





**ENVIRONMENTAL TESTING & CONSULTING, INC.**

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

*Keel*  
*6/14/2012*

June 08, 2012

Mr. Ken Johnson/ Mr. Vincent Miles,  
Pine Bluff Wastewater Utility  
1520 South Ohio Street  
Pine Bluff, AR 71601-6055

Dear Permittee,

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 > 12% Permit Limit: 9 %

Report #: 12-136-0102 PINE\_BLUFF - AR0033316

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.025A). CETIS created by Tidepool Scientific Software

Respectfully,

A handwritten signature in cursive script, appearing to read "Connie Cook", is written above a horizontal line.

Connie Cook, Manager, Biological Sciences

Enclosure(s)

cc

## CETIS Test Evaluation

Report Date: 08 Jun-12 1:07 PM

Link: 07-5106-1105/CD136-0102

<b>Facility:</b> PINE_BLUFF - AR0033316 (AR0033316) <b>Sample Site:</b> <b>Sample Code:</b> 12-136-0102 <b>Sample Date:</b> 14 May-12 07:00 AM <b>Sample Age:</b> 31 Hours (1 °C) <b>Project:</b>	<b>Test Title:</b> Ceriodaphnia 7-d Survival and Reproduction Test <b>Organism:</b> Ceriodaphnia dubia (Water Flea) <b>Protocol:</b> EPA/821/R-02-013 (2002) <b>Start Date:</b> 15 May-12 02:15 PM <b>End Date:</b> 21 May-12 02:55 PM <b>Test Duration:</b> 6 Days 0 Hours
<b>Permitee:</b> Pine Bluff Wastewater Utility <b>Address:</b> 1520 South Ohio Street 900 Island Harbour Marina Road Pine Bluff, AR 71601-6055 <b>Contact:</b> Mr. Ken Johnson/ Mr. Vincent Miles <b>Phone:</b> 870-535-0821, 870-535-6243(fax) <b>Email:</b>	<b>Laboratory:</b> Environmental Testing and Consulting, Inc. <b>Address:</b> 2790 Whitten Road Memphis, TN 38133 <b>Contact:</b> Ms. Connie Cook <b>Phone:</b> 901-213-2454, 901-213-2440(fax) <b>Email:</b> ccook@etcmemphis.com

## Comments

## Chronic Toxicity Evaluation

Endpoint	Parameter	Conc-%	IWC	Pass/Fail
Reproduction	ChV	12	9	Passed

## Test Acceptability

Endpoint	Attribute	Estimate	Criteria	Pass/Fail
Reproduction	Control CV	0.17996702	N/A - 0.4	Passed
Reproduction	Control Response	16.4	15 - N/A	Passed
6d Proportion Survived		0.9	0.799 - N/A	Passed
Reproduction	MSDp	0.2894412	0.13 - 0.47	Passed

## 6d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
4		10	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
5		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
7		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
9		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
12		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%

## Reproduction Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	10	16.4000	12.0000	21.0000	0.93333	2.95146	18.00%
4		10	17.0000	13.0000	22.0000	0.78881	2.49444	14.67%
5		10	16.3000	3.00000	20.0000	1.58500	5.01221	30.75%
7		10	15.5000	5.00000	22.0000	1.44722	4.57651	29.53%
9		10	14.7000	0.00000	19.0000	1.78916	5.65784	38.49%
12		10	15.6000	0.00000	21.0000	1.90438	6.02218	38.60%

## CETIS Test Summary

Report Date: 08 Jun-12 1:07 PM

Link: 07-5106-1105/CD136-0102

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

<b>Test No:</b> 12-3488-9660	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Duration:</b> 6 Days 0 Hours
<b>Start Date:</b> 15 May-12 02:15 PM	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Species:</b> Ceriodaphnia dubia
<b>Ending Date:</b> 21 May-12 02:55 PM	<b>Dil Water:</b> Perrier Water	<b>Source:</b> In-House Culture
<b>Setup Date:</b> 15 May-12 02:15 PM	<b>Brine:</b> Not Applicable	

<b>Sample No:</b> 15-1301-3743	<b>Material:</b> POTW Effluent	<b>Client:</b> Pine Bluff Wastewater Utility
<b>Sample Date:</b> 14 May-12 07:00 AM	<b>Code:</b> 12-136-0102	<b>Project:</b>
<b>Receive Date:</b> 15 May-12 09:16 AM	<b>Source:</b> PINE_BLUFF - AR0033316	
<b>Sample Age:</b> 31 Hours (1 °C)	<b>Station:</b>	

