

Arkansas Analytical, Inc.

Toxicity Test Results

Paragould Light, Water & Cable
NPDES PERMIT NUMBER: AR0033766
First Quarter 2021
AFIN # 28-00470

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 K2101007

Wednesday, January 27, 2021

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: 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%, 32%, 42%, 56%, 80%, 100%
- Dilution water: Moderately hard synthetic
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

<i>Ceriodaphnia dubia</i> 12/15/20-12/21/20		<i>Pimephales promelas</i> 12/15/20-12/22/20	
NOEC Survival:	500 ppm KCl	NOEC Survival:	500 ppm KCl
LOEC Survival:	1000 ppm KCl	LOEC Survival:	1000ppm KCl
NOEC Reproduction:	250 ppm KCl	NOEC Growth:	500ppm 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	100%
Pass/Fail Survival Parameter: TLP3B	Pass	Pass/Fail Survival Parameter: TLP6C	Pass
NOEC Reproduction Parameter: TPP3B	100%	NOEC Growth Parameter: TPP6C	100%
Pass/Fail Reproduction Parameter: TGP3B	Pass	Pass/Fail Growth Parameter: TGP6C	Pass
%CV Reproduction Parameter: TQP3B	29.1%	%CV Growth Parameter: TQP6C	8.52%
PMSD Reproduction	37.5%	PMSD Growth	12.7%

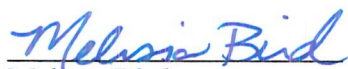
Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Paragould Light, Water & Cable, specifies that 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.

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, Emily Nichols, Jettie Parnell, Tracy Bounds

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



8100 National Drive
 Little Rock, AR 72209
 PHONE: 501-455-3233
 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. Thiou sulfate for Dechlorination 5. Hydrochloric Acid (HCl) 6. Sodium Hydroxide (NaOH), pH > 12	
PO #: 9521LE		Reporting Information		Telephone: 870-239-7795		Routine		TEST PARAMETERS	
Attn: Lisa Ellington		Fax: 870-239-7791		Email: lellington@paragould.com		Preservative Code: 1		Bottle Type Code	
NPDES Permit AR0033766		Tiffani Newson		Bottle Type: P		G = Glass, P = Plastic V = Spinn, A = Amber		Arkansas Analytical Work Order Number: K2161057 A	
Sampler(s) Signature		Sampler(s) Printed		SAMPLE IDENTIFICATION/ DESCRIPTION		Chronic Toxicity			
Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Number of Comp	Number of Bottles	Sample Matrix	Water	Effluent Outfall 001 -- Day 1	
	01/11/2021 to 01/12/2021	7:12 AM to 7:08 AM		X	4			X	
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		Date/Time		REMARKS / SAMPLE COMMENTS	
 Tiffani Newson		1-12-2021 9:00am		 Tiffani Newson		1-12-2021 9:00am			
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		Date/Time		SAMPLE CONDITION UPON RECEIPT IN LAB 1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes ___ No 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: <input checked="" type="checkbox"/> Yes ___ No 6. TEMPERATURE GUN ID: HHT#2 FOR COMPLETION BY LAB ONLY	
 Tiffani Newson		1-12-2021 9:00am		 Tiffani Newson		1-12-2021 9:00am			



