# FDEP Biology Lab-Toxicity Section
## Test Instrument Serial Number Page
Method: EPA-821-R-02-012



| METER / DEVICE | ID | SOP | Parameter | Method | Benchsheet Code |
|---|---|---|---|---|---|
| YSI Model 58 Dissolved Oxygen Meter | 90H018262 | TA-06.04 | Dissolved Oxygen | SM 4500 O G | DO1 |
| Thermo Scientific Orion Star A213 Benchtop RDO/DOMeter | SN X49117<br>Probe: 019059 | TA-06.39 | Dissolved Oxygen | SM 4500 O G | DO2 |
| Accumet AR-10 pH Meter | 93312105 | TA-06.23 | pH | SM 4500 H+ | PH1 |
| Fisherbrand FE150 pH Meter | SN 2753630<br>Probe: S35932<br>Temp: S35934 | TA-06.37 | pH | SM 4500 H+ | PH2 |
| Mettler-Toledo SevenMulti Conductivity Meter | SN 1225117049 Probe H04257 | TA-06.25 | Conductivity Salinity | SM 2510 B<br>SM 2520 B | COND1 |
| Traceable Bench Conductivity Meter | SN 170814827 | TA-06.36 | Conductivity Salinity | SM 2510 B<br>SM 2520 B | COND2 |
| Hach Ammonia Mid-Range Kit for freshwater | Kit Lot # A6070 | TA-06.33 | Ammonia | SM 4500 NH3 | NH32 |
| Hach Ammonia Kit NI-SA for saltwater | Kit Lot # A6055 | TA-06.33 | Ammonia | SM 4500 NH3 | NH31 |
| Hach Ammonia Nitrogen Pocket Colorimeter II | Kit Lot # A8051 | TA-06.35 | Ammonia | SM 4500 NH4 | NH34 |
| Traceable Thermometer | #7-SN 160858747<br>Probe #181156302 | TA-06.05 | Temperature | SM-2530B modified & DEP SOP-001/01 FT1400 | #7 |
| Traceable Thermometer | #6-SN150057760<br>Probe #181156300 | TA-06.05 | Temperature | SM-2530B modified & DEP SOP-001/01 FT1400 | #6B |
| Hach Chlorine Pocket Colorimeter II | #2-05050C026378 | TA-06.22 | Total Residual Chlorine | EPA 330.5<br>SM 4500 CL G | #2 |
| Alkalinity (Hach Kit) | No SN | TA-06.08 | Alkalinity | SM 2320 B | ALK1 |
| Hardness (Hach Kit) | No SN | TA-06.08 | Hardness | SM 2340 C | HARD1 |
| Mettler Toledo XA105 | B314195659 | PCR-2.2 | Weight | - | BAL1 |
| Mettler Toledo 403TS/00 | B815673069 | TA-06.34 | Weight | - | BAL2 |
| S-Weights | BIO-S-WEIGHTS-01 | NA | Balance check | - | S01 |
| | | | | | |
| | | | | | |

# FDEP Biology Laboratory - Toxicity Section
## Chronic Bioassay Facility Bench Sheet

Method: EPA-821-R-02-013



**Sample Collection:** **Date:**_____ **Time:**_____

**Hold Time Start:** **Date:**_____ **Time:**_____

**Test Species:** ***Ceriodaphnia dubia***
(SOP: TA-07,05, Method: 2002.0)

**Test Start Date:**_____ **Time:**_____

**Test End Date:**_____ **Time:**_____

**Facility:**_____

_____

**Address:**_____

_____

**County:**_____

**NPDES Permit #: FL** _____

**Contact/District:** _____

**LIMS Job #:**_____ **LIMS Sample #:**_____

**LIMS Entry:**_____ **Verified:**_____

**Reviewer:**_____

**Organism Age:** _____

**Organism Batch #:** _____

| Test Type | |
|---|---|
| ☐ | Screen |
| ☐ | Definitive |
| ☐ | Static |
| ☐ | Flow-through |

| Initial Sample Handling: | | | | | |
|---|---|---|---|---|---|
| **pH adjustment:** | | **Aeration:** | | **Dechlorination:** | |
| **Yes** | **No** | **Yes** | **No** | **Yes** | **No** |
| **Initial pH:** _____ | | **Initial DO:** _____mg/L | | **Initial TRC:** _____ mg/L | |
| **NaOH:** _____N | | **Final DO:** _____mg/L | | _____ mL of 0.025 N Sodium Thiosulfate per liter of sample. | |
| **HCl:** _____N | | **Duration:** _____minutes | | **Final TRC:** _____mg/L | |
| _____ ml | | **Rate:** ~ _____ bubbles per min | | | |
| **Final pH:** _____ | | | | | |

| Sample Validation: | | |
|---|---|---|
| **Temperature Shipped ≤ 6°C:** | **Yes** | **No** |
| **If Hand Delivered, Cooling:** | **Yes** | **No** |
| **Received:** _____ °C **Collected:** _____ °C | | |
| **Holding Time ≤ 36 Hours:** | **Yes** | **No** |
| **(Composite: End of collection; Grab: When collected; 4 in 24: Time last sample collected)** | | |

