

# Arkansas Analytical, Inc.

## Toxicity Test Results

**NORTH LITTLE ROCK WASTEWATER UTILITY  
FAULKNER LAKE  
NPDES PERMIT NUMBER: AR0020303  
Third Quarter Test 2023**

Fathead Minnow, *Pimephales promelas*, Larval Survival and Growth Test  
Test 1000.0

*Ceriodaphnia dubia*, Survival and Reproduction Test  
Test 1002.0

Prepared for: **Chris Lumpkin**  
**North Little Rock Wastewater**  
**7400 Baucom Pike**  
**North Little Rock, Arkansas 72117**

Prepared by: **Arkansas Analytical**  
**8100 National Drive**  
**Little Rock, Arkansas 72209**  
**Lab Number K2308003**

Monday, August 28, 2023

## **Plant Location**

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North Little Rock Wastewater Faulkner Lake Plant is located as follows: 7400 Baucum Pike, North Little Rock, AR 72117, from I-40 E take exit 159 towards I-440, continue onto J-440 W towards Little Rock National Airport, take exit 7 for US-165 N/Baucum Pike, destination is on the left in Pulaski County, Arkansas.

## **Test Methods**

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EPA Method 1000.0 *Pimephales promelas*, Larval survival and growth test

- Test chambers: 500 mL plastic cups
- Test solution volume: 250 mL
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 3%, 5%, 6%, 8%, 11%
- Dilution water: Moderately hard synthetic
- No deviation from method

EPA Method 1002.0 *Ceriodaphnia dubia*, Survival and reproduction test

- Test chambers: 30 mL plastic cups
- Test solution volume: 15 mL
- Number of test organisms per chamber: 1
- Number of replicates per concentration: 10
- Test temperature 25°C ± 1°C
- Test concentrations: 0%, 3%, 5%, 6%, 8%, 11%
- Dilution water: Moderately hard synthetic
- No deviation from method

## **Reference Toxicant Data**

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### REFERENCE TOXICANT (Potassium Chloride)

<i>Ceriodaphnia dubia</i> 7/5/23-7/11/23		<i>Pimephales promelas</i> 7/5/23-7/12/23	
NOEC Survival:	500 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	1000 ppm KCl	LOEC Survival:	1000 ppm KCl
NOEC Reproduction:	250 ppm KCl	NOEC Growth:	500 ppm KCl
LOEC Reproduction:	500 ppm KCl	LOEC Growth:	1000 ppm KCl

## Summary of Results

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### Faulkner Lake

<i>Ceriodaphnia dubia</i>		<i>Pimephales promelas</i>	
NOEC Survival Parameter: <b>TOP3B</b>	11%	NOEC Survival Parameter: <b>TOP6C</b>	11%
Pass/Fail Survival Parameter: <b>TLP3B</b>	Pass	Pass/Fail Survival Parameter: <b>TLP6C</b>	Pass
NOEC Reproduction Parameter: <b>TPP3B</b>	11%	NOEC Growth Parameter: <b>TPP6C</b>	11%
Pass/Fail Reproduction Parameter: <b>TGP3B</b>	Pass	Pass/Fail Growth Parameter: <b>TGP6C</b>	Pass
%CV Reproduction Parameter: <b>TQP3B</b>	31.0%	%CV Growth Parameter: <b>TQP6C</b>	15.5%
PMSD Reproduction	38.6%	PMSD Growth	21.0%

### Conclusion

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*Pimephales promelas*, (Method 1000.0): The permit issued to NLRWW – Faulkner Lake, specifies that the **critical dilution is 8% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

*Ceriodaphnia dubia*, (Method 1002.0): The permit issued to NLRWW – Faulkner Lake, specifies that the **critical dilution is 8% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

Biomonitoring Analysts: Melissa Bird, Noah Limbaugh, Justin Yeatts, Johnny Moline

Reviewed by:

  
Melissa Bird

## Appendices

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Appendix A.....Chains of custody  
Appendix B.....Fathead minnow data & statistics  
Appendix C.....*Ceriodaphnia dubia* data & statistics  
Appendix D.....Water chemistry data  
Appendix E.....Reference toxicant control charts



