

Effluent Quality Assessment

Fort Myers South Advanced Wastewater Treatment Plant

Lee County

NPDES #FL0021270

Sampled February 25 & 27, and March 1, 2013

June 2013

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration
Quality Manual No. 870346G
NELAC Certification No. E31780

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Fort Myers South Advanced Wastewater Treatment Plant (AWWTP),1618 South Drive, Fort Myers, Lee County, Florida, 33907. NPDES #FL0021270.

Facility Overview

Fort Myers South AWWTP uses a 5-stage Bardenpho Process to treat domestic wastewater. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent grab samples for toxicity testing were collected on February 25 and 27, and March 1, 2013. Effluent grab samples for biological and chemical analyses for this facility were collected on February 25-27, 2013. All samples were collected from the EFD-01 NPDES sampling point for Outfall D-001 by Alyssa Mork (FDEP South District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix C)

The 7-day chronic definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_05, TA07_09, and TA08_01 through TA08_09 (see Appendix C).

Results

Chemistry Results (See Table 1 and Appendix D)

- Total residual chlorine (TRC) was detected in bioassay sample # 2 (LIMS # 1486662) (0.075 mg/L) in the bioassay laboratory. Total ammonia was not detected in any of the three bioassay samples in the bioassay laboratory. Chemical analysis for total ammonia was not performed. Since total ammonia was not detected in the bioassay samples and was not measured in a preserved sample, unionized ammonia could not be calculated but was presumed to be < 0.02 mg/L.
- Bromodichloromethane, dibromochloromethane, aluminum, iron, nickel, total phosphorus, carbonaceous biochemical oxygen demand (CBOD), enterococci, and fecal coliforms were detected in the effluent at levels that comply with Class III Marine Water Quality Criteria (62-302.530, F.A.C.) and/or permitted limits. Atrazine, arsenic, chromium, copper, lead, zinc, and total suspended solids were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). The effluent's total residual chlorine (0.075 mg/L UQ£) exceeded the respective Class III Marine Criterion and permitted limits in the second sample received in the laboratory. Aluminum (73 µg/L) was also detected in the field blank.

Algal Growth Potential (See Table 2 and Appendix D)

- The effluent Algal Growth Potential (AGP) was 35.7 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The ratio of inorganic nitrogen to ortho-phosphate suggests that the effluent is phosphorus limited; whereas, the ratio of total nitrogen to total phosphorus suggests that the effluent is co-limited by both phosphorus and nitrogen (Miller et al. 1978).
- To determine actual nutrient limitation, a limiting-nutrient algal growth potential test with associated nutrient chemistry should be performed (Miller et al. 1978).
- The salinity adjusted effluent algal growth potential (AGP) was 9.66 mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Schultz determined that AGP values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication, Marshall Faircloth, et. al. FDEP with Ron Raschke USEPA Region 4 1987).
- The algal growth potential (AGP) sample was salinity-adjusted with artificial sea salts from an apparent salinity of approximately 0.4 parts per thousand (ppth) to a salinity of approximately 7.06 ppth to meet the salinity requirements of the test species.

Toxicity Test Results (See Appendices D- G)

- Tests were performed February 26 –March 5, 2013.
  Ceriodaphnia dubia 7-day chronic definitive bioassay – IC 25: > 100%
  NOEC: 100%

  Pimephales promelas 7-day chronic definitive bioassay – IC25: > 100%
  NOEC: 100%

- The bioassay samples were not chronically toxic to the test organisms.

Conclusion

The effluent samples collected from the EFD-1 NPDES sampling point for this facility on February 25 and 27, and March 1, 2013, were not chronically toxic to either test species during the 7-day chronic definitive bioassays. The effluent AGP result was greater than the "problem" threshold for fresh receiving waters and by inference suggests that nutrient enrichment may be an issue in the marine receiving waters. The effluent's total residual chlorine (0.075 mg/L UQ£) exceeded the respective Class III Marine Criterion and permitted limits in the second bioassay sample received in the laboratory. Additional effluent water quality samples collected on February 25-27 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.

Maloney, T. E., W. E. Miller, and D. T. Specht. 1974. The Marine Algal Assay Procedure: Bottle Test. National Environmental Research Center Office of Research and Development. U. S. EPA, Corvallis, Oregon. 43 p.

Table 1. Effluent limits, Class III Criteria for predominantly marine waters, chemical and microbiological data, and qualifiers

Fort Myers South WWTP	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
Atrazine	-	-	0.07	I
Bromodichloromethane	≤ 34.0 a	52.2p	28	
Dibromochloromethane	≤ 22.0 a	111p	22	
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1500	-	444	
Arsenic	≤ 50	-	0.64	I
Cadmium	≤ 8.8	-	0.050	U
Calcium (mg/L)	-	-	53.3	
Chromium-III	-	-	0.58	I
Copper	≤ 3.7	≤ 3.7p	0.74	I
Iron	≤ 300	Report	130	
Lead	≤ 8.5	-	0.34	I
Magnesium (mg/L)	-	-	10.8	
Nickel	≤ 8.3	Report	1.26	
Selenium	≤ 71	-	0.20	U
Silver	≤ 2.3	≤ 2.3s	0.025	U
Zinc	≤ 86	-	8.3	I
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.02	
Total Phosphorus	-	≤ 1.0s	0.11	
Total Ammonia	-	-	≤ 0.017	U£
Un-ionized Ammonia	-	-	< 0.02	J
Nitrate and Nitrite	-	-	0.53	
Total Kjeldahl Nitrogen	-	-	0.94	
Organic Nitrogen	-	-	0.932	c
Total Nitrogen	-	6p	1.47	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0s	≥ 4.0s	7.56	
pH (SU)	6.5 - 8.5	6.5 - 8.5	7.43	
Specific Conductance (µmhos/cm)	-	-	533	
Temperature (°C)	-	-	26.65	
Salinity	-	-	< 0.25	c
Total Residual Chlorine (mg/L)	≤ 0.01s	≤ 0.01s	0.075	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	0.79	I
Phaeophytin (µg/L)	-	-	0.40	U
Total Suspended Solids (mg/L)	-	≤ 60.0s	3.0	I
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60.0p	2.1	
Oils and Greases (mg/L)	≤ 5.0	Report	0.75	U
Cyanide (µg/L)	≤ 1.0s	≤ 1.0s	0.005	U
Flow (MGD)	-	12.0	8.22	a*
Hardness (mg $CaCO_3$)	-	-	177.5645	c
Microbiology (Number of colony forming units/100ml) ¥				
Enterococci (MPN/100 ml)	-	104s	17	
Fecal Coliforms	≤ 400s #	≤ 800s	76	

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

a - Annual average
c - Value is calculated
p - 24 hour flow proportioned composite
s - single grab sample
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
¥ - Fecal coliform analysis performed bySanders Laboratories Inc.
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
£ - measurement taken in the FDEP laboratory
* - Measured from 2-28-2012 - 1-31-2013

Table 2. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata,* salinity- adjusted AGP for the saltwater species *Dunaliella tertiolecta* , and ratios of nitrogen to phosphorus.

Fort Myers South WWTP								
Location	Test Species	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 *	marine	9.66					26.5	13.4
Effluent	fresh	35.7	20.1 ± 4.0	8.6 ± 1.7	55.9 ± 11.2	47.3 ± 9.5	26.5	13.4

* - sample salinity adjusted to ~7 ppth

Marine - saltwater species *Dunaliella tertiolecta*

Fresh - freshwater species *Pseudokirchneriella subcapitata*

Appendix A.
Facility Summary

South AWWT Facility

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Alyssa Mork	Contact Number: (239)344-5673
Facility Name (as it appears on permit): Fort Myers South WWTP	Former Names:
NPDES Permit Number: FL0021270	Permit Expiration Date: May19,2016
Physical Address: 1618 South Dr. Fort Myers, FL 33907-1118	
District: SD	County: Lee
Function of Facility: Treat domestic wastewater for discharge to the Caloosahatchee River	
Facility Type: Domestic Wastewater	Permitted Capacity (MGD):0 12
Mean Flow for previous 12 months for all EXTENAL outfalls listed in permit (list date range including months): 7.68 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): No reuse	
Description of type of Discharge: Continuous operation ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	

South AWWT Facility

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): EFD-1 :Next tank north of EFA-01 (EFA-01:End of Chlorine Contact tanks)
Description of Permitted Outfall(s): Surface Water Discharge D-001: Treated effluent is disposed by an existing 12.0 MGD maximum monthly average daily flow (MMADF) discharge to the tidal Caloosahatchee, Class III Marine waters, (WBID# 3240A). The outfall is a 42 inch reinforced concrete pipe without a diffuser. The outfall discharges 1760 feet from shore and at a depth of 19.8 feet. The point of discharge is located approximately at latitude 26°35' 35" N, longitude 81°54' 15" W. There are two mixing zones associated with this outfall; one for chlorodibromomethane and one for dichlorobromomethane. Both mixing zones are within a 6 meter radius around the outfall. The mixture of effluent and receiving waters shall meet the surface water standards of Chapter 62-302, F.A.C., at the edge of the mixing zones.

South AWWT Facility

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

The facility is a 5-Stage Bardenpho process domestic wastewater treatment plant. The permitted annual average daily flow (AADF) for the facility is 12.0 million gallons per day (MGD). The major units of the facility are two influent belt screens, two vortex grit removal systems, two 5-stage Bardenpho systems, four clarifiers, two chlorine contact tanks, a sodium hypochlorite disinfection system, a dechlorination system, five aerobic biosolids holding tanks, and three belt presses. Each Bardenpho train consists of one fermentation tank, two anoxic tanks, one oxidation ditch, and one reaeration tank.

PART I: Continued										
List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)										
			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow from Outfall D-001(To River)	**MGD**	**Maximum**		**12.0**	-	-	**Continuous (During Discharge)**	**Recording flow meters and totalizers**	**FLOW-1**	
Annual Volume of Effluent				**12.0**	-		**Continuous (During Discharge)**	**Recording flow meters and totalizers**	**CAL-1**	
BOD, Carbonaceous 5-day, 20°C	**MG/L**	**Maximum**	**20.0**	**25.0**	**40.0**	**60.0**	**Daily (During Discharge)**	**24-hr. FPC**	**EFD-1**	
Solids, Total Suspended	**MG/L**	**Maximum**	**20.0**	**30.0**	**45.0**	**60.0**	**Daily (During Discharge)**	**Grab**	**EFD-1**	
Total Nitrogen, as N	**MG/L**	**Maximum**	**3.0**	**3.0**	**4.5**	**6.0**	**Daily (During Discharge)**	**Grab**	**EFD-1**	
Water Temperature (°C)										
Ammonia, as N										
Unionized ammonia, as N										
Total Phosphorous, as P	**MG/L**	**Maximum**	**0.5**	**0.5**	**0.75**	**1.0**	**5 days per week**	**24-hrs per day**	**EFD-1**	
pH	**SU**	**Range**	-	-	-	**6.5 to 8.5**	**Continuous (During Discharge)**	**Meter**	**EFD-1**	**See Cond. I.A.3**
Coliform, Fecal	**#/100ML**	**Maximum**	**See Permit Condition I.A.5.**				**Weekly (During Discharge)**	**Grab**	**EFA-01**	
Total Residual Chlorine (For Disinfection)	**MG/L**	**Minimum**	-	-	-	**1.0**	**Continuous (During Discharge)**	**Meter**	**EFA-1**	**See Cond. I.A.3 and 6**

South AWWT Facility

PART I: Continued										
List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)										
			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Total Residual Chlorine (For Dechlorination)	**MG/L**	**Maximum**	-	-	-	**0.01**	**Daily (During Discharge)**	**Meter**	**EFD-1**	
Oxygen, Dissolved (DO)	**MG/L**	**Minimum**	-	-	-	**4.0**	**Daily (During Discharge)**	**Grab**	**EFD-1**	
Total Cyanide	**µg/L**	**Maximum**	-	-	-	**1.0**	**Quarterly**	**Grab**	**EFD-1**	
Silver, Total Recoverable	**µg/L**	**Maximum**	-	-	-	**2.3**	**Quarterly**	**Grab**	**EFD-1**	
Chronic Whole Effluent Toxicity	**See Permit Condition I.A.9**					**Quarterly (During Discharge)**		**24-hr FPC**	**EFD-1 or**	
Ambient Stream Sampling	**See Permit Condition I.A.12**									

Parameter	Max/Min	Annual Total Mass Load	Monthly Total Mass Load	Weekly mass Load	Daily Mass Load	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes	
Total Nitrogen, as N	**Maximum**		**300 (Lbs/year)**	-	-	**5 days-week**	**24-hr FPC**	**EFD-01**		

1. Hourly measurement of pH and total residual chlorine for disinfection during the period of operator attendance may be substituted for continuous measurement. The pH values shall not deviate outside the required range more than 7 hours and 26 minutes in any calendar month and no individual excursion shall exceed 60 minutes. An "excursion" is an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in this permit. *[62-601, Figure 2, 40 CFR, Part 401.17]*

