


**Effluent Quality Assessment**

# Mosaic Fertilizer, L.L.C. – South Pierce Concentrates Plant

Polk County

NPDES #FL0000370

Sampled February 17, 2009

June 2009

**Biology Section**
**Bureau of Laboratories**
**Division of Environmental Assessment and Restoration**

Quality Manual No. 870346G
NELAC Certification No. E31780

Mosaic Fertilizer, L.L.C. – South Pierce Concentrates Plant, 7450 County Road 630, Mulberry, Polk County, Florida, NPDES #FL0000370. Effluent samples for this facility were collected on February 17, 2009.

## Introduction

Mosaic Fertilizer, L.L.C. – South Pierce Concentrates Plant was a phosphate fertilizer manufacturing facility that produced sulfuric acid, phosphoric acid, and granular superphosphate. Phosphogypsum was produced as a byproduct of phosphoric acid production and was disposed by stacking in an existing unlined phosphogypsum stack system located immediately north and east of the chemical plant. Other operations at this site included electric cogeneration, raw material storage and handling, wastewater storage and handling, process material handling and product shipping facilities. Phosphoric acid production, and therefore phosphogypsum generation, was terminated in May 2006. Sulfuric acid production and electric co-generation operations are continuing.

The phosphogypsum stack system encompasses a total area of approximately 190.2 hectares (470 acres) and consists of a phosphogypsum stack with a base area of approximately 149.7 hectares (370 acres), a 23.5 hectare (58 acre) perimeter process water cooling channel and cooling pond system, perimeter containment dykes and associated conveyance pumps, piping and ditching. Process water is recirculated in the cooling pond system and returned to the chemical plant for reuse. The process wastewater pond system also accepts sewage effluent from eleven septic tanks located throughout the facility. This effluent is pumped to the pond system via lift stations at an average discharge rate of 5,500 gallons per day.

Effluent discharge from the facility is intermittent and rainfall dependent. The facility has no design flow capacity. The annual average daily flow (AADF) discharged from January 2008 through December 2008 was 5.33 MGD. The wastewater treatment system consists of:

- an agitation tank;
- lime slurry addition;
- a primary treatment/settling pond;
- an agitation tank;
- lime slurry addition;
- a secondary treatment/settling pond; and
- a non-process wastewater holding pond.

Process wastewater treatment consists of two-stage lime treatment and settling with acidulation. Excess process water is pumped into an agitated tank and mixed with lime slurry to raise the pH to about 3.8 SU. Precipitated solids are settled in a primary treatment pond. Decanted effluent from the treatment pond is treated in a second agitated tank with lime slurry to raise the pH to about 11.5 SU. Precipitated solids are settled in a secondary treatment pond and decanted effluent is discharged at a pH of 8.5 SU or less. The facility also generates non-process wastewater including stormwater runoff, which is routed into a holding pond. When necessary, excess wastewater from the holding pond is transferred into the secondary process wastewater treatment pond where it may commingle with any treated process wastewater prior to transfer or discharge via the permitted outfall.

Discharge of effluent to surface waters is through temporary Outfall D-001T. Outfall D-001T was created to allow for an alternate discharge flow to the Class III freshwaters of Hookers Prairie because mine reclamation and restoration activities interrupted the flow path of the permitted discharge through Outfall D-001. Outfall D-001T is located approximately 19.5 m (64 feet) from Outfall D-001. D-001 is located approximately at latitude 27º 46’ 15” N and longitude 81º 55’ 30” W.

The facility has no Administrative Orders or Consent Orders. A mixing zone exists at Outfall D-001T for pH, fluoride and specific conductance. The mixing zone extends 233 meters

downstream of the outfall. A review of Discharge Monitoring Report (DMR) data for the past year, revealed no permit violations. (Facility information provided by Jacquelyn Champion of FDEP BMR Phosphate Management Southwest District.)

## Methods

Samples were collected from the EFF-01T NPDES sampling point for Outfall D-001T by Jacquelyn Champion and Mike Lynch (FDEP BMR Phosphate Management Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

See Appendix A for the completed chain of custody form.

The 48-hour screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

## Toxicity Test Results

Tests were performed February 18 - 20, 2009.

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

The bioassay samples were not acutely toxic to the test organisms.

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

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

## Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 54.8 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited. The predicted AGP based on inorganic nitrogen concentrations was 22.4 (±20%) mg dry wt/L (Table 1; Miller et al.1978).

See Table 1 for AGP results.

## Chemistry Results

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical

analysis was 0.35 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Arsenic, copper, fluoride, nickel, sulfate and total alpha particles were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.) and/or permit conditions. Aluminum, chromium-III, iron and selenium were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

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

## Conclusion

The effluent sample collected from the EFF-01T NPDES sampling point for Outfall D-001T for this facility on February 17, 2009, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP result exceeded the "problem" threshold for fresh receiving waters, suggesting nutrient enrichment may be an issue. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions.

## Literature Cited

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

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

**Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from the Mosaic Fertilizer, L.L.C. - South Pierce Concentrates Plant facility on February 17, 2009.**

| Mosaic Fertilizer, L.L.C. - South Pierce Concentrates Plant | | | | | |
|---|---|---|---|---|---|
| Location | AGP (measured) | Predicted AGP (TSIN) ± 20% | Predicted AGP (TN) ± 20% | Inorganic N:P ratio | Total N:P ratio |
| Effluent | 54.8 | 22.4 ± 4.5 | 42.6 ± 8.5 | 0.2 | 0.4 |

**Table 2. Effluent limits, Class III Freshwater Criteria and chemical data for samples collected from the Mosaic Fertilizer, L.L.C. - South Pierce Concentrates Plant facility on February 17, 2009.**

| Mosaic Fertilizer, L.L.C. - South Pierce Concentrates Plant NPDES #FL0000370 | Class III Criteria | Effluent Limits | Effluent | |
|---|---|---|---|---|
| **Organic Constituents (µg/L)** | | | | |
| None Detected | - | - | None Detected | |
| **Metals (µg/L unless otherwise noted)** | | | | |
| Aluminum | - | - | 66 | I |
| Arsenic | ≤ 50 | - | 45 | |
| Cadmium | ≤ 0.7 b | - | 0.03 | U |
| Calcium (mg/L) | - | - | 88.5 | |
| Chromium-III | ≤ 235.3 b | - | 0.87 | I |
| Copper | ≤ 26.6 b | - | 1.99 | |
| Iron | ≤ 1,000 | - | 34 | I |
| Lead | ≤ 15.2 b | - | 0.2 | U |
| Magnesium (mg/L) | - | - | 29.1 | |
| Nickel | ≤ 147.2 b | - | 4 | |
| Selenium | ≤ 5.0 | - | 0.64 | I |
| Silver | ≤ 0.07 | - | 0.01 | U |
| Zinc | ≤ 338.6 b | - | 5 | U |
| **Nutrients (mg/L)** | | | | |
| Ortho-phosphate | - | Report | 2.6 | |
| Total Phosphorus | - | 35 sp | 2.9 | |
| Total Ammonia | - | Report | 0.35 | |
| Un-ionized Ammonia | ≤ 0.02 s | ≤ 0.02 s | ≤ 0.02 | c |
| Nitrate and Nitrite | - | Report | 0.24 | |
| Total Kjeldahl Nitrogen | - | Report | 0.88 | |
| Organic Nitrogen | - | - | 0.53 | c |
| Total Nitrogen | - | Report | 1.12 | c |
| **General Physical and Chemical Parameters** | | | | |
| Dissolved Oxygen (mg/L) | ≥ 5.0 | Report | 7.8 | |
| pH (SU) | 6.0 - 8.5 | 6.0 - 9.5 | 7.0 | |
| Conductivity (µmhos/cm) | ≤ 1,275 | 1,800 | 1,577 | |
| Temperature (°C) | - | Report | 24.2 | |
| Total Residual Chlorine (mg/L) | ≤ 0.01 | - | 0.03 | UQ |
| Chlorophyll *a* (µg/L) - Corrected | - | - | 18 | |
| Phaeophytin (µg/L) | - | - | 0.94 | |
| Total Suspended Solids (mg/L) | - | ≤ 150 sp | 5 | I |
| Total Dissolved Solids (mg/L) | - | - | 1110 | |
| CBOD, 5 day (mg/L), N - inhibited | - | - | 1.5 | I |
| Fluoride (mg/L) | ≤ 10.0 | ≤ 15 sp | 2.4 | |
| Sulfate (mg/L) | - | Report | 620 | |
| Alpha, Total (pCi/L) | ≤ 15 | ≤ 15 sp | 3.5 | |
| Alpha-Counting Error (pCi/L) | - | - | 1.5 | |
| Radium 226 (pCi/L) | - | - | 1.4 | |
| Radium 226-Counting Error (pCi/L) | - | - | 0.2 | |
| Radium 228 (pCi/L) | - | - | 0.8 | U |
| Radium 228-Counting Error (pCi/L) | - | - | 0.4 | |
| Radium 226 + 228 (pCi/L) | ≤ 5 | ≤ 5 sp | 1.4 | c |
| Flow (MGD) | - | Report | 5.33 | a |
| Hardness (mg $CaCO_3$) | - | - | 340.82 | c |

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
p - Limit based on 24-hour composite sample
s - Single sample
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

