


Effluent Quality Assessment

# City of Venice Reverse Osmosis Water Treatment Facility

Sarasota County

NPDES #FL0035335

Sampled March 11, 2013

July 2013

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

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City of Venice Reverse Osmosis (RO) Water Treatment Plant (WTP), 200 North Warfield Avenue, Venice, Sarasota County, Florida, 34285. NPDES #FL0035335.

## Facility Overview

The City of Venice operates a reverse osmosis water treatment plant for potable water supply. See Appendix A for a description of the facility and a summary of permit limits (Pages 1-9 of NPDES Permit FL0035335).

## Methods

Effluent grab samples for toxicity testing and biological and chemical analyses were collected on March 11, 2013. All samples were collected from the EFF-001 NPDES sampling point for Outfall D-002 by Alyssa Mork (FDEP South District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix C).

The 96-hour acute definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_03, TA07_04, and TA08_01 through TA08_09 (see Appendix C). Due to the lack of facility and permit information at the time of test initiation, the bioassay tests were not performed in accordance with permit (NPDES Permit # FL0035335) conditions.

## Results

### Chemistry Results (See Table 1 and Appendix D)

- Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. Nutrient content of the sample was not measured.
- Fluoride, total alpha, and radium 226 + 228 were detected in the effluent at levels that comply with Class III Marine Water Quality Criteria (62-302.530, F.A.C.) or permit conditions. Nickel and total suspended solids were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

### Algal Growth Potential (See Table 2 Appendix D)

- The salinity adjusted effluent algal growth potential (AGP) was 6.42 A 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).

### Toxicity Test Results (See Appendices D- G)

- Tests were performed March 12 - 16, 2013.

| | |
|---|---|
| *Americamysis bahia* 96-hour acute definitive bioassay – | $LC_{50}$ = 74.85%, 85%* mortality in 100% sample at 96 hours |
| *Menidia beryllina 96*-hour acute definitive bioassay – | $LC_{50}$ > 100%, 10%*mortality in 100% sample at 96 hours |

*NOTE: In a 96-hour acute definitive test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

- The bioassay samples were acutely toxic to the *Americamysis bahia* test organisms. However, a violation of the permit criterion of LC50 ≥ 30% effluent did not occur. The cause of toxicity was attributed, at least in part, to the seawater ion imbalance (excess calcium and magnesium) in the sample.
- The chemistry results confirmed that the ion makeup of the sample was not in seawater proportions and that the apparent 3.3 parts per thousand (ppth) salinity (calculated value) of the sample was due to elevated levels of ground-water ions. The observed mortality in the *A. bahia* test is likely due to the seawater-ion imbalance of the sample. Previous research conducted by the FDEP Biology Section demonstrated that *A. bahia* is much more sensitive to seawater-ion imbalances than is *M. beryllina* (Wolfe, *et al*. 1995. *Protocols for determining Major-Seawater-Ion Toxicity in Membrane-Technology Water-Treatment Concentrate*. Florida Department of Environmental Protection, Bureau of Laboratories. 96pp.) The calcium concentration was measured at 815 mg/L at 3.3 ppth salinity and calculated at 1015 mg/L as tested at 19.6 ppth salinity. This is approximately twenty times (20X) the normal concentration for calcium in seawater of 3.3 ppth salinity and greater than four times (4.3X) the normal calcium concentration of calcium as tested at 19.6 ppth salinity. The magnesium concentration was measured at 338 mg/L at 3.3 ppth salinity and calculated at 936 mg/L as tested (19.6 ppth salinity). This is approximately three times (2.8X) the normal concentration for magnesium in seawater of 3.3 ppth salinity and 1.3 times the normal concentration of magnesium at 19.6 ppth salinity The elevated calcium and magnesium concentrations are two potential sources of toxicity in this sample, but other unidentified sources of toxicity cannot be ruled out without performing the major-seawater-ion imbalance toxicity testing protocols cited above.

- Aliquots of the bioassay sample were salinity-adjusted from an apparent salinity of approximately 3.46 ppth (measured in bioassay lab) to a salinity of approximately 19.6 ppth for the *Americamysis bahia* and the *Menidia beryllina* tests. Forty Fathoms® marine mix artificial sea salts was used for the salinity adjustments. The salinity adjustments were performed to ensure that the minimum salinity of the bioassay samples based on known seawater-ion content met the salinity requirements of the test species (6 ppth for *Americamysis bahia* and 1 ppth for *Menidia beryllina*). The salt control used for each test was prepared by diluting 20 ppth salinity artificial seawater (ASW) with well water to a salinity of approximately 3.46 ppth then salting this solution with artificial sea salts to match the salinity of the appropriate test solution. The purpose of the salt controls was to confirm that there was no effect of adding artificial sea salts to the sample. There was no mortality in the salt controls of the *Americamysis bahia* test and 10% mortality in the salt controls of the *Menidia beryllina* test.

## Conclusion

The effluent sample collected from the EFF-001 NPDES sampling point for this facility on March 11, 2013, was acutely toxic to the *Americamysis bahia* test species during the 96-hour acute definitive bioassays. However, a violation of the permit criterion of LC50 ≥ 30% effluent did not occur. The cause of toxicity was attributed, at least in part, to the seawater ion imbalance (excess calcium and magnesium) in the sample. The effluent salinity-adjusted AGP result was less than the "problem" threshold for marine receiving waters. Effluent water quality samples collected on March 11, 2013, did not exceed any applicable water quality standards or violate any permit conditions.

## Literature Cited

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.

USEPA. 2002. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms. 5th edition. EPA-821-R-02-012.

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

| City of Venice RO WTP | Class III Criteria | Effluent Limits | Effluent | |
|---|---|---|---|---|
| Metals (µg/L unless otherwise noted) | | | | |
| Arsenic | ≤ 50 | - | 0.25 | U |
| Cadmium | ≤ 8.8 | - | 0.050 | U |
| Calcium (mg/L) | - | - | 815 | |
| Chromium-III | - | - | 0.30 | U |
| Copper | ≤ 3.7 | ≤ 3.7 p | 0.50 | U |
| Iron | ≤ 300 | - | 30 | U |
| Lead | ≤ 8.5 | - | 0.20 | U |
| Magnesium (mg/L) | - | - | 338 | |
| Nickel | ≤ 8.3 | - | 0.46 | I |
| Selenium | ≤ 71 | - | 0.20 | U |
| Silver | ≤ 2.3 see crit | - | 0.025 | U |
| Sodium | - | - | 367 | |
| Zinc | ≤ 86 | - | 5.0 | U |
| Nutrients (mg/L) | | | | |
| Total Organic Carbon | - | - | 4.5 | A |
| General Physical and Chemical Parameters | | | | |
| Dissolved Oxygen (mg/L) | ≥ 4.0 | ≥ 4.0 | 7.60 | |
| pH (SU) | 6.5 - 8.5 | 6.5 - 8.5 | 7.30 | |
| Specific Conductance (µmhos/cm) | - | Report | 6,069 | |
| Temperature (°C) | - | - | 25.07 | |
| Salinity | - | - | 3.3 | c |
| Total Residual Chlorine (mg/L) | ≤ 0.01 | ≤ 0.01 | ≤ 0.03 | QU£ |
| Chlorophyll *a* (µg/L) - Corrected | - | - | 0.62 | U |
| Phaeophytin (µg/L) | - | - | 0.45 | U |
| Total Suspended Solids (mg/L) | - | ≤ 5.0 p | 3 | I |
| Alkalinity (mg CaCO3/L) | - | - | 247 | A |
| Chloride (mg/L) | - | Report | 790 | |
| Fluoride (mg/L) | ≤ 5.0 | ≤ 5.0 p | 3.2 | |
| Sulfate (mg/L) | - | - | 2,600 | |
| Alpha, Total (pCi/L) | ≤ 15 | ≤ 55 p | 28.9 | |
| Alpha-Counting Error (pCi/L) | - | - | 5.7 | |
| Radium 226 (pCi/L) | - | - | 8.1 | |
| Radium 226-Counting Error (pCi/L) | - | - | 0.4 | |
| Radium 228 (pCi/L) | - | - | 0.7 | |
| Radium 228-Counting Error (pCi/L) | - | - | 0.5 | |
| Radium 226 + 228 (pCi/L) | ≤ 5 | ≤ 17.0 p | 8.8 | c |
| Flow (MGD) | - | 3.56 † | 2.13 | m |
| Hardness (mg $CaCO_3$) | - | - | 3426.939 | c |

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

Value exceeds the Class III Water Quality Criteria or permit limits

c - Value is calculated

m - Maximum 7-day average 3/31/2012 - 3/28/2013

p - 24 hour flow proportioned composite

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

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Q - Sample held beyond normal holding time

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

£ - measurement taken in the FDEP laboratory

† - Consecutive 7-day average

**Table 2. Measured algal growth potential (AGP; mg dry weight/L) for salt adjusted AGP for the saltwater species *Dunaliella tertiolecta.***

| City of Venice RO WTP | | | | |
|---|---|---|---|---|
| Location | Test Species | AGP (measured) | Inorganic N:P ratio | Total N:P ratio |
| Effluent | Marine | 6.42 A* | - | - |

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

* - sample salinity adjusted to 7.1 ppth

**Appendix A.**
**Permit**

Florida Department of Environmental Protection

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

**STATE OF FLORIDA**
**INDUSTRIAL WASTEWATER FACILITY PERMIT**

**PERMITTEE:**
City of Venice
200 North Warfield Avenue
Venice, FL 34285

**PERMIT NUMBER:** FL0035335 (Major)
**PA FILE NUMBER:** FL0035335-007-IW5A
**ISSUANCE DATE:** November 25, 2008
**EXPIRATION DATE:** November 24, 2013

**RESPONSIBLE AUTHORITY:**

Mr. Lenox Bramble, P.E.
Utilities Director

**FACILITY:**

City of Venice - RO WTP
200 North Warfield Avenue
Venice, FL 34285
Sarasota County
WBID #2018

Latitude: 27° 6' 1" N Longitude: 82° 26' 12" W

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and applicable rules of the Florida Administrative Code (F.A.C.), and constitutes authorization to discharge to waters of the state under the National Pollutant Discharge Elimination System (NPDES). The above named permittee is hereby authorized to operate the facilities shown on the application and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

**WASTEWATER TREATMENT:**

The City of Venice operates a Reverse Osmosis (RO) Water Treatment Plant (WTP) for potable water supply. The source water is 8.0 million gallons per day (MGD) of brackish groundwater. Treatment of the RO concentrate discharge is provided through the addition of chlorine and air injection, combined with in-line mixers, to oxidize the dissolved sulfides and raise the dissolved oxygen in the concentrate. Additionally, the treatment process includes a dechlorination station to be used as needed. A mixing zone at the point of discharge, with a surface area of 210-feet x 45-feet, is granted for the radiological parameters, and another mixing zone with an area of 116-feet x 30-feet is granted for chronic toxicity. The RO concentrate discharge may be mixed in the discharge pipe, with reclaimed water from the City's Eastside Advanced Wastewater Treatment Plant for disposal in the Intercoastal Waterway. Permit Number FL0041441, sets forth the conditions for monitoring, reporting and other requirements for the reclaimed water effluent (See Attachment A - Process Flow Diagram)

**EFFLUENT DISPOSAL:**
**Surface Water Discharge:**

Effluent disposal is through Outfall D-002 which consists of a 66-foot long, 24-inch HDPE pipe with a multiport 2-inch diffuser system. The angle of orientation of the diffusers will be 30° from horizontal. The point of discharge is located at the east bank of the Intercoastal Waterway (ICWW) WBID #2018 at a location south of the Venice Avenue Bridge at a depth of approximately 7.7 feet approximately at latitude 27° 05' 58" N, longitude 82° 26' 27" W (See Attachment B -Topographic Map).

