

From: Mena Wastewater Treatment plant

To: ADEQ, Npdes/ Bio-Monitoring

Subj: 1st Quarter Bio monitoring 2015

As discussed January 2015 bio test failed from high NH₃N and the lab certification expired also and test was not valid. Test was conducted week 1-7 March as retest and passed. This test will be our 1st quarter results for 2015. Nh₃N has been corrected.

Sincerely,



Wastewater Supervisor

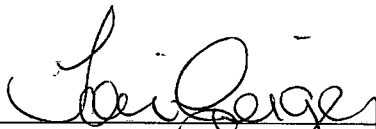
**CITY OF MENA WWTF
OUTFALL 001**

Chronic Biomonitoring Report
Permit Number NPDES AR0036692
AFIN Number 57-00042

Ceriodaphnia dubia
Pimephales promelas

March 3, 2015

Reviewed by:



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TOXICITY TEST REPORT - CHRONIC

Client City of Mena WWTF Laboratory I.D. 23819
Permit No. NPDES AR0036692 Begin Date March 3, 2015
Sample Outfall 001

Results: Pass Ceriodaphnia dubia survival and reproduction and Pimephales promelas survival and growth at the critical low flow concentration (100% effluent).

SAMPLE COLLECTION

The first composite effluent samples from City of Mena WWTF was delivered by United Parcel Service courier to Huthur & Associates on March 3, 2015. Due to inclement weather the second and third samples arrived March 6, 2015. The second sample was used twice to renew as was the third sample. Effluent samples were collected and composited from Outfall 001 using an automatic sampler by facility personnel. Two toxicity tests were requested: a seven-day Ceriodaphnia dubia survival and reproduction test (EPA Method 1002.0), and a seven-day Pimephales promelas larval survival and growth test (EPA Method 1000.0). Test organisms, procedures and quality assurance requirements were in accordance with the EPA manual, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013).

The effluent samples were analyzed for total residual chlorine (Standard Methods, 22nd Edition, 4500-Cl D) and contained <0.01 mg/L, <0.01 mg/L, and <0.01 mg/L, respectively. Effluent and laboratory dilution water hardness, alkalinity, conductivity, pH, and dissolved oxygen data were collected and recorded.

TEST SETUP Ceriodaphnia dubia



The seven-day Ceriodaphnia dubia survival and reproduction test was initiated at 1445 hours, March 3, 2015. Five concentrations were prepared (32%, 42%, 56%, 75%, and 100% effluent) utilizing distilled, deionized laboratory water reconstituted to match the hardness, alkalinity and pH of the receiving stream (unnamed tributary of Prairie Creek). The test was conducted in 25 mL distilled water rinsed plastic beakers containing 15 mL of solution (one organism per beaker, ten beakers per concentration). C. dubia neonates were less than 24 hours old and within eight hours of the same age at test initiation. Neonates were placed in beakers following a randomized block test design. Fresh solutions were prepared and renewed daily. Daily feeding consisted of 0.5 mL Selenastrum capricornutum and cerophyll per test chamber. The test proceeded for seven days during which survival, reproduction and water quality data were collected daily.

A control of 10 replicate beakers containing one neonate each in distilled, deionized, reconstituted water (same as diluent) was conducted concurrently with the test. There was 100% survival in the control. The test ended at 1445 hours, March 10, 2015. Survival and reproduction data were statistically analyzed ($p = 0.05$) according to EPA procedures to determine the Lowest Observable Effect Concentration (LOEC) and the No Observable Effect Concentration (NOEC).

SURVIVAL
Ceriodaphnia dubia

There was 100% survival to *C. dubia* in all of the effluent concentrations tested. Therefore, statistical analyses were not required to determine a no effect concentration.

LOEC: Not Applicable
NOEC: 100% Effluent

REPRODUCTION
Ceriodaphnia dubia

C. dubia reproduction data were normally distributed at the 0.01 alpha level (13.277) using Chi-Square test for normality. Reproduction data were homogeneous using Bartlett's test at the 0.01 alpha level (15.09) without data transformations. Therefore, a parametric test was performed on the homogeneous data. Dunnett's test on *C. dubia* reproduction data demonstrated that there were no statistically significant differences between the control and any of the effluent concentrations.

LOEC: Not Applicable
NOEC: 100% Effluent

PMSD: 8.7%

TEST SETUP
Pimephales promelas



The seven-day *Pimephales promelas* larval survival and growth test was initiated at 1550 hours, March 3, 2015. Five concentrations were prepared (32%, 42%, 56%, 75%, and 100% effluent) utilizing distilled, deionized laboratory water reconstituted to match the hardness, alkalinity and pH of the receiving stream (unnamed tributary of Prairie Creek). The test was conducted in 300 mL distilled water rinsed plastic beakers containing 250 mL of solution (eight larvae per beaker, five beakers per concentration). *P. promelas* larvae were less than 24-hours old at test initiation and originated from a minimum of three in-house spawnings. Fresh solutions were prepared and renewed daily. Larvae in each test chamber were fed <24-hour-old *Artemia* (brine shrimp) three times per day. The test proceeded for seven days during which survival and water quality data were collected daily.

A control of five replicate chambers containing eight larvae each in distilled, deionized, reconstituted water (same as diluent) was conducted concurrently with the test. There was 100% survival in the control. The test ended at 1550 hours, March 10, 2015. At test termination, all larvae were sacrificed, dried for 24-hours, and weighed. Survival and growth (weight) data were statistically analyzed ($p = 0.05$) according to EPA procedures to determine the Lowest Observable Effect Concentration (LOEC) and the No Observable Effect Concentration (NOEC).

SURVIVAL
Pimephales promelas

There was 100% survival to *P. promelas* in all of the effluent concentrations tested. Therefore, statistical analyses were not required to determine a no effect concentration.

LOEC: Not Applicable
NOEC: 100% Effluent

GROWTH
Pimephales promelas

P. promelas growth data were normally distributed at the 0.01 alpha level (0.900) using Shapiro Wilk's test for normality. Growth data were homogeneous using Bartlett's test at the 0.01 alpha level (15.09) without data transformations. Therefore, a parametric test was performed on the homogeneous data. Dunnett's test on *P. promelas* growth data demonstrated that there were no statistically significant differences between the control and any of the effluent concentrations.

