



05/15/2015

Blytheville Sewer Department  
Mr. Thomas Jones  
P.O. Box 1784  
Blytheville, AR, 72316

Ref: Analytical Testing  
ETC Report Number: 15-119-0191  
Client Project Description: Bioassay - West WWTP

Dear Mr. Thomas Jones:

The results of this WET (Whole Effluent Toxicity) test are acceptable according to test review criteria. There were no significant deficiencies found in sample handling, test performance, or reporting. The test results are within the limits established by your NPDES permit and were entered into the permittee's records in the database.

Results: CV/NOEL = 99%  
Permit Limit: 99%

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.8.6.1). CETIS created by Tidepool Scientific Software

Respectfully,

Connie Cook  
Lab Supervisor

**CETIS Test Evaluation Report**

**Report Date:** 15 May-15 09:27 ( 1 of 2)  
**Test Code:** CD 15-119-0191 | 04-4301-4908

<b>Facility:</b> Blytheville Sewer - West Plant	<b>Test Name:</b> Ceriodaphnia 7-d Survival and Reproduction Test
<b>Sample Site:</b>	<b>Organism:</b> Ceriodaphnia dubia (Water Flea)
<b>Sample Code:</b> 15-119-0191	<b>Protocol:</b> EPA/821/R-02-013 (2002)
<b>Sample Date:</b> 27 Apr-15 09:15	<b>Start Date:</b> 29 Apr-15 13:00
<b>Sample Age:</b> 52h (0.7 °C)	<b>End Date:</b> 05 May-15 14:10
<b>Project:</b> WET Quarterly Compliance Test (2Q)	<b>Duration:</b> 6d 1h <b>Organism Age:</b> < 24
<b>Permittee:</b> Blytheville Sewer Department	<b>Laboratory:</b> Environmental Testing and Consulting, Inc.
<b>Address:</b> PO Box 1784 Blytheville, AR 72316	<b>Address:</b> 2790 Whitten Road Memphis, TN 38133
<b>Contact:</b> Mr. Thomas Jones	<b>Contact:</b> Ms. Connie Cook, Lab Supervisor
<b>Phone:</b> 870-763-4961	<b>Phone:</b> 901-213-2454, 901-213-2440(fax)
<b>Email:</b>	<b>Email:</b> ccook@etcmemphis

**Chronic Toxicity Evaluation**

Endpoint	Parameter	C-%	IWC	Pass/Fail	Method
Reproduction	NOEL/LOEL	100/>100	98.99	Pass	Dunnett Multiple Comparison Test

**Test Acceptability Criteria**

Endpoint	Attribute	Test Stat	Limits	Pass/Fail
Reproduction	Control Resp	17	15 - N/A	Pass
Reproduction	PMSD	0.1808	0.13 - 0.47	Pass

**CETIS Test Evaluation Report**

Report Date: 15 May-15 09:27 ( 2 of 2)  
 Test Code: CD 15-119-0191 | 04-4301-4908

**6d Survival Rate Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
32		10	1	1	1	1	1	0	0	0.0%	0.0%
42		10	1	1	1	1	1	0	0	0.0%	0.0%
56		10	1	1	1	1	1	0	0	0.0%	0.0%
75		10	1	1	1	1	1	0	0	0.0%	0.0%
100		10	1	1	1	1	1	0	0	0.0%	0.0%

**Reproduction Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	17	16	18	13	21	0.8433	2.667	15.69%	0.0%
32		10	18.5	17.22	19.78	13	23	1.088	3.44	18.59%	-8.82%
42		10	18.1	17.1	19.1	14	22	0.8492	2.685	14.84%	-6.47%
56		10	17	15.55	18.45	13	25	1.229	3.887	22.87%	0.0%
75		10	18.1	16.9	19.3	14	25	1.016	3.213	17.75%	-6.47%
100		10	16.6	16.01	17.19	13	18	0.4989	1.578	9.5%	2.35%

**CETIS Summary Report**

Report Date: 15 May-15 09:27 (p 1 of 2)  
 Test Code: CD 15-119-0191 | 04-4301-4908

