

Dec 28<sup>th</sup> 2023

Mary Barnett, Ecologist  
Water Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR. 72118-5317

Re: 4<sup>th</sup> Qt 2023 Activities Report, Outfall 007 TRE  
El Dorado Chemical Company  
NPDES Permit # AR 00000752; AFIN 70-00

Dear Ms. Barnett:

As required by the Storm Water Toxicity Reduction Evaluation (TRE) Plan for Outfall 007 (dated 10 August 2023) and in accordance with ADEQ's approval dated 22 August 2023, this letter provides the quarterly activities report for the above referenced TRE.

TRE activities completed during the period from Oct 1<sup>st</sup> , 2023 through Dec 28th, 2023 include:

- 1) Continued the baseline whole effluent toxicity (WET) testing and analytical chemistry on a monthly basis.
- 2) Conducted Mock Effluent Trails.
- 3) Additional on site

Additional details of the completed activities are provided below:

**Continued the routine baseline toxicity testing and associated analytical chemistry.**

During this period, the routine WET tests were completed monthly at the 1<sup>st</sup> storm event of each respective month.

1/2/2024

The monthly WET tests results are summarized in the following table:

Date	NOEC	DO	pH	Alkalinity	Hardness	Conductivity	Residual CL	Notes
1/2/2023	46.7	8.0	4.4	1.1	78	340	<0.05	
2/8/2023	100	7.6	7.3	30	100	480	<0.05	
3/2/2023	100	7.2	6.9	10	170	830	0.09	
4/2-3/2023	45	6.9	7.1	20	79	390	<0.05	
5/5/2023	45	7.7	7	20	18	94	0.06	
6/10/2023	20.4	7.5	9.2	59	300	1200	>0.05	
6/13/2023	100	7.4	6.6	7.3	140	480	>0.05	ReTest
7/4/2023	100	6.0	7.2	14	110	610	<0.05	
8/8/2023	32	6.8	6.7	8	110	460	<0.05	
9/4/2023	100	7.7	7	15	150	1400	<0.05	
10/5/2023	45	8.0	7.6	35	46	180	<0.05	
11/10/2023	45	8.0	7.2	54	150	1500	<0.05	
12/16/2023				Results	Pending			

The October test result showed a NOEC at a 45% concentration.

A detailed assessment of the October WET. The following parameters stood out.

Nitrate 99 mg/L

Nitrite 0.17 mg/L

Fluoride 5.0 mg/L

Zinc 1.0 mg/L

Aluminum 120mg/L

Sulfate is at 790 mg/L

Other trace metals were also present. Nitrate could be an issue, but the Zinc could also be a problem. However, Zinc toxicity is reduced as Hardness is increased and the effluent water is Hard with Calcium at 150mg/L.

The November test showed the same result of NOEC at 45% concentration.

#### **Additional activities.**

In addition to the routine WET testing, collection of additional facility information has been initiated. This information includes but is not limited to facility operations, chemical use data, tracking of internal housekeeping records and documentation of activities within the individual outfall sub-basins.

We conducted a mock effluent trail to attempt to replicate the results from the October WET testing. The mock effluent had a NOEC of 56. This indicates that nitrate or fluoride could be the potential cause of this issue.

We have found a potential source of high sulfate and low pH. This could be a factor that is effecting the toxicity of the water.

These two avenues of potential causes are conflicting, farther laboratory testing will be conducted to try and isolate the cause.

1/2/2024

**Future Activities.**

Activities planned for the 4th Qt 2023 includes continuation of the routine monthly storm water WET testing, continued monitoring of effluent constituents, tracking of site storm data (duration and magnitude), and discharge volumes. In addition, the assemblage of facility data including the monitoring of routine storm water discharge data with particular attention to facility conditions during the WET monitoring periods will continue.

We will continue to conduct mock effluent trails to attempt to isolate the parameters of concern.

Please do not hesitate to contact me if you have any questions or require additional information regarding the implementation of the Outfall 007 TRE.

