


Bioassays of

# Boca Raton Wastewater Treatment Plant

Boca Raton, Palm Beach County, Florida

NPDES #FL0026344

Sampled 10/9–13/92

**January 1993**

**Biology Section**
**Division of Technical Services**

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Boca Raton, Palm Beach County, Florida

NPDES #FL0026344

**Biology Section**
**Bureau of Laboratories**
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## Introduction

Boca Raton Wastewater Treatment Plant, Boca Raton, Palm Beach County, NPDES #FL0026344, tests performed on 9 to 13 October, 1992.

This facility is located at 1501 Glades Road and serves the Boca Raton area which has a population of approximately 160,000. The 20 MGD design flow treatment process includes grit removal, primary clarification, aeration, secondary clarification, and chlorination. The 17.5 MGD average flow of chlorinated effluent is discharged to the Atlantic Ocean via a pipe with the outfall one mile offshore and 90 feet below the surface.

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1991, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition (EPA/600/4-90/027).

## Results and Discussion

The FDER Biology Section used their mobile toxicity laboratory to perform a series of on-site 96-hour, continuous flow-through and static-renewal toxicity tests on chlorinated effluent from this facility. Effluent for these tests was obtained from the effluent pipe at a sampling point located near the Beach Rescue and Lifeguard Headquarters building on A1A in Boca Raton.

Total residual chlorine (TRC) concentrations ranged from 0.05 mg/L to 0.33 mg/L in the 100% effluent, with the majority of the concentrations being less than 0.17 mg/L. Near the end of the test period, a difference in chlorine concentrations between that at the sample point and that at the mobile laboratory diluter was noted. Chlorine measurements taken during the tests are presented in Table 1, which includes paired measurements taken subsequent to discovery of the difference. The results indicated that the TRC in the effluent averaged 80% more than that reaching the exposure chambers.

Dr. Dennis Burton, who has been heavily involved in research on the aquatic toxicity of chlorine (Wye Research and Education Center, University of Maryland), indicated the likelihood that the plastic tubing used to deliver the effluent to the diluter system presented a chlorine demand (personal communication).

The freshwater test organisms used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Notropis leedsi*. These organisms were cultured in the FDER Biology laboratory. The freshwater species were used in flow-through tests with 100% effluent and static-renewal tests with 100% effluent and effluent diluted with DER well water.

The results of the flow-through tests (Table 2) indicated that 100% effluent was toxic to *C. dubia* producing a 48-hour $LC_{50} < 100\%$. The *C. dubia* had 90% and 100% mortality at 24 and 48 hours, respectively. The flow-through results indicated that 100% effluent was not toxic to *N. leedsi*.

The marine test organisms used were the inland silverside, *Menidia beryllina*, and the mysid shrimp, *Mysidopsis bahia*. These test organisms were obtained from Aquatic Indicators of St. Augustine. The marine organisms were acclimated to the appropriate salinities prior to test initiation. The marine species were used to test for toxicity after the effluent had been diluted with ambient seawater.

The highest effluent concentration used in the marine tests was 80%. Due to the low salinity (about 7 ppt) of the 80% effluent concentration, a static saltwater control (7 ppt) was set up to monitor any problems caused by salinity. No mortality or other signs of stress were noted in this salinity control. All tests, except one, used chlorinated effluent. An aliquot of effluent was dechlorinated using the sodium thiosulfate method. The dechlorinated aliquot was then used in a static-renewal, definitive bioassay with *M. bahia*.

The effluent in the flow-through tests was toxic to *M. bahia*, producing a 96-hour $LC_{50}$ of 62%, but was not toxic to *M. beryllina*. The measured effluent concentrations for the flow-through tests are shown in Table 3. The actual effluent concentrations were within ± 3% of the nominal effluent concentrations, except for the nominal 80% concentration which ranged from 72%–78% actual effluent concentration. Results of the flow-through tests are presented in Tables 4-7.

The static-renewal tests produced results similar to the flow-through tests as toxicity was noted in both the *C. dubia* and *M. bahia* tests and not in the *N. leedsi* or *M. beryllina* tests. The chlorinated-effluent, static-renewal tests produced 96-hour $LC_{50}$'s of 45% and 49% in the *C. dubia* and *M. bahia* tests, respectively. The dechlorinated-effluent, static-renewal test using *M. bahia* produced a 96-hour $LC_{50}$ of 51%. This result suggests that a substance(s) other than chlorine was present in the effluent in a concentration sufficient to produce mortality in the *M. bahia* test. Results of the static-renewal tests are presented in Tables 8-12.

Total ammonia concentrations were 1.0 mg/L or less. The calculated unionized ammonia concentrations were 0.01 mg/L or less. These concentrations are not sufficient to cause mortality. Further chemical analyses were not performed on the samples.

The results of the static-renewal chlorinated and dechlorinated tests indicate the presence of a non-chlorine toxicant. These tests were sampled at 0900 each day, the time of day when the effluent was expected to have the highest chlorine concentrations. However, static toxicity tests only show toxicity from chlorine when the concentrations are high (> 0.4 mg/L, approximately) because the chlorine is lost rapidly through volatilization and oxidation. Given the TRC concentration in these renewal samples (0.05–0.15 mg/L), no toxicity from the chlorine would be expected, and the nearly identical $LC_{50}$'s of the chlorinated and dechlorinated tests supports this.

The flow-through tests yielded slightly lower levels of toxicity. This indicates that the concentration of the non-chlorine toxicant(s) in the effluent was higher at the 0900 samplings than during the rest of the day (suggested by the slightly greater toxicity found in the renewal tests). However, the question of whether the toxicity found in the flow-through test resulted from the chlorine concentration or

the non-chlorine toxicant cannot be determined with certainty. The chlorine concentrations measured in the diluter system, based on EPA AQUIRE and other toxicity data for chlorine, were those that would reasonably be expected to account for the observed toxicity. While we have data regarding the variability of the chlorine concentrations in our tests, we have no information on the daily variation in concentration of the non-chlorine toxicant(s).

Based on the chlorine concentration, the correlation between observed and expected toxicity in the sample was good. Therefore, it is reasonable to assume that the chlorine was the probable cause of the toxicity observed in the flow-through tests and that the non-chlorine-toxicant concentration apparently was lower during much of the day. However, this test regime does not provide conclusive evidence that chlorine alone was responsible for the observed toxicity.

Since this facility may receive a permit having a compliance limit of an $LC_{50}$ of 30%, the data were examined with this in mind. Assuming that chlorine is the toxicant and given the observed 80% difference in chlorine concentration between the sampling point and the laboratory diluter, the toxicity from chlorine in the effluent at the sampling point would have been expected to be approximately 80% greater than that found in the flow-through test, or an $LC_{50}$ of approximately 38%.

## Conclusion

The samples of effluent collected for the static-renewal tests on 9 to 13 October, 1992, showed toxicity to *C. dubia* and *M. bahia*. The results of the flow-through tests, performed on 9–13 October, also showed toxicity to *C. dubia* and *M. bahia*. Chlorine probably contributed to the observed toxicity but other toxicants were also present.

The results of these tests indicate that the effluent would be in compliance with a permit having an $LC_{50}$ limit of 30%. However, it should be noted that the chlorine concentrations found during the test period were lower than those previously reported by the discharger and future compliance could depend on chlorine concentrations in the discharge remaining at the levels found during these tests.

**Table 1. Results of analyses for total residual chlorine of the effluent from the Boca Raton WWTP, sampled during flow-through testing on 9 to 13 October, 1992.**

10/9/92

| Time Collected | TRC [a] mg/L |
|---|---|
| 0915 | 0.10 |
| 1000 | 0.10 |
| 1030 | 0.10 |
| 1105 | 0.10 |
| 1200 | 0.10 |
| 1330 | 0.10 |
| 1630 | 0.09 |
| 1755 | 0.09 |
| 2125 | 0.09 |
| 2220 | 0.09 |
| 2325 | 0.12 |

10/10/92

| Time Collected | TRC [b] mg/L |
|---|---|
| 0745 | 0.08 |
| 0845 | 0.09 [a] |
| 0905 | 0.12 [a] |
| 0950 | 0.13 |
| 1100 | 0.03 |
| 2015 | 0.09 |
| 2100 | 0.10 |
| 2220 | 0.07 |

10/11/92

| Time Collected | TRC [b] mg/L |
|---|---|
| 0750 | 0.08 |
| 0900 | 0.05 [a] |
| 0930 | 0.07 |
| 1030 | 0.09 |
| 1210 | 0.10 |
| 1840 | 0.07 |
| 2015 | 0.08 |
| 2102 | 0.09 |

10/12/92

| Time Collected | TRC mg/L |
|---|---|
| 0745 | 0.08 [b] |
| 0810 | 0.07 [b] |
| 0905 | 0.15 [a] |
| 0950 | 0.33 [a] |
| 1035 | 0.09 [b] |
| 1145 | 0.08 [b] |
| 1150 | 0.13 [a] |
| 1830 | 0.09 [b] |
| 1835 | 0.17 [a] |
| 2005 | 0.16 [a] |

10/13/92

| Time Collected | TRC mg/L |
|---|---|
| 0755 | 0.19 [a] |
| 0800 | 0.11 [b] |
| 0925 | 0.17 [a] |
| 0930 | 0.09 [b] |
| 1545 | 0.11 [a] |
| 1550 | 0.07 [b] |
| 2045 | 0.15 [a] |
| 2050 | 0.08 [b] |

a Sample for Total Residual Chlorine collected at sample point.

b Sample for Total Residual Chlorine collected at dilutor prior to mixing chambers.

**Table 2. Toxicity data for the bioassays of the Boca Raton WWTP effluent, performed on 9 to 13 October, 1992.**

| Organism | Method of Data Analysis | 96 Hour $LC_{50}$ (95% Confidence Intervals) |
|---|---|---|
| **Chlorinated effluent, flow-through tests.** | | |
| *Ceriodaphnia dubia* | non-calculated | < 100% [a,b] |
| *Notropis leedsi* | non-calculated | > 100% [c] |
| *Menidia beryllina* | non-calculated | > 100% [c] |
| *Mysidopsis bahia* | Trimmed Spearman-Karber | 62% (54%, 71%) |
| **Chlorinated effluent, static-renewal tests.** | | |
| *Ceriodaphnia dubia* | Trimmed Spearman-Karber | 45% (40%, 50%) |
| *Notropis leedsi* | non-calculated | >100% [c] |
| *Menidia beryllina* | non-calculated | >100% [c] |
| *Mysidopsis bahia* | Trimmed Spearman-Karber | 49% (40%, 59%) |
| **Dechlorinated effluent, static-renewal test.** | | |
| *Mysidopsis bahia* | Trimmed Spearman-Karber | 51% (43%, 62%) |

**a** The $LC_{50}$ is < 100% since all the organisms died in the lowest test concentration (100%).

**b** The $LC_{50}$ was calculated at 48-hours since all the test organisms were dead at 48 hours.

**c** The $LC_{50}$ was not calculated since none of the test organisms died in the 100% test concentration.

**Table 3. Effluent concentration percentages and minimum and maximum mix cycle volumes measured during the 96-hour continuous flow-through bioassays of the Boca Raton WWTP effluent, performed on 9 to 13 October, 1992.**

| Nominal Effluent Concentration | Actual Effluent Concentrations | | | | |
|---|---|---|---|---|---|
| | 10/9/92 | 10/10/92 | 10/11/92 | 10/12/92 | 10/13/92 |
| Control | 0% | 0% | 0% | 0% | 0% |
| 7.5% | 8% | 7% | 8% | 8% | 8% |
| 15% | 17% | 17% | 16% | 16% | 15% |
| 30% | 29% | 28% | 27% | 28% | 27% |
| 50% | 51% | 52% | 52% | 51% | 53% |
| 80% | 78% | 72% | 76% | 75% | 74% |
| 100% | 100% | 100% | 100% | 100% | 100% |

| Effluent Concentration | Exposure Replicate Volumes per mix cycle | |
|---|---|---|
| | Minimum | Maximum |
| Control | 595 mL | 610 mL |
| 7.5% | 575 mL | 590 mL |
| 15% | 570 mL | 590 mL |
| 30% | 580 mL | 595 mL |
| 50% | 585 mL | 610 mL |
| 80% | 460 mL | 495 mL |
| 100% | 630 mL | 1040 mL |

**Table 4.** Data recorded during the 96-hour continuous flow-through bioassays of chlorinated effluent from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **Boca Raton WWTP** | | **NPDES # FL0026344** | Facility Type: | **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | P. Phillips / SE | |
| County: | Palm Beach | | Test type: | Flow-through | |
| Sample Collection Date: | **continuous** | Time: flow-through | # tests: | 4 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 2100 | Chlorination Type: | **Chlorinated** | |
| Test Ending Date: | 10/11/92 | Time: 2100 | | **Page 1 of 1** | |

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours

**LC50:** < 100%

| | SURVIVAL | | | pH | | | Temperature | | | Dissolved Oxygen | | | Conductivity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | Live at 48 hr | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour |
| Static Control | 5 | 5 | 5 | 8.8 | - | 7.9 | 23.0 | - | 24.5 | 8.4 | - | 8.4 | 153 | - | 240 |
| Static Control | 5 | 5 | 5 | - | - | 8.0 | - | - | - | - | - | 8.5 | - | - | 245 |
| Static Control | 5 | 4 | 3 | - | - | 8.1 | - | - | - | - | - | 8.7 | - | - | 245 |
| Static Control | 5 | 5 | 5 | - | - | 8.1 | - | - | - | - | - | 8.7 | - | - | 235 |
| 100.0% | 10 | 1 | 0 | 7.1 | 7.1 | 7.1 | 24.0 | 24.3 | 25.6 | 6.3 | 6.1 | 5.3 | 1005 | 1038 | 1080 |
| 100.0% | 10 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.0% | 10 | 0 | 0 | 7.1 | 7.1 | 7.1 | - | - | - | 6.3 | 6.1 | 5.3 | 1005 | 1039 | 1070 |
| 100.0% | 10 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| Control Water: | 70 | 77 |
| 100% Sample: | 93 | 177 |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

**Table 5.** Data recorded during the 96-hour continuous flow-through bioassays of chlorinated effluent from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **Boca Raton WWTP** | | **NPDES #** | **FL0026344** | Facility Type: **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | P. Phillips / SE | |
| County: | Palm Beach | | Test type: | Flow-through | |
| Sample Collection Date: | **continuous** | Time: flow-through | # tests: | 4 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 2100 | Chlorination Type: | **Chlorinated** | |
| Test Ending Date: | 10/13/92 | Time: 2100 | | | **Page 1 of 1** |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| Control Water: | 70 | 77 |
| 100% Sample: | 93 | 177 |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

Organism: ***Notropis leedsi*** Life stage: 14 days

**LC50:** -

| | SURVIVAL | | | pH | | | Temperature | | | Dissolved Oxygen | | | Conductivity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | Live at 48 hr | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour |
| Static Control | 5 | 5 | 5 | 7.8 | 8.2 | 8.3 | 22.8 | 23.5 | 24.0 | 8.4 | 7.8 | 8.0 | - | - | 265 |
| Static Control | 5 | 5 | 5 | 7.8 | 8.2 | 8.3 | - | - | - | 8.4 | 7.8 | 8.0 | 240 | 270 | 265 |
| 100.0% | 10 | 10 | 10 | 7.1 | 7.1 | 7.1 | 24.0 | 24.3 | 25.6 | 6.3 | 6.1 | 5.3 | 1005 | 1038 | 1080 |
| 100.0% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.0% | 10 | 10 | 10 | 7.1 | 7.1 | 7.1 | - | - | - | 6.3 | 6.1 | 5.3 | 1005 | 1039 | 1070 |
| 100.0% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | Live at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Static Control | 5 | 5 | 8.2 | 8.0 | 23.5 | 23.5 | 7.9 | 7.2 | 400 | 510 |
| Static Control | 5 | 5 | 8.2 | 8.0 | - | - | 7.9 | 7.2 | 400 | 470 |
| 100.0% | 10 | 10 | 7.0 | 7.0 | 25.0 | 25.0 | 5.0 | 4.4 | 1080 | 1090 |
| 100.0% | 10 | 10 | - | - | - | - | - | - | - | - |
| 100.0% | 10 | 10 | 7.0 | 7.0 | 25.0 | 25.0 | 5.2 | 4.6 | 1060 | 1040 |
| 100.0% | 10 | 10 | - | - | - | - | - | - | - | - |

**Table 6.** Data recorded during the 96-hour continuous flow-through bioassays of chlorinated effluent from the Boca Raton WWTP pipe to ocean discharge, Boca aton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **Boca Raton WWTP** | | **NPDES # FL0026344** | Facility Type: | **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | P. Phillips / SE | |
| County: | Palm Beach | | Test type: | Flow-through | |
| Sample Collection Date: | **continuous** | Time: flow-through | # tests: | 4 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 2100 | Chlorination Type: | **Chlorinated** | |
| Test Ending Date: | 10/13/92 | Time: 2100 | | | **Page 1 of 2** |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| Control Water: | 125 | - |
| 80% Sample: | - | - |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 11 |

Organism: ***Menidia beryllina*** Life stage: 12 days
**LC50:** -

| | SURVIVAL | | | pH | | | Temperature | | | Dissolved Oxygen | | | Conductivity (mmhos) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | Live at 48 hr | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour |
| Control | 10 | 9 | 8 | 8.1 | 8.1 | 8.1 | 23..8 | 23.5 | 24.8 | 6.6 | 7.2 | 6.3 | 52.1 | 51.8 | 52.8 |
| Control | 10 | 10 | 10 | - | | - | - | - | - | - | - | - | - | - | - |
| Control | 10 | 9 | 9 | 8.1 | 8.1 | 8.1 | - | - | - | 6.6 | 7.2 | 6.4 | 52.3 | 52.2 | 52.9 |
| Control | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7ppt Control* | 5 | 5 | 5 | 8.6 | 7.8 | 7.4 | 22.6 | 24.0 | 24.0 | 8.3 | 7.7 | 7.1 | - | - | 14.1 |
| 7ppt Control* | 5 | 5 | 5 | 8.6 | 7.8 | 7.4 | - | - | - | 8.3 | 7.7 | 7.1 | 13.0 | 13.6 | 13.7 |
| 7.5% | 10 | 10 | 10 | 8.1 | 8.0 | 8.0 | 24.0 | 23.9 | 25.0 | 6.6 | 7.2 | 6.4 | 49.3 | 49.1 | 49.9 |
| 7.5% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7.5% | 10 | 10 | 10 | 8.1 | 8.0 | 8.0 | - | - | - | 6.6 | 7.2 | 6.4 | 49.0 | 48.9 | 49.6 |
| 7.5% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 15% | 10 | 10 | 10 | 8.0 | 8.0 | 8.0 | 24.0 | 24.2 | 25.0 | 6.5 | 7.2 | 6.2 | 45.4 | 45.6 | 46.4 |
| 15% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 15% | 10 | 10 | 10 | 8.0 | 8.0 | 7.9 | - | - | - | 6.5 | 7.2 | 6.2 | 45.9 | 45.6 | 45.9 |
| 15% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 30% | 10 | 10 | 10 | 7.9 | 7.8 | 7.8 | 24.0 | 24.2 | 25.1 | 6.5 | 7.1 | 6.0 | 40.1 | 40.2 | 41.1 |
| 30% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 30% | 10 | 10 | 10 | 7.9 | 7.8 | 7.8 | - | - | - | 6.5 | 7.1 | 6.1 | 40.4 | 40.5 | 41.0 |
| 30% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 50% | 10 | 10 | 10 | 7.4 | 7.4 | 7.4 | 24.0 | 24.2 | 25.2 | 6.3 | 6.5 | 5.6 | 27.5 | 27.6 | 28.3 |
| 50% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 50% | 10 | 10 | 10 | 7.4 | 7.4 | 7.4 | - | - | - | 6.3 | 6.5 | 5.6 | 28.5 | 28.4 | 29.1 |
| 50% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 80% | 10 | 10 | 10 | 7.2 | 7.1 | 7.1 | 24.0 | 23.8 | 24.9 | 6.2 | 6.7 | 5.7 | 16.8 | 16.8 | 16.9 |
| 80% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 80% | 10 | 10 | 10 | 7.2 | 7.1 | 7.1 | - | - | - | 6.3 | 6.7 | 5.8 | 18.0 | 17.1 | 16.9 |
| 80% | 10 | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |

*Since the 80% effluent test concentration would theoretically contain 7ppt salinity, a 7ppt static salt control was set up to monitor the tolerance of the test organisms to low salinity.

**Table 6.** Continued

| | | | | | |
|---|---|---|---|---|---|
| Facility: **Boca Raton WWTP** | | | **NPDES # FL0026344** | Facility Type: **Wastewater Treatment** | |
| Location: 1501 Glades Road, Boca Raton | | | Contact/District: P. Phillips / SE | | |
| County: Palm Beach | | | Test type: Flow-through | | |
| Sample Collection Date: **continuous** | Time: | flow-through | # tests: 4 | Receiving Water: Atlantic Ocean | |
| Test Beginning Date: 10/9/92 | Time: | 2100 | Chlorination Type: **Chlorinated** | | |
| Test Ending Date: 10/13/92 | Time: | 2100 | | **Page 2 of 2** | |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| See Table 3 | | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| Control Water: | 125 | - |
| 80% Sample: | - | - |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 10 |

Organism: ***Menidia beryllina*** Life stage: 12 days

**LC50:** -

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | Live at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Control | 8 | 8 | 8.1 | 8.1 | 24.0 | 24.8 | 6.7 | 6.4 | 52.0 | 53.2 |
| Control | 10 | 10 | - | - | - | - | - | - | - | - |
| Control | 9 | 9 | 8.1 | 8.1 | - | - | 6.7 | 6.4 | 52.2 | 53.3 |
| Control | 10 | 10 | - | - | - | - | - | - | - | - |
| 7ppt Control* | 5 | 5 | 7.4 | 7.3 | 23.5 | 24.3 | 7.4 | 7.0 | 14.0 | 14.6 |
| 7ppt Control* | 5 | 5 | 7.4 | 7.4 | - | - | 7.4 | 7.0 | 14.2 | 14.7 |
| 7.5% | 10 | 10 | 8.1 | 8.0 | 24.5 | 25.0 | 6.6 | 6.1 | 49.6 | 49.4 |
| 7.5% | 10 | 10 | - | - | - | - | - | - | - | - |
| 7.5% | 10 | 10 | 8.0 | 8.0 | - | - | 6.6 | 6.2 | 49.6 | 49.9 |
| 7.5% | 10 | 10 | - | - | - | - | - | - | - | - |
| 15% | 10 | 10 | 8.0 | 7.9 | 24.5 | 25.0 | 6.5 | 6.0 | 46.7 | 46.7 |
| 15% | 10 | 10 | - | - | - | - | - | - | - | - |
| 15% | 10 | 10 | 8.0 | 7.9 | - | - | 6.5 | 6.0 | 46.2 | 46.1 |
| 15% | 10 | 10 | - | - | - | - | - | - | - | - |
| 30% | 10 | 10 | 7.8 | 7.8 | 24.5 | 25.0 | 6.5 | 6.0 | 40.4 | 41.4 |
| 30% | 10 | 10 | - | - | - | - | - | - | - | - |
| 30% | 10 | 10 | 7.8 | 7.8 | - | - | 6.6 | 6.0 | 40.8 | 40.6 |
| 30% | 10 | 10 | - | - | - | - | - | - | - | - |
| 50% | 10 | 10 | 7.3 | 7.3 | 24.5 | 25.0 | 5.9 | 5.4 | 27.8 | 27.9 |
| 50% | 10 | 10 | - | - | - | - | - | - | - | - |
| 50% | 10 | 10 | 7.4 | 7.3 | - | - | 6.7 | 5.5 | 28.9 | 29.2 |
| 50% | 10 | 10 | - | - | - | - | - | - | - | - |
| 80% | 10 | 10 | 7.1 | 7.1 | 24.0 | 25.0 | 6.0 | 5.1 | 16.4 | 16.9 |
| 80% | 10 | 10 | - | - | - | - | - | - | - | - |
| 80% | 10 | 10 | 7.1 | 7.1 | - | - | 6.0 | 5.0 | 16.5 | 17.3 |
| 80% | 10 | 10 | - | - | - | - | - | - | - | - |

*Since the 80% effluent test concentration would theoretically contain 7ppt salinity, a 7ppt static salt control was set up to monitor the tolerance of the test organisms to low salinity.