2. Meters shall be utilized to measure flow and calibrated at least once every 12 months. *[62-601.200(17) and .500(6)]*

3. The effluent limit for the monthly geometric mean of the fecal coliform is only applicable if 10 or more values are reported. If fewer than 10 values are reported, the monthly geometric mean shall be calculated and reported on the Discharge Monitoring Report to be used to calculate the annual average. *[62-600.440(4)(c)]*

4. Total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow. *[62-600.440(4)(b), (5)(b), and (6)(b)]*

5. The enterococci monthly geometric mean value shall be based on all samples of effluent collected during a period of 30 consecutive days (monthly); a minimum of 5 samples of effluent, each collected on nonconsecutive days, is required. *[62-302.500(1)(a)6. and 40 CFR Part 131.41*

6. The concentration of Dissolved Oxygen shall not average less than 5.0 mg/L in a 24-hour period and shall never be less than 4.0 mg/L. Normal daily and seasonal fluctuations above these levels shall be maintained in the receiving waters. *[62-302.530(30)]*

7. The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-001.

   a. Effluent Limitation
      (1) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC25) shall not be less than 100% effluent. [*62-302.530(61) and 62-4.241(1)(b), F.A.C.]*
      (2) For acute whole effluent toxicity, the 96-hour LC50 shall not be less than 100% effluent in any test. *[62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]*

   b. Monitoring Frequency
      (1) Routine toxicity tests shall be conducted once every three months, the first starting within 180 days of the issuance date of this permit and lasting for the duration of this permit.

   c. Sampling Requirements
      (1) For each routine test or additional follow-up test conducted, a total of three flow proportional 24-hr composite samples of final effluent shall be collected and used in accordance with the sampling protocol discussed in EPA-821-R-02-013, Section 8.
      (2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.
      (3) Samples for routine and additional follow-up tests shall not be collected on the same day.

   d. Test Requirements
      (1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: 100%, 50%, 25%, 12.5%, and 6.25% final effluent.
      (2) The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction Test and a fathead minnow, Pimephales promelas, Larval Survival and Growth Test, concurrently.
      (3) All test species, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to

Freshwater Organisms, 4th Edition, EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.

(4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.2.3.

e. Quality Assurance Requirements

(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or does not meet "test acceptability criteria", the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-013, Section 13.12 (Ceriodaphnia dubia) and Section 11.11 (Pimephales promelas). The repeat test shall begin within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations for either test species prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) for that species shall be terminated with the conclusion that the test fails and constitutes non-compliance.

(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.

f. Reporting Requirements

(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

(a) Routine and Additional Follow-up Test Results: The calculated IC25 for each test species shall be entered on the DMR.

(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.

(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.

(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.

(5) The same bioassay data shall not be reported as the results of more than one test.

(6) All bioassay laboratory reports shall be sent to:
Florida Department of Environmental Protection
South District Office
2295 Victoria Ave, Suite 364
Ft. Myers, Florida 33901-3881

g. Test Failures

(1) A test fails when the test results do not meet the limits in 3.a.(1).

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in 3.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 3.d.

(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be analyzed according to the procedures in EPA-821-R-02-013.

(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.

(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.

(b) The Department shall review and approve the plan before initiation.

(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.

(d) Progress reports shall be submitted quarterly to the Department at the address above.

(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with 3.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in 3.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.

(f) Upon completion of four consecutive quarterly valid routine tests that demonstrate compliance with the effluent limitation in 3.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive quarterly valid routine whole effluent toxicity tests. If a test within the sequence of the four is deemed invalid, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive quarterly valid routine tests for the purpose of terminating the plan.

(4) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in 3.a.(2), the Department may revise this permit to require acute definitive whole effluent toxicity testing.

(5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity failures.

[62-4.241, 62-620.620(3)]

10. Upon the completion of six valid tests, if the parameter's theoretical maximum level in the effluent is below 50% of the parameter's limit, the permittee may petition the Department for a reduction in monitoring frequency of the parameters that are sampled quarterly. *[BPJ]*

RT I: Continued	
Receiving Waters: **Caloosahatchee**	**Classification (indicate whether fresh or marine):** **Class III, predominately marine waters – WBID 3240A**

South AWWT Facility

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

96-hr Chronic – LC50 at 100%.
Ceriodaphnia dubia (Routine)
Pimephales promelas (Routine)

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
None

Facility Mixing Zone Details (if applicable):

There are two mixing zones associated with this outfall; one for chlorodibromomethane and one for dichlorobromomethane. Both mixing zones are within a 6 meter radius around the outfall. The mixture of effluent and receiving waters shall meet the surface water standards of Chapter 62-302, F.A.C., at the edge of the mixing zones.

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

No violations

	Parameter and Units	Limit	Result
NONE	NONE	NONE	NONE

Describe previous or current Enforcement Actions (including WLs): NONE

No current enforcement actions

Describe any violations or problems noted in previous inspection:

No violations

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

No real trends

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

South AWWT Facility

PART II: Sampling Event Information	
Date(s) sample collected:	Sampler(s):
Temperature (Deg C):	pH (SU):
Dissolved Oxygen (mg/L):	Conductivity (umhos/cm):
Total Residual Chlorine (mg/L):	Total Residual Chlorine - after Disinfection (mg/L):
Method of Chlorination:	Method of De-chlorination:
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here: Toxicity was changed to Acute.	

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2013-02-25-16
FYI3 Fort Myers South AWWTP Sampling Inspection

Customer: SO-DIST
Project ID: FYI3
PMAS: 1143

Requester: Michelle Fish
Collected By: Alyssa Mork
Sampling Agency: FDEP

Field Report Prepared By: Alyssa Mork
Send Final Report To: Deanna Newburg

Lab ID *	Location / Field ID / Matrix / Temp (C) / pH / Latitude / Longitude	Comp / Grab / Collection (comp begin or grab) Eastern Date Time Central / Composite end Eastern Date Time Central	Tot Res Chlorine (mg/L) / Diss Oxygen (mg/L) / Storet Station Number	Sample Depth m ft / Salinity (PPTh) / Sp Conductance (umho/cm) / NPDES Number	Bottle Group(s)**	Comments
	Location: Fort Myers South Field ID: 022513-FMS-01 Matrix: Fresh Temp (C): 20.05 pH: 7.43 Latitude: ☐ dd ☐ dms Longitude: ☐ dd ☐ dms	☐ Comp ☒ Grab Collection Date 2-25-13 Time 315 Central Composite end Date Time Eastern Central	Tot Res Chlorine (mg/L): 0.0 Diss Oxygen (mg/L): 7.56 Storet Station Number:	Sample Depth ☐ m ☐ ft: 533 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) NPDES Number:	A & B	No Composite
	Location: Fort Myers South Field ID: 022513-FMS-02 Matrix: DI water Temp (C): pH: Latitude: ☐ dd ☐ dms Longitude: ☐ dd ☐ dms	☐ Comp ☒ Grab Collection Date 2-25-13 Time 400 Central Composite end Date Time Eastern Central	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): Storet Station Number:	Sample Depth ☐ m ☐ ft: ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number:	C & D	Field Blanks only
	Location: Field ID: Matrix: Temp (C): pH: Latitude: ☐ dd ☐ dms Longitude: ☐ dd ☐ dms	☐ Comp ☐ Grab Collection (comp begin or grab) Eastern Date Time Central Composite end Date Time Eastern Central	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): Storet Station Number:	Sample Depth ☐ m ☐ ft: ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number:		Comments:
	Location: Field ID: Matrix: Temp (C): pH: Latitude: ☐ dd ☐ dms Longitude: ☐ dd ☐ dms	☐ Comp ☐ Grab Collection (comp begin or grab) Eastern Date Time Central Composite end Date Time Eastern Central	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): Storet Station Number:	Sample Depth ☐ m ☐ ft: ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number:		Comments:

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	2-25-13 5:03pm	FEDEX					[signature]	2-26-13/9:20

2 Biz-days 2.26.13 @ 10.53 EA

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2013-02-25-16
FYI3 Fort Myers South AWWTP Sampling Inspection

Event ID *

Customer: SO-DIST
Project ID: FYI3
PMAS: 1143

Requester: Michelle Fish
Collected By: Alyssa Mork
Sampling Agency: FDEP

Field Report Prepared By: Alyssa Mork
Send Final Report To: Deanna Newburg

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
	FTM South WWTP EFF	☐ Comp ☒ Grab Date 2-27-13 Time 2:05	Date Time	A
	Field ID: 022713-FMS-01	Tot Res Chlorine (mg/L): 0	Diss Oxygen (mg/L): 9.11	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc): Plant Effluent	Temp (C): 25.14	pH: 7.93	Sample Depth ☐ m ☐ ft: 1.27
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)
				NPDES Number
				Comments

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
	Field Blank	☐ Comp ☒ Grab Date 2-27-13 Time 2:10	Date Time	C
	Field ID: 022713-FMS-02	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc): DI Water	Temp (C)	pH	Sample Depth ☐ m ☐ ft
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
				NPDES Number
				Comments

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end 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
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
				NPDES Number
				Comments

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end 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
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
				NPDES Number
				Comments

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
A. Mesa	2-27-13 5:00 pm	Fedex					[illegible]	2-28-13 [illegible]

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

2 biosassay Jugs
M. Fairchild
0940 2/28/13

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2013-02-25-16
FYI3 Fort Myers South AWWTP Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: Alyssa Mork
Collected By: Alyssa Mork
Send Final Report To: Deanna Newburg
Sampling Agency: FDEP

Customer: SO-DIST
Project ID: FYI3
PMAS: 1143

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
	Fort Myers South WWTP	☐ Comp ☒ Grab Eastern Date 5-1-13 Time 12:15 Central	Eastern Date Time Central	
	Field ID 130113-FMS-01	Tot Res Chlorine (mg/L) 0.0	Diss Oxygen (mg/L) 7.09	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc) Fresh	Temp (C) 24.73	pH 7.31	Sample Depth ☐ m ☐ ft
			1006	☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)
				NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
		☐ Comp ☐ Grab Eastern Date Time Central	Eastern Date Time Central	
	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
		☐ Comp ☐ Grab Eastern Date Time Central	Eastern Date Time Central	
	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
		☐ Comp ☐ Grab Eastern Date Time Central	Eastern Date Time Central	
	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Relinquished By	Date/Time	Shipping Method	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
	3-1-13 3:00pm	FEDEX	M. Faircloth	3/2/13 0900				9-4-13 / 3:45

* Shaded Areas for Lab use only

** Please see reverse side for Bottle Group information

last revised October 1, 2003

2 coolers with 2 jugs 3.4°C
Bio Assays
orange 1 jug 2.4°C

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. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits. Exceedances of Water Quality Criteria may constitute violations of specific provisions of Chapter 62-302 (F.A.C.) and/ or facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or a violation of facility permit limits. An inhibition concentration greater than 25% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or a violation of facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or a violation of facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or a violation of facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20-60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a “problem” threshold for fresh receiving waters, implying nutrient enrichment. High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61), F.A.C.

(7) Chlorophyll *a* Content

Chlorophyll *a* content is an estimate of algal biomass . High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be constitute exceedances of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C..

(8) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix D.
Chemical Analyses of Effluent

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
2/25/2013 15:15	022513-FMS-01	AGP/LN	Algal Growth Potential-Salinity Adjusted	9.66		mg DryWt/L	3	3
2/25/2013 15:15	022513-FMS-01	AGP/LN	Algal Growth Potential	35.7		mg DryWt/L	0.3	0.9
2/25/2013 15:15	022513-FMS-01	Chlorophyll/Grain Size/BOD	BOD-5 Day,N-Inhib	2.1		mg/L	0.2	2
2/25/2013 15:15	022513-FMS-01	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.79	I	ug/L	0.55	1.7
2/25/2013 15:15	022513-FMS-01	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40	U	ug/L	0.4	1.2
2/25/2013 15:15	022513-FMS-01	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	100	L	IC25		
2/25/2013 15:15	022513-FMS-01	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100	L	IC25		
2/25/2013 15:15	022513-FMS-01	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100		NOEC		
2/25/2013 15:15	022513-FMS-01	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	100		NOEC		
2/25/2013 15:15	022513-FMS-01	Metals	Chromium	0.58	I	ug/L	0.3	1.2
2/25/2013 15:15	022513-FMS-01	Metals	Selenium	0.20	U	ug/L	0.2	0.8
2/25/2013 15:15	022513-FMS-01	Metals	Copper	0.74	I	ug/L	0.5	1
2/25/2013 15:15	022513-FMS-01	Metals	Silver	0.025	U	ug/L	0.025	0.1
2/25/2013 15:15	022513-FMS-01	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
2/25/2013 15:15	022513-FMS-01	Metals	Zinc	8.3	I	ug/L	5	20
2/25/2013 15:15	022513-FMS-01	Metals	Arsenic	0.64	I	ug/L	0.25	1
2/25/2013 15:15	022513-FMS-01	Metals	Nickel	1.26		ug/L	0.25	1
2/25/2013 15:15	022513-FMS-01	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
2/25/2013 15:15	022513-FMS-01	Metals	Aluminum	444		ug/L	5	20
2/25/2013 15:15	022513-FMS-01	Metals	Calcium	53.3		mg/L	0.075	0.3
2/25/2013 15:15	022513-FMS-01	Metals	Iron	130		ug/L	30	120
2/25/2013 15:15	022513-FMS-01	Metals	Lead	0.34	I	ug/L	0.2	0.8
2/25/2013 15:15	022513-FMS-01	Metals	Magnesium	10.8		mg/L	0.04	0.16
2/25/2013 15:15	022513-FMS-01	Metals	Antimony	0.25	U	ug/L	0.25	1
2/25/2013 15:15	022513-FMS-01	Nutrients	Cyanide	0.005	U	mg CN/L	0.005	0.02
2/25/2013 15:15	022513-FMS-01	Nutrients	TSS	3	I	mg/L	2	10
2/25/2013 15:15	022513-FMS-01	Nutrients	Total-P	0.11		mg P/L	0.005	0.05
2/25/2013 15:15	022513-FMS-01	Nutrients	NO2NO3-N	0.53		mg N/L	0.004	0.01
2/25/2013 15:15	022513-FMS-01	Nutrients	Kjeldahl Nitrogen	0.94		mg N/L	0.08	0.2
2/25/2013 15:15	022513-FMS-01	Overflow	Oil and Grease	0.75	U	mg/L	0.75	2.7
2/25/2013 15:15	022513-FMS-01	Pesticides	Metolachlor	0.33	U	ug/L	0.33	1.3