**IN ACCORDANCE WITH:** The limitations, monitoring requirements and other conditions as set forth in Part I through Part VIII on pages 3 through 20 of this permit.

PERMITTEE: City of Venice PA FILE NUMBER: FL0035335-007-IW5A
FACILITY: City of Venice - RO WTP

## I. Effluent Limitations and Monitoring Requirements

### A. Surface Water Discharges

1. During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge Reverse Osmosis Concentrate and Reclaimed Water from Outfall D-002. Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with condition I.E.3.:

| | Discharge Limitations | | | Monitoring Requirements | | |
|---|---|---|---|---|---|---|
| **Parameters (units)** | **Monthly Average** | **Daily Maximum** | **Daily Minimum** | **Monitoring Frequency** | **Sample Type** | **Sample Point** |
| **Flow (MGD)** | -- | Report | -- | Continuous | Meter | FLW-001 |
| **Flow (MGD)** | Report | 3.56 (Consecutive 7-day average) | -- | Continuous | Calculated | FLW-001 |
| **Chlorine, Total Residual (MG/L)[1]** | Report | 0.01 | -- | Weekly | Instantaneous | EFF-001 |
| **Solids, Total Suspended (MG/L)** | Report | 5.0 | -- | Monthly | 24-hour flow proportioned composite | EFF-001 |
| **pH (SU)** | -- | 8.5 | 6.5 | Daily | Instantaneous | EFF-001 |
| **Fluoride, Total (as F) (MG/L)** | Report | 5.0 | -- | Monthly | 24-hour flow proportioned composite | EFF-001 |
| **Copper, Total Recoverable (UG/L)** | Report | 3.7 | -- | Monthly | 24-hour flow proportioned composite | EFF-001 |
| **Oxygen, Dissolved (DO) (MG/L)** | 5.0 | -- | 4.0 | Daily | Instantaneous | EFF-001 |
| **Radium 226 + Radium 228, Total (PCI/L)** | Report | 17.0 See Cond. I.A.6 | -- | Monthly | 24-hour flow proportioned composite | EFF-001 |
| **Alpha, Gross Particle Activity (PCI/L)** | Report | 55.0 See Cond. I.A.6 | -- | Monthly | 24-hour flow proportioned composite | EFF-001 |
| **Specific Conductance (UMHO/CM)** | Report | Report | -- | Monthly | 24-hour flow proportioned composite | EFF-001 |
| **Chloride (as Cl) (MG/L)** | Report | Report | -- | Monthly | 24-hour flow proportioned composite | EFF-001 |

[1] Analyzed or preserved immediately according to FDEP-approved sampling method.

PERMITTEE: City of Venice PA FILE NUMBER: FL0035335-007-IW5A
FACILITY: City of Venice - RO WTP

| | Discharge Limitations | | | Monitoring Requirements | | |
|---|---|---|---|---|---|---|
| **Parameters (units)** | **Monthly Average** | **Daily Maximum** | **Daily Minimum** | **Monitoring Frequency** | **Sample Type** | **Sample Point** |
| **Whole Effluent Toxicity (Acute)** | See Permit Conditions I.A.7 & 9 | | | | | EFF-001 |

2. Effluent samples shall be taken at the monitoring site locations listed in permit condition I.A.1 and as described below:

| Sample Point | Description of Monitoring Location |
|---|---|
| FLW-001 | RO Concentrate Discharge Flow at Outfall D-002 before mixing with reclaimed water [Magnetic Totalizing Flow Meter] |
| EFF-001 | RO Concentrate Discharge at Outfall D-002 after mixing with reclaimed water |

3. There shall be no discharge of floating solids or visible foam in other than trace amounts.

4. The discharge shall not cause a visible sheen on the receiving water.

5. The Magnetic Totalizing Flow Meter shall be calibrated at least annually.

6. Pursuant to the provisions of Section 62-4.244, F.A.C., a zone of mixing for combined Radium 226 & 228 and Gross Alpha Activity with a surface area of 210-foot (length centered over diffuser, north and south) by 45-foot (width from center line of diffuser, east and west) is granted by the Department.

7. Pursuant to the provisions of Section 62-4.244 (3) (b), F.A.C., the permittee has been granted a mixing zone of 116 feet (length centered over diffuser, north and south) by 30 feet (width from centerline of diffuser, east and west) for chronic toxicity.

8. The permittee shall continue to implement the "Venice Ambient Monitoring Plan, May 1998" by Camp, Dresser & McKee, as approved by the Department, to assess the impacts of the proposed discharge on the ICWW and shall submit a summary report at the end of this permit cycle.

9. Whole Effluent Toxicity Monitoring.

   The permittee shall comply with the following requirements to evaluate acute whole effluent toxicity of the discharge from outfall D-002.

   a. Effluent Limitation
      (1) Whole effluent acute toxicity shall not exceed in any routine or in any additional follow-up test an LC50 of less than 30% effluent. [Rules 62-302.200(1), 62-302.500(1)(a)4., and 62-4.244(3)(b), F.A.C.]

   b. Monitoring Frequency
      (1) Routine toxicity tests shall be conducted once every six months, the first starting within 60 days following the effective date of this permit and lasting for the duration of this permit.

c. Sampling Requirements

(1) Routine tests shall be conducted on four separate grab samples collected at evenly-spaced (6-hr) intervals over a 24-hour period. The four grab samples shall be used in eight bioassays (four bioassays for each species) and shall represent one test. If the duration of the discharge is less than 24-hours, the duration of discharge shall be documented on the chain of custody.

(2) For additional follow-up tests, the first test shall be conducted on four separate grab samples collected at evenly-spaced (6-hr) intervals over a 24-hour period. The four grab samples shall be used in four separate bioassays for each species that failed the routine test. The four grab samples represent one test. The second follow-up test shall be run on a single grab sample collected on the day and time when the greatest toxicity was identified in the routine or first additional follow-up test. Results for each additional test shall include the determination of LC50 values with 95% confidence limits.

d. Test Requirements

(1) Routine Test: All routine tests shall be conducted using a control (0% effluent) and a minimum of five dilutions: 60%, 30%, 15%, 7.5% and 3.75% effluent.

(2) The permittee shall conduct 96-hour acute static renewal multi-concentration toxicity tests using the mysid, Americamysis (Mysidopsis) bahia, and the inland silverside, Menidia beryllina, concurrently.

(3) All test species, procedures and quality assurance criteria used shall be in accordance with Methods for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition, EPA-821-R-02-012. 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 acute toxicity testing in accordance with the revised method.

The control water and dilution water shall be artificial seawater or hypersaline brine diluted to the test salinity as described in EPA-821-R-02-012, Sections 7.2.4. and 7.3.7, respectively. The control/dilution water shall be prepared with the same artificial sea salts or hypersaline brine that is used to adjust the salinity of the effluent. The test salinity shall be determined as follows:

(a) When the salinity resulting from the mixture of 30% effluent concentration and artificial seawater or hypersaline brine adjusted to 24 ppt is between 1 and 7 parts per thousand (ppt), the effluent salinity for the Americamysis bahia bioassays shall be adjusted to 7 ppt using artificial seawater or hypersaline brine. When the salinity resulting from the mixture of 30% effluent concentration and artificial seawater or hypersaline brine adjusted to 24 ppt is greater than 7 ppt, the salinity of the effluent shall be adjusted to the higher salinity using artificial sea salts or hypersaline brine. The control/dilution water shall also be adjusted to match the salinity of the adjusted effluent using artificial seawater or hypersaline brine, as was used to adjust the effluent salinity.

(b) The effluent salinity for the Menidia beryllina bioassay shall be adjusted to match the salinity resulting from the mixture of 30% effluent concentration and artificial seawater or hypersaline brine adjusted to 24 ppt. The salinity of the control/dilution water (0% effluent) shall be adjusted to match the salinity of the adjusted effluent.

(c) If hypersaline brine is used to prepare the control/dilution water and to adjust the salinity of the effluent, the volume of hypersaline brine added to the effluent must be taken into account when preparing the effluent dilutions.

e. Quality Assurance Requirements

(1) A standard reference toxicant (SRT) quality assurance (QA) acute 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 test 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 acute toxicity tests using the same reference toxicant and test conditons. 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 10% for either species in any test, the test for that species (including the control) shall be invalidated and the test repeated. The repeat test shall begin within 14 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations prior to the end of any test and the control mortality is less than 10% at that time, the test (including the control) 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 concentration-response relationship, as required by EPA-821-R-02-012, Section 12.2.6.2., and 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 Test Results: The lowest calculated LC50 effluent concentration for the four separate tests shall be entered on the DMR for that test species.

(b) Additional Follow-up Test Results: For each additional test required, the calculated LC50 value shall be entered on the DMR for that test species and the 95% confidence limits.

(2) A bioassay laboratory report for the routine test shall be prepared according to EPA-821-R-02-012, Section 12, Report Preparation and Test Review, and mailed to the Department at the address in 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-02-012, Section 12, 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
Southwest District Office
Industrial Wastewater Program
Attention: Compliance/Enforcement
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

g. Test Failures

(1) A test fails when the test results do not meet the limits in 9.a.(1).

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the acute toxicity limitation in 9.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 9.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: 60%, 30%, 15%, 7.5%, and 3.75% 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 statistically analyzed according to the Appendices in EPA-821-R-02-012.

(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 9.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 9.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-012, a repeat test shall be initiated within 14 days after the last day of the invalid routine test.

(f) Upon completion of four consecutive, valid routine tests that demonstrate compliance with the effluent limitation in 9.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 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 14 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive valid tests for the purpose of terminating the plan.

(4) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for whole effluent toxicity permit limit violations.

10. Water Quality Monitoring

The permittee shall continue the routine quarterly Ambient Water Quality and Benthic Monitoring following the conditions listed below and established under the Department approved "Venice Ambient Monitoring Plan, May 1998" for the duration of this permit.

a. Sampling Locations:

Station 5N: The station is located in the Intracoastal Waterway (ICWW), 500 feet north and 45 feet west of the outfall, at approximately latitude 27° 06' 01.3" N, and longitude 82° 26' 08.5" W.

Station 5S: The station is located in the ICWW, 500 feet south and 45 feet west of the outfall, at approximately latitude 27° 05' 34.3" N, and longitude 82° 26' 10.7" W.

Station 10S: The station is located in the ICWW, 1000 feet south and 45 feet west of the outfall, at approximately latitude 27° 05' 30.1" N, and longitude 82° 26' 08.2" W. This station is designated as the reference point and is not within the zone of influence of the discharge.

b. Sampling Depths:

Samples shall be collected at surface, mid-depth and bottom.

c. Sampling Parameters:

Surface: Radium 226 + Radium 228, Alpha, Gross Particle Activity, pH, dissolved oxygen, temperature, salinity and chlorides.

Mid-depth: Radium 226 + Radium 228, Alpha, Gross Particle Activity, pH, dissolved oxygen, temperature, salinity, chlorides, chlorophyll-a, total suspended solids, $BOD_5$, total nitrogen, total Kjeldahl nitrogen, nitrite-nitrate, total ammonia, total phosphorus, orthophosphate and hydrogen sulfide.