# Florida Department of Environmental Protection

## Central Laboratory Sample Submittal Form

**Request Number: RQ-2009-02-16-37**
Mosaic South Pierce

Event ID *

Requester: Jennifer Paris
Field Report Prepared By: Jacki Champion

**Customer: BMR-TAMPA**
Collected By: Jacki Champion / Mike Lynch
Send Final Report To Vishwas Sathe

**Project ID: FYI5**
Sampling Agency: FDEP

**PMAS: 1143**

| Lab ID * | Location | Collection (begin) | Collection (end) | Bottle Group(s)** |
|---|---|---|---|---|
| | Mosaic South Pierce | ☐ Comp ☒ Grab Date 2/17/09 Time 10:00 (Eastern) Central | Date Time (Eastern) Central | A |
| | Field ID: Outfall 001T | Tot Res Chlorine (mg/L) | Diss Oxygen (mg/L): 7.75 | Storet Station Number |
| | Matrix (Include type e.g. Salt, Fresh, etc): Fresh H2O | Temp (C): 24.18 | pH: 6.95 | Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm): 1577 | NPDES Number: FL0000370 |
| | Latitude o ' " | Longitude o ' " | Comments: turbidity - 2.78 NTUs | |

| Lab ID * | Location | Collection (begin) | Collection (end) | Bottle Group(s)** |
|---|---|---|---|---|
| | Mosaic South Pierce | ☐ Comp ☒ Grab Date 2/17/09 Time 10:00 (Eastern) Central | Date Time (Eastern) Central | A |
| | Field ID: Outfall 001T | Tot Res Chlorine (mg/L) | Diss Oxygen (mg/L): 7.75 | Storet Station Number |
| | Matrix (Include type e.g. Salt, Fresh, etc): Fresh H2O | Temp (C): 24.18 | pH: 6.95 | Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm): 1577 | NPDES Number: FL0000370 |
| | Latitude o ' " | Longitude o ' " | Comments: Bioassay Samples | |

| Lab ID * | Location | Collection (begin) | Collection (end) | Bottle Group(s)** |
|---|---|---|---|---|
| | Mosaic South Pierce | ☐ Comp ☒ Grab Date 2/17/09 Time 12:30 (Eastern) Central | Date Time (Eastern) Central | B |
| | Field ID: Blanks | Tot Res Chlorine (mg/L) | Diss Oxygen (mg/L) | Storet Station Number |
| | Matrix (Include type e.g. Salt, Fresh, etc): Fresh H2O | Temp (C) | pH | Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) | NPDES Number |
| | Latitude o ' " | Longitude o ' " | Comments | |

| Lab ID * | Location | Collection (begin) | Collection (end) | Bottle Group(s)** |
|---|---|---|---|---|
| | | ☐ Comp ☐ Grab Date Time (Eastern) Central | Date Time (Eastern) Central | |
| | Field ID | Tot Res Chlorine (mg/L) | Diss Oxygen (mg/L) | Storet Station Number |
| | Matrix (Include type e.g. Salt, Fresh, etc): | Temp (C) | pH | Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) | NPDES Number |
| | Latitude o ' " | Longitude o ' " | Comments: 2 bioassay Rcvd in top by J.D. 10:01 2/18/09 | |

| Relinquished By: | Date/Time | Shipping Method: | Received By: | Date/Time | Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|---|---|---|---|---|
| [illegible] | 2/17/09 1:00pm | FedEx | [illegible] | 2/18/09 09:30 | | | | |

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

# FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Mosaic South Pierce

Address: North of CR 630, East of SR37

City: Mulberry County: POLK ZIP 33860

Contact/District: Jack Champion / BMR - Tampa

NPDES Permit #: FL0000370

LIMS Job #: TLH-2009-02-18-15 LIMS Sample #: 1166538 MF

Lims Data Entry: 3-2-09 MF Data Entry Verification: 3-2-09 BD

Sample Collection: Date: 2.17.09 Time: 10.00

Hold Time Start: Date: 2.17.09 Time: 10.00

Comments:

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

Test Type: (Screen)
(Static) / Static Renewal / Flow-through
Test Duration: (48) 96 Hours.

Test 1 validation: Test 1: SOP TA 07_01
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_02
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

(√one)
Test 1 incubated in: [✓] Incubator #: 2 [ ] Waterbath #:
Test 2 incubated in: [ ] Incubator #: [ ] Waterbath #:

Initial sample handling:

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

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

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

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

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

Light Intensity: 50 - 100 ft. candles

Photoperiod: 16 light 8 dark

Temperature Range °C: (If used)

Incubator # 2 min. 25.8 max. 26.5 mean 26.2

Incubator # ____ min. ____ max. ____ mean ____

Waterbath # ____ min. ____ max. ____ mean ____

Room B246 min. 23.0 max. 24.8 mean 23.9

Sample Validation:

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

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

Investigators' Signatures

Jason Daniels

Marshall Faircloth

Bruce Alexander

Kim M. Spencer

Loretta C. Clarke

REVIEWER

| Batch # | | 1-30-09 | 2-16-09 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Water Quality Parameters | 20% DMW | Well Water | Moderately Hard Water | Salt Water ASW NSW Test 1 | Salt Water ASW NSW Test 2 | Other: | Original Sample | Measured by | Verified by |
| Field Total Residual $Cl_2$ (mg/L): | N/A | N/A | N/A | N/A | N/A | | Not measured | | MF |
| Lab Total Residual $Cl_2$ (mg/L): | <0.03 | <0.03 | | | | | <0.03 | KMS | JD |
| Alkalinity (mg/L as $CaCO_3$): | 83 | 159 | | | | | 158 | BA | JD |
| Hardness (mg/L as $CaCO_3$): | 85 | 151 | | | | | 272 | BA | JD |
| Total Ammonia (mg/L as N): | <0.017 | <0.017 | | | | | <0.017 | MF | JD |
| Conductivity: (µmhos) mmhos | 181 | 283 | | | | | 1658 | JD | BA |
| Salinity (ppth): | — | — | | | | | — | JD | BA |

V 1.6 7/8/08

## Appendix B.  (continued)

### FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1166558  Test #: 1/2  SOP#:TA 07 01  Test Started: Date 2.18.09  Time: 12:25

Organism/Batch/Age: c.dubia / 7-09 / <24hr  Test Ended: Date 2.20.09  Time: 12:15

Chamber/Test Volume: 30 / 20 ml  Diluent/ Batch: DMW / 1-30-09  Test Duration: (48) hr  96 hr

Food/Batch: [✓] YCT 1-22-09 [✓] P.sub 2-13-09

[ ] Artemia Lot#______  Batch #: 0hr______ 24hr______ 48hr______ 72hr______

Feeding: [✓] Prior to Test [ ] Prior to Renewal  [✓] 0 hr [ ] 24 hr [ ] 48 hr [ ] 72 hr

| Concentration | Replicate | Chamber # | Test Hour: 0 hr | 24 hr | 48 hr BR | 48 hr AR | 72 hr | 96 hr |
|---|---|---|---|---|---|---|---|---|
| Ctrl | A | A | 5 | 5 | 5 | | | |
| | B | B | 5 | 5 | 5 | | | |
| | C | C | 5 | 5 | 5 | | | |
| | D | D | 5 | 5 | 5 | | | |
| 100% | A | A | 5 | 5 | 5 | | | |
| | B | B | 5 | 5 | 5 | | | |
| | C | C | 5 | 5 | 5 | | | |
| | D | D | 5 | 5 | 5 | | | |
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| | | | | | | | | |
| Loaded/Verified by: ab / BA | | Checked by: | ab | BA | BA | | | |

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

Comments:

Test Results:

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

% mortality in 100% sample: 0 %  LC50: >100%

If Calculated: 95% CI________ Method__________

V 2.3 7/15/2008

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

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## Appendix B. (continued)

### FDEP Biology Laboratory - Bioassay Survival Bench Sheet

[redacted]

LIMS Sample #: 1166558 Test #: 2/2 SOP#:TA 07_02 Test Started: Date 2.18.09 Time: 1300

Organism/Batch/Age: L.kedsi / 2.17.09 / 12days Test Ended: Date 2.20.09 Time: 1300

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: Vell / 2.16.09 Test Duration: (48) hr 96 hr

Food/Batch: ☐ YCT___ ☐ P.sub___

☑ Artemia Lot# 38438 Batch #: 0hr 2.1.09 24hr___ 48hr___ 72hr___

Feeding: ☑ Prior to Test ☐ Prior to Renewal ☑ 0 hr ☐ 24 hr ☐ 48 hr ☐ 72 hr

| Concentration | Replicate | Chamber # | Test Hour 0 hr | 24 hr | 48 hr BR | 48 hr AR | 72 hr | 96 hr |
|---|---|---|---|---|---|---|---|---|
| Ctrl | A | A17 | 5 | 5 | 5 | | | |
| | B | A18 | 5 | 5 | 5 | | | |
| | C | A19 | 5 | 5 | 5 | | | |
| | D | A20 | 5 | 5 | 5 | | | |
| 100% | A | A21 | 5 | 5 | 5 | | | |
| | B | A22 | 5 | 5 | 5 | | | |
| | C | A23 | 5 | 5 | 5 | | | |
| | D | A24 | 5 | 5 | 5 | | | |
| Loaded/Verified by: JB / AA | Checked by: | | JB | mms | JB | | | |

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

Comments:

**Test Results:**

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

% mortality in 100% sample: 0% LC50: >100%

If Calculated: 95% CI_____ Method_____

V 2.3 7/15/2008

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

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## Appendix B. (continued)

**FDEP Biology Laboratory - Bioassay Parameter Bench Sheet**

LIMS Sample #: 1166558 Test #: ___ of ___

TEST SOP #: TA07_01 Test Species: ☑ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other: ___

| Concentration | 0 Hr. | 24 Hr. | 48 Hr. before renewal | 48 Hr. after renewal | 72 Hr. | 96 Hr. |
|---|---|---|---|---|---|---|
| Replicate | M | | A | | | |
| pH (S.U.) | 7.8 | | 7.9 | | | |
| Temperature °C | 24.0 | | 24.0 | | | |
| Dissolved Oxygen mg/L aerate if < 4 | 7.8 | | 7.0 | | | |
| Conductivity ~~µmhos~~ mmhos | 181 | | 206 | | | |
| Salinity ppth | — | | ~ | | | |
| (initials) Measured by: | BA | | GA | | | |
| (initials) Recorded by: | GA | | GA | | | |