**Table 7.** Data recorded during the 96-hour continuous flow-through bioassays of chlorinated effluent from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **Boca Raton WWTP** | | **NPDES #** | **FL0026344** | Facility Type: **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | P. Phillips / SE | |
| County: | Palm Beach | | Test type: | Flow-through | |
| Sample Collection Date: | **continuous** | Time: flow-through | # tests: | 4 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 2100 | Chlorination Type: | **Chlorinated** | |
| Test Ending Date: | 10/13/92 | Time: 2100 | | | **Page 1 of 2** |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| | Alkalinity | Hardness |
|---|---|---|
| **Alk & Hardness** | (mg/l) | (mg/l) |
| Control Water: | 125 | - |
| 80% Sample: | - | - |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 9.0 |

Organism: ***Mysidopsis bahia*** Life stage: 4 days

**LC50:** 62% Trimmed Spearman-Karber

| | SURVIVAL | | | pH | | | Temperature | | | Dissolved Oxygen | | | Conductivity (mmhos) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | Live at 48 hr | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour | 0 hour | 24 hour | 48 hour |
| Control | 8 | 8 | 8 | 8.1 | 8.1 | 8.1 | 23..8 | 23.5 | 24.8 | 6.6 | 7.2 | 6.3 | 52.1 | 51.8 | 52.8 |
| Control | 8 | 8 | 8 | - | | - | - | - | - | - | - | - | - | - | - |
| Control | 8 | 8 | 8 | 8.1 | 8.1 | 8.1 | - | - | - | 6.6 | 7.2 | 6.4 | 52.3 | 52.2 | 52.9 |
| Control | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7ppt Control | 5 | 4 | 4 | 8.6 | 7.3 | 7.2 | 22.6 | 23.8 | 23.5 | 8.2 | 7.9 | 6.8 | - | - | 13.6 |
| 7ppt Control | 5 | 5 | 5 | 8.6 | 7.3 | 7.2 | - | - | - | 8.3 | 7.9 | 6.7 | 12.7 | 13.2 | 13.7 |
| 7.5% | 8 | 8 | 8 | 8.1 | 8.0 | 8.0 | 24.0 | 23.9 | 25.0 | 6.6 | 7.2 | 6.4 | 49.3 | 49.1 | 49.9 |
| 7.5% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7.5% | 8 | 8 | 8 | 8.1 | 8.0 | 8.0 | - | - | - | 6.6 | 7.2 | 6.4 | 49.0 | 48.9 | 49.6 |
| 7.5% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 15% | 8 | 8 | 8 | 8.0 | 8.0 | 8.0 | 24.0 | 24.2 | 25.0 | 6.5 | 7.2 | 6.2 | 45.4 | 45.6 | 46.4 |
| 15% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 15% | 8 | 8 | 8 | 8.0 | 8.0 | 7.9 | - | - | - | 6.5 | 7.2 | 6.2 | 45.9 | 45.6 | 45.9 |
| 15% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 30% | 8 | 8 | 8 | 7.9 | 7.8 | 7.8 | 24.0 | 24.2 | 25.1 | 6.5 | 7.1 | 6.0 | 40.1 | 40.2 | 41.1 |
| 30% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 30% | 8 | 8 | 8 | 7.9 | 7.8 | 7.8 | - | - | - | 6.5 | 7.1 | 6.1 | 40.4 | 40.5 | 41.0 |
| 30% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 50% | 8 | 8 | 8 | 7.4 | 7.4 | 7.4 | 24.0 | 24.2 | 25.2 | 6.3 | 6.5 | 5.6 | 27.5 | 27.6 | 28.3 |
| 50% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 50% | 8 | 8 | 8 | 7.4 | 7.4 | 7.4 | - | - | - | 6.3 | 6.5 | 5.6 | 28.5 | 28.4 | 29.1 |
| 50% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 80% | 8 | 8 | 7 | 7.2 | 7.1 | 7.1 | 24.0 | 23.8 | 24.9 | 6.2 | 6.7 | 5.7 | 16.8 | 16.8 | 16.9 |
| 80% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 80% | 8 | 8 | 5 | 7.2 | 7.1 | 7.1 | - | - | - | 6.3 | 6.7 | 5.8 | 18.0 | 17.1 | 16.9 |
| 80% | 8 | 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |

*Since the 80% effluent test concentration would theoretically contain 7ppt salinity, a 7ppt static salt control was set up to monitor the tolerance of the test organisms to low salinity.

**Table 7.** Continued

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **Boca Raton WWTP** | | **NPDES #** | **FL0026344** | Facility Type: **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | P. Phillips / SE | |
| County: | Palm Beach | | Test type: | Flow-through | |
| Sample Collection Date: | **continuous** | Time: flow-through | # tests: | 4 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 2100 | Chlorination Type: | **Chlorinated** | |
| Test Ending Date: | 10/13/92 | Time: 2100 | | | **Page 2 of 2** |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| See Table 3 | | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| Control Water: | 125 | - |
| 80% Sample: | - | - |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 10 |

Organism: ***Mysidopsis bahia*** Life stage: 4 days

**LC50:** 62% Trimmed Spearman-Karber

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | Live at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Control | 7 | 7 | 8.1 | 8.1 | 24.0 | 24.8 | 6.7 | 6.4 | 52.0 | 53.2 |
| Control | 8 | 8 | - | - | - | - | - | - | - | - |
| Control | 8 | 8 | 8.1 | 8.1 | - | - | 6.7 | 6.4 | 52.2 | 53.3 |
| Control | 8 | 8 | - | - | - | - | - | - | - | - |
| 7ppt Control | 4 | 4 | 7.2 | 7.3 | 23.0 | 23.7 | 7.1 | 6.8 | 13.7 | 14.3 |
| 7ppt Control | 5 | 5 | 7.2 | 7.3 | - | - | 7.1 | 6.9 | 13.9 | 14.2 |
| 7.5% | 8 | 8 | 8.1 | 8.0 | 24.5 | 25.0 | 6.6 | 6.1 | 49.6 | 49.4 |
| 7.5% | 8 | 8 | - | - | - | - | - | - | - | - |
| 7.5% | 8 | 8 | 8.0 | 8.0 | - | - | 6.6 | 6.2 | 49.6 | 49.9 |
| 7.5% | 8 | 8 | - | - | - | - | - | - | - | - |
| 15% | 8 | 8 | 8.0 | 7.9 | 24.5 | 25.0 | 6.5 | 6.0 | 46.7 | 46.7 |
| 15% | 8 | 8 | - | - | - | - | - | - | - | - |
| 15% | 8 | 8 | 8.0 | 7.9 | - | - | 6.5 | 6.0 | 46.2 | 46.1 |
| 15% | 8 | 8 | - | - | - | - | - | - | - | - |
| 30% | 8 | 8 | 7.8 | 7.8 | 24.5 | 25.0 | 6.5 | 6.0 | 40.4 | 41.4 |
| 30% | 8 | 8 | - | - | - | - | - | - | - | - |
| 30% | 8 | 8 | 7.8 | 7.8 | - | - | 6.6 | 6.0 | 40.8 | 40.6 |
| 30% | 8 | 8 | - | - | - | - | - | - | - | - |
| 50% | 5 | 5 | 7.3 | 7.3 | 24.5 | 25.0 | 5.9 | 5.4 | 27.8 | 27.9 |
| 50% | 7 | 5 | - | - | - | - | - | - | - | - |
| 50% | 7 | 7 | 7.4 | 7.3 | - | - | 6.7 | 5.5 | 28.9 | 29.2 |
| 50% | 8 | 8 | - | - | - | - | - | - | - | - |
| 80% | 1 | 0 | 7.1 | 7.1 | 24.0 | 25.0 | 6.0 | 5.5 | 16.4 | 16.9 |
| 80% | 6 | 2 | - | - | - | - | - | - | - | - |
| 80% | 3 | 1 | 7.1 | 7.1 | - | - | 6.0 | 5.4 | 16.5 | 17.3 |
| 80% | 5 | 2 | - | - | - | - | - | - | - | - |

*Since the 80% effluent test concentration would theoretically contain 7ppt salinity, a 7ppt static salt control was set up to monitor the tolerance of the test organisms to low salinity.

**Table 8.** Data recorded during the 96-hour acute definitive, static-renewal bioassays of chlorinated effluent samples from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

## 1st day (0-24 hours)

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **City of Boca Raton WWTP** | | **NPDES # FL0026344** | Facility Type: | **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | Paul Phillips / SE | |
| County: | Palm Beach | | Test type: | Static Renewal Definitive | |
| Sample 1 Collection Date: | **10/9/92** | Time: 0915 | # tests: | 4 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 1400 | Chlorination Type: | **Chlorinated** | |
| Test Ending Date: | 10/13/92 | Time: 1500 | | | **Page 1 of 4** |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| See Table 3 | | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| 20% Dilute Mineral Water (cladocerans): | 70 | 77 |
| 100% Sample: | 93 | 177 |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 Hours

**LC50:** 45% Trimmed Spearman-Karber

Day 1 sample--Parameters taken at the beginning and the end of the test species exposure to the day 1 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour |
| Control | 5 | 5 | 8.2 | 8.1 | 21.0 | 24.0 | 8.8 | 8.1 | 217 | 180 |
| Control | 5 | 5 | - | 8.1 | - | - | - | 8.1 | - | - |
| Control | 5 | 5 | - | 8.1 | - | - | - | 8.1 | - | - |
| Control | 5 | 5 | - | 8.1 | - | - | - | 8.1 | - | - |
| 7% | 5 | 5 | 8.1 | 8.0 | 20.5 | 24.2 | 8.9 | 8.2 | 242 | 230 |
| 7% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 7% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 7% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 15% | 5 | 5 | 8.1 | 8.0 | 20.4 | 24.1 | 8.7 | 8.2 | 256 | 390 |
| 15% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 15% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 15% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 30% | 5 | 5 | 8.0 | 8.0 | 20.3 | 24.1 | 8.7 | 8.2 | 359 | 430 |
| 30% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 30% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 30% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | - |
| 50% | 5 | 5 | 7.8 | 7.9 | 20.4 | 24.2 | 8.5 | 8.1 | 504 | 590 |
| 50% | 5 | 5 | - | 7.9 | - | - | - | 8.1 | - | - |
| 50% | 5 | 5 | - | 8.0 | - | - | - | 8.1 | - | - |
| 50% | 5 | 5 | - | 7.9 | - | - | - | 8.1 | - | - |
| 80% | 5 | 5 | 7.7 | 7.9 | 20.5 | 24.2 | 8.5 | 8.0 | 717 | 825 |
| 80% | 5 | 5 | - | 7.9 | - | - | - | 8.0 | - | - |
| 80% | 5 | 5 | - | 7.9 | - | - | - | 8.0 | - | - |
| 80% | 5 | 5 | - | 7.9 | - | - | - | 8.0 | - | - |
| 100% | 5 | 5 | 7.6 | 7.9 | 20.6 | 24.5 | 8.4 | 7.9 | 868 | 985 |
| 100% | 5 | 5 | - | 7.9 | - | - | - | 7.9 | - | - |
| 100% | 5 | 5 | - | 7.9 | - | - | - | 7.9 | - | - |
| 100% | 5 | 5 | - | 7.9 | - | - | - | 7.9 | - | - |

**Table 8.** Continued

## 2nd day (24-48 hours)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Facility: | **City of Boca Raton WWTP** | | | **NPDES #** | **FL0026344** | Facility Type: | **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | | Contact/District: | Paul Phillips / SE | | |
| County: | Palm Beach | | | Test type: | Static Renewal Definitive | | |
| Sample 2 Collection Date: | **10/10/92** | Time: | 0905 | # tests: | 4 | Receiving Water: | Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: | 1400 | Chlorination Type: | **Chlorinated** | | |
| Test Ending Date: | 10/13/92 | Time: | 1500 | | | **Page 2 of 4** | |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| 20% Dilute Mineral Water (cladocerans): | 70 | 77 |
| 100% Sample: | 93 | 177 |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

Organism: ***Ceriodaphnia dubia*** Life stage: < 48 Hours

**LC50:** 45% Trimmed Spearman-Karber

Day 2 sample--Parameters taken at the beginning and the end of the test species exposure to the day 2 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 24 hr | Live at 48 hr | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour |
| Control | 5 | 5 | 8.7 | 8.0 | 23.5 | 24.0 | 8.7 | 7.9 | 155 | 195 |
| Control | 5 | 5 | - | 8.0 | - | - | - | 7.9 | - | 195 |
| Control | 5 | 5 | - | 8.0 | - | - | - | 7.9 | - | 190 |
| Control | 5 | 5 | - | 8.1 | - | - | - | 7.9 | - | 180 |
| 7% | 5 | 5 | 8.5 | 8.1 | 23.5 | 24.1 | 8.6 | 8.0 | 220 | 240 |
| 7% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 240 |
| 7% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 235 |
| 7% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 235 |
| 15% | 5 | 5 | 8.2 | 8.1 | 23.5 | 24.1 | 8.4 | 8.0 | 275 | 295 |
| 15% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 285 |
| 15% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 295 |
| 15% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 290 |
| 30% | 5 | 5 | 7.6 | 8.1 | 23.5 | 24.0 | 8.1 | 8.0 | 395 | 430 |
| 30% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 420 |
| 30% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 420 |
| 30% | 5 | 5 | - | 8.1 | - | - | - | 8.0 | - | 405 |
| 50% | 5 | 5 | 7.3 | 8.0 | 23.4 | 24.0 | 7.6 | 8.0 | 555 | 610 |
| 50% | 5 | 5 | - | 8.0 | - | - | - | 8.0 | - | 605 |
| 50% | 5 | 4 | - | 8.0 | - | - | - | 8.0 | - | 595 |
| 50% | 5 | 5 | - | 8.0 | - | - | - | 7.9 | - | 570 |
| 80% | 5 | 1 | 7.1 | 8.0 | 23.5 | 24.0 | 7.0 | 7.9 | 785 | 880 |
| 80% | 5 | 1 | - | 8.0 | - | - | - | 7.9 | - | 870 |
| 80% | 5 | 0 | - | 8.0 | - | - | - | 7.9 | - | 805 |
| 80% | 5 | 0 | - | 8.0 | - | - | - | 7.9 | - | 825 |
| 100% | 5 | 0 | 7.0 | 8.1 | 23.7 | 23.9 | 6.6 | 7.9 | 985 | 1075 |
| 100% | 5 | 0 | - | 8.1 | - | - | - | 7.9 | - | 1020 |
| 100% | 5 | 0 | - | 8.1 | - | - | - | 7.9 | - | 1055 |
| 100% | 5 | 0 | - | 8.1 | - | - | - | 7.9 | - | 965 |

**Table 8.** Continued

## 3rd day (48-72 hours)

Facility: **City of Boca Raton WWTP** NPDES # **FL0026344** Facility Type: **Sewage Treatment**
Location: 1501 Glades Road, Boca Raton Contact/District: Paul Phillips / SE
County: Palm Beach Test type: Static Renewal Definitive
Sample 3 Collection Date: **10/11/92** Time: 0900 # tests: 4 Receiving Water: Atlantic Ocean
Test Beginning Date: 10/9/92 Time: 1400 Chlorination Type: **Chlorinated**
Test Ending Date: 10/13/92 Time: 1500 **Page 3 of 4**

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| 20% Dilute Mineral Water (cladocerans): | 70 | 77 |
| 100% Sample: | 93 | 177 |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

Organism: ***Ceriodaphnia dubia*** Life stage: < 72 Hours
**LC50:** 45% Trimmed Spearman-Karber
Day 3 sample--Parameters taken at the beginning and the end of the test species exposure to the day 3 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 48 hr | Live at 72 hr | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour |
| Control | 5 | 4 | 8.6 | 7.9 | 23.8 | 22.2 | 8.2 | 8.2 | 150 | 165 |
| Control | 5 | 5 | - | 7.9 | - | - | - | 8.2 | - | 190 |
| Control | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | 190 |
| Control | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | 205 |
| 7% | 5 | 5 | 8.5 | 8.0 | 23.7 | 22.2 | 8.2 | 8.2 | 215 | 230 |
| 7% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | 250 |
| 7% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | 260 |
| 7% | 5 | 5 | - | 8.0 | - | - | - | 8.2 | - | 270 |
| 15% | 5 | 5 | 8.1 | 8.0 | 23.6 | 22.2 | 8.2 | 8.1 | 280 | 305 |
| 15% | 5 | 5 | - | 8.0 | - | - | - | 8.1 | - | 305 |
| 15% | 5 | 5 | - | 8.0 | - | - | - | 8.1 | - | 325 |
| 15% | 5 | 5 | - | 8.0 | - | - | - | 8.1 | - | 330 |
| 30% | 5 | 5 | 7.9 | 7.9 | 23.7 | 22.3 | 8.0 | 8.0 | 400 | 425 |
| 30% | 5 | 4 | - | 7.9 | - | - | - | 8.0 | - | 445 |
| 30% | 5 | 5 | - | 7.9 | - | - | - | 8.0 | - | 465 |
| 30% | 5 | 5 | - | 7.9 | - | - | - | 8.0 | - | 465 |
| 50% | 5 | 4 | 7.5 | 8.0 | 23.8 | 22.3 | 7.8 | 8.0 | 555 | 575 |
| 50% | 5 | 3 | - | 8.0 | - | - | - | 8.0 | - | 610 |
| 50% | 4 | 0 | - | 8.0 | - | - | - | 8.0 | - | 640 |
| 50% | 5 | 0 | - | 8.0 | - | - | - | 8.0 | - | 660 |
| 80% | 1 | 0 | 7.3 | 8.0 | 23.9 | 22.4 | 7.3 | 8.0 | 790 | 815 |
| 80% | 1 | 0 | - | 8.0 | - | - | - | 8.0 | - | 865 |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |

**Table 8.** Continued

## 4th day (72-96 hours)

Facility: **City of Boca Raton WWTP** NPDES # **FL0026344** Facility Type: **Wastewater Treatment**
Location: 1501 Glades Road, Boca Raton Contact/District: Paul Phillips / SE
County: Palm Beach Test type: Static Renewal Definitive
Sample 4 Collection Date: **10/12/92** Time: 0905 # tests: 4 Receiving Water: Atlantic Ocean
Test Beginning Date: 10/9/92 Time: 1400 Chlorination Type: **Chlorinated**
Test Ending Date: 10/13/92 Time: 1500 **Page 4 of 4**

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| 20% Dilute Mineral Water (cladocerans): | 70 | 77 |
| 100% Sample: | 93 | 177 |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

Organism: ***Ceriodaphnia dubia*** Life stage: < 96 Hours
**LC50:** 45% Trimmed Spearman-Karber
Day 4 sample--Parameters taken at the beginning and the end of the test species exposure to the day 4 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Control | 4 | 4 | 8.6 | 8.1 | 22.2 | 23.0 | 8.6 | 8.7 | 165 | 155 |
| Control | 5 | 5 | - | 8.1 | - | - | - | 8.7 | - | 155 |
| Control | 5 | 5 | - | 8.1 | - | - | - | 8.7 | - | 155 |
| Control | 5 | 5 | - | 8.1 | - | - | - | 8.7 | - | 155 |
| 7% | 5 | 5 | 8.4 | 8.1 | 22.0 | 23.3 | 8.6 | 8.6 | 195 | 220 |
| 7% | 5 | 5 | - | 8.1 | - | - | - | 8.6 | - | 220 |
| 7% | 5 | 5 | - | 8.1 | - | - | - | 8.6 | - | 220 |
| 7% | 5 | 5 | - | 8.1 | - | - | - | 8.6 | - | 215 |
| 15% | 5 | 5 | 8.2 | 8.1 | 21.8 | 23.3 | 8.5 | 8.6 | 260 | 285 |
| 15% | 5 | 5 | - | 8.1 | - | - | - | 8.6 | - | 285 |
| 15% | 5 | 5 | - | 8.1 | - | - | - | 8.6 | - | 290 |
| 15% | 5 | 5 | - | 8.1 | - | - | - | 8.6 | - | 280 |
| 30% | 5 | 5 | 7.9 | 8.1 | 22.0 | 23.6 | 8.4 | 8.5 | 375 | 390 |
| 30% | 4 | 4 | - | 8.1 | - | - | - | 8.5 | - | 400 |
| 30% | 5 | 5 | - | 8.1 | - | - | - | 8.5 | - | 410 |
| 30% | 5 | 5 | - | 8.1 | - | - | - | 8.5 | - | 400 |
| 50% | 4 | 1 | 7.6 | 8.1 | 22.2 | 23.7 | 7.8 | 8.5 | 530 | 550 |
| 50% | 3 | 0 | - | 8.1 | - | - | - | 8.5 | - | 550 |
| 50% | 0 | 0 | - | - | - | - | - | - | - | - |
| 50% | 0 | 0 | - | - | - | - | - | - | - | - |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |
| 100% | 0 | 0 | - | - | - | - | - | - | - | - |

**Table 9.** Data recorded during the 96-hour acute definitive, static-renewal bioassays of chlorinated effluent samples from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

## 1st day (0-24 hours)

Facility: **City of Boca Raton WWTP** NPDES # **FL0026344** Facility Type: **Wastewater Treatment**
Location: 1501 Glades Road, Boca Raton Contact/District: Paul Phillips / SE
County: Palm Beach Test type: Static Renewal Definitive
Sample 1 Collection Date: **10/9/92** Time: 0915 # tests: 4 Receiving Water: Atlantic Ocean
Test Beginning Date: 10/9/92 Time: 1400 Chlorination Type: **Chlorinated**
Test Ending Date: 10/13/92 Time: 1500 **Page 1 of 2**

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| **Alk & Hardness** | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| Control Water (fish): | 122 | 127 |
| 100% Sample: | 93 | 177 |

Organism: ***Notropis leedsi*** Life stage: 14 days
**LC50:** - Day 1 sample--Parameters taken at the beginning and the end of the test species exposure to the day 1 sample.

