

# **Tampa Electric Laboratory Services**

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Polk Power Station		Report Date:	12/13/16 12:33
Amy Butler		•	
9995 State Rd 37 S	outh		
Mulberry, FL 33860	)		
AMButler@tecoend	ergy.com		
Work Order -	L16K112	Project - NPDES-Cooling Reservoir-Ouarterly	

**Case Narrative** 

The attached analysis was subcontracted to Hydrosphere Research.

Rory Lacey, Environmental Technician

Laboratory Services certifies that the test result in this report meet all requirements of the NELAC standards, unless indicated otherwise in the body of the report. Unless otherwise noted, all methods followed are per the most current published version of 40 CFR Part 136, Table B. Results reported on this report pertain to the above referenced sample only.



#### **Prepared for:**

Tampa Electric Polk Power Station 5012 Causeway Boulevard Tampa, FL 33619



Prepared by: Hydrosphere Research

Test Location: 11842 Research Circle Alachua, FL 32615

#### **Contact Information:**

Craig Watts, Lab Director (386) 462-7889 <u>cwatts@hydrosphere.net</u> <u>www.hydrosphere.net</u>

Test Number: TMP-PO 16222

Permit Number: FL0043869

Initiated: November 29, 2016

**Test Type:** 7-day Chronic Definitive Bioassays

# **Report of Routine Bioassays Performed for the**

# **Tampa Electric Polk Power Station**

# Abstract

To comply with the routine whole effluent biomonitoring requirements of the National Pollutant Discharge Elimination System (NPDES) permit FL0043869, composite samples were collected from the Tampa Electric Polk Power Station, Polk County, Florida. Using these samples, Hydrosphere Research conducted a series of 7-day chronic definitive bioassay tests. In addition, Hydrosphere Research conducted a series of 7-day chronic definitive bioassay tests using UV sterilized samples.

The results are summarized in the accompanying report. All test results contained herein comply with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). The results discussed in this report relate only to the samples as identified on the Chain of Custody forms in Appendix A. Laboratory Bench Sheets and Statistical Analyses are in Appendix B, and the Standard Reference Toxicity Tests are in Appendix C.

## Introduction

To comply with the routine whole effluent biomonitoring requirements of NPDES permit FL0043869, composite samples were collected from Outfall 001 at the Tampa Electric Polk Power Station, Polk County, Florida.

Using these samples, Hydrosphere Research conducted a series of 7-day chronic definitive bioassay tests using the water flea (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*). In an effort to address possible pathogenic interference, Hydrosphere Research also conducted a series of 7-day chronic definitive bioassay tests with UV sterilized samples.

## **Materials and Methods**

#### Test Sample

Grab samples were collected from Outfall 001 at the Tampa Electric Polk Power Station on November 27, 28, 29, 30, December 1, and 2, 2016. The samples were contained in ½ gallon HDPE containers, which were intact upon arrival. Hydrosphere Research received these samples in good condition. The samples were composited in the lab.

Upon receipt, the effluent temperature of each sample met the sample acceptance criteria. The effluent water quality values fell into expected ranges for pH, conductivity, and dissolved oxygen. All other chemical characterization data for the effluent samples upon arrival in the laboratory are provided on the Sample Data Bench Sheet, located in Appendix B.

The Chain of Custody forms are located in Appendix A. Each effluent sample tested was assigned a unique sample identification number.

#### **Test Methods**

The test conditions are presented in Table 1. The dilution series used is specified in the permit. The toxicity tests were performed according to the methods listed in the table below. All tests were in compliance with NELAC standards.

Test Type Species		Dilution Series (%)	Test Method
7-day chronic static	C. dubia	0, 6.25, 12.5, 25, 50, and 100	EPA-821-R-02-013,
renewal definitive	C. UUDIU	0, 0.25, 12.5, 25, 50, and 100	Method 1002.0
7-day chronic static	Deresales		EPA-821-R-02-013,
renewal definitive	P. promelas	0, 6.25, 12.5, 25, 50, and 100	Method 1000.0

**Table 1. Test Methods** 

#### **UV Treatment**

Hydrosphere Research prepared subsamples that were UV sterilized prior to test initiation. Each sample was placed in a UV sterilization chamber for 5 minutes in an effort to mitigate any pathogenic interference.

#### **Test Organisms**

The *C. dubia* and *P. promelas* test organisms were cultured in-house. All organisms appeared to be in normal condition at the test initiation.

#### **Toxicity Test Monitoring**

Each test was monitored at the test initiation and daily thereafter for mortality, temperature, dissolved oxygen, pH, and conductivity. The bioassay tests were initiated on November 29, 2016.

#### **Standard Reference Toxicity Tests**

A reference toxicant test was conducted for each test species to evaluate the sensitivity of the test organisms for the chronic tests. The test organisms used for each reference toxicant test were the same as those used for the effluent tests. The test conditions and dilution series were specific for each reference toxicant test conducted.

#### **Test Location**

The bioassay tests were performed at Hydrosphere Research, 11842 Research Circle, Alachua, FL 32615; telephone number (386) 462-7889. The laboratory is NELAC/P certified by the State of Florida Department of Health and Rehabilitation Services (E82295).

#### **Statement of Quality Assurance**

This report was reviewed by the Hydrosphere Research Quality Assurance Officer and the Laboratory Director to ensure that the procedures outlined in the Hydrosphere Research Quality Manual were followed. Testing was conducted using generally accepted lab practices. Hydrosphere Research believes the results are true and accurate and meet all NELAC standards.

# **Results & Discussion**

#### **Toxicity Test Results**

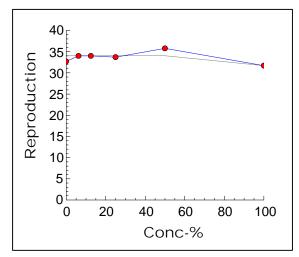
Water quality values remained within acceptable limits during the test period. The results of the control exposures met the test acceptability requirements specified in the method. The bioassay tests were initiated within 36 hours of the first sample's collection time and were acceptable tests based on controls and test conditions. Copies of the relevant laboratory raw data pertaining to the toxicity tests are provided in Appendix B.

The toxicity test results are summarized in Table 2 and the corresponding graphs below:

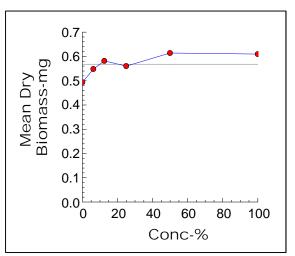
		C. dubia	P. promelas			
Percent	Final	Three Brood Totals	Final	Average Dry		
Effluent	Survival	(Average # of	Survival	Weight		
	(%)	neonates / female)	(%)	(mg/fish)		
Control	100	32.7	85	0.494		
6.25	100	34.0	74.4	0.548		
12.5	100	34.0	89.7	0.582		
25	100	33.7	79.5	0.560		
50	100	35.8	92.5	0.614		
100	100	31.7	87.5	0.610		
IC25		>100%		>100%		
Report on DMR		>100%		>100%		

**Table 2. Chronic Test Results** 





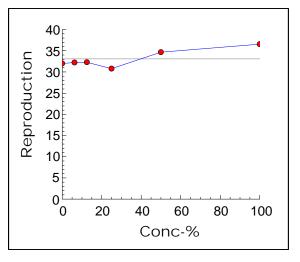




	C. dubia					
Percent	Final	Three Brood Totals				
Effluent	Survival	(Average # of				
	(%)	neonates / female)				
Control	100	32.0				
6.25	100	32.2				
12.5	100	32.3				
25	100	30.8				
50	100	34.7				
100	100	36.6				
IC <sub>25</sub>		>100%				
Report on DMR		>100%				

#### Table 3. Chronic Test Results with UV Sterilization





All statistical calculations were made using CETIS<sup>®</sup> (Tidepool Scientific Software, McKinleyville, CA). The statistical results are located in Appendix B.

The samples provided did not demonstrate chronic toxicity to either test species. The untreated sample produced an  $IC_{25} > 100\%$  effluent for both species. The UV Sterilized sample produced an  $IC_{25} > 100\%$  effluent for *C. dubia*. The *P. promelas* test using the UV Sterilized sample was invalid due to invalid test controls. The invalid data is in Appendix D.

While both *C. dubia* tests produced an  $IC_{25} > 100\%$  effluent, the 100% untreated effluent produced a -3.1% effect when compared to the control. The 100% UV treated effluent sample demonstrated an improvement as the effect was +14.2% when compared to the control.

During these tests, dissolved oxygen, temperature, pH, and conductivity remained within the limits established in the test methods.

The cooler received on November 28, 2016, was missing an intact chain-of-custody seal. The clientwas contacted and advised Hydrosphere to use the samples. The Hydrosphere Sample Rejection/Acceptance Form is included with the chain-of-custody forms in Appendix A.

Otherwise no unusual observations or deviations from standard test protocol were noted. These test results only relate to the samples described in this report and meet all requirements of NELAC.

#### **Standard Reference Toxicity Test Results**

The results of the standard reference toxicant tests, provided in Appendix C, indicate that the test organisms were of normal sensitivity for this laboratory. The control charts, bench sheets, and statistical analysis for the standard reference toxicant test are located in Appendix C.

## Conclusion

Hydrosphere Research initiated a series of 7-day chronic definitive bioassay tests using the water flea (*C. dubia*) and the fathead minnow (*P. promelas*) on November 29, 2016. The tests were conducted to satisfy the requirements of NPDES permit FL0043869.

The samples provided did not demonstrate chronic toxicity to either test species. The untreated sample tests produced an  $IC_{25} > 100\%$  effluent for both species. The UV Sterilized sample test for *C. dubia* produced an  $IC_{25} > 100\%$  effluent.

## References

U.S. Environmental Protection Agency. *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms*. Fourth Edition. EPA-821-R-02-013. October 2002.

Handbook of Analytical Quality Control in Water and Wastewater Laboratories. EPA-600/4-79-019. March 1979.

Chemical and physical parameters reported herein were determined by methods described in *Methods for Chemical Analysis of Water and Waste*. EPA 600/4-79-020. March 1983.

### **NPDES Forms**

The NPDES forms can be found in the following four pages, comprised of Table 4. NPDES Whole Effluent Toxicity Testing Report Form, Table 5. Summary of Test Conditions, Table 6. Acute Test Results, and Table 7. Chronic Test Results.



### Table 4. NPDES Whole Effluent Toxicity Testing Report Form

	All blanks on this form are to be filled in.							
	Blanks that are not used should be filled in with "N/A" or a line drawn through the blank. Please print.							
	Attachments: Please attach the following items to this report form and indicate with an "x" in box.							
1.	All Chain-of-Custody Forms	Х						
2.	All Reference Toxicant Data for each Organism used in Test and Current Control Charts for each Organism	Х						
3.	All Raw Data (Bench Sheets) Pertaining to the Tests (i.e., all physical, chemical, and biological measurements)	Х						
4.	All Result Calculations	Х						
5.	Discharge Monitoring Reports (DMR) when Applicable	NA						

Facility/industry/client name:	Tampa Electric – Polk Powe	r Station		
Permit number:	FL0043869		County:	Polk
Consultant company name:	Hydrosphere Research	Telepho	ne: (386) 4	62-7889
Dates test(s) conductedBegin:	11/29/16	E	nd: 12/06/	16
Persons conducting test(s) (print names):	E, Hill, K. Oliff, R. Salley			
Authorized signature:	Cining Natt		Date:	12/13/16
	V			
Laboratory report #/project #:	ТМР-РО 16222	Sampler (print name)	. Howard, R. ⁄I. Torres, E. V	Kelley, E. Richardson, Varren

 DMR monitoring period end date on which this test is reported (filled out by the Permittee--mm/dd/yy):

 Routine test:
 X
 Additional test:
 NA
 Failed routine test date:
 NA

	Samples									
No.	Date & Time Collected	Lab Sample #	Grab	24-Hour Composite	Arrival Temperature (°C)	Initial Residual Chlorine	L Y/N	ab Dechlorination Chemical Used		
1.	11/28/16-1000	16222A	NA	Х	0.5-0.6	<0.04	Ν	NA		
2.	11/30/16-1000	16222B	NA	х	0.5	<0.04	Ν	NA		
3.	12/02/16-1000	16222C	NA	х	0.5	<0.04	Ν	NA		
4.	NA	NA	NA	NA	NA	NA	NA	NA		
5.	NA	NA	NA	NA	NA	NA	NA	NA		
6.	NA	NA	NA	NA	NA	NA	NA	NA		
7.	NA	NA	NA	NA	NA	NA	NA	NA		
8.	NA	NA	NA	NA	NA	NA	NA	NA		
9.	NA	NA	NA	NA	NA	NA	NA	NA		
10.	NA	NA	NA	NA	NA	NA	NA	NA		

	Wet Ice	Blue Ice	Other	Samples Aerated	
	wetice	blue ice	(describe)	Yes (describe)	No
Refrigerant used for sample transportation:	х	NA	NA	X, All samples for 5 minutes	NA

	Bus	Hand	Common	Samples Filtered		
	Bus	Hanu	Carrier	Yes (describe)	No	
Samples delivered by:	NA	NA	х	NA	х	



# Table 5. Summary of Test Conditions

Туре	Test	Test	Age of	Amount &	How	Test	Volume of	Туре	# of		Temp.
of	Concentrations <sup>b</sup>	Species	Test	Type of	Often	Chamber	Effluent	of	Organisms/	# of	Range
Test <sup>a</sup>	(% Effluent)	Used <sup>c</sup>	Organism	Food	Fed	Volume	Used	Chamber	Chamber	Replicates	(°C)
F	0, 6.25, 12.5, 25, 50, 100	CD	< 24 hours	0.133 ml YCT + 0.133 ml S. cap	1x/day	30 ml	20 ml	Plastic cup	1	10	25.0 ± 1.0
F	0, 6.25, 12.5, 25, 50, 100	FM	< 24 hours	0.15 ml Artemia	2x/day	1 liter	250 ml	Plastic cup	10	4	25.0 ± 1.0

		<b>T</b>	Single	Multiple	Continuous
G. "Other" type of test:	NA	Temperature readings:	NA	Х	NA

Description of control water: Moderately Hard Reconstituted

Photoperiod during test: 16 hours light / 8 hours dark

Reference Toxicant Data <sup>d</sup>									
Name of Toxicant	Dates of Test		Speciec	In-House or Commercially Obtained					
Name of Toxicant	Begin	End	Species <sup>c</sup>	In-House of commercially Obtained	LC <sub>50</sub> /IC <sub>25</sub>				
KCI	11/01/16	11/08/16	CD	In-House	IC <sub>25</sub> = 394.9 mg/L				
КСІ	11/01/16 11/08/16		FM	In-House	IC <sub>25</sub> = 0.66 g/L				

<sup>a</sup> Please fill the "Type of Test" box with the appropriate letter:		<sup>c</sup> Write appropriate letters for the following species in this column:		s for the following species in this column:
А.	48-Hr/Non-Renewal/Single Concentration (Screen)	CD	-	Ceriodaphnia dubia
В.	48-Hr/Non-Renewal/Multi-Concentration (Definitive)	FM	-	Pimephales promelas (fathead minnow)
С.	96-Hr/Renewed Every 48 Hrs/Single Concentration (Screen)	SS	-	Menidia beryllina (inland silverside)
D.	96-Hr/Renewed Every 48 Hrs/Multi-Concentration (Definitive)	MS	-	Americamysis bahia (formerly Mysidopsis bahia, mysid shrimp)
E.	7-Day Chronic/Single Concentration (Screen)/Renewed Daily	CL	-	Cyprinella leedsi (bannerfin shiner)
F.	7-Day Chronic/Multi-Concentration (Definitive)/Renewed Daily	Other	-	Please describe:
G.	Other (described in the "G" box)			
<sup>b</sup> List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).		<sup>d</sup> Attach all refere test.	nce tox	icant raw data & control charts for each organism/reference toxicant used for the



#### **Table 6. Acute Test Results**

Test Species	Test Concentrations <sup>b</sup> (% Effluent)	Grab Sample <sup>c</sup>	Composite Sample <sup>c</sup>	% Mortality <sup>d</sup> (48 Hours)	% Mortality <sup>d</sup> (96 Hours)	LC <sub>50</sub> e
Control <sup>a</sup>	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
Control <sup>a</sup>	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA

<sup>a</sup>List % Control Mortality in appropriate column (48 or 96 hr) for organisms (use abbreviations shown on footnote "c" of Table 5) that you list under the word "Control." Control mortality must not exceed 10% for a valid acute test.

<sup>b</sup>List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

<sup>c</sup>Record number that corresponds with the number of the sample in the "Date & Time Collected" column in sample section.

<sup>d</sup>List % Mortality for each organism and control if you are conducting a single concentration (Screen) test.

<sup>e</sup>If multi-concentration (Definitive) tests are conducted on grab or composite samples, record the calculated  $LC_{50}$  in this column for each sample. Enter "N/A" in all % Mortality columns and  $LC_{50}$  box at bottom of this table.

Species	LC <sub>50</sub> <sup>f</sup>	<sup>f</sup> If a single concentration (s four grab or composite sa
NA	NA	four grabs or composites,
NA	NA	in the above table.

<sup>f</sup>If a single concentration (screen) test is conducted and >50% mortality occurs in any one of the four grab or composite samples, record <100% in this column. If <50% mortality occurs in all four grabs or composites, record >100% in this column. Draw a line through the  $LC_{50}$  column in the above table.



#### **Table 7. Chronic Test Results**

Test	Test	IC <sub>25</sub>		
Species <sup>a</sup>	Concentrations <sup>b</sup> (% Effluent)	Growth <sup>c</sup>	Reproduction <sup>c</sup>	
CD	0, 6.25, 12.5, 25, 50, 100	NA	>100%	
FM	0, 6.25, 12.5, 25, 50, 100	>100%	NA	
CD (UV)	0, 6.25, 12.5, 25, 50, 100	NA	>100%	

<sup>a</sup>Use abbreviations shown on footnote "c" of Table 5.

<sup>b</sup>List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

<sup>c</sup>For single concentration tests (Screen), if there is a significant difference (P = 0.05) between survival, growth, reproduction, or fecundity in 100% or IWC, and control, record <100% in proper column. If there is <u>not</u> a significant difference between survival, growth, reproduction, or fecundity in 100% or IWC, and control, record >100% in proper column.

