

Arkansas Analytical, Inc.

Toxicity Test Results

Conway Corporation: Tupelo Bayou
NPDES Permit Number: AR0051951
Fourth quarter 2016
AFIN # 23-01095

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

Ceriodaphnia dubia, Survival and Reproduction Test
Test 1002.0

Prepared for: **Mr. Bill Fulmer**
Conway Corporation
P.O. Box 99
Conway, Arkansas 72032

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K1612005

Tuesday, December 27, 2016

Plant Location

The facility is located as follows: from the intersection of Dave Ward Drive (Hwy. 60) and Lollie Road, drive approximately 1.3 miles south on Lollie Road, and the proposed facility location will be on the right (to the west) in Faulkner 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%, 5%, 7%, 9%, 12%, 16%
- Dilution water: Soft 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%, 5%, 7%, 9%, 12%, 16%
- Dilution water: Soft synthetic
- No deviation from method

Reference Toxicant Data

REFERENCE TOXICANT (Potassium Chloride)

<i>Ceriodaphnia dubia</i> 11/1/16-11/8/16		<i>Pimephales promelas</i> 11/1/16-11/8/16	
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

Conway Corporation – Tupelo Bayou

<i>Ceriodaphnia dubia</i>		<i>Pimephales promelas</i>	
NOEC Survival Parameter: TOP3B	16%	NOEC Survival Parameter: TOP6C	16%
Pass/Fail Survival Parameter: TLP3B	Pass	Pass/Fail Survival Parameter: TLP6C	Pass
NOEC Reproduction Parameter: TPP3B	16%	NOEC Growth Parameter: TPP6C	16%
Pass/Fail Reproduction Parameter: TGP3B	Pass	Pass/Fail Growth Parameter: TGP6C	Pass
%CV Reproduction Parameter: TQP3B	27.6%	%CV Growth Parameter: TQP6C	13.1%
PMSD Reproduction	27.2%	PMSD Growth	21.0%

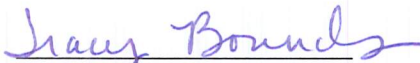
Conclusion

Pimephales promelas, (Method 1000.0): The permit issued to the Conway Corporation – Tupelo Bayou, specifies that the **critical dilution is 12% 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 Conway Corporation – Tupelo Bayou, specifies the **critical dilution is 12% effluent**. The effluent samples **did not** exhibit lethal or sublethal effects at the critical dilution, and, as such, **passed** both portions of the test.

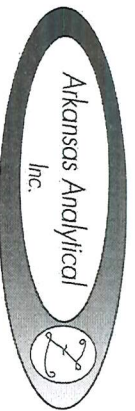
Biomonitoring Analysts: Tracy Bounds, Shelby Chappell, Ken Rood, Chris Turney, Hallie Freyaldenhoven

Reviewed by:


Tracy Bounds, lab manager

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 Dr.
 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:	
Conway Corporation		Conway Corporation		Chronic Toxicity		1 Day (100%)		1. Cool, 4 Degrees Centigrade	
800 South Harkrider		P.O. Box 99		Tupelo Bayou		2 Day (50%)		2. Sulfuric Acid (H ₂ SO ₄), pH < 2	
Conway, AR 72032		Conway, AR 72032		Reporting Information		3 Day (25%)		3. Nitric Acid (HNO ₃), pH < 2	
Attn: Bill Fulmer		Telephone: 501-733-4495		Routine		TEST PARAMETERS		4. Thiosulfate for Dechlorination	
Email: Bill.Fulmer@conwaycorp.com		Preservative Code: P		1				5. Hydrochloric Acid(HCl)	
Email: trey.jleblong@conwaycorp.com		Bottle Type:						6. Sodium Hydroxide (NaOH), pH > 12	
Bottle Type Code		V = Septum, A = Amber							
Arkansas Analytical Work Order Number: K1612005		A							
Field Number	SAMPLE COLLECTION Dates	Times	Grab	Comp	Number of Bottles	Sample Matrix	IDENTIFICATION / DESCRIPTION	Chronic Toxicity	
	12-11-12-16	8 AM-3 PM		X	1	Water	Outfall 001	X	
1. Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB			
Bill Fulmer		12-12-16		Bill Fulmer		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 checked="" type="checkbox"/> No 5. TEMPERATURE ON RECEIPT: 2 °C 6. TEMPERATURE GUN ID: HHT# 2			
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		REMARKS / SAMPLE COMMENTS			
Bill Fulmer		12-12-16		Sydney James					