LOEC: Not Applicable
NOEC: 100% Effluent

PMSD: 8.6%

SUMMARY

There were no statistically significant differences between the control and the critical low flow concentration (100% effluent) for *C. dubia* survival and reproduction and *P. promelas* survival and growth. Based on biomonitoring requirements for Outfall 001 contained in Permit Number NPDES AR0036692 for City of Mena WWTF, Outfall 001 passed for this testing period.

Huther and Associates
7-Day/3 Brood *Ceriodaphnia dubia* Survival and Reproduction Chronic Toxicity Test

CLIENT <u>City of Mena WWTF</u>	SAMPLE TYPE <u>24 Hour Composite</u>
NPDES # <u>AR0036692</u>	DATE COLLECTED <u>03/02/15 03/04/15 03/06/15</u>
LAB ID # <u>23819</u>	DATE RECEIVED <u>03/03/15 03/06/15 03/06/15</u>
TEST TYPE <u>7 Day Chronic</u>	BEGIN DATE/TIME <u>03/03/15 1445</u>
TEST ORGANISM <u>Ceriodaphnia dubia</u>	END DATE/TIME <u>03/10/15 1445</u>
ORGANISM AGE <u>< 24 Hours</u>	TEST TEMPERATURE (°C) <u>25 ± 1</u>
ORGANISM SOURCE <u>In House</u>	PHOTO PERIOD <u>16-hr. Light 8-hr. Dark</u>
RECEIVING WATER <u>unnamed tributary of Prairie Creek</u>	LIGHT INTENSITY <u>50-100 ft. cndl.</u>
DILUTION WATER <u>Laboratory</u>	TECHNICIAN <u>N. Lehr</u>

SURVIVAL & REPRODUCTION SUMMARY

Control											
Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
03/04/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/05/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/06/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/07/15	3	4	3	3	4	3	2	3	7	4	
	3	4	3	3	4	3	2	3	7	4	
03/08/15	A	A	A	A	A	A	A	A	A	A	
	3	4	3	3	4	3	2	3	7	4	
03/09/15	6	7	6	8	6	8	7	7	6	6	
	9	11	9	11	10	11	9	10	13	10	
	12	14	13	13	14	12	11	13	14	12	
03/10/15	21	25	22	24	24	23	20	23	27	22	
x # Young 23.1 C.V. 8.77% x% Survival 100% C.V. 0.00%											

32% Effluent											
Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
03/04/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/05/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/06/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/07/15	4	3	2	3	3	4	3	2	3	3	
	4	3	2	3	3	4	3	2	3	3	
03/08/15	A	A	A	A	A	A	A	A	A	A	
	4	3	2	3	3	4	3	2	3	3	
03/09/15	8	9	8	7	6	7	9	7	8	6	
	12	12	10	10	9	11	12	9	11	9	
	13	12	13	11	12	12	14	13	13	12	
03/10/15	25	24	23	21	21	23	26	22	24	21	
x # Young 23.0 C.V. 7.67% x% Survival 100% C.V. 0.00%											

42% Effluent											
Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
03/04/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/05/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/06/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/07/15	4	4	3	2	4	3	4	3	2	2	
	4	4	3	2	4	3	4	3	2	2	
03/08/15	A	A	A	A	A	A	A	A	A	A	
	4	4	3	2	4	3	4	3	2	2	
03/09/15	6	9	6	6	7	10	8	6	8	6	
	10	13	9	8	11	13	12	9	10	8	
	12	14	13	13	12	13	14	11	12	11	
03/10/15	22	27	22	21	23	26	26	20	22	19	
x # Young 22.8 C.V. 11.84% x% Survival 100% C.V. 0.00%											

56% Effluent											
Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10	
03/04/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/05/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/06/15	A	A	A	A	A	A	A	A	A	A	
	0	0	0	0	0	0	0	0	0	0	
03/07/15	4	2	3	3	2	2	3	3	4	2	
	4	2	3	3	2	2	3	3	4	2	
03/08/15	A	A	A	A	A	A	A	A	A	A	
	4	2	3	3	2	2	3	3	4	2	
03/09/15	8	7	6	7	6	7	6	9	6	7	
	12	9	9	10	8	9	9	12	10	9	
	13	12	14	12	12	13	12	12	13	13	
03/10/15	25	21	23	22	20	22	21	24	23	22	
x # Young 22.3 C.V. 6.70% x% Survival 100% C.V. 0.00%											

where: A = Alive
 5 = Alive, 5 young
 D = Dead
 D5 = 5 Young, Female died

ex 1:

A
4

 alive today
 total young to date

ex 2:

5
12

 alive, 5 young today
 total young to date

Huther and Associates
7-Day/3 Brood *Ceriodaphnia dubia* Survival and Reproduction Chronic Toxicity Test

City of Mena WWTF

Lab ID# 23819

Test Date: March 3, 2015

75% Effluent

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
03/04/15	A	A	A	A	A	A	A	A	A	A
	0	0	0	0	0	0	0	0	0	0
03/05/15	A	A	A	A	A	A	A	A	A	A
	0	0	0	0	0	0	0	0	0	0
03/06/15	A	A	A	A	A	A	A	A	A	A
	0	0	0	0	0	0	0	0	0	0
03/07/15	3	2	3	2	4	3	2	3	3	2
	3	2	3	2	4	3	2	3	3	2
03/08/15	A	A	A	A	A	A	A	A	A	A
	3	2	3	2	4	3	2	3	3	2
03/09/15	8	6	9	7	6	8	10	7	6	7
	11	8	12	9	10	11	12	10	9	9
03/10/15	14	12	13	14	13	12	12	13	14	12
	25	20	25	23	23	23	24	23	23	21
x# Young 23.0 C.V. 6.80% x% Survival 100% C.V. 0.00%										