CD Survival in Control (≥80%)	100%, 100%
Average Number of Young per Female in CD Control (min 15 young/surviving female)	32.7, 32.0

FM Survival in Control (≥80%)	85%
Average FM Dry Weight in Control (min ADW 0.25 mg/FM in surviving controls)	0.494

MS Survival in Control (≥80%)	NA
Average MS Dry Weight in Control (min ADW 0.20 mg/MS in surviving controls)	NA

SS Survival in Control (≥80%)	NA
Average SS Dry Weight in Control (min immediate ADW 0.50 mg/SS in surviving controls)	NA

Appendix A. Chain of Custody



# **CHAIN OF CUSTODY**

Please complete ALL fields other than the gray areas (which will be completed by Hydrosphere)

Client Name Tampa Electric Polk Power Station	Client Shipping Address 5012 Causeway Boulevard Tampa, FL	33619	
Sample Kit Information Cooler 2 of 6 Container Type: 1/2 gal bottle Number of Containers: 8 Method of Shipment:	Prepared and Shipped by <u>(G)</u> Date <u>1)</u>  14  16	Sample Kit Received By Print Name Date Time Condition of Seal Upon Receipt (Check One) O Intact O Other (describe)	Signature
Ship Samples Priority Overnight To: Hydrosphere Research 11842 Research Circle Alachua, FL 32615 (386) 462-7889 Be Sure to Mark for Saturday Delivery if Appropriat Sampling Location Park Pawer Permit Number County Samples Collected In Park	Samples Shipped Via	≤ 6.0 °C Total Hours 24 T	me 000
Outfall Sample Number or Client Time 😫 👷	# of Containers	ampled By	For Lab Use
Client     Time     Client       Description     Date     (24 Hour Format)       OQ     11-12146     1000	3 Print Name 2 Frank Howper	Signature	Temp (°C)         Lab Sample ID           0. 6         16222 A
001 11-27-14 2200 /	2 Rick Kelley	Rehad Kolley	0.5 16222 B
00/ 11-28-14 0400 //	2 Rick Kelley	Reading	0.5 162220
201 11-18-14 100e V	L FRIC WARREN	Turibarm	0.6 162220
Additional Comments (if needed) CHRONIC	BLOASSAY (DAY T	El OF 3) (Usamp compositad	and relabled
elinquished By (Print Clearly & Sign) ERIC WARPEN (May (1) May	Date Time Shipped	· C · · · ·	
eceived By (Print Clearly & Sign)	Date Time Relinquis	thed By (Print Clearly & Sign)	Date Time
vistopher Griffin Custo	A 0830 Time Shipper's	Tracking Number	

See Provisions on back



# CHAIN OF CUSTODY

Please complete ALL fields other than the gray areas (which will be completed by Hydrosphere)

Client Name	Client Shipping Address		
Tampa Electric	5012 Causeway Boulevard Tampa, FL	33619	
Polk Power Station			
Sample Kit Information	Prepared and Shipped by	Sample Kit Received By	
Cooler 2 of 6		FRIC WARRAN Tru	Wann
Container Type: 1/2 gal bottle	Date	Print Name	Signature
Number of Containers: 8		Date Time	
Method of Shipment:		Condition of Seal Upon Receipt (Check One)	
Ship Samples Priority Overnight To: Hydrosphere Research	Refrigerant Used For Shipping	Composite Sample Information	
11842 Research Circle Alachua, FL 32615		Samples/Hour	olume/Sample CM
(386) 462-7889	O Other (describe)	p_/	
Be Sure to Mark for Saturday Delivery if Appropriate	Samples must arrive at the lab (never frozen). Pack cooler co	≤ 6.0 °C Total Hours 24 To	otal Volume 464
Sampling Location POLK POWER	with ice before shipping.	Initiated Date 1-29-16 Ti	me <u>[600</u>
Permit Number	Samples Shipped Via	Ended Date 11-30-14 Ti	000
County Samples Collected In	× ~	Client	/
Polk	O UPS O Other (described) E STR		Yes O No
Outfall Sample Number of Type	ers		
Number or Client Time 😫 🙇 🗮	Sal	mpled By	For Lab Use
Client Time di o Description Date Claure Go	S Print Name	Signature	Temp (°C) Lab Sample ID
001 11-29-14 1600 / 2	- Mike Terres	mine	$(^{\circ}C)$ Lab Sample ID $O_2 \leq   (_2 2 \geq \cdot R)$
001 11-1944 2200 / 2	Frenk House	And Van	
00/ 11-30/4 0400 / 2	- Frank Houng	2 della	
Qal 11-20-14 1000 / 2	ERIC (IARDEN)	Samlah	-7 -7
		- Our Manny	7
Additional Comments (if needed)			
(If needed) UTRONIC	BLOASSAY (DAY #	-2 OF 3 WSamples	composited Jobfolder
TEG LAB INF LILEKII2-	-01 -1-1	in lab per	lob follow
SHUKI12-	-02 (UV TRAATTME	ANT Instructio	n-R.512/1
Relinquished By (Print Clearly & Sigh)	Date Time Shipped vi	a Plucal l	· · · · · · · · · · · · · · · · · · ·
Received By (Print Clearly & Sign)	7 Date Time Relinquish	BIVESTREAK	
	- Keinquish	ed By (Print Clearly & Sign)	Date Time
eceived By Lab (Print Clearly & Sign)	Date Time Shipper's T	racking Number	
rachel salley take to	4.12/10 9:00 151	112116	
' (	See Provisions on ba	ack	TMP-PO 16222 13 of 49



4

# CHAIN OF CUSTODY

Please complete ALL fields other than the gray areas (which will be completed by Hydrosphere)

Client Name	Client Shipping Address			
Tampa Electric	5012 Causeway Boulevard Tampa, FL 33619			
Polk Power Station				
Sample Kit Information	Prepared and Shipped by	Sample Kit Dession 1 D		
Cooler 2 of 6	r toparoa and ompped by	Sample Kit Received By	12/1) Duna	
Container Type: 1/2 gal bottle		Print Name	Signature	
Number of Containers: 8	Date	Date Time		
Method of Shipment:		Condition of Seal Upon Receipt (Check One)		
Ship Samples Priority Overnight To:	Refrigerant Used For Shipping	Composite Sample Information		
Hydrosphere Research 11842 Research Circle	Wet Ice	1 /.	0.	
Alachua, FL 32615	O Other (describe)	Samples/Hour	Volume/Sample	
(386) 462-7889	Samples must arrive at the lab	≤ 6.0 °C Total Hours 24	Total Volume 4 GA	
Be Sure to Mark for Saturday Delivery if Appropriate	(never frozen). Pack cooler c	completely 10 11		
Sampling Location POLK POLNER	with ice before shipping.		Time 1000	
Permit Number	Samples Shipped Via	Ended Date 12-14	Time 000	
County Samples Collected In Polk		O Client Chilled During Collection (	Yes O No	
Outfall Sample				
Number or Type	5.5 Si	ampled By	For Lab Use	
Client Time d g # Description Date Format O	t conta		Temp	
		Signature	(°C) Lab Sample ID	
	- ERC B. Richardse	N Z / C	0.5 6222.	
00/ 12-14/ 2200 / 2	Frank HOWAR	P But Hom		
201 12-14 0400 / 2	- Frank How ARP	32Hont		
201 12-24 1000 V 2	FRIC ( ARREN)	English	1	
		- Colo ann		
dditional Comments (if needed)	Dishee (10			
2 HERONIC	BLOHSSAY DAY +	\$3 OF 3) MG	mples	
EG LAB IDE LICKIL	-01 ( 1 - 1 - 1	ALA Composi	tod rulab	
JULKILL	-02-10V TRAFTM	ENT Der ich	other instruction	
Inquished By (Print Clearly & Siden) -RIC U ARREN / Sna )/16 min	Date Time Shipped	via Rhilestraak	-RS 12/1	
	n 16670 1190			
ceived By (Print Clearly & Sign)		thed By (Print Clearly & Sign)	Date Time	
	Date Time Relinquis		Date Time	
ceived By (Print Clearly & Sign)	Date Time Relinquis		Date Time	



Sample Rejection/Acceptance Form<sup>1</sup>

Job #: TMP. PD.16222

Laboratrory Rejection	n/Acceptance Criteria			
1) Sample Cooler Intact and Sealed	1) Z Yes	□ No		
2) Chain-of-Custody Seal Intact	2) 🗆 Yes	⊠No		
3) Sample Bottles Sealed	3) 🗹 Yes	□ No		
4) Sample Temperature Acceptable	4) 🖉 Yes	🗆 No		
5) Sample Bottle Label(s) match	5) 🔁 Yes	🗆 No		
information on Chain-of-Custody				
6) Sample Documentation complete	6) 🖉 Yes	□ No		
7) Proper Sample Container Labeling	7) 🛛 Yes	□ No		
8) Proper Sampling Containers (HDPE, PS, PP,	Glass) 8) 🛛 Yes	🗆 No		
9) Sample Holding Time Acceptable	9) 🗹 Yes	🗆 No		
10) Adequate Sample Volume for Testing	10) ZYes	🗆 No		
and the second	The second s			
Sample ID for samp		Maria Maria		
16222 A, 16222 B, 16222 R, 11	0222p (			
Client Driver (A	0			
Client Rejection / Acceptance o	0	: "no")		
Contact	and the	· · · · · · · · · · · · · · · ·		
Phone Number				
	The lab should <u>ACCEPT</u>	*		
Client Response	based on the above informati			
	$\Box$ the lab should <u><b>REJECT</b></u> t	A CONTRACT OF A		
	based on the above informati	on		
Addition C		lan - Shan		
Client actuised samples to be accepted via email CG 11/29 I All Samples are "A" CG 1218				
Form Completed by (signature):	Curther	Date: 11 1291116		
☐ Place form in				
	11 - W.T.M.M.O			

<sup>1</sup> NELAC, Quality Systems, July 1, 2003, Section 5.11.2

Appendix B. Raw Data Sheets & Statistical Results



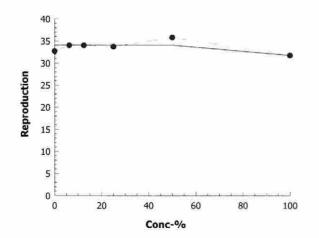


Survival & Reproduction

-						14 C 44		51		
Client:	Tampa Electric Company - Polk Pow	er Station		Note: Valid Control is ≥80% survival @ 7d and		Initiation	Date:	11-29-16	Termination Date:	12.6.16
10	Code: TMP-PO Job #:	16222		eonates average /surviving female)		Sample D	Description:			
Species:	Certodaphnia dubia Code:	CD		30-mL Plastic Cup						an and the life of 10201
	ID #: 8340 Age:	<24-h		20-mLs per replicate						
	R Live Counts (Adults ), Number of Neon	ales)	BERT BERT		NE MEMORY			AND THE OWNER	THE STREET	
Control	ENRFSSM	ates) Int-3rd T brood	1st E	Live Counts	1st-Jrd brood	2nd dilution	E		Live Counts	1st-Sed brood
Art Production			P 1 2	3 4 5 6	7 total	Unition	P 1		4 5 6	7 total
	1000005010 100007050	\$15 31	1000	05090	Ø13 27		A O	S & S		01939
EITwase ()	add a and	Ø18 40 Ø16 33	6.25		Ø15 36	Effunct	B		, , , , , , , , , , , , , , , , , , , ,	Ø16 33
	00000000130	di 25	1.25 c 0 0 0	050110	019 35	2.5	c Ø		7 011 0	@17 35
	EQQQ 070130	Ø18 38	, 3 8 9 9		017 39				86 Ø13 Ø 96 Ø15 Ø	@1+ 33
	000000000	016 35	690	080150	Φ. 23	2.12	E	889		01637
Sample	JEE OLEIDE	Ø13 29		060120	Ø13 31	- Same		1 1 1	868118	Ø 27 Ø 8 36
nple Descript Control	100004040	\$15 23	C B Effluent	070120	Ø19 33	pie pe Sfflu	G G		10	Ø2 30
: Description Ontrol	10000060100	016 32	Receipted	Q5 Ø 14 Ø	017 36	Sample Description Effluent		TO O O		16 35
3	1999 068100	015 31	1,000	050130	Ø17 35	8	10	880	16	0 35
Live Cou		100317	Live Count: 10 10 1	0 10 10 10	10 340	Live Co	-1-1	10 10	01010	10 310
in distant		327					-			
and the local second	A DETERMINE THE STATE OF BOARD DEPENDENCE	the state of the state of the	R			10000	R	1. 15 B 19		
3rd dilution	E Live Counts	lst-3rd brood	4th dilution	Live Counts	tst strat brood	5th dilution	R E		Live Counts	fst 3rd brood
1.		7 total	dilution E P 1 2	3 4 5 6	brood 7 total	5th dilution	R E P 1		4 5 6	7 brood
dilution	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	7 brood 7 total 016 34	dilution E P 1 2	3 4 5 6 06 013 0	7 brood 7 total		R E P 1 A	ବ ବ ବ	4 3 6 5 0 9 0	50000 brood
dilution	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	7 total 7 total 016 34 103 33	dilution         E           P         1         2           A         O         O           B         O         O	3 4 5 6 06 013 0 06 016 010	7 brood 100al	dilution	B	<u>0</u> 00000000000000000000000000000000000	4 3 6 15 0 9 0 14 0 10 0	7 brood 7 total 017 31 018 32
1.	B     B     B     B     B     B     B     C <td>r         brood           7         cotal           ∅16         34           ∅33         33           ∅16         34</td> <td>dilution P 1 2 A O O O B O O O S O O O O</td> <td>3 4 5 6 C 0 13 0 C 0 0 10 0 0 0 7 0 0 0 1</td> <td>7 brood 7 brood 0 0.191 0 2 34 0 19 37 0 19 37</td> <td></td> <td></td> <td>0 0 0 0 0 0 0 0 0</td> <td>4 3 6 75 0 9 0 74 0 10 0 06 0 11 0</td> <td>5 17 31 5 17 31 5 18 32 5 17 34</td>	r         brood           7         cotal           ∅16         34           ∅33         33           ∅16         34	dilution P 1 2 A O O O B O O O S O O O O	3 4 5 6 C 0 13 0 C 0 0 10 0 0 0 7 0 0 0 1	7 brood 7 brood 0 0.191 0 2 34 0 19 37 0 19 37			0 0 0 0 0 0 0 0 0	4 3 6 75 0 9 0 74 0 10 0 06 0 11 0	5 17 31 5 17 31 5 18 32 5 17 34
dilution £Shunet, 25	a     d     d     d     d     d     d     d       a     d     d     d     d     d     d     d     d       b     d     d     d     d     d     d     d     d       c     d     d     d     d     d     d     d     d       c     d     d     d     d     d     d     d       p     d     d     d     d     d     d	prood           7         cotal           ∅16         34           03         33           ∅16         34           ∅16         34           ∅15         34	dilution         E           P         1         2           A         O         O           B         O         O           C         O         O           JO         O         O	3 0 0 0 0 0 0 0 0 0 0 0 0 0	7 brood 7 UM 0 UM 0 2 34 0 19 37 0 17 37	dilution		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	+	breed           7         total           Ø17         31           Ø18         32           Ø17         34           Ø17         35
dilution Effunct, 25	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         cotal           Ø160         34           1         Ø3         33           Ø160         34         34           Ø15         34           Ø19         37	dilution         E           P         1         2           A         O         O           B         O         O           C         O         O           D         O         O           E         O         O		7 brood 7 brood 0 0,19 0 2 34 0 19 37 0 17 37 0 18 39	dilution		8 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	$\frac{1}{2} + \frac{1}{2} + \frac{1}$	breed           7         total           Ø17         31           Ø17         32           Ø17         34           Ø17         34           Ø17         31           Ø17         33
dilution Efflumet. 7% So	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         cotal           ∅16         34           03         33           ∅16         34           015         34           ∅19         37           ∅16         34	dilution         E           P         1         2           A         O         O           B         O         O           JO         O         O           SO         O         O           SC         B         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O           B         O         O         O         O           B         O         O         O         O      Inter         O	3 4 5 6 6 7 6 7 7 7 7 0 0 7 7 0 0 7 0 1 0 0 1 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	7 (real 7 (real 0 2 34 0 19 37 0 17 37 0 18 39 0 19 36	dilution Effiniet. **, Sat		8 8 9 9 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	+ + + + + + + + + + + + + + + + + + +	breed           7         total           Ø)7         3)           Ø17         3)           Ø18         32           Ø17         34           Ø17         34           Ø15         31           Ø17         34           Ø17         34
dilution Efflumet.** % %	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         oftal           Ø \ b         34           1         Ø 3           Ø \ b         34           Ø \ b         35	dilution         E           P         -<	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	brood           7         total           0         0.191           0         2.34           0.19         3.7           0.17         3.7           0.18         3.9           0.19         3.6           0.18         3.3	dilution Effinet. <sup>19</sup> Sample		Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø	+ 5 8 9 9 9 9 9 9 9 9 9 9 9 9 9	bread           7         total           Ø17         31           Ø17         31           Ø17         31           Ø17         31           Ø17         31           Ø17         31           Ø17         34           Ø17         34           Ø15         31           Ø17         33           Ø14         34           Ø15         34
dilution £Shunet, 25	A     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       A     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       B     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       C     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       D     Ø     Ø     Ø     Ø     Ø     Ø     Ø       E     Ø     Ø     Ø     Ø     Ø     Ø       F     Ø     Ø     Ø     Ø     Ø       G     Ø     Ø     Ø     Ø     Ø       H     Ø     Ø     Ø     Ø     Ø	prood           7         otal           Ø \ b         34           1         Ø 3           Ø \ b         34	dilution         E           P         -<	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	brood           7         fotal           0         0.19           0         2.34           0         19           0         17           0         17           0         17           0         17           0         17           0         17           0         18           0         18           0         18           0         19           0         18           0         19	dilution Effinet. <sup>19</sup> Sample		Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø       Ø     Ø     Ø	+ + + + + + + + + + + + + + + + + + +	breed           7         total           Ø17         31           Ø17         32           Ø17         34           Ø15         31           Ø17         33           Ø17         34           Ø18         34           Ø18         34
dilution Efflumet. 7% So	B     P     1     2     3     4     3     6       A     Ø     Ø     Ø     Ø     Ø     7     Ø     1     Ø       B     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       C     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       D     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       E     Ø     Ø     Ø     Ø     Ø     Ø     Ø       F     Ø     Ø     Ø     Ø     Ø     Ø       G     Ø     Ø     Ø     Ø     Ø     Ø       H     Ø     Ø     Ø     Ø     Ø     Ø	prood           7         oftal           Ø \ b         34           1         Ø 3           Ø \ b         34           Ø \ b         35	dilution         E           P         -           A         B           C         O           B         C           D         O           SO         O           SO         O           FF         G           H         F           G         O           SO         O           FIlluent         F	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	brood           7         total           02         34           019         37           017         37           018         39           019         36           018         33           019         36           018         33           019         36           018         33           019         37           020         38	dilution			+ + + + + + + + + + + + + + + + + + +	breed           7         total           Ø17         31           Ø17         31           Ø17         31           Ø17         34           Ø15         31           Ø17         33           Ø17         34           Ø15         31           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø18         34           Ø15         34           Ø15         34           Ø16         35           Ø12         28
dilution Efflumet. 7% So	a       d	brood           7         cotal           Ø \& 34           Ø \& 35           Ø \& 37	dilution         P         0<	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	brood           7         total           0         0.191           0         2           0         19           0         19           0         17           0         17           0         17           0         17           0         19           0         19           0         19           0         19           0         19           0         19           0         18           0         18           0         18           0         18           0         18           0         18           0         18           0         18           0         18           0         18           0         18           0         19           0         2           0         10	dilution Effinet. <sup>19</sup> Sample			+ + + + + + + + + + + + + + + + + + +	bread           7         total           Ø17         31           Ø17         32           Ø17         34           Ø17         34           Ø17         34           Ø17         33           Ø17         34           Ø17         34           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø14         34           Ø15         34           Ø16         35           Ø12         28           Ø11         25
dilution £/fhuret, % Sample Description 2.5 Effluent	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         cotal           Ø 16         34           Ø 17         35           Ø 16         37           Ø 15         37           Ø 16         33           Ø 17         35           Ø 16         37           Ø 15         37           Ø 16         37           Ø 17         35           Ø 16         37           Ø 15         37           Ø 1         22           Ø 10         33	dilution     E       -     -       <	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Incode           7         Incode           0         2           0         2           0         19           0         17           0         17           0         17           0         17           0         17           0         18           0         19           0         19           0         19           0         18           0         19           0         19           0         19           0         19           0         19           0         10           0         10           0         10           0         10           0         10           0         10           0         14	dilution Efflinet, % Sample Description Live Con Live Con			$ \frac{1}{15} = \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{1}{10} = \frac{1}{10} + \frac{1}{10} = \frac{1}{10} + \frac{1}{10}$	bread           7         total           Ø17         31           Ø17         31           Ø17         31           Ø17         34           Ø17         34           Ø17         33           Ø14         34           Ø15         34           Ø16         35           Ø12         28           Ø11         25           10         317
dilution Effluert, % Sample Description Live Court	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         cotal           Ø 16         34           Ø 34         33           Ø 16         34           Ø 16         34           Ø 16         34           Ø 17         35           Ø 16         37           Ø 17         35           Ø 16         37           Ø 16         37           Ø 17         35           Ø 16         33           Ø 17         35	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 4 5 6 0 6 13 0 0 6 10 0 0 7 0 0 9 1 0 6 0 4 0 0 5 0 5 0 1 0 6 0 1 4 0 0 4 0 1 0 6 0 1 2 0 0 6 0 1 2 0 0 5 0 1 0 0 0 5 0 0 0 5 0 0 0 5 0 0 0 5 0 0 0 7 0 0 6 0 0 0 7 0	brood           7         total           0         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.5           0.19         3.5           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0	dilution Effluet.** IOO Effluent Live Cor		♥         Ø         Ø           ↓         Ø         Ø         Ø           ↓         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø           Ø         Ø         Ø         Ø	4 5 6 75 Ø 9 Ø 74 Ø 10 Ø 96 Ø 11 Ø 97 Ø 9 Ø 97 Ø 10 Ø 97 Ø 97 Ø 10 Ø 97 Ø 9	bread           7         total           Ø17         31           Ø17         32           Ø17         34           Ø17         34           Ø17         34           Ø17         33           Ø17         34           Ø17         34           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø17         33           Ø14         34           Ø15         34           Ø16         35           Ø12         28           Ø11         25
dilution Uffluret, % Simple Description Live Cou	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         cotal           Ø16         34           Ø3         33           Ø16         34           Ø16         34           Ø19         37           Ø16         34           Ø17         35           Ø16         37           Ø15         37           Ø10         337	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$3 4 5 6$ $0 6 13 - 6$ $0 6 16 00$ $0 7 0 0 9 16 00$ $0 7 0 0 9 1$ $0 6 0 15 0 1$ $0 3 014 0$ $0 4 0 1 0$ $0 4 0 1 0$ $0 6 0 1 2 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ Note & Continents $C + \frac{2}{5} C C r t C$	Incode           7         Incode           0         2           0         2           0         19           0         17           0         17           0         17           0         17           0         17           0         18           0         19           0         19           0         19           0         18           0         19           0         19           0         19           0         19           0         19           0         10           0         10           0         10           0         10           0         10           0         10           0         14	dilution Effluet. <sup>10</sup> 100 Effluent Live Co	B C D D D D D D D D D D D D D D D D D D	Image: Constraint of the	4 5 6 5 Ø 9 Ø 7 4 Ø 10 Ø 9 6 Ø 11 Ø 9 7 Ø 9 Ø 9 7 Ø 9 0 Ø 0 0 Ø 0 0 Ø 0 0 Ø 0 0	breed           7         total           Ø17         31           Ø17         31           Ø17         31           Ø17         34           Ø15         31           Ø17         33           Ø14         34           Ø15         34           Ø16         35           Ø12         28           Ø11         25           10         317           Randomizziton         317
dilution t/Trunct.% Sample Description 2.5 Effluent Live Cou	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         cotal           Ø 16         34           Ø 17         35           Ø 16         37           Ø 17         35           Ø 16         37           Ø 16         37           Ø 17         35           Ø 16         37           Ø 10         33           Ø 10         33           Ø 10         34           Ø 10         37           Ø 10         37           Ø 10         37	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$3 4 5 6$ $0 6 13 - 6$ $0 6 16 00$ $0 7 0 0 9 16 00$ $0 7 0 0 9 1$ $0 6 0 15 0 1$ $0 3 014 0$ $0 4 0 1 0$ $0 4 0 1 0$ $0 6 0 1 2 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ Note & Continents $C + \frac{2}{5} C C r t C$	brood           7         total           0         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.5           0.19         3.5           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4	dilution IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	B C D D D D D D D D D D D D D D D D D D	Image: Construction of the construc	4         5         6           75         9         0           74         0         0         0           74         0         0         0           74         0         0         0           74         0         0         0           9         0         1         0           9         0         1         0           10         0         7         0         0           10         0         1         0         0           10         0         1         0         0           10         0         1         0         0           10         0         0         0         0         0           10         0         0         0         0         0           10         0         0         0         0         0           10         0         0         0         0         0           10         0         0         0         0         0           10         0         0         0         0         0           10         0	breed           7         total           Ø17         31           Ø17         31           Ø17         31           Ø17         34           Ø15         31           Ø17         33           Ø14         34           Ø15         34           Ø16         35           Ø12         28           Ø11         25           10         317           Randomizziton         317
dilution Effluent 25 Effluent EixeCou 25 Effluent	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	prood           7         cotal           Ø16         34           Ø3         33           Ø16         34           Ø16         34           Ø19         37           Ø16         34           Ø17         35           Ø16         37           Ø15         37           Ø10         337	$\begin{array}{c c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ $	$3 4 5 6$ $0 6 13 - 6$ $0 6 16 00$ $0 7 0 0 9 16 00$ $0 7 0 0 9 1$ $0 6 0 15 0 1$ $0 3 014 0$ $0 4 0 1 0$ $0 4 0 1 0$ $0 6 0 1 2 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ $0 5 0 1 0 0$ Note & Continents $C + \frac{2}{5} C C r t C$	brood           7         total           0         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.5           0.19         3.5           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4           0.19         3.4	dilution IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	B C C C C C C C C C C C C C C C C C C C	Y     Y     Y       Y     Y       Y <td>4         5         6           5         9         0           6         0         0         0           7         9         0         0           9         0         0         0         0           9         0         0         0         0         0           9         0         0         0         0         0         0           9         0</td> <td>bread       7     total       Ø)7     3)       Ø)7     3)       Ø)7     3)       Ø)7     34       Ø)7     33       Ø)7     33       Ø)7     33       Ø)7     34       Ø)7     33       Ø)7     34       Ø)7     33       Ø)7     33       Ø)7     34       Ø)7     34       Ø)6     35       Ø)2     28       Ø)1     25       10     317       Randomization       Template #       1</td>	4         5         6           5         9         0           6         0         0         0           7         9         0         0           9         0         0         0         0           9         0         0         0         0         0           9         0         0         0         0         0         0           9         0	bread       7     total       Ø)7     3)       Ø)7     3)       Ø)7     3)       Ø)7     34       Ø)7     33       Ø)7     33       Ø)7     33       Ø)7     34       Ø)7     33       Ø)7     34       Ø)7     33       Ø)7     33       Ø)7     34       Ø)7     34       Ø)6     35       Ø)2     28       Ø)1     25       10     317       Randomization       Template #       1