Bottom: Radium 226 + Radium 228, Alpha, Gross Particle Activity, pH, dissolved oxygen, temperature, salinity and chlorides.

d. Secchi Depth: Secchi depth shall be measured at each sampling location.

e. Ambient Conditions: Air temperature, rainfall, cloud cover and direction of receiving waterbody flow incoming or outgoing tide) shall be noted at each sampling location.

f. Chain of Custody: Time and date of sampling event and the names of the persons who obtained the sample shall be noted at each sampling location.

g. Report: A quarterly report shall be submitted to the FDEP's Southwest District (in both printed and electronic formats) presenting the results and interpretations of the sampling events. The report shall also include all chain of custody forms, laboratory results as reported by the laboratory and the physiochemical raw data sheets.

11. Biological Monitoring:

The permittee shall continue to conduct routine quarterly monitoring of the macro-invertebrate communities within the ICWW according to the sampling methods and at the locations designated in the Department approved Plan of Study. Per the Plan of Study, the sampling locations shall be within the two (2) mixing zone locations and at the reference site specified under the Water Quality Monitoring section above. Four (4) benthic samples for faunal analysis will be collected at the aforementioned sites. Three of the samples will be analyzed for fauna and the fourth sample will serve as an archive back-up sample. A sediment grain analysis shall also be performed at each site.

a. During each sampling event, the following water quality parameter levels shall be determined at surface, mid and bottom depth at each sampling location: pH, dissolved oxygen, temperature, salinity and chlorides.

b. Chain of Custody: Time and date of sampling event and the names of the persons who obtained the sample shall be noted at each sampling location.

c. If the permittee conducts the ambient water quality and the benthic monitoring on different days, the secchi depth and the ambient conditions stated in section 7.e. above, shall also be recorded during the benthic sampling event.

d. Effluent Monitoring: The facility effluent shall be monitored for the parameters listed in Permit Condition I.A.1. during the same time as the ambient water quality monitoring is conducted. The data shall be submitted, in addition to the monthly DMRs, with the report required below to the Department on a quarterly basis.

e. Reporting: Quarterly reports that contain the results of the ambient monitoring program, which includes the ambient water quality and the biological monitoring results, shall be submitted (in printed and electronic format) to the Department for review in accordance with Permit Condition I.E.3.

f. The permittee may request the Department a reduction on the sampling frequency of the ambient monitoring program if the results indicate no detectable water quality and biological impacts due to the effluent discharge.

**B. Underground Injection Control Systems**

1. This section is not applicable to this facility.

**C. Land Application Systems**

1. This section is not applicable to this facility.

**D. Other Methods of Disposal or Recycling**

1. There shall be no discharge of industrial wastewater from this facility to ground or surface waters, except as authorized by this permit.

**E. Other Limitations and Monitoring and Reporting Requirements**

1. The sample collection, analytical test methods and method detection limits (MDLs) applicable to this permit shall be in accordance with Rule 62-4.246, Chapters 62-160 and 62-601, F.A.C., and 40 CFR 136, as appropriate. The list of Department established analytical methods, and corresponding MDLs (method detection limits) and PQLs (practical quantification limits), which is titled "Florida Department of Environmental Protection Table as Required By Rule 62-4.246(4) Testing Methods for Discharges to Surface Water" is available at http://www.dep.state.fl.us/labs/guidance/index.htm. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. Any method included in the list may be used for reporting as long as it meets the following requirements:

   a. The laboratory's reported MDL and PQL values for the particular method must be equal or less than the corresponding method values specified in the Department's approved MDL and PQL list;

# Florida Department of Environmental Protection

## Central Laboratory Sample Submittal Form

Event ID *

**Request Number: RQ-2013-03-11-14**
FYI3 Venice RO Plant 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: 03113-VeniceRO-01 | | | ☐ Comp ☒ Grab | Collection (comp begin or grab) Eastern Date 03-11-13 Time 11:10 Central | | Composite end Eastern Date Time Central | | Bottle Group(s)** |
| | Field ID: Venice RO - effluent | | | Tot Res Chlorine (mg/L): 0.00 | Diss Oxygen (mg/L): 7.60 | | Storet Station Number | | A 4C |
| | Matrix (include type e.g. Salt, Fresh, etc): ~~Effluent~~ RO effluent | Temp (C): 25.07 | pH: 7.30 | Sample Depth ☐ m ☐ ft: Tap | 60069 | ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) | | NPDES Number | |
| | Latitude ☐ dd ☐ dms | | Longitude ☐ dd ☐ dms | Comments: All grab / no composite | | | | | |
| Lab ID * | Location: Blank - VeniceRO | | | ☐ Comp ☐ Grab | Collection (comp begin or grab) Eastern Date 3-11-13 Time 13:20 Central | | Composite end Eastern Date Time Central | | Bottle Group(s)** |
| | Field ID: 03113 VeniceRO-02 | | | Tot Res Chlorine (mg/L) | Diss Oxygen (mg/L) | | Storet Station Number | | B |
| | Matrix (include type e.g. Salt, Fresh, etc): DI water | 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 | | | ☐ Comp ☐ Grab | Collection (comp begin or grab) Eastern Date Time Central | | Composite end Eastern Date Time Central | | Bottle Group(s)** |
| | Field ID | | | Tot Res Chlorine (mg/L) | Diss Oxygen (mg/L) | | Storet Station Number | | |
| | Matrix (include type e.g. Salt, Fresh, etc) | Temp (C) | pH | Sample Depth ☐ m ☐ ft | | ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) | | NPDES Number | |
| | Latitude ☐ dd ☐ dms | | Longitude ☐ dd ☐ dms | Comments | | | | | |
| Lab ID * | Location | | | ☐ Comp ☐ Grab | Collection (comp begin or grab) Eastern Date Time Central | | Composite end Eastern Date Time Central | | Bottle Group(s)** |
| | Field ID | | | Tot Res Chlorine (mg/L) | Diss Oxygen (mg/L) | | Storet Station Number | | |
| | Matrix (include type e.g. Salt, Fresh, etc) | Temp (C) | pH | Sample Depth ☐ m ☐ ft | | ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) | | NPDES Number | |
| | Latitude ☐ dd ☐ dms | | Longitude ☐ dd ☐ dms | Comments | | | | | |

| Relinquished By: | Date/Time | Shipping Method: | Received By: | Date/Time | Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|---|---|---|---|---|
| | 3-11-13 / 3:04 pm | Fedex | | | | | DC | 3/12/13 / 9:20 |

3 bioassay 1000 AM 3.12.13 BA

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

# 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 | Results | Remarks | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | AGP/LN | Algal Growth Potential | 6.42 | A | mg DryWt/L | 3 | 3 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Corrected | 0.62 | U | ug/L | 0.62 | 1.9 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Chlorophyll/Grain Size/BOD | Phaeophytin-a | 0.45 | U | ug/L | 0.45 | 1.4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Toxicology | Bioassay-Acute-Def-SW-Mysid, LC50 | 74.9 | | LC50 | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Toxicology | Bioassay-Acute-Def-SW-Fish, LC50 | 100 | L | LC50 | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Selenium | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Sodium | 367 | | mg/L | 5 | 20 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Arsenic | 0.25 | U | ug/L | 0.25 | 1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Zinc | 5.0 | U | ug/L | 5 | 20 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Copper | 0.50 | U | ug/L | 0.5 | 1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Calcium | 815 | | mg/L | 0.75 | 3 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Nickel | 0.46 | I | ug/L | 0.25 | 1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Chromium | 0.30 | U | ug/L | 0.3 | 1.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Cadmium | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Magnesium | 338 | | mg/L | 0.4 | 1.6 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Silver | 0.025 | U | ug/L | 0.025 | 0.1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Iron | 30 | U | ug/L | 30 | 120 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Metals | Lead | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Nutrients | Alkalinity | 247 | A | mg CaCO3/L | 0.65 | 2.5 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Nutrients | Chloride | 790 | | mg Cl/L | 20 | 50 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Nutrients | Color (true) | 4.1 | I | PCU | 2.5 | 6 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Nutrients | Organic Carbon | 4.5 | A | mg C/L | 0.5 | 1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Nutrients | TSS | 3 | I | mg/L | 2 | 10 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Nutrients | Sulfate | 2,600 | | mg SO4/L | 20 | 50 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Nutrients | Fluoride | 3.2 | | mg F/L | 0.035 | 0.1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Overflow | Radium 226-Counting Error | 0.4 | | pCi/L | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Overflow | Alpha, Total | 28.9 | | pCi/L | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Overflow | Radium 228 | 0.7 | | pCi/L | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Overflow | Radium 226 | 8.1 | | pCi/L | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Overflow | Radium 228-Counting Error | 0.5 | | pCi/L | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Overflow | Alpha-Counting Error | 5.7 | | pCi/L | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Atrazine | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Azinphos Methyl | 0.10 | U | ug/L | 0.1 | 0.4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Chlorpyrifos Ethyl | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Metribuzin | 0.10 | U | ug/L | 0.1 | 0.4 |

| Date Sampled | Field ID | Analysis Group | Components | Results | Remarks | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Ethoprop | 0.025 | U | ug/L | 0.025 | 0.1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Hexazinone | 0.15 | UJ | ug/L | 0.15 | 0.6 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Metolachlor | 0.30 | U | ug/L | 0.3 | 1.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Mevinphos | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Norflurazon | 0.15 | U | ug/L | 0.15 | 0.6 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Simazine | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Fenamiphos | 0.15 | U | ug/L | 0.15 | 0.6 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Malathion | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Parathion Ethyl | 0.10 | U | ug/L | 0.1 | 0.4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Phorate | 0.025 | U | ug/L | 0.025 | 0.1 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Prometryn | 0.10 | U | ug/L | 0.1 | 0.4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Metalaxyl | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Diazinon | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Alachlor | 0.30 | UJ | ug/L | 0.3 | 1.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Butylate | 0.10 | U | ug/L | 0.1 | 0.4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Naled | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Parathion Methyl | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Ametryn | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Bromacil | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Fonofos | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Chlorpyrifos Methyl | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Pesticides | Ethion | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Anthracene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Pentachlorophenol | 3.0 | UJ | ug/L | 3 | 12 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Dimethyl phthalate | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 4-Nitrophenol | 15 | U | ug/L | 15 | 60 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Benzo(a)anthracene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Butyl benzyl phthalate | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Chrysene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Fluoranthene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 2.0 | U | ug/L | 2 | 8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Naphthalene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Nitrobenzene | 2.0 | U | ug/L | 2 | 8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 40 | U | ug/L | 40 | 160 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 2.0 | U | ug/L | 2 | 8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 3.0 | U | ug/L | 3 | 12 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2,4-Dimethylphenol | 10 | U | ug/L | 10 | 40 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Fluorene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Phenol | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2,4-Dichlorophenol | 1.0 | U | ug/L | 1 | 4 |