100% Effluent

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
03/04/15	A	A	A	A	A	A	A	A	A	A
	0	0	0	0	0	0	0	0	0	0
03/05/15	A	A	A	A	A	A	A	A	A	A
	0	0	0	0	0	0	0	0	0	0
03/06/15	A	A	A	A	A	A	A	A	A	A
	0	0	0	0	0	0	0	0	0	0
03/07/15	4	3	3	2	3	2	2	3	3	4
	4	3	3	2	3	2	2	3	3	4
03/08/15	A	A	A	A	A	A	A	A	A	A
	4	3	3	2	3	2	2	3	3	4
03/09/15	6	9	8	7	9	6	8	8	6	8
	10	12	11	9	12	8	10	11	9	12
03/10/15	12	13	14	12	13	12	14	12	14	13
	22	25	25	21	25	20	24	23	23	25
x# Young 23.3 C.V. 7.85% x% Survival 30% C.V. 161.02%										

where: A = Alive
 5 = Alive, 5 young
 D = Dead
 D5 = 5 Young, Female died

ex 1:

A
4

 alive today
 total young to date

ex 2:

5
12

 alive, 5 young today
 total young to date

Huthner and Associates
7-Day/3 Brood *Ceriodaphnia dubia* Survival and Reproduction Chronic Toxicity Test

City of Mena WWTF

Lab ID# 23819

Test Date: March 3, 2015

WET CHEMISTRY MEASUREMENTS

Date	Time	Temp	Samp. No.	pH of Solution						Analyst
				CON	32%	42%	56%	75%	100%	
03/03/15	Start	25.0	1	8.05	7.80	7.71	7.63	7.42	7.07	CS
03/04/15	24 Hr.	25.4	1	8.20	8.18	8.17	8.16	8.15	8.14	CS
03/04/15	Renew	25.5	1	7.94	7.86	7.82	7.78	7.76	7.75	CS
03/05/15	48 Hr.	25.5	1	8.25	8.21	8.16	8.15	8.13	8.12	CS
03/05/15	Renew	25.0	1	7.44	7.47	7.49	7.46	7.43	7.07	CS
03/06/15	72 Hr.	25.6	1	7.89	7.73	7.64	7.85	7.54	7.86	EMS
03/06/15	Renew	25.6	2	7.83	7.75	7.64	7.56	7.52	7.67	EMS
03/07/15	96 Hr.	25.6	2	8.22	8.20	8.17	8.16	8.15	8.10	CS
03/07/15	Renew	25.0	2	8.45	8.42	8.40	8.37	8.35	8.32	CS
03/08/15	120 Hr.	25.6	2	7.52	7.50	7.49	7.47	7.45	7.44	EMS
03/08/15	Renew	25.6	3	8.36	8.37	8.39	8.42	8.44	7.65	EMS
03/09/15	144 Hr.	25.3	3	8.20	8.19	8.18	8.17	8.16	8.15	CS
03/09/15	Renew	25.3	3	7.97	7.57	7.56	7.56	7.54	7.52	EMS
03/10/15	168 Hr.	25.5	3	8.26	8.23	8.22	8.20	8.18	8.17	CS

Date	Time	Temp	Samp. No.	DO (mg/L) of Solution						Analyst
				CON	32%	42%	56%	75%	100%	
03/03/15	Start	25.0	1	8.67	8.72	8.75	8.77	8.78	8.80	CS
03/04/15	24 Hr.	25.4	1	8.31	8.28	7.86	7.66	8.25	8.18	CS
03/04/15	Renew	25.5	1	8.85	7.04	8.72	8.61	8.59	8.24	CS
03/05/15	48 Hr.	25.5	1	8.35	8.27	7.92	7.71	8.04	8.35	CS
03/05/15	Renew	25.0	1	8.73	8.35	8.76	8.55	8.81	8.80	CS
03/06/15	72 Hr.	25.6	1	7.95	8.96	8.45	8.44	8.76	7.96	EMS
03/06/15	Renew	25.6	2	7.72	8.21	8.22	8.36	8.71	7.86	EMS
03/07/15	96 Hr.	25.6	2	8.33	8.22	8.82	7.56	7.84	7.88	CS
03/07/15	Renew	25.0	2	8.75	8.39	8.79	8.71	8.88	8.58	CS
03/08/15	120 Hr.	25.6	2	8.15	8.89	8.76	8.52	7.86	8.56	EMS
03/08/15	Renew	25.6	3	7.63	7.58	7.89	8.01	8.06	8.04	EMS
03/09/15	144 Hr.	25.3	3	7.71	7.52	8.63	8.41	8.59	8.66	CS
03/09/15	Renew	25.3	3	7.70	8.87	8.62	8.76	8.59	8.53	EMS
03/10/15	168 Hr.	25.5	3	8.74	8.15	8.23	8.78	8.58	8.88	CS

Huther and Associates
7-Day/3 Brood *Ceriodaphnia dubia* Survival and Reproduction Chronic Toxicity Test

City of Mena WWTF

Lab ID# 23819

Test Date: March 3, 2015

INITIAL CHEMISTRY MEASUREMENTS @ 100% EFFLUENT

Date	Samp. No.	pH	DO	Hardness mg/L CaCO ₃ ¹	Alkalinity mg/L CaCO ₃ ¹	Conduct. umhos/cm ¹	Resid. Cl ₂ mg/L ¹	Dechlor(mL) Na ₂ S ₂ O ₃ mg/L ¹	Analyst
03/03/15	1	7.07	8.80	32	10	155	<0.01	N/A	TG
03/06/15	2	7.67	7.86	34	12	151	<0.01	N/A	TG
03/08/15	3	7.65	8.08	34	10	175	<0.01	N/A	TG
03/03/15	Con	7.90	8.28	48	24	198	-	-	TG

¹ Measurements taken in 100% solution.