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CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:	
Conway Corporation		Conway Corporation		Chronic Toxicity		1 Day (100%)		1. Cool, 4 Degrees Centigrade	
800 South Harkrider		P. O. Box 99		Tupelo Bayou		2 Day (50%)		2. Sulfuric Acid (H ₂ SO ₄), pH < 2	
Conway, AR 72032		Conway, AR 72032		Reporting Information		3 Day (25%)		3. Nitric Acid (HNO ₃), pH < 2	
Attn: Bill Fulmer		Telephone: 501-733-4495		Routine		TEST PARAMETERS		4. Thiocyanate for Dechlorination	
Email: Bill.Fulmer@conwaycorp.com		Preservative Code:		1		5. Hydrochloric Acid(HCl)		6. Sodium Hydroxide (NaOH), pH > 12	
Email: trey.jleblong@conwaycorp.com		Bottle Type:		P		Bottle Type Code		V = Septum; A = Amber	
Sampler(s) Signature <i>Bill Fulmer</i>		Sampler(s) Printed <i>Bill Fulmer</i>		SAMPLE IDENTIFICATION / DESCRIPTION		Chronic Toxicity		Arkansas Analytical Work Order Number:	
Field Number	SAMPLE COLLECTION Dates	Times	Grab	Comp	Number of Bottles	Sample Matrix	Water	Outfall 001	
	12-13-14-16	730 PM - 7:30 AM		X	1				Ark1012005
1. Relinquished by: (Signature) <i>Bill Fulmer</i>		Date/Time 12-14-16		2. Received by: (Signature) <i>Sydney James</i>		Date/Time 9 59 AM		3. Relinquished by: (Signature) <i>Sydney James</i>	
3. Relinquished by: (Signature)		Date/Time 12-14-16, 0959		4. Received by lab: (Signature)		Date/Time		5. Relinquished by: (Signature)	
SAMPLE CONDITION UPON RECEIPT IN LAB					REMARKS / SAMPLE COMMENTS				
1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes ___ No									
2. CONTAINERS CORRECT: ___ Yes ___ No									
3. COC/LABELS AGREE: ___ Yes ___ No									
4. RECEIVED ON ICE: ___ Yes ___ No									
5. TEMPERATURE ON RECEIPT: 1 °C									
6. TEMPERATURE GUN ID: HHT# 2									
FOR COMPLETION BY LAB ONLY									