| Date Sampled | Field ID | Analysis Group | Components | Results | Remarks | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2-Chloronaphthalene | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2-Nitrophenol | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Acenaphthene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Acenaphthylene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 2.0 | U | ug/L | 2 | 8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Isophorone | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | N-Nitrosodimethylamine | 2.0 | U | ug/L | 2 | 8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Pyrene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 3.0 | UJ | ug/L | 3 | 12 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Benzo(a)pyrene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Hexachloroethane | 3.0 | U | ug/L | 3 | 12 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Phenanthrene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2,4-Dinitrophenol | 15 | U | ug/L | 15 | 60 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2,4-Dinitrotoluene | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Benzidine | 100 | U | ug/L | 100 | 400 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Diethyl phthalate | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Hexachlorobutadiene | 3.0 | U | ug/L | 3 | 12 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Hexachlorocyclopentadiene | 3.0 | U | ug/L | 3 | 12 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 3.0 | U | ug/L | 3 | 12 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2,6-Dinitrotoluene | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | 2-Chlorophenol | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Di-n-octyl phthalate | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Hexachlorobenzene | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Priority Organic Pollutants | Di-n-butyl phthalate | 1.0 | U | ug/L | 1 | 4 |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Field Parameter | pH | 7.30 | | | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Field Parameter | Specific Conductance | 6,069 | | umhos/cm | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Field Parameter | Dissolved Oxygen | 7.60 | | mg/L | | |
| 3/11/2013 11:00 | VENICE RO-EFFLUENT | Field Parameter | Temperature | 25.07 | | C | | |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Selenium | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Iron | 30 | U | ug/L | 30 | 120 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Arsenic | 0.25 | U | ug/L | 0.25 | 1 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Cadmium | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Zinc | 5.0 | U | ug/L | 5 | 20 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Calcium | 0.075 | U | mg/L | 0.075 | 0.3 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Magnesium | 0.040 | U | mg/L | 0.04 | 0.16 |

| Date Sampled | Field ID | Analysis Group | Components | Results | Remarks | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Chromium | 0.30 | U | ug/L | 0.3 | 1.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Nickel | 0.25 | U | ug/L | 0.25 | 1 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Sodium | 0.50 | U | mg/L | 0.5 | 2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Lead | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Copper | 0.50 | U | ug/L | 0.5 | 1 |
| 3/11/2013 13:00 | BLANK VENICE RO | Metals | Silver | 0.025 | U | ug/L | 0.025 | 0.1 |
| 3/11/2013 13:00 | BLANK VENICE RO | Nutrients | Sulfate | 0.20 | U | mg SO4/L | 0.2 | 0.5 |
| 3/11/2013 13:00 | BLANK VENICE RO | Nutrients | Organic Carbon | 0.50 | U | mg C/L | 0.5 | 1 |
| 3/11/2013 13:00 | BLANK VENICE RO | Nutrients | Color (true) | 2.5 | U | PCU | 2.5 | 6 |
| 3/11/2013 13:00 | BLANK VENICE RO | Nutrients | Alkalinity | 0.65 | U | mg CaCO3/L | 0.65 | 2.5 |
| 3/11/2013 13:00 | BLANK VENICE RO | Nutrients | Fluoride | 0.035 | U | mg F/L | 0.035 | 0.1 |
| 3/11/2013 13:00 | BLANK VENICE RO | Nutrients | Chloride | 0.20 | U | mg Cl/L | 0.2 | 0.5 |
| 3/11/2013 13:00 | BLANK VENICE RO | Overflow | Radium 226 | 0.2 | | pCi/L | | |
| 3/11/2013 13:00 | BLANK VENICE RO | Overflow | Radium 228 | 0.8 | U | pCi/L | | |
| 3/11/2013 13:00 | BLANK VENICE RO | Overflow | Alpha-Counting Error | 0.4 | | pCi/L | | |
| 3/11/2013 13:00 | BLANK VENICE RO | Overflow | Alpha, Total | 0.7 | U | pCi/L | | |
| 3/11/2013 13:00 | BLANK VENICE RO | Overflow | Radium 226-Counting Error | 0.1 | | pCi/L | | |
| 3/11/2013 13:00 | BLANK VENICE RO | Overflow | Radium 228-Counting Error | 0.5 | | pCi/L | | |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Malathion | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Diazinon | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Butylate | 0.099 | U | ug/L | 0.099 | 0.4 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Alachlor | 0.30 | UJ | ug/L | 0.3 | 1.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Prometryn | 0.099 | U | ug/L | 0.099 | 0.4 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Norflurazon | 0.15 | U | ug/L | 0.15 | 0.6 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Metalaxyl | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Ethoprop | 0.025 | U | ug/L | 0.025 | 0.099 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Azinphos Methyl | 0.099 | U | ug/L | 0.099 | 0.4 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Simazine | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Metolachlor | 0.30 | U | ug/L | 0.3 | 1.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Bromacil | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Atrazine | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Phorate | 0.025 | U | ug/L | 0.025 | 0.099 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Fonofos | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Ethion | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Naled | 0.20 | U | ug/L | 0.2 | 0.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Fenamiphos | 0.15 | U | ug/L | 0.15 | 0.6 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Ametryn | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Parathion Ethyl | 0.099 | U | ug/L | 0.099 | 0.4 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Metribuzin | 0.099 | U | ug/L | 0.099 | 0.4 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Hexazinone | 0.15 | U | ug/L | 0.15 | 0.6 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Chlorpyrifos Methyl | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Parathion Methyl | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Chlorpyrifos Ethyl | 0.050 | U | ug/L | 0.05 | 0.2 |

| Date Sampled | Field ID | Analysis Group | Components | Results | Remarks | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 3/11/2013 13:00 | BLANK VENICE RO | Pesticides | Mevinphos | 0.050 | U | ug/L | 0.05 | 0.2 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Phenanthrene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Pyrene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2,4-Dimethylphenol | 9.7 | U | ug/L | 9.7 | 39 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Anthracene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Di-n-octyl phthalate | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Hexachlorobenzene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 1.9 | U | ug/L | 1.9 | 7.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 4-Nitrophenol | 15 | U | ug/L | 15 | 58 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Pentachlorophenol | 2.9 | UJ | ug/L | 2.9 | 12 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Acenaphthylene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Diethyl phthalate | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Dimethyl phthalate | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Hexachlorobutadiene | 2.9 | U | ug/L | 2.9 | 12 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Hexachlorocyclopentadiene | 2.9 | U | ug/L | 2.9 | 12 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Hexachloroethane | 2.9 | U | ug/L | 2.9 | 12 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Isophorone | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Phenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Benzidine | 97 | U | ug/L | 97 | 390 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 1.9 | U | ug/L | 1.9 | 7.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Fluoranthene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Naphthalene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2-Chloronaphthalene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Acenaphthene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 2.9 | U | ug/L | 2.9 | 12 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Chrysene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2-Nitrophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Butyl benzyl phthalate | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Fluorene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | N-Nitrosodimethylamine | 1.9 | U | ug/L | 1.9 | 7.8 |

| Date Sampled | Field ID | Analysis Group | Components | Results | Remarks | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2,4-Dinitrophenol | 15 | U | ug/L | 15 | 58 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2-Chlorophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 2.9 | U | ug/L | 2.9 | 12 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 39 | U | ug/L | 39 | 160 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Benzo(a)anthracene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Benzo(a)pyrene | 0.19 | U | ug/L | 0.19 | 0.78 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 1.9 | U | ug/L | 1.9 | 7.8 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Di-n-butyl phthalate | 0.97 | U | ug/L | 0.97 | 3.9 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 2.9 | U | ug/L | 2.9 | 12 |
| 3/11/2013 13:00 | BLANK VENICE RO | Priority Organic Pollutants | Nitrobenzene | 1.9 | U | ug/L | 1.9 | 7.8 |

# FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: City of Venice R/O

Address: 200 Warfield Ave N. Zip code

City: Venice County: Sarasota (34292)

Contact/District: Alyssa Mork / South

NPDES Permit #: FL 0035335

LIMS Job #: TLH-2013-03-12-41 LIMS Sample #: 1488631

Lims Data Entry: 3/18/13 MF Data Entry Verification: 3/18/13 MF BA

Sample Collection: Date: 3.11.13 Time: 11:00

Hold Time Start: Date: 3.11.13 Time: 11:00

Comments:

**Initial sample handling:**

Instructions: Check yes or no. If yes is checked, complete blanks

PH adjustment : ☐ yes ☑ no Initial pH: ____ NaOH ____ N HCl ____ N ____ Drops mL Final pH: ____

Aeration : ☐ yes ☑ no Initial DO: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~____bubbles/min

Salinity adjusted (Test 1): ☑ yes ☐ no Initial Salinity: 34.6 Final Salinity: 19.6 (Salts) Hypersaline brine

Salinity adjusted (Test 2): ☑ yes ☐ no Initial Salinity: 34.6 Final Salinity: 19.6 (Salts) Hypersaline brine

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

**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)

| Investigators' Signatures: | Initials: |
|---|---|
| Marshall Faircloth | MF |
| Bruce Black | BA |
| Adrienne Pennington | AP |
| | |
| | |
| | |
| | |
| REVIEWER: Liz Miller | |

| Diluent/Control Batch#: | | | | 3.11.13 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Water Quality Parameters** | 20% DMW | Well Water | Moderately Hard Water | Salt Water (ASW) NSW Test 1 | Salt Water ASW NSW Test 2 | Other: Salinity Adjusted | Original Sample | Measured by | Verified by |
| Field Total Residual $Cl_2$ (mg/L): | N/A | N/A | N/A | N/A | N/A | N/A | 0.00 | facility | MF |
| Lab Total Residual $Cl_2$ (mg/L): | | | | <0.03 | | — | <0.03 | AP/BA | MF |
| Alkalinity (mg/L as $CaCO_3$): | | | | 187 | | — | 303 | MF | AP |
| Hardness (mg/L as $CaCO_3$): | | | | — | | — | — | — | — |
| Total Ammonia (mg/L as N): | | | | <0.017 | | — | 1.512 MF | MF | AP |
| Conductivity: ☐ µmhos ☑ mmhos | | | | 32.6 | | 31.5 MF | ~~31.5 34.6~~ | BA | AP |
| Salinity (ppth): | | | | 20.2 | | 19.6 | ~~19.6 MF~~ | BA | AP |

3/18/13 MF original Conductivity 6.33 mmhos V 1.8 1/13/10

MF original Sample Salinity 3.46ppth

## FDEP Biology Laboratory - Acute Bioassay Survival Bench Sheet

**LIMS Sample #** 148631 **SOP#: TA 07_03** **Test #** 1 of 2

**Test Species:**
Batch #: 3.12.13 Age: 4 days
- ☐ *Ceriodaphnia dubia*
- ☐ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☐ *Menidia beryllina*
- ☑ *Americamysis bahia*
- ☐ Other:_____

**Test Validation**
Control Survival ≥ 90%: ☑ Yes ☐ No
Temperature Range ≤ 3° C: ☑ Yes ☐ No

**Diluent (Batch # 3-11-13)**
☑ ASW ☐ MHWCD ☐ MHW ☐ Well

**Test Type:** ☐ Screen ☑ Definitive ☐ Static ☑ Static Renewal ☐ Flow-Through

**Test Duration:** ☐ 48 hr ☑ 96 hr ☐ ___hr

**Test Started:** Date 3.12.13 Time 1430

**Test Ended:** Date 3.16.13 Time 11:10

**Chamber Size** 400 ml
**Test Volume:** 300 ml

| Concentration | Replicate | Chamber # | Test Hour 0 hr | 24 hr | 48 hr BR | 48 hr AR | 72 hr | 96 hr |
|---|---|---|---|---|---|---|---|---|
| CTL | A | L1 | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | L2 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | L3 | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | L4 | 5 | 5 | 5 | 5 | 5 | 5 |
| 6.25% | A | L5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | L6 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | L7 | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | L8 | 5 | 4 1D | 4 | 4 | 4 | 4 |
| 12.5% | A | L9 | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | L10 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | L11 | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | L12 | 5 | 5 | 5 | 5 | 5 | 5 |
| 25% | A | L13 | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | L14 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | L15 | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | L16 | 5 | 5 | 5 | 5 | 5 | 5 |
| 50% | A | L17 | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | L18 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | L19 | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | L20 | 5 | 5 | 5 | 5 | 5 | 5 |
| 100% | A | L21 | 5 | 3 2D | 1 2D | 1 | 0 1D | – |
| | B | L22 | 5 | 4 1D | 2 2D | 2 | 2 | 1 1D |
| | C | L23 | 5 | 5 | 4 1D | 4 | 3 1D | 1 2D |
| | D | L24 | 5 | 5 | 4 1D | 4 | 3 1D | 1 2D |
| Salt Control | A | Y1 | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | Y2 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | Y3 | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | Y4 | 5 | 5 | 5 | 5 | 5 | 5 |
| | A | | | | | | | |
| | B | | | | | | | |
| | C | | | | | | | |
| | D | | | | | | | |
| Checked or Verified by: | | | MF | BA | AP | AP | AP | AP |