Respectfully submitted,

Charles McDowell  
Environmental Leader

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Mr. Charles McDowell  
El Dorado Chemical Company  
4500 North West Avenue  
El Dorado, Arkansas 71730

Generated 12/21/2023 1:45:48 PM

**JOB DESCRIPTION**

Mock Effluent

**JOB NUMBER**

192-7225-1

# Eurofins Arkansas

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

## Authorization



Generated  
12/21/2023 1:45:48 PM

---

Authorized for release by  
John Overbey, Business Unit Manager  
[john.overbey@et.eurofinsus.com](mailto:john.overbey@et.eurofinsus.com)  
Designee for  
Steve Bradford, Lab Director  
[steve.bradford@et.eurofinsus.com](mailto:steve.bradford@et.eurofinsus.com)  
(501)224-5060



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Definitions/Glossary . . . . .	4
Case Narrative . . . . .	5
Client Sample Results . . . . .	6

# Definitions/Glossary

Client: El Dorado Chemical Company  
Project/Site: Mock Effluent

Job ID: 192-7225-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: El Dorado Chemical Company  
Project: Mock Effluent

Job ID: 192-7225-1

**Job ID: 192-7225-1**

**Eurofins Arkansas**

## Job Narrative 192-7225-1

### Receipt

The sample was received on 11/28/2023 3:50 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice.

### HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Metals

Method 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 192-10183 and analytical batch 192-10212 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Biology

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Eurofins Arkansas





# Client Sample Results

Client: El Dorado Chemical Company  
 Project/Site: Mock Effluent

Job ID: 192-7225-1

**Client Sample ID: Mock Effluent 007**

**Lab Sample ID: 192-7225-1**

Date Collected: 11/28/23 00:00

**Matrix: Water**

Date Received: 11/28/23 15:50

**Method: EPA 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	95		5.0		mg/L			11/29/23 09:25	100
Nitrite as N	0.22		0.050		mg/L			11/29/23 08:43	1
Fluoride	4.7		0.10		mg/L			11/29/23 08:43	1

**Method: EPA 200.7 Rev 4.4 - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	14		1.0		mg/L		11/30/23 10:23	11/30/23 15:02	10
Magnesium	12		0.50		mg/L		11/30/23 10:23	11/30/23 15:02	10
Zinc	0.62		0.010		mg/L		11/30/23 10:23	11/30/23 13:39	1

**Method: SM 2340B-2011 - Total Hardness (as CaCO3) by calculation**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	87		1.0		mg/L			11/30/23 15:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B-2011)	67		1.0		mg/L			11/30/23 08:03	1

**Method: EPA 2021 48 DPNR - Acute 48 Hr. D. pulex Non-Renewal**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acute D. pulex	Completed				NONE			12/14/23 17:10	1

Re: 48 HR Non Renewal Biomonitoring utilizing *Daphnia pulex*  
- Mock Effluent  
Client NPDES Permit No. AR0000752  
Control No. 274802-1

This report is the analytical results and supporting information for the samples submitted to Eurofins Arkansas. The following results are applicable only to the sample identified by the control number referenced above. Accurate assessment of the data requires access to the entire document. Each section of the report has been reviewed and approved by the Lab Manager or qualified designee.

Testing procedures and Quality Assurance were in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" EPA-821-R-02-012, Fifth Edition, October 2002. Test results are summarized below:

**This mock effluent was prepared to have similar levels of Nitrate as N and Fluoride as identified in the effluent sample previously submitted.**

Acute *Daphnia pulex* Survival Test. The permit requirement is NOEC not less than 100%. The following were concluded from the test:

<b>Survival:</b>	<b>NOEC</b>	<b>LOEC</b>	<b>LC50</b>
	56	75	81.7

**The sample therefore FAILED the *Daphnia pulex* test.**

## Table of Contents

- I. Introduction and Summary
- II. Control Acceptance Criteria
- III. Outlined Report
  - A. Introduction
  - B. Effluent Samples
  - C. Dilution Water Samples
  - D. Test Methods
  - E. Test Organisms
  - F. Quality Assurance
  - G. Organism History
- IV. Results Summary
  - Daphnia pulex*
- Appendix (Data)
  - Daphnia pulex* Survival
- Appendix (Reference Toxicant)
- Appendix (Water Chemistry)

I. Introduction and Summary

Biomonitoring testing of 48-hour non-renewal definitive toxicity tests using *Daphnia pulex* were performed.