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
2/25/2013 15:15	022513-FMS-01	Pesticides	Malathion	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Mevinphos	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.44
2/25/2013 15:15	022513-FMS-01	Pesticides	Ethoprop	0.028	U	ug/L	0.028	0.11
2/25/2013 15:15	022513-FMS-01	Pesticides	Hexazinone	0.17	U	ug/L	0.17	0.67
2/25/2013 15:15	022513-FMS-01	Pesticides	Ethion	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Atrazine	0.070	I	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Simazine	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Phorate	0.028	U	ug/L	0.028	0.11
2/25/2013 15:15	022513-FMS-01	Pesticides	Naled	0.22	U	ug/L	0.22	0.89
2/25/2013 15:15	022513-FMS-01	Pesticides	Chlorpyrifos Ethyl	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Ametryn	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Butylate	0.11	U	ug/L	0.11	0.44
2/25/2013 15:15	022513-FMS-01	Pesticides	Fenamiphos	0.17	UJ	ug/L	0.17	0.67
2/25/2013 15:15	022513-FMS-01	Pesticides	Chlorpyrifos Methyl	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Diazinon	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Parathion Methyl	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Fonofos	0.056	U	ug/L	0.056	0.22
2/25/2013 15:15	022513-FMS-01	Pesticides	Bromacil	0.22	U	ug/L	0.22	0.89
2/25/2013 15:15	022513-FMS-01	Pesticides	Azinphos Methyl	0.11	UJ	ug/L	0.11	0.44
2/25/2013 15:15	022513-FMS-01	Pesticides	Alachlor	0.33	U	ug/L	0.33	1.3
2/25/2013 15:15	022513-FMS-01	Pesticides	Parathion Ethyl	0.11	U	ug/L	0.11	0.44
2/25/2013 15:15	022513-FMS-01	Pesticides	Metalaxyl	0.22	U	ug/L	0.22	0.89
2/25/2013 15:15	022513-FMS-01	Pesticides	Norflurazon	0.17	U	ug/L	0.17	0.67
2/25/2013 15:15	022513-FMS-01	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.44
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	U	ug/L	9.9	40
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0	UJ	ug/L	3	12
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	U	ug/L	40	160
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0	U	ug/L	2	7.9
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Benzo(a)pyrene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0	U	ug/L	2	7.9
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Naphthalene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Bromodichloromethane	28		ug/L	0.2	0.8
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	U	ug/L	0.99	4

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Butyl benzyl phthalate	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Benzo(a)anthracene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Chrysene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Dimethyl phthalate	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Fluoranthene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Fluorene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0	U	ug/L	3	12
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Hexachloroethane	3.0	U	ug/L	3	12
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2-Nitrophenol	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Acenaphthylene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Di-n-butyl phthalate	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Hexachlorobenzene	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Pentachlorophenol	3.0	UJ	ug/L	3	12
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Phenol	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Dibromochloromethane	22		ug/L	0.2	0.8
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2-Chloronaphthalene	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2-Chlorophenol	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Acenaphthene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0	U	ug/L	3	12
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0	U	ug/L	2	7.9
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0	U	ug/L	3	12
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Isophorone	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Phenanthrene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Anthracene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Benzidine	99	U	ug/L	99	400
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20	U	ug/L	0.2	0.79

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Diethyl phthalate	0.99	U	ug/L	0.99	4
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Nitrobenzene	2.0	U	ug/L	2	7.9
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Pyrene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0	U	ug/L	2	7.9
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20	U	ug/L	0.2	0.79
2/25/2013 15:15	022513-FMS-01	Priority Organic Pollutants	Hexachlorobutadiene	3.0	U	ug/L	3	12
2/25/2013 15:15	022513-FMS-01	Field Parameter	Total Residual Chlorine	0.0		mg/L		
2/25/2013 15:15	022513-FMS-01	Field Parameter	Dissolved Oxygen	7.56		mg/L		
2/25/2013 15:15	022513-FMS-01	Field Parameter	Specific Conductance	533		umhos/cm		
2/25/2013 15:15	022513-FMS-01	Field Parameter	pH	7.43				
2/25/2013 15:15	022513-FMS-01	Field Parameter	pH	7.43				
2/25/2013 15:15	022513-FMS-01	Field Parameter	Total Residual Chlorine	0.0		mg/L		
2/25/2013 15:15	022513-FMS-01	Field Parameter	Temperature	26.65		C		
2/25/2013 15:15	022513-FMS-01	Field Parameter	Specific Conductance	533		umhos/cm		
2/25/2013 15:15	022513-FMS-01	Field Parameter	Temperature	26.65		C		
2/25/2013 15:15	022513-FMS-01	Field Parameter	Dissolved Oxygen	7.56		mg/L		
2/25/2013 16:00	022513-FMS-02	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
2/25/2013 16:00	022513-FMS-02	Metals	Lead	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Metals	Arsenic	0.25	U	ug/L	0.25	1
2/25/2013 16:00	022513-FMS-02	Metals	Antimony	0.25	U	ug/L	0.25	1
2/25/2013 16:00	022513-FMS-02	Metals	Zinc	5.0	U	ug/L	5	20
2/25/2013 16:00	022513-FMS-02	Metals	Nickel	0.25	U	ug/L	0.25	1
2/25/2013 16:00	022513-FMS-02	Metals	Copper	0.50	U	ug/L	0.5	1
2/25/2013 16:00	022513-FMS-02	Metals	Silver	0.025	U	ug/L	0.025	0.1
2/25/2013 16:00	022513-FMS-02	Metals	Calcium	0.18	I	mg/L	0.075	0.3
2/25/2013 16:00	022513-FMS-02	Metals	Chromium	0.30	U	ug/L	0.3	1.2
2/25/2013 16:00	022513-FMS-02	Metals	Iron	30	U	ug/L	30	120
2/25/2013 16:00	022513-FMS-02	Metals	Aluminum	73		ug/L	5	20
2/25/2013 16:00	022513-FMS-02	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
2/25/2013 16:00	022513-FMS-02	Metals	Selenium	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Metals	Magnesium	0.040	U	mg/L	0.04	0.16
2/25/2013 16:00	022513-FMS-02	Nutrients	Cyanide	0.005	U	mg CN/L	0.005	0.02
2/25/2013 16:00	022513-FMS-02	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
2/25/2013 16:00	022513-FMS-02	Nutrients	Total-P	0.002	U	mg P/L	0.002	0.005

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
2/25/2013 16:00	022513-FMS-02	Nutrients	Kjeldahl Nitrogen	0.080	U	mg N/L	0.08	0.2
2/25/2013 16:00	022513-FMS-02	Overflow	Oil and Grease	0.75	U	mg/L	0.75	2.7
2/25/2013 16:00	022513-FMS-02	Pesticides	Chlorpyrifos Ethyl	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Malathion	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Mevinphos	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Ethion	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Parathion Methyl	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Ametryn	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Ethoprop	0.026	U	ug/L	0.026	0.11
2/25/2013 16:00	022513-FMS-02	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.42
2/25/2013 16:00	022513-FMS-02	Pesticides	Hexazinone	0.16	U	ug/L	0.16	0.63
2/25/2013 16:00	022513-FMS-02	Pesticides	Naled	0.21	U	ug/L	0.21	0.84
2/25/2013 16:00	022513-FMS-02	Pesticides	Azinphos Methyl	0.11	U	ug/L	0.11	0.42
2/25/2013 16:00	022513-FMS-02	Pesticides	Bromacil	0.21	U	ug/L	0.21	0.84
2/25/2013 16:00	022513-FMS-02	Pesticides	Diazinon	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Fenamiphos	0.16	UJ	ug/L	0.16	0.63
2/25/2013 16:00	022513-FMS-02	Pesticides	Fonofos	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Phorate	0.026	U	ug/L	0.026	0.11
2/25/2013 16:00	022513-FMS-02	Pesticides	Alachlor	0.32	U	ug/L	0.32	1.3
2/25/2013 16:00	022513-FMS-02	Pesticides	Chlorpyrifos Methyl	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Metolachlor	0.32	U	ug/L	0.32	1.3
2/25/2013 16:00	022513-FMS-02	Pesticides	Parathion Ethyl	0.11	U	ug/L	0.11	0.42
2/25/2013 16:00	022513-FMS-02	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.42
2/25/2013 16:00	022513-FMS-02	Pesticides	Simazine	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Atrazine	0.053	U	ug/L	0.053	0.21
2/25/2013 16:00	022513-FMS-02	Pesticides	Butylate	0.11	U	ug/L	0.11	0.42
2/25/2013 16:00	022513-FMS-02	Pesticides	Metalaxyl	0.21	U	ug/L	0.21	0.84
2/25/2013 16:00	022513-FMS-02	Pesticides	Norflurazon	0.16	U	ug/L	0.16	0.63
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2-Chlorophenol	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Pentachlorophenol	3.0	UJ	ug/L	3	12
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Acenaphthylene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Hexachlorobenzene	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Dibromochloromethane	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2-Chloronaphthalene	1.0	U	ug/L	1	4

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	U	ug/L	40	160
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Acenaphthene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Butyl benzyl phthalate	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Fluoranthene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Bromodichloromethane	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	60
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Di-n-butyl phthalate	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Diethyl phthalate	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Dimethyl phthalate	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Hexachloroethane	3.0	U	ug/L	3	12
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0	U	ug/L	2	8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0	U	ug/L	2	8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0	U	ug/L	3	12
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2,4-Dichlorophenol	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	40
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0	U	ug/L	2	8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Fluorene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0	U	ug/L	3	12
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	60
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Benzo(a)pyrene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0	U	ug/L	2	8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Hexachlorobutadiene	3.0	U	ug/L	3	12
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Phenanthrene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	400
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Chrysene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Di-n-octyl phthalate	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Nitrobenzene	2.0	U	ug/L	2	8

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2-Nitrophenol	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Anthracene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Benzo(a)anthracene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Phenol	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Pyrene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0	U	ug/L	3	12
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Isophorone	1.0	U	ug/L	1	4
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	Naphthalene	0.20	U	ug/L	0.2	0.8
2/25/2013 16:00	022513-FMS-02	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0	U	ug/L	3	12
2/26/2013 9:00	FTM SOUTH EFF-01	Overflow	Fecal Coliforms-Membrane Filter	76		cfu/100 mL	2	
2/26/2013 9:00	FTM SOUTH EFF-02	Overflow	ENTEROCOCCI-ENTEROLERT	17		MPN/100 mL	1	
2/25/2013 15:15	TRIP BLANK	Priority Organic Pollutants	Bromodichloromethane	0.20	U	ug/L	0.2	0.8
2/25/2013 15:15	TRIP BLANK	Priority Organic Pollutants	Dibromochloromethane	0.20	U	ug/L	0.2	0.8
2/27/2013 14:05	022713- FMS-01	Nutrients	O-Phosphate-P	0.020		mg P/L	0.004	0.01
2/27/2013 14:05	022713- FMS-01	Field Parameter	Temperature	25.14		C		
2/27/2013 14:05	022713- FMS-01	Field Parameter	Dissolved Oxygen	9.11		mg/L		
2/27/2013 14:05	022713- FMS-01	Field Parameter	pH	7.93				
2/27/2013 14:05	022713- FMS-01	Field Parameter	Specific Conductance	1,027		umhos/cm		
2/27/2013 14:10	022713-FMS-02	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
3/1/2013 12:15	030113-FMS-01	Field Parameter	pH	7.31				
3/1/2013 12:15	030113-FMS-01	Field Parameter	Temperature	24.73		C		
3/1/2013 12:15	030113-FMS-01	Field Parameter	Specific Conductance	1,006		umhos/cm		
3/1/2013 12:15	030113-FMS-01	Field Parameter	Dissolved Oxygen	7.69		mg/L		