#### **CETIS Analytical Report**

Ceriodaphnia	7-d Survival a	nd Repr	oduction T	est 🗸					н	lydrospher	e Researcl
Analysis ID: Analyzed:	19-5383-7377 07 Dec-16 17:	05	Endpoint: Analysis:	Reproduction Linear Interpo		1) V		IS Version: cial Results		1.9.2	
Batch ID:	18-8000-8667		Test Type:	Reproduction	-Survival (7d	)	Anal	yst:			
Start Date:	29 Nov-16 14:3	0 -	Protocol:	EPA/821/R-0			Dilu	ent: Mo	d-Hard Synt	hetic Water	
Ending Date:	06 Dec-16 13:2	20	Species:	Ceriodaphnia	dubia 🗸		Brin	e:			
Duration:	6d 23h		Source:	In-House Cul	ture		Age	5 6			
	10.0000.0000		•					4 <b>T</b>	El de	D-11 D	01-11-1
Sample ID:	19-0992-6908	-	Code:	TMP-PO 162			Clie		npa Electric		r Station
And the second	28 Nov-16 10:0		Material:	Final Effluent			Proj	ect: VVE	T Complian	ice l'est	
00000000000000000000000000000000000000	29 Nov-16 08:3	50	Source:	TMP-PO (FL	0043869) V						
Sample Age:	28h		Station:	001							
Linear Interpo	olation Options										
X Transform	Y Transform	m	Seed	Resamples	Exp 95%	CL Met	hod				
Linear	Linear		1371104	200	Yes	Two	-Point Interp	olation			
Point Estimat	tes										
Level %	∖ 95% LCL	95%	UCL TU	95% LC	L 95% UCI						
IC25 >100		n/a	<1	n/a	n/a						
	/			1//4	374245		010 #00#Tes				
Reproduction	· · · · · · · · · · · · · · · · · · ·					alculated V		(The land			
Conc-%	Code	Cour		And a second	Max	Std Err	Std Dev	CV%	%Effect		
0	D	10	32.7		40	1.513	4.785	14.63%	0.0%		
6.25		10	34 🗸		40	1.719	5.437	15.99%	-3.98%		
12.5		10	34 🗸		39	1.095	3.464	10.19%	-3.98%		
25	0	10	33.7	22	37	1.383	4.373	12.98%	-3.06%		
50	(1)		35.78	3 31	39	0.8625	2.587	7.23%	-9.41%		
100		10	31.7	25	35	0.9894	3.129	9.87%	3.06%		
Reproductior	Detail										
Conc-%	Code	Rep	1 Rep	2 Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	31	40	33	35	38	35	29	23	32	31
6.25		27	36	35	39	40	23	31	38	36	35
12.5		39	33	35	33	37	27	36	30	35	35
25		34	33	34	34	37	34	35	37	37	22
		34	37	37	39	36	33	37	38	31	
50											



CWF 12/7/16 QA: TMP-PO 16222 18 of 49 Analyst:\_

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#### Chronic Freshwater Method (EPA-821-R-02-013, Method 1002.0)

Water Quality I

		Client:		Tampa	Electric Co	ompany - Pe	olk Power	Station		Initiation	Date:	29	4	Termin	ation Date:	12.6	.16
			Code:	TMF	P-PO	Job #:	16	222		Sample D	escription:						
		Species:	Cer	iodaphnia dh	ibia												
			1D #;	83	40			Rente.								10-12-1 million 10000-0	
Sample	1%				the second s	H r a valid test is 6 to	2)							Oxygen (n			
Description	Effluent	new 0	old new I	old new 2	old new 3	old new 4		old new 6	old 7	new 0	old new	old ne 2				old new 6	old 7
Control	0	77	7.778	7.8 7.7	7.276	8079	797.7	7.274	7.7	84	778.3	788	2 78 8	3 7.5 B	17379	7782	7.C
	6.25	77	787.7	7976	7.8 7.iq	807.9	787.3	7.874	7.7	85	7.784	798	3 7.88	4 7.48.1	7.68.2	7782	72
	12.5	ר.ר	7977	7.9 7.6	7874	8.0 7.8	7.8 7.7	787.6	7.7	86	1884	798	3798	4 7.48.	7.88.2	7.78 2	72
Effluent	25	76	7977	7976	787.6	8.0 7.8	7.87.1	\$ 787.6	7.7	8.6	788.4	788	37.98	4 7.38,	788.2	778.2	271
	50	7.5	7.976	7976	7.97.6	8.1 7.7	7.8 7.1	07.87.4	1.7	8.5	7783	7.68	38.08	3 7382	2798.	17.78-	71
	100	73	787.6	1975	7.97.5	817.6	7.875	57.875	77	8.0	7883	7.8 8	4798	3 7.3 8	37.98.1	7979	7.3
	Meter ID:	Nie	فالها	1616	16 16	μ	1212	- [6] 16	]12	٦	17	77	7	7 1313	1010	77	
	Day:	Û	1	2	3	4	5	6	7		a ang ang ang ang ang ang ang ang ang an		Notes	& Comments	A second		
	Control ID:	4054	4054	4058	4058	4058		4058									
	Diluent ID;	4054	4654	4058		4058	4058	4058				11-1-1					
	Studen Dr.	A	A	B	В	C	C	C									
	Initials:		EHEH			A COLORADO		EHEH	1 1 2 2								
	Time:	1300	1535 1100	1210 1050	1330 1030	1705 1250	1709:20	5 14501100	1340								

Ì	) Hydros rese	sphere arch							Chro	nic Free	shwater Me	thod (EP	A-821-R-		<b>1ethod 10</b> Vater Qua		On.
		Client:		Tampa	Electric Co	ompany - Po	olk Power S	station		Initiatio	n Date:	29.14	r j	Termina	tion Date:	12.6.	6
			Code:	TMP	-PO	Job #:	16:	222		Sample	Description:						
		Species:	Cer	riodaphnia du													
			ID #:	834	-0	a al	A. A.			\$ 							
Sample	16			(a Confluctiv	wity of 2,150-jumbo/	ty (µmho/c	1% (@ 25°C)				17-11-19	(8	cooptable range for	a valid test is 25±1	°C)		
Description	Effluent	0	1	Measu 2	red in each ne 3	ew sample and c	control 5	6	7	0	1	Measured 2	at the end of e	each 24-b expos	sure period	6	7
Control	0	300	299	283	288	218	afa	291			24.4	24.9	24.7	Q4.9	24.8	243	24.9
	6.25	338	344	333	329	313	322	330			24.4	24.9	24 7	249	24.8	248	24.7
	12.5	380	381	371	368	342	365	370			24 4	24.9	24 7	249	24.8	24.8	24.9
Effluent	25	460	443	443	439	411	430	9444			24.4	24.9	24 7	24.9	24.8	24.8	24.9
	50	603	600	592	603	546	560	584			24.4	24.9	24.7	249	24.8	24 8	24.9
	100	899	896	899	908	826	918	914			24.4	24 9	24.7	24.9	24.8	24.8	24,9
	Meter ID:	17	17	17	17	IS	18	17	j		57	57	57	\$ <del>7</del>	57	57	57
	Day:	0	1.1	2	3	4 1	5	6	7				Notes &	Comments			
	Control ID:	4054	4054	4058	4058			4058									-
	Diluent ID:	4054	4054	4058	4058	4058		4058 C									
	Efflocot ID:	A	A	B	B	C RS	KO	EH	KO								
14	Initials:	EH 1305	EH 1105	EH 1055	1035	1250	1210	1105	1300								
141	Time:	1505	1105	1000	1000	10.2	1010	1100	120								

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Chronic Freshwater Method (EPA-821-R-02-013, Method 1002.0)