The *Daphnia pulex* test was conducted from December 14, 2023 at 1710 to December 16, 2023 at 1620.

The tests were performed in accordance with EPA-821-R-02-012. Statistical analyses were performed on the observed data.

The tests were conducted in temperature and light cycle controlled environmental chamber. The test temperature was 25 degrees C +/- 1 degree for the *Daphnia pulex*.

II. Control Acceptance Criteria

ORGANISM	CRITERIA	RESULTS	PASS/FAIL
<i>Daphnia pulex</i>	Control Survival >= 90%	100	PASS
<i>Daphnia pulex</i>	Control Dilution CV <= 40%	0.00	PASS
<i>Daphnia pulex</i>	Critical Dilution CV <= 40%	21.1	PASS

III. Outlined Report

A. Introduction

Permit Number: AR0000752

Test Requirements: 48-hour non-renewal definitive toxicity test using:  
*Daphnia pulex*

B. Effluent Samples:

Sampling Point: NA

Chemical Data:

Analysis	Result
Dissolved oxygen (mg/l)	8.9
pH (standard units)	7.4
Alkalinity (mg/l as CaCO3)	67
Hardness (mg/l as CaCO3)	87
Conductivity (umhos/cm)	1100
Residual Chlorine (mg/l)	0.14
Ammonia (mg/l)	NA

C. Dilution Water Samples: Soft Water  
Chemical Data:

Analysis	192-7415-A-1
Dissolved oxygen (mg/l)	8.2
pH (standard units)	7.0
Alkalinity (mg/l as CaCO <sub>3</sub> )	31
Hardness (mg/l as CaCO <sub>3</sub> )	44
Conductivity (umhos/cm)	170
Residual Chlorine (mg/l)	<0.05
Ammonia (mg/l)	NA

D. Test Methods

Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, (Fifth Ed.), EPA-821-R-02-012, 48-hour acute definitive test.

Endpoints:

Death; the criteria employed to establish death are:

No movement

No reaction to gentle prodding

Criteria	<i>Daphnia pulex</i>
Type and Volume of Test Chamber	30 ml disposable beaker
Volume of Sample	25 ml
Organisms per chamber	8
Replicates per dilution	5
Test Temperature	25 deg. C
Test Initiated	December 14, 2023 at 1710
Test Terminated	December 16, 2023 at 1620
Feeding	None required
Age of Test Organisms	<24 hours

E. Test Organisms

*Daphnia pulex*

## F. Quality Assurance - Toxicity Tests

Reference Toxicant: Sodium Chloride

Date of test:

*Daphnia pulex*: November 01, 2023 at 1412 to November 03, 2023 at 1350

Synthetic moderately hard dilution water used

Organism	LC50	Warning Limits
<i>Daphnia pulex</i>	2.38 g/l	1.91-2.51 g/l

## G. Organism History

*Daphnia pulex*

Date: December 14, 2023 at 1710

Age: &lt;24 hours

Source: In-house culture

#### IV. Results Summary

*Daphnia pulex* are exposed in a static non-renewal system to different concentrations of effluent and dilution water. Effluent dilutions for this test were 32%, 45%, 56%, 75%, 100%. The low-flow concentration was 100%. Test results were based on survival.

#### *Daphnia pulex*

The *Daphnia pulex* test was conducted from December 14, 2023 at 1710 to December 16, 2023 at 1620.

