



*Ventura Countywide  
Stormwater Quality  
Management Program*

2021-2022  
Permit Year

Ventura Countywide Stormwater Quality  
Management Program Annual Report

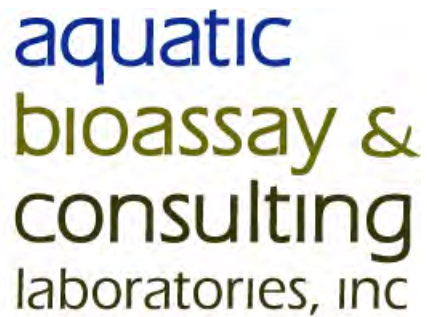
# Attachment D Monitoring Appendices I - Part 1



December 15, 2022

Camarillo  
County of Ventura  
Fillmore  
Moorpark  
Ojai  
Oxnard  
Port Hueneme  
Santa Paula  
Simi Valley  
Thousand Oaks  
Ventura  
Ventura County Watershed Protection District

## **Appendix I. Aquatic Toxicity Testing Lab Results**



## **Toxicity Report for Ventura County Watershed Protection District**

2021/22-1 (Wet)

PROJECT: 2021/22-1 (Wet)  
PO: NA  
CLIENT: Ms. Kelly Hahs  
VCWPD  
800 South Victoria Avenue, L#1610  
Ventura, CA 93009-1670  
SAMPLE I.D.: MO-OXN, MO-OJA, ME-CC, MO-VEN, ME-VR2, MO-HUE, MO-MEI, MO-FIL, MO-SPA, ME-SCR, MO-THO, MO-MPK, MO-SIM, MO-CAM  
DATE RECEIVED: 10/25/2021  
DATE REPORTED: 11/19/2021  
ABC LAB NO.: VCF1020.151-.165

29 North Olive Street Ventura, California 93001 (805) 643-5621

## INTRODUCTION

Toxicity tests using fathead (*P. promelas*), Ceriodaphnia (*C. dubia*), green algae (*S.capricornutum*), Topsmelt (*A.affinis*), and purple urchin (*S.purpuratus*) were performed to evaluate the quality of stormwater samples for Ventura County Watershed Protection District. The samples were collected on October 25<sup>th</sup>, 2021 and delivered the same day. Testing was conducted at Aquatic Bioassay and Consulting Labs, Inc. in Ventura California from October 25<sup>th</sup>, through November 5<sup>th</sup>, 2021.

## MATERIALS AND METHODS

### Test Material

Test material consisted of 14 grab samples (11 outfall and 3 receiving water sites) collected by Ventura County Watershed Protection District (VCWPD) outfall sites. Sample collection was performed by VCWPD personnel and consultants under the direction of Ms. Kelly Hahs. The samples were collected in 5-gallon low-density polyethylene buckets and were delivered to Aquatic Bioassay immediately after sampling. Sample temperature was recorded upon acceptance at Aquatic Bioassay Laboratories and is included in the report for each station.

Samples were stored at 4°C. Upon arrival at Aquatic Bioassay, an aliquot of each sample was drawn and water quality parameters of pH, dissolved oxygen (DO), conductivity, temperature, salinity, alkalinity, and hardness were measured and recorded.

### Bioassay Testing

The study was performed in accordance with the United States Environmental Protection Agency (USEPA) protocols:

Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002, US EPA-821-R-02-013.

Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition, October 2002, US EPA-821-R-02-014.



Summary of results for 100% sample concentration:

Sample ID	Test	Endpoint	Control	100% Sample	Statistically Different From Control	TST Result	*Percent Effect
MO-OXN	Chronic Fathead	Survival (%)	100	96.67	No	Pass	3.33
		Biomass (mg)	0.3398	0.3417	No	Pass	-0.54
MO-MEI	Chronic Fathead	Survival (%)	100	96.67	No	Pass	3.33
		Biomass (mg)	0.3418	0.3392	No	Pass	0.78
MO-SPA	Chronic Fathead	Survival (%)	100	98.33	No	Pass	1.67
		Biomass (mg)	0.3398	0.3590	No	Pass	-5.64
MO-CAM	Chronic Fathead	Survival (%)	100	100	No	Pass	0.00
		Biomass (mg)	0.3410	0.3452	No	Pass	-1.22
MO-OJA	Chronic Fathead	Survival (%)	100	100	No	Pass	0.00
		Biomass (mg)	0.3418	0.3450	No	Pass	-0.93
MO-VEN	Chronic Ceriodaphnia	Survival (%)	100	100	No	Pass	0.00
		Reproduction #-Neonates	21.2	24.7	No	Pass	-16.51
MO-FIL	Chronic Ceriodaphnia	Survival (%)	100	100	No	Pass	0.00
		Reproduction #-Neonates	24.7	23.3	No	Pass	5.67
MO-HUE	Chronic Ceriodaphnia	Survival (%)	100	100	No	Pass	0.00
		Reproduction #-Neonates	26.3	24.1	No	Pass	8.37
MO-THO	Chronic Ceriodaphnia	Survival (%)	100	100	No	Pass	0.00
		Reproduction #-Neonates	19.3	25.3	No	Pass	-31.09

\*Percent Effect at IWC = (Mean Control Response – Mean IWC Response) \* 100 / Mean Control Response.

Summary of results for 100% sample concentration: (Cont.)

Sample ID	Test	Endpoint	Control	100% Sample	Statistically Different From Control	TST Result	*Percent Effect
MO-SIM	Chronic Ceriodaphnia	Survival (%)	100	100	No	Pass	0.00
		Reproduction #-Neonates	23.6	26.4	No	Pass	-11.86
MO-MPK	Selenastrum	Cell Density	1.423E+6	1.821E+6	No	Pass	-27.97
ME-CC	Chronic Topsmelt	Survival (%)	100	96.0	No	Pass	4.00
		Biomass (mg)	1.434	1.452	No	Pass	-1.23
ME-VR2	Chronic Topsmelt	Survival (%)	100	100	No	Pass	0.00
		Biomass (mg)	1.442	1.449	No	Pass	-0.44
ME-SCR	Chronic Urchin	Fertilization (%)	94.25	92.75	No	Pass	1.59

\*Percent Effect at IWC = (Mean Control Response – Mean IWC Response) \* 100 / Mean Control Response.

Quality Assurance

All samples were received in good condition at the appropriate temperatures, and all tests were initiated within 72 hours of sample collection. The natural seawater controls met the minimum test acceptability criterion of 80 percent mean survival. Variability among replicates was minimal, and the ability to detect a statistical difference was deemed appropriate.

Survival counts were recorded daily to ensure tests were progressing as expected. Counts were conducted daily on the control replicates. The temperatures in samples were within the recommended range for the entire test duration.

Reference Toxicant Test

A concurrent reference toxicant test using copper chloride was conducted to assess the health of the test organisms. Mean control survival met the test acceptability criterion. The median lethal concentration (LC50) calculated for this test was within two standard deviations of the internal control chart mean, indicating test organism sensitivity was typical. Reference toxicant test results are summarized in the report.

### Results and Discussion

Mean survival and statistical differences from control for the tests, error bars, results summaries including individual replicate data, statistical summaries, and raw datasheets are located in in the appendix. Appropriate chain-of-custody (COC) procedures were followed during all phases of this study, and copies of the COC forms are provided in the appendix.

### Data Analysis and Reporting

The response observed in this test includes survival of the test organism. Two statistical methods were employed to determine whether there was an effect between the control and test sample: 1) A standard t-test approach following the statistical analysis decision tree in EPA 2002; and 2) A more recent EPA-recommended Test of Significant Toxicity (TST) approach (EPA 2010).

References:

*United States Environmental Protection Agency, 1995. Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136.*

*United States Environmental Protection Agency, 2002. Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/821/R-02-014.*

*United States Environmental Protection Agency, 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA/821/R-02/012.*

*United States Environmental Protection Agency, 2010. National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document. Office of Wastewater Management. EPA 833-R-10-003.*



**Chain of Custody Record**  
**Ventura County Watershed Protection District**  
**NPDES Stormwater Monitoring Program**  
**Project: NPDES Stormwater Wet Season (Contract AE20-007)**  
**Toxicity - ABC Laboratories**

Side 2 of 2

Sampling Date: 10/25/21

Project Number: 2021/22-1 (Wet)

Sampling Team: Michelle Carter

SAMPLE ID	DATE/TIME COLLECTED	Chronic toxicity - topsmelt ( <i>Atherinops affinis</i> )	Chronic toxicity - inland silverside ( <i>Menidia beryllina</i> )	Chronic toxicity - giant kelp ( <i>Macrocystis pyrifera</i> )	Chronic toxicity - purple sea urchin ( <i>Strongylocentrotus purpuratus</i> )	Chronic toxicity - fathead minnow ( <i>Pimephales promelas</i> )	Chronic toxicity - daphnid ( <i>Ceriodaphnia dubia</i> )	Chronic toxicity - green alga ( <i>Raphidocelis subcapitata</i> )	Number of 5-Gallon Buckets	NOTES
159 MO-CAM	10/25/21 / 1100 1403	ML				X			2	Note 1, Note 2, Note 3 11.0% ~LO1 ~LO
160 MO-SIM	10/25/21 / 1245 1320	ML					X		2	Note 1, Note 2, Note 3 14.0% ~LO1 ~LO
161 MO-MPK	10/25/21 1210							X	2	Note 1, Note 2, Note 3 11.0% ~LO1 ~LO
162 MO-THO	10/25/21 1510						X		2	Note 1, Note 2, Note 3 12.5% ~LO1 ~LO
MO-HUE							X		3	Note 1, Note 2, Note 3, Note 4 MLC

Relinquished Printed Name Michelle Carter  
 Signature [Signature]  
 Affiliation RINCON Date/Time 10/25/21

Received Printed Name Victor Marquez  
 Signature [Signature]  
 Affiliation ABC LABS Date/Time 10/25/21 1730

Other Notes: Note 1: Dilutions - 6.25%, 12.5%, 25%, 50%, 100% Note 2: Please execute TIE if mortality > 50%  
Note 3: Notify District within 24 hours if significant toxicity is observed.  
Note 4: If salinity >2 ppt then also run topsmelt for comparison. If topsmelt unavailable, use *Hyaella*



**Chain of Custody Record**  
**Ventura County Watershed Protection District**  
**NPDES Stormwater Monitoring Program**  
**Project: NPDES Stormwater Wet Season (Contract AE20-007)**

**Toxicity - ABC Laboratories**

Side 1 of 2

Sampling Date: 10/25/21 Project Number: 2021/22-1 (Wet)

Sampling Team: MICHELLE C. + LONDON LUJAN

SAMPLE ID	DATE/TIME COLLECTED	Chronic toxicity - topsmelt ( <i>Atherinops affinis</i> )	Chronic toxicity - inland silverside ( <i>Menidia beryllina</i> )	Chronic toxicity - giant kelp ( <i>Macrocystis pyrifera</i> )	Chronic toxicity - purple sea urchin ( <i>Strongylocentrotus purpuratus</i> )	Chronic toxicity - fathead minnow ( <i>Pimephales promelas</i> )	Chronic toxicity - daphnid ( <i>Ceriodaphnia dubia</i> )	Chronic toxicity - green alga ( <i>Raphidocelis subcapitata</i> )	Number of 5-Gallon Buckets	NOTES
ME-SCR					X				1	Note 1, Note 2, Note 3
ME-VR2		X							2	Note 1, Note 2, Note 3
ME-CC		X							2	Note 1, Note 2, Note 3
MO-OXN						X			2	Note 1, Note 2, Note 3
MO-FIL							X		2	Note 1, Note 2, Note 3
MO-SPA					X				2	Note 1, Note 2, Note 3
MO-VEN							X		2	Note 1, Note 2, Note 3
MO-OJA					X				2	Note 1, Note 2, Note 3
MO-MEI					X				2	Note 1, Note 2, Note 3

Relinquished Printed Name Michelle Carter  
 Signature [Signature]  
 Affiliation RINCON Date/Time 10/25/21

Received Printed Name Victor Marquez  
 Signature [Signature]  
 Affiliation ABC LABS Date/Time 10/25/21 1730

Other Notes: Note 1: Dilutions - 6.25%, 12.5%, 25%, 50%, 100% Note 2: Please execute TIE if mortality > 50%  
Note 3: Notify District within 24 hours if significant toxicity is observed.





**Chain of Custody Record**  
**Ventura County Watershed Protection District**  
**NPDES Stormwater Monitoring Program**  
**Project: NPDES Stormwater Wet Season (Contract AE20-007)**

**Toxicity - ABC Laboratories**

Side 1 of 2

Sampling Date: 10/25/2021 Project Number: 2021/22-1 (Wet)  
 Sampling Team: DL+DLW

SAMPLE ID	DATE/TIME COLLECTED	Chronic toxicity - topsmelt ( <i>Atherinops affinis</i> )	Chronic toxicity - inland silverside ( <i>Menidia beryllina</i> )	Chronic toxicity - giant kelp ( <i>Macrocystis pyrifera</i> )	Chronic toxicity - purple sea urchin ( <i>Strongylocentrotus purpuratus</i> )	Chronic toxicity - fathead minnow ( <i>Pimephales promelas</i> )	Chronic toxicity - daphnid ( <i>Ceriodaphnia dubia</i> )	Chronic toxicity - green alga ( <i>Raphidocelis subcapitata</i> )	Number of 5-Gallon Buckets	NOTES
.163 ME-SCR	10/25/21 15:45				X				1	Note 1, Note 2, Note 3
.164 ME-VR2	10/25/21 13:35	X							2	Note 1, Note 2, Note 3
.165 ME-CC	10/25/21 14:40	X							2	Note 1, Note 2, Note 3
MO-OXN						X			2	Note 1, Note 2, Note 3
MO-FIL							X		2	Note 1, Note 2, Note 3
MO-SPA					X				2	Note 1, Note 2, Note 3
MO-VEN							X		2	Note 1, Note 2, Note 3
MO-OJA						X			2	Note 1, Note 2, Note 3
MO-MEI						X			2	Note 1, Note 2, Note 3

*Handwritten notes:*  
 2.5% = 2.5%  
 3.5% = 3.5%  
 5.5% = 5.5%  
 2(0.1) = 0.2  
 2(0.1) = 0.2  
 2(0.1) = 0.2

Relinquished Printed Name David Leak  
 Signature [Signature]  
 Affiliation VCWPD Date/Time 10/25/2021 17:35

Received Printed Name Victor Marquez  
 Signature [Signature]  
 Affiliation ABC LABS Date/Time 10/25/21 1735

Other Notes: Note 1: Dilutions - 6.25%, 12.5%, 25%, 50%, 100% Note 2: Please execute TIE if mortality > 50%  
 Note 3: Notify District within 24 hours if significant toxicity is observed.





**Chain of Custody Record**  
**Ventura County Watershed Protection District**  
**NPDES Stormwater Monitoring Program**  
**Project: NPDES Stormwater Wet Season (Contract AE20-007)**  
**Toxicity - ABC Laboratories**

Side 1 of 2

Sampling Date: 10-25-21 Project Number: 2021/22-1 (Wet)

Sampling Team: Lara S. Jones

SAMPLE ID	DATE/TIME COLLECTED	Chronic toxicity - topsmelt ( <i>Atherinops affinis</i> )	Chronic toxicity - inland silverside ( <i>Menidia beryllina</i> )	Chronic toxicity - giant kelp ( <i>Macrocystis pyrifera</i> )	Chronic toxicity - purple sea urchin ( <i>Strongylocentrotus purpuratus</i> )	Chronic toxicity - fathead minnow ( <i>Pimephales promelas</i> )	Chronic toxicity - daphnid ( <i>Ceriodaphnia dubia</i> )	Chronic toxicity - green alga ( <i>Raphidocelis subcapitata</i> )	Number of 5-Gallon Buckets	NOTES
ME-SCR					X				1	Note 1, Note 2, Note 3
ME-VR2		X							2	Note 1, Note 2, Note 3
ME-CC		X							2	Note 1, Note 2, Note 3
.151 MO-OXN	10/25/21 9:45					X			2	Note 1, Note 2, Note 3 9.0 = LO.1 = LO
MO-FIL							X		2	Note 1, Note 2, Note 3
.152 MO-SPA	10/25/21 11:00					X			2	Note 1, Note 2, Note 3 7.0 = LO.1 = LO
MO-VEN							X		2	Note 1, Note 2, Note 3
.153 MO-OJA	10/25/21 12:45					X			2	Note 1, Note 2, Note 3 7.0 = LO.1 = LO
.154 MO-MEI	10/25/21 14:30					X			2	Note 1, Note 2, Note 3 13.0 = LO.1 = LO

Relinquished Printed Name Lara Shellenbarger  
 Signature [Signature]  
 Affiliation VCPWA-WP Date/Time 10/25/21 15:27

Received Printed Name Victor Marquez  
 Signature [Signature]  
 Affiliation ABCLABS Date/Time 10/25/21 15:27

Other Notes: Note 1: Dilutions - 6.25%, 12.5%, 25%, 50%, 100% Note 2: Please execute TIE if mortality > 50%  
Note 3: Notify District within 24 hours if significant toxicity is observed.



**Chain of Custody Record**  
**Ventura County Watershed Protection District**  
**NPDES Stormwater Monitoring Program**  
**Project: NPDES Stormwater Wet Season (Contract AE20-007)**  
**Toxicity - ABC Laboratories**

Side 1 of 2

Sampling Date: 10/25/21

Project Number: 2021/22-1 (Wet)

Sampling Team: P. Doran, M. Doran

SAMPLE ID	DATE/TIME COLLECTED	Chronic toxicity - topsmelt ( <i>Atherinops affinis</i> )	Chronic toxicity - inland silverside ( <i>Menidia beryllina</i> )	Chronic toxicity - giant kelp ( <i>Macrocystis pyrifera</i> )	Chronic toxicity - purple sea urchin ( <i>Strongylocentrotus purpuratus</i> )	Chronic toxicity - fathead minnow ( <i>Pimephales promelas</i> )	Chronic toxicity - daphnid ( <i>Ceriodaphnia dubia</i> )	Chronic toxicity - green alga ( <i>Raphidocelis subcapitata</i> )	Number of 5-Gallon Buckets	NOTES
ME-SCR					X				1	Note 1, Note 2, Note 3
ME-VR2		X							2	Note 1, Note 2, Note 3
ME-CC		X							2	Note 1, Note 2, Note 3
MO-OXN						X			2	Note 1, Note 2, Note 3
.156 MO-FIL	10/25/21/1212						X		2	Note 1, Note 2, Note 3 8.5% = LOA = LOA
MO-SPA						X			2	Note 1, Note 2, Note 3
.157 MO-VEN	10/25/21/1320						X		2	Note 1, Note 2, Note 3 8.5% = LOA = LOA
MO-OJA						X			2	Note 1, Note 2, Note 3
MO-MEI						X			2	Note 1, Note 2, Note 3

Relinquished Printed Name PETER DORAN

Signature [Signature]

Affiliation River VTA Date/Time 10-25-21 1617

Received Printed Name Victor Marquez

Signature [Signature]

Affiliation ABC LABS Date/Time 10-25-21 1617

Other Notes: Note 1: Dilutions - 6.25%, 12.5%, 25%, 50%, 100% Note 2: Please execute TIE if mortality > 50%

Note 3: Notify District within 24 hours if significant toxicity is observed.



**Chain of Custody Record**  
**Ventura County Watershed Protection District**  
**NPDES Stormwater Monitoring Program**  
**Project: NPDES Stormwater Wet Season (Contract AE20-007)**  
**Toxicity - ABC Laboratories**

Side 2 of 2

Sampling Date: \_\_\_\_\_ Project Number: 2021/22-1 (Wet)  
 Sampling Team: \_\_\_\_\_

SAMPLE ID	DATE/TIME COLLECTED	Chronic toxicity - topsmelt ( <i>Atherinops affinis</i> )	Chronic toxicity - inland silverside ( <i>Menidia beryllina</i> )	Chronic toxicity - giant kelp ( <i>Macrocystis pyrifera</i> )	Chronic toxicity - purple sea urchin ( <i>Strongylocentrotus purpuratus</i> )	Chronic toxicity - fathead minnow ( <i>Pimephales promelas</i> )	Chronic toxicity - daphnid ( <i>Ceriodaphnia dubia</i> )	Chronic toxicity - green alga ( <i>Raphidocelis subcapitata</i> )	Number of 5-Gallon Buckets	NOTES
MO-CAM						X			2	Note 1, Note 2, Note 3
MO-SIM							X		2	Note 1, Note 2, Note 3
MO-MPK								X	2	Note 1, Note 2, Note 3
MO-THO							X		2	Note 1, Note 2, Note 3
MO-HUE	10/25/21/1415						X		3	Note 1, Note 2, Note 3, Note 4

8.5  
 201  
 201

158

Relinquished Printed Name PETER DURAN  
 Signature [Signature]  
 Affiliation Rincon VTA County Date/Time 10.25.21 / 1617

Received Printed Name Victor Marquez  
 Signature [Signature]  
 Affiliation ABC LABS Date/Time 10.25.21 1617

Other Notes: Note 1: Dilutions - 6.25%, 12.5%, 25%, 50%, 100% Note 2: Please execute TIE if mortality > 50%  
Note 3: Notify District within 24 hours if significant toxicity is observed.  
Note 4: If salinity >2 ppt then also run topsmelt for comparison. If topsmelt unavailable, use *Hyalella*



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:


CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-OXN  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.151

#### CHRONIC FATHEAD MINNOW SURVIVAL & GROWTH BIOASSAY

SURVIVAL            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          EC25 =            >100.00 %  
                          EC50 =            >100.00 %

BIOMASS            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          IC25 =            >100.00 %  
                          IC50 =            >100.00 %

Yours very truly,



Scott Johnson  
Laboratory Director



**CETIS Summary Report**

**Report Date:** 15 Nov-21 12:54 (p 1 of 2)  
**Test Code/ID:** VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 06-8119-4663	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:00	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 03-0000-3447	<b>Code:</b> VCF1021.151fml	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 09:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OXN
<b>Sample Age:</b> 28h (9 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
02-7330-7283	7d Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	5.72%	1	1
12-6010-3705	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test	100	>100	---	4.32%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
09-9467-8593	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
02-0933-9023	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
02-7330-7283	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
09-9467-8593	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
02-0933-9023	Mean Dry Biomass-mg	Control Resp	0.3398	0.25	>>	Yes	Passes Criteria
12-6010-3705	Mean Dry Biomass-mg	Control Resp	0.3398	0.25	>>	Yes	Passes Criteria
12-6010-3705	Mean Dry Biomass-mg	PMSD	0.04322	0.12	0.3	Yes	Below Criteria

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
12.5		4	0.9667	0.9054	1.0280	0.9333	1.0000	0.0193	0.0385	3.98%	3.33%
25		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
50		4	0.9667	0.9054	1.0280	0.9333	1.0000	0.0193	0.0385	3.98%	3.33%
100		4	0.9667	0.9054	1.0280	0.9333	1.0000	0.0193	0.0385	3.98%	3.33%

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.3398	0.3317	0.3479	0.3353	0.3467	0.002544	0.005088	1.50%	0.00%
6.25		4	0.3445	0.3401	0.3489	0.3413	0.348	0.001371	0.002742	0.80%	-1.37%
12.5		4	0.3413	0.339	0.3436	0.3393	0.3427	0.000720	0.00144	0.42%	-0.44%
25		4	0.3425	0.338	0.347	0.3393	0.346	0.001424	0.002848	0.83%	-0.78%
50		4	0.3472	0.3198	0.3746	0.3353	0.3727	0.008608	0.01722	4.96%	-2.16%
100		4	0.3417	0.3252	0.3581	0.3313	0.356	0.005168	0.01034	3.02%	-0.54%

**CETIS Summary Report**

Report Date: 15 Nov-21 12:54 (p 2 of 2)

Test Code/ID: VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: A83452331BDDDF0F86FB29168D1EF43E

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	0.9333
12.5		1.0000	0.9333	1.0000	0.9333
25		0.9333	1.0000	1.0000	1.0000
50		0.9333	1.0000	0.9333	1.0000
100		1.0000	0.9333	0.9333	1.0000

**Mean Dry Biomass-mg Detail**

MD5: FBB181F13FC26297F17FB2DDEB61E5A9

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3353	0.3407	0.3367	0.3467
6.25		0.3447	0.3413	0.348	0.344
12.5		0.3393	0.3427	0.3413	0.342
25		0.3433	0.3413	0.346	0.3393
50		0.3727	0.3387	0.3353	0.342
100		0.3393	0.3313	0.34	0.356

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	15/15	14/15
12.5		15/15	14/15	15/15	14/15
25		14/15	15/15	15/15	15/15
50		14/15	15/15	14/15	15/15
100		15/15	14/15	14/15	15/15

**CETIS Analytical Report**

**Report Date:** 15 Nov-21 12:54 (p 1 of 4)  
**Test Code/ID:** VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 02-7330-7283	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:53	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:53	<b>MD5 Hash:</b> A83452331BDDDF0F86FB29168D1EF43E	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 06-8119-4663	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:00	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 03-0000-3447	<b>Code:</b> VCF1021.151fml	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 09:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OXN
<b>Sample Age:</b> 28h (9 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.05722	5.72%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	16	10	1	6	CDF	0.6105	Non-Significant Effect
		12.5	14	10	1	6	CDF	0.3451	Non-Significant Effect
		25	16	10	1	6	CDF	0.6105	Non-Significant Effect
		50	14	10	1	6	CDF	0.3451	Non-Significant Effect
		100	14	10	1	6	CDF	0.3451	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0144533	0.0028907	5	0.6667	0.6536	Non-Significant Effect
Error	0.078048	0.004336	18			
Total	0.0925014		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
	Levene Equality of Variance Test	7.2	4.248	0.0007	Unequal Variances
	Mod Levene Equality of Variance Test	2	4.248	0.1274	Equal Variances
Distribution	Anderson-Darling A2 Test	1.517	3.878	0.0001	Non-Normal Distribution
	D'Agostino Kurtosis Test	2.477	2.576	0.0133	Normal Distribution
	D'Agostino Skewness Test	0.9102	2.576	0.3627	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	6.963	9.21	0.0308	Normal Distribution
	Kolmogorov-Smirnov D Test	0.214	0.2056	0.0059	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8564	0.884	0.0029	Non-Normal Distribution

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
12.5		4	0.9667	0.9054	1.0000	0.9667	0.9333	1.0000	0.0192	3.98%	3.33%
25		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
50		4	0.9667	0.9054	1.0000	0.9667	0.9333	1.0000	0.0192	3.98%	3.33%
100		4	0.9667	0.9054	1.0000	0.9667	0.9333	1.0000	0.0192	3.98%	3.33%



Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-7330-7283 Endpoint: 7d Survival Rate CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 12:53 Analysis: Nonparametric-Control vs Treatments Status Level: 1  
 Edit Date: 15 Nov-21 12:53 MD5 Hash: A83452331BDDDF0F86FB29168D1EF43E Editor ID: 000-189-126-0

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
6.25		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
12.5		4	1.3750	1.2540	1.4960	1.3750	1.3100	1.4410	0.0380	5.53%	4.57%
25		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
50		4	1.3750	1.2540	1.4960	1.3750	1.3100	1.4410	0.0380	5.53%	4.57%
100		4	1.3750	1.2540	1.4960	1.3750	1.3100	1.4410	0.0380	5.53%	4.57%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	0.9333
12.5		1.0000	0.9333	1.0000	0.9333
25		0.9333	1.0000	1.0000	1.0000
50		0.9333	1.0000	0.9333	1.0000
100		1.0000	0.9333	0.9333	1.0000

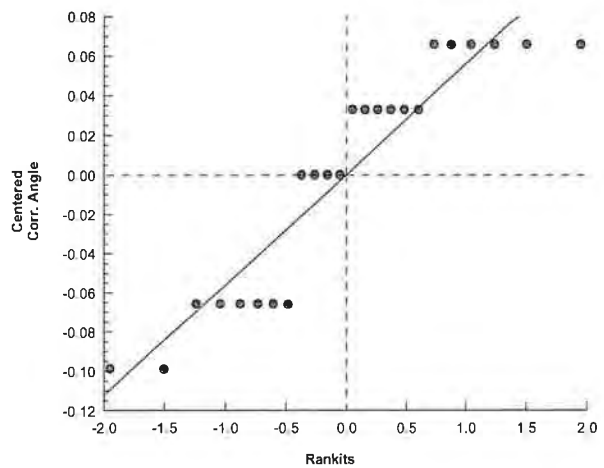
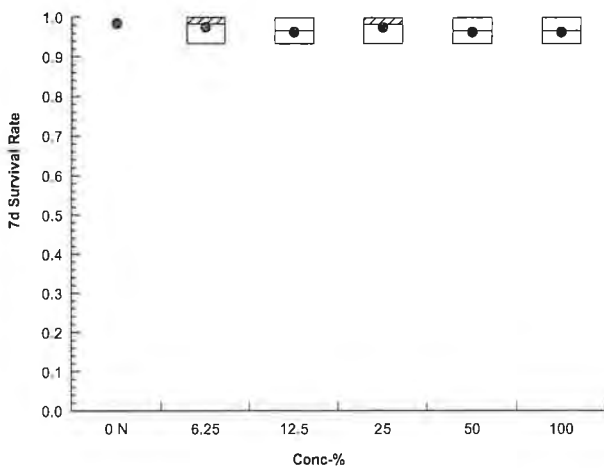
Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.4410	1.4410	1.4410	1.4410
6.25		1.4410	1.4410	1.4410	1.3100
12.5		1.4410	1.3100	1.4410	1.3100
25		1.3100	1.4410	1.4410	1.4410
50		1.3100	1.4410	1.3100	1.4410
100		1.4410	1.3100	1.3100	1.4410

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	15/15	14/15
12.5		15/15	14/15	15/15	14/15
25		14/15	15/15	15/15	15/15
50		14/15	15/15	14/15	15/15
100		15/15	14/15	14/15	15/15

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 12-6010-3705	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:53	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:53	<b>MD5 Hash:</b> FBB181F13FC26297F17FB2DDEB61E5A9	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 06-8119-4663	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:00	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 03-0000-3447	<b>Code:</b> VCF1021.151fml	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 09:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OXN
<b>Sample Age:</b> 28h (9 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	--	1	0.01469	4.32%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	23	10	0	6	CDF	0.9966	Non-Significant Effect
		12.5	21	10	0	6	CDF	0.9778	Non-Significant Effect
		25	21	10	0	6	CDF	0.9778	Non-Significant Effect
		50	19.5	10	1	6	CDF	0.9315	Non-Significant Effect
		100	18	10	0	6	CDF	0.8333	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3398	0.25	>>	Yes	Passes Criteria
PMSD	0.04322	0.12	0.3	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0001371	2.742E-05	5	0.3682	0.8637	Non-Significant Effect
Error	0.0013405	7.447E-05	18			
Total	0.0014776		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	19.67	15.09	0.0014	Unequal Variances
	Levene Equality of Variance Test	3.691	4.248	0.0179	Equal Variances
	Mod Levene Equality of Variance Test	0.9856	4.248	0.4535	Equal Variances
Distribution	Anderson-Darling A2 Test	1.431	3.878	0.0005	Non-Normal Distribution
	D'Agostino Kurtosis Test	2.923	2.576	0.0035	Non-Normal Distribution
	D'Agostino Skewness Test	3.195	2.576	0.0014	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	18.75	9.21	8.5E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.2223	0.2056	0.0034	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8435	0.884	0.0017	Non-Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.3398	0.3317	0.3479	0.3387	0.3353	0.3467	0.002544	1.50%	0.00%
6.25		4	0.3445	0.3401	0.3489	0.3443	0.3413	0.348	0.001371	0.80%	-1.37%
12.5		4	0.3413	0.339	0.3436	0.3417	0.3393	0.3427	0.00072	0.42%	-0.44%
25		4	0.3425	0.338	0.347	0.3423	0.3393	0.346	0.001424	0.83%	-0.78%
50		4	0.3472	0.3198	0.3746	0.3403	0.3353	0.3727	0.008608	4.96%	-2.16%
100		4	0.3417	0.3252	0.3581	0.3397	0.3313	0.356	0.005168	3.02%	-0.54%

Fathead Minnow 7-d Larval Survival and Growth Test

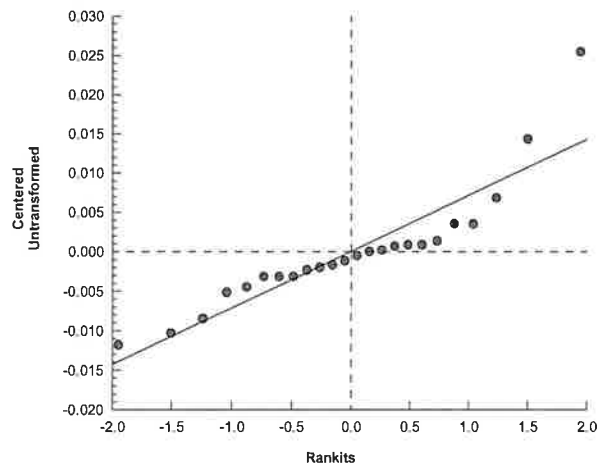
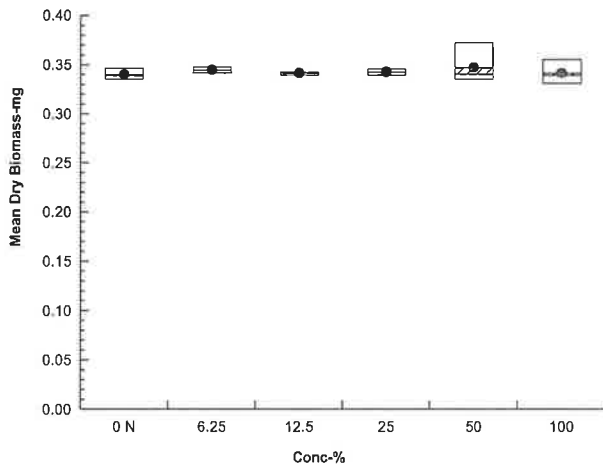
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 12-6010-3705      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 12:53      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 12:53      MD5 Hash: FBB181F13FC26297F17FB2DDEB61E5A9      Editor ID: 000-189-126-0

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3353	0.3407	0.3367	0.3467
6.25		0.3447	0.3413	0.348	0.344
12.5		0.3393	0.3427	0.3413	0.342
25		0.3433	0.3413	0.346	0.3393
50		0.3727	0.3387	0.3353	0.342
100		0.3393	0.3313	0.34	0.356

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 12:54 (p 1 of 4)  
 Test Code/ID: VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 09-9467-8593	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:53	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:53	<b>MD5 Hash:</b> A83452331BDDDF0F86FB29168D1EF43E	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 06-8119-4663	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:00	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 03-0000-3447	<b>Code:</b> VCF1021.151fml	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 09:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OXN
<b>Sample Age:</b> 28h (9 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	1.0000	0.00%
6.25		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9833	1.67%
12.5		4	0.9667	0.9667	0.9333	1.0000	3.98%	3.33%	58/60	0.9750	2.50%
25		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9750	2.50%
50		4	0.9667	0.9667	0.9333	1.0000	3.98%	3.33%	58/60	0.9667	3.33%
100		4	0.9667	0.9667	0.9333	1.0000	3.98%	3.33%	58/60	0.9667	3.33%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	0.9333
12.5		1.0000	0.9333	1.0000	0.9333
25		0.9333	1.0000	1.0000	1.0000
50		0.9333	1.0000	0.9333	1.0000
100		1.0000	0.9333	0.9333	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	15/15	14/15
12.5		15/15	14/15	15/15	14/15
25		14/15	15/15	15/15	15/15
50		14/15	15/15	14/15	15/15
100		15/15	14/15	14/15	15/15



Fathead Minnow 7-d Larval Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
<b>Analysis ID:</b> 02-0933-9023	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 15 Nov-21 12:53	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1			
<b>Edit Date:</b> 15 Nov-21 12:53	<b>MD5 Hash:</b> FBB181F13FC26297F17FB2DDEB61E5A9	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 06-8119-4663	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 14:00	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water			
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24			
<b>Sample ID:</b> 03-0000-3447	<b>Code:</b> VCF1021.151fml	<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 09:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OXN			
<b>Sample Age:</b> 28h (9 °C)	<b>Client:</b> Ventura County Watershed Protection Distri				

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	287249	280	Yes	Two-Point Interpolation

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3398	0.25	>>	Yes	Passes Criteria

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

Mean Dry Biomass-mg Summary			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	0.3398	0.3387	0.3353	0.3467	1.50%	0.00%	0.3431	0.00%
6.25		4	0.3445	0.3443	0.3413	0.348	0.80%	-1.37%	0.3431	0.00%
12.5		4	0.3413	0.3417	0.3393	0.3427	0.42%	-0.44%	0.3431	0.00%
25		4	0.3425	0.3423	0.3393	0.346	0.83%	-0.78%	0.3431	0.00%
50		4	0.3472	0.3403	0.3353	0.3727	4.96%	-2.16%	0.3431	0.00%
100		4	0.3417	0.3397	0.3313	0.356	3.02%	-0.54%	0.3417	0.41%

Mean Dry Biomass-mg Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3353	0.3407	0.3367	0.3467
6.25		0.3447	0.3413	0.348	0.344
12.5		0.3393	0.3427	0.3413	0.342
25		0.3433	0.3413	0.346	0.3393
50		0.3727	0.3387	0.3353	0.342
100		0.3393	0.3313	0.34	0.356





**CETIS Measurement Report**

Report Date: 15 Nov-21 12:54 (p 1 of 8)  
 Test Code/ID: VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 06-8119-4663	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:00	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 03-0000-3447	<b>Code:</b> VCF1021.151fml	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 09:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OXN
<b>Sample Age:</b> 28h (9 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Alkalinity (CaCO3)-mg/L**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	71	71	71	71	71	0	0	0.00%	0
Overall		16	65.81	62.95	68.67	60	71	1.342	5.369	8.16%	0 (0%)

**Conductivity-µmhos**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	361.5	360	363	360	365	0.2315	1.852	0.51%	0
12.5		8	365.6	362.9	368.4	362	369	0.4115	3.292	0.90%	0
25		8	370.6	367.3	374	363	376	0.4997	3.998	1.08%	0
50		8	407.1	403.1	411.1	398	412	0.5955	4.764	1.17%	0
100		8	477.9	465.6	490.2	442	488	1.838	14.7	3.08%	0
Overall		48	390.5	378	403.1	354	488	6.22	43.09	11.03%	0 (0%)

**Dissolved Oxygen-mg/L**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.488	7.318	7.657	7.2	7.8	0.02539	0.2031	2.71%	0
12.5		8	7.438	7.29	7.585	7.2	7.7	0.0221	0.1768	2.38%	0
25		8	7.387	7.201	7.574	7.1	7.8	0.0279	0.2232	3.02%	0
50		8	7.325	7.148	7.502	7	7.7	0.02652	0.2121	2.90%	0
100		8	7.262	7.09	7.435	7	7.6	0.02582	0.2066	2.84%	0
Overall		48	7.417	7.353	7.48	7	7.9	0.0317	0.2196	2.96%	0 (0%)

**Hardness (CaCO3)-mg/L**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	145	145	145	145	145	0	0	0.00%	0
Overall		16	120.3	106.7	133.9	95	145	6.375	25.5	21.19%	0 (0%)

**pH-Units**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.738	7.554	7.921	7.3	7.9	0.0275	0.22	2.84%	0
12.5		8	7.688	7.53	7.845	7.3	7.9	0.02356	0.1885	2.45%	0
25		8	7.662	7.515	7.81	7.3	7.9	0.0221	0.1768	2.31%	0
50		8	7.575	7.331	7.819	7	7.9	0.03644	0.2915	3.85%	0
100		8	7.65	7.502	7.798	7.3	7.9	0.02216	0.1773	2.32%	0
Overall		48	7.713	7.647	7.778	7	8	0.03243	0.2247	2.91%	0 (0%)

# CETIS Measurement Report

Report Date: 15 Nov-21 12:54 (p 2 of 8)  
Test Code/ID: VCF1021.151fml / 12-0589-9336

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.06	23.91	24.21	24	24.5	0.0221	0.1768	0.73%	0
12.5		8	24.08	23.96	24.19	24	24.4	0.01736	0.1389	0.58%	0
25		8	24.09	24.02	24.16	24	24.2	0.01042	0.08336	0.35%	0
50		8	24.1	24.02	24.18	24	24.2	0.01156	0.0925	0.38%	0
100		8	24.14	24.03	24.25	24	24.3	0.01628	0.1302	0.54%	0
Overall		48	24.08	24.04	24.11	24	24.5	0.01717	0.1189	0.49%	0 (0%)

# CETIS Measurement Report

Report Date: 15 Nov-21 12:54 (p 3 of 8)  
Test Code/ID: VCF1021.151fml / 12-0589-9336

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				71					
0	N	2		60					
100				71					
0	N	3		60					
100				71					
0	N	4		61					
100				71					
0	N	5		61					
100				71					
0	N	6		61					
100				71					
0	N	7		61					
100				71					
0	N	8		61					
100				71					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:54 (p 4 of 8)

Test Code/ID: VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test**

Aquatic Bioassay & Consulting Labs, Inc.

**Conductivity-µmhos**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				363					
12.5				365					
25				376					
50				398					
100				442					
0	N	2		360					
6.25				362					
12.5				369					
25				372					
50				402					
100				480					
0	N	3		354					
6.25				365					
12.5				369					
25				375					
50				410					
100				485					
0	N	4		360					
6.25				360					
12.5				367					
25				370					
50				410					
100				482					
0	N	5		364					
6.25				360					
12.5				362					
25				369					
50				408					
100				482					
0	N	6		362					
6.25				360					
12.5				362					
25				363					
50				412					
100				488					
0	N	7		362					
6.25				362					
12.5				369					
25				370					
50				410					
100				482					
0	N	8		360					
6.25				360					
12.5				362					
25				370					
50				407					
100				482					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:54 (p 5 of 8)  
 Test Code/ID: VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7.4					
12.5				7.3					
25				7.2					
50				7.2					
100				7					
0	N	2		7.4					
6.25				7.3					
12.5				7.3					
25				7.2					
50				7.2					
100				7.2					
0	N	3		7.5					
6.25				7.4					
12.5				7.4					
25				7.4					
50				7.3					
100				7.3					
0	N	4		7.6					
6.25				7.2					
12.5				7.2					
25				7.1					
50				7					
100				7					
0	N	5		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.4					
100				7.4					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.8					
50				7.7					
100				7.6					
0	N	7		7.6					
6.25				7.6					
12.5				7.6					
25				7.5					
50				7.5					
100				7.4					
0	N	8		7.4					
6.25				7.5					
12.5				7.4					
25				7.4					
50				7.3					
100				7.2					

# CETIS Measurement Report

Report Date: 15 Nov-21 12:54 (p 6 of 8)  
Test Code/ID: VCF1021.151fml / 12-0589-9336

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Hardness (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				145					
0	N	2		95					
100				145					
0	N	3		95					
100				145					
0	N	4		96					
100				145					
0	N	5		96					
100				145					
0	N	6		96					
100				145					
0	N	7		96					
100				145					
0	N	8		96					
100				145					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:54 (p 7 of 8)  
 Test Code/ID: VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.3					
100				7.3					
0	N	2		8					
6.25				7.6					
12.5				7.6					
25				7.6					
50				7.6					
100				7.6					
0	N	3		7.8					
6.25				7.8					
12.5				7.7					
25				7.7					
50				7.7					
100				7.7					
0	N	4		8					
6.25				7.6					
12.5				7.6					
25				7.6					
50				7.6					
100				7.6					
0	N	5		8					
6.25				7.9					
12.5				7.8					
25				7.7					
50				7.7					
100				7.7					
0	N	6		7.9					
6.25				7.9					
12.5				7.8					
25				7.7					
50				7					
100				7.6					
0	N	7		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	8		8					
6.25				7.9					
12.5				7.8					
25				7.8					
50				7.8					
100				7.8					



**CETIS Measurement Report**

Report Date: 15 Nov-21 12:54 (p 8 of 8)

Test Code/ID: VCF1021.151fml / 12-0589-9336

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24					
12.5				24					
25				24.1					
50				24.1					
100				24.1					
0	N	2		24					
6.25				24					
12.5				24.1					
25				24.2					
50				24.2					
100				24.3					
0	N	3		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	4		24					
6.25				24.5					
12.5				24.4					
25				24.2					
50				24.2					
100				24.2					
0	N	5		24					
6.25				24					
12.5				24					
25				24.1					
50				24.1					
100				24.2					
0	N	6		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.2					
100				24.3					
0	N	7		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* EPA-821-R-02-013. "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-SPA  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.152

#### CHRONIC FATHEAD MINNOW SURVIVAL & GROWTH BIOASSAY

SURVIVAL NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
EC25 = >100.00 %  
EC50 = >100.00 %

BIOMASS NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
IC25 = >100.00 %  
IC50 = >100.00 %

Yours very truly,

Scott Johnson  
Laboratory Director

**CETIS Summary Report**

Report Date: 15 Nov-21 13:07 (p 1 of 2)  
 Test Code/ID: VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 04-0845-0402	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:07	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:12	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 16-9402-7981	<b>Code:</b> VCF1021.152	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-SPA
<b>Sample Age:</b> 27h (7 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
01-3625-8144	7d Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	5.41%	1	1
09-0753-5244	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test	100	>100	---	8.36%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
04-3370-1682	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
06-8377-6690	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Decision
				Lower	Upper	Overlap	
01-3625-8144	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
04-3370-1682	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
06-8377-6690	Mean Dry Biomass-mg	Control Resp	0.3398	0.25	>>	Yes	Passes Criteria
09-0753-5244	Mean Dry Biomass-mg	Control Resp	0.3398	0.25	>>	Yes	Passes Criteria
09-0753-5244	Mean Dry Biomass-mg	PMSD	0.08357	0.12	0.3	Yes	Below Criteria

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		4	0.9333	0.8467	1.0200	0.8667	1.0000	0.0272	0.0544	5.83%	6.67%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
50		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
100		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.3398	0.3317	0.3479	0.3353	0.3467	0.002544	0.005088	1.50%	0.00%
6.25		4	0.3437	0.34	0.3473	0.3407	0.346	0.001139	0.002277	0.66%	-1.13%
12.5		4	0.3488	0.3254	0.3723	0.3393	0.3707	0.007365	0.01473	4.22%	-2.65%
25		4	0.3473	0.3274	0.3673	0.3353	0.3607	0.006278	0.01256	3.61%	-2.21%
50		4	0.3352	0.329	0.3413	0.33	0.3393	0.001932	0.003863	1.15%	1.37%
100		4	0.359	0.3028	0.4152	0.34	0.412	0.01768	0.03535	9.85%	-5.64%

**CETIS Summary Report**

Report Date: 15 Nov-21 13:07 (p 2 of 2)  
 Test Code/ID: VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail** MD5: 775260C070C2BB512AC867F8BF6EF0FA

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		0.9333	0.9333	0.8667	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	0.9333	1.0000
50		1.0000	1.0000	0.9333	1.0000
100		1.0000	1.0000	0.9333	1.0000

**Mean Dry Biomass-mg Detail** MD5: 950210FD2372EC51F346D3945D6D5A41

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3353	0.3407	0.3367	0.3467
6.25		0.3407	0.3447	0.3433	0.346
12.5		0.3393	0.3407	0.3447	0.3707
25		0.3607	0.338	0.3353	0.3553
50		0.33	0.3353	0.336	0.3393
100		0.34	0.3413	0.3427	0.412

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		14/15	14/15	13/15	15/15
12.5		15/15	15/15	15/15	15/15
25		15/15	15/15	14/15	15/15
50		15/15	15/15	14/15	15/15
100		15/15	15/15	14/15	15/15

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 01-3625-8144	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:06	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:04	<b>MD5 Hash:</b> 775260C070C2BB512AC867F8BF6EF0FA	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 04-0845-0402	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:07	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:12	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 16-9402-7981	<b>Code:</b> VCF1021.152	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-SPA
<b>Sample Age:</b> 27h (7 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.05413	5.41%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	12	10	1	6	CDF	0.1424	Non-Significant Effect
		12.5	18	10	1	6	CDF	0.8333	Non-Significant Effect
		25	16	10	1	6	CDF	0.6105	Non-Significant Effect
		50	16	10	1	6	CDF	0.6105	Non-Significant Effect
		100	16	10	1	6	CDF	0.6105	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0434927	0.0086985	5	2.27	0.0913	Non-Significant Effect
Error	0.0689638	0.0038313	18			
Total	0.112456		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
	Levene Equality of Variance Test	2.369	4.248	0.0809	Equal Variances
	Mod Levene Equality of Variance Test	0.7247	4.248	0.6137	Equal Variances
Distribution	Anderson-Darling A2 Test	2.457	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	1.352	2.576	0.1764	Normal Distribution
	D'Agostino Skewness Test	1.344	2.576	0.1788	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	3.635	9.21	0.1624	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2987	0.2056	<1.0E-05	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8114	0.884	0.0005	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	0.9333	0.8467	1.0000	0.9333	0.8667	1.0000	0.0272	5.83%	6.67%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
50		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
100		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%

**Fathead Minnow 7-d Larval Survival and Growth Test**

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 01-3625-8144      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:06      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:04      MD5 Hash: 775260C070C2BB512AC867F8BF6EF0FA      Editor ID: 000-189-126-0

**Angular (Corrected) Transformed Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
6.25		4	1.3140	1.1550	1.4730	1.3100	1.1970	1.4410	0.0500	7.60%	8.81%
12.5		4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
25		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
50		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
100		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		0.9333	0.9333	0.8667	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	0.9333	1.0000
50		1.0000	1.0000	0.9333	1.0000
100		1.0000	1.0000	0.9333	1.0000

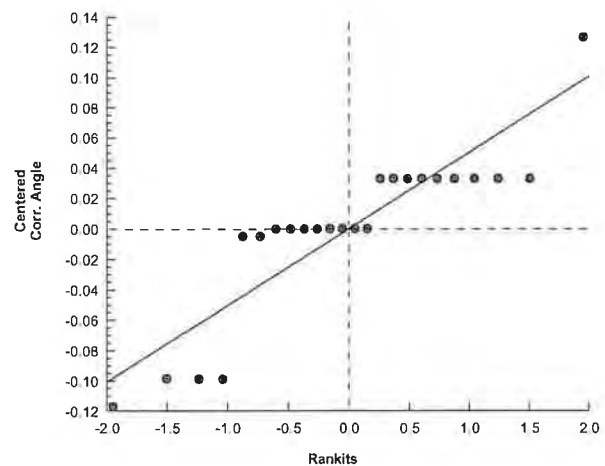
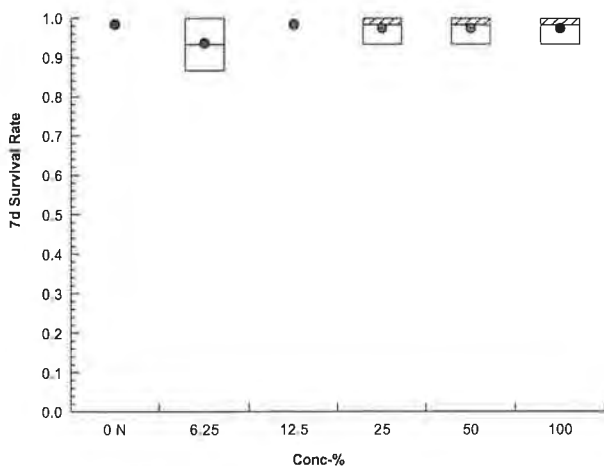
**Angular (Corrected) Transformed Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.4410	1.4410	1.4410	1.4410
6.25		1.3100	1.3100	1.1970	1.4410
12.5		1.4410	1.4410	1.4410	1.4410
25		1.4410	1.4410	1.3100	1.4410
50		1.4410	1.4410	1.3100	1.4410
100		1.4410	1.4410	1.3100	1.4410