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour |
| Control | 5 | 5 | 7.8 | 8.2 | 22.5 | 23.2 | 8.3 | 8.6 | - | - |
| Control | 5 | 5 | 7.8 | 8.3 | - | - | 8.3 | 8.6 | 242 | 290 |
| 7% | 5 | 5 | 7.8 | 8.1 | 22.5 | 23.3 | 8.3 | 8.4 | - | - |
| 7% | 5 | 5 | 7.8 | 8.1 | - | - | 8.3 | 8.4 | 296 | 346 |
| 15% | 5 | 5 | 7.8 | 8.1 | 22.7 | 23.2 | 8.2 | 8.4 | - | - |
| 15% | 5 | 5 | 7.8 | 8.1 | - | - | 8.2 | 8.4 | 348 | 396 |
| 30% | 5 | 5 | 7.7 | 7.9 | 22.8 | 23.2 | 8.1 | 8.2 | - | - |
| 30% | 5 | 5 | 7.7 | 7.9 | - | - | 8.1 | 8.2 | 449 | 482 |
| 50% | 5 | 5 | 7.5 | 7.8 | 22.9 | 23.2 | 7.7 | 7.9 | - | - |
| 50% | 5 | 5 | 7.5 | 7.8 | - | - | 7.7 | 7.9 | 590 | 626 |
| 80% | 5 | 5 | 7.3 | 7.6 | 23.1 | 23.2 | 7.2 | 7.5 | - | - |
| 80% | 5 | 5 | 7.3 | 7.6 | - | - | 7.2 | 7.5 | 800 | 832 |
| 100% | 5 | 5 | 7.2 | 7.4 | 23.0 | 23.5 | 6.6 | 6.8 | - | - |
| 100% | 5 | 5 | 7.2 | 7.4 | - | - | 6.6 | 6.8 | 934 | 968 |

## 2nd day (24-48 hours)

Sample 2 Collection Date: **10/10/92** Time: 0905

Organism: ***Notropis leedsi*** Life stage: 15 days
**LC50:** - Day 2 sample--Parameters taken at the beginning and the end of the test species exposure to the day 2 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 24 hr | Live at 48 hr | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour |
| Control | 5 | 5 | 7.9 | 8.3 | 24.3 | 23.0 | 8.2 | 8.4 | - | 265 |
| Control | 5 | 5 | 7.9 | 8.3 | - | - | 8.3 | 8.4 | 260 | 255 |
| 7% | 5 | 5 | 7.8 | 8.1 | 24.0 | 23.5 | 8.1 | 7.9 | - | 310 |
| 7% | 5 | 5 | 7.8 | 8.1 | - | - | 8.1 | 7.9 | 310 | 310 |
| 15% | 5 | 5 | 7.6 | 8.0 | 24.0 | 23.5 | 7.8 | 7.6 | - | 375 |
| 15% | 5 | 5 | 7.6 | 8.0 | - | - | 7.8 | 7.6 | 365 | 370 |
| 30% | 5 | 5 | 7.4 | 7.7 | 24.3 | 23.5 | 7.2 | 7.2 | - | 480 |
| 30% | 5 | 5 | 7.4 | 7.7 | - | - | 7.2 | 7.2 | 470 | 470 |
| 50% | 5 | 5 | 7.3 | 7.5 | 24.6 | 24.0 | 6.8 | 6.4 | - | 620 |
| 50% | 5 | 5 | 7.3 | 7.5 | - | - | 6.8 | 6.4 | 620 | 615 |
| 80% | 5 | 5 | 7.1 | 7.3 | 25.0 | 24.0 | 5.7 | 6.0 | - | 840 |
| 80% | 5 | 5 | 7.1 | 7.3 | - | - | 5.8 | 6.0 | - | 830 |
| 100% | 5 | 5 | 7.0 | 7.2 | 25.2 | 24.0 | 5.1 | 5.2 | - | 985 |
| 100% | 5 | 5 | 6.9 | 7.1 | - | - | 5.1 | 5.2 | - | 975 |

**Table 9.** Continued

## 3rd day (48-72 hours)

Facility: **City of Boca Raton WWTP** NPDES # **FL0026344** Facility Type: **Wastewater Treatment**
Location: 1501 Glades Road, Boca Raton Contact/District: Paul Phillips / SE
County: Palm Beach Test type: Static Renewal Definitive
Sample 3 Collection Date: **10/11/92** Time: 0900 # tests: 4 Receiving Water: Atlantic Ocean
Test Beginning Date: 10/11/92 Time: 1400 Chlorination Type: **Chlorinated**
Test Ending Date: 10/13/92 Time: 1500 **Page 2 of 2**

| Total Residual Cl2 | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| Alk & Hardness | Alkalinity (mg/l) | Hardness (mg/l) |
|---|---|---|
| Control Water (fish): | 122 | 127 |
| 100% Sample: | 93 | 177 |

| Salinity (ppt) | |
|---|---|
| Control Water: | 0 |
| 100% Sample: | 0 |

Organism: ***Notropis leedsi*** Life stage: 16 days
**LC50:** - Day 3 sample--Parameters taken at the beginning and the end of the test species exposure to the day 3 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 48 hr | Live at 72 hr | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour |
| Control | 5 | 5 | 8.1 | 8.0 | 23.5 | 23.0 | 8.0 | 7.9 | 245 | 270 |
| Control | 5 | 5 | 8.1 | 8.1 | - | - | 8.0 | 7.9 | 247 | 260 |
| 7% | 5 | 5 | 8.0 | 8.1 | 23.5 | 23.0 | 7.9 | 8.0 | 301 | 315 |
| 7% | 5 | 5 | 8.0 | 8.1 | - | - | 7.9 | 8.1 | 301 | 315 |
| 15% | 5 | 5 | 7.8 | 8.0 | 23.6 | 23.0 | 7.7 | 8.1 | 360 | 375 |
| 15% | 5 | 5 | 7.8 | 8.0 | - | - | 7.7 | 8.0 | 365 | 385 |
| 30% | 5 | 5 | 7.6 | 7.8 | 23.9 | 23.0 | 7.3 | 7.9 | 465 | 480 |
| 30% | 5 | 5 | 7.6 | 7.8 | - | - | 7.2 | 7.9 | 465 | 485 |
| 50% | 5 | 5 | 7.6 | 7.7 | 23.6 | 23.5 | 7.1 | 7.5 | 490 | 510 |
| 50% | 5 | 5 | 7.6 | 7.7 | - | - | 7.1 | 7.5 | 485 | 495 |
| 80% | 5 | 5 | 7.1 | 7.4 | 24.1 | 23.5 | 5.1 | 7.0 | 820 | 840 |
| 80% | 5 | 5 | 7.1 | 7.4 | - | - | 5.0 | 6.9 | 820 | 845 |
| 100% | 5 | 5 | 6.9 | 7.3 | 24.5 | 24.0 | 4.4 | 6.7 | 980 | 1000 |
| 100% | 5 | 5 | 6.9 | 7.3 | - | - | 4.4 | 6.6 | 980 | 990 |

## 4th day (72-96 hours)

Sample 4 Collection Date: **10/12/92** Time: 0905

Organism: ***Notropis leedsi*** Life stage: 17 days
**LC50:** - Day 4 sample--Parameters taken at the beginning and the end of the test species exposure to the day 4 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Control | 5 | 5 | 8.2 | 8.2 | 22.8 | 23.1 | 8.7 | 8.4 | 240 | 255 |
| Control | 5 | 5 | 8.2 | 8.2 | - | - | 8.7 | 8.4 | 240 | 255 |
| 7% | 5 | 5 | 8.1 | 8.2 | 23.0 | 23.1 | 8.6 | 8.4 | 290 | 300 |
| 7% | 5 | 5 | 8.1 | 8.2 | - | - | 8.5 | 8.4 | 290 | 300 |
| 15% | 5 | 5 | 7.8 | 8.1 | 23.1 | 23.3 | 8.3 | 8.2 | 350 | 365 |
| 15% | 5 | 5 | 7.8 | 8.1 | - | - | 8.2 | 8.2 | 350 | 360 |
| 30% | 5 | 5 | 7.5 | 7.9 | 23.2 | 23.8 | 7.6 | 7.9 | 460 | 475 |
| 30% | 5 | 5 | 7.5 | 7.9 | - | - | 7.6 | 7.9 | 460 | 475 |
| 50% | 5 | 5 | 7.3 | 7.8 | 23.0 | 24.0 | 7.0 | 7.8 | 595 | 610 |
| 50% | 5 | 5 | 7.3 | 7.8 | - | - | 6.8 | 7.8 | 590 | 610 |
| 80% | 5 | 5 | 7.1 | 7.7 | 24.1 | 24.0 | 5.2 | 7.6 | 830 | 850 |
| 80% | 5 | 5 | 7.1 | 7.7 | - | - | 5.2 | 7.6 | 830 | 850 |
| 100% | 5 | 5 | 7.0 | 7.7 | 24.1 | 24.0 | 4.2 | 7.5 | 975 | 1015 |
| 100% | 5 | 5 | 7.0 | 7.7 | - | - | 4.2 | 7.5 | 975 | 1005 |

**Table 10.** Data recorded during the 96-hour acute definitive, static-renewal bioassays of chlorinated effluent samples from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

## 1st day (0-24 hours)

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **City of Boca Raton WWTP** | | **NPDES # FL0026344** | Facility Type: | **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | Paul Phillips / SE | |
| County: | Palm Beach | | Test type: | Static Renewal Definitive | |
| Sample 1 Collection Date: | **10/9/92** | Time: 0915 | # tests: | 4 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 1400 | Chlorination Type: | **Chlorinated** | |
| Test Ending Date: | 10/13/92 | Time: 1500 | | | **Page 1 of 2** |

| Total Residual Cl2 | mg/l | Method |
|---|---|---|
| See Table 3 | | |

| Salinity (ppt) | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 8 |

Organism: ***Mysidopsis bahia*** Life stage: 4 days

**LC50:** 49% Trimmed Spearman-Karber

Day 1 sample--Parameters taken at the beginning and the end of the test species exposure to the day 1 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour |
| Control | 5 | 5 | 8.1 | 8.0 | 23.3 | 23.7 | 6.5 | 6.7 | - | - |
| Control | 5 | 5 | 8.1 | 8.0 | - | - | 6.5 | 6.7 | 51.9 | 52.1 |
| 7% | 5 | 5 | 8.1 | 8.0 | 23.3 | 23.3 | 6.7 | 6.7 | - | - |
| 7% | 5 | 5 | 8.1 | 8.0 | - | - | 6.7 | 6.7 | 49.1 | 49.7 |
| 15% | 5 | 5 | 8.1 | 8.0 | 23.3 | 23.6 | 6.7 | 6.7 | - | - |
| 15% | 5 | 5 | 8.1 | 8.0 | - | - | 6.7 | 6.7 | 45.4 | 45.9 |
| 30% | 5 | 5 | 8.0 | 8.0 | 23.2 | 23.6 | 7.0 | 6.9 | - | - |
| 30% | 5 | 5 | 8.0 | 8.0 | - | - | 7.0 | 6.9 | 38.3 | 38.9 |
| 50% | 5 | 5 | 7.9 | 7.9 | 23.0 | 23.8 | 7.3 | 7.2 | - | - |
| 50% | 5 | 5 | 7.9 | 7.9 | - | - | 7.3 | 7.2 | 28.5 | 29.2 |
| 80% | 5 | 5 | 7.3 | 7.7 | 22.9 | 23.8 | 6.9 | 7.4 | - | - |
| 80% | 5 | 5 | 7.3 | 7.6 | - | - | 6.9 | 7.4 | 13.1 | 13.5 |

## 2nd day (24-48 hours)

Sample 2 Collection Date: **10/10/92** Time: 0905

Organism: ***Mysidopsis bahia*** Life stage: 5 days

**LC50:** 49% Trimmed Spearman-Karber

Day 2 sample--Parameters taken at the beginning and the end of the test species exposure to the day 2 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 24 hr | Live at 48 hr | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour |
| Control | 5 | 5 | 8.1 | 7.8 | 24.8 | 23.0 | 7.9 | 5.2 | - | 52.4 |
| Control | 5 | 5 | 8.0 | 7.9 | - | - | 7.9 | 5.2 | 53.3 | 52.2 |
| 7% | 5 | 5 | 8.0 | 7.9 | 24.9 | 23.0 | 7.9 | 5.7 | - | 49.1 |
| 7% | 5 | 5 | 8.0 | 7.9 | - | - | 7.9 | 5.7 | 50.6 | 49.3 |
| 15% | 5 | 5 | 7.8 | 7.9 | 25.0 | 23.0 | 7.7 | 5.9 | - | 45.6 |
| 15% | 5 | 5 | 7.8 | 7.9 | - | - | 7.7 | 5.9 | 46.8 | 45.8 |
| 30% | 5 | 5 | 7.5 | 7.7 | 25.0 | 23.0 | 7.3 | 5.8 | - | 38.5 |
| 30% | 5 | 5 | 7.5 | 7.8 | - | - | 7.3 | 5.7 | 39.4 | 38.6 |
| 50% | 5 | 5 | 7.3 | 7.6 | 25.1 | 23.0 | 6.8 | 5.9 | - | 29.1 |
| 50% | 5 | 5 | 7.3 | 7.6 | - | - | 6.8 | 5.9 | 30.0 | 29.1 |
| 80% | 5 | 1 | 7.0 | 7.5 | 25.9 | 23.5 | 5.3 | 6.2 | - | 13.2 |
| 80% | 5 | 3 | 7.0 | 7.5 | - | - | 5.3 | 6.2 | 13.5 | 13.0 |

**Table 10.** Continued

## 3rd day (48-72 hours)

Facility: **City of Boca Raton WWTP** NPDES # **FL0026344** Facility Type: **Wastewater Treatment**
Location: 1501 Glades Road, Boca Raton Contact/District: Paul Phillips / SE
County: Palm Beach Test type: Static Renewal Definitive
Sample 3 Collection Date: **10/11/92** Time: 0900 # tests: 4 Receiving Water: Atlantic Ocean
Test Beginning Date: 10/9/92 Time: 1400 Chlorination Type: **Chlorinated**
Test Ending Date: 10/13/92 Time: 1500 **Page 2 of 2**

| Total Residual Cl2 | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| Salinity (ppt) | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 8 |

Organism: ***Mysidopsis bahia*** Life stage: 6 days
**LC50:** 49% Trimmed Spearman-Karber
Day 3 sample--Parameters taken at the beginning and the end of the test species exposure to the day 3 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 48 hr | Live at 72 hr | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour |
| Control | 5 | 4 | 8.1 | 7.8 | 24.0 | 23.5 | 5.9 | 5.6 | 52.2 | 52.0 |
| Control | 5 | 5 | 8.1 | 7.8 | - | - | 5.9 | 5.6 | 52.4 | 51.9 |
| 7% | 5 | 5 | 8.1 | 7.7 | 24.1 | 23.0 | 6.0 | 5.7 | 49.1 | 48.7 |
| 7% | 5 | 5 | 8.1 | 7.8 | - | - | 6.0 | 5.7 | 49.3 | 48.6 |
| 15% | 5 | 5 | 8.0 | 7.7 | 24.2 | 23.0 | 5.8 | 5.9 | 45.6 | 45.1 |
| 15% | 5 | 5 | 8.0 | 7.7 | - | - | 5.8 | 5.9 | 45.8 | 45.4 |
| 30% | 5 | 5 | 7.8 | 7.6 | 24.2 | 23.0 | 5.6 | 6.1 | 38.7 | 38.2 |
| 30% | 5 | 5 | 7.8 | 7.6 | - | - | 5.6 | 6.1 | 38.7 | 38.3 |
| 50% | 5 | 4 | 7.5 | 7.6 | 24.2 | 23.5 | 5.5 | 6.3 | 28.7 | 28.5 |
| 50% | 5 | 4 | 7.5 | 7.6 | - | - | 5.5 | 6.3 | 29.0 | 28.8 |
| 80% | 1 | 0 | 7.1 | 7.5 | 24.2 | 23.5 | 5.1 | 6.6 | 13.0 | 13.1 |
| 80% | 3 | 0 | 7.1 | 7.5 | - | - | 5.0 | 6.6 | 13.1 | 13.1 |

## 4th day (72-96 hours)

Sample 4 Collection Date: **10/12/92** Time: 0905

Organism: ***Mysidopsis bahia*** Life stage: 7 days
**LC50:** 49% Trimmed Spearman-Karber
Day 4 sample--Parameters taken at the beginning and the end of the test species exposure to the day 4 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Control | 4 | 4 | 8.1 | 7.9 | 25.0 | 23.0 | 5.9 | 6.3 | 53.2 | 52.3 |
| Control | 5 | 5 | 8.1 | 7.9 | - | - | 5.9 | 6.5 | 53.4 | 52.1 |
| 7% | 5 | 5 | 8.0 | 7.9 | 24.9 | 22.9 | 6.0 | 6.5 | 49.5 | 48.5 |
| 7% | 5 | 5 | 8.0 | 7.9 | - | - | 6.0 | 6.5 | 49.9 | 48.8 |
| 15% | 5 | 5 | 8.0 | 7.9 | 25.1 | 23.0 | 6.1 | 6.6 | 46.8 | 45.6 |
| 15% | 5 | 4 | 8.0 | 7.9 | - | - | 6.1 | 6.6 | 47.0 | 46.0 |
| 30% | 5 | 5 | 7.8 | 7.8 | 25.2 | 23.2 | 6.0 | 6.7 | 39.5 | 38.6 |
| 30% | 5 | 5 | 7.8 | 7.8 | - | - | 6.0 | 6.7 | 39.5 | 39.0 |
| 50% | 4 | 3 | 7.5 | 7.8 | 24.6 | 23.7 | 5.6 | 6.9 | 28.9 | 29.1 |
| 50% | 4 | 3 | 7.5 | 7.8 | - | - | 5.6 | 7.0 | 29.2 | 29.3 |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |

**Table 11.** Data recorded during the 96-hour acute definitive, static-renewal bioassays of samples of dechlorinated effluent from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

## 1st day (0-24 hours)

| | | | | | |
|---|---|---|---|---|---|
| Facility: | **City of Boca Raton WWTP** | | **NPDES # FL0026344** | Facility Type: | **Wastewater Treatment** |
| Location: | 1501 Glades Road, Boca Raton | | Contact/District: | Paul Phillips / SE | |
| County: | Palm Beach | | Test type: | Static Renewal Definitive | |
| Sample 1 Collection Date: | **10/9/92** | Time: 0915 | # tests: | 1 | Receiving Water: Atlantic Ocean |
| Test Beginning Date: | 10/9/92 | Time: 1400 | Chlorination Type: | **Dechlorinated in lab** | |
| Test Ending Date: | 10/13/92 | Time: 1500 | Dechlor Method: | sodium thiosulfate | **Page 1 of 2** |

| **Total Residual Cl2** | mg/l | Method |
|---|---|---|
| See Table 3 | | |

| **Salinity (ppt)** | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 8 |

Organism: ***Mysidopsis bahia*** Life stage: 4 days

**LC50:** 51% Trimmed Spearman-Karber

Day 1 sample--Parameters taken at the beginning and the end of the test species exposure to the day 1 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour |
| Control | 5 | 5 | 8.1 | 8.0 | 24.1 | 23.5 | 6.6 | 6.7 | - | - |
| Control | 5 | 5 | 8.1 | 8.0 | - | - | 6.6 | 6.7 | 52.7 | 52.7 |
| 7% | 5 | 5 | 8.1 | 8.0 | 24.1 | 23.7 | 6.7 | 6.7 | - | - |
| 7% | 5 | 5 | 8.1 | 8.0 | - | - | 6.7 | 6.7 | 49.5 | 49.5 |
| 15% | 5 | 5 | 8.1 | 8.0 | 23.8 | 23.8 | 6.8 | 6.7 | - | - |
| 15% | 5 | 5 | 8.1 | 8.0 | - | - | 6.8 | 6.7 | 45.9 | 46.1 |
| 30% | 5 | 5 | 8.0 | 7.9 | 23.7 | 23.5 | 7.0 | 6.8 | - | - |
| 30% | 5 | 5 | 8.0 | 7.9 | - | - | 7.0 | 6.8 | 38.7 | 38.9 |
| 50% | 5 | 5 | 7.8 | 7.9 | 23.2 | 23.7 | 7.2 | 7.1 | - | - |
| 50% | 5 | 5 | 7.8 | 7.8 | - | - | 7.2 | 7.1 | 28.6 | 29.0 |
| 80% | 5 | 5 | 7.3 | 7.6 | 23.0 | 23.3 | 6.9 | 7.2 | - | - |
| 80% | 5 | 5 | 7.3 | 7.6 | - | - | 6.9 | 7.2 | 12.9 | 13.3 |