Statistical analyses:

Concentration	24 hour % Survival	48 hour % Survival
Control	100	100
32%	100	95.0
45%	100	95.0
56%	97.5	82.5
75%	90.0	57.5
100%	57.5	32.5

Appendix (Data)

*Daphnia pulex*  
Survival Data

Number of organisms per chamber: 8  
Volume of test chamber: 30 ml

Age of organisms: <24 hours  
Volume of test solution: 25 ml

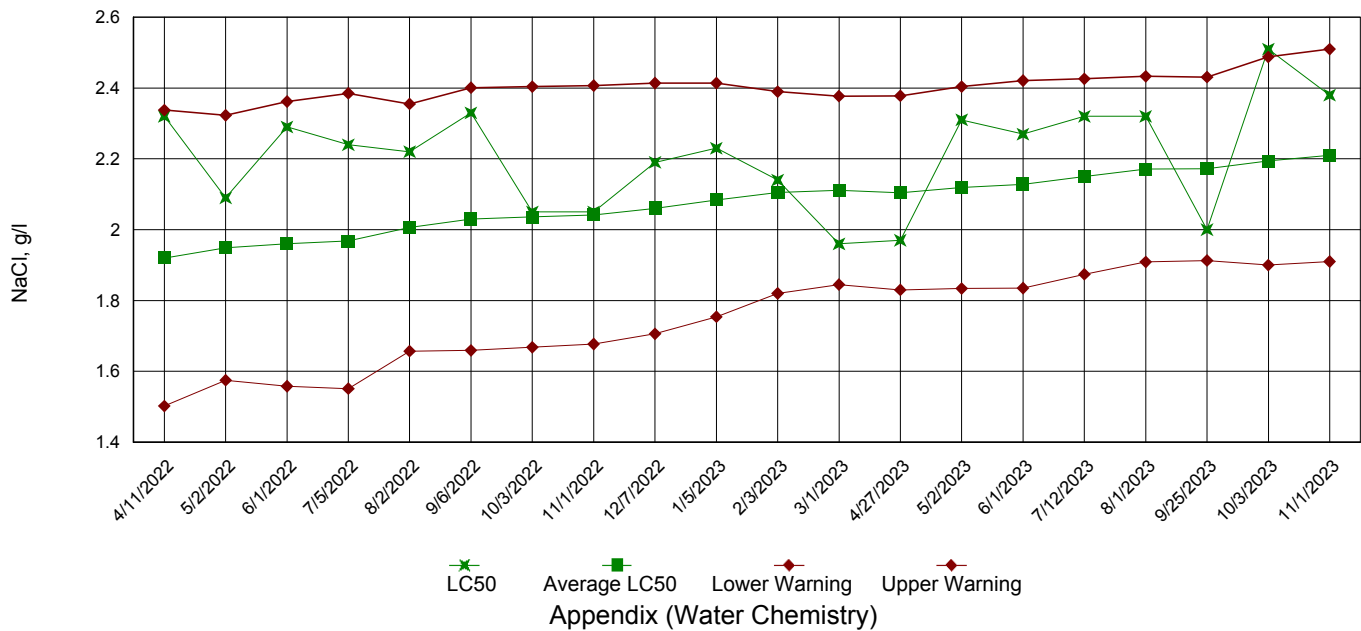
Effluent Concentration		Number of Survivors		% Survival	CV %
		24 Hours	48 Hours		
Control	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
32%	rep. A	8	8	95.0	7.21
	rep. B	8	7		
	rep. C	8	8		
	rep. D	8	7		
	rep. E	8	8		
45%	rep. A	8	8	95.0	7.21
	rep. B	8	8		
	rep. C	8	7		
	rep. D	8	7		
	rep. E	8	8		
56%	rep. A	8	7	82.5	17.3
	rep. B	7	7		
	rep. C	8	8		
	rep. D	8	5		
	rep. E	8	6		
75%	rep. A	7	4	57.5	11.9
	rep. B	6	4		
	rep. C	8	5		
	rep. D	8	5		
	rep. E	7	5		
100%	rep. A	6	3	32.5	21.1
	rep. B	4	2		
	rep. C	5	3		
	rep. D	4	2		
	rep. E	4	3		