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		14/15	14/15	13/15	15/15
12.5		15/15	15/15	15/15	15/15
25		15/15	15/15	14/15	15/15
50		15/15	15/15	14/15	15/15
100		15/15	15/15	14/15	15/15

**Graphics**





**CETIS Analytical Report**

Report Date: 15 Nov-21 13:07 (p 3 of 4)  
 Test Code/ID: VCF1021.152 / 07-3555-1020

Fathead Minnow 7-d Larval Survival and Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID: 09-0753-5244	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.7		Analyst:			
Analyzed: 15 Nov-21 13:06	Analysis: Nonparametric-Control vs Treatments	Status Level: 1		Diluent: Laboratory Water			
Edit Date: 15 Nov-21 13:04	MD5 Hash: 950210FD2372EC51F346D3945D6D5A41	Editor ID: 000-189-126-0		Brine: Not Applicable			
Batch ID: 04-0845-0402	Test Type: Growth-Survival (7d)			Source: Aquatic Biosystems, CO	Age: <24		
Start Date: 26 Oct-21 14:07	Protocol: EPA/821/R-02-013 (2002)						
Ending Date: 02 Nov-21 14:12	Species: Pimephales promelas						
Test Length: 7d 0h	Taxon: Actinopterygii						
Sample ID: 16-9402-7981	Code: VCF1021.152	Project: NPDES Stormwater Wet Season					
Sample Date: 25 Oct-21 11:00	Material: Sample Water	Source: Bioassay Report					
Receipt Date: 25 Oct-21 15:27	CAS (PC):	Station: MO-SPA					
Sample Age: 27h (7 °C)	Client: Ventura County Watershed Protection Distri						

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	0.0284	8.36%

Steel Many-One Rank Sum Test									
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	21.5	10	1	6	CDF	0.9855	Non-Significant Effect
		12.5	21.5	10	1	6	CDF	0.9855	Non-Significant Effect
		25	20.5	10	1	6	CDF	0.9667	Non-Significant Effect
		50	13.5	10	1	6	CDF	0.2853	Non-Significant Effect
		100	22	10	0	6	CDF	0.9908	Non-Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3398	0.25	>>	Yes	Passes Criteria
PMSD	0.08357	0.12	0.3	Yes	Below Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0013554	0.0002711	5	0.9738	0.4600	Non-Significant Effect
Error	0.0050108	0.0002784	18			
Total	0.0063662		23			

ANOVA Assumptions Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variance	Bartlett Equality of Variance Test	22.84	15.09	0.0004	Unequal Variances	
	Levene Equality of Variance Test	5.321	4.248	0.0036	Unequal Variances	
	Mod Levene Equality of Variance Test	0.7042	4.248	0.6277	Equal Variances	
Distribution	Anderson-Darling A2 Test	1.279	3.878	0.0022	Non-Normal Distribution	
	D'Agostino Kurtosis Test	3.325	2.576	0.0009	Non-Normal Distribution	
	D'Agostino Skewness Test	3.647	2.576	0.0003	Non-Normal Distribution	
	D'Agostino-Pearson K2 Omnibus Test	24.36	9.21	<1.0E-05	Non-Normal Distribution	
	Kolmogorov-Smirnov D Test	0.1872	0.2056	0.0293	Normal Distribution	
	Shapiro-Wilk W Normality Test	0.8216	0.884	0.0007	Non-Normal Distribution	

Mean Dry Biomass-mg Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.3398	0.3317	0.3479	0.3387	0.3353	0.3467	0.002544	1.50%	0.00%
6.25		4	0.3437	0.34	0.3473	0.344	0.3407	0.346	0.001139	0.66%	-1.13%
12.5		4	0.3488	0.3254	0.3723	0.3427	0.3393	0.3707	0.007365	4.22%	-2.65%
25		4	0.3473	0.3274	0.3673	0.3467	0.3353	0.3607	0.006278	3.61%	-2.21%
50		4	0.3352	0.329	0.3413	0.3357	0.33	0.3393	0.001932	1.15%	1.37%
100		4	0.359	0.3028	0.4152	0.342	0.34	0.412	0.01768	9.85%	-5.64%

**CETIS Analytical Report**

**Report Date:** 15 Nov-21 13:07 (p 4 of 4)  
**Test Code/ID:** VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test**

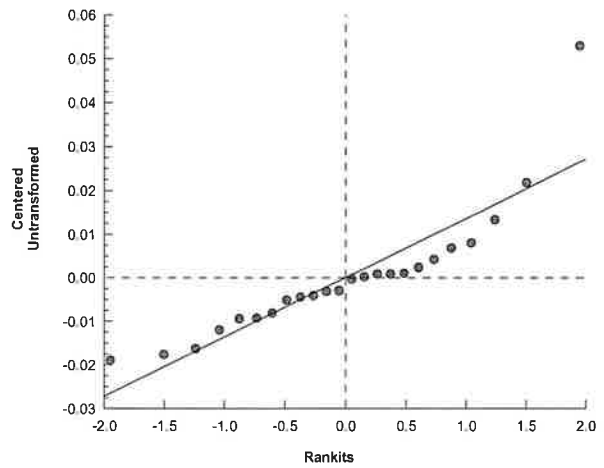
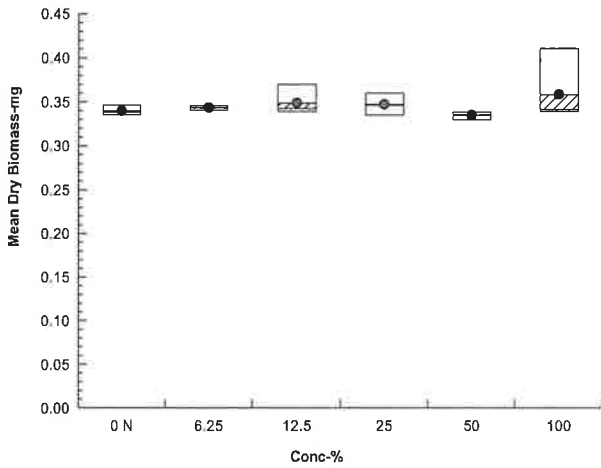
**Aquatic Bioassay & Consulting Labs, Inc.**

**Analysis ID:** 09-0753-5244      **Endpoint:** Mean Dry Biomass-mg      **CETIS Version:** CETISv1.9.7  
**Analyzed:** 15 Nov-21 13:06      **Analysis:** Nonparametric-Control vs Treatments      **Status Level:** 1  
**Edit Date:** 15 Nov-21 13:04      **MD5 Hash:** 950210FD2372EC51F346D3945D6D5A41      **Editor ID:** 000-189-126-0

**Mean Dry Biomass-mg Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3353	0.3407	0.3367	0.3467
6.25		0.3407	0.3447	0.3433	0.346
12.5		0.3393	0.3407	0.3447	0.3707
25		0.3607	0.338	0.3353	0.3553
50		0.33	0.3353	0.336	0.3393
100		0.34	0.3413	0.3427	0.412

**Graphics**



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:07 (p 1 of 4)  
 Test Code/ID: VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID: 04-3370-1682      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:06      Analysis: Linear Interpolation (ICPIN)      Status Level: 1  
 Edit Date: 15 Nov-21 13:04      MD5 Hash: 775260C070C2BB512AC867F8BF6EF0FA      Editor ID: 000-189-126-0

Batch ID: 04-0845-0402      Test Type: Growth-Survival (7d)      Analyst:  
 Start Date: 26 Oct-21 14:07      Protocol: EPA/821/R-02-013 (2002)      Diluent: Laboratory Water  
 Ending Date: 02 Nov-21 14:12      Species: Pimephales promelas      Brine: Not Applicable  
 Test Length: 7d 0h      Taxon: Actinopterygii      Source: Aquatic Biosystems, CO      Age: <24

Sample ID: 16-9402-7981      Code: VCF1021.152      Project: NPDES Stormwater Wet Season  
 Sample Date: 25 Oct-21 11:00      Material: Sample Water      Source: Bioassay Report  
 Receipt Date: 25 Oct-21 15:27      CAS (PC):      Station: MO-SPA  
 Sample Age: 27h (7 °C)      Client: Ventura County Watershed Protection Distri

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	1.0000	0.00%
6.25		4	0.9333	0.9333	0.8667	1.0000	5.83%	6.67%	56/60	0.9767	2.33%
12.5		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	0.9767	2.33%
25		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9767	2.33%
50		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9767	2.33%
100		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9767	2.33%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		0.9333	0.9333	0.8667	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	0.9333	1.0000
50		1.0000	1.0000	0.9333	1.0000
100		1.0000	1.0000	0.9333	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		14/15	14/15	13/15	15/15
12.5		15/15	15/15	15/15	15/15
25		15/15	15/15	14/15	15/15
50		15/15	15/15	14/15	15/15
100		15/15	15/15	14/15	15/15

Fathead Minnow 7-d Larval Survival and Growth Test

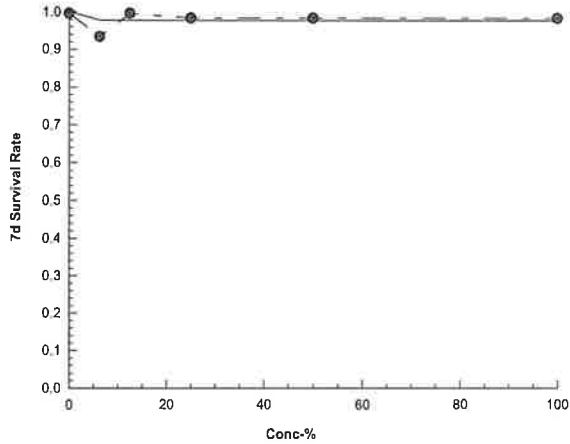
Aquatic Bioassay & Consulting Labs, Inc.

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<b>Analysis ID:</b> 04-3370-1682	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:06	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:04	<b>MD5 Hash:</b> 775260C070C2BB512AC867F8BF6EF0FA	<b>Editor ID:</b> 000-189-126-0

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Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:07 (p 3 of 4)

Test Code/ID: VCF1021.152 / 07-3555-1020

Fathead Minnow 7-d Larval Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 06-8377-6690	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.7	Analyst:		
Analyzed: 15 Nov-21 13:06	Analysis: Linear Interpolation (ICPIN)	Status Level: 1	Diluent: Laboratory Water		
Edit Date: 15 Nov-21 13:04	MD5 Hash: 950210FD2372EC51F346D3945D6D5A41	Editor ID: 000-189-126-0	Brine: Not Applicable		
Batch ID: 04-0845-0402	Test Type: Growth-Survival (7d)		Source: Aquatic Biosystems, CO	Age: <24	
Start Date: 26 Oct-21 14:07	Protocol: EPA/821/R-02-013 (2002)				
Ending Date: 02 Nov-21 14:12	Species: Pimephales promelas				
Test Length: 7d 0h	Taxon: Actinopterygii				
Sample ID: 16-9402-7981	Code: VCF1021.152	Project: NPDES Stormwater Wet Season			
Sample Date: 25 Oct-21 11:00	Material: Sample Water	Source: Bioassay Report			
Receipt Date: 25 Oct-21 15:27	CAS (PC):	Station: MO-SPA			
Sample Age: 27h (7 °C)	Client: Ventura County Watershed Protection Distri				

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	286845	280	Yes	Two-Point Interpolation

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3398	0.25	>>	Yes	Passes Criteria

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

Mean Dry Biomass-mg Summary			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	0.3398	0.3387	0.3353	0.3467	1.50%	0.00%	0.3456	0.00%
6.25		4	0.3437	0.344	0.3407	0.346	0.66%	-1.13%	0.3456	0.00%
12.5		4	0.3488	0.3427	0.3393	0.3707	4.22%	-2.65%	0.3456	0.00%
25		4	0.3473	0.3467	0.3353	0.3607	3.61%	-2.21%	0.3456	0.00%
50		4	0.3352	0.3357	0.33	0.3393	1.15%	1.37%	0.3456	0.00%
100		4	0.359	0.342	0.34	0.412	9.85%	-5.64%	0.3456	0.00%

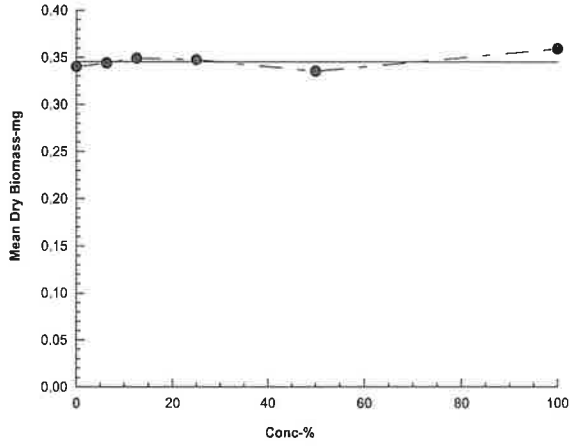
Mean Dry Biomass-mg Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3353	0.3407	0.3367	0.3467
6.25		0.3407	0.3447	0.3433	0.346
12.5		0.3393	0.3407	0.3447	0.3707
25		0.3607	0.338	0.3353	0.3553
50		0.33	0.3353	0.336	0.3393
100		0.34	0.3413	0.3427	0.412

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 06-8377-6690	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:06	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:04	<b>MD5 Hash:</b> 950210FD2372EC51F346D3945D6D5A41	<b>Editor ID:</b> 000-189-126-0

**Graphics**



# CETIS Measurement Report

Report Date: 15 Nov-21 13:07 (p 1 of 8)

Test Code/ID: VCF1021.152 / 07-3555-1020

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 04-0845-0402	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:07	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:12	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 16-9402-7981	<b>Code:</b> VCF1021.152	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-SPA
<b>Sample Age:</b> 27h (7 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	22	22	22	22	22	0	0	0.00%	0
Overall		16	41.31	30.68	51.94	22	61	4.987	19.95	48.29%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	351.4	350.3	352.5	350	353	0.1628	1.302	0.37%	0
12.5		8	325.9	322.4	329.3	318	330	0.5151	4.121	1.26%	0
25		8	305.1	302.4	307.8	302	310	0.4033	3.227	1.06%	0
50		8	243.1	239.9	246.3	237	248	0.4792	3.834	1.58%	0
100		8	122	120.4	123.6	120	125	0.2409	1.927	1.58%	0
Overall		48	284.7	260.5	308.8	120	364	11.99	83.08	29.19%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.463	7.253	7.672	7	7.8	0.03129	0.2504	3.35%	0
12.5		8	7.45	7.255	7.645	7	7.8	0.02912	0.233	3.13%	0
25		8	7.387	7.266	7.509	7.2	7.6	0.01822	0.1458	1.97%	0
50		8	7.363	7.263	7.462	7.2	7.5	0.01485	0.1188	1.61%	0
100		8	7.325	7.209	7.441	7.1	7.5	0.01736	0.1389	1.90%	0
Overall		48	7.431	7.374	7.488	7	7.9	0.02827	0.1959	2.64%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	58	58	58	58	58	0	0	0.00%	0
Overall		16	76.81	66.46	87.17	58	96	4.858	19.43	25.30%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.738	7.538	7.937	7.3	8	0.02983	0.2387	3.08%	0
12.5		8	7.7	7.521	7.879	7.3	8	0.02673	0.2138	2.78%	0
25		8	7.675	7.515	7.835	7.3	7.9	0.02386	0.1909	2.49%	0
50		8	7.625	7.493	7.757	7.3	7.8	0.01976	0.1581	2.07%	0
100		8	7.6	7.474	7.726	7.3	7.8	0.0189	0.1512	1.99%	0
Overall		48	7.717	7.656	7.777	7.3	8	0.02997	0.2077	2.69%	0 (0%)



# CETIS Measurement Report

Report Date: 15 Nov-21 13:07 (p 2 of 8)  
Test Code/ID: VCF1021.152 / 07-3555-1020

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.06	24	24.12	24	24.2	0.00929	0.07432	0.31%	0
12.5		8	24.09	24.03	24.14	24	24.2	0.007993	0.06395	0.27%	0
25		8	24.13	24.05	24.2	24	24.2	0.01107	0.08854	0.37%	0
50		8	24.15	24.04	24.26	24	24.3	0.01637	0.1309	0.54%	0
100		8	24.17	24.04	24.31	24	24.4	0.02087	0.1669	0.69%	0
Overall		48	24.1	24.07	24.13	24	24.4	0.01631	0.113	0.47%	0 (0%)



**CETIS Measurement Report**

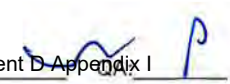
Report Date: 15 Nov-21 13:07 (p 3 of 8)  
Test Code/ID: VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Alkalinity (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				22					
0	N	2		60					
100				22					
0	N	3		60					
100				22					
0	N	4		61					
100				22					
0	N	5		61					
100				22					
0	N	6		61					
100				22					
0	N	7		61					
100				22					
0	N	8		61					
100				22					



# CETIS Measurement Report

Report Date: 15 Nov-21 13:07 (p 4 of 8)

Test Code/ID: VCF1021.152 / 07-3555-1020

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Conductivity-µmhos

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				353					
12.5				330					
25				302					
50				237					
100				120					
0	N	2		360					
6.25				350					
12.5				327					
25				304					
50				240					
100				122					
0	N	3		354					
6.25				352					
12.5				318					
25				309					
50				245					
100				124					
0	N	4		360					
6.25				350					
12.5				322					
25				302					
50				240					
100				120					
0	N	5		364					
6.25				351					
12.5				325					
25				305					
50				243					
100				123					
0	N	6		362					
6.25				353					
12.5				328					
25				310					
50				248					
100				125					
0	N	7		362					
6.25				352					
12.5				327					
25				307					
50				245					
100				122					
0	N	8		360					
6.25				350					
12.5				330					
25				302					
50				247					
100				120					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:07 (p 5 of 8)

Test Code/ID: VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7					
12.5				7					
25				7.2					
50				7.2					
100				7.3					
0	N	2		7.4					
6.25				7.6					
12.5				7.5					
25				7.4					
50				7.4					
100				7.3					
0	N	3		7.5					
6.25				7.4					
12.5				7.5					
25				7.5					
50				7.5					
100				7.5					
0	N	4		7.6					
6.25				7.4					
12.5				7.4					
25				7.3					
50				7.3					
100				7.2					
0	N	5		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.4					
100				7.4					
0	N	6		7.9					
6.25				7.8					
12.5				7.8					
25				7.6					
50				7.5					
100				7.5					
0	N	7		7.6					
6.25				7.5					
12.5				7.5					
25				7.4					
50				7.4					
100				7.3					
0	N	8		7.4					
6.25				7.3					
12.5				7.3					
25				7.2					
50				7.2					
100				7.1					

# CETIS Measurement Report

Report Date: 15 Nov-21 13:07 (p 6 of 8)  
Test Code/ID: VCF1021.152 / 07-3555-1020

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

## Hardness (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				58					
0	N	2		95					
100				58					
0	N	3		95					
100				58					
0	N	4		96					
100				58					
0	N	5		96					
100				58					
0	N	6		96					
100				58					
0	N	7		96					
100				58					
0	N	8		96					
100				58					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:07 (p 7 of 8)  
 Test Code/ID: VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

pH-Units									
Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.3					
100				7.3					
0	N	2		8					
6.25				7.6					
12.5				7.6					
25				7.6					
50				7.6					
100				7.6					
0	N	3		7.8					
6.25				7.8					
12.5				7.7					
25				7.7					
50				7.6					
100				7.6					
0	N	4		8					
6.25				8					
12.5				7.9					
25				7.9					
50				7.8					
100				7.7					
0	N	5		8					
6.25				8					
12.5				8					
25				7.9					
50				7.8					
100				7.8					
0	N	6		7.9					
6.25				7.9					
12.5				7.8					
25				7.7					
50				7.6					
100				7.5					
0	N	7		8					
6.25				7.7					
12.5				7.7					
25				7.7					
50				7.7					
100				7.7					
0	N	8		8					
6.25				7.6					
12.5				7.6					
25				7.6					
50				7.6					
100				7.6					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:07 (p 8 of 8)  
 Test Code/ID: VCF1021.152 / 07-3555-1020

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24					
100				24					
0	N	2		24					
6.25				24.2					
12.5				24.2					
25				24.2					
50				24.3					
100				24.3					
0	N	3		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	4		24					
6.25				24.1					
12.5				24.1					
25				24.2					
50				24.2					
100				24.4					
0	N	5		24					
6.25				24.1					
12.5				24.1					
25				24.1					
50				24.2					
100				24.3					
0	N	6		24					
6.25				24					
12.5				24.1					
25				24.2					
50				24.3					
100				24.3					
0	N	7		24					
6.25				24.1					
12.5				24.1					
25				24.2					
50				24.2					
100				24.1					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					

P



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

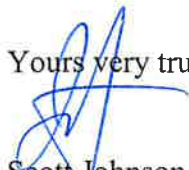
CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-OJA  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.153

#### CHRONIC FATHEAD MINNOW SURVIVAL & GROWTH BIOASSAY

SURVIVAL            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          EC25 =            >100.00 %  
                          EC50 =            >100.00 %

BIOMASS            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          IC25 =            >100.00 %  
                          IC50 =            >100.00 %

Yours very truly,

  
Scott Johnson  
Laboratory Director

**CETIS Summary Report**

Report Date: 15 Nov-21 13:10 (p 1 of 2)

Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 17-8098-6405	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:10	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:15	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 01-3804-3132	<b>Code:</b> VCF1021.153	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OJA
<b>Sample Age:</b> 25h (7.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	S
02-8521-8502	7d Survival Rate	Steel Many-One Rank Sum Test		100	>100	---	6.72%	1	1
05-6979-7312	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test		100	>100	---	12.7%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓	Level	%	95% LCL	95% UCL	TU	S
03-1146-3617	7d Survival Rate	Linear Interpolation (ICPIN)		✓ EC10	>100	---	---	<1	1
				✓ EC15	>100	---	---	<1	
				✓ EC20	>100	---	---	<1	
				✓ EC25	>100	---	---	<1	
				✓ EC40	>100	---	---	<1	
				✓ EC50	>100	---	---	<1	
16-7362-7417	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)		✓ IC10	>100	---	---	<1	1
				✓ IC15	>100	---	---	<1	
				✓ IC20	>100	---	---	<1	
				✓ IC25	>100	---	---	<1	
				✓ IC40	>100	---	---	<1	
				✓ IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
02-8521-8502	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
03-1146-3617	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
05-6979-7312	Mean Dry Biomass-mg	Control Resp	0.3418	0.25	>>	Yes	Passes Criteria
16-7362-7417	Mean Dry Biomass-mg	Control Resp	0.3418	0.25	>>	Yes	Passes Criteria
05-6979-7312	Mean Dry Biomass-mg	PMSD	0.1266	0.12	0.3	Yes	Passes Criteria

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
12.5		4	0.9500	0.8484	1.0520	0.8667	1.0000	0.0319	0.0638	6.72%	5.00%
25		4	0.9500	0.8484	1.0520	0.8667	1.0000	0.0319	0.0638	6.72%	5.00%
50		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.3418	0.3376	0.346	0.3387	0.344	0.001316	0.002632	0.77%	0.00%
6.25		4	0.3407	0.3339	0.3474	0.3373	0.3467	0.002126	0.004251	1.25%	0.34%
12.5		4	0.3237	0.2464	0.4009	0.2513	0.352	0.02427	0.04854	15.00%	5.31%
25		4	0.3207	0.2612	0.3801	0.2647	0.3413	0.01868	0.03737	11.65%	6.19%
50		4	0.341	0.3347	0.3473	0.3373	0.3453	0.001972	0.003944	1.16%	0.24%
100		4	0.345	0.3302	0.3598	0.336	0.3533	0.004639	0.009278	2.69%	-0.93%

*ABS*



**CETIS Summary Report**

Report Date: 15 Nov-21 13:10 (p 2 of 2)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 19557CD16D7CD14AC1397DB15F747219

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	0.9333	1.0000
12.5		1.0000	0.9333	1.0000	0.8667
25		0.9333	0.8667	1.0000	1.0000
50		0.9333	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

**Mean Dry Biomass-mg Detail**

MD5: A54737B3D3A74EA0F8D235871F487C99

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.344	0.3387	0.3407	0.344
6.25		0.3373	0.3407	0.3467	0.338
12.5		0.352	0.34	0.3513	0.2513
25		0.3413	0.2647	0.3373	0.3393
50		0.3373	0.338	0.3433	0.3453
100		0.3527	0.336	0.3533	0.338

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	14/15	15/15
12.5		15/15	14/15	15/15	13/15
25		14/15	13/15	15/15	15/15
50		14/15	15/15	15/15	15/15
100		15/15	15/15	15/15	15/15

**CETIS Analytical Report**

Report Date: 15 Nov-21 13:10 (p 1 of 4)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

Fathead Minnow 7-d Larval Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 02-8521-8502	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7			
Analyzed: 15 Nov-21 13:10	Analysis: Nonparametric-Control vs Treatments	Status Level: 1			
Edit Date: 15 Nov-21 13:09	MD5 Hash: 19557CD16D7CD14AC1397DB15F747219	Editor ID: 000-189-126-0			
Batch ID: 17-8098-6405	Test Type: Growth-Survival (7d)	Analyst:			
Start Date: 26 Oct-21 14:10	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water			
Ending Date: 02 Nov-21 14:15	Species: Pimephales promelas	Brine: Not Applicable			
Test Length: 7d 0h	Taxon: Actinopterygii	Source: Aquatic Biosystems, CO Age: <24			
Sample ID: 01-3804-3132	Code: VCF1021.153	Project: NPDES Stormwater Wet Season			
Sample Date: 25 Oct-21 12:45	Material: Sample Water	Source: Bioassay Report			
Receipt Date: 25 Oct-21 15:27	CAS (PC):	Station: MO-OJA			
Sample Age: 25h (7.5 °C)	Client: Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.06717	6.72%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	16	10	1	6	CDF	0.6105	Non-Significant Effect
		12.5	14	10	1	6	CDF	0.3451	Non-Significant Effect
		25	14	10	1	6	CDF	0.3451	Non-Significant Effect
		50	16	10	1	6	CDF	0.6105	Non-Significant Effect
		100	18	10	1	6	CDF	0.8333	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0364065	0.0072813	5	1.198	0.3494	Non-Significant Effect
Error	0.109401	0.0060778	18			
Total	0.145808		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
	Levene Equality of Variance Test	6.637	4.248	0.0011	Unequal Variances
	Mod Levene Equality of Variance Test	2.91	4.248	0.0426	Equal Variances
Distribution	Anderson-Darling A2 Test	1.227	3.878	0.0032	Non-Normal Distribution
	D'Agostino Kurtosis Test	0.659	2.576	0.5099	Normal Distribution
	D'Agostino Skewness Test	1.634	2.576	0.1024	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	3.103	9.21	0.2120	Normal Distribution
	Kolmogorov-Smirnov D Test	0.25	0.2056	0.0004	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8864	0.884	0.0112	Normal Distribution

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
12.5		4	0.9500	0.8484	1.0000	0.9667	0.8667	1.0000	0.0319	6.72%	5.00%
25		4	0.9500	0.8484	1.0000	0.9667	0.8667	1.0000	0.0319	6.72%	5.00%
50		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-8521-8502      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:10      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:09      MD5 Hash: 19557CD16D7CD14AC1397DB15F747219      Editor ID: 000-189-126-0

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
6.25		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
12.5		4	1.3470	1.1600	1.5350	1.3750	1.1970	1.4410	0.0589	8.75%	6.52%
25		4	1.3470	1.1600	1.5350	1.3750	1.1970	1.4410	0.0589	8.75%	6.52%
50		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
100		4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	0.9333	1.0000
12.5		1.0000	0.9333	1.0000	0.8667
25		0.9333	0.8667	1.0000	1.0000
50		0.9333	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

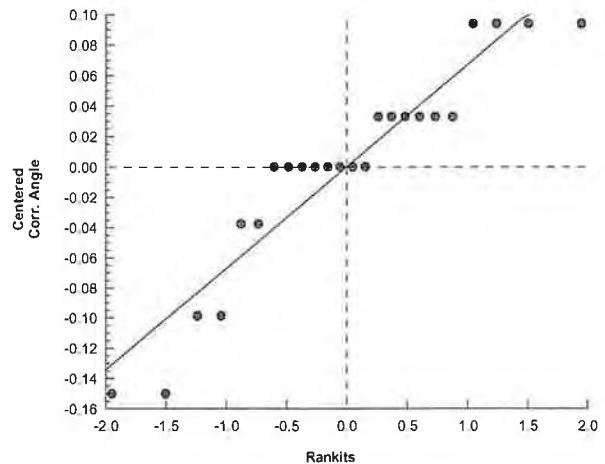
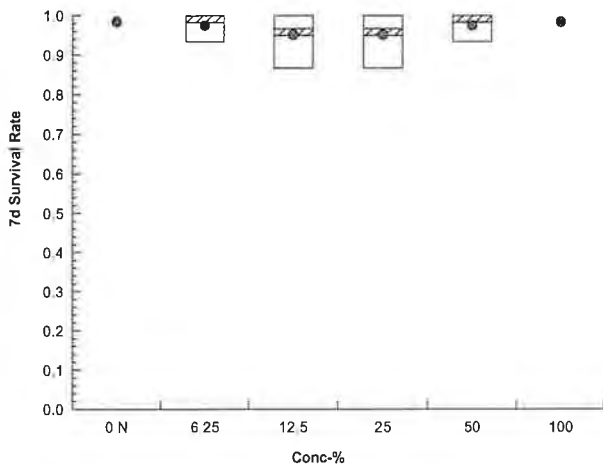
Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.4410	1.4410	1.4410	1.4410
6.25		1.4410	1.4410	1.3100	1.4410
12.5		1.4410	1.3100	1.4410	1.1970
25		1.3100	1.1970	1.4410	1.4410
50		1.3100	1.4410	1.4410	1.4410
100		1.4410	1.4410	1.4410	1.4410

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	14/15	15/15
12.5		15/15	14/15	15/15	13/15
25		14/15	13/15	15/15	15/15
50		14/15	15/15	15/15	15/15
100		15/15	15/15	15/15	15/15

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:10 (p 3 of 4)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 05-6979-7312	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:10	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:09	<b>MD5 Hash:</b> A54737B3D3A74EA0F8D235871F487C99	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 17-8098-6405	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:10	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:15	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 01-3804-3132	<b>Code:</b> VCF1021.153	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OJA
<b>Sample Age:</b> 25h (7.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	0.04328	12.66%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	15.5	10	1	6	CDF	0.5438	Non-Significant Effect
		12.5	19	10	0	6	CDF	0.9055	Non-Significant Effect
		25	13	10	0	6	CDF	0.2311	Non-Significant Effect
		50	16	10	0	6	CDF	0.6105	Non-Significant Effect
		100	18	10	0	6	CDF	0.8333	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3418	0.25	>>	Yes	Passes Criteria
PMSD	0.1266	0.12	0.3	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0021894	0.0004379	5	0.6774	0.6461	Non-Significant Effect
Error	0.0116363	0.0006465	18			
Total	0.0138258		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	31.32	15.09	<1.0E-05	Unequal Variances
	Levene Equality of Variance Test	5.419	4.248	0.0033	Unequal Variances
	Mod Levene Equality of Variance Test	0.8432	4.248	0.5367	Equal Variances
Distribution	Anderson-Darling A2 Test	2.171	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	2.972	2.576	0.0030	Non-Normal Distribution
	D'Agostino Skewness Test	3.572	2.576	0.0004	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	21.59	9.21	2.1E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.2686	0.2056	9.7E-05	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.7671	0.884	8.9E-05	Non-Normal Distribution

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.3418	0.3376	0.346	0.3423	0.3387	0.344	0.001316	0.77%	0.00%
6.25		4	0.3407	0.3339	0.3474	0.3393	0.3373	0.3467	0.002126	1.25%	0.34%
12.5		4	0.3237	0.2464	0.4009	0.3457	0.2513	0.352	0.02427	15.00%	5.31%
25		4	0.3207	0.2612	0.3801	0.3383	0.2647	0.3413	0.01868	11.65%	6.19%
50		4	0.341	0.3347	0.3473	0.3407	0.3373	0.3453	0.001972	1.16%	0.24%
100		4	0.345	0.3302	0.3598	0.3453	0.336	0.3533	0.004639	2.69%	-0.93%

Fathead Minnow 7-d Larval Survival and Growth Test

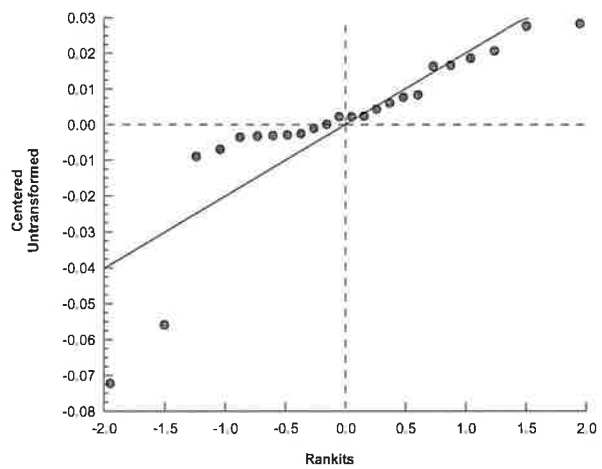
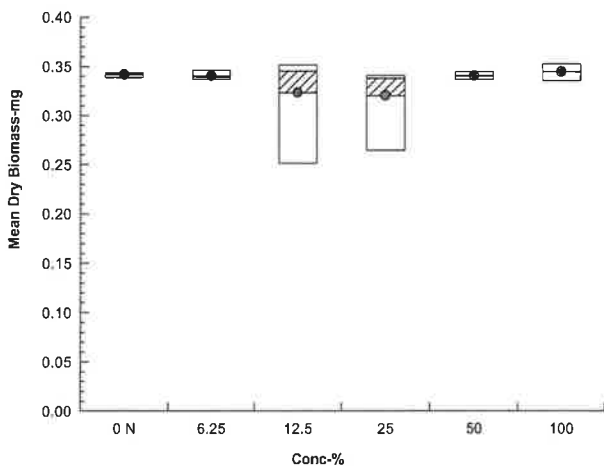
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 05-6979-7312      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:10      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:09      MD5 Hash: A54737B3D3A74EA0F8D235871F487C99      Editor ID: 000-189-126-0

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.344	0.3387	0.3407	0.344
6.25		0.3373	0.3407	0.3467	0.338
12.5		0.352	0.34	0.3513	0.2513
25		0.3413	0.2647	0.3373	0.3393
50		0.3373	0.338	0.3433	0.3453
100		0.3527	0.336	0.3533	0.338

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:10 (p 1 of 4)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 03-1146-3617	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:10	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:09	<b>MD5 Hash:</b> 19557CD16D7CD14AC1397DB15F747219	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 17-8098-6405	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:10	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:15	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 01-3804-3132	<b>Code:</b> VCF1021.153	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OJA
<b>Sample Age:</b> 25h (7.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	1.0000	0.00%
6.25		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9833	1.67%
12.5		4	0.9500	0.9667	0.8667	1.0000	6.72%	5.00%	57/60	0.9708	2.92%
25		4	0.9500	0.9667	0.8667	1.0000	6.72%	5.00%	57/60	0.9708	2.92%
50		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9708	2.92%
100		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	0.9708	2.92%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	0.9333	1.0000
12.5		1.0000	0.9333	1.0000	0.8667
25		0.9333	0.8667	1.0000	1.0000
50		0.9333	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	14/15	15/15
12.5		15/15	14/15	15/15	13/15
25		14/15	13/15	15/15	15/15
50		14/15	15/15	15/15	15/15
100		15/15	15/15	15/15	15/15

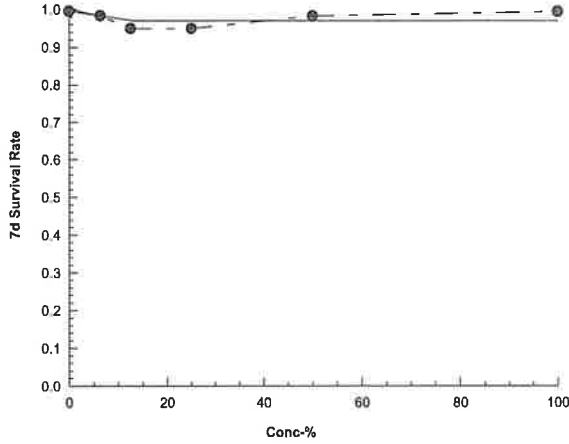


Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 03-1146-3617	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 15 Nov-21 13:10	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 15 Nov-21 13:09	MD5 Hash: 19557CD16D7CD14AC1397DB15F747219	Editor ID: 000-189-126-0

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:10 (p 3 of 4)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 16-7362-7417	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:10	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:09	<b>MD5 Hash:</b> A54737B3D3A74EA0F8D235871F487C99	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 17-8098-6405	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:10	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:15	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 01-3804-3132	<b>Code:</b> VCF1021.153	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OJA
<b>Sample Age:</b> 25h (7.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1599308	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3418	0.25	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	0.3418	0.3423	0.3387	0.344	0.77%	0.00%	0.3418	0.00%
6.25		4	0.3407	0.3393	0.3373	0.3467	1.25%	0.34%	0.3407	0.34%
12.5		4	0.3237	0.3457	0.2513	0.352	15.00%	5.31%	0.3326	2.71%
25		4	0.3207	0.3383	0.2647	0.3413	11.65%	6.19%	0.3326	2.71%
50		4	0.341	0.3407	0.3373	0.3453	1.16%	0.24%	0.3326	2.71%
100		4	0.345	0.3453	0.336	0.3533	2.69%	-0.93%	0.3326	2.71%

**Mean Dry Biomass-mg Detail**

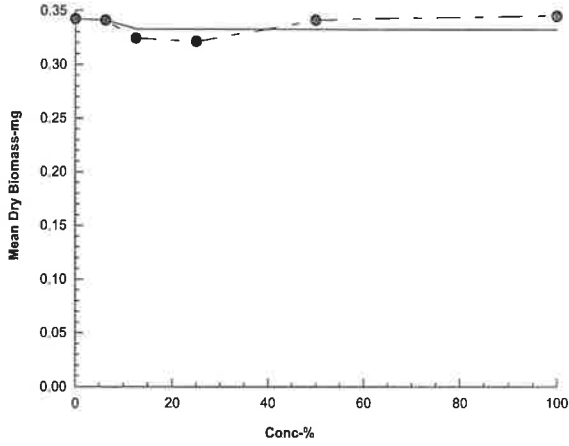
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.344	0.3387	0.3407	0.344
6.25		0.3373	0.3407	0.3467	0.338
12.5		0.352	0.34	0.3513	0.2513
25		0.3413	0.2647	0.3373	0.3393
50		0.3373	0.338	0.3433	0.3453
100		0.3527	0.336	0.3533	0.338

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 16-7362-7417      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
Analyzed: 15 Nov-21 13:10      Analysis: Linear Interpolation (ICPIN)      Status Level: 1  
Edit Date: 15 Nov-21 13:09      MD5 Hash: A54737B3D3A74EA0F8D235871F487C99      Editor ID: 000-189-126-0

Graphics



# CETIS Measurement Report

Report Date: 15 Nov-21 13:10 (p 1 of 8)

Test Code/ID: VCF1021.153 / 17-5430-3396

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 17-8098-6405	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:10	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:15	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 01-3804-3132	<b>Code:</b> VCF1021.153	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-OJA
<b>Sample Age:</b> 25h (7.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	26	26	26	26	26	0	0	0.00%	0
Overall		16	43.31	33.78	52.84	26	61	4.471	17.88	41.29%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	342.5	340.8	344.2	340	345	0.25	2	0.58%	0
12.5		8	352.1	350.9	353.3	350	355	0.1822	1.458	0.41%	0
25		8	346.9	342.9	350.8	337	353	0.588	4.704	1.36%	0
50		8	342.5	339.3	345.7	336	347	0.4772	3.817	1.11%	0
100		8	308.6	306.1	311.2	302	312	0.3776	3.021	0.98%	0
Overall		48	342.2	337.3	347	302	364	2.409	16.69	4.88%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.413	7.187	7.638	7	7.8	0.0337	0.2696	3.64%	0
12.5		8	7.375	7.187	7.563	7	7.7	0.02815	0.2252	3.05%	0
25		8	7.337	7.177	7.498	7.1	7.6	0.02403	0.1923	2.62%	0
50		8	7.337	7.19	7.485	7.1	7.5	0.0221	0.1768	2.41%	0
100		8	7.337	7.159	7.516	7	7.6	0.02667	0.2134	2.91%	0
Overall		48	7.4	7.336	7.464	7	7.9	0.03193	0.2212	2.99%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	55	55	55	55	55	0	0	0.00%	0
Overall		16	75.31	64.13	86.49	55	96	5.245	20.98	27.86%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.538	7.301	7.774	7	7.8	0.03532	0.2825	3.75%	0
12.5		8	7.487	7.281	7.694	7	7.7	0.03094	0.2475	3.31%	0
25		8	7.45	7.271	7.629	7	7.7	0.02673	0.2138	2.87%	0
50		8	7.425	7.253	7.597	7	7.7	0.02566	0.2053	2.76%	0
100		8	7.413	7.231	7.594	7	7.7	0.02709	0.2167	2.92%	0
Overall		48	7.546	7.464	7.628	7	8	0.0406	0.2813	3.73%	0 (0%)

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:10 (p 2 of 8)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.04	23.98	24.1	24	24.2	0.009295	0.07436	0.31%	0
12.5		8	24.09	24	24.17	24	24.3	0.01238	0.09906	0.41%	0
25		8	24.13	24.04	24.21	24	24.3	0.01293	0.1035	0.43%	0
50		8	24.16	24.04	24.28	24	24.4	0.0176	0.1408	0.58%	0
100		8	24.18	24.04	24.31	24	24.5	0.02086	0.1669	0.69%	0
Overall		48	24.1	24.06	24.13	24	24.5	0.01774	0.1229	0.51%	0 (0%)

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:10 (p 3 of 8)  
Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Alkalinity (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				26					
0	N	2		60					
100				26					
0	N	3		60					
100				26					
0	N	4		61					
100				26					
0	N	5		61					
100				26					
0	N	6		61					
100				26					
0	N	7		61					
100				26					
0	N	8		61					
100				26					



**CETIS Measurement Report**

Report Date: 15 Nov-21 13:10 (p 4 of 8)

Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Conductivity-µmhos**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				342					
12.5				352					
25				347					
50				336					
100				302					
0	N	2		360					
6.25				340					
12.5				353					
25				349					
50				339					
100				310					
0	N	3		354					
6.25				344					
12.5				355					
25				353					
50				344					
100				312					
0	N	4		360					
6.25				340					
12.5				352					
25				344					
50				342					
100				307					
0	N	5		364					
6.25				342					
12.5				350					
25				348					
50				344					
100				310					
0	N	6		362					
6.25				345					
12.5				351					
25				348					
50				347					
100				309					
0	N	7		362					
6.25				345					
12.5				352					
25				337					
50				341					
100				309					
0	N	8		360					
6.25				342					
12.5				352					
25				349					
50				347					
100				310					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:10 (p 5 of 8)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7.6					
12.5				7.5					
25				7.5					
50				7.5					
100				7.5					
0	N	2		7.4					
6.25				7.3					
12.5				7.3					
25				7.4					
50				7.5					
100				7.6					
0	N	3		7.5					
6.25				7.4					
12.5				7.4					
25				7.3					
50				7.2					
100				7.2					
0	N	4		7.6					
6.25				7.2					
12.5				7.2					
25				7.1					
50				7.1					
100				7					
0	N	5		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.5					
100				7.5					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.5					
0	N	7		7.6					
6.25				7					
12.5				7					
25				7.1					
50				7.2					
100				7.2					
0	N	8		7.4					
6.25				7.3					
12.5				7.3					
25				7.2					
50				7.2					
100				7.2					

# CETIS Measurement Report

Report Date: 15 Nov-21 13:10 (p 6 of 8)  
Test Code/ID: VCF1021.153 / 17-5430-3396

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Hardness (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				55					
0	N	2		95					
100				55					
0	N	3		95					
100				55					
0	N	4		96					
100				55					
0	N	5		96					
100				55					
0	N	6		96					
100				55					
0	N	7		96					
100				55					
0	N	8		96					
100				55					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:10 (p 7 of 8)  
 Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7					
12.5				7					
25				7					
50				7					
100				7					
0	N	2		8					
6.25				7.4					
12.5				7.4					
25				7.5					
50				7.5					
100				7.6					
0	N	3		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.5					
100				7.5					
0	N	4		8					
6.25				7.6					
12.5				7.5					
25				7.5					
50				7.5					
100				7.4					
0	N	5		8					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.5					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.5					
50				7.4					
100				7.3					
0	N	7		8					
6.25				7.7					
12.5				7.7					
25				7.7					
50				7.7					
100				7.7					
0	N	8		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.3					
100				7.3					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:10 (p 8 of 8)

Test Code/ID: VCF1021.153 / 17-5430-3396

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24.1					
12.5				24.1					
25				24.2					
50				24.2					
100				24.2					
0	N	2		24					
6.25				24.2					
12.5				24.3					
25				24.3					
50				24.4					
100				24.5					
0	N	3		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	4		24					
6.25				24					
12.5				24					
25				24.1					
50				24.1					
100				24.1					
0	N	5		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.2					
100				24.2					
0	N	6		24					
6.25				24					
12.5				24.1					
25				24.2					
50				24.3					
100				24.3					
0	N	7		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.1					
100				24.1					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* EPA-821-R-02-013. "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

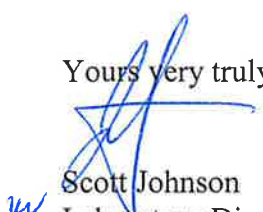
CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-MEI  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.154

#### CHRONIC FATHEAD MINNOW SURVIVAL & GROWTH BIOASSAY

SURVIVAL            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          EC25 =            >100.00 %  
                          EC50 =            >100.00 %

BIOMASS            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          IC25 =            >100.00 %  
                          IC50 =            >100.00 %

Yours very truly,

  
Scott Johnson  
Laboratory Director

**CETIS Summary Report**

Report Date: 15 Nov-21 13:16 (p 1 of 2)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 10-9527-0381	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:15	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:19	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 16-7996-9723	<b>Code:</b> VCF1021.154	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:30	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-MEI
<b>Sample Age:</b> 24h (13 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
09-9316-9000	7d Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	8.87%	1	1
14-1010-2715	Mean Dry Biomass-mg	Dunnett Multiple Comparison Test	100	>100	---	2.39%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
05-3267-7387	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
01-5726-4277	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
05-3267-7387	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
09-9316-9000	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
01-5726-4277	Mean Dry Biomass-mg	Control Resp	0.3418	0.25	>>	Yes	Passes Criteria	
14-1010-2715	Mean Dry Biomass-mg	Control Resp	0.3418	0.25	>>	Yes	Passes Criteria	
14-1010-2715	Mean Dry Biomass-mg	PMSD	0.02389	0.12	0.3	Yes	Below Criteria	

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		4	0.9333	0.7212	1.1450	0.7333	1.0000	0.0667	0.1333	14.29%	6.67%
25		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		4	0.9667	0.8606	1.0730	0.8667	1.0000	0.0333	0.0667	6.90%	3.33%

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.3418	0.3376	0.346	0.3387	0.344	0.001316	0.002632	0.77%	0.00%
6.25		4	0.338	0.3353	0.3407	0.336	0.34	0.000861	0.001721	0.51%	1.12%
12.5		4	0.3438	0.3385	0.3491	0.3393	0.3467	0.001664	0.003328	0.97%	-0.59%
25		4	0.3448	0.3305	0.3592	0.336	0.3567	0.004516	0.009033	2.62%	-0.88%
50		4	0.3363	0.3279	0.3448	0.3293	0.3413	0.002646	0.005292	1.57%	1.61%
100		4	0.3392	0.3348	0.3435	0.336	0.3427	0.001371	0.002742	0.81%	0.78%

*PASS*



**CETIS Summary Report**

Report Date: 15 Nov-21 13:16 (p 2 of 2)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: A3EC6290922159B3DE1DEC18CCB6D09A

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	0.7333
25		1.0000	0.9333	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		0.8667	1.0000	1.0000	1.0000

**Mean Dry Biomass-mg Detail**

MD5: D2315CA24D53B4E3E8BA28542D5E8C4E

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.344	0.3387	0.3407	0.344
6.25		0.3387	0.3373	0.34	0.336
12.5		0.3433	0.346	0.3393	0.3467
25		0.34	0.3467	0.3567	0.336
50		0.3413	0.3293	0.3353	0.3393
100		0.3387	0.336	0.3427	0.3393

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	15/15	15/15
12.5		15/15	15/15	15/15	11/15
25		15/15	14/15	15/15	15/15
50		15/15	15/15	15/15	15/15
100		13/15	15/15	15/15	15/15

**CETIS Analytical Report**

Report Date: 15 Nov-21 13:16 (p 1 of 4)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

Fathead Minnow 7-d Larval Survival and Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID:	09-9316-9000	Endpoint:	7d Survival Rate	CETIS Version:	CETISv1.9.7		
Analyzed:	15 Nov-21 13:15	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1		
Edit Date:	15 Nov-21 13:14	MD5 Hash:	A3EC6290922159B3DE1DEC18CCB6D09	Editor ID:	000-189-126-0		
Batch ID:	10-9527-0381	Test Type:	Growth-Survival (7d)	Analyst:			
Start Date:	26 Oct-21 14:15	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	02 Nov-21 14:19	Species:	Pimephales promelas	Brine:	Not Applicable		
Test Length:	7d 0h	Taxon:	Actinopterygii	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	16-7996-9723	Code:	VCF1021.154	Project:	NPDES Stormwater Wet Season		
Sample Date:	25 Oct-21 14:30	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	25 Oct-21 15:27	CAS (PC):		Station:	MO-MEI		
Sample Age:	24h (13 °C)	Client:	Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.08869	8.87%

Steel Many-One Rank Sum Test									
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	18	10	1	6	CDF	0.8333	Non-Significant Effect
		12.5	16	10	1	6	CDF	0.6105	Non-Significant Effect
		25	16	10	1	6	CDF	0.6105	Non-Significant Effect
		50	18	10	1	6	CDF	0.8333	Non-Significant Effect
		100	16	10	1	6	CDF	0.6105	Non-Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0359876	0.0071975	5	0.6972	0.6324	Non-Significant Effect
Error	0.185819	0.0103233	18			
Total	0.221806		23			

ANOVA Assumptions Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variance	Bartlett Equality of Variance Test				Indeterminate	
	Levene Equality of Variance Test	6.275	4.248	0.0015	Unequal Variances	
	Mod Levene Equality of Variance Test	0.6972	4.248	0.6324	Equal Variances	
Distribution	Anderson-Darling A2 Test	2.72	3.878	<1.0E-05	Non-Normal Distribution	
	D'Agostino Kurtosis Test	3.165	2.576	0.0016	Non-Normal Distribution	
	D'Agostino Skewness Test	3.709	2.576	0.0002	Non-Normal Distribution	
	D'Agostino-Pearson K2 Omnibus Test	23.77	9.21	<1.0E-05	Non-Normal Distribution	
	Kolmogorov-Smirnov D Test	0.375	0.2056	<1.0E-05	Non-Normal Distribution	
	Shapiro-Wilk W Normality Test	0.7343	0.884	3.0E-05	Non-Normal Distribution	