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CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:	
Conway Corporation		Conway Corporation		Chronic Toxicity		1 Day (100%)		1. Cool, 4 Degrees Centigrade	
800 South Harkerider		P.O. Box 99		Tupelo Bayou		2 Day (50%)		2. Sulfuric Acid (H ₂ SO ₄), pH < 2	
Conway, AR 72032		Conway, AR 72032		Reporting Information		3 Day (25%)		3. Nitric Acid (HNO ₃), pH < 2	
Attn: Bill Fulmer		Telephone: 501-733-4495		Routine		TEST PARAMETERS		4. Thiosulfate for Dechlorination	
Email: Bill.Fulmer@conwaycorp.com		Email: trey.leblong@conwaycorp.com		Preservative Code: P		5. Hydrochloric Acid(HCl)		6. Sodium Hydroxide (NaOH), pH > 12	
Email: trey.leblong@conwaycorp.com		Bottle Type:		1		6. Sodium Hydroxide (NaOH), pH > 12		Bottle Type Code	
Sampler(s) Signature <i>Bill Fulmer</i>		Sampler(s) Printed <i>Bill Fulmer</i>		SAMPLE IDENTIFICATION/ DESCRIPTION		Chronic Toxicity		Arkansas Analytical Work Order Number: <i>K1612205</i>	
Field Number	SAMPLE COLLECTION Dates	Times	Grab	Comp	Number of Bottles	Sample Matrix	Water	Outfall	001
	<i>12/16/16</i>	<i>8AM-8AM</i>		<input checked="" type="checkbox"/>	<i>1</i>				<i>X</i>
1. Relinquished by: (Signature) <i>Bill Fulmer</i> Date/Time <i>12-16-16 10:27AM</i> 2. Received by: (Signature) <i>[Signature]</i> 3. Relinquished by: (Signature) <i>[Signature]</i> Date/Time <i>12-16-16 10:07</i> 4. Received by lab: (Signature) <i>[Signature]</i>									
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: <i>1</i> °C 6. TEMPERATURE GUN ID: <i>HHT# 2</i> FOR COMPLETION BY LAB ONLY									
REMARKS / SAMPLE COMMENTS									

CETIS Summary Report

Report Date: 04 Jan-17 14:30 (p 1 of 2)
 Test Code: K1612005 FH | 03-0983-0202

Fathead Minnow 7-d Larval Survival and Growth Test

Arkansas Analytical, Inc.

Batch ID: 21-1302-8588	Test Type: Growth-Survival (7d)	Analyst: Sheby Chappell
Start Date: 13 Dec-16 13:30	Protocol: EPA/821/R-02-013 (2002)	Diluent: Soft Synthetic Water
Ending Date: 20 Dec-16 13:10	Species: Pimephales promelas	Brine: Not Applicable
Duration: 7d	Source: Aquatox, AR	Age: <24
Sample ID: 19-6309-9757	Code: 7502866D	Client: Conway-Tupelo Bayou
Sample Date: 12 Dec-16 08:00	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (4Q)
Receipt Date: 12 Dec-16 09:38	Source: Conway-Tupelo Bayou (AR0051951)	
Sample Age: 29h (2 °C)	Station: Outfall 001	

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K1612005 B	14 Dec-16 07:30	14 Dec-16 09:59	15 Dec-16 00:00	1
2	K1612005 C	16 Dec-16 08:00	16 Dec-16 10:27	17 Dec-16 00:00	1

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
00-2985-4536	7d Survival Rate	Steel Many-One Rank Sum Test	16	> 16	n/a	6.25	7.14%
19-5646-0822	Mean Dry Biomass-mg	Dunnett Multiple Comparison Test	16	> 16	n/a	6.25	21.0%

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
00-2985-4536	7d Survival Rate	Control Resp	0.98	0.8	>>	Yes	Passes Criteria
19-5646-0822	Mean Dry Biomass-mg	Control Resp	0.4592	0.25	>>	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	0.00%
5		5	0.9600	0.8920	1.0000	0.9000	1.0000	0.0245	0.0548	5.71%	2.04%
7		5	0.9600	0.8920	1.0000	0.9000	1.0000	0.0245	0.0548	5.71%	2.04%
9		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-2.04%
12		5	0.9600	0.8920	1.0000	0.9000	1.0000	0.0245	0.0548	5.71%	2.04%
16		5	0.9800	0.9245	1.0000	0.9000	1.0000	0.0200	0.0447	4.56%	0.00%