## 2nd day (24-48 hours)

Sample 2 Collection Date: **10/12/92** Time: 0905

Organism: ***Mysidopsis bahia*** Life stage: 5 days

**LC50:** 51% Trimmed Spearman-Karber

Day 2 sample--Parameters taken at the beginning and the end of the test species exposure to the day 2 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 24 hr | Live at 48 hr | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour |
| Control | 5 | 4 | 8.1 | 7.9 | 25.6 | 23.5 | 7.8 | 6.0 | - | 52.4 |
| Control | 5 | 5 | 8.1 | 7.8 | - | - | 7.8 | 6.0 | 54.3 | 52.9 |
| 7% | 5 | 5 | 8.0 | 7.9 | 25.8 | 23.5 | 7.8 | 5.9 | - | 49.0 |
| 7% | 5 | 5 | 8.0 | 7.9 | - | - | 7.8 | 5.9 | 50.7 | 48.6 |
| 15% | 5 | 5 | 8.0 | 7.8 | 25.9 | 24.0 | 7.5 | 5.4 | - | 45.8 |
| 15% | 5 | 5 | 8.0 | 7.8 | - | - | 7.5 | 5.4 | 47.2 | 45.6 |
| 30% | 5 | 5 | 7.8 | 7.7 | 25.8 | 24.0 | 7.5 | 5.3 | - | 38.8 |
| 30% | 5 | 5 | 7.8 | 7.6 | - | - | 7.4 | 5.3 | 40.5 | 39.1 |
| 50% | 5 | 5 | 7.6 | 7.6 | 25.9 | 24.0 | 6.8 | 5.7 | - | 29.7 |
| 50% | 5 | 5 | 7.6 | 7.6 | - | - | 6.8 | 5.7 | 30.6 | 29.6 |
| 80% | 5 | 1 | 7.1 | 7.5 | 26.0 | 24.0 | 5.9 | 6.1 | - | 13.3 |
| 80% | 5 | 3 | 7.1 | 7.4 | - | - | 5.9 | 6.1 | 13.5 | 13.1 |

**Table 11.** Continued

## 3rd day (48-72 hours)

Facility: **City of Boca Raton WWTP** NPDES # **FL0026344** Facility Type: **Wastewater Treatment**
Location: 1501 Glades Road, Boca Raton Contact/Distqict: Paul Phillips / SE
County: Palm Beach Test type: Static Renewal Definitive
Sample 3 Collection Date: **10/11/92** Time: 0900 # tests: 1 Receiving Water: Atlantic Ocean
Test Beginning Date: 10/9/92 Time: 1400 Chlorination Type: **Dechlorinated in lab**
Test Ending Date: 10/13/92 Time: 1500 Dechlor Method: sodium thiosulfate **Page 2 of 2**

| Total Residual Cl2 | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| Salinity (ppt) | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 8 |

Organism: ***Mysidopsis bahia*** Life stage: 6 days
**LC50:** 51% Trimmed Spearman-Karber
Day 3 sample--Parameters taken at the beginning and the end of the test species exposure to the day 3 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 48 hr | Live at 72 hr | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour |
| Control | 4 | 4 | 8.1 | 7.8 | 24.2 | 23.5 | 6.0 | 6.0 | 52.3 | 52.2 |
| Control | 5 | 5 | 8.1 | 7.8 | - | - | 6.0 | 5.9 | 52.5 | 52.4 |
| 7% | 5 | 5 | 8.0 | 7.7 | 24.2 | 23.5 | 6.0 | 6.0 | 48.4 | 48.7 |
| 7% | 5 | 5 | 8.0 | 7.7 | - | - | 5.9 | 6.0 | 49.1 | 48.7 |
| 15% | 5 | 5 | 8.0 | 7.7 | 25.0 | 23.5 | 5.8 | 5.9 | 46.3 | 45.6 |
| 15% | 5 | 5 | 8.0 | 7.7 | - | - | 5.8 | 5.9 | 46.3 | 45.3 |
| 30% | 5 | 5 | 7.8 | 7.6 | 25.1 | 24.0 | 5.4 | 6.0 | 38.5 | 37.9 |
| 30% | 5 | 5 | 7.8 | 7.6 | - | - | 5.4 | 6.0 | 39.5 | 38.7 |
| 50% | 5 | 4 | 7.5 | 7.6 | 25.1 | 24.0 | 5.1 | 6.2 | 29.2 | 29.0 |
| 50% | 5 | 4 | 7.5 | 7.6 | - | - | 5.1 | 6.2 | 29.7 | 29.2 |
| 80% | 1 | 1 | 7.1 | 7.5 | 25.0 | 24.0 | 4.4 | 6.7 | 13.0 | 13.1 |
| 80% | 3 | 0 | 7.1 | 7.5 | - | - | 4.4 | 6.7 | 13.1 | 13.0 |

## 4th day (72-96 hours)

Sample 4 Collection Date: **10/12/92** Time: 0905

Organism: ***Mysidopsis bahia*** Life stage: 7 days
**LC50:** 51% Trimmed Spearman-Karber
Day 4 sample--Parameters taken at the beginning and the end of the test species exposure to the day 4 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Control | 4 | 4 | 8.1 | 7.9 | 25.0 | 23.3 | 6.7 | 6.5 | 53.0 | 53.2 |
| Control | 5 | 5 | 8.1 | 7.9 | - | - | 6.7 | 6.5 | 53.3 | 52.9 |
| 7% | 5 | 5 | 8.0 | 7.9 | 25.4 | 23.3 | 6.7 | 6.8 | 50.1 | 49.7 |
| 7% | 5 | 5 | 8.0 | 7.9 | - | - | 6.7 | 6.8 | 50.6 | 49.1 |
| 15% | 5 | 5 | 8.0 | 7.9 | 25.3 | 24.0 | 6.6 | 6.8 | 47.1 | 46.5 |
| 15% | 5 | 5 | 8.0 | 7.9 | - | - | 6.6 | 6.7 | 46.5 | 45.5 |
| 30% | 5 | 4 | 7.9 | 7.8 | 25.0 | 24.0 | 6.3 | 6.8 | 39.3 | 39.4 |
| 30% | 5 | 5 | 7.9 | 7.8 | - | - | 6.3 | 6.8 | 39.5 | 39.0 |
| 50% | 4 | 3 | 7.6 | 7.8 | 24.7 | 24.1 | 5.9 | 7.0 | 29.2 | 29.9 |
| 50% | 4 | 4 | 7.6 | 7.8 | - | - | 5.8 | 7.0 | 29.6 | 29.8 |
| 80% | 1 | 0 | 7.1 | 7.8 | 24.2 | 24.3 | 5.0 | 7.4 | 13.1 | 13.5 |
| 80% | 0 | 0 | - | - | - | - | - | - | - | - |

**Table 12.** Data recorded during the 96-hour acute definitive, static-renewal bioassays of chlorinated effluent samples from the Boca Raton WWTP pipe to ocean outfall, Boca Raton, Palm Beach County, Florida, NPDES# FL0026344, on 9 to 13 October, 1992.

## 1st day (0-24 hours)

Facility: **City of Boca Raton WWTP** — **NPDES # FL0026344** — Facility Type: **Wastewater Treatment**
Location: **1501 Glades Road, Boca Raton** — Contact/District: Paul Phillips / SE
County: Palm Beach — Test type: Static Renewal Definitive
Sample 1 Collection Date: **10/9/92** Time: 0915 — # tests: 4 — Receiving Water: Atlantic Ocean
Test Beginning Date: 10/9/92 Time: 1400 — Chlorination Type: **Chlorinated**
Test Ending Date: 10/13/92 Time: 1500 — **Page 1 of 2**

| Total Residual Cl2 | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| Salinity (ppt) | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 8 |

Organism: ***Menidia beryllina*** Life stage: 12 days
**LC50:** - Day 1 sample--Parameters taken at the beginning and the end of the test species exposure to the day 1 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 0 hr | Live at 24 hr | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour | 0 hour | 24 hour |
| Control | 5 | 4 | 8.1 | 8.0 | 22.8 | 23.8 | 6.6 | 6.6 | - | - |
| Control | 5 | 4 | 8.1 | 8.0 | - | - | 6.6 | 6.6 | 51.5 | 52.5 |
| 7% | 5 | 4 | 8.1 | 8.0 | 23.0 | 24.0 | 6.7 | 6.6 | - | - |
| 7% | 5 | 4 | 8.1 | 8.0 | - | - | 6.7 | 6.6 | 49.0 | 50.1 |
| 15% | 5 | 5 | 8.1 | 8.0 | 23.1 | 24.1 | 6.7 | 6.7 | - | - |
| 15% | 5 | 5 | 8.1 | 8.0 | - | - | 6.7 | 6.7 | 45.4 | 46.7 |
| 30% | 5 | 5 | 8.0 | 7.9 | 23.0 | 24.1 | 7.0 | 6.8 | - | - |
| 30% | 5 | 5 | 8.0 | 7.9 | - | - | 7.0 | 6.8 | 38.2 | 39.8 |
| 50% | 5 | 5 | 7.8 | 7.8 | 23.0 | 24.2 | 7.2 | 6.9 | - | - |
| 50% | 5 | 5 | 7.8 | 7.8 | - | - | 7.2 | 6.9 | 28.5 | 29.8 |
| 80% | 5 | 5 | 7.3 | 7.6 | 22.8 | 24.0 | 6.9 | 7.3 | - | - |
| 80% | 5 | 5 | 7.3 | 7.7 | - | - | 6.9 | 7.3 | 12.6 | 13.1 |

## 2nd day (24-48 hours)

Sample 2 Collection Date: **10/10/92** Time: 0905

Organism: ***Menidia beryllina*** Life stage: 13 days
**LC50:** - Day 2 sample--Parameters taken at the beginning and the end of the test species exposure to the day 2 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 24 hr | Live at 48 hr | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour | 24 hour | 48 hour |
| Control | 4 | 3 | 8.1 | 8.0 | 24.8 | 23.0 | 7.8 | 6.2 | - | 53.0 |
| Control | 4 | 4 | 8.1 | 8.0 | - | - | 7.8 | 6.2 | 53.6 | 52.8 |
| 7% | 4 | 4 | 8.0 | 8.0 | 24.9 | 23.0 | 7.8 | 6.2 | - | 49.4 |
| 7% | 4 | 4 | 8.0 | 8.0 | - | - | 7.8 | 6.2 | 50.5 | 49.4 |
| 15% | 5 | 5 | 7.8 | 7.9 | 25.0 | 23.0 | 7.1 | 6.4 | - | 38.8 |
| 15% | 5 | 5 | 7.8 | 7.9 | - | - | 7.1 | 6.4 | 41.3 | 40.4 |
| 30% | 5 | 5 | 7.8 | 7.9 | 25.0 | 23.0 | 7.1 | 6.6 | - | 38.5 |
| 30% | 5 | 5 | 7.8 | 7.9 | - | - | 7.1 | 6.6 | 39.5 | 38.7 |
| 50% | 5 | 5 | 7.4 | 7.8 | 25.0 | 23.5 | 6.4 | 6.8 | - | 29.2 |
| 50% | 5 | 5 | 7.4 | 7.8 | - | - | 6.4 | 6.8 | 29.5 | 28.9 |
| 80% | 5 | 5 | 7.0 | 7.6 | 25.0 | 23.5 | 5.6 | 6.9 | - | 13.1 |
| 80% | 5 | 5 | 7.0 | 7.7 | - | - | 5.7 | 6.8 | 13.7 | 13.5 |
| *New Control | 10 | 10 | 8.1 | 8.0 | 24.7 | 24.0 | 7.8 | 6.1 | - | 52.9 |
| *New Control | 10 | 10 | 8.1 | 7.9 | - | - | 7.8 | 6.1 | 53.3 | 53.3 |
| *New 7% | 10 | 10 | 8.0 | 7.9 | 24.9 | 24.0 | 7.8 | 6.8 | - | 49.8 |
| *New 7% | 10 | 10 | 8.0 | 7.9 | - | - | 7.8 | 6.9 | 50.6 | 50.2 |

*Due to mortality in the initial controls and 7% test concentration at 24 hours, new controls and 7% test concentration were set up to provide additional data during the test.

**Table 12.** Continued

## 3rd day (48-72 hours)

Facility: **City of Boca Raton WWTP** NPDES # **FL0026344** Facility Type: **Wastewater Treatment**
Location: 1501 Glades Road, Boca Raton Contact/District: Paul Phillips / SE
County: Palm Beach Test type: Static Renewal Definitive
Sample 3 Collection Date: **10/11/92** Time: 0900 # tests: 4 Receiving Water: Atlantic Ocean
Test Beginning Date: 10/9/92 Time: 1400 Chlorination Type: **Chlorinated**
Test Ending Date: 10/13/92 Time: 1500 **Page 2 of 2**

| Total Residual Cl2 | mg/l | Method |
|---|---|---|
| | See Table 3 | |

| Salinity (ppt) | |
|---|---|
| Control Water: | 35 and 7 |
| 80% Sample: | 8 |

Organism: ***Menidia beryllina*** Life stage: 14 days
**LC50:** - Day 3 sample--Parameters taken at the beginning and the end of the test species exposure to the day 3 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 48 hr | Live at 72 hr | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour | 48 hour | 72 hour |
| Control | 3 | 3 | 8.1 | 7.9 | 24.1 | 23.5 | 6.1 | 6.3 | 52.3 | 52.2 |
| Control | 4 | 4 | 8.1 | 7.9 | - | - | 6.1 | 6.3 | 52.5 | 52.7 |
| 7% | 4 | 4 | 8.1 | 7.9 | 24.0 | 24.0 | 6.1 | 6.3 | 49.2 | 49.4 |
| 7% | 4 | 4 | 8.1 | 7.9 | - | - | 6.1 | 6.3 | 49.3 | 49.3 |
| 15% | 5 | 5 | 8.0 | 7.8 | 24.0 | 24.0 | 6.1 | 6.3 | 44.8 | 45.2 |
| 15% | 5 | 5 | 8.0 | 7.8 | - | - | 6.1 | 6.3 | 44.8 | 45.0 |
| 30% | 5 | 5 | 7.8 | 7.8 | 24.0 | 24.0 | 6.0 | 6.5 | 38.5 | 39.0 |
| 30% | 5 | 5 | 7.8 | 7.8 | - | - | 6.0 | 6.5 | 38.5 | 38.8 |
| 50% | 5 | 5 | 7.5 | 7.7 | 24.0 | 24.0 | 5.7 | 6.7 | 28.5 | 29.0 |
| 50% | 5 | 5 | 7.5 | 7.6 | - | - | 5.7 | 6.7 | 28.7 | 29.0 |
| 80% | 5 | 5 | 7.1 | 7.6 | 24.3 | 24.5 | 5.3 | 6.9 | 13.0 | 13.2 |
| 80% | 5 | 5 | 7.1 | 7.6 | - | - | 5.3 | 6.9 | 13.3 | 13.4 |
| *New Control | 10 | 10 | 8.1 | 7.8 | - | 23.5 | - | 5.9 | 52.2 | 52.2 |
| *New Control | 10 | 10 | 8.1 | 7.8 | - | - | - | 5.9 | 52.4 | 52.8 |
| *New 7% | 10 | 10 | 8.1 | 7.8 | - | 24.0 | - | 5.7 | 49.1 | 49.9 |
| *New 7% | 10 | 10 | 8.1 | 7.8 | - | - | - | 5.7 | 49.2 | 49.6 |

*Due to mortality in the initial controls and 7% test concentration at 24 hours, new controls and 7% test concentration were set up to provide additional data during the test.

## 4th day (72-96 hours)

Sample 4 Collection Date: **10/12/92** Time: 0905

Organism: ***Menidia beryllina*** Life stage: 15 days
**LC50:** - Day 4 sample--Parameters taken at the beginning and the end of the test species exposure to the day 4 sample.

| | SURVIVAL | | pH | | Temperature | | Dissolved Oxygen | | Conductivity (mmhos) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Concentrations | # at 72 hr | Live at 96 hr | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour | 72 hour | 96 hour |
| Control | 3 | 3 | 8.1 | 8.0 | 24.8 | 23.4 | 6.3 | 6.8 | 52.9 | 53.0 |
| Control | 4 | 4 | 8.1 | 8.0 | - | - | 6.3 | 6.8 | 53.1 | 52.9 |
| 7% | 4 | 4 | 8.0 | 8.0 | 24.9 | 23.3 | 6.2 | 6.9 | 49.8 | 49.5 |
| 7% | 4 | 4 | 8.0 | 8.0 | - | - | 6.2 | 6.9 | 50.1 | 49.3 |
| 15% | 5 | 5 | 8.0 | 7.9 | 25.0 | 23.9 | 6.0 | 6.8 | 46.3 | 46.0 |
| 15% | 5 | 5 | 8.0 | 7.9 | - | - | 6.0 | 6.8 | 46.6 | 45.9 |
| 30% | 5 | 5 | 7.8 | 7.9 | 24.9 | 24.0 | 5.9 | 7.0 | 39.1 | 39.2 |
| 30% | 5 | 5 | 7.8 | 7.9 | - | - | 5.9 | 7.0 | 39.2 | 38.8 |
| 50% | 5 | 5 | 7.5 | 7.9 | 24.7 | 24.2 | 5.4 | 7.3 | 29.1 | 29.6 |
| 50% | 5 | 5 | 7.5 | 7.8 | - | - | 5.4 | 7.3 | 29.1 | 29.2 |
| 80% | 5 | 5 | 7.1 | 7.8 | 24.3 | 24.3 | 4.8 | 7.5 | 13.3 | 13.3 |
| 80% | 5 | 5 | 7.1 | 7.8 | - | - | 4.8 | 7.5 | 13.1 | 13.6 |
| *New Control | 10 | 10 | 8.1 | 7.9 | 24.9 | 24.0 | 6.0 | 6.4 | 53.0 | 53.6 |
| *New Control | 10 | 10 | 8.1 | 7.9 | - | - | 6.1 | 6.2 | 53.2 | 52.9 |
| *New 7% | 10 | 10 | 8.0 | 7.9 | 25.1 | 24.5 | 6.0 | 6.2 | 50.7 | 51.4 |
| *New 7% | 10 | 10 | 8.0 | 7.9 | - | - | 6.0 | 6.3 | 50.1 | 50.1 |

**Table 13. Concentration series and volumes used for the 96-hour acute static-renewal bioassays of the Boca Raton WWTP effluent, performed on 9 to 13 October, 1992.**

*Ceriodaphnia dubia* (water flea)

| Concentration | Dilution Water | Sample | Total Volume |
|---|---|---|---|
| Control | 20 mL | 0 mL | 20 mL |
| 7% | 18.6 mL | 1.4 mL | 20 mL |
| 15% | 17 mL | 3 mL | 20 mL |
| 30% | 14 mL | 6 mL | 20 mL |
| 50% | 10 mL | 10 mL | 20 mL |
| 80% | 4 mL | 16 mL | 20 mL |
| 100% | 0 mL | 20 mL | 20 mL |

*Notropis leedsi* (bannerfin shiner)

| Concentration | Dilution Water | Sample | Total Volume |
|---|---|---|---|
| Control | 500 mL | 0 mL | 500 mL |
| 7% | 465 mL | 35 mL | 500 mL |
| 15% | 425 mL | 75 mL | 500 mL |
| 30% | 350 mL | 150 mL | 500 mL |
| 50% | 250 mL | 250 mL | 500 mL |
| 80% | 100 mL | 400 mL | 500 mL |
| 100% | 0 mL | 500 mL | 500 mL |

*Mysidopsis bahia* (mysid shrimp)

| Concentration | Dilution Water | Sample | Total Volume |
|---|---|---|---|
| Control | 500 mL | 0 mL | 500 mL |
| 7% | 465 mL | 35 mL | 500 mL |
| 15% | 425 mL | 75 mL | 500 mL |
| 30% | 350 mL | 150 mL | 500 mL |
| 50% | 250 mL | 250 mL | 500 mL |
| 80% | 100 mL | 400 mL | 500 mL |

*Menidia beryllina* (inland silversides)

| Concentration | Dilution Water | Sample | Total Volume |
|---|---|---|---|
| Control | 500 mL | 0 mL | 500 mL |
| 7% | 465 mL | 35 mL | 500 mL |
| 15% | 425 mL | 75 mL | 500 mL |
| 30% | 350 mL | 150 mL | 500 mL |
| 50% | 250 mL | 250 mL | 500 mL |
| 80% | 100 mL | 400 mL | 500 mL |

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: CITY OF BOCA RATON WWTP
Address/City: RENEWAL test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date 10-9-92 Time 0915
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date Time
Test Organism: C. dubia
Life Stage/Age: < 24 HRS

Test Number: 1 of 5 Test Type: ~~Screening~~ | Definitive
Static | Static Renewal | Flow-through

Remarks:
24 HR READINGS ARE BEFORE AND AFTER RENEWAL

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | 7@7, 9@9 | 8.6@23.5 | 22.5@22.7 | 952 9660 @22.2 |
| 24 hr | 7@7, 9@9 | 8.7@23.0 | 22.3/22.8 | 955@1K 9600@10K |
| 48 hr | 7@7, 9@9 | 8.7@23.0 | 23.5@23.5 | 956@1K 9560@10K @2 |

| Conc. | Chamber # | Number Live 24 ~~48~~ | | | pH 24 | | | Temp. (°C) 24 | | | DO (mg/L) 24 | | | Cond. (µmhos/cm) 24 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ |
| control | A | 5 | 5 | 5 | 8.2 | 8.1 | 8.7 | 21.0 | 24.0 | 23.5 | 8.8 | 8.1 | 8.7 | 217 | 180 | 155 |
| control | B | 5 | 5 | 5 | | 8.1 | | | | | | 8.1 | | | | |
| control | C | 5 | 5 | 5 | | 8.1 | | | | | | 8.1 | | | | |
| control | D | 5 | 5 | 5 | | 8.1 | | | | | | 8.1 | | | | |
| 7% | A | 5 | 5 | 5 | 8.1 | 8.0 | 8.5 | 20.5 | 24.2 | 23.5 | 8.9 | 8.2 | 8.6 | 242 | 230 | 220 |
| 7% | B | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 7% | C | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 7% | D | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 15% | A | 5 | 5 | 5 | 8.1 | 8.0 | 8.2 | 20.4 | 24.1 | 23.5 | 8.7 | 8.2 | 8.4 | 256 | 390 | 275 |
| 15% | B | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 15% | C | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 15% | D | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 30% | A | 5 | 5 | 5 | 8.0 | 8.0 | 7.6 | 20.3 | 24.1 | 23.5 | 8.7 | 8.2 | 8.1 | 359 | 430 | 395 |
| 30% | B | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 30% | C | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 30% | D | 5 | 5 | 5 | | 8.0 | | | | | | 8.2 | | | | |
| 50% | A | 5 | 5 | 5 | 7.8 | 7.9 | 7.3 | 20.4 | 24.2 | 23.4 | 8.5 | 8.1 | 7.6 | 504 | 590 | 555 |
| 50% | B | 5 | 5 | 5 | | 7.9 | | | | | | 8.1 | | | | |
| 50% | C | 5 | 5 | 5 | | 8.0 | | | | | | 8.1 | | | | |
| 50% | D | 5 | 5 | 5 | | 7.9 | | | | | | 8.1 | | | | |
| 80% | A | 5 | 5 | 5 | 7.7 | 7.9 | 7.1 | 20.5 | 24.2 | 23.5 | 8.5 | 8.0 | 7.0 | 717 | 825 | 785 |
| 80% | B | 5 | 5 | 5 | | 7.9 | | | | | | 8.0 | | | | |
| 80% | C | 5 | 5 | 5 | | 7.9 | | | | | | 8.0 | | | | |
| 80% | D | 5 | 5 | 5 | | 7.9 | | | | | | 8.0 | | | | |
| Measured/Loaded by: | | KP | KP | MF | MF | SW | SW | MF | SW | SW | MF | SW | SW | MF | SW | SW |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