Renewal	Renewed	Collected	Received	Temp °C	Sample Code
1	17 May-12 12:00 AM	16 May-12 06:55	17 May-12 08:42	1	12-136-0102
2	19 May-12 12:00 AM	17 May-12 06:50	18 May-12 08:32	1	12-136-0102

Analysis	Endpoint	NOEL	LOEL	ChV	MSDp	Method
12-5630-0811	6d Proportion Survived	12	>12	N/A	N/A	Fisher's Exact
06-8137-2645	Reproduction	12	>12	N/A	28.94%	Steel's Many-One Rank

Analysis	Endpoint	Attribute	Statistic	Acceptable Range	Decision
06-8137-2645	Reproduction	Control CV	0.1799670	N/A - 0.4	Passes acceptability criteria
06-8137-2645	Reproduction	Control Response	16.4	15 - N/A	Passes acceptability criteria
12-5630-0811	6d Proportion Survived		0.9	0.799 - N/A	Passes acceptability criteria
06-8137-2645	Reproduction	MSDp	0.2894412	0.13 - 0.47	Passes acceptability criteria

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
4		10	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
5		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
7		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
9		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%
12		10	0.90000	0.00000	1.00000	0.10000	0.31623	35.14%

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	10	16.4000	12.0000	21.0000	0.93333	2.95146	18.00%
4		10	17.0000	13.0000	22.0000	0.78881	2.49444	14.67%
5		10	16.3000	3.00000	20.0000	1.58500	5.01221	30.75%
7		10	15.5000	5.00000	22.0000	1.44722	4.57651	29.53%
9		10	14.7000	0.00000	19.0000	1.78916	5.65784	38.49%
12		10	15.6000	0.00000	21.0000	1.90438	6.02218	38.60%

Take  
the  
Highest  
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Two

Value

## CETIS Test Summary

Report Date: 08 Jun-12 1:07 PM

Link: 07-5106-1105/CD136-0102

6d Proportion Survived Detail											
Conc-%	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	1.00000	1.00000	0.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
4		1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
5		1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	0.00000	1.00000	1.00000	1.00000
7		1.00000	1.00000	1.00000	1.00000	1.00000	0.00000	1.00000	1.00000	1.00000	1.00000
9		1.00000	1.00000	0.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
12		1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	0.00000	1.00000	1.00000	1.00000

Reproduction Detail											
Conc-%	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	16.00000	15.00000	13.00000	21.00000	17.00000	12.00000	18.00000	18.00000	20.00000	14.00000
4		16.00000	15.00000	16.00000	17.00000	13.00000	19.00000	16.00000	17.00000	19.00000	22.00000
5		14.00000	17.00000	19.00000	20.00000	19.00000	17.00000	3.00000	17.00000	17.00000	20.00000
7		14.00000	16.00000	17.00000	16.00000	16.00000	5.00000	19.00000	18.00000	12.00000	22.00000
9		15.00000	18.00000	0.00000	17.00000	18.00000	15.00000	16.00000	11.00000	18.00000	19.00000
12		15.00000	17.00000	19.00000	12.00000	17.00000	21.00000	0.00000	17.00000	19.00000	19.00000

# CETIS Measurement Detail

Ceriodaphnia 7-d Survival and Reproduction Test

Environmental Testing and Consulting, Inc.

# CETIS Measurement Detail

Initial Dissolved Oxygen-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	9.7	9.3	8.9	9.3	8.8	8.9	8.5
4		9.8	9.4	8.8	9.4	8.8	9.1	8.7
5		9.9	9.4	8.8	9.5	8.8	9.1	8.7
7		9.8	9	8.8	9.5	8.8	9.1	8.6
9		9.8	9.5	8.8	9.5	8.8	9	8.6
12		9.7	9.5	8.9	9.4	8.8	9	8.5

Initial pH								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	8.1	7.8	7.9	7.8	8	8.3	8.1
4		8.1	7.8	7.8	7.8	7.8	8.3	8.1
5		8.1	7.8	7.8	7.8	7.8	8.3	8.1
7		8.1	7.9	7.8	7.8	7.8	8.3	8.1
9		8.1	7.9	7.8	7.8	7.8	8.3	8.1
12		8.1	8	7.9	7.8	7.8	8.3	8.1