**Food**
- ☐ YCT Batch#_____
- ☐ P. subcapitata Batch#_____
- ☑ Artemia Lot# 08812

**Feeding and Artemia Batch #**
47.13
- ☑ 0 hr 48.13 ☑ Prior to Test
- ☑ 24 hr 49.13 48.13 AP
- ☑ 48 hr 50.13 ☑ 49.13 Prior to
- ☑ 72 hr 51.13 Renewal
50.13

**Temperature Range (°C)**
Incubator # 2
min. 24.5 max. 25.8 mean –

Incubator #___
min._____max._____mean_____

Waterbath #___
min._____max._____mean_____

Room B246
min. 24.8 max. 25.6 mean –

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: BA MF
m = missing, d = dead, BR/AR Before/ After Renewal

**Test Results:**
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 85% LC50: 74.85
Calculated LC50 (Definitive) 95% CI 69.18 – 80.99 Method TSK

**Comments:**

V. 2.6 2-15-13

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

Page 000 8

LIMS Sample # 1488631 SOP#: TA 07 04 Test # 2 of 2

**Test Species:**
Batch #: 3.12.13 Age: 12 days
- ☐ *Ceriodaphnia dubia*
- ☐ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☑ *Menidia beryllina*
- ☐ *Americamysis bahia*
- ☐ Other:_____

**Test Validation**
Control Survival ≥ 90%:
☐ Yes ☐ No
Temperature Range ≤ 3° C:
☐ Yes ☐ No

**Diluent (Batch # 3.11.13)**
☑ ASW ☐ MHWCD
☐ MHW ☐ Well

**Test Type:** ☐ Screen ☑ Definitive
☐ Static ☑ Static Renewal ☐ Flow-Through

**Test Duration:**
☐ 48 hr
☑ 96 hr
☐ ___hr

**Test Started:** Date 3.12.13 Time 1445

**Test Ended:** Date 3.16.13 Time 10:50

**Chamber Size** 1000 ml
**Test Volume:** 500 ml

| Concentration | Replicate | Chamber # | Test Hour 0 hr | 24 hr | 48 hr BR | 48 hr AR | 72 hr | 96 hr |
|---|---|---|---|---|---|---|---|---|
| Control | A | G-1 | 10 | 10 | 10 | 10 | 10 | 10 |
| | B | G-2 | 10 | 10 | 10 | 10 | 10 | 10 |
| 6.25% | A | G-3 | 10 | 10 | 10 | 10 | 10 | 10 |
| | B | G-4 | 10 | 10 | 9 1D | 9 | 9 | 9 |
| 12.5% | A | G-5 | 10 | 9 1D | 9 | 9 | 9 | 9 |
| | B | G-6 | 10 | 9 1D | 9 | 9 | 9 | 9 |
| 25% | A | G-7 | 10 | 9 1D | 8 1D | 8 | 8 | 8 |
| | B | G-8 | 10 | 10 | 9 1D | 9 | 9 | 9 |
| 50% | A | G-9 | 10 | 10 | 10 | 10 | 9 1D | 9 |
| | B | G-10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 100% | A | G-11 | 10 | 10 | 10 | 10 | 9 1D | 9 |
| | B | G-12 | 10 | 9 1D | 9 | 9 | 9 | 9 |
| Std Control | A | G-13 | 10 | 10 | 10 | 10 | 10 | 10 |
| | B | G-14 | 10 | 8 2D | 8 | 8 | 8 | 8 |
| | | | | | | | | |
| | | | | | | | | |
| Checked or Verified by: | | | MF | BA | AP | BA | BA | AP |

Loaded/ Verified by: BA / MF
m = missing, d = dead, BR/AR Before/ After Renewal

**Food**
- ☐ YCT Batch#_____
- ☐ P. subcapitata Batch#_____
- ☑ Artemia Lot# 08812

**Feeding and Artemia Batch #**
47.13 AP
- ☑ 0 hr 48.13 ☑ Prior to Test
- ☐ 24 hr ___ 49.13 AP
- ☑ 48 hr 50.13 ☑ Prior to Renewal
- ☐ 72 hr ___

**Temperature Range (°C)**
Incubator # 2
min 24.5 max 25.8 mean ___
Incubator #___
min.___ max.___ mean___
Waterbath #___
min.___ max.___ mean___
Room B246
min 24.8 max 25.6 mean ___
Light intensity (ft. candles): 50-100
Photoperiod (hours): 16 light, 8 dark

**Test Results:**
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 10% LC50: >100%
Calculated LC50 (Definitive) 95% CI_____ Method_____

**Comments:**

V. 2.6 2-15-13

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

LIMS Sample #1488631 Test # 1 of 2

**Test Species:**

☐ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☒ *Americamysis bahia*
☐ *Cyprinella leedsi* ☐ *Menidia beryllina* ☐ Other:_____

**Test aerated:** (if DO is < 4.0 mg/L)
☐ Yes ☒ No

| Concentration | Replicate | Test Hour | pH (SU) | Temperature (°C) | Dissolved Oxygen (mg/L) | Conductivity ☐ µmhos ☑ mmhos | Salinity* (ppth) |
|---|---|---|---|---|---|---|---|
| ctrl | A | 0 hr | 8.2 | 25.4 | 6.7 | 32.6 | 20.2 |
| | B | 24 hr | 8.2 | 25.8 | 5.8 | 33.7 | 21.0 |
| | C | 48 hr BR | 8.1 | 25.4 | 6.2 | 36.3 | 22.9 |
| | C | 48 hr AR | 8.2 | 23.1 | 6.7 | 34.4 | 19.4 |
| | D | 72 hr | 8.0 | 24.1 | 5.2 | 36.3 | 21.9 |
| | A | 96 hr | 8.0 | 24.1 | 5.8 | 35.7 | 22.2 |
| 6.25% | A | 0 hr | 8.2 | 24.6 | 6.8 | 33.1 | 20.7 |
| | B | 24 hr | 8.1 | 25.6 | 5.6 | 33.5 | 21.0 |
| | C | 48 hr BR | 8.1 | 25.4 | 6.1 | 35.1 | 21.9 |
| | C | 48 hr AR | 8.1 | 23.4 | 6.7 | 34.0 | 21.4 |
| | D | 72 hr | 8.0 | 24.3 | 5.3 | 35.5 | 22.1 |
| | A | 96 hr | 8.0 | 24.4 | 5.8 | 35.8 | 22.3 |
| 12.5% | A | 0 hr | 8.2 | 24.4 | 6.7 | 33.1 | 20.7 |
| | B | 24 hr | 8.1 | 25.8 | 5.6 | 33.6 | 21.0 |
| | C | 48 hr BR | 8.0 | 24.7 | 5.5 | 34.2 | 21.3 |
| | C | 48 hr AR | 8.1 | 23.2 | 6.6 | 33.7 | 21.2 |
| | D | 72 hr | 8.0 | 24.1 | ~~6.~~ AP 5.4 | 35.2 | 21.9 |
| | A | 96 hr | 8.0 | 24.5 | 5.7 | 36.6 | 22.8 |
| 25% | A | 0 hr | 8.2 | 24.3 | 6.6 | 32.9 | 20.6 |
| | B | 24 hr | 8.1 | 25.2 | 5.6 | 33.2 | 20.7 |
| | C | 48 hr BR | 8.1 | 24.8 | 5.6 | 34.0 | 21.2 |
| | C | 48 hr AR | 8.1 | 23.0 | 6.6 | 33.3 | 20.7 |
| | D | 72 hr | 8.0 | 24.7 | 5.3 | 34.8 | 21.6 |
| | A | 96 hr | 8.0 | 24.3 | 5.6 | 36.1 | 22.5 |
| 50% | A | 0 hr | 8.1 | 24.2 | 6.6 | 32.3 | 20.2 |
| | B | 24 hr | 8.1 | 25.0 | 5.8 | 32.7 | 20.4 |
| | C | 48 hr BR | 8.1 | 24.6 | 5.7 | 33.0 | 20.4 |
| | C | 48 hr AR | 8.1 | 23.4 | 6.5 | 32.5 | 20.3 |
| | D | 72 hr | 8.1 | 24.4 | 5.2 | 34.5 | 21.5 |
| | A | 96 hr | 8.1 | 24.6 | 5.5 | 35.1 | 21.9 |
| 100% | A | 0 hr | 7.9 | 24.3 | 6.6 | 31.5 | 19.6 |
| | B | 24 hr | 8.1 | 24.9 | 5.9 | 32.0 | 19.9 |
| | C | 48 hr BR | 8.2 | 24.1 | 5.7 | 33.4 | 20.7 |
| | C | 48 hr AR | 8.1 | 23.4 | 6.5 | 32.2 | 20.1 |
| | D | 72 hr | 8.1 | 24.3 | 6.0 | 33.9 | 21.0 |
| | B | 96 hr | 8.2 | 24.5 | 5.7 | 34.1 | 21.3 |
| Salt ctrl | A | 0 hr | 8.3 | 24.4 | 6.6 | 30.8 | 19.2 |
| | B | 24 hr | 8.2 | 25.6 | 6.2 | 31.0 | 19.2 |
| | C | 48 hr BR | 8.1 | 25.8 | 6.2 | 31.1 | 19.5 |
| | C | 48 hr AR | 8.2 | 23.4 | 6.8 | 30.8 | 19.4 AP |
| | D | 72 hr | 8.1 | 24.9 | 6.0 | 31.5 | 19.85 |
| | A | 96 hr | 8.0 | 24.2 | 5.7 | 32.0 | 19.7 |
| | | 0 hr | | | | | |
| | | 24 hr | | | | | |
| | | 48 hr BR | | | | | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |

*Measure/ record salinity for marine tests

Comments:

| Measured By: |
|---|
| 0 hr: BA |
| 24 hr: AP/BA |
| 48 hr BR: AP |
| 48 hr AR: AP |
| 72 hr: AP |
| 96 hr: AP |

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V. 2.3 1-13-10

## FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1488631 Test # 2 of 2

**Test Species:**

☐ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☐ *Americamysis bahia*
☐ *Cyprinella leedsi* ☒ ~~*Menidia beryllina*~~ ☐ Other:_____