7d Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		4	0.9333	0.7212	1.0000	1.0000	0.7333	1.0000	0.0667	14.29%	6.67%
25		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	0.9667	0.8606	1.0000	1.0000	0.8667	1.0000	0.0333	6.90%	3.33%

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 09-9316-9000      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:15      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:14      MD5 Hash: A3EC6290922159B3DE1DEC18CCB6D09      Editor ID: 000-189-126-0

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
6.25		4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
12.5		4	1.3380	1.0090	1.6670	1.4410	1.0280	1.4410	0.1033	15.44%	7.17%
25		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
50		4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
100		4	1.3800	1.1860	1.5750	1.4410	1.1970	1.4410	0.0611	8.85%	4.24%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	0.7333
25		1.0000	0.9333	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		0.8667	1.0000	1.0000	1.0000

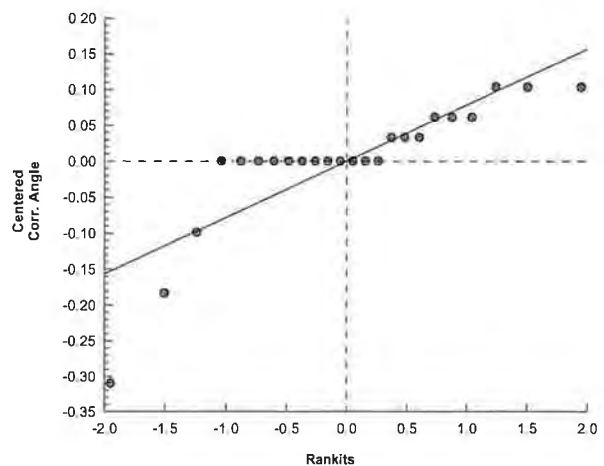
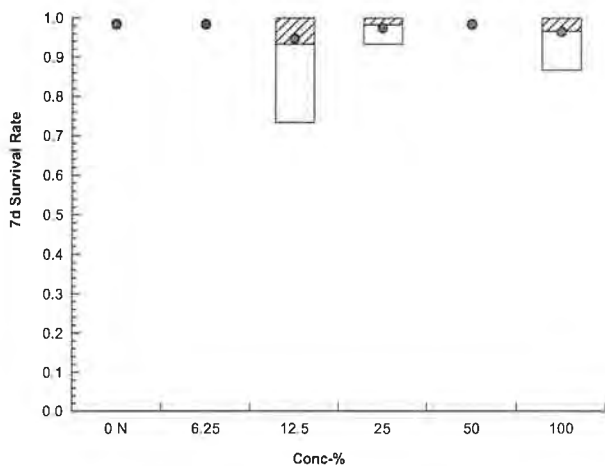
Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.4410	1.4410	1.4410	1.4410
6.25		1.4410	1.4410	1.4410	1.4410
12.5		1.4410	1.4410	1.4410	1.0280
25		1.4410	1.3100	1.4410	1.4410
50		1.4410	1.4410	1.4410	1.4410
100		1.1970	1.4410	1.4410	1.4410

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	15/15	15/15
12.5		15/15	15/15	15/15	11/15
25		15/15	14/15	15/15	15/15
50		15/15	15/15	15/15	15/15
100		13/15	15/15	15/15	15/15

Graphics



**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 14-1010-2715	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:15	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:14	<b>MD5 Hash:</b> D2315CA24D53B4E3E8BA28542D5E8C4E	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 10-9527-0381	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:15	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:19	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 16-7996-9723	<b>Code:</b> VCF1021.154	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:30	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-MEI
<b>Sample Age:</b> 24h (13 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	0.008165	2.39%

**Dunnett Multiple Comparison Test**

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	1.13	2.407	0.008	6	CDF	0.3658	Non-Significant Effect
		12.5	-0.5896	2.407	0.008	6	CDF	0.9510	Non-Significant Effect
		25	-0.8844	2.407	0.008	6	CDF	0.9765	Non-Significant Effect
		50	1.621	2.407	0.008	6	CDF	0.1912	Non-Significant Effect
		100	0.7861	2.407	0.008	6	CDF	0.5186	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3418	0.25	>>	Yes	Passes Criteria
PMSD	0.02389	0.12	0.3	Yes	Below Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0002276	4.551E-05	5	1.978	0.1310	Non-Significant Effect
Error	0.0004142	2.301E-05	18			
Total	0.0006418		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	9.664	15.09	0.0853	Equal Variances
	Levene Equality of Variance Test	3.008	4.248	0.0381	Equal Variances
	Mod Levene Equality of Variance Test	2.57	4.248	0.0635	Equal Variances
Distribution	Anderson-Darling A2 Test	0.4617	3.878	0.2629	Normal Distribution
	D'Agostino Kurtosis Test	1.717	2.576	0.0859	Normal Distribution
	D'Agostino Skewness Test	0.8385	2.576	0.4017	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	3.652	9.21	0.1610	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1214	0.2056	0.4773	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9547	0.884	0.3422	Normal Distribution

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.3418	0.3376	0.346	0.3423	0.3387	0.344	0.001316	0.77%	0.00%
6.25		4	0.338	0.3353	0.3407	0.338	0.336	0.34	0.000860	0.51%	1.12%
12.5		4	0.3438	0.3385	0.3491	0.3447	0.3393	0.3467	0.001664	0.97%	-0.59%
25		4	0.3448	0.3305	0.3592	0.3433	0.336	0.3567	0.004516	2.62%	-0.88%
50		4	0.3363	0.3279	0.3448	0.3373	0.3293	0.3413	0.002646	1.57%	1.61%
100		4	0.3392	0.3348	0.3435	0.339	0.336	0.3427	0.001371	0.81%	0.78%

Fathead Minnow 7-d Larval Survival and Growth Test

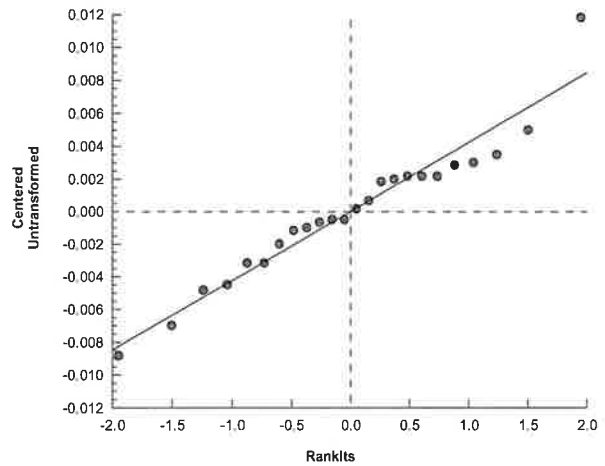
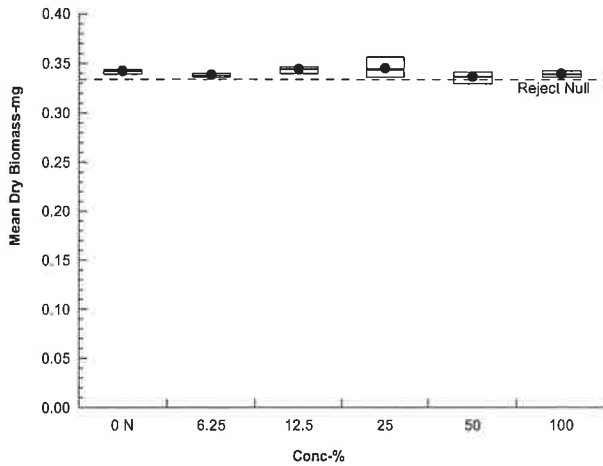
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 14-1010-2715      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:15      Analysis: Parametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:14      MD5 Hash: D2315CA24D53B4E3E8BA28542D5E8C4E      Editor ID: 000-189-126-0

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.344	0.3387	0.3407	0.344
6.25		0.3387	0.3373	0.34	0.336
12.5		0.3433	0.346	0.3393	0.3467
25		0.34	0.3467	0.3567	0.336
50		0.3413	0.3293	0.3353	0.3393
100		0.3387	0.336	0.3427	0.3393

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:16 (p 1 of 4)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

Fathead Minnow 7-d Larval Survival and Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID: 05-3267-7387	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7		Analyst:			
Analyzed: 15 Nov-21 13:15	Analysis: Linear Interpolation (ICPIN)	Status Level: 1		Diluent: Laboratory Water			
Edit Date: 15 Nov-21 13:14	MD5 Hash: A3EC6290922159B3DE1DEC18CCB6D09	Editor ID: 000-189-126-0		Brine: Not Applicable			
Batch ID: 10-9527-0381	Test Type: Growth-Survival (7d)			Source: Aquatic Biosystems, CO	Age: <24		
Start Date: 26 Oct-21 14:15	Protocol: EPA/821/R-02-013 (2002)						
Ending Date: 02 Nov-21 14:19	Species: Pimephales promelas						
Test Length: 7d 0h	Taxon: Actinopterygii						
Sample ID: 16-7996-9723	Code: VCF1021.154	Project: NPDES Stormwater Wet Season					
Sample Date: 25 Oct-21 14:30	Material: Sample Water	Source: Bioassay Report					
Receipt Date: 25 Oct-21 15:27	CAS (PC):	Station: MO-MEI					
Sample Age: 24h (13 °C)	Client: Ventura County Watershed Protection Distri						

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)							Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	1.0000	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	1.0000	0.00%
12.5		4	0.9333	1.0000	0.7333	1.0000	14.29%	6.67%	56/60	0.9722	2.78%
25		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9722	2.78%
50		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	0.9722	2.78%
100		4	0.9667	1.0000	0.8667	1.0000	6.90%	3.33%	58/60	0.9667	3.33%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	0.7333
25		1.0000	0.9333	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		0.8667	1.0000	1.0000	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		15/15	15/15	15/15	15/15
12.5		15/15	15/15	15/15	11/15
25		15/15	14/15	15/15	15/15
50		15/15	15/15	15/15	15/15
100		13/15	15/15	15/15	15/15

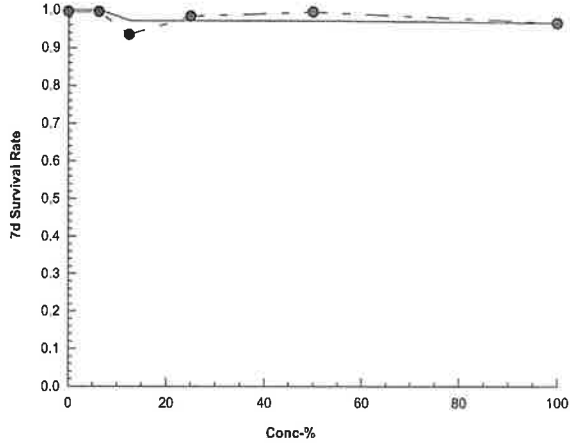


Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 05-3267-7387	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:15	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:14	<b>MD5 Hash:</b> A3EC6290922159B3DE1DEC18CCB6D09	<b>Editor ID:</b> 000-189-126-0

Graphics





**CETIS Analytical Report**

Report Date: 15 Nov-21 13:16 (p 3 of 4)

Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 01-5726-4277	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:15	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:14	<b>MD5 Hash:</b> D2315CA24D53B4E3E8BA28542D5E8C4E	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 10-9527-0381	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:15	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:19	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 16-7996-9723	<b>Code:</b> VCF1021.154	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:30	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-MEI
<b>Sample Age:</b> 24h (13 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1653261	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3418	0.25	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	0.3418	0.3423	0.3387	0.344	0.77%	0.00%	0.3421	0.00%
6.25		4	0.338	0.338	0.336	0.34	0.51%	1.12%	0.3421	0.00%
12.5		4	0.3438	0.3447	0.3393	0.3467	0.97%	-0.59%	0.3421	0.00%
25		4	0.3448	0.3433	0.336	0.3567	2.62%	-0.88%	0.3421	0.00%
50		4	0.3363	0.3373	0.3293	0.3413	1.57%	1.61%	0.3378	1.28%
100		4	0.3392	0.339	0.336	0.3427	0.81%	0.78%	0.3378	1.28%

**Mean Dry Biomass-mg Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.344	0.3387	0.3407	0.344
6.25		0.3387	0.3373	0.34	0.336
12.5		0.3433	0.346	0.3393	0.3467
25		0.34	0.3467	0.3567	0.336
50		0.3413	0.3293	0.3353	0.3393
100		0.3387	0.336	0.3427	0.3393

**CETIS Analytical Report**

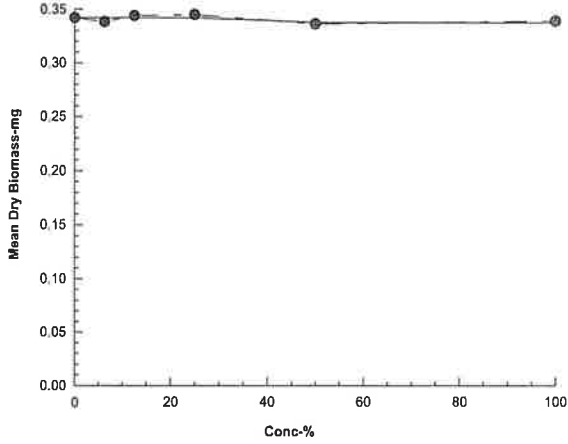
Report Date: 15 Nov-21 13:16 (p 4 of 4)  
Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID: 01-5726-4277      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
Analyzed: 15 Nov-21 13:15      Analysis: Linear Interpolation (ICPIN)      Status Level: 1  
Edit Date: 15 Nov-21 13:14      MD5 Hash: D2315CA24D53B4E3E8BA28542D5E8C4E      Editor ID: 000-189-126-0

**Graphics**



# CETIS Measurement Report

Report Date: 15 Nov-21 13:16 (p 1 of 8)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 10-9527-0381	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:15	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:19	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 16-7996-9723	<b>Code:</b> VCF1021.154	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:30	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 15:27	<b>CAS (PC):</b>	<b>Station:</b> MO-MEI
<b>Sample Age:</b> 24h (13 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	94	94	94	94	94	0	0	0.00%	0
Overall		16	77.31	68.13	86.5	60	94	4.31	17.24	22.30%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	378.8	370.1	387.4	354	388	1.295	10.36	2.74%	0
12.5		8	416.6	411.9	421.4	409	425	0.7101	5.68	1.36%	0
25		8	486.1	479.6	492.7	472	494	0.9784	7.827	1.61%	0
50		8	585.4	573.7	597	562	598	1.745	13.96	2.38%	0
100		8	813.2	810.3	816.2	810	820	0.447	3.576	0.44%	0
Overall		48	506.8	460.9	552.7	354	820	22.82	158.1	31.19%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.538	7.365	7.71	7.3	7.8	0.02582	0.2066	2.74%	0
12.5		8	7.462	7.302	7.623	7.2	7.7	0.02403	0.1923	2.58%	0
25		8	7.4	7.266	7.534	7.2	7.6	0.02004	0.1604	2.17%	0
50		8	7.35	7.232	7.468	7.2	7.5	0.01768	0.1414	1.92%	0
100		8	7.263	7.108	7.417	7	7.5	0.02308	0.1847	2.54%	0
Overall		48	7.435	7.376	7.495	7	7.9	0.0294	0.2037	2.74%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	125	125	125	125	125	0	0	0.00%	0
Overall		16	110.3	102.2	118.4	95	125	3.793	15.17	13.75%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.45	7.209	7.691	7	7.8	0.03598	0.2878	3.86%	0
12.5		8	7.425	7.207	7.643	7	7.7	0.03256	0.2605	3.51%	0
25		8	7.425	7.231	7.619	7	7.7	0.02893	0.2315	3.12%	0
50		8	7.4	7.21	7.59	7	7.7	0.02835	0.2268	3.06%	0
100		8	7.413	7.221	7.604	7	7.7	0.02869	0.2295	3.10%	0
Overall		48	7.513	7.426	7.599	7	8	0.0429	0.2972	3.96%	0 (0%)

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:16 (p 2 of 8)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

Temperature-°C											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.03	23.97	24.08	24	24.2	0.008836	0.07069	0.29%	0
12.5		8	24.05	23.99	24.11	24	24.2	0.009442	0.07553	0.31%	0
25		8	24.09	23.98	24.19	24	24.3	0.01558	0.1246	0.52%	0
50		8	24.1	24	24.2	24	24.3	0.01494	0.1195	0.50%	0
100		8	24.11	24	24.23	24	24.3	0.01695	0.1356	0.56%	0
Overall		48	24.06	24.03	24.09	24	24.3	0.01478	0.1024	0.43%	0 (0%)

# CETIS Measurement Report

Report Date: 15 Nov-21 13:16 (p 3 of 8)  
Test Code/ID: VCF1021.154 / 15-9053-7272

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

## Alkalinity (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				94					
0	N	2		60					
100				94					
0	N	3		60					
100				94					
0	N	4		61					
100				94					
0	N	5		61					
100				94					
0	N	6		61					
100				94					
0	N	7		61					
100				94					
0	N	8		61					
100				94					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:16 (p 4 of 8)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Conductivity-µmhos**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				382					
12.5				409					
25				472					
50				582					
100				810					
0	N	2		360					
6.25				380					
12.5				410					
25				477					
50				589					
100				816					
0	N	3		354					
6.25				384					
12.5				415					
25				484					
50				595					
100				820					
0	N	4		360					
6.25				380					
12.5				416					
25				490					
50				592					
100				810					
0	N	5		364					
6.25				382					
12.5				415					
25				494					
50				598					
100				813					
0	N	6		362					
6.25				388					
12.5				421					
25				490					
50				598					
100				812					
0	N	7		362					
6.25				354					
12.5				425					
25				492					
50				562					
100				815					
0	N	8		360					
6.25				380					
12.5				422					
25				490					
50				567					
100				810					

# CETIS Measurement Report

Report Date: 15 Nov-21 13:16 (p 5 of 8)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Dissolved Oxygen-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7.4					
12.5				7.3					
25				7.3					
50				7.2					
100				7.1					
0	N	2		7.4					
6.25				7.3					
12.5				7.3					
25				7.2					
50				7.2					
100				7					
0	N	3		7.5					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.5					
100				7.5					
0	N	4		7.6					
6.25				7.5					
12.5				7.5					
25				7.4					
50				7.4					
100				7.3					
0	N	5		7.8					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.5					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.3					
0	N	7		7.6					
6.25				7.5					
12.5				7.4					
25				7.4					
50				7.3					
100				7.3					
0	N	8		7.4					
6.25				7.3					
12.5				7.2					
25				7.2					
50				7.2					
100				7.1					



# CETIS Measurement Report

Report Date: 15 Nov-21 13:16 (p 6 of 8)  
Test Code/ID: VCF1021.154 / 15-9053-7272

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Hardness (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				125					
0	N	2		95					
100				125					
0	N	3		95					
100				125					
0	N	4		96					
100				125					
0	N	5		96					
100				125					
0	N	6		96					
100				125					
0	N	7		96					
100				125					
0	N	8		96					
100				125					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:16 (p 7 of 8)  
 Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7					
12.5				7					
25				7					
50				7					
100				7					
0	N	2		8					
6.25				7.3					
12.5				7.3					
25				7.4					
50				7.4					
100				7.5					
0	N	3		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.4					
100				7.4					
0	N	4		8					
6.25				7.6					
12.5				7.6					
25				7.7					
50				7.7					
100				7.7					
0	N	5		8					
6.25				7.7					
12.5				7.7					
25				7.7					
50				7.7					
100				7.7					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.5					
50				7.4					
100				7.3					
0	N	7		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.3					
100				7.4					
0	N	8		8					
6.25				7.2					
12.5				7.2					
25				7.3					
50				7.3					
100				7.3					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:16 (p 8 of 8)

Test Code/ID: VCF1021.154 / 15-9053-7272

**Fathead Minnow 7-d Larval Survival and Growth Test**

Aquatic Bioassay & Consulting Labs, Inc.

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24					
12.5				24.1					
25				24.2					
50				24.2					
100				24.2					
0	N	2		24					
6.25				24.2					
12.5				24.2					
25				24.3					
50				24.3					
100				24.3					
0	N	3		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	4		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	5		24					
6.25				24					
12.5				24.1					
25				24.2					
50				24.2					
100				24.3					
0	N	6		24					
6.25				24					
12.5				24					
25				24					
50				24.1					
100				24.1					
0	N	7		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* EPA-821-R-02-013. "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

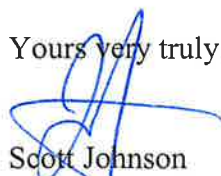
CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-CAM  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.159

#### CHRONIC FATHEAD MINNOW SURVIVAL & GROWTH BIOASSAY

SURVIVAL            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          EC25 =            >100.00 %  
                          EC50 =            >100.00 %

BIOMASS            NOEC =            100.00 %  
                          TU<sub>c</sub> =            1.00  
                          IC25 =            >100.00 %  
                          IC50 =            >100.00 %

Yours very truly,

  
Mr Scott Johnson  
Laboratory Director

# CETIS Summary Report

Report Date: 15 Nov-21 13:22 (p 1 of 2)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 10-5713-4435	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:20	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-9363-4841	<b>Code:</b> VCF1021.159	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-CAM
<b>Sample Age:</b> 27h (11 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
14-6693-3157	7d Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	6.21%	1	1
11-2602-5185	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test	100	>100	---	10.1%	1	1

### Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
09-7189-3441	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
05-9651-2488	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

### Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
09-7189-3441	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
14-6693-3157	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
05-9651-2488	Mean Dry Biomass-mg	Control Resp	0.341	0.25	>>	Yes	Passes Criteria	
11-2602-5185	Mean Dry Biomass-mg	Control Resp	0.341	0.25	>>	Yes	Passes Criteria	
11-2602-5185	Mean Dry Biomass-mg	PMSD	0.1005	0.12	0.3	Yes	Below Criteria	

### 7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		4	0.9667	0.9054	1.0280	0.9333	1.0000	0.0193	0.0385	3.98%	3.33%
12.5		4	0.9833	0.9303	1.0360	0.9333	1.0000	0.0167	0.0333	3.39%	1.67%
25		4	0.9000	0.7630	1.0370	0.8000	1.0000	0.0430	0.0861	9.56%	10.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

### Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.341	0.3319	0.3501	0.336	0.348	0.002861	0.005722	1.68%	0.00%
6.25		4	0.3213	0.266	0.3766	0.2693	0.3413	0.01738	0.03476	10.82%	5.77%
12.5		4	0.3388	0.3323	0.3453	0.3347	0.344	0.002044	0.004087	1.21%	0.64%
25		4	0.3397	0.3356	0.3438	0.3373	0.3433	0.001291	0.002582	0.76%	0.39%
50		4	0.3252	0.2711	0.3793	0.2747	0.346	0.017	0.034	10.46%	4.64%
100		4	0.3452	0.3393	0.3511	0.3427	0.3507	0.001853	0.003707	1.07%	-1.22%

PASS

**CETIS Summary Report**

Report Date: 15 Nov-21 13:22 (p 2 of 2)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 7767473C648EC203523266AFC83774F0

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		0.9333	1.0000	1.0000	0.9333
12.5		1.0000	1.0000	0.9333	1.0000
25		0.9333	0.8000	1.0000	0.8667
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

**Mean Dry Biomass-mg Detail**

MD5: 6C32FA5BE09B2C5C7F2DAC29B3CA2BF8

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3433	0.336	0.3367	0.348
6.25		0.2693	0.3413	0.3393	0.3353
12.5		0.344	0.3367	0.3347	0.34
25		0.3373	0.3433	0.3387	0.3393
50		0.3353	0.346	0.2747	0.3447
100		0.3507	0.3433	0.3427	0.344

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		14/15	15/15	15/15	14/15
12.5		15/15	15/15	14/15	15/15
25		14/15	12/15	15/15	13/15
50		15/15	15/15	15/15	15/15
100		15/15	15/15	15/15	15/15

**CETIS Analytical Report**

Report Date: 15 Nov-21 13:22 (p 1 of 4)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 14-6693-3157	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:22	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:17	<b>MD5 Hash:</b> 7767473C648EC203523266AFC83774F0	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 10-5713-4435	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:20	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-9363-4841	<b>Code:</b> VCF1021.159	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-CAM
<b>Sample Age:</b> 27h (11 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	--	1	0.06207	6.21%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	14	10	1	6	CDF	0.3451	Non-Significant Effect
		12.5	16	10	1	6	CDF	0.6105	Non-Significant Effect
		25	12	10	1	6	CDF	0.1424	Non-Significant Effect
		50	18	10	1	6	CDF	0.8333	Non-Significant Effect
		100	18	10	1	6	CDF	0.8333	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0968772	0.0193754	5	3.751	0.0168	Significant Effect
Error	0.0929734	0.0051652	18			
Total	0.189851		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
	Levene Equality of Variance Test	9.626	4.248	0.0001	Unequal Variances
	Mod Levene Equality of Variance Test	5.789	4.248	0.0023	Unequal Variances
Distribution	Anderson-Darling A2 Test	1.67	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	2.174	2.576	0.0297	Normal Distribution
	D'Agostino Skewness Test	0.289	2.576	0.7726	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	4.808	9.21	0.0904	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2917	0.2056	1.2E-05	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8783	0.884	0.0077	Non-Normal Distribution

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	0.9667	0.9054	1.0000	0.9667	0.9333	1.0000	0.0192	3.98%	3.33%
12.5		4	0.9833	0.9303	1.0000	1.0000	0.9333	1.0000	0.0167	3.39%	1.67%
25		4	0.9000	0.7630	1.0000	0.9000	0.8000	1.0000	0.0430	9.56%	10.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%



**Fathead Minnow 7-d Larval Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID: 14-6693-3157      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:22      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:17      MD5 Hash: 7767473C648EC203523266AFC83774F0      Editor ID: 000-189-126-0

**Angular (Corrected) Transformed Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
6.25		4	1.3750	1.2540	1.4960	1.3750	1.3100	1.4410	0.0380	5.53%	4.57%
12.5		4	1.4080	1.3040	1.5130	1.4410	1.3100	1.4410	0.0329	4.68%	2.28%
25		4	1.2640	1.0340	1.4940	1.2530	1.1070	1.4410	0.0722	11.43%	12.32%
50		4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%
100		4	1.4410	1.4410	1.4420	1.4410	1.4410	1.4410	0.0000	0.00%	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		0.9333	1.0000	1.0000	0.9333
12.5		1.0000	1.0000	0.9333	1.0000
25		0.9333	0.8000	1.0000	0.8667
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

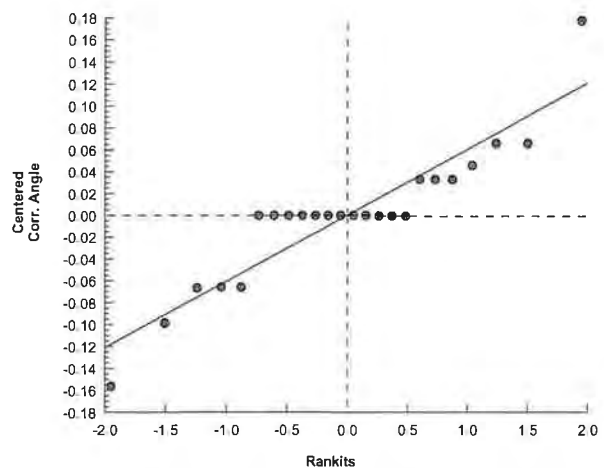
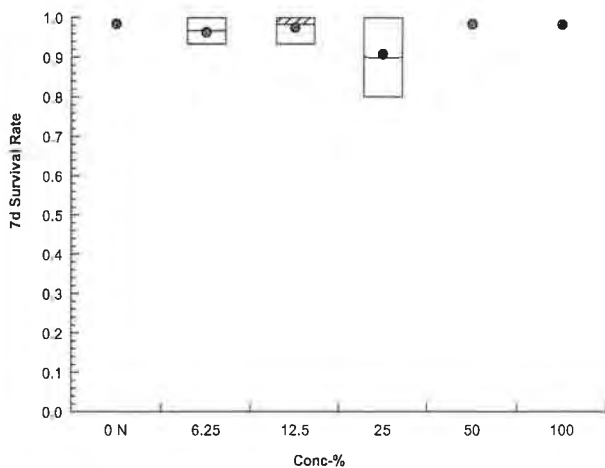
**Angular (Corrected) Transformed Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.4410	1.4410	1.4410	1.4410
6.25		1.3100	1.4410	1.4410	1.3100
12.5		1.4410	1.4410	1.3100	1.4410
25		1.3100	1.1070	1.4410	1.1970
50		1.4410	1.4410	1.4410	1.4410
100		1.4410	1.4410	1.4410	1.4410

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		14/15	15/15	15/15	14/15
12.5		15/15	15/15	14/15	15/15
25		14/15	12/15	15/15	13/15
50		15/15	15/15	15/15	15/15
100		15/15	15/15	15/15	15/15

**Graphics**



**CETIS Analytical Report**

**Report Date:** 15 Nov-21 13:22 (p 3 of 4)  
**Test Code/ID:** VCF1021.159 / 16-5569-8070

Fathead Minnow 7-d Larval Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
<b>Analysis ID:</b> 11-2602-5185	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 15 Nov-21 13:22	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1			
<b>Edit Date:</b> 15 Nov-21 13:17	<b>MD5 Hash:</b> 6C32FA5BE09B2C5C7F2DAC29B3CA2BF	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 10-5713-4435	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 14:20	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water			
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24			
<b>Sample ID:</b> 20-9363-4841	<b>Code:</b> VCF1021.159	<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-CAM			
<b>Sample Age:</b> 27h (11 °C)	<b>Client:</b> Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	0.03428	10.05%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	14	10	0	6	CDF	0.3451	Non-Significant Effect
		12.5	16.5	10	1	6	CDF	0.6742	Non-Significant Effect
		25	18.5	10	1	6	CDF	0.8729	Non-Significant Effect
		50	16	10	0	6	CDF	0.6105	Non-Significant Effect
		100	21.5	10	1	6	CDF	0.9855	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.341	0.25	>>	Yes	Passes Criteria
PMSD	0.1005	0.12	0.3	Yes	Below Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0018363	0.0003673	5	0.9054	0.4991	Non-Significant Effect
Error	0.0073015	0.0004056	18			
Total	0.0091378		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	29.38	15.09	2.0E-05	Unequal Variances
	Levene Equality of Variance Test	5.224	4.248	0.0039	Unequal Variances
	Mod Levene Equality of Variance Test	0.9041	4.248	0.4998	Equal Variances
Distribution	Anderson-Darling A2 Test	2.376	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	2.842	2.576	0.0045	Non-Normal Distribution
	D'Agostino Skewness Test	3.506	2.576	0.0005	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	20.37	9.21	3.8E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.3062	0.2056	<1.0E-05	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.7447	0.884	4.2E-05	Non-Normal Distribution

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.341	0.3319	0.3501	0.34	0.336	0.348	0.002861	1.68%	0.00%
6.25		4	0.3213	0.266	0.3766	0.3373	0.2693	0.3413	0.01738	10.82%	5.77%
12.5		4	0.3388	0.3323	0.3453	0.3383	0.3347	0.344	0.002043	1.21%	0.64%
25		4	0.3397	0.3356	0.3438	0.339	0.3373	0.3433	0.001291	0.76%	0.39%
50		4	0.3252	0.2711	0.3793	0.34	0.2747	0.346	0.017	10.46%	4.64%
100		4	0.3452	0.3393	0.3511	0.3437	0.3427	0.3507	0.001853	1.07%	-1.22%

Fathead Minnow 7-d Larval Survival and Growth Test

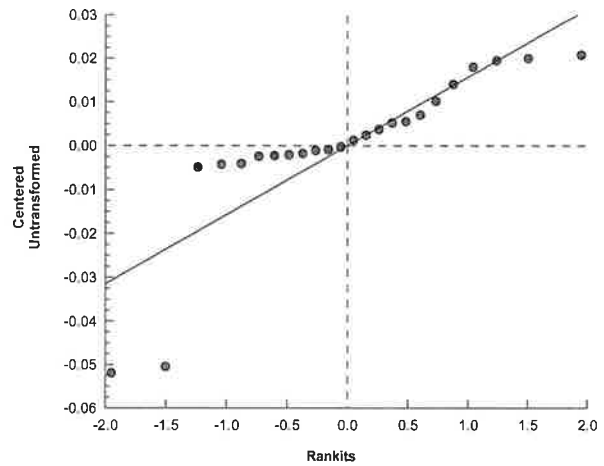
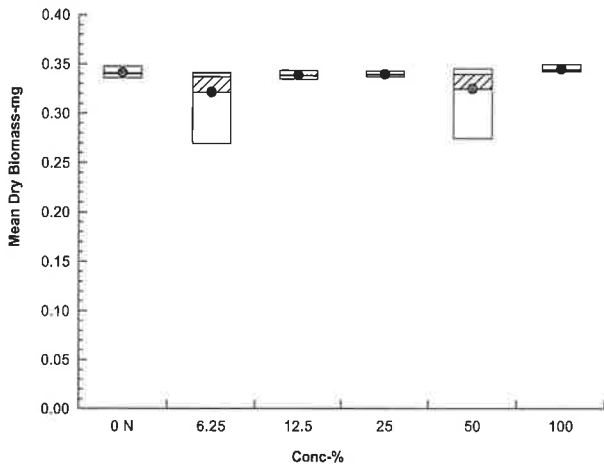
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 11-2602-5185 Endpoint: Mean Dry Biomass-mg CETIS Version: CETISv1.9.7  
Analyzed: 15 Nov-21 13:22 Analysis: Nonparametric-Control vs Treatments Status Level: 1  
Edit Date: 15 Nov-21 13:17 MD5 Hash: 6C32FA5BE09B2C5C7F2DAC29B3CA2BF Editor ID: 000-189-126-0

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3433	0.336	0.3367	0.348
6.25		0.2693	0.3413	0.3393	0.3353
12.5		0.344	0.3367	0.3347	0.34
25		0.3373	0.3433	0.3387	0.3393
50		0.3353	0.346	0.2747	0.3447
100		0.3507	0.3433	0.3427	0.344

Graphics



# CETIS Analytical Report

Report Date: 15 Nov-21 13:22 (p 1 of 4)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

Fathead Minnow 7-d Larval Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 09-7189-3441	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7	Analyst:		
Analyzed: 15 Nov-21 13:22	Analysis: Linear Interpolation (ICPIN)	Status Level: 1	Diluent: Laboratory Water		
Edit Date: 15 Nov-21 13:17	MD5 Hash: 7767473C648EC203523266AFC83774F0	Editor ID: 000-189-126-0	Brine: Not Applicable		
Batch ID: 10-5713-4435	Test Type: Growth-Survival (7d)		Source: Aquatic Biosystems, CO	Age: <24	
Start Date: 26 Oct-21 14:20	Protocol: EPA/821/R-02-013 (2002)				
Ending Date: 02 Nov-21 14:23	Species: Pimephales promelas				
Test Length: 7d 0h	Taxon: Actinopterygii				
Sample ID: 20-9363-4841	Code: VCF1021.159	Project: NPDES Stormwater Wet Season			
Sample Date: 25 Oct-21 11:00	Material: Sample Water	Source: Bioassay Report			
Receipt Date: 25 Oct-21 17:30	CAS (PC):	Station: MO-CAM			
Sample Age: 27h (11 °C)	Client: Ventura County Watershed Protection Distri				

## Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

## Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

## Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

## 7d Survival Rate Summary

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	1.0000	0.00%
6.25		4	0.9667	0.9667	0.9333	1.0000	3.98%	3.33%	58/60	0.9750	2.50%
12.5		4	0.9833	1.0000	0.9333	1.0000	3.39%	1.67%	59/60	0.9750	2.50%
25		4	0.9000	0.9000	0.8000	1.0000	9.56%	10.00%	54/60	0.9667	3.33%
50		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	0.9667	3.33%
100		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	60/60	0.9667	3.33%

## 7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
6.25		0.9333	1.0000	1.0000	0.9333
12.5		1.0000	1.0000	0.9333	1.0000
25		0.9333	0.8000	1.0000	0.8667
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

## 7d Survival Rate Binomials

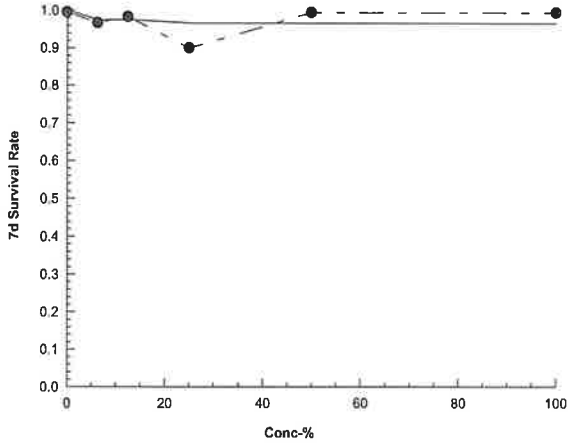
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	15/15	15/15	15/15	15/15
6.25		14/15	15/15	15/15	14/15
12.5		15/15	15/15	14/15	15/15
25		14/15	12/15	15/15	13/15
50		15/15	15/15	15/15	15/15
100		15/15	15/15	15/15	15/15

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 09-7189-3441    Endpoint: 7d Survival Rate    CETIS Version: CETISv1.9.7  
Analyzed: 15 Nov-21 13:22    Analysis: Linear Interpolation (ICPIN)    Status Level: 1  
Edit Date: 15 Nov-21 13:17    MD5 Hash: 7767473C648EC203523266AFC83774F0    Editor ID: 000-189-126-0

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:22 (p 3 of 4)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

<b>Fathead Minnow 7-d Larval Survival and Growth Test</b>			<b>Aquatic Bioassay &amp; Consulting Labs, Inc.</b>		
<b>Analysis ID:</b> 05-9651-2488	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 15 Nov-21 13:22	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1			
<b>Edit Date:</b> 15 Nov-21 13:17	<b>MD5 Hash:</b> 6C32FA5BE09B2C5C7F2DAC29B3CA2BF	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 10-5713-4435	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 14:20	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water			
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24			
<b>Sample ID:</b> 20-9363-4841	<b>Code:</b> VCF1021.159	<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-CAM			
<b>Sample Age:</b> 27h (11 °C)	<b>Client:</b> Ventura County Watershed Protection Distri				

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1790986	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.341	0.25	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	0.341	0.34	0.336	0.348	1.68%	0.00%	0.341	0.00%
6.25		4	0.3213	0.3373	0.2693	0.3413	10.82%	5.77%	0.334	2.04%
12.5		4	0.3388	0.3383	0.3347	0.344	1.21%	0.64%	0.334	2.04%
25		4	0.3397	0.339	0.3373	0.3433	0.76%	0.39%	0.334	2.04%
50		4	0.3252	0.34	0.2747	0.346	10.46%	4.64%	0.334	2.04%
100		4	0.3452	0.3437	0.3427	0.3507	1.07%	-1.22%	0.334	2.04%

**Mean Dry Biomass-mg Detail**

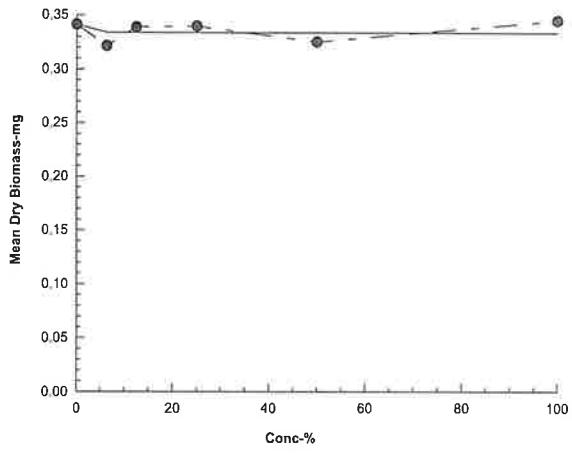
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3433	0.336	0.3367	0.348
6.25		0.2693	0.3413	0.3393	0.3353
12.5		0.344	0.3367	0.3347	0.34
25		0.3373	0.3433	0.3387	0.3393
50		0.3353	0.346	0.2747	0.3447
100		0.3507	0.3433	0.3427	0.344

**CETIS Analytical Report**

Report Date: 15 Nov-21 13:22 (p 4 of 4)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

<b>Fathead Minnow 7-d Larval Survival and Growth Test</b>		<b>Aquatic Bioassay &amp; Consulting Labs, Inc.</b>	
<b>Analysis ID:</b> 05-9651-2488	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7	
<b>Analyzed:</b> 15 Nov-21 13:22	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1	
<b>Edit Date:</b> 15 Nov-21 13:17	<b>MD5 Hash:</b> 6C32FA5BE09B2C5C7F2DAC29B3CA2BF	<b>Editor ID:</b> 000-189-126-0	

**Graphics**





# CETIS Measurement Report

Report Date: 15 Nov-21 13:22 (p 1 of 8)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 10-5713-4435	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:20	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-9363-4841	<b>Code:</b> VCF1021.159	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 11:00	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-CAM
<b>Sample Age:</b> 27h (11 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	29	29	29	29	29	0	0	0.00%	0
Overall		16	44.81	36.11	53.52	29	61	4.084	16.33	36.45%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	381.6	380.4	382.9	380	384	0.1882	1.506	0.39%	0
12.5		8	346.1	341	351.2	337	353	0.7631	6.105	1.76%	0
25		8	309.1	308.3	310	307	310	0.1239	0.991	0.32%	0
50		8	266.8	259.1	274.4	254	279	1.143	9.146	3.43%	0
100		8	154	149.3	158.7	147	162	0.7039	5.632	3.66%	0
Overall		48	303	280.6	325.4	147	384	11.15	77.23	25.49%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.337	7.128	7.547	7	7.7	0.03129	0.2504	3.41%	0
12.5		8	7.275	7.057	7.493	7	7.7	0.03256	0.2605	3.58%	0
25		8	7.275	7.122	7.428	7	7.5	0.0229	0.1832	2.52%	0
50		8	7.225	7.101	7.349	7	7.5	0.0186	0.1488	2.06%	0
100		8	7.188	7.066	7.309	7	7.4	0.01822	0.1458	2.03%	0
Overall		48	7.317	7.249	7.384	7	7.9	0.0336	0.2328	3.18%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	49	49	49	49	49	0	0	0.00%	0
Overall		16	72.31	59.48	85.14	49	96	6.02	24.08	33.30%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.625	7.329	7.921	7	8	0.04419	0.3536	4.64%	0
12.5		8	7.55	7.26	7.84	7	8	0.0433	0.3464	4.59%	0
25		8	7.512	7.211	7.814	7	8	0.04504	0.3603	4.80%	0
50		8	7.487	7.183	7.792	7.1	8	0.04553	0.3643	4.86%	0
100		8	7.462	7.14	7.785	7.1	8	0.04815	0.3852	5.16%	0
Overall		48	7.6	7.496	7.704	7	8	0.05166	0.3579	4.71%	0 (0%)



# CETIS Measurement Report

Report Date: 15 Nov-21 13:22 (p 3 of 8)

Test Code/ID: VCF1021.159 / 16-5569-8070

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				29					
0	N	2		60					
100				29					
0	N	3		60					
100				29					
0	N	4		61					
100				29					
0	N	5		61					
100				29					
0	N	6		61					
100				29					
0	N	7		61					
100				29					
0	N	8		61					
100				29					

# CETIS Measurement Report

Report Date: 15 Nov-21 13:22 (p 4 of 8)

Test Code/ID: VCF1021.159 / 16-5569-8070

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Conductivity-µmhos

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				383					
12.5				337					
25				310					
50				254					
100				147					
0	N	2		360					
6.25				384					
12.5				340					
25				309					
50				257					
100				150					
0	N	3		354					
6.25				380					
12.5				351					
25				307					
50				262					
100				148					
0	N	4		360					
6.25				382					
12.5				340					
25				309					
50				270					
100				152					
0	N	5		364					
6.25				380					
12.5				349					
25				310					
50				278					
100				155					
0	N	6		362					
6.25				382					
12.5				353					
25				309					
50				279					
100				158					
0	N	7		362					
6.25				380					
12.5				349					
25				310					
50				264					
100				160					
0	N	8		360					
6.25				382					
12.5				350					
25				309					
50				270					
100				162					

# CETIS Measurement Report

Report Date: 15 Nov-21 13:22 (p 5 of 8)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Dissolved Oxygen-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7.2					
12.5				7					
25				7					
50				7					
100				7					
0	N	2		7.4					
6.25				7					
12.5				7					
25				7.2					
50				7.2					
100				7.3					
0	N	3		7.5					
6.25				7.4					
12.5				7.3					
25				7.4					
50				7.2					
100				7.2					
0	N	4		7.6					
6.25				7.3					
12.5				7.3					
25				7.2					
50				7.2					
100				7.1					
0	N	5		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.5					
100				7.4					
0	N	6		7.9					
6.25				7.7					
12.5				7.7					
25				7.5					
50				7.3					
100				7.2					
0	N	7		7.6					
6.25				7.2					
12.5				7.1					
25				7.1					
50				7.1					
100				7					
0	N	8		7.4					
6.25				7.2					
12.5				7.2					
25				7.3					
50				7.3					
100				7.3					

**CETIS Measurement Report**

**Report Date:** 15 Nov-21 13:22 (p 6 of 8)  
**Test Code/ID:** VCF1021.159 / 16-5569-8070

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Hardness (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				49					
0	N	2		95					
100				49					
0	N	3		95					
100				49					
0	N	4		96					
100				49					
0	N	5		96					
100				49					
0	N	6		96					
100				49					
0	N	7		96					
100				49					
0	N	8		96					
100				49					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:22 (p 7 of 8)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7					
12.5				7					
25				7					
50				7.1					
100				7.1					
0	N	2		8					
6.25				7.3					
12.5				7.2					
25				7.2					
50				7.2					
100				7.2					
0	N	3		7.8					
6.25				7.7					
12.5				7.5					
25				7.4					
50				7.3					
100				7.2					
0	N	4		8					
6.25				8					
12.5				8					
25				8					
50				8					
100				8					
0	N	5		8					
6.25				8					
12.5				8					
25				8					
50				8					
100				8					
0	N	6		7.9					
6.25				7.9					
12.5				7.6					
25				7.4					
50				7.2					
100				7.1					
0	N	7		8					
6.25				7.6					
12.5				7.6					
25				7.7					
50				7.7					
100				7.7					
0	N	8		8					
6.25				7.5					
12.5				7.5					
25				7.4					
50				7.4					
100				7.4					



**CETIS Measurement Report**

Report Date: 15 Nov-21 13:22 (p 8 of 8)  
 Test Code/ID: VCF1021.159 / 16-5569-8070

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24.1					
6.25				24					
12.5				24.2					
25				24.2					
50				24.2					
100				24.3					
0	N	2		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	3		24					
6.25				24.1					
12.5				24.1					
25				24.1					
50				24.1					
100				24.1					
0	N	4		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	5		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.1					
100				24.2					
0	N	6		24					
6.25				24.1					
12.5				24					
25				24.1					
50				24.2					
100				24.1					
0	N	7		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.1					
100				24.1					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					

*P*



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. Results were as follows:


CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-FIL  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.156

**CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY**

SURVIVAL NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
EC25 = >100.00 %  
EC50 = >100.00 %

REPRODUCTION NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
IC25 = >100.00 %  
IC50 = >100.00 %

Yours very truly,



m Scott Johnson  
Laboratory Director

**CETIS Summary Report**

**Report Date:** 11 Nov-21 14:45 (p 1 of 2)  
**Test Code/ID:** VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 16-5109-9334	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:03	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-1814-8516	<b>Code:</b> VCF1021.156	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:12	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-FIL
<b>Sample Age:</b> 25h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
02-1416-2411	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	100	>100	---	---	1	1
11-2418-3427	Reproduction	Dunnett Multiple Comparison Test	100	>100	---	14.1%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
17-5471-2430	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
16-7160-3468	Reproduction	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
02-1416-2411	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
17-5471-2430	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
11-2418-3427	Reproduction	Control Resp	24.7	15	>>	Yes	Passes Criteria	
16-7160-3468	Reproduction	Control Resp	24.7	15	>>	Yes	Passes Criteria	
11-2418-3427	Reproduction	PMSD	0.1406	0.13	0.47	Yes	Passes Criteria	

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

**Reproduction Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	24.7	23.44	25.96	22	27	0.5588	1.767	7.15%	0.00%
6.25		10	25.2	23.15	27.25	20	29	0.9043	2.86	11.35%	-2.02%
12.5		10	26.1	23.23	28.97	22	35	1.269	4.012	15.37%	-5.67%
25		10	22.6	20.12	25.08	19	27	1.097	3.471	15.36%	8.50%
50		10	22.6	19.31	25.89	17	31	1.454	4.6	20.35%	8.50%
100		10	23.3	21.22	25.38	17	26	0.9195	2.908	12.48%	5.67%

**CETIS Summary Report**

Report Date: 11 Nov-21 14:45 (p 2 of 2)  
 Test Code/ID: VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test** **Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail** MD5: 6DFFCF255519977902535414E38EA216

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**Reproduction Detail** MD5: 7D07A4725A803F3D1AD03E6AE1AB1426

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	24	27	27	26	23	22	25	26	23
6.25		24	27	26	20	28	21	26	29	25	26
12.5		35	23	24	22	27	27	24	22	29	28
25		27	23	27	20	19	19	27	21	24	19
50		20	28	25	23	17	31	22	17	19	24
100		23	26	26	23	20	24	17	26	25	23

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

**CETIS Analytical Report**

Report Date: 11 Nov-21 14:45 (p 1 of 2)  
 Test Code/ID: VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 11-2418-3427	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:42	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:37	<b>MD5 Hash:</b> B497DDA19E26E68A5E5A957FF12E18E4	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 16-5109-9334	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:03	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-1814-8516	<b>Code:</b> VCF1021.156	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:12	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-FIL
<b>Sample Age:</b> 25h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	3.473	14.06%

**Dunnett Multiple Comparison Test**

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	-0.3296	2.289	3.473	18	CDF	0.9130	Non-Significant Effect
		12.5	-0.9228	2.289	3.473	18	CDF	0.9804	Non-Significant Effect
		25	1.384	2.289	3.473	18	CDF	0.2576	Non-Significant Effect
		50	1.384	2.289	3.473	18	CDF	0.2576	Non-Significant Effect
		100	0.9228	2.289	3.473	18	CDF	0.4519	Non-Significant Effect

**Test Acceptability Criteria**

**TAC Limits**

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	24.7	15	>>	Yes	Passes Criteria
PMSD	0.1406	0.13	0.47	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	107.083	21.4167	5	1.861	0.1166	Non-Significant Effect
Error	621.5	11.5093	54			
Total	728.583		59			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	8.324	15.09	0.1393	Equal Variances
	Levene Equality of Variance Test	1.717	3.377	0.1465	Equal Variances
	Mod Levene Equality of Variance Test	1.625	3.377	0.1692	Equal Variances
Distribution	Anderson-Darling A2 Test	0.3393	3.878	0.5035	Normal Distribution
	D'Agostino Kurtosis Test	0.6023	2.576	0.5470	Normal Distribution
	D'Agostino Skewness Test	1.099	2.576	0.2717	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	1.571	9.21	0.4559	Normal Distribution
	Kolmogorov-Smirnov D Test	0.06912	0.1331	0.6499	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9777	0.9459	0.3395	Normal Distribution