Investigators' Signatures 100% on next page

Kim Pearce
Steven J Wolf
Marshall Faudt
Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | ~~FLOW THRU~~ | | KP SAMPLED NEXT TO MTV |
| Lab Tot. Resid. Cl2: | | | 0.10 | DR-100 | KP |
| Alkalinity: | 122 | 70 | 93 | Hach | KP |
| Hardness: | 127 | 77 | 177 | Hach | KP |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date 10-9-92 Time 0915
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date Time
Test Organism: C. dubia
Life Stage/Age: <24 HRS

Test Number: 1 of 5 Test Type: Screening | (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
continued from previous page

24-HR READINGS ARE BEFORE AND AFTER RENEWAL

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | 7@7,9@9 | 8.6@23.5 | 22.5/22.7 | 952 @22.2 9660 |
| 24 hr | 7@7,9@9 | 8.7@23.0 | 22.8/22.8 | 955 @22.8 9680 |
| 48 hr | | | | |

at 24 HRS, most C. dubia barely mobile

| | | Number Live 24 | | | pH 24 | | | Temp. (°C) 24 | | | DO (mg/L) 24 | | | Cond. (µmhos/cm) | | | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | |
| 100% | A | 5 | 5 | 5 | 7.6 | 7.9 | 7.0 | 20.6 | 24.5 | 23.7 | 8.4 | 7.9 | 6.6 | 868 | 985 | 985 | |
| 100% | B | 5 | 5 | 5 | | 7.9 | | | | | | 7.9 | | | | | |
| 100% | C | 5 | 5 | 5 | | 7.9 | | | | | | 7.9 | | | | | |
| 100% | D | 5 | 5 | 5 | | 7.9 | | | | | | 7.9 | | | | | |
| | before 48 | | 48 after | | | | | | | | | | | | | | |
| Measured/Loaded by: | | KP | KP | MF | MF | SW | SW | MF | SW | SW | MF | SW | SW | MF | SW | SW | |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | |

Investigators' Signatures

Kim Pearce
Steven H Wolfe
Marshall Brooks

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | SAMPLED NEXT TO MTV | | |
| Lab Tot. Resid. Cl2: | | | 0.10 | DR-100 | KP |
| Alkalinity: | 122 | 70 | 93 | Hach | KP |
| Hardness: | 127 | 77 | 177 | Hach | KP |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time KP
Test Beginning: Date 10-9-92 Time 2100 1400
Test Ending: Date Time
Test Organism: C. dubia
Life Stage/Age: < 24 hrs

Test Number: 1 of 5 Test Type: Screening | Definitive
Static | Static Renewal | Flow-through

Remarks:
48 hr before } renewal
48 hr after }
72 hr before }

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 48 ~~0~~ hr | 7@7, 9@9 | 8.7@23.0 | 23.5/23.5 | 9560@1K @23.4<br>9560@10K |
| 72 ~~24~~ hr | 7@7, 9@9 | 22.3@22.4 | 8.7@23.0 | 9380@1K<br>9480@10K @22.7 |
| 96 ~~48~~ hr | 7@7, 9@9 | 8.7@23.0 | 225@225 | 962@1K<br>9620@10K @22.3 |

48h 48h 72h

| Conc. | Chamber # | Number Live 0-48 | Number Live 24-48 | Number Live 48-72 | pH 0-48 | pH 24-48 | pH 48-72 | Temp. (°C) 0-48 | Temp. (°C) 24-48 | Temp. (°C) 48-72 | DO (mg/L) 0-48 | DO (mg/L) 24-48 | DO (mg/L) 48-72 | Cond. (µmhos/cm) 0-48 | Cond. (µmhos/cm) 24-48 | Cond. (µmhos/cm) 48-72 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | A | 5 | 5 | 4 | 8.0 | 9.6 | 7.9 | 24.0 | 23.8 | 22.2 | 7.9 | 8.2 | 8.2 | 195 | 150 | 165 |
| control | B | 5 | 5 | 5 | 8.0 | | 7.9 | | | | 7.9 | | 8.2 | 195 | | 190 |
| control | C | 5 | 5 | 5 | 8.0 | | 8.0 | | | | 7.9 | | 8.2 | 190 | | 190 |
| control | D | 5 | 5 | 5 | 8.1 | | 8.0 | | | | 7.9 | | 8.2 | 180 | | 205 |
| 7% | A | 5 | 5 | 5 | 8.1 | 8.5 | 8.0 | 24.1 | 23.7 | 22.2 | 8.0 | 8.2 | 8.2 | 240 | 215 | 230 |
| 7% | B | 5 | 5 | 5 | 8.1 | | 8.0 | | | | 8.0 | | 8.2 | 240 | | 250 |
| 7% | C | 5 | 5 | 5 | 8.1 | | 8.0 | | | | 8.0 | | 8.2 | 235 | | 260 |
| 7% | D | 5 | 5 | 5 | 8.1 | | 8.0 | | | | 8.0 | | 8.2 | 235 | | 270 |
| 15% | A | 5 | 5 | 5 | 8.1 | 8.1 | 8.0 | 24.1 | 23.6 | 22.2 | 8.0 | 8.2 | 8.1 | 295 | 280 | 305 |
| 15% | B | 5 | 5 | 5 | 8.1 | | 8.0 | | | | 8.0 | | 8.1 | 285 | | 305 |
| 15% | C | 5 | 5 | 5 | 8.1 | | 8.0 | | | | 8.0 | | 8.1 | 295 | | 325 |
| 15% | D | 5 | 5 | 5 | 8.1 | | 8.0 | | | | 8.0 | | 8.1 | 290 | | 330 |
| 30% | A | 5 | 5 | 5 | 8.1 | 7.9 | 7.9 | 24.0 | 23.7 | 22.3 | 8.0 | 8.0 | 8.0 | 430 | 400 | 425 |
| 30% | B | 5 | 5 | 4 | 8.1 | | 7.9 | | | | 8.0 | | 8.0 | 420 | | 445 |
| 30% | C | 5 | 5 | 5 | 8.1 | | 7.9 | | | | 8.0 | | 8.0 | 420 | | 465 |
| 30% | D | 5 | 5 | 5 | 8.1 | | 7.9 | | | | 8.0 | | 8.0 | 405 | | 465 |
| 50% | A | 5 | 5 | 4 | 8.0 | 7.5 | 8.0 | 24.0 | 23.8 | 22.3 | 8.0 | 7.8 | 8.0 | 610 | 555 | 575 |
| 50% | B | 5 | 5 | 3 | 8.0 | | 8.0 | | | | 8.0 | | 8.0 | 605 | | 610 |
| 50% | C | 4 | 4 | 0 | 8.0 | | 8.0 | | | | 8.0 | | 8.0 | 595 | | 640 |
| 50% | D | 5 | 5 | 0 | 8.0 | | 8.0 | | | | 7.9 | | 8.0 | 570 | | 660 |
| 80% | A | 1 | 1 | 0 | 8.0 | 7.3 | 8.0 | 24.0 | 23.9 | 22.4 | 7.9 | 7.3 | 8.0 | 880 | 770 | 815 |
| 80% | B | 1 | 1 | 0 | 8.0 | | 8.0 | | | | 7.9 | | 8.0 | 870 | | 865 |
| 80% | C | 0 | — | — | 8.0 | — | — | | — | — | 7.9 | — | — | 805 | — | — |
| 80% | D | 0 | — | — | 8.0 | — | — | | — | — | 7.9 | — | — | 825 | — | — |
| Measured/Loaded by: | | KP | KP | MF | MF | MF | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

100% next page

Investigators' Signatures
Kim Pearce
Marshall Faircloth
Steven H Wolfe

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Ammonia Salinity

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time KP
Test Beginning: Date 10-9-92 Time ~~3100~~ 1400
Test Ending: Date Time
Test Organism: C. dubia
Life Stage/Age: < 24 hrs

Test Number: 1 of 5 Test Type: Screening | Definitive
Static | Static Renewal | Flow-through

Remarks: continued from previous page

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | | | | |
| 24 hr | | | | |
| 48 hr | | | | |

48h 48h 72h

| | | Number Live | | | pH | | | Temp. (°C) | | | DO (mg/L) | | | Cond. (µmhos/cm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | ~~0~~48 | 24~~48~~ | ~~48~~72 | ~~0~~48 | 24~~48~~ | ~~48~~72 | ~~0~~48 | 24~~48~~ | ~~48~~72 | ~~0~~48 | 24~~48~~ | ~~48~~72 | ~~0~~48 | 24~~48~~ | ~~48~~72 |
| 100% | A | 0 | — | | 8.1 | — | | 23.9 | — | | 7.9 | — | | 1075 | — | |
| 100% | B | 0 | — | | 8.1 | — | | | — | | 7.9 | — | | 1020 | — | |
| 100% | C | 0 | — | | 8.1 | — | | | — | | 7.9 | — | | 1055 | — | |
| 100% | D | 0 | — | | 8.1 | — | | | — | | 7.9 | — | | 965 | — | |
| Measured/Loaded by: | | KP | | | MF | | | SW | | | SW | | | SW | | |
| Recorded by: | | KP | | | KP | | | KP | | | KP | | | KP | | |

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven H Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time
Test Beginning: Date 10-9-92 Time 1400 KP
Test Ending: Date 10-13-92 Time 1500
Test Organism: C. dubia
Life Stage/Age: < 24 hrs

Test Number: 1 of 5 Test Type: Screening | Definitive
Static | Static Renewal | Flow-through

Remarks:
72 hr after
96 hr before } renewals
96 hr after KP

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 72-0 hr | | | | |
| 96-24 hr | 7@7.9@9 | 8.1@23.0 | 22.5/22.5 | 9626@1K 9626@10K @22.8 |
| 48 hr | | | | |

| Conc. | Chamber # | Number Live 0-72 | Number Live 24-96 | Number Live 48-96 | pH 0-72 | pH 24-96 | pH 48-96 | Temp. (°C) 0-72 | Temp. (°C) 24-96 | Temp. (°C) 48-96 | DO (mg/L) 0-72 | DO (mg/L) 24-96 | DO (mg/L) 48-96 | Cond. (µmhos/cm) 0-72 | Cond. (µmhos/cm) 24-96 | Cond. (µmhos/cm) 48-96 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | A | 4 | 4 | | 8.6 | 8.1 | | 22.2 | 23.0 | | 8.6 | 8.7 | | 165 | 155 | |
| control | B | 5 | 5 | | | 8.1 | | | | | | 8.7 | | | 155 | |
| control | C | 5 | 5 | | | 8.1 | | | | | | 8.7 | | | 155 | |
| control | D | 5 | 5 | | | 8.1 | | | | | | 8.7 | | | 155 | |
| 7% | A | 5 | 5 | | 8.4 | 8.1 | | 22.0 | 23.3 | | 8.6 | 8.6 | | 195 | 220 | |
| 7% | B | 5 | 5 | | | 8.1 | | | | | | 8.6 | | | 220 | |
| 7% | C | 5 | 5 | | | 8.1 | | | | | | 8.6 | | | 220 | |
| 7% | D | 5 | 5 | | | 8.1 | | | | | | 8.6 | | | 215 | |
| 15% | A | 5 | 5 | | 8.2 | 8.1 | | 21.8 | 23.3 | | 8.5 | 8.6 | | 260 | 285 | |
| 15% | B | 5 | 5 | | | 8.1 | | | | | | 8.6 | | | 285 | |
| 15% | C | 5 | 5 | | | 8.1 | | | | | | 8.6 | | | 290 | |
| 15% | D | 5 | 5 | | | 8.1 | | | | | | 8.6 | | | 280 | |
| 30% | A | 5 | 5 | | 7.9 | 8.1 | | 22.0 | 23.6 | | 8.4 | 8.5 | | 375 | 390 | |
| 30% | B | 4 | 4 | | | 8.1 | | | | | | 8.5 | | | 400 | |
| 30% | C | 5 | 5 | | | 8.1 | | | | | | 8.5 | | | 410 | |
| 30% | D | 5 | 5 | | | 8.1 | | | | | | 8.5 | | | 400 | |
| 50% | A | 4 | 1 | | 7.6 | 8.1 | | 22.2 | 23.7 | | 7.8 | 8.5 | | 530 | 550 | |
| 50% | B | 3 | 0 | | | 8.1 | | | | | | 8.5 | | | 550 | |
| 50% | C | 0 | — | | — | — | | — | — | | — | — | | — | — | |
| 50% | D | 0 | — | | — | — | | — | — | | — | — | | — | — | |
| 80% | A | — | | | — | | | — | | | — | | | — | | |
| 80% | B | — | | | — | | | — | | | — | | | — | | |
| 80% | C | — | | | — | | | — | | | — | | | — | | |
| 80% | D | — | | | — | | | — | | | — | | | — | | |
| Measured/Loaded by: | | MF | KP | | SW | MF | | MF | MF | | MF | MF | | SW | MF | |
| Recorded by: | | KP | KP | | KP | KP | | KP | KP | | KP | KP | | KP | KP | |

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven H Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | 0.15 | DR100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____
Ammonia Blank: _____
Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date 10-9-92 Time 0915
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date Time
Test Organism: N. LEEDSI
Life Stage/Age: 14 DAYS

Test Number: 2 of 5
Test Type: Screening (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
24-HR BEFORE + AFTER RENEWAL

0.12 mg/L TRC at renewal 10/10

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | 7@7.9@9 | 8.6@22.5 | 22.5@22.7 | 9660 952 @22.2 |
| 24 hr | see BOCA C.dubia page | | | |
| 48 hr | see BOCA C.dubia page | | | |

| | | Number Live 24 | | | pH 24 | | | Temp. (°C) 24 | | | DO (mg/L) 24 | | | Cond. (µmhos/cm) -24 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ | 0 | 24 | ~~48~~ |
| control | 183 | 5 | 5 | 5 | 7.8 | 8.2 | 7.9 | 22.5 | 23.2 | 24.3 | 8.3 | 8.6 | 8.2 | | | |
| control | 49 | 5 | 5 | 5 | 7.8 | 8.3 | 7.9 | | | | 8.3 | 8.6 | 8.3 | 242 | 290 | 260 |
| 7% | 109 | 5 | 5 | 5 | 7.8 | 8.1 | 7.8 | 22.5 | 23.3 | 24.0 | 8.3 | 8.4 | 8.1 | | | |
| 7% | 41 | 5 | 5 | 5 | 7.8 | 8.1 | 7.8 | | | | 8.3 | 8.4 | 8.1 | 296 | 346 | 310 |
| 15% | 315 | 5 | 5 | 5 | 7.8 | 8.1 | 7.6 | 22.7 | 23.2 | 24.0 | 8.2 | 8.4 | 7.8 | | | |
| 15% | 108 | 5 | 5 | 5 | 7.8 | 8.1 | 7.6 | | | | 8.2 | 8.4 | 7.8 | 348 | 396 | 365 |
| 30% | 198 | 5 | 5 | 5 | 7.7 | 7.9 | 7.4 | 22.8 | 23.2 | 24.3 | 8.1 | 8.2 | 7.2 | | | |
| 30% | 82 | 5 | 5 | 5 | 7.7 | 7.9 | 7.4 | | | | 8.1 | 8.2 | 7.2 | 449 | 482 | 470 |
| 50% | 38 | 5 | 5 | 5 | 7.5 | 7.8 | 7.3 | 22.9 | 23.2 | 24.6 | 7.7 | 7.9 | 6.8 | | | |
| 50% | 153 | 5 | 5 | 5 | 7.5 | 7.8 | 7.3 | | | | 7.7 | 7.9 | 6.8 | 590 | 626 | 620 |
| 80% | 10 | 5 | 5 | 5 | 7.3 | 7.6 | 7.1 | 23.1 | 23.2 | 25.0 | 7.2 | 7.5 | 5.7 | | | |
| 80% | 9 | 5 | 5 | 5 | 7.3 | 7.6 | 7.1 | | | | 7.2 | 7.5 | 5.8 | 800 | 832 | |
| 100% | 45 | 5 | 5 | 5 | 7.2 | 7.4 | 7.0 | 23.0 | 23.5 | 25.2 | 6.6 | 6.8 | 5.1 | | | |
| 100% | 14 | 5 | 5 | 5 | 7.2 | 7.4 | 6.9 | | | | 6.6 | 6.8 | 5.1 | 934 | 968 | |
| Measured/Loaded by: | | MF | MF | MF | MF | MF | SW | MF | MF | SW | MF | MF | SW | MF | MF | SW |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

Investigators' Signatures

Kim Pearce
Steven H Wolfe
Marshall Faircloth

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | ~~FLOWTHRU~~ | | ~~KP~~ SAMPLED BY MTV |
| Lab Tot. Resid. Cl2: | | | 0.10 | DR100 | KP |
| Alkalinity: | 122 | 70 | 93 | Hach | KP |
| Hardness: | 127 | 77 | 177 | Hach | KP |
| Total Ammonia: | | | | ~~Hach~~ | ~~KP~~ |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: Renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time KP
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date Time
Test Organism: N. leedsi
Life Stage/Age: 14 days

Test Number: 2 of 5 Test Type: Screening (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | | | | |
| 24 hr | | | | |
| 48 hr | | | | |

48h 48h 72h

| | | Number Live 72 | | | pH | | | Temp. (°C) | | | DO (mg/L) | | | Cond. (µmhos/cm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | 0-48 | 24-48 | 48-72 | 0-48 | 24-48 | 48-72 | 0-48 | 24-48 | 48-72 | 0-48 | 24-48 | 48-72 | 0-48 | 24-48 | 48-72 |
| control | 183 | 5 | 5 | 5 | 8.3 | 8.1 | 8.0 | 23.0 | 23.5 | 23.0 | 8.4 | 8.0 | 7.9 | 265 | 245 | 270 |
| control | 49 | 5 | 5 | 5 | 8.3 | 8.1 | 8.1 | | | | 8.4 | 8.0 | 7.9 | 255 | 247 | 260 |
| 7% | 109 | 5 | 5 | 5 | 8.1 | 8.0 | 8.1 | 23.5 | 23.5 | 23.0 | 7.9 | 7.9 | 8.0 | 310 | 301 | 315 |
| 7% | 41 | 5 | 5 | 5 | 8.1 | 8.0 | 8.1 | | | | 7.9 | 7.9 | 8.1 | 310 | 301 | 315 |
| 15% | 315 | 5 | 5 | 5 | 8.0 | 7.8 | 8.0 | 23.5 | 23.6 | 23.0 | 7.6 | 7.7 | 8.1 | 375 | 360 | 375 |
| 15% | 108 | 5 | 5 | 5 | 8.0 | 7.8 | 8.0 | | | | 7.6 | 7.7 | 8.0 | 370 | 365 | 385 |
| 30% | 198 | 5 | 5 | 5 | 7.7 | 7.6 | 7.8 | 23.5 | 23.9 | 23.0 | 7.2 | 7.3 | 7.9 | 480 | 465 | 480 |
| 30% | 82 | 5 | 5 | 5 | 7.7 | 7.6 | 7.8 | | | | 7.2 | 7.2 | 7.9 | 470 | 465 | 485 |
| 50% | 38 | 5 | 5 | 5 | 7.5 | 7.6 | 7.7 | 24.0 | 23.6 | 23.5 | 6.4 | 7.1 | 7.5 | 620 | 490 | 510 |
| 50% | 153 | 5 | 5 | 5 | 7.5 | 7.6 | 7.7 | | | | 6.4 | 7.1 | 7.5 | 615 | 485 | 495 |
| 80% | 10 | 5 | 5 | 5 | 7.3 | 7.1 | 7.4 | 24.0 | 24.1 | 23.5 | 6.0 | 5.1 | 7.0 | 840 | 820 | 840 |
| 80% | 9 | 5 | 5 | 5 | 7.3 | 7.1 | 7.4 | | | | 6.0 | 5.0 | 6.9 | 830 | 830 | 845 |
| 100% | 45 | 5 | 5 | 5 | 7.2 | 6.9 | 7.3 | 24.0 | 24.5 | 24.0 | 5.2 | 4.4 | 6.7 | 985 | 980 | 1000 |
| 100% | 14 | 5 | 5 | 5 | 7.1 | 6.9 | 7.3 | | | | 5.2 | 4.4 | 6.6 | 975 | 980 | 990 |
| | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Measured/Loaded by: | | KP | KP | MF | SW | MF | SW | KP | SW | KP | KP | SW | KP | SW | MF | SW |
| Recorded by: | | KP | KP | KP | MF | KP | MF | MF | KP | MF | MF | KP | MF | MF | KP | MF |

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven J Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | 0.0 | 0.0 | 1.0 | Orion | MF |

Ammonia Meter Slope: -55.0

Ammonia Blank: 0 10/1/92

Salinity Sample: 0 ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date _____ Time _____
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date 10-13-92 Time 1500
Test Organism: N. seedsi
Life Stage/Age: 14 days

Test Number: 2 of 5
Test Type: Screening | (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
72 hr after
96 hr before renewal
~~96 hr after KP~~