8100 National Drive
 Little Rock, AR 72209
 PHONE: 501-455-3233
 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 #: 9521LE		Reporting Information		Telephone: 870-239-7795		Routine		TEST PARAMETERS	
Attn: Lisa Ellington		Fax: 870-239-7791		Email: lellington@paragould.com		Preservative Code: 1		Bottle Type Code	
NPDES Permit AR0033766		Sampler(s) Printed: TIPARI NEWSON		Sampler(s) Signature: <i>Tipari Newson</i>		Bottle Type: P		G = Glass, P = Plastic V = Septum, A = Amber	
Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Number of Bottles	Sample Matrix	IDENTIFICATION/ DESCRIPTION	SAMPLE	Chronic Toxicity	Arkansas Analytical Work Order Number:
	01/12/2021 to 01/13/2021	7:29 AM to 7:30 AM		X 4	Water	Effluent Outfall 001 -- Day 2		X	K210107 B
1. Relinquished by: (Signature) <i>Steve Barden</i>		Date/Time 1/12/21 9:00		2. Received by: (Signature) <i>VRB</i>		SAMPLE CONDITION UPON RECEIPT IN LAB 1. CUSTODY SEALS: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 2. CONTAINERS CORRECT: Yes <input type="checkbox"/> No <input type="checkbox"/> 3. COC/LABELS AGREE: Yes <input type="checkbox"/> No <input type="checkbox"/> 4. RECEIVED ON ICE: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 5. TEMPERATURE ON RECEIPT: <i>1°C</i> 6. TEMPERATURE GUN ID: <i>HH7#2</i> FOR COMPLETION BY LAB ONLY			
3. Relinquished by: (Signature) <i>VRB</i>		Date/Time 1-12-21 10:03		4. Received by lab: (Signature) <i>James H. Johnson</i>		REMARKS / SAMPLE COMMENTS			



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

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%) 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	
401 Grant Lane		P.O. Box 9		Reporting Information		Routine Telephone: 870-239-7795 Fax: 870-239-7791		TEST PARAMETERS Bottle Type Code	
Paragould, AR 72450		Paragould, AR 72450		Attn: Lisa Ellington		NPDES Permit AR0033766 Email: lellington@paragould.com		Preservative Code: P Bottle Type:	
PO #: 9521LE		Tiffani Nanson		Sampler(s) Signature		Sampler(s) Printed		Arkansas Analytical Work Order Number: K2101007	
Field Number	SAMPLE COLLECTION Date/s	Times	Grab	Comp	Number of Bottles	Sample Matrix	IDENTIFICATION/ DESCRIPTION	SAMPLE	Chronic Toxicity
	01/13/2021 to 01/14/2021	8:15 AM to 7:22 AM		X	4	Water	Effluent Outfall 001 -- Day 3		X
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		Date/Time		SAMPLE CONDITION UPON RECEIPT IN LAB 1. CUSTODY SEALS: Yes ___ No <input checked="" type="checkbox"/> 2. CONTAINERS CORRECT: Yes ___ No <input checked="" type="checkbox"/> 3. COC/LABELS AGREE: Yes ___ No <input checked="" type="checkbox"/> 4. RECEIVED ON ICE: Yes ___ No <input checked="" type="checkbox"/> 5. TEMPERATURE ON RECEIPT: 1°C <input checked="" type="checkbox"/> 6. TEMPERATURE GUN ID: HHT#2	
Steve Parker		1/14/21 9:00am		URS		1/15/21 0930		REMARKS / SAMPLE COMMENTS	
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		Date/Time			
URS				Tiffani Nanson					

CETIS Summary Report

Report Date: 27 Jan-21 14:09 (p 1 of 2)
 Test Code/ID: K2101007FH / 18-4581-9880

Fathead Minnow 7-d Larval Survival and Growth Test

Arkansas Analytical

Batch ID: 08-0505-6131 Test Type: Growth-Survival (7d) Analyst: Emily Nichols
 Start Date: 13 Jan-21 15:01 Protocol: EPA/821/R-02-013 (2002) Diluent: Mod-Hard Synthetic Water
 Ending Date: 20 Jan-21 14:15 Species: Pimephales promelas Brine: Not Applicable
 Test Length: 6d 23h Taxon: Actinopterygii Source: Aquatox, AR Age: <48

Sample ID: 07-7071-7684 Code: k2101007FH Project: WET Quarterly Compliance Test (1Q)
 Sample Date: 12 Jan-21 07:08 Material: POTW Effluent Source: Paragould (AR0033766)
 Receipt Date: 13 Jan-21 10:58 CAS (PC): Station:
 Sample Age: 32h (1 °C) Client: Paragould

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2101007B	13 Jan-21 07:30	14 Jan-21 16:03	14 Jan-21 00:00	1
2	K2101007C	14 Jan-21 07:22	15 Jan-21 09:30	15 Jan-21 00:00	1