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	5	0.4592	0.3847	0.5337	0.391	0.518	0.02682	0.05997	13.06%	0.00%
5		5	0.4328	0.3358	0.5298	0.36	0.552	0.03494	0.07812	18.05%	5.75%
7		5	0.4116	0.2845	0.5387	0.304	0.566	0.04579	0.1024	24.87%	10.37%
9		5	0.3638	0.3366	0.391	0.33	0.386	0.00978	0.02187	6.01%	20.78%
12		5	0.3918	0.3456	0.438	0.336	0.428	0.01665	0.03722	9.50%	14.68%
16		5	0.4282	0.361	0.4954	0.373	0.518	0.0242	0.05411	12.64%	6.75%

CETIS Summary Report

Report Date: 04 Jan-17 14:30 (p 2 of 2)
Test Code: K1612005 FH | 03-0983-0202

Fathead Minnow 7-d Larval Survival and Growth Test

Arkansas Analytical, Inc.

7d 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	0.9000
5		1.0000	1.0000	0.9000	0.9000	1.0000
7		0.9000	1.0000	1.0000	0.9000	1.0000
9		1.0000	1.0000	1.0000	1.0000	1.0000
12		0.9000	0.9000	1.0000	1.0000	1.0000
16		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	D	0.518	0.4	0.391	0.479	0.508
5		0.469	0.36	0.382	0.552	0.401
7		0.424	0.304	0.566	0.334	0.43
9		0.36	0.386	0.38	0.33	0.363
12		0.386	0.424	0.336	0.385	0.428
16		0.426	0.406	0.418	0.518	0.373

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	D	10/10	10/10	10/10	10/10	9/10
5		10/10	10/10	9/10	9/10	10/10
7		9/10	10/10	10/10	9/10	10/10
9		10/10	10/10	10/10	10/10	10/10
12		9/10	9/10	10/10	10/10	10/10
16		9/10	10/10	10/10	10/10	10/10

CETIS Summary Report

Report Date: 29 Dec-16 15:37 (p 1 of 2)
Test Code: K1612005 CD | 10-6954-4527

Cladoceran 7-d Survival and Reproduction Test

Arkansas Analytical, Inc.

Batch ID: 02-8219-0166	Test Type: Reproduction-Survival (7d)	Analyst: Tracy Bounds
Start Date: 13 Dec-16 10:15	Protocol: EPA/600/4-91/002 (1994)	Diluent: Soft Synthetic Water
Ending Date: 20 Dec-16 16:40	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 7d 6h	Source: In-House Culture	Age: <24
Sample ID: 12-4590-5291	Code: 4A43018B	Client: Conway-Tupelo Bayou
Sample Date: 12 Dec-16 08:00	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (4Q)
Receipt Date: 12 Dec-16 09:38	Source: Conway-Tupelo Bayou (AR0051951)	
Sample Age: 26h (2 °C)	Station: Outfall 001	

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	K1612005B	14 Dec-16 07:30	14 Dec-16 09:59	15 Dec-16 00:00	1
2	K1612005C	16 Dec-16 08:00	16 Dec-16 10:27	17 Dec-16 00:00	1

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
10-9770-6899	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	16	> 16	n/a	6.25	n/a
11-5994-7434	Reproduction	Dunnett Multiple Comparison Test	16	> 16	n/a	6.25	27.2%

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
10-9770-6899	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
11-5994-7434	Reproduction	Control Resp	21	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	D	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%
7		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
9		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
12		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
16		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	D	10	21	16.86	25.14	14	33	1.832	5.793	27.58%	0.00%
5		10	19.5	15.15	23.85	11	31	1.922	6.078	31.17%	7.14%
7		10	24.8	20.14	29.46	16	32	2.059	6.512	26.26%	-18.10%
9		10	21.7	18.26	25.14	15	29	1.521	4.809	22.16%	-3.33%
12		10	20.9	17.64	24.16	15	29	1.441	4.557	21.80%	0.48%
16		10	22.2	18.26	26.14	14	30	1.744	5.514	24.84%	-5.71%

CETIS Summary Report

Report Date: 29 Dec-16 15:37 (p 2 of 2)
 Test Code: K1612005 CD | 10-6954-4527

Cladoceran 7-d Survival and Reproduction Test

Arkansas Analytical, Inc.