Appendix E.
Bioassay Bench Sheets

FDEP Biology Laboratory - Chronic Definitive Bench Sheet
Ceriodaphnia dubia

Facility: ~~Green Bay~~ MF Fort Myers South AWWTP
Address: 1618 South Dr., ~~Ft. M~~ Fort Myers
County: Lee
NPDES Permit #: FL 0021270
Contact/District: ~~Jacky Champion~~ MF / ~~SWD~~ MF Southwest ~~District~~ Alyssa Mark

LIMS entry: 3-7-13 MF verified: 3.7.13 BA

Diluent/ Batch: MF MHWCD ~~20% SDMHW~~ / 2-26-13 Test Days Used: 0 – 5
20% SDMHW /_____ Test Days Used: _____

SOP#: TA07_05 EPA 821-R-02-013 Method 1002.0

Organism: *Ceriodaphnia dubia*
Organism Batch #: ~~1-27-13~~ MF 2-26-13
Organism age : <24 hours
Feeding: Prior to Test and Daily
Food: ☑ YCT ☑ *P. subcapitata*
Food Batch: 11-14-12 1-18-13
Chamber size : 30 ml
Sample volume : 20 ml

Sample Received	LAB Sample #	LIMS JOB #	LIMS SAMPLE #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-~~2013-01-29-16~~ MF	MF ~~1480233~~ 6103	~~1-28-2013 0950~~ MF	~~1-29-2013~~ MF 1052
Test Day 2	2	TLH- 2013-02-28-S1	1486682 MM	2/27/13 1405	2/28/13 0940
Test Day 4	3	TLH- 2013-03-04-03	1486976 MM	3/1/13 1215	3/2/13 0900
Sample #1		TLH-2013-02-26-34	1486103	2-25-13 1515	2-26-13 1053

Water Quality Parameters	Batch # 2-26-13		NA	NA	NA		Measured By:	Verified by:
	MF ~~20% SDMHW~~ CD	MF ~~20% SDMHW~~ CD	Sample 1	Sample 2	Sample 3	Other:		
Field Total Residual Cl_2 (mg/L):	NA	NA	0.0	0	0.0		Alyssa Mark	MF
Lab Total Residual Cl_2 (mg/L):	<0.03		<0.03	0.015	<0.03		AP/MF/AP	MF/AP
Alkalinity (mg/L as $CaCO_3$):	69		137	139	148		AP	MF AP MF
Hardness (mg/L as $CaCO_3$):	88		172	171	170		AP	AP MF
Total Ammonia (mg/L as N):	<0.017		<0.017	<0.017	<0.017		MF	AP
Conductivity (µmhos) mmhos:	319		995	1039	1046		MF/AP	AP / MF
Salinity (ppth):								

Test Incubated in: Incubator #: 2

Temperature Shipped ≤ 6° C (all samples) (yes) no
Holding Time ≤ 36 hours (yes) no
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min 24.2 max 26.1 mean –
Room B246 min. 22.0 max. 24.1 mean –
Test min. 24.0 max. 25.3 mean –

Loaded by: MF

Lims entry – 3-7-13 MF
Lims verification 3-7-13 BA

Test Replicates	Loaded from culture vial
1	MF ~~B5~~ A23
2	MF ~~B6~~ A22
3	MF ~~B12~~ A7
4	MF ~~B14~~ B4
5	MF ~~B15~~ A24
6	MF ~~B11~~ A27
7	MF ~~B18~~ A30
8	MF ~~B29~~ 25
9	MF A24
10	MF A27

Results	
Control % CV:	19.6
Dunnetts PMSD:	26.6
Reproduction NOEC:	MF 100%
Reproduction LOEC:	>100%
Survival NOEC:	100%
Survival LOEC:	>100%
ICP_{20}:	41.4
ICP_{25}:	>100%

Investigators' signatures
Marshall Faircloth
Bruce Alexander
Adrienne Pennington

REVIEWER

Comments:

Test Page 1 of 6 PAGE 00031 revised 07/15/08 MF

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Fort Myers South AWWTP

LIMS Sample #: 1486103 for lab sample #1

Start Date: 2-26-13 Time: 1230

End Date: 3-4-13 Time: 1500

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving adults	Neonates per adult
Control	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	4	3	3	1	0	4	1	1	2	19	10	1.9
	4	0	0	0	0	0	4	0	5	4	0	13	10	1.3
	5	3	6	5	6	6	6	5	0	0	6	43	10	4.3
	6	19	8	5	9	12	6	8	14	7	5	93	10	9.3
	7													
	8													
	Total	22	18	13	18	19	16	17	20	12	13	168	10	16.8

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving adults	Neonates per adult
6.25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	0	3	5	0	0	1	1	0	4	18	10	1.8
	4	0	3	0	0	4	3	5	0	3	0	18	10	1.8
	5	7	5	7	8	0	4	0	6	0	5	42	10	4.2
	6	15	3	7	5	11	2	13	5	12	8	81	10	8.1
	7													
	8													
	Total	26	11	17	18	15	9	19	12	15	17	159	10	15.9

Organisms loaded by: MF

Day	Counted/ verified by:	Concentrations prepared by:
0	BA	MF
1	BA	BA
2	MF	MF
3	MF	MF
4	MF	MF
5	MF	MF
6	MF	MF
7		
8		

Concentration	Mean neonates /adult	% survival
Control	16.8	100
6.25%	15.9	100
12.50%	13.9	100
25%	13.9	100
50%	13.2	100
100%	12.8	100

Test acceptability

Mean control reproduction 15/female (yes) no

3rd brood in 60% of surviving females (yes) no

Control survival ≥ 80%: (yes) no

Comments:

*Day 0 is test initiation day
X = Dead (original organism)

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Fort Myers South AWWTP

LIMS Sample # : 1486103 for lab sample #1

Start Date: 2-26-13 Time: 1230

End Date: 3-4-13 Time: 1500

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
12.50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	2	0	2	5	3	0	0	3	0	1	16	10	1.6
	4	0	3	0	0	0	3	4	0	4	0	14	10	1.4
	5	3	7	6	9	7	6	0	5	0	3	46	10	4.6
	6	6	5	5	2	8	4	7	10	14	2	63	10	6.3
	7													
	8													
	Total	11	15	13	16	18	13	11	18	18	6	139	10	13.9

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	4	2	0	0	2	0	2	10	10	1.0
	4	0	4	4	0	0	0	3	0	4	0	16	10	1.6
	5	4	8	0	8	5	4	7	6	10	5	47	10	4.7
	6	12	6	11	9	10	2	0	6	10	0	66	10	6.6
	7													
	8													
	Total	16	18	15	21	17	6	10	14	15	7	139	10	13.9

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	3	4	0	0	0	4	0	0	11	10	1.1
	4	2	0	0	4	2	3	0	4	6		23	10	2.3
	5	0	6	6	8	0	4	7	7	0	0	38	10	3.8
	6	16	7	0	0	10	4	0	5	6	12	60	10	6.0
	7													
	8													
	Total	18	15	9	16	12	14	10	10	16	10	18	132	10	13.2

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
100%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	4	0	0	0	2	0	0	6	10	0.6
	4	2	4	3	0	1	4	3	0	5	3	25	10	2.5
	5	6	7	0	8	0	7	6	4	0	0	38	10	3.8
	6	0	5	6	10	3	7	5	2	11	10	59	10	5.9
	7													
	8													
	Total	8	16	9	22	4	18	14	8	16	13	128	10	12.8

Comments: (5) = split brood MF 3/3/13

*Day 0 is test initiation day
X = Dead (original organism)

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Parameters

Facility: Fort Myers South AWWTP SOP TA07_05

LIMS Sample #: 14861-03 for lab sample 1

Circle µmhos-cm or mmhos-cm

Test Day ↓		Concentration	New Sample					Old Sample				
			Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 0	sample	Control	M	8.1 7.5 MF	24.2	7.5	319					
	1	6.25%	M	8.1	24.7	7.4	357					
	1	12.5%	M	8.1	24.6	7.5	399					
	1	25%	M	8.0	24.6	7.7	485					
	1	50%	M	8.0	24.8	7.8	663					
	1	100%	M	7.7	24.8	7.9	995					
	Measured by:			MF	MF	MF	MF					
	Recorded by:			MF	MF	MF	MF					
Day 1	sample:	Control	M	7.4	24.0	6.8	320	M	7.6	24.0	6.9	348
	1	6.25%	M	7.4	24.0	7.1	369	M	7.6	24.0	7.0	388
	1	12.5%	M	7.4	24.0	6.5	415	M	7.6	24.0	6.9	446
	1	25%	M	7.4	24.0	7.1	507	M	7.6	24.0	6.9	546
	1	50%	M	7.4	24.0	7.5	685	M	7.6	24.0	7.0	718
	1	100%	M	7.3	24.0	7.5	1034	M	7.6	24.0	6.8	1049
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 2	sample:	Control	M	7.7	24.6	7.5	312	M	7.7	24.5	7.6	340
	2	6.25%	M	7.7	25.0	7.6	361	M	7.7	24.4	7.7	387
	2	12.5%	M	7.7	24.9	7.6	406	M	7.8	24.6	7.8	440
	2	25%	M	7.6	24.9	7.6	495	M	7.7	24.4	7.8	541
	2	50%	M	7.6	24.9	7.9	676	M	7.8	24.5	7.8	717
	2	100%	M	7.4	25.0	8.2	1039	M	7.9	24.5	7.7	1086
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 3	sample:	Control	M	7.8	24.1	7.5	308	M	7.8	24.5	7.5	332
	2	6.25%	M	7.8	24.3	7.5	354	M	7.8	24.4	7.9	390
	2	12.5%	M	7.8	24.2	7.7	394	M	7.8	24.3	8.0	441
	2	25%	M	7.7	24.0	7.6	481	M	7.8	24.3	8.0	538
	2	50%	M	7.7	24.1	7.6	649	M	7.8	24.3	8.0	727
	2	100%	M	7.5	24.3	8.0	987	M	7.8	24.3	8.0	1100
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF

Comments:

Replicate M= "Metered" vial, a surrogate vial for parameters

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Parameters

Facility: Fort Myers South AWWTP SOP TA07_05

LIMS Sample #: 1486103 for lab sample 1

Circle µmhos-cm or mmhos-cm

Test Day		Concentration	New Sample: Test Replicate	New Sample: pH (su)	New Sample: Temp (°C)	New Sample: DO (mg/L)	New Sample: Conductivity (µmhos/cm) (mmhos/cm)	Old Sample: Test Replicate	Old Sample: pH (su)	Old Sample: Temp (°C)	Old Sample: DO (mg/L)	Old Sample: Conductivity (µmhos/cm) (mmhos/cm)
Day 4 ←	sample:	Control	M	8.0	24.5	7.5	330	M	7.7	24.0	8.2	367
	3	6.25%	M	7.9	24.5	7.5	378	M	7.7	24.1	7.8	412
	3	12.5%	M	7.9	24.5	7.5	422	M	7.7	24.6	7.9	445
	3	25%	M	7.8	24.5	7.4	512	M	7.8	24.7	7.6	545
	3	50%	M	7.7	24.3	7.4	690	M	8.0	24.7	7.6	739
	3	100%	M	7.6	24.2	7.4	1046	M	8.1	24.4	7.6	1147
	Measured by:			AP	MF	AP	AP		AP	MF	AP	AP
	Recorded by:			AP	MF	AP	AP		AP	MF	AP	AP
Day 5	sample:	Control	M	7.9	24.8	7.5	343	M	7.9	24.5	8.2	336
	3	6.25%	M	7.9	25.1	7.7	345	M	7.9	24.3	8.1	396
	3	12.5%	M	7.9	25.2	7.7	443	M	7.9	24.3	8.2	441
	3	25%	M	7.9	25.3	7.8	533	M	7.9	24.3	8.3	538
	3	50%	M	7.8	25.1	7.8	717	M	7.9	24.2	8.4	734
	3	100%	M	7.6	25.0	8.2	1078	M	7.9	24.5	8.5	1081
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 6	sample:	Control	M	7.8	24.1	7.5	323	M	7.8	24.1	7.6	339
	3	6.25%	M	7.8	24.1	7.6	373	M	7.9	24.4	7.6	400
	3	12.5%	M	7.8	24.2	7.8	419	M	7.8	24.4	7.7	435
	3	25%	M	7.7	24.1	7.8	510	M	7.8	24.7	7.7	546
	3	50%	M	7.6	24.3	7.8	691	M	7.8	24.8	7.8	748
	3	100%	M	7.5	24.4	7.9	1040	M	7.9	25.0	7.8	1067
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 7	sample:	Control	M					M				
	3	6.25%	M					M				
	3	12.5%	M					M				
	3	25%	M					M				
	3	50%	M					M				
	3	100%	M					M				
	Measured by:											
	Recorded by:											

New Samples not to use on Day 6

Comments:

Replicate M= "Metered" vial, a surrogate vial for parameters

Test Page 5 of 6 PAGE 00035 revised 07/15/08 MF

Test ID: Fort Myers South C.dubia chronic Dates: 2/26 – 3/4/13

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	#4 ✓
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	✓
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT–Chronic SRT)

