

Arkansas Analytical, Inc.

Toxicity Test Results

Paragould Light, Water & Cable
NPDES PERMIT NUMBER: AR0033766
Second Quarter 2022
AFIN # 28-00470
Fathead Minnow Control Failure

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

Ceriodaphnia dubia, Survival and Reproduction Test
Test 1002.0

Prepared for: **Lisa Ellington**
401 Grant Lane
Paragould, Arkansas 72450

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K2204004

Monday, April 18, 2022

Plant location

City of Paragould. The facility is located at 401 Grant Lane, Paragould, AR 72450, approximately 1.4 miles south of U.S. Highway 412 and 0.4 miles west of Arkansas Highway 69 on Grant Lane in Greene County, Arkansas

Test Methods

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%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Receiving water
- 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%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Receiving water
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

<i>Ceriodaphnia dubia</i> 3/29/22 – 4/5/22		<i>Pimephales promelas</i> 3/29/22 – 4/5/22	
NOEC Survival:	250 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	500 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

Paragould Light, Water & Cable

<i>Ceriodaphnia dubia</i>		<i>Pimephales promelas</i>	
NOEC Survival Parameter: TOP3B	100%	NOEC Survival Parameter: TOP6C	N/A
Pass/Fail Survival Parameter: TLP3B	Pass	Pass/Fail Survival Parameter: TLP6C	Invalid
NOEC Reproduction Parameter: TPP3B	100%	NOEC Growth Parameter: TPP6C	N/A
Pass/Fail Reproduction Parameter: TGP3B	Pass	Pass/Fail Growth Parameter: TGP6C	Invalid
%CV Reproduction Parameter: TQP3B	36.0%	%CV Growth Parameter: TQP6C	34.0%
PMSD Reproduction	46.2%	PMSD Growth	37.4%
Chronic Toxicity NOEC Parameter: 51710	Lethality: 100% Sub-lethality: 100%	Chronic Toxicity NOEC Parameter: 51714	N/A

Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Paragould Light, Water & Cable, specifies that the **critical dilution is 100% effluent**. Due to a **control failure using receiving water**, the test will have to be **repeated using synthetic water**.

Ceriodaphnia dubia, (Method 1002.0): The permit issued to the Paragould Light, Water & Cable, specifies the **critical dilution is 100% 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, Jettie Parnell, Samantha Denton, Johnny Moline

Reviewed by:


Melissa Bird

Appendices

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

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 Little Rock, AR 72209
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 FAX: 501-455-6118



CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:					
Paragould, Light, Water & Cable 401 Grant Lane Paragould, AR 72450		Paragould, Light, Water, & Cable P.O. Box 9 Paragould, AR 72450		Chronic Toxicity		1 Day (100%) 2 Day (50%) 3 Day (25%)		1. Cool, 4 Degrees Centigrade 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 3. Nitric Acid (HNO ₃), pH < 2 4. Thiosulfate for Dechlorination 5. Hydrochloric Acid(HCl) 6. Sodium Hydroxide (NaOH), pH > 12					
PO #9522LE Attn: Lisa Ellington NPDES Permit AR0033766		Telephone: 870-239-7795 Fax: 870-239-7791 Email: lellington@paragould.com		Reporting Information		Routine		TEST PARAMETERS					
Fuzz Symons		Fuzz Symons		Sample Information		Preservative Code: 1 Bottle Type: P		G = Glass; P = Plastic V = Septum; A = Amber Arkansas Analytical Work Order Number: K2204004					
Sampler(s) Signature		Sampler(s) Printed		Sample		Dilution		REMARKS / SAMPLE COMMENTS					
Field Number	Date/s	Time/s	Grab	Number of Bottles	Sample Matrix	IDENTIFICATION/ DESCRIPTION							
	4/4/2022	8:50 AM	X	1	Water	PLWC River Water - 8-Mile Creek		X					
	4/4/2022	8:51 AM	X	1	Water	PLWC River Water - 8-Mile Creek		X					
	4/4/2022	8:52 AM	X	1	Water	PLWC River Water - 8-Mile Creek		X					
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB		REMARKS / SAMPLE COMMENTS					
Steve Pomeroy		4/5/2022 9:00		UPS		1. CUSTODY SEALS: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 2. CONTAINERS CORRECT: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 3. COC/LABELS AGREE: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 4. RECEIVED ON ICE: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 5. TEMPERATURE ON RECEIPT: 1°C 6. TEMPERATURE GUN ID: HHT#5							
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		FOR COMPLETION BY LAB ONLY							
UPS		4-6-22 1445		Manda Johnson									