**Chamber Size: 30 mL**
**Test Volume: 20 mL**

**Light Intensity: 50-100 ft candles (recommended) Photoperiod:16 hr light, 8 hr dark (recommended)**

| Food | Days Used |
|---|---|
| **YCT Batch #** _____ | |
| **YCT Batch #** _____ | |
| ***P. subcapitata*** **Batch #** _____ | |
| ***P. subcapitata Batch #*** _____ | |

C. dubia fed 0.2 ml of *YCT and and *P. subcapitata* in a 1:1 ratio prior to test and daily. YCT= yeast, cereal leaves and trout chow

**Comments:**

# FDEP Biology Laboratory - Toxicity Section
## Chronic Bioassay Information Sheet



**LIMS Sample #:** _____ (for lab sample # 1)

Method: EPA-821-R-02-013

*Ceriodaphnia dubia* SOP # TA-07.05

**Start Date:** _____ **Time:** _____

**End Date:** _____ **Time:** _____

| Temperature Range (°C) |
|---|
| Incubator #_____ |
| Min._____ Max._____ |
| Test |
| Min._____ Max._____ |
| Room B246 |
| Min._____ Max._____ |

| Diluent | Batch #/LIMS ID # | Days Used |
|---|---|---|
| | | |
| | | |

| Randomizer #: _____ | |
|---|---|
| **Test Replicates** | **Culture vial** |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |

**Stats by/Date:** _____

**Stats verified by/Date:** _____

| Results | |
|---|---|
| Control % CV: | |
| Dunnetts PMSD: | |
| IC25: | |
| Reproduction NOEC: | |
| Reproduction LOEC: | |
| Survival NOEC: | |
| Survival LOEC: | |

| Test Acceptability Criteria: | | |
|---|---|---|
| Mean control reproduction ≥ 15 neonates per female: | Yes | No |
| 3rd brood in 60% of surviving females: | Yes | No |
| Control Survival ≥ 80%: | Yes | No |
| Temperature Range ≤ 3° C: | Yes | No |

| Concentration | Mean neonates per female | % Survival |
|---|---|---|
| Control | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Comments:**

# FDEP Laboratory-Toxicity Section
# Chronic Water Quality Benchsheet



Method: EPA-821-R-02-13 *Ceriodaphnia dubia* SOP TA-07.05

| Sample Received | LAB Sample # | LIMS JOB # | LIMS SAMPLE # | Collection Date/Time | Received Date/Time |
|---|---|---|---|---|---|
| **Test Day 0** | **1** | TLH- | | | |
| **Test Day 2** | **2** | TLH- | | | |
| **Test Day 4** | **3** | TLH- | | | |

| Water Quality Parameters | MHWCD LIMS ID # _____ Batch # _____ | MHWCD LIMS ID # _____ Batch # _____ | Sample 1 LIMS Sample #: _____ | Sample 2 LIMS Sample #: _____ | Sample 3 LIMS Sample #: _____ | Other: | SOP | Measured By: | Transcription Checked by: |
|---|---|---|---|---|---|---|---|---|---|
| **Field Total Residual $Cl_2$** (mg/L) | N/A | N/A | | | | | TA-06.22 | | |
| **Lab Total Residual $Cl_2$** (mg/L) | | | | | | | TA-06.22 | | |
| **Alkalinity** (mg/L as $CaCO_3$) | | | | | | | TA-06.08 | | |
| **Hardness** (mg/L as $CaCO_3$) | | | | | | | TA-06.08 | | |
| **Total Ammonia** (mg/L as N) | | | | | | | TA-06.35 or TA-06.33 | | |
| **Conductivity:** □ µmhos □ mmhos | | | | | | | TA-06.36 | | |
| **Salinity** (ppt) | | | | | | | TA-06.36 | | |
| **Days Used** | | | | | | | | | |

**Comments:**

# FDEP Biology Laboratory-Toxicicty Section
## Chronic Bioassay Survival Benchsheet



*Ceriodaphnia dubia* SOP TA-07.05 Method: EPA 821-R-02-013

**Start Date:** _____ **Time:** _____
**End Date:** _____ **Time:** _____

**Facility:** _____

**LIMS Sample #:**_____ (for lab sample #1)

| Conc. | Day | Replicate Number 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total neonates | Surviving original organisms | Neonates per female | Counts by: | Conc. prep by: | Fed by/Time fed: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 0* | | | | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | |
| | Total | | | | | | | | | | | | | | | | |

| Conc. (%) | Day | Replicate Number 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total neonates | Surviving original organisms | Neonates per female |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0* | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | |
| | Total | | | | | | | | | | | | | |