Ceriodaphnia 7-d Survival and Reproduction Test				Environmental Testing and Consulting, Inc.			
Batch ID:	20-2168-4679	Test Type:	Reproduction-Survival (7d)	Analyst:	Ava Davis		
Start Date:	29 Apr-15 13:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Perrier Water		
Ending Date:	05 May-15 14:10	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Duration:	6d 1h	Source:	In-House Culture	Age:	< 24		
Sample ID:	20-6566-7032	Code:	15-119-0191	Client:	Blytheville Sewer Department		
Sample Date:	27 Apr-15 09:15	Material:	POTW Effluent	Project:	WET Quarterly Compliance Test (2Q)		
Receive Date:	29 Apr-15 12:15	Source:	Blytheville Sewer - West Plant (AR0022560)				
Sample Age:	52h (0.7 °C)	Station:					

Sample Renewals					
Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	15-119-0191	29 Apr-15 09:15	29 Apr-15 12:15	01 May-15 00:00	0.1
2	15-119-0191	01 May-15 09:15	01 May-15 11:45	03 May-15 00:00	0.1

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-3507-8775	6d Survival Rate	100	>100	NA	NA	1	Fisher Exact/Bonferroni-Holm Test
13-4451-1852	Reproduction	100	>100	NA	18.1%	1	Dunnett Multiple Comparison Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
13-4451-1852	Reproduction	Control Resp	17	15 - NL	Yes	Passes Acceptability Criteria
13-4451-1852	Reproduction	PMSD	0.1808	0.13 - 0.47	Yes	Passes Acceptability Criteria

6d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
32		10	1	1	1	1	1	0	0	0.0%	0.0%
42		10	1	1	1	1	1	0	0	0.0%	0.0%
56		10	1	1	1	1	1	0	0	0.0%	0.0%
75		10	1	1	1	1	1	0	0	0.0%	0.0%
100		10	1	1	1	1	1	0	0	0.0%	0.0%

Reproduction Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	10	17	15.09	18.91	13	21	0.8433	2.667	15.69%	0.0%
32		10	18.5	16.04	20.96	13	23	1.088	3.44	18.59%	-8.82%
42		10	18.1	16.18	20.02	14	22	0.8492	2.685	14.84%	-6.47%
56		10	17	14.22	19.78	13	25	1.229	3.887	22.87%	0.0%
75		10	18.1	15.8	20.4	14	25	1.016	3.213	17.75%	-6.47%
100		10	16.6	15.47	17.73	13	18	0.4989	1.578	9.5%	2.35%

**CETIS Summary Report**

Report Date: 15 May-15 09:27 (p 2 of 2)  
 Test Code: CD 15-119-0191 | 04-4301-4908

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

Environmental Testing and Consulting, Inc.

**6d Survival Rate Detail**

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	1	1	1	1	1	1	1	1	1	1
32		1	1	1	1	1	1	1	1	1	1
42		1	1	1	1	1	1	1	1	1	1
56		1	1	1	1	1	1	1	1	1	1
75		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1

**Reproduction Detail**

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	13	21	18	18	14	17	19	15	15	20
32		13	20	17	16	19	22	14	22	23	19
42		14	22	16	22	19	17	19	15	19	18
56		13	13	17	16	25	14	18	15	17	22
75		21	15	18	15	18	18	19	18	14	25
100		17	15	18	18	17	17	18	16	17	13

**6d Survival Rate Binomials**

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	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	1/1	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
75		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

**CETIS Measurement Report**

**Report Date:** 15 May-15 09:27 (p 1 of 3)  
**Test Code:** CD 15-119-0191 | 04-4301-4908

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<b>Ceriodaphnia 7-d Survival and Reproduction Test</b>		<b>Environmental Testing and Consulting, Inc.</b>	
<b>Batch ID:</b> 20-2168-4679	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b> Ava Davis	
<b>Start Date:</b> 29 Apr-15 13:00	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Perrier Water	
<b>Ending Date:</b> 05 May-15 14:10	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable	
<b>Duration:</b> 6d 1h	<b>Source:</b> In-House Culture	<b>Age:</b> < 24	
<b>Sample ID:</b> 20-6566-7032	<b>Code:</b> 15-119-0191	<b>Client:</b> Blytheville Sewer Department	
<b>Sample Date:</b> 27 Apr-15 09:15	<b>Material:</b> POTW Effluent	<b>Project:</b> WET Quarterly Compliance Test (2Q)	
<b>Receive Date:</b> 29 Apr-15 12:15	<b>Source:</b> Blytheville Sewer - West Plant (AR0022560)		
<b>Sample Age:</b> 52h (0.7 °C)	<b>Station:</b>		