BS entered 3-4-13

V 1.1 9/21/10 MF/jd

FDEP Biology Laboratory - Chronic Bioassay Bench Sheet

Pimphales promelas or *Menidia beryllina*

Facility: Fort Myers South AWWTP
Address: 1618 South Dr. Fort Myers
County: Lee
NPDES Permit #: FL 0021270
Contact/District: Alyssa Mark / South

Test Species (circle one)
(*P. promelas*) SOP#: TA07_09 EPA-821-R-02-013 Method 1000.0
M. beryllina SOP#: TA07_14 EPA-821-R-02-014 Method 1006.0

Start Date: 2.26.13 Time: 1300
End Date: 3.5.13 Time: 0800

Diluent/ Batch:
MHW / 2.6.13 Test Days Used: D-1
MHW / 2.20.13 Test Days Used: 2-6
ASW /_____ Test Days Used: _____
ASW /_____ Test Days Used: _____

Organism age <24 hrs days
Feeding Prior to Test and Daily
Artemia Lot # : 088122
Chamber size : 1000 ml
Test volume : 500 ml

Organism Batch #:	A-AP		
Artemia Batch #		Day 3	36.13
Day 0	33.13	Day 4	37.13
Day 1	34.13	Day 5	38.13
Day 2	35.13	Day 6	39.13

LIMS entry: See below Entry verification: See below

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2013-02-26-39	1486103	2-25-13/1515	2.26.13/1053
Test Day 2	2	TLH-2013-03-28-51	1486662	2-27-13/1405	2-28-13/0940
Test Day 4	3	TLH-2013-03-04-03 AP	1486976	3-1-13/1215	3-2-13/0900

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	0.0	0	0.0	<0.03	0.075	<0.03	137	139	148	177	171	170
Diluent/Control:				<0.03	<0.03		68 71 AP	71		~~88~~ 81		
Method:	facility	facility	facility	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	A. Mark	A. Mark	A. Mark	AP	MF	AP	AP	AP	AP	AP	AP	AP
Verified by:	MF	MF	MF	MF	AP	MF	MF	MF	MF	MF	MF	MF

	Conductivity (circle one) (µmhos-cm) mmhos-cm)			Ammonia (mg/L)			Salinity (ppth)		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	309	1008	1050	<0.017	<0.017	<0.017	—	—	—
Diluent/Control:	1032	402		<0.017	<0.017	<0.017 AP	—	—	—
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	BA	AP	AP	MF	MF	MF			
Verified by:	MF	MF	MF	AP	AP	AP			

Statistics	
Growth NOEC:	100 %
Growth LOEC:	>100 %
Growth IC_{20}:	>100 %
Growth IC_{25}:	>100 %
Ctrl % CV:	8.7 %
Dunnetts PMSD:	20 %
Survival NOEC:	100 %
Survival LOEC:	>100 %

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min 24.7 max 26.0 mean —
Water bath # ____ min. _____ max. _____ mean ____
Room B246 min 23.9 max 25.4 mean —

Sample Validation:
Instructions: Check yes or no. Fill in temperatures.
Temperature: Shipped ≤ 6°C ☑ Yes ☐ No
If Hand Delivered:Cooling ☐ Yes ☐ No (received ____°C collected___°C)
Holding Time: ≤ 36 Hours ☑ Yes ☐ No
(Composite-end of collection; grab-when collected;
4 in 24 - time last sample collected)

Lims Data Entry: 3-7-13 MF Data Entry Verification: 3.7.13 AP

Investigators' signatures

	Initials:
Bruce Alcock	BA
Adrienne Pennington	AP
Marshall Fairbairn	MF
Liz Miller	

REVIEWER

Comments:

00036

PAGE

revised 01/24/12 MF

Chronic Bioassay Survival Benchsheet

Facility: Fort Myers South AWWTP

LIMS Sample Number: 1486103
(for Lab Sample # 1)

Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
***P. promelas* SOP TA07_09 *M. beryllina* SOP TA07_14**

Organism: (*P. promelas*) *M.beryllina* (circle one)

		TEST DAY							
Concentration	Replicate	0	1	2	3	4	5	6	7
Control	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	9[1D]	9	9	9	9
Sample 6.25 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 12.5 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 25 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	9[1D]	9	9	9
	D	10	10	10	10	10	10	10	10
Sample 50 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 100 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	9[1D]	9
	D	10	10	10	10	10	10	10	10
Sample %	A	10							
	B	10							
	C	10							
	D	10							
Loaded by: AP	Checked by:		AP	AP	AP	AP	AP	AP	AP
Verified by: BA									

Comments:

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_14 parameter pg 1

Sample Source: Fort Myers South — Start Date: 2.26.13 End Date: 3.5.13 AP

LIMS Sample #: 1486103 (for Lab sample #1) — Start Time: 1300 End Time: 0800

conc = concentration — rep = replicate — circle umhos or mmhos

Test Day			Before Renewal						After Renewal					
		Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 0	sample:	Control	A	7.1	24.0	7.0	309							
	1	6.25%	A	7.1	24.0	7.1	354							
	1	12.5%	A	7.2	24.1	7.1	393							
	1	25%	A	7.2	24.3	7.4	481							
	1	50%	A	7.1	24.7	7.2	701							
	1	100%	A	7.1	25.4	7.5	1032							
	1		A											
	Measured by:			BA	BA	BA	BA							
	Recorded by:			BA	BA	BA	BA							
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 1	sample:	Control	B	7.5	26.0	7.3	360		B	7.6	24.3	7.4	368	
	1	6.25%	B	7.5	25.6	7.2	353		B	7.7	24.2	7.4	343	
	1	12.5%	B	7.5	25.8	7.3	398		B	7.7	24.1	7.2	383	
	1	25%	B	7.6	25.0	7.3	466		B	7.6	24.1	7.2	464	
	1	50%	B	7.6	25.6	7.4	671		B	7.6	24.0	7.3	642	
	1	100%	B	7.9	25.6	7.3	1011		B	7.5	24.1	7.5	966	
	1		B						B					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 2	sample:	Control	C	7.6	25.8	7.1	546		C	7.8	24.2	7.6	402	
	2	6.25%	C	7.7	26.0	6.9	367		C	7.8	24.0	7.6	345	
	2	12.5%	C	7.7	26.0	6.8	404		C	7.8	24.1	7.4	389	
	2	25%	C	7.6	25.5	6.8	495		C	7.7	24.2	7.2	478	
	2	50%	C	7.6	25.6	6.5	675		C	7.7	24.1	7.2	602	
	2	100%	C	7.6	25.4	6.5	1020		C	7.6	24.4	7.4	1008	
	2		C						C					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 3	sample:	Control	D	7.7	25.8	7.4	449		D	7.5	24.1	7.5	326	
	2	6.25%	D	7.6	25.1	7.3	342		D	7.6	24.1	7.3	349	
	2	12.5%	D	7.6	25.8	7.0	385		D	7.5	23.9	7.2	390	
	2	25%	D	7.6	25.5	6.8	468		D	7.5	24.0	7.1	482	
	2	50%	D	7.6	25.7	6.5	653		D	7.5	24.0	7.1	658	
	2	100%	D	7.7	25.6	6.5	1004		D	7.5	24.0	7.2	1026	
	2		D						D					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional

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Page

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_14 parameter pg 2

Sample Source: Fort Myers South AWWTP Start Date: 2.26.13 End Date: 3.5.13

LIMS Sample #: 1486103 (for Lab sample #1) Start Time: 1300 End Time: 0800

conc = concentration rep = replicate

Test Day			Before Renewal						After Renewal					
		Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 4	sample:	Control	A	7.5	25.9	7.1	388		A	7.4	24.0	7.6	39	
	3	6.25%	A	7.5	25.3	7.2	359		A	7.5	24.0	7.4	338	
	3	12.5%	A	7.5	25.8	7.0	385		A	7.5	24.0	7.2	382	
	3	25%	A	7.5	25.7	7.0	477		A	7.4	24.0	7.3	478	
	3	50%	A	7.6	24.1	7.1	657		A	7.5	23.8	7.3	656	
	3	100%	A	7.6	25.5	7.1	996		A	7.4	23.8	7.2	995	
	3		A						A					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 5	sample:	Control	B	8.0	25.5	7.2	323		B	7.4	23.9	7.7	356	
	3	6.25%	B	8.0	25.7	7.2	378		B	7.5	23.7	7.4	366	
	3	12.5%	B	7.9	25.3	6.8	428		B	7.5	23.6	7.4	403	
	3	25%	B	7.9	24.3	7.0	527		B	7.4	23.7	7.5	498	
	3	50%	B	8.0	25.1	7.1	753		B	7.4	23.6	7.5	675	
	3	100%	B	8.0	25.4	7.1	1099		B	7.4	24.0	7.5	1050	
	3		B		~~24.6~~ MF				B					
	Measured by:			MF	MF	MF	MF			AP	AP	AP	AP	
	Recorded by:			MF	MF	MF	MF			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 6	sample:	Control	C	7.2	25.7	6.1	310		C	7.6	23.1	7.4	330	
	3	6.25%	C	7.2	25.8	6.1	361		C	7.6	23.1	7.3	334	
	3	12.5%	C	7.2	25.5	6.0	414		C	7.6	23.1	7.1	380	
	3	25%	C	7.2	25.4	5.9	505 ~~7.01~~ BA		C	7.5	23.2	7.1	470	
	3	50%	C	7.2	25.3	6.1	~~647~~ 691		C	7.5	23.3	7.1	648	
	3	100%	C	7.2	25.4	6.1	1058		C	7.5	23.6	7.3	988	
	3		C						C					
	Measured by:			BA	BA	BA	BA			AP	AP	AP	AP	
	Recorded by:			BA	BA	BA	BA			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 7	sample:	Control	D	7.3	25.8	7.6	373		D					
	3	6.25%	D	7.4	25.7	7.5	358		D					
	3	12.5%	D	7.4	25.0	7.0	410		D					
	3	25%	D	7.3	25.0	6.8	497		D					
	3	50%	D	7.3	25.1	6.8	677		D					
	3	100%	D	7.3	25.1	6.1	1055		D					
	3								D					
	Measured by:			AP	AP	AP	AP							
	Recorded by:			AP	AP	AP	AP							

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional

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Chronic Bioassay Weighing Benchsheet

Facility: Fort Myers South AWWTP

LIMS Sample Number: 1486103
(for Lab Sample # 1)

***P. promelas* and *M. beryllina* Bench Sheet**
SOP TA06_21

			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right					
Concentration	Replicate	Pan #	Pan wt. g	Pan + Fish g	Fish wt. g	Original # Fish	Mean wt. mg	
Control	A	1	0.02234 ~~0.023~~ AP	0.02764	0.00525	10	0.525	0.46725
	B	2	0.02466	0.02931	0.00465	10	0.465	
	C	3	0.02331	0.02776	0.00445	10	0.445	
	D	4	0.02389	0.02823	0.00434	10	0.434	
sample 6.25 %	A	5	0.02227	0.02729	0.00502	10	0.502	0.52
	B	6	0.02283	0.02845	0.00562	10	0.562	
	C	7	0.02285	0.02736	0.00451	10	0.451	
	D	8	0.02364	0.02949	0.00585	10	0.585	
sample 12.5 %	A	9	0.02369	0.02878	0.00509	10	0.509	0.46425
	B	10	0.02200	0.02633	0.00433	10	0.433	
	C	11	0.02445	0.02921	0.00476	10	0.476	
	D	12	0.02381	0.02820	0.00439	10	0.439	
sample 25 %	A	13	0.02446	0.02997	0.00551	10	0.551	0.51225
	B	14	0.02309 AP	0.02848	0.00539	10	0.539	
	C	15	0.02240	0.02714	0.00474	10	0.474	
	D	16	0.02259	0.02744	0.00485	10	0.485	
sample 50 %	A	17	0.02234	0.02818	0.00584	10	0.584	0.53975
	B	18	0.02232	0.02718	0.00486	10	0.486	
	C	19	0.02184	0.02780	0.00596	10	0.596	
	D	20	0.02222	0.02715	0.00493	10	0.493	
sample 100 %	A	21	0.02320	0.02819	0.00499	10	0.499	0.555
	B	22	0.02310	0.02845	0.00535	10	0.535	
	C	23	0.02448	0.02985	0.00537	10	0.537	
	D	24	0.02475	0.03110	0.00635	10	0.635	
sample %	A					10		
	B					10		
	C					10		
	D					10		
	Weighed by initials:		AP	BA	BA	revised 7/16/08 mf		

Comments:

Balance: Ohaus 250D Ser# 1125481084
S-Weights: BIO-S-Weights-01

Note: Pan number (#) refers to actual Pan number.