**Test aerated:**
(if DO is < 4.0 mg/L)
☐ Yes ☒ No

| Concentration | Replicate | Test Hour | pH (SU) | Temperature (°C) | Dissolved Oxygen (mg/L) | Conductivity ☐ µmhos ☒ mmhos | Salinity* (ppth) |
|---|---|---|---|---|---|---|---|
| | A | 0 hr | 8.2 | 25.4 | 6.7 | 32.6 | 20.2 |
| | B | 24 hr | 8.2 | 24.2 | 6.0 | 33.4 | 20.8 |
| ctrl | A | 48 hr BR | 8.2 | 25.1 | 6.6 | 34.1 | 21.3 |
| | A | 48 hr AR | 8.2 | 23.5 | 7.0 | 33.9 | 19.1 |
| | B | 72 hr | 8.2 | 24.6 | 6.4 | 34.9 | 21.8 |
| | A | 96 hr | 8.1 | 25.0 | 6.3 | 35.7 | 22.5 |
| | A | 0 hr | 8.2 | 24.6 | 6.8 | 33.1 | 20.7 |
| | B | 24 hr | 8.2 | 24.4 | 6.3 | 33.5 | 20.9 |
| 6.25% | A | 48 hr BR | 8.2 | 25.3 | 6.5 | 34.4 | 21.5 |
| | A | 48 hr AR | 8.2 | 23.6 | 6.9 | 33.9 | 21.4 |
| | B | 72 hr | 8.2 | 24.5 | 6.4 | 35.1 | 22.0 |
| | A | 96 hr | 8.1 | 24.8 | 5.7 | 35.6 | 22.4 |
| | A | 0 hr | 8.2 | 24.4 | 6.7 | 33.1 | 20.7 |
| | B | 24 hr | 8.2 | 24.0 | 6.5 | 33.3 | 20.9 |
| 12.5% | A | 48 hr BR | 8.2 | 24.9 | 6.4 | 33.8 | 21.0 |
| | A | 48 hr AR | 8.2 | 23.8 | 6.9 | 33.8 | 21.2 |
| | B | 72 hr | 8.1 | 24.5 | 6.2 | 35.0 | 21.9 |
| | A | 96 hr | 8.1 | 25.2 | 5.8 | 35.7 | 22.5 |
| | A | 0 hr | 8.2 | 24.3 | 6.6 | 32.9 | 20.6 |
| | B | 24 hr | 8.2 | 24.3 | 6.6 | 33.2 | 20.8 |
| 25% | A | 48 hr BR | 8.2 | 25.7 | 6.6 | 33.9 | 21.1 |
| | A | 48 hr AR | 8.2 | 23.7 | 6.8 | 33.2 | 20.8 |
| | B | 72 hr | 8.2 | 24.6 | 6.1 | 34.2 | 21.4 |
| | A | 96 hr | 8.1 | 25.1 | 5.8 | 35.5 | 22.3 |
| | A | 0 hr | 8.1 | 24.2 | 6.6 | 32.3 | 20.2 |
| | B | 24 hr | 8.2 | 24.4 AP | 6.7 | 32.4 | 20.2 |
| 50% | A | 48 hr BR | 8.2 | 25.3 | 6.5 | 32.9 | 20.4 |
| | A | 48 hr AR | 8.2 | 23.9 | 6.7 | 32.7 | 20.6 |
| | B | 72 hr | 8.1 | 24.6 | 6.1 | 33.3 | 20.8 |
| | A | 96 hr | 8.2 | 24.8 | 5.9 | 34.2 | 21.4 |
| | A | 0 hr | 7.9 | 24.3 | 6.6 | 31.5 | 19.6 |
| | B | 24 hr | 8.1 | 24.5 | 6.7 | 32.0 | 19.9 |
| 100% | A | 48 hr BR | 8.2 | 25.7 | 6.5 | 32.2 | 19.9 |
| | A | 48 hr AR | 8.1 | 24.9 | 6.7 | 32.2 | 20.1 |
| | B | 72 hr | 8.1 | 24.7 | 5.6 | 32.1 | 19.9 |
| | A | 96 hr | 8.2 | 25.4 | 6.0 | 33.7 | 21.1 |
| | A | 0 hr | 8.3 | 24.4 | 6.6 | 30.8 | 19.2 |
| | B | 24 hr | 8.3 | 24.2 | 6.8 | 30.9 | 19.1 |
| Salt | A | 48 hr BR | 8.2 | 24.0 | 6.5 | 31.2 | 19.4 |
| ctrl | A | 48 hr AR | 8.2 | 23.6 | 7.1 | 30.4 | 19.1 |
| | B | 72 hr | 8.2 | 24.7 | 6.3 | 31.9 | 19.8 |
| | A | 96 hr | 8.2 | 24.9 | 6.6 | 32.4 | 20.3 |
| | | 0 hr | | | | | |
| | | 24 hr | | | | | |
| | | 48 hr BR | | | | | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |

*Measure/ record salinity for marine tests

**Comments:**

| Measured By: |
|---|
| 0 hr: BA |
| 24 hr: AP/BA |
| 48 hr BR: AP |
| 48 hr AR: AP |
| 72 hr: AP |
| 96 hr: AP |

Test ID: City of Venice R/O  Dates: 3/12/13 — 3/16/13

| METER / DEVICE | ID | SOP | Parameter | Method | √ 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 #1 | 05110C042029 | TA06_22 | Total Residual Chlorine | EPA 330.5 SM 4500 CL G | √ |
| Hach Pocket Colorimeter II #2 | 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 | NA |
| 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)

Entered By: M. Faircloth 3/18/13

V 1.3 2/15/13 MF

## Appendix F.
## Standard Reference Toxicant Data

Florida Department of Environmental Protection
Bureau of Laboratories

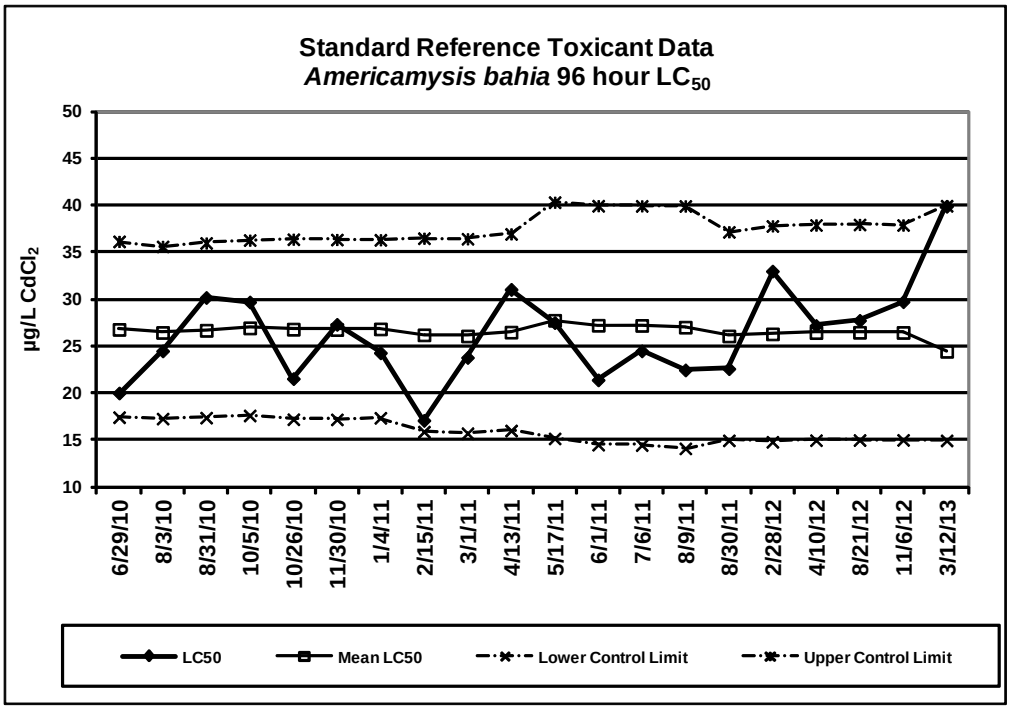
Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
*Americamysis bahia* (mysid shrimp) - Cadmium Chloride ($CdCl_2$)

| Date | LC50 | Mean LC50 | Std Dev | Lower Control Limit | Upper Control Limit |
|---|---|---|---|---|---|
| 6/29/10 | 20.00 | 26.78 | 4.68 | 17.42 | 36.15 |
| 8/3/10 | 24.49 | 26.45 | 4.59 | 17.27 | 35.62 |
| 8/31/10 | 30.17 | 26.68 | 4.66 | 17.37 | 35.99 |
| 10/5/10 | 29.70 | 26.94 | 4.67 | 17.60 | 36.29 |
| 10/26/10 | 21.53 | 26.80 | 4.80 | 17.20 | 36.39 |
| 11/30/10 | 27.31 | 26.76 | 4.79 | 17.18 | 36.35 |
| 1/4/11 | 24.29 | 26.83 | 4.74 | 17.35 | 36.32 |
| 2/15/11 | 17.08 | 26.19 | 5.15 | 15.88 | 36.49 |
| 3/1/11 | 23.78 | 26.07 | 5.18 | 15.71 | 36.43 |
| 4/13/11 | 31.04 | 26.48 | 5.24 | 16.00 | 36.95 |
| 5/17/11 | 27.50 | 27.75 | 6.29 | 15.16 | 40.33 |
| 6/1/11 | 21.40 | 27.22 | 6.36 | 14.49 | 39.95 |
| 7/6/11 | 24.49 | 27.20 | 6.37 | 14.45 | 39.94 |
| 8/9/11 | 22.46 | 27.01 | 6.46 | 14.09 | 39.93 |
| 8/30/11 | 22.59 | 26.07 | 5.55 | 14.96 | 37.17 |
| 2/28/12 | 32.99 | 26.30 | 5.75 | 14.80 | 37.80 |
| 4/10/12 | 27.19 | 26.44 | 5.73 | 14.97 | 37.90 |
| 8/21/12 | 27.74 | 26.47 | 5.74 | 14.99 | 37.95 |
| 11/6/12 | 29.73 | 26.45 | 5.73 | 15.00 | 37.90 |
| 3/12/13 | 39.90 | 24.44 | 6.25 | 14.94 | 39.95 |

**CV = 22.78**

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

EPA reference 75th quartile CV = 26%



# FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

**Test Organism:** (check one)
- ☑ *Americamysis bahia* — Method 2007.0 TA07.03
- ☐ *Menidia Beryllina* — Method 2006.0 TA07.04
- ☐ *Hyalella azteca* — Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* — Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* — Method 2000.0 TA07.02
- ☐ *Pimephales promelas* — Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

**Diluent/ Batch #:** ASW 1.3.11.13 **Organism** Batch: 3.12.13 **Test Beginning:** Date: 3-12-13 Time: 1205

**Toxicant/ Batch#:** CaCl 1-3-12-13 Age: 4days **Test Ending:** Date: 3.16.13 Time: 10:45

| Water Quality Parameters: | Diluent | SOP | Initials |
|---|---|---|---|
| Total Residual $Cl_2$ (mg/L): | <0.03 | TA06_22 | AP |
| Alkalinity (mg/L as $CaCO_3$): | AP 168185 | TA06_08 | MF |
| Hardness (mg.L as $CaCO_3$): | — | TA06_09 | — |
| Total Ammonia (mg/L as N): | <0.017 | TA06_17 | MF |
| Conductivity: µmhos (mmhos) | 33.3 | TA06_25 | MF |
| Salinity (ppth): | 20.5 | TA06_25 | MF |

| Food: | Batch |
|---|---|
| ☐ YCT | |
| ☐ *P. subcapitata* | |
| ☑ Artemia Lot # 08812 | |

Artemia Batch:
- 0 hr: ~~48.13~~ 47.13
- 24 hr: ~~49.13~~ 48.13 AP
- 48 hr: ~~50.13~~ 49.13
- 72 hr: 50.13

**Chamber size:** 400 mL

**Test volume:** 300 mL per replicate

Concentrations prepared by: AP

Temperature Range °C:(if used)

Test Incubated in: Incubator # 2 Waterbath # ____ Incubator # 2 min 24.5 max 25.8 mean —