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	D	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
7		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
9		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
16		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	D	17	33	16	28	23	19	20	14	22	18
5		18	31	19	24	27	17	15	11	15	18
7		16	32	21	29	31	32	30	19	20	18
9		22	18	19	29	28	27	19	18	15	22
12		17	19	29	24	15	23	26	16	19	21
16		18	25	28	24	17	26	30	24	14	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	D	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
7		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
9		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
16		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 K1612005

Test Start (Date/Time) 12-13-16, 1330

Client: Timpala - Bayou

Test End (Date/Time) 12-20-16, 1310

Day of Test

		1	2	3	4	5	6	7	notes
Control	SS 331	12/13	12/14	12/15*	12/16	12/17	12/18	12/19	
D.O. (mg/L)	INITIAL	8.8	8.5	8.9	8.7	8.4	9.1	9.3	*SS 332
	FINAL	8.0	7.8	7.5	8.0	8.9	7.3	7.9	
pH (s.u.)	INITIAL	7.5	7.4	7.6	7.7	7.4	7.7	7.6	
	FINAL	7.4	7.6	7.1	7.2	7.5	7.1	7.4	
temp (C)	INITIAL	22	22	21	20	22	19	18	
	FINAL	25	25	25	25	25	25	25	
ALKALINITY (mg/L)		74	→	24	→	→	→	→	
HARDNESS (mg/L)		40	→	38	→	→	→	→	
CONDUCTIVITY (umhc)		149	→	149	→	→	→	→	
CHLORINE (mg/L)		<0.05	→	<0.05	→	→	→	→	
CONC:	5%								
D.O. (mg/L)	INITIAL	7.9	8.6	8.9	8.8	8.5	9.2	9.3	
	FINAL	7.8	7.8	7.5	7.9	8.7	7.5	8.0	
pH (s.u.)	INITIAL	7.4	7.4	7.6	7.4	7.4	7.6	7.6	
	FINAL	7.3	7.2	7.3	7.3	7.9	7.2	7.4	
temp (C)	INITIAL	23	22	21	20	23	19	20	
	FINAL	25	25	25	25	25	25	25	
CONC:	7%								
D.O. (mg/L)	INITIAL	8.1	8.6	8.9	8.7	8.6	9.2	9.4	
	FINAL	7.8	7.8	7.5	7.8	8.7	7.8	8.1	
pH (mg/L)	INITIAL	7.5	7.4	7.5	7.4	7.4	7.6	7.5	
	FINAL	7.3	7.2	7.2	7.3	7.4	7.4	7.4	
temp (C)	INITIAL	23	22	21	20	23	19	20	
	FINAL	25	25	25	25	25	25	25	
CONC:	9%								
D.O. (mg/L)	INITIAL	8.2	8.5	8.9	8.7	8.6	9.2	9.3	
	FINAL	7.8	7.9	7.4	7.9	8.7	7.9	8.1	
pH (s.u.)	INITIAL	7.5	7.4	7.5	7.4	7.4	7.6	7.5	
	FINAL	7.3	7.3	7.2	7.3	7.5	7.3	7.4	
temp (C)	INITIAL	23	22	21	21	23	19	20	
	FINAL	25	25	25	25	25	25	25	
CONC:	12%								
D.O. (mg/L)	INITIAL	8.2	8.5	8.9	8.7	8.6	9.1	9.2	
	FINAL	7.8	8.0	7.3	7.8	8.7	7.7	8.0	
pH (s.u.)	INITIAL	7.5	7.4	7.4	7.4	7.4	7.6	7.5	
	FINAL	7.3	7.3	7.2	7.3	7.5	7.3	7.4	
temp (C)	INITIAL	23	22	21	21	23	19	21	
	FINAL	25	25	25	25	25	25	25	
CONC:	16%								
D.O. (mg/L)	INITIAL	8.3	8.6	8.9	8.7	8.6	9.1	9.1	
	FINAL	7.8	8.0	7.4	7.9	8.7	7.6	7.9	
pH (s.u.)	INITIAL	7.4	7.4	7.4	7.4	7.4	7.6	7.6	
	FINAL	7.4	7.3	7.2	7.3	7.5	7.3	7.3	
temp (C)	INITIAL	23	22	21	21	23.1	19	21	
	FINAL	25	25	25	25	25	25	25	
CONC:	100 %	A	A	B	B	C	C	C	
ALKALINITY (mg/L)		76	→	38	→	36	→	→	
HARDNESS (mg/L)		42	→	44	→	42	→	→	
CONDUCTIVITY (umhc)		639	→	614	→	602	→	→	
CHLORINE (mg/L)		<0.05	→	<0.05	→	<0.05	→	→	