**Reproduction Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	24.7	23.44	25.96	24.5	22	27	0.5588	7.15%	0.00%
6.25		10	25.2	23.15	27.25	26	20	29	0.9043	11.35%	-2.02%
12.5		10	26.1	23.23	28.97	25.5	22	35	1.269	15.37%	-5.67%
25		10	22.6	20.12	25.08	22	19	27	1.097	15.36%	8.50%
50		10	22.6	19.31	25.89	22.5	17	31	1.454	20.35%	8.50%
100		10	23.3	21.22	25.38	23.5	17	26	0.9195	12.48%	5.67%

**Ceriodaphnia 7-d Survival and Reproduction Test**

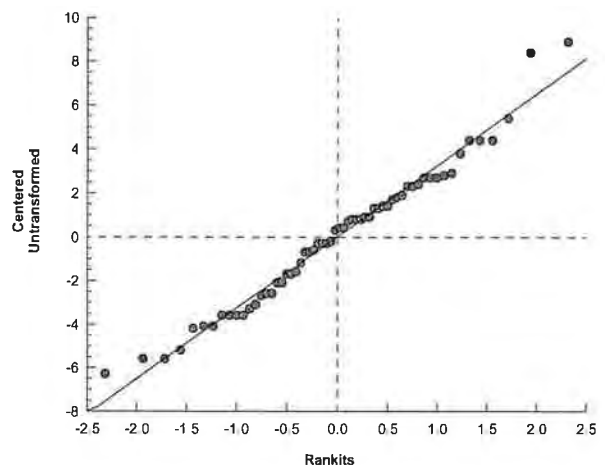
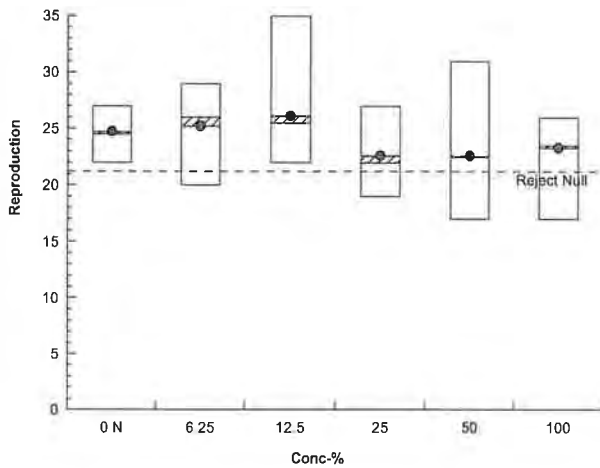
**Aquatic Bioassay & Consulting Labs, Inc.**

**Analysis ID:** 11-2418-3427      **Endpoint:** Reproduction      **CETIS Version:** CETISv1.9.7  
**Analyzed:** 11 Nov-21 14:42      **Analysis:** Parametric-Control vs Treatments      **Status Level:** 1  
**Edit Date:** 11 Nov-21 14:37      **MD5 Hash:** B497DDA19E26E68A5E5A957FF12E18E4      **Editor ID:** 000-189-126-0

**Reproduction Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	24	27	27	26	23	22	25	26	23
6.25		24	27	26	20	28	21	26	29	25	26
12.5		35	23	24	22	27	27	24	22	29	28
25		27	23	27	20	19	19	27	21	24	19
50		20	28	25	23	17	31	22	17	19	24
100		23	26	26	23	20	24	17	26	25	23

**Graphics**



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**CETIS Analytical Report**

Report Date: 11 Nov-21 14:45 (p 1 of 4)  
 Test Code/ID: VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 17-5471-2430	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:42	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:37	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 16-5109-9334	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:03	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-1814-8516	<b>Code:</b> VCF1021.156	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:12	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-FIL
<b>Sample Age:</b> 25h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1



Ceriodaphnia 7-d Survival and Reproduction Test

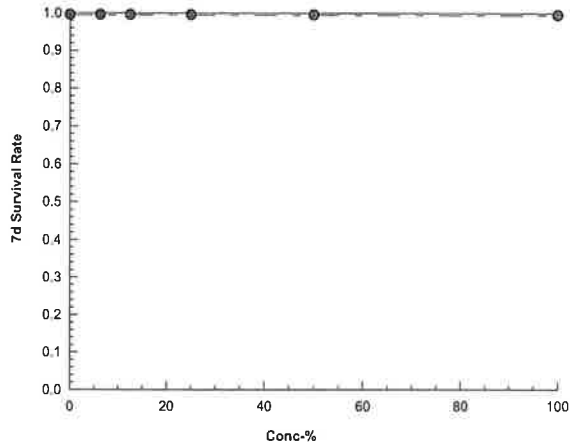
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 17-5471-2430  
Analyzed: 11 Nov-21 14:42  
Edit Date: 11 Nov-21 14:37

Endpoint: 7d Survival Rate  
Analysis: Linear Interpolation (ICPIN)  
MD5 Hash: 6DFFCF255519977902535414E38EA216

CETIS Version: CETISv1.9.7  
Status Level: 1  
Editor ID: 000-189-126-0

Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 14:45 (p 3 of 4)

Test Code/ID: VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 16-7160-3468	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:42	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:37	<b>MD5 Hash:</b> B497DDA19E26E68A5E5A957FF12E18E4	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 16-5109-9334	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:03	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-1814-8516	<b>Code:</b> VCF1021.156	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:12	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-FIL
<b>Sample Age:</b> 25h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1431844	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	24.7	15	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

**Reproduction Summary**

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	24.7	24.5	22	27	7.15%	0.00%	25.33	0.00%
6.25		10	25.2	26	20	29	11.35%	-2.02%	25.33	0.00%
12.5		10	26.1	25.5	22	35	15.37%	-5.67%	25.33	0.00%
25		10	22.6	22	19	27	15.36%	8.50%	22.83	9.87%
50		10	22.6	22.5	17	31	20.35%	8.50%	22.83	9.87%
100		10	23.3	23.5	17	26	12.48%	5.67%	22.83	9.87%

**Reproduction Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	24	27	27	26	23	22	25	26	23
6.25		24	27	26	20	28	21	26	29	25	26
12.5		35	23	24	22	27	27	24	22	29	28
25		27	23	27	20	19	19	27	21	24	19
50		20	28	25	23	17	31	22	17	19	24
100		23	26	26	23	20	24	17	26	25	23

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Analysis ID:** 16-7160-3468

**Endpoint:** Reproduction

**CETIS Version:** CETISv1.9.7

**Analyzed:** 11 Nov-21 14:42

**Analysis:** Linear Interpolation (ICPIN)

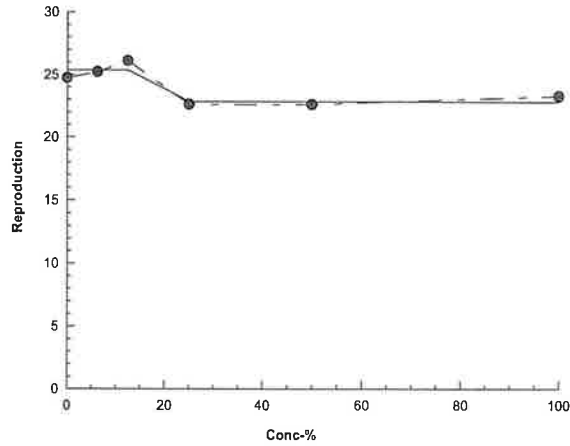
**Status Level:** 1

**Edit Date:** 11 Nov-21 14:37

**MD5 Hash:** B497DDA19E26E68A5E5A957FF12E18E4

**Editor ID:** 000-189-126-0

**Graphics**



<b>Ceriodaphnia 7-d Survival and Reproduction Test</b>			<b>Aquatic Bioassay &amp; Consulting Labs, Inc.</b>		
<b>Analysis ID:</b> 02-1416-2411	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 11 Nov-21 14:42	<b>Analysis:</b> STP 2xK Contingency Tables	<b>Status Level:</b> 1			
<b>Edit Date:</b> 11 Nov-21 14:37	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 16-5109-9334	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 13:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water			
<b>Ending Date:</b> 02 Nov-21 14:03	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24			
<b>Sample ID:</b> 20-1814-8516	<b>Code:</b> VCF1021.156	<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 12:12	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-FIL			
<b>Sample Age:</b> 25h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Untransformed	C > T	100	>100	---	1

Fisher Exact/Bonferroni-Holm Test						
Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	1.0000	Exact	1.0000	Non-Significant Effect
		12.5	1.0000	Exact	1.0000	Non-Significant Effect
		25	1.0000	Exact	1.0000	Non-Significant Effect
		50	1.0000	Exact	1.0000	Non-Significant Effect
		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

7d Survival Rate Frequencies							
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
6.25		10	0	10	1.0000	0.0000	0.00%
12.5		10	0	10	1.0000	0.0000	0.00%
25		10	0	10	1.0000	0.0000	0.00%
50		10	0	10	1.0000	0.0000	0.00%
100		10	0	10	1.0000	0.0000	0.00%

7d Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

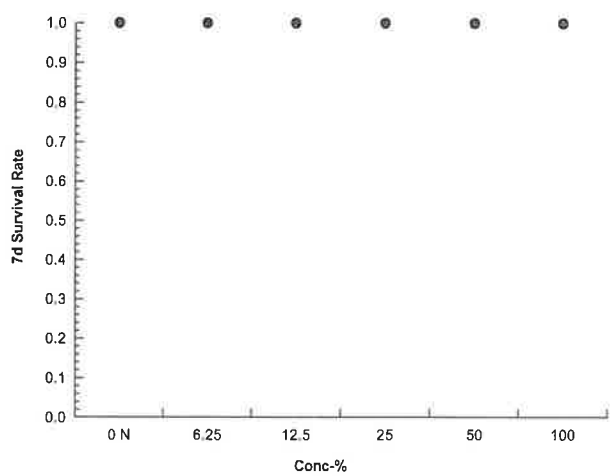
Ceriodaphnia 7-d Survival and Reproduction Test Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-1416-2411	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 11 Nov-21 14:42	Analysis: STP 2xK Contingency Tables	Status Level: 1
Edit Date: 11 Nov-21 14:37	MD5 Hash: 6DFFCF255519977902535414E38EA216	Editor ID: 000-189-126-0

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

**Graphics**



# CETIS Measurement Report

Report Date: 11 Nov-21 14:45 (p 1 of 8)

Test Code/ID: VCF1021.156 / 13-0727-8617

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 16-5109-9334	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:03	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 20-1814-8516	<b>Code:</b> VCF1021.156	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 12:12	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-FIL
<b>Sample Age:</b> 25h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	30	30	30	30	30	0	0	0.00%	0
Overall		16	45.31	36.88	53.74	30	61	3.955	15.82	34.91%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	340.8	339.8	341.7	340	343	0.1456	1.165	0.34%	0
12.5		8	337.1	335.2	339.1	332	339	0.2946	2.357	0.70%	0
25		8	310.4	308.2	312.5	307	316	0.32	2.56	0.82%	0
50		8	281.5	276	287	272	290	0.821	6.568	2.33%	0
100		8	182	180.4	183.6	180	185	0.2409	1.927	1.06%	0
Overall		48	302	284.6	319.4	180	364	8.652	59.94	19.85%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.488	7.312	7.663	7.2	7.8	0.02625	0.21	2.80%	0
12.5		8	7.412	7.243	7.582	7.1	7.7	0.02539	0.2031	2.74%	0
25		8	7.387	7.236	7.539	7.1	7.7	0.0226	0.1808	2.45%	0
50		8	7.35	7.166	7.534	7	7.7	0.02755	0.2204	3.00%	0
100		8	7.35	7.155	7.545	7	7.7	0.02912	0.233	3.17%	0
Overall		48	7.431	7.369	7.493	7	7.9	0.03082	0.2135	2.87%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	90	90	90	90	90	0	0	0.00%	0
Overall		16	92.81	91.25	94.37	90	96	0.7315	2.926	3.15%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.725	7.477	7.973	7.2	7.9	0.03705	0.2964	3.84%	0
12.5		8	7.713	7.487	7.938	7.2	7.9	0.0337	0.2696	3.50%	0
25		8	7.688	7.49	7.885	7.3	7.9	0.02946	0.2357	3.07%	0
50		8	7.65	7.46	7.84	7.3	7.9	0.02835	0.2268	2.96%	0
100		8	7.6	7.433	7.767	7.3	7.9	0.025	0.2	2.63%	0
Overall		48	7.723	7.652	7.794	7.2	8	0.03539	0.2452	3.17%	0 (0%)

# CETIS Measurement Report

Report Date: 11 Nov-21 14:45 (p 2 of 8)

Test Code/ID: VCF1021.156 / 13-0727-8617

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.06	23.99	24.14	24	24.2	0.01145	0.09156	0.38%	0
12.5		8	24.08	24	24.15	24	24.2	0.01107	0.08857	0.37%	0
25		8	24.11	24	24.23	24	24.3	0.01695	0.1356	0.56%	0
50		8	24.14	24	24.27	24	24.4	0.01997	0.1598	0.66%	0
100		8	24.16	24.01	24.32	24	24.4	0.02309	0.1847	0.76%	0
Overall		48	24.09	24.05	24.13	24	24.4	0.01879	0.1302	0.54%	0 (0%)



# CETIS Measurement Report

Report Date: 11 Nov-21 14:45 (p 3 of 8)  
Test Code/ID: VCF1021.156 / 13-0727-8617

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				30					
0	N	2		60					
100				30					
0	N	3		60					
100				30					
0	N	4		61					
100				30					
0	N	5		61					
100				30					
0	N	6		61					
100				30					
0	N	7		61					
100				30					
0	N	8		61					
100				30					



**CETIS Measurement Report**

Report Date: 11 Nov-21 14:45 (p 5 of 8)

Test Code/ID: VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7.6					
12.5				7.5					
25				7.4					
50				7.4					
100				7.4					
0	N	2		7.4					
6.25				7.5					
12.5				7.4					
25				7.4					
50				7.3					
100				7.2					
0	N	3		7.5					
6.25				7.5					
12.5				7.5					
25				7.4					
50				7.4					
100				7.4					
0	N	4		7.6					
6.25				7.3					
12.5				7.3					
25				7.4					
50				7.4					
100				7.5					
0	N	5		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.5					
100				7.5					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.7					
50				7.7					
100				7.7					
0	N	7		7.6					
6.25				7.2					
12.5				7.1					
25				7.1					
50				7					
100				7					
0	N	8		7.4					
6.25				7.3					
12.5				7.2					
25				7.2					
50				7.1					
100				7.1					



**CETIS Measurement Report**

Report Date: 11 Nov-21 14:45 (p 7 of 8)

Test Code/ID: VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7.2					
12.5				7.2					
25				7.3					
50				7.3					
100				7.3					
0	N	2		8					
6.25				7.3					
12.5				7.4					
25				7.4					
50				7.4					
100				7.4					
0	N	3		7.8					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.5					
0	N	4		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	5		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.6					
0	N	6		7.9					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.7					
100				7.6					
0	N	7		8					
6.25				7.9					
12.5				7.9					
25				7.8					
50				7.8					
100				7.8					
0	N	8		8					
6.25				7.9					
12.5				7.8					
25				7.7					
50				7.7					
100				7.7					

**CETIS Measurement Report**

Report Date: 11 Nov-21 14:45 (p 8 of 8)  
 Test Code/ID: VCF1021.156 / 13-0727-8617

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25			24.2						
12.5			24.2						
25			24.3						
50			24.3						
100			24.4						
0			N	2		24			
6.25	24.1								
12.5	24.1								
25	24.2								
50	24.2								
100	24.3								
0	N	3				24			
6.25			24						
12.5			24.1						
25			24.1						
50			24.2						
100			24.2						
0			N	4		24			
6.25	24.2								
12.5	24.2								
25	24.3								
50	24.4								
100	24.4								
0	N	5				24			
6.25			24						
12.5			24						
25			24						
50			24						
100			24						
0			N	6		24			
6.25	24								
12.5	24								
25	24								
50	24								
100	24								
0	N	7				24			
6.25			24						
12.5			24						
25			24						
50			24						
100			24						
0			N	8		24			
6.25	24								
12.5	24								
25	24								
50	24								
100	24								



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. Results were as follows:

CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-VEN  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.157

#### CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

SURVIVAL NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
EC25 = >100.00 %  
EC50 = >100.00 %

REPRODUCTION NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
IC25 = >100.00 %  
IC50 = >100.00 %

Yours very truly,

Scott Johnson  
Laboratory Director



# CETIS Summary Report

Report Date: 11 Nov-21 14:50 (p 1 of 2)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 17-4720-0803	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:43	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:07	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 06-0782-2388	<b>Code:</b> VCF1021.157	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-VEN
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
06-6473-2828	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	100	>100	---	---	1	1
09-7041-8290	Reproduction	Dunnett Multiple Comparison Test	100	>100	---	18.3%	1	1

### Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
14-7564-2185	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
21-3556-2970	Reproduction	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

### Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
06-6473-2828	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
14-7564-2185	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
09-7041-8290	Reproduction	Control Resp	21.2	15	>>	Yes	Passes Criteria	
21-3556-2970	Reproduction	Control Resp	21.2	15	>>	Yes	Passes Criteria	
09-7041-8290	Reproduction	PMSD	0.1831	0.13	0.47	Yes	Passes Criteria	

### 7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

### Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	21.2	18.04	24.36	12	26	1.397	4.417	20.84%	0.00%
6.25		10	23.3	19.89	26.71	17	32	1.506	4.762	20.44%	-9.91%
12.5		10	24.3	22.22	26.38	20	28	0.9195	2.908	11.97%	-14.62%
25		10	25.8	22.83	28.77	20	33	1.315	4.158	16.12%	-21.70%
50		10	22.1	20.4	23.8	19	26	0.752	2.378	10.76%	-4.25%
100		10	24.7	22.15	27.25	19	31	1.126	3.561	14.42%	-16.51%

**CETIS Summary Report**

Report Date: 11 Nov-21 14:50 (p 2 of 2)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 6DFFCF255519977902535414E38EA216

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**Reproduction Detail**

MD5: F86E208516AE1382F6E9B7B06D794006

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	19	20	17	12	23	25	21	23	26	26
6.25		32	25	23	23	17	17	25	21	21	29
12.5		28	26	21	25	21	26	20	25	28	23
25		28	20	24	24	21	24	31	25	33	28
50		24	21	19	20	22	24	26	24	19	22
100		30	31	25	19	25	23	24	23	25	22

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 09-7041-8290	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:49	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:45	<b>MD5 Hash:</b> EF7AF7C9042DA092722EC757AE83EF80	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 17-4720-0803	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:43	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:07	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 06-0782-2388	<b>Code:</b> VCF1021.157	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-VEN
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	3.882	18.31%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	-1.238	2.289	3.882	18	CDF	0.9924	Non-Significant Effect
		12.5	-1.828	2.289	3.882	18	CDF	0.9990	Non-Significant Effect
		25	-2.713	2.289	3.882	18	CDF	1.0000	Non-Significant Effect
		50	-0.5307	2.289	3.882	18	CDF	0.9450	Non-Significant Effect
		100	-2.064	2.289	3.882	18	CDF	0.9996	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	21.2	15	>>	Yes	Passes Criteria
PMSD	0.1831	0.13	0.47	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	146.333	29.2667	5	2.036	0.0882	Non-Significant Effect
Error	776.4	14.3778	54			
Total	922.733		59			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	5.559	15.09	0.3515	Equal Variances
	Levene Equality of Variance Test	0.9146	3.377	0.4786	Equal Variances
	Mod Levene Equality of Variance Test	0.7429	3.377	0.5948	Equal Variances
Distribution	Anderson-Darling A2 Test	0.2391	3.878	0.8074	Normal Distribution
	D'Agostino Kurtosis Test	0.1629	2.576	0.8706	Normal Distribution
	D'Agostino Skewness Test	0.143	2.576	0.8863	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.04698	9.21	0.9768	Normal Distribution
	Kolmogorov-Smirnov D Test	0.0721	0.1331	0.5795	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9921	0.9459	0.9667	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	21.2	18.04	24.36	22	12	26	1.397	20.84%	0.00%
6.25		10	23.3	19.89	26.71	23	17	32	1.506	20.44%	-9.91%
12.5		10	24.3	22.22	26.38	25	20	28	0.9195	11.97%	-14.62%
25		10	25.8	22.83	28.77	24.5	20	33	1.315	16.12%	-21.70%
50		10	22.1	20.4	23.8	22	19	26	0.752	10.76%	-4.25%
100		10	24.7	22.15	27.25	24.5	19	31	1.126	14.42%	-16.51%

Ceriodaphnia 7-d Survival and Reproduction Test

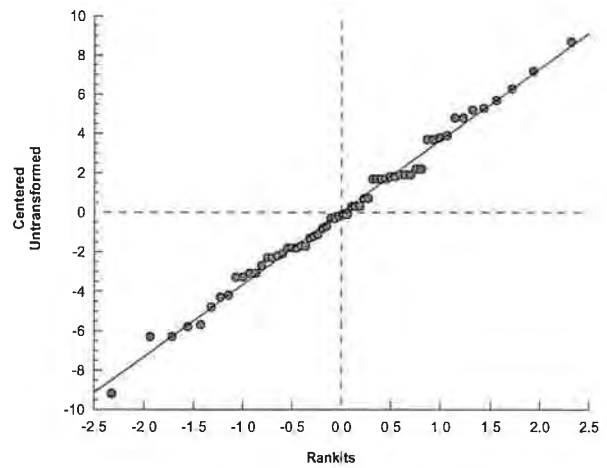
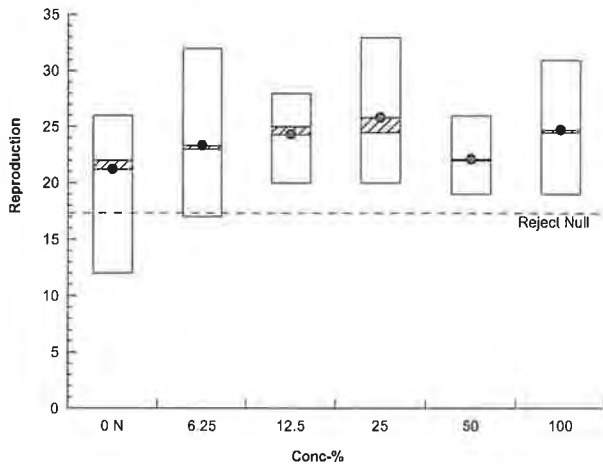
Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 09-7041-8290	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:49	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:45	<b>MD5 Hash:</b> EF7AF7C9042DA092722EC757AE83EF80	<b>Editor ID:</b> 000-189-126-0

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	19	20	17	12	23	25	21	23	26	26
6.25		32	25	23	23	17	17	25	21	21	29
12.5		28	26	21	25	21	26	20	25	28	23
25		28	20	24	24	21	24	31	25	33	28
50		24	21	19	20	22	24	26	24	19	22
100		30	31	25	19	25	23	24	23	25	22

Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 14:50 (p 1 of 4)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

Ceriodaphnia 7-d Survival and Reproduction Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 14-7564-2185	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7			
Analyzed: 11 Nov-21 14:49	Analysis: Linear Interpolation (ICPIN)	Status Level: 1			
Edit Date: 11 Nov-21 14:45	MD5 Hash: 6DFFCF255519977902535414E38EA216	Editor ID: 000-189-126-0			
Batch ID: 17-4720-0803	Test Type: Reproduction-Survival (7d)	Analyst:			
Start Date: 26 Oct-21 13:43	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water			
Ending Date: 02 Nov-21 14:07	Species: Ceriodaphnia dubia	Brine: Not Applicable			
Test Length: 7d 0h	Taxon: Branchiopoda	Source: Aquatic Biosystems, CO	Age: <24		
Sample ID: 06-0782-2388	Code: VCF1021.157	Project: NPDES Stormwater Wet Season			
Sample Date: 25 Oct-21 13:20	Material: Sample Water	Source: Bioassay Report			
Receipt Date: 25 Oct-21 16:17	CAS (PC):	Station: MO-VEN			
Sample Age: 24h (8.5 °C)	Client: Ventura County Watershed Protection Distri				

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	>>	Yes	Passes Criteria

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

7d Survival Rate Summary			Calculated Variate(A/B)						Isotonic Variate		
Conc-%	Code	Count	Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%

7d Survival Rate Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test

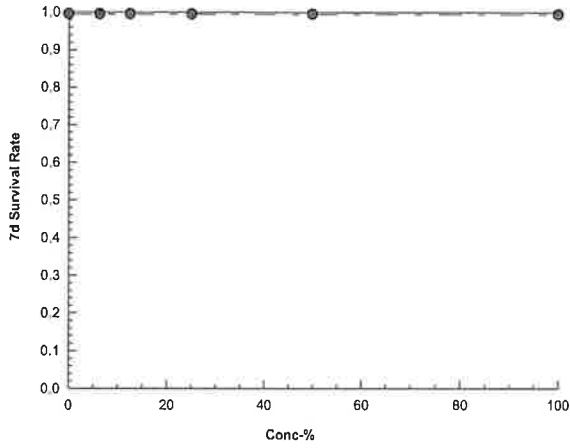
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 14-7564-2185  
Analyzed: 11 Nov-21 14:49  
Edit Date: 11 Nov-21 14:45

Endpoint: 7d Survival Rate  
Analysis: Linear Interpolation (ICPIN)  
MD5 Hash: 6DFFCF255519977902535414E38EA216

CETIS Version: CETISv1.9.7  
Status Level: 1  
Editor ID: 000-189-126-0

Graphics





**CETIS Analytical Report**

Report Date: 11 Nov-21 14:50 (p 3 of 4)

Test Code/ID: VCF1021.157 / 18-3904-8933

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 21-3556-2970	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:49	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:45	<b>MD5 Hash:</b> EF7AF7C9042DA092722EC757AE83EF80	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 17-4720-0803	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:43	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:07	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 06-0782-2388	<b>Code:</b> VCF1021.157	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-VEN
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	518972	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	21.2	15	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

**Reproduction Summary**

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	21.2	22	12	26	20.84%	0.00%	23.65	0.00%
6.25		10	23.3	23	17	32	20.44%	-9.91%	23.65	0.00%
12.5		10	24.3	25	20	28	11.97%	-14.62%	23.65	0.00%
25		10	25.8	24.5	20	33	16.12%	-21.70%	23.65	0.00%
50		10	22.1	22	19	26	10.76%	-4.25%	23.4	1.06%
100		10	24.7	24.5	19	31	14.42%	-16.51%	23.4	1.06%

**Reproduction Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	19	20	17	12	23	25	21	23	26	26
6.25		32	25	23	23	17	17	25	21	21	29
12.5		28	26	21	25	21	26	20	25	28	23
25		28	20	24	24	21	24	31	25	33	28
50		24	21	19	20	22	24	26	24	19	22
100		30	31	25	19	25	23	24	23	25	22



# CETIS Analytical Report

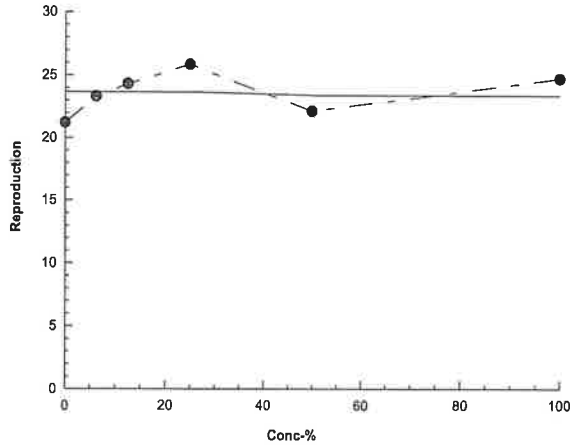
Report Date: 11 Nov-21 14:50 (p 4 of 4)  
Test Code/ID: VCF1021.157 / 18-3904-8933

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 21-3556-2970	Endpoint: Reproduction	CETIS Version: CETISv1.9.7
Analyzed: 11 Nov-21 14:49	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 11 Nov-21 14:45	MD5 Hash: EF7AF7C9042DA092722EC757AE83EF80	Editor ID: 000-189-126-0

### Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 14:50 (p 1 of 2)

Test Code/ID: VCF1021.157 / 18-3904-8933

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 06-6473-2828	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:49	<b>Analysis:</b> STP 2xK Contingency Tables	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:45	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 17-4720-0803	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:43	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:07	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 06-0782-2388	<b>Code:</b> VCF1021.157	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-VEN
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Untransformed	C > T	100	>100	---	1

**Fisher Exact/Bonferroni-Holm Test**

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	1.0000	Exact	1.0000	Non-Significant Effect
		12.5	1.0000	Exact	1.0000	Non-Significant Effect
		25	1.0000	Exact	1.0000	Non-Significant Effect
		50	1.0000	Exact	1.0000	Non-Significant Effect
		100	1.0000	Exact	1.0000	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**7d Survival Rate Frequencies**

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
6.25		10	0	10	1.0000	0.0000	0.00%
12.5		10	0	10	1.0000	0.0000	0.00%
25		10	0	10	1.0000	0.0000	0.00%
50		10	0	10	1.0000	0.0000	0.00%
100		10	0	10	1.0000	0.0000	0.00%

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

# CETIS Analytical Report

Report Date: 11 Nov-21 14:50 (p 2 of 2)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

## Ceriodaphnia 7-d Survival and Reproduction Test

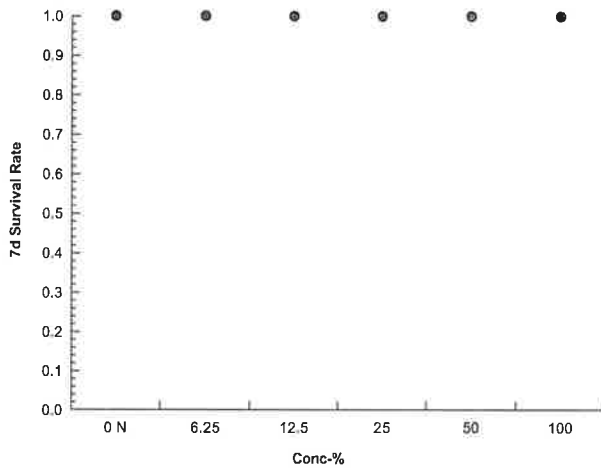
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 06-6473-2828      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 11 Nov-21 14:49      Analysis: STP 2xK Contingency Tables      Status Level: 1  
 Edit Date: 11 Nov-21 14:45      MD5 Hash: 6DFFCF255519977902535414E38EA216      Editor ID: 000-189-126-0

### 7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

### Graphics



# CETIS Measurement Report

Report Date: 11 Nov-21 14:50 (p 1 of 8)

Test Code/ID: VCF1021.157 / 18-3904-8933

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 17-4720-0803	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:43	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:07	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 06-0782-2388	<b>Code:</b> VCF1021.157	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-VEN
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	42.31	32.23	52.39	24	61	4.729	18.92	44.71%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	338.4	337.8	339	337	339	0.093	0.744	0.22%	0
12.5		8	335.2	333	337.5	332	339	0.3391	2.712	0.81%	0
25		8	323.8	321	326.5	320	329	0.4159	3.327	1.03%	0
50		8	286.8	283.2	290.3	282	295	0.5376	4.301	1.50%	0
100		8	212	210.4	213.6	210	215	0.2409	1.927	0.91%	0
Overall		48	309.4	295.1	323.8	210	364	7.138	49.45	15.98%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.45	7.289	7.611	7.3	7.8	0.02409	0.1927	2.59%	0
12.5		8	7.4	7.266	7.534	7.3	7.7	0.02004	0.1604	2.17%	0
25		8	7.363	7.222	7.503	7.2	7.7	0.02106	0.1685	2.29%	0
50		8	7.325	7.193	7.457	7.2	7.6	0.01976	0.1581	2.16%	0
100		8	7.312	7.155	7.47	7.1	7.6	0.02356	0.1885	2.58%	0
Overall		48	7.408	7.353	7.464	7.1	7.9	0.02775	0.1922	2.60%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	60	60	60	60	60	0	0	0.00%	0
Overall		16	77.81	68.01	87.62	60	96	4.6	18.4	23.65%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.563	7.266	7.859	7	7.9	0.04429	0.3543	4.69%	0
12.5		8	7.55	7.26	7.84	7	7.9	0.0433	0.3464	4.59%	0
25		8	7.538	7.252	7.823	7	7.9	0.04275	0.342	4.54%	0
50		8	7.55	7.275	7.825	7	7.9	0.04119	0.3295	4.36%	0
100		8	7.55	7.275	7.825	7	7.9	0.04119	0.3295	4.36%	0
Overall		48	7.619	7.522	7.716	7	8	0.04816	0.3337	4.38%	0 (0%)

# CETIS Measurement Report

Report Date: 11 Nov-21 14:50 (p 2 of 8)

Test Code/ID: VCF1021.157 / 18-3904-8933

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.06	23.96	24.16	24	24.3	0.01485	0.1188	0.49%	0
12.5		8	24.09	23.99	24.18	24	24.3	0.01407	0.1126	0.47%	0
25		8	24.09	23.99	24.18	24	24.3	0.01407	0.1126	0.47%	0
50		8	24.11	23.99	24.23	24	24.4	0.01822	0.1457	0.60%	0
100		8	24.13	23.98	24.27	24	24.5	0.0219	0.1752	0.73%	0
Overall		48	24.08	24.04	24.12	24	24.5	0.01785	0.1237	0.51%	0 (0%)

# CETIS Measurement Report

Report Date: 11 Nov-21 14:50 (p 3 of 8)  
Test Code/ID: VCF1021.157 / 18-3904-8933

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				24					
0	N	2		60					
100				24					
0	N	3		60					
100				24					
0	N	4		61					
100				24					
0	N	5		61					
100				24					
0	N	6		61					
100				24					
0	N	7		61					
100				24					
0	N	8		61					
100				24					

# CETIS Measurement Report

Report Date: 11 Nov-21 14:50 (p 4 of 8)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Conductivity-µmhos

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				338					
12.5				339					
25				323					
50				286					
100				213					
0	N	2		360					
6.25				339					
12.5				336					
25				320					
50				290					
100				210					
0	N	3		354					
6.25				339					
12.5				338					
25				322					
50				295					
100				215					
0	N	4		360					
6.25				337					
12.5				332					
25				324					
50				282					
100				210					
0	N	5		364					
6.25				338					
12.5				333					
25				328					
50				285					
100				212					
0	N	6		362					
6.25				339					
12.5				335					
25				329					
50				288					
100				214					
0	N	7		362					
6.25				339					
12.5				337					
25				324					
50				286					
100				210					
0	N	8		360					
6.25				338					
12.5				332					
25				320					
50				282					
100				212					





**CETIS Measurement Report**

Report Date: 11 Nov-21 14:50 (p 6 of 8)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Hardness (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				60					
0	N	2		95					
100				60					
0	N	3		95					
100				60					
0	N	4		96					
100				60					
0	N	5		96					
100				60					
0	N	6		96					
100				60					
0	N	7		96					
100				60					
0	N	8		96					
100				60					

**CETIS Measurement Report**

Report Date: 11 Nov-21 14:50 (p 7 of 8)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7					
12.5				7					
25				7					
50				7					
100				7					
0	N	2		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.4					
100				7.4					
0	N	3		7.8					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.5					
0	N	4		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	5		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	6		7.9					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	7		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.3					
100				7.3					
0	N	8		8					
6.25				7.4					
12.5				7.4					
25				7.4					
50				7.5					
100				7.5					

**CETIS Measurement Report**

Report Date: 11 Nov-21 14:50 (p 8 of 8)  
 Test Code/ID: VCF1021.157 / 18-3904-8933

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24.2					
12.5				24.2					
25				24.2					
50				24.2					
100				24.2					
0	N	2		24					
6.25				24.3					
12.5				24.3					
25				24.3					
50				24.4					
100				24.5					
0	N	3		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.1					
100				24.1					
0	N	4		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.2					
100				24.2					
0	N	5		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	6		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	7		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. Results were as follows:

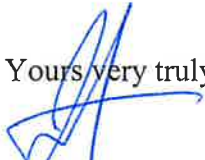
CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-HUE  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.158

#### CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

SURVIVAL NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
EC25 = >100.00 %  
EC50 = >100.00 %

REPRODUCTION NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
IC25 = >100.00 %  
IC50 = >100.00 %

Yours very truly,

  
Scott Johnson  
Laboratory Director

# CETIS Summary Report

Report Date: 11 Nov-21 15:00 (p 1 of 2)

Test Code/ID: VCF1021.158 / 12-0098-6500

Ceriodaphnia 7-d Survival and Reproduction Test				Aquatic Bioassay & Consulting Labs, Inc.			
<b>Batch ID:</b> 18-1410-9064	<b>Test Type:</b> Reproduction-Survival (7d)			<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 13:52	<b>Protocol:</b> EPA/821/R-02-013 (2002)			<b>Diluent:</b> Laboratory Water			
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Ceriodaphnia dubia			<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda			<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> <24		
<b>Sample ID:</b> 07-5176-2437	<b>Code:</b> VCF1021.158			<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 14:15	<b>Material:</b> Sample Water			<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>			<b>Station:</b> MO-HUE			
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri						

Multiple Comparison Summary									
Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	S
08-5709-5962	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		100	>100	---	---	1	1
13-5718-0339	Reproduction	Dunnett Multiple Comparison Test		100	>100	---	13.0%	1	1

Point Estimate Summary									
Analysis ID	Endpoint	Point Estimate Method	✓	Level	%	95% LCL	95% UCL	TU	S
16-1294-2510	7d Survival Rate	Linear Interpolation (ICPIN)		EC10	>100	---	---	<1	1
				EC15	>100	---	---	<1	
				EC20	>100	---	---	<1	
				EC25	>100	---	---	<1	
				EC40	>100	---	---	<1	
				EC50	>100	---	---	<1	
18-6301-5261	Reproduction	Linear Interpolation (ICPIN)		IC10	>100	---	---	<1	1
				IC15	>100	---	---	<1	
				IC20	>100	---	---	<1	
				IC25	>100	---	---	<1	
				IC40	>100	---	---	<1	
				IC50	>100	---	---	<1	

Test Acceptability							
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Decision
				Lower	Upper	Overlap	
08-5709-5962	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
16-1294-2510	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
13-5718-0339	Reproduction	Control Resp	26.3	15	>>	Yes	Passes Criteria
18-6301-5261	Reproduction	Control Resp	26.3	15	>>	Yes	Passes Criteria
13-5718-0339	Reproduction	PMSD	0.1298	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

Reproduction Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	26.3	24.36	28.24	21	30	0.857	2.71	10.30%	0.00%
6.25		10	23.1	19.93	26.27	18	30	1.402	4.433	19.19%	12.17%
12.5		10	23.1	20.48	25.72	18	29	1.159	3.665	15.87%	12.17%
25		10	26.6	24.6	28.6	23	32	0.8844	2.797	10.51%	-1.14%
50		10	28.9	26.95	30.85	25	33	0.8622	2.726	9.43%	-9.89%
100		10	24.1	21.73	26.47	20	32	1.048	3.315	13.75%	8.37%

**CETIS Summary Report**

Report Date: 11 Nov-21 15:00 (p 2 of 2)  
 Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 6DFFCF255519977902535414E38EA216

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**Reproduction Detail**

MD5: 5CB671F6EA182973DD90D32F31B3A7D6

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	24	28	21	26	27	28	26	30	24
6.25		26	30	30	20	20	18	19	20	24	24
12.5		28	29	23	21	19	21	22	24	18	26
25		28	26	24	26	26	24	27	30	23	32
50		32	26	25	27	27	28	33	31	29	31
100		22	20	25	32	25	25	23	25	23	21

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1



**CETIS Analytical Report**

**Report Date:** 11 Nov-21 15:00 (p 1 of 2)  
**Test Code/ID:** VCF1021.158 / 12-0098-6500

Ceriodaphnia 7-d Survival and Reproduction Test			Aquatic Bioassay & Consulting Labs, Inc.		
<b>Analysis ID:</b> 13-5718-0339	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 11 Nov-21 14:59	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1			
<b>Edit Date:</b> 11 Nov-21 14:54	<b>MD5 Hash:</b> CB7702B74565EF7295134E960A131E73	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 18-1410-9064	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 13:52	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water			
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24			
<b>Sample ID:</b> 07-5176-2437	<b>Code:</b> VCF1021.158	<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 14:15	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-HUE			
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	3.413	12.98%

**Dunnnett Multiple Comparison Test**

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	2.146	2.289	3.413	18	CDF	0.0678	Non-Significant Effect
		12.5	2.146	2.289	3.413	18	CDF	0.0678	Non-Significant Effect
		25	-0.2012	2.289	3.413	18	CDF	0.8863	Non-Significant Effect
		50	-1.744	2.289	3.413	18	CDF	0.9987	Non-Significant Effect
		100	1.476	2.289	3.413	18	CDF	0.2253	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	26.3	15	>>	Yes	Passes Criteria
PMSD	0.1298	0.13	0.47	Yes	Below Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	267.55	53.51	5	4.815	0.0010	Significant Effect
Error	600.1	11.113	54			
Total	867.65		59			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	3.613	15.09	0.6063	Equal Variances
	Levene Equality of Variance Test	1.161	3.377	0.3402	Equal Variances
	Mod Levene Equality of Variance Test	1.064	3.377	0.3905	Equal Variances
Distribution	Anderson-Darling A2 Test	0.5139	3.878	0.1967	Normal Distribution
	D'Agostino Kurtosis Test	0.2543	2.576	0.7993	Normal Distribution
	D'Agostino Skewness Test	1.666	2.576	0.0957	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	2.84	9.21	0.2417	Normal Distribution
	Kolmogorov-Smirnov D Test	0.091	0.1331	0.2337	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9677	0.9459	0.1125	Normal Distribution

**Reproduction Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	26.3	24.36	28.24	26.5	21	30	0.857	10.30%	0.00%
6.25		10	23.1	19.93	26.27	22	18	30	1.402	19.19%	12.17%
12.5		10	23.1	20.48	25.72	22.5	18	29	1.159	15.87%	12.17%
25		10	26.6	24.6	28.6	26	23	32	0.8844	10.51%	-1.14%
50		10	28.9	26.95	30.85	28.5	25	33	0.8622	9.43%	-9.89%
100		10	24.1	21.73	26.47	24	20	32	1.048	13.75%	8.37%

Ceriodaphnia 7-d Survival and Reproduction Test

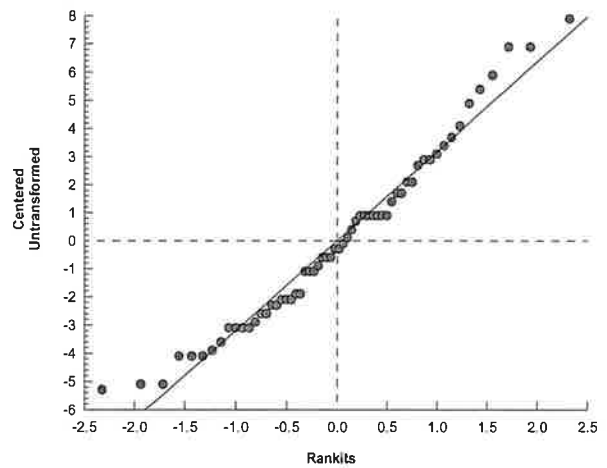
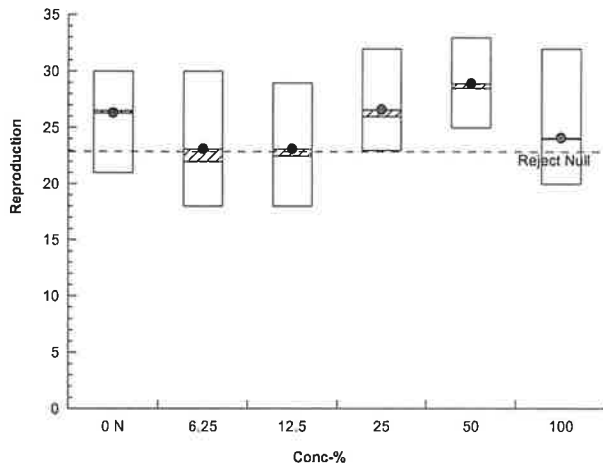
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-5718-0339	Endpoint: Reproduction	CETIS Version: CETISv1.9.7
Analyzed: 11 Nov-21 14:59	Analysis: Parametric-Control vs Treatments	Status Level: 1
Edit Date: 11 Nov-21 14:54	MD5 Hash: CB7702B74565EF7295134E960A131E73	Editor ID: 000-189-126-0

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	24	28	21	26	27	28	26	30	24
6.25		26	30	30	20	20	18	19	20	24	24
12.5		28	29	23	21	19	21	22	24	18	26
25		28	26	24	26	26	24	27	30	23	32
50		32	26	25	27	27	28	33	31	29	31
100		22	20	25	32	25	25	23	25	23	21

Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:00 (p 1 of 4)  
 Test Code/ID: VCF1021.158 / 12-0098-6500

Ceriodaphnia 7-d Survival and Reproduction Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 16-1294-2510	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7			
Analyzed: 11 Nov-21 14:59	Analysis: Linear Interpolation (ICPIN)	Status Level: 1			
Edit Date: 11 Nov-21 14:54	MD5 Hash: 6DFFCF255519977902535414E38EA216	Editor ID: 000-189-126-0			
Batch ID: 18-1410-9064	Test Type: Reproduction-Survival (7d)	Analyst:			
Start Date: 26 Oct-21 13:52	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water			
Ending Date: 02 Nov-21 14:10	Species: Ceriodaphnia dubia	Brine: Not Applicable			
Test Length: 7d 0h	Taxon: Branchiopoda	Source: Aquatic Biosystems, CO Age: <24			
Sample ID: 07-5176-2437	Code: VCF1021.158	Project: NPDES Stormwater Wet Season			
Sample Date: 25 Oct-21 14:15	Material: Sample Water	Source: Bioassay Report			
Receipt Date: 25 Oct-21 16:17	CAS (PC):	Station: MO-HUE			
Sample Age: 24h (8.5 °C)	Client: Ventura County Watershed Protection Distri				

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test

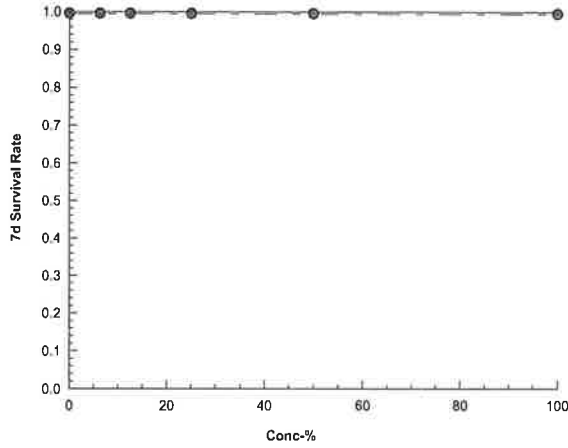
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 16-1294-2510  
Analyzed: 11 Nov-21 14:59  
Edit Date: 11 Nov-21 14:54

Endpoint: 7d Survival Rate  
Analysis: Linear Interpolation (ICPIN)  
MD5 Hash: 6DFFCF255519977902535414E38EA216

CETIS Version: CETISv1.9.7  
Status Level: 1  
Editor ID: 000-189-126-0

Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:00 (p 3 of 4)

Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 18-6301-5261	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:59	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:54	<b>MD5 Hash:</b> CB7702B74565EF7295134E960A131E73	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 18-1410-9064	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:52	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 07-5176-2437	<b>Code:</b> VCF1021.158	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:15	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-HUE
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1873552	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	26.3	15	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

**Reproduction Summary**

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	26.3	26.5	21	30	10.30%	0.00%	26.3	0.00%
6.25		10	23.1	22	18	30	19.19%	12.17%	25.42	3.33%
12.5		10	23.1	22.5	18	29	15.87%	12.17%	25.42	3.33%
25		10	26.6	26	23	32	10.51%	-1.14%	25.42	3.33%
50		10	28.9	28.5	25	33	9.43%	-9.89%	25.42	3.33%
100		10	24.1	24	20	32	13.75%	8.37%	24.1	8.37%

**Reproduction Detail**

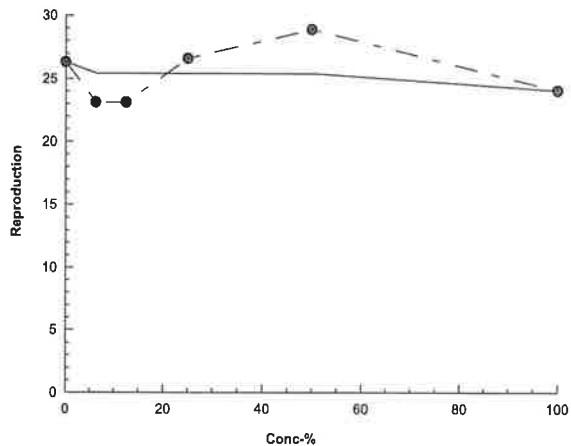
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	24	28	21	26	27	28	26	30	24
6.25		26	30	30	20	20	18	19	20	24	24
12.5		28	29	23	21	19	21	22	24	18	26
25		28	26	24	26	26	24	27	30	23	32
50		32	26	25	27	27	28	33	31	29	31
100		22	20	25	32	25	25	23	25	23	21

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 18-6301-5261      Endpoint: Reproduction      CETIS Version: CETISv1.9.7  
Analyzed: 11 Nov-21 14:59      Analysis: Linear Interpolation (ICPIN)      Status Level: 1  
Edit Date: 11 Nov-21 14:54      MD5 Hash: CB7702B74565EF7295134E960A131E73      Editor ID: 000-189-126-0

Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:00 (p 1 of 2)

Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 08-5709-5962	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 14:59	<b>Analysis:</b> STP 2xK Contingency Tables	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 14:54	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 18-1410-9064	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:52	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 07-5176-2437	<b>Code:</b> VCF1021.158	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:15	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-HUE
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Untransformed	C > T	100	>100	---	1

**Fisher Exact/Bonferroni-Holm Test**

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	1.0000	Exact	1.0000	Non-Significant Effect
		12.5	1.0000	Exact	1.0000	Non-Significant Effect
		25	1.0000	Exact	1.0000	Non-Significant Effect
		50	1.0000	Exact	1.0000	Non-Significant Effect
		100	1.0000	Exact	1.0000	Non-Significant Effect

**Test Acceptability Criteria**

**TAC Limits**

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	>>	Yes	Passes Criteria

**7d Survival Rate Frequencies**

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
6.25		10	0	10	1.0000	0.0000	0.00%
12.5		10	0	10	1.0000	0.0000	0.00%
25		10	0	10	1.0000	0.0000	0.00%
50		10	0	10	1.0000	0.0000	0.00%
100		10	0	10	1.0000	0.0000	0.00%