Survival & Reproduction

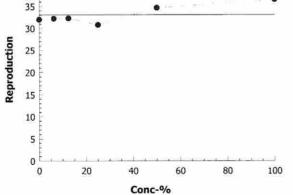
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	Tampa Elactric	Company - Polk Pov	or Station			Survival & Reproduction	
Client:	A state of the	Company - Polk Pov	STER QUELEUS (BISIS	Note: Valid Control is ≥80% survival @ 7d and	Initiation Date:	11 29 10 Termination Date: 12 6	.16
	Code: TMP-PO	Job #:	16222	≥15-neonates average /surviving female}	Sample Description:	・「「「「「」」「「「「「「」」」」「「」」「「」」「「」」「」」「」」「」」「	
Species:	Ceriodaphnia dubia	Code:	CD	30-mL Plastic Cup	UV treated eff		
	10#: \$340	Age:	<24-h	20-mLs per replicate	(see Laboratory Notes	s. Task Titled "UV Treatment of Samples")	
- Thinker	THE MERINA CONTRACTOR OF A DESCRIPTION OF A DESCRIPANTE A DESCRIPTION OF A DESCRIPANTE A DESCRIPANTE A DESCR	a su N		30			
Control	E T V E		ates) Ist 3rd	1st E	2nd F	Live Counts	Ist -Jrd
Color Ion. Dimits		4 5 0	7 total	dilution P 1 2 3 4 5 6 7 100a	Cuncion	2 3 4 5 6 7	brood total
	10000	60100	015 31	A & & Ø & Ø 6 0/13 Ø Ø 13 32		0 0 0 0 0 0 0 15	24
5	BOOOQ	00110	017 34	Nad algo a dia		0,0000120010	34
0	COOOO	50110	0 16 32		Emunet	0,0 050100 013	28
8	DODD	60120	0/13 31	* DOO 06011, 01 014 37		00000140015	35
	EQQQ 0	40110	0,18 33	RODOCO1100535		8, 8, 06 812 8 819	31
S	10000	2010 Ø	0 17 33	, O O O O7 O11, O, 3 O 17 33	F O	00060130015	34
	GØØØØ	60100	0 16 32			Q & O2 0/2 0 017	31
tple Bescript Control	R & Ø Ø Ø	50110	0 15 31		C H Descript	000609.01038	
Description Introl		S ØLI Ø	014 30	$\frac{1}{1000} = \frac{1}{1000} = 1$		00 08 09 01 015	33
	10000	70100	Ø16 33	10000601201501 34		V & 05813 & 015	33
Live Co		0 10 10	) 10 320	Live Count: 10 10 9 253 9 9 9 290	Live Count:	10 10 10 10 10	325
				95.12.12			
	R		and the second second	R5 12/3		es fine and all a self-the source of the second second	Ð
3rd dilution	RE	Live Counts	1st -3rd broud	4th R Live Counts Int-3n	Sth E	Live Counts	Ist .Jed
3rd dilution	E P 1 2 3	4 5 6	1st-3rd broud 7 total	R	Sth dilution P 1	Live Counts	
NAME OF TAXABLE PARTY.		4 5 6 5 0 12 0	broud	4tb         R         Live Counts         Ist-3e           dilution         P         1         2         3         4         5         6         7         form	dilution P	2 3 4 5 6 7	Ist Jrd brood total
dilution	E         P         1         2         3           A         Ø         Ø         Ø         Ø         Ø         Ø           B         Ø	4 5 6 5 0 12 0	7 brood 7 total 9 14 31 9 14 34	$4th$ R     Live Counts     Int 3n $dilution$ $P$ 1     2     3     4     5     6     7     total $A$ $\mathcal{O}$ <	dilution P 1 A O	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Ist-Jrd brood total 34
dilution Emunt, 25	B         Z         3           A         Ø         Ø         Ø           B         Ø         Ø         Ø           C         Ø         Ø         Ø	+ + + + + + + + + + + + + + + + + + +	7 total 7 total 9 14 3.1 9 14 3.1 9 14 3.5 0 14 3.3	Interview Counts       Interview Counts $4th$ dilution     R p     Interview Counts $P$ 1     2     3     4     5     6     7     form       A $\emptyset$		2 3 4 5 6 7 ØØØ7Ø13ØØ10 ØØØ8Ø1400014	Jat-Jid brood total 34
dilution	B         P         1         2         3           A         Ø	+ + + + + + + + + + + + + + + + + + +	7 brood 7 total 9 14 31 9 14 34	Intervertical constant	dilution P 1 P 1 A Ø Effiniet, c Ø	2 3 4 5 6 7 Ø Ø Ø 7 Ø 1 3 Ø Ø 1 6 Ø Ø Ø 8 Ø 1 4 Ø Ø 1 4	Ist-Jed brood total 36 32
dilution Emunt, 25	E P 1 2 3 A Ø Ø Ø Ø B Ø Ø Ø Ø C Ø Ø Ø Ø D Ø Ø Ø Ø E Ø Ø Ø Ø	1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 11 0	7 10111 7 10111 9 14 3.1 9 14 3.1 9 14 3.4 0 14 33 0 14 33 0 14 37 9 18 34	Intervertical constant	dilution P 1 P 1 A Ø Effiniet, c Ø	234567 88970138916 889148914 89050118916	in 3rd brood total 34 36 36
dilution Emunt, 25	F       P       1       2       3       4       8       7       8       7       9       7       9       7       9       10       10       10       11       12       12       13       14       15       15       16       16       17       17       18       10 <t< td=""><td>1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 11 0 6 0 12 0</td><td>7 10000 7 10000 0 14 31 0 14 31 0 14 33 0 14 33 0 14 33</td><td>4th     R     Live Counts     Int-Int       dilution     P     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     1     0     1     24       <math>p</math>     1     2     3     4     1     0     1     24       <math>p</math>     0     0     0     0     0     1     24     3       <math>p</math>     0     0     0     0     0     1     0     1     1       <math>p</math>     0     0     0     0     0     1     0     1     1       <math>p</math>     0     0     0     0     0     1     0     1       <math>p</math>     0     0&lt;</td><td><math display="block">\begin{array}{c c} dilution \\ \hline \\ </math></td><td>2 3 4 5 5 7 Ø Ø Ø 7 Ø 3 Ø Ø 16 Ø Ø Ø 8 Ø 14 Ø Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 16 Ø Ø Ø 7 Ø 13 Ø Ø 16</td><td>In Jrd brood total 34 36 36 36 41</td></t<>	1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 11 0 6 0 12 0	7 10000 7 10000 0 14 31 0 14 31 0 14 33 0 14 33 0 14 33	4th     R     Live Counts     Int-Int       dilution     P     1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     1     0     1     24 $p$ 1     2     3     4     1     0     1     24 $p$ 0     0     0     0     0     1     24     3 $p$ 0     0     0     0     0     1     0     1     1 $p$ 0     0     0     0     0     1     0     1     1 $p$ 0     0     0     0     0     1     0     1 $p$ 0     0<	$\begin{array}{c c} dilution \\ \hline \\ $	2 3 4 5 5 7 Ø Ø Ø 7 Ø 3 Ø Ø 16 Ø Ø Ø 8 Ø 14 Ø Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 16 Ø Ø Ø 7 Ø 13 Ø Ø 16	In Jrd brood total 34 36 36 36 41
dilution Effuert, % Sample	F       P       1       2       3       4       8       9       0       1       2       3       4       9       1       2       3       1       1       2       1 <t< td=""><td></td><td>7 total 7 total 9 14 3.1 9 14 3.1 9 14 3.5 9 14 3.5 9 14 3.7 9 18 3.4 9 18 3.4 9 12 3.0 0 14</td><td>4th     R     Live Counts     Int-Int       dilution     P     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     1     0     1     24       <math>p</math>     1     2     3     4     1     0     1     24       <math>p</math>     0     0     0     0     0     1     24     3       <math>p</math>     0     0     0     0     0     1     0     1     1       <math>p</math>     0     0     0     0     0     1     0     1     1       <math>p</math>     0     0     0     0     0     1     0     1       <math>p</math>     0     0&lt;</td><td>dilution P 1 P 1 A D D D D D D D D D D D D D D D D D D D</td><td>2 3 4 5 6 7 Ø Ø Ø 7 Ø 13 Ø Ø 16 Ø Ø Ø 8 Ø 14 0 Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 16 Ø Ø 07 Ø 13 Ø Ø 16 Ø Ø 06 Ø 5 Ø 1 Ø 9</td><td>184 Jan brood total 34 34 34 34 34 34 34 34 34 34</td></t<>		7 total 7 total 9 14 3.1 9 14 3.1 9 14 3.5 9 14 3.5 9 14 3.7 9 18 3.4 9 18 3.4 9 12 3.0 0 14	4th     R     Live Counts     Int-Int       dilution     P     1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     1     0     1     24 $p$ 1     2     3     4     1     0     1     24 $p$ 0     0     0     0     0     1     24     3 $p$ 0     0     0     0     0     1     0     1     1 $p$ 0     0     0     0     0     1     0     1     1 $p$ 0     0     0     0     0     1     0     1 $p$ 0     0<	dilution P 1 P 1 A D D D D D D D D D D D D D D D D D D D	2 3 4 5 6 7 Ø Ø Ø 7 Ø 13 Ø Ø 16 Ø Ø Ø 8 Ø 14 0 Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 16 Ø Ø 07 Ø 13 Ø Ø 16 Ø Ø 06 Ø 5 Ø 1 Ø 9	184 Jan brood total 34 34 34 34 34 34 34 34 34 34
dilution Effuert, % Sample	F       P       1       2       3       A       Ø <t< td=""><td>1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 12 0 4 0 12 0 4 0 13 0</td><td>7 1011 7 1011 9 14 3.1 9 14 3.1 9 14 3.4 0 14 33 9 14 33 9 18 34 9 12 30 0 14 9 12 30 0 14 19</td><td>4th     R     Live Counts     Int-Int       dilution     P     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     5     6     7     outal       <math>p</math>     1     2     3     4     1     0     1     24       <math>p</math>     1     2     3     4     1     0     1     24       <math>p</math>     0     0     0     0     0     1     24     3       <math>p</math>     0     0     0     0     0     1     0     1     1       <math>p</math>     0     0     0     0     0     1     0     1     1       <math>p</math>     0     0     0     0     0     1     0     1       <math>p</math>     0     0&lt;</td><td>dilution P 1 P 1 A D D D D D D D D D D D D D D D D D D D</td><td>2 3 4 5 6 7 Ø Ø Ø 7 Ø 3 Ø Ø 10 Ø Ø Ø 8 Ø 14 0 Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 10 Ø Ø Ø 5 Ø 13 Ø Ø 10 Ø Ø 06 Ø 15 Ø 1 Ø 19 Ø Ø 06 Ø 14 Ø Ø 19</td><td>Int Stra brood total 34 36 36 36 41</td></t<>	1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 12 0 4 0 12 0 4 0 13 0	7 1011 7 1011 9 14 3.1 9 14 3.1 9 14 3.4 0 14 33 9 14 33 9 18 34 9 12 30 0 14 9 12 30 0 14 19	4th     R     Live Counts     Int-Int       dilution     P     1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     5     6     7     outal $p$ 1     2     3     4     1     0     1     24 $p$ 1     2     3     4     1     0     1     24 $p$ 0     0     0     0     0     1     24     3 $p$ 0     0     0     0     0     1     0     1     1 $p$ 0     0     0     0     0     1     0     1     1 $p$ 0     0     0     0     0     1     0     1 $p$ 0     0<	dilution P 1 P 1 A D D D D D D D D D D D D D D D D D D D	2 3 4 5 6 7 Ø Ø Ø 7 Ø 3 Ø Ø 10 Ø Ø Ø 8 Ø 14 0 Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 10 Ø Ø Ø 5 Ø 13 Ø Ø 10 Ø Ø 06 Ø 15 Ø 1 Ø 19 Ø Ø 06 Ø 14 Ø Ø 19	Int Stra brood total 34 36 36 36 41
dilution Emunt, 25	F       P       1       2       3       4       Ø    <	1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 15 0 6 0 13 0 8 0 10 0	7 1011 7 1011 0 14 3.1 0 14 3.1 0 14 3.4 0 14 33 0 14 33 0 18 34 0 12 30 0 19 19 0 19 0 19	4th diluction         R E         Live Countis         Int-Int brown           4th diluction         R E         1         2         3         4         5         6         7         outal           1         2         3         4         5         6         7         outal           1         2         3         4         5         6         7         outal           50         1         2         3         4         5         6         7         outal           50         1         2         3         4         5         6         7         outal           50         1         2         3         4         5         6         7         outal           50         1         2         1         1         1         1         1         2         3           50         1         2         2         1         1         1         1         1         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3 <td>dilution P 1 P 1 A D D D D D D D D D D D D D D D D D D D</td> <td>2 3 4 5 5 7 Ø Ø Ø 7 Ø 3 Ø Ø 10 Ø Ø Ø 8 Ø 14 0 Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 10 Ø Ø Ø 6 Ø 13 Ø Ø 10 Ø Ø 06 Ø 15 Ø 1 Ø 19 Ø Ø 06 Ø 14 Ø Ø 18 Ø Ø 08 Ø 13 Ø 1 Ø 19</td> <td>34 drd brood 00al 34 34 34 34 34 34 34 34 34 34 36 36</td>	dilution P 1 P 1 A D D D D D D D D D D D D D D D D D D D	2 3 4 5 5 7 Ø Ø Ø 7 Ø 3 Ø Ø 10 Ø Ø Ø 8 Ø 14 0 Ø 14 Ø Ø Ø 5 Ø 11 Ø Ø 10 Ø Ø Ø 6 Ø 13 Ø Ø 10 Ø Ø 06 Ø 15 Ø 1 Ø 19 Ø Ø 06 Ø 14 Ø Ø 18 Ø Ø 08 Ø 13 Ø 1 Ø 19	34 drd brood 00al 34 34 34 34 34 34 34 34 34 34 36 36
dilution Effuert, % Sample	F       P       1       2       3       A       Ø <t< td=""><td>1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 13 0 4 0 13 0 6 0 13 0 8 0 11 0</td><td>7 1011 7 1011 9 14 3.1 9 14 3.1 9 14 3.4 0 14 33 9 14 33 9 18 34 9 12 30 0 14 9 12 30 0 14 19</td><td>4th dilution         R P         Live Counts         Int-In brow           4th dilution         R P         1         2         3         4         5         6         7         outal           <math>p</math>         1         2         3         4         5         6         7         outal           <math>s</math> <math>\phi</math> <math>\phi</math></td><td>dilution P P 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>2 3 4 5 5 7 0 0 07 0 3 0 0 14 0 0 08 0 4 0 014 0 0 05 011 0 014 0 0 05 011 0 014 0 0 05 013 0 014 0 0 06 015 0 019 0 0 06 015 0 019</td><td>34.34 broad 34 36 36 36 41 38 40</td></t<>	1 3 6 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 13 0 4 0 13 0 6 0 13 0 8 0 11 0	7 1011 7 1011 9 14 3.1 9 14 3.1 9 14 3.4 0 14 33 9 14 33 9 18 34 9 12 30 0 14 9 12 30 0 14 19	4th dilution         R P         Live Counts         Int-In brow           4th dilution         R P         1         2         3         4         5         6         7         outal $p$ 1         2         3         4         5         6         7         outal $s$ $\phi$	dilution P P 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 3 4 5 5 7 0 0 07 0 3 0 0 14 0 0 08 0 4 0 014 0 0 05 011 0 014 0 0 05 011 0 014 0 0 05 013 0 014 0 0 06 015 0 019 0 0 06 015 0 019	34.34 broad 34 36 36 36 41 38 40
dilution Effuert, % Sample 25 Ef	F     1     2     3       A     Ø     Ø     Ø     Ø       B     Ø     Ø     Ø     Ø       C     Ø     Ø     Ø     Ø       D     Ø     Ø     Ø     Ø       F     Ø     Ø     Ø     Ø       F     Ø     Ø     Ø     Ø       G     Ø     Ø     Ø     Ø       H     Ø     Ø     Ø     Ø       J     Ø     Ø     Ø     Ø	1 1 1 5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 12 0 4 0 12 0 6 0 13 0 8 0 11 0	7 1011 7 1011 0 14 3.1 0 14 3.1 0 14 3.4 0 14 33 0 14 33 0 18 34 0 12 30 0 19 19 0 19 0 19	4th diluction         R E         Live Countis         Int-Int brown           4th diluction         R E         1         2         3         4         5         6         7         outal           1         2         3         4         5         6         7         outal           1         2         3         4         5         6         7         outal           50         1         2         3         4         5         6         7         outal           50         1         2         3         4         5         6         7         outal           50         1         2         3         4         5         6         7         outal           50         1         2         1         1         1         1         1         2         3           50         1         2         2         1         1         1         1         1         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3 <td>dilution P P 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>2     3     4     5     6       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø</td> <td>14 34 1000 1001 34 36 36 41 33 40 32 30 40 32 30 40 32 30</td>	dilution P P 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2     3     4     5     6       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø	14 34 1000 1001 34 36 36 41 33 40 32 30 40 32 30 40 32 30
dilution Effluent, % Sample Description 25 Effluent	F     1     2     3       A     Ø     Ø     Ø     Ø       B     Ø     Ø     Ø     Ø       C     Ø     Ø     Ø     Ø       D     Ø     Ø     Ø     Ø       F     Ø     Ø     Ø     Ø       F     Ø     Ø     Ø     Ø       G     Ø     Ø     Ø     Ø       H     Ø     Ø     Ø     Ø       J     Ø     Ø     Ø     Ø	1 5 0 12 0 7 0 13 0 7 0 14 0 7 0 10 0 6 0 13 0 6 0 13 0 6 0 10 0 6 0 10 0	r         total           Ø         14         3.1           Ø         14         3.1           Ø         14         3.1           Ø         14         3.1           Ø         14         3.2           Ø         14         3.3           Ø         19         3.0           Ø         12         3.0           Ø         14         3.5           Ø         14         3.5           Ø         14         3.5           Ø         2.0         3.7           Ø         1.0         3.06	4th dilution         R P         Live Counts         Int-In brow $4$ th dilution         P         1         2         3         4         5         6         7         outal $1$ 2         3         4         5         6         7         outal $1$ 2         3         4         5         6         7         outal $50$ $1$ $2$ $3$ $4$ $5$ $6$ $7$ outal $50$ $4$ $2$ $4$ $2$ $4$ $2$ $3$ $4$ $5$ $6$ $7$ outal $50$ $4$ $2$ $2$ $4$ $2$ $2$ $3$ $4$ $3$ $4$ $5$ $7$ $5$ $7$ $4$ $3$ $4$ $3$ $7$	dilution P P 1 A D D D D D D D D D D D D D D D D D D D	2       3       4       5       6       7 $\mathcal{O}$	14.34 broad 1031 34 36 36 37 36 41 38 40 32 38 40 32 32 38 40 32 32 38 40 32 38 40 32 38 40 32 38 40 32 36 36 36 36 36 37 36 36 37 36 36 37 36 37 36 36 37 36 37 36 37 36 37 36 37 36 37 36 37 36 37 36 37 36 37 36 37 36 37 37 37 37 37 37 37 37 37 37
dilution  Tillwiret, % Sample Description 2.5 Effluent	F       1       2       3         A       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         C       Ø       Ø       Ø       Ø         D       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         J       Ø       Ø       Ø       Ø         J       Ø       Ø       Ø       Ø         Junt:       I.Q.       I.Q.       I.       I.		7 total 7 total 9 14 3.1 9 14 3.1 9 14 3.1 9 14 3.3 9 14 3.3 9 14 3.3 9 18 3.4 9 18 3.4 9 12 3.0 0 14 19 19 19 9 14 3.5 9 20 3.7 9 10 306 7 Day	4th dilution         R E         Live Counts         re-3n brown brown           4th dilution         R E         1         2         3         4         5         6         7         total           1         2         3         4         5         6         7         total           8         9         9         9         9         9         9         1         2         3           50         8         9         9         9         9         9         9         1         2         1         1         1         2         3           50         8         9         9         9         9         9         9         1         2         1         1         1         2         3         4         5         6         7         total           50         9         9         9         9         9         1         1         1         1         3         1         3         1         3         1         3         1         3         1         3         1         3         1         3         1         3         1         3         1 <t< td=""><td>dilution E P 1 A O C D Effluent Live Count: C Normal Adult</td><td>2     3     4     5     6     7       Ø     Ø     Ø     7     Ø     3     Ø     Ø     0       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø</td></t<> <td>34.34 broad total 34 34 34 34 36 40 32 32 32 32 32 32 32 32 32 32</td>	dilution E P 1 A O C D Effluent Live Count: C Normal Adult	2     3     4     5     6     7       Ø     Ø     Ø     7     Ø     3     Ø     Ø     0       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø	34.34 broad total 34 34 34 34 36 40 32 32 32 32 32 32 32 32 32 32
dilution Tilluret, % Sample Description 2.5 Effiluent	F       1       2       3         A       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         C       Ø       Ø       Ø       Ø         D       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         G       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø       Ø         H       Ø       Ø       Ø <td>5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 12 0 6 0 13 0 8 0 11 0 6 0 10 10 6 0 10 0 6 0 0 6 0 0 0 0 6 0 0 0 0 6 0 0 0 0 0 6 0 0 0 0 0 6 0 0 0 0 0 0 6 0 0 0 0 0 0 0 0 0 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>7         total           7         total           14         3.1           14         3.1           14         3.1           14         3.4           14         3.5           14         3.3           14         3.4           14         3.5           14         3.4           15         1.4           16         3.4           17         3.0           18         3.4           19         1.4           19         1.4           19         1.4           10         1.9           10         1.0           20         3.7           10         1.0           20         3.7           10         1.0           20         3.7           20         3.7           20         1.0           30.6         3.7           10         1.0           20         3.7           20         3.7           20         3.7</td> <td>4th       R       Live Counts       10 - 30         4th       R       2       3       4       5       6       7       10 - 10         1       2       3       4       5       6       7       10 - 10       10 - 10       10 - 10       10 - 10       10 - 20</td> <td>dilution P P 1 A D D D D D D D D D D D D D D D D D D D</td> <td>2     3     4     5     6     7       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø<td>14.3rd brood total 34 34 34 34 40 32 34 12 34 12 34 12 12 12 12 12 12 12 12 12 12</td></td>	5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 4 0 12 0 6 0 13 0 8 0 11 0 6 0 10 10 6 0 10 0 6 0 0 6 0 0 0 0 6 0 0 0 0 6 0 0 0 0 0 6 0 0 0 0 0 6 0 0 0 0 0 0 6 0 0 0 0 0 0 0 0 0 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7         total           7         total           14         3.1           14         3.1           14         3.1           14         3.4           14         3.5           14         3.3           14         3.4           14         3.5           14         3.4           15         1.4           16         3.4           17         3.0           18         3.4           19         1.4           19         1.4           19         1.4           10         1.9           10         1.0           20         3.7           10         1.0           20         3.7           10         1.0           20         3.7           20         3.7           20         1.0           30.6         3.7           10         1.0           20         3.7           20         3.7           20         3.7	4th       R       Live Counts       10 - 30         4th       R       2       3       4       5       6       7       10 - 10         1       2       3       4       5       6       7       10 - 10       10 - 10       10 - 10       10 - 10       10 - 20	dilution P P 1 A D D D D D D D D D D D D D D D D D D D	2     3     4     5     6     7       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø <td>14.3rd brood total 34 34 34 34 40 32 34 12 34 12 34 12 12 12 12 12 12 12 12 12 12</td>	14.3rd brood total 34 34 34 34 40 32 34 12 34 12 34 12 12 12 12 12 12 12 12 12 12
dilution Effluent,% Sumple Description 2.5 Effluent		5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 10 0 6 0 13 0 6 0 13 0 6 0 10 0 6 0 10 0 6 0 10 10 6 0 10 10 5 6 0 EH	T         Interface           7         Interface           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.5           12         3.0           12         3.0           14         19           14         3.5           20         3.7           21         3.0           14         19           14         3.5           20         3.7           21         1.0           35         3.2           20         3.7           20         1.0           30         1.0           30         1.0           30         1.0           30         1.0           30         1.0           30         1.0	4th       R       Live Counts       In An Brown         diluction       P       1       2       3       4       5       6       7       outal         a       Ø       Ø       Ø       Ø       Ø       Ø       Ø       Ø       In An Brown         b       Ø       Ø       Ø       Ø       Ø       Ø       Ø       Ø       In An Brown         b       Ø       <	dilution P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2     3     4     5     5     7       Ø     Ø     7     Ø     3     Ø     Ø     0       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø     Ø     Ø     Ø     Ø       Ø     Ø     Ø <td>In Std broad total 34 34 34 34 34 32 32 32 32 32 32 32 32 32 32 32 32 32</td>	In Std broad total 34 34 34 34 34 32 32 32 32 32 32 32 32 32 32 32 32 32
dilution Effluent, % Sample Description 2.5 Effluent Sive Con	P       1       2       3         A       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         C       Ø       Ø       Ø       Ø         D       Ø       Ø       Ø       Ø         E       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         F       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø       Ø         B       Ø       Ø       Ø <td>5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 10 0 6 0 13 0 8 0 10 0 6 0 10 10 5 K0 EH 35 17 15 140 32 152 102</td> <td>T         Interference           7         Interference           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           15         1.2           16         3.4           17         30           18         3.4           19         14           19         14           19         19           10         19           10         19           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         3</td> <td>4th       R       Live Counts       In An         diluction       P       1       2       3       4       5       6       7       outal         a       Ø       Ø       Ø       Ø       Ø       Ø       Ø       Ø       In An       brown         b       Ø       Ø       Ø       Ø       Ø       Ø       Ø       Ø       In An       brown         s       Ø</td> <td>dilution P 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>2         3         4         5         6         7           Ø</td> <td>in 3rd brood total 3.4 3.4 3.4 3.4 4 3.4 3.4 3.4 3.4 3.4 3</td>	5 0 12 0 7 0 13 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 14 0 7 0 10 0 6 0 13 0 8 0 10 0 6 0 10 10 5 K0 EH 35 17 15 140 32 152 102	T         Interference           7         Interference           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           14         3.1           15         1.2           16         3.4           17         30           18         3.4           19         14           19         14           19         19           10         19           10         19           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         30.6           10         3	4th       R       Live Counts       In An         diluction       P       1       2       3       4       5       6       7       outal         a       Ø       Ø       Ø       Ø       Ø       Ø       Ø       Ø       In An       brown         b       Ø       Ø       Ø       Ø       Ø       Ø       Ø       Ø       In An       brown         s       Ø	dilution P 1 1 1 1 1 1 1 1 1 1 1 1 1	2         3         4         5         6         7           Ø	in 3rd brood total 3.4 3.4 3.4 3.4 4 3.4 3.4 3.4 3.4 3.4 3