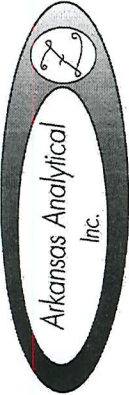


8100 National Dr.  
 Little Rock, AR 72209  
 PHONE: 501-455-3233  
 FAX: 501-455-6118

# CHAIN OF CUSTODY RECORD

<b>CLIENT INFORMATION</b>		<b>Project Description</b>		<b>Turnaround Time</b>		<b>Preservation Codes:</b>	
NLRWWU		Faulkner Lake -- AR0020303		1 Day (100%)		4. Thiosulfate for Dechlorination	
7400 Baucom Pike		Chronic Toxicity --- 3rd Quarter 2023		2 Day (50%)		5. Hydrochloric Acid(HCl)	
North Little Rock, AR 72117		Reporting Information		3 Day (25%)		6. Sodium Hydroxide (NaOH), pH > 12	
Attn: Chris Lumpkin		Telephone: 501-945-7186		Routine		<b>TEST PARAMETERS</b>	
		Email: CLumpkin@nirwu.com; MEggleston@nirwu.com		Preservative Code:		1	
		Bottle Type:		Bottle Type Code		P	
Sampler(s) Signature		Sampler(s) Printed		Chronic Toxicity (Cerodaphnia Dubia, PimephalesPromelas)		Arkansas Analytical Work Order Number:	
<i>[Signature]</i>		kayla Jones		X		k2308-	
Field Number		SAMPLE COLLECTION		SAMPLE IDENTIFICATION/ DESCRIPTION			
Comp Start Date/Time		Date/s		Date/Time			
Comp End Date/Time		Time/s		Time/s			
		8-X-23		0715			
		8-9-23		0705			
		Grab		Number of Bottles			
		X		4			
		Comp		Sample Matrix			
		X		Water			
		Grab		Outfall Composite			
		Date/Time		2. Received by: (Signature)			
		8-9-23 / 1312		<i>[Signature]</i>			
1. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)			
<i>[Signature]</i>		8/19/23		Sydney James			
3. Relinquished by: (Signature)		Date/Time		1334			
<i>[Signature]</i>		8/19/23					
		1334					
<b>SAMPLE CONDITION UPON RECEIPT IN LAB</b>				<b>REMARKS / SAMPLE COMMENTS</b>			
1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes ___ No				PO #: 231617			
2. CONTAINERS CORRECT: <input checked="" type="checkbox"/> Yes ___ No							
3. COC/LABELS AGREE: <input checked="" type="checkbox"/> Yes ___ No							
4. RECEIVED ON ICE: <input checked="" type="checkbox"/> Yes ___ No							
5. TEMPERATURE ON RECEIPT: 1 °C							
6. TEMPERATURE GUN ID: HHT# 5							
FOR COMPLETION BY LAB ONLY							

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 Little Rock, AR 72209  
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# CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		Project Description		Turnaround Time		Preservation Codes:				
NLRWWU		Faulkner Lake -- AR0020303		1 Day (100%)		1. Cool, 6 Degrees Centigrade	4. Thiosulfate for Dechlorination			
7400 Baucom Pike		Chronic Toxicity -- 3rd Quarter 2023		2 Day (50%)		2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2	5. Hydrochloric Acid (HCl)			
North Little Rock, AR 72117		<b>Reporting Information</b>		3 Day (25%)		3. Nitric Acid (HNO <sub>3</sub> ), pH < 2	6. Sodium Hydroxide (NaOH), pH > 12			
Attn: Chris Lumpkin		Telephone: 501-945-7186		Routine		<b>TEST PARAMETERS</b>				
		Email: CLumpkin@nlrwu.com; MEggleston@nlrwu.com		Preservative Code: 1					Arkansas Analytical Work Order Number:	
		<p><i>Kayla Jones</i>  <b>Sampler(s) Printed</b></p>		Bottle Type: P					K2308-	
				Chronic Toxicity (Ceriodaphnia Dubia, Pimephales/Promelas)						003C
				Outfall Composite						
SAMPLE COLLECTION		SAMPLE IDENTIFICATION/ DESCRIPTION		Number of Sample Bottles Matrix		SAMPLE CONDITION UPON RECEIPT IN LAB				
Field Number	Date/s	Time/s	Grab	ID		1. CUSTODY SEALS: Yes ___ No ___				
Comp Start Date/Time	8-10-23	0700	X	4 Water		2. CONTAINERS CORRECT: Yes ___ No ___				
Comp End Date/Time	8-11-23	0700				3. COC/LABELS AGREE: Yes ___ No ___				
						4. RECEIVED ON ICE: Yes ___ No ___				
						5. TEMPERATURE ON RECEIPT: 1 °C				
						6. TEMPERATURE GUN ID: HHT# 5				
						FOR COMPLETION BY LAB ONLY				
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		REMARKS / SAMPLE COMMENTS				
<i>Chris Lumpkin</i>		8-11-23 / 1025		<i>Bryn Craft</i>		PO # : 231617				
3. Relinquished by: (Signature)		Date/Time		4. Received by: (Signature)						
<i>Bryn Craft</i>		8/11/23 / 1042		<i>Sydney James</i>						