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Chronic Bioassay Weighing Benchsheet

Quality Control

Facility: Fort Myers South

LIMS Sample Number: 1486103
(for Lab Sample # 1)

***P. promelas and M. beryllina* Bench sheet**
SOPs TA07_09, TA07_14 and TA06_21

Drying Oven ID:	ER034000	Tare weighed by:	AP
Temperature °C:	100	Final weighed by:	BA
Hours:	8		
Tare Weighing Date: 3.4.13		Final Weighing Date: 3.6.13	

			Measured Value (g)		S-weight Value (g)
Tare Pan 1 after Pan 5 (g)	0.02243	@ 0.02239	S-weights	@	0.01
Tare Pan 1 after Pan 10 (g)	0.02242	@ 0.02239	at tare	@	0.03
Tare Pan 1 after Pan 15 (g)	0.02242	@ 0.02239	S-weights	@	0.01
Tare Pan 1 after Pan 20 (g)	0.02243	@ 0.02239	at final	@	0.03
Tare Pan 1 after Pan ~~25~~ 24 (g)	0.02242	@ 0.02239			
Tare Pan 1 after Pan 30 (g)		@	Balance: Ohaus 250D Ser# 1125481084		
Tare Pan 1 after Pan 35 (g)		@	S-Weights: BIO-S-Weights-01		
Tare Pan 1 after Pan 40 (g)		@			
Tare Pan 1 after Pan 45 (g)		@			
Tare Pan 1 after Pan 48 (g)		@			
Final Pan 1 after Pan 5 (g)	0.02765	@ 0.02764			
Final Pan 1 after Pan 10 (g)	0.02763	@ 0.02764			
Final Pan 1 after Pan 15 (g)	0.02767	@ 0.02764			
Final Pan 1 after Pan 20 (g)	0.02763	@ 0.02764			
Final Pan 1 after Pan ~~25~~ 24 (g)	0.02764	@ 0.02764			
Final Pan 1 after Pan 30 (g)		@			
Final Pan 1 after Pan 35 (g)		@			
Final Pan 1 after Pan 40 (g)		@			
Final Pan 1 after Pan 45 (g)		@			
Final Pan 1 after Pan 48 (g)		@			

Note: Pan numbers (5, 10, etc.) for Tare and Final refers to sequence of weighing as actual Pan #s may differ.

Comments:

revised 7/16/08 MF

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Page

LIMS sample #F1486103

Test ID: Fort Myers S. ~~NPDES #FB~~ P. promelas Chronic Dates: 2.26.13 - 3-5-13

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	~~#4~~ ✓
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	✓
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	✓
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	✓

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT--Chronic SRT)

BA 2.27.13 3-5-13

V 1.1 9/21/10 MF/jd

27000

Appendix F.
Standard Reference Toxicant Data

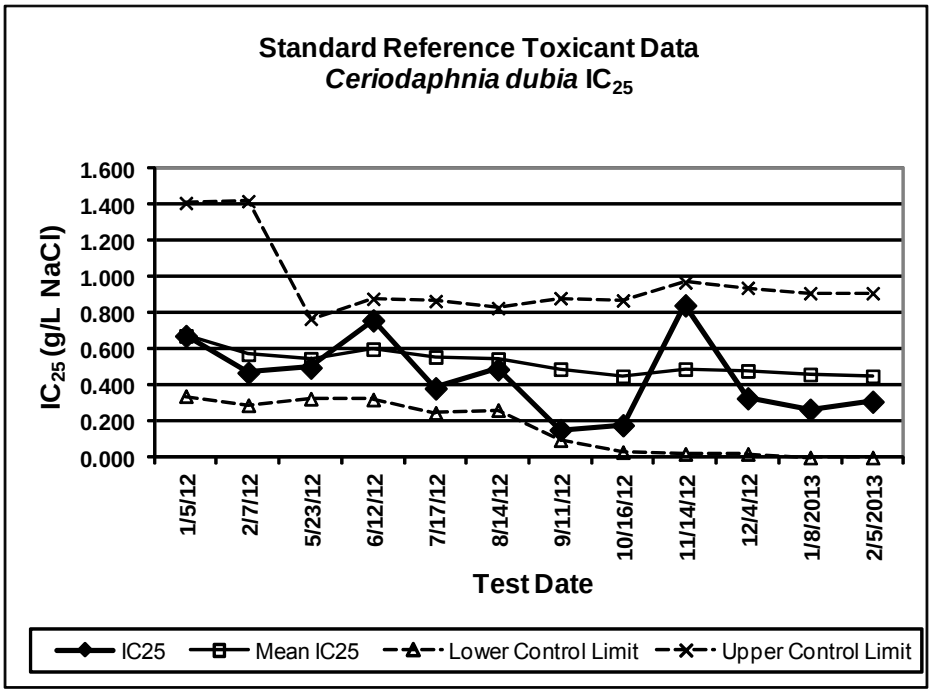
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	IC25	Mean IC25	Std Dev	Lower Control Limit	Upper Control Limit
1/5/12	0.674	0.67	0.14	0.34	1.41
2/7/12	0.470	0.57	0.11	0.29	1.42
5/23/12	0.498	0.55	0.11	0.33	0.77
6/12/12	0.760	0.60	0.14	0.32	0.88
7/17/12	0.383	0.56	0.15	0.25	0.87
8/14/12	0.489	0.55	0.14	0.26	0.83
9/11/12	0.153	0.49	0.20	0.10	0.88
10/16/12	0.179	0.45	0.21	0.03	0.87
11/14/12	0.843	0.49	0.24	0.02	0.97
12/4/12	0.328	0.48	0.23	0.02	0.94
1/8/2013	0.266	0.46	0.23	0.00	0.91
2/5/2013	0.309	0.45	0.23	0.00	0.91

Means are of the last 10 SRT tests.
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

EPA 75th Percentile %CV for Reproduction **45%**
Last 10 - Lab %CV Reproduction 51.8%



FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia

Facility: ~~Green Bay~~ MF Fort Myers South AWWTP
Address: 1618 South Dr., ~~Ft.~~ MF Fort Myers,
County: Lee
NPDES Permit #: FL 0021270
Contact/District: ~~Jacki Champion~~ MF / ~~SWF~~ MF ~~Southwest~~ District
Alyssa Mark
LIMS entry: 3-7-13 MF verified: 3.7.13 BA

Diluent/ Batch: MF ~~20% SDMHW~~ MHWCD / 2-26-13 Test Days Used: 0 – 5
20% SDMHW /_____ Test Days Used: _____

SOP#: TA07_05 EPA 821-R-02-013 Method 1002.0

Organism: *Ceriodaphnia dubia*
Organism Batch #: ~~1-29-13~~ MF 2-26-13
Organism age : <24 hours
Feeding: Prior to Test and Daily
Food: ☑ YCT ☑ *P. subcapitata*
Food Batch: 11-14-12 1-18-13
Chamber size : 30 ml
Sample volume : 20 ml

Sample Received	LAB Sample #	LIMS JOB #	LIMS SAMPLE #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-~~2013-01-29-16~~ MF	MF ~~1480233~~ 6103	~~1-28-2013~~ MF 0950	~~1-29-2013~~ MF 1552
Test Day 2	2	TLH- 2013-02-28-51	1486682 MF	2/27/13 1405	2/28/13 0940
Test Day 4	3	TLH- 2013-03-04-03	1486976 MF	3/1/13 1215	3/2/13 0900
Sample #1		TLH-2013-02-26-39	1486103	2-25-13 1515	2-26-13 1053

Water Quality Parameters	Batch # 2-26-13		NA Sample 1	NA Sample 2	NA Sample 3	Other:	Measured By:	Verified by:
	MF ~~20% SDMHW~~ CD	MF ~~20% SDMHW~~ CD						
Field Total Residual Cl_2 (mg/L):	NA	NA	0.0	0	0.0		Alyssa Mark	MF
Lab Total Residual Cl_2 (mg/L):	<0.03		<0.03	0.075	<0.03		AP/MF/AP	MF/AP
Alkalinity (mg/L as $CaCO_3$):	69		137	139	148		AP	MF AP MF
Hardness (mg/L as $CaCO_3$):	88		172	171	170		AP	MF AP MF
Total Ammonia (mg/L as N):	<0.017		<0.017	<0.017	<0.017		MF	AP
Conductivity (µmhos) mmhos:	319		995	1039	1046		MF/AP	AP / MF
Salinity (ppth):								

Test Incubated in: Incubator #: 2

Temperature Shipped ≤ 6° C (all samples) (yes) no
Holding Time ≤ 36 hours (yes) no
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min 25.2 max. 26.1 mean –
Room B246 min. 22.0 max. 25.1 mean –
Test min. 24.0 max. 25.3 mean –

Loaded by: MF

Lims entry – 3-7-13 MF
Lims verification 3-7-13 BA

Test Replicates	Loaded from culture vial
1	MF ~~B5~~ A23
2	MF ~~B6~~ A22
3	MF ~~B12~~ A7
4	MF ~~B14~~ B4
5	MF ~~B15~~ A24
6	MF ~~B11~~ A27
7	MF ~~B18~~ A30
8	MF ~~B29~~ 25
9	MF ~~A11~~ 24
10	MF ~~A19~~ 27

Results	
Control % CV:	19.6
Dunnetts PMSD:	26.6
Reproduction NOEC:	MF ~~100%~~
Reproduction LOEC:	>100%
Survival NOEC:	100%
Survival LOEC:	>100%
ICP_{20}:	41.4
ICP_{25}:	>100%

Investigators' signatures
Marshall Faircloth
Bryce Akuba
Adrienne Pennington
Lisa Miller
REVIEWER

Comments:

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Fort Myers South AWWTP

LIMS Sample #: 1486103 for lab sample #1

Start Date: 2-26-13 Time: 1230

End Date: 3-4-13 Time: 1500

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving adults	Neonates per adult
Control	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	4	3	3	1	0	4	1	1	2	19	10	1.9
	4	0	0	0	0	0	4	0	5	4	0	13	10	1.3
	5	3	6	5	6	6	6	5	0	0	6	43	10	4.3
	6	19	8	5	9	12	6	8	14	7	5	93	10	9.3
	7													
	8													
	Total	22	18	13	18	19	16	17	20	12	13	168	10	16.8

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving adults	Neonates per adult
6.25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	0	3	5	0	0	1	1	0	4	18	10	1.8
	4	0	3	0	0	4	3	5	0	3	0	18	10	1.8
	5	7	5	7	8	0	4	0	6	0	5	42	10	4.2
	6	15	3	7	5	11	2	13	5	12	8	81	10	8.1
	7													
	8													
	Total	26	11	17	18	15	9	19	12	15	17	159	10	15.9

Organisms loaded by: MF

Day	Counted/ verified by:	Concentrations prepared by:
0	BA	MF
1	BA	BA
2	MF	MF
3	MF	MF
4	MF	MF
5	MF	MF
6	MF	MF
7		
8		

Concentration	Mean neonates /adult	% survival
Control	16.8	100
6.25%	15.9	100
12.50%	13.9	100
25%	13.9	100
50%	13.2	100
100%	12.8	100

Test acceptability

Mean control reproduction 15/female (yes) no

3rd brood in 60% of surviving females (yes) no

Control survival ≥ 80%: (yes) no

Comments:

*Day 0 is test initiation day
X = Dead (original organism)

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Fort Myers South AWWTP

LIMS Sample # : 1486103 for lab sample #1

Start Date: 2-26-13 Time: 1230

End Date: 3-4-13 Time: 1500

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
12.50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	2	0	2	5	3	0	0	3	0	1	16	10	1.6
	4	0	3	0	0	0	3	4	0	4	0	14	10	1.4
	5	3	7	6	9	7	6	0	5	0	3	46	10	4.6
	6	6	5	5	2	8	4	7	10	14	2	63	10	6.3
	7													
	8													
	Total	11	15	13	16	18	13	11	18	18	6	139	10	13.9

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	4	2	0	0	2	0	2	10	10	1.0
	4	0	4	4	0	0	0	3	0	4	0	16	10	1.6
	5	4	8	0	8	5	4	7	6	16	5	47	10	4.7
	6	12	6	11	9	10	2	0	6	10	0	66	10	6.6
	7													
	8													
	Total	16	18	15	21	17	6	10	14	15	7	139	10	13.9

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	3	4	0	0	0	4	0	0	11	10	1.1
	4	2	0	0	0	4	2	3	0	4	6	23	10	2.3
	5	0	6	6	8	0	4	7	7	0	0	38	10	3.8
	6	16	7	0	0	10	4	0	5	6	12	60	10	6.0
	7													
	8													
	Total	18	15	16	12	14	10	10	16	10	18	132	10	13.2

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
100%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	4	0	0	0	2	0	0	6	10	0.6
	4	2	4	3	0	1	4	3	0	5	3	25	10	2.5
	5	6	7	0	8	0	7	6	4	0	0	38	10	3.8
	6	0	5	6	10	3	7	5	2	11	10	59	10	5.9
	7													
	8													
	Total	8	16	9	22	4	18	14	8	16	13	128	10	12.8

Comments: (5) = split brood on 3/3/13

*Day 0 is test initiation day
X = Dead (original organism)