Comments:

Salinity only needs measuring if saltwater.

| Concentration | 0 Hr. | 24 Hr. | 48 Hr. before renewal | 48 Hr. after renewal | 72 Hr. | 96 Hr. |
|---|---|---|---|---|---|---|
| Replicate | | | | | | |
| pH (S.U.) | | | | | | |
| Temperature °C | | | | | | |
| Dissolved Oxygen mg/L aerate if < 4 | | | | | | |
| Conductivity µmhos mmhos | | | | | | |
| Salinity ppth | | | | | | |
| (initials) Measured by: | | | | | | |
| (initials) Recorded by: | | | | | | |

Comments:

| Concentration | 0 Hr. | 24 Hr. | 48 Hr. before renewal | 48 Hr. after renewal | 72 Hr. | 96 Hr. |
|---|---|---|---|---|---|---|
| Replicate | | | | | | |
| pH (S.U.) | | | | | | |
| Temperature °C | | | | | | |
| Dissolved Oxygen mg/L aerate if < 4 | | | | | | |
| Conductivity µmhos mmhos | | | | | | |
| Salinity ppth | | | | | | |
| (initials) Measured by: | | | | | | |
| (initials) Recorded by: | | | | | | |

Comments:

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## FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1166558 Test #: 2 of 2

TEST SOP #: TA07_02 Test Species: ☐ *Ceriodaphnia dubia* ☒ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:_____

| Concentration <4m | 0 Hr. | 24 Hr. | 48 Hr. before renewal | 48 Hr. after renewal | 72 Hr. | 96 Hr. |
|---|---|---|---|---|---|---|
| Replicate | A | B | C | | | |
| pH (S.U.) | 7.8 | 8.1 | 8.3 | | | |
| Temperature °C | 24.0 | 24.3 (Strong Block) | 24.0 | | | |
| Dissolved Oxygen mg/L aerate if < 4 | 8.3 | 8.2 | 7.7 | | | |
| Conductivity µmhos mmhos | 283 | 302 | 289 | | | |
| Salinity ppth | — | — | — | | | |
| (initials) Measured by: | [illegible] | KMS | [illegible] | | | |
| (initials) Recorded by: | [illegible] | KMS | [illegible] | | | |

Comments: (1) 24.3°C mc for KMS 3-2-09

| Concentration 100% | 0 Hr. | 24 Hr. | 48 Hr. before renewal | 48 Hr. after renewal | 72 Hr. | 96 Hr. |
|---|---|---|---|---|---|---|
| Replicate | A | B | C | | | |
| pH (S.U.) | 7.4 | 8.0 | 8.6 | | | |
| Temperature °C | 25.3 | 24.5 | 24.0 | | | |
| Dissolved Oxygen mg/L aerate if < 4 | 8.2 | 8.8 | 9.2 | | | |
| Conductivity µmhos mmhos | 1684 | 1623 | 1065 | | | |
| Salinity ppth | — | — | — | | | |
| (initials) Measured by: | [illegible] | KMS | [illegible] | | | |
| (initials) Recorded by: | [illegible] | KMS | [illegible] | | | |

Comments:

Salinity only needs measuring if saltwater.

| Concentration | 0 Hr. | 24 Hr. | 48 Hr. before renewal | 48 Hr. after renewal | 72 Hr. | 96 Hr. |
|---|---|---|---|---|---|---|
| Replicate | | | | | | |
| pH (S.U.) | | | | | | |
| Temperature °C | | | | | | |
| Dissolved Oxygen mg/L aerate if < 4 | | | | | | |
| Conductivity µmhos mmhos | | | | | | |
| Salinity ppth | | | | | | |
| (initials) Measured by: | | | | | | |
| (initials) Recorded by: | | | | | | |

Comments:

| Concentration | 0 Hr. | 24 Hr. | 48 Hr. before renewal | 48 Hr. after renewal | 72 Hr. | 96 Hr. |
|---|---|---|---|---|---|---|
| Replicate | | | | | | |
| pH (S.U.) | | | | | | |
| Temperature °C | | | | | | |
| Dissolved Oxygen mg/L aerate if < 4 | | | | | | |
| Conductivity µmhos mmhos | | | | | | |
| Salinity ppth | | | | | | |
| (initials) Measured by: | | | | | | |
| (initials) Recorded by: | | | | | | |

Comments:

## Appendix B. (continued)

**Bioassay Instrument ID**

Test ID: Mosaic South Pierce  Dates: 2-18-09-2-20-09

| METER / DEVICE | ID | SOP | Parameter | Method | √used |
|---|---|---|---|---|---|
| YSI Model 58 Dissolved Oxygen Meter | 90H018262 | 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 | SM 2510 B | ✓ |
| | | | Salinity | SM 2520 B | ✓ |
| Denver Model 225 ISE with ammonia probe | SN K01377 | TA06_17 | Ammonia | SM 4500 NH3 F | ✓ |
| Thermometer (DO probe) | YSI 5750 SN 05J1720 | TA06_05 | Temperature | SM-2530B modified DEP SOP-001/01 FT1400 | ✓ |
| Hach Pocket Colorimeter II | 05050C026378 | TA06_22 | Total Residual Chlorine | EPA 330.5 SM 4500 CL G | ✓ |
| Alkalinity (Hach Kit) | No SN | TA06_08 | Alkalinity | SM 2320 B | ✓ |
| Hardness (Hach Kit) | No SN | TA06_09 | Hardness | SM 2340 C | ✓ |
| OHAUS Balance 250D | 1125481084 | TA06_21 TA06_27 | Weight | - | — |
| S-Weights | BIO-S-WEIGHTS-01 | NA | Balance check | - | — |
| | | | | | |

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

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

entered by MF 2-23-09

V 1.1 6/12/08 MF

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PAGE

## Appendix C. SRT Bench Sheets and Statistical Analysis

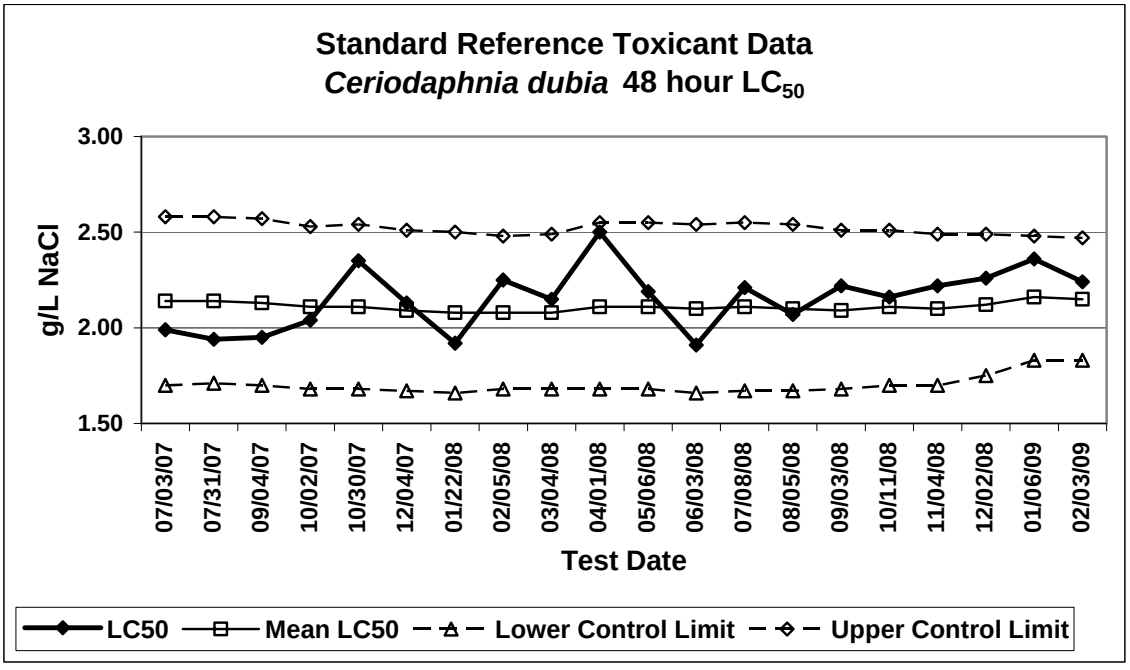
Florida Department of Environmental Protection
Bureau of Laboratories

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

| Date | LC50 | Mean LC50 | Std Dev | Lower Control Limit | Upper Control Limit |
|---|---|---|---|---|---|
| 07/03/07 | 1.99 | 2.14 | 0.22 | 1.70 | 2.58 |
| 07/31/07 | 1.94 | 2.14 | 0.22 | 1.71 | 2.58 |
| 09/04/07 | 1.95 | 2.13 | 0.22 | 1.70 | 2.57 |
| 10/02/07 | 2.04 | 2.11 | 0.21 | 1.68 | 2.53 |
| 10/30/07 | 2.35 | 2.11 | 0.21 | 1.68 | 2.54 |
| 12/04/07 | 2.13 | 2.09 | 0.20 | 1.67 | 2.51 |
| 01/22/08 | 1.92 | 2.08 | 0.20 | 1.66 | 2.50 |
| 02/05/08 | 2.25 | 2.08 | 0.20 | 1.68 | 2.48 |
| 03/04/08 | 2.15 | 2.08 | 0.20 | 1.68 | 2.49 |
| 04/01/08 | 2.50 | 2.11 | 0.22 | 1.68 | 2.55 |
| 05/06/08 | 2.19 | 2.11 | 0.22 | 1.68 | 2.55 |
| 06/03/08 | 1.91 | 2.10 | 0.22 | 1.66 | 2.54 |
| 07/08/08 | 2.21 | 2.11 | 0.22 | 1.67 | 2.55 |
| 08/05/08 | 2.07 | 2.10 | 0.22 | 1.67 | 2.54 |
| 09/03/08 | 2.22 | 2.09 | 0.21 | 1.68 | 2.51 |
| 10/11/08 | 2.16 | 2.11 | 0.20 | 1.70 | 2.51 |
| 11/04/08 | 2.22 | 2.10 | 0.20 | 1.70 | 2.49 |
| 12/02/08 | 2.26 | 2.12 | 0.19 | 1.75 | 2.49 |
| 01/06/09 | 2.36 | 2.16 | 0.16 | 1.83 | 2.48 |
| 02/03/09 | 2.24 | 2.15 | 0.16 | 1.83 | 2.47 |