Initial Temperature-°C								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	23
4		23	23	23	23	23	23	23
5		23	23	23	23	23	23	23
7		23	23	23	23	23	23	23
9		23	23	23	23	23	23	23
12		23	23	23	23	23	23	23

Final Dissolved Oxygen-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	9.1	9.4	9.9	9.9	8.7	8.3	
4		9.9	9.3	9.9	9.9	8.8	8.4	
5		9.9	9.3	9.8	9.9	8.8	8.4	
7		9.8	9.3	9.8	9.9	8.8	8.2	
9		9.8	9.4	9.8	9.8	8.8	8.2	
12		9.8	9	9.8	9.8	8.8	8.1	

Final pH								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	8.1	8.3	8.1	8.3	8.5	8.4	
4		8.4	8.3	8.2	8.3	8.4	8.3	
5		8.4	8.2	8.2	8.3	8.4	8.3	
7		8.4	8.2	8.2	8.2	8.4	8.2	
9		8.3	8.2	8.2	8.3	8.4	8.1	
12		8.3	8.2	8.2	8.2	8.4	8.2	

Final Temperature-°C								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	
4		23	23	23	23	23	23	
5		23	23	23	23	23	23	
7		23	23	23	23	23	23	
9		23	23	23	23	23	23	
12		23	23	23	23	23	23	

Alkalinity (CaCO3)-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	63	63	61	60	63	60	59

# CETIS Measurement Detail

Total Residual Chlorine-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	0	0	0	0	0	0	0
100		0	0	0	0	0	0	0

Conductivity-µmhos								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	181	181	181	185	185	191	182
100		741	730	1770	786	786	787	768

Hardness (CaCO3)-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	89	89	92	91	93	90	88



## CETIS Test Evaluation

Report Date: 08 Jun-12 1:09 PM

Link: 18-5392-2132/FH136-0102

<b>Facility:</b> PINE_BLUFF - AR0033316 (AR0033316) <b>Sample Site:</b> <b>Sample Code:</b> 12-136-0102 <b>Sample Date:</b> 14 May-12 07:00 AM <b>Sample Age:</b> 32 Hours (1 °C) <b>Project:</b>	<b>Test Title:</b> Fathead Minnow 7-d Larval Survival and Growth Test <b>Organism:</b> Pimephales promelas (Fathead Minnow) <b>Protocol:</b> EPA/821/R-02-013 (2002) <b>Start Date:</b> 15 May-12 02:30 PM <b>End Date:</b> 22 May-12 03:50 PM <b>Test Duration:</b> 7 Days 1 Hours
<b>Permitee:</b> Pine Bluff Wastewater Utility <b>Address:</b> 1520 South Ohio Street 900 Island Harbour Marina Road Pine Bluff, AR 71601-6055 <b>Contact:</b> Mr. Ken Johnson/ Mr. Vincent Miles <b>Phone:</b> 870-535-0821, 870-535-6243(fax) <b>Email:</b>	<b>Laboratory:</b> Environmental Testing and Consulting, Inc. <b>Address:</b> 2790 Whitten Road Memphis, TN 38133 <b>Contact:</b> Ms. Connie Cook <b>Phone:</b> 901-213-2454, 901-213-2440(fax) <b>Email:</b> ccook@etcmemphis.com

## Comments

## Chronic Toxicity Evaluation

Endpoint	Parameter	Conc-%	IWC	Pass/Fail
Mean Dry Weight-mg	ChV	12	9	Passed
7d Proportion Survived		12	9	Passed

## Test Acceptability

Endpoint	Attribute	Estimate	Criteria	Pass/Fail
Mean Dry Weight-mg	Control CV	0.14040111	N/A - 0.4	Passed
Mean Dry Weight-mg	Control Response	0.34249878	0.25 - N/A	Passed
7d Proportion Survived		1	0.799 - N/A	Passed

## 7d Proportion Survived Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
4		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
5		5	0.95000	0.87500	1.00000	0.03062	0.06847	7.21%
7		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
9		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
12		5	0.95000	0.75000	1.00000	0.05000	0.11180	11.77%

## Mean Dry Weight-mg Summary

Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	5	0.34250	0.30000	0.40000	0.02151	0.04809	14.04%
4		5	0.32250	0.23750	0.38750	0.02543	0.05687	17.63%
5		5	0.33500	0.27500	0.41250	0.02512	0.05618	16.77%
7		5	0.31750	0.26250	0.33750	0.01458	0.03260	10.27%
9		5	0.31500	0.27500	0.38750	0.02284	0.05108	16.22%
12		5	0.30000	0.21250	0.36250	0.02710	0.06059	20.20%


