

August 22, 2012

Test Results of
Third Quarter
Chronic 7-Day Renewal
Biomonitoring Testing
for
Effluent
Mena, AR

Control No. 160100-1

Prepared for:

Mr. Mike Spencer
Mena Water and Sewer
323 County Road 53
Mena, AR 71953

Prepared by:

AMERICAN INTERPLEX CORPORATION
8600 Kanis Road
Little Rock, AR 72204-2322



August 22, 2012
Control No. 160100-1
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Mena Water and Sewer
ATTN: Mr. Mike Spencer
323 County Road 53
Mena, AR 71953

Re: Chronic 7-Day Renewal utilizing *Ceriodaphnia dubia*
Effluent - Mena, AR
NPDES Permit No. AR0036692 AFIN#5700042

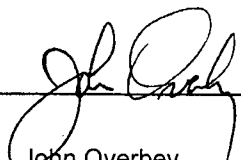
Dear Mr. Mike Spencer:

This report is the analytical results and supporting information for the samples submitted to American Interplex Corporation (AIC). The following results are applicable only to the sample identified by the control number referenced above. Accurate assessment of the data requires access to the entire document. Each section of the report has been reviewed and approved by the laboratory director or qualified designee.

Testing procedures and Quality Assurance were in accordance with "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" EPA-821-R-02-013, Fourth Edition, October 2002. Test results are summarized below:

Method 1002.0 Chronic *Ceriodaphnia dubia* Survival and Reproduction Test: The No Observable Effects Concentration (NOEC) for survival occurred at 100 % effluent, which is equal to the critical dilution of 100 %. The NOEC for reproduction occurred at 100 % effluent, which is equal to the critical dilution of 100 %. **The sample, therefore, PASSED both lethal and sub-lethal effects for the *Ceriodaphnia dubia* test.**

AMERICAN INTERPLEX CORPORATION



John Overbey
Laboratory Director

PDF cc: Mena Water and Sewer
ATTN: Mr. Mike Spencer
menawwtp@gmail.com

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I. Control Acceptance Criteria

Ceriodaphnia dubia Method 1002.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Reproduction > or = 15 per Surviving Female	15.5	PASS
Control CV < or = 40% per Surviving Female	14.3	PASS
Reproduction Minimum Significant Difference 13 to 47%	18.2	PASS
Critical Dilution CV < or = 40%	22.0	PASS

II. Outlined Report

A. Introduction

1. Permit Number: AR0036692 AFIN#5700042
2. Test Requirements: Chronic Biomonitoring, Quarterly Test Method 1002.0
3. Receiving Stream: Ouachita River Basin

B. Source of Effluent/Dilution Water

1. Effluent Samples:
 - a. Sampling Point: Effluent
 - b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	7.9	8.7	8.6
pH (standard units)	8.0	6.8	7.0
Alkalinity (mg/l as CaCO ₃)	12	12	12
Hardness (mg/l as CaCO ₃)	23	25	27
Conductivity (umhos/cm)	260	270	280
Residual Chlorine (mg/l)	<0.05	<0.05	<0.05
Ammonia as N (mg/l)	0.65	0.78	0.76

2. Dilution Water Samples: Synthetic Laboratory Soft Water #3897

- a. Dates Prepared: August 1 through August 15, 2012
- b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	8.2	7.8	8.2
pH (standard units)	7.6	7.9	7.7
Alkalinity (mg/l as CaCO ₃)	30	30	30
Hardness (mg/l as CaCO ₃)	46	47	46
Conductivity (umhos/cm)	170	170	170
Residual Chlorine (mg/l)	<0.05	<0.05	<0.05

C. Test Methods

1. Test methods used:

Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013; test Method 1002.0, *Ceriodaphnia dubia* Survival and Reproduction.

2. Endpoint: No Observable Effects Concentration (NOEC)

3. Test Conditions:

Ceriodaphnia dubia Survival and Growth Method 1002.0

Date & Time Test Initiated: August 14, 2012 at 1140
Date & Time Test Terminated: August 20, 2012 at 1255
Type & Volume of Test Chamber: 30 ml disposable beaker
Volume of Sample: 15 ml
Number of Organisms per replicate: 1
Number of Replicates per dilution: 10

4. Acclimation of test organisms: Obtained from in-house cultures

5. Test Temperature: 25 +/- 1 degree Celsius

D. Test Organisms

1. Scientific Name

a. Test 1002.0 *Ceriodaphnia dubia*

III. Data Analysis

The data was analyzed using American Interplex Corporation's Laboratory Information Management Software based on Toxstat.