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	TU	PMSD	S
13-9659-9487	7d Survival Rate	Steel Many-One Rank Sum Test		100	>100	n/a	1	6.76%	1
06-3111-6558	Mean Dry Biomass-mg	Dunnett Multiple Comparison Test		100	>100	n/a	1	12.7%	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Decision
				Lower	Upper	Overlap	
13-9659-9487	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
06-3111-6558	Mean Dry Biomass-mg	Control Resp	0.6752	0.25	>>	Yes	Passes Criteria
06-3111-6558	Mean Dry Biomass-mg	PMSD	0.1267	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	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
32		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
42		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
56		5	0.9600	0.8489	1.0000	0.8000	1.0000	0.0400	0.0894	9.32%	4.00%
80		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	2.00%
100		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	2.00%

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.6752	0.6038	0.7466	0.627	0.767	0.02573	0.05754	8.52%	0.00%
32		5	0.6516	0.5376	0.7656	0.551	0.784	0.04106	0.09182	14.09%	3.50%
42		5	0.6914	0.6243	0.7585	0.619	0.743	0.02415	0.054	7.81%	-2.40%
56		5	0.6612	0.5979	0.7245	0.596	0.728	0.02279	0.05096	7.71%	2.07%
80		5	0.6954	0.6444	0.7464	0.643	0.753	0.01838	0.0411	5.91%	-2.99%
100		5	0.666	0.6326	0.6994	0.631	0.704	0.01203	0.02691	4.04%	1.36%

CETIS Summary ReportReport Date: 27 Jan-21 14:09 (p 2 of 2)
Test Code/ID: K2101007FH / 18-4581-9880**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	1.0000	1.0000	1.0000	1.0000
32		1.0000	1.0000	1.0000	1.0000	1.0000
42		1.0000	1.0000	1.0000	1.0000	1.0000
56		1.0000	0.8000	1.0000	1.0000	1.0000
80		1.0000	1.0000	1.0000	1.0000	0.9000
100		0.9000	1.0000	1.0000	1.0000	1.0000

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.63	0.627	0.691	0.661	0.767
32		0.784	0.581	0.684	0.551	0.658
42		0.7	0.743	0.619	0.74	0.655
56		0.646	0.642	0.728	0.694	0.596
80		0.753	0.694	0.643	0.712	0.675
100		0.661	0.677	0.704	0.657	0.631

7d Survival Rate Binomials

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

CETIS Summary Report

Report Date: 27 Jan-21 14:15 (p 1 of 2)
 Test Code/ID: K2101007CD / 09-4961-1443

Ceriodaphnia 7-d Survival and Reproduction Test

Arkansas Analytical

Batch ID: 02-1069-8700	Test Type: Reproduction-Survival (7d)	Analyst: Emily Nichols
Start Date: 13 Jan-21 14:32	Protocol: EPA/821/R-02-013 (2002)	Diluent: Mod-Hard Synthetic Water
Ending Date: 20 Jan-21 12:47	Species: Ceriodaphnia dubia	Brine: Not Applicable
Test Length: 6d 22h	Taxon: Branchiopoda	Source: In-House Culture Age: <24
Sample ID: 12-1252-5233	Code: K2101007CD	Project: WET Quarterly Compliance Test (1Q)
Sample Date: 12 Jan-21 07:08	Material: POTW Effluent	Source: Paragould (AR0033766)
Receipt Date: 13 Jan-21 10:58	CAS (PC):	Station:
Sample Age: 31h (1 °C)	Client: Paragould	

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K2101007B	13 Jan-21 07:30	14 Jan-21 16:03	14 Jan-21 00:00	1
2	K2101007C	14 Jan-21 07:22	15 Jan-21 09:30	15 Jan-21 00:00	1