Huther and Associates, Inc.
 Begin Date: March 03, 2015
 Lab I.D.# 23819

CERIODAPHNIA DUBIA STATISTICAL ANALYSES
 Reproduction

Summary Statistics on Transformed Data Table 1 of 2

Grp	Identification	N	Min	Max	Mean
1	Control	10	20.000	27.000	23.100
2	32% Effluent	10	21.000	26.000	23.000
3	42% Effluent	10	19.000	27.000	22.800
4	56% Effluent	10	20.000	25.000	22.300
5	75% Effluent	10	20.000	25.000	23.000
6	100% Effluent	10	20.000	25.000	23.300

Summary Statistics on Transformed Data Table 2 of 2

Grp	Identification	Variance	Sd	Sem	C.V.%
1	Control	4.100	2.025	0.640	8.77
2	32% Effluent	3.111	1.764	0.558	7.67
3	42% Effluent	7.289	2.700	0.854	11.84
4	56% Effluent	2.233	1.494	0.473	6.70
5	75% Effluent	2.444	1.563	0.494	6.80
6	100% Effluent	3.344	1.829	0.578	7.85

Chi-Square Test For Normality: Actual And Expected Frequencies

Interval	< -1.5	-1.5 to -0.5	-0.5 to 0.5	> 0.5 to 1.5	> 1.5
Expected	4.020	14.520	22.920	14.520	4.020
Observed	4	15	23	14	4

Calculated Chi-Square goodness of fit test statistic = 0.0350
 Table Chi-Square value (alpha = 0.01) = 13.277

Data Pass normality test. Continue analysis.

Bartlett's Test For Homogeneity of Variance

Calculated B1 statistic = 4.31

Table Chi-square value = 15.09 (alpha = 0.01, DF = 5)
 Table Chi-square value = 11.07 (alpha = 0.05, DF = 5)

Data Pass B1 homogeneity test at 0.01 level. Continue analysis.

ANOVA Table

SOURCE	DF	SS	MS	F
Between	5	5.883	1.177	0.313
Within (Error)	54	202.700	3.754	
Total	59	208.583		

Critical F value = 2.45 (0.05,5,40)
 Since F < Critical F Fail to Reject Ho: All equal

Dunnett's Test - Table 1 of 2 Ho: Control < Treatment

Grp	Identification	Transformed Mean	Mean	T Stat	Sig
			Calculated In Original Units		
1	Control	23.100	23.100		
2	32% Effluent	23.000	23.000	0.115	
3	42% Effluent	22.800	22.800	0.346	
4	56% Effluent	22.300	22.300	0.923	
5	75% Effluent	23.000	23.000	0.115	
6	100% Effluent	23.300	23.300	-0.231	

Dunnett table value = 2.31 (1 Tailed Value, P=0.05, DF=40,5)
 No statistically significant difference

Dunnett's Test - Table 1 of 2 Ho: Control < Treatment

Grp	Identification	Num of Reps	Minimum Sig Diff (In Orig. Units)	% of Control	Difference
					from Control
1	Control	10			
2	32% Effluent	10	2.002	8.7	0.100
3	42% Effluent	10	2.002	8.7	0.300
4	56% Effluent	10	2.002	8.7	0.800
5	75% Effluent	10	2.002	8.7	0.100
6	100% Effluent	10	2.002	8.7	-0.200

Huthner and Associates
7-Day *Pimephales promelas* Survival and Growth Chronic Toxicity Test

CLIENT	City of Mena WWTF	SAMPLE TYPE	24 Hour Composite
NPDES #	AR0036692	DATE COLLECTED	03/02/15 03/04/15 03/06/15
LAB ID #	23819	DATE RECEIVED	03/03/15 03/06/15 03/06/15
TEST TYPE	7 Day Chronic	BEGIN DATE/TIME	03/03/15 1550
TEST ORGANISM	<i>Pimephales promelas</i>	END DATE/TIME	03/10/15 1550
ORGANISM AGE	< 24 Hours	TEST TEMPERATURE (°C)	25 ± 1
ORGANISM SOURCE	In House	PHOTO PERIOD	16-hr Light 8-hr Dark
RECEIVING WATER	unnamed tributary of Prairie Creek	LIGHT INTENSITY	50-100 ft. cndl.
DILUTION WATER	Laboratory	TECHNICIAN	M. Horner

SURVIVAL SUMMARY

Conc.	03/04/15					03/05/15					03/06/15					03/07/15					03/08/15									
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E					
Con	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
32%	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
42%	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
56%	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
75%	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
100%	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Conc.	03/09/15					03/10/15					x % Survival	C.V. %
	A	B	C	D	E	A	B	C	D	E		
Con	8	8	8	8	8	8	8	8	8	8	100.0	0.00
32%	8	8	8	8	8	8	8	8	8	8	100.0	0.00
42%	8	8	8	8	8	8	8	8	8	8	100.0	0.00
56%	8	8	8	8	8	8	8	8	8	8	100.0	0.00
75%	8	8	8	8	8	8	8	8	8	8	100.0	0.00
100%	8	8	8	8	8	8	8	8	8	8	0.0	0.00

MEAN DRY WEIGHT PER REP

% Effluent	Rep A	Rep B	Rep C	Rep D	Rep E	x	C.V. %
Con	0.4760	0.4270	0.4560	0.4810	0.4490	0.4578	4.76
32%	0.4920	0.4350	0.4810	0.4260	0.4790	0.4626	6.46
42%	0.4820	0.4450	0.4970	0.4800	0.4350	0.4678	5.65
56%	0.4260	0.4910	0.5040	0.4650	0.4950	0.4762	6.63
75%	0.4560	0.5020	0.4760	0.4920	0.4470	0.4746	4.90
100%	0.5060	0.4440	0.4810	0.4670	0.4910	0.4778	4.95

Huthier and Associates
7-Day *Pimephales promelas* Survival and Growth Chronic Toxicity Test