Ceriodaphnia dubia survival data was analyzed with Fisher's Exact Test. Reproduction data was analyzed using Kolmogorov's Test for Normality and analyzed with Steel's Many-One Rank Test to determine the No Observable Effects Concentration (NOEC) for Reproduction. Dunnett's Test was used to calculate the PMSD.

IV. Standard Reference Toxicants

American Interplex Corporation has an ongoing test organism culturing program. The sensitivity of the offspring is determined by performing a standard reference toxicant test with each effluent test. Sodium chloride in synthetic moderately hard water is used as prescribed in EPA-821-R-02-013.

Ceriodaphnia dubia

Chronic reference tests are performed monthly.

A chronic reference test was performed on August 9, 2012 at 1200 to August 15, 2012 at 1320

The results were as follows: (Control No. 160011-1.)

Survival LC-50: 2469 mg/l

Growth IC-25: 1245 mg/l

Growth PMSD: 11.4

V. Chemical Analysis/Quality Control

Parameter	Method	% Recovery	Relative % Difference
Alkalinity	SM 2320 B	NA	0.00
Hardness	EPA 200.7	101	1.60
pH	SM 4500-H+ B	101	0.268
Conductivity	EPA 120.1	103	2.61

VI. Organism History

Ceriodaphnia dubia

Date: August 14, 2012

Age: <24 hours

Source: In-house culture

Water Chemistry Record:

Alkalinity: 57-64 mg/l

Hardness: 80-100 mg/l

Temperature: 25 deg.C

VII. Results Summary *Ceriodaphnia dubia*, Cladoceran Survival and Reproduction Test -- Method 1002.0

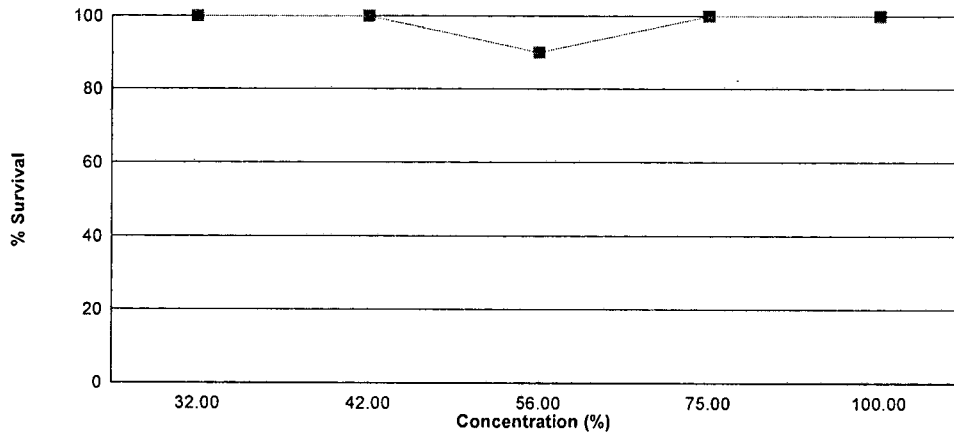
Neonates are exposed in a static renewal system to different concentrations of effluent with dilution water until 60% of surviving control organisms have three broods of offspring with an average of at least 15 young per female.

Effluent dilutions for this test were 32 %, 42 %, 56 %, 75 %, 100 % in accordance with the NPDES permit.

The low flow or 'critical' dilution is specified in the NPDES permit as 100 % effluent.