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**CETIS Measurement Report**

Report Date: 15 May-15 09:27 (p 2 of 3)  
 Test Code: CD 15-119-0191 | 04-4301-4908

**Ceriodaphnia 7-d Survival and Reproduction Test** **Environmental Testing and Consulting, Inc.**

**Alkalinity (CaCO3)-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	59	61	63	64	60	62	62
32								
42								
56								
75								
100								

**Total Residual Chlorine-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	0	0	0	0	0	0	0
32								
42								
56								
75								
100		0	0	0	0	0	0	0

**Conductivity-µS/cm**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	173	172	172	165	165	172	171
32								
42								
56								
75								
100		509	511	549	549	550	582	545

**Final Dissolved Oxygen-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	8.4	8.6	9.4	8.8	8.2	8.8	
32		8.1	8.4	9.6	8.9	8.5	8.4	
42		8.1	8.4	9.6	8.8	8.5	8.7	
56		8	8	9.3	8.9	9	8.4	
75		8.3	8.3	9.4	8.7	8.6	8.6	
100		8.2	8.2	9.4	8.6	8.2	8.1	

**Initial Dissolved Oxygen-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	9.3	9.2	9.4	9.4	8.5	8.7	8.6
32		9.5	9.1	9.4	9.4	9.1	8.7	8.6
42		9.5	9.1	9.1	9.1	8.8	8.4	8.8
56		9.5	8.8	8.8	8.8	8.4	8.1	8.7
75		9.4	8.8	8.9	8.2	8.1	7.8	8.7
100		9.2	8.7	8.5	8.7	7.8	7.2	8.6

**Hardness (CaCO3)-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	92	91	90	91	87	90	90
32								
42								
56								
75								
100								

**CETIS Measurement Report**

Report Date: 15 May-15 09:27 (p 3 of 3)  
 Test Code: CD 15-119-0191 | 04-4301-4908

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

Environmental Testing and Consulting, Inc.

**Final pH-Units**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	6.9	7.3	7.8	8	7.9	7.5	
32		7.3	7.5	7.8	8	7.8	7.3	
42		7.3	7.5	7.9	8	7.8	7.3	
56		7.4	7.4	7.9	8	7.8	7.3	
75		7.2	7.5	7.9	8	7.8	7.3	
100		7.1	7.6	7.9	8	7.8	7.2	

**Initial pH-Units**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	7.8	7.9	7.6	8	8.1	7.8	7.7
32		7.5	7.5	7.3	7.6	7.7	7.5	7.6
42		7.6	7.5	7.4	7.5	7.7	7.5	7.7
56		7.5	7.6	7.3	7.5	7.7	7.4	7.7
75		7.5	7.7	7.3	7.4	7.6	7.4	7.7
100		7.5	7.6	7.3	7.4	7.6	7.4	7.8

**Final Temperature-°C**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	
32		23	23	23	23	23	23	
42		23	23	23	23	23	23	
56		23	23	23	23	23	23	
75		23	23	23	23	23	23	
100		23	23	23	23	23	23	

**Initial Temperature-°C**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	23
32		23	23	23	23	23	23	23
42		23	23	23	23	23	23	23
56		23	23	23	23	23	23	23
75		23	23	23	23	23	23	23
100		23	23	23	23	23	23	23



**CETIS Test Evaluation Report**

**Report Date:** 15 May-15 09:29 ( 1 of 2)  
**Test Code:** FH 15-119-0191 | 03-2498-5052

<b>Facility:</b> Blytheville Sewer - West Plant	<b>Test Name:</b> Fathead Minnow 7-d Larval Survival and Growth Test
<b>Sample Site:</b>	<b>Organism:</b> Pimephales promelas (Fathead Minnow)
<b>Sample Code:</b> 15-119-0191	<b>Protocol:</b> EPA/821/R-02-013 (2002)
<b>Sample Date:</b> 27 Apr-15 09:15	<b>Start Date:</b> 29 Apr-15 12:50
<b>Sample Age:</b> 52h (0.7 °C)	<b>End Date:</b> 05 May-15 15:30
<b>Project:</b> WET Quarterly Compliance Test (2Q)	<b>Duration:</b> 6d 3h <b>Organism Age:</b> < 24
<b>Permitee:</b> Blytheville Sewer Department	<b>Laboratory:</b> Environmental Testing and Consulting, Inc.
<b>Address:</b> PO Box 1784 Blytheville, AR 72316	<b>Address:</b> 2790 Whitten Road Memphis, TN 38133
<b>Contact:</b> Mr. Thomas Jones	<b>Contact:</b> Ms. Connie Cook, Lab Supervisor
<b>Phone:</b> 870-763-4961	<b>Phone:</b> 901-213-2454, 901-213-2440(fax)
<b>Email:</b>	<b>Email:</b> ccook@etcmemphis