Start !

End !

**CETIS Summary Report**

Report Date: 28 Aug-23 10:14 (p 1 of 2)  
 Test Code/ID: K2308003FH / 02-4137-8968

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

Arkansas Analytical

<b>Batch ID:</b> 03-5645-5593	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b> Melissa Bird
<b>Start Date:</b> 08 Aug-23 15:04	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Mod-Hard Synthetic Water
<b>Ending Date:</b> 15 Aug-23 13:25	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 6d 22h	<b>Taxon:</b> Actinopterygii	<b>Source:</b> Aquatox, AR <b>Age:</b> <24
<b>Sample ID:</b> 15-7741-6231	<b>Code:</b> K2308003FH	<b>Project:</b> WET Quarterly Compliance Test (3Q)
<b>Sample Date:</b> 07 Aug-23 07:00	<b>Material:</b> POTW Effluent	<b>Source:</b> Faulkner Lake (AR0020303)
<b>Receipt Date:</b> 07 Aug-23 13:31	<b>CAS (PC):</b>	<b>Station:</b>
<b>Sample Age:</b> 32h (1 °C)	<b>Client:</b> Faulkner	

**Sample Renewals**

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2308003B	09 Aug-23 07:05	09 Aug-23 13:34	10 Aug-23 00:00	1
2	K2308003C	11 Aug-23 07:00	11 Aug-23 10:42	12 Aug-23 00:00	1

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	TU	PMSD	S
04-3800-2407	7d Survival Rate	Steel Many-One Rank Sum Test	11	>11	n/a	9.091	6.95%	1
20-9045-4160	Mean Dry Weight-mg	Dunnett Multiple Comparison Test	11	>11	n/a	9.091	21.0%	1

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
04-3800-2407	7d Survival Rate	Control Resp	0.96	0.8	>>	Yes	Passes Criteria

**7d Survival Rate Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.9600	0.8920	1.0000	0.9000	1.0000	0.0245	0.0548	5.71%	0.00%
3		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	-2.08%
5		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	-2.08%
6		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-4.17%
8		5	0.9600	0.8920	1.0000	0.9000	1.0000	0.0245	0.0548	5.71%	0.00%
11		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	-2.08%

**Mean Dry Weight-mg Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.5052	0.4177	0.5927	0.458	0.628	0.03153	0.0705	13.95%	0.00%
3		5	0.4744	0.3795	0.5693	0.365	0.553	0.03419	0.07646	16.12%	6.10%
5		5	0.4642	0.3818	0.5466	0.353	0.525	0.02969	0.06639	14.30%	8.12%
6		5	0.541	0.4679	0.6141	0.458	0.589	0.02633	0.05886	10.88%	-7.09%
8		5	0.5114	0.413	0.6098	0.426	0.602	0.03542	0.07921	15.49%	-1.23%
11		5	0.4426	0.3521	0.5331	0.363	0.537	0.03258	0.07286	16.46%	12.39%