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	TU	PMSD	S
14-6142-6999	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		100	>100	n/a	1	n/a	1
16-9610-4420	Reproduction	Dunnett Multiple Comparison Test		100	>100	n/a	1	37.5%	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits			Decision
				Lower	Upper	Overlap	
14-6142-6999	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
16-9610-4420	Reproduction	Control Resp	22.6	15	>>	Yes	Passes Criteria
16-9610-4420	Reproduction	PMSD	0.3751	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	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
42		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	10.00%
56		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
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	22.6	17.9	27.3	10	33	2.077	6.569	29.07%	0.00%
32		10	25.3	18.78	31.82	9	39	2.883	9.117	36.04%	-11.95%
42		10	20.7	11.76	29.64	4	48	3.95	12.49	60.34%	8.41%
56		10	24.4	20.58	28.22	19	34	1.688	5.337	21.87%	-7.96%
80		10	25.7	19.78	31.62	11	39	2.616	8.274	32.19%	-13.72%
100		10	29.3	25.24	33.36	20	37	1.795	5.677	19.38%	-29.65%

CETIS Summary Report

Report Date: 27 Jan-21 14:15 (p 2 of 2)
 Test Code/ID: K2101007CD / 09-4961-1443

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	1.0000	1.0000	1.0000
42		1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
56		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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	33	24	24	10	17	28	20	20	21	29
32		24	27	29	9	20	26	39	25	16	38
42		10	4	23	48	23	9	19	27	28	16
56		32	25	19	21	19	27	24	34	19	24
80		27	29	27	11	19	29	35	39	23	18
100		33	36	29	37	31	20	31	29	26	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	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	1/1	1/1	1/1
42		1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
56		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	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 62101007

Test Start (Date/Time) 1-13-21 / 1501

Client: Paragould

Test End (Date/Time) 1-20-21 / 1416

Day of Test

		1	2	3	4	5	6	7	notes
Control	MHS100	1/13	1/14	1/15	1/16	1/17	1/18	1/19	1/16 MHS100
D.O. (mg/L)	INITIAL	8.6	8.2	8.6	8.8	8.7	8.6	8.5	
	FINAL	7.9	8.1	7.8	7.6	8.2	7.9	7.9	
pH (s.u.)	INITIAL	8.3	8.8	8.4	8.4	8.5	8.2	8.4	
	FINAL	8.1	8.1	8.1	8.3	8.1	8.1	8.1	
temp (C)	INITIAL	22	21	21	21	21	22	23	
	FINAL	25	25	25	25	25	25	25	
ALKALINITY (mg/L)		62			68				
HARDNESS (mg/L)		90			100				
CONDUCTIVITY (umhd)		318			316				
CHLORINE (mg/L)		40.05			40.05				
CONC: 32%									
D.O. (mg/L)	INITIAL	8.6	8.7	8.5	8.7	8.9	8.6	8.5	
	FINAL	7.2	8.0	7.6	7.6	7.8	7.4	7.8	
pH (s.u.)	INITIAL	8.1	8.0	8.3	8.2	8.1	8.3	8.3	
	FINAL	8.1	8.2	8.2	8.3	8.2	8.2	8.2	
temp (C)	INITIAL	23	22	21	22	22	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC: 42%									
D.O. (mg/L)	INITIAL	8.6	8.7	8.6	8.8	8.9	8.6	8.5	
	FINAL	7.1	8.0	7.7	7.7	7.7	7.4	7.7	
pH (mg/L)	INITIAL	8.1	8.0	8.3	8.2	8.1	8.3	8.3	
	FINAL	8.2	8.2	8.3	8.2	8.3	8.2	8.3	
temp (C)	INITIAL	23	22	21	22	22	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC: 56%									
D.O. (mg/L)	INITIAL	8.6	8.8	8.6	8.9	8.8	8.6	8.5	
	FINAL	7.0	7.8	7.8	7.6	7.7	7.4	7.7	
pH (s.u.)	INITIAL	8.1	8.0	8.2	8.2	8.1	8.3	8.3	
	FINAL	8.1	8.3	8.4	8.3	8.3	8.2	8.3	
temp (C)	INITIAL	23	22	22	21	23	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC: 80%									
D.O. (mg/L)	INITIAL	8.5	9.0	8.6	9.0	8.9	8.6	8.5	
	FINAL	6.9	7.7	7.8	7.6	7.7	7.4	7.7	
pH (s.u.)	INITIAL	8.1	8.0	8.2	8.1	8.0	8.3	8.3	
	FINAL	8.3	8.3	8.4	8.3	8.4	8.3	8.4	
temp (C)	INITIAL	23	22	23	22	23	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC: 100%									
D.O. (mg/L)	INITIAL	8.8	9.2	8.8	9.2	9.0	8.7	8.6	
	FINAL	7.0	7.7	7.8	7.5	7.7	7.4	7.6	
pH (s.u.)	INITIAL	8.0	7.9	8.1	8.1	8.0	8.2	8.2	
	FINAL	8.4	8.4	8.5	8.4	8.4	8.5	8.4	
temp (C)	INITIAL	23	23	23	21	23	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC: 100%		A	B	C	A	B	C	C	
ALKALINITY (mg/L)		152	154	164	152	154	164	164	
HARDNESS (mg/L)		52	60	70	52	60	70	70	
CONDUCTIVITY (umhd)		591	597	621	591	597	621	621	
CHLORINE (mg/L)		40.05	40.05	40.05	40.05	40.05	40.05	40.05	

CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING

Ceriodaphnia Dubia

Lab #/ Sample ID K2101007

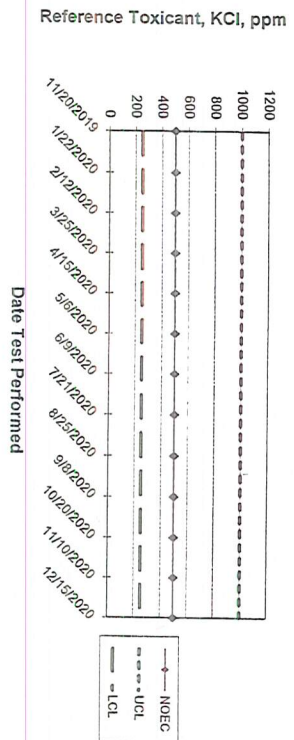
Test Start (Date/Time) 1-13-21/1432

Client: Paragould

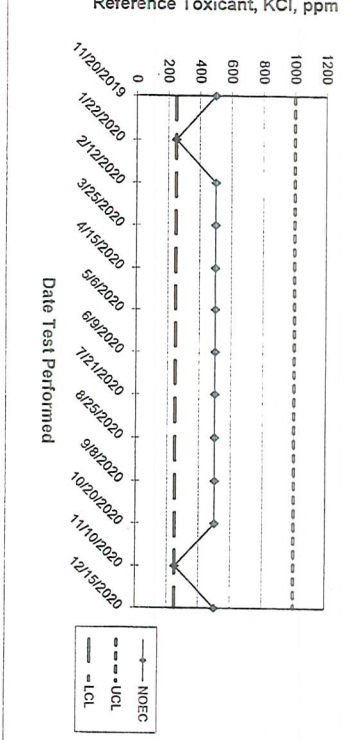
Test End (Date/Time) 1-20-21/1247

		Day of Test							notes/remarks
		1	2	3	4	5	6	7	
Control	MHS 100	1/13	1/14	1/15	1/16	1/17	1/18	1/19	1/16 MHS 101
D.O. (mg/L)	INITIAL	8.6	8.2	8.6	8.8	8.7	8.6	8.5	
	FINAL	8.7	8.7	8.6	8.5	8.5	8.5	8.2	
pH (s.u.)	INITIAL	8.3	8.8	8.4	8.4	8.5	8.2	8.4	
	FINAL	8.3	8.8	8.4	8.4	8.3	8.3	9.0	
temp (C)	INITIAL	22	21	21	21	21	22	23	
	FINAL	25	25	25	25	25	25	25	
ALKALINITY (mg/L)		62			68				
HARDNESS (mg/L)		90			100				
CONDUCTIVITY (umhos/cm)		318			316				
CHLORINE (mg/L)		40.05			40.05				
CONC:	32%								
D.O. (mg/L)	INITIAL	8.6	8.7	8.5	8.7	8.9	8.6	8.5	
	FINAL	8.5	8.7	8.5	8.5	8.5	8.4	8.2	
pH (s.u.)	INITIAL	8.1	8.0	8.3	8.2	8.1	8.3	8.3	
	FINAL	8.4	8.6	8.4	8.4	8.4	8.4	8.7	
temp (C)	INITIAL	23	22	21	22	22	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC:	42%								
D.O. (mg/L)	INITIAL	8.6	8.7	8.6	8.8	8.9	8.6	8.5	
	FINAL	8.3	8.7	8.5	8.5	8.4	8.4	8.3	
pH (mg/L)	INITIAL	8.1	8.0	8.3	8.2	8.1	8.3	8.3	
	FINAL	8.5	8.7	8.5	8.5	8.4	8.5	8.6	
temp (C)	INITIAL	23	22	21	22	22	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC:	56%								