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CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:							
Paragould, Light, Water & Cable		Paragould, Light, Water, & Cable		Chronic Toxicity		1 Day (100%)		1. Cool, 4 Degrees Centigrade		4. Thiosulfate for Dechlorination					
401 Grant Lane		P.O. Box 9				2 Day (50%)		2. Sulfuric Acid (H ₂ SO ₄), pH < 2		5. Hydrochloric Acid(HCl)					
Paragould, AR 72450		Paragould, AR 72450		Reporting Information		3 Day (25%)		3. Nitric Acid (HNO ₃), pH < 2		6. Sodium Hydroxide (NaOH), pH > 12					
PO #9522LE				Telephone: 870-239-7795		Routine		TEST PARAMETERS							
Attn: Lisa Ellington				Fax: 870-239-7791		Preservative Code:		1						Bottle Type Code	
NPDES Permit AR0033766				Email: lellington@paragould.com		Bottle Type:		P						G = Glass, P = Plastic V = Septum, A = Amber	
 Sampler(s) Signature		 Sampler(s) Printed												Arkansas Analytical Work Order Number: K2204004	
Field Number	SAMPLE COLLECTION Dats	Time/s	Grab	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION									
	4/4/2022	8:47 AM	X	1	Water	PLWC River Water - 8-Mile Creek		X							
	4/4/2022	8:48 AM	X	2	Water	PLWC River Water - 8-Mile Creek		X							
	4/4/2022	8:49 AM	X	1	Water	PLWC River Water - 8-Mile Creek		X							
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB								REMARKS / SAMPLE COMMENTS	
 Steve Parbu		4/5/22 9:00		 VRS		1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		2. CONTAINERS CORRECT: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
 UPS		4-6-22 1445		 Amanda Johnson		3. COC/LABELS AGREE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
						4. RECEIVED ON ICE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
						5. TEMPERATURE ON RECEIPT: 1°C									
						6. TEMPERATURE GUN ID: #H T#5									
						FOR COMPLETION BY LAB ONLY									



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CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:					
Paragould, Light, Water & Cable 401 Grant Lane Paragould, AR 72450 PO #: 9522LE		Paragould, Light, Water, & Cable P.O. Box 9 Paragould, AR 72450		Chronic Toxicity		1 Day (100%) 2 Day (50%) 3 Day (25%) Routine		1. Cool, 4 Degrees Centigrade 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 3. Nitric Acid (HNO ₃), pH < 2 4. Thiosulfate for Dechlorination 5. Hydrochloric Acid (HCl) 6. Sodium Hydroxide (NaOH), pH > 12					
Attn: Lisa Ellington NPDES Permit AR0033766		Telephone: 870-239-7795 Fax: 870-239-7791 Email: lellington@paragould.com		Reporting Information		Preservative Code: 1 Bottle Type: P		TEST PARAMETERS					
 Lisa Ellington		 Colin Bester		Chronic Toxicity		Chronic Toxicity		G = Glass; P = Plastic V = Septum; A = Amber Arkansas Analytical Work Order Number: K2204- 004C					
Sampler(s) Signature		Sampler(s) Printed		SAMPLE COLLECTION		SAMPLE IDENTIFICATION/ DESCRIPTION		REMARKS / SAMPLE COMMENTS					
Field Number	Date/s	Date/Time	Grab	Comp	Number of Bottles	Sample Matrix	IDENTIFICATION/ DESCRIPTION	1. Relinquished by: (Signature) Steve Paulsen Date/Time: 4/17/2009 9:00 2. Received by: (Signature) UPS Date/Time: 4/18/2009 1430 3. Relinquished by: (Signature) UPS Date/Time: 4/18/2009 1430 4. Received by lab: (Signature) Sydney James Date/Time: 4/18/2009 1430 SAMPLE CONDITION UPON RECEIPT IN LAB 1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2. CONTAINERS CORRECT: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 3. COC/LABELS AGREE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 4. RECEIVED ON ICE: <input type="checkbox"/> Yes <input type="checkbox"/> No 5. TEMPERATURE ON RECEIPT: 12 6. TEMPERATURE GUN ID: H17#5 FOR COMPLETION BY LAB ONLY					
4/6/22 to 4/7/22	8:04 AM to 7:49 AM	4/17/2009 9:00	X	X	4	Water	Effluent Outfall 001 -- Day 3	Chronic Toxicity X					