**Chronic Toxicity Evaluation**

Endpoint	Parameter	C-%	IWC	Pass/Fail	Method
7d Survival Rate	NOEL/LOEL	100/>100	98.99	Pass	Dunnett Multiple Comparison Test
Mean Dry Weight-mg	NOEL/LOEL	100/>100	98.99	Pass	Dunnett Multiple Comparison Test

**Test Acceptability Criteria**

Endpoint	Attribute	Test Stat	Limits	Pass/Fail
7d Survival Rate	Control Resp	0.975	0.8 - N/A	Pass
Mean Dry Weight-mg	Control Resp	0.39	0.25 - N/A	Pass
Mean Dry Weight-mg	PMSD	0.2639	0.12 - 0.3	Pass

**CETIS Test Evaluation Report**

Report Date: 15 May-15 09:29 ( 2 of 2 )  
 Test Code: FH 15-119-0191 | 03-2498-5052

**7d Survival Rate Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.975	0.9541	0.9959	0.875	1	0.025	0.0559	5.73%	0.0%
32		5	0.925	0.8994	0.9506	0.875	1	0.03062	0.06847	7.4%	5.13%
42		5	0.925	0.8833	0.9667	0.75	1	0.05	0.1118	12.09%	5.13%
56		5	0.9	0.8609	0.9391	0.75	1	0.04677	0.1046	11.62%	7.69%
75		5	0.95	0.9083	0.9917	0.75	1	0.05	0.1118	11.77%	2.56%
100		5	0.875	0.8178	0.9322	0.625	1	0.06847	0.1531	17.5%	10.26%

**Mean Dry Weight-mg Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.39	0.368	0.412	0.3	0.4375	0.02634	0.05889	15.1%	0.0%
32		5	0.5025	0.48	0.525	0.425	0.575	0.02693	0.06021	11.98%	-28.85%
42		5	0.4525	0.4174	0.4876	0.3625	0.6125	0.04209	0.09413	20.8%	-16.03%
56		5	0.4475	0.4204	0.4746	0.3375	0.5375	0.03245	0.07256	16.22%	-14.74%
75		5	0.47	0.4415	0.4985	0.375	0.55	0.03414	0.07634	16.24%	-20.51%
100		5	0.31	0.2958	0.3242	0.2625	0.3625	0.01696	0.03791	12.23%	20.51%

**CETIS Summary Report**

Report Date: 15 May-15 09:29 (p 1 of 2)  
 Test Code: FH 15-119-0191 | 03-2498-5052

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

Environmental Testing and Consulting, Inc.

<b>Batch ID:</b> 05-0416-6176	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b> Ava Davis
<b>Start Date:</b> 29 Apr-15 12:50	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Perrier Water
<b>Ending Date:</b> 05 May-15 15:30	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 3h	<b>Source:</b> Aquatox, AR	<b>Age:</b> < 24
<b>Sample ID:</b> 20-6566-7032	<b>Code:</b> 15-119-0191	<b>Client:</b> Blytheville Sewer Department
<b>Sample Date:</b> 27 Apr-15 09:15	<b>Material:</b> POTW Effluent	<b>Project:</b> WET Quarterly Compliance Test (2Q)
<b>Receive Date:</b> 29 Apr-15 12:15	<b>Source:</b> Blytheville Sewer - West Plant (AR0022560)	
<b>Sample Age:</b> 52h (0.7 °C)	<b>Station:</b>	

**Sample Renewals**

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	15-119-0191	29 Apr-15 09:15	29 Apr-15 12:15	01 May-15 00:00	0.1
2	15-119-0191	01 May-15 09:15	01 May-15 11:45	03 May-15 00:00	0.1