**CETIS Summary Report**

Report Date: 28 Aug-23 10:14 (p 2 of 2)  
 Test Code/ID: K2308003FH / 02-4137-8968

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

**Arkansas Analytical**

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	0.9000	1.0000	0.9000	1.0000
3		1.0000	1.0000	0.9000	1.0000	1.0000
5		1.0000	1.0000	0.9000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	1.0000
8		1.0000	1.0000	1.0000	0.9000	0.9000
11		1.0000	0.9000	1.0000	1.0000	1.0000

**Mean Dry Weight-mg Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.628	0.458	0.489	0.459	0.492
3		0.481	0.553	0.365	0.536	0.437
5		0.465	0.502	0.353	0.525	0.476
6		0.5	0.586	0.572	0.589	0.458
8		0.426	0.444	0.503	0.602	0.582
11		0.377	0.537	0.454	0.363	0.482

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	10/10	9/10	10/10	9/10	10/10
3		10/10	10/10	9/10	10/10	10/10
5		10/10	10/10	9/10	10/10	10/10
6		10/10	10/10	10/10	10/10	10/10
8		10/10	10/10	10/10	9/10	9/10
11		10/10	9/10	10/10	10/10	10/10

**CETIS Summary Report**

Report Date: 28 Aug-23 09:59 (p 1 of 2)  
 Test Code/ID: K2308003CD / 10-3756-4691

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

Arkansas Analytical

<b>Batch ID:</b> 10-5077-9631	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b> Melissa Bird
<b>Start Date:</b> 08 Aug-23 14:15	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Mod-Hard Synthetic Water
<b>Ending Date:</b> 14 Aug-23 12:27	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Test Length:</b> 5d 22h	<b>Taxon:</b> Branchiopoda	<b>Source:</b> Aquatox, AR <b>Age:</b> <24
<b>Sample ID:</b> 09-5025-4290	<b>Code:</b> K2308003CD	<b>Project:</b> WET Quarterly Compliance Test (3Q)
<b>Sample Date:</b> 07 Aug-23 07:00	<b>Material:</b> POTW Effluent	<b>Source:</b> Faulkner Lake (AR0020303)
<b>Receipt Date:</b> 07 Aug-23 13:31	<b>CAS (PC):</b>	<b>Station:</b>
<b>Sample Age:</b> 31h (1 °C)	<b>Client:</b> Faulkner	

**Sample Renewals**

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2308003B	09 Aug-23 07:05	09 Aug-23 13:34	10 Aug-23 00:00	1
2	K2308003C	11 Aug-23 07:00	11 Aug-23 10:42	12 Aug-23 00:00	1

**Multiple Comparison Summary**

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	TU	PMSD	S
03-7459-8324	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	11	>11	n/a	9.091	n/a	1
18-4672-1656	Reproduction	Dunnett Multiple Comparison Test	11	>11	n/a	9.091	38.6%	1

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Overlap	Decision
				Lower	Upper			
03-7459-8324	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria	
18-4672-1656	Reproduction	Control Resp	18.5	15	>>	Yes	Passes Criteria	
18-4672-1656	Reproduction	PMSD	0.3865	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	L	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
6		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
8		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
11		10	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	L	10	18.5	16.13	20.87	15	26	1.046	3.308	17.88%	0.00%
3		10	21.5	15.74	27.26	13	36	2.544	8.045	37.42%	-16.22%
5		10	23	18.91	27.09	15	34	1.807	5.715	24.85%	-24.32%
6		10	26.6	19.79	33.41	14	39	3.012	9.524	35.81%	-43.78%
8		10	21.5	16.74	26.26	10	32	2.104	6.654	30.95%	-16.22%
11		10	22.2	17.18	27.22	14	30	2.22	7.021	31.62%	-20.00%

**CETIS Summary Report**

Report Date: 28 Aug-23 09:59 (p 2 of 2)  
 Test Code/ID: K2308003CD / 10-3756-4691