CETIS Summary Report

Report Date: 19 Apr-22 14:38 (p 1 of 2)
 Test Code/ID: K2204004FH / 03-6362-7069

Fathead Minnow 7-d Larval Survival and Growth Test

Arkansas Analytical

Batch ID: 14-6153-8054	Test Type: Growth-Survival (7d)	Analyst: Jettie Parnell
Start Date: 06 Apr-22 15:40	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 13 Apr-22 16:00	Species: Pimephales promelas	Brine: Not Applicable
Test Length: 7d 0h	Taxon: Actinopterygii	Source: Aquatox, AR Age: <24
Sample ID: 06-2576-1240	Code: K2204004FH	Project: WET Quarterly Compliance Test (2Q)
Sample Date: 05 Apr-22 07:16	Material: POTW Effluent	Source: Paragould (AR0033766)
Receipt Date: 06 Apr-22 14:45	CAS (PC):	Station:
Sample Age: 32h (1 °C)	Client: Paragould	

RECEIVING WATER - sampled 4/4/22@08:52/received on 4/6/22@14:45

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2204004B	06 Apr-22 07:22	07 Apr-22 12:55	07 Apr-22 00:00	1
2	K2204004C	07 Apr-22 07:49	08 Apr-22 14:30	08 Apr-22 00:00	1

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	TU	PMSD	S
01-2595-0452	7d Survival Rate	Dunnett Multiple Comparison Test	100	>100	n/a	1	41.4%	1
10-3035-9910	Mean Dry Weight-mg	Dunnett Multiple Comparison Test	100	>100	n/a	1	37.4%	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
01-2595-0452	7d Survival Rate	Control Resp	0.7	0.8	>>	Yes	Below Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	R	5	0.7000	0.3173	1.0000	0.3000	1.0000	0.1378	0.3082	44.03%	0.00%
32		5	0.6600	0.3132	1.0000	0.2000	0.9000	0.1249	0.2793	42.32%	5.71%
42		5	0.8600	0.6717	1.0000	0.7000	1.0000	0.0678	0.1517	17.63%	-22.86%
56		5	0.9400	0.8289	1.0000	0.8000	1.0000	0.0400	0.0894	9.52%	-34.29%
80		5	0.9600	0.8920	1.0000	0.9000	1.0000	0.0245	0.0548	5.71%	-37.14%
100		5	0.9600	0.8920	1.0000	0.9000	1.0000	0.0245	0.0548	5.71%	-37.14%

Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	R	5	0.2176	0.1257	0.3095	0.096	0.279	0.03308	0.07398	34.00%	0.00%
32		5	0.164	0.06257	0.2654	0.024	0.228	0.03653	0.08169	49.81%	24.63%
42		5	0.245	0.1825	0.3075	0.204	0.331	0.02252	0.05036	20.56%	-12.59%
56		5	0.2404	0.1973	0.2835	0.208	0.289	0.01551	0.03469	14.43%	-10.48%
80		5	0.273	0.2243	0.3217	0.226	0.333	0.01754	0.03923	14.37%	-25.46%
100		5	0.2512	0.2257	0.2767	0.234	0.283	0.009172	0.02051	8.16%	-15.44%

CETIS Summary ReportReport Date: 19 Apr-22 14:38 (p 2 of 2)
Test Code/ID: K2204004FH / 03-6362-7069**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	R	1.0000	1.0000	0.7000	0.3000	0.5000
32		0.8000	0.9000	0.8000	0.2000	0.6000
42		1.0000	1.0000	0.9000	0.7000	0.7000
56		0.8000	0.9000	1.0000	1.0000	1.0000
80		1.0000	0.9000	0.9000	1.0000	1.0000
100		1.0000	0.9000	0.9000	1.0000	1.0000

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.266	0.279	0.245	0.096	0.202
32		0.183	0.228	0.215	0.024	0.17
42		0.331	0.246	0.22	0.224	0.204
56		0.232	0.211	0.208	0.289	0.262
80		0.256	0.226	0.27	0.28	0.333
100		0.234	0.283	0.243	0.26	0.236

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	10/10	10/10	7/10	3/10	5/10
32		8/10	9/10	8/10	2/10	6/10
42		10/10	10/10	9/10	7/10	7/10
56		8/10	9/10	10/10	10/10	10/10
80		10/10	9/10	9/10	10/10	10/10
100		10/10	9/10	9/10	10/10	10/10