CHEMICAL DATA SHEET FOR CHRONIC TOXICITY TESTING

Ceriodaphnia Dubia

Lab # / Sample ID K11612005

Test Start (Date/Time) 12-13-16 / 1015

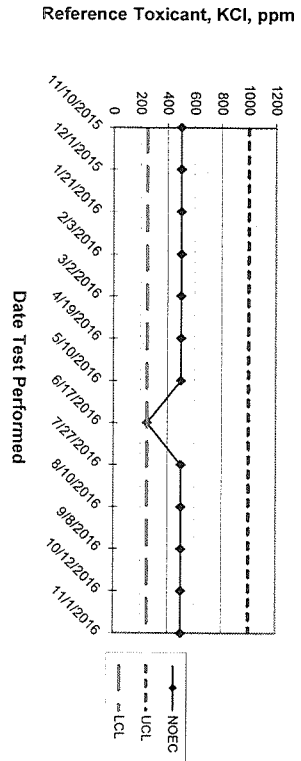
Client: Tupelo - Bayou

Test End (Date/Time) 12-20-2016 / 1640

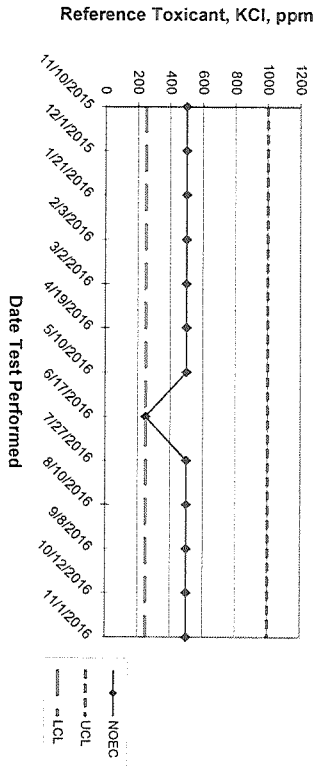
Day of Test

		1	2	3	4	5	6	7	notes
Control	SS331	12/13	12/14	12/15*	12/16	12/17	12/18	12/19	*SS332
D.O. (mg/L)	INITIAL	8.8	8.5	8.9	8.7	8.4	9.1	9.3	
	FINAL	8.5	9.0	9.1	9.3	9.4	8.6	9.3	
pH (s.u.)	INITIAL	7.5	7.4	7.6	7.7	7.9	7.7	7.6	
	FINAL	7.6	7.9	7.8	7.7	7.7	7.6	8.2	
temp (C)	INITIAL	22	22	21	20	22	19	18	
	FINAL	25	24	25	25	25	25	25	
ALKALINITY (mg/L)		74	→	84	→	→	→	→	
HARDNESS (mg/L)		40	→	38	→	→	→	→	
CONDUCTIVITY (umhc)		149	→	149	→	→	→	→	
CHLORINE (mg/L)		<0.05	→	<0.05	→	→	→	→	
CONC:	5%								
D.O. (mg/L)	INITIAL	7.9	8.4	8.9	8.8	8.5	9.2	9.3	
	FINAL	8.7	9.1	9.3	9.3	9.3	9.0	9.5	
pH (s.u.)	INITIAL	7.4	7.4	7.6	7.4	7.4	7.6	7.6	
	FINAL	7.8	8.1	8.0	7.6	7.4	7.7	8.3	
temp (C)	INITIAL	23	22	21	20	23	19	20	
	FINAL	25	25	25	25	25	25	25	
CONC:	7%								
D.O. (mg/L)	INITIAL	8.1	8.6	8.9	8.7	8.6	9.2	9.4	
	FINAL	8.7	9.2	9.4	9.4	9.2	9.0	9.5	
pH (mg/L)	INITIAL	7.5	7.4	7.5	7.4	7.4	7.6	7.5	