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 72 hr | | | | |
| 96 hr | | | | |
| 48 hr | | | | |

| | | Number Live | | | pH | | | Temp. (°C) | | | DO (mg/L) | | | Cond. (µmhos/cm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | 0 72 | 24 96 | 48 ~~96~~ | 0 72 | 24 96 | 48 ~~96~~ | 0 72 | 24 96 | 48 ~~96~~ | 0 72 | 24 96 | 48 ~~96~~ | 0 72 | 24 96 | 48 ~~96~~ |
| control | 183 | 5 | 5 | | 8.2 | 8.2 | | 22.8 | 23.1 | | 8.7 | 8.4 | | 240 | 255 | |
| control | 49 | 5 | 5 | | 8.2 | 8.2 | | | | | 8.7 | 8.4 | | 240 | 255 | |
| 7% | 109 | 5 | 5 | | 8.1 | 8.2 | | 23.0 | 23.1 | | 8.6 | 8.4 | | 290 | 300 | |
| 7% | 41 | 5 | 5 | | 8.1 | 8.2 | | | | | 8.5 | 8.4 | | 290 | 300 | |
| 15% | 315 | 5 | 5 | | 7.8 | 8.1 | | 23.1 | 23.3 | | 8.3 | 8.2 | | 350 | 365 | |
| 15% | 108 | 5 | 5 | | 7.8 | 8.1 | | | | | 8.2 | 8.2 | | 350 | 360 | |
| 30% | 198 | 5 | 5 | | 7.5 | 7.9 | | 23.2 | 23.8 | | 7.6 | 7.9 | | 460 | 475 | |
| 30% | 82 | 5 | 5 | | 7.5 | 7.9 | | | | | 7.6 | 7.9 | | 460 | 475 | |
| 50% | 38 | 5 | 5 | | 7.3 | 7.8 | | 23.0 | 24.0 | | 7.0 | 7.8 | | 595 | 610 | |
| 50% | 153 | 5 | 5 | | 7.3 | 7.8 | | | | | 6.8 | 7.9 | | 590 | 610 | |
| 80% | 10 | 5 | 5 | | 7.1 | 7.7 | | 24.1 | 24.0 | | 5.2 | 7.6 | | 830 | 850 | |
| 80% | 9 | 5 | 5 | | 7.1 | 7.7 | | | | | 5.2 | 7.6 | | 830 | 850 | |
| 100% | 45 | 5 | 5 | | 7.0 | 7.7 | | 24.1 | 24.0 | | 4.2 | 7.5 | | 975 | 1015 | |
| 100% | 14 | 5 | 5 | | 7.0 | 7.7 | | | | | 4.2 | 7.5 | | 975 | 1005 | |
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| | | | | | | | | | | | | | | | | |
| Measured/Loaded by: | | KP | KP | | MF | MF | | SW | MF | | SW | MF | | MF | MF | |
| Recorded by: | | KP | KP | | KP | KP | | KP | KP | | KP | KP | | KP | KP | |

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven Hubble

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | 0.15 | DR100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

Sample Source: BOCA RATON WWTP — Sample Collection: Date 10-9-92 Time 0915
Address/City: renewal test — Test Beginning: Date 10-9-92 Time 1400
County: — Test Ending: Date ____ Time ____
Contact/District: — Test Organism: MYSIDOPSIS BAHIA
NPDES Permit #: FL00 Outfall #: — Life Stage/Age: 4 days

Test Number: 3 of 5 — Test Type: Screening | (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
UNALTERED SAMPLE AS COLLECTED AND SPLIT W/ CITY, CHLORINATED
24-HR READINGS BEFORE + AFTER RENEWAL

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | see BOCA C.dubia page | | | |
| 24 hr | ↓ | ↓ | ↓ | ↓ |
| 48 hr | | | | |

| | | Number Live 24 | | | pH 24 | | | Temp. (°C) 24 | | | DO (mg/L) 24 | | | Cond. (µmhos/cm) | | | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 | |
| control | 219 | 5 | 5 | 5 | 8.1 | 8.0 | 8.1 | 23.3 | 23.7 | 24.8 | 6.5 | 6.7 | 7.9 | | | | |
| control | 30 | 5 | 5 | 5 | 8.1 | 8.0 | 8.0 | | | | 6.5 | 6.7 | 7.9 | 51900 | 52100 | 53300 | |
| 7% | 8 | 5 | 5 | 5 | 8.1 | 8.0 | 8.0 | 23.3 | 23.3 | 24.9 | 6.7 | 6.7 | 7.9 | | | | |
| 7% | 43 | 5 | 5 | 5 | 8.1 | 8.0 | 8.0 | | | | 6.7 | 6.7 | 7.9 | 49100 | 49700 | 50600 | |
| 15% | 67 | 5 | 5 | 5 | 8.1 | 8.0 | 7.8 | 23.3 | 23.6 | 25.0 | 6.7 | 6.7 | 7.7 | | | | |
| 15% | 190 | 5 | 5 | 5 | 8.1 | 8.0 | 7.8 | | | | 6.7 | 6.7 | 7.7 | 45400 | 45900 | 46800 | |
| 30% | 68 | 5 | 5 | 5 | 8.0 | 8.0 | 7.5 | 23.2 | 23.6 | 25.0 | 7.0 | 6.9 | 7.3 | | | | |
| 30% | 70 | 5 | 5 | 5 | 8.0 | 8.0 | 7.5 | | | | 7.0 | 6.9 | 7.3 | 38300 | 38900 | 39400 | |
| 50% | 71 | 5 | 5 | 5 | 7.9 | 7.9 | 7.3 | 23.0 | 23.8 | 25.1 | 7.3 | 7.2 | 6.8 | | | | |
| 50% | 72 | 5 | 5 | 5 | 7.9 | 7.9 | 7.3 | | | | 7.3 | 7.2 | 6.8 | 28500 | 29200 | 30000 | |
| 80% | 34 | 5 | 5 | 5 | 7.3 | 7.7 | 7.0 | 22.9 | 23.8 | 25.9 | 6.9 | 7.4 | 5.3 | | | | |
| 80% | 224 | 5 | 5 | 5* | 7.3 | 7.6 | 7.0 | | | | 6.9 | 7.4 | 5.3 | 13100 | 13500 | 13500 | |
| ~~100%~~ | KP | | | | | | | | | | | | not taken correctly | | | | |
| | 80% IS HIGHEST CONCENTRATION TESTED W/ MARINE SPECIES | | | | | | | | | | | | | | | | |
| | * mysid stuck on side of jar, may or may not be alive | | | | | | | | | | | | | | | | |
| | | | KP | | | SW | | | | | | | | | | | |
| Measured/Loaded by: | | MF | AF | SW | MF | AF | SW | MF | MF | SW | MF | MF | SW | MF | MF | SW | |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | |

Investigators' Signatures
Kim Pearce
Steven H. Wolfe
Marshall Faircloth
Reviewer

Water-quality Parameters

| | ~~Well Water~~ Sea Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | SAMPLED NEXT TO MTV | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: ____ Ammonia Blank: ____ Salinity Sample: ____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date Time
Test Organism: M. BAHIA
Life Stage/Age: 4 days

Test Number: 3 of 5 Test Type: ~~Screening~~ | Definitive
Static | Static Renewal | Flow-through

Remarks:
CHLORINATED SAMPLE

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | | | | |
| 24 hr | | | | |
| 48 hr | | | | |

48h 48h 72h

| Conc. | Chamber # | Number Live 0 45 | 24 45 | 48 72 | pH 0 48 | 24 45 | 48 72 | Temp. (°C) 0 45 | 24 45 | 48 72 | DO (mg/L) 0 48 | 24 45 | 48 72 | Cond. (µmhos/cm) 0 48 | 24 48 | 48 72 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cntrl | 219 | 5 | ~~4~~ 5 | 4 | 7.8 | 8.1 | 7.8 | 23.0 | ~~23.5~~ 24.0 | 23.5 | 5.2 | 5.9 | 5.6 | 52400 | 522 | 52.0 |
| control | 30 | 5 | 5 | 5 | 7.9 | 8.1 | 7.8 | | | | 5.2 | 5.9 | 5.6 | 52,200 | 524 | 51.9 |
| 7% | 8 | 5 | 5 | 5 | 7.9 | 8.1 | 7.7 | 23.0 | 24.1 | 23.0 | 5.7 | 6.0 | 5.7 | 49100 | 49.1 | 48.7 |
| 7% | 43 | 5 | 5 | 5 | 7.9 | 8.1 | 7.8 | | | | 5.7 | 6.0 | 5.7 | 49300 | 49.3 | 48.6 |
| 15% | 67 | 5 | 5 | 5 | 7.9 | 8.0 | 7.7 | 23.0 | 24.2 | 23.0 | 5.9 | 5.8 | 5.9 | 45600 | 456 | 45.1 |
| 15% | 190 | 5 | 5 | 5 | 7.9 | 8.0 | 7.7 | | | | 5.9 | 5.8 | 5.9 | 45800 | 45.8 | 45.4 |
| 30% | 68 | 5 | 5 | 5 | 7.7 | 7.8 | 7.6 | 23.0 | 24.2 | 23.0 | 5.8 | 5.6 | 6.1 | 35500 | 38.7 | 38.2 |
| 30% | 70 | 5 | 5 | 5 | 7.8 | 7.8 | 7.6 | | | | 5.7 | 5.6 | 6.1 | 38600 | 38.7 | 38.3 |
| 50% | 71 | 5 | ~~4~~ 5 | 4 | 7.6 | 7.5 | 7.6 | 23.0 | 24.2 | 23.5 | 5.9 | 5.5 | 6.3 | 29100 | 28.7 | 28.5 |
| 50% | 72 | 5 | ~~4~~ 5 | 4 | 7.6 | 7.5 | 7.6 | | | | 5.9 | 5.5 | 6.3 | 29100 | 29.0 | 28.8 |
| 80% | 37 | 1 | ~~0~~ 1 | 0 | 7.5 | 7.1 | 7.5 | 23.5 | 24.2 | 23.5 | 6.2 | 5.1 | 6.6 | 13200 | 13.0 | 13.1 |
| 80% | 224 | 3 | ~~0~~ 3 | 0 | 7.5 | 7.1 | 7.5 | | | | 6.2 | 5.0 | 6.6 | 13000 | 13.1 | 13.1 |
| ~~100%~~ | KP | 80% | | is | highest | | | | | | | | | | | |
| ~~100%~~ | KP | concentration | | | tested | | | | | | w/ marine species | | | | | |
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| Measured/Loaded by: | | KP | SW | | SW | MF | SW | KP | SW | KP | KP | SW | KP | SW | MF | |
| Recorded by: | | KP | SW | | MF | KP | MF | MF | KP | MF | MF | KP | MF | MF | KP | |

recorded at 72hrs instead of 48hrs column

3 million/ml KP

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven J Wolfe

Reviewer

Water-quality Parameters

| | ~~Well~~ Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | 0.0 | 0.0 | 1.0 | ~~ppm~~ | MF |

Ammonia Meter Slope: -55.0
Ammonia Blank: 0.0
Salinity Sample: ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date 10-13-92 Time 1500
Test Organism: M. BAHIA
Life Stage/Age: 4 DAYS

Test Number: 3 of 5 Test Type: Screening | (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
Chlorinated sample
72 hr after
96 hr before renewal
~~96 hr after~~ KP

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| ~~72~~ 0 hr | | | | |
| 96 ~~24~~ hr | | | | |
| ~~48~~ hr | | | | |

| | | Number Live | | | pH | | | Temp. (°C) | | | DO (mg/L) | | | Cond. (µmhos/cm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | ~~0~~ 72 | 24 96 | ~~48~~ 96 | ~~0~~ 72 | 24 96 | ~~48~~ 96 | ~~0~~ 72 | 24 96 | ~~48~~ 96 | ~~0~~ 72 | 24 96 | ~~48~~ 96 | ~~0~~ 72 | 24 96 | ~~48~~ 96 |
| control | 219 | 4 | 4 | | 8.1 | 7.9 | | 25.0 | 23.0 | | 5.9 | 6.3 | | 53.2 | 52.3 | |
| control | 30 | 5 | 5 | | 8.1 | 7.9 | | | | | 5.9 | 6.5 | | 53.4 | 52.1 | |
| 7% | 8 | 5 | 5 | | 8.0 | 7.9 | | 24.9 | 22.9 | | 6.0 | 6.5 | | 49.5 | 48.5 | |
| 7% | 43 | 5 | 5 | | 8.0 | 7.9 | | | | | 6.0 | 6.5 | | 49.9 | 48.8 | |
| ~~8~~ 15% | 67 | 5 | 5 | | 8.0 | 7.9 | | 25.1 | 23.0 | | 6.1 | 6.6 | | 46.8 | 45.6 | |
| 15% | 190 | 5 | 4 | | 8.0 | 7.9 | | | KP | | 6.1 | 6.6 | | 47.0 | 46.0 | |
| 30% | 68 | 5 | 5 | | 7.8 | 7.8 | | 25.2 | ~~22.8~~ | | 6.0 | 6.7 | | 39.5 | 38.6 | |
| 30% | 70 | 5 | 5 | | 7.8 | 7.8 | | | 23.2 | | 6.0 | 6.7 | | 39.5 | 39.0 | |
| 50% | 71 | 4 | 3 | | 7.5 | 7.8 | | 24.6 | 23.7 | | 5.6 | 6.9 | | 28.9 | 29.1 | |
| 50% | 72 | 4 | 3 | | 7.5 | 7.8 | | | | | 5.6 | 7.0 | | 29.2 | 29.3 | |
| 80% | 34 | 0 | — | | — | | | — | | | — | | | — | | |
| 80% | 224 | 0 | — | | — | | | — | | | — | | | — | | |
| | | | | | | | | re-read at temp 14 hrs KP | | | | | | | | |
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| Measured/Loaded by: | | SW | mf | | MF | MF | | SW | MF | | SW | MF | | MF | MF | |
| Recorded by: | | KP | mf | | KP | KP | | KP | KP | | KP | KP | | KP | KP | |

millimhos/cm KP

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven H Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | 0.15 | DR100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Ammonia Salinity

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP — Sample Collection: Date 10-9-92 Time 0915
Address/City: renewal test — Test Beginning: Date 10-9-92 Time 1400
County: — Test Ending: Date ____ Time ____
Contact/District: — Test Organism: MYSIDOPSIS BAHIA
NPDES Permit #: FL00 Outfall #: ____ — Life Stage/Age: 4 days

Test Number: 4 of 5 — Test Type: Screening | (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
DECHLORINATED SAMPLE IN LAB W/ SODIUM THIOSULFATE.
24-HR READINGS BEFORE + AFTER RENEWAL

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | 7@7.9@9 | 8.6@23.5 | 22.5/22.7 | 952 / 9660 @22.2 |
| 24 hr | see BOCA C. dubia page | | | |
| 48 hr | see BOCA C. dubia page | | | |

| Conc. | Chamber # | Number Live 24 0 | 24 | ~~48~~ | pH 24 0 | 24 | ~~48~~ | Temp. (°C) 24 0 | 24 | ~~48~~ | DO (mg/L) 24 0 | 24 | ~~48~~ | Cond. (µmhos/cm) 24 0 | 24 | ~~48~~ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | 101 | 5 | 5 | 5 | 8.1 | 8.0 | 8.1 | 24.1 | 23.5 | 25.6 | 6.6 | 6.7 | 7.8 | | | |
| control | 102 | 5 | 5 | 5 | 8.1 | 8.0 | 8.1 | | | | 6.6 | 6.7 | 7.8 | 52700 | 52700 | 54300 |
| 7% | 103 | 5 | 5 | 5 | 8.1 | 8.0 | 8.0 | 24.1 | 23.7 | 25.8 | 6.7 | 6.7 | 7.8 | | | |
| 7% | 104 | 5 | 5 | 5 | 8.1 | 8.0 | 8.0 | | | | 6.7 | 6.7 | 7.8 | 49500 | 49500 | 50700 |
| 15% | 198 | 5 | 5 | 5 | 8.1 | 8.0 | 8.0 | 23.8 | 23.8 | 25.9 | 6.8 | 6.7 | 7.5 | | | |
| 15% | 105 | 5 | 5 | 5 | 8.1 | 8.0 | 8.0 | | | | 6.8 | 6.7 | 7.5 | 45900 | 46100 | 47250 |
| 30% | 63 | 5 | 5 | 5 | 8.0 | 7.9 | 7.8 | 23.7 | 23.5 | 25.8 | 7.0 | 6.8 | 7.5 | | | |
| 30% | 106 | 5 | 5 | 5 | 8.0 | 7.9 | 7.8 | | | | 7.0 | 6.8 | 7.4 | 38700 | 38900 | 40500 |
| 50% | 53 | 5 | 5 | 5 | 7.8 | 7.9 | 7.6 | 23.2 | 23.7 | 25.9 | 7.2 | 7.9 | 6.8 | | | |
| 50% | 55 | 5 | 5 | 5 | 7.8 | 7.8 | 7.6 | | | | 7.2 | 7.1 | 6.8 | 28600 | 29000 | 30000 |
| 80% | 210 | 5 | 5 | 5 | 7.3 | 7.6 | 7.1 | 23.0 | 23.3 | 26.0 | 6.9 | 7.2 | 5.9 | | | |
| 80% | 107 | 5 | 5 | 5 | 7.3 | 7.6 | 7.1 | | | | 6.9 | 7.2 | 5.9 | 12900 | 13300 | 13500 |
| ~~10~~ KP | | | | | | | | | | | | | | | | |
| 80% IS THE HIGHEST CONCENTRATION TESTED W. MARINE SPECIES. | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | not salin corrected | | | |
| | | | | | | SW | | | | | | | | | | |
| Measured/Loaded by: | | MF | KP | MF | MF | ~~DAF~~ | SW | MF | MF | SW | MF | MF | SW | MF | MF | SW |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

Investigators' Signatures
Kim Pearce
Steven J Wolfe
Marshall Faircloth
Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | sea | | SAMPLED NEXT TO MTV | | |
| Lab Tot. Resid. Cl2: | | | 0.10 | DR100 | KP |
| Alkalinity: | 125 | | 93 | Hach | KP |
| Hardness: | — | | 177 | Hach | KP |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: — Ammonia Blank: — Salinity Sample: —

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP — Sample Collection: Date _____ Time _____
Address/City: renewal test — Test Beginning: Date 10-9-92 Time 1400
County: _____ — Test Ending: Date _____ Time _____
Contact/District: _____ — Test Organism: M. BAHIA
NPDES Permit #: FL00 _____ Outfall #: _____ — Life Stage/Age: 4 days

Test Number: 4 of 5 — Test Type: Screening | (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
DECHLORINATED SAMPLE
control counts had jars switched KP 10/11

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | | | | |
| 24 hr | | | | |
| 48 hr | | | | |

48h 48h 72h

| Conc. | Chamber # | Number Live 0-48 | Number Live 24-48 | Number Live 48-72 | pH 0-48 | pH 24-48 | pH 48-72 | Temp. (°C) 0-48 | Temp. (°C) 24-48 | Temp. (°C) 48-72 | DO (mg/L) 0-48 | DO (mg/L) 24-48 | DO (mg/L) 48-72 | Cond. (µmhos/cm) 0-48 | Cond. (µmhos/cm) 24-48 | Cond. (µmhos/cm) 48-72 | 72hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | 101 | ~~5~~ K 4 | ~~5~~ 4 | 4 | 7.9 | 8.1 | 7.8 | 23.5 | 24.0 | 23.5 | 6.0 | 6.0 | 6.0 | 52400 | 52.3 | 52.0 | 52.2 |
| control | 102 | ~~5~~ 4 K 5 | ~~5~~ K 5 | 5 | 7.8 | 8.1 | 7.8 | KP | 24.2 | | 6.0 | 6.0 | 5.9 | 52400 | 52.5 | 51.9 | 52.4 |
| 7% | 103 | 5 | 5 | 5 | 7.9 | 8.0 | 7.7 | 23.5 | 24.2 | 23.5 | 5.9 | 6.0 | 6.0 | 49000 | 48.4 | 48.6 | 48.7 |
| 7% | 104 | 5 | 5 | 5 | 7.9 | 8.0 | 7.7 | | | | 5.9 | 5.9 | 6.0 | 48600 | 49.1 | 48.7 | 48.7 |
| 15% | 198 | 5 | 5 | 5 | 7.8 | 8.0 | 7.7 | 24.0 | 24.2 | 23.5 | 5.4 | 5.8 | 5.9 | 45800 | 46.3 | 45.1 | 45.6 |
| 15% | 105 | 5 | 5 | 5 | 7.8 | 8.0 | 7.7 | KP | 25.0 | | 5.4 | 5.8 | 5.9 | 45600 | 46.3 | 45.4 | 45.3 |
| 30% | 63 | 5 | 5 | 5 | 7.7 | 7.8 | 7.6 | 24.0 | 25.1 | 24.0 | 5.3 | 5.4 | 6.0 | 38800 | 38.5 | 38.2 | 37.9 |
| 30% | 106 | 5 | 5 | 5 | 7.6 | 7.8 | 7.6 | | | | 5.3 | 5.4 | 6.0 | 39100 | 39.5 | 38.3 | 38.7 |
| 50% | 53 | 5 | 5 | 4 | 7.6 | 7.5 | 7.6 | 24.0 | 25.1 | 24.0 | 5.7 | 5.1 | 6.2 | 29700 | 29.2 | 28.5 | 29.0 |
| 50% | 55 | 5 | 4 5 | 4 | 7.6 | 7.5 | 7.4 | | | | 5.7 | 5.1 | 6.2 | 29600 | 29.7 | 28.8 | 29.2 |
| 80% | 210 | 1 | 1 | 1 | 7.5 | 7.1 | 7.5 | 24.0 | 25.0 | 24.0 | 6.1 | 4.4 | 6.7 | 13300 | 13.0 | 13.1 | 13.1 |
| 80% | 107 | 3 | ~~4~~ 0 3K | 0 | 7.4 | 7.1 | 7.5 | | | | 6.1 | 4.4 | 6.7 | 13100 | 13.1 | 13.1 | 13.0 |
| | | | recorded 72hr reading as 48hr rep. | | | | | | | | | | | | | | |
| Measured/Loaded by: | | KP | SW | SW | SW | MF | SW | KP | SW | KP | KP | SW | KP | SW | MF | SW | |
| Recorded by: | | KP | SW | KP | MF | KP | MF | MF | KP | MF | MF | KP | MF | MF | KP | MF | |

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven H Wolfe

Reviewer

Water-quality Parameters

| | Salt/Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | 0.0 | 0.0 | 0.3 | Orion | MF |

Ammonia — Ammonia — Salinity

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date 10-13-92 Time 1500
Test Organism: M. BAHIA
Life Stage/Age: 4 DAYS

Test Number: 4 of 5 Test Type: Screening | (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:
72 hr after } renewal
96 hr before }
~~96 hr after~~
DECHLORINATED sample