The test was initiated on August 14, 2012 at 1140 and continued through August 20, 2012 at 1255. Statistical analyses were performed on the observed data and the no observable effects concentrations (NOECs) were as follows:

- a.) NOEC survival = 100 % effluent
- b.) NOEC reproduction = 100 % effluent



Concentration	Percent Survival	Mean Reproduction
Control	100	15.5
32 %	100	15.6
42 %	100	15.7
56 %	90.0	14.0
75 %	100	14.0
100 %	100	15.1

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: August 14, 2012 at 1140
Date and Time Test Terminated: August 20, 2012 at 1255

Concentration: Control														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	3	2	0	2	0	2	1	0	0	2	12	10	1.20	
4	0	8	3	0	6	0	0	5	2	5	29	10	2.90	
5	7	0	8	7	9	7	6	7	5	0	56	10	5.60	
6	8	7	0	9	0	8	8	1	8	9	58	10	5.80	
7														
8														
TOTAL	18	17	11	18	15	17	15	13	15	16	155	10	15.5	

Concentration: 32 %													
Day	Replicate										No. of Young	No. of Adults	Young per Adult
	1	2	3	4	5	6	7	8	9	10			
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	3	2	0	2	0	0	2	0	0	1	10	10	1.00
4	0	5	3	0	5	4	0	3	0	0	20	10	2.00
5	8	0	6	6	9	8	6	8	7	6	64	10	6.40
6	9	7	8	7	0	9	7	0	8	7	62	10	6.20
7													
8													
TOTAL	20	14	17	15	14	21	15	11	15	14	156	10	15.6

Concentration: 42 %													
Day	Replicate										No. of Young	No. of Adults	Young per Adult
	1	2	3	4	5	6	7	8	9	10			
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	2	2	2	2	2	0	1	0	0	11	10	1.10
4	4	7	0	0	7	0	2	4	0	4	28	10	2.80
5	7	0	6	5	0	8	7	0	6	7	46	10	4.60
6	7	7	8	7	9	10	8	9	7	0	72	10	7.20
7													
8													
TOTAL	18	16	16	14	18	20	17	14	13	11	157	10	15.7

Appendix A1: Test 1002.0

Ceriodaphnia dubia Survival and Reproduction

Date and Time Test Initiated: August 14, 2012 at 1140
Date and Time Test Terminated: August 20, 2012 at 1255

Concentration: 56 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	X	2	1	1	0	2	0	2	0	0	8	9	0.889	
4	X	0	3	0	0	0	2	4	1	0	10	9	1.11	
5	X	5	8	6	6	6	8	8	6	7	60	9	6.67	
6	X	7	9	7	8	9	7	0	8	7	62	9	6.89	
7														
8														
TOTAL	0	14	21	14	14	17	17	14	15	14	140	10	14.0	

Concentration: 75 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
3	0	2	0	1	2	0	1	0	0	0	6	10	0.600	
4	3	0	4	0	0	0	0	2	0	5	14	10	1.40	
5	7	5	6	6	6	7	7	7	6	7	64	10	6.40	
6	8	7	0	6	8	7	6	6	7	1	56	10	5.60	
7														
8														
TOTAL	18	14	10	13	16	14	14	15	13	13	140	10	14.0	

Concentration: 100 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
3	2	2	0	1	2	1	1	0	0	0	9	10	0.900	
4	0	5	4	0	0	0	0	4	0	4	17	10	1.70	
5	6	9	7	6	6	8	0	8	8	7	65	10	6.50	
6	9	0	9	7	6	8	7	0	8	6	60	10	6.00	
7														
8														
TOTAL	17	16	20	14	14	17	8	12	16	17	151	10	15.1	

Appendix A2: Statistics

Ceriodaphnia dubia Survival

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
32 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
42 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
56 %	9	1	10
Total	19	1	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 9. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
75 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Appendix A2: Statistics

Ceriodaphnia dubia Survival

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
100 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Summary of Fisher's Exact Test				
Group	Identification	Exposed	Dead	Sig 0.05
0	Control	10	0	
1	32 %	10	0	
2	42 %	10	0	
3	56 %	10	1	
4	75 %	10	0	
5	100 %	10	0	

Appendix A2: Statistics

Ceriodaphnia dubia Reproduction

Chi-Square Test for Normality	No Transformation
Chi-Square = 5.3035 Critical Chi-Square = 13.28	(alpha = 0.01, df = 4)
Data PASS normality test (alpha = 0.01).	