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

**CV = 7.47**
EPA reference 75th quartile CV = 29%



## Appendix C. (continued)

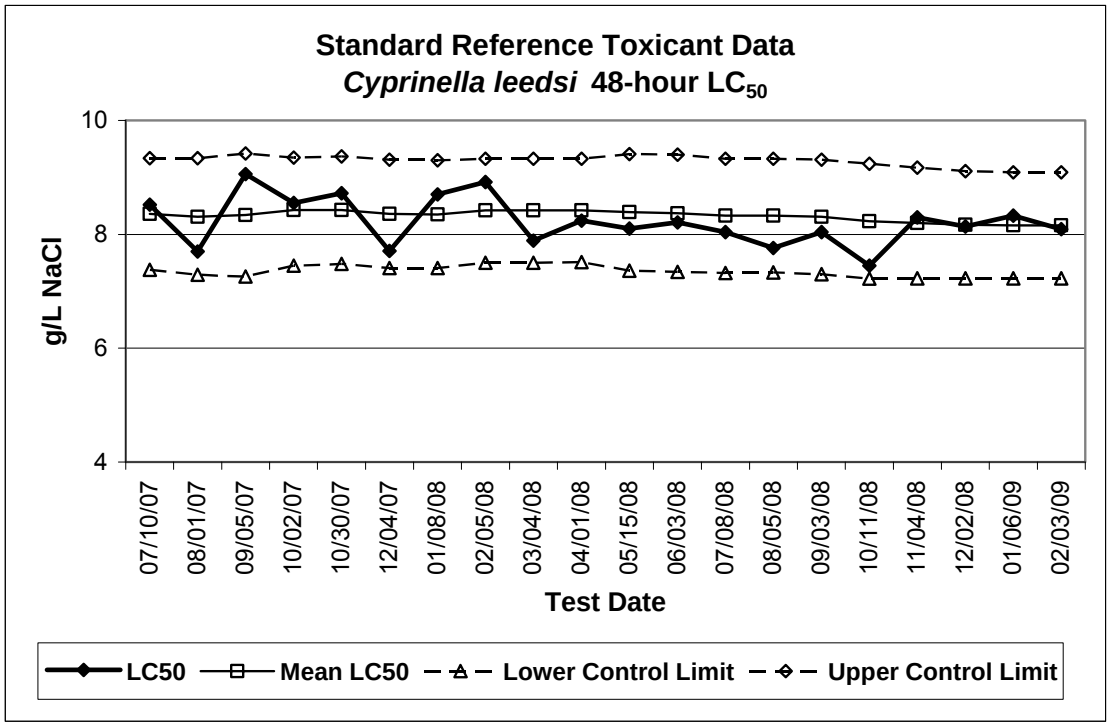
Florida Department of Environmental Protection
Bureau of Laboratories

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

| Date | LC50 | Mean LC50 | Std Dev | Lower Control Limit | Upper Control Limit |
|---|---|---|---|---|---|
| 07/10/07 | 8.52 | 8.36 | 0.49 | 7.38 | 9.34 |
| 08/01/07 | 7.7 | 8.31 | 0.51 | 7.29 | 9.34 |
| 09/05/07 | 9.06 | 8.34 | 0.54 | 7.26 | 9.42 |
| 10/02/07 | 8.55 | 8.43 | 0.47 | 7.45 | 9.35 |
| 10/30/07 | 8.72 | 8.43 | 0.47 | 7.48 | 9.37 |
| 12/04/07 | 7.71 | 8.36 | 0.47 | 7.41 | 9.31 |
| 01/08/08 | 8.7 | 8.35 | 0.47 | 7.41 | 9.30 |
| 02/05/08 | 8.92 | 8.42 | 0.46 | 7.50 | 9.33 |
| 03/04/08 | 7.89 | 8.42 | 0.46 | 7.50 | 9.33 |
| 04/01/08 | 8.24 | 8.42 | 0.45 | 7.51 | 9.33 |
| 05/15/08 | 8.1 | 8.39 | 0.51 | 7.36 | 9.41 |
| 06/03/08 | 8.21 | 8.37 | 0.51 | 7.34 | 9.40 |
| 07/08/08 | 8.04 | 8.33 | 0.50 | 7.32 | 9.33 |
| 08/05/08 | 7.76 | 8.33 | 0.50 | 7.33 | 9.33 |
| 09/03/08 | 8.04 | 8.31 | 0.50 | 7.30 | 9.31 |
| 10/11/08 | 7.45 | 8.23 | 0.51 | 7.22 | 9.24 |
| 11/04/08 | 8.3 | 8.20 | 0.48 | 7.23 | 9.17 |
| 12/02/08 | 8.14 | 8.17 | 0.47 | 7.23 | 9.11 |
| 01/06/09 | 8.33 | 8.16 | 0.47 | 7.23 | 9.09 |
| 02/03/09 | 8.09 | 8.16 | 0.47 | 7.23 | 9.09 |

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

**CV = 5.7**
EPA reference 75th quartile CV = 19%



## Appendix C. (continued)

### 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 #:** DMW / 1.30.09 **Organism Batch:** 4-09
**Toxicant/ Batch#:** NaCl / 2.3.09 Age: <24hr DH

**Test Beginning:** Date: 2-3-09 Time: 11:30
**Test Ending:** Date: 2-7-09 Time: 0900

| Water Quality Parameters: | Diluent | SOP | Initials |
|---|---|---|---|
| Total Residual $Cl_2$ (mg/L): | <0.03 | TA06_22 | AGR |
| Alkalinity (mg/L as $CaCO_3$): | 83 | TA06_08 | AGR |
| Hardness (mg.L as $CaCO_3$): | 85 | TA06_09 | AGR |
| Total Ammonia (mg/L as N): | <0.017 | TA06_17 | MF |
| Conductivity: µmhos ,mmhos | 184 | TA06_25 | BA |
| Salinity (ppth): | — | TA06_25 | — |

| Food: | Batch |
|---|---|
| ☑ YCT | 6-18-08 |
| ☑ *P. subcapitata* | 7-18-08 |
| ☐ Artemia Lot # | |

Artemia Batch:

| | |
|---|---|
| 0 hr: | |
| 24 hr: | |
| 48 hr: | |
| 72 hr: | |

Concentrations prepared by: BA
Temperature Range °C:(if used)
**Chamber size:** 30 mL
**Test volume:** 20 mL per replicate

Test Incubated in: Incubator #2 Waterbath # ____ Incubator # 2 min. 22.7 max. 25.9 mean 24.3
Light Intensity: 50-100 Ft. candles Waterbath # ___ min. ____ max. ____ mean ____
Photoperiod: 16 hours Light / 8 hours dark Room B246 min. 23.5 max. 25.1 mean 24.3

**Feeding:** √as needed

| | |
|---|---|
| ☑ | Before test |
| ☐ | 0 hr |
| ☐ | 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 ug/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 | A | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | B | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | C | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | D | 5 | 5 | 5 | 5 | 5 | 5 |
| 1.5 | A | A | 5 | 5 | 5 | 5 | 5 | 5 |
| | B | B | 5 | 5 | 5 | 5 | 5 | 5 |
| | C | C | 5 | 5 | 5 | 5 | 5 | 5 |
| | D | D | 5 | 5 | 5 | 5 | 4 1D | 4 MF Transcription error MF 2/7/09 |
| 2.0 | A | A | 5 | 5 | 5 | 5 | 2 3D | 2 |
| | B | B | 5 | 5 | 5 | 5 | 1 4D | 1 |
| | C | C | 5 | 5 | 5 | 5 | 3 2D | 3 |
| | D | D | 5 | 5 | 5 | 5 | 4 1D | 4 |
| 2.5 | A | A | 5 | 5 | 0 5D | — | — | — |
| | B | B | 5 | 5 | 0 5D | — | — | — |
| | C | C | 5 | 5 | 0 5D | — | — | — |
| | D | D | 5 | 5 | 0 5D | — | — | — |
| 3.0 | A | A | 5 | 5 | 0 5D | — | — | — |
| | B | B | 5 | 5 | 0 5D | — | — | — |
| | C | C | 5 | 5 | 0 5D | — | — | — |
| | D | D | 5 | 5 | 0 5D | — | — | — |
| 4.0 | A | A | 5 | 5 | 0 5D | — | — | — |
| | B | B | 5 | 5 | 0 5D | — | — | — |
| | C | C | 5 | 5 | 0 5D | — | — | — |
| | D | D | 5 | 5 | 0 5D | — | — | — |
| Organisms loaded by: BA | | Checked by: | BA | BA | BA | BA | MM | MF |

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

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

Investigators' Signatures
Bruce Alexander
Marshall Faircloth
Mindy M. Spencer
Amelia Rankin
Reviewer: Loretta C. Wolfe