**Loaded by:** _____
**Verified by:**_____

s = split brood

(#) = 4th brood (not counted)

*Day 0 is test initiation day

X = Dead (original organism)

**Comments:**

# FDEP Biology Laboratory-Toxicicty Section
## Chronic Bioassay Survival Benchsheet



*Ceriodaphnia dubia* SOP TA-07.05 Method: EPA 821-R-02-013

**Facility:** _____ **Start Date:** _____ **Time:** _____
**LIMS Sample #:**_____ (for lab sample #1) **End Date:** _____ **Time:** _____

| Conc. (%) | Day | Replicate Number | | | | | | | | | | Total neonates | Surviving original organisms | Neonates per female |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| | 0* | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | |
| | Total | | | | | | | | | | | | | |

| Conc. (%) | Day | Replicate Number | | | | | | | | | | Total neonates | Surviving original organisms | Neonates per female |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| | 0* | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | |
| | Total | | | | | | | | | | | | | |

s = split brood

(#) = 4th brood (not counted)

*Day 0 is test initiation day

X = Dead (original organism)

**Comments:**

# FDEP Biology Laboratory-Toxicity Section
## Chronic Bioassay Survival Benchsheet



*Ceriodaphnia dubia* SOP TA-07.05 Method: EPA 821-R-02-013

**Start Date:** _____ **Time:** _____
**End Date:** _____ **Time:** _____

**Facility:** _____

**LIMS Sample #:**_____ (for lab sample #1)

| Conc. (%) | Day | Replicate Number | | | | | | | | | | Total neonates | Surviving original organisms | Neonates per female |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| | 0* | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | |
| | Total | | | | | | | | | | | | | |

| Conc. (%) | Day | Replicate Number | | | | | | | | | | Total neonates | Surviving original organisms | Neonates per female |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| | 0* | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | |
| | Total | | | | | | | | | | | | | |

s = split brood

(#) = 4th brood (not counted)

*Day 0 is test initiation day

X = Dead (original organism)

**Comments:**

# FDEP Biology Laboratory- Chronic Bioassay Parameter Benchsheet



Method: EPA 821-R-02-013
*Ceriodaphnia dubia* SOP TA-07.05

**Facility:**_____

**LIMS Sample #:**_____ (for lab sample # 1) *Ceriodaphnia dubia* Parameters

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

| Test Day ↓ | Conc. % | New Sample Replicate | pH (su) | Temp (°C) | DO (mg/L) | Conductivity (µmhos/cm) (mmhos/cm) | Old Sample Replicate | pH (su) | Temp (°C) | DO (mg/L) | Conductivity (µmhos/cm) (mmhos/cm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Day 0 (Sample 1) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |
| Day 1 (Sample 1) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |
| Day 2 (Sample 2) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |
| Day 3 (Sample 2) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |

Conc. = Concentration, Temp = Temerature, DO = Dissolved oxygen

**Comments:**

# FDEP Biology Laboratory-Chronic Bioassay Parameter Benchsheet



Method: EPA 821-R-02-013
*Ceriodaphnia dubia* SOP TA-07.05

**LIMS Sample #**_____ (for lab sample # 1) *Ceriodaphnia dubia* Parameters

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

| Test Day ↓ | Conc. % | New Sample Replicate | pH (su) | Temp (°C) | DO (mg/L) | Conductivity (µmhos/cm) (mmhos/cm) | Old Sample Replicate | pH (su) | Temp (°C) | DO (mg/L) | Conductivity (µmhos/cm) (mmhos/cm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Day 4 (Sample 3) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |
| Day 5 (Sample 3) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |
| Day 6 (Sample 3) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |
| Day 7 (Sample 3) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |
| Day 8 (Sample 3) | **Control** | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | | **M** | | | | | | | | | |
| | Measured by: | | | | | | | | | | |
| | Recorded by: | | | | | | | | | | |

**Comments:**

Conc. = Concentration
Temp = Temperature
DO = Dissolved oxygen

# FDEP Laboratory-Toxicity Section
# Chronic Bioassay Instrument Code Sheet



Method: EPA 821-02-013
*Ceriodaphnia dubia* SOP TA-07.05

Test ID: Dates:

| METER / DEVICE | Instrument Code |
|---|---|
| DO Meter | |
| pH Meter | |
| Conductivity Meter | |
| Ammonia Kit | |
| Traceable Thermometer | |
| Chlorine Kit | |
| Alkalinity Kit | |
| Hardness Kit | |
| Balances used: | |
| Weights used: | |
| | |
| | |
| Entered by and date: | |