Kolmogorov Test for Normality	No Transformation
D = 0.1446 D* = 1.134 Critical D* = 1.035	(alpha = 0.01, N = 60)
Data FAIL normality test (alpha = 0.01).	

Steel's Many-One Rank Test					No Transformation
Ho:Control<Treatment					
Group	Identification	Rank Sum	Critical Value	DF	Sig 0.05
1	Control				
2	32 %	99.00	75.00	10.00	
3	42 %	107.00	75.00	10.00	
4	56 %	92.50	75.00	10.00	
5	75 %	83.50	75.00	10.00	
6	100 %	102.00	75.00	10.00	

Critical values are 1 tailed (k=5)

Appendix A2: Statistics

Ceriodaphnia dubia Reproduction

Dunnett's Test for PMSD Calculation (excluding deaths if applicable)

ANOVA Table				No Transformation	
SOURCE	DF	SS	MS	F	
Between	5	20.56	4.112	0.5795	
Within (Error)	53	376.1	7.096		
Total	58	396.7			
Critical F = 3.39 (alpha = 0.01, df = 5,53) 2.39 (alpha = 0.05, df = 5,53)					
Since F < Critical F FAIL TO REJECT Ho: All equal (alpha = 0.05)					

Dunnett's Test - Table 1 of 2					No Transformation	
Ho:Control<Treatment						
Group	Identification	Transformed Mean	Mean In Original Units	T Stat	Sig 0.05	
1	Control	15.5	15.5			
2	32 %	15.6	15.6	-0.08394		
3	42 %	15.7	15.7	-0.1679		
4	56 %	15.556	15.556	-0.04575		
5	75 %	14	14	1.259		
6	100 %	15.1	15.1	0.3358		
Dunnett's critical value = 2.31 (1 Tailed, alpha = 0.05, df [used] = 5,40) (Actual df = 5,53) WARNING - Unequal replicate sizes. Critical values assuming equal replicate sizes have been used.						

Dunnett's Test - Table 2 of 2					No Transformation	
Ho:Control<Treatment						
Group	Identification	Num of Reps	Min Sig Diff (In Orig. Units)	% of Control	Difference From Control	
1	Control	10				
2	32 %	10	2.752	17.8	-0.1	
3	42 %	10	2.752	17.8	-0.2	
4	56 %	9	2.827	18.2	-0.056	
5	75 %	10	2.752	17.8	1.5	
6	100 %	10	2.752	17.8	0.4	

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: August 14, 2012 at 0808
Date and Time Test Terminated: August 20, 2012 at 1255

Effluent Conc.: Control		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.2	8.2	7.8	8.1	8.2	8.0	8.2
	Final	8.3	8.3	8.5	8.4	8.2	8.8	NA
pH, units	Initial	7.6	7.8	7.9	7.7	7.7	7.7	7.8
	Final	8.1	8.1	8.0	8.2	8.1	8.0	NA
Alkalinity, mg CaCO ₃ /l		30	NA	30	NA	30	NA	NA
Hardness, mg CaCO ₃ /l		46	NA	47	NA	46	NA	NA
Conductivity, umhos/cm		170	NA	170	NA	170	NA	NA
Res. Chlorine, mg/l		<0.05	NA	<0.05	NA	<0.05	NA	NA

Effluent Conc.: 32 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.1	7.7	8.0	7.7	8.2	7.9	8.3
	Final	8.1	8.3	8.5	8.3	8.1	8.7	NA
pH, units	Initial	7.6	7.6	7.6	7.4	7.4	7.5	7.6
	Final	8.0	8.0	7.9	8.0	8.0	7.9	NA

Effluent Conc.: 42 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.1	8.2	7.7	8.0	8.0	7.9	8.2
	Final	8.3	8.4	8.3	8.3	8.1	8.6	NA
pH, units	Initial	7.4	7.5	7.5	7.4	7.3	7.4	7.5
	Final	7.9	8.0	7.9	8.0	7.9	7.9	NA