**Comments:** (A) Transcription error BA 2-9-09
(B) 95% confidence limits unreliable BA 2-9-09

Method: TSK

| Statistics: LC50 | 95% confidence intervals Lower | Upper |
|---|---|---|
| 48 hour: 2.24 | (B) | (A) |
| 96 hour: 1.96 | 1.83 | 2.09 |

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Revised 7/15/2008 mf

## Appendix C. (continued)

**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: 2-3-09 Time: 1130
**Test Ending:** Date: 2-7-09 Time: 0900

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

| Concentration µg/L mg/L (circle) | Replicate | Test Hour | pH (SU) | Temperature (°C) | Dissolved Oxygen (mg/L) | Conductivity ☑ µmhos ☐ mmhos | Salinity (ppth) |
|---|---|---|---|---|---|---|---|
| Control | M | 0 hr | 7.9 | 24.0 | 8.3 | 184 | — |
| | | 24 hr | — | — | — | ~~2930~~ (A) | — |
| | A | 48 hr BR | 7.7 | 24.0 | 8.1 | 195 | |
| | m | 48 hr AR | 7.9 | 24.0 | 8.0 | 178 | |
| | | 72 hr | — | — | — | — | |
| | A | 96 hr | 8.1 | 24.1 | 7.6 | 210 | |
| 1.5 | M | 0 hr | 7.9 | 24.0 | 8.3 | 2930 | |
| | | 24 hr | — | — | — | ~~3200~~ (A) | |
| | A | 48 hr BR | 7.8 | 24.0 | 8.0 | 3200 | |
| | m | 48 hr AR | 8.0 | 24.0 | 8.1 | 2930 | |
| | | 72 hr | — | — | — | — | |
| | A | 96 hr | 8.0 | 24.3 | 7.8 | 3150 | |
| 2.0 | M | 0 hr | 7.9 | 24.0 | 8.3 | 3870 | |
| | | 24 hr | — | — | — | — | |
| | A | 48 hr BR | 7.8 | 24.0 | 7.9 | 4400 | |
| | m | 48 hr AR | 8.0 | 24.0 | 8.2 | 3760 | |
| | | 72 hr | — | — | — | — | |
| | A | 96 hr | 8.1 | 24.3 | 7.7 | 4070 | |
| 2.5 | M | 0 hr | 7.9 | 24.0 | 8.3 | 4760 | |
| | | 24 hr | — | — | — | — | |
| | A | 48 hr BR | 7.9 | 24.0 | 8.0 | 5430 | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |
| 3.0 | M | 0 hr | 8.0 | 24.0 | 8.3 | 5610 | |
| | | 24 hr | — | — | — | — | |
| | A | 48 hr BR | 7.9 | 24.0 | 7.9 | 6300 | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |
| 4.0 | M | 0 hr | 8.0 | 24.0 | 8.3 | 7290 | |
| | | 24 hr | — | — | — | — | |
| | A | 48 hr BR | 8.0 | 24.0 | 7.7 | 8050 | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |

Investigators Signatures
Brent Allen Snyder
Marshall Faircloth
Kim M. Spencer
James Davis
Reviewed By: Loretta C Wolf

Measured by:
0 hr: BA
24 hr: BA
48 hr BR: BA
48 hr AR: BA
72 hr: DA
96 hr: MF

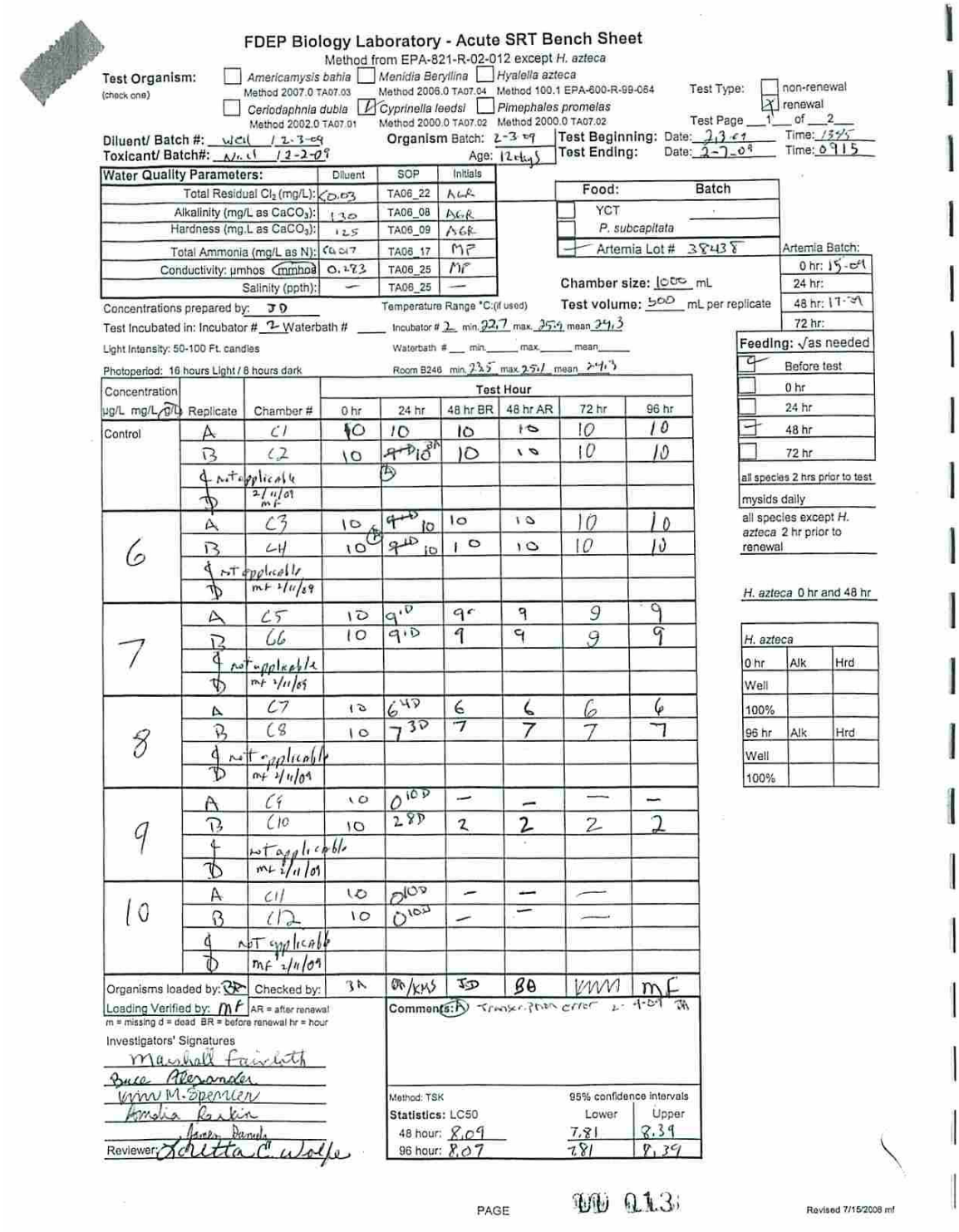
Measure/record salinity for marine tests

Comments: (A) Transcription error BA 2-3-09

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Revised 07/15/2008 MF

## Appendix C. (continued)



**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 #: well / 2-3-09
Toxicant/ Batch#: NaCl / 12-2-09
Organism Batch: 2-3 09 Age: 12 days
Test Beginning: Date: 2-3-09 Time: 1325
Test Ending: Date: 2-7-09 Time: 0915

| Water Quality Parameters: | Diluent | SOP | Initials |
|---|---|---|---|
| Total Residual $Cl_2$ (mg/L): | <0.03 | TA06_22 | AGR |
| Alkalinity (mg/L as $CaCO_3$): | 130 | TA06_08 | AGR |
| Hardness (mg.L as $CaCO_3$): | 125 | TA06_09 | AGR |
| Total Ammonia (mg/L as N): | <0.07 | TA06_17 | MF |
| Conductivity: µmhos (mmhos) | 0.283 | TA06_25 | MF |
| Salinity (ppth): | — | TA06_25 | — |

| Food: | Batch |
|---|---|
| ☐ YCT | |
| ☐ *P. subcapitata* | |
| — Artemia Lot # | 38438 |

Artemia Batch:
0 hr: 15-09
24 hr:
48 hr: 17-09
72 hr:

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

Concentrations prepared by: JD
Temperature Range °C:(if used)
Test Incubated in: Incubator # 2 Waterbath # ___ Incubator # 2 min. 22.7 max. 25.4 mean 24.3
Light Intensity: 50-100 Ft. candles Waterbath # ___ min. ___ max. ___ mean. ___
Photoperiod: 16 hours Light / 8 hours dark Room B246 min. 23.5 max. 25.1 mean 24.3