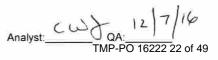
## **CETIS Analytical Report**

Report Date: 07 Dec-16 16:50 (p 1 of 1) Test Code: TMP-PO 16222CDU | 03-0657-8066

Ceriodaphnia	7-d Survival an	nd Repr	roduction T	est 🗸							Ĥ	ydrosphere	e Research
Analysis ID: Analyzed:	13-9200-8461 07 Dec-16 16:	46	Endpoint: Analysis:	Repro Linea	oduction r Interpola	ation (ICPIN	V		CETIS Ver Official Re	Contraction of the last of	CETISv1 Yes	.9.2	
Batch ID:	18-8000-8667		Test Type:	Repro	oduction-S	Survival (7d)		1	Analyst:				
Start Date:	29 Nov-16 16:1	5√	Protocol:	EPA/	821/R-02-	013 (2002)		C	Diluent:	Mod	Hard Synth	netic Water	1
Ending Date:	06 Dec-16 13:1	0 /	Species:	Cerio	daphnia d	lubia 🗸		E	Brine:				
Duration:	6d 21h		Source:	In-Ho	use Cultu	re		1	Age:				
Sample ID:	20-3186-2121		Code:	TMP-	PO 16222			c	Client:	Tam	pa Electric	Polk Powe	r Station V
Sample Date:	28 Nov-16 10:0	0 ~	Material:	Final	Effluent			F	Project:	WET	Complian	ce Test	
	29 Nov-16 08:3		Source:	TMP-	PO (FL00	43869) 🗸							
Sample Age:			Station:		JV V	1.4.752.754							
Linear Interpo	olation Options												
X Transform	Y Transform	n	Seed	Resa	mples	Exp 95%	CL Me	ethod					
Linear	Linear		1995270	200		Yes	Tw	vo-Point In	terpolation	n			
Point Estimat	tes												
Level %	95% LCL	. 95%	UCL TU		95% LCL	95% UCL							
IC25 >100	1 Arrest 1011 - 2010 -	n/a	<1		n/a	n/a							
Reproduction	) Summary	A.00.20	i.e.			Ca	culated \	Variate					
Conc-%	Code	Cour	nt Mear	1	Min	Max	Std Err	Std D	ev CV%	6	%Effect		
0	D	10	32 🗸		30	34	0.3944	1.247	3.90	)%	0.0%		
6.25	G	9	32.22	2 1	24	38	1.299	3.898	12.1	0%	-0.69%		
12.5		10	32.3		28	37	0.9315	2.946	9.12	2%	-0.94%		
25		10	30.8	~	14	37	2.529	7.997	25.9	97%	3.75%		
50	C	00	34.67	V/	26	39	1.312	3,937	11.3	36%	-8.33%		
100	3	9	36.56	3 <sup></sup>	32	41	1.042	3.127	8.55	5%	-14.24%		
Reproduction	n Detail												
Conc-%	Code	Rep	1 Rep		Rep 3	Rep 4	Rep 5	Rep 6		7	Rep 8	Rep 9	Rep 10
0	D	31	34		32	31	33	33	32		31	30	33
6.25		32	24		30	32	35	38	31		34	34	
12.5		29	34		28	35	37	34	31		29	33	33
25		31	36		33	37	36	30	14		19	35	37
50		26	34		34	39	39	34	36		33	37	
100		36	36		32	36	41	38	38		40	32	
Graphics													
Capinoo													
40										207	n.		
35	-								6	<70	)	7 77	

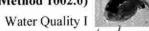


 $\begin{array}{c} (1) \quad \frac{290}{9} = 32,22\\ (2) \quad \frac{312}{9} = 34.67\\ (3) \quad \frac{329}{9} = 36,56 \end{array}$ 





Chronic Freshwater Method (EPA-821-R-02-013, Method 1002.0)



-											-								water	Qua	inty I	1	
		Client;		Tampa	Electric C	ompany - P	olk Power	Station			Initiat	ion Dat	e;	29	-16		7	ermina	tion Da	te:	12/	6/16	,
			Code:	TMI	P-PO	Job #	14	223	z		100		ription:			- Nucle			、産生	F.B.			
			C.,	riodaphnia di	ubia	1 <b>300</b> #,		0.0					ed eff		Stied 9	JV Treat	mant of	Samuelae	ñ.				
		Species:	Ce		100 M						- (see L	aborato	ry inotes	1456	nned (	v freat	nent of .	samples	1				
	čistavi -	T Shirth Carlo	ID #:	834	0			i de la	172			10.82			<i></i>	4		14			111		
Sample	%					н						1 11				solved				in si			
Description	Effluent	new 0	old new	old new	old new	or a valid test is 6 to old new 4	old new	old	new	old 7	new		old new	old		old n		i new	old 5		old n 6		old. 7
												l.									Ť		
Control	0	7.7	7.778	7.8 78	787.7	8079	1:17:	7.7	767	7	8	38	108.4	+74	182	7.58	47	58.Z	7.4	3.Z	1.48	18.	ЕН I
							hala					. [		12-	0.2			122	5				]
	6.25	77	7.8 7,8	7878	78 7.7	8.0 7.9	1-8 7.	17.2	7.67	Ö	8.	1 2	10	117	0.4	778	1	102	7.T	62	1-10	2 7.2	e
										]							-	. 0					1
	12.5	7.7	7.87.8	78 7.8	7877	817.9	7.87:	778-	7.607	Ċ	8	38	-18-	178	8.2	7.88	.4 7.4	10.1	7.7	8.Z	7.4P	170	(
Eff										1					1			91	50			1	]
Effluent	25	77	7871	7877	7876	8.1 7.9	7.87.	78	1679	2	8	2 0	08.	- 1.8	8.2	782	4 7:	50.7	4.8	Ċ.	1.18	121	
-				10		000	221								61			. 00	4	0			]
	50	7.4	1,271	7.8 7.1	117.7	0. +.0	1.8 7.	018	1. 4 []	1	7 0	3	98	178	8.1	788	1.6 7.	50.0	7,8	0-1	777		1
							1			7		_ [					L	-7		70		1.0.	]
	100	75	787.4	77.7	7.7-1.7	8.1 +1.	41.47	0 78	7.67.	9	٦. :	5 6	07	648	1.1	788	Ut.	5 7.0	17.8	7.3	181	680	1
	Meter ID:	16	1616	12 16	16 16		12 1	210	16 10		7		77	10	7	7	7 1	313	0		7-	17	
	Day:	0	a <b>1</b>	2	3	4	5	6	anter al la companya de la company	7		1		4		Note	s & Com	ments					
-300 - 13	Control ID:	4054	4054	4058	4058	4098	40.5%	465	32		İ												
	Diluct. (D)	4054	4054	4058			40.51																
	Effluent ID:	A	A	В	6	C	6.00	C			i												
	Initials:		EHEH			RSRS	KOK	_	12.3	ł													
			X	1001125							1												
	Time:	[1130]	1000	1001123	1100 1110		main	2.11-	1001	12													

Ì	) Hydro rese	sphere arch	i K						Chre	onic Fresh	iwater Me	thod (EP:	A-821-R		<b>Method 10</b> Water Qua		
		Client:		Tamp	a Electric C	Company - Po	olk Power !	Station		Initiation I	Date: 11.	29-14		Termins	ation Date:	12/6/	/16
			Code:	: TM	4P-PO	Job #:	16	222		Sample D	Description:					angiral an an Fi 13	
		Species:	Ce	eriodaphnia d	-						eated efflu		'UV Treatme	ent of Samples	s*)		
ie de la companya de La companya de la comp			1D #:	# \$34	Ð												
Sample	%					ity (µmho/c								ature (°C)			
Description	Effluent	0	1			new sample and c		6	7	0	1	Measured 2	d at the end of e	each 24-h expos	osure period	6	7
Control	0	299	299	289	288	268	278	292			24.3	24.5	25.2	25.0	24.9	24.9	24.9
	6.25	341	342	331	332	305	325	334			24.3	24.5	25.2	250	24.9	24 9	249
-	12.5	376	376	369	373	341	364	374			24.3	24.5	25.2	. <u>25</u> c	24.9	24.9	24.9
Effluent	25	456	456	444	440	408	463	435			24.3	24.5	25 2	25.0	24.9	24.9	24.9
	50	612	612	593	595	557	613	ما			24.3	24.5	25.2	as.0	24.9	24.9	2414
	100	917	919	899	969	823	899	926			24.3	24.5	25 Z	25.0	24.9	24.9	24.9
	Meter ID:	17	17	17	17	15	18	17	]		57	57	57	57	57	57	57
	Day:	0	1	2	3	4	5	6	7	No.			Notes &	Comments			
	Control ID:	4054	1			4058		4658									
	Diluent ID;	4054		4058	4058		4058										
	Effluent ID:	A	A	B	B	C 0C		C	E(1)								
	Initials:	EH	EH 1035	EH (130	EH 1120	RS 1300	K0	1 1	EH								
	Time:		100.0	1120	1120	120	1215	I U U	1315								



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Effluent

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Initials:

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Feeding Type:

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1610

Artemia

3-drops (0.15-mLs) of a concentrated slurry / 2x / day

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EH

Vorts

1645

Client:

Species:

Sample Description

Control

Effluent

dro: s e	sph o r	ere ch									Chro	onic Freshwate	er Method (El	PA-821-R-02	-013, Method 1000.0 Survival & Growtl	Car alternative statements and the
Tam	pa El	ectric Compa	ny - Polk F	Power Stati	on							Initiation Date:	11.29.	16	Termination Date:	12.6.16
Code:		TMP-PO	Job #:	[160	122							Sample Descripti	on:	the safe	a de arta	
Pime	ohales	prometas	Code:	F	м	1		Test Vessel:	I-L plas	tic cup					-	
ID #:		8339	Age:	< 24-	hours		1	est Volume:	250-mL	/ rep.				1		
26	R		-	Live	Counts (Valid)	lannol is ≥81% sur	vival @ 7d)	d and	1 de na	1	Biomass (original)	number, final dry weight busis	Valid Control is 20.25-mg/s	curring fish)	٦	
lucat	E	T	N	R	F	Sa +	SUL	M	T	Pan #	Tare Weight (0.00001-gms)	Total Weight (0.00001-gms)	Net Weight (0.00001-gms)	Wt / Fish (0.001-mgs)		
		10	10	10	10	10	10	10	9'		1.16058	1.1(253)	0 00473	C. 473		
0	в	10	10	IC	10	91	ġ	9	9	2	1.13898	1,14410	0.00512	0.512		
<b>7</b> 11	с	10	10	10	82	8	- G	3	8	3	115637	11657	0.00520	0.520		
	D	10	10	10	10	91	10	10	<u>8</u>	-	1.15233	15702	0.0046	0.469		
35	B	10	10	10	10	10	10	a	8:	14	1.14050	1.14076	0.00594	0 596		
.25	c	10	1Ů	9'	9	72	7	63)	6	*	1.13454	1.13925	0.00471	0.523	].	
	D	10	10	9'	72	7	7	7	6	3	1.10450	1.16963	0.00513	0.513		
	A	10	10	10	10	9'	8'	Ø	09	5	<u>1.13995</u> 1.14259	1.14492	0.00494	0.497		
2.5	B	10	10	10	10	10	91	9	9	10	1.151078	1.10199	0.00571	0.571	-	
	D	10	10	10	ĨŎ	q'	10	93	q	12	1.14344	1.14955	0.000011	0.1079	-	

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Date Final Dry V'eights :

Date Tare Weights :

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Randomization Template #

FH

MOSING

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16

Notes & Comments

Photoperiod is 16-bours light and 8-bours dark, Illuminiation is ambient (50 to 100 fted)

567

Initials

Initials:

12 15

(2)

(2

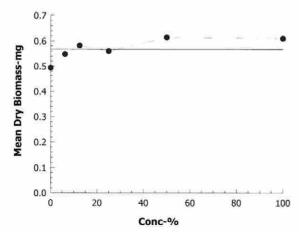
2

-7

## **CETIS Analytical Report**

Report Date: 08 Dec-16 09:55 (p 1 of 1) Test Code: TMP-PO 16222FMC | 20-1085-7342

ruticuu min	now 7-d Larval S	urvival ar	d Growt	h Test *					Hydrosphere Research
Analysis ID: Analyzed:	00-8334-8206 08 Dec-16 9:55		dpoint: alysis:	Mean Dry Biom Linear Interpola		)) 🗸	1 m	'IS Versio cial Resul	
Batch ID: Start Date: Ending Date: Duration:	02-4045-3922 29 Nov-16 15:15 06 Dec-16 11:15 6d 20h	o√ Pr o√ Sp	st Type: otocol: ecies: urce:	Growth-Surviva EPA/821/R-02- Pimephales pro In-House Cultu	013 (2002) omelas 🗸	l.		ie:	od-Hard Synthetic Water
	09-5359-1903 28 Nov-16 10:00 29 Nov-16 08:30 29h	o∕ Ma	de: terial: urce: ntion:	TMP-PO 16222 Final Effluent TMP-PO (FL00 001		¢	Clie Pro		ampa Electric Polk Power Station V /ET Compliance Test
Linear Interp	olation Options				_				
X Transform	Y Transform	Se	ed	Resamples	Exp 95%	CL Meth	nod		
Linear	Linear	60	7281	200	Yes		Point Inter	olation	
Point Estimat	tes								
Level %	95% LCL	95% UC	- TU	95% LCL	95% UCL				
IC25 >100		n/a	<1	n/a	n/a				
Mean Dry Bic	/ mass-mg Summ	ary			Ca	Iculated Va	riate		
Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	4	0.493	5 0.469	0.52	0.01312	0.02623	5.32%	0.0%
5	D	4 4	0.493 0.548	- <u>Bernara</u>	The second second	0.01312 0.01889	0.02623 0.03777	5.32% 6.89%	
6.25	D			1 0.513	0.52	5444080 (F (B) (F (B)	1		0.0% -11.06%
0 6.25 12.5 25	D	4	0.548	1 0.513 7 0.497	0.52 0.596	0.01889	0.03777	6.89%	0.0% -11.06% -17.88%
6.25 12.5	D	4 4	0.548 0.581	1 0.513 7 0.497 1 0.492	0.52 0.596 0.6789	0.01889 0.03735	0.03777 0.07469	6.89% 12.84%	0.0% -11.06% -17.88%
6.25 12.5 25	D	4 4 4	0.548 0.581 0.560	1 0.513 7 0.497 1 0.492 3 0.544	0.52 0.596 0.6789 0.6322	0.01889 0.03735 0.02865	0.03777 0.07469 0.0573	6.89% 12.84% 10.23%	0.0% -11.06% -17.88% -13.49%
6.25 12.5 25 50 100	D omass-mg Detail	4 4 4 4	0.548 0.581 0.560 0.614	1 0.513 7 0.497 1 0.492 3 0.544	0.52 0.596 0.6789 0.6322 0.654	0.01889 0.03735 0.02865 0.02553	0.03777 0.07469 0.0573 0.05106	6.89% 12.84% 10.23% 8.31%	0.0% -11.06% -17.88% -13.49% -24.47%
6.25 12.5 25 50 100		4 4 4 4	0.548 0.581 0.560 0.614	1 0.513 7 0.497 1 0.492 3 0.544 8 0.557	0.52 0.596 0.6789 0.6322 0.654	0.01889 0.03735 0.02865 0.02553	0.03777 0.07469 0.0573 0.05106	6.89% 12.84% 10.23% 8.31%	0.0% -11.06% -17.88% -13.49% -24.47%
6.25 12.5 25 50 100 Mean Dry Bio Conc-%	mass-mg Detail	4 4 4 4	0.548 0.581 0.560 0.614 0.609	1 0.513 7 0.497 1 0.492 3 0.544 8 0.557 <b>Rep 3</b>	0.52 0.596 0.6789 0.6322 0.654 0.65 <b>Rep 4</b> 0.469	0.01889 0.03735 0.02865 0.02553	0.03777 0.07469 0.0573 0.05106	6.89% 12.84% 10.23% 8.31%	0.0% -11.06% -17.88% -13.49% -24.47%
6.25 12.5 25 50 100 Mean Dry Bio	omass-mg Detail Code	4 4 4 4 4 Rep 1	0.548 0.581 0.560 0.614 0.609 Rep 2	1 0.513 7 0.497 1 0.492 3 0.544 8 0.557 2 <b>Rep 3</b> 0.52	0.52 0.596 0.6789 0.6322 0.654 0.65 <b>Rep 4</b>	0.01889 0.03735 0.02865 0.02553	0.03777 0.07469 0.0573 0.05106	6.89% 12.84% 10.23% 8.31%	0.0% -11.06% -17.88% -13.49% -24.47%
6.25 12.5 25 50 100 <b>Mean Dry Bio</b> <b>Conc-%</b> 0 6.25	omass-mg Detail Code	4 4 4 4 4 <b>Rep 1</b> 0.473	0.548 0.581 0.560 0.614 0.609 <b>Rep 2</b> 0.512	1 0.513 7 0.497 1 0.492 3 0.544 8 0.557 2 <b>Rep 3</b> 0.52	0.52 0.596 0.6789 0.6322 0.654 0.65 <b>Rep 4</b> 0.469	0.01889 0.03735 0.02865 0.02553	0.03777 0.07469 0.0573 0.05106	6.89% 12.84% 10.23% 8.31%	0.0% -11.06% -17.88% -13.49% -24.47%
6.25 12.5 25 50 100 Mean Dry Bio Conc-% 0 6.25 12.5	omass-mg Detail Code	4 4 4 4 <b>Rep 1</b> 0.473 0.56	0.548 0.581 0.560 0.614 0.609 <b>Rep 2</b> 0.512 0.596	1 0.513 7 0.497 1 0.492 3 0.544 8 0.557 2 <b>Rep 3</b> 0.52 0.5233 0.571	0.52 0.596 0.6789 0.6322 0.654 0.65 <b>Rep 4</b> 0.469 0.513	0.01889 0.03735 0.02865 0.02553	0.03777 0.07469 0.0573 0.05106	6.89% 12.84% 10.23% 8.31%	0.0% -11.06% -17.88% -13.49% -24.47%
6.25 12.5 25 50 100 Mean Dry Bio Conc-% 0	omass-mg Detail Code	4 4 4 4 <b>Rep 1</b> 0.473 0.56 0.497	0.548 0.581 0.560 0.614 0.609 <b>Rep 2</b> 0.512 0.596 0.58	1 0.513 7 0.497 1 0.492 3 0.544 8 0.557 2 <b>Rep 3</b> 0.52 0.5233 0.571	0.52 0.596 0.6789 0.6322 0.654 0.655 <b>Rep 4</b> 0.469 0.513 0.6789	0.01889 0.03735 0.02865 0.02553	0.03777 0.07469 0.0573 0.05106	6.89% 12.84% 10.23% 8.31%	0.0% -11.06% -17.88% -13.49% -24.47%



CWJ 12/8/16 TMP-PO 16222 26 of 49 Analyst:



Water Quality I

-	1030	aren												Water	r Quality I		
		Client:		Tampa	Electric Co	ompany - Po	olk Power S	Station		Initiation	Date;	29-14	e]	Termina	tion Date:	12 6	5.10
			Code:	TMI	P-PO	Job #:	16	222		Sample D	escription:						
		Species:	Pim	ephales prom	elas												
			ID #:	833	39												
Sample	%		12 20		p acceptable range for	H								Dxygen (m			
Description	Effinent	nøw 0	old new	old new 2	old new 3	old new 4	old new 5	old new 6	old 7	new D	old new	old new 2	old new 3		old new 5	old new 6	old 7
Control	0	77	7778	7778	ר.ר ר.ר	77 78	757.8	7477	76	8.4	7484	7684	7585	7.08.2	6.98.2	7083	7.2
	6.25	77	7778	777.8	777	7.77.9	7.578	7577	75	84	7584	7.684	7685	57083	7.28.3	7.08.4	7.2
	12.5	7.7	7.77.8	7.77.8	7.77.7	777.9	7.577	75 7.7	75	8.5	7584	7.484	7.585	;7.183	728.3	4834	7.2
Effluent	25	76	7.777	רךרר	7.77.7	7.87.9	7.57.7	75 7 7	7.5	85	7.684	7.5 8.4	7.5 8.5	57.293	7.38.2	6.88.3	7.2
	50	7.5	7.876	7777	7777	7.87.8	7.576	7.57.7	75	8.4	7.684	7.584	7.584	7.283	7.382	6881	7.0
	100	7.4	18 74	7.17.6	7.776	7.97.6	7.6 7.5	757.4	7.5	8.3	7.6 8.3	7.584	7.683	37.38.3	7.28.1	70-1.8	70
	Meter ID:	14	iv iv	1616	1616	[] ] [I]	12/12	14/14	16	7	77	77	77	313	J J	77	7
	Day:	0	1	2	- 3	4	5	6	7			- 1990 - 1	Notes &	Comments			
	Control ID:	4054	4056	4056	4056	4056	4056	4059									
	Dilution ID:	4654	4056	4054	4054		4056	1									
	Efflornt ID:	A	A	B	B	C	C	С	12. 34								
	Initials:	1		EHEH													
	Time:	1325	1345 1115	1535 1100	1335 1045	1520 245	16131200	1250 1050	1040							-	

	) Hydro rese	sphere arch							Chronic F	reshwate	r Method	(EPA-82	1-R-02-01		od 1000.0) Quality II	(	
	APRIL 194	Client:		Tampa	Electric C	Company - Po	olk Power f	Station		Initiation I	Date: 11-	29.11		Termina	tion Date:	12.6-	16
			Code:	: TMJ	IP-PO	Job #:	163	222		Sample D	escription:						
		Species:	Pim	mephales prom													
E AN			1D #:	# 837	39									4.0			
Sample	1%			(a Conductiv	tivity of 2,150-jumba/	ty (µmho/c o/cm = a Salinity of 1	1% @ 25*C1	Alterna P				()	acceptable range for	ature (°C)	°C)		
Description	Effluent	0	1 1 1	2 Measu	sured in each ne	iew sample and c	control 5	6	7	0	1	Measured	i at the end of e	each 24-h expos	sure period	6	7
Control	0	287	290	289	288	368	284	290			24.8	24 4	24.5	<i>24.5</i>	24.6	24 64	24 4
	6.25	325	336	330	329	304	323	328			24.8	24 4	24.S	245	24.6	24.4	24 u
	12.5	367	368	368	348	341	363	370			24.8	24 4	24.5	24.5	24. b	24 4	Z4 4
Effluent	25	443	441	443	446	411	447	458			24.8	24 6	24 5	24.5	24.6	24.4	24.4
	50	595	603	601	604	559	617	597			24.8	24.6	24.5	24.5	24,6	24.6	24.4
	100	909	917	910	918	837	940	924			24.8	246	24.5	24.5	Z4.6	24.0	24.6
	Meter ID:	17	17	17	17	15	18	17		1	57	57	57	57	57	57	57
	Day:	0	1	2	3	4	5	6	7			Sec. 2	Notes & (	Comments		C MEAN TH	
	Control ID:	4056		4056	4054	4056											
	Dilution ID: Effluent ID:	4056 A	A	4034 B	B	14000	1036	4059 C									
	Initials:	EH	EH	EH	EH	RS	Ko	1	EH								
	Time:	1330	1120	1105	1050	1245	1155										



$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Client:		Tam	pa Electric Compa	ny - Po	lk Pe	wer	Statio	n			1															
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1 - 1 - <b>2</b> -	Code		TMP-PO		Job:	1	62	22	~																Sample	e Data
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Sai	mple In	ıfo		Ľ			gen						Ати	nonia		Cond	uctivit	y		Sal	inity		Alkal	inity/Har	dness
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	#	1	Letter Coo	Description	D.O. (mg/L)	D.O. (%)	Aeration (min.)	Post Aerat D.O. (mg/	Meter #	Initials	TRC (mg/L)	Meter #	Initials	T-NH <sub>3</sub> (mg/L)	рН	Meter #	Initials	Conductiv (µmho/cr	Meter #	Initials	Salinity (ppt)	Adjuste (ppt)	Meter f	Initials	Alkalini (mgCaCO	Hardne (mgCaCO	Initiak
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1		-	TEE CON	a ı	112	-		17	Cu	10.14	- 19 -	VO	×	72		150			3.8		1	1	2		1.1 1.5 Samp	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							5		4				1			-	_	924	11		1				1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		110
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			1000				5		7		-	-			1 Sec. 10				17			1. 0			2/11/0		PS
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$						18 28			7				1		-5	1000			17								
7     12/05/16     M C     1     100/123/5     7/8 <th< td=""><td></td><td></td><td></td><td></td><td>10.0</td><td></td><td>5</td><td></td><td>13</td><td>RS</td><td></td><td></td><td>RS</td><td></td><td></td><td>11</td><td>RS</td><td>822</td><td>15</td><td>RS</td><td>X</td><td>×</td><td>X</td><td>RS</td><td>040</td><td>250</td><td>RS</td></th<>					10.0		5		13	RS			RS			11	RS	822	15	RS	X	×	X	RS	040	250	RS
			1C				5		10		X_	X		X			KO	920			X	X	Х	Ko	$\times$	X	Ko
9     1     1       10     1       11     1       12     1		11	C		0.0	165	5	10	7	EH	×	×	EH	X	13	الذ	EH	432	17	EH	X	×	×	EH	×	×	EH
	9 1 1		-							1			-		-						-		-				
	10 / /																										
	11 / /																										
	12 / /				_		-				-		-									ĺ					_
	13 / / 14 / /																		-					-			
	15 / /		-				1	-		-																	-
	16 / /																										
Notes & Comments Dilution Waters Alkalinity/Hardness		<u>.</u>					N	otes & (	Comm	ents	- 21		£ .	1	1		1				1	Dilution	Wate	ers	Alkali	nity/Harc	iness
(i) 926 EH 11/30 Critical Note !!!	(1) 926 E	H 11	30										5	C		Jaka									â.	â	13
Critical Note !!!     Check COC.     Email     Image: Constraint of the second secon																					Cod		Đ		Alkalin IgCaC	Hardn 1gCaC	Initia
Samples may need to be Composited in Lab.											Sar	nples i	may					sited in L	.ab.		C				nity D <sub>y</sub> /L)	ess D <sub>3</sub> /L)	5
For Jobs requiring routine and UV. On Saturday we will only receive 8 bottles. Label 4 new half-gallon bottles with the sample ID and mark at 1200 mLs. MHR 4C54 60 90 cm		-																		es.	MH	R 4	051	4	60	90	cuit
											Label	two "Sun	and tw	o "Mor	". War	m the i	remaini	ng bottles for a	use on						59		Cuif
MHR 4058 60 88 Ku			1.754	2.1.222165.524786.75								ing und O			contains	en linn	, sach t	m out, out of	(stury,	_	MH	RH			60	88	Civif
① Aeration rate is 500-mLs/min (EPA-821-R-02-012, Section 9.1.8, page 41).         ② If sample is to be dechlorintaed then use 1-mL Effluent Dechlorintator (8-g/L NaThio) per 1-L Effluent Sample per 1-ppm TRC (EPA-821-R-02-012, Section 9.1.6, pg 41)						28 J. (1)	XI2TA	dia and	11.00		1000		ci armi	001 5		0					Mith	e i	105	9	59	90	cuit



Task Title	UV Treat	ment ① of Samp	les	Task Page	of
Initials Date Sample I	D	Sample Cla	arity @ / UV dura	ation (minutes)	17
RS 11/29/11/10222	$A \square Clear / 2$	🗆 Cloudy / 3.5	🗐 Opaque / 5	🗆 Particles / 5	Gother (Note®
RS 12/1 K0722	5 🗆 Clear / 2	Cloudy / 3.5	Opaque / 5	🗆 Particles / 5	C Other (Note
RS12/3 16272 C	$\square$ Clear/2	Cloudy / 3.5	🗆 Opaque / 5	🗆 Particles / 5	⊡-Other (Note®
Star Street		Notes & Com	ments		A starting the

Dilu Ser		Volume of Dilution 1200 -mLs Volume of Effluent	(200 mLs) Total volu	Only s/dilution) me of neat or # days 3 days		(1,000 ml Total volu	Only .s/dilution) time of neat for # days 3 days		(1,200 ml Total volu	& FM .s/dilution) me of neat for # days 3 days
0	%	0	775 Es	1,163 분	0	3,875	5,813 🛃	0	4.650 문	6,975 를
6.25	%	75	1 bottles	1 bottles	R	3 bottle	4 bottla	R	3 bottle	4 bonies
12.5	%	150	2.4.7.7.P	DMs d sample		1 A A A A A A A A A A A A A A A A A A A	oottled d sample			oottled d sample
25	%	300	2 DMs	3 DMs		4 bottles	6 bottles	1	4 bottles	6 bottles
50	%	600	marked at	marked at		marked at	marked at		marked at	marked at
100	%	1200	388 🚊	388 🗒		969 를	969 🚊		1.163 🚊	1.163 🚊
		2325	container vol (max)	400 <u>≡</u>		container vol (max)	1,800 🗒		container vol (max)	1.800 🚆

- 1) Mark up containers for the UV treated samples.
- 2) Treat 1.2-L at a time.
- 3) Pour effluent sample into sterilizer.
- 4) Close Valves\* and PLUG IN STERILZER \* do not operate sterilzer without water in the chamber
- 5) Set timer.
- 6) Gently rock the chamber for the appropriate treatment time.
- 7) UNPLUG sterilzer.
- 8) Open valves and pour treated sample into marked container.
- 9) Clean the inside of the sterilzer by partially filling with a solution of Liquinox (~5-drops per liter), shaking vigorously, dumping, rinsing with copious amounts of warm tap water, rinsing with deionized water, then filling with deionized water and treating with UV for 2-minutes. Empty and store with valves closed.

① using a Smart UV Lite Sterilizer, Emperor Aquatics, Model Number 02240/40, 40-Watt, which emitts UV light between 250 and 280 nm.

② Definitions based on sample in a half gallon bottle as viewed through the opening. Clear: bottom can be seen. Cloudy: bottom can be seen but is hazy. Opaque: bottom can not be seen. Particles: obvious settled material on bottom.

Labor Hours to perform tasks on this page:

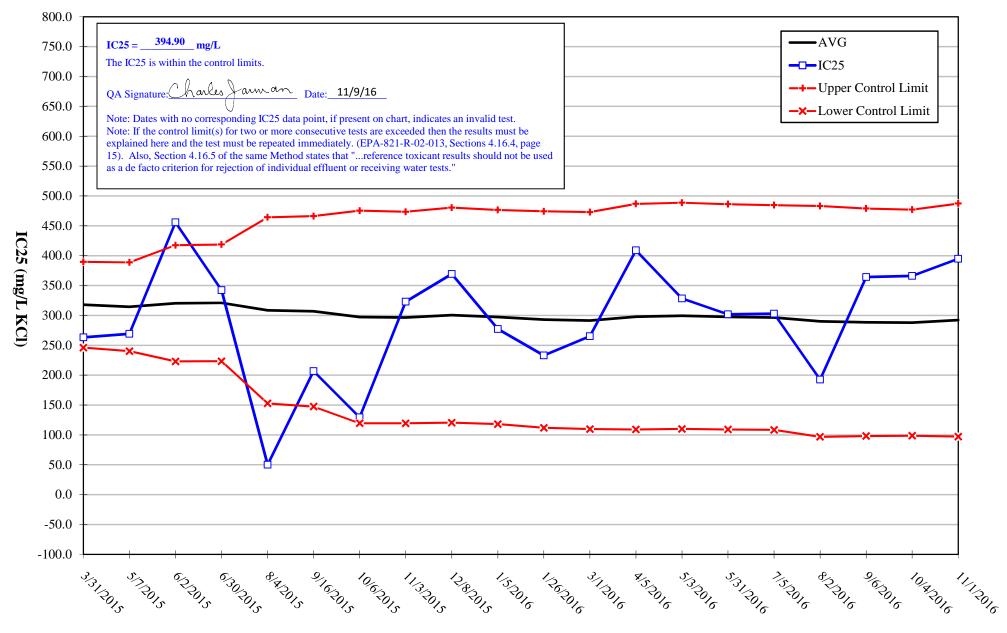
Lab Notes Page

of

Appendix C. Reference Toxicant Data



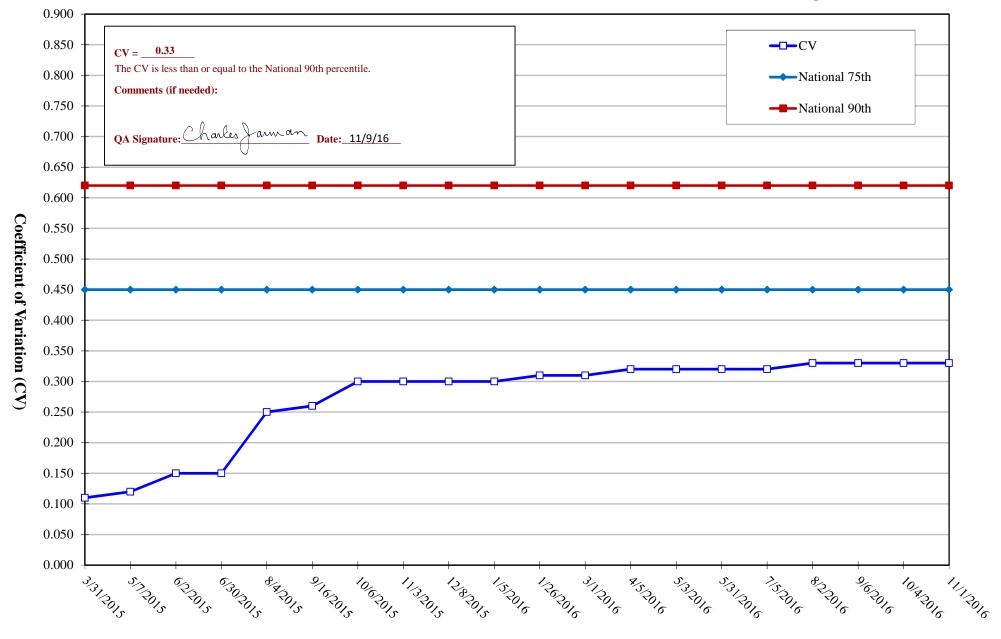
## Control Chart - I Control Limits for Standard Reference Toxicant Tests CHRONIC --- Ceriodaphnia dubia



Test Dates



# **Control Chart-II** Coefficient of Variation for Standard Reference Toxicant Tests CHRONIC --- Ceriodaphnia dubia



Test Dates

				RE	FERENCE	TOXICAN	Г LOG• <mark>Las</mark>	t 20				
	Test:	7-day Chro	nic									<b>B</b>
	Species:	Ceriodaphn	ia dubia								6.22	10
			hloride ( <b>mg</b> )	KC1 / liter)							1930	1.2
N	DATE	IC25	AVG	S.D.	2S.D.	+2 SD	-2 SD	CV	National 75th %	National 90th %	Lower Control Limit	Upper Control Limit
129	3/31/2015	263.20	317.93	35.88	71.76	389.69	246.17	0.11	0.45	0.62	246.17	389.69
130	5/7/2015	269.20	314.49	37.13	74.25	388.74	240.23	0.12	0.45	0.62	240.23	388.74
131	6/2/2015	455.80	320.34	48.60	97.21	417.55	223.13	0.15	0.45	0.62	223.13	417.55
132	6/30/2015	342.30	321.06	48.83	97.66	418.71	223.40	0.15	0.45	0.62	223.40	418.71
133	8/4/2015	50.05	308.51	77.86	155.73	464.24	152.79	0.25	0.45	0.62	152.79	464.24
134	9/16/2015	206.80	306.85	79.73	159.46	466.32	147.39	0.26	0.45	0.62	147.39	466.32
135	10/6/2015	129.50	297.43	88.95	177.91	475.34	119.52	0.30	0.45	0.62	119.52	475.34
136	11/3/2015	323.00	296.44	88.53	177.06	473.51	119.38	0.30	0.45	0.62	119.38	473.51
137	12/8/2015	369.40	300.44	89.99	179.99	480.42	120.45	0.30	0.45	0.62	120.45	480.42
138	1/5/2016	277.30	297.30	89.63	179.26	476.56	118.04	0.30	0.45	0.62	118.04	476.56
139	1/26/2016	233.00	293.11	90.62	181.25	474.36	111.86	0.31	0.45	0.62	111.86	474.36
140	3/1/2016	265.30	291.35	90.81	181.63	472.98	109.72	0.31	0.45	0.62	109.72	472.98
141	4/5/2016	409.00	297.95	94.44	188.88	486.83	109.06	0.32	0.45	0.62	109.06	486.83
142	5/3/2016	328.40	299.39	94.69	189.37	488.76	110.01	0.32	0.45	0.62	110.01	488.76
143	5/31/2016	302.00	297.63	94.27	188.55	486.17	109.08	0.32	0.45	0.62	109.08	486.17
144	7/5/2016	303.00	296.53	94.07	188.13	484.66	108.40	0.32	0.45	0.62	108.40	484.66
145	8/2/2016	192.60	289.97	96.61	193.21	483.18	96.76	0.33	0.45	0.62	96.76	483.18
146	9/6/2016	364.30	288.57	95.23	190.46	479.03	98.10	0.33	0.45	0.62	98.10	479.03
147	10/4/2016	366.30	287.90	94.60	189.21	477.10	98.69	0.33	0.45	0.62	98.69	477.10
148	11/1/2016	394.90	292.27	97.53	195.06	487.33	97.21	0.33	0.45	0.62	97.21	487.33