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: August 14, 2012 at 0808

Date and Time Test Terminated: August 20, 2012 at 1255

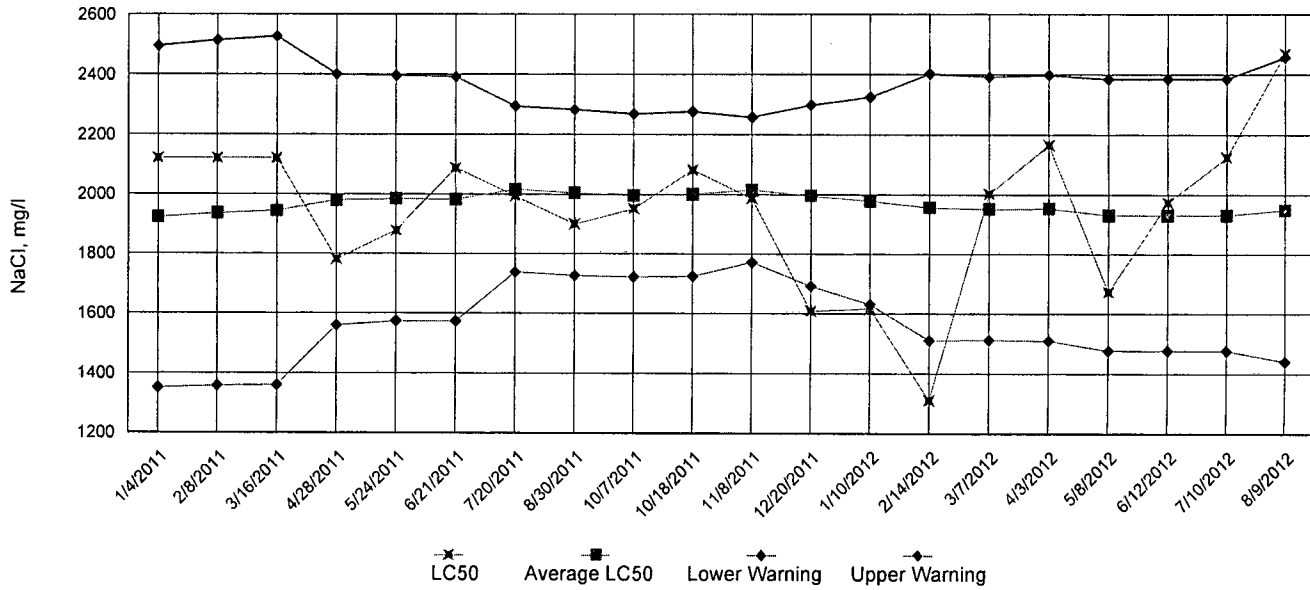
Effluent Conc.: 56 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.3	8.0	8.1	8.0	8.1	8.0	8.0
	Final	8.3	8.3	8.5	8.2	8.2	8.8	NA
pH, units	Initial	7.3	7.4	7.4	7.3	7.2	7.2	7.4
	Final	7.9	7.9	7.8	7.9	7.9	7.8	NA

Effluent Conc.: 75 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.5	7.8	8.5	7.7	8.3	7.9	8.0
	Final	8.1	8.3	8.4	8.4	8.2	8.8	NA
pH, units	Initial	7.0	7.3	7.2	7.1	7.1	7.1	7.3
	Final	7.8	7.8	7.7	7.8	7.8	7.8	NA