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

**Arkansas Analytical**

**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	L	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
11		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	L	16	19	15	22	19	26	16	18	17	17
3		18	17	20	16	18	31	31	15	36	13
5		15	23	28	25	17	24	20	26	18	34
6		26	34	39	34	18	33	15	35	14	18
8		17	17	32	17	22	30	10	26	23	21
11		29	19	25	14	30	29	16	14	30	16

**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	L	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
6		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
11		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING								Fathead Minnow	
Lab # / Sample ID				K2308003				Test Start (Date/Time)	8-8-23, 1504
Client:				FAULKNER				Test End (Date/Time)	8-15-23, 1325
								Day of Test	
		1	2	3	4	5	6	7	notes/remarks
<b>Control</b>	MHS 093	8-8	8-9	8-10	8-11	8-12	8-13	8-14	
D.O. (mg/L)	INITIAL	8.6	8.6	8.8	8.8	8.7	8.6	8.6	
	FINAL	7.0	7.4	7.6	7.7	7.7	7.2	7.2	
pH (s.u.)	INITIAL	8.0	7.8	7.6	7.8	7.9	8.0	8.0	
	FINAL	7.6	7.6	7.8	7.7	7.9	7.6	7.6	
temp (C)	INITIAL	23	22	22	22	23	23	22	
	FINAL	25	25	25	23	25	25	22	
ALKALINITY (mg/L)		62							>
HARDNESS (mg/L)		81							>
CONDUCTIVITY (umhos/cm)		308							>
CHLORINE (mg/L)		0.05							>
<b>CONC:</b>	3%								
D.O. (mg/L)	INITIAL	8.6	8.6	8.8	8.8	8.7	8.5	8.6	
	FINAL	5.6	7.6	7.2	8.1	7.9	7.2	6.8	
pH (s.u.)	INITIAL	7.9	7.8	8.0	8.0	7.9	8.0	8.0	
	FINAL	7.4	7.6	7.6	7.8	7.9	7.6	7.6	
temp (C)	INITIAL	23	22	22	22	22	23	22	
	FINAL	25	25	25	23	25	25	22	
<b>CONC:</b>	5%								
D.O. (mg/L)	INITIAL	8.5	8.6	8.8	8.8	8.7	8.6	8.6	
	FINAL	5.4	7.2	7.4	8.0	8.0	7.6	7.6	7.7 M 8-15
pH (mg/L)	INITIAL	7.9	7.8	8.0	8.0	7.9	8.0	8.0	
	FINAL	7.4	7.8	7.8	7.8	7.9	7.8	7.8	
temp (C)	INITIAL	23	22	22	22	22	23	22	
	FINAL	25	25	25	23	25	25	22	
<b>CONC:</b>	6%								
D.O. (mg/L)	INITIAL	8.5	8.6	8.6	8.8	8.6	8.5	8.6	
	FINAL	6.0	6.8	6.8	7.8	7.8	6.8	7.5	
pH (s.u.)	INITIAL	7.9	7.8	8.0	7.4	7.9	8.0	8.0	
	FINAL	7.4	7.6	7.6	7.8	7.9	7.6	7.7	
temp (C)	INITIAL	23	22	22	22	22	23	22	
	FINAL	25	25	25	23	25	25	23	
<b>CONC:</b>	8%								
D.O. (mg/L)	INITIAL	8.5	8.6	8.6	8.8	8.6	8.5	8.6	
	FINAL	5.4	7.0	6.8	7.8	7.8	7.2	7.5	
pH (s.u.)	INITIAL	7.8	7.8	7.8	7.8	7.9	8.0	8.0	
	FINAL	7.4	7.6	7.6	7.8	8.0	7.8	7.7	
temp (C)	INITIAL	23	22	22	22	22	23	22	
	FINAL	25	25	25	23	25	25	23	
<b>CONC:</b>	11%								
D.O. (mg/L)	INITIAL	8.5	8.6	8.6	8.8	8.6	8.5	8.6	
	FINAL	5.4	7.6	7.6	7.4	7.9	7.6	7.0	
pH (s.u.)	INITIAL	7.8	7.8	7.8	7.8	7.9	8.0	7.9	
	FINAL	7.4	7.8	7.6	7.8	8.0	7.8	7.7	
temp (C)	INITIAL	23	22	22	22	23	23	22	
	FINAL	25	25	25	23	25	25	22	
<b>CONC:</b>	A	A	B	B	C	C	C		
ALKALINITY (mg/L)		18		34		28			>
HARDNESS (mg/L)		66		54		50			>
CONDUCTIVITY (umhos/cm)		469		410		373			>
CHLORINE (mg/L)		0.05		0.05		0.07			>

CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING										Ceriodaphnia Dubia			
Lab # / Sample ID <u>K2308003</u>					Test Start (Date/Time) <u>8-8-23, 1415</u>								
Client: <u>FAULKNER</u>					Test End (Date/Time) <u>8-14-23, 1227</u>								
										Day of Test			
										1			
										2			
										3			
										4			
										5			
										6			
										7			
										notes/remarks			
<b>Control</b>										<u>MHS</u>			
D.O. (mg/L)										INITIAL		<u>8.6</u>	<u>8.6</u>
										FINAL		<u>8.0</u>	<u>9.0</u>
pH (s.u.)										INITIAL		<u>8.0</u>	<u>7.8</u>
										FINAL		<u>8.0</u>	<u>8.4</u>
temp (C)										INITIAL		<u>23</u>	<u>22</u>
										FINAL		<u>23</u>	<u>24</u>
ALKALINITY (mg/L)													
HARDNESS (mg/L)													
CONDUCTIVITY (umhos/cm)													
CHLORINE (mg/L)													
<b>CONC:</b>										<u>3 %</u>			
D.O. (mg/L)										INITIAL		<u>8.6</u>	<u>8.6</u>
										FINAL		<u>7.6</u>	<u>9.2</u>
pH (s.u.)										INITIAL		<u>7.9</u>	<u>7.8</u>
										FINAL		<u>7.9</u>	<u>8.4</u>
temp (C)										INITIAL		<u>23</u>	<u>22</u>
										FINAL		<u>23</u>	<u>24</u>
<b>CONC:</b>										<u>5 %</u>			
D.O. (mg/L)										INITIAL		<u>8.5</u>	<u>8.6</u>
										FINAL		<u>7.6</u>	<u>9.2</u>
pH (mg/L)										INITIAL		<u>7.9</u>	<u>7.8</u>
										FINAL		<u>7.9</u>	<u>8.4</u>
temp (C)										INITIAL		<u>23</u>	<u>22</u>
										FINAL		<u>24</u>	<u>24</u>
<b>CONC:</b>										<u>6 %</u>			
D.O. (mg/L)										INITIAL		<u>8.5</u>	<u>8.6</u>
										FINAL		<u>7.7</u>	<u>9.4</u>
pH (s.u.)										INITIAL		<u>7.9</u>	<u>7.8</u>
										FINAL		<u>7.9</u>	<u>8.5</u>
temp (C)										INITIAL		<u>23</u>	<u>22</u>
										FINAL		<u>24</u>	<u>24</u>
<b>CONC:</b>										<u>8 %</u>			
D.O. (mg/L)										INITIAL		<u>8.5</u>	<u>8.6</u>
										FINAL		<u>7.6</u>	<u>9.3</u>
pH (s.u.)										INITIAL		<u>7.8</u>	<u>7.8</u>
										FINAL		<u>7.9</u>	<u>8.4</u>
temp (C)										INITIAL		<u>23</u>	<u>22</u>
										FINAL		<u>24</u>	<u>24</u>
<b>CONC:</b>										<u>11 %</u>			
D.O. (mg/L)										INITIAL		<u>8.5</u>	<u>8.6</u>
										FINAL		<u>7.7</u>	<u>9.6</u>
pH (s.u.)										INITIAL		<u>7.8</u>	<u>7.8</u>
										FINAL		<u>8.0</u>	<u>8.6</u>
temp (C)										INITIAL		<u>23</u>	<u>22</u>
										FINAL		<u>24</u>	<u>24</u>
<b>CONC:</b>										<u>A</u>			
ALKALINITY (mg/L)													
HARDNESS (mg/L)													
CONDUCTIVITY (umhos/cm)													
CHLORINE (mg/L)													