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



Ceriodaphnia 7-d Survival and Reproduction Test

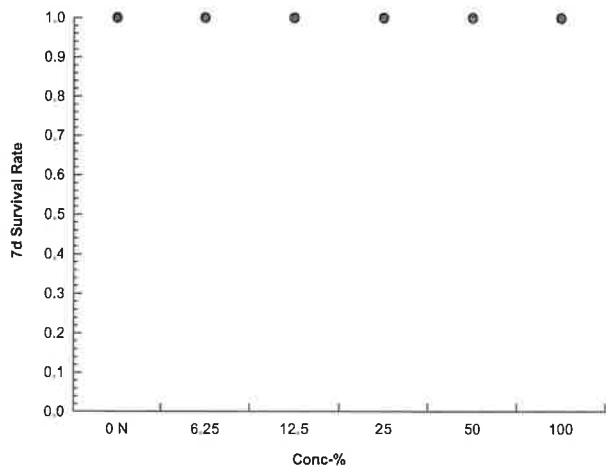
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-5709-5962	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7
Analyzed: 11 Nov-21 14:59	Analysis: STP 2xK Contingency Tables	Status Level: 1
Edit Date: 11 Nov-21 14:54	MD5 Hash: 6DFFCF255519977902535414E38EA216	Editor ID: 000-189-126-0

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Graphics



# CETIS Measurement Report

Report Date: 11 Nov-21 15:00 (p 1 of 8)

Test Code/ID: VCF1021.158 / 12-0098-6500

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 18-1410-9064	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:52	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:10	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 07-5176-2437	<b>Code:</b> VCF1021.158	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:15	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 16:17	<b>CAS (PC):</b>	<b>Station:</b> MO-HUE
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	76	76	76	76	76	0	0	0.00%	0
Overall		16	68.31	64.08	72.55	60	76	1.987	7.947	11.63%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	380.2	378.9	381.6	378	382	0.2086	1.669	0.44%	0
12.5		8	446.4	439.5	453.2	432	460	1.022	8.176	1.83%	0
25		8	494.5	490.7	498.3	485	499	0.5669	4.536	0.92%	0
50		8	642.4	638.7	646.1	636	650	0.5548	4.438	0.69%	0
100		8	932.5	929.2	935.8	927	940	0.4864	3.891	0.42%	0
Overall		48	542.8	484.9	600.6	354	940	28.76	199.2	36.71%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.438	7.219	7.656	7.2	7.9	0.03269	0.2615	3.52%	0
12.5		8	7.388	7.218	7.557	7.2	7.8	0.02539	0.2031	2.75%	0
25		8	7.312	7.131	7.494	7	7.7	0.02709	0.2167	2.96%	0
50		8	7.312	7.137	7.488	7	7.7	0.02625	0.21	2.87%	0
100		8	7.25	7.077	7.423	7	7.6	0.02588	0.207	2.86%	0
Overall		48	7.383	7.316	7.451	7	7.9	0.0336	0.2328	3.15%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	205	205	205	205	205	0	0	0.00%	0
Overall		16	150.3	120.2	180.4	95	205	14.12	56.48	37.58%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.588	7.349	7.826	7.2	7.9	0.03563	0.285	3.76%	0
12.5		8	7.6	7.368	7.832	7.2	7.9	0.03472	0.2777	3.65%	0
25		8	7.588	7.349	7.826	7.2	7.9	0.03563	0.285	3.76%	0
50		8	7.575	7.362	7.788	7.3	7.9	0.03187	0.2549	3.37%	0
100		8	7.588	7.376	7.799	7.3	7.9	0.03165	0.2532	3.34%	0
Overall		48	7.65	7.57	7.73	7.2	8	0.03972	0.2752	3.60%	0 (0%)

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:00 (p 2 of 8)  
 Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.1	24	24.2	24	24.3	0.01494	0.1195	0.50%	0
12.5		8	24.1	24	24.2	24	24.3	0.01494	0.1195	0.50%	0
25		8	24.14	24.01	24.26	24	24.3	0.01883	0.1506	0.62%	0
50		8	24.14	24.01	24.26	24	24.3	0.01883	0.1506	0.62%	0
100		8	24.11	23.98	24.24	24	24.3	0.01941	0.1553	0.64%	0
Overall		48	24.1	24.06	24.14	24	24.3	0.01871	0.1296	0.54%	0 (0%)

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:00 (p 3 of 8)  
Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Alkalinity (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				76					
0	N	2		60					
100				76					
0	N	3		60					
100				76					
0	N	4		61					
100				76					
0	N	5		61					
100				76					
0	N	6		61					
100				76					
0	N	7		61					
100				76					
0	N	8		61					
100				76					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:00 (p 4 of 8)

Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

**Conductivity-µmhos**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				378					
12.5				432					
25				485					
50				640					
100				932					
0	N	2		360					
6.25				380					
12.5				440					
25				492					
50				640					
100				927					
0	N	3		354					
6.25				378					
12.5				444					
25				498					
50				636					
100				932					
0	N	4		360					
6.25				382					
12.5				447					
25				493					
50				640					
100				933					
0	N	5		364					
6.25				380					
12.5				448					
25				497					
50				643					
100				929					
0	N	6		362					
6.25				382					
12.5				450					
25				495					
50				643					
100				935					
0	N	7		362					
6.25				380					
12.5				450					
25				499					
50				647					
100				940					
0	N	8		360					
6.25				382					
12.5				460					
25				497					
50				650					
100				932					







**CETIS Measurement Report**

Report Date: 11 Nov-21 15:00 (p 7 of 8)  
 Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

pH-Units									
Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7.2					
12.5				7.2					
25				7.2					
50				7.3					
100				7.3					
0	N	2		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.3					
100				7.3					
0	N	3		7.8					
6.25				7.5					
12.5				7.5					
25				7.4					
50				7.4					
100				7.4					
0	N	4		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	5		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	6		7.9					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.8					
100				7.8					
0	N	7		8					
6.25				7.4					
12.5				7.5					
25				7.5					
50				7.5					
100				7.6					
0	N	8		8					
6.25				7.6					
12.5				7.6					
25				7.6					
50				7.5					
100				7.5					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:00 (p 8 of 8)  
 Test Code/ID: VCF1021.158 / 12-0098-6500

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24.3					
12.5				24.3					
25				24.3					
50				24.3					
100				24.3					
0	N	2		24					
6.25				24.2					
12.5				24.2					
25				24.3					
50				24.3					
100				24.3					
0	N	3		24					
6.25				24.1					
12.5				24.1					
25				24.2					
50				24.2					
100				24					
0	N	4		24					
6.25				24.2					
12.5				24.2					
25				24.3					
50				24.3					
100				24.3					
0	N	5		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	6		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	7		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. Results were as follows:

CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-SIM  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.160

#### CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

SURVIVAL NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
EC25 = >100.00 %  
EC50 = >100.00 %

REPRODUCTION NOEC = 100.00 %  
TU<sub>c</sub> = 1.00  
IC25 = >100.00 %  
IC50 = >100.00 %

Yours very truly,

  
Scott Johnson  
Laboratory Director

# CETIS Summary Report

Report Date: 11 Nov-21 15:14 (p 1 of 2)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 00-7118-6001	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:54	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:13	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 13-9493-3340	<b>Code:</b> VCF1021.160	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-SIM
<b>Sample Age:</b> 25h (14 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

## Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	S
15-0336-7328	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		100	>100	---	---	1	1
20-0340-3580	Reproduction	Dunnett Multiple Comparison Test		100	>100	---	15.3%	1	1

## Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	%	95% LCL	95% UCL	TU	S
10-2176-5922	7d Survival Rate	Linear Interpolation (ICPIN)		EC10	>100	---	---	<1	1
				EC15	>100	---	---	<1	
				EC20	>100	---	---	<1	
				EC25	>100	---	---	<1	
				EC40	>100	---	---	<1	
				EC50	>100	---	---	<1	
08-6191-6911	Reproduction	Linear Interpolation (ICPIN)		IC10	>100	---	---	<1	1
				IC15	>100	---	---	<1	
				IC20	>100	---	---	<1	
				IC25	>100	---	---	<1	
				IC40	>100	---	---	<1	
				IC50	>100	---	---	<1	

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
10-2176-5922	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
15-0336-7328	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
08-6191-6911	Reproduction	Control Resp	23.6	15	>>	Yes	Passes Criteria	
20-0340-3580	Reproduction	Control Resp	23.6	15	>>	Yes	Passes Criteria	
20-0340-3580	Reproduction	PMSD	0.1533	0.13	0.47	Yes	Passes Criteria	

## 7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

## Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	23.6	21.28	25.92	19	31	1.024	3.239	13.72%	0.00%
6.25		10	24	20.56	27.44	15	29	1.52	4.807	20.03%	-1.69%
12.5		10	24.1	21.8	26.4	20	27	1.016	3.213	13.33%	-2.12%
25		10	21.6	19.31	23.89	17	27	1.013	3.204	14.83%	8.47%
50		10	24.4	22.08	26.72	20	30	1.024	3.239	13.27%	-3.39%
100		10	26.4	24.11	28.69	20	31	1.013	3.204	12.14%	-11.86%

**CETIS Summary Report**

**Report Date:** 11 Nov-21 15:14 (p 2 of 2)  
**Test Code/ID:** VCF1021.160 / 06-7399-8337

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 6DFFCF255519977902535414E38EA216

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**Reproduction Detail**

MD5: B87A121B68E4361A17AF12B6672A9D40

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	23	23	23	23	22	26	21	31	25	19
6.25		17	15	24	28	26	24	26	22	29	29
12.5		27	27	26	22	20	20	25	20	27	27
25		25	20	20	17	19	20	25	23	20	27
50		26	26	24	25	21	23	20	21	28	30
100		30	27	29	26	25	25	31	27	24	20

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

**CETIS Analytical Report**

Report Date: 11 Nov-21 15:13 (p 1 of 2)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 20-0340-3580	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:13	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:00	<b>MD5 Hash:</b> 6D55FA4B85231158C4D5BB93339CD21D	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 00-7118-6001	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:54	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:13	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 13-9493-3340	<b>Code:</b> VCF1021.160	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-SIM
<b>Sample Age:</b> 25h (14 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	3.618	15.33%

**Dunnett Multiple Comparison Test**

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	-0.2531	2.289	3.618	18	CDF	0.8977	Non-Significant Effect
		12.5	-0.3163	2.289	3.618	18	CDF	0.9105	Non-Significant Effect
		25	1.265	2.289	3.618	18	CDF	0.3030	Non-Significant Effect
		50	-0.5062	2.289	3.618	18	CDF	0.9417	Non-Significant Effect
		100	-1.772	2.289	3.618	18	CDF	0.9988	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	23.6	15	>>	Yes	Passes Criteria
PMSD	0.1533	0.13	0.47	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	118.483	23.6967	5	1.897	0.1100	Non-Significant Effect
Error	674.5	12.4907	54			
Total	792.983		59			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	2.734	15.09	0.7410	Equal Variances
	Levene Equality of Variance Test	0.5816	3.377	0.7139	Equal Variances
	Mod Levene Equality of Variance Test	0.5075	3.377	0.7693	Equal Variances
Distribution	Anderson-Darling A2 Test	0.2397	3.878	0.8053	Normal Distribution
	D'Agostino Kurtosis Test	0.04255	2.576	0.9661	Normal Distribution
	D'Agostino Skewness Test	0.7723	2.576	0.4400	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.5982	9.21	0.7415	Normal Distribution
	Kolmogorov-Smirnov D Test	0.06058	0.1331	0.8641	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9894	0.9459	0.8812	Normal Distribution

**Reproduction Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	23.6	21.28	25.92	23	19	31	1.024	13.72%	0.00%
6.25		10	24	20.56	27.44	25	15	29	1.52	20.03%	-1.69%
12.5		10	24.1	21.8	26.4	25.5	20	27	1.016	13.33%	-2.12%
25		10	21.6	19.31	23.89	20	17	27	1.013	14.83%	8.47%
50		10	24.4	22.08	26.72	24.5	20	30	1.024	13.27%	-3.39%
100		10	26.4	24.11	28.69	26.5	20	31	1.013	12.14%	-11.86%





**CETIS Analytical Report**

Report Date: 11 Nov-21 15:13 (p 1 of 4)

Test Code/ID: VCF1021.160 / 06-7399-8337

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 10-2176-5922	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:13	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:00	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 00-7118-6001	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:54	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:13	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 13-9493-3340	<b>Code:</b> VCF1021.160	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-SIM
<b>Sample Age:</b> 25h (14 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)							Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

# CETIS Analytical Report

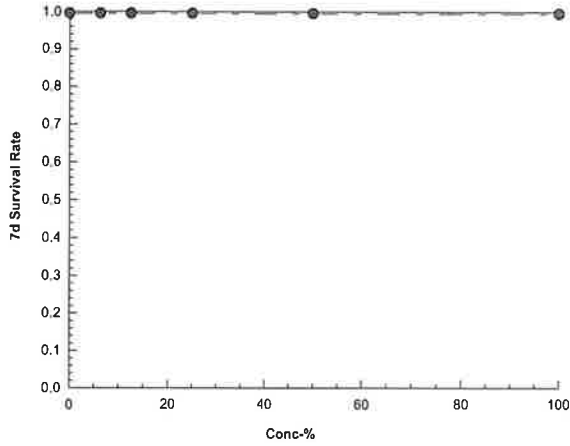
Report Date: 11 Nov-21 15:13 (p 2 of 4)  
Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 10-2176-5922	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:13	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:00	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0

### Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:13 (p 3 of 4)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

Ceriodaphnia 7-d Survival and Reproduction Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 08-6191-6911	Endpoint: Reproduction	CETIS Version: CETISv1.9.7	Analized: 11 Nov-21 15:13	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 11 Nov-21 15:00	MD5 Hash: 6D55FA4B85231158C4D5BB93339CD21D	Editor ID: 000-189-126-0	Batch ID: 00-7118-6001	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 26 Oct-21 13:54	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water	Ending Date: 02 Nov-21 14:13	Species: Ceriodaphnia dubia	Brine: Not Applicable
Test Length: 7d 0h	Taxon: Branchiopoda	Source: Aquatic Biosystems, CO	Age: <24	Sample ID: 13-9493-3340	Code: VCF1021.160
Sample Date: 25 Oct-21 13:20	Material: Sample Water	Project: NPDES Stormwater Wet Season	Receipt Date: 25 Oct-21 17:30	CAS (PC):	Source: Bioassay Report
Sample Age: 25h (14 °C)	Client: Ventura County Watershed Protection Distri	Station: MO-SIM			

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1464271	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	23.6	15	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

Reproduction Summary			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	23.6	23	19	31	13.72%	0.00%	24.02	0.00%
6.25		10	24	25	15	29	20.03%	-1.69%	24.02	0.00%
12.5		10	24.1	25.5	20	27	13.33%	-2.12%	24.02	0.00%
25		10	21.6	20	17	27	14.83%	8.47%	24.02	0.00%
50		10	24.4	24.5	20	30	13.27%	-3.39%	24.02	0.00%
100		10	26.4	26.5	20	31	12.14%	-11.86%	24.02	0.00%

**Reproduction Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	23	23	23	23	22	26	21	31	25	19
6.25		17	15	24	28	26	24	26	22	29	29
12.5		27	27	26	22	20	20	25	20	27	27
25		25	20	20	17	19	20	25	23	20	27
50		26	26	24	25	21	23	20	21	28	30
100		30	27	29	26	25	25	31	27	24	20

# CETIS Analytical Report

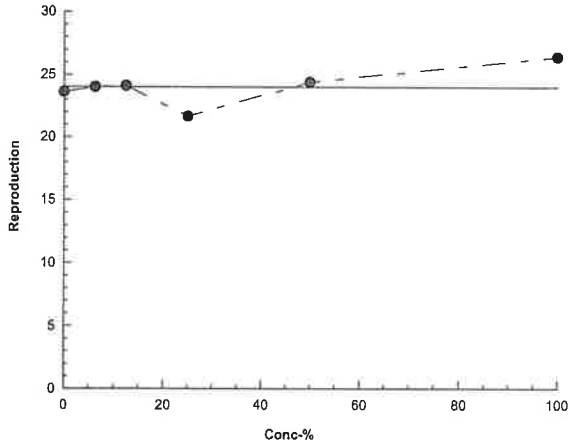
Report Date: 11 Nov-21 15:13 (p 4 of 4)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-6191-6911      Endpoint: Reproduction      CETIS Version: CETISv1.9.7  
 Analyzed: 11 Nov-21 15:13      Analysis: Linear Interpolation (ICPIN)      Status Level: 1  
 Edit Date: 11 Nov-21 15:00      MD5 Hash: 6D55FA4B85231158C4D5BB93339CD21D      Editor ID: 000-189-126-0

### Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:13 (p 1 of 2)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 15-0336-7328	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:13	<b>Analysis:</b> STP 2xK Contingency Tables	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:00	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 00-7118-6001	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:54	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:13	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 13-9493-3340	<b>Code:</b> VCF1021.160	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-SIM
<b>Sample Age:</b> 25h (14 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Untransformed	C > T	100	>100	---	1

**Fisher Exact/Bonferroni-Holm Test**

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	1.0000	Exact	1.0000	Non-Significant Effect
		12.5	1.0000	Exact	1.0000	Non-Significant Effect
		25	1.0000	Exact	1.0000	Non-Significant Effect
		50	1.0000	Exact	1.0000	Non-Significant Effect
		100	1.0000	Exact	1.0000	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**7d Survival Rate Frequencies**

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
6.25		10	0	10	1.0000	0.0000	0.00%
12.5		10	0	10	1.0000	0.0000	0.00%
25		10	0	10	1.0000	0.0000	0.00%
50		10	0	10	1.0000	0.0000	0.00%
100		10	0	10	1.0000	0.0000	0.00%

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

# CETIS Analytical Report

Report Date: 11 Nov-21 15:13 (p 2 of 2)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

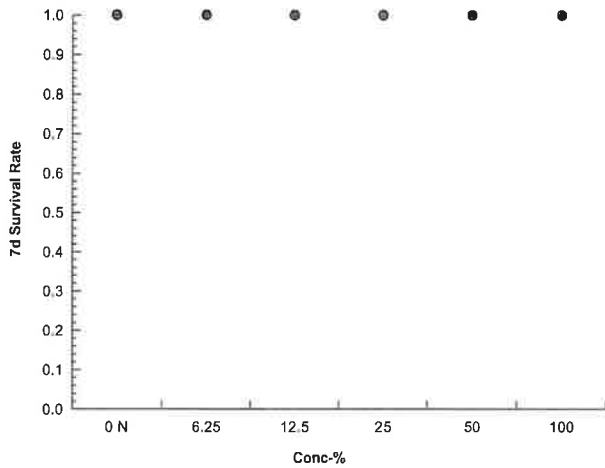
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-0336-7328      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 11 Nov-21 15:13      Analysis: STP 2xK Contingency Tables      Status Level: 1  
 Edit Date: 11 Nov-21 15:00      MD5 Hash: 6DFFCF255519977902535414E38EA216      Editor ID: 000-189-126-0

### 7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

### Graphics



# CETIS Measurement Report

Report Date: 11 Nov-21 15:13 (p 1 of 8)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 00-7118-6001	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:54	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:13	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 13-9493-3340	<b>Code:</b> VCF1021.160	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:20	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-SIM
<b>Sample Age:</b> 25h (14 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

## Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	32	32	32	32	32	0	0	0.00%	0
Overall		16	46.31	38.43	54.19	32	61	3.697	14.79	31.93%	0 (0%)

## Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
6.25		8	407	404.2	409.8	401	410	0.4226	3.381	0.83%	0
12.5		8	457.1	424.2	490	360	477	4.921	39.37	8.61%	0
25		8	397	383.6	410.4	358	407	2.003	16.03	4.04%	0
50		8	393.8	381.6	405.9	362	410	1.81	14.48	3.68%	0
100		8	395.2	383.2	407.3	362	413	1.809	14.47	3.66%	0
Overall		48	401.8	391.8	411.7	354	477	4.943	34.25	8.52%	0 (0%)

## Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.337	7.085	7.59	7	7.8	0.03776	0.3021	4.12%	0
12.5		8	7.3	7.116	7.484	7	7.7	0.02755	0.2204	3.02%	0
25		8	7.325	7.209	7.441	7.2	7.6	0.01736	0.1389	1.90%	0
50		8	7.338	7.249	7.426	7.2	7.5	0.01326	0.1061	1.45%	0
100		8	7.363	7.254	7.471	7.1	7.5	0.01628	0.1302	1.77%	0
Overall		48	7.377	7.317	7.437	7	7.9	0.02996	0.2076	2.81%	0 (0%)

## Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	100	100	100	100	100	0	0	0.00%	0
Overall		16	97.81	96.59	99.03	95	100	0.5717	2.287	2.34%	0 (0%)

## pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.663	7.431	7.894	7.2	7.9	0.03468	0.2774	3.62%	0
12.5		8	7.663	7.431	7.894	7.2	7.9	0.03468	0.2774	3.62%	0
25		8	7.675	7.453	7.897	7.2	7.9	0.03324	0.2659	3.46%	0
50		8	7.675	7.462	7.888	7.2	7.9	0.03187	0.2549	3.32%	0
100		8	7.688	7.467	7.908	7.2	7.9	0.03303	0.2642	3.44%	0
Overall		48	7.721	7.646	7.796	7.2	8	0.03718	0.2576	3.34%	0 (0%)



# CETIS Measurement Report

Report Date: 11 Nov-21 15:13 (p 2 of 8)  
Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.09	24	24.17	24	24.2	0.01238	0.09904	0.41%	0
12.5		8	24.1	24.01	24.19	24	24.2	0.01336	0.1068	0.44%	0
25		8	24.12	24.01	24.24	24	24.3	0.01736	0.1389	0.58%	0
50		8	24.15	24.03	24.27	24	24.3	0.01768	0.1414	0.59%	0
100		8	24.16	24.03	24.3	24	24.4	0.01998	0.1598	0.66%	0
Overall		48	24.1	24.07	24.14	24	24.4	0.0181	0.1254	0.52%	0 (0%)

# CETIS Measurement Report

Report Date: 11 Nov-21 15:13 (p 3 of 8)  
Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				32					
0	N	2		60					
100				32					
0	N	3		60					
100				32					
0	N	4		61					
100				32					
0	N	5		61					
100				32					
0	N	6		61					
100				32					
0	N	7		61					
100				32					
0	N	8		61					
100				32					

# CETIS Measurement Report

Report Date: 11 Nov-21 15:13 (p 4 of 8)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Conductivity-µmhos

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				401					
12.5				360					
25				358					
50				362					
100				362					
0	N	2		360					
6.25				403					
12.5				467					
25				400					
50				410					
100				413					
0	N	3		354					
6.25				410					
12.5				468					
25				400					
50				385					
100				399					
0	N	4		360					
6.25				407					
12.5				469					
25				400					
50				399					
100				397					
0	N	5		364					
6.25				408					
12.5				473					
25				407					
50				398					
100				399					
0	N	6		362					
6.25				410					
12.5				471					
25				402					
50				398					
100				398					
0	N	7		362					
6.25				410					
12.5				477					
25				407					
50				399					
100				397					
0	N	8		360					
6.25				407					
12.5				472					
25				402					
50				399					
100				397					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:13 (p 5 of 8)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7					
12.5				7					
25				7.2					
50				7.2					
100				7.3					
0	N	2		7.4					
6.25				7.2					
12.5				7.2					
25				7.3					
50				7.3					
100				7.3					
0	N	3		7.5					
6.25				7.5					
12.5				7.4					
25				7.4					
50				7.4					
100				7.4					
0	N	4		7.6					
6.25				7					
12.5				7.2					
25				7.2					
50				7.3					
100				7.4					
0	N	5		7.8					
6.25				7.7					
12.5				7.5					
25				7.4					
50				7.4					
100				7.5					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.4					
0	N	7		7.6					
6.25				7.2					
12.5				7.2					
25				7.3					
50				7.4					
100				7.5					
0	N	8		7.4					
6.25				7.3					
12.5				7.2					
25				7.2					
50				7.2					
100				7.1					

# CETIS Measurement Report

Report Date: 11 Nov-21 15:13 (p 6 of 8)  
Test Code/ID: VCF1021.160 / 06-7399-8337

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Hardness (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				100					
0	N	2		95					
100				100					
0	N	3		95					
100				100					
0	N	4		96					
100				100					
0	N	5		96					
100				100					
0	N	6		96					
100				100					
0	N	7		96					
100				100					
0	N	8		96					
100				100					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:13 (p 7 of 8)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7.2					
12.5				7.2					
25				7.2					
50				7.2					
100				7.2					
0	N	2		8					
6.25				7.4					
12.5				7.4					
25				7.5					
50				7.5					
100				7.5					
0	N	3		7.8					
6.25				7.5					
12.5				7.5					
25				7.5					
50				7.5					
100				7.5					
0	N	4		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	5		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	6		7.9					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.8					
100				7.9					
0	N	7		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	8		8					
6.25				7.6					
12.5				7.6					
25				7.6					
50				7.7					
100				7.7					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:13 (p 8 of 8)  
 Test Code/ID: VCF1021.160 / 06-7399-8337

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24.2					
12.5				24.2					
25				24.3					
50				24.3					
100				24.3					
0	N	2		24					
6.25				24.2					
12.5				24.2					
25				24.2					
50				24.2					
100				24.2					
0	N	3		24					
6.25				24.1					
12.5				24.2					
25				24.2					
50				24.3					
100				24.3					
0	N	4		24					
6.25				24.2					
12.5				24.2					
25				24.3					
50				24.3					
100				24.4					
0	N	5		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	6		24					
6.25				24					
12.5				24					
25				24					
50				24.1					
100				24.1					
0	N	7		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					





November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. Results were as follows:

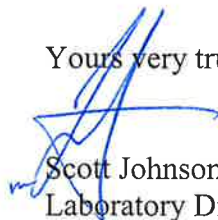
CLIENT: Ventura County Flood Control  
SAMPLE I.D.: MO-THO  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.162

#### CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

SURVIVAL NOEC = 100.00 %  
TUc = 1.00  
EC25 = >100.00 %  
EC50 = >100.00 %

REPRODUCTION NOEC = 100.00 %  
TUc = 1.00  
IC25 = >100.00 %  
IC50 = >100.00 %

Yours very truly,



Scott Johnson  
Laboratory Director

# CETIS Summary Report

Report Date: 11 Nov-21 15:35 (p 1 of 2)  
 Test Code/ID: VCF1021.162 / 19-7072-3839

Ceriodaphnia 7-d Survival and Reproduction Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	04-5672-9951	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	26 Oct-21 14:11	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	02 Nov-21 14:17	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	10-5619-1624	Code:	VCF1021.162	Project:	NPDES Stormwater Wet Season		
Sample Date:	25 Oct-21 15:10	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	25 Oct-21 17:30	CAS (PC):		Station:	MO-THO		
Sample Age:	23h (12.5 °C)	Client:	Ventura County Watershed Protection Distri				

Multiple Comparison Summary									
Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	S
15-6575-5676	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		100	>100	---	---	1	1
13-8475-6292	Reproduction	Dunnett Multiple Comparison Test		100	>100	---	16.4%	1	1

Point Estimate Summary									
Analysis ID	Endpoint	Point Estimate Method	✓	Level	%	95% LCL	95% UCL	TU	S
09-9402-8332	7d Survival Rate	Linear Interpolation (ICPIN)		EC10	>100	---	---	<1	1
				EC15	>100	---	---	<1	
				EC20	>100	---	---	<1	
				EC25	>100	---	---	<1	
				EC40	>100	---	---	<1	
				EC50	>100	---	---	<1	
09-1094-2153	Reproduction	Linear Interpolation (ICPIN)		IC10	>100	---	---	<1	1
				IC15	>100	---	---	<1	
				IC20	>100	---	---	<1	
				IC25	>100	---	---	<1	
				IC40	>100	---	---	<1	
				IC50	>100	---	---	<1	

Test Acceptability							
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Decision
				Lower	Upper	Overlap	
09-9402-8332	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
15-6575-5676	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
09-1094-2153	Reproduction	Control Resp	19.3	15	>>	Yes	Passes Criteria
13-8475-6292	Reproduction	Control Resp	19.3	15	>>	Yes	Passes Criteria
13-8475-6292	Reproduction	PMSD	0.1645	0.13	0.47	Yes	Passes Criteria

7d Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

Reproduction Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	19.3	17.25	21.35	15	24	0.9074	2.869	14.87%	0.00%
6.25		10	23.8	22.55	25.05	22	27	0.5538	1.751	7.36%	-23.32%
12.5		10	22.1	20.15	24.05	19	27	0.8622	2.726	12.34%	-14.51%
25		10	21.7	19.95	23.45	19	26	0.7753	2.452	11.30%	-12.44%
50		10	22.4	19.42	25.38	14	27	1.318	4.169	18.61%	-16.06%
100		10	25.3	22.48	28.12	19	33	1.248	3.945	15.59%	-31.09%

PASS

**CETIS Summary Report**

Report Date: 11 Nov-21 15:35 (p 2 of 2)  
 Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 6DFFCF255519977902535414E38EA216

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**Reproduction Detail**

MD5: 37782D87E0A608C2A07DCC85AD2576B1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	23	21	24	19	21	17	18	17	18	15
6.25		26	22	23	27	23	22	24	24	25	22
12.5		20	23	24	21	19	20	19	27	23	25
25		21	21	20	23	19	19	26	25	23	20
50		21	26	27	25	26	25	22	19	19	14
100		19	23	27	22	29	33	25	23	27	25

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

**CETIS Analytical Report**

Report Date: 11 Nov-21 15:35 (p 1 of 2)  
 Test Code/ID: VCF1021.162 / 19-7072-3839

Ceriodaphnia 7-d Survival and Reproduction Test				Aquatic Bioassay & Consulting Labs, Inc.			
<b>Analysis ID:</b> 13-8475-6292	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7					
<b>Analyzed:</b> 11 Nov-21 15:34	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1					
<b>Edit Date:</b> 11 Nov-21 15:27	<b>MD5 Hash:</b> 695F9DE2E8DB3E967854C1EA52FCD56A	<b>Editor ID:</b> 000-189-126-0					
<b>Batch ID:</b> 04-5672-9951	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>					
<b>Start Date:</b> 26 Oct-21 14:11	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water					
<b>Ending Date:</b> 02 Nov-21 14:17	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable					
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> <24				
<b>Sample ID:</b> 10-5619-1624	<b>Code:</b> VCF1021.162	<b>Project:</b> NPDES Stormwater Wet Season					
<b>Sample Date:</b> 25 Oct-21 15:10	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report					
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-THO					
<b>Sample Age:</b> 23h (12.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri						

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	--	1	3.174	16.45%

**Dunnnett Multiple Comparison Test**

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	-3.245	2.289	3.174	18	CDF	1.0000	Non-Significant Effect
		12.5	-2.019	2.289	3.174	18	CDF	0.9995	Non-Significant Effect
		25	-1.731	2.289	3.174	18	CDF	0.9986	Non-Significant Effect
		50	-2.236	2.289	3.174	18	CDF	0.9998	Non-Significant Effect
		100	-4.327	2.289	3.174	18	CDF	1.0000	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	19.3	15	>>	Yes	Passes Criteria
PMSD	0.1645	0.13	0.47	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	205.533	41.1067	5	4.275	0.0024	Significant Effect
Error	519.2	9.61481	54			
Total	724.733		59			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	8.206	15.09	0.1453	Equal Variances
	Levene Equality of Variance Test	1.813	3.377	0.1257	Equal Variances
	Mod Levene Equality of Variance Test	1.481	3.377	0.2113	Equal Variances
Distribution	Anderson-Darling A2 Test	0.5072	3.878	0.2043	Normal Distribution
	D'Agostino Kurtosis Test	0.707	2.576	0.4796	Normal Distribution
	D'Agostino Skewness Test	0.04124	2.576	0.9671	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.5015	9.21	0.7782	Normal Distribution
	Kolmogorov-Smirnov D Test	0.09028	0.1331	0.2433	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9805	0.9459	0.4516	Normal Distribution

**Reproduction Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	19.3	17.25	21.35	18.5	15	24	0.9074	14.87%	0.00%
6.25		10	23.8	22.55	25.05	23.5	22	27	0.5538	7.36%	-23.32%
12.5		10	22.1	20.15	24.05	22	19	27	0.8622	12.34%	-14.51%
25		10	21.7	19.95	23.45	21	19	26	0.7753	11.30%	-12.44%
50		10	22.4	19.42	25.38	23.5	14	27	1.318	18.61%	-16.06%
100		10	25.3	22.48	28.12	25	19	33	1.248	15.59%	-31.09%

**Ceriodaphnia 7-d Survival and Reproduction Test**

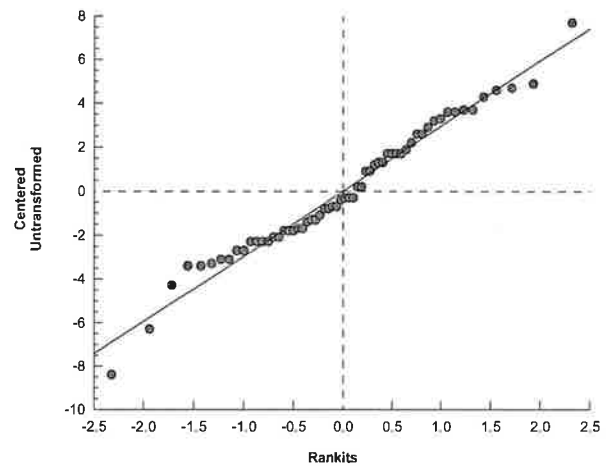
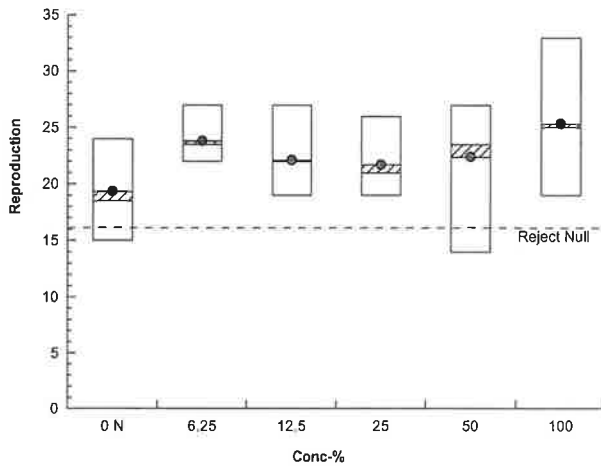
**Aquatic Bioassay & Consulting Labs, Inc.**

**Analysis ID:** 13-8475-6292      **Endpoint:** Reproduction      **CETIS Version:** CETISv1.9.7  
**Analyzed:** 11 Nov-21 15:34      **Analysis:** Parametric-Control vs Treatments      **Status Level:** 1  
**Edit Date:** 11 Nov-21 15:27      **MD5 Hash:** 695F9DE2E8DB3E967854C1EA52FCD56A      **Editor ID:** 000-189-126-0

**Reproduction Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	23	21	24	19	21	17	18	17	18	15
6.25		26	22	23	27	23	22	24	24	25	22
12.5		20	23	24	21	19	20	19	27	23	25
25		21	21	20	23	19	19	26	25	23	20
50		21	26	27	25	26	25	22	19	19	14
100		19	23	27	22	29	33	25	23	27	25

**Graphics**



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:35 (p 1 of 4)  
 Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 09-9402-8332	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:34	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:27	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 04-5672-9951	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:11	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:17	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 10-5619-1624	<b>Code:</b> VCF1021.162	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 15:10	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-THO
<b>Sample Age:</b> 23h (12.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)							Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%

**7d Survival Rate Detail**

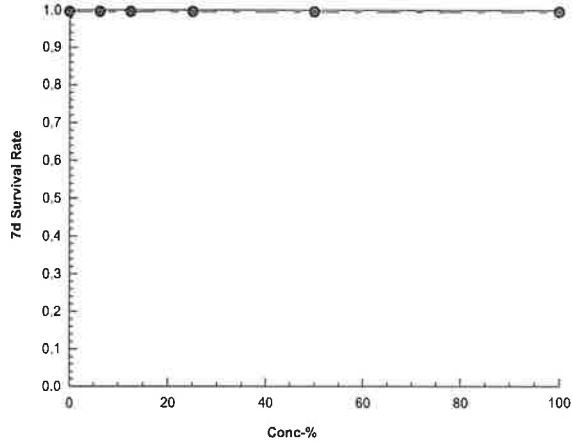
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

<b>Ceriodaphnia 7-d Survival and Reproduction Test</b>			<b>Aquatic Bioassay &amp; Consulting Labs, Inc.</b>		
<b>Analysis ID:</b> 09-9402-8332	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 11 Nov-21 15:34	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1			
<b>Edit Date:</b> 11 Nov-21 15:27	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0			

**Graphics**





# CETIS Analytical Report

Report Date: 11 Nov-21 15:35 (p 3 of 4)  
 Test Code/ID: VCF1021.162 / 19-7072-3839

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 09-1094-2153	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:34	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:27	<b>MD5 Hash:</b> 695F9DE2E8DB3E967854C1EA52FCD56A	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 04-5672-9951	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:11	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:17	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 10-5619-1624	<b>Code:</b> VCF1021.162	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 15:10	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-THO
<b>Sample Age:</b> 23h (12.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1944255	280	Yes	Two-Point Interpolation

### Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	19.3	15	>>	Yes	Passes Criteria

### Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

### Reproduction Summary

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	19.3	18.5	15	24	14.87%	0.00%	22.43	0.00%
6.25		10	23.8	23.5	22	27	7.36%	-23.32%	22.43	0.00%
12.5		10	22.1	22	19	27	12.34%	-14.51%	22.43	0.00%
25		10	21.7	21	19	26	11.30%	-12.44%	22.43	0.00%
50		10	22.4	23.5	14	27	18.61%	-16.06%	22.43	0.00%
100		10	25.3	25	19	33	15.59%	-31.09%	22.43	0.00%

### Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	23	21	24	19	21	17	18	17	18	15
6.25		26	22	23	27	23	22	24	24	25	22
12.5		20	23	24	21	19	20	19	27	23	25
25		21	21	20	23	19	19	26	25	23	20
50		21	26	27	25	26	25	22	19	19	14
100		19	23	27	22	29	33	25	23	27	25



# CETIS Analytical Report

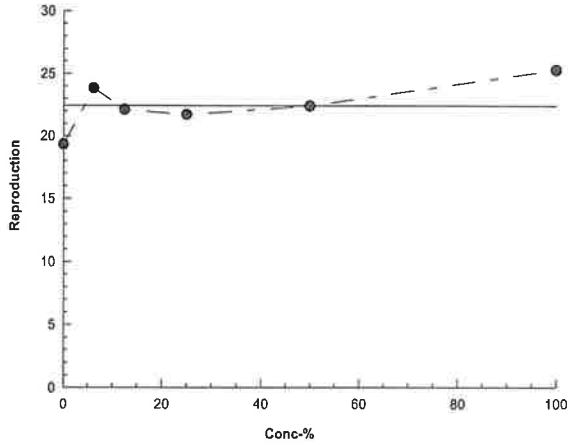
Report Date: 11 Nov-21 15:35 (p 4 of 4)  
Test Code/ID: VCF1021.162 / 19-7072-3839

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 09-1094-2153	Endpoint: Reproduction	CETIS Version: CETISv1.9.7
Analyzed: 11 Nov-21 15:34	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 11 Nov-21 15:27	MD5 Hash: 695F9DE2E8DB3E967854C1EA52FCD56A	Editor ID: 000-189-126-0

### Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:35 (p 1 of 2)  
 Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 15-6575-5676	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:34	<b>Analysis:</b> STP 2xK Contingency Tables	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:27	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 04-5672-9951	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:11	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:17	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 10-5619-1624	<b>Code:</b> VCF1021.162	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 15:10	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-THO
<b>Sample Age:</b> 23h (12.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Untransformed	C > T	100	>100	---	1

**Fisher Exact/Bonferroni-Holm Test**

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	1.0000	Exact	1.0000	Non-Significant Effect
		12.5	1.0000	Exact	1.0000	Non-Significant Effect
		25	1.0000	Exact	1.0000	Non-Significant Effect
		50	1.0000	Exact	1.0000	Non-Significant Effect
		100	1.0000	Exact	1.0000	Non-Significant Effect

**Test Acceptability Criteria**

**TAC Limits**

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	>>	Yes	Passes Criteria

**7d Survival Rate Frequencies**

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
6.25		10	0	10	1.0000	0.0000	0.00%
12.5		10	0	10	1.0000	0.0000	0.00%
25		10	0	10	1.0000	0.0000	0.00%
50		10	0	10	1.0000	0.0000	0.00%
100		10	0	10	1.0000	0.0000	0.00%

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**Ceriodaphnia 7-d Survival and Reproduction Test**

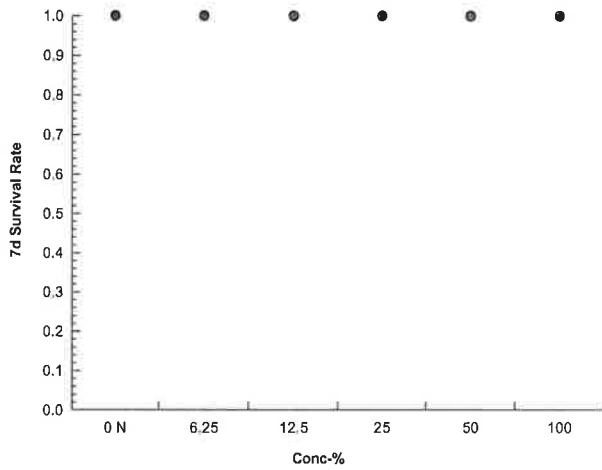
**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 15-6575-5676	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:34	<b>Analysis:</b> STP 2xK Contingency Tables	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:27	<b>MD5 Hash:</b> 6DFFCF255519977902535414E38EA216	<b>Editor ID:</b> 000-189-126-0

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6.25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12.5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
50		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

**Graphics**



# CETIS Measurement Report

Report Date: 11 Nov-21 15:35 (p 1 of 8)

Test Code/ID: VCF1021.162 / 19-7072-3839

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 04-5672-9951	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 14:11	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:17	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 10-5619-1624	<b>Code:</b> VCF1021.162	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 15:10	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:30	<b>CAS (PC):</b>	<b>Station:</b> MO-THO
<b>Sample Age:</b> 23h (12.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
100		8	53	53	53	53	53	0	0	0.00%	0
Overall		16	56.81	54.71	58.92	53	61	0.9883	3.953	6.96%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	323	234.1	411.9	60	364	13.29	106.3	32.91%	0
6.25		8	371.9	369.9	373.9	370	376	0.3021	2.416	0.65%	0
12.5		8	383.8	381.8	385.7	380	387	0.2969	2.375	0.62%	0
25		8	416.5	411.7	421.3	412	427	0.7227	5.782	1.39%	0
50		8	480	473.9	486.1	469	490	0.9112	7.29	1.52%	0
100		8	621.4	606.2	636.5	602	662	2.266	18.13	2.92%	0
Overall		48	432.8	401.9	463.6	60	662	15.36	106.4	24.58%	0 (0%)

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
6.25		8	7.438	7.214	7.661	7	7.8	0.03337	0.2669	3.59%	0
12.5		8	7.375	7.176	7.574	7	7.7	0.02969	0.2375	3.22%	0
25		8	7.35	7.202	7.498	7.1	7.6	0.02216	0.1773	2.41%	0
50		8	7.337	7.212	7.463	7.1	7.5	0.01882	0.1506	2.05%	0
100		8	7.325	7.201	7.449	7.1	7.5	0.0186	0.1488	2.03%	0
Overall		48	7.404	7.343	7.465	7	7.9	0.03036	0.2103	2.84%	0 (0%)

### Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
100		8	154	154	154	154	154	0	0	0.00%	0
Overall		16	124.8	108.7	140.9	95	154	7.537	30.15	24.15%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
6.25		8	7.738	7.528	7.947	7.3	7.9	0.03129	0.2504	3.24%	0
12.5		8	7.725	7.521	7.929	7.3	7.9	0.03044	0.2435	3.15%	0
25		8	7.7	7.495	7.905	7.3	7.9	0.03062	0.2449	3.18%	0
50		8	7.663	7.418	7.907	7.2	7.9	0.03656	0.2925	3.82%	0
100		8	7.65	7.405	7.895	7.2	7.9	0.0366	0.2928	3.83%	0
Overall		48	7.74	7.666	7.813	7.2	8	0.03668	0.2541	3.28%	0 (0%)

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:35 (p 2 of 8)  
 Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
6.25		8	24.05	23.99	24.11	24	24.2	0.009442	0.07553	0.31%	0
12.5		8	24.06	24	24.12	24	24.2	0.00929	0.07432	0.31%	0
25		8	24.1	24	24.2	24	24.3	0.01494	0.1195	0.50%	0
50		8	24.11	23.99	24.23	24	24.4	0.01822	0.1457	0.60%	0
100		8	24.14	23.98	24.29	24	24.5	0.02308	0.1847	0.77%	0
Overall		48	24.08	24.04	24.11	24	24.5	0.01717	0.1189	0.49%	0 (0%)

**CETIS Measurement Report**

**Report Date:** 11 Nov-21 15:35 (p 3 of 8)  
**Test Code/ID:** VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Alkalinity (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
100				53					
0	N	2		60					
100				53					
0	N	3		60					
100				53					
0	N	4		61					
100				53					
0	N	5		61					
100				53					
0	N	6		61					
100				53					
0	N	7		61					
100				53					
0	N	8		61					
100				53					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:35 (p 4 of 8)

Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

**Conductivity-µmhos**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
6.25				376					
12.5				387					
25				413					
50				477					
100				602					
0	N	2		360					
6.25				370					
12.5				380					
25				412					
50				469					
100				610					
0	N	3		354					
6.25				370					
12.5				382					
25				415					
50				473					
100				615					
0	N	4		360					
6.25				372					
12.5				383					
25				416					
50				477					
100				613					
0	N	5		364					
6.25				375					
12.5				385					
25				424					
50				484					
100				622					
0	N	6		362					
6.25				370					
12.5				385					
25				427					
50				488					
100				627					
0	N	7		362					
6.25				372					
12.5				382					
25				413					
50				482					
100				620					
0	N	8		60					
6.25				370					
12.5				386					
25				412					
50				490					
100				662					



**CETIS Measurement Report**

Report Date: 11 Nov-21 15:35 (p 5 of 8)

Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
6.25				7					
12.5				7					
25				7.1					
50				7.1					
100				7.2					
0	N	2		7.4					
6.25				7.3					
12.5				7.2					
25				7.2					
50				7.2					
100				7.2					
0	N	3		7.5					
6.25				7.5					
12.5				7.5					
25				7.4					
50				7.4					
100				7.4					
0	N	4		7.6					
6.25				7.2					
12.5				7.2					
25				7.3					
50				7.4					
100				7.5					
0	N	5		7.8					
6.25				7.7					
12.5				7.6					
25				7.5					
50				7.5					
100				7.5					
0	N	6		7.9					
6.25				7.8					
12.5				7.7					
25				7.6					
50				7.5					
100				7.4					
0	N	7		7.6					
6.25				7.4					
12.5				7.3					
25				7.2					
50				7.2					
100				7.1					
0	N	8		7.4					
6.25				7.6					
12.5				7.5					
25				7.5					
50				7.4					
100				7.3					

# CETIS Measurement Report

Report Date: 11 Nov-21 15:35 (p 6 of 8)  
Test Code/ID: VCF1021.162 / 19-7072-3839

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Hardness (CaCO3)-mg/L

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		95					
100				154					
0	N	2		95					
100				154					
0	N	3		95					
100				154					
0	N	4		96					
100				154					
0	N	5		96					
100				154					
0	N	6		96					
100				154					
0	N	7		96					
100				154					
0	N	8		96					
100				154					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:35 (p 7 of 8)

Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

Aquatic Bioassay & Consulting Labs, Inc.