Take the Highest of Two values

## CETIS Test Summary

Report Date: 08 Jun-12 1:09 PM

Link: 18-5392-2132/FH136-0102

Fathead Minnow 7-d Larval Survival and Growth Test				Environmental Testing and Consulting, Inc.				
Test No:	14-2413-6953	Test Type:	Growth-Survival (7d)	Duration:	7 Days 1 Hours			
Start Date:	15 May-12 02:30 PM	Protocol:	EPA/821/R-02-013 (2002)	Species:	Pimephales promelas			
Ending Date:	22 May-12 03:50 PM	Dil Water:	Perrier Water	Source:	Aquatox, AR			
Setup Date:	15 May-12 02:30 PM	Brine:	Not Applicable					
Sample No:	15-1301-3743	Material:	POTW Effluent	Client:	Pine Bluff Wastewater Utility			
Sample Date:	14 May-12 07:00 AM	Code:	12-136-0102	Project:				
Receive Date:	15 May-12 09:16 AM	Source:	PINE_BLUFF - AR0033316					
Sample Age:	32 Hours (1 °C)	Station:						
<b>Sample Renewals</b>								
Renewal	Renewed	Collected	Received	Temp °C	Sample Code			
1	17 May-12 12:00 AM	16 May-12 06:55	17 May-12 08:42	1	12-136-0102			
2	19 May-12 12:00 AM	17 May-12 06:50	18 May-12 08:32	1	12-136-0102			
<b>Comparison Summary</b>								
Analysis	Endpoint	NOEL	LOEL	ChV	MSDp	Method		
08-5113-1425	7d Proportion Survived	12	>12	N/A	8.18%	Steel's Many-One Rank		
11-5596-7355	Mean Dry Weight-mg	12	>12	N/A	22.54%	Dunnett's Multiple Comparison		
<b>Test Acceptability</b>								
Analysis	Endpoint	Attribute	Statistic	Acceptable Range	Decision			
11-5596-7355	Mean Dry Weight-mg	Control CV	0.1404011	N/A - 0.4	Passes acceptability criteria			
11-5596-7355	Mean Dry Weight-mg	Control Response	0.3424988	0.25 - N/A	Passes acceptability criteria			
08-5113-1425	7d Proportion Survived		1	0.799 - N/A	Passes acceptability criteria			
<b>7d Proportion Survived Summary</b>								
Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
4		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
5		5	0.95000	0.87500	1.00000	0.03062	0.06847	7.21%
7		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
9		5	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
12		5	0.95000	0.75000	1.00000	0.05000	0.11180	11.77%
<b>Mean Dry Weight-mg Summary</b>								
Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Lab Water	5	0.34250	0.30000	0.40000	0.02151	0.04809	14.04%
4		5	0.32250	0.23750	0.38750	0.02543	0.05687	17.63%
5		5	0.33500	0.27500	0.41250	0.02512	0.05618	16.77%
7		5	0.31750	0.26250	0.33750	0.01458	0.03260	10.27%
9		5	0.31500	0.27500	0.38750	0.02284	0.05108	16.22%
12		5	0.30000	0.21250	0.36250	0.02710	0.06059	20.20%



## CETIS Test Summary

Report Date: 08 Jun-12 1:09 PM

Link: 18-5392-2132/FH136-0102

7d Proportion Survived Detail						
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	1.00000	1.00000	1.00000	1.00000	1.00000
4		1.00000	1.00000	1.00000	1.00000	1.00000
5		1.00000	1.00000	1.00000	0.87500	0.87500
7		1.00000	1.00000	1.00000	1.00000	1.00000
9		1.00000	1.00000	1.00000	1.00000	1.00000
12		0.75000	1.00000	1.00000	1.00000	1.00000

Mean Dry Weight-mg Detail						
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Lab Water	0.30000	0.32500	0.30000	0.38750	0.40000
4		0.23750	0.33750	0.30000	0.38750	0.35000
5		0.28750	0.33750	0.36250	0.41250	0.27500
7		0.26250	0.33750	0.31250	0.33750	0.33750
9		0.27500	0.38750	0.35000	0.27500	0.28750
12		0.30000	0.21250	0.35000	0.27500	0.36250

# CETIS Measurement Detail

Fathead Minnow 7-d Larval Survival and Growth Test Environmental Testing and Consulting, Inc.