Chronic Freshwater Method (EPA-	-821-R-02-013,	Method	1002.0)
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Hydrosphere r e s e a r c h	Chronic F	reshwater Method (EPA-821-R-02-013, Method 1002.0) SRT: Survival & Reproduction
SRT for the Mouth of (circle one):	Note: Valid Control is ≥80% survival @ 7d and	Initiation Date: 11/1/16 Termination Date: 1.8.16
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	≥surve survival (g) /d and ≥15-neonates average /surviving female)	Toxicant (desiccated): KCl
Species: Ceriodaphnia dubia Code: CD	30-mL Plastic Cup	Stock Solution (Concentration): 100-gm KCl / Liter
ID#: 8317 Age: <24.h	20-mLs per replicate	Test Concentration (Units): mg KCl / Liter
R         Live Counts         (Adults), Number of Neonates)         1st -3rd           Control         E         W         R         F         F         D         J         Drood	Ist         R         Live Counts         Ist 3rd           dilution         E         broad         broad	2nd dilution     R     Live Counts     Int3re       5     brood
P 1 2 3 4 5 6 7 total	P 1 2 3 4 5 6 7 total	P 1 2 3 4 5 6 7 total
10000000000000000000000000000000000000	. 0 0 0 0 0 0 10 0 14 29 0 0 0 0 0 0 10 0 18 35	× C C C & G 10 C 014 30 × C C C & 5 0 12 0 0 18 35
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\frac{2}{15} = \frac{2}{10} \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$
D & & & & F Ø 10 Ø Ø 19 36	000000000000000000000000000000000000000	D O O O O5 010 0 18 33
e & Ø Ø & # Ø j1 Ø 19 Ø 34	* Ø Ø Ø \$5 Ø 10 Ø 17, Ø, 1 33	€ Ø Ø Ø ● Ø 7 Ø 11 Ø 13 31 , Ø Ø Ø ⊕ 6 Ø 9, Ø 2 Ø 17 34
C S C C & & G C M C C 19 36 C S C C & & G C M C C 19 37		
Control Control $\mathbf{u} \otimes \mathbf{v} $	$\begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 $	Toxicant Decrement
2 1 0 0 0 0 0 1 0 15 0 30		
10000000000000	JOOO \$50100,1 020 36	, OOV \$6010 W13 0 29
Live Count: 10 10 10 10 10 10 326	Live Count: 10 10 10 10 10 10 338	Live Counting 10 10 10 10 10 313
ard R Live Counts Ist Jac	4th g Live Counts in Jrd	Sth         R         Live Counts         Ist -3rd           The counts         F         Brood         Brood
dilution	dilution         E         brood           P         1         2         3         4         5         6         7         total	dilation P 1 2 3 4 5 6 7 total
10,0° \$5080 0 Hg 30	1000 00 00 010 32	1000 0 05011 0 10 26
B & & & & & & & & & & & & & & & & & & &	8 8 8 9 8 4 8 13 8 9 18 37	5 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
$\frac{12}{125} = \frac{12}{10} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \circ$	$\begin{array}{c} \begin{array}{c} & \\ \\ \\ \\ \\ \\ \end{array} \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ $	5 5 5 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7
$\begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 $	BOOG \$5012016,0,1 34	
000 \$5 C10 0 15	ROOC \$50100 019 34	, O O O \$508 0 013 26
	T 6 0 0 0 0 0 5 010 0 0 18 33	J C C C C C C C C C 14 25
Toxicant $G O O O O O O O O O O O O O O O O O O $	Toxicant $C$ $C$ $C$ $C$ $C$ $C$ $C$ $C$ $C$ $C$	Toxicant
a day as de die d sh	$ \begin{bmatrix} 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$	10000000000000000000000000000000000000
Live Count: 10 10 10 10 10 298	Live count: 10 10 10 10 10 10 10 324	Live Count: 9 9 9 9 9 8 8 204
0 1 2 3 4 5 6 7 Day	Notes & Comments	🗩
The KOKORS FR KO KO EH Initials	Ocorrection KO147-12	Normal Adult near neonate releave with developing brood Template #
15: 20 1505 1545 14:10 14:20 11:55 12:30 12:45 Time	2) IT EH 1/8	w/ newly deposited brood w/ embryos in oviducts with Small Brood 3
		D Abnormal Adult; Abnormal Adult;
181 181 181 181 181 181 181 181 181	(3) O EH IVB	reproductivley inactive Dead

09 Nov-16 15:23 (p 1 of 1) VNOV16CDC | 05-3000-3649

Test Code: Hydrosphere Research Ceriodaphnia 7-d Survival and Reproduction Test V **CETIS Version:** CETISv1.9.2 Reproduction V 18-1001-1673 Endpoint: Analysis ID: 09 Nov-16 15:23 Analysis: Linear Interpolation (ICPIN) **Official Results:** Yes r Test Type: Reproduction-Survival (7d) Analyst: 11-1451-4705 Mod-Hard Synthetic Water EPA/821/R-02-013 (2002) Diluent: 01 Nov-16 15:30 V Protocol:

**Report Date:** 

Start Date:	01 Nov-16 15:30 V	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Mod-Hard Synthetic Water
Ending Date:	08 Nov-16 12:45 🗸	Species:	Ceriodaphnia dubia 🗸	Brine:	
Duration:	6d 21h	Source:	In-House Culture	Age:	
Sample ID:	05-6273-5793	Code:	NOV16CDC	Client:	Internal Lab
Sample Date:	01 Nov-16 🗸	Material:	Potassium chloride	Project:	Standard Reference Toxicant Test
Receipt Date:	01 Nov-16	Source:	Reference Toxicant		
Sample Age:	16h	Station:			

### Linear Interpolation Options

**CETIS Analytical Report** 

X/Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
√Linear	Linear	2035753	200	Yes	Two-Point Interpolation

#### Point Estimates

Analyzed:

Batch ID:

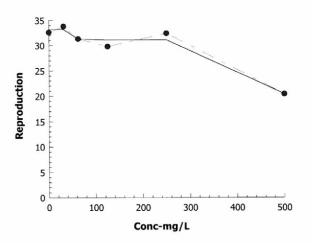
Level	mg/L	95% LCL
IC25	394.9	326.8

Reproduction S	Summary				C	Calculated Va	riate		
Conc-mg/L	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	10	32.6	23	37	1.4	4.427	13.58%	0.0%
31.25		10	33.8	29	37	0.8273	2.616	7.74%	-3.68%
62.5		10	31.3	22	36	1.3	4.111	13.13%	3.99%
125		10	29.8	15	37	2.149	6.795	22.80%	8.59%
250		10	32.4	25	37	1.056	3.34	10.31%	0.61%
500		10	20.4	0	27	2.782	8.796	43.12%	37.42%

#### **Reproduction Detail**

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	32	32	37	36	34	36	37	23	30	29
31.25		29	35	32	34	33	37	34	37	31	36
62.5		30	35	36	33	31	34	34	29	22	29
125		30	34	36	33	34	15	37	23	30	26
250		32	37	29	35	34	34	33	25	32	33
500		26	26	16	27	0	26	25	12	26	20

### Graphics



95% UCL 495.1

Analyst: CW J QA: 11/9/16



Chronic Freshwater Method (EPA-821-R-02-013, Method 1002.0)

SRT: Water Quality I



		SRT for	the M	onth a	of (circ	le one	):										Initiatio	n Date	<u>ر</u> ا	1.	116		]	T	ermin	ation	Date:		.8.	16	
			Jan		Mar			Jun	Jul A	ug S	Sep (	Oct (	ioy I	Dec						Tox	icant (	desico	ated):				K	Cl			
		Species	·L	Cer	riodaph													St	ock Sc	olutio	a (Co	icentr	ation)	:			0.000	n KCl			
				ID #:		317	7												Tes	t Con	centra	tion (	Units)	:			mg K	C1/1	L		
hills of Stock /	mg/L		1					p range for	a valid tes	CONTRACTOR OF THE OWNER OWNER OF THE OWNER											(acc	eptable m	inimum fo	or a valid	en (n test is ≥4	0-mg/L)					
200-raLs		new 0	old	new 1	old 2		old 3	new 3	old 4	new	old	new 5	old	new 6	old 7	╏┢	new 0	old	new 1	old	пен 2	old	new 3	blo	new 4	blo	new 5	old	new 6		ld 7
Control	0	7.8	7.6	ר.ר	7.6	7.7	8.0	7.6	7 <del>5.</del>	80	7.8	7.8	7.7	7.8	7.8		8,2	7.4	8.1	1.7	8.3	37.2	8,7	28.	7.7	7.6	,8.4	17.1	8.1	7.5	
62.5-μL	31.25	7.8	36	7.8	7.6	7.7	8.1	7.7	79	80	7.8	7.8	<del>7</del> 9	7.8	7.8		8,3	7.5	8.2	7.7	8.4	17.2	8.3	8.1	7.8	7.7	8.4	<b>A</b> .3	e. 2	2.82	
125-μL	62.5	7.9	7.7	7.8	7.7	ר.ך	81	7.7	ŦĄ	B.0	7.9	7.8	7.9	7.9	7.8		8.3	7.5	8.2	.7.7	8.4	7.2	8.3	8.1	7.8	379	8.4	7.3	8.2	7.6	
250-μL	125	7.9	7.7	7.8	7.7	7.7	81	7.7	7.9	3.0	7.9	7.9	-19	7.9	7.Ê		8,3	7.5	8.2	7.7	8.4	7.1	8.3	8.0	7.7	7.8	8	7.3	8.2	7,5	
0.5-mL	2 *9	7,9	\$ ג	7.9	7.8	7.8	8.1	7.8	80	8.0	7.9	7.9	8.0	7.9	7.8		8.3	7.4	8.2	7.8	8.4	7.1	8.4	80	7.8	7.7	8.5	7.3	8. z	7.7	
1-mL	500	7.9	9.8	7.9	7.8	7.9	8.1	7.8	8.0	3.1	9,0	7.9	8,0	80	7.8		8.3	75	8.3	7.7	8.4	7.1	8.3	79	7,8	78	8.5	7.3	8.2	7.7	
	Meter ID:	16	12	14	12	16	11	16	14	11 [	12	16	11	16	10		٦	0	]7	10	7	13	7	7	]13	10	]7	13	]7	7	]
	Day:	0		(	2		3		4		5			6	7							No	tes &	Comn	nents						
Stock Solu	tion ID (SLN):	16306	163	304	163	06	1630	ole				- S. S. S. S. S. S. S. S. S. S. S. S. S.				4	D 40	46	Ch	fe	11	9									
	Dilution ID:		404		404		404			46		0.0								'											
	Initials:	EH	KO	EH	KU	EH [	RS	EH	1Pm	RS	$\bigcirc$	EH	KO	EH	EH																

Time:

1210

1520 1020 1550 1040 1350 1110 1420 1110 1200 1000 1245 1050 1300

Ø	Hydro	arch SRT for the Month of (circle one): Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Species: Ceriodaphnia dubia ID #: 8317 Conductivity (µmho/cm) (a Conductivity of 2,150-µmho/cm = a Salinty of 1%-(a) 25°C) Measured in each new sample and control	Chronic						
		SRT for		gen de lagables r		Jul Aug	Sep Oct (	Vov Dec	
		Species:		831					
mLs of Stock / 200-mLs	mg/L	0	1	(a Conductiv Measu	vity of 2,150-µmho ired in each no	/cm = a Salinity of	1‰ @ 25°C) control	6	7
Control	0	289	290	288	295	286	295	295	
62.5-μL	31.25	354	352	354	355	342	348	351	
125-µL	62.5	592	425	426	427	415	424	421	
2501	125	571	522	527	120	500	FAG		

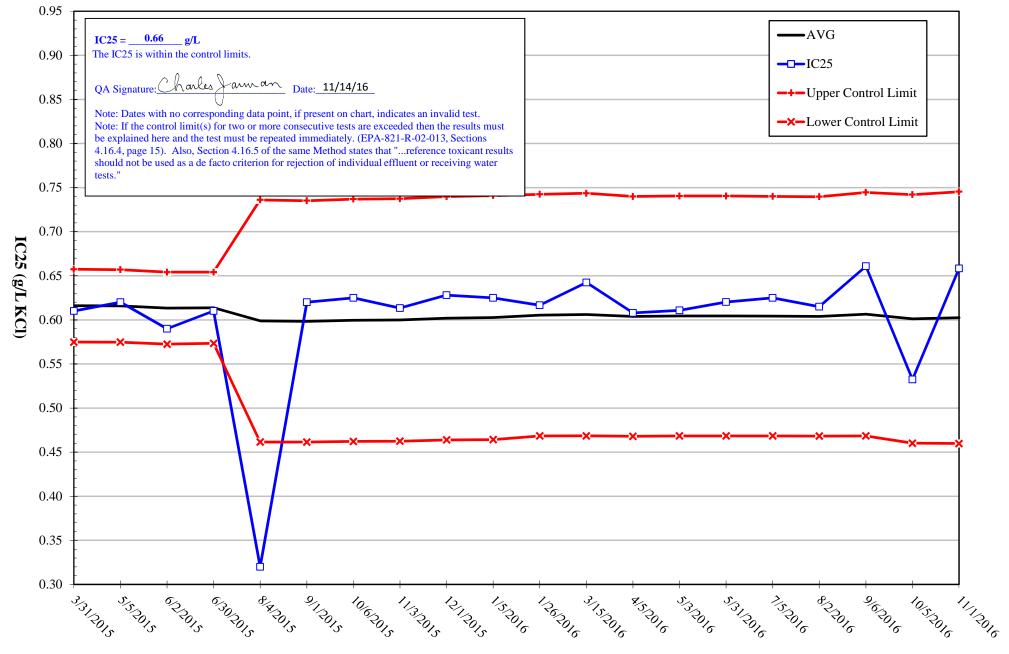
Initiation Date: 11/1/16	Termination Date:
Toxicant (desiccated):	KCl
Stock Solution (Concentration):	100-gm KCl / L
Test Concentration (Units):	mg KCl / L

			10 #									Concentration					
mLs of Stock /	mg/L			(a Conduction	vity of 2,150-µmhc	y (µmho) o/cm = a Salinity of ew sample and	1‰ @ 25°C)					(aı	Tempera coeptable range for at the end of e	a valid test is 25±	I°C)		
200-mLs		0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
Control	0	289	290	288	295	286	295	295			25.1	25.1	24.4	25.1	24.4	24.4	25.0
62.5-μL	31.25	354	352	354	355	342	348	351	]		25.1	25.1	24.4	25,1	24.6	24.4	25.0
125-μL	62.5	592	425	426	427	415	424	421			25.1	25.1	24.4	250	24.4	24.4	25,0
250-μL	125	536	532	537	538	520	528	537			25.1	25.1	24.4	25,1	24.6	24.4	250
0.5-mL	250	744	746	749	756	729	731	742			25.1	Z5, I	24.4	25,0	24.6	24.4	24.9
1-mL	500	1188	1192	1183	1197	1154	1178	1126			25.1	25.)	24.4	25.1	24.6	24. H	24.9
	Meter ID:	17	17	17	17	15	17	17	]		57	57	57	57	57	57	57
	Day:	0	1	2	3	4	5	6	7				Notes & (	Comments			
Stock Solu	tion ID (SLN):	16306	14306	16306	16306	16306	16306	16304		1 4	046 cu	111 40	9				
	Dilution ID:	4041	4041	4041	4041	T		14044				0,					
	Initials:	EH	EH	EH	EH	RS	EH	EH	EH	ā.							
	Time:	12:14	10:20	10:40	11:15	11:10	09:55	10:45	12:50								

ic Freshwater Method (EPA-821-R-02-013, Method 1002.0)



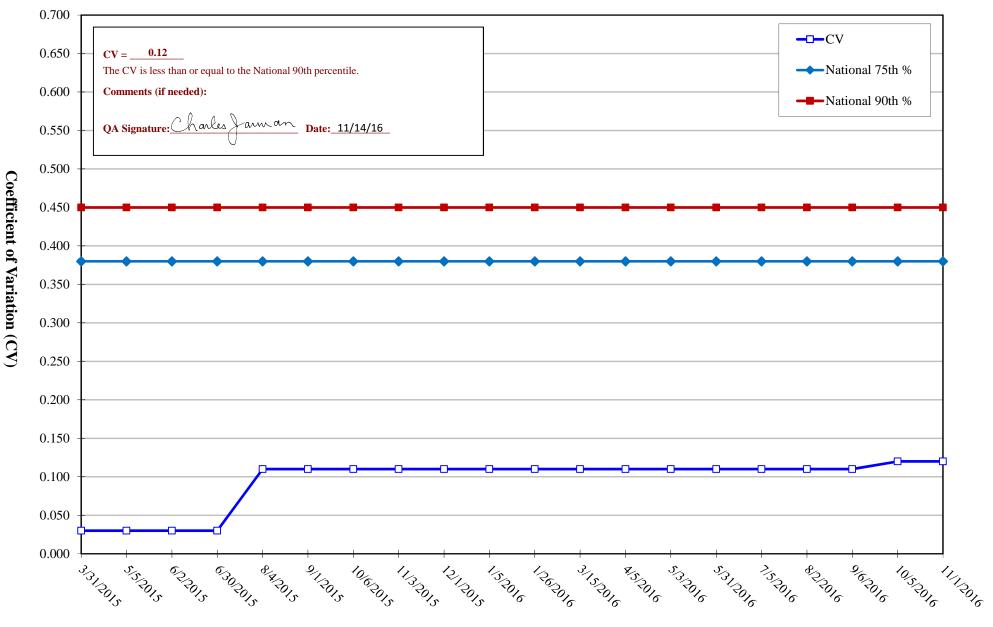
# Control Chart-I Control Limits for Standard Reference Toxicant Tests CHRONIC --- Pimephales promelas



Test Dates



# **Control Chart-II** Coefficient of Variation for Standard Reference Toxicant Tests CHRONIC --- Pimephales promelas

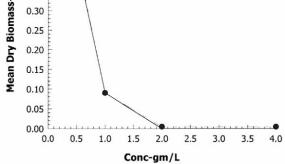


Test Dates

				RE	FERENCE	TOXICAN	ſ LOG∙ <mark>Las</mark>	t 20				
	Test: '	7-day Chro	onic									
	Species:	Pimephales	promelas								9 E	Second St.
	-	-	-	VC1 / liter)								and the second
	Toxicant:	Potassium c	hloride ( <b>gm</b>	KCI / mer)								
Ν	DATE	IC25	AVG	S.D.	2S.D.	- 2S.D.	+2S.D.	CV	National 75th %	National 90th %	Lower Control Limit	Upper Control Limit
141	3/31/2015	0.61	0.62	0.02	0.04	0.57	0.66	0.03	0.38	0.45	0.57	0.66
142	5/5/2015	0.62	0.62	0.02	0.04	0.57	0.66	0.03	0.38	0.45	0.57	0.66
143	6/2/2015	0.59	0.61	0.02	0.04	0.57	0.65	0.03	0.38	0.45	0.57	0.65
144	6/30/2015	0.61	0.61	0.02	0.04	0.57	0.65	0.03	0.38	0.45	0.57	0.65
145	8/4/2015	0.32	0.60	0.07	0.14	0.46	0.74	0.11	0.38	0.45	0.46	0.74
146	9/1/2015	0.62	0.60	0.07	0.14	0.46	0.74	0.11	0.38	0.45	0.46	0.74
147	10/6/2015	0.63	0.60	0.07	0.14	0.46	0.74	0.11	0.38	0.45	0.46	0.74
148	11/3/2015	0.61	0.60	0.07	0.14	0.46	0.74	0.11	0.38	0.45	0.46	0.74
149	12/1/2015	0.63	0.60	0.07	0.14	0.46	0.74	0.11	0.38	0.45	0.46	0.74
150	1/5/2016	0.63	0.60	0.07	0.14	0.46	0.74	0.11	0.38	0.45	0.46	0.74
151	1/26/2016	0.62	0.61	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
152	3/15/2016	0.64	0.61	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
153	4/5/2016	0.61	0.60	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
154	5/3/2016	0.61	0.60	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
155	5/31/2016	0.62	0.60	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
156	7/5/2016	0.63	0.60	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
157	8/2/2016	0.62	0.60	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
158	9/6/2016	0.66	0.61	0.07	0.14	0.47	0.74	0.11	0.38	0.45	0.47	0.74
159	10/5/2016	0.53	0.60	0.07	0.14	0.46	0.74	0.12	0.38	0.45	0.46	0.74
160	11/1/2016	0.66	0.60	0.07	0.14	0.46	0.75	0.12	0.38	0.45	0.46	0.75