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
6.25				7.3					
12.5				7.3					
25				7.3					
50				7.2					
100				7.2					
0	N	2		8					
6.25				7.4					
12.5				7.4					
25				7.4					
50				7.3					
100				7.3					
0	N	3		7.8					
6.25				7.7					
12.5				7.7					
25				7.6					
50				7.5					
100				7.5					
0	N	4		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	5		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	6		7.9					
6.25				7.9					
12.5				7.8					
25				7.7					
50				7.7					
100				7.6					
0	N	7		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					
0	N	8		8					
6.25				7.9					
12.5				7.9					
25				7.9					
50				7.9					
100				7.9					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:35 (p 8 of 8)

Test Code/ID: VCF1021.162 / 19-7072-3839

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
6.25				24.2					
12.5				24.2					
25				24.3					
50				24.4					
100				24.5					
0	N	2		24					
6.25				24.1					
12.5				24.1					
25				24.2					
50				24.2					
100				24.2					
0	N	3		24					
6.25				24					
12.5				24.1					
25				24.1					
50				24.1					
100				24.1					
0	N	4		24					
6.25				24.1					
12.5				24.1					
25				24.2					
50				24.2					
100				24.3					
0	N	5		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	6		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	7		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					
0	N	8		24					
6.25				24					
12.5				24					
25				24					
50				24					
100				24					



November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013*. Results were as follows:

CLIENT:	Ventura County Flood Control
SAMPLE I.D.:	MO-MPK
DATE RECEIVED:	10/25/2021
ABC LAB. NO.:	VCF1021.161

#### CHRONIC SELENASTRUM ALGAE GROWTH BIOASSAY

NOEC =	100.00 %
TU <sub>c</sub> =	1.00
IC <sub>25</sub> =	>100.00 %
IC <sub>50</sub> =	>100.00 %

Yours very truly,

  
Scott Johnson  
Laboratory Director

**CETIS Summary Report**

Report Date: 02 Nov-21 13:13 (p 1 of 1)  
 Test Code/ID: VCF1021.161sel / 06-9190-0388

Selenastrum Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID: 02-5688-0648	Test Type: Cell Growth	Analyst:		Diluent: Laboratory Water			
Start Date: 26 Oct-21 13:18	Protocol: EPA/821/R-02-013 (2002)	Brine: Not Applicable		Source: Aquatic Biosystems, CO	Age: 5d		
Ending Date: 30 Oct-21 13:00	Species: Selenastrum capricornutum						
Test Length: 96h	Taxon: Chlorophyta						
Sample ID: 09-9951-0595	Code: VCF1021.161sel	Project: NPDES Stormwater Wet Season		Source: Bioassay Report			
Sample Date: 25 Oct-21 12:10	Material: Sample Water	Station: MO-MPK					
Receipt Date: 25 Oct-21 17:30	CAS (PC):						
Sample Age: 25h (11 °C)	Client: Ventura County Watershed Protection Distri						

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
15-6151-5041	Cell Density	Dunnett Multiple Comparison Test	100	>100	---	12.5%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
09-9042-7602	Cell Density	Linear Interpolation (ICPIN)	IC10	>100	---	---	<1	1
			IC15	>100	---	---	<1	
			IC20	>100	---	---	<1	
			IC25	>100	---	---	<1	
			IC40	>100	---	---	<1	
			IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
09-9042-7602	Cell Density	Control CV	0.03597	<<	0.2	Yes	Passes Criteria
15-6151-5041	Cell Density	Control CV	0.03597	<<	0.2	Yes	Passes Criteria
09-9042-7602	Cell Density	Control Resp	1.42E+6	1000000	>>	Yes	Passes Criteria
15-6151-5041	Cell Density	Control Resp	1.42E+6	1000000	>>	Yes	Passes Criteria

**Cell Density Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	1.423E+6	1.341E+6	1.504E+6	1.361E+6	1.471E+6	2.559E+4	5.118E+4	3.60%	0.00%
6.25		4	1.762E+6	1.607E+6	1.917E+6	1.646E+6	1.849E+6	4.868E+4	9.736E+4	5.52%	-23.86%
12.5		4	1.812E+6	1.644E+6	1.979E+6	1.699E+6	1.953E+6	5.256E+4	1.051E+5	5.80%	-27.32%
25		4	1.961E+6	1.786E+6	2.136E+6	1.829E+6	2.098E+6	5.493E+4	1.099E+5	5.60%	-37.83%
50		4	2.042E+6	1.938E+6	2.145E+6	1.946E+6	2.087E+6	3.252E+4	6.504E+4	3.19%	-43.51%
100		4	1.821E+6	1.561E+6	2.080E+6	1.648E+6	2.027E+6	8.148E+4	1.630E+5	8.95%	-27.97%

**Cell Density Detail** MD5: 221D354ED16ED9A8D7FB37F17BB658BB

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.361E+6	1.471E+6	1.401E+6	1.458E+6
6.25		1.718E+6	1.646E+6	1.836E+6	1.849E+6
12.5		1.699E+6	1.792E+6	1.953E+6	1.802E+6
25		1.957E+6	1.960E+6	1.829E+6	2.098E+6
50		2.077E+6	1.946E+6	2.087E+6	2.057E+6
100		1.648E+6	2.027E+6	1.746E+6	1.862E+6

**CETIS Analytical Report**

Report Date: 02 Nov-21 13:12 (p 1 of 2)  
 Test Code/ID: VCF1021.161sel / 06-9190-0388

Selenastrum Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 15-6151-5041	Endpoint: Cell Density	CETIS Version: CETISv1.9.7			
Analyzed: 02 Nov-21 13:12	Analysis: Parametric-Control vs Treatments	Status Level: 1			
Edit Date: 02 Nov-21 13:08	MD5 Hash: E2762B2FE82E6FC2625088D5CE142AAE	Editor ID: 000-189-126-0			
Batch ID: 02-5688-0648	Test Type: Cell Growth	Analyst:			
Start Date: 26 Oct-21 13:18	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water			
Ending Date: 30 Oct-21 13:00	Species: Selenastrum capricornutum	Brine: Not Applicable			
Test Length: 96h	Taxon: Chlorophyta	Source: Aquatic Biosystems, CO Age: 5d			
Sample ID: 09-9951-0595	Code: VCF1021.161sel	Project: NPDES Stormwater Wet Season			
Sample Date: 25 Oct-21 12:10	Material: Sample Water	Source: Bioassay Report			
Receipt Date: 25 Oct-21 17:30	CAS (PC):	Station: MO-MPK			
Sample Age: 25h (11 °C)	Client: Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	178500	12.55%

Dunnett Multiple Comparison Test									
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	-4.578	2.407	2E+05	6	CDF	1.0000	Non-Significant Effect
		12.5	-5.242	2.407	2E+05	6	CDF	1.0000	Non-Significant Effect
		25	-7.258	2.407	2E+05	6	CDF	1.0000	Non-Significant Effect
		50	-8.346	2.407	2E+05	6	CDF	1.0000	Non-Significant Effect
		100	-5.366	2.407	2E+05	6	CDF	1.0000	Non-Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.03597	<<	0.2	Yes	Passes Criteria
Control Resp	1.42E+6	1000000	>>	Yes	Passes Criteria

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	9.144E+11	1.829E+11	5	16.62	<1.0E-05	Significant Effect	
Error	1.980E+11	1.100E+10	18				
Total	1.112E+12		23				

ANOVA Assumptions Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variance	Bartlett Equality of Variance Test	4.146	15.09	0.5285	Equal Variances	
	Levene Equality of Variance Test	1.093	4.248	0.3977	Equal Variances	
	Mod Levene Equality of Variance Test	1.006	4.248	0.4423	Equal Variances	
Distribution	Anderson-Darling A2 Test	0.1815	3.878	0.9695	Normal Distribution	
	D'Agostino Kurtosis Test	0.07131	2.576	0.9431	Normal Distribution	
	D'Agostino Skewness Test	0.4674	2.576	0.6402	Normal Distribution	
	D'Agostino-Pearson K2 Omnibus Test	0.2236	9.21	0.8942	Normal Distribution	
	Kolmogorov-Smirnov D Test	0.09319	0.2056	0.9614	Normal Distribution	
	Shapiro-Wilk W Normality Test	0.9852	0.884	0.9695	Normal Distribution	

Cell Density Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.423E+6	1.341E+6	1.504E+6	1.430E+6	1.361E+6	1.471E+6	2.559E+4	3.60%	0.00%
6.25		4	1.762E+6	1.607E+6	1.917E+6	1.777E+6	1.646E+6	1.849E+6	4.868E+4	5.52%	-23.86%
12.5		4	1.812E+6	1.644E+6	1.979E+6	1.797E+6	1.699E+6	1.953E+6	5.256E+4	5.80%	-27.32%
25		4	1.961E+6	1.786E+6	2.136E+6	1.958E+6	1.829E+6	2.098E+6	5.493E+4	5.60%	-37.83%
50		4	2.042E+6	1.938E+6	2.145E+6	2.067E+6	1.946E+6	2.087E+6	3.252E+4	3.19%	-43.51%
100		4	1.821E+6	1.561E+6	2.080E+6	1.804E+6	1.648E+6	2.027E+6	8.148E+4	8.95%	-27.97%

**Selenastrum Growth Test**

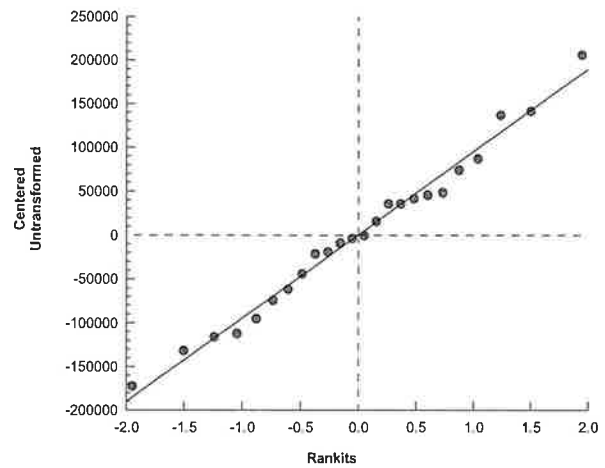
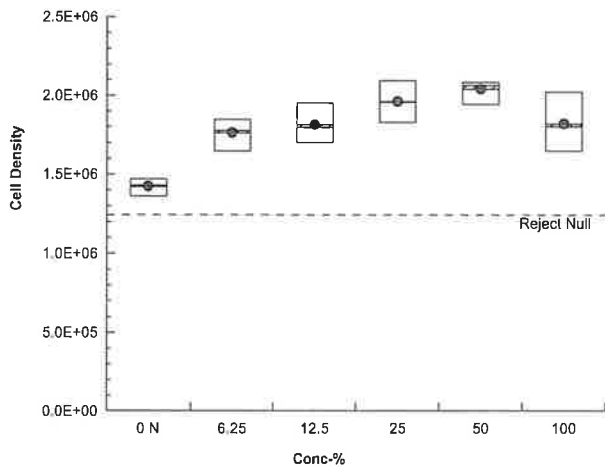
**Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID: 15-6151-5041      Endpoint: Cell Density      CETIS Version: CETISv1.9.7  
 Analyzed: 02 Nov-21 13:12      Analysis: Parametric-Control vs Treatments      Status Level: 1  
 Edit Date: 02 Nov-21 13:08      MD5 Hash: E2762B2FE82E6FC2625088D5CE142AAE      Editor ID: 000-189-126-0

**Cell Density Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.361E+6	1.471E+6	1.401E+6	1.458E+6
6.25		1.718E+6	1.646E+6	1.836E+6	1.849E+6
12.5		1.699E+6	1.792E+6	1.953E+6	1.802E+6
25		1.957E+6	1.960E+6	1.829E+6	2.098E+6
50		2.077E+6	1.946E+6	2.087E+6	2.057E+6
100		1.648E+6	2.027E+6	1.746E+6	1.862E+6

**Graphics**





**CETIS Analytical Report**

Report Date: 02 Nov-21 13:13 (p 1 of 2)  
 Test Code/ID: VCF1021.161sel / 06-9190-0388

Selenastrum Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 09-9042-7602	Endpoint: Cell Density	CETIS Version: CETISv1.9.7	Analyst:		
Analyzed: 02 Nov-21 13:12	Analysis: Linear Interpolation (ICPIN)	Status Level: 1	Diluent: Laboratory Water		
Edit Date: 02 Nov-21 13:08	MD5 Hash: E2762B2FE82E6FC2625088D5CE142AAE	Editor ID: 000-189-126-0	Brine: Not Applicable		
Batch ID: 02-5688-0648	Test Type: Cell Growth	Project: NPDES Stormwater Wet Season	Source: Aquatic Biosystems, CO	Age: 5d	
Start Date: 26 Oct-21 13:18	Protocol: EPA/821/R-02-013 (2002)	Source: Bioassay Report			
Ending Date: 30 Oct-21 13:00	Species: Selenastrum capricornutum	Station: MO-MPK			
Test Length: 96h	Taxon: Chlorophyta				
Sample ID: 09-9951-0595	Code: VCF1021.161sel				
Sample Date: 25 Oct-21 12:10	Material: Sample Water				
Receipt Date: 25 Oct-21 17:30	CAS (PC):				
Sample Age: 25h (11 °C)	Client: Ventura County Watershed Protection Distri				

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.03597	<<	0.2	Yes	Passes Criteria
Control Resp	1.42E+6	1000000	>>	Yes	Passes Criteria

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

Cell Density Summary			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	1.423E+6	1.430E+6	1.361E+6	1.471E+6	3.60%	0.00%	1.803E+6	0.00%
6.25		4	1.762E+6	1.777E+6	1.646E+6	1.849E+6	5.52%	-23.86%	1.803E+6	0.00%
12.5		4	1.812E+6	1.797E+6	1.699E+6	1.953E+6	5.80%	-27.32%	1.803E+6	0.00%
25		4	1.961E+6	1.958E+6	1.829E+6	2.098E+6	5.60%	-37.83%	1.803E+6	0.00%
50		4	2.042E+6	2.067E+6	1.946E+6	2.087E+6	3.19%	-43.51%	1.803E+6	0.00%
100		4	1.821E+6	1.804E+6	1.648E+6	2.027E+6	8.95%	-27.97%	1.803E+6	0.00%

Cell Density Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.361E+6	1.471E+6	1.401E+6	1.458E+6
6.25		1.718E+6	1.646E+6	1.836E+6	1.849E+6
12.5		1.699E+6	1.792E+6	1.953E+6	1.802E+6
25		1.957E+6	1.960E+6	1.829E+6	2.098E+6
50		2.077E+6	1.946E+6	2.087E+6	2.057E+6
100		1.648E+6	2.027E+6	1.746E+6	1.862E+6



# CETIS Measurement Report

Report Date: 02 Nov-21 13:13 (p 1 of 4)

Test Code/ID: VCF1021.161sel / 06-9190-0388

Selenastrum Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	02-5688-0648	Test Type:	Cell Growth	Analyst:			
Start Date:	26 Oct-21 13:18	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	30 Oct-21 13:00	Species:	Selenastrum capricornutum	Brine:	Not Applicable		
Test Length:	96h	Taxon:	Chlorophyta	Source:	Aquatic Biosystems, CO	Age:	5d
Sample ID:	09-9951-0595	Code:	VCF1021.161sel	Project:	NPDES Stormwater Wet Season		
Sample Date:	25 Oct-21 12:10	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	25 Oct-21 17:30	CAS (PC):		Station:	MO-MPK		
Sample Age:	25h (11 °C)	Client:	Ventura County Watershed Protection Distri				

Alkalinity (CaCO3)-mg/L											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	70	---	---	70	70	---	0	---	0
6.25		1	85	---	---	85	85	---	0	---	0
12.5		1	77	---	---	77	77	---	0	---	0
25		1	73	---	---	73	73	---	0	---	0
50		1	63	---	---	63	63	---	0	---	0
100		1	57	---	---	57	57	---	0	---	0
Overall		6	70.83	60.37	81.29	57	85	4.07	9.968	14.07%	0 (0%)

Conductivity-µmhos											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	451	429.9	472.1	430	464	3.4	17	3.77%	0
6.25		5	465.6	460	471.2	461	470	0.9011	4.506	0.97%	0
12.5		5	446	441	451	439	449	0.8	4	0.90%	0
25		5	427.2	424.5	429.9	424	429	0.4336	2.168	0.51%	0
50		5	390.4	383.7	397.1	384	398	1.083	5.413	1.39%	0
100		5	308.2	299.7	316.7	298	315	1.367	6.834	2.22%	0
Overall		30	414.7	394.3	435.1	298	470	9.972	54.62	13.17%	0 (0%)

Hardness (CaCO3)-mg/L											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	1	138	---	---	138	138	---	0	---	0
6.25		1	140	---	---	140	140	---	0	---	0
12.5		1	131	---	---	131	131	---	0	---	0
25		1	105	---	---	105	105	---	0	---	0
50		1	84	---	---	84	84	---	0	---	0
100		1	80	---	---	80	80	---	0	---	0
Overall		6	113	84.56	141.4	80	140	11.06	27.1	23.98%	0 (0%)

pH-Units											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	7.46	7.349	7.571	7.4	7.6	0.01789	0.08945	1.20%	0
6.25		5	7.26	7.072	7.448	7.1	7.5	0.03033	0.1517	2.09%	0
12.5		5	7.2	7.048	7.352	7.1	7.4	0.0245	0.1225	1.70%	0
25		5	7.16	7.049	7.271	7.1	7.3	0.01789	0.08944	1.25%	0
50		5	7.1	7.012	7.188	7	7.2	0.01414	0.07072	1.00%	0
100		5	7.08	6.944	7.216	6.9	7.2	0.02191	0.1095	1.55%	0
Overall		30	7.21	7.149	7.271	6.9	7.6	0.02969	0.1626	2.26%	0 (0%)

Temperature-°C											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	5	25.58	25.42	25.74	25.5	25.8	0.02608	0.1304	0.51%	0
6.25		5	25.58	25.42	25.74	25.5	25.8	0.02608	0.1304	0.51%	0
12.5		5	25.58	25.42	25.74	25.5	25.8	0.02608	0.1304	0.51%	0
25		5	25.58	25.42	25.74	25.5	25.8	0.02608	0.1304	0.51%	0
50		5	25.58	25.42	25.74	25.5	25.8	0.02608	0.1304	0.51%	0
100		5	25.58	25.42	25.74	25.5	25.8	0.02608	0.1304	0.51%	0
Overall		30	25.58	25.54	25.62	25.5	25.8	0.02166	0.1186	0.46%	0 (0%)

**CETIS Measurement Report**

Report Date: 02 Nov-21 13:13 (p 2 of 4)  
Test Code/ID: VCF1021.161sel / 06-9190-0388

**Selenastrum Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Alkalinity (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		70					
6.25				85					
12.5				77					
25				73					
50				63					
100				57					

**Conductivity-µmhos**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		464					
6.25				461					
12.5				447					
25				426					
50				384					
100				298					

0	N	2		464					
6.25				461					
12.5				439					
25				424					
50				387					
100				305					

0	N	3		462					
6.25				466					
12.5				449					
25				429					
50				390					
100				310					

0	N	4		430					
6.25				470					
12.5				447					
25				428					
50				393					
100				313					

0	N	5		435					
6.25				470					
12.5				448					
25				429					
50				398					
100				315					

**Hardness (CaCO3)-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		138					
6.25				140					
12.5				131					
25				105					
50				84					
100				80					

# CETIS Measurement Report

Report Date: 02 Nov-21 13:13 (p 3 of 4)  
Test Code/ID: VCF1021.161sel / 06-9190-0388

## Selenastrum Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

pH-Units										
Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes	
0	N	1		7.4						
6.25				7.3						
12.5				7.2						
25				7.1						
50				7						
100				6.9						
0	N	2		7.4						
6.25				7.2						
12.5				7.1						
25				7.1						
50				7.1						
100				7.1						
0	N	3		7.6						
6.25				7.2						
12.5				7.2						
25				7.2						
50				7.1						
100				7.1						
0	N	4		7.4						
6.25				7.1						
12.5				7.1						
25				7.1						
50				7.1						
100				7.1						
0	N	5		7.5						
6.25				7.5						
12.5				7.4						
25				7.3						
50				7.2						
100				7.2						





November 15, 2021

Mr. Arnie Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995*. Results were as follows:


CLIENT:	County of Ventura
SAMPLE I.D.:	ME-SCR
DATE RECEIVED:	10/25/2021
ABC LAB. NO.:	VCF1021.163

### CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC = 100.00 %  
TUc = 1.00

IC25 = >100.00 %  
IC50 = >100.00 %

Yours very truly,

  
✓ Scott Johnson  
Laboratory Director

**CETIS Summary Report**

Report Date: 11 Nov-21 15:26 (p 1 of 1)  
 Test Code/ID: VCF1021.163 / 09-6369-4626

**Purple Sea Urchin Sperm Cell Fertilization Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 15-1835-0403	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 16:01	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 26 Oct-21 16:41	<b>Species:</b> Strongylocentrotus purpuratus	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 40m	<b>Taxon:</b> Echinoidea	<b>Source:</b> Ventura Dive <b>Age:</b>
<b>Sample ID:</b> 08-4136-3719	<b>Code:</b> VCF1021.163	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 15:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-SCR
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
18-5282-9044	Fertilization Rate	Dunnett Multiple Comparison Test	100	>100	---	3.78%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
13-2400-0256	Fertilization Rate	Linear Interpolation (ICPIN)	EC10	>100	---	---	<1	1
			EC15	>100	---	---	<1	
			EC20	>100	---	---	<1	
			EC25	>100	---	---	<1	
			EC40	>100	---	---	<1	
			EC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
13-2400-0256	Fertilization Rate	Control Resp	0.9425	0.7	>>	Yes	Passes Criteria
18-5282-9044	Fertilization Rate	Control Resp	0.9425	0.7	>>	Yes	Passes Criteria
18-5282-9044	Fertilization Rate	PMSD	0.03782	<<	0.25	No	Passes Criteria

**Fertilization Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.9425	0.9124	0.9726	0.9300	0.9700	0.0095	0.0189	2.01%	0.00%
6.25		4	0.9375	0.9103	0.9647	0.9200	0.9600	0.0085	0.0171	1.82%	0.53%
12.5		4	0.9225	0.8986	0.9464	0.9100	0.9400	0.0075	0.0150	1.63%	2.12%
25		4	0.9425	0.9186	0.9664	0.9300	0.9600	0.0075	0.0150	1.59%	0.00%
50		4	0.9350	0.8891	0.9809	0.9100	0.9600	0.0144	0.0289	3.09%	0.80%
100		4	0.9275	0.8947	0.9603	0.9100	0.9500	0.0103	0.0206	2.22%	1.59%

**Fertilization Rate Detail**

MD5: 7921CC84F7A91610DE92665AC8B327F5

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9300	0.9300	0.9400	0.9700
6.25		0.9300	0.9600	0.9400	0.9200
12.5		0.9100	0.9400	0.9100	0.9300
25		0.9600	0.9500	0.9300	0.9300
50		0.9100	0.9600	0.9100	0.9600
100		0.9400	0.9100	0.9100	0.9500

**Fertilization Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	93/100	93/100	94/100	97/100
6.25		93/100	96/100	94/100	92/100
12.5		91/100	94/100	91/100	93/100
25		96/100	95/100	93/100	93/100
50		91/100	96/100	91/100	96/100
100		94/100	91/100	91/100	95/100



Purple Sea Urchin Sperm Cell Fertilization Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID:	18-5282-9044	Endpoint:	Fertilization Rate	CETIS Version:	CETISv1.9.7		
Analyzed:	11 Nov-21 15:25	Analysis:	Parametric-Control vs Treatments	Status Level:	1		
Edit Date:	11 Nov-21 15:24	MD5 Hash:	7921CC84F7A91610DE92665AC8B327F5	Editor ID:	000-189-126-0		
Batch ID:	15-1835-0403	Test Type:	Fertilization	Analyst:			
Start Date:	26 Oct-21 16:01	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	26 Oct-21 16:41	Species:	Strongylocentrotus purpuratus	Brine:	Not Applicable		
Test Length:	40m	Taxon:	Echinoidea	Source:	Ventura Dive	Age:	
Sample ID:	08-4136-3719	Code:	VCF1021.163	Project:	NPDES Stormwater Wet Season		
Sample Date:	25 Oct-21 15:45	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	25 Oct-21 17:35	CAS (PC):		Station:	ME-SCR		
Sample Age:	24h (8.5 °C)	Client:	Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.03565	3.78%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	0.3928	2.407	0.071	6	CDF	0.6930	Non-Significant Effect
		12.5	1.422	2.407	0.071	6	CDF	0.2537	Non-Significant Effect
		25	0.04518	2.407	0.071	6	CDF	0.8197	Non-Significant Effect
		50	0.4672	2.407	0.071	6	CDF	0.6617	Non-Significant Effect
		100	1.064	2.407	0.071	6	CDF	0.3941	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.9425	0.7	>>	Yes	Passes Criteria
PMSD	0.03782	<<	0.25	No	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0055928	0.0011186	5	0.6451	0.6687	Non-Significant Effect
Error	0.0312126	0.0017340	18			
Total	0.0368054		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	1.859	15.09	0.8682	Equal Variances
	Levene Equality of Variance Test	2.021	4.248	0.1241	Equal Variances
	Mod Levene Equality of Variance Test	1.16	4.248	0.3664	Equal Variances
Distribution	Anderson-Darling A2 Test	0.9963	3.878	0.0127	Normal Distribution
	D'Agostino Kurtosis Test	2.42	2.576	0.0155	Normal Distribution
	D'Agostino Skewness Test	0.7665	2.576	0.4433	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	6.442	9.21	0.0399	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1969	0.2056	0.0169	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9081	0.884	0.0321	Normal Distribution

Fertilization Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.9425	0.9124	0.9726	0.9350	0.9300	0.9700	0.0095	2.01%	0.00%
6.25		4	0.9375	0.9103	0.9647	0.9350	0.9200	0.9600	0.0085	1.82%	0.53%
12.5		4	0.9225	0.8986	0.9464	0.9200	0.9100	0.9400	0.0075	1.63%	2.12%
25		4	0.9425	0.9186	0.9664	0.9400	0.9300	0.9600	0.0075	1.59%	0.00%
50		4	0.9350	0.8891	0.9809	0.9350	0.9100	0.9600	0.0144	3.09%	0.80%
100		4	0.9275	0.8947	0.9603	0.9250	0.9100	0.9500	0.0103	2.22%	1.59%

**Purple Sea Urchin Sperm Cell Fertilization Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Analysis ID:** 18-5282-9044      **Endpoint:** Fertilization Rate      **CETIS Version:** CETISv1.9.7  
**Analyzed:** 11 Nov-21 15:25      **Analysis:** Parametric-Control vs Treatments      **Status Level:** 1  
**Edit Date:** 11 Nov-21 15:24      **MD5 Hash:** 7921CC84F7A91610DE92665AC8B327F5      **Editor ID:** 000-189-126-0

**Angular (Corrected) Transformed Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.3320	1.2610	1.4020	1.3130	1.3030	1.3970	0.0223	3.34%	0.00%
6.25		4	1.3200	1.2620	1.3780	1.3130	1.2840	1.3690	0.0183	2.78%	0.87%
12.5		4	1.2900	1.2440	1.3350	1.2850	1.2660	1.3230	0.0142	2.20%	3.15%
25		4	1.3300	1.2780	1.3830	1.3240	1.3030	1.3690	0.0164	2.47%	0.10%
50		4	1.3180	1.2230	1.4130	1.3180	1.2660	1.3690	0.0298	4.53%	1.03%
100		4	1.3000	1.2360	1.3640	1.2950	1.2660	1.3450	0.0202	3.11%	2.35%

**Fertilization Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9300	0.9300	0.9400	0.9700
6.25		0.9300	0.9600	0.9400	0.9200
12.5		0.9100	0.9400	0.9100	0.9300
25		0.9600	0.9500	0.9300	0.9300
50		0.9100	0.9600	0.9100	0.9600
100		0.9400	0.9100	0.9100	0.9500

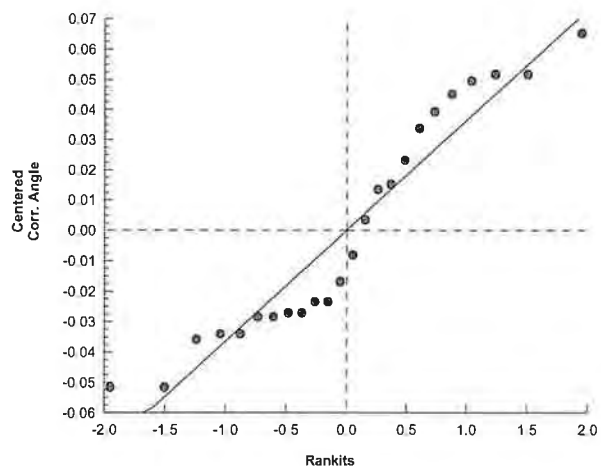
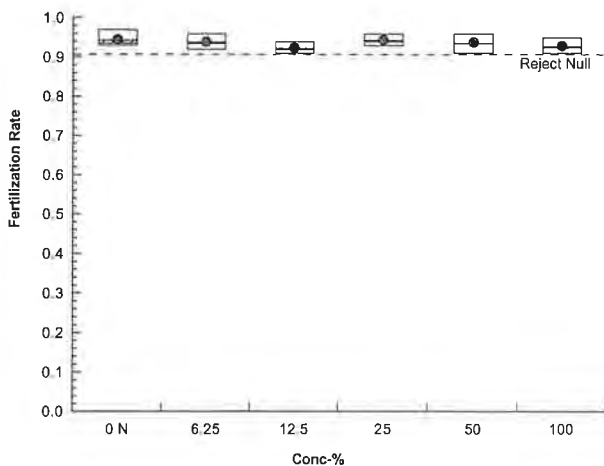
**Angular (Corrected) Transformed Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.3030	1.3030	1.3230	1.3970
6.25		1.3030	1.3690	1.3230	1.2840
12.5		1.2660	1.3230	1.2660	1.3030
25		1.3690	1.3450	1.3030	1.3030
50		1.2660	1.3690	1.2660	1.3690
100		1.3230	1.2660	1.2660	1.3450

**Fertilization Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	93/100	93/100	94/100	97/100
6.25		93/100	96/100	94/100	92/100
12.5		91/100	94/100	91/100	93/100
25		96/100	95/100	93/100	93/100
50		91/100	96/100	91/100	96/100
100		94/100	91/100	91/100	95/100

**Graphics**



# CETIS Analytical Report

Report Date: 11 Nov-21 15:26 (p 1 of 2)

Test Code/ID: VCF1021.163 / 09-6369-4626

Purple Sea Urchin Sperm Cell Fertilization Test			Aquatic Bioassay & Consulting Labs, Inc.		
<b>Analysis ID:</b> 13-2400-0256	<b>Endpoint:</b> Fertilization Rate	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 11 Nov-21 15:25	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1			
<b>Edit Date:</b> 11 Nov-21 15:24	<b>MD5 Hash:</b> 7921CC84F7A91610DE92665AC8B327F5	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 15-1835-0403	<b>Test Type:</b> Fertilization	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 16:01	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater			
<b>Ending Date:</b> 26 Oct-21 16:41	<b>Species:</b> Strongylocentrotus purpuratus	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 40m	<b>Taxon:</b> Echinoidea	<b>Source:</b> Ventura Dive <b>Age:</b>			
<b>Sample ID:</b> 08-4136-3719	<b>Code:</b> VCF1021.163	<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 15:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-SCR			
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri				

## Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

## Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.9425	0.7	>>	Yes	Passes Criteria

## Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

## Fertilization Rate Summary

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	0.9425	0.9350	0.9300	0.9700	2.01%	0.00%	377/400	0.9425	0.00%
6.25		4	0.9375	0.9350	0.9200	0.9600	1.82%	0.53%	375/400	0.9375	0.53%
12.5		4	0.9225	0.9200	0.9100	0.9400	1.63%	2.12%	369/400	0.9333	0.97%
25		4	0.9425	0.9400	0.9300	0.9600	1.59%	0.00%	377/400	0.9333	0.97%
50		4	0.9350	0.9350	0.9100	0.9600	3.09%	0.80%	374/400	0.9333	0.97%
100		4	0.9275	0.9250	0.9100	0.9500	2.22%	1.59%	371/400	0.9275	1.59%

## Fertilization Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9300	0.9300	0.9400	0.9700
6.25		0.9300	0.9600	0.9400	0.9200
12.5		0.9100	0.9400	0.9100	0.9300
25		0.9600	0.9500	0.9300	0.9300
50		0.9100	0.9600	0.9100	0.9600
100		0.9400	0.9100	0.9100	0.9500

## Fertilization Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	93/100	93/100	94/100	97/100
6.25		93/100	96/100	94/100	92/100
12.5		91/100	94/100	91/100	93/100
25		96/100	95/100	93/100	93/100
50		91/100	96/100	91/100	96/100
100		94/100	91/100	91/100	95/100

# CETIS Analytical Report

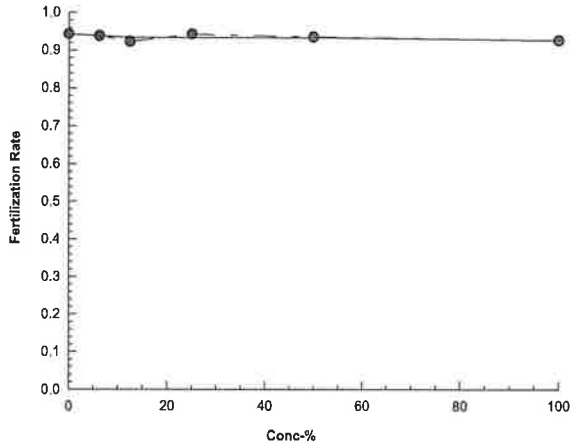
Report Date: 11 Nov-21 15:26 (p 2 of 2)  
Test Code/ID: VCF1021.163 / 09-6369-4626

## Purple Sea Urchin Sperm Cell Fertilization Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-2400-0256	Endpoint: Fertilization Rate	CETIS Version: CETISv1.9.7
Analyzed: 11 Nov-21 15:25	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 11 Nov-21 15:24	MD5 Hash: 7921CC84F7A91610DE92665AC8B327F5	Editor ID: 000-189-126-0

### Graphics



**CETIS Measurement Report**

Report Date: 11 Nov-21 15:26 (p 1 of 3)

Test Code/ID: VCF1021.163 / 09-6369-4626

**Purple Sea Urchin Sperm Cell Fertilization Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 15-1835-0403	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 16:01	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 26 Oct-21 16:41	<b>Species:</b> Strongylocentrotus purpuratus	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 40m	<b>Taxon:</b> Echinoidea	<b>Source:</b> Ventura Dive <b>Age:</b>
<b>Sample ID:</b> 08-4136-3719	<b>Code:</b> VCF1021.163	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 15:45	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-SCR
<b>Sample Age:</b> 24h (8.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Parameter Acceptability Criteria**

Parameter	TAC Limits				Overlap	Decision
	Min	Max	Lower	Upper		
Salinity	34	34	32	36	Yes	Passes Criteria
Temperature	15.7	15.7	11	13	Yes	Above Criteria

**Dissolved Oxygen-mg/L**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.2	7.188	7.212	7.2	7.2	0	0	0.00%	0
6.25		2	7	7	7	7	7	0	0	0.00%	0
12.5		2	7.1	7.086	7.114	7.1	7.1	0	0	0.00%	0
25		2	7.1	7.086	7.114	7.1	7.1	0	0	0.00%	0
50		2	7.1	7.086	7.114	7.1	7.1	0	0	0.00%	0
100		2	7	7	7	7	7	0	0	0.00%	0
Overall		12	7.083	7.038	7.129	7	7.2	0.02072	0.07177	1.01%	0 (0%)

**pH-Units**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
6.25		2	8	8	8	8	8	0	0	0.00%	0
12.5		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
25		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
50		2	7.8	7.787	7.813	7.8	7.8	0	0	0.00%	0
100		2	7.7	7.698	7.702	7.7	7.7	0	0	0.00%	0
Overall		12	7.867	7.804	7.929	7.7	8	0.02843	0.09847	1.25%	0 (0%)

**Salinity-ppt**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.00%	0
6.25		2	34	34	34	34	34	0	0	0.00%	0
12.5		2	34	34	34	34	34	0	0	0.00%	0
25		2	34	34	34	34	34	0	0	0.00%	0
50		2	34	34	34	34	34	0	0	0.00%	0
100		2	34	34	34	34	34	0	0	0.00%	0
Overall		12	34	34	34	34	34	0	0	0.00%	0 (0%)

**Temperature-°C**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
6.25		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
12.5		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
25		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
50		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
100		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
Overall		12	15.7	15.7	15.7	15.7	15.7	0	0	0.00%	0 (0%)

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:26 (p 2 of 3)  
 Test Code/ID: VCF1021.163 / 09-6369-4626

**Purple Sea Urchin Sperm Cell Fertilization Test**

Aquatic Bioassay & Consulting Labs, Inc.

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.2					
6.25				7					
12.5				7.1					
25				7.1					
50				7.1					
100				7					
0	N	2		7.2					
6.25				7					
12.5				7.1					
25				7.1					
50				7.1					
100				7					

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.9					
6.25				8					
12.5				7.9					
25				7.9					
50				7.8					
100				7.7					
0	N	2		7.9					
6.25				8					
12.5				7.9					
25				7.9					
50				7.8					
100				7.7					

**Salinity-ppt**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		34					
6.25				34					
12.5				34					
25				34					
50				34					
100				34					
0	N	2		34					
6.25				34					
12.5				34					
25				34					
50				34					
100				34					

**CETIS Measurement Report**

**Report Date:** 11 Nov-21 15:26 (p 3 of 3)  
**Test Code/ID:** VCF1021.163 / 09-6369-4626

**Purple Sea Urchin Sperm Cell Fertilization Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		15.7					
6.25				15.7					
12.5				15.7					
25				15.7					
50				15.7					
100				15.7					
0	N	2		15.7					
6.25				15.7					
12.5				15.7					
25				15.7					
50				15.7					
100				15.7					





November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Estuarine Organisms, EPA/821/R-02-014*. Results were as follows:

CLIENT: Ventura County Flood Control  
SAMPLE I.D.: ME-VR2  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.164

#### CHRONIC TOPSMELT SURVIVAL AND GROWTH BIOASSAY

Survival                      NOEC =        100.00  
   TU<sub>c</sub> =        1.00  
   EC25 =        >100.00 %  
   EC50 =        >100.00 %

Biomass                      NOEC =        100.00 %  
   TU<sub>c</sub> =        1.00  
   IC25 =        >100.00 %  
   IC50 =        >100.00 %

Yours very truly,

  
Scott Johnson  
Laboratory Director



**CETIS Summary Report**

Report Date: 15 Nov-21 13:31 (p 1 of 2)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

Pacific Topsmelt 7-d Survival and Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
<b>Batch ID:</b> 20-5944-2962	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>					
<b>Start Date:</b> 26 Oct-21 12:30	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater					
<b>Ending Date:</b> 02 Nov-21 12:37	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable					
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO		<b>Age:</b> 9d			
<b>Sample ID:</b> 08-6580-7779	<b>Code:</b> VCF1021.164	<b>Project:</b> NPDES Stormwater Wet Season					
<b>Sample Date:</b> 25 Oct-21 13:35	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report					
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-VR2					
<b>Sample Age:</b> 23h (3.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri						

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
14-7661-2060	7d Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	---	1	1
16-4357-7673	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test	100	>100	---	4.83%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
17-7092-1907	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
03-6020-7156	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
14-7661-2060	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
17-7092-1907	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
03-6020-7156	Mean Dry Biomass-mg	Control Resp	1.442	0.85	>>	Yes	Passes Criteria	
16-4357-7673	Mean Dry Biomass-mg	Control Resp	1.442	0.85	>>	Yes	Passes Criteria	

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	1.442	1.386	1.499	1.406	1.522	0.02039	0.04559	3.16%	0.00%
6.25		5	1.416	1.396	1.436	1.396	1.43	0.007043	0.01575	1.11%	1.83%
12.5		5	1.436	1.42	1.453	1.422	1.458	0.006013	0.01345	0.94%	0.42%
25		5	1.43	1.415	1.444	1.42	1.45	0.005344	0.01195	0.84%	0.89%
50		5	1.398	1.347	1.449	1.33	1.434	0.01842	0.04118	2.95%	3.08%
100		5	1.449	1.333	1.565	1.388	1.614	0.0417	0.09324	6.44%	-0.44%

**CETIS Summary Report**

Report Date: 15 Nov-21 13:31 (p 2 of 2)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 4298CEFA14016A9551DEF9751A7C89A1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

**Mean Dry Biomass-mg Detail**

MD5: 5B5830798F10A5EE514B35B4853C7D3E

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.428	1.522	1.424	1.432	1.406
6.25		1.402	1.426	1.43	1.426	1.396
12.5		1.43	1.438	1.434	1.422	1.458
25		1.428	1.428	1.42	1.45	1.422
50		1.426	1.406	1.434	1.394	1.33
100		1.404	1.42	1.388	1.614	1.418

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	5/5	5/5	5/5	5/5
6.25		5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5	5/5
25		5/5	5/5	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

**CETIS Analytical Report**

Report Date: 15 Nov-21 13:31 (p 1 of 4)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

Pacific Topsmelt 7-d Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 14-7661-2060	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.7	Analyst:		
Analyzed: 15 Nov-21 13:30	Analysis: Nonparametric-Control vs Treatments	Status Level: 1	Diluent: Laboratory Seawater		
Edit Date: 15 Nov-21 13:29	MD5 Hash: 4298CEFA14016A9551DEF9751A7C89A1	Editor ID: 000-189-126-0	Brine: Not Applicable		
Batch ID: 20-5944-2962	Test Type: Growth-Survival (7d)		Source: Aquatic Biosystems, CO	Age: 9d	
Start Date: 26 Oct-21 12:30	Protocol: EPA/600/R-95/136 (1995)				
Ending Date: 02 Nov-21 12:37	Species: Atherinops affinis				
Test Length: 7d 0h	Taxon: Actinopterygii				
Sample ID: 08-6580-7779	Code: VCF1021.164	Project: NPDES Stormwater Wet Season			
Sample Date: 25 Oct-21 13:35	Material: Sample Water	Source: Bioassay Report			
Receipt Date: 25 Oct-21 17:35	CAS (PC):	Station: ME-VR2			
Sample Age: 23h (3.5 °C)	Client: Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Angular (Corrected)	C > T	100	>100	---	1

Steel Many-One Rank Sum Test									
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		12.5	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		25	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		50	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		100	27.5	16	1	8	CDF	0.8333	Non-Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	5			Indeterminate
Error	0	0	24			
Total	0		29			

ANOVA Assumptions Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test				Indeterminate

7d Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
6.25		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
12.5		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
25		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
50		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
100		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%

Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 14-7661-2060      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:30      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:29      MD5 Hash: 4298CEFA14016A9551DEF9751A7C89A1      Editor ID: 000-189-126-0

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

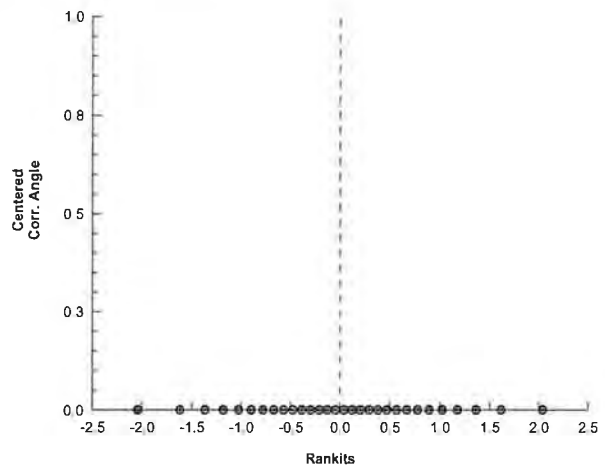
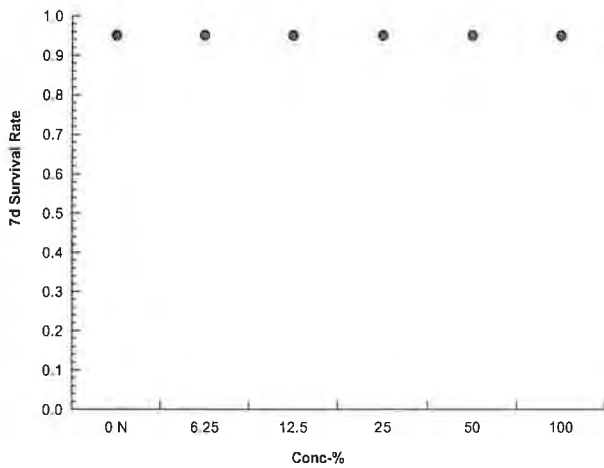
Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.3450	1.3450	1.3450	1.3450	1.3450
6.25		1.3450	1.3450	1.3450	1.3450	1.3450
12.5		1.3450	1.3450	1.3450	1.3450	1.3450
25		1.3450	1.3450	1.3450	1.3450	1.3450
50		1.3450	1.3450	1.3450	1.3450	1.3450
100		1.3450	1.3450	1.3450	1.3450	1.3450

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	5/5	5/5	5/5	5/5
6.25		5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5	5/5
25		5/5	5/5	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 13:31 (p 3 of 4)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

Pacific Topsmelt 7-d Survival and Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
Analysis ID:	16-4357-7673	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.7		
Analyzed:	15 Nov-21 13:30	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1		
Edit Date:	15 Nov-21 13:29	MD5 Hash:	5B5830798F10A5EE514B35B4853C7D3E	Editor ID:	000-189-126-0		
Batch ID:	20-5944-2962	Test Type:	Growth-Survival (7d)	Analyst:			
Start Date:	26 Oct-21 12:30	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater		
Ending Date:	02 Nov-21 12:37	Species:	Atherinops affinis	Brine:	Not Applicable		
Test Length:	7d 0h	Taxon:	Actinopterygii	Source:	Aquatic Biosystems, CO	Age:	9d
Sample ID:	08-6580-7779	Code:	VCF1021.164	Project:	NPDES Stormwater Wet Season		
Sample Date:	25 Oct-21 13:35	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	25 Oct-21 17:35	CAS (PC):		Station:	ME-VR2		
Sample Age:	23h (3.5 °C)	Client:	Ventura County Watershed Protection Distri				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	0.06963	4.83%

Steel Many-One Rank Sum Test									
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	22	16	0	8	CDF	0.3476	Non-Significant Effect
		12.5	31	16	0	8	CDF	0.9676	Non-Significant Effect
		25	26	16	1	8	CDF	0.7237	Non-Significant Effect
		50	21.5	16	1	8	CDF	0.3036	Non-Significant Effect
		100	22	16	0	8	CDF	0.3476	Non-Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1.442	0.85	>>	Yes	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0087771	0.0017554	5	0.8077	0.5555	Non-Significant Effect
Error	0.0521584	0.0021733	24			
Total	0.0609355		29			

ANOVA Assumptions Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variance	Bartlett Equality of Variance Test	22.92	15.09	0.0004	Unequal Variances	
	Levene Equality of Variance Test	2.965	3.895	0.0319	Equal Variances	
	Mod Levene Equality of Variance Test	0.8134	4.248	0.5555	Equal Variances	
Distribution	Anderson-Darling A2 Test	1.688	3.878	<1.0E-05	Non-Normal Distribution	
	D'Agostino Kurtosis Test	3.639	2.576	0.0003	Non-Normal Distribution	
	D'Agostino Skewness Test	3.938	2.576	8.2E-05	Non-Normal Distribution	
	D'Agostino-Pearson K2 Omnibus Test	28.75	9.21	<1.0E-05	Non-Normal Distribution	
	Kolmogorov-Smirnov D Test	0.1735	0.1853	0.0217	Normal Distribution	
	Shapiro-Wilk W Normality Test	0.8164	0.9031	0.0001	Non-Normal Distribution	

Mean Dry Biomass-mg Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.442	1.386	1.499	1.428	1.406	1.522	0.02039	3.16%	0.00%
6.25		5	1.416	1.396	1.436	1.426	1.396	1.43	0.007043	1.11%	1.83%
12.5		5	1.436	1.42	1.453	1.434	1.422	1.458	0.006014	0.94%	0.42%
25		5	1.43	1.415	1.444	1.428	1.42	1.45	0.005344	0.84%	0.89%
50		5	1.398	1.347	1.449	1.406	1.33	1.434	0.01842	2.95%	3.08%
100		5	1.449	1.333	1.565	1.418	1.388	1.614	0.0417	6.44%	-0.44%

Pacific Topsmelt 7-d Survival and Growth Test

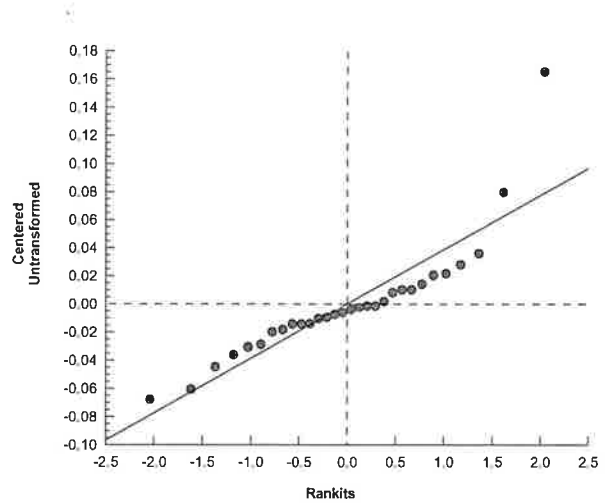
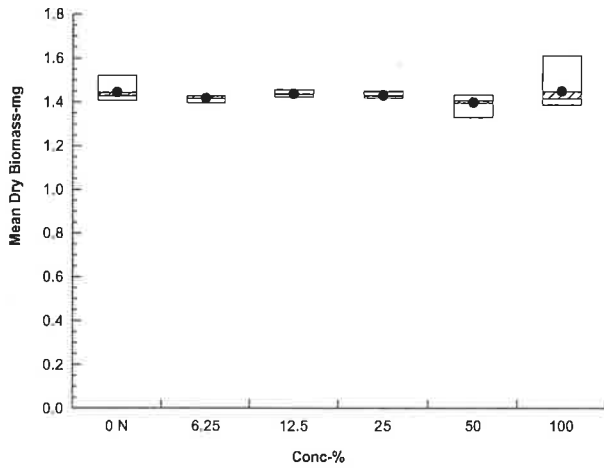
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 16-4357-7673      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 13:30      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 13:29      MD5 Hash: 5B5830798F10A5EE514B35B4853C7D3E      Editor ID: 000-189-126-0

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.428	1.522	1.424	1.432	1.406
6.25		1.402	1.426	1.43	1.426	1.396
12.5		1.43	1.438	1.434	1.422	1.458
25		1.428	1.428	1.42	1.45	1.422
50		1.426	1.406	1.434	1.394	1.33
100		1.404	1.42	1.388	1.614	1.418

Graphics





Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 17-7092-1907	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:30	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:29	<b>MD5 Hash:</b> 4298CEFA14016A9551DEF9751A7C89A1	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 20-5944-2962	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:30	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:37	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 08-6580-7779	<b>Code:</b> VCF1021.164	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:35	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-VR2
<b>Sample Age:</b> 23h (3.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

7d Survival Rate Summary

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
6.25		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
12.5		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
25		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
50		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	5/5	5/5	5/5	5/5
6.25		5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5	5/5
25		5/5	5/5	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5





**CETIS Analytical Report**

Report Date: 15 Nov-21 13:31 (p 3 of 4)

Test Code/ID: VCF1021.164 / 21-0902-0154

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 03-6020-7156	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 13:30	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 13:29	<b>MD5 Hash:</b> 5B5830798F10A5EE514B35B4853C7D3E	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 20-5944-2962	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:30	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:37	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 08-6580-7779	<b>Code:</b> VCF1021.164	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:35	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-VR2
<b>Sample Age:</b> 23h (3.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1896211	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1.442	0.85	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	5	1.442	1.428	1.406	1.522	3.16%	0.00%	1.442	0.00%
6.25		5	1.416	1.426	1.396	1.43	1.11%	1.83%	1.427	1.04%
12.5		5	1.436	1.434	1.422	1.458	0.94%	0.42%	1.427	1.04%
25		5	1.43	1.428	1.42	1.45	0.84%	0.89%	1.427	1.04%
50		5	1.398	1.406	1.33	1.434	2.95%	3.08%	1.423	1.32%
100		5	1.449	1.418	1.388	1.614	6.44%	-0.44%	1.423	1.32%

**Mean Dry Biomass-mg Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.428	1.522	1.424	1.432	1.406
6.25		1.402	1.426	1.43	1.426	1.396
12.5		1.43	1.438	1.434	1.422	1.458
25		1.428	1.428	1.42	1.45	1.422
50		1.426	1.406	1.434	1.394	1.33
100		1.404	1.42	1.388	1.614	1.418

# CETIS Analytical Report

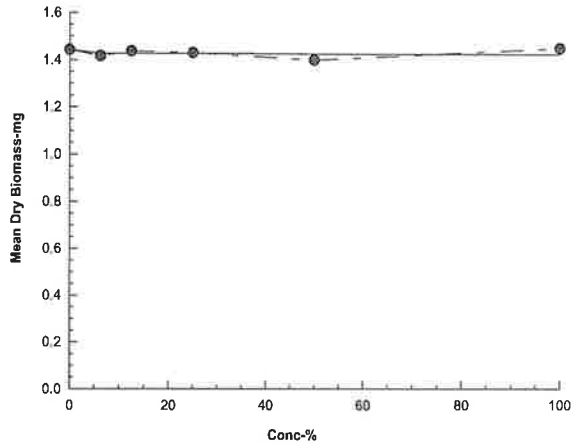
Report Date: 15 Nov-21 13:31 (p 4 of 4)  
Test Code/ID: VCF1021.164 / 21-0902-0154

## Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	03-6020-7156	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.7
Analyzed:	15 Nov-21 13:30	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	15 Nov-21 13:29	MD5 Hash:	5B5830798F10A5EE514B35B4853C7D3E	Editor ID:	000-189-126-0

### Graphics



# CETIS Measurement Report

Report Date: 15 Nov-21 13:31 (p 1 of 5)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

## Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 20-5944-2962	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:30	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:37	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 08-6580-7779	<b>Code:</b> VCF1021.164	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 13:35	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-VR2
<b>Sample Age:</b> 23h (3.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

### Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.313	7.23	7.395	7.2	7.5	0.01239	0.0991	1.36%	0
6.25		8	7.237	7.104	7.371	7	7.5	0.01997	0.1598	2.21%	0
12.5		8	7.225	7.085	7.365	7	7.5	0.02086	0.1669	2.31%	0
25		8	7.212	7.083	7.342	7	7.5	0.01941	0.1553	2.15%	0
50		8	7.237	7.112	7.363	7	7.4	0.01882	0.1506	2.08%	0
100		8	7.2	7.027	7.373	7	7.5	0.02588	0.207	2.88%	0
Overall		48	7.237	7.192	7.283	7	7.5	0.02241	0.1552	2.15%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.687	7.658	7.717	7.6	7.7	0.004419	0.03536	0.46%	0
6.25		8	7.487	7.318	7.657	7.2	7.7	0.02539	0.2031	2.71%	0
12.5		8	7.487	7.318	7.657	7.2	7.7	0.02539	0.2031	2.71%	0
25		8	7.462	7.296	7.629	7.2	7.7	0.02494	0.1996	2.67%	0
50		8	7.437	7.29	7.585	7.2	7.6	0.0221	0.1768	2.38%	0
100		8	7.412	7.275	7.55	7.2	7.6	0.02053	0.1642	2.22%	0
Overall		48	7.496	7.441	7.55	7.2	7.7	0.02712	0.1879	2.51%	0 (0%)

### Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	25	25	25	25	25	0	0	0.00%	0
6.25		8	25	25	25	25	25	0	0	0.00%	0
12.5		8	25	25	25	25	25	0	0	0.00%	0
25		8	25	25	25	25	25	0	0	0.00%	0
50		8	25	25	25	25	25	0	0	0.00%	0
100		8	25	25	25	25	25	0	0	0.00%	0
Overall		48	25	25	25	25	25	0	0	0.00%	0 (0%)

### Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	21	21	21	21	21	0	0	0.00%	0
6.25		8	21	21	21	21	21	0	0	0.00%	0
12.5		8	21	21	21	21	21	0	0	0.00%	0
25		8	21	21	21	21	21	0	0	0.00%	0
50		8	21	21	21	21	21	0	0	0.00%	0
100		8	21	21	21	21	21	0	0	0.00%	0
Overall		48	21	21	21	21	21	0	0	0.00%	0 (0%)

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:31 (p 2 of 5)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.3					
6.25			7						
12.5			7.1						
25			7.1						
50			7.2						
100			7.2						
0			N	2		7.3			
6.25	7.2								
12.5	7.2								
25	7.3								
50	7.4								
100	7.4								
0	N	3				7.3			
6.25			7.4						
12.5			7.4						
25			7.3						
50			7.4						
100			7.5						
0			N	4		7.2			
6.25	7.3								
12.5	7.3								
25	7.2								
50	7.2								
100	7								
0	N	5				7.5			
6.25			7.5						
12.5			7.5						
25			7.5						
50			7.4						
100			7.4						
0			N	6		7.4			
6.25	7.2								
12.5	7.1								
25	7.2								
50	7.2								
100	7.1								
0	N	7				7.3			
6.25			7.2						
12.5			7.2						
25			7.1						
50			7.1						
100			7						
0			N	8		7.2			
6.25	7.1								
12.5	7								
25	7								
50	7								
100	7								

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:31 (p 3 of 5)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.7					
6.25			7.2						
12.5			7.2						
25			7.2						
50			7.2						
100			7.2						
0			N	2		7.7			
6.25	7.2								
12.5	7.2								
25	7.2								
50	7.2								
100	7.2								
0	N	3				7.7			
6.25			7.4						
12.5			7.4						
25			7.3						
50			7.3						
100			7.3						
0			N	4		7.7			
6.25	7.6								
12.5	7.6								
25	7.6								
50	7.6								
100	7.6								
0	N	5				7.7			
6.25			7.7						
12.5			7.7						
25			7.7						
50			7.6						
100			7.5						
0			N	6		7.7			
6.25	7.7								
12.5	7.7								
25	7.6								
50	7.5								
100	7.4								
0	N	7				7.7			
6.25			7.6						
12.5			7.6						
25			7.6						
50			7.6						
100			7.6						
0			N	8		7.6			
6.25	7.5								
12.5	7.5								
25	7.5								
50	7.5								
100	7.5								

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:31 (p 4 of 5)  
 Test Code/ID: VCF1021.164 / 21-0902-0154

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Salinity-ppt**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	2		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	3		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	4		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	5		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	6		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	7		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	8		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					

**CETIS Measurement Report**

Report Date: 15 Nov-21 13:31 (p 5 of 5)

Test Code/ID: VCF1021.164 / 21-0902-0154

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	2		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	3		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	4		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	5		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	6		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	7		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	8		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					





November 15, 2021

Mr. Arne Anselm  
Ventura County Watershed Protection District  
800 South Victoria Ave  
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Estuarine Organisms, EPA/821/R-02-014*. Results were as follows:

CLIENT: Ventura County Flood Control  
SAMPLE I.D.: ME-CC  
DATE RECEIVED: 10/25/2021  
ABC LAB. NO.: VCF1021.165

#### CHRONIC TOPSMELT SURVIVAL AND GROWTH BIOASSAY

Survival                      NOEC =        100.00  
   TUc    =        1.00  
   EC25 =        >100.00 %  
   EC50 =        >100.00 %

Biomass                      NOEC =        100.00 %  
   TUc    =        1.00  
   IC25 =        >100.00 %  
   IC50 =        >100.00 %

Yours very truly,

  
w/ Scott Johnson  
Laboratory Director

**CETIS Summary Report**

Report Date: 15 Nov-21 15:19 (p 1 of 2)  
 Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 10-6793-2878	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:40	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:48	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-4845-2833	<b>Code:</b> VCF1021.165	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:40	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-CC
<b>Sample Age:</b> 22h (5.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
21-1164-2606	7d Survival Rate	Steel Many-One Rank Sum Test	100	>100	---	8.2%	1	1
11-6645-3103	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test	100	>100	---	5.17%	1	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	%	95% LCL	95% UCL	TU	S
08-6588-7706	7d Survival Rate	Linear Interpolation (ICPIN)	✓ EC10	>100	---	---	<1	1
			✓ EC15	>100	---	---	<1	
			✓ EC20	>100	---	---	<1	
			✓ EC25	>100	---	---	<1	
			✓ EC40	>100	---	---	<1	
			✓ EC50	>100	---	---	<1	
11-9269-4640	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	>100	---	---	<1	1
			✓ IC15	>100	---	---	<1	
			✓ IC20	>100	---	---	<1	
			✓ IC25	>100	---	---	<1	
			✓ IC40	>100	---	---	<1	
			✓ IC50	>100	---	---	<1	

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
08-6588-7706	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
21-1164-2606	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
11-6645-3103	Mean Dry Biomass-mg	Control Resp	1.434	0.85	>>	Yes	Passes Criteria
11-9269-4640	Mean Dry Biomass-mg	Control Resp	1.434	0.85	>>	Yes	Passes Criteria
21-1164-2606	7d Survival Rate	PMSD	0.08202	<<	0.25	No	Passes Criteria

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
6.25		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
12.5		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
25		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
50		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	0.00%
100		5	0.9600	0.8489	1.0710	0.8000	1.0000	0.0400	0.0894	9.32%	4.00%

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	1.434	1.424	1.444	1.422	1.442	0.003521	0.007874	0.55%	0.00%
6.25		5	1.483	1.405	1.56	1.416	1.55	0.0279	0.0624	4.21%	-3.40%
12.5		5	1.439	1.395	1.483	1.414	1.5	0.01583	0.0354	2.46%	-0.33%
25		5	1.52	1.409	1.631	1.432	1.656	0.03997	0.08939	5.88%	-6.00%
50		5	1.425	1.414	1.436	1.412	1.434	0.003929	0.008786	0.62%	0.61%
100		5	1.452	1.403	1.5	1.42	1.518	0.01734	0.03877	2.67%	-1.23%

*PASS*

**CETIS Summary Report**

Report Date: 15 Nov-21 15:19 (p 2 of 2)  
 Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: BB17F45C43703E06476AD25419AF9030

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	0.8000	1.0000	1.0000	1.0000

**Mean Dry Biomass-mg Detail**

MD5: AD0BFED745EBE5D7F863ECEB109EC1C

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.432	1.44	1.422	1.434	1.442
6.25		1.468	1.434	1.416	1.546	1.55
12.5		1.5	1.418	1.424	1.414	1.438
25		1.514	1.45	1.656	1.548	1.432
50		1.426	1.434	1.422	1.432	1.412
100		1.43	1.518	1.42	1.45	1.44

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	5/5	5/5	5/5	5/5
6.25		5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5	5/5
25		5/5	5/5	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5	5/5
100		5/5	4/5	5/5	5/5	5/5

Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 21-1164-2606	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 15:19	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 15:18	<b>MD5 Hash:</b> BB17F45C43703E06476AD25419AF9030	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 10-6793-2878	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:40	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:48	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-4845-2833	<b>Code:</b> VCF1021.165	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:40	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-CC
<b>Sample Age:</b> 22h (5.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	100	>100	---	1	0.08202	8.20%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		12.5	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		25	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		50	27.5	16	1	8	CDF	0.8333	Non-Significant Effect
		100	25	16	1	8	CDF	0.6353	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria
PMSD	0.08202	<<	0.25	No	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0094513	0.0018903	5	1	0.4389	Non-Significant Effect
Error	0.0453663	0.0018903	24			
Total	0.0548176		29			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
	Levene Equality of Variance Test	7.111	3.895	0.0003	Unequal Variances
	Mod Levene Equality of Variance Test	1	4.248	0.4457	Equal Variances
Distribution	Anderson-Darling A2 Test	7.95	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	4.912	2.576	<1.0E-05	Non-Normal Distribution
	D'Agostino Skewness Test	5.58	2.576	<1.0E-05	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	55.27	9.21	<1.0E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.4667	0.1853	<1.0E-05	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.4063	0.9031	<1.0E-05	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	0.9600	0.8489	1.0000	1.0000	0.8000	1.0000	0.0400	9.32%	4.00%

Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 21-1164-2606      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 15:19      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 15:18      MD5 Hash: BB17F45C43703E06476AD25419AF9030      Editor ID: 000-189-126-0

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
6.25		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
12.5		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
25		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
50		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
100		5	1.2980	1.1650	1.4300	1.3450	1.1070	1.3450	0.0476	8.21%	3.54%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	0.8000	1.0000	1.0000	1.0000

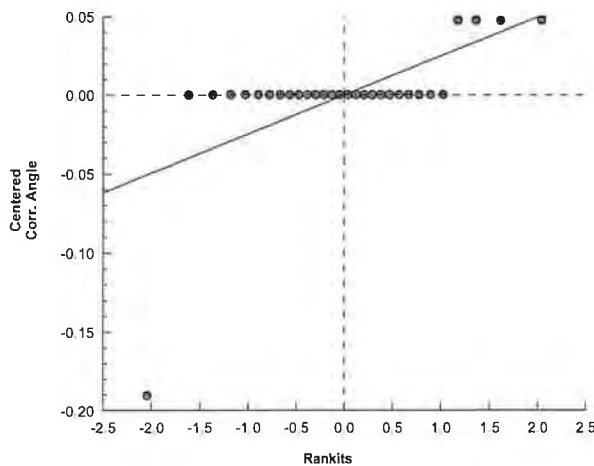
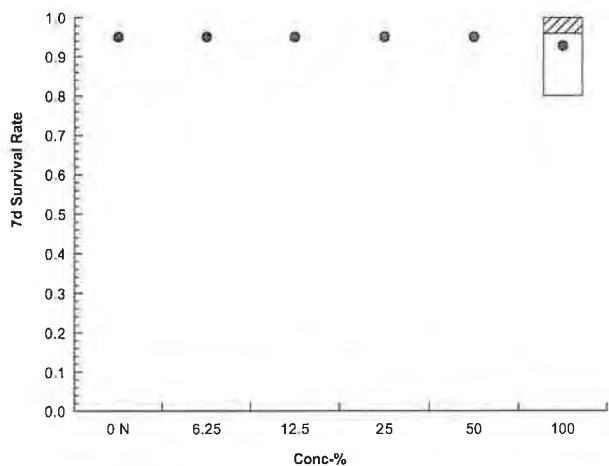
Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.3450	1.3450	1.3450	1.3450	1.3450
6.25		1.3450	1.3450	1.3450	1.3450	1.3450
12.5		1.3450	1.3450	1.3450	1.3450	1.3450
25		1.3450	1.3450	1.3450	1.3450	1.3450
50		1.3450	1.3450	1.3450	1.3450	1.3450
100		1.3450	1.1070	1.3450	1.3450	1.3450

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	5/5	5/5	5/5	5/5
6.25		5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5	5/5
25		5/5	5/5	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5	5/5
100		5/5	4/5	5/5	5/5	5/5

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 15:19 (p 3 of 4)

Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 11-6645-3103	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 15:19	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 15:18	<b>MD5 Hash:</b> AD0BFED745EBE5D7F863ECEB109EC1C	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 10-6793-2878	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:40	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:48	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-4845-2833	<b>Code:</b> VCF1021.165	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:40	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-CC
<b>Sample Age:</b> 22h (5.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	>100	---	1	0.07413	5.17%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		6.25	32.5	16	1	8	CDF	0.9870	Non-Significant Effect
		12.5	24	16	0	8	CDF	0.5394	Non-Significant Effect
		25	36.5	16	1	8	CDF	0.9994	Non-Significant Effect
		50	20.5	16	3	8	CDF	0.2245	Non-Significant Effect
		100	29.5	16	1	8	CDF	0.9290	Non-Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1.434	0.85	>>	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0325863	0.0065173	5	2.646	0.0484	Significant Effect
Error	0.0591136	0.0024631	24			
Total	0.0916998		29			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	24.35	15.09	0.0002	Unequal Variances
	Levene Equality of Variance Test	4.134	3.895	0.0075	Unequal Variances
	Mod Levene Equality of Variance Test	4.396	4.248	0.0086	Unequal Variances
Distribution	Anderson-Darling A2 Test	1.263	3.878	0.0025	Non-Normal Distribution
	D'Agostino Kurtosis Test	1.92	2.576	0.0548	Normal Distribution
	D'Agostino Skewness Test	1.949	2.576	0.0513	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	7.485	9.21	0.0237	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2227	0.1853	0.0006	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.9141	0.9031	0.0189	Normal Distribution

**Mean Dry Biomass-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.434	1.424	1.444	1.434	1.422	1.442	0.003522	0.55%	0.00%
6.25		5	1.483	1.405	1.56	1.468	1.416	1.55	0.0279	4.21%	-3.40%
12.5		5	1.439	1.395	1.483	1.424	1.414	1.5	0.01583	2.46%	-0.33%
25		5	1.52	1.409	1.631	1.514	1.432	1.656	0.03998	5.88%	-6.00%
50		5	1.425	1.414	1.436	1.426	1.412	1.434	0.003931	0.62%	0.61%
100		5	1.452	1.403	1.5	1.44	1.42	1.518	0.01734	2.67%	-1.23%



Pacific Topsmelt 7-d Survival and Growth Test

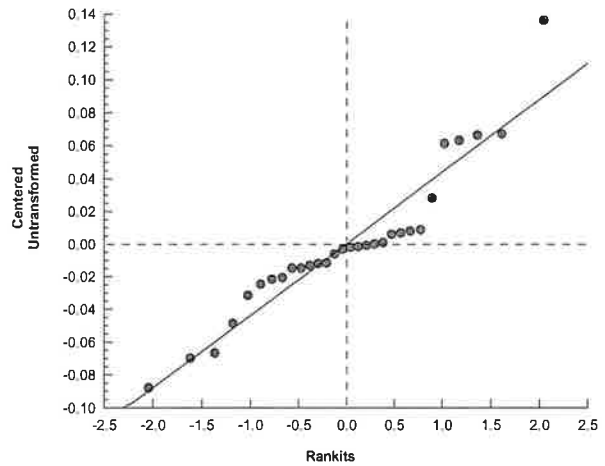
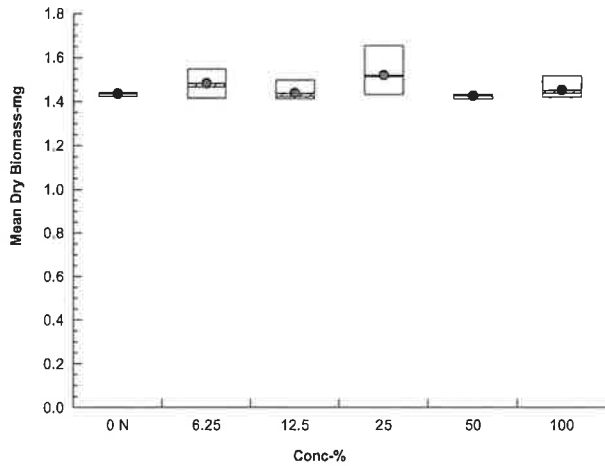
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 11-6645-3103      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 15:19      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 15:18      MD5 Hash: AD0BFED745EBE5D7F863ECEB109EC1C      Editor ID: 000-189-126-0

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.432	1.44	1.422	1.434	1.442
6.25		1.468	1.434	1.416	1.546	1.55
12.5		1.5	1.418	1.424	1.414	1.438
25		1.514	1.45	1.656	1.548	1.432
50		1.426	1.434	1.422	1.432	1.412
100		1.43	1.518	1.42	1.45	1.44

Graphics



**CETIS Analytical Report**

**Report Date:** 15 Nov-21 15:19 (p 1 of 4)  
**Test Code/ID:** VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 08-6588-7706	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 15:19	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 15:18	<b>MD5 Hash:</b> BB17F45C43703E06476AD25419AF9030	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 10-6793-2878	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:40	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:48	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-4845-2833	<b>Code:</b> VCF1021.165	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:40	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-CC
<b>Sample Age:</b> 22h (5.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC10	>100	---	---	<1	---	---
EC15	>100	---	---	<1	---	---
EC20	>100	---	---	<1	---	---
EC25	>100	---	---	<1	---	---
EC40	>100	---	---	<1	---	---
EC50	>100	---	---	<1	---	---

**7d Survival Rate Summary**

Conc-%	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
6.25		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
12.5		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
25		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
50		5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	25/25	1.0000	0.00%
100		5	0.9600	1.0000	0.8000	1.0000	9.32%	4.00%	24/25	0.9600	4.00%

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	0.8000	1.0000	1.0000	1.0000

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	5/5	5/5	5/5	5/5
6.25		5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5	5/5
25		5/5	5/5	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5	5/5
100		5/5	4/5	5/5	5/5	5/5



Pacific Topsmelt 7-d Survival and Growth Test

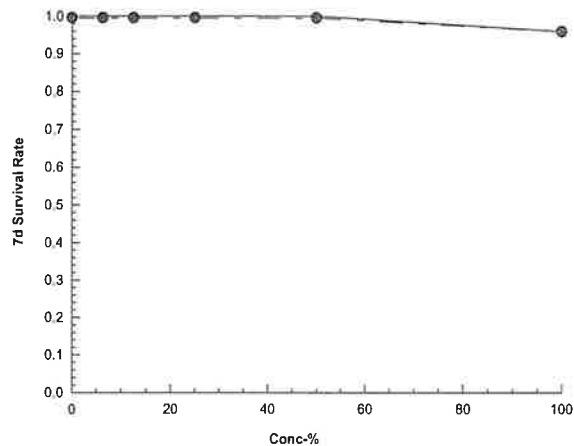
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-6588-7706  
Analyzed: 15 Nov-21 15:19  
Edit Date: 15 Nov-21 15:18

Endpoint: 7d Survival Rate  
Analysis: Linear Interpolation (ICPIN)  
MD5 Hash: BB17F45C43703E06476AD25419AF9030

CETIS Version: CETISv1.9.7  
Status Level: 1  
Editor ID: 000-189-126-0

Graphics



Pacific Topsmelt 7-d Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
<b>Analysis ID:</b> 11-9269-4640	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 15 Nov-21 15:19	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1			
<b>Edit Date:</b> 15 Nov-21 15:18	<b>MD5 Hash:</b> AD0BFED745EBE5D7F863ECEB109EC1C	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 10-6793-2878	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 12:40	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater			
<b>Ending Date:</b> 02 Nov-21 12:48	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d			
<b>Sample ID:</b> 11-4845-2833	<b>Code:</b> VCF1021.165	<b>Project:</b> NPDES Stormwater Wet Season			
<b>Sample Date:</b> 25 Oct-21 14:40	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report			
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-CC			
<b>Sample Age:</b> 22h (5.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri				

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1451111	280	Yes	Two-Point Interpolation

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1.434	0.85	>>	Yes	Passes Criteria

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC10	>100	---	---	<1	---	---
IC15	>100	---	---	<1	---	---
IC20	>100	---	---	<1	---	---
IC25	>100	---	---	<1	---	---
IC40	>100	---	---	<1	---	---
IC50	>100	---	---	<1	---	---

Mean Dry Biomass-mg Summary			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	5	1.434	1.434	1.422	1.442	0.55%	0.00%	1.469	0.00%
6.25		5	1.483	1.468	1.416	1.55	4.21%	-3.40%	1.469	0.00%
12.5		5	1.439	1.424	1.414	1.5	2.46%	-0.33%	1.469	0.00%
25		5	1.52	1.514	1.432	1.656	5.88%	-6.00%	1.469	0.00%
50		5	1.425	1.426	1.412	1.434	0.62%	0.61%	1.438	2.08%
100		5	1.452	1.44	1.42	1.518	2.67%	-1.23%	1.438	2.08%

Mean Dry Biomass-mg Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.432	1.44	1.422	1.434	1.442
6.25		1.468	1.434	1.416	1.546	1.55
12.5		1.5	1.418	1.424	1.414	1.438
25		1.514	1.45	1.656	1.548	1.432
50		1.426	1.434	1.422	1.432	1.412
100		1.43	1.518	1.42	1.45	1.44

**CETIS Analytical Report**

Report Date: 15 Nov-21 15:19 (p 4 of 4)  
Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

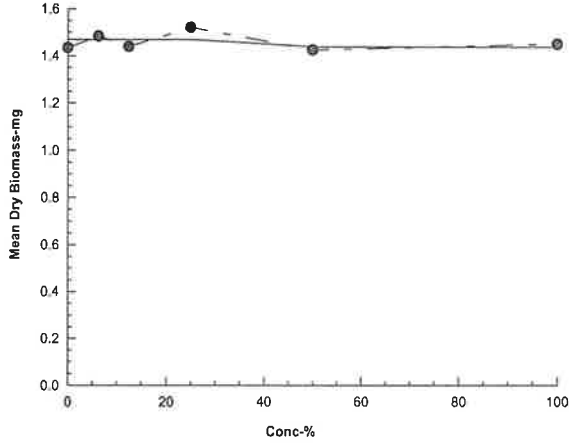
**Aquatic Bioassay & Consulting Labs, Inc.**

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<b>Analysis ID:</b> 11-9269-4640	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 15:19	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 15:18	<b>MD5 Hash:</b> AD0BFED745EBE5D7F863ECEB109EC1C	<b>Editor ID:</b> 000-189-126-0

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**Graphics**



**CETIS Measurement Report**

Report Date: 15 Nov-21 15:19 (p 1 of 5)

Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 10-6793-2878	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 12:40	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:48	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 7d 0h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-4845-2833	<b>Code:</b> VCF1021.165	<b>Project:</b> NPDES Stormwater Wet Season
<b>Sample Date:</b> 25 Oct-21 14:40	<b>Material:</b> Sample Water	<b>Source:</b> Bioassay Report
<b>Receipt Date:</b> 25 Oct-21 17:35	<b>CAS (PC):</b>	<b>Station:</b> ME-CC
<b>Sample Age:</b> 22h (5.5 °C)	<b>Client:</b> Ventura County Watershed Protection Distri	

**Dissolved Oxygen-mg/L**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.313	7.23	7.395	7.2	7.5	0.01239	0.0991	1.36%	0
6.25		8	7.163	6.99	7.335	7	7.5	0.02582	0.2066	2.88%	0
12.5		8	7.15	7.024	7.276	7	7.4	0.0189	0.1512	2.11%	0
25		8	7.162	7.022	7.303	6.9	7.5	0.02106	0.1685	2.35%	0
50		8	7.187	7.05	7.325	6.9	7.5	0.02053	0.1642	2.28%	0
100		8	7.2	7.059	7.341	6.9	7.5	0.02113	0.169	2.35%	0
Overall		48	7.196	7.148	7.243	6.9	7.5	0.02363	0.1637	2.28%	0 (0%)

**pH-Units**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.687	7.658	7.717	7.6	7.7	0.004419	0.03536	0.46%	0
6.25		8	7.525	7.409	7.641	7.3	7.7	0.01736	0.1389	1.85%	0
12.5		8	7.5	7.4	7.6	7.3	7.6	0.01494	0.1195	1.59%	0
25		8	7.463	7.374	7.551	7.3	7.6	0.01326	0.1061	1.42%	0
50		8	7.45	7.361	7.539	7.3	7.6	0.01336	0.1069	1.43%	0
100		8	7.438	7.338	7.537	7.3	7.6	0.01485	0.1188	1.60%	0
Overall		48	7.51	7.471	7.549	7.3	7.7	0.01935	0.1341	1.79%	0 (0%)

**Salinity-ppt**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	25	25	25	25	25	0	0	0.00%	0
6.25		8	25	25	25	25	25	0	0	0.00%	0
12.5		8	25	25	25	25	25	0	0	0.00%	0
25		8	25	25	25	25	25	0	0	0.00%	0
50		8	25	25	25	25	25	0	0	0.00%	0
100		8	25	25	25	25	25	0	0	0.00%	0
Overall		48	25	25	25	25	25	0	0	0.00%	0 (0%)

**Temperature-°C**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	21	21	21	21	21	0	0	0.00%	0
6.25		8	21	21	21	21	21	0	0	0.00%	0
12.5		8	21	21	21	21	21	0	0	0.00%	0
25		8	21	21	21	21	21	0	0	0.00%	0
50		8	21	21	21	21	21	0	0	0.00%	0
100		8	21	21	21	21	21	0	0	0.00%	0
Overall		48	21	21	21	21	21	0	0	0.00%	0 (0%)

**CETIS Measurement Report**

Report Date: 15 Nov-21 15:19 (p 2 of 5)  
 Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.3					
6.25				7					
12.5				7					
25				7.1					
50				7.1					
100				7.2					
0	N	2		7.3					
6.25				7					
12.5				7					
25				6.9					
50				6.9					
100				6.9					
0	N	3		7.3					
6.25				7.3					
12.5				7.2					
25				7.2					
50				7.2					
100				7.1					
0	N	4		7.2					
6.25				7					
12.5				7					
25				7.1					
50				7.2					
100				7.2					
0	N	5		7.5					
6.25				7.5					
12.5				7.4					
25				7.5					
50				7.5					
100				7.5					
0	N	6		7.4					
6.25				7.4					
12.5				7.3					
25				7.2					
50				7.2					
100				7.2					
0	N	7		7.3					
6.25				7.1					
12.5				7.2					
25				7.2					
50				7.2					
100				7.3					
0	N	8		7.2					
6.25				7					
12.5				7.1					
25				7.1					
50				7.2					
100				7.2					

**CETIS Measurement Report**

Report Date: 15 Nov-21 15:19 (p 3 of 5)  
 Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.7					
6.25			7.3						
12.5			7.3						
25			7.3						
50			7.3						
100			7.3						
0			N	2		7.7			
6.25	7.4								
12.5	7.4								
25	7.4								
50	7.4								
100	7.4								
0	N	3				7.7			
6.25			7.7						
12.5			7.6						
25			7.5						
50			7.5						
100			7.5						
0			N	4		7.7			
6.25	7.6								
12.5	7.6								
25	7.6								
50	7.6								
100	7.6								
0	N	5				7.7			
6.25			7.7						
12.5			7.6						
25			7.5						
50			7.4						
100			7.4						
0			N	6		7.7			
6.25	7.5								
12.5	7.4								
25	7.4								
50	7.4								
100	7.3								
0	N	7				7.7			
6.25			7.5						
12.5			7.6						
25			7.6						
50			7.6						
100			7.6						
0			N	8		7.6			
6.25	7.5								
12.5	7.5								
25	7.4								
50	7.4								
100	7.4								

**CETIS Measurement Report**

Report Date: 15 Nov-21 15:19 (p 4 of 5)  
 Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Salinity-ppt**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	2		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	3		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	4		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	5		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	6		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	7		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					
0	N	8		25					
6.25				25					
12.5				25					
25				25					
50				25					
100				25					



**CETIS Measurement Report**

Report Date: 15 Nov-21 15:19 (p 5 of 5)  
 Test Code/ID: VCF1021.165 / 00-2973-7402

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-%	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	2		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	3		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	4		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	5		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	6		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	7		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					
0	N	8		21					
6.25				21					
12.5				21					
25				21					
50				21					
100				21					

**CHRONIC SEA URCHIN FERTILIZATION BIOASSAY**

DATE: 26 October 2021

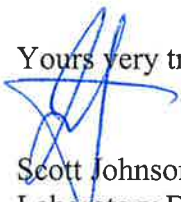
STANDARD TOXICANT: Copper Chloride

NOEC = 18.00 ug/l

EC25 = 34.83 ug/l

EC50 = 45.71 ug/l

Yours very truly,



Scott Johnson  
Laboratory Director

# CETIS Summary Report

Report Date: 11 Nov-21 15:23 (p 1 of 1)  
 Test Code/ID: URC102621 / 11-3453-2991

## Purple Sea Urchin Sperm Cell Fertilization Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 15-0142-5550	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 16:00	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 26 Oct-21 16:40	<b>Species:</b> Strongylocentrotus purpuratus	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 40m	<b>Taxon:</b> Echinoidea	<b>Source:</b> Ventura Dive <b>Age:</b>
<b>Sample ID:</b> 11-9277-7508	<b>Code:</b> URC102621	<b>Project:</b>
<b>Sample Date:</b> 26 Oct-21 16:00	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

## Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	S
11-1827-6916	Fertilization Rate	Dunnett Multiple Comparison Test	18	32	24	4.44%	1

## Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	µg/L	95% LCL	95% UCL	S
05-6827-1771	Fertilization Rate	Linear Interpolation (ICPIN)	EC10	25.56	24.15	27.07	1
			EC15	29.35	27.3	31.6	
			EC20	32.65	30.69	34.04	
			EC25	34.83	33.33	36.12	
			EC40	41.36	40.05	42.4	
			EC50	45.71	44.52	46.75	

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
05-6827-1771	Fertilization Rate	Control Resp	0.9275	0.7	>>	Yes	Passes Criteria
11-1827-6916	Fertilization Rate	Control Resp	0.9275	0.7	>>	Yes	Passes Criteria
11-1827-6916	Fertilization Rate	PMSD	0.0444	<<	0.25	No	Passes Criteria

## Fertilization Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.9275	0.9075	0.9475	0.9100	0.9400	0.0063	0.0126	1.36%	0.00%
18		4	0.9500	0.9089	0.9911	0.9200	0.9800	0.0129	0.0258	2.72%	-2.43%
32		4	0.7650	0.7250	0.8050	0.7300	0.7900	0.0126	0.0252	3.29%	17.52%
56		4	0.2475	0.2077	0.2873	0.2100	0.2600	0.0125	0.0250	10.10%	73.32%
100		4	0.0500	0.0110	0.0890	0.0300	0.0800	0.0123	0.0245	48.99%	94.61%
180		4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	--	100.00%

## Fertilization Rate Detail

MD5: 60D03B39C1A683F842A843697DC95FFF

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9300	0.9400	0.9300	0.9100
18		0.9600	0.9800	0.9400	0.9200
32		0.7700	0.7900	0.7300	0.7700
56		0.2600	0.2600	0.2600	0.2100
100		0.0300	0.0800	0.0600	0.0300
180		0.0000	0.0000	0.0000	0.0000

## Fertilization Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	93/100	94/100	93/100	91/100
18		96/100	98/100	94/100	92/100
32		77/100	79/100	73/100	77/100
56		26/100	26/100	26/100	21/100
100		3/100	8/100	6/100	3/100
180		0/100	0/100	0/100	0/100

**CETIS Analytical Report**

Report Date: 11 Nov-21 15:23 (p 1 of 2)  
 Test Code/ID: URC102621 / 11-3453-2991

**Purple Sea Urchin Sperm Cell Fertilization Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 11-1827-6916	<b>Endpoint:</b> Fertilization Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 11 Nov-21 15:23	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 11 Nov-21 15:22	<b>MD5 Hash:</b> 60D03B39C1A683F842A843697DC95FFF	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 15-0142-5550	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 16:00	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 26 Oct-21 16:40	<b>Species:</b> Strongylocentrotus purpuratus	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 40m	<b>Taxon:</b> Echinoidea	<b>Source:</b> Ventura Dive <b>Age:</b>
<b>Sample ID:</b> 11-9277-7508	<b>Code:</b> URC102621	<b>Project:</b>
<b>Sample Date:</b> 26 Oct-21 16:00	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	18	32	24	---	0.04118	4.44%

**Dunnett Multiple Comparison Test**

Control	vs	Conc-µg/L	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		18	-1.72	2.356	0.072	6	CDF	0.9963	Non-Significant Effect
		32*	7.652	2.356	0.072	6	CDF	<1.0E-05	Significant Effect
		56*	25.48	2.356	0.072	6	CDF	<1.0E-05	Significant Effect
		100*	35.29	2.356	0.072	6	CDF	<1.0E-05	Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.9275	0.7	>>	Yes	Passes Criteria
PMSD	0.0444	<<	0.25	No	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.98206	0.995514	4	533.3	<1.0E-05	Significant Effect
Error	0.0280012	0.0018668	15			
Total	4.01006		19			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	3.877	13.28	0.4229	Equal Variances
	Levene Equality of Variance Test	2.507	4.893	0.0861	Equal Variances
	Mod Levene Equality of Variance Test	2.04	4.893	0.1402	Equal Variances
Distribution	Anderson-Darling A2 Test	0.6491	3.878	0.0907	Normal Distribution
	D'Agostino Kurtosis Test	0.2084	2.576	0.8349	Normal Distribution
	D'Agostino Skewness Test	0.2395	2.576	0.8107	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.1008	9.21	0.9508	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1931	0.2235	0.0489	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9424	0.866	0.2661	Normal Distribution

**Fertilization Rate Summary**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.9275	0.9075	0.9475	0.9300	0.9100	0.9400	0.0063	1.36%	0.00%
18		4	0.9500	0.9089	0.9911	0.9500	0.9200	0.9800	0.0129	2.72%	-2.43%
32		4	0.7650	0.7250	0.8050	0.7700	0.7300	0.7900	0.0126	3.29%	17.52%
56		4	0.2475	0.2077	0.2873	0.2600	0.2100	0.2600	0.0125	10.10%	73.32%
100		4	0.0500	0.0110	0.0890	0.0450	0.0300	0.0800	0.0123	48.99%	94.61%
180		4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

CETIS Analytical Report

Report Date: 11 Nov-21 15:23 (p 2 of 2)  
 Test Code/ID: URC102621 / 11-3453-2991

Purple Sea Urchin Sperm Cell Fertilization Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 11-1827-6916      Endpoint: Fertilization Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 11 Nov-21 15:23      Analysis: Parametric-Control vs Treatments      Status Level: 1  
 Edit Date: 11 Nov-21 15:22      MD5 Hash: 60D03B39C1A683F842A843697DC95FFF      Editor ID: 000-189-126-0

Angular (Corrected) Transformed Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.2990	1.2610	1.3370	1.3030	1.2660	1.3230	0.0119	1.84%	0.00%
18		4	1.3510	1.2520	1.4510	1.3460	1.2840	1.4290	0.0312	4.61%	-4.05%
32		4	1.0650	1.0180	1.1120	1.0710	1.0240	1.0950	0.0147	2.76%	18.00%
56		4	0.5203	0.4733	0.5673	0.5351	0.4760	0.5351	0.0148	5.67%	59.94%
100		4	0.2206	0.1314	0.3098	0.2108	0.1741	0.2868	0.0280	25.41%	83.02%
180		4	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0000	0.00%	96.15%

Fertilization Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9300	0.9400	0.9300	0.9100
18		0.9600	0.9800	0.9400	0.9200
32		0.7700	0.7900	0.7300	0.7700
56		0.2600	0.2600	0.2600	0.2100
100		0.0300	0.0800	0.0600	0.0300
180		0.0000	0.0000	0.0000	0.0000

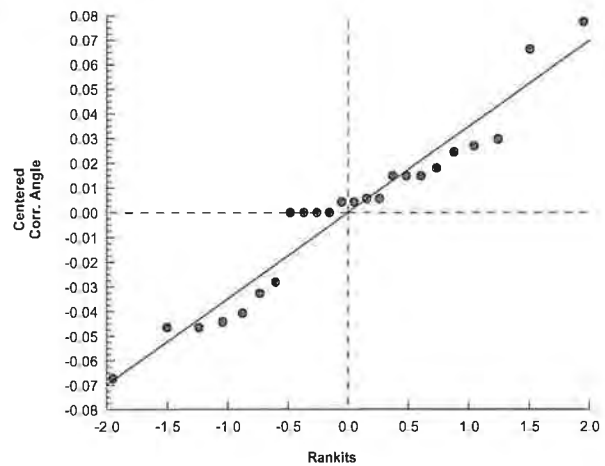
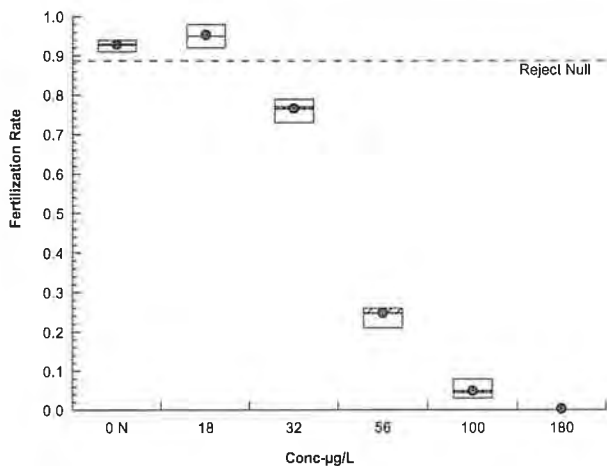
Angular (Corrected) Transformed Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.3030	1.3230	1.3030	1.2660
18		1.3690	1.4290	1.3230	1.2840
32		1.0710	1.0950	1.0240	1.0710
56		0.5351	0.5351	0.5351	0.4760
100		0.1741	0.2868	0.2475	0.1741
180		0.0500	0.0500	0.0500	0.0500

Fertilization Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	93/100	94/100	93/100	91/100
18		96/100	98/100	94/100	92/100
32		77/100	79/100	73/100	77/100
56		26/100	26/100	26/100	21/100
100		3/100	8/100	6/100	3/100
180		0/100	0/100	0/100	0/100

Graphics



**CETIS Analytical Report**

Report Date: 11 Nov-21 15:23 (p 1 of 2)

Test Code/ID: URC102621 / 11-3453-2991

Purple Sea Urchin Sperm Cell Fertilization Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 05-6827-1771	Endpoint: Fertilization Rate	CETIS Version: CETISv1.9.7			
Analyzed: 11 Nov-21 15:23	Analysis: Linear Interpolation (ICPIN)	Status Level: 1			
Edit Date: 11 Nov-21 15:22	MD5 Hash: 60D03B39C1A683F842A843697DC95FFF	Editor ID: 000-189-126-0			
Batch ID: 15-0142-5550	Test Type: Fertilization	Analyst:			
Start Date: 26 Oct-21 16:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater			
Ending Date: 26 Oct-21 16:40	Species: Strongylocentrotus purpuratus	Brine: Not Applicable			
Test Length: 40m	Taxon: Echinoidea	Source: Ventura Dive	Age:		
Sample ID: 11-9277-7508	Code: URC102621	Project:			
Sample Date: 26 Oct-21 16:00	Material: Copper chloride	Source: Reference Toxicant			
Receipt Date:	CAS (PC):	Station: REF TOX			
Sample Age: ---	Client: Internal Lab				

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.9275	0.7	>>	Yes	Passes Criteria

Point Estimates			
Level	µg/L	95% LCL	95% UCL
EC10	25.56	24.15	27.07
EC15	29.35	27.3	31.6
EC20	32.65	30.69	34.04
EC25	34.83	33.33	36.12
EC40	41.36	40.05	42.4
EC50	45.71	44.52	46.75

Fertilization Rate Summary			Calculated Variate(A/B)						Isotonic Variate		
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	0.9275	0.9300	0.9100	0.9400	1.36%	0.00%	371/400	0.9388	0.00%
18		4	0.9500	0.9500	0.9200	0.9800	2.72%	-2.43%	380/400	0.9388	0.00%
32		4	0.7650	0.7700	0.7300	0.7900	3.29%	17.52%	306/400	0.7650	18.51%
56		4	0.2475	0.2600	0.2100	0.2600	10.10%	73.32%	99/400	0.2475	73.64%
100		4	0.0500	0.0450	0.0300	0.0800	48.99%	94.61%	20/400	0.0500	94.67%
180		4	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/400	0.0000	100.00%

Fertilization Rate Detail					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9300	0.9400	0.9300	0.9100
18		0.9600	0.9800	0.9400	0.9200
32		0.7700	0.7900	0.7300	0.7700
56		0.2600	0.2600	0.2600	0.2100
100		0.0300	0.0800	0.0600	0.0300
180		0.0000	0.0000	0.0000	0.0000

Fertilization Rate Binomials					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	93/100	94/100	93/100	91/100
18		96/100	98/100	94/100	92/100
32		77/100	79/100	73/100	77/100
56		26/100	26/100	26/100	21/100
100		3/100	8/100	6/100	3/100
180		0/100	0/100	0/100	0/100

# CETIS Analytical Report

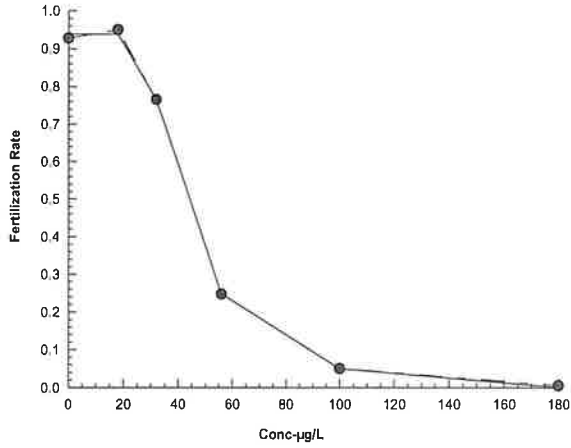
Report Date: 11 Nov-21 15:23 (p 2 of 2)  
Test Code/ID: URC102621 / 11-3453-2991

## Purple Sea Urchin Sperm Cell Fertilization Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 05-6827-1771	Endpoint: Fertilization Rate	CETIS Version: CETISv1.9.7
Analyzed: 11 Nov-21 15:23	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 11 Nov-21 15:22	MD5 Hash: 60D03B39C1A683F842A843697DC95FFF	Editor ID: 000-189-126-0

### Graphics





# CETIS Measurement Report

Report Date: 11 Nov-21 15:23 (p 1 of 3)

Test Code/ID: URC102621 / 11-3453-2991

## Purple Sea Urchin Sperm Cell Fertilization Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 15-0142-5550	<b>Test Type:</b> Fertilization	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 16:00	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 26 Oct-21 16:40	<b>Species:</b> Strongylocentrotus purpuratus	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 40m	<b>Taxon:</b> Echinoidea	<b>Source:</b> Ventura Dive <b>Age:</b>
<b>Sample ID:</b> 11-9277-7508	<b>Code:</b> URC102621	<b>Project:</b>
<b>Sample Date:</b> 26 Oct-21 16:00	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

### Parameter Acceptability Criteria

Parameter	TAC Limits				Overlap	Decision
	Min	Max	Lower	Upper		
Salinity	34	34	32	36	Yes	Passes Criteria
Temperature	15.7	15.7	11	13	Yes	Above Criteria

### Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.2	7.188	7.212	7.2	7.2	0	0	0.00%	0
18		2	7.15	5.244	9.056	7	7.3	0.1061	0.2121	2.97%	0
32		2	7.2	7.188	7.212	7.2	7.2	0	0	0.00%	0
56		2	7.2	7.188	7.212	7.2	7.2	0	0	0.00%	0
100		2	7.1	7.086	7.114	7.1	7.1	0	0	0.00%	0
180		2	7.1	7.086	7.114	7.1	7.1	0	0	0.00%	0
Overall		12	7.158	7.108	7.209	7	7.3	0.02289	0.0793	1.11%	0 (0%)

### pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
18		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
32		2	8	8	8	8	8	0	0	0.00%	0
56		2	8	8	8	8	8	0	0	0.00%	0
100		2	8	8	8	8	8	0	0	0.00%	0
180		2	8	8	8	8	8	0	0	0.00%	0
Overall		12	7.967	7.935	7.998	7.9	8	0.01421	0.04924	0.62%	0 (0%)

### Salinity-ppt

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.00%	0
18		2	34	34	34	34	34	0	0	0.00%	0
32		2	34	34	34	34	34	0	0	0.00%	0
56		2	34	34	34	34	34	0	0	0.00%	0
100		2	34	34	34	34	34	0	0	0.00%	0
180		2	34	34	34	34	34	0	0	0.00%	0
Overall		12	34	34	34	34	34	0	0	0.00%	0 (0%)

### Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
18		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
32		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
56		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
100		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
180		2	15.7	15.68	15.72	15.7	15.7	0	0	0.00%	0
Overall		12	15.7	15.7	15.7	15.7	15.7	0	0	0.00%	0 (0%)



**CETIS Measurement Report**

Report Date: 11 Nov-21 15:23 (p 2 of 3)  
 Test Code/ID: URC102621 / 11-3453-2991

**Purple Sea Urchin Sperm Cell Fertilization Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.2					
18				7.3					
32				7.2					
56				7.2					
100				7.1					
180				7.1					
0	N	2		7.2					
18				7					
32				7.2					
56				7.2					
100				7.1					
180				7.1					

**pH-Units**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.9					
18				7.9					
32				8					
56				8					
100				8					
180				8					
0	N	2		7.9					
18				7.9					
32				8					
56				8					
100				8					
180				8					

**Salinity-ppt**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		34					
18				34					
32				34					
56				34					
100				34					
180				34					
0	N	2		34					
18				34					
32				34					
56				34					
100				34					
180				34					

**CETIS Measurement Report**

Report Date: 11 Nov-21 15:23 (p 3 of 3)  
Test Code/ID: URC102621 / 11-3453-2991

**Purple Sea Urchin Sperm Cell Fertilization Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		15.7					
18				15.7					
32				15.7					
56				15.7					
100				15.7					
180				15.7					
0	N	2		15.7					
18				15.7					
32				15.7					
56				15.7					
100				15.7					
180				15.7					

**CHRONIC TOPSMELT SURVIVAL AND GROWTH BIOASSAY**

DATE: 26 October - 2021

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 180.00 ug/l

EC25 = 166.70 ug/l

EC50 = 221.20 ug/l

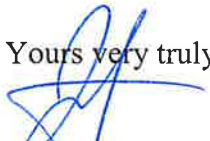
ENDPOINT: GROWTH

NOEC = 100.00 ug/l

IC25 = 136.00 ug/l

IC50 = 172.70 ug/l

Yours very truly,



Scott Johnson  
Laboratory Director

\*25ppt

**CETIS Summary Report**

Report Date: 15 Nov-21 12:29 (p 1 of 2)  
 Test Code/ID: TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 00-1515-9415	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:15	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:20	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-6813-9310	<b>Code:</b> TOPS102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 13:15	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	S
15-8083-8163	7d Survival Rate	Steel Many-One Rank Sum Test	180	320	240	17.0%	1
08-3001-4194	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test	✓ 100	180	134.2	15.4%	1

**Point Estimate Summary**

Analysis ID	Endpoint	Point Estimate Method	✓ Level	µg/L	95% LCL	95% UCL	S
00-2935-7520	7d Survival Rate	Linear Interpolation (ICPIN)	EC10	118.7	77.47	162.7	1
			EC15	134.7	93.17	198.8	
			EC20	150.7	111.8	205.9	
			EC25	166.7	122.2	210.3	
			EC40	201.4	152.5	230.2	
18-0144-8912	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	114	104.8	122.8	1
			✓ IC15	121.3	110.9	134	
			✓ IC20	128.7	116.3	145.2	
			✓ IC25	136	120.9	158	
			✓ IC40	158.1	136.1	194.5	
✓ IC50	172.7	146.4	221.6				

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
00-2935-7520	7d Survival Rate	Control Resp	0.92	0.8	>>	Yes	Passes Criteria	
15-8083-8163	7d Survival Rate	Control Resp	0.92	0.8	>>	Yes	Passes Criteria	
08-3001-4194	Mean Dry Biomass-mg	Control Resp	1.405	0.85	>>	Yes	Passes Criteria	
18-0144-8912	Mean Dry Biomass-mg	Control Resp	1.405	0.85	>>	Yes	Passes Criteria	
15-8083-8163	7d Survival Rate	PMSD	0.1696	<<	0.25	No	Passes Criteria	

**7d Survival Rate Summary**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9200	0.7840	1.0560	0.8000	1.0000	0.0490	0.1095	11.91%	0.00%
56		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	---	-8.70%
100		5	0.9200	0.7840	1.0560	0.8000	1.0000	0.0490	0.1095	11.91%	0.00%
180		5	0.6800	0.4579	0.9021	0.4000	0.8000	0.0800	0.1789	26.31%	26.09%
320		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
560		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

**Mean Dry Biomass-mg Summary**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	1.405	1.375	1.436	1.378	1.43	0.011	0.0246	1.75%	0.00%
56		5	1.446	1.386	1.506	1.416	1.532	0.02159	0.04828	3.34%	-2.93%
100		5	1.419	1.341	1.497	1.314	1.468	0.02801	0.06264	4.41%	-1.00%
180		5	0.6424	0.2749	1.01	0.278	0.9	0.1324	0.296	46.08%	54.28%
320		5	0	0	0	0	0	0	0	---	100.00%
560		5	0	0	0	0	0	0	0	---	100.00%

**CETIS Summary Report**

**Report Date:** 15 Nov-21 12:29 (p 2 of 2)  
**Test Code/ID:** TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail** MD5: D8B71F2A27BF1D955925BFDBFF3FE85B

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	0.8000	1.0000	1.0000	0.8000
56		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	0.8000	1.0000	1.0000	0.8000
180		0.8000	0.8000	0.4000	0.8000	0.6000
320		0.0000	0.0000	0.0000	0.0000	0.0000
560		0.0000	0.0000	0.0000	0.0000	0.0000

**Mean Dry Biomass-mg Detail** MD5: 083515B2CC037868AABD6E16B87D986C

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.43	1.378	1.424	1.414	1.38
56		1.424	1.426	1.434	1.532	1.416
100		1.468	1.314	1.41	1.454	1.45
180		0.874	0.792	0.368	0.9	0.278
320		0	0	0	0	0
560		0	0	0	0	0

**7d Survival Rate Binomials**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	4/5	5/5	5/5	4/5
56		5/5	5/5	5/5	5/5	5/5
100		5/5	4/5	5/5	5/5	4/5
180		4/5	4/5	2/5	4/5	3/5
320		0/5	0/5	0/5	0/5	0/5
560		0/5	0/5	0/5	0/5	0/5

# CETIS Analytical Report

Report Date: 15 Nov-21 12:29 (p 1 of 4)  
 Test Code/ID: TOPS102621 / 17-2646-6053

## Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 15-8083-8163	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:28	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:28	<b>MD5 Hash:</b> D8B71F2A27BF1D955925BFDBFF3FE85B	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 00-1515-9415	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:15	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:20	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-6813-9310	<b>Code:</b> TOPS102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 13:15	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	180	320	240	---	0.156	16.96%

## Steel Many-One Rank Sum Test

Control	vs	Conc-µg/L	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		56	32.5	17	1	8	CDF	0.9699	Non-Significant Effect
		100	27.5	17	2	8	CDF	0.7500	Non-Significant Effect
		180	18	17	1	8	CDF	0.0595	Non-Significant Effect

## Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.92	0.8	>>	Yes	Passes Criteria
PMSD	0.1696	<<	0.25	No	Passes Criteria

## ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.375283	0.125094	3	7.133	0.0029	Significant Effect
Error	0.2806	0.0175375	16			
Total	0.655882		19			

## ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
	Levene Equality of Variance Test	11.56	5.292	0.0003	Unequal Variances
	Mod Levene Equality of Variance Test	0.9735	5.953	0.4373	Equal Variances
Distribution	Anderson-Darling A2 Test	1.239	3.878	0.0029	Non-Normal Distribution
	D'Agostino Kurtosis Test	0.1648	2.576	0.8691	Normal Distribution
	D'Agostino Skewness Test	1.677	2.576	0.0935	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	2.841	9.21	0.2416	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2334	0.2235	0.0056	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.863	0.866	0.0089	Non-Normal Distribution

## 7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9200	0.7840	1.0000	1.0000	0.8000	1.0000	0.0490	11.91%	0.00%
56		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-8.70%
100		5	0.9200	0.7840	1.0000	1.0000	0.8000	1.0000	0.0490	11.91%	0.00%
180		5	0.6800	0.4579	0.9021	0.8000	0.4000	0.8000	0.0800	26.31%	26.09%
320		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
560		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-8083-8163      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 12:28      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 12:28      MD5 Hash: D8B71F2A27BF1D955925BFBDBFF3FE85B      Editor ID: 000-189-126-0

Angular (Corrected) Transformed Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.2500	1.0880	1.4120	1.3450	1.1070	1.3450	0.0583	10.43%	0.00%
56		5	1.3450	1.3450	1.3460	1.3450	1.3450	1.3450	0.0000	0.00%	-7.62%
100		5	1.2500	1.0880	1.4120	1.3450	1.1070	1.3450	0.0583	10.43%	0.00%
180		5	0.9784	0.7425	1.2140	1.1070	0.6847	1.1070	0.0850	19.43%	21.73%
320		5	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0.0000	0.00%	81.96%
560		5	0.2255	0.2255	0.2256	0.2255	0.2255	0.2255	0.0000	0.00%	81.96%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	0.8000	1.0000	1.0000	0.8000
56		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	0.8000	1.0000	1.0000	0.8000
180		0.8000	0.8000	0.4000	0.8000	0.6000
320		0.0000	0.0000	0.0000	0.0000	0.0000
560		0.0000	0.0000	0.0000	0.0000	0.0000

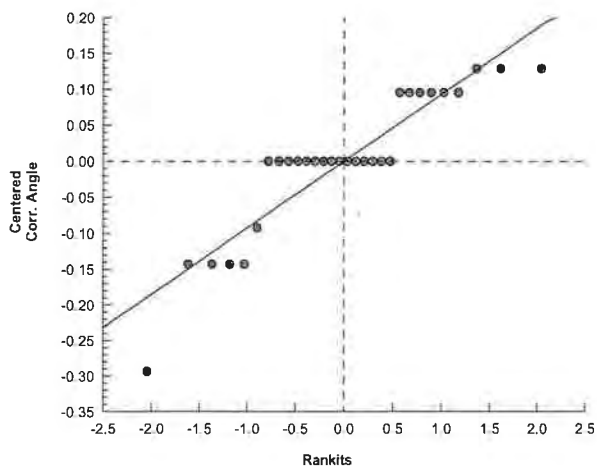
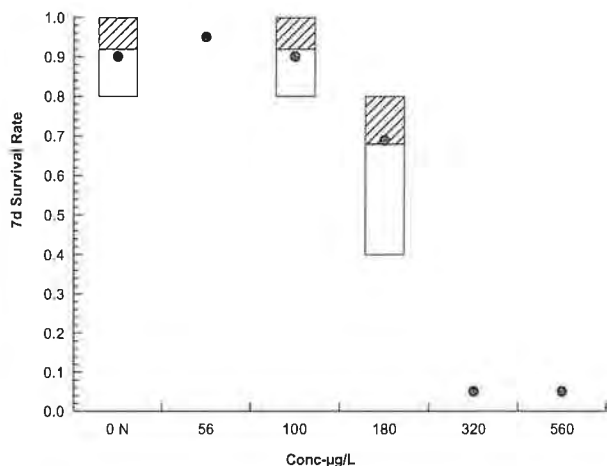
Angular (Corrected) Transformed Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.3450	1.1070	1.3450	1.3450	1.1070
56		1.3450	1.3450	1.3450	1.3450	1.3450
100		1.3450	1.1070	1.3450	1.3450	1.1070
180		1.1070	1.1070	0.6847	1.1070	0.8861
320		0.2255	0.2255	0.2255	0.2255	0.2255
560		0.2255	0.2255	0.2255	0.2255	0.2255

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	4/5	5/5	5/5	4/5
56		5/5	5/5	5/5	5/5	5/5
100		5/5	4/5	5/5	5/5	4/5
180		4/5	4/5	2/5	4/5	3/5
320		0/5	0/5	0/5	0/5	0/5
560		0/5	0/5	0/5	0/5	0/5

Graphics





**CETIS Analytical Report**

Report Date: 15 Nov-21 12:29 (p 3 of 4)  
 Test Code/ID: TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 08-3001-4194	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:28	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:28	<b>MD5 Hash:</b> 083515B2CC037868AABD6E16B87D986C	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 00-1515-9415	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:15	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:20	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-6813-9310	<b>Code:</b> TOPS102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 13:15	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	100	180	134.2	---	0.2165	15.41%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-µg/L	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		56	35.5	17	1	8	CDF	0.9955	Non-Significant Effect
		100	32	17	0	8	CDF	0.9606	Non-Significant Effect
		180*	15	17	0	8	CDF	0.0123	Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1.405	0.85	>>	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.29291	0.764305	3	32.36	<1.0E-05	Significant Effect
Error	0.377896	0.0236185	16			
Total	2.67081		19			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	23.42	11.34	3.3E-05	Unequal Variances
	Levene Equality of Variance Test	30.16	5.292	<1.0E-05	Unequal Variances
	Mod Levene Equality of Variance Test	4.53	5.953	0.0241	Equal Variances
Distribution	Anderson-Darling A2 Test	1.268	3.878	0.0024	Non-Normal Distribution
	D'Agostino Kurtosis Test	1.811	2.576	0.0702	Normal Distribution
	D'Agostino Skewness Test	1.514	2.576	0.1301	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	5.57	9.21	0.0617	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2647	0.2235	0.0007	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8827	0.866	0.0198	Normal Distribution

**Mean Dry Biomass-mg Summary**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.405	1.375	1.436	1.414	1.378	1.43	0.011	1.75%	0.00%
56		5	1.446	1.386	1.506	1.426	1.416	1.532	0.02159	3.34%	-2.93%
100		5	1.419	1.341	1.497	1.45	1.314	1.468	0.02801	4.41%	-1.00%
180		5	0.6424	0.2749	1.01	0.792	0.278	0.9	0.1324	46.08%	54.28%
320		5	0	0	0	0	0	0	---	---	100.00%
560		5	0	0	0	0	0	0	---	---	100.00%

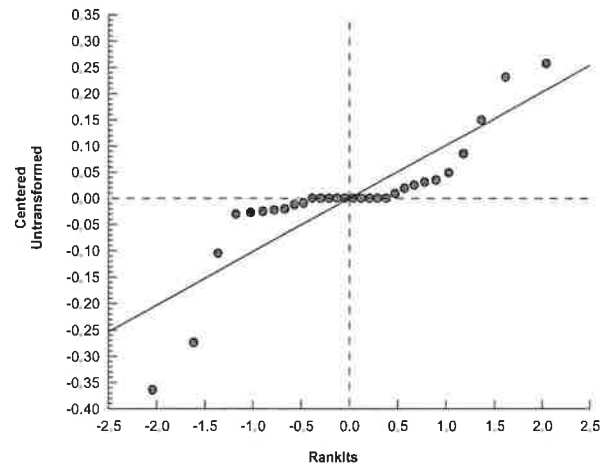
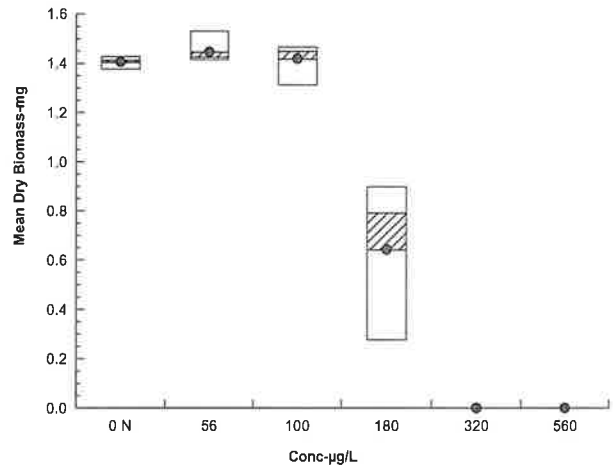
Pacific Topsmelt 7-d Survival and Growth Test Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-3001-4194      Endpoint: Mean Dry Biomass-mg      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 12:28      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 12:28      MD5 Hash: 083515B2CC037868AABD6E16B87D986C      Editor ID: 000-189-126-0

Mean Dry Biomass-mg Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.43	1.378	1.424	1.414	1.38
56		1.424	1.426	1.434	1.532	1.416
100		1.468	1.314	1.41	1.454	1.45
180		0.874	0.792	0.368	0.9	0.278
320		0	0	0	0	0
560		0	0	0	0	0

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 12:29 (p 1 of 4)  
 Test Code/ID: TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 00-2935-7520	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:29	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:28	<b>MD5 Hash:</b> D8B71F2A27BF1D955925BFDBFF3FE85B	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 00-1515-9415	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:15	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:20	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-6813-9310	<b>Code:</b> TOPS102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 13:15	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.92	0.8	>>	Yes	Passes Criteria

**Point Estimates**

Level	µg/L	95% LCL	95% UCL
EC10	118.7	77.47	162.7
EC15	134.7	93.17	198.8
EC20	150.7	111.8	205.9
EC25	166.7	122.2	210.3
EC40	201.4	152.5	230.2
EC50	221.2	175.6	245.2

**7d Survival Rate Summary**

Conc-µg/L	Code	Count	Calculated Variate(A/B)						Isotonic Variate		
			Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	5	0.9200	1.0000	0.8000	1.0000	11.91%	0.00%	23/25	0.9600	0.00%
56		5	1.0000	1.0000	1.0000	1.0000	0.00%	-8.70%	25/25	0.9600	0.00%
100		5	0.9200	1.0000	0.8000	1.0000	11.91%	0.00%	23/25	0.9200	4.17%
180		5	0.6800	0.8000	0.4000	0.8000	26.31%	26.09%	17/25	0.6800	29.17%
320		5	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/25	0.0000	100.00%
560		5	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/25	0.0000	100.00%

**7d Survival Rate Detail**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	0.8000	1.0000	1.0000	0.8000
56		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	0.8000	1.0000	1.0000	0.8000
180		0.8000	0.8000	0.4000	0.8000	0.6000
320		0.0000	0.0000	0.0000	0.0000	0.0000
560		0.0000	0.0000	0.0000	0.0000	0.0000

**7d Survival Rate Binomials**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	5/5	4/5	5/5	5/5	4/5
56		5/5	5/5	5/5	5/5	5/5
100		5/5	4/5	5/5	5/5	4/5
180		4/5	4/5	2/5	4/5	3/5
320		0/5	0/5	0/5	0/5	0/5
560		0/5	0/5	0/5	0/5	0/5

# CETIS Analytical Report

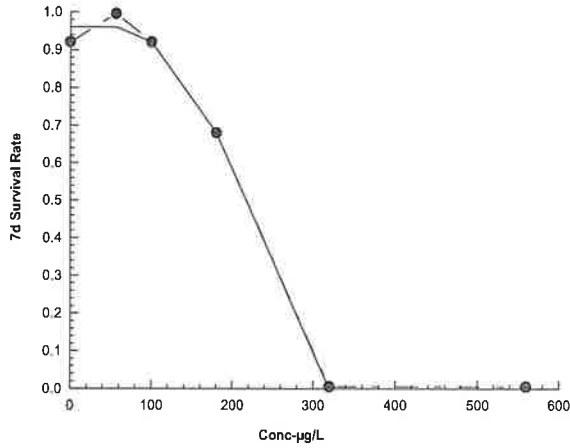
Report Date: 15 Nov-21 12:29 (p 2 of 4)  
Test Code/ID: TOPS102621 / 17-2646-6053

## Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 00-2935-7520	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:29	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:28	<b>MD5 Hash:</b> D8B71F2A27BF1D955925BFDBFF3FE85B	<b>Editor ID:</b> 000-189-126-0

### Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 12:29 (p 3 of 4)  
 Test Code/ID: TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 18-0144-8912	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:29	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:28	<b>MD5 Hash:</b> 083515B2CC037868AABD6E16B87D986C	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 00-1515-9415	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:15	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:20	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-6813-9310	<b>Code:</b> TOPS102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 13:15	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1683511	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1.405	0.85	>>	Yes	Passes Criteria

**Point Estimates**

Level	µg/L	95% LCL	95% UCL
IC10	114	104.8	122.8
IC15	121.3	110.9	134
IC20	128.7	116.3	145.2
IC25	136	120.9	158
IC40	158.1	136.1	194.5
IC50	172.7	146.4	221.6

**Mean Dry Biomass-mg Summary**

Conc-µg/L	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	5	1.405	1.414	1.378	1.43	1.75%	0.00%	1.426	0.00%
56		5	1.446	1.426	1.416	1.532	3.34%	-2.93%	1.426	0.00%
100		5	1.419	1.45	1.314	1.468	4.41%	-1.00%	1.419	0.46%
180		5	0.6424	0.792	0.278	0.9	46.08%	54.28%	0.6424	54.94%
320		5	0	0	0	0	---	100.00%	0	100.00%
560		5	0	0	0	0	---	100.00%	0	100.00%

**Mean Dry Biomass-mg Detail**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.43	1.378	1.424	1.414	1.38
56		1.424	1.426	1.434	1.532	1.416
100		1.468	1.314	1.41	1.454	1.45
180		0.874	0.792	0.368	0.9	0.278
320		0	0	0	0	0
560		0	0	0	0	0

CETIS Analytical Report

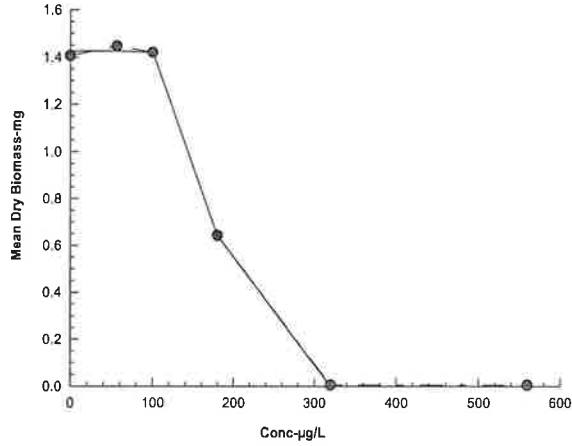
Report Date: 15 Nov-21 12:29 (p 4 of 4)  
Test Code/ID: TOPS102621 / 17-2646-6053

Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 18-0144-8912	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.7
Analyzed: 15 Nov-21 12:29	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 15 Nov-21 12:28	MD5 Hash: 083515B2CC037868AABD6E16B87D986C	Editor ID: 000-189-126-0

Graphics



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# CETIS Measurement Report

Report Date: 15 Nov-21 12:29 (p 1 of 5)  
 Test Code/ID: TOPS102621 / 17-2646-6053

## Pacific Topsmelt 7-d Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 00-1515-9415	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 13:15	<b>Protocol:</b> EPA/600/R-95/136 (1995)	<b>Diluent:</b> Laboratory Seawater
<b>Ending Date:</b> 02 Nov-21 12:20	<b>Species:</b> Atherinops affinis	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> 9d
<b>Sample ID:</b> 11-6813-9310	<b>Code:</b> TOPS102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 13:15	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> Internal Lab	

### Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.313	7.23	7.395	7.2	7.5	0.01239	0.0991	1.36%	0
56		8	7.225	7.109	7.341	7	7.4	0.01736	0.1389	1.92%	0
100		8	7.212	7.083	7.342	7	7.4	0.01941	0.1553	2.15%	0
180		8	7.2	7.074	7.326	7	7.4	0.0189	0.1512	2.10%	0
320		7	7.243	7.125	7.361	7.1	7.4	0.01818	0.1272	1.76%	0
560		2	7	7	7	7	7	0	0	0.00%	0
Overall		41	7.227	7.182	7.271	7	7.5	0.02209	0.1415	1.96%	0 (0%)

### pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.675	7.636	7.714	7.6	7.7	0.005786	0.04629	0.60%	0
56		8	7.65	7.587	7.713	7.5	7.7	0.009449	0.07559	0.99%	0
100		8	7.637	7.549	7.726	7.4	7.7	0.01326	0.1061	1.39%	0
180		8	7.587	7.483	7.692	7.4	7.7	0.01558	0.1246	1.64%	0
320		7	7.614	7.515	7.713	7.4	7.7	0.01527	0.1069	1.40%	0
560		2	7.65	7.015	8.285	7.6	7.7	0.03535	0.07071	0.92%	0
Overall		41	7.634	7.605	7.664	7.4	7.7	0.01465	0.09383	1.23%	0 (0%)

### Salinity-ppt

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	25	25	25	25	25	0	0	0.00%	0
56		8	25	25	25	25	25	0	0	0.00%	0
100		8	25	25	25	25	25	0	0	0.00%	0
180		8	25	25	25	25	25	0	0	0.00%	0
320		8	25	25	25	25	25	0	0	0.00%	0
560		2	25	25	25	25	25	0	0	0.00%	0
Overall		42	25	25	25	25	25	0	0	0.00%	0 (0%)

### Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	21	21	21	21	21	0	0	0.00%	0
56		8	21	21	21	21	21	0	0	0.00%	0
100		8	21	21	21	21	21	0	0	0.00%	0
180		8	21	21	21	21	21	0	0	0.00%	0
320		8	21	21	21	21	21	0	0	0.00%	0
560		2	21	21	21	21	21	0	0	0.00%	0
Overall		42	21	21	21	21	21	0	0	0.00%	0 (0%)



**CETIS Measurement Report**

Report Date: 15 Nov-21 12:29 (p 2 of 5)  
 Test Code/ID: TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Dissolved Oxygen-mg/L**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.3					
56				7.2					
100				7.2					
180				7.1					
320				7.1					
560				7					
0	N	2		7.3					
56				7.2					
100				7.2					
180				7.3					
320				7.3					
560				7					
0	N	3		7.3					
56				7.4					
100				7.4					
180				7.4					
320				7.4					
0	N	4		7.2					
56				7					
100				7					
180				7.1					
320				7.2					
0	N	5		7.5					
56				7.4					
100				7.4					
180				7.4					
320				7.4					
0	N	6		7.4					
56				7.3					
100				7.3					
180				7.2					
320				7.2					
0	N	7		7.3					
56				7.2					
100				7.2					
180				7.1					
320				7.1					
0	N	8		7.2					
56				7.1					
100				7					
180				7					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:29 (p 3 of 5)  
 Test Code/ID: TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.7					
56				7.7					
100				7.7					
180				7.6					
320				7.6					
560				7.6					
0	N	2		7.7					
56				7.7					
100				7.7					
180				7.7					
320				7.7					
560				7.7					
0	N	3		7.7					
56				7.7					
100				7.7					
180				7.7					
320				7.7					
0	N	4		7.6					
56				7.6					
100				7.6					
180				7.6					
320				7.6					
0	N	5		7.7					
56				7.7					
100				7.7					
180				7.6					
320				7.6					
0	N	6		7.7					
56				7.7					
100				7.7					
180				7.7					
320				7.7					
0	N	7		7.7					
56				7.6					
100				7.6					
180				7.4					
320				7.4					
0	N	8		7.6					
56				7.5					
100				7.4					
180				7.4					

**CETIS Measurement Report**

**Report Date:** 15 Nov-21 12:29 (p 4 of 5)

**Test Code/ID:** TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Salinity-ppt**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		25					
56				25					
100				25					
180				25					
320				25					
560				25					
0	N	2		25					
56				25					
100				25					
180				25					
320				25					
560				25					
0	N	3		25					
56				25					
100				25					
180				25					
320				25					
0	N	4		25					
56				25					
100				25					
180				25					
320				25					
0	N	5		25					
56				25					
100				25					
180				25					
320				25					
0	N	6		25					
56				25					
100				25					
180				25					
320				25					
0	N	7		25					
56				25					
100				25					
180				25					
320				25					
0	N	8		25					
56				25					
100				25					
180				25					
320				25					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:29 (p 5 of 5)  
 Test Code/ID: TOPS102621 / 17-2646-6053

**Pacific Topsmelt 7-d Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		21					
56			21						
100			21						
180			21						
320			21						
560			21						
0	N	2		21					
56			21						
100			21						
180			21						
320			21						
560			21						
0	N	3		21					
56			21						
100			21						
180			21						
320			21						
560			21						
0	N	4		21					
56			21						
100			21						
180			21						
320			21						
560			21						
0	N	5		21					
56			21						
100			21						
180			21						
320			21						
560			21						
0	N	6		21					
56			21						
100			21						
180			21						
320			21						
560			21						
0	N	7		21					
56			21						
100			21						
180			21						
320			21						
560			21						
0	N	8		21					
56			21						
100			21						
180			21						
320			21						
560			21						

**CHRONIC FATHEAD MINNOW SURVIVAL AND GROWTH BIOASSAY**

DATE: 26 October 2021

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 38.00 ug/l

EC25 = 61.64 ug/l

EC50 = 110.30 ug/l

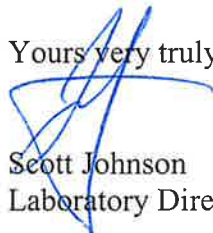
ENDPOINT: GROWTH

NOEC = 10.00 ug/l

IC25 = 31.64 ug/l

IC50 = 63.26 ug/l

Yours very truly,



Scott Johnson  
Laboratory Director

# CETIS Summary Report

Report Date: 15 Nov-21 12:39 (p 1 of 2)  
 Test Code/ID: FML102621 / 02-5685-1639

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Batch ID:</b> 02-3240-9253	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 15:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 15-3630-3073	<b>Code:</b> FML102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 15:40	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> ABC Labs	

## Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	S
03-7142-3842	7d Survival Rate	Dunnett Multiple Comparison Test	38	75	53.39	14.3%	1
02-4606-2737	Mean Dry Biomass-mg	Steel Many-One Rank Sum Test	✓ 10	19	13.78	15.0%	1

## Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	µg/L	95% LCL	95% UCL	S
15-0669-1917	7d Survival Rate	Linear Interpolation (ICPIN)	EC10	43.76	22.77	55.86	1
			EC15	49.72	34.56	65.6	
			EC20	55.68	40.14	79.12	
			EC25	61.64	45.03	91.77	
			EC40	84.71	50.52	130.5	
			EC50	110.3	45.75	162.7	
10-5451-2610	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	✓ IC10	20.75	12.18	25.73	1
			✓ IC15	24.38	15.22	29.13	
			✓ IC20	28.01	21.53	32.56	
			✓ IC25	31.64	26.82	37.02	
			✓ IC40	47.72	36.23	66.56	
			✓ IC50	63.26	47.16	99.32	

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
03-7142-3842	7d Survival Rate	Control Resp	0.9667	0.8	>>	Yes	Passes Criteria	
15-0669-1917	7d Survival Rate	Control Resp	0.9667	0.8	>>	Yes	Passes Criteria	
02-4606-2737	Mean Dry Biomass-mg	Control Resp	0.3467	0.25	>>	Yes	Passes Criteria	
10-5451-2610	Mean Dry Biomass-mg	Control Resp	0.3467	0.25	>>	Yes	Passes Criteria	
02-4606-2737	Mean Dry Biomass-mg	PMSD	0.1499	0.12	0.3	Yes	Passes Criteria	

## 7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.9667	0.9054	1.0280	0.9333	1.0000	0.0193	0.0385	3.98%	0.00%
10		4	0.9667	0.9054	1.0280	0.9333	1.0000	0.0193	0.0385	3.98%	0.00%
19		4	0.9500	0.8484	1.0520	0.8667	1.0000	0.0319	0.0638	6.72%	1.72%
38		4	0.9167	0.7832	1.0500	0.8000	1.0000	0.0419	0.0839	9.15%	5.17%
75		4	0.6167	0.2999	0.9334	0.3333	0.8000	0.0995	0.1991	32.28%	36.21%
150		4	0.3333	0.1042	0.5625	0.2000	0.5333	0.0720	0.1440	43.20%	65.52%

## Mean Dry Biomass-mg Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	4	0.3467	0.3423	0.3511	0.3433	0.35	0.001388	0.002776	0.80%	0.00%
10		4	0.3417	0.3331	0.3503	0.3367	0.3467	0.002701	0.005402	1.58%	1.44%
19		4	0.3203	0.2735	0.3672	0.278	0.3407	0.01471	0.02943	9.19%	7.60%
38		4	0.2297	0.1929	0.2665	0.206	0.2607	0.01156	0.02313	10.07%	33.75%
75		4	0.1472	0.06476	0.2296	0.08267	0.2093	0.02589	0.05179	35.19%	57.55%
150		4	0.06033	-0.0007	0.1214	0.01867	0.098	0.01918	0.03835	63.57%	82.60%

**CETIS Summary Report**

**Report Date:** 15 Nov-21 12:39 (p 2 of 2)  
**Test Code/ID:** FML102621 / 02-5685-1639

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**7d Survival Rate Detail**

MD5: 0DF6A663A531DA491F0EB29D2AD222B0

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9333	1.0000	0.9333	1.0000
10		0.9333	1.0000	0.9333	1.0000
19		0.9333	0.8667	1.0000	1.0000
38		0.9333	0.8000	0.9333	1.0000
75		0.3333	0.6667	0.6667	0.8000
150		0.2667	0.5333	0.2000	0.3333

**Mean Dry Biomass-mg Detail**

MD5: 4651F3821D6807F88FFB8DA6373F939D

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3433	0.346	0.3473	0.35
10		0.3467	0.3373	0.346	0.3367
19		0.3227	0.278	0.3407	0.34
38		0.2207	0.2313	0.2607	0.206
75		0.08267	0.1453	0.1513	0.2093
150		0.03733	0.098	0.01867	0.08733

**7d Survival Rate Binomials**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	14/15	15/15	14/15	15/15
10		14/15	15/15	14/15	15/15
19		14/15	13/15	15/15	15/15
38		14/15	12/15	14/15	15/15
75		5/15	10/15	10/15	12/15
150		4/15	8/15	3/15	5/15

*MSS*



**CETIS Analytical Report**

Report Date: 15 Nov-21 12:39 (p 1 of 4)  
 Test Code/ID: FML102621 / 02-5685-1639

**Fathead Minnow 7-d Larval Survival and Growth Test**

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 03-7142-3842	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:37	<b>Analysis:</b> Parametric-Control vs Treatments	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:37	<b>MD5 Hash:</b> 0DF6A663A531DA491F0EB29D2AD222B0	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 02-3240-9253	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 15:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 15-3630-3073	<b>Code:</b> FML102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 15:40	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> ABC Labs	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	38	75	53.39	---	0.138	14.27%

**Dunnett Multiple Comparison Test**

Control	vs	Conc-µg/L	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		10	0	2.407	0.231	6	CDF	0.8333	Non-Significant Effect
		19	0.2929	2.407	0.231	6	CDF	0.7330	Non-Significant Effect
		38	0.869	2.407	0.231	6	CDF	0.4807	Non-Significant Effect
		75*	4.859	2.407	0.231	6	CDF	0.0003	Significant Effect
		150*	7.961	2.407	0.231	6	CDF	2.7E-05	Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.9667	0.8	>>	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.04253	0.408506	5	22.1	<1.0E-05	Significant Effect
Error	0.332745	0.0184858	18			
Total	2.37527		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	3.996	15.09	0.5500	Equal Variances
	Levene Equality of Variance Test	0.6671	4.248	0.6533	Equal Variances
	Mod Levene Equality of Variance Test	0.2566	4.248	0.9309	Equal Variances
Distribution	Anderson-Darling A2 Test	0.4042	3.878	0.3590	Normal Distribution
	D'Agostino Kurtosis Test	0.5471	2.576	0.5843	Normal Distribution
	D'Agostino Skewness Test	0.9735	2.576	0.3303	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	1.247	9.21	0.5360	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1207	0.2056	0.4879	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9663	0.884	0.5763	Normal Distribution

**7d Survival Rate Summary**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.9667	0.9054	1.0000	0.9667	0.9333	1.0000	0.0192	3.98%	0.00%
10		4	0.9667	0.9054	1.0000	0.9667	0.9333	1.0000	0.0192	3.98%	0.00%
19		4	0.9500	0.8484	1.0000	0.9667	0.8667	1.0000	0.0319	6.72%	1.72%
38		4	0.9167	0.7832	1.0000	0.9333	0.8000	1.0000	0.0419	9.15%	5.17%
75		4	0.6167	0.2999	0.9334	0.6667	0.3333	0.8000	0.0995	32.28%	36.21%
150		4	0.3333	0.1042	0.5625	0.3000	0.2000	0.5333	0.0720	43.20%	65.52%

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID: 03-7142-3842      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
 Analyzed: 15 Nov-21 12:37      Analysis: Parametric-Control vs Treatments      Status Level: 1  
 Edit Date: 15 Nov-21 12:37      MD5 Hash: 0DF6A663A531DA491F0EB29D2AD222B0      Editor ID: 000-189-126-0

**Angular (Corrected) Transformed Summary**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	1.3750	1.2540	1.4960	1.3750	1.3100	1.4410	0.0380	5.53%	0.00%
10		4	1.3750	1.2540	1.4960	1.3750	1.3100	1.4410	0.0380	5.53%	0.00%
19		4	1.3470	1.1600	1.5350	1.3750	1.1970	1.4410	0.0589	8.75%	2.05%
38		4	1.2920	1.0720	1.5110	1.3100	1.1070	1.4410	0.0690	10.68%	6.07%
75		4	0.9083	0.5775	1.2390	0.9553	0.6155	1.1070	0.1040	22.89%	33.96%
150		4	0.6101	0.3678	0.8524	0.5791	0.4636	0.8188	0.0761	24.96%	55.64%

**7d Survival Rate Detail**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9333	1.0000	0.9333	1.0000
10		0.9333	1.0000	0.9333	1.0000
19		0.9333	0.8667	1.0000	1.0000
38		0.9333	0.8000	0.9333	1.0000
75		0.3333	0.6667	0.6667	0.8000
150		0.2667	0.5333	0.2000	0.3333

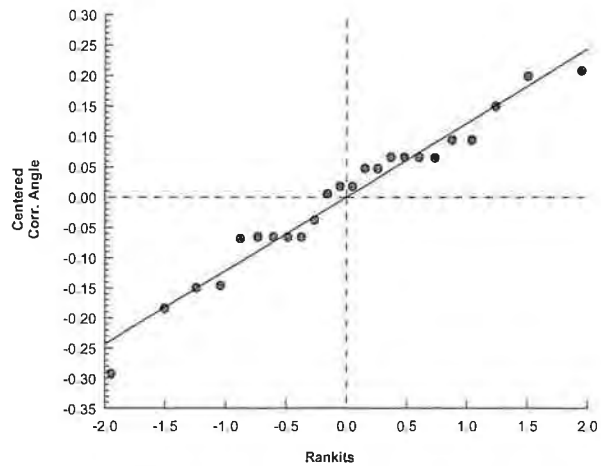
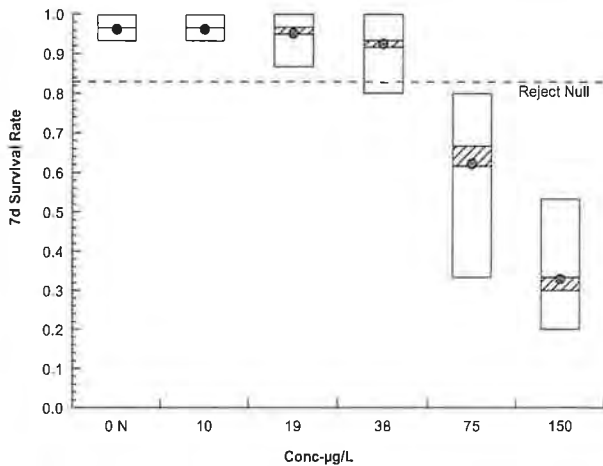
**Angular (Corrected) Transformed Detail**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.3100	1.4410	1.3100	1.4410
10		1.3100	1.4410	1.3100	1.4410
19		1.3100	1.1970	1.4410	1.4410
38		1.3100	1.1070	1.3100	1.4410
75		0.6155	0.9553	0.9553	1.1070
150		0.5426	0.8188	0.4636	0.6155

**7d Survival Rate Binomials**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	14/15	15/15	14/15	15/15
10		14/15	15/15	14/15	15/15
19		14/15	13/15	15/15	15/15
38		14/15	12/15	14/15	15/15
75		5/15	10/15	10/15	12/15
150		4/15	8/15	3/15	5/15

**Graphics**



**CETIS Analytical Report**

**Report Date:** 15 Nov-21 12:39 (p 3 of 4)  
**Test Code/ID:** FML102621 / 02-5685-1639

Fathead Minnow 7-d Larval Survival and Growth Test			Aquatic Bioassay & Consulting Labs, Inc.		
<b>Analysis ID:</b> 02-4606-2737	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7			
<b>Analyzed:</b> 15 Nov-21 12:37	<b>Analysis:</b> Nonparametric-Control vs Treatments	<b>Status Level:</b> 1			
<b>Edit Date:</b> 15 Nov-21 12:37	<b>MD5 Hash:</b> 4651F3821D6807F88FFB8DA6373F939D	<b>Editor ID:</b> 000-189-126-0			
<b>Batch ID:</b> 02-3240-9253	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>			
<b>Start Date:</b> 26 Oct-21 15:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water			
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable			
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24			
<b>Sample ID:</b> 15-3630-3073	<b>Code:</b> FML102621	<b>Project:</b> REF TOX			
<b>Sample Date:</b> 26 Oct-21 15:40	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant			
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX			
<b>Sample Age:</b> ---	<b>Client:</b> ABC Labs				

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Untransformed	C > T	10	19	13.78	---	0.05196	14.99%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-µg/L	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		10	13.5	10	1	6	CDF	0.2853	Non-Significant Effect
		19*	10	10	0	6	CDF	0.0417	Significant Effect
		38*	10	10	0	6	CDF	0.0417	Significant Effect
		75*	10	10	0	6	CDF	0.0417	Significant Effect
		150*	10	10	0	6	CDF	0.0417	Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3467	0.25	>>	Yes	Passes Criteria
PMSD	0.1499	0.12	0.3	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.276666	0.0553333	5	59.38	<1.0E-05	Significant Effect
Error	0.0167719	0.0009318	18			
Total	0.293438		23			

**ANOVA Assumptions Tests**

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	19.58	15.09	0.0015	Unequal Variances
	Levene Equality of Variance Test	2.428	4.248	0.0753	Equal Variances
	Mod Levene Equality of Variance Test	2.11	4.248	0.1112	Equal Variances
Distribution	Anderson-Darling A2 Test	0.7529	3.878	0.0498	Normal Distribution
	D'Agostino Kurtosis Test	1.259	2.576	0.2079	Normal Distribution
	D'Agostino Skewness Test	0.4506	2.576	0.6523	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	1.789	9.21	0.4088	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1766	0.2056	0.0513	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9517	0.884	0.2955	Normal Distribution

**Mean Dry Biomass-mg Summary**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	4	0.3467	0.3423	0.3511	0.3467	0.3433	0.35	0.001388	0.80%	0.00%
10		4	0.3417	0.3331	0.3503	0.3417	0.3367	0.3467	0.002701	1.58%	1.44%
19		4	0.3203	0.2735	0.3672	0.3313	0.278	0.3407	0.01471	9.19%	7.60%
38		4	0.2297	0.1929	0.2665	0.226	0.206	0.2607	0.01156	10.07%	33.75%
75		4	0.1472	0.06476	0.2296	0.1483	0.08267	0.2093	0.02589	35.19%	57.55%
150		4	0.06033	-0.0007	0.1214	0.06233	0.01867	0.098	0.01918	63.57%	82.60%



**CETIS Analytical Report**

**Report Date:** 15 Nov-21 12:39 (p 1 of 4)  
**Test Code/ID:** FML102621 / 02-5685-1639

Fathead Minnow 7-d Larval Survival and Growth Test				Aquatic Bioassay & Consulting Labs, Inc.			
<b>Analysis ID:</b> 15-0669-1917	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.7					
<b>Analyzed:</b> 15 Nov-21 12:38	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1					
<b>Edit Date:</b> 15 Nov-21 12:37	<b>MD5 Hash:</b> 0DF6A663A531DA491F0EB29D2AD222B0	<b>Editor ID:</b> 000-189-126-0					
<b>Batch ID:</b> 02-3240-9253	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>					
<b>Start Date:</b> 26 Oct-21 15:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water					
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable					
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> <24				
<b>Sample ID:</b> 15-3630-3073	<b>Code:</b> FML102621	<b>Project:</b> REF TOX					
<b>Sample Date:</b> 26 Oct-21 15:40	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant					
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX					
<b>Sample Age:</b> ---	<b>Client:</b> ABC Labs						

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.9667	0.8	>>	Yes	Passes Criteria

Point Estimates			
Level	µg/L	95% LCL	95% UCL
EC10	43.76	22.77	55.86
EC15	49.72	34.56	65.6
EC20	55.68	40.14	79.12
EC25	61.64	45.03	91.77
EC40	84.71	50.52	130.5
EC50	110.3	45.75	162.7

7d Survival Rate Summary			Calculated Variate(A/B)						Isotonic Variate		
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	0.9667	0.9667	0.9333	1.0000	3.98%	0.00%	58/60	0.9667	0.00%
10		4	0.9667	0.9667	0.9333	1.0000	3.98%	0.00%	58/60	0.9667	0.00%
19		4	0.9500	0.9667	0.8667	1.0000	6.72%	1.72%	57/60	0.9500	1.72%
38		4	0.9167	0.9333	0.8000	1.0000	9.15%	5.17%	55/60	0.9167	5.17%
75		4	0.6167	0.6667	0.3333	0.8000	32.28%	36.21%	37/60	0.6167	36.21%
150		4	0.3333	0.3000	0.2000	0.5333	43.20%	65.52%	20/60	0.3333	65.52%

7d Survival Rate Detail					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.9333	1.0000	0.9333	1.0000
10		0.9333	1.0000	0.9333	1.0000
19		0.9333	0.8667	1.0000	1.0000
38		0.9333	0.8000	0.9333	1.0000
75		0.3333	0.6667	0.6667	0.8000
150		0.2667	0.5333	0.2000	0.3333

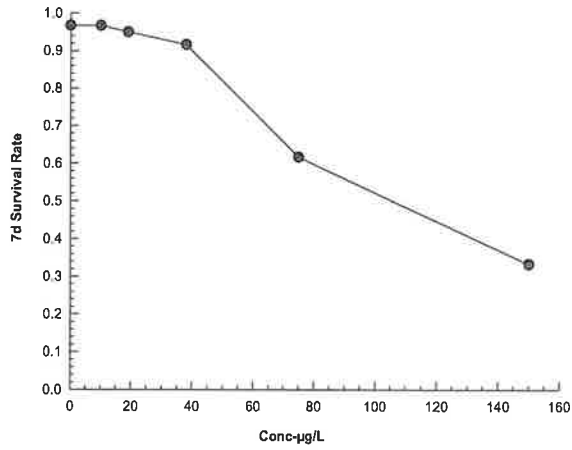
7d Survival Rate Binomials					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	14/15	15/15	14/15	15/15
10		14/15	15/15	14/15	15/15
19		14/15	13/15	15/15	15/15
38		14/15	12/15	14/15	15/15
75		5/15	10/15	10/15	12/15
150		4/15	8/15	3/15	5/15

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-0669-1917      Endpoint: 7d Survival Rate      CETIS Version: CETISv1.9.7  
Analyzed: 15 Nov-21 12:38      Analysis: Linear Interpolation (ICPIN)      Status Level: 1  
Edit Date: 15 Nov-21 12:37      MD5 Hash: 0DF6A663A531DA491F0EB29D2AD222B0      Editor ID: 000-189-126-0

Graphics



**CETIS Analytical Report**

Report Date: 15 Nov-21 12:39 (p 3 of 4)  
 Test Code/ID: FML102621 / 02-5685-1639

**Fathead Minnow 7-d Larval Survival and Growth Test** **Aquatic Bioassay & Consulting Labs, Inc.**

<b>Analysis ID:</b> 10-5451-2610	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:38	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:37	<b>MD5 Hash:</b> 4651F3821D6807F88FFB8DA6373F939D	<b>Editor ID:</b> 000-189-126-0
<b>Batch ID:</b> 02-3240-9253	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 15:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 15-3630-3073	<b>Code:</b> FML102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 15:40	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> ABC Labs	

**Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	500698	280	Yes	Two-Point Interpolation

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.3467	0.25	>>	Yes	Passes Criteria

**Point Estimates**

Level	µg/L	95% LCL	95% UCL
IC10	20.75	12.18	25.73
IC15	24.38	15.22	29.13
IC20	28.01	21.53	32.56
IC25	31.64	26.82	37.02
IC40	47.72	36.23	66.56
IC50	63.26	47.16	99.32

**Mean Dry Biomass-mg Summary**

Conc-µg/L	Code	Count	Calculated Variate						Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	4	0.3467	0.3467	0.3433	0.35	0.80%	0.00%	0.3467	0.00%
10		4	0.3417	0.3417	0.3367	0.3467	1.58%	1.44%	0.3417	1.44%
19		4	0.3203	0.3313	0.278	0.3407	9.19%	7.60%	0.3203	7.60%
38		4	0.2297	0.226	0.206	0.2607	10.07%	33.75%	0.2297	33.75%
75		4	0.1472	0.1483	0.08267	0.2093	35.19%	57.55%	0.1472	57.55%
150		4	0.06033	0.06233	0.01867	0.098	63.57%	82.60%	0.06033	82.60%

**Mean Dry Biomass-mg Detail**

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	0.3433	0.346	0.3473	0.35
10		0.3467	0.3373	0.346	0.3367
19		0.3227	0.278	0.3407	0.34
38		0.2207	0.2313	0.2607	0.206
75		0.08267	0.1453	0.1513	0.2093
150		0.03733	0.098	0.01867	0.08733

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 10-5451-2610	<b>Endpoint:</b> Mean Dry Biomass-mg	<b>CETIS Version:</b> CETISv1.9.7
<b>Analyzed:</b> 15 Nov-21 12:38	<b>Analysis:</b> Linear Interpolation (ICPIN)	<b>Status Level:</b> 1
<b>Edit Date:</b> 15 Nov-21 12:37	<b>MD5 Hash:</b> 4651F3821D6807F88FFB8DA6373F939D	<b>Editor ID:</b> 000-189-126-0

Graphics





**CETIS Measurement Report**

Report Date: 15 Nov-21 12:39 (p 1 of 8)

Test Code/ID: FML102621 / 02-5685-1639

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

<b>Batch ID:</b> 02-3240-9253	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 26 Oct-21 15:40	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 02 Nov-21 14:23	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 23h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatic Biosystems, CO <b>Age:</b> <24
<b>Sample ID:</b> 15-3630-3073	<b>Code:</b> FML102621	<b>Project:</b> REF TOX
<b>Sample Date:</b> 26 Oct-21 15:40	<b>Material:</b> Copper chloride	<b>Source:</b> Reference Toxicant
<b>Receipt Date:</b>	<b>CAS (PC):</b>	<b>Station:</b> REF TOX
<b>Sample Age:</b> ---	<b>Client:</b> ABC Labs	

**Alkalinity (CaCO3)-mg/L**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60.62	60.19	61.06	60	61	0.06469	0.5175	0.85%	0
150		8	60	60	60	60	60	0	0	0.00%	0
Overall		16	60.31	60.06	60.57	60	61	0.1197	0.4787	0.79%	0 (0%)

**Conductivity-µmhos**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	360.5	358	363	354	364	0.372	2.976	0.83%	0
10		8	360	358.6	361.4	358	363	0.2113	1.69	0.47%	0
19		8	358.5	357.2	359.8	357	361	0.189	1.512	0.42%	0
38		8	357.2	356	358.5	356	360	0.186	1.488	0.42%	0
75		8	354.1	352	356.3	352	359	0.3235	2.588	0.73%	0
150		8	352	349.6	354.4	350	358	0.3536	2.828	0.80%	0
Overall		48	357.1	356	358.2	350	364	0.5453	3.778	1.06%	0 (0%)

**Dissolved Oxygen-mg/L**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.6	7.452	7.748	7.4	7.9	0.02216	0.1773	2.33%	0
10		8	7.525	7.348	7.702	7.3	7.9	0.02652	0.2121	2.82%	0
19		8	7.525	7.359	7.691	7.3	7.9	0.02478	0.1982	2.63%	0
38		8	7.438	7.277	7.598	7.2	7.8	0.02403	0.1923	2.59%	0
75		8	7.425	7.259	7.591	7.2	7.8	0.02478	0.1982	2.67%	0
150		8	7.425	7.259	7.591	7.2	7.8	0.02478	0.1982	2.67%	0
Overall		48	7.49	7.432	7.547	7.2	7.9	0.02844	0.197	2.63%	0 (0%)

**Hardness (CaCO3)-mg/L**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.387	7.218	7.557	7.1	7.7	0.02539	0.2031	2.75%	0
150		8	95.62	95.19	96.06	95	96	0.06469	0.5175	0.54%	0
Overall		16	51.51	27.23	75.79	7.1	96	11.39	45.57	88.47%	0 (0%)

**pH-Units**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
10		8	7.913	7.843	7.982	7.8	8	0.01043	0.08345	1.05%	0
19		8	7.913	7.843	7.982	7.8	8	0.01043	0.08345	1.05%	0
38		8	7.925	7.866	7.984	7.8	8	0.008838	0.0707	0.89%	0
75		8	7.925	7.866	7.984	7.8	8	0.008838	0.0707	0.89%	0
150		8	7.925	7.866	7.984	7.8	8	0.008838	0.0707	0.89%	0
Overall		48	7.927	7.906	7.948	7.8	8	0.01063	0.07363	0.93%	0 (0%)

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:39 (p 2 of 8)  
 Test Code/ID: FML102621 / 02-5685-1639

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**Temperature-°C**

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
10		8	24.01	23.98	24.04	24	24.1	0.004414	0.03531	0.15%	0
19		8	24.03	23.99	24.06	24	24.1	0.005778	0.04623	0.19%	0
38		8	24.03	23.99	24.06	24	24.1	0.005778	0.04623	0.19%	0
75		8	24.03	23.99	24.06	24	24.1	0.005778	0.04623	0.19%	0
150		8	24.04	23.99	24.08	24	24.1	0.006459	0.05167	0.21%	0
Overall		48	24.02	24.01	24.03	24	24.1	0.005924	0.04104	0.17%	0 (0%)

# CETIS Measurement Report

Report Date: 15 Nov-21 12:39 (p 3 of 8)

Test Code/ID: FML102621 / 02-5685-1639

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		60					
150				60					
0	N	2		60					
150				60					
0	N	3		60					
150				60					
0	N	4		61					
150				60					
0	N	5		61					
150				60					
0	N	6		61					
150				60					
0	N	7		61					
150				60					
0	N	8		61					
150				60					

# CETIS Measurement Report

Report Date: 15 Nov-21 12:39 (p 4 of 8)

Test Code/ID: FML102621 / 02-5685-1639

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Conductivity-µmhos

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		362					
10				360					
19				359					
38				357					
75				356					
150				352					
0	N	2		360					
10				359					
19				357					
38				356					
75				352					
150				350					
0	N	3		354					
10				358					
19				358					
38				357					
75				355					
150				354					
0	N	4		360					
10				359					
19				357					
38				356					
75				352					
150				350					
0	N	5		364					
10				362					
19				360					
38				359					
75				355					
150				352					
0	N	6		362					
10				363					
19				361					
38				360					
75				359					
150				358					
0	N	7		362					
10				360					
19				359					
38				357					
75				352					
150				350					
0	N	8		360					
10				359					
19				357					
38				356					
75				352					
150				350					

# CETIS Measurement Report

Report Date: 15 Nov-21 12:39 (p 5 of 8)

Test Code/ID: FML102621 / 02-5685-1639

## Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

### Dissolved Oxygen-mg/L

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.6					
10				7.6					
19				7.5					
38				7.4					
75				7.4					
150				7.4					
0	N	2		7.4					
10				7.6					
19				7.6					
38				7.5					
75				7.5					
150				7.5					
0	N	3		7.5					
10				7.4					
19				7.4					
38				7.3					
75				7.3					
150				7.3					
0	N	4		7.6					
10				7.4					
19				7.4					
38				7.3					
75				7.2					
150				7.2					
0	N	5		7.8					
10				7.7					
19				7.7					
38				7.6					
75				7.5					
150				7.5					
0	N	6		7.9					
10				7.9					
19				7.9					
38				7.8					
75				7.8					
150				7.8					
0	N	7		7.6					
10				7.3					
19				7.4					
38				7.4					
75				7.5					
150				7.5					
0	N	8		7.4					
10				7.3					
19				7.3					
38				7.2					
75				7.2					
150				7.2					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:39 (p 6 of 8)  
Test Code/ID: FML102621 / 02-5685-1639

Fathead Minnow 7-d Larval Survival and Growth Test

Aquatic Bioassay & Consulting Labs, Inc.

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		7.3					
150				95					
0	N	2		7.4					
150				95					
0	N	3		7.3					
150				95					
0	N	4		7.2					
150				96					
0	N	5		7.5					
150				96					
0	N	6		7.7					
150				96					
0	N	7		7.6					
150				96					
0	N	8		7.1					
150				96					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:39 (p 7 of 8)  
 Test Code/ID: FML102621 / 02-5685-1639

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

**pH-Units**

Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		8					
10				8					
19				7.9					
38				7.9					
75				7.9					
150				7.9					
0	N	2		8					
10				7.9					
19				7.9					
38				7.9					
75				7.9					
150				7.9					
0	N	3		7.8					
10				7.8					
19				7.8					
38				7.9					
75				7.9					
150				7.9					
0	N	4		8					
10				8					
19				8					
38				8					
75				8					
150				8					
0	N	5		8					
10				8					
19				8					
38				8					
75				8					
150				8					
0	N	6		7.9					
10				7.9					
19				8					
38				8					
75				8					
150				8					
0	N	7		8					
10				7.8					
19				7.8					
38				7.8					
75				7.8					
150				7.8					
0	N	8		8					
10				7.9					
19				7.9					
38				7.9					
75				7.9					
150				7.9					

**CETIS Measurement Report**

Report Date: 15 Nov-21 12:39 (p 8 of 8)  
 Test Code/ID: FML102621 / 02-5685-1639

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Aquatic Bioassay & Consulting Labs, Inc.**

Temperature-°C									
Conc-µg/L	Code	Read	Time	Measure	QA	Diff-%	Inst ID	Analyst	Notes
0	N	1		24					
10				24					
19				24					
38				24					
75				24					
150				24					
0	N	2		24					
10				24					
19				24					
38				24					
75				24					
150				24					
0	N	3		24					
10				24					
19				24					
38				24					
75				24					
150				24					
0	N	4		24					
10				24.1					
19				24.1					
38				24.1					
75				24.1					
150				24.1					
0	N	5		24					
10				24					
19				24					
38				24					
75				24					
150				24.1					
0	N	6		24					
10				24					
19				24					
38				24					
75				24					
150				24					
0	N	7		24					
10				24					
19				24.1					
38				24.1					
75				24.1					
150				24.1					
0	N	8		24					
10				24					
19				24					
38				24					
75				24					
150				24					