City of Mena WWTF

Lab ID# 23819

Test Date: March 3, 2015

WET CHEMISTRY MEASUREMENTS

Date	Time	Temp	Samp. No.	pH of Solution						Analyst
				CON	32%	42%	56%	75%	100%	
03/03/15	Start	25.0	1	8.05	7.80	7.71	7.63	7.42	7.07	CS
03/04/15	24 Hr.	25.4	1	8.31	8.23	8.20	8.12	8.08	7.95	CS
03/04/15	Renew	25.5	1	7.94	7.86	7.82	7.78	7.76	7.75	CS
03/05/15	48 Hr.	25.5	1	7.83	7.81	7.78	7.75	7.74	7.76	CS
03/05/15	Renew	25.7	1	7.44	7.47	7.49	7.46	7.43	7.07	CS
03/06/15	72 Hr.	25.4	1	8.25	7.65	7.56	7.55	7.52	8.01	EMS
03/06/15	Renew	25.4	2	7.83	7.75	7.64	7.56	7.52	7.67	EMS
03/07/15	96 Hr.	25.5	2	8.28	8.21	8.19	8.16	8.10	8.07	CS
03/07/15	Renew	25.2	2	8.45	8.42	8.40	8.37	8.35	8.32	CS
03/08/15	120 Hr.	25.6	2	8.41	8.41	8.27	8.19	8.08	8.08	EMS
03/08/15	Renew	25.6	3	8.36	8.37	8.39	8.42	8.44	7.65	EMS
03/09/15	144 Hr.	25.6	3	8.30	8.28	8.09	8.04	8.03	7.59	EMS
03/09/15	Renew	25.6	3	7.97	7.57	7.56	7.56	7.54	7.52	EMS
03/10/15	168 Hr.	25.5	3	8.24	8.23	8.20	8.19	8.16	8.15	CS

Date	Time	Temp	Samp. No.	DO (mg/L) of Solution						Analyst
				CON	32%	42%	56%	75%	100%	
03/03/15	Start	25.0	1	8.67	8.72	8.75	8.77	8.78	8.80	CS
03/04/15	24 Hr.	25.4	1	8.02	8.55	8.76	8.87	8.20	8.15	CS
03/04/15	Renew	25.5	1	8.85	7.04	8.72	8.61	8.59	8.24	CS
03/05/15	48 Hr.	25.5	1	8.30	8.42	7.57	8.39	8.61	8.42	CS
03/05/15	Renew	25.7	1	8.73	8.35	8.76	8.55	8.81	8.80	CS
03/06/15	72 Hr.	25.4	1	8.29	8.13	8.53	7.59	8.76	8.46	EMS
03/06/15	Renew	25.4	2	7.72	8.21	8.22	8.36	8.71	7.86	EMS
03/07/15	96 Hr.	25.5	2	8.06	8.75	8.54	8.48	8.21	8.53	CS
03/07/15	Renew	25.2	2	8.75	8.39	8.79	8.71	8.88	8.58	CS
03/08/15	120 Hr.	25.6	2	8.16	8.72	8.63	8.56	8.46	8.40	EMS
03/08/15	Renew	25.6	3	7.63	7.58	7.89	8.01	8.06	8.08	EMS
03/09/15	144 Hr.	25.6	3	8.07	8.33	8.21	8.13	7.66	7.90	EMS
03/09/15	Renew	25.6	3	7.70	8.87	8.62	8.76	8.59	8.53	EMS
03/10/15	168 Hr.	25.5	3	8.71	8.45	8.25	8.65	8.32	8.85	CS

Huther and Associates
 7-Day *Pimephales promelas* Survival and Growth Chronic Toxicity Test

City of Mena WWTF

Lab ID# 23819

Test Date: March 3, 2015

INITIAL CHEMISTRY MEASUREMENTS @ 100% EFFLUENT

Date	Samp. No.	pH	DO	Hardness mg/L CaCO ₃ ¹	Alkalinity mg/L CaCO ₃ ¹	Conduct umhos/cm ¹	Resid. Cl ₂ mg/L ¹	Dechlor(mL) Na ₂ S ₂ O ₃ mg/L ¹	Analyst
03/03/15	1	7.07	8.80	32	10	155	<0.01	N/A	TG
03/06/15	2	7.67	7.86	34	12	151	<0.01	N/A	TG
03/08/15	3	7.65	8.08	34	10	175	<0.01	N/A	TG
03/03/15	Con	7.90	8.28	48	24	198	-	-	TG

¹Measurements taken in 100% solution.

Huther and Associates, Inc.
 Begin Date: March 03, 2015
 Lab I.D.# 23819

PIMEPHALES PROMELAS STATISTICAL ANALYSES
 Growth

Summary Statistics on Transformed Data Table 1 of 2

Grp	Identification	N	Min	Max	Mean
1	Control	5	0.427	0.481	0.458
2	32% Effluent	5	0.426	0.492	0.463
3	42% Effluent	5	0.435	0.497	0.468
4	56% Effluent	5	0.426	0.504	0.476
5	75% Effluent	5	0.447	0.502	0.475
6	100% Effluent	5	0.444	0.506	0.478

Summary Statistics on Transformed Data Table 2 of 2

Grp	Identification	Variance	Sd	Sem	C.V.%
1	Control	0.000	0.022	0.010	4.76
2	32% Effluent	0.001	0.030	0.013	6.46
3	42% Effluent	0.001	0.026	0.012	5.65
4	56% Effluent	0.001	0.032	0.014	6.63
5	75% Effluent	0.001	0.023	0.010	4.90
6	100% Effluent	0.001	0.024	0.011	4.95

Shapiro - Wilk's Test For Normality

D = 0.017

W = 0.905

Critical W (P = 0.05) (n = 30) = 0.927

Critical W (P = 0.01) (n = 30) = 0.900

Data Pass normality test at P=0.01 level. Continue analysis.

Bartlett's Test For Homogeneity of Variance

Calculated B1 statistic = 0.81

Table Chi-square value = 15.09 (alpha = 0.01, DF = 5)

Table Chi-square value = 11.07 (alpha = 0.05, DF = 5)

Data Pass B1 homogeneity test at 0.01 level. Continue analysis.