# CETIS Measurement Detail

Initial Dissolved Oxygen-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	9.7	9.3	8.9	9.3	8.8	8.9	8.5
4		9.8	9.4	8.8	9.4	8.8	9.1	8.7
5		9.9	9.4	8.8	9.5	8.8	9.1	8.7
7		9.8	9	8.8	9.5	8.8	9.1	8.6
9		9.8	9.5	8.8	9.5	8.8	9	8.6
12		9.7	9.5	8.9	9.4	8.8	9	8.5

Initial pH								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	8.1	7.8	7.9	7.8	8	8.3	8.1
4		8.1	7.8	7.8	7.8	7.8	8.3	8.1
5		8.1	7.8	7.8	7.8	7.8	8.3	8.1
7		8.1	7.9	7.8	7.8	7.8	8.3	8.1
9		8.1	7.9	7.8	7.8	7.8	8.3	8.1
12		8.1	8	7.9	7.8	7.8	8.3	8.1

Initial Temperature-°C								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	23
4		23	23	23	23	23	23	23
5		23	23	23	23	23	23	23
7		23	23	23	23	23	23	23
9		23	23	23	23	23	23	23
12		23	23	23	23	23	23	23

Final Dissolved Oxygen-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	8.8	9.2	9.2	8.8	8.4	8.2	8.4
4		8.9	9.2	9.3	8.8	8.6	8.2	8.6
5		8.9	9.3	9.4	8.8	8.6	8.4	8.6
7		9.1	9.3	9.5	8.8	8.7	8.4	8.7
9		9.3	9.2	9.5	8.8	8.6	8.4	8.7
12		9.3	9.2	9.6	8.8	8.6	8.4	8.6

Final pH								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	7.8	7.9	7.9	7.9	7.6	7.5	7.6
4		7.7	7.8	7.8	7.9	7.9	7.4	7.9
5		7.7	7.8	7.8	7.9	7.9	7.4	7.9
7		7.7	7.9	7.8	8.8	8	7.5	7.6
9		7.7	7.9	7.8	8	8	7.5	7.6
12		7.8	7.9	7.8	8	8	7.6	7.3

Final Temperature-°C								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	23	23	23	23	23	23	23
4		23	23	23	23	23	23	23
5		23	23	23	23	23	23	23
7		23	23	23	23	23	23	23
9		23	23	23	23	23	23	23
12		23	23	23	23	23	23	23

Alkalinity (CaCO3)-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	63	63	61	60	63	60	59

# CETIS Measurement Detail

Total Residual Chlorine-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	0	0	0	0	0	0	0
100		0	0	0	0	0	0	0

Conductivity-µmhos								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	181	181	181	185	185	191	182
100		741	730	770	786	786	787	768

Hardness (CaCO3)-mg/L								
Conc-%	Control Type	1	2	3	4	5	6	7
0	Lab Water	89	89	92	91	93	90	88



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"A Laboratory Management Partner"

03326

Pine Bluff Wastewater Utility  
Mr. Ken Johnson  
900 Island Harbour Marina Rd.  
Pine Bluff, AR 71602

Project Bioassay  
Information :

Report Date : 6/8/2012

Report Number : 12-136-0102

## REPORT OF ANALYSIS

Received : 5/15/2012

Lab No : 93860

Matrix: Aqueous

Sample ID : Boyd Pt. Effluent-1 5/13-14/12

Sampled: 5/14/2012 7:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	110	mg/L	1	1	05/24/12 09:18	EWB	2320B
Total Calcium	11.8	mg/L	0.100	1	05/23/12 20:39	BKN	EPA-200.7
Hardness as CaCO3(SM-2340B)	44.7	mg/L	0.100	1	05/23/12 20:39		EPA-200.7
Total Magnesium	3.71	mg/L	0.100	1	05/23/12 20:39	BKN	EPA-200.7

Lab No : 94268

Matrix: Aqueous

Sample ID : Boyd Pt. Effluent-2 5/15-16/12

Sampled: 5/16/2012 6:55

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	115	mg/L	1	1	05/24/12 09:18	EWB	2320B
Total Calcium	12.0	mg/L	0.100	1	05/23/12 20:46	BKN	EPA-200.7
Hardness as CaCO3(SM-2340B)	45.4	mg/L	0.100	1	05/23/12 20:46		EPA-200.7
Total Magnesium	3.74	mg/L	0.100	1	05/23/12 20:46	BKN	EPA-200.7