**Feeding:** √as needed

| | |
|---|---|
| ☐ | Before test |
| ☐ | 0 hr |
| ☐ | 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 | C1 | 10 | 10 | 10 | 10 | 10 | 10 |
| | B | C2 | 10 | 9 10 10 | 10 | 10 | 10 | 10 |
| | ♀ | not applicable | | (A) | | | | |
| | ♂ | 2/11/09 mf | | | | | | |
| 6 | A | C3 | 10 | (A) 9 10 | 10 | 10 | 10 | 10 |
| | B | C4 | 10 | (A) 9 10 | 10 | 10 | 10 | 10 |
| | ♀ | not applicable | | | | | | |
| | ♂ | mf 2/11/09 | | | | | | |
| 7 | A | C5 | 10 | 9.0 | 9 | 9 | 9 | 9 |
| | B | C6 | 10 | 9.0 | 9 | 9 | 9 | 9 |
| | ♀ | not applicable | | | | | | |
| | ♂ | mf 2/11/09 | | | | | | |
| 8 | A | C7 | 10 | 6 4D | 6 | 6 | 6 | 6 |
| | B | C8 | 10 | 7 3D | 7 | 7 | 7 | 7 |
| | ♀ | not applicable | | | | | | |
| | ♂ | mf 2/11/09 | | | | | | |
| 9 | A | C9 | 10 | 0 10D | — | — | — | — |
| | B | C10 | 10 | 2 8D | 2 | 2 | 2 | 2 |
| | ♀ | not applicable | | | | | | |
| | ♂ | mf 2/11/09 | | | | | | |
| 10 | A | C11 | 10 | 8 10D | — | — | — | |
| | B | C12 | 10 | 0 10D | — | — | — | |
| | ♀ | not applicable | | | | | | |
| | ♂ | mf 2/11/09 | | | | | | |
| Organisms loaded by: BR | | Checked by: | 3A | BR/KHS | JD | BB | KMM | MF |

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

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

Comments: (A) Transfer error 2-9-09 3A

Investigators' Signatures
Marshall Faircloth
Bruce Alexander
Kim M. Spencer
Amelia Parkin
James Daniels
Reviewer: Loretta C. Wolfe

Method: TSK — 95% confidence intervals

| Statistics: LC50 | Lower | Upper |
|---|---|---|
| 48 hour: 8.09 | 7.81 | 8.39 |
| 96 hour: 8.07 | 7.81 | 8.39 |

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Revised 7/15/2008 mf

## Appendix C. (continued)

**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: 2-3-09 Time: 1350
**Test Ending:** Date: 2-7-09 Time: 0915
Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

| Concentration µg/L mg/L % | Replicate | Test Hour | pH (SU) | Temperature (° C) | Dissolved Oxygen (mg/L) | Conductivity ☐ µmhos ☑ mmhos | Salinity (ppth) |
|---|---|---|---|---|---|---|---|
| Control | A | 0 hr | 7.9 | 24.0 | 7.9 | 0.283 | |
| | B | 24 hr | 7.8 | 24.0 | 7.5 | 0.295 | |
| | A ¢ | 48 hr BR | 8.1 | 24.0 | 7.4 | 0.297 | |
| | A ¢ | 48 hr AR | 8.1 | 24.2 | 7.9 | 0.298 | |
| | B | 72 hr | 7.8 | 23.1 | 7.0 | 0.308 | |
| | A | 96 hr | 8.2 | 24.1 | 7.0 | 0.319 | |
| 6 | A | 0 hr | 7.9 | 24.2 | 8.1 | 11.5 | |
| | B | 24 hr | 7.9 | 24.0 | 7.3 | 11.6 | |
| | A | 48 hr BR | 8.1 | 24.0 | 7.3 | 11.7 | |
| | A | 48 hr AR | 8.1 | 24.2 | 7.4 | 11.4 | |
| | B | 72 hr | 7.8 | 23.0 | 6.9 | 12.0 | |
| | A | 96 hr | 8.1 | 24.1 | 7.0 | 12.4 | |
| 7 | A | 0 hr | 7.9 | 24.1 | 8.2 | 12.5 | |
| | B | 24 hr | 8.0 | 24.0 | 7.2 | 13.4 | |
| | A | 48 hr BR | 8.1 | 24.0 | 6.8 | 13.4 | |
| | A | 48 hr AR | 8.0 | 24.2 | 7.4 | 13.3 | |
| | B | 72 hr | 7.8 | 23.2 | 6.5 | 13.9 | |
| | A | 96 hr | 8.1 | 24.6 | 6.7 | 14.3 | |
| 8 | A | 0 hr | 7.9 | 24.2 | 8.2 | 15.2 | |
| | B | 24 hr | 7.9 | 24.0 | 6.8 | 15.3 | |
| | A | 48 hr BR | 8.1 | 24.0 | 6.9 | 15.4 | |
| | B | 48 hr AR | 8.0 | 24.1 | 7.4 | 15.0 | |
| | B | 72 hr | 7.8 | 23.1 | 6.6 | 15.6 | |
| | A | 96 hr | 8.1 | 24.0 | 6.6 | 16.2 | |
| 9 | A | 0 hr | 7.9 | 24.2 | 8.1 | 16.9 | |
| | B | 24 hr | 7.9 | 24.0 | 6.6 | 16.9 | |
| | B | 48 hr BR | 8.1 | 24.0 | 7.0 | 16.9 | |
| | B | 48 hr AR | 8.0 | 24.1 | 7.3 | 16.0 | |
| | B | 72 hr | 7.8 | 22.7 | 6.7 | 16.9 | |
| | B | 96 hr | 8.1 | 24.1 | 6.9 | 17.3 | |
| 10 | A | 0 hr | 7.9 | 24.3 | 8.0 | 18.6 | |
| | B | 24 hr | 7.9 | 24.0 | 6.2 | 18.6 | |
| | | 48 hr BR | | | | | |
| | | 48 hr AR | | | | | |
| | | 72 hr | | | | | |
| | | 96 hr | | | | | |

Investigators Signatures
Marshall Faircloth
Kimm. Spencer
Bruce Alexander
Amelia Rankin
James Dysart
Reviewed By: Anita C Wolfe

Measured by:
0 hr: MF
24 hr: BJA
48 hr BR: KMS
48 hr AR: KMS
72 hr: BA
96 hr: MF

Measure/record salinity for marine tests

Comments:

PAGE 00 014

Revised 07/15/2008 MF

## Appendix C. (continued)

***Ceriodaphnia dubia* Acute Standard Reference Toxicant Test**

DATE: 2-3-09 DURATION: 48 hr TOXICANT: NaCl
SPECIES: *Ceriodaphnia dubia*

| RAW DATA: Concentration (g/L) | Number Exposed | Mortalities |
|---|---|---|
| 0.00 | 20 | 0 |
| 1.50 | 20 | 0 |
| 2.00 | 20 | 0 |
| 2.50 | 20 | 20 |
| 3.00 | 20 | 20 |
| 4.00 | 20 | 20 |

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 2.24
95% CONFIDENCE LIMITS ARE NOT RELIABLE.

---

***Cyprinella leedsi* Acute Standard Reference Toxicant Test**

DATE: 2-3-09 DURATION: 48 hr TOXICANT: NaCl
SPECIES: *Cyprinella leedsi*

| RAW DATA: Concentration (g/L) | Number Exposed | Mortalities |
|---|---|---|
| 0.00 | 20 | 0 |
| 6.00 | 20 | 0 |
| 7.00 | 20 | 2 |
| 8.00 | 20 | 7 |
| 9.00 | 20 | 18 |
| 10.00 | 20 | 20 |

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 8.09
95% LOWER CONFIDENCE: 7.81
95% UPPER CONFIDENCE: 8.39

## Appendix D. Test Organism Receipts

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

### Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 8/2/09

Shipped to: FDEP

P.O. No: N/A

| Species | Quantity | Age | Brood Number | Temp. | pH | Salinity |
|---|---|---|---|---|---|---|
| *Mysidopsis bahia* | 150 | 4 DAYS | MS090129 | 25°C | 7.9 | 20‰ |
| *Menidia beryllina* | 150 | 17 DAYS<br>11 DAYS STR | MS090122 | 25°C | 7.9 | 20‰ |
| | | | | | | Hardness |
| *Cyprinella leedsi* | 200 | 11 DAYS | CL090122 | 25°C | 7.8 | 80mg/L |
| *Pimephales promelas* | 150 | 9 DAY | FM090124 | 25°C | 7.8 | 80mg/L |
| | | | | | | |

Packed by:

Shipped Via: FedEx

Notes:

Thank you for your order.

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

## Appendix D. (continued)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

### Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 2/16/09

Shipped to: FDEP

P.O. No: N/A

| Species | Quantity | Age | Brood Number | Temp. | pH | Salinity |
|---|---|---|---|---|---|---|
| *Mysidopsis bahia* | | | | | | |
| *Menidia beryllina* | | | | | | |
| | | | | | | Hardness |
| *Cyprinella leedsi* | 150 | 10 DAYS | CL090216 | 25°C | 7.8 s.u. | 80 mg/L |
| *Pimephales promelas* | | | | | | |
| | | | | | | |

Packed by: [signature]

Shipped Via: FedEx

Notes:

Thank you for your order.