ANOVA Table

SOURCE	DF	SS	MS	F
Between	5	0.002	0.000	0.471
Within (Error)	24	0.017	0.001	
Total	29	0.018		

Critical F value = 2.62 (0.05,5,24)

Since F < Critical F Fail to Reject Ho: All equal

Dunnett's Test - Table 1 of 2 Ho:Control < Treatment

Grp	Identification	Transformed Mean	Mean	T Stat	Sig
			Calculated In Original Units		
1	Control	0.458	0.458		
2	32% Effluent	0.463	0.463	-0.288	
3	42% Effluent	0.468	0.468	-0.600	
4	56% Effluent	0.476	0.476	-1.104	
5	75% Effluent	0.475	0.475	-1.008	
6	100% Effluent	0.478	0.478	-1.200	

Dunnett table value = 2.36 (1 Tailed Value, P=0.05, DF=24,5)

No statistically significant difference

Dunnett's Test - Table 1 of 2 Ho:Control < Treatment

Grp	Identification	Num of Reps	Minimum Sig Diff (In Orig. Units)	% of Control	Difference from
					Control
1	Control	5			
2	32% Effluent	5	0.039	8.6	-0.005
3	42% Effluent	5	0.039	8.6	-0.010
4	56% Effluent	5	0.039	8.6	-0.018
5	75% Effluent	5	0.039	8.6	-0.017
6	100% Effluent	5	0.039	8.6	-0.020

**APPENDIX A
RAW DATA**

7-DAY CERIODAPHNIA DUBIA SURVIVAL & REPRODUCTION
 DAILY RAW DATA TABLE
 PAGE 1 OF 2

CLIENT Mena
 OUTFALL 001
 LAB ID # 23819

START DATE/TIME 3-3-15 NL 1445
 END DATE/TIME 3-10-15 NL 1445

Con

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
3/4	A	A	A	A	A	A	A	A	A	A	NL	1445
3/5	A	A	A	A	A	A	A	A	A	A	NL	1200
3/6	A	A	A	A	A	A	A	A	A	A	MH	1420
3/7	3	4	3	3	4	3	2	3	2	4	NL	1320
3/8	A	A	A	A	A	A	A	A	A	A	ZG	1315
3/9	6	7	6	8	6	8	7	7	6	6	MH	1425
3/10	12	19	13	13	14	12	11	13	14	12	NL	1445
	21	25	22	24	24	23	20	23	27	22		

\bar{x} # Young w/o Dead = 23.1 CV% = 8.77

\bar{x} # Young w/Dead = CV% =

\bar{x} % Survival = 100.0 CV% = 0.00

42

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
3/4	A	A	A	A	A	A	A	A	A	A	NL	1445
3/5	A	A	A	A	A	A	A	A	A	A	NL	1200
3/6	A	A	A	A	A	A	A	A	A	A	MH	1420
3/7	4	4	3	2	4	3	4	3	2	2	NL	1320
3/8	A	A	A	A	A	A	A	A	A	A	ZG	1315
3/9	6	9	6	6	7	10	8	6	8	6	MH	1425
3/10	12	14	13	13	12	13	14	11	12	11	NL	1445
	22	27	22	21	23	26	26	20	22	19		

\bar{x} # Young w/o Dead = 22.8 CV% = 11.84

\bar{x} # Young w/Dead = CV% =

\bar{x} % Survival = 100.0 CV% = 0.00

32

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
3/4	A	A	A	A	A	A	A	A	A	A	NL	1445
3/5	A	A	A	A	A	A	A	A	A	A	NL	1200
3/6	A	A	A	A	A	A	A	A	A	A	MH	1420
3/7	4	3	2	3	3	4	3	2	3	3	NL	1320
3/8	A	A	A	A	A	A	A	A	A	A	ZG	1315
3/9	8	9	8	7	6	7	9	7	8	6	MH	1425
3/10	13	12	13	11	12	12	14	13	13	12	NL	1445
	25	24	23	21	21	23	26	22	24	21		

\bar{x} # Young w/o Dead = 23.0 CV% = 7.67

\bar{x} # Young w/Dead = CV% =

\bar{x} % Survival = 100.0 CV% = 0.00

56

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
3/4	A	A	A	A	A	A	A	A	A	A	NL	1445
3/5	A	A	A	A	A	A	A	A	A	A	NL	1200
3/6	A	A	A	A	A	A	A	A	A	A	MH	1420
3/7	4	2	3	3	2	2	3	3	4	2	NL	1320
3/8	A	A	A	A	A	A	A	A	A	A	ZG	1315
3/9	8	7	6	7	6	7	6	9	6	7	MH	1425
3/10	13	12	14	12	12	13	12	12	13	13	NL	1445
	25	21	23	22	20	22	21	24	23	22		

\bar{x} # Young w/o Dead = 22.3 CV% = 6.70

\bar{x} # Young w/Dead = CV% =

\bar{x} % Survival = 100.0 CV% = 0.00

7-DAY CERIODAPHNIA DUBIA SURVIVAL & REPRODUCTION

DAILY RAW DATA TABLE

CLIENT Mena
 OUTFALL 001
 LAB ID # 23819

START DATE/TIME 3-3-15 NL 1445
 END DATE/TIME 3-10-15 NL 1445

75

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
3/4	A	A	A	A	A	A	A	A	A	A	NL	1445
3/5	A	A	A	A	A	A	A	A	A	A	NL	1200
3/6	A	A	A	A	A	A	A	A	A	A	MH	1420
3/7	3	2	3	2	4	3	2	3	3	2	NL	1320
3/8	A	A	A	A	A	A	A	A	A	A	ZG	1315
3/9	8	6	9	7	6	8	10	7	6	7	MH	1425
3/10	14	12	13	14	13	12	12	13	14	12	NL	1445

\bar{x} # Young w/o Dead = 23.0 CV% = 6.80
 \bar{x} # Young w/Dead = CV% =
 \bar{x} % Survival = 100.0 CV% = 0.00

100

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
3/4	A	A	A	A	A	A	A	A	A	A	NL	1445
3/5	A	A	A	A	A	A	A	A	A	A	NL	1200
3/6	A	A	A	A	A	A	A	A	A	A	MH	1420
3/7	4	3	3	2	3	2	2	3	3	4	NL	1320
3/8	A	A	A	A	A	A	A	A	A	A	ZG	1315
3/9	6	9	8	7	9	6	8	8	6	8	MH	1425
3/10	12	13	14	12	13	12	14	12	14	13	NL	1445

