

February 8, 2018

Ms. Kim Tu  
Weck Laboratories, Inc.  
14859 East Clark Avenue  
City of Industry, CA 91745-1396

Dear Ms. Tu:

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:	Weck Laboratories, Inc.
SAMPLE I.D.:	8A09087-01/ME000000564
DATE RECEIVED:.	10 Jan -18
ABC LAB NO.:	WEC0118.082

#### CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

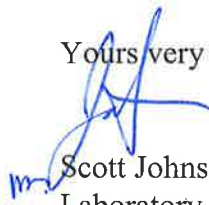
IWC = 100.00%

#### TST RESULT

SURVIVAL = PASS      % EFFECT = 0.00 %

REPRODUCTION = PASS      % EFFECT = -1.93%

Yours very truly,



Scott Johnson  
Laboratory Director

\*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

## CETIS Summary Report

Report Date: 07 Feb-18 15:59 (p 1 of 1)

Test Code: WEC0118.082cer | 19-6065-6001

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay &amp; Consulting Labs, Inc.

Batch ID: 14-3436-9391 Test Type: Reproduction-Survival (7d)  
 Start Date: 10 Jan-18 15:50 Protocol: EPA/821/R-02-013 (2002)  
 Ending Date: 17 Jan-18 14:30 Species: Ceriodaphnia dubia  
 Duration: 6d 23h Source: Aquatic Biosystems, CO

Analyst:  
 Diluent: Laboratory Water  
 Brine: Not Applicable  
 Age:

Sample ID: 16-6186-4955 Code: WEC0118.082c  
 Sample Date: 09 Jan-18 06:45 Material: Sample Water  
 Receipt Date: 10 Jan-18 11:05 Source: Bioassay Report  
 Sample Age: 33h (4.4 °C) Station: 8A09087-01/ME000000564

Client: Weck Laboratories  
 Project: Flood Control District-ME03

## Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
18-2234-6511	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate
04-6968-3597	Reproduction	TST-Welch's t Test	6.3E-04	100% passed reproduction

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
18-2234-6511	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
04-6968-3597	Reproduction	Control Resp	31.05	15	>>	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	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

## Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	31.05	27.6	34.5	18	43	1.65	7.38	23.77%	0.00%
100		20	31.65	27.45	35.85	14	48	2.006	8.969	28.34%	-1.93%

## 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
		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
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

## 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	30	34	26	31	22	20	35	30	36	31
		18	33	22	27	37	26	43	43	35	42
100		14	31	15	29	41	24	20	35	34	34
		30	29	27	30	38	31	43	37	43	48

## 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
		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
		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: 07 Feb-18 15:59 (p 1 of 2)

Test Code: WEC0118.082cer | 19-6065-6001

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 04-6968-3597	<b>Endpoint:</b> Reproduction	<b>CETIS Version:</b> CETISv1.9.2
<b>Analyzed:</b> 07 Feb-18 15:51	<b>Analysis:</b> Parametric Bioequivalence-Two Sample	<b>Official Results:</b> Yes
<b>Batch ID:</b> 14-3436-9391	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 10 Jan-18 15:50	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 17 Jan-18 14:30	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 23h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b>
<b>Sample ID:</b> 16-6186-4955	<b>Code:</b> WEC0118.082c	<b>Client:</b> Weck Laboratories
<b>Sample Date:</b> 09 Jan-18 06:45	<b>Material:</b> Sample Water	<b>Project:</b> Flood Control District-ME03
<b>Receipt Date:</b> 10 Jan-18 11:05	<b>Source:</b> Bioassay Report	
<b>Sample Age:</b> 33h (4.4 °C)	<b>Station:</b> 8A09087-01/ME000000564	

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction

### TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	3.548	0.8534	31	CDF	6.3E-04	Non-Significant Effect

### Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	31.05	15	>>	Yes	Passes Criteria

### ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	3.6	3.6	1	0.05336	0.8185	Non-Significant Effect
Error	2563.5	67.4605	38			
Total	2567.1		39			

### Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.369	7.353	0.5471	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.3153	7.353	0.5778	Equal Variances
Variances	Variance Ratio F Test	1.477	3.432	0.4030	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.2516	3.878	0.7658	Normal Distribution
Distribution	D'Agostino Kurtosis Test	0.2383	2.576	0.8117	Normal Distribution
Distribution	D'Agostino Skewness Test	0.5509	2.576	0.5817	Normal Distribution
Distribution	D'Agostino-Pearson K2 Omnibus Test	0.3603	9.21	0.8351	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.07189	0.1617	0.9345	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9818	0.9236	0.7565	Normal Distribution

### Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	31.05	27.6	34.5	31	18	43	1.65	23.77%	0.00%
100		20	31.65	27.45	35.85	31	14	48	2.006	28.34%	-1.93%

### 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	30	34	26	31	22	20	35	30	36	31
		18	33	22	27	37	26	43	43	35	42
100		14	31	15	29	41	24	20	35	34	34
		30	29	27	30	38	31	43	37	43	48

# CETIS Analytical Report

Report Date: 07 Feb-18 15:59 (p 2 of 2)  
Test Code: WEC0118.082cer | 19-6065-6001

## Ceriodaphnia 7-d Survival and Reproduction Test

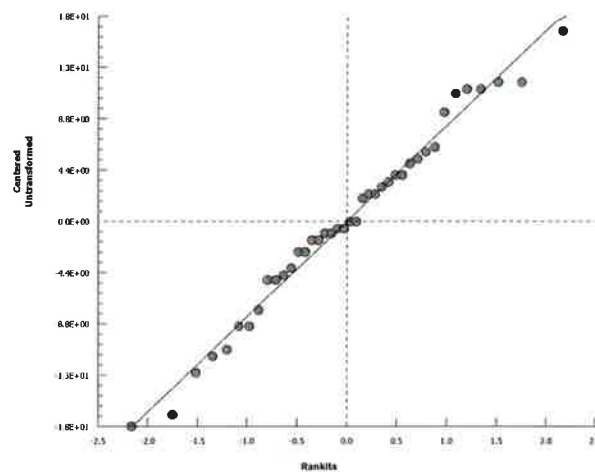
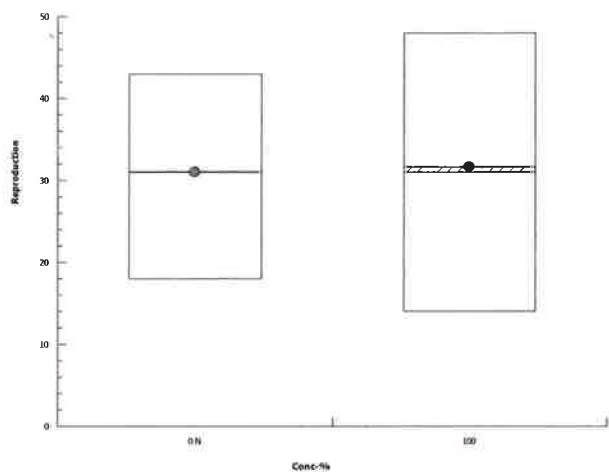
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 04-6968-3597  
Analyzed: 07 Feb-18 15:51

Endpoint: Reproduction  
Analysis: Parametric Bioequivalence-Two Sample

CETIS Version: CETISv1.9.2  
Official Results: Yes

### Graphics



# CETIS Analytical Report

Report Date: 07 Feb-18 15:59 (p 1 of 2)