Light Intensity: 50-100 Ft. candles Waterbath # ___ min.____ max.____ mean____

Photoperiod: 16 hours Light / 8 hours dark Room B246 min 24.8 max 25.6 mean —

**Feeding:** √ as needed
- ☑ Before test
- ☑ 24 hr
- ☑ 48 hr
- ☑ 72 hr

all species 2 hrs prior to test

mysids daily

all species except *H. azteca* 2 hr prior to renewal

*H. azteca* 0 hr and 48 hr

| *H. azteca* | | |
|---|---|---|
| 0 hr | Alk | Hrd |
| Well | | |
| 100% | | |
| 96 hr | Alk | Hrd |
| Well | | |
| 100% | | |

| Concentration µg/L mg/L g/L | Replicate | Chamber # | Test Hour 0 hr | 24 hr | 48 hr BR | 48 hr AR | 72 hr | 96 hr |
|---|---|---|---|---|---|---|---|---|
| Control | A | K1 | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | K2 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | K3 | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | K4 | 5 | 5 | 5 | 5 | 5 | 5 |
| 20 | A | K5 | 5 | 5 | 4ID | 4 | 4 | 4 |
| | B | K6 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | K7 | 5 | 5 | 4ID | 4 | 4 | 4 |
| | D | K8 | 5 | 5 | 5 | 5 | 5 | 5 |
| 30 | A | K9 | 5 | 5 | 5 | 5 | 4ID | 4 |
| | B | K10 | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | K11 | 5 | 5 | 5 | 5 | 5 | 4ID |
| | D | K12 | 5 | 5 | 5 | 5 | 5 | 4ID |
| 45 | A | K13 | 5 | 4ID | 2 2D | 2 | 1ID | 0ID |
| | B | K14 | 5 | 5 | 5 | 5 | 2 3D | 2 |
| | C | K15 | 5 | 4ID | 4 | 4 | 4 | 3ID |
| | D | K16 | 5 | 5 | 4ID | 4 | 3ID | 2ID |
| 67 | A | K17 | 5 | 4ID | 1 3D | 1 | 1 | 0ID |
| | B | K18 | 5 | 5 | 0 5D | - | — | — |
| | C | K19 | 5 | 4ID | 0 4D | - | — | — |
| | D | K20 | 5 | 4ID | 0 4D | - | — | — |
| 100 | A | K21 | 5 | 4ID | 0 4D | - | — | — |
| | B | K22 | 5 | 4ID | 0 4D | - | — | — |
| | C | K23 | 5 | 4ID | 0 4D | - | — | — |
| | D | K24 | 5 | 5 | 0 5D | - | — | — |
| Organisms loaded by: BA | Checked by: | MF | BA | AP | BA | BA | AP | |

Loading Verified by: MF AR = after renewal

m = missing d = dead BR = before renewal hr = hour

Investigators' Signatures

Marshall Faircloth

Bruce Alexander

Shawna Pennington

Reviewer: Liz Miller

**Comments:**

| Method: TSK | 95% confidence intervals | |
|---|---|---|
| **Statistics:** LC50 | Lower | Upper |
| 48 hour: — | — | — |
| 96 hour: 39.90 | 34.85 | 45.67 |

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PAGE

Revised 7/15/2008 mf

## FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters

Methods from EPA-821-R-02-012 except *H. azteca*

Test Page 2 of 2

**Test Organism:** (check one)
- ☑ *Americamysis bahia* Method 2007.0 TA07.03
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

**Test Beginning:** Date: 3-12-13 Time: 1205
**Test Ending:** Date: 3-16-13 Time: 10:45

Test Type: ☐ non-renewal ☒ renewal

hr = hour AR = after renewal BR = before renewal

| Concentration (µg/L mg/L g/L) | Replicate | Test Hour | pH (SU) | Temperature (°C) | Dissolved Oxygen (mg/L) | Conductivity ☐ µmhos ☑ mmhos | Salinity (ppth) |
|---|---|---|---|---|---|---|---|
| Control | A | 0 hr | 8.3 | 24.0 | 7.0 | 33.3 | 20.5 |
| | B | 24 hr | 8.2 | 24.1 | 6.5 | 34.0 | 21.3 |
| | C | 48 hr BR | 8.1 | 24.7 | 6.4 | 34.8 | 20.4 |
| | C | 48 hr AR | 8.2 | 23.1 | 6.7 | 34.5 | 21.2 |
| | D | 72 hr | 8.1 | 25.3 | 5.6 | 35.8 | 21.3 |
| | A | 96 hr | 8.1 | 25.0 | 5.9 | 37.0 | 22.6 |
| 20 | A | 0 hr | 8.3 | 24.0 | 7.1 | 33.5 | 20.6 |
| | B | 24 hr | 8.2 | 24.7 | 6.5 | 34.0 | 21.3 |
| | C | 48 hr BR | 8.1 | 24.4 | 6.1 | 35.3 | 20.7 |
| | C | 48 hr AR | 8.2 | 23.4 | 6.7 | 34.1 | 20.9 |
| | D | 72 hr | 8.1 | 25.2 | 5.6 | 35.9 | 21.2 |
| | A | 96 hr | 8.1 | 24.7 | 5.9 | 36.7 | 22.3 |
| 30 | A | 0 hr | 8.3 | 24.1 | 7.2 | 33.6 | 20.7 |
| | B | 24 hr | 8.2 | 24.6 | 6.6 | 33.9 | 21.2 |
| | C | 48 hr BR | 8.1 | 25.2 | 6.0 | 34.6 | 20.3 |
| | C | 48 hr AR | 8.2 | 23.4 | 6.6 | 34.6 | 21.0 |
| | D | 72 hr | 8.1 | 25.2 | 5.6 | 35.6 | 21.2 |
| | A | 96 hr | 8.1 | 24.6 | 5.9 | 36.9 | 22.5 |
| 45 | A | 0 hr | 8.3 | 24.1 | 7.2 | 33.7 | 20.7 |
| | B | 24 hr | 8.2 | 24.5 | 6.6 | 33.9 | 21.2 |
| | C | 48 hr BR | 8.1 | 24.5 | 5.8 | 35.4 | 20.8 |
| | C | 48 hr AR | 8.2 | 23.3 | 6.6 | 34.7 | 21.1 |
| | D | 72 hr | 8.1 | 25.0 | 5.6 | 35.5 | 21.1 |
| | A | 96 hr | 8.1 | 24.5 | 5.8 | 36.0 | 22.0 |
| 67 | A | 0 hr | 8.3 | 24.2 | 7.1 | 33.4 | 20.6 |
| | B | 24 hr | 8.2 | 24.6 | 6.6 | 33.6 | 21.0 |
| | C | 48 hr BR | 8.1 | 25.4 | 5.9 | 34.7 | 20.5 |
| | A | 48 hr AR | 8.2 | 23.3 | 6.5 | 34.2 | 20.8 |
| | A | 72 hr | 8.1 | 25.8 | 5.5 | 35.2 | 21.2 |
| | A | 96 hr | 8.1 | 24.7 | 5.8 | 35.8 | 21.9 |
| 100 | A | 0 hr | 8.3 | 24.2 | 7.1 | 33.6 | 20.8 |
| | B | 24 hr | 8.2 | 24.3 | 6.6 | 34.2 | 21.4 |
| | C | 48 hr BR | 8.1 | 25.0 | 5.8 | 34.9 | 20.9 |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |

Investigators Signatures
Marshall Faircloth
Anne Alexander
Adrienne Pennington

Reviewed By: Liz Miller

Measured by:
0 hr: MF
24 hr: AP/AA
48 hr BR: AP
48 hr AR: AP
72 hr: AP
96 hr: AP

Measure/record salinity for marine tests

Comments:

000010

PAGE

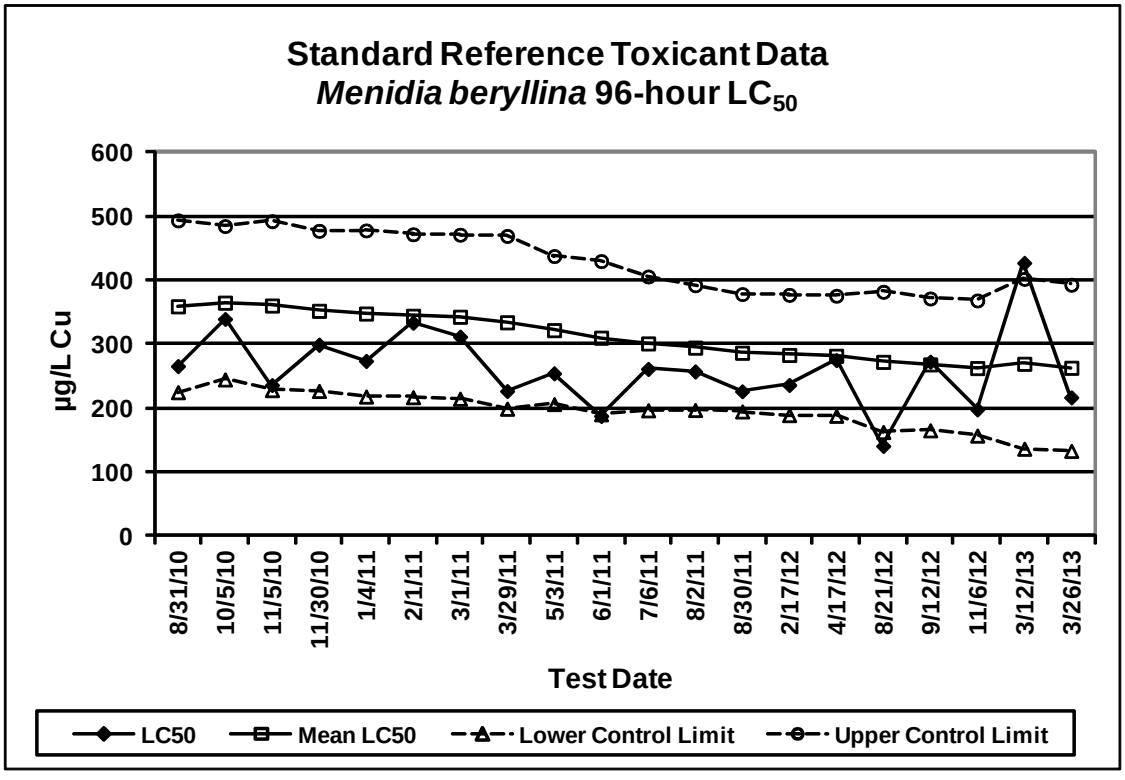
Revised 07/15/2008 MF

Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
*Menidia beryllina* (inland silverside) - Copper Chloride ($CuCl_2$) as Cu

| Date | LC50 | Mean LC50 | Std Dev | Lower Control Limit | Upper Control Limit |
|---|---|---|---|---|---|
| 8/31/10 | 266.23 | 359.85 | 67.19 | 225.46 | 494.23 |
| 10/5/10 | 340.06 | 365.40 | 60.01 | 245.39 | 485.42 |
| 11/5/10 | 236.68 | 360.93 | 66.11 | 228.71 | 493.15 |
| 11/30/10 | 299.75 | 352.65 | 62.62 | 227.41 | 477.89 |
| 1/4/11 | 274.39 | 348.59 | 65.00 | 218.58 | 478.60 |
| 2/1/11 | 334.16 | 345.13 | 63.77 | 217.60 | 472.66 |
| 3/1/11 | 312.31 | 343.58 | 64.19 | 215.20 | 471.96 |
| 3/29/11 | 227.2 | 334.81 | 67.59 | 199.62 | 470.00 |
| 5/3/11 | 255.03 | 322.69 | 57.93 | 206.82 | 438.55 |
| 6/1/11 | 188.24 | 310.77 | 59.92 | 190.93 | 430.62 |
| 7/6/11 | 261.89 | 301.82 | 52.33 | 197.15 | 406.48 |
| 8/2/11 | 257.93 | 295.20 | 48.81 | 197.58 | 392.81 |
| 8/30/11 | 226.9 | 287.16 | 45.93 | 195.30 | 379.02 |
| 2/17/12 | 236.77 | 283.69 | 47.03 | 189.63 | 377.76 |
| 4/17/12 | 275.73 | 282.54 | 46.92 | 188.69 | 376.38 |
| 8/21/12 | 141.42 | 272.92 | 54.90 | 163.12 | 382.71 |
| 9/12/12 | 273.15 | 268.94 | 51.60 | 165.74 | 372.14 |
| 11/6/12 | 198.5 | 263.29 | 52.87 | 157.56 | 369.03 |
| 3/12/13 | 427.86 | 269.96 | 66.44 | 137.08 | 402.85 |
| 3/26/13 | 217.38 | 263.62 | 65.02 | 133.58 | 393.66 |