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| ~~0~~ 72 hr | | | | |
| 96 ~~24~~ hr | | | | |
| ~~48~~ hr | | | | |

| | | Number Live | | | pH | | | Temp. (°C) | | | DO (mg/L) | | | Cond. (µmhos/cm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | ~~0~~ 72 | 24 96 | ~~48 96~~ | ~~0~~ 72 | 24 96 | ~~48 96~~ | ~~0~~ 72 | 24 96 | ~~48 96~~ | ~~0~~ 72 | 24 96 | ~~48 96~~ | ~~0~~ 72 | 24 96 | 48 |
| control | 101 | 4 | 4 | | 8.1 | 7.9 | | 25.0 | 23.3 | | 6.7 | 6.5 | | 53.0 | 53.2 | |
| control | 102 | 5 | 5 | | 8.0 | 7.9 | | | | | 6.7 | 6.5 | | 53.3 | 52.9 | |
| 7% | 103 | 5 | 5 | | 8.0 | 7.9 | | 25.4 | 23.3 | | 6.7 | 6.8 | | 50.1 | 49.7 | |
| 7% | 104 | 5 | 5 | | 8.0 | 7.9 | | | | | 6.7 | 6.8 | | 50.6 | 49.1 | |
| 15% | 198 | 5 | 5 | | 8.0 | 7.9 | | 25.3 | 24.0 | | 6.6 | 6.8 | | 47.1 | 46.5 | |
| 15% | 105 | 5 | 5 | | 8.0 | 7.9 | | | | | 6.6 | 6.7 | | 46.5 | 45.5 | |
| 30% | 63 | 5 | 4 | | 7.9 | 7.8 | | 25.0 | 24.0 | | 6.3 | 6.8 | | 39.3 | 39.4 | |
| 30% | 106 | 5 | 5 | | 7.9 | 7.8 | | | | | 6.3 | 6.8 | | 39.5 | 39.0 | |
| 50% | 53 | 4 | 3 | | 7.6 | 7.8 | | 24.7 | 24.1 | | 5.9 | 7.0 | | 29.2 | 29.9 | |
| 50% | 55 | 4 | 4 | | 7.6 | 7.8 | | | | | 5.8 | 7.0 | | 29.6 | 29.8 | |
| 80% | 210 | 1 | 0 | | 7.1 | 7.8 | | 24.2 | 24.3 | | 5.0 | 7.4 | | 13.1 | 13.5 | |
| 80% | 107 | — | — | | — | — | | — | — | | — | — | | — | — | |
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| | | | | | | | | SW | | | SW | | | | | |
| Measured/Loaded by: | | KP | MF | | MF | MF | | ~~MF~~ | MF | | ~~MF~~ | MF | | ~~DHC~~ | MF | |
| Recorded by: | | KP | MF | | KP | KP | | KP | KP | | KP | KP | | KP | KP | |

millimhos/cm to µmhos/cm

Investigators' Signatures

Kim Scazzo
Marshall Faircloth
Steven H Wolfe
Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | 0.15 | DR100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____
Ammonia Blank: _____
Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date 10-9-92 Time 0915
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date Time
Test Organism: M. BERYLLINA
Life Stage/Age:

Test Number: 5 of 5 Test Type: ~~Screening~~ | Definitive
Static | Static Renewal | Flow-through

Remarks:
24-HR READINGS BEFORE + AFTER RENEWAL

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | see BOCA C. dubia page | | | |
| 24 hr | ↓ | ↓ | ↓ | ↓ |
| 48 hr | | | | |

| Conc. | Chamber # | Number Live 0 | 24 | ~~48~~ 24 | pH 0 | 24 | ~~48~~ 24 | Temp. (°C) 0 | 24 | ~~48~~ 24 | DO (mg/L) 0 | 24 | ~~48~~ 24 | Cond. (µmhos/cm) 0 | 24 | ~~48~~ 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | 16 | 5 | 4 | 4 | 8.1 | 8.0 | 8.1 | 22.8 | 23.8 | 24.3 | 6.6 | 6.6 | 7.8 | | | |
| control | 11 | 5 | 4 | 4 | 8.1 | 8.0 | 8.1 | | | | 6.6 | 6.6 | 7.8 | 51500 | 52500 | 53000 |
| 7% | 43 | 5 | 4 | 4 | 8.1 | 8.0 | 8.0 | 23.0 | 24.0 | 24.9 | 6.7 | 6.6 | 7.8 | | | |
| 7% | 113 | 5 | 4 | 4 | 8.1 | 8.0 | 8.0 | | | | 6.7 | 6.6 | 7.8 | 49000 | 50100 | 50500 |
| 15% | 85 | 5 | 5 | 5 | 8.1 | 8.0 | 7.8 | 23.1 | 24.1 | 25.0 | 6.7 | 6.7 | 7.1 | | | |
| 15% | 88 | 5 | 5 | 5 | 8.1 | 8.0 | 7.8 | | | | 6.7 | 6.7 | 7.1 | 45400 | 46700 | 41300 |
| 30% | 15 | 5 | 5 | 5 | 8.0 | 7.9 | 7.8 | 23.0 | 24.1 | 25.0 | 7.0 | 6.8 | 7.1 | | | |
| 30% | 2 | 5 | 5 | 5 | 8.0 | 7.9 | 7.8 | | | | 7.0 | 6.8 | 7.1 | 38200 | 39800 | 39500 |
| 50% | 71 | 5 | 5 | 5 | 7.8 | 7.8 | 7.4 | 23.0 | 24.2 | 25.0 | 7.2 | 6.9 | 6.4 | | | |
| 50% | 322 | 5 | 5 | 5 | 7.8 | 7.8 | 7.4 | | | | 7.2 | 6.9 | 6.4 | 28500 | 29800 | 28500 |
| 80% | 186 | 5 | 5 | 5 | 7.3 | 7.6 | 7.0 | 22.8 | 24.0 | 25.0 | 6.9 | 7.3 | 5.6 | | | |
| 80% | 115 | 5 | 5 | 5 | 7.3 | 7.7 | 7.0 | | | | 6.9 | 7.3 | 5.7 | 12600 | 13100 | 13700 |
| new control | 175 | | | 5 | | | 8.1 | | | 24.7 | | | 7.8 | | | |
| new control | 174 | | | 5 | | | 8.1 | | | | | | 7.8 | | | 53300 |
| new 7% | 774 | | | 5 | | | 8.0 | | | 24.9 | | | 7.8 | | | |
| new 7% | 773 | | | 5 | | | 8.0 | | | | | | 7.8 | | | 50600 |
| | | | | | | | | | | | | | not corrected for salinity | | | |
| | | | | | | | | | | | | | | | | |
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| | | | | | SW | | | | | | | | | | | |
| Measured/Loaded by: | | MF | MF | SW | ~~MF~~ | SW | SW | MF | MF | SW | MF | MF | SW | MF | MF | SW |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

Investigators' Signatures

Kim Pearce
Marshall Faudeth
Steven L. Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____
Ammonia Blank: _____
Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time
Test Beginning: Date 10-7-92 Time 1400
Test Ending: Date Time
Test Organism: M. BERYLLINA
Life Stage/Age: 12 days

Test Number: 5 of 5 Test Type: Screening (Definitive)
(Static) (Static Renewal) Flow-through
KP

Remarks:

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | | | | |
| 24 hr | | | | |
| 48 hr | | | | |

48h 48h 72h

| Conc. | Chamber # | Number Live 0-48 | Number Live 24-48 | Number Live 48-72 | pH 0-48 | pH 24-48 | pH 48-72 | Temp (°C) 0-48 | Temp (°C) 24-48 | Temp (°C) 48-72 | DO (mg/L) 0-48 | DO (mg/L) 24-48 | DO (mg/L) 48-72 | Cond. (µmhos/cm) 0-48 | Cond. (µmhos/cm) 24-48 | Cond. (µmhos/cm) 48-72 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | 16 | 3 | 3 | 3 | 8.0 | 8.1 | 7.9 | 23.0 | 24.1 | 23.5 | 6.2 | 6.1 | 6.3 | 53000 | 52.3 | 52.2 |
| control | 11 | 4 | 4 | 4 | 8.0 | 8.1 | 7.9 | | | | 6.2 | 6.1 | 6.3 | 52800 | 52.5 | 52.7 |
| 7‰ | 43 | 4 | 4 | 4 | 8.0 | 8.1 | 7.9 | 23.0 | 24.0 | 24.0 | 6.2 | 6.1 | 6.3 | 49400 | 49.2 | 49.4 |
| 7‰ | 113 | 4 | 4 | 4 | 8.0 | 8.1 | 7.9 | | | | 6.2 | 6.1 | 6.3 | 49400 | 49.3 | 49.3 |
| 15‰ | 85 | 5 | 5 | 5 | 7.9 | 8.0 | 7.8 | 23.0 | 24.0 | 24.0 | 6.4 | 6.1 | 6.3 | 38800 | 44.8 | 45.2 |
| 15‰ | 88 | ~~4~~ 5 | 5 | 5 | 7.9 | 8.0 | 7.8 | | | | 6.4 | 6.1 | 6.3 | 40400 | 44.8 | 45.0 |
| 30‰ | 15 | 5 | 5 | 5 | 7.9 | 7.9 | 7.8 | 23.0 | 24.0 | 24.0 | 6.6 | 6.0 | 6.5 | 38500 | 38.5 | 39.0 |
| 30‰ | 2 | 5 | 5 | 5 | 7.9 | 7.9 | 7.8 | | | | 6.6 | 6.0 | 6.5 | 38700 | 38.5 | 38.8 |
| 50‰ | 71 | 5 | 5 | 5 | 7.8 | 7.5 | 7.7 | 23.5 | 24.0 | 24.0 | 6.8 | 5.7 | 6.7 | 29200 | 28.5 | 29.0 |
| 50‰ | 322 | 5 | 5 | 5 | 7.8 | 7.5 | 7.6 | | | | 6.8 | 5.7 | 6.7 | 28900 | 28.7 | 29.0 |
| 80‰ | 186 | 5 | 5 | 5 | 7.6 | 7.1 | 7.6 | 23.5 | 24.3 | 24.5 | 6.9 | 5.3 | 6.9 | 13100 | 13.0 | 13.2 |
| 80‰ | 115 | 5 | 5 | 5 | 7.7 | 7.1 | 7.6 | | | | 6.8 | 5.3 | 6.9 | 13500 | 13.3 | 13.4 |
| new control | 175 | 10 | 10 | 10 | 8.0 | 8.1 | 7.8 | 24.0 | | 23.5 | 6.1 | | 5.9 | 52900 | 52.2 | 52.2 |
| new control | 174 | 10 | 10 | 10 | 7.9 | 8.1 | 7.8 | | | | 6.1 | | 5.9 | 53300 | 52.4 | 52.8 |
| new 7‰ | 774 | 10 | 10 | 10 | 7.9 | 8.1 | 7.8 | 24.0 | | 24.0 | 6.8 | | 5.7 | 49800 | 49.1 | 49.9 |
| new 7‰ | 773 | 10 | 10 | 10 | 7.9 | 8.1 | 7.8 | | | | 6.9 | | 5.7 | 50200 | 49.2 | 49.6 |
| | | | | | | | | | | | | | | | | |
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| Measured/Loaded by: | | KP | MF | MF | SW | MF | SW | KP | SW | KP | KP | SW | KP | SW | MF | SW |
| Recorded by: | | KP | KP | KP | MF | KP | MF | MF | KP | MF | MF | KP | MF | MF | KP | MF |

* WRONG COUNT

3 replicates

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven H. Wolfe

Reviewer

Salt

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope:
Ammonia Blank:
Salinity Sample: ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: renewal test
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date Time
Test Beginning: Date 10-9-92 Time 1400
Test Ending: Date 10-13-92 Time 1500
Test Organism: M. BERYLLINA
Life Stage/Age: 12 DAYS

Test Number: 5 of 5 Test Type: Screening (Definitive)
Static | (Static Renewal) | Flow-through

Remarks:

72 hr after
96 hr before } renewal
~~96 hr after~~

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 72 ~~0~~ hr | | | | |
| 96 ~~24~~ hr | | | | |
| ~~48~~ hr | | | | |

| | Conc. | Chamber # | Number Live 0-72 | Number Live 24-96 | Number Live 48 | pH 0-72 | pH 24-96 | pH 96 | Temp. (°C) 0-72 | Temp. (°C) 24-96 | Temp. (°C) 48 | DO (mg/L) 0-72 | DO (mg/L) 24-96 | DO (mg/L) 48 | Cond. (µmhos/cm) 0-72 | Cond. (µmhos/cm) 24-96 | Cond. (µmhos/cm) 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | control | 16 | 3 | 3 | | 8.1 | 8.0 | | 24.8 | 23.4 | | 6.3 | 6.8 | | 52.9 | 53.0 | |
| | control | 11 | 4 | 4 | | 8.1 | 8.0 | | | | | 6.3 | 6.8 | | 53.1 | 52.9 | |
| | 7% | 43 | 4 | 4 | | 8.0 | 8.0 | | 24.9 | 23.3 | | 6.2 | 6.9 | | 49.8 | 49.5 | |
| | 7% | 113 | 4 | 4 | | 8.0 | 8.0 | | | | | 6.2 | 6.9 | | 50.1 | 49.3 | |
| | 15% | 85 | 5 | 5 | | 8.0 | 7.9 | | 25.0 | 23.9 | | 6.0 | 6.8 | | 46.3 | 46.0 | |
| | 15% | 88 | 5 | 5 | | 8.0 | 7.9 | | | | | 6.0 | 6.8 | | 46.6 | 45.9 | |
| | 30% | 15 | 5 | 5 | | 7.8 | 7.9 | | 24.9 | 24.0 | | 5.9 | 7.0 | | 39.1 | 39.2 | |
| | 30% | 2 | 5 | 5 | | 7.8 | 7.9 | | | | | 5.9 | 7.0 | | 39.2 | 38.8 | |
| | 50% | 71 | 5 | 5 | | 7.5 | 7.9 | | 24.7 | 24.2 | | 5.4 | 7.3 | | 29.1 | 29.6 | |
| | 50% | 322 | 5 | 5 | | 7.5 | 7.8 | | | | | 5.4 | 7.3 | | 29.1 | 29.2 | |
| | 80% | 186 | 5 | 5 | | 7.1 | 7.8 | | 24.3 | 24.3 | | 4.8 | 7.5 | | 13.3 | 13.3 | |
| | 80% | 115 | 5 | 5 | | 7.1 | 7.8 | | | | | 4.8 | 7.5 | | 13.1 | 13.6 | |
| new | control | 175 | 5 | 10 | | 8.1 | 7.9 | | 24.9 | 24.0 | | 6.0 | 6.4 | | 53.0 | 53.6 | |
| new | control | 174 | 5 | 10 | | 8.1 | 7.9 | | | | | 6.1 | 6.2 | | 53.2 | 52.9 | |
| new | 7% | 774 | 5 | 10 | | 8.0 | 7.9 | | 25.1 | 24.5 | | 6.0 | 6.2 | | 50.7 | 51.4 | |
| new | 7% | 773 | 5 | 10 | | 8.0 | 7.9 | | | | | 6.0 | 6.3 | | 50.1 | 50.1 | |
| | | | recorded wrong # 10/13 KP | | | | | | | | | | | | | millimhos/cm KP | |
| | Measured/Loaded by: | | KP | KP | | MF | MF | | SW | MF | | SW | MF | | MF | MF | |
| | Recorded by: | | KP | KP | | KP | KP | | KP | KP | | KP | KP | | KP | KP | |

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steve H Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | 0.15 | D2100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: FLOW-THRU
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date FLOW THRU Time
Test Beginning: Date 10-9-92 Time 2300
Test Ending: Date 10-11-92 Time 2025
Test Organism: C. DUBIA
Life Stage/Age: < 24 HRS

Test Number: 4 of 4 Test Type: Screening | Definitive
Static | Static Renewal | Flow-through 100%

Remarks: control

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | see mysid flow-thru page | | | |
| 24 hr | see SRT C. dubia page | | | |
| 48 hr | see SRT C. dubia page | | | |

FLOWTHRU STATIC

| Conc. | Chamber # | Number Live 0 | 24 | 48 | pH 0 | 24 | 48 | Temp. (°C) 0 | 24 | 48 | DO (mg/L) 0 | 24 | 48 | Cond. (µmhos/cm) 0 | 24 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | A | 5 | 5 | 5 | 8.8 | — | 7.9 | 23.0 | — | 24.5 | 8.4 | — | 8.4 | 153 | — | 240 |
| control | B | 5 | 5 | 5 | | | 8.0 | | | | | | 8.5 | | | 245 |
| control | C | 5 | 4 | 3 | | | 8.1 | | | | | | 8.7 | | | 245 |
| control | D | 5 | 5 | 5 | | | 8.1 | | | | | | 8.7 | | | 235 |
| 100% | 1 | 10 | 1 | 0 | 7.1 | 7.1 | 7.1 | 24.0 | 24.3 | 25.6 | 6.3 | 6.1 | 5.3 | | | |
| 100% | 2 | 10 | 1 | 0 | | | | | | | | | | 1005 | 1038 | 1080 |
| 100% | 3 | 10 | 0 | 0 | 7.1 | 7.1 | 7.1 | | | | 6.3 | 6.1 | 5.3 | | | |
| 100% | 4 | 10 | 0 | 0 | | | | | | | | | | 1005 | 1039 | 1070 |
| Measured/Loaded by: | | KP | MF | KP | KP | MF | SW | KP | MF | SW | KP | MF | SW | KP | MF | SW |
| Recorded by: | | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steve Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Boca WWTP
Address/City: FLOW-THRU
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date FLOW-THRU Time
Test Beginning: Date 10-9-92 Time 2100
Test Ending: Date 10-13-92 Time 2100
Test Organism: N. Leeds
Life Stage/Age: 14 days

Test Number: 3 of 3/4 Test Type: Screening | Definitive
Static | Static Renewal | Flow-through 100%

Remarks:
new static well water control set up at same time as flow-thru began
control

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | see mysid flow-thru page | | | |
| 24 hr | see SRT C. dubia page | | | |
| 48 hr | see SRT C. dubia page | | | |

| Conc. | Chamber # | Number Live 0 | 24 | 48 | pH 0 | 24 | 48 | Temp. (°C) 0 | 24 | 48 | DO (mg/L) 0 | 24 | 48 | Cond. (µmhos/cm) 0 | 24 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100% | 01 | 10 | 10 | 10 | 7.1 | 7.1 | 7.1 | 24.0 | 24.3 | 25.6 | 6.3 | 6.1 | 5.3 | | | |
| 100% | 02 | 10 | 10 | 10 | | | | | | | | | | 1005 | 1038 | 1080 |
| 100% | 03 | 10 | 10 | 10 | 7.1 | 7.1 | 7.1 | | | | 6.3 | 6.1 | 5.3 | | | |
| 100% | 04 | 10 | 10 | 10 | | | | | | | | | | 1005 | 1039 | 1070 |
| control | 209 | 5 | 5 | 5 | 7.8 | 8.2 | 8.3 | 22.8 | 23.5 | 24.0 | 8.4 | 7.8 | 8.0 | | | 265 |
| control | 210 | 5 | 5 | 5 | 7.8 | 8.2 | 8.3 | | | | 8.4 | 7.8 | 8.0 | 240 | 270 | 265 |
| | | | | | | | | | | | | | | | | |
| well water control | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | 72h | 96h | | 72h | 96h | | 72h | 96h | | 72h | 96h | | 72h | 96h | |
| control | 209 | 5 | 5 | | 8.2 | 8.0 | | 23.5 | 23.5 | | 7.9 | 7.2 | | 400 | 510 | |
| control | 210 | 5 | 5 | | 8.2 | 8.0 | | | | | 7.9 | 7.2 | | 400 | 470 | |
| 100% | 01 | 10 | 10 | | 7.0 | 7.0 | | 25.0 | 25.0 | | 5.0 | 4.0 | KP | 1080 | 1090 | |
| 100% | 02 | 10 | 10 | | | | | | | | | 4.4 | | | | |
| 100% | 03 | 10 | 10 | | 7.0 | 7.0 | | 25.0 | 25.0 | | 5.2 | 4.2 | KP | 1060 | 1040 | |
| 100% | 04 | 10 | 10 | | | | | | | | | 4.6 | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | KP | MF | MF | KP | SW | MF | KP | SW | SW | KP | SW | SW | KP | SW | MF |
| | | KP | KP | KP | MF | KP | KP | MF | KP | KP | MF | KP | KP | MF | KP | KP |
| Measured/Loaded by: | | MF | MF | KP | SW | MF | KP | SW | MF | KP | SW | MF | KP | SW | MF | KP |
| Recorded by: | | KP | KP | KP | KP | KP | MF | KP | KP | KP | KP | KP | KP | KP | KP | MF |

FLOW-THRU START 14

Investigators' Signatures

Steve Wolfe
Kim Pekarcc
Marshall Rawlett
Steven H Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | FLOW-THRU | | |
| Lab Tot. Resid. Cl2: | | | 0.09 | DR100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: FLOW-THRU
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date FLOW-THRU Time
Test Beginning: Date 10-9-92 Time 2100
Test Ending: Date Time
Test Organism: MENIDIA BERYLLINA
Life Stage/Age: 12 DAYS

Test Number: 2 of 3/4 Test Type: Screening | Definitive
Static | Static Renewal | Flow-through