Test Code: WEC0118.082cer | 19-6065-6001

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

<b>Analysis ID:</b> 18-2234-6511	<b>Endpoint:</b> 7d Survival Rate	<b>CETIS Version:</b> CETISv1.9.2
<b>Analyzed:</b> 07 Feb-18 15:51	<b>Analysis:</b> Single 2x2 Contingency Table	<b>Official Results:</b> Yes
<b>Batch ID:</b> 14-3436-9391	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b>
<b>Start Date:</b> 10 Jan-18 15:50	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Laboratory Water
<b>Ending Date:</b> 17 Jan-18 14:30	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 23h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b>
<b>Sample ID:</b> 16-6186-4955	<b>Code:</b> WEC0118.082c	<b>Client:</b> Weck Laboratories
<b>Sample Date:</b> 09 Jan-18 06:45	<b>Material:</b> Sample Water	<b>Project:</b> Flood Control District-ME03
<b>Receipt Date:</b> 10 Jan-18 11:05	<b>Source:</b> Bioassay Report	
<b>Sample Age:</b> 33h (4.4 °C)	<b>Station:</b> 8A09087-01/ME000000564	

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate

### Fisher Exact Test

Control	vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		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

### Data Summary

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1	0	0.0%
100		20	0	20	1	0	0.0%

### 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
		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
		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
		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
		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:** 07 Feb-18 15:59 (p 2 of 2)

**Test Code:** WEC0118.082cer | 19-6065-6001

### Ceriodaphnia 7-d Survival and Reproduction Test

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

**Analysis ID:** 18-2234-6511

**Endpoint:** 7d Survival Rate

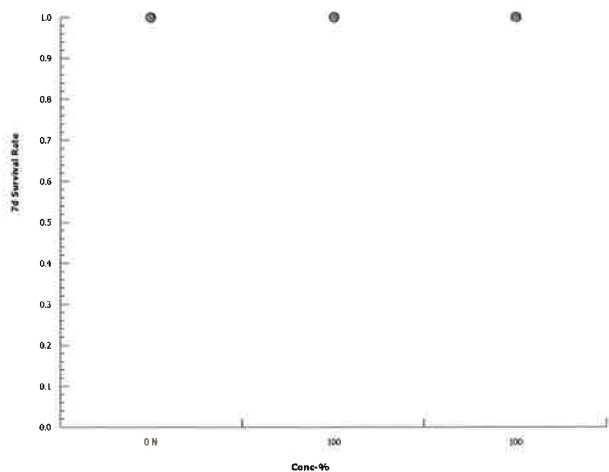
**CETIS Version:** CETISv1.9.2

**Analyzed:** 07 Feb-18 15:51

**Analysis:** Single 2x2 Contingency Table

**Official Results:** Yes

## Graphics



# CETIS Measurement Report

Report Date: 07 Feb-18 15:59 (p 1 of 2)  
 Test Code: WEC0118.082cer | 19-6065-6001

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-3436-9391  
 Start Date: 10 Jan-18 15:50  
 Ending Date: 17 Jan-18 14:30  
 Duration: 6d 23h  
 Test Type: Reproduction-Survival (7d)  
 Protocol: EPA/821/R-02-013 (2002)  
 Species: Ceriodaphnia dubia  
 Source: Aquatic Biosystems, CO

Analyst:  
 Diluent: Laboratory Water  
 Brine: Not Applicable  
 Age:

Sample ID: 16-6186-4955  
 Sample Date: 09 Jan-18 06:45  
 Receipt Date: 10 Jan-18 11:05  
 Sample Age: 33h (4.4 °C)  
 Code: WEC0118.082c  
 Material: Sample Water  
 Source: Bioassay Report  
 Station: 8A09087-01/ME000000564

Client: Weck Laboratories  
 Project: Flood Control District-ME03

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	66	62.9	69.1	60	68	1.309	3.703	5.61%	0
100		8	35	35	35	35	35	0	0	0.0%	0
Overall		16	50.5	41.86	59.14	35	68	4.052	16.21	32.09%	0 (0%)

### Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	338.8	333.5	344	330	348	2.226	6.296	1.86%	0
100		8	250.8	233.5	268	208	283	7.294	20.63	8.23%	0
Overall		16	294.8	269.3	320.2	208	348	11.94	47.77	16.21%	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	7.55	7.345	7.755	7.1	7.9	0.0866	0.2449	3.24%	0
100		8	5.887	5.13	6.645	4.3	7	0.3204	0.9062	15.39%	0
Overall		16	6.719	6.148	7.29	4.3	7.9	0.2679	1.072	15.95%	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	97.75	95.81	99.69	94	99	0.8183	2.315	2.37%	0
100		8	70	70	70	70	70	0	0	0.0%	0
Overall		16	83.88	76.19	91.56	70	99	3.604	14.42	17.19%	0 (0%)

### pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.871	8.204	7.7	8.4	0.07055	0.1996	2.48%	0
100		8	7.212	7.108	7.317	7	7.4	0.04407	0.1246	1.73%	0
Overall		16	7.625	7.382	7.868	7	8.4	0.1138	0.4553	5.97%	0 (0%)

### 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	0.0%	0
100		8	24.05	23.96	24.14	24	24.3	0.0378	0.1069	0.44%	0
Overall		16	24.02	23.98	24.07	24	24.3	0.01936	0.07746	0.32%	0 (0%)

# CETIS Measurement Report

Report Date: 07 Feb-18 15:59 (p 2 of 2)

Test Code: WEC0118.082cer | 19-6065-6001

## Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

### Alkalinity (CaCO3)-mg/L

Conc-%	Code	1	2	3	4	5	6	7	8
0	N	60	60	68	68	68	68	68	68
100		35	35	35	35	35	35	35	35

### Conductivity-µmhos

Conc-%	Code	1	2	3	4	5	6	7	8
0	N	339	348	339	330	342	330	338	344
100		244	208	283	252	254	255	255	255

### Dissolved Oxygen-mg/L

Conc-%	Code	1	2	3	4	5	6	7	8
0	N	7.5	7.6	7.8	7.9	7.6	7.4	7.5	7.1
100		5.9	5	5.9	4.3	5.7	6.6	7	6.7

### Hardness (CaCO3)-mg/L

Conc-%	Code	1	2	3	4	5	6	7	8
0	N	94	94	99	99	99	99	99	99
100		70	70	70	70	70	70	70	70

### pH-Units

Conc-%	Code	1	2	3	4	5	6	7	8
0	N	8.1	8.1	7.9	8	8.4	8	8.1	7.7
100		7	7.1	7.4	7.3	7.2	7.2	7.2	7.3

### Temperature-°C

Conc-%	Code	1	2	3	4	5	6	7	8
0	N	24	24	24	24	24	24	24	24
100		24.3	24	24.1	24	24	24	24	24

**Subcontracted Laboratory:**

Aquatic Bioassay & Consulting Labs, Inc.  
29 North Olive Street  
Ventura, CA 93001  
Phone: (805) 643-5621  
Fax: (805) 643-2930

**Turn Around Time:** Normal unless noted in comments

**Project Manager:** Kim G. Tu

**Project Name:** Flood Control District - ME03

**Project Number:** Flood Control District - ME03

**Sampler Employed by:** \_\_\_\_\_

**Work Order: 8A09087**

Analysis	Expires	Comments
<b>Sample ID:</b> 8A09087-01/ME000000564 <b>Sample comment:</b> Bioassay EPA 821-R-02-013 Chronic (Freshwater) <b>Containers Supplied:</b> Other (A)	01/10/2018 18:45	<b>Matrix:</b> Water Ceriodaphnia Dubia, 36 HR, require 0% and 100% dilution, 1

**Sampled:** 01/09/2018 06:45

**Sampled By:** Client

WEC.0118.082

NH<sub>3</sub> = 1

Chlorine = <0.1

**Remarks / Special Comments:**

**Sample Condition**

**Temperature:** 4.4

**Preserved:** Yes / No

**Evidence Seal Intact:** Yes / No

**Container Attacked:** Yes / No

**Preserved at Lab:** Yes / No

Relinquished By

Date / Time Received By

Date / Time

Relinquished By

Date / Time Received By

Date / Time