Lab No : 94556

Matrix: Aqueous

Sample ID : Boyd Pt. Effluent-2 5/16-17/12

Sampled: 5/17/2012 6:50

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	115	mg/L	1	1	05/24/12 09:18	EWB	2320B
Total Calcium	11.4	mg/L	0.100	1	05/23/12 20:52	BKN	EPA-200.7
Hardness as CaCO3(SM-2340B)	43.7	mg/L	0.100	1	05/23/12 20:52		EPA-200.7
Total Magnesium	3.71	mg/L	0.100	1	05/23/12 20:52	BKN	EPA-200.7

### Qualifiers/ Definitions

\* Outside QC limit  
MQL Method Quantitation Limit

DF Dilution Factor

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Memphis, TN 38133

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: 2500 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





# CHAIN OF CUSTODY RECORD

①

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## BIOASSAY TESTING

ETC Work Order



Pine Bluff Wastewater Utility  
Bioassay

12-136-0102  
03326  
2012-05-15  
10:35:14

Company Name <i>Pine Bluff Wastewater Utility</i>		Phone #: <i>870-535-0828</i>																	
Project/Site <i>Semi-annual Bioassay</i>		Fax #: <i>870-535-0822</i>		FID #:		PO #: <i>24541</i>													
Project # <i>Outfall 001</i>		Sample Shipped on ICE (Circle One): <i>No</i>																	
Project Manager/Contact <i>Vincent Miles</i>																			
# of cont.	Sample ID/Number	Depth	Date Sample Start	Time Sample Start	Date Sample End	Time Sample End	Sample Type Comp	Grab	Test Type Chronic	Acute	Comments								
<i>5</i>	<i>Boyd # Effluent-1</i>		<i>5/13/12</i>	<i>0900</i>	<i>5/14/12</i>	<i>0900</i>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>										
Sampled By <i>Samantha Simpson</i>		Date <i>5/13/2012</i>	Time <i>0900</i>	Method of Shipment <i>FedEx</i>		Remarks													
RELINQUISHED BY (sign)		DATE	TIME	RECEIVED BY (sign)		DATE	TIME												
RELINQUISHED BY (sign)		DATE	TIME	RECEIVED BY (sign)		DATE	TIME												
RELINQUISHED BY (sign)		DATE	TIME	RECEIVED BY LAB (print/sign) <i>B. Blou</i>		DATE <i>5-15-12</i>	TIME <i>09:16</i>												

Distribution: Original and Yellow accompany samples to the laboratory.  
Original copy returned with results. Yellow copy for ETC, Inc. files.



# CHAIN OF CUSTODY RECORD

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## BIOASSAY TESTING

ETC Work



Pine Bluff Wastewater Utility  
Bioassav / 5/15/12

12-136-0102  
03326  
2012-05-15  
10:35:14

Company Name <b>Pine Bluff Wastewater Utility</b>		Phone #: <b>870-535-0821</b>
Project/Site		Fax #: <b>870-535-0822</b>
Project # <b>Outfall 001</b>		FID #:
Project Manager/Contact <b>Vincent Miles</b>		PO #: <b>24541</b>
Sample Shipped on ICE (Circle One): <input checked="" type="radio"/> Yes <input type="radio"/> No <b>1°C</b>		

# of cont.	Sample ID/Number	Depth	Date Sample Start	Time Sample Start	Date Sample End	Time Sample End	Sample Type		Test Type		Comments
							Comp	Grab	Chronic	Acute	
5	Boyd Pt. Effluent-2		5/15/12	0855	5/16/12	0655	✓		✓		

Sampled By <b>Najjarad Jasper</b>	Date <b>5/15/12</b>	Time <b>0855</b>	Method of Shipment <b>Federal Express</b>	Remarks	
RELINQUISHED BY (sign)	DATE	TIME	RECEIVED BY (sign)	DATE	TIME
RELINQUISHED BY (sign)	DATE	TIME	RECEIVED BY (sign)	DATE	TIME
RELINQUISHED BY (sign)	DATE	TIME	RECEIVED BY LAB (print/sign) <b>BBlowp</b>	DATE <b>5-17-12</b>	TIME <b>08:42</b>

Distribution: Original and Yellow accompany samples to the laboratory.  
Original copy returned with results. Yellow copy for ETC, Inc. files.





**PINE BLUFF WASTEWATER UTILITY**

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