**CV = 24.66**
EPA reference 75th quartile CV = 21%



## FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

**Test Organism:** (check one)
☐ *Americamysis bahia* Method 2007.0 TA07.03 ☑ *Menidia Beryllina* Method 2006.0 TA07.04 ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01 ☐ *Cyprinella leedsi* Method 2000.0 TA07.02 ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☑ renewal
Test Page 1 of 2

**Diluent/ Batch #:** ASW 1.31.13
**Toxicant/ Batch#:** $CuCl_2$ 1.3.26.13
**Organism Batch:** 3.26.13 Age: 13 days
**Test Beginning:** Date: 3.26.13 Time: 1315
**Test Ending:** Date: 3.30.13 Time: 0900

| Water Quality Parameters: | Diluent | SOP | Initials |
|---|---|---|---|
| Total Residual $Cl_2$ (mg/L): | <0.03 | TA06_22 | AP |
| Alkalinity (mg/L as $CaCO_3$): | 187 | TA06_08 | MF |
| Hardness (mg.L as $CaCO_3$): | — | TA06_09 | — |
| Total Ammonia (mg/L as N): | <0.017 | TA06_17 | MF |
| Conductivity: µmhos (mmhos) | 33.6 | TA06_25 | AP |
| Salinity (ppth): | 20.7 | TA06_25 | AP |

| Food: | Batch |
|---|---|
| ☐ YCT | |
| ☐ *P. subcapitata* | |
| ☑ Artemia Lot # | 08812 |

Artemia Batch:
0 hr 3 AP 3.26.13
24 hr:
48 hr: 3.28.13
72 hr:

**Chamber size:** 1000 mL
**Test volume:** 500 mL per replicate

Concentrations prepared by: MF
Test Incubated in: Incubator # 2 Waterbath # ____
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:(if used)
Incubator # 2 min. 25.1 max. 26.2 mean —
Waterbath # ___ min.____ max.____ mean____
Room B246 min: 24.1 max. 25.5 mean —

**Feeding:** √ as needed

| | |
|---|---|
| ☑ | Before test |
| ☐ | 24 hr |
| ☑ | 48 hr |
| ☐ | 72 hr |

all species 2 hrs prior to test
mysids daily
all species except *H. azteca* 2 hr prior to renewal
*H. azteca* 0 hr and 48 hr

| Concentration (µg/L) mg/L g/L | Replicate | Chamber # | Test Hour 0 hr | 24 hr | 48 hr BR | 48 hr AR | 72 hr | 96 hr |
|---|---|---|---|---|---|---|---|---|
| Control | A | F1 | 10 | 10 | 10 | 10 | 10 | 10 |
| | B | F2 | 10 | 10 | 10 | 10 | 10 | 10 |
| 100 | A | F3 | 10 | 10 | 10 | 10 | 10 | 10 |
| | B | F4 | 10 | 9 1D | 9 | 9 | 9 | 9 |
| 200 | A | F5 | 10 | 8 2D | 8 | 8 | 8 | 8 |
| | B | F6 | 10 | 6 4D | 6 | 6 | 6 | 6 |
| 300 | A | F7 | 10 | 3 7D | 3 | 3 | 3 | 2 1D |
| | B | F8 | 10 | 2 8D | 1 1D | 1 | 1 | 1 |
| 400 | A | F9 | 10 | 0 10D | | | | |
| | B | F10 | 10 | 0 10D | | | | |
| 500 | A | F11 | 10 | 0 10D | | | | |
| | B | F12 | 10 | 0 10D | | | | |
| Organisms loaded by: AP | | Checked by: | MF | AP | AP | AP | CR | AP |

Loading Verified by: MF AR = after renewal
m = missing d = dead BR = before renewal hr = hour

| *H. azteca* | | |
|---|---|---|
| 0 hr | Alk | Hrd |
| Well | | |
| 100% | | |
| 96 hr | Alk | Hrd |
| Well | | |
| 100% | | |

**Comments:**

Investigators' Signatures
Adriana Pennington
Cassidy Beckett
Bruce Ahrens
Meredith Faridah
Reviewer: Liz Miller

Method: TSK

| Statistics: LC50 | 95% confidence intervals Lower | Upper |
|---|---|---|
| 48 hour: | — | — |
| 96 hour: 217.38 | 188.38 | 250.34 |

0003.13

PAGE

Revised 7/15/2008 mf

## FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters

Methods from EPA-821-R-02-012 except *H. azteca*

Test Page 2 of 2

**Test Organism:** (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☑ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

**Test Beginning:** Date: 3.26.13 Time: 1315
**Test Ending:** Date: 3.30.13 Time: 0900

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

| Concentration µg/L mg/L g/L | Replicate | Test Hour | pH (SU) | Temperature (°C) | Dissolved Oxygen (mg/L) | Conductivity ☐ µmhos ☑ mmhos | Salinity (ppth) |
|---|---|---|---|---|---|---|---|
| Control | A | 0 hr | 8.1 | 23.9 | 8.3 | 33.6 | 20.7 |
| | B | 24 hr | 8.1 | 24.8 | 6.6 | 34.4 | 21.7 |
| | A | 48 hr BR | 8.1 | 25.0 | 7.0 | 36.3 | 22.5 |
| | A | 48 hr AR | 8.1 | 24.0 | 7.3 | 32.6 | 20.3 |
| | B | 72 hr | 8.0 | 24.7 | 6.5 | 32.3 | 20.4 |
| | A | 96 hr | 8.0 | 25.0 | 6.4 | 32.9 | 20.7 |
| 100 | A | 0 hr | 8.1 | 24.1 | 8.2 | 34.5 | 21.0 |
| | B | 24 hr | 8.2 | 24.9 | 6.5 | 35.1 | 22.2 |
| | A | 48 hr BR | 8.1 | 24.9 | 7.0 | 37.0 | 23.2 |
| | A | 48 hr AR | 8.1 | 23.7 | 7.2 | 34.9 | 22.0 |
| | B | 72 hr | 8.0 | 24.7 | 6.4 | 34.8 | 22.3 |
| | A | 96 hr | 8.0 | 24.8 | 6.3 | 35.0 | 22.4 |
| 200 | A | 0 hr | 8.1 | 24.1 | 8.1 | 34.5 | 21.0 |
| | B | 24 hr | 8.1 | 25.0 | 6.5 | 35.2 | 22.3 |
| | A | 48 hr BR | 8.1 | 24.9 | 6.9 | 37.2 | 23.2 |
| | A | 48 hr AR | 8.1 | 23.7 | 7.1 | 34.7 | 21.9 |
| | B | 72 hr | 8.0 | 24.7 | 6.4 | 34.6 | 22.2 |
| | A | 96 hr | 8.0 | 24.6 | 6.3 | 35.1 | 22.4 |
| 300 | A | 0 hr | 8.1 | 24.2 | 8.1 | 34.7 | 21.3 |
| | B | 24 hr | 8.1 | 25.2 | 6.3 | 35.2 | 22.3 |
| | A | 48 hr BR | 8.1 | 24.9 | 6.9 | 37.1 | 23.2 |
| | A | 48 hr AR | 8.1 | 23.6 | 7.0 | 34.7 | 21.9 |
| | B | 72 hr | 8.1 | 24.8 | 6.3 | 34.8 | 22.3 |
| | A | 96 hr | 8.0 | 24.9 | 6.3 | 35.3 | 22.5 |
| 400 | A | 0 hr | 8.1 | 24.2 | 8.1 | 34.8 | 21.3 |
| | B | 24 hr | 8.1 | 25.1 | 6.4 | 35.2 | 22.4 |
| | | 48 hr BR | | | | | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |
| 500 | A | 0 hr | 8.1 | 24.1 | 8.1 | 34.8 | 21.3 |
| | B | 24 hr | 8.1 | 25.0 | 6.4 | 35.1 | 22.2 |
| | | 48 hr BR | | | | | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |

Investigators Signatures
Adrienne Pennington
Cassidy Roselli
Bruce Rhodes
Marshall Faircloth

Reviewed By: Liz Miller

Measured by:
0 hr: AP
24 hr: AP
48 hr BR: AP
48 hr AR: AP
72 hr: AP
96 hr: AP

Measure/record salinity for marine tests

**Comments:**

00014

PAGE

Revised 07/15/2008 MF

## 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: 3/11/2013

Ship to: FDEP

P.O. No: _____

| Species | Quantity | Age | Brood/Lot Number | Temp. (°C) | pH (S.U.) | Salinity (‰) |
|---|---|---|---|---|---|---|
| *Mysidopsis bahia* | 300 ac | 4 DAYS | MS130307 | 25 | 7.9 | 20 |
| *Menidia beryllina* | 300 ac | 12 DAYS | SS130227 | 25 | 7.9 | 20 |
| | | | | | | Hardness mg/L |
| *Cyprinella leedsi* | | | | | | |
| *Pimephales promelas* | | | | | | |
| *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: 3/25/13

Ship to: FDEP

P.O. No:

| Species | Quantity | Age | Brood/Lot Number | Temp. (°C) | pH (S.U.) | Salinity (‰) |
|---|---|---|---|---|---|---|
| *Mysidopsis bahia* | | | | | | |
| *Menidia beryllina* | 150 ac | 12 days | SS130313 | 25 | 7.9 | 20 |
| | | | | | | **Hardness mg/L** |
| *Cyprinella leedsi* | | | | | | |
| *Pimephales promelas* | 300 | <24hrs | FM130324-1605 | 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 City of Venice Reverse Osmosis Water Treatment Plant effluent sampled on March 11, 2013. NPDES #FL0035335.

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 3 5 3 3 5 11 | 12 1 3 0 3 1 1 | 18 B | 19 S | 20 1 |

Remarks

66

## The Priority Pollutants Analysis of City of Venice Reverse Osmosis Water Treatment Plant effluent sampled on March 11, 2013. NPDES #FL0035335.

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 3 5 3 3 5 11 | 12 1 3 0 3 1 1 | 18 X | 19 S | 20 1 |

Remarks

66

## Biological Analyses of City of Venice Reverse Osmosis Water Treatment Plant effluent sampled on March 11, 2013. NPDES #FL0035335.

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 3 5 3 3 5 11 | 12 1 3 0 3 1 1 | 18 S | 19 S | 20 1 |

Remarks

66