\bar{x} # Young w/o Dead = 23.3 CV% = 7.85
 \bar{x} # Young w/Dead = CV% =
 \bar{x} % Survival = 100.0 CV% = 0.00

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time

\bar{x} # Young w/o Dead = CV% =
 \bar{x} # Young w/Dead = CV% =
 \bar{x} % Survival = CV% =

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time

\bar{x} # Young w/o Dead = CV% =
 \bar{x} # Young w/Dead = CV% =
 \bar{x} % Survival = CV% =

**7-DAY CHRONIC TOXICITY TEST
PIMEPHALES PROMELAS (fathead minnow) SURVIVAL**

CLIENT/FACILITY Mena
 OUTFALL # 001 PROJECT # 23819
 ORGANISM ID# PP0-15-061

DATE/TIME STARTED 3-3-15 MH 1550
 DATE/TIME ENDED 3-10-15 MH 1550

Conc.	A					B					C					D					E									
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E					
Con	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
32	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
42	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
56	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
75	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
100	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Initials Date/Time	3-4-15 MH 1550					3-5-15 TB 1040					3-6-15 TB 0950					3-7-15 TG 0830					3-8-15 TG 0940									

Conc.	A					B					Mean Survival	C.V. %
	A	B	C	D	E	A	B	C	D	E		
Con	8	8	8	8	8	8	8	8	8	8	100.0	0.00
32	8	8	8	8	8	8	8	8	8	8	100.0	0.00
42	8	8	8	8	8	8	8	8	8	8	100.0	0.00
56	8	8	8	8	8	8	8	8	8	8	100.0	0.00
75	8	8	8	8	8	8	8	8	8	8	100.0	0.00
100	8	8	8	8	8	8	8	8	8	8	100.0	0.00
Initials Date/Time	3-9-15 TB 1020					3-10-15 MH 1550						

Client / Facility Mena
 Lab ID Number 23819
 Outfall Number 001
 Test Date 3-3-15

INITIAL CHEMISTRY MEASUREMENTS @ 100% EFFLUENT

Date	Samp No.	pH	DO	Hardness mg/L CaCO ₃ ¹	Alkalinity mg/L CaCO ₃ ¹	Conduct umhos/cm ¹	Resid Cl ₂ mg/L ¹	Dechlor(mL) Na ₂ S ₂ O ₃ mg/L ¹	Analyst
3/3	1	7.07	8.80	32	10	155	0.01	Na	TG
3/6	2	7.67	7.86	34	12	151	§	§	§
3/8	3	7.65	8.08	34	10	175	§	§	§
3/3	Con	7.90	8.28	48	24	198	—	—	§

INITIAL CHEMISTRY MEASUREMENTS @ RECEIVING WATER

Date	Samp No.	pH	DO	Hardness mg/L CaCO ₃ ¹	Alkalinity mg/L CaCO ₃ ¹	Conduct umhos/cm ¹	Resid Cl ₂ mg/L ¹	Dechlor(mL) Na ₂ S ₂ O ₃ mg/L ¹	Analyst

Notes:

**APPENDIX B
REFERENCE TOXICANTS**

CHRONIC REFERENCE TOXICANT TEST RESULTS

SPECIES: *Ceriodaphnia dubia*

CHEMICAL: Copper Nitrate

DURATION: 7-Days

TEST NUMBER: 3

TEST DATE: 03/04/15 - 03/11/15
1000 Hrs - 1000 Hrs

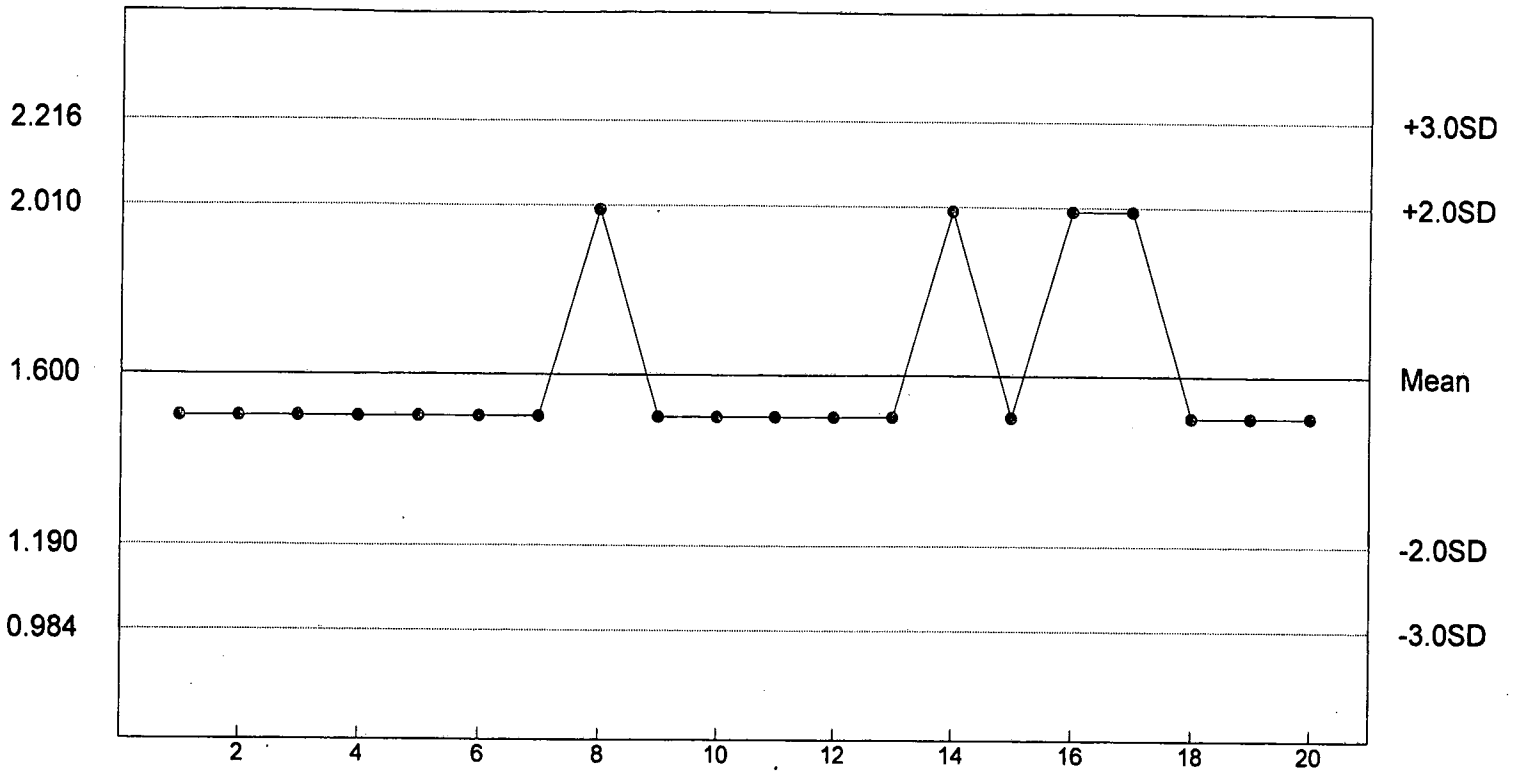
STATISTICAL METHOD: Dunnetts/Steels

CONCENTRATION (ug/L)	NUMBER EXPOSED	NUMBER DEAD
0.5	10	0
1.0	10	0
1.5	10	0
2.0	10	5
2.5	10	10
3.0	10	10

LOEC FOR SURVIVAL	NOEC FOR SURVIVAL	LOEC FOR GROWTH	NOEC FOR GROWTH
2.0 ug/L	1.5 ug/L	1.0 ug/L	0.5 ug/L

Reference Tox Sodium Chloride g/L

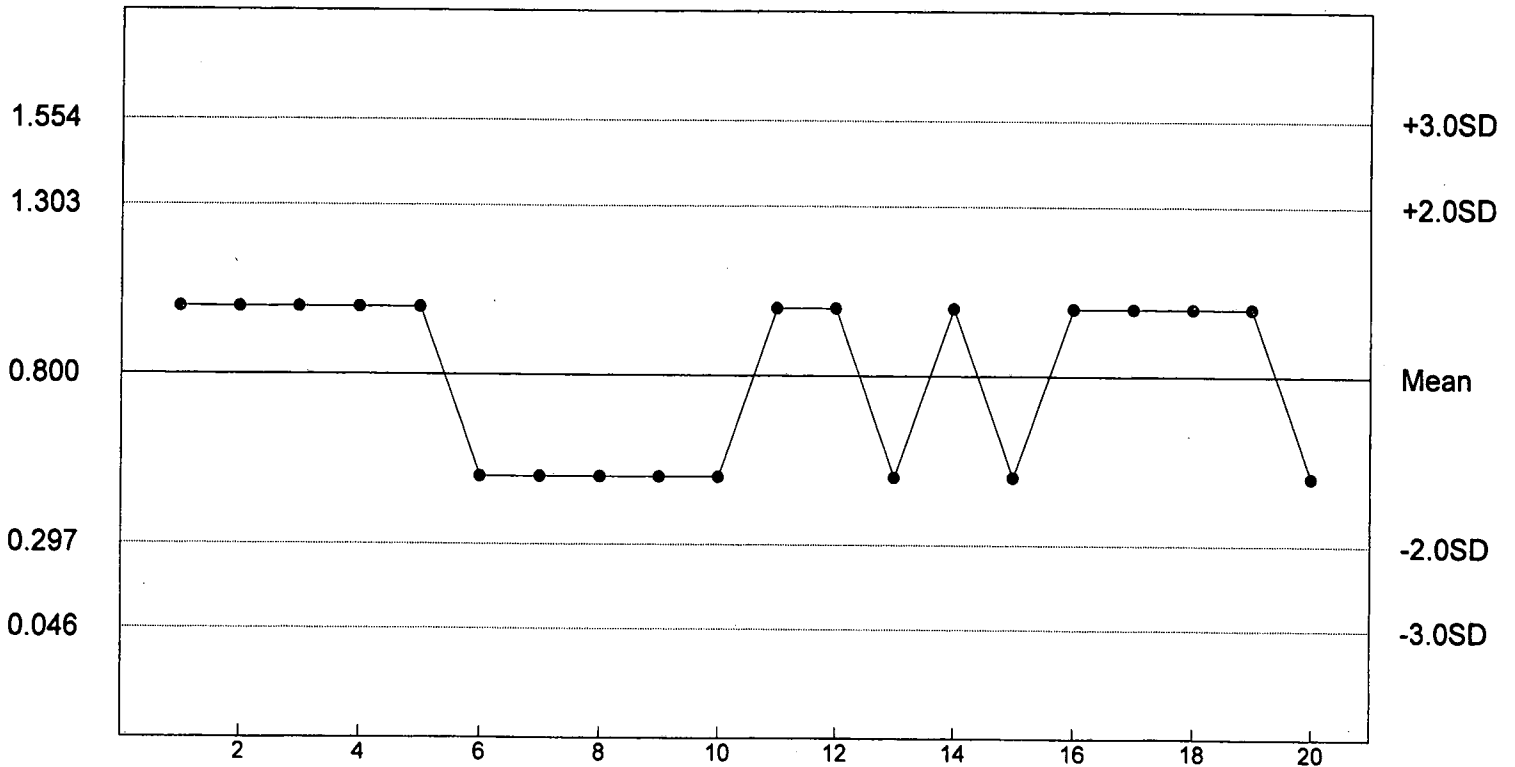
C. dubia Survival - NOEC



n= 20 Mean= 1.600 SD= 0.205 CV= 12.82% Min= 1.500 Max= 2.000

Reference Tox Sodium Chloride g/L

C. dubia Reproduction - NOEC



n= 20 Mean= 0.800 SD= 0.251 CV= 31.41% Min= 0.500 Max= 1.000