CV = Coefficient of variance = standard deviation X 100/mean



Appendix (Reference Toxicant)  
Acute Reference Toxicant, *Daphnia pulex*

LC50 Survival Data



Chemical Data for  
*Daphnia pulex*

Day 1	Control	32%	45%	56%	75%	100%
DO, mg/l	8.2	8.6	8.7	8.7	8.7	8.9
pH, su	7.0	7.2	7.2	7.2	7.3	7.4
Alkalinity, mg/l	31	NA	NA	NA	NA	67
Hardness, mg/l	44	NA	NA	NA	NA	87
Conductivity, umho/cm	170	490	590	690	890	1100
Residual Chlorine, mg/l	<0.05	NA	NA	NA	NA	0.14
Day 2	Control	32%	45%	56%	75%	100%
DO, mg/l	Final	7.5	8.0	7.8	7.9	7.6
pH, su	Final	7.4	7.4	7.5	7.5	7.6

# CETIS Summary Report

Report Date: 19 Dec-23 12:41 (p 1 of 1)  
 Test Code/ID: 274802\_DP / 05-8104-8296

## Daphnia pulex 48-h Acute Survival Test

Eurofins Arkansas

### Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	PMSD	TU
04-6833-2594	48h Survival Rate	Steel Many-One Rank Sum Test	56	75	64.81	10.6%	1.8

### Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	%	95% LCL	95% UCL	TU
09-6358-8196	48h Survival Rate	Trimmed Spearman-Kärber	LC50	81.74	69.32	96.39	1.2

### Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
04-6833-2594	48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Criteria
09-6358-8196	48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Criteria

### 48h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
32		5	0.9500	0.8650	1.0350	0.8750	1.0000	0.0306	0.0685	7.21%	5.00%
45		5	0.9500	0.8650	1.0350	0.8750	1.0000	0.0306	0.0685	7.21%	5.00%
56		5	0.8250	0.6480	1.0020	0.6250	1.0000	0.0637	0.1425	17.28%	17.50%
75		5	0.5750	0.4900	0.6600	0.5000	0.6250	0.0306	0.0685	11.91%	42.50%
100		5	0.3250	0.2400	0.4100	0.2500	0.3750	0.0306	0.0685	21.07%	67.50%

### 48h Survival Rate Detail

MD5: D7ECB2FD432CA3C051704F6A5EA421CC

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	D	1.0000	1.0000	1.0000	1.0000	1.0000
32		1.0000	0.8750	1.0000	0.8750	1.0000
45		1.0000	1.0000	0.8750	0.8750	1.0000
56		0.8750	0.8750	1.0000	0.6250	0.7500
75		0.5000	0.5000	0.6250	0.6250	0.6250
100		0.3750	0.2500	0.3750	0.2500	0.3750

# CETIS Analytical Report

Report Date: 19 Dec-23 12:41 (p 1 of 2)  
 Test Code/ID: 274802\_DP / 05-8104-8296

**Daphnia pulex 48-h Acute Survival Test** **Eurofins Arkansas**

Analysis ID: 04-6833-2594      Endpoint: 48h Survival Rate      CETIS Version: CETIS v2.1.5  
 Analyzed: 19 Dec-23 12:40      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 19 Dec-23 0:00      MD5 Hash: D7ECB2FD432CA3C051704F6A5EA421CC      Editor ID: 004-572-886-9

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	56	75	64.81	1.8	0.1061	10.61%

**Steel Many-One Rank Sum Test**

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Dilution Water		32	8	22.5	16	1	CDF	0.3937	Non-Significant Effect
		45	8	22.5	16	1	CDF	0.3937	Non-Significant Effect
		56	8	17.5	16	1	CDF	0.0695	Non-Significant Effect
		75*	8	15	16	0	CDF	0.0191	Significant Effect
		100*	8	15	16	0	CDF	0.0191	Significant Effect