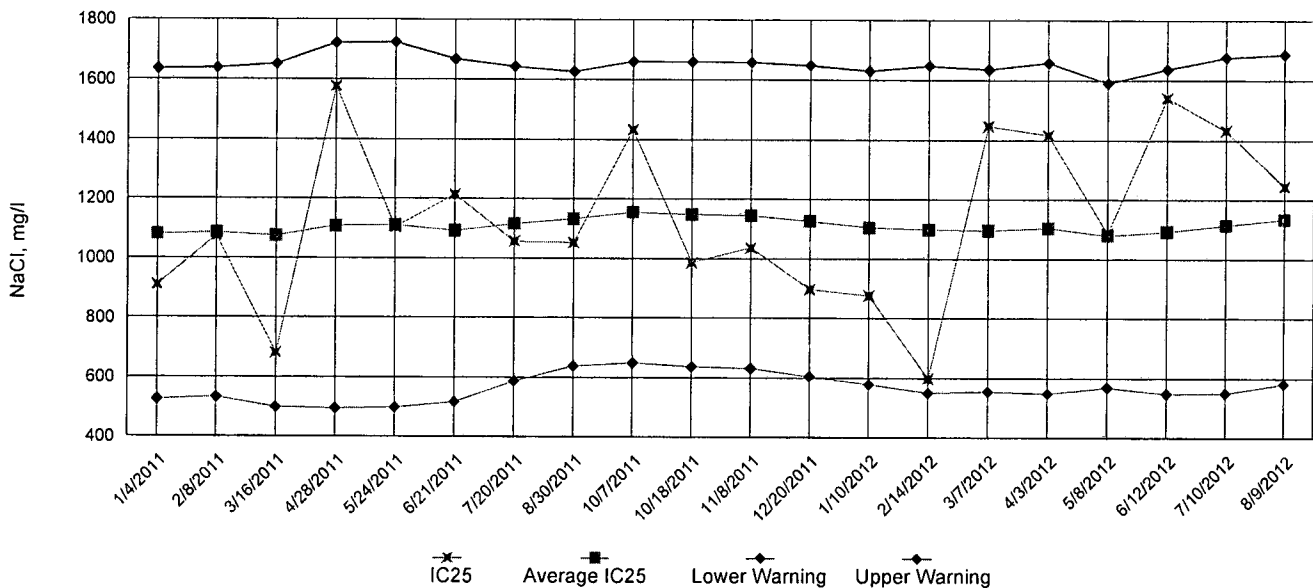
Effluent Conc.: 100 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	7.9	7.6	8.7	7.8	8.6	8.1	8.5
	Final	8.1	8.4	8.6	8.3	8.3	8.9	NA
pH, units	Initial	8.0	7.2	6.8	7.0	7.0	6.8	7.0
	Final	7.7	7.7	7.6	7.8	7.7	7.6	NA
Alkalinity, mg CaCO ₃ /l		12	NA	12	NA	12	NA	NA
Hardness, mg CaCO ₃ /l		23	NA	25	NA	27	NA	NA
Conductivity, umhos/cm		260	NA	270	NA	280	NA	NA
Res. Chlorine, mg/l		<0.05	NA	<0.05	NA	<0.05	NA	NA

Appendix A4: Test 1002.0
Chronic Reference Toxicant, *Ceriodaphnia dubia*

LC50 Survival Data



IC25 Reproduction Data



Appendix B: Test 1002.0
SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Ceriodaphnia dubia
SURVIVAL AND REPRODUCTION

Permittee: Mena Water and Sewer

NPDES No.: AR0036692 AFIN#5700042

Date and Time Test Initiated: August 14, 2012 at 1140

Date and Time Test Terminated: August 20, 2012 at 1255

Dilution water used: Synthetic Laboratory Soft Water #3897

PERCENT SURVIVAL

Time of Reading	Control	Percent Effluent				
		32 %	42 %	56 %	75 %	100 %
24 hour	100	100	100	100	100	100
48 hour	100	100	100	100	100	100
6 day	100	100	100	90.0	100	100

NUMBER OF YOUNG PRODUCED PER FEMALE @ 6 DAYS

Replicates	Control	Percent Effluent				
		32 %	42 %	56 %	75 %	100 %
A	18	20	18	0	18	17
B	17	14	16	14	14	16
C	11	17	16	21	10	20
D	18	15	14	14	13	14
E	15	14	18	14	16	14
F	17	21	20	17	14	17
G	15	15	17	17	14	8
H	13	11	14	14	15	12
I	15	15	13	15	13	16
J	16	14	11	14	13	17
Mean per Adult	15.5	15.6	15.7	14.0	14.0	15.1
Mean per Surviving Adult	15.5	15.6	15.7	15.6	14.0	15.1
CV %	14.3	19.2	17.3	15.5	15.1	22.0

CV = Coefficient of variation = standard deviation * 100 / mean
(calculated based on young produced by surviving females)

Appendix B: Test 1002.0
SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Ceriodaphnia dubia
SURVIVAL AND REPRODUCTION

1. Fisher's Exact Test:

Is the mean survival significantly different ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

a.) LOW FLOW OR CRITICAL DILUTION	(100 %)	<u> </u> YES	<u> X </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<u> </u> YES	<u> </u> NO