**Comparison Summary**

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
06-7325-9002	7d Survival Rate	100	>100	NA	15.3%	1	Dunnett Multiple Comparison Test
07-8627-5332	Mean Dry Weight-mg	100	>100	NA	26.4%	1	Dunnett Multiple Comparison Test

**Test Acceptability**

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
06-7325-9002	7d Survival Rate	Control Resp	0.975	0.8 - NL	Yes	Passes Acceptability Criteria
07-8627-5332	Mean Dry Weight-mg	Control Resp	0.39	0.25 - NL	Yes	Passes Acceptability Criteria
07-8627-5332	Mean Dry Weight-mg	PMSD	0.2639	0.12 - 0.3	Yes	Passes Acceptability Criteria

**7d Survival Rate Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.975	0.9056	1	0.875	1	0.025	0.0559	5.73%	0.0%
32		5	0.925	0.84	1	0.875	1	0.03062	0.06847	7.4%	5.13%
42		5	0.925	0.7862	1	0.75	1	0.05	0.1118	12.09%	5.13%
56		5	0.9	0.7701	1	0.75	1	0.04677	0.1046	11.62%	7.69%
75		5	0.95	0.8112	1	0.75	1	0.05	0.1118	11.77%	2.56%
100		5	0.875	0.6849	1	0.625	1	0.06847	0.1531	17.5%	10.26%

**Mean Dry Weight-mg Summary**

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Water	5	0.39	0.3169	0.4631	0.3	0.4375	0.02634	0.05889	15.1%	0.0%
32		5	0.5025	0.4277	0.5773	0.425	0.575	0.02693	0.06021	11.98%	-28.85%
42		5	0.4525	0.3356	0.5694	0.3625	0.6125	0.04209	0.09413	20.8%	-16.03%
56		5	0.4475	0.3574	0.5376	0.3375	0.5375	0.03245	0.07256	16.22%	-14.74%
75		5	0.47	0.3752	0.5648	0.375	0.55	0.03414	0.07634	16.24%	-20.51%
100		5	0.31	0.2629	0.3571	0.2625	0.3625	0.01696	0.03791	12.23%	20.51%

**CETIS Summary Report**

Report Date: 15 May-15 09:29 (p 2 of 2)  
 Test Code: FH 15-119-0191 | 03-2498-5052

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

Environmental Testing and Consulting, Inc.

**7d Survival Rate Detail**

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	1	1	1	1	0.875
32		0.875	0.875	1	0.875	1
42		1	0.75	0.875	1	1
56		0.875	1	1	0.875	0.75
75		1	1	0.75	1	1
100		1	0.875	1	0.875	0.625

**Mean Dry Weight-mg Detail**

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	0.3625	0.3	0.4375	0.4375	0.4125
32		0.4875	0.475	0.575	0.425	0.55
42		0.4375	0.425	0.3625	0.425	0.6125
56		0.3375	0.475	0.45	0.5375	0.4375
75		0.55	0.475	0.375	0.5375	0.4125
100		0.2875	0.3625	0.325	0.2625	0.3125

**7d Survival Rate Binomials**

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	8/8	8/8	8/8	8/8	7/8
32		7/8	7/8	8/8	7/8	8/8
42		8/8	6/8	7/8	8/8	8/8
56		7/8	8/8	8/8	7/8	6/8
75		8/8	8/8	6/8	8/8	8/8
100		8/8	7/8	8/8	7/8	5/8

**CETIS Measurement Report**

**Report Date:** 15 May-15 09:29 (p 1 of 3)  
**Test Code:** FH 15-119-0191 | 03-2498-5052

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

**Environmental Testing and Consulting, Inc.**

<b>Batch ID:</b> 05-0416-6176	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b> Ava Davis
<b>Start Date:</b> 29 Apr-15 12:50	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> Perrier Water
<b>Ending Date:</b> 05 May-15 15:30	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Duration:</b> 6d 3h	<b>Source:</b> Aquatox, AR	<b>Age:</b> < 24
<b>Sample ID:</b> 20-6566-7032	<b>Code:</b> 15-119-0191	<b>Client:</b> Blytheville Sewer Department
<b>Sample Date:</b> 27 Apr-15 09:15	<b>Material:</b> POTW Effluent	<b>Project:</b> WET Quarterly Compliance Test (2Q)
<b>Receive Date:</b> 29 Apr-15 12:15	<b>Source:</b> Blytheville Sewer - West Plant (AR0022560)	
<b>Sample Age:</b> 52h (0.7 °C)	<b>Station:</b>	