**Test Acceptability Criteria**

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.9	>>	Yes	Passes Criteria

**ANOVA Table**

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.43508	0.487016	5	45.74	<1.0E-05	Significant Effect
Error	0.255529	0.010647	24			
Total	2.69061		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	0.9014	0.9031	0.0091	Non-Normal Distribution

**48h Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
32		5	0.9500	0.8650	1.0000	1.0000	0.8750	1.0000	0.0306	7.21%	5.00%
45		5	0.9500	0.8650	1.0000	1.0000	0.8750	1.0000	0.0306	7.21%	5.00%
56		5	0.8250	0.6480	1.0000	0.8750	0.6250	1.0000	0.0637	17.28%	17.50%
75		5	0.5750	0.4900	0.6600	0.6250	0.5000	0.6250	0.0306	11.91%	42.50%
100		5	0.3250	0.2400	0.4100	0.3750	0.2500	0.3750	0.0306	21.07%	67.50%

**Angular (Corrected) Transformed Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	5	1.3930	1.3930	1.3930	1.3930	1.3930	1.3930	0.0000	0.00%	0.00%
32		5	1.3200	1.1950	1.4450	1.3930	1.2090	1.3930	0.0450	7.62%	5.27%
45		5	1.3200	1.1950	1.4450	1.3930	1.2090	1.3930	0.0450	7.62%	5.27%
56		5	1.1540	0.9274	1.3810	1.2090	0.9117	1.3930	0.0817	15.82%	17.15%
75		5	0.8612	0.7753	0.9471	0.9117	0.7854	0.9117	0.0310	8.04%	38.18%
100		5	0.6049	0.5128	0.6970	0.6591	0.5236	0.6591	0.0332	12.27%	56.58%

**48h Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	D	1.0000	1.0000	1.0000	1.0000	1.0000
32		1.0000	0.8750	1.0000	0.8750	1.0000
45		1.0000	1.0000	0.8750	0.8750	1.0000
56		0.8750	0.8750	1.0000	0.6250	0.7500
75		0.5000	0.5000	0.6250	0.6250	0.6250
100		0.3750	0.2500	0.3750	0.2500	0.3750



Daphnia pulex 48-h Acute Survival Test

Eurofins Arkansas

Analysis ID: 04-6833-2594      Endpoint: 48h Survival Rate      CETIS Version: CETIS v2.1.5  
 Analyzed: 19 Dec-23 12:40      Analysis: Nonparametric-Control vs Treatments      Status Level: 1  
 Edit Date: 19 Dec-23 0:00      MD5 Hash: D7ECB2FD432CA3C051704F6A5EA421CC      Editor ID: 004-572-886-9

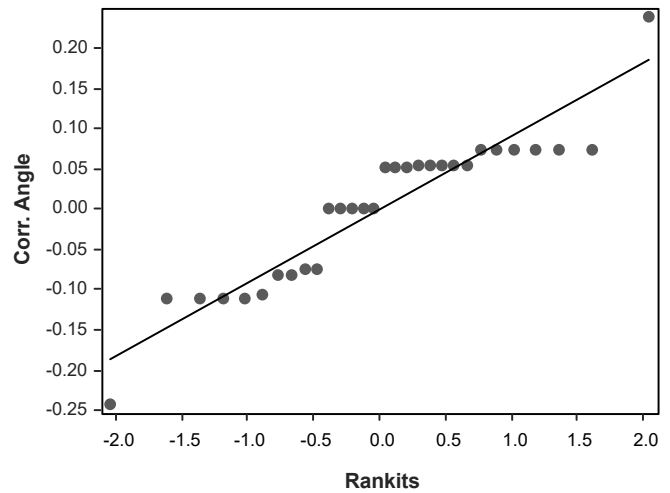
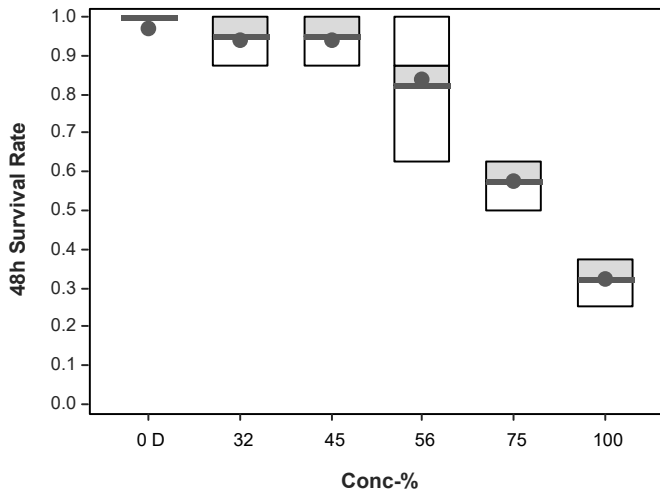
Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	D	1.3930	1.3930	1.3930	1.3930	1.3930
32		1.3930	1.2090	1.3930	1.2090	1.3930
45		1.3930	1.3930	1.2090	1.2090	1.3930
56		1.2090	1.2090	1.3930	0.9117	1.0470
75		0.7854	0.7854	0.9117	0.9117	0.9117
100		0.6591	0.5236	0.6591	0.5236	0.6591