Remarks:
72 + 96 hr readings continued on a later page

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | see mysid flow-thru page | | | |
| 24 hr | see SRT C. dubia page | | | |
| 48 hr | see SRT C. dubia page | | | |

| | | Number Live | | | pH | | | Temp. (°C) | | | DO (mg/L) | | | Cond. (µmhos/cm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 |
| control | 43 | 10 | 9 | 8 | 8.1 | 8.1 | 8.1 | 23.8 | 23.5 | 24.8 | 6.6 | 7.2 | 6.3 | | | |
| control | 44 | 10 | 10 | 10 | | | | | | | | | | 52100 | 51800 | 52.8 |
| control | 47 | 10 | 9 | 9 | 8.1 | 8.1 | 8.1 | | | | 6.6 | 7.2 | 6.4 | | | |
| control | 48 | 10 | 10 | 10 | | | | | | | | | | 52300 | 52200 | 52.9 |
| 7.5‰ | 35 | 10 | 10 | 10 | 8.1 | 8.0 | 8.0 | 24.0 | 23.9 | 25.0 | 6.6 | 7.2 | 6.4 | | | |
| 7.5‰ | 36 | 10 | 10 | 10 | | | | | | | | | | 49300 | 49100 | 49.7 |
| 7.5‰ | 39 | 10 | 10 | 10 | 8.1 | 8.0 | 8.0 | | | | 6.6 | 7.2 | 6.4 | | | |
| 7.5‰ | 40 | 10 | 10 | 10 | | | | | | | | | | 49200 | 48900 | 49.6 |
| 15‰ | 27 | 10 | 10 | 10 | 8.0 | 8.0 | 8.0 | 24.0 | 24.2 | 25.0 | 6.5 | 7.2 | 6.2 | | | |
| 15‰ | 28 | 10 | 10 | 10 | | | | | | | | | | 45400 | 45600 | 46.9 |
| 15‰ | 31 | 10 | 10 | 10 | 8.0 | 8.0 | 7.9 | | | | 6.5 | 7.2 | 6.2 | | | |
| 15‰ | 32 | 10 | 10 | 10 | | | | | | | | | | 45900 | 45600 | 45.9 |
| 30‰ | 19 | 10 | 10 | 10 | 7.9 | 7.8 | 7.8 | 24.0 | 24.2 | 25.1 | 6.5 | 7.1 | 6.0 | | | |
| 30‰ | 20 | 10 | 10 | 10 | | | | | | | | | | 40100 | 40200 | 41.1 |
| 30‰ | 23 | 10 | 10 | 10 | 7.9 | 7.8 | 7.8 | | | | 6.5 | 7.1 | 6.1 | | | |
| 30‰ | 24 | 10 | 10 | 10 | | | | | | | | | | 40400 | 40500 | 41.0 |
| 50‰ | 11 | 10 | 10 | 10 | 7.4 | 7.4 | 7.4 | 24.0 | 24.2 | 25.2 | 6.3 | 6.5 | 5.6 | | | |
| 50‰ | 12 | 10 | 10 | 10 | | | | | | | | | | 27500 | 27600 | 28.3 |
| 50‰ | 15 | 10 | 10 | 10 | 7.4 | 7.4 | 7.4 | | | | 6.3 | 6.5 | 5.6 | | | |
| 50‰ | 16 | 10 | 10 | 10 | | | | | | | | | | 28500 | 28400 | 29.1 |
| 80‰ | 3 | 10 | 10 | 10 | 7.2 | 7.1 | 7.1 | 24.0 | 23.8 | 24.9 | 6.2 | 6.7 | 5.7 | | | |
| 80‰ | 4 | 10 | 10 | 10 | | | | | | | | | | 16800 | 16800 | 16.9 |
| 80‰ | 7 | 10 | 10 | 10 | 7.2 | 7.1 | 7.1 | | | | 6.3 | 6.7 | 5.8 | | | |
| 80‰ | 8 | 10 | 10 | 10 | | | | | | | | | | 18000 | 17100 | 16.9 |
| Measured/Loaded by: | | MF | MF | MF | SW | MF | MF | SW | MF | SW | SW | MF | SW | SW | MF | MF |
| Recorded by: | | MF | KP | MF | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

Investigators' Signatures

Kim Pearce
Marshall Faulstich
Steven H. Wolfe

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | FLOW THRU | | |
| Lab Tot. Resid. Cl2: | | | 0.09 | DR100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP — FLOWTHRU
Address/City: FLOWTHRU
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date ____ Time ____
Test Beginning: Date 10-9-92 Time 2100
Test Ending: Date 10-13-92 Time 2100
Test Organism: M. BERYLLINA
Life Stage/Age: 12 DAYS

Test Number: 2 of 4 **Test Type:** Screening | Definitive
Static | Static Renewal | Flow-through

Remarks:
continued 72+96 hrs from 48 hr page

**Instrument Calibrations:**

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 72 hr | | | | |
| 96 24 hr | | | | |
| 48 hr | | | | |

| Conc. | Chamber # | Number Live 72 | Number Live 24 96 | Number Live 48 | pH 72 | pH 24 96 | pH 48 | Temp. (°C) 72 | Temp. (°C) 24 96 | Temp. (°C) 48 | DO (mg/L) 72 | DO (mg/L) 24 96 | DO (mg/L) 48 | Cond. (µmhos/cm) 72 | Cond. (µmhos/cm) 24 96 | Cond. (µmhos/cm) 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| control | 43 | 8 | 8 | | 8.1 | 8.1 | | 24.0 | 24.8 | | 6.7 | 6.4 | | 52.0 | 53.2 | |
| control | 44 | 10 | 10 | | | | | | | | | | | | | |
| control | 47 | 9 | 9 | | 8.1 | 8.1 | | | | | 6.7 | 6.4 | | 52.2 | 53.3 | |
| control | 48 | 10 | 10 | | | | | | | | | | | | | |
| 7.5% | 35 | 10 | 10 | | 8.1 | 8.0 | | 24.5 | 25.0 | | 6.6 | 6.1 | | 49.6 | 49.4 | |
| 7.5% | 36 | 10 | 10 | | | | | | | | | | | | | |
| 7.5% | 39 | 10 | 10 | | 8.0 | 8.0 | | | | | 6.6 | 6.2 | | 49.6 | 49.9 | |
| 7.5% | 40 | 10 | 10 | | | | | | | | | | | | | |
| 15% | 27 | 10 | 10 | | 8.0 | 7.9 | | 24.5 | 25.0 | | 6.5 | 6.0 | | 46.2 | 46.7 | |
| 15% | 28 | 10 | 10 | | | | | | | | | | | | | |
| 15% | 31 | 10 | 10 | | 8.0 | 7.9 | | | | | 6.5 | 6.0 | | 46.2 | 46.1 | |
| 15% | 32 | 10 | 10 | | | | | | | | | | | | | |
| 30% | 19 | 10 | 10 | | 7.8 | 7.8 | | 24.5 | 25.0 | | 6.5 | 6.0 | | 40.4 | 41.4 | |
| 30% | 20 | 10 | 10 | | | | | | | | | | | | | |
| 30% | 23 | 10 | 10 | | 7.8 | 7.8 | | | | | 6.4 | 6.0 | | 40.8 | 40.6 | |
| 30% | 24 | 10 | 10 | | | | | | | | | | | | | |
| 50% | 11 | 10 | 10 | | 7.3 | 7.3 | | 24.5 | 25.0 | | 5.9 | 5.4 | | 27.8 | 27.9 | |
| 50% | 12 | 10 | 10 | | | | | | | | | | | | | |
| 50% | 15 | 10 | 10 | | 7.4 | 7.3 | | | | | 6.7 | 5.5 | | 28.9 | 29.2 | |
| 50% | 16 | 10 | 10 | | | | | | | | | | | | | |
| 80% | 3 | 10 | 10 | | 7.1 | 7.1 | | 24.0 | 25.0 | | 6.0 | 5.1 | | 16.4 | 16.9 | |
| 80% | 4 | 10 | 10 | | | | | | | | | | | | | |
| 80% | 7 | 10 | 10 | | 7.1 | 7.1 | | | | | 6.0 | 5.0 | | 16.5 | 17.3 | |
| 80% | 8 | 10 | 10 | | | | | | | | | | | | | |
| Measured/Loaded by: | | MF | MF | | KP | SW | | KP | SW | | KP | SW | | KP | SW | |
| Recorded by: | | KP | KP | | MF | KP | | MF | KP | | MF | KP | | MF | KP | |

**Investigators' Signatures**

Kim Pearce
Marshall Faircloth
Steven H Wolfe

Reviewer

**Water-quality Parameters**

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: ____ Ammonia Blank: ____ Salinity Sample: ____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: 7ppt SALT CONTROL
Address/City: for BOCA flow-thru
County:
Contact/District:
NPDES Permit #: FL00
Outfall #:

Sample Collection: Date ______ Time ______
Test Beginning: Date 10-9-92 Time 2100
Test Ending: Date ______ Time ______
Test Organism: M. BERYLLINA
Life Stage/Age: 12 DAYS

Test Number: 2 of 2
Test Type: Screening | Definitive
(Static) | Static Renewal | Flow-through

Remarks:
Salt control

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | see mysid flow-thru page | | | |
| 24 hr | see SRT C. dubia page | | | |
| 48 hr | see SRT C. dubia page | | | |

| Conc. | Chamber # | Number Live 0 | Number Live 24 | Number Live 48 | pH 0 | pH 24 | pH 48 | Temp. (°C) 0 | Temp. (°C) 24 | Temp. (°C) 48 | DO (mg/L) 0 | DO (mg/L) 24 | DO (mg/L) 48 | Cond. (µmhos/cm) 0 | Cond. (µmhos/cm) 24 | Cond. (µmhos/cm) 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7ppt | 43 | 5 | 5 | 5 | 8.6 | 7.8 | 7.4 | 22.6 | 24.0 | 24.0 | 8.3 | 7.7 | 7.1 | | | 14100 |
| 7ppt | 50 | 5 | 5 | 5 | 8.6 | 7.8 | 7.4 | | | | 8.3 | 7.7 | 7.1 | 13000 | 13610 | 13200 |
| | | 72h | 96h | | 72h | 96h | | 72h | 96h | | 72h | 96h | | 72h | 96h | 72h |
| 7ppt | 43 | 5 | 5 | | 7.4 | 7.3 | | 23.5 | 24.3 | | 7.4 | 7.0 | | ~~13.7~~ | 14.6 | 14.0 |
| 7ppt | 50 | 5 | 5 | | 7.4 | 7.4 | | | | | 7.4 | 7.0 | | ~~13.9~~ KP | 14.7 | 14.2 |
| | | KP | KP | | KP | SW | | KP | SW | | KP | SW | | KP | SW | |
| | | KP | KP | | KP | KP | | KP | KP | | KP | KP | | KP | KP | |
| | | | | | | | | | | | | | | wrote M. bahia(?) data here 10/12 | millimhos/cm | |
| Measured/Loaded by: | | MF | MF | KP | SW | MF | MF | SW | MF | MF | SW | MF | ~~MF~~ KP | SW | MF | ~~MF~~ KP |
| Recorded by: | | KP | KP | KP | KP | KP | MF | KP | KP | KP | KP | KP | MF | KP | KP | MF |

Investigators' Signatures
Kim Pearce
Randall Fairchild(?)
Steven H Wolfe(?)
[signature]
Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. $Cl_2$: | | | | | |
| Lab Tot. Resid. $Cl_2$: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: ______
Ammonia Blank: ______
Salinity Sample: ______ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Boca Raton WWTP
Address/City: FLOW-THRU
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date FLOW-THRU Time
Test Beginning: Date 10/9/92 Time 21:00
Test Ending: Date Time
Test Organism: Mysidopsis bahia
Life Stage/Age: 4 days

Test Number: 1 of 4 Test Type: Screening | Definitive
Static | Static Renewal | (Flow-through)

Remarks:
72+96 hr readings continued on a later page

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | 7@7, 9@9 | 8.5@24.0 | 24.0@24.1 | 992@1000 9970@10,000 @24.6 |
| 24 hr | see SRT C. dubia page | | | |
| 48 hr | see SRT C. dubia page | | | |

| Conc. | Chamber # | Number Live 0 | 24 | 48 | pH 0 | 24 | 48 | Temp. (°C) 0 | 24 | 48 | DO (mg/L) 0 | 24 | 48 | Cond. (µmhos/cm) 0 | 24 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 41 | 8 | 8 | 8 | 8.1 | 8.1 | 8.1 | 23.8 | 23.5 | 24.8 | 6.6 | 7.2 | 6.3 | | | |
| control | 42 | 8 | 8 | 8 | 8.KP | | | | | | | | | 52100 | 51800 | 528 |
| control | 45 | 8 | 8 | 8 | 8.1 | 8.1 | 8.1 | | | | 6.6 | 7.2 | 6.4 | | | |
| control | 46 | 8 | 8 | 8 | | | | | | | KP | | | 52300 | 52200 | 52.9 |
| 7.5% | 33 | 8 | 8 | 8 | 8.1 | 8.0 | 8.0 | 24.0 | 23.9 | 25.0 | 5.8 | 7.2 | 6.4 | | | |
| 7.5% | 34 | 8 | 8 | 8 | | | | | | | 6.6 | | | 49300 | 49100 | 49.9 |
| 7.5% | 37 | 8 | 8 | 8 | 8.1 | 8.0 | 8.0 | | | | KP 5.8 | 7.2 | 6.4 | | | |
| 7.5% | 38 | 8 | 8 | 8 | | | | | | | 6.6 | | | 49000 | 48900 | 49.6 |
| 15% | 25 | 8 | 8 | 8 | 8.0 | 8.0 | 8.0 | 24.0 | 24.2 | 25.0 | 6.5 | 7.2 | 6.2 | | | |
| 15% | 26 | 8 | 8 | 8 | | | | | | | | | | 45400 | 45600 | 46.4 |
| 15% | 29 | 8 | 8 | 8 | 8.0 | 8.0 | 7.9 | | | | 6.5 | 7.2 | 6.2 | | | |
| 15% | 30 | 8 | 8 | 8 | | | | | | | | | | 45900 | 45600 | 45.9 |
| 30% | 17 | 8 | 8 | 8 | 7.9 | 7.8 | 7.8 | 24.0 | 24.2 | 25.1 | 6.5 | 7.1 | 6.0 | | | |
| 30% | 18 | 8 | 8 | 8 | | | - | | | | | | | 40100 | 40200 | 41.1 |
| 30% | 21 | 8 | 8 | 8 | 7.9 | 7.8 | 7.8 | | | | 6.5 | 7.1 | 6.1 | | | |
| 30% | 22 | 8 | 8 | 8 | | | | | | | | | | 40400 | 40500 | 41.0 |
| 50% | 9 | 8 | 8 | 8 | 7.4 | 7.4 | 7.4 | 24.0 | 24.2 | 25.2 | 6.3 | 6.5 | 5.6 | | | |
| 50% | 10 | 8 | 8 | 8 | | | | | | | 1 | | | 27500 | 27600 | 28.3 |
| 50% | 13 | 8 | 8 | 8 | 7.4 | 7.4 | 7.4 | | | | 6.3 | 6.5 | 5.6 | | | |
| 50% | 14 | 8 | 8 | 8 | | | | | | | | | | 28500 | 28400 | 29.1 |
| 80% | 1 | 8 | 8 | 7 | 7.2 | 7.1 | 7.1 | 24.0 | 23.8 | 24.9 | 6.2 | 6.7 | 5.7 | | | |
| 80% | 2 | 8 | 8 | 8 | | | | | | | | | | 16800 | 16800 | 16.9 |
| 80% | 5 | 8 | 8 | 5 | 7.2 | 7.1 | 7.1 | | | | 6.3 | 6.7 | 5.8 | | | |
| 80% | 6 | 8 | 8 | 8 | | | | | | | | | | 18000 | 17100 | 16.9 |
| Measured/Loaded by: | | MF | MF | MF | SW | MF | MF | SW | MF | SW | SW | MF | SW | SW | MF | MF |
| Recorded by: | | MF | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP | KP |

Investigators' Signatures

Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | FLOW THRU | | |
| Lab Tot. Resid. Cl2: | | | 0.09 | DR100 | KP |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Ammonia Salinity

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: 7ppt SALT CONTROL
Address/City: for BOCA flow thru
County: _____
Contact/District: _____
NPDES Permit #: FL00 Outfall #: _____

Sample Collection: Date _____ Time _____
Test Beginning: Date 10-9-92 Time 2100
Test Ending: Date _____ Time _____
Test Organism: M. BAHIA
Life Stage/Age: 4 DAYS

Test Number: 1 of 2 Test Type: Screening | Definitive
(Static) | Static Renewal | Flow-through

Remarks:
salt control

Instrument Calibrations:

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 0 hr | see mysid flow-thru page | | | |
| 24 hr | see SRT C. dubia page | | | |
| 48 hr | see SRT C. dubia page | | | |

| | | Number Live | | | pH | | | Temp. (°C) | | | DO (mg/L) | | | Cond. (µmhos/cm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conc. | Chamber # | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 | 0 | 24 | 48 |
| 7ppt | 142 | 5 | 4 | 4 | 8.6 | 7.3 | 7.2 | 22.6 | 23.8 | 23.5 | 8.2 | 7.9 | 6.8 | | | 13600 |
| 7ppt | 26 | 5 | 5 | 5 | 8.6 | 7.3 | 7.2 | | | | 8.2 | 7.9 | 6.7 | 12700 | 13250 | 13700 |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | 72h | 96h | | 72h | 96h | | 72h | 96h | | 72h | 96h | | 72h | 96h | |
| 7ppt | 142 | 4 | 4 | | 7.2 | 7.3 | | 23.0 | 23.7 | | 7.1 | 6.8 | | 13.7 | 14.3 | |
| 7ppt | 26 | 5 | 5 | | 7.2 | 7.3 | | | | | 7.1 | 6.9 | | 13.9 | 14.2 | |
| | | | | | | | | | | | | | | | | |
| | | KP | KP | | KP | SW | | KP | SW | | KP | SW | | KP | SW | |
| | | KP | KP | | KP | KP | | KP | KP | | KP | KP | | KP | KP | |
| | | | | | | | | | | | | | | | millimhos/cm | |
| Measured/Loaded by: | | MF | MF | KP | SW | MF | MF | SW | MF | MF | SW | MF | KP | SW | MF | KP |
| Recorded by: | | KP | KP | KP | KP | KP | MF | KP | KP | MF | KP | KP | MF | KP | KP | MF |

Investigators' Signatures
Kim Pearce
Marshall Faircloth
Steven H. Wolfe
Reviewer

Water-quality Parameters

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| Total Ammonia: | | | | | |

Ammonia Meter Slope: _____ Ammonia Blank: _____ Salinity Sample: _____ ppt

# DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: BOCA RATON WWTP
Address/City: FLOW-THRU
County:
Contact/District:
NPDES Permit #: FL00 Outfall #:
Test Number: 1 of 4 KP 4 KBD
Test Type: Screening | Definitive
Static | Static Renewal | Flow-through

Sample Collection: Date FLOW THRU Time
Test Beginning: Date 10-9-92 Time 2100
Test Ending: Date 10-13-92 Time 2100
Test Organism: M. BAHIA
Life Stage/Age: 4 DAYS

Remarks:
continued 72+96 hrs from 48 hr page

Instrument Calibrations: (made DO in Temp)

| | pH | DO | Temp | Cond |
|---|---|---|---|---|
| 72 hr | 7@7, 9@9 | 8.4@24.5 | 24.5 KP | 1001@1K 10020@10K @24. |
| 96 hr | 7@7, 9@9 | 8.5@24.0 | 24.2@24.3 | 1032@1K 9920@10K @24. |
| ~~48 hr~~ | | | | |

| Conc. | Chamber # | Number Live ~~0~~ 72 | 24 96 ~~48~~ | pH ~~0~~ 72 | 24 96 ~~48~~ | Temp. (°C) ~~0~~ 72 | 24 96 ~~48~~ | DO (mg/L) ~~0~~ 72 | 24 96 ~~48~~ | Cond. (µmhos/cm) ~~0~~ 72 | 24 96 ~~48~~ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| control | 41 | 7 | 7 | 8.1 | 8.1 | 24.0 | 24.5 | 6.7 | 6.4 | 52.0 | 53.2 |
| control | 42 | 8 | 8 | | | | | | | | |
| control | 45 | 8 | 8 | 8.1 | 8.1 | | | 6.7 | 6.4 | 52.2 | 53.3 |
| control | 46 | 8 | 8 | | | | | | | | |
| 7.5‰ | 33 | 8 | 8 | 8.1 | 8.0 | 24.5 | 25.0 | 6.6 | 6.1 | 49.6 | 49.4 |
| 7.5‰ | 34 | 8 | 8 | | | | | | | | |
| 7.5‰ | 37 | 8 | 8 | 8.0 | 8.0 | | | 6.6 | 6.2 | 49.6 | 49.9 |
| 7.5‰ | 38 | 8 | 8 | | | | | | | | |
| 15‰ | 25 | 8 | 8 | 8.0 | 7.9 | 24.5 | 25.0 | 6.5 | 6.0 | 46.7 | 46.7 |
| 15‰ | 26 | 8 | 8 | | | | | | | | |
| 15‰ | 29 | 8 | 8 | 8.0 | 7.9 | | | 6.5 | 6.0 | 46.2 | 46.1 |
| 15‰ | 30 | 8 | 8 | | | | | | | | |
| 30‰ | 17 | 8 | 8 | 7.8 | 7.8 | 24.5 | 25.0 | 6.5 | 6.0 | 40.4 | 41.4 |
| 30‰ | 18 | 8 | 8 | | | | | | | | |
| 30‰ | 21 | 8 | 8 | 7.8 | 7.8 | | | 6.6 | 6.0 | 40.8 | 40.6 |
| 30‰ | 22 | 8 | 8 | | | | | | | | |
| 50‰ | 9 | ~~8~~ 5 | 5 | 7.3 | 7.3 | 24.5 | 25.0 | 5.9 | 5.4 | 27.8 | 27.9 |
| 50‰ | 10 | 7 | 5 | | | | | | | | |
| 50‰ | 13 | 7 | 7 | 7.4 | 7.3 | | | 6.7 | 5.5 | 28.9 | 29.2 |
| 50‰ | 14 | 8 | 8 | | | | | | | | |
| 80‰ | 1 | 1 | 0 | 7.1 | 7.1 | 24.0 | 25.0 | 6.0 | ~~5.1~~ KP 5.5 | 16.4 | 16.9 |
| 80‰ | 2 | 6 | 2 | | | | | | | | |
| 80‰ | 5 | 3 | 1 | 7.1 | 7.1 | | | 6.0 | 5.0 KP 5.4 | 16.5 | 17.3 |
| 80‰ | 6 | 5 | 2 | | | | | | | | |
| Measured/Loaded by: | | MF | MF | KP | SW | KP | SW | KP | SW (SALIN Cheek) | KP | SW |
| Recorded by: | | KP | KP | MF | KP | MF | KP | MF | KP | MF | KP |

record wrong KP 10/12

KP 311 mhos/cm KP 10/12 + 10/13

Investigators' Signatures

Kim Pearce
Marshall Faircloth
Steven H Wolfe

Reviewer

Water-quality Parameters

Salt

| | Well Water | Cond. Water | Sample | Method | Measured by |
|---|---|---|---|---|---|
| Field Tot. Resid. Cl2: | | | | | |
| Lab Tot. Resid. Cl2: | | | | | |
| Alkalinity: | | | | | |
| Hardness: | | | | | |
| 10/12 Total Ammonia: | 0.0 | 0.0 | 0.0 | Orion | MF |

Ammonia Meter Slope: -55.5
Ammonia Blank: 0.0
Salinity Sample: ppt

**The Bioassays of the Boca Raton WWTP effluent sampled on 9 to 13 October, 1992, NPDES# FL0026344.**

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

| 1 | 2 | 3 | 11 | 12 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|
| Transaction Code | | NPDES NUMBER | | YR/MO/DA | | Insp Type | Inspector | Fac Type |
| N | 5 | FL0026344 | | 921009 | | B | S | J |

Remarks

RENEWAL AND FLOW-THROUGH BIOASSAYS