**CETIS Measurement Report**

Report Date: 15 May-15 09:29 (p 2 of 3)  
 Test Code: FH 15-119-0191 | 03-2498-5052

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

**Environmental Testing and Consulting, Inc.**

**Alkalinity (CaCO3)-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	59	61	63	64	60	62	62
32								
42								
56								
75								
100								

**Total Residual Chlorine-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	0	0	0	0	0	0	0
32								
42								
56								
75								
100		0	0	0	0	0	0	0

**Conductivity-µS/cm**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	173	172	172	165	165	172	171
32								
42								
56								
75								
100		509	511	549	549	550	582	545

**Final Dissolved Oxygen-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	7.6	7.2	7.3	8	7.1	8	8.4
32		7.6	7.5	7.4	8	7.5	8.5	8.3
42		7.8	7.1	7	8.1	7.3	8.2	8.4
56		7.7	6.5	7	7.7	7.6	8.1	8.3
75		7.5	5.8	6.9	7.5	7.2	7.8	8.2
100		7.6	5.6	6.6	7.7	7	7.8	8

**Initial Dissolved Oxygen-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	9.3	9.2	9.4	9.4	8.5	8.7	8.6
32		9.5	9.1	9.4	9.4	9.1	8.7	8.6
42		9.5	9.1	9.1	9.1	8.8	8.4	8.8
56		9.5	8.8	8.8	8.8	8.4	8.1	8.7
75		9.4	8.8	8.9	8.2	8.1	7.8	8.7
100		9.2	8.7	8.5	8.7	7.8	7.2	8.6

**Hardness (CaCO3)-mg/L**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	92	91	90	91	87	90	90
32								
42								
56								
75								
100								

**CETIS Measurement Report**

Report Date: 15 May-15 09:29 (p 3 of 3)  
 Test Code: FH 15-119-0191 | 03-2498-5052

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

**Environmental Testing and Consulting, Inc.**

**Final pH-Units**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	7.3	7.6	7.7	7.9	7.6	7.7	7.9
32		7.5	7.4	7.6	7.9	7.6	7.6	7.9
42		7.3	7.5	7.5	7.9	7.6	7.6	7.8
56		7.5	7.5	7.5	7.9	7.7	7.5	7.3
75		7.7	7.5	7.5	7.9	7.6	7.5	7.5
100		7.2	7.6	7.7	8	7.7	7.5	7.7

**Initial pH-Units**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	7.8	7.9	7.6	8	8.1	7.8	7.7
32		7.5	7.5	7.3	7.6	7.7	7.5	7.6
42		7.6	7.5	7.4	7.5	7.7	7.5	7.7
56		7.5	7.6	7.3	7.5	7.7	7.4	7.7
75		7.5	7.7	7.3	7.4	7.6	7.4	7.7
100		7.5	7.6	7.3	7.4	7.6	7.4	7.8

**Final Temperature-°C**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	23
32		23	23	23	23	23	23	23
42		23	23	23	23	23	23	23
56		23	23	23	23	23	23	23
75		23	23	23	23	23	23	23
100		23	23	23	23	23	23	23

**Initial Temperature-°C**

C-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	23
32		23	23	23	23	23	23	23
42		23	23	23	23	23	23	23
56		23	23	23	23	23	23	23
75		23	23	23	23	23	23	23
100		23	23	23	23	23	23	23

Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
  - Dissolved oxygen: 4500-O G YSI MODEL - 58
  - pH: 4500-H + B JENCO METER 6072
  - Temperature: 2550 B JENCO METER 6072
  - Conductivity: 2510 B CORNING METER 441
  - Alkalinity: 2320 B
  - Hardness: 200.7
  - Total Residual Chlorine: 4500-Cl G - REPORTED VALUE OF "0" INDICATES RESULT BELOW DETECTION LIMIT OF 0.02 mg/L
  - EPA Acute/Chronic Manual Edition and Date: EPA-821-R-02-012
  - OCT 2002 (Fifth edition)
2. Laboratory
  - Temperature: Average - 25 C Range - 23 - 26
  - Light Cycle: 16 hours light/ 8 hours dark
  - Light intensity: 100 foot-candles, average
  - Control Water: Dilute mineral water made with 20 % Perrier in Nanopure
  - Dilution Water: Laboratory control water
  - Pretreatment: none
3. Method 1002.0
  - Test chambers: 30 mL disposable plastic beakers
  - Volume per chamber: 15 mL
  - Number of organisms per chamber: 1
  - Number of replicates: 10
  - Food: Laboratory culture of Selenastrum algae and YCT solution
4. Method 1000.0
  - Test chambers: 20 oz. Disposable plastic cups
  - Volume per chamber: 200 mL
  - Average number of organisms per chamber: 8
  - Number of replicates per concentration: 5
  - Food: Artemia brine shrimp hatched in laboratory
  - Acclimation of organisms: Organisms are allowed to reach test temperature. Dilution water is added at half-hour intervals until organisms are contained in a culture media that consists of 80% dilution water.
5. Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that were necessary for these tests as well as any sample manipulations which were performed, such as aeration, dechlorination with sodium thiosulfate, etc. and the justification for such manipulations or deviations. Attach additional pages as needed.
  - None





# ENVIRONMENTAL TESTING & CONSULTING, INC.

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2790 Whitten Road

Memphis, Tennessee 38133

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Fax (901) 213-2440

"A Laboratory Management Partner"

03316

Blytheville Sewer Department  
Mr. Thomas Jones  
4834 County Rd. 639  
Blytheville, AR 72315

Project Bioassay -West WWTP  
Information :

Report Date : 5/15/2015

Report Number : 15-119-0191

## REPORT OF ANALYSIS

Received : 4/29/2015

Lab No : 89632

Matrix: Aqueous

Sample ID : Bioassay

Sampled: 4/27/2015 9:15

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	102	mg/L	1	1	05/06/15 09:09	CJR	2320B-2011
Total Calcium	37.5	mg/L	0.100	1	05/06/15 00:51	BKN	EPA-200.7
Hardness as CaCO3(SM-2340B)	132	mg/L	0.100	1	05/06/15 00:51		EPA-200.7
Total Magnesium	9.42	mg/L	0.100	1	05/06/15 00:51	BKN	EPA-200.7

Lab No : 89633

Matrix: Aqueous

Sample ID : Bioassay

Sampled: 4/29/2015 9:15

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	211	mg/L	1	1	05/06/15 09:09	CJR	2320B-2011
Total Calcium	36.6	mg/L	0.100	1	05/06/15 00:55	BKN	EPA-200.7
Hardness as CaCO3(SM-2340B)	130	mg/L	0.100	1	05/06/15 00:55		EPA-200.7
Total Magnesium	9.27	mg/L	0.100	1	05/06/15 00:55	BKN	EPA-200.7

Lab No : 90627

Matrix: Aqueous

Sample ID : Bioassay

Sampled: 5/1/2015 9:15

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	215	mg/L	1	1	05/06/15 09:09	CJR	2320B-2011
Total Calcium	35.5	mg/L	0.100	1	05/06/15 01:00	BKN	EPA-200.7
Hardness as CaCO3(SM-2340B)	126	mg/L	0.100	1	05/06/15 01:00		EPA-200.7
Total Magnesium	9.18	mg/L	0.100	1	05/06/15 01:00	BKN	EPA-200.7

### Qualifiers/ Definitions

DF

Dilution Factor

ML

Method Quantitation Limit



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①

## CHAIN OF CUSTODY

15-119-0191  
03316  
04-29-2015  
12:46:57  
Blytheville Sewer Department  
Bioassay - West WWTP

Company Name Blytheville Sewer Department			Customer Number 03316		Telephone (870) 763-4961		RUSH	ICE ✓
Site Name Kit SEMII A - WEST Bioassay - 04/26-27			Project Comment				FID Number	
Project Blytheville Sewer - Bioassay			Project Number 042715W		PO Number			
Project Manager / Contact Mr. Thomas Jones					E-mail cityofblytheville@att.net			
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses	
Outfall 001 - Composite 1	Plastic - Pint	4-27-15 <sup>9:15 AM</sup>	1	HNO3 - Nitric Acid	C	Aqueous	hardness	
Outfall 001 - Composite 1	Plastic - Pint	4-27-15 <sup>9:15 AM</sup>	1	NONE	C	Aqueous	Alkalinity	
Outfall 001 - Composite 1	Plastic - Gallon	4-27-15 <sup>9:15 AM</sup>	2	NONE	C	Aqueous	chronic CD/FH	