48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	D	8/8	8/8	8/8	8/8	8/8
32		8/8	7/8	8/8	7/8	8/8
45		8/8	8/8	7/8	7/8	8/8
56		7/8	7/8	8/8	5/8	6/8
75		4/8	4/8	5/8	5/8	5/8
100		3/8	2/8	3/8	2/8	3/8

Graphics



# CETIS Analytical Report

Report Date: 19 Dec-23 12:41 (p 1 of 1)  
 Test Code/ID: 274802\_DP / 05-8104-8296

## Daphnia pulex 48-h Acute Survival Test

Eurofins Arkansas

Analysis ID: 09-6358-8196      Endpoint: 48h Survival Rate      CETIS Version: CETIS v2.1.5  
 Analyzed: 19 Dec-23 12:40      Analysis: Trimmed Spearman-Kärber      Status Level: 1  
 Edit Date: 19 Dec-23 0:00      MD5 Hash: D7ECB2FD432CA3C051704F6A5EA421CC      Editor ID: 004-572-886-9

### Trimmed Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	LC50	95% LCL	95% UCL	Tox Units	95% LCL	95% UCL
Control Threshold	0	32.50%	1.912	0.03579	81.74	69.32	96.39	1.2	1	1.4

### Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.9	>>	Yes	Passes Criteria

### 48h Survival Rate Summary

Conc-%	Code	Count	Calculated Variate(A/B)							Isotonic Variate	
			Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	D	5	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	1.0000	0.00%
32		5	0.9500	1.0000	0.8750	1.0000	7.21%	5.00%	38/40	0.9500	5.00%
45		5	0.9500	1.0000	0.8750	1.0000	7.21%	5.00%	38/40	0.9500	5.00%
56		5	0.8250	0.8750	0.6250	1.0000	17.28%	17.50%	33/40	0.8250	17.50%
75		5	0.5750	0.6250	0.5000	0.6250	11.91%	42.50%	23/40	0.5750	42.50%
100		5	0.3250	0.3750	0.2500	0.3750	21.07%	67.50%	13/40	0.3250	67.50%

### 48h Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	D	1.0000	1.0000	1.0000	1.0000	1.0000
32		1.0000	0.8750	1.0000	0.8750	1.0000
45		1.0000	1.0000	0.8750	0.8750	1.0000
56		0.8750	0.8750	1.0000	0.6250	0.7500
75		0.5000	0.5000	0.6250	0.6250	0.6250
100		0.3750	0.2500	0.3750	0.2500	0.3750

### 48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	D	8/8	8/8	8/8	8/8	8/8
32		8/8	7/8	8/8	7/8	8/8
45		8/8	8/8	7/8	7/8	8/8
56		7/8	7/8	8/8	5/8	6/8
75		4/8	4/8	5/8	5/8	5/8
100		3/8	2/8	3/8	2/8	3/8

### Graphics