2. Steel's Many-One Rank Test:

Is the mean number of young produced per female significantly different ($p=0.05$) than the control's number of young per female for the % effluent corresponding to (significant non-lethal effects):

a.) LOW FLOW OR CRITICAL DILUTION	(100 %)	<u> </u> YES	<u> X </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<u> </u> YES	<u> </u> NO

3. If you answered NO to 1.a) enter [0] otherwise enter [1]: 0 (TLP3B) ✓
4. If you answered NO to 2.a) enter [0] otherwise enter [1]: 0 (TGP3B) ✓
5. NOEC Ceriodaphnia Lethality: 100 % (TOP3B) ✓
6. LOEC Ceriodaphnia Lethality: 100 % (TXP3B)
7. NOEC Ceriodaphnia Sublethality: 100 % (TPP3B)
8. LOEC Ceriodaphnia Sublethality: 100 % (TYP3B)
9. Coefficient of variation for Ceriodaphnia Reproduction: 22 (TQP3B)

Appendix B: Test 1002.0

CHRONIC TOXICITY SUMMARY FORM
Ceriodaphnia dubia
CHEMICAL PARAMETERS CHART

PERMITTEE: Mena Water and Sewer
NPDES NO.: AR0036692 AFIN#5700042
CONTACT: Mr. Mike Spencer
ANALYST: 275, 280, 298, 304

Test Initiated: DATE: August 14, 2012 TIME: 1140
Test Terminated: DATE: August 20, 2012 TIME: 1255

DILUTION Control	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.2	8.2	7.8	8.1	8.2	8.0	8.2
Final	8.3	8.3	8.5	8.4	8.2	8.8	NA
pH Initial	7.6	7.8	7.9	7.7	7.7	7.7	7.8
Final	8.1	8.1	8.0	8.2	8.1	8.0	NA
Alkalinity	30	NA	30	NA	30	NA	NA
Hardness	46	NA	47	NA	46	NA	NA
Conductivity	170	NA	170	NA	170	NA	NA
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION 32 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.1	7.7	8.0	7.7	8.2	7.9	8.3
Final	8.1	8.3	8.5	8.3	8.1	8.7	NA
pH Initial	7.6	7.6	7.6	7.4	7.4	7.5	7.6
Final	8.0	8.0	7.9	8.0	8.0	7.9	NA
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	NA	NA	NA	NA	NA	NA	NA
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 42 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.1	8.2	7.7	8.0	8.0	7.9	8.2
Final	8.3	8.4	8.3	8.3	8.1	8.6	NA
pH Initial	7.4	7.5	7.5	7.4	7.3	7.4	7.5
Final	7.9	8.0	7.9	8.0	7.9	7.9	NA
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	NA	NA	NA	NA	NA	NA	NA
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 56 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.3	8.0	8.1	8.0	8.1	8.0	8.0
Final	8.3	8.3	8.5	8.2	8.2	8.8	NA
pH Initial	7.3	7.4	7.4	7.3	7.2	7.2	7.4
Final	7.9	7.9	7.8	7.9	7.9	7.8	NA
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	NA	NA	NA	NA	NA	NA	NA
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 75 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	7.8	8.5	7.7	8.3	7.9	8.0
Final	8.1	8.3	8.4	8.4	8.2	8.8	NA
pH Initial	7.0	7.3	7.2	7.1	7.1	7.1	7.3
Final	7.8	7.8	7.7	7.8	7.8	7.8	NA
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	NA	NA	NA	NA	NA	NA	NA
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 100 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	7.9	7.6	8.7	7.8	8.6	8.1	8.5
Final	8.1	8.4	8.6	8.3	8.3	8.9	NA
pH Initial	8.0	7.2	6.8	7.0	7.0	6.8	7.0
Final	7.7	7.7	7.6	7.8	7.7	7.6	NA
Alkalinity	12	NA	12	NA	12	NA	NA
Hardness	23	NA	25	NA	27	NA	NA
Conductivity	260	NA	270	NA	280	NA	NA
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

MENA WWTP
323 DOIK 53
MENA AZ
71953



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(ATTN: Bio Mon NPDES)
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