CE # 5

Sampled By JAMES CLARK	Method of Shipment ETC Lab	Blank / Cooler Temperature 0.7	Remarks
Relinquished By (sign) <i>James Clark</i>	Date / Time 4/27/15 9:30	Received By (sign) <i>Felton</i>	Date / Time 4/29/15 10:15
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign) <i>Felton</i>	Date / Time 4/29/15 12:15	Received by Lab (sign) <i>Felton</i>	Date / Time 4/29/15 12:15

1/1



# ENVIRONMENTAL TESTING & CONSULTING, INC.

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## CHAIN OF CUSTODY



Blytheville Sewer Department  
Bioassay - West WWTP

15-119-0191  
03316  
04-29-2015  
12:46:57

Company Name Blytheville Sewer Department		Customer Number 03316		Telephone (870) 763-4961		RUSH	ICE
Site Name Kit SEMI B - WEST Bioassay - 04/28-29			Project Comment			RID Number	
Project Blytheville Sewer - Bioassay		Project Number 042915 W		PO Number			
Project Manager / Contact Mr. Thomas Jones				E-mail cityofblytheville@att.net			
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses
Outfall 001 - Composite 2	Plastic - Pint	4-29-15 9:25 AM	1	HNO3 - Nitric Acid	C	Aqueous	hardness
Outfall 001 - Composite 2	Plastic - Pint	4-29-15 9:30 AM	1	NONE	C	Aqueous	Alkalinity
Outfall 001 - Composite 2	Plastic - Gallon	4-29-15 9:15 AM	2	NONE	C	Aqueous	chronic CD/FH

Sampled By James Clark	Method of Shipment ETC LAB	Blank / Cooler Temperature 0.1	Remarks CET#5
Relinquished By (sign) James Clark	Date / Time 4-29-15 9:45	Received By (sign) Fulmer	Date / Time 4/29/15 10:15
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign) Fulmer	Date / Time 4/29/15 12:15	Received by lab (sign) Fulmer	Date / Time 4/29/15 12:15



# ENVIRONMENTAL TESTING & CONSULTING, INC.

2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440

3

## CHAIN OF CUSTODY

15-119-0191  
03316  
04-29-2015  
12:46:57

Blytheville Sewer Department  
Bioassay - West WWTP / 4/29/15

<b>Company Name</b> Blytheville Sewer Department				<b>Customer Number</b> 03316	<b>Telephone</b> (870) 763-4961	<b>RUSH</b>	<b>ICE</b>
<b>Site Name</b> Kit SEMI C - WEST Bioassay - 04/30 - 05/01			<b>Project Comment</b>			<b>FID Number</b>	
<b>Project</b> Blytheville Sewer - Bioassay		<b>Project Number</b> 050115 W	<b>PO Number</b>				
<b>Project Manager / Contact</b> Mr. Thomas Jones				<b>E-mail</b> cityofblytheville@att.net			
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses
Outfall 001 - Composite 3	Plastic - Pint	5-1-15 9:15 AM	1	HNO3 - Nitric Acid	C	Aqueous	hardness
Outfall 001 - Composite 3	Plastic - Pint	5-1-15 9:15 AM	1	NONE	C	Aqueous	Alkalinity
Outfall 001 - Composite 3	Plastic - Gallon	5-1-15 9:15 AM	3	NONE	C	Aqueous	chronic CD/FH

CE # 4

<b>Sampled By</b> James Clark	<b>Method of Shipment</b> Ketchab	<b>Blank / Cooler</b> Temperature 0.1	<b>Remarks</b>
<b>Relinquished By (sign)</b> James Clark	<b>Date / Time</b> 5-1-15 9:40	<b>Received By (sign)</b> Falsberg	<b>Date / Time</b> 5/1/15 1000
<b>Relinquished By (sign)</b>	<b>Date / Time</b>	<b>Received By (sign)</b>	<b>Date / Time</b>
<b>Relinquished By (sign)</b> Falsberg	<b>Date / Time</b> 5/1/15 1145	<b>Received by Lab (sign)</b> Falsberg	<b>Date / Time</b> 5/1/15 1145