Ì	Hydros rese	s <b>phe</b> a r	e <b>re</b> ch									Chron	ic Freshwate	r Meth	od (EPA			<b>3, Method</b> Survival & O	1500		×
SRT for the M	onth of (circ	cle one)	);			di se		Co	ntrol Water	MHF	2		Initiation Dat	he:	$\Pi \cdot \Gamma$	16	1858	Fermination Da	111	.8.16	,
Jan Fe	eb Mar Ap	or Ma	y Jun Jul	Aug Sep	Oct Nov	Dec			1D #	see "water o	quality"		Tox	ricant (des	iccated):			KCl			
Species:	Pime	phales	promelas	Code	F	Ъ			Test Vessel	1-L plasti	c cup		Stock Solutio	n (Concer	tration):		100-į	gm KCl / Liter	•	]	
ID #:	8316	] <sub>Ag</sub>	e: <24-ho		itment of Egg No, Y	s/Larvae ① es, Note		1	fest Volume	250-mL /	rep.		Test Con	centratio	ı (Units):		gm	KCl / Liter			
	g/L	R E P	t	ΙΨ	Live	Counts (Valid F 3	Control is≥80% s	urvival @ ?d)	M		Pan #	Growth (original Tare Weight (0.00001-gms		Net '	rol is ≥0.25-mg Weight 01-gms)	/sarviving fish) Wt. / F (0.001-n	ish		Notes & (	Comments	
Control	0	A B C D	10 10 10 10	0000	10 10 10	10 10 10	10 91 10 9	10 9 9	10 9 9 8	100007	25 26 27 28	1.1469 1.14641 1.16078	1.15149 1.15079 1.16520	0.00 0.00 0.00	)454 )430 )442 )326	0.4	12	D q' 2 q'		11/03 11/03	
	0.25	A B C D	10 10 10 10	10 10 10	10 10 10 10	10 10 10 9	10 10 10 9	10 10 10 9	10 10 10 9	10 10 8 <sup>2</sup> 9	29 30 31 32	15712 13580 14480	1.1558	50.0 10.0 20.0 0.0	2473 2481 0336 2448	0.4	73 81 36			2	
	0.5	A B C D	10 10 10 . 10	10	10 10 10	9' 10 10	9 10 10 10	9 10 10	9 10 10 10	9 10 10	33 34 35 36	1.14892 1.1476 1.15780	1.1531 1.1522 1.1522	10.0 70.0 20.0	0426 0465 0422 0431	0.42	05				
	1	A B C D	10 10 10 10	64 91 73 64	3 <sup>3</sup> 8' 1 <sup>6</sup> 1 <sup>5</sup>	2' $6^2$ 1	2 4 <sup>2</sup> 0'	24	2 4	2 4 8'	37 38 39	1.1382=	1.1396			0.13	4				
	2	A B C D	10 10 10 10	0 10 0 10 0 10																	
	4	A B C	10 10 10 10	Q1° Q1°														<u> </u>			
	In	nitials:	KO	KO	EH	EH	RS	KO	EH	KO	D	ate Tare Weights	11/1/16		Initials:	CG				th certain chemic methylene blue	
	MI S. S.	Time:	17:00	15:00		15:30	13:65			10:50	Date F	inal Dry Weights			Initials:	16		Fungus Elimi	nator (FE) an	re used to contro	
Randomization	Feeding	Туре:				drage (Part Part of	temia	CALCE OF					That Hurses	Weigh Pan	and Dry We	eight Determ	unation In	aformation			
Template #	An Artemiz	nount:	106117	20.0280	rops (0.15-	mLs) of a c		slurry / 2x	144 441 44		Final	Oven IDs			Time IN:	11/8.1	1):05		8.0	Initials:	KO
	Morning ( Evening (	time):	10041	16047 09:30	09:30	09:30			09:30	(·CHM)		otal Drying Time	24:02	Drying T		peratures fo C or ≥6-hou		Veights:	<u>i8.6</u>	Initials:	57

CETIS Analy	tical Repo	ort						Report Date: est Code:		14 Nov-16 10:32 (p NOV16FMC   07-631	
Fathead Minno	w 7-d Larval S	urvival	and Growt	h Test						Hydrosphere Res	
	00-6972-4371 14 Nov-16 10:3	32	Endpoint: Analysis:	Mean Dry Bior Linear Interpo		N) V		ETIS Versio		CETISv1.9.2 Yes	
Batch ID: 0	1-0984-3654		Test Type:	Growth-Surviv	al (7d)			nalyst:			
	1 Nov-16 17:00	V	Protocol:	EPA/821/R-02		/			Aod-Ha	ard Synthetic Water	
Ending Date: 0			Species:	Pimephales p			E	Brine:			
-	d 18h		Source:	In-House Cult	ure		1	ge:			
Sample ID: 0	0-6761-2887	/	Code:	NOV16FMC	V		(	lient: I	nterna	l Lab	
Sample Date: 0	1 Nov-16		Material:	Potassium chl			F	Project: S	Standa	rd Reference Toxicant To	est
Receipt Date: 0	1 Nov-16		Source:	Reference To:	xicant						
Sample Age: 1	7h		Station:								
Linear Interpola	ation Options										
X/Transform	Y Transform	n	Seed	Resamples	Exp 95%	6 CL N	lethod				
Linear	Linear		908261	200	Yes	Т	wo-Point In	terpolation			
Point Estimates	3										
Level gm/L	95% LCL	95%	UCL								
IC25 0.6584	0.5813	0.744	4						di 5		M.
Mean Dry Biom	ass-mg Sumn	nary			Ca	alculated	Variate				
Conc-gm/L	Code	Cour	nt Mean	Min	Max	Std E	rr Std D	ev CV%	%	6Effect	
0	D	4	0.413	0.326	0.454	0.0294	41 0.058	82 14.24%	6 0	0.0%	
0.25		4	0.434	5 0.336	0.481	0.0335	58 0.067			5.21%	
0.5		4	0.436		0.465	0.0098				5.57%	
1		4	0.090		0.227	0.0554		9 122.90		8.15%	
2 4		4 4	0	0	0	0 0	0 0			00.0% 00.0%	
		100	0	0	0	0	0			00.070	
Mean Dry Biom					_						
Conc-gm/L	D Code	Rep		Rep 3	Rep 4 0.326	<u> </u>				- 0.1%	
-	D	0.454			0.326	r					
0.25 0.5		0.473		0.336 0.422	0.448 V	/					
0.5 1		0.426			0.431 *						
2		0.134	0.227	0	0						
4		0	0	0	õ						
Graphics											
0.45 p	a - 0										
0.40											
<b>5</b> 0.35 <b>5</b> 0.30											
- 0.00											



Analyst: \_\_\_\_\_QA:\_\_\_11/14/16



Chronic Freshwater Method (EPA-821-R-02-013, Method 1000.0)

SRT: Water Quality I

		SRT for the Month of (circle one):	Initiation Date: 1. 6 Termination Date: 1.8.16											
		Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec	Toxicant (desiccated): KCl											
		Species: Pimephales promelas	Stock Solution (Concentration): 100-gm KCl / L											
		ID#: \$3\6	Test Concentration (Units): gm KCl / L											
mLs of Stock /	g/L	pH (acceptable range for a valid test is 6 to 9)	Dissolved Oxygen (mg/L) (acceptable minimum for a valid test is 4.0-mg/L)											
Liter	6.5	new         old         new <th>new         old         new         old         new</th>	new         old         new											
Control	0	7.9 7.57.87.67.87.57.87.787.780 7.57.87.77.87.4	8.4 7.3 8.3 7.4 8.5 7.3 8.4 6.7 7.9 7.2 8.6 7.2 8.5 7.5											
2.5-mls	0.25	8.0 7.67.9 7.6 7.8 7.67.9 7.78.1 7.6 80 7.7 7.9 7.7	8.5 7.4 8.4 7.5 8.5 7.28.4 6.6 7.9 7.28.6 7.2 8.5 7.4											
5-mls	0.5	8.0 7.17.9 7.7 7.9 7.7 7.9 7.7 8.1 7.7 8.0 7.8 7.9 7.7	8.5 7.5 8.4 7.5 8.5 7.3 8.4 6.6 7.9 7.1 8.6 7.2 8.5 7.4											
10-mls	1	8.1 78 8.0 7.8 7.9 7.7 8.0 7.8 8.2 7.8 8.0 7.8 8.0 7.8	8.5 7.5 8.4 7.6 8.5 7.4 8.5 6.8 80 7.2 8.6 7.4 8.5 7.5											
20-mls	2	8.1 7.98.0	8.5 7.5 8.4											
40-mls	4	8.1 8.0 8.1	8.5 7.6 8.4											
	Meter ID:	10 12 16 16 16 16 11 11 12 16 14 16 16	T T T T T T T T T T T T T T T T T T T											
	Day:	0 1 2 3 4 5 6 7	Notes & Comments											
Stock Solut	tion ID (SLN):	16306 16306 16306 16306 16306 16306 16306												
	Dilution ID:	4043 4043 4043 4043 4045 4045 4045												
	Initials:	EH KOEH EH EH EH EH RSRS KOEH EH EH												
0.01016-1	Time:	1135 1430 1040 1340 1000 1510 1010 1300 1045 1320 925 1230 1015 10:35												

Ì	F	ly	d	ro	sp	h	er	e	
Q	r	é	s	е	ά	r	С	h	

Chronic Freshwater Method (EPA-821-R-02-013, Method 1000.0)

SRT: Water Quality II

		SRT for	the Month (	of (circle one	e):				itiation I	Date:	1.1.1	16	Termina	ation Date:	11.8.	16				
			Jan Feb	Mar Apr	May Jun	Jul Aug	Sep Oct 1	Nov Dec					Toxicant (c	desiccated):	KCI					
		Species:	Pim	nephales prom		1						Stock Sol	ution (Con	centration):	100-gm KCl / L					
			ID #:	[83]	6							Test	Concentral	tion (Units):		gm KCl / L				
mLs of Stock /	g/L			(a Conductiv	nductivit	o/cm = a Salinity of	1‰ @ 25°C)		Temperature (°C)           (acceptable range for a valid test is 25±1°C)           Measured at the end of each 24-h exposure period											
Liter		0	1	2	3	4	5	6	7		0	1	Nieasured 2	at the end of e	4	5	6	7		
Control	0	289	286	289	290	286	295	292				24.8	25-1	25.0	25.1	24.6	24.6	24.8		
2.5-mls	0.25	718	745	744	730	715	736	743				24.8	25.1	25.0	25.1	24.6	24.6	24.8		
5-mls	0.5	1140	1155	1158	1166	1131	1169	1157				24-8	25.1	25.0	25.1	24.4	24.4	24.8		
10-mls	1	1980	1999	1987	1998	1946	2160	1964				24.8	25.1	25.0	25.1	24.6	24.6	24.8		
20-mls	2	3840	3830	$\backslash$	$\sum$							24.8								
40-mls	4	6940	7080									24.8	$\overline{\ }$				$\overline{\mathbf{N}}$			
	Meter ID:	17	17	17	17	15	17	17			Ī	57	57	57	57	57	57	57		
	Day:	0	1	2	3	4	5	6	.7					Notes & (	Comments					
Stock Solut	ttion ID (SLN):	16306	16304	16306	16306	16306	16306	16306					and a second second					-		
	Dilution ID:	4043	4043	4043	4043	4045	4045	4045												
	Initials:	EH	EH	EH	EH	RS	EH	EH	EH											
	Time:	11:30	10:45	10:00	10:15	10:45	09 :25	10:10	10:30											

**Appendix D. Invalid Test** 

Ì	Hydro rese	sphe a r	e <b>re</b> c h									Chro	nic Freshwat	er Method (E	PA-821-	-R-02-		thod 10 al & Gro		
Client:	Tar	npa Ele	ectric Comp	any - Polk	Power Stat	ion	11 N						Initiation Date:	11.29	16		Terminati	on Date:		
し、新たい	Code	•	TMP-PO	Job #:	16	222			二首 日				Sample Descript		10 T.					
Species:	Pim	S	prometas	Code:	1	M			Test Vessel:	1-L plasti			UV treated (see Laboratory ?	effluent Notes: Task Titled*	UV Treatm	nent of S	(amples*)			
	ID #	•L_{	3339	Age:	< 24	-hours			Fest Volume:	250-mL /	rep									
Sample Description	% Effluent	R E P	T	W	Live R 2	Counts (Valid o	Control is 280% star Suc A	Su	M	T	1 10 10 10 10 10 10 10 10 10 10 10 10 10	Tare Weight (0.00001-gms)	Total Weight (0.00001-gms)	Velal Control is 2025ong Net Weight (0.00001-gms)	weining fish) Wt. / 1 (0.001-	CANE .	Li.	CHIVIN		
Control	0	A B C D	10 10 10 10	10 10 10	10 10 10 9'	9' 10 10 9	9	9 00	10 10 9	980 73 73 73 780		14902 14339 15447 14912					- >	Frit 3 Pa		
	6.25	A B C D	10 10 10 10	10 10 10	10 9' 10 10	10 9 10 10	10 10	9 10 91	00909	8'	201 301 31 32	15353 13740 15126 15042					tuelly v	5		III
	12.5	A B C D	10 10 10 10	10 10 10 9'	1041	0 10 10 0 8	10 10 82 8	10 202 7 90	$\begin{array}{c} 10 \\ 8 \\ 7 \\ 6^2 \end{array}$	٦	33 N 35 N 35 N	.15298 .15298 .14119 .14986					25 2	very d		
Effluent	25	A B C D	10 10 10 10	10 10 10 10	10 16 10	10 20 9 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	82 70 9 8	0-0-0-00	87 7 80 92		37) 321 371 401	15065 14736 14622 16293					Serisms	Pable Pa		
	50	A B C D	10 10 10 10	10	16 10 10	10 10 10 10 10	7391	100 100	90000		+11 +21 +31 +41	.14620 .14940 .14217 .15624					missing or	NEPOSA!		
	100	A B C D	10 10 10 10	10 10 10	10 10 10	10 10 8 <sup>2</sup> 10	01 82 80	907	50 7 10		15 11	.14578 .15088 .15551 .15879					(m), (D)	or ch	Г. К	
	1	nitials:	ÉH	EH	EH	EH	RS	KO	EH	KO	D	ate Ture Weights :	12/5/14	Initials:	CG					
Constant of		Time:	1455	1305	1630	- Party of the second	1540	11640	1235	1035	Date F	inal Dry Weights :	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Initials:				1		
Randomization Template #	Feeding	g Type: mount;		3	-drons (0.15	Art -mLs) of a co	emia incentrated s	durry /2x/4	lav		0.1	0	17/1 21	12/2 (2	es & Comme		hon.	-CS +	2/2	
	- Siller of A	oruing;	$\times$	0925	09.30	0930	1620	945	930		(3)		-RS12/3	al la la la la la la la la la la la la l			KO			
and the second sec	E	vening:	1545	1455	1645	1410	Igis	1815	1550		Ē	dead.	2 missi	ngko	12/6	J				
25.275		Other:				120-4				10.1 × 11.1	9		Photoperiod is 1	6-hours light and 8-he	nors därk, Ut	huniniatio	n is ambient	(50 to 100 ftc	(b	

Version 1 (12033-DCF)

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## Chronic Freshwater Method (EPA-821-R-02-013, Method 1000.0)



Q	rese	àrch												ě.	Water Q	Quality I					
		Client:		Tampa	Electric Co	Company - Pc	olk Power f	Station		Initiation	Date: 1	. 29 11	1	Те	erminatio	o Date:					
			Code:	TMF	P-PO	Job #:	16	222			Description:	的人们			12						
		Species:	Pim	nephales prom						UV treated effluent (see Laboratory Notes: Task Titled "UV Treatment of Samples")											
			1D #:	83	339																
Sample	%					DH or a vulid test is 6 to 9	9)		Dissolved Oxygen (mg/L) vacceptable minimum for a valid text to 4.0-mg/L)												
Description	Effluent	new 0	old new 1			terrine a stream a state of the second sector of the second second second second second second second second s	the second second second second second	old new 6	old 7	new 0	old new	old new 2		new old		.) old new 5	old new 6	old 7			
Control	0	77	717.8	7.078	7678	7.780	7678	7577	7.5	84	7484	7.48	t 7.38	35 69	8.2 7	08.2	698.	\$6.7			
	6.25	77	777.8	7678	7678	7.780	7.67.8	7.57.7	17.4	8.4	7.48.4	7.38	1728	65 68	8.3 9	28.3	6.984	6.8			
	12,5	71	7.7 7.8	7678	7478	7.780	767.8	7.577	17.4	8.4	7.384	7.38-	7.38	5/68	8.3	38.3	7083	٩،٩			
Effluent	25	7.7	7.7	7778	7.67.8	7.7 79	7678	7577	7.4	8.3	7.4 8 3	7.4 8.3	3738	468	8.2 7	383	7082	6.9			
	50	7.6	ן.דר.ך	778	7478	7.7 7.9	7.5 7.7	7576	7.4	8,0	1.48.1	738.1	7.38	36 <sup>8</sup>	817	385	698.0	7.0			
	100	7.5 -	7.77.6	7.777	747.7	77 7.7	7.57.6	7.5-1.6	7.4	74	7.4 7.5	7378	, 73e	1 6.7	78	.97.8	697.5	63			
	Meter ID:	16	16/16	10 16	10 10		22	1414	][2]	7	77	77	7	7 13	]B [[	0][0	77	[0]			
	Day:	0	1	2	3	4	5	6	7				Note	s & Comme	ents	<u>, 5</u>					
	Control ID;			4054	4056	4056	1	4059													
E	Dilution ID:			4056	4054	4056	7056			四 出来, 南	1. an m										
	Effluent ID;	A	A	B	B	$\square$	C	C	ND.						Cases	Can		DUL.			
	Initials:			EHEH				EHEH	1 1 2	No Co	V Sta				Sector 1			1			
	Time:	1155	12441045	1601140	1455 1135	1910 Bào	1435 1205	1215 1000	1030							- Theory		20- 357 Pm -			

Ì	) Hydro rese	osphere arch	i.						Chronic I	Freshwate	r Method	(EPA-82	1-R-02-01		o <b>d 1000.0)</b> Quality II	C 1 200				
		Client:		Tampa	I Electric C	ompany - P	Polk Power S	Station		Initiation	Date:	2916		Termina	ation Date:					
		· 是 ·	Code:	. TM	P-PO	] Job #:	//	6222	$\mathcal{L}$	Sample D	escription:									
	Species: Pimephales prometas										ated efflu		'UV Treatmer	nt of Sample	s*i)					
			ID #:	837	39															
Sample	%		2.11	Co (a Conduc	mductivit	ty (µmho/ o/cm = a Salinity of	cm)			Temperature (°C) (acceptable range for a valid test is 25±1°C)           Measured at the end of each 24-h exposure period           0         1         2         3         4         5         6         7										
Description	Effluent	0				iew sample and a		6	7											
Control	0	288	289	289	287	268	285	290		- Hereiter	249	24.7	24.4		24.	25 6				
	6.25	330	3.30	327	324	304	322	328			249	24 7	24.6	24.5	24.6	25 C	24.9			
	12.5	368	369	365	369	340	359	371	1		24 9	24.7	24.4	24. S	24.6	25 0	24.9			
Effluent	25	446	444	440	437	413	409	447	ĺ		24 9	24.7	24 0	24.5	24.6	25 C	24.9			
	50	594	611	603	Q01	552	612	<i>ie</i> 12			24 9	247	24.4	24.5	24.6	25 C	24.9			
	100	909	926	915	917	840	935	940			24.9	24.7	24 4	24.5	Z4.6	25.0	24.9			
	Meter ID:	17	17	17	17	15	18	17	j		57	57	57	57	57	57	57			
	Day:	0	1	2	3	4	5	6	7			2050	Notes &	Comments						
181 - 1	Control ID:	4056	4056	4056	4054	4056	705b	4059		105	O EH	°130								
	Dilution ID:	4054	4056	4056	4054	4056	4056	4059			_									
	Effluent ID:	A	A	B	B	C	0	C		夏時 日	1 <i>n p</i>				5 <i>4</i> 1 2		-			
	Initials:	ĒH	EH	EH	EH	RS	KO	EH	KO		n St St									
	Time:	1200	HOOR	1145	1140	isco	1210	1035	1030	그 왕 니	资 觀	r in the second	Dest?				é je d			