CETIS Summary Report

Report Date: 18 Apr-22 13:46 (p 1 of 2)
 Test Code/ID: K2204004CD / 21-2751-6830

Ceriodaphnia 7-d Survival and Reproduction Test

Arkansas Analytical

Batch ID: 10-7295-0427	Test Type: Reproduction-Survival (7d)	Analyst: Jettie Parnell
Start Date: 06 Apr-22 15:15	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 12 Apr-22 13:37	Species: Ceriodaphnia dubia	Brine: Not Applicable
Test Length: 5d 22h	Taxon: Branchiopoda	Source: In-House Culture Age: <24
Sample ID: 19-8395-1042	Code: K2204004CD	Project: WET Quarterly Compliance Test (2Q)
Sample Date: 05 Apr-22 07:16	Material: POTW Effluent	Source: Paragould (AR0033766)
Receipt Date: 06 Apr-22 14:45	CAS (PC):	Station:
Sample Age: 32h (1 °C)	Client: Paragould	

RECEIVING WATER - sampled 4/4/22@08:52/received on 4/6/22@14:45

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2204004B	06 Apr-22 07:22	07 Apr-22 12:55	07 Apr-22 00:00	1
2	K2204004C	07 Apr-22 07:49	08 Apr-22 14:30	08 Apr-22 00:00	1

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	TU	PMSD	S
06-2637-1136	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	100	>100	n/a	1	n/a	1
00-6103-9845	Reproduction	Dunnett Multiple Comparison Test	100	>100	n/a	1	46.2%	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
06-2637-1136	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
00-6103-9845	Reproduction	Control Resp	24.6	15	>>	Yes	Passes Criteria
00-6103-9845	Reproduction	PMSD	0.4616	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%
32		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	10.00%
42		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	10.00%
56		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	10.00%
80		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		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	24.6	19.27	29.93	13	34	2.358	7.457	30.31%	0.00%
32		10	24.5	14.93	34.07	2	42	4.23	13.38	54.60%	0.41%
42		10	19.5	10.4	28.6	6	40	4.023	12.72	65.24%	20.73%
56		10	23.4	15.75	31.05	5	39	3.384	10.7	45.73%	4.88%
80		10	24.4	16.65	32.15	7	39	3.426	10.83	44.40%	0.81%
100		10	24.4	16.9	31.9	9	39	3.317	10.49	42.99%	0.81%

Average neonates per surviving female in 100% conc. → $\bar{X} = 26.1$
 $\%CV = 36.0$
 At 4/19

CETIS Summary Report

Report Date: 18 Apr-22 13:46 (p 2 of 2)
 Test Code/ID: K2204004CD / 21-2751-6830

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
32		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
42		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000
56		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000
80		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

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	24	34	26	30	13	33	29	13	24	20
32		15	33	38	42	8	27	22	2	37	21
42		6	40	15	20	11	30	40	10	9	14
56		23	28	38	16	24	39	29	13	5	19
80		33	37	20	23	7	32	39	10	20	23
100		22	17	28	39	9	28	38	12	33	18

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
32		1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1
42		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1
56		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1
80		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

CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING							Fathead Minnow			
Lab # / Sample ID <u>62804004</u>				Test Start (Date/Time) <u>4/6/22-1540</u>						
Client: <u>Paragould</u>				Test End (Date/Time) <u>4/13/22-1600</u>						
		Day of Test								
		1	2	3	4	5	6	7	notes	
Control	MHS 014	4/6	4/7	4/8	4/9	4/10	4/11	4/12		
D.O. (mg/L)	INITIAL	10.0	9.6	9.3	9.1	9.0	8.7	8.6		
	FINAL	7.9	8.0	8.2	8.4	7.8	8.0	7.9		
pH (s.u.)	INITIAL	6.3	7.4	6.6	7.5	7.6	7.2	7.4		
	FINAL	8.2	7.9	7.7	7.6	8.0	7.8	7.6		
temp (C)	INITIAL	25	21	21	20	20	21	21		
	FINAL	25	25	20	20	25	25	25		
ALKALINITY (mg/L)		56								
HARDNESS (mg/L)		100								
CONDUCTIVITY (umhc)		349								
CHLORINE (mg/L)		<0.05								
CONC: 32										
D.O. (mg/L)	INITIAL	9.3	9.6	9.0	9.1	9.0	8.8	8.7		
	FINAL	7.8	7.8	8.2	8.4	7.9	8.1	7.9		
pH (s.u.)	INITIAL	6.5	7.7	6.8	7.6	7.6	7.2	7.3		
	FINAL	8.0	7.5	7.8	7.6	7.8	7.7	7.6		
temp (C)	INITIAL	23	21	22	20	20	21	21		
	FINAL	25	25	20	20	25	25	25		
CONC: 42										
D.O. (mg/L)	INITIAL	9.1	9.6	8.9	9.1	9.0	8.9	8.6		
	FINAL	7.8	7.7	8.2	8.4	7.8	8.0	7.8		
pH (mg/L)	INITIAL	6.8	7.7	7.0	7.6	7.6	7.2	7.4		
	FINAL	7.9	7.6	7.8	7.7	7.8	7.7	7.6		
temp (C)	INITIAL	24	21	23	20	20	20	21		
	FINAL	25	25	20	20	25	25	25		
CONC: 56										
D.O. (mg/L)	INITIAL	9.0	9.5	8.8	9.1	9.0	8.9	8.7		
	FINAL	7.7	7.8	8.2	8.2	7.1	7.6	7.7		
pH (s.u.)	INITIAL	7.1	7.6	7.2	7.5	7.6	7.3	7.4		
	FINAL	7.9	7.6	7.9	7.8	7.7	7.7	7.7		
temp (C)	INITIAL	23	21	23	20	20	20	21		
	FINAL	25	25	21	20	25	25	25		
CONC: 80										
D.O. (mg/L)	INITIAL	8.9	9.4	8.6	9.2	8.9	9.0	8.8		
	FINAL	7.7	7.9	8.1	8.2	7.1	7.9	7.8		
pH (s.u.)	INITIAL	7.1	7.6	7.3	7.4	7.6	7.3	7.4		
	FINAL	7.9	7.7	7.9	7.9	7.6	7.7	7.7		
temp (C)	INITIAL	23	21	24	20	20	20	21		
	FINAL	25	25	21	20	25	25	25		
CONC: 100										
D.O. (mg/L)	INITIAL	9.4	9.5	8.7	9.3	9.2	9.1	8.8		
	FINAL	7.8	7.9	8.4	8.2	7.4	8.0	7.8		
pH (s.u.)	INITIAL	7.3	7.6	7.3	7.2	7.5	7.4	7.5		
	FINAL	7.9	7.8	7.9	8.0	7.7	7.8	7.8		
temp (C)	INITIAL	24	21	25	20	21	20	21		
	FINAL	25	25	21	20	25	25	25		
CONC: 100		A	B	C	A	B	C	C		
ALKALINITY (mg/L)		A110	B112	C98	110	112	98	98		
HARDNESS (mg/L)		92	106	104	92	106	104	104		
CONDUCTIVITY (umhc)		525	560	477	525	560	477	477		
CHLORINE (mg/L)		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		

CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING

Ceriodaphnia Dubia

Lab # / Sample ID *K2-204004*

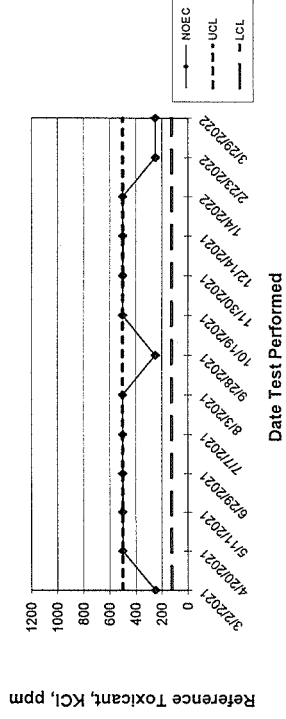
Test Start (Date/Time) *4/6/22 - 1515*

Client: *Danaguld*

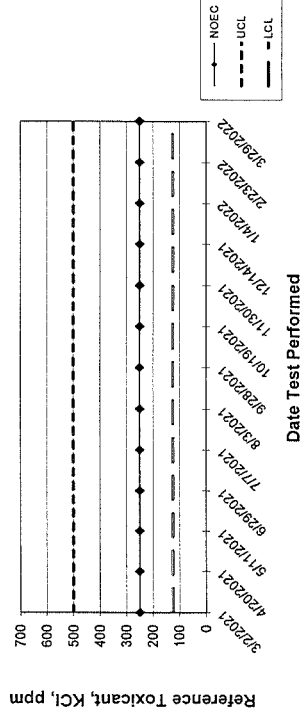
Test End (Date/Time) *4/12/22 - 1337*

		Day of Test							
		1	2	3	4	5	6	7	notes/remarks
Control	MHS 014	4/6	4/7	4/8	4/9	4/10	4/11	4/12	
D.O. (mg/L)	INITIAL	10.0	9.6	9.3	9.1	9.0	8.7	8.6	
	FINAL	8.5	8.0	8.6	8.9	8.3	8.2		
pH (s.u.)	INITIAL	6.3	7.9	6.6	7.5	7.6	7.2	7.4	
	FINAL	7.8	8.6	7.6	8.0	7.6	8.9		
temp (C)	INITIAL	23	21	21	20	20	21	21	
	FINAL	25	25	25	25	25	25		
ALKALINITY (mg/L)		56							
HARDNESS (mg/L)		100							
CONDUCTIVITY (umhos/cm)		349							
CHLORINE (mg/L)		<0.05							
CONC: 32									
D.O. (mg/L)	INITIAL	9.3	9.6	9.0	9.1	9.0	8.8	8.7	
	FINAL	8.5	9.3	8.7	8.8	8.4	8.3		
pH (s.u.)	INITIAL	6.5	7.7	6.8	7.6	7.6	7.2	7.3	
	FINAL	7.9	8.6	7.6	7.9	7.6	8.4		
temp (C)	INITIAL	23	21	22	20	20	21	21	
	FINAL	25	25	25	25	25	25		
CONC: 42									
D.O. (mg/L)	INITIAL	9.1	9.6	8.9	9.1	9.0	8.9	8.6	
	FINAL	8.5	9.6	8.8	8.8	8.4	8.5		
pH (mg/L)	INITIAL	6.8	7.7	7.0	7.6	7.6	7.2	7.4	
	FINAL	8.1	8.5	7.8	7.9	7.6	8.1		
temp (C)	INITIAL	24	21	23	20	20	20	21	
	FINAL	25	25	25	25	25	25		
CONC: 56									
D.O. (mg/L)	INITIAL	9.0	9.5	8.8	9.1	9.0	8.9	8.7	
	FINAL	8.6	9.7	8.8	8.8	8.5	8.2		
pH (s.u.)	INITIAL	7.1	7.6	7.2	7.5	7.6	7.3	7.4	
	FINAL	8.2	8.5	7.8	7.9	7.8	7.9		
temp (C)	INITIAL	23	21	23	20	20	20	21	
	FINAL	25	25	25	25	25	25		
CONC: 80									
D.O. (mg/L)	INITIAL	8.9	9.4	8.6	9.2	8.9	9.0	8.8	
	FINAL	8.6	9.7	8.8	8.8	8.5	8.2		
pH (s.u.)	INITIAL	7.1	7.6	7.3	7.4	7.6	7.3	7.4	
	FINAL	8.3	8.5	7.9	7.9	7.8	7.9		
temp (C)	INITIAL	23	21	24	20	20	20	21	
	FINAL	25	25	25	25	25	25		
CONC: 100									
D.O. (mg/L)	INITIAL	9.4	9.5	8.7	9.3	9.1	9.1	8.8	
	FINAL	8.7	10.2	8.9	9.0	8.8	8.3		
pH (s.u.)	INITIAL	7.3	7.6	7.3	7.2	7.5	7.4	7.5	
	FINAL	8.4	8.7	8.0	8.1	8.0	7.9		
temp (C)	INITIAL	24	21	25	20	21	20	21	
	FINAL	25	25	25	25	25	25		
CONC: 100		A	B	C	A	B	C	C	
ALKALINITY (mg/L)		110	112	98	110	112	98	98	
HARDNESS (mg/L)		92	106	104	92	106	104	104	
CONDUCTIVITY (umhos/cm)		525	560	477	525	560	477	477	
CHLORINE (mg/L)		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	

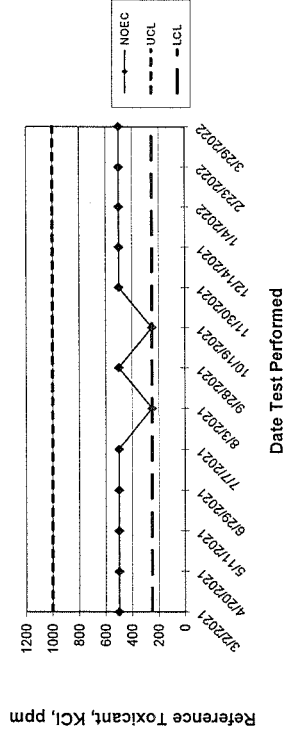
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