D.O. (mg/L)	INITIAL	8.6	8.8	8.6	8.9	8.8	8.6	8.5	
	FINAL	8.3	8.6	8.6	8.5	8.5	8.4	8.3	
pH (s.u.)	INITIAL	8.1	8.0	8.2	8.2	8.1	8.3	8.3	
	FINAL	8.5	8.7	8.5	8.5	8.5	8.5	8.7	
temp (C)	INITIAL	23	22	22	21	23	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC:	80%								
D.O. (mg/L)	INITIAL	8.5	9.0	8.6	9.0	8.9	8.6	8.5	
	FINAL	8.2	8.6	8.6	8.5	8.5	8.4	8.3	
pH (s.u.)	INITIAL	8.1	8.0	8.2	8.1	8.0	8.3	8.3	
	FINAL	8.5	8.7	8.6	8.6	8.6	8.5	8.8	
temp (C)	INITIAL	23	22	23	22	23	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC:	100%								
D.O. (mg/L)	INITIAL	8.8	9.2	8.8	9.2	9.0	8.7	8.6	
	FINAL	8.2	8.6	8.6	8.5	8.5	8.4	8.3	
pH (s.u.)	INITIAL	8.0	7.9	8.1	8.1	8.0	8.2	8.2	
	FINAL	8.6	8.7	8.7	8.5	8.6	8.6	8.8	
temp (C)	INITIAL	23	23	23	21	23	21	22	
	FINAL	25	25	25	25	25	25	25	
CONC:	100%	A	B	C	A	B	C	C	
ALKALINITY (mg/L)		152	154	164	152	154	164	164	
HARDNESS (mg/L)		52	60	70	52	60	70	70	
CONDUCTIVITY (umhos/cm)		591	597	621	591	597	621	621	
CHLORINE (mg/L)		40.05	40.05	40.05	40.05	40.05	40.05	40.05	

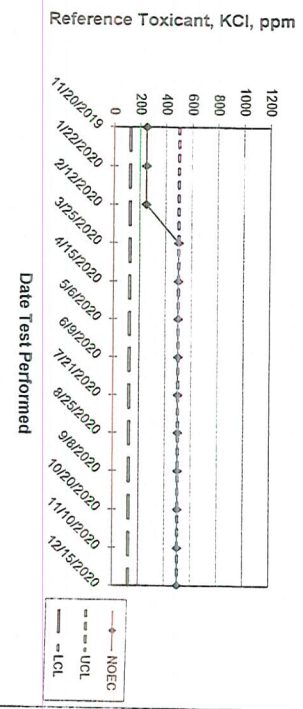
ARKANSAS ANALYTICAL, INC.
 FATHEAD MINNOW SURVIVAL 7 Day
 QUALITY ASSURANCE



ARKANSAS ANALYTICAL, INC.
 FATHEAD MINNOW GROWTH 7 Day
 QUALITY ASSURANCE



ARKANSAS ANALYTICAL, INC.
 CERIODAPHNIA DUBIA SURVIVAL
 QUALITY ASSURANCE



ARKANSAS ANALYTICAL, INC.
 CERIODAPHNIA DUBIA REPRODUCTION
 QUALITY ASSURANCE