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

**Appendix E. Chemical Analyses performed on the effluent from the Mosaic Fertilizer, L.L.C. – South Pierce Concentrates Plant Outfall D-001T, sampled on February 17, 2009.**

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 10:00 | Effluent | AGP/LN | Algal Growth Potential | 54.8 | | mg DryWt/L | 0.3 | 0.9 |
| 2/17/2009 10:00 | Effluent | Chlorophyll/Grain Size/BOD | Phaeophytin-a | 0.94 | | ug/L | 0.24 | 0.71 |
| 2/17/2009 10:00 | Effluent | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Corrected | 18 | | ug/L | 0.55 | 1.7 |
| 2/17/2009 10:00 | Effluent | Chlorophyll/Grain Size/BOD | Biochemical Oxygen Demand-5 Day,N-Inhib | 1.5 | I | mg/L | 0.2 | 2 |
| 2/17/2009 10:00 | Effluent | Toxicology | Bioassay-Acute-Screen-FW-C.dubia, LC50 | 100 | L | LC50 | | |
| 2/17/2009 10:00 | Effluent | Toxicology | Bioassay-Acute-Screen-FW-Fish, LC50 | 100 | L | LC50 | | |
| 2/17/2009 10:00 | Effluent | Metals | Selenium | 0.64 | I | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Metals | Sodium | 228 | | mg/L | 2.5 | 10 |
| 2/17/2009 10:00 | Effluent | Metals | Copper | 1.99 | | ug/L | 0.5 | 0.5 |
| 2/17/2009 10:00 | Effluent | Metals | Iron | 34 | I | ug/L | 30 | 120 |
| 2/17/2009 10:00 | Effluent | Metals | Cadmium | 0.03 | U | ug/L | 0.03 | 0.12 |
| 2/17/2009 10:00 | Effluent | Metals | Magnesium | 29.1 | | mg/L | 0.04 | 0.16 |
| 2/17/2009 10:00 | Effluent | Metals | Zinc | 5 | U | ug/L | 5 | 20 |
| 2/17/2009 10:00 | Effluent | Metals | Silver | 0.01 | U | ug/L | 0.01 | 0.04 |
| 2/17/2009 10:00 | Effluent | Metals | Arsenic | 45 | | ug/L | 0.25 | 1 |
| 2/17/2009 10:00 | Effluent | Metals | Aluminum | 66 | I | ug/L | 60 | 240 |
| 2/17/2009 10:00 | Effluent | Metals | Calcium | 88.5 | | mg/L | 0.075 | 0.3 |
| 2/17/2009 10:00 | Effluent | Metals | Chromium | 0.87 | I | ug/L | 0.7 | 2.8 |
| 2/17/2009 10:00 | Effluent | Metals | Lead | 0.2 | U | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Metals | Nickel | 4 | | ug/L | 0.25 | 1 |
| 2/17/2009 10:00 | Effluent | Nutrients | Sulfate | 620 | | mg SO4/L | 2 | 5 |
| 2/17/2009 10:00 | Effluent | Nutrients | O-Phosphate-P | 2.6 | | mg P/L | 0.08 | 0.2 |
| 2/17/2009 10:00 | Effluent | Nutrients | TDS | 1110 | | mg/L | 15 | 60 |
| 2/17/2009 10:00 | Effluent | Nutrients | Fluoride | 2.4 | | mg F/L | 0.05 | 0.1 |
| 2/17/2009 10:00 | Effluent | Nutrients | Kjeldahl Nitrogen | 0.88 | | mg N/L | 0.08 | 0.2 |
| 2/17/2009 10:00 | Effluent | Nutrients | NO2NO3-N | 0.24 | | mg N/L | 0.004 | 0.01 |
| 2/17/2009 10:00 | Effluent | Nutrients | TSS | 5 | I | mg/L | 4 | 16 |
| 2/17/2009 10:00 | Effluent | Nutrients | Ammonia-N | 0.35 | | mg N/L | 0.01 | 0.02 |
| 2/17/2009 10:00 | Effluent | Nutrients | Total-P | 2.9 | | mg P/L | 0.1 | 0.3 |
| 2/17/2009 10:00 | Effluent | Overflow | Radium 226 | 1.4 | | pCi/L | | |
| 2/17/2009 10:00 | Effluent | Overflow | Alpha-Counting Error | 1.5 | | pCi/L | | |
| 2/17/2009 10:00 | Effluent | Overflow | Alpha, Total | 3.5 | | pCi/L | | |
| 2/17/2009 10:00 | Effluent | Overflow | Radium 226-Counting Error | 0.2 | | pCi/L | | |

## Appendix E. (continued)

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 10:00 | Effluent | Overflow | Radium 228-Counting Error | 0.4 | | pCi/L | | |
| 2/17/2009 10:00 | Effluent | Overflow | Radium 228 | 0.8 | U | pCi/L | | |
| 2/17/2009 10:00 | Effluent | Pesticides | Butylate | 0.2 | UJ | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Pesticides | Hexazinone | 0.1 | UJ | ug/L | 0.1 | 0.4 |
| 2/17/2009 10:00 | Effluent | Pesticides | Metalaxyl | 0.25 | U | ug/L | 0.25 | 1 |
| 2/17/2009 10:00 | Effluent | Pesticides | Naled | 0.8 | UJ | ug/L | 0.8 | 3.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Norflurazon | 0.15 | U | ug/L | 0.15 | 0.6 |
| 2/17/2009 10:00 | Effluent | Pesticides | Parathion Methyl | 0.1 | U | ug/L | 0.1 | 0.4 |
| 2/17/2009 10:00 | Effluent | Pesticides | Prometryn | 0.15 | U | ug/L | 0.15 | 0.6 |
| 2/17/2009 10:00 | Effluent | Pesticides | Chlordane | 0.2 | U | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Pesticides | DDT-p,p' | 0.03 | U | ug/L | 0.03 | 0.12 |
| 2/17/2009 10:00 | Effluent | Pesticides | Azinphos Methyl | 0.2 | UJ | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Pesticides | Ethion | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Ethoprop | 0.1 | U | ug/L | 0.1 | 0.4 |
| 2/17/2009 10:00 | Effluent | Pesticides | Fonofos | 0.1 | U | ug/L | 0.1 | 0.4 |
| 2/17/2009 10:00 | Effluent | Pesticides | Dieldrin | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Pesticides | Endosulfan I | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Pesticides | Endrin Aldehyde | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Pesticides | Ametryn | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Fenamiphos | 0.2 | U | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Pesticides | Malathion | 0.15 | U | ug/L | 0.15 | 0.6 |
| 2/17/2009 10:00 | Effluent | Pesticides | Mevinphos | 0.2 | U | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Pesticides | Delta-BHC | 0.01 | U | ug/L | 0.01 | 0.04 |
| 2/17/2009 10:00 | Effluent | Pesticides | Endosulfan Sulfate | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Pesticides | Endrin | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Atrazine | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Bromacil | 0.2 | UJ | ug/L | 0.2 | 0.8 |
| 2/17/2009 10:00 | Effluent | Pesticides | Metolachlor | 0.5 | U | ug/L | 0.5 | 2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Metribuzin | 0.1 | U | ug/L | 0.1 | 0.4 |
| 2/17/2009 10:00 | Effluent | Pesticides | Simazine | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Gamma-BHC | 0.01 | U | ug/L | 0.01 | 0.04 |
| 2/17/2009 10:00 | Effluent | Pesticides | Heptachlor Epoxide | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Pesticides | Toxaphene | 0.75 | U | ug/L | 0.75 | 3 |
| 2/17/2009 10:00 | Effluent | Pesticides | Alpha-BHC | 0.01 | U | ug/L | 0.01 | 0.04 |

## Appendix E. (continued)

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 10:00 | Effluent | Pesticides | DDE-p,p' | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Pesticides | Endosulfan II | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Pesticides | Heptachlor | 0.01 | U | ug/L | 0.01 | 0.04 |
| 2/17/2009 10:00 | Effluent | Pesticides | Chlorpyrifos Ethyl | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Diazinon | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Parathion Ethyl | 0.15 | U | ug/L | 0.15 | 0.6 |
| 2/17/2009 10:00 | Effluent | Pesticides | Aldrin | 0.01 | U | ug/L | 0.01 | 0.04 |
| 2/17/2009 10:00 | Effluent | Pesticides | Beta-BHC | 0.01 | U | ug/L | 0.01 | 0.04 |
| 2/17/2009 10:00 | Effluent | Pesticides | Methoxychlor | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | Alachlor | 0.6 | UJ | ug/L | 0.6 | 2.4 |
| 2/17/2009 10:00 | Effluent | Pesticides | Chlorpyrifos Methyl | 0.1 | U | ug/L | 0.1 | 0.4 |
| 2/17/2009 10:00 | Effluent | Pesticides | Phorate | 0.05 | U | ug/L | 0.05 | 0.2 |
| 2/17/2009 10:00 | Effluent | Pesticides | DDD-p,p' | 0.02 | U | ug/L | 0.02 | 0.08 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 41 | U | ug/L | 41 | 160 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Benzo(a)anthracene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Di-n-octyl phthalate | 1 | UJ | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Hexachlorobutadiene | 3 | U | ug/L | 3 | 12 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 2 | U | ug/L | 2 | 8.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | N-Nitrosodimethylamine | 2 | U | ug/L | 2 | 8.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Pyrene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Di-n-butyl phthalate | 5.1 | U | ug/L | 5.1 | 20 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Chrysene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 15 | U | ug/L | 15 | 61 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Acenaphthene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 2 | U | ug/L | 2 | 8.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 3 | U | ug/L | 3 | 12 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2,4-Dimethylphenol | 10 | U | ug/L | 10 | 41 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 3 | U | ug/L | 3 | 12 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Anthracene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Benzo(g,h,i)perylene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Benzo(k)fluoranthene | 1 | U | ug/L | 1 | 4.1 |

## Appendix E. (continued)

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Dimethyl phthalate | 10 | UJ | ug/L | 10 | 41 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2,4-Dinitrotoluene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2-Chloronaphthalene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2-Chlorophenol | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Acenaphthylene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Naphthalene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Phenanthrene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Phenol | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 4-Nitrophenol | 15 | U | ug/L | 15 | 61 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Benzidine | 100 | U | ug/L | 100 | 410 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Fluorene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Hexachlorobenzene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2,4-Dichlorophenol | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2,6-Dinitrotoluene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Benzo(b)fluoranthene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Butyl benzyl phthalate | 5.1 | U | ug/L | 5.1 | 20 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Diethyl phthalate | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Fluoranthene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Hexachloroethane | 3 | U | ug/L | 3 | 12 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Isophorone | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Pentachlorophenol | 3 | UJ | ug/L | 3 | 12 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Benzo(a)pyrene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 3 | U | ug/L | 3 | 12 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Hexachlorocyclopentadiene | 3 | UJ | ug/L | 3 | 12 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | Nitrobenzene | 2 | U | ug/L | 2 | 8.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2,4-Dinitrophenol | 15 | U | ug/L | 15 | 61 |
| 2/17/2009 10:00 | Effluent | Priority Organic Pollutants | 2-Nitrophenol | 1 | U | ug/L | 1 | 4.1 |
| 2/17/2009 10:00 | Effluent | Field Parameter | pH | 6.95 | | | | |
| 2/17/2009 10:00 | Effluent | Field Parameter | Specific Conductance | 1577 | | umhos/cm | | |