	FINAL	7.8	8.2	7.9	7.6	7.5	7.8	8.2	
temp (C)	INITIAL	23	22	21	20	23	19	20	
	FINAL	25	25	25	25	25	25	25	
CONC:	9%								
D.O. (mg/L)	INITIAL	8.2	8.5	8.9	8.7	8.6	9.2	9.3	
	FINAL	8.7	9.2	9.4	9.4	9.3	9.3	9.4	
pH (s.u.)	INITIAL	7.5	7.4	7.5	7.4	7.4	7.6	7.5	
	FINAL	7.9	8.2	7.9	7.6	7.6	7.8	8.2	
temp (C)	INITIAL	23	22	21	21	23	19	20	
	FINAL	25	25	25	25	25	25	25	
CONC:	12%								
D.O. (mg/L)	INITIAL	8.2	8.5	8.9	8.7	8.6	9.1	9.3	
	FINAL	8.7	9.2	9.4	9.4	9.2	9.3	9.3	
pH (s.u.)	INITIAL	7.5	7.4	7.4	7.4	7.4	7.6	7.5	
	FINAL	7.9	8.1	8.0	7.7	7.6	7.9	8.1	
temp (C)	INITIAL	23	22	21	21	23	19	21	
	FINAL	25	25	25	25	25	25	25	
CONC:	16%								
D.O. (mg/L)	INITIAL	8.3	8.6	8.9	8.7	8.6	9.1	9.1	
	FINAL	8.8	9.0	9.4	9.4	9.2	9.4	9.2	
pH (s.u.)	INITIAL	7.4	7.4	7.4	7.4	7.9	7.6	7.6	
	FINAL	7.9	8.0	7.9	7.7	7.6	7.9	8.0	
temp (C)	INITIAL	23	22	21	21	21	19	21	
	FINAL	25	25	25	25	25	25	25	
CONC:	100%	A	A	B	B	C	C	C	
ALKALINITY (mg/L)		76	→	88	→	86	→	→	
HARDNESS (mg/L)		42	→	44	→	42	→	→	
CONDUCTIVITY (umhc)		1634	→	1614	→	1663	→	→	
CHLORINE (mg/L)		<0.05	→	<0.05	→	<0.05	→	→	

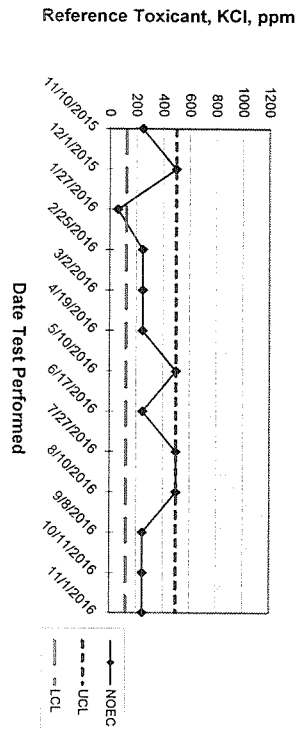
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