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Parameters

Facility: Fort Myers South AWWTP SOP TA07_05

LIMS Sample #: 1486703 for lab sample 1
1 MRST209MAR

Circle µmhos-cm or mmhos-cm

Test Day		Concentration	New Sample: Test Replicate	New Sample: pH (su)	New Sample: Temp (°C)	New Sample: DO (mg/L)	New Sample: Conductivity (µmhos/cm) (mmhos/cm)	Old Sample: Test Replicate	Old Sample: pH (su)	Old Sample: Temp (°C)	Old Sample: DO (mg/L)	Old Sample: Conductivity (µmhos/cm) (mmhos/cm)
Day 0 ←	sample	Control	M	8.1 7.5 MF	24.2	7.5	319					
	1	6.25%	M	8.1	24.7	7.4	357					
	1	12.5%	M	8.1	24.6	7.5	399					
	1	25%	M	8.0	24.6	7.7	485					
	1	50%	M	8.0	24.8	7.8	663					
	1	100%	M	7.7	24.8	7.9	995					
	Measured by:			MF	MF	MF	MF					
	Recorded by:			MF	MF	MF	MF					
Day 1	sample:	Control	M	7.4	24.0	6.8	320	M	7.6	24.0	6.9	348
	1	6.25%	M	7.4	24.0	7.1	369	M	7.6	24.0	7.0	388
	1	12.5%	M	7.4	24.0	6.5	415	M	7.6	24.0	6.9	446
	1	25%	M	7.4	24.0	7.1	507	M	7.6	24.0	6.9	546
	1	50%	M	7.4	24.0	7.5	685	M	7.6	24.0	7.0	718
	1	100%	M	7.3	24.0	7.5	1034	M	7.6	24.0	6.8	1049
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 2	sample:	Control	M	7.7	24.6	7.5	312	M	7.7	24.5	7.6	340
	2	6.25%	M	7.7	25.0	7.6	361	M	7.7	24.4	7.7	387
	2	12.5%	M	7.7	24.9	7.6	406	M	7.8	24.6	7.8	440
	2	25%	M	7.6	24.9	7.6	495	M	7.7	24.4	7.8	541
	2	50%	M	7.6	24.9	7.9	676	M	7.8	24.5	7.8	717
	2	100%	M	7.4	25.0	8.2	1039	M	7.9	24.5	7.7	1086
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 3	sample:	Control	M	7.8	24.1	7.5	308	M	7.8	24.5	7.5	332
	2	6.25%	M	7.8	24.3	7.5	354	M	7.8	24.4	7.9	390
	2	12.5%	M	7.8	24.2	7.7	396	M	7.8	24.3	8.0	441
	2	25%	M	7.7	24.0	7.6	481	M	7.8	24.3	8.0	538
	2	50%	M	7.7	24.1	7.6	649	M	7.8	24.3	8.0	727
	2	100%	M	7.5	24.3	8.0	987	M	7.8	24.3	8.0	1100
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF

Comments:

Replicate M= "Metered" vial, a surrogate vial for parameters

Test Page 4 of 6 PAGE 00024 revised 07/15/08 MF

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Parameters

Facility: Fort Myers South AWWTP SOP TA07_05

LIMS Sample #: 1486103 for lab sample 1

Circle µmhos-cm or mmhos-cm

Test Day		Concentration	New Sample: Test Replicate	New Sample: pH (su)	New Sample: Temp (°C)	New Sample: DO (mg/L)	New Sample: Conductivity (µmhos/cm) (mmhos/cm)	Old Sample: Test Replicate	Old Sample: pH (su)	Old Sample: Temp (°C)	Old Sample: DO (mg/L)	Old Sample: Conductivity (µmhos/cm) (mmhos/cm)
Day 4 ←	sample:	Control	M	8.0	24.5	7.5	330	M	7.7	24.0	8.2	367
	3	6.25%	M	7.9	24.5	7.5	378	M	7.7	24.1	7.8	412
	3	12.5%	M	7.9	24.5	7.5	422	M	7.7	24.6	7.9	445
	3	25%	M	7.8	24.5	7.4	512	M	7.8	24.7	7.6	545
	3	50%	M	7.7	24.3	7.4	690	M	8.0	24.7	7.6	739
	3	100%	M	7.6	24.2	7.4	1046	M	8.1	24.4	7.6	1147
	Measured by:			AP	MF	AP	AP		AP	MF	AP	AP
	Recorded by:			AP	MF	AP	AP		AP	MF	AP	AP
Day 5	sample:	Control	M	7.9	24.8	7.5	343	M	7.9	24.5	8.2	336
	3	6.25%	M	7.9	25.1	7.7	345	M	7.9	24.3	8.1	396
	3	12.5%	M	7.9	25.2	7.7	443	M	7.9	24.3	8.2	441
	3	25%	M	7.9	25.3	7.8	533	M	7.9	24.3	8.3	538
	3	50%	M	7.8	25.1	7.8	717	M	7.9	24.2	8.4	734
	3	100%	M	7.6	25.0	8.2	1078	M	7.9	24.5	8.5	1081
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 6	sample:	Control	M	7.8	24.1	7.5	323	M	7.8	24.1	7.6	339
	3	6.25%	M	7.8	24.1	7.6	373	M	7.9	24.4	7.6	400
	3	12.5%	M	7.8	24.2	7.8	419	M	7.8	24.4	7.7	435
	3	25%	M	7.7	24.1	7.8	510	M	7.8	24.7	7.7	546
	3	50%	M	7.6	24.3	7.8	691	M	7.8	24.8	7.8	748
	3	100%	M	7.5	24.4	7.9	1040	M	7.9	25.0	7.8	1067
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 7	sample:	Control	M					M				
	3	6.25%	M					M				
	3	12.5%	M					M				
	3	25%	M					M				
	3	50%	M					M				
	3	100%	M					M				
	Measured by:											
	Recorded by:											

New Samples not used on Day 6

Comments:

Replicate M= "Metered" vial, a surrogate vial for parameters

Test ID: Fort Myers South C.dubia chronic Dates: 2/26 – 3/4/13

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	#4 ✓
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	✓
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT–Chronic SRT)

BA entered 3-4-13

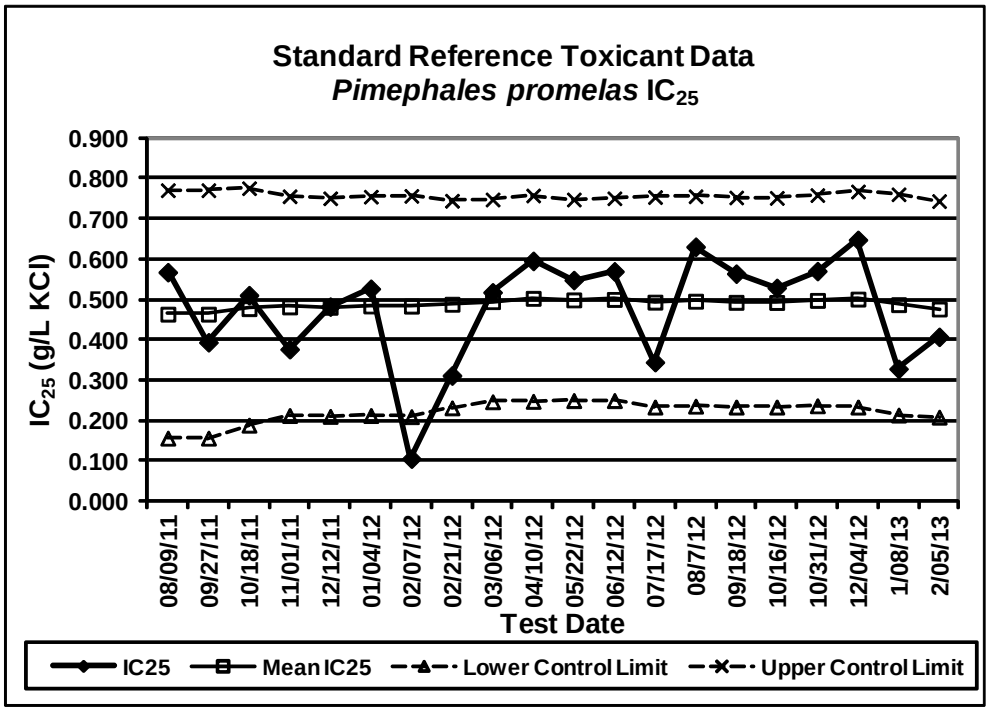
V 1.1 9/21/10 MF/jd

000276

Florida Department of Environmental Protection
Bureau of Laboratories
Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity
Pimephales promelas (fathead minnow) - Potassium Chloride (KCl)

Date	IC25	Mean IC25	Std Dev	Lower Control Limit	Upper Control Limit
08/09/11	0.568	0.464	0.15	0.157	0.771
09/27/11	0.394	0.464	0.15	0.157	0.771
10/18/11	0.511	0.478	0.14	0.189	0.776
11/01/11	0.377	0.482	0.14	0.213	0.756
12/12/11	0.483	0.481	0.14	0.211	0.751
01/04/12	0.527	0.484	0.14	0.213	0.755
02/07/12	0.106	0.484	0.14	0.210	0.757
02/21/12	0.312	0.489	0.13	0.232	0.745
03/06/12	0.518	0.495	0.13	0.247	0.748
04/10/12	0.596	0.503	0.13	0.248	0.758
05/22/12	0.548	0.499	0.12	0.250	0.748
06/12/12	0.570	0.501	0.12	0.250	0.751
07/17/12	0.345	0.494	0.13	0.234	0.754
08/7/12	0.631	0.496	0.13	0.236	0.756
09/18/12	0.564	0.493	0.13	0.234	0.753
10/16/12	0.529	0.493	0.13	0.234	0.752
10/31/12	0.571	0.498	0.13	0.237	0.759
12/04/12	0.648	0.501	0.13	0.234	0.768
1/08/13	0.329	0.488	0.14	0.214	0.761
2/05/13	0.408	0.477	0.13	0.209	0.744

Means are from the last 20 SRTs.
Lower Confidence Limit = mean - 2 * Std Dev EPA 75th %CV: 38%
Upper Confidence Limit = mean + 2 * Std Dev lab % CV: 28%



FDEP Biology Laboratory - Chronic Bioassay Bench Sheet

Pimphales promelas or Menidia beryllina

Facility: Fort Myers South AWWTP
Address: 1618 South Dr. Fort Myers
County: Lee
NPDES Permit #: FL 0021270
Contact/District: Alyssa Mark / South

Test Species (circle one)
(P. promelas) SOP#: TA07_09 EPA-821-R-02-013 Method 1000.0
M. beryllina SOP#: TA07_14 EPA-821-R-02-014 Method 1006.0

Start Date: 2.26.13 Time: 1300
End Date: 3.5.13 Time: 0800

Diluent/ Batch:
MHW / 2.6.13 Test Days Used: 0-1
MHW / 2.20.13 Test Days Used: 2-6
ASW /_____ Test Days Used: _____
ASW /_____ Test Days Used: _____

Organism age: <24 hrs days
Feeding Prior to Test and Daily
Artemia Lot #: 08812
Chamber size : 1000 ml
Test volume : 500 ml

Organism Batch #:	0-AP		
Artemia Batch #	Day 3	36.13	
Day 0 33.13	Day 4	37.13	
Day 1 34.13	Day 5	38.13	
Day 2 35.13	Day 6	39.13	

LIMS entry: See below Entry verification: See below

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2013-2-26-39	1486103	2-25-13/1515	2.26.13/1053
Test Day 2	2	TLH-2013-02-28-51	1486662	2-27-13/1405	2-28-13/0940
Test Day 4	3	TLH-2013-03-04-03	1486976	3-1-13/1215	3-2-13/0900

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	0.0	0	0.0	<0.03	0.075	<0.03	137	139	148	172	171	170
Diluent/Control:				<0.03	<0.03		87 AP 71			~~AP 88~~	81	
Method:	facility	facility	facility	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	A. Mark	A. mark	A. mark	AP	MF	AP	AP	AP	AP	AP	AP	AP
Verified by:	MF	MF	MF	MF	AP	MF	MF	MF	MF	MF	MF	MF

	Conductivity (circle one) (umhos-cm) mmhos-cm)			Ammonia (mg/L)			Salinity (ppth)		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	309	1008	1050	<0.017	<0.017	<0.017	—	—	—
Diluent/Control:	1032	402		<0.017	<0.017	~~<0.017 AP~~	—	—	—
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	BA	AP	AP	MF	MF	MF			
Verified by:	MF	MF	MF	AP	AP	AP			

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min 24.7 max 26.0 mean —
Water bath # ____ min.____ max.____ mean____
Room B246 min 23.9 max 25.4 mean —

Sample Validation:
Instructions: Check yes or no. Fill in temperatures.
Temperature: Shipped ≤ 6°C ☒ Yes ☐ No
If Hand Delivered:Cooling ☐ Yes ☐ No (received ____°C collected___°C)
Holding Time: ≤ 36 Hours ☒ Yes ☐ No
(Composite-end of collection; grab-when collected;
4 in 24 - time last sample collected)

Statistics	
Growth NOEC:	100 %
Growth LOEC:	>100 %
Growth IC_{20}:	>100 %
Growth IC_{25}:	>100 %
Ctrl % CV:	8.7 %
Dunnetts PMSD:	20 %
Survival NOEC:	100 %
Survival LOEC:	>100 %

Lims Data Entry: 3.7-13 MF Data Entry Verification: 3.7.13 BA

Investigators' signatures

	Initials:
Bruce Alcock	BA
Adrienne Pennington	AP
Marshall Faircloth	MF
Liz Miller	

REVIEWER

Comments:

00036

Chronic Bioassay Survival Benchsheet

Facility: Fort Myers South AWWTP

LIMS Sample Number: 148603
(for Lab Sample # 1)

Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
***P. promelas* SOP TA07_09 *M. beryllina* SOP TA07_14**

Organism: (*P. promelas*) *M.beryllina* (circle one)

		TEST DAY							
Concentration	Replicate	0	1	2	3	4	5	6	7
Control	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	9[10]	9	9	9	9
Sample 6.25 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 12.5 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 25 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	9[10]	9	9	9
	D	10	10	10	10	10	10	10	10
Sample 50 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 100 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	9[10]	9
	D	10	10	10	10	10	10	10	10
Sample %	A	10							
	B	10							
	C	10							
	D	10							
Loaded by: AP	Checked by:		AP	AP	AP	AP	AP	AP	AP
Verified by: BA									

Comments:

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Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_14

parameter pg. 1

Sample Source: Fort Myers South — Start Date: 3.26.13 End Date: 3.27.13 AP 3.5.13

LIMS Sample #: 1486103 (for Lab sample #1) — Start Time: 1300 End Time: 0800

conc = concentration — rep = replicate — circle umhos or mmhos

Test Day ↓			Before Renewal						After Renewal					
		Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 0	sample:	Control	A	7.1	24.0	7.0	309							
	1	6.25%	A	7.1	24.0	7.1	354							
	1	12.5%	A	7.2	24.1	7.1	393							
	1	25%	A	7.2	24.3	7.4	481							
	1	50%	A	7.1	24.7	7.2	701							
	1	100%	A	7.1	25.4	7.5	1032							
	1		A											
	Measured by:			BA	BA	BA	BA							
	Recorded by:			BA	BA	BA	BA							
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 1	sample:	Control	B	7.5	26.0	7.3	360		B	7.6	24.3	7.4	368	
	1	6.25%	B	7.5	25.6	7.2	353		B	7.7	24.2	7.4	343	
	1	12.5%	B	7.5	25.8	7.3	398		B	7.7	24.1	7.2	383	
	1	25%	B	7.6	25.0	7.3	466		B	7.6	24.1	7.2	464	
	1	50%	B	7.6	25.6	7.4	671		B	7.6	24.0	7.3	642	
	1	100%	B	7.9	25.6	7.3	1011		B	7.5	24.1	7.5	966	
	1		B						B					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 2	sample:	Control	C	7.6	25.8	7.1	546		C	7.8	24.2	7.6	402	
	2	6.25%	C	7.7	26.0	6.9	367		C	7.8	24.0	7.6	345	
	2	12.5%	C	7.7	26.0	6.8	404		C	7.8	24.1	7.4	389	
	2	25%	C	7.6	25.5	6.8	495		C	7.7	24.2	7.2	478	
	2	50%	C	7.6	25.6	6.5	675		C	7.7	24.1	7.2	602	
	2	100%	C	7.6	25.4	6.5	1020		C	7.6	24.4	7.4	1008	
	2		C						C					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 3	sample:	Control	D	7.7	25.8	7.4	449		D	7.5	24.1	7.5	326	
	2	6.25%	D	7.6	25.1	7.3	342		D	7.6	24.1	7.3	349	
	2	12.5%	D	7.6	25.8	7.0	385		D	7.5	23.9	7.2	390	
	2	25%	D	7.6	25.5	6.8	468		D	7.5	24.0	7.1	482	
	2	50%	D	7.6	25.7	6.5	653		D	7.5	24.0	7.1	658	
	2	100%	D	7.7	25.6	6.5	1064		D	7.5	24.0	7.2	1026	
	2		D						D					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

00028

Page

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_14

parameter pg 2

Sample Source: Fort Myers South AWWTP Start Date: 2.26.13 End Date: 3.5.13

LIMS Sample #: 1486103 (for Lab sample #1) Start Time: 1300 End Time: 0800

conc = concentration rep = replicate

Test Day		Conc.	Before Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	After Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 4	sample:	Control	A	7.5	25.9	7.1	388		A	7.4	24.0	7.6	39	
	3	6.25%	A	7.5	25.3	7.2	359		A	7.5	24.0	7.4	338	
	3	12.5%	A	7.5	25.8	7.0	385		A	7.5	24.0	7.2	382	
	3	25%	A	7.5	25.7	7.0	477		A	7.4	24.0	7.3	478	
	3	50%	A	7.6	24.1	7.1	657		A	7.5	23.8	7.3	656	
	3	100%	A	7.6	25.5	7.1	996		A	7.4	23.8	7.2	995	
	3		A						A					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 5	sample:	Control	B	8.0	25.5	7.2	323		B	7.4	23.9	7.7	356	
	3	6.25%	B	8.0	25.7	7.2	378		B	7.5	23.7	7.4	366	
	3	12.5%	B	7.9	25.3	6.8	428		B	7.5	23.6	7.4	403	
	3	25%	B	7.9	24.3	7.0	527		B	7.4	23.7	7.5	498	
	3	50%	B	8.0	25.1	7.1	753		B	7.4	23.6	7.5	675	
	3	100%	B	8.0	25.4	7.1	1099		B	7.4	24.0	7.5	1050	
	3		B		~~24.8~~ MF				B					
	Measured by:			MF	MF	MF	MF			AP	AP	AP	AP	
	Recorded by:			MF	MF	MF	MF			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 6	sample:	Control	C	7.2	25.7	6.1	310		C	~~7.6~~	23.1	7.4	330	
	3	6.25%	C	7.2	25.8	6.1	341		C	7.6	23.1	7.3	334	
	3	12.5%	C	7.2	25.5	6.0	414		C	7.6	23.1	7.1	380	
	3	25%	C	7.2	25.4	5.9	505 ~~7.02~~ BA		C	7.5	23.2	7.1	470	
	3	50%	C	7.2	25.3	6.1	~~697~~ 691		C	7.5	23.3	7.1	648	
	3	100%	C	7.2	25.4	6.1	1058		C	7.5	23.6	7.3	988	
	3		C						C					
	Measured by:			BA	BA	BA	BA			AP	AP	AP	AP	
	Recorded by:			BA	BA	BA	BA			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 7	sample:	Control	D	7.3	25.8	7.6	373		D					
	3	6.25%	D	7.4	25.7	7.5	358		D					
	3	12.5%	D	7.4	25.0	7.0	410		D					
	3	25%	D	7.3	25.0	6.8	497		D					
	3	50%	D	7.3	25.1	6.8	677		D					
	3	100%	D	7.3	25.1	6.1	1055		D					
	3								D					
	Measured by:			AP	AP	AP	AP							
	Recorded by:			AP	AP	AP	AP							

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional

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Page

Chronic Bioassay Weighing Benchsheet

Facility: Fort Myers South AWWTP

LIMS Sample Number: 1486103
(for Lab Sample # 1)

***P. promelas* and *M. beryllina* Bench Sheet**
SOP TA06_21

			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right					
Concentration	Replicate	Pan #	Pan wt. g	Pan + Fish g	Fish wt. g	Original # Fish	Mean wt. mg	
Control	A	1	0.02239 ~~0.023~~ AP	0.02764	0.00525	10	0.525	0.46725
	B	2	0.02466	0.02931	0.00465	10	0.465	
	C	3	0.02331	0.02776	0.00445	10	0.445	
	D	4	0.02389	0.02823	0.00434	10	0.434	
sample 6.25 %	A	5	0.02227	0.02729	0.00502	10	0.502	0.52
	B	6	0.02283	0.02845	0.00562	10	0.562	
	C	7	0.02285	0.02736	0.00451	10	0.451	
	D	8	0.02364	0.02949	0.00585	10	0.585	
sample 12.5 %	A	9	0.02369	0.02878	0.00509	10	0.509	0.46425
	B	10	0.02200	0.02633	0.00433	10	0.433	
	C	11	0.02445	0.02921	0.00476	10	0.476	
	D	12	0.02381	0.02820	0.00439	10	0.439	
sample 25 %	A	13	0.02446	0.02997	0.00551	10	0.551	0.51725
	B	14	0.02309 AP	0.02848	0.00539	10	0.539	
	C	15	0.02240	0.02714	0.00474	10	0.474	
	D	16	0.02259	0.02744	0.00485	10	0.485	
sample 50 %	A	17	0.02234	0.02818	0.00584	10	0.584	0.53975
	B	18	0.02232	0.02718	0.00486	10	0.486	
	C	19	0.02184	0.02780	0.00596	10	0.596	
	D	20	0.02222	0.02715	0.00493	10	0.493	
sample 100 %	A	21	0.02320	0.02819	0.00499	10	0.499	0.555
	B	22	0.02310	0.02845	0.00535	10	0.535	
	C	23	0.02448	0.02985	0.00537	10	0.537	
	D	24	0.02475	0.03110	0.00635	10	0.635	
sample %	A					10		
	B					10		
	C					10		
	D					10		
	Weighed by initials:		AP	BA	BA	revised 7/16/08 mf		

Comments:

Balance: Ohaus 250D Ser# 1125481084
S-Weights: BIO-S-Weights-01

Note: Pan number (#) refers to actual Pan number.

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Chronic Bioassay Weighing Benchsheet

Quality Control

Facility: Fort Myers South

LIMS Sample Number: 1486103
(for Lab Sample # 1)

***P. promelas and M. beryllina* Bench sheet**
SOPs TA07_09, TA07_14 and TA06_21

Drying Oven ID:	ER034000	Tare weighed by:	AP
Temperature °C:	100	Final weighed by:	BA
Hours:	8		

Tare Weighing Date: 3.4.13		Final Weighing Date: 3.6.13			Measured Value (g)		S-weight Value (g)
Tare Pan 1 after Pan 5 (g)	0.02241	@	0.02239	S-weights	0.61000	@	0.01
Tare Pan 1 after Pan 10 (g)	0.02242	@	0.02239	at tare	0.03000	@	0.03
Tare Pan 1 after Pan 15 (g)	0.02242	@	0.02239	S-weights	0.01002	@	0.01
Tare Pan 1 after Pan 20 (g)	0.02243	@	0.02239	at final	0.03001	@	0.03
Tare Pan 1 after Pan ~~25~~ 24 (g)	0.02242	@	0.02239				
Tare Pan 1 after Pan 30 (g)		@		Balance: Ohaus 250D Ser# 1125481084			
Tare Pan 1 after Pan 35 (g)		@		S-Weights: BIO-S-Weights-01			
Tare Pan 1 after Pan 40 (g)		@					
Tare Pan 1 after Pan 45 (g)		@					
Tare Pan 1 after Pan 48 (g)		@					
Final Pan 1 after Pan 5 (g)	0.02765	@	0.02764				
Final Pan 1 after Pan 10 (g)	0.02763	@	0.02764				
Final Pan 1 after Pan 15 (g)	0.02767	@	0.02764				
Final Pan 1 after Pan 20 (g)	0.02763	@	0.02764				
Final Pan 1 after Pan ~~25~~ 24 (g)	0.02764	@	0.02764				
Final Pan 1 after Pan 30 (g)		@					
Final Pan 1 after Pan 35 (g)		@					
Final Pan 1 after Pan 40 (g)		@					
Final Pan 1 after Pan 45 (g)		@					
Final Pan 1 after Pan 48 (g)		@					

Note: Pan numbers (5, 10, etc.) for Tare and Final refers to sequence of weighing as actual Pan #s may differ.

Comments:

revised 7/16/08 MF

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Page

LIMS sample #1486103

Test ID: Fort Myers S. ~~NPDES #FB~~ P. promelas Chronic Dates: 2.26.13 - 3-5-13

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5-SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	#4 ✓
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	✓
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	✓
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	✓

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT--Chronic SRT)

BA 2.27.13 - 3-5-13

V 1.1 9/21/10 MF/jd

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Appendix G.
Organism Receipts

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 2/4/13

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi	150 ac	11 days	CL 130124	25	7.8	80
Pimephales promelas	300	<24 HRS	FM 1309.09-1645	25	7.8	80
	150 ac	7 days	FM 130128	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

4569 Samuel Street · Sarasota, FL 34233 · Tel: 941-925-3594 · Fax: 941-922-3874 · Web: www.biologylab.com

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 2/25/13

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi						
Pimephales promelas	300	< 24Hrs	FM130224-1715	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

4569 Samuel Street · Sarasota, FL 34233 · Tel: 941-925-3594 · Fax: 941-922-3874 · Web: www.biologylab.com

EPA End Sheet

The Bioassay of Fort Myers South AWWTP effluent sampled on February 25 and 27, and March 1, 2013. NPDES #FL0021270.

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 0 2 1 2 7 0 11	12 1 3 0 2 2 5	18 B	19 S	20 1

Remarks

66

The Priority Pollutants Analysis of Fort Myers South AWWTP effluent sampled on February 25, 2013. NPDES #FL0021270.

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 0 2 1 2 7 0 11	12 1 3 0 2 2 5	18 X	19 S	20 1

Remarks

66

Biological Analyses of Fort Myers South AWWTP effluent sampled on February 25, 2013. NPDES #FL0021270.

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 0 2 1 2 7 0 11	12 1 3 0 2 2 5	18 S	19 S	20 1

Remarks

66