## Appendix E. (continued)

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 10:00 | Effluent | Field Parameter | Temperature | 24.18 | | C | | |
| 2/17/2009 10:00 | Effluent | Field Parameter | Dissolved Oxygen | 7.75 | | mg/L | | |
| 2/17/2009 12:30 | Equipment Blank | Metals | Calcium | 0.075 | U | mg/L | 0.075 | 0.3 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Cadmium | 0.03 | U | ug/L | 0.03 | 0.12 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Aluminum | 60 | U | ug/L | 60 | 240 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Nickel | 0.25 | U | ug/L | 0.25 | 1 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Zinc | 5 | U | ug/L | 5 | 20 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Selenium | 0.2 | U | ug/L | 0.2 | 0.8 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Iron | 30 | U | ug/L | 30 | 120 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Magnesium | 0.04 | U | mg/L | 0.04 | 0.16 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Chromium | 0.3 | U | ug/L | 0.3 | 1.2 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Lead | 0.2 | U | ug/L | 0.2 | 0.8 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Copper | 0.5 | U | ug/L | 0.5 | 0.5 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Sodium | 0.5 | U | mg/L | 0.5 | 2 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Silver | 0.01 | U | ug/L | 0.01 | 0.04 |
| 2/17/2009 12:30 | Equipment Blank | Metals | Arsenic | 0.25 | U | ug/L | 0.25 | 1 |
| 2/17/2009 12:30 | Equipment Blank | Nutrients | Sulfate | 0.2 | U | mg SO4/L | 0.2 | 0.5 |
| 2/17/2009 12:30 | Equipment Blank | Nutrients | O-Phosphate-P | 0.004 | U | mg P/L | 0.004 | 0.01 |
| 2/17/2009 12:30 | Equipment Blank | Nutrients | Ammonia-N | 0.01 | U | mg N/L | 0.01 | 0.02 |
| 2/17/2009 12:30 | Equipment Blank | Nutrients | Total-P | 0.02 | U | mg P/L | 0.02 | 0.06 |
| 2/17/2009 12:30 | Equipment Blank | Nutrients | Fluoride | 0.05 | U | mg F/L | 0.05 | 0.1 |
| 2/17/2009 12:30 | Equipment Blank | Nutrients | NO2NO3-N | 0.008 | U | mg N/L | 0.008 | 0.02 |
| 2/17/2009 12:30 | Equipment Blank | Nutrients | Kjeldahl Nitrogen | 0.08 | U | mg N/L | 0.08 | 0.2 |
| 2/17/2009 12:30 | Equipment Blank | Overflow | Radium 228 | 0.7 | U | pCi/L | | |
| 2/17/2009 12:30 | Equipment Blank | Overflow | Alpha, Total | 0.8 | U | pCi/L | | |
| 2/17/2009 12:30 | Equipment Blank | Overflow | Radium 226-Counting Error | 0.1 | | pCi/L | | |
| 2/17/2009 12:30 | Equipment Blank | Overflow | Radium 226 | 0.2 | | pCi/L | | |
| 2/17/2009 12:30 | Equipment Blank | Overflow | Radium 228-Counting Error | 0.4 | | pCi/L | | |
| 2/17/2009 12:30 | Equipment Blank | Overflow | Alpha-Counting Error | 0.5 | | pCi/L | | |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Ametryn | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Chlorpyrifos Ethyl | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Ethion | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Malathion | 0.14 | U | ug/L | 0.14 | 0.56 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Metolachlor | 0.48 | UJ | ug/L | 0.48 | 1.9 |

## Appendix E. (continued)

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Beta-BHC | 0.0096 | U | ug/L | 0.0096 | 0.038 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Methoxychlor | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Atrazine | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Phorate | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Alpha-BHC | 0.0096 | U | ug/L | 0.0096 | 0.038 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Delta-BHC | 0.0096 | U | ug/L | 0.0096 | 0.038 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Endosulfan II | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Gamma-BHC | 0.0096 | U | ug/L | 0.0096 | 0.038 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Hexazinone | 0.096 | U | ug/L | 0.096 | 0.38 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Metalaxyl | 0.24 | U | ug/L | 0.24 | 0.96 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Aldrin | 0.0096 | U | ug/L | 0.0096 | 0.038 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | DDE-p,p' | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Dieldrin | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Heptachlor Epoxide | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Bromacil | 0.19 | U | ug/L | 0.19 | 0.76 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Chlordane | 0.19 | U | ug/L | 0.19 | 0.76 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Chlorpyrifos Methyl | 0.096 | U | ug/L | 0.096 | 0.38 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Ethoprop | 0.096 | UJ | ug/L | 0.096 | 0.38 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Prometryn | 0.14 | U | ug/L | 0.14 | 0.56 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Endosulfan I | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Endrin | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Azinphos Methyl | 0.19 | U | ug/L | 0.19 | 0.76 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Butylate | 0.19 | UJ | ug/L | 0.19 | 0.76 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Diazinon | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Fenamiphos | 0.19 | U | ug/L | 0.19 | 0.76 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Mevinphos | 0.19 | U | ug/L | 0.19 | 0.76 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Naled | 0.77 | UJ | ug/L | 0.77 | 3.1 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Parathion Methyl | 0.096 | U | ug/L | 0.096 | 0.38 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | DDD-p,p' | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Endosulfan Sulfate | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Endrin Aldehyde | 0.019 | U | ug/L | 0.019 | 0.076 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Alachlor | 0.58 | UJ | ug/L | 0.58 | 2.3 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Fonofos | 0.096 | U | ug/L | 0.096 | 0.38 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Metribuzin | 0.096 | U | ug/L | 0.096 | 0.38 |

## Appendix E. (continued)

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Norflurazon | 0.14 | U | ug/L | 0.14 | 0.56 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Parathion Ethyl | 0.14 | U | ug/L | 0.14 | 0.56 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Simazine | 0.048 | U | ug/L | 0.048 | 0.19 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Heptachlor | 0.0096 | U | ug/L | 0.0096 | 0.038 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | DDT-p,p' | 0.029 | U | ug/L | 0.029 | 0.12 |
| 2/17/2009 12:30 | Equipment Blank | Pesticides | Toxaphene | 0.72 | U | ug/L | 0.72 | 2.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 2.9 | U | ug/L | 2.9 | 12 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 39 | U | ug/L | 39 | 160 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 4-Nitrophenol | 15 | U | ug/L | 15 | 58 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Acenaphthene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Diethyl phthalate | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Nitrobenzene | 1.9 | U | ug/L | 1.9 | 7.8 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2-Chlorophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | N-Nitrosodimethylamine | 1.9 | U | ug/L | 1.9 | 7.8 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Isophorone | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Hexachlorobutadiene | 2.9 | U | ug/L | 2.9 | 12 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Benzo(a)pyrene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 2.9 | U | ug/L | 2.9 | 12 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Anthracene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Chrysene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Dimethyl phthalate | 9.7 | UJ | ug/L | 9.7 | 39 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Naphthalene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Phenanthrene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2-Chloronaphthalene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 1.9 | U | ug/L | 1.9 | 7.8 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Di-n-butyl phthalate | 4.9 | U | ug/L | 4.9 | 19 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Fluorene | 0.97 | U | ug/L | 0.97 | 3.9 |

## Appendix E. (continued)

| Date Sampled | Field ID | Analysis | Component | Results | Remark | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Pyrene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2,4-Dinitrophenol | 15 | U | ug/L | 15 | 58 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2-Nitrophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Benzo(a)anthracene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Hexachlorocyclopentadiene | 2.9 | UJ | ug/L | 2.9 | 12 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Pentachlorophenol | 2.9 | UJ | ug/L | 2.9 | 12 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2,4-Dimethylphenol | 9.7 | U | ug/L | 9.7 | 39 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 2.9 | U | ug/L | 2.9 | 12 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 15 | U | ug/L | 15 | 58 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Fluoranthene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Hexachlorobenzene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Acenaphthylene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Butyl benzyl phthalate | 4.9 | U | ug/L | 4.9 | 19 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Di-n-octyl phthalate | 0.97 | UJ | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Hexachloroethane | 2.9 | U | ug/L | 2.9 | 12 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 1.9 | U | ug/L | 1.9 | 7.8 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Phenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.97 | U | ug/L | 0.97 | 3.9 |
| 2/17/2009 12:30 | Equipment Blank | Priority Organic Pollutants | Benzidine | 97 | U | ug/L | 97 | 390 |

**The Bioassay of the Mosaic Fertilizer, L.L.C. - South Pierce Concentrates Plant effluent sampled on February 17, 2009. NPDES #FL0000370.**

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 0 0 3 7 0 11 | 12 0 9 0 2 1 7 | 18 B | 19 S | 20 2 |

Remarks

66

**The Priority Pollutants Analysis of the Mosaic Fertilizer, L.L.C. - South Pierce Concentrates Plant effluent sampled on February 17, 2009. NPDES #FL0000370.**

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 0 0 3 7 0 11 | 12 0 9 0 2 1 7 | 18 B | 19 S | 20 2 |

Remarks

66

**Biological Analyses of the Mosaic Fertilizer, L.L.C. - South Pierce Concentrates Plant effluent sampled on February 17, 2009. NPDES #FL0000370.**

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 0 0 3 7 0 11 | 12 0 9 0 2 1 7 | 18 B | 19 S | 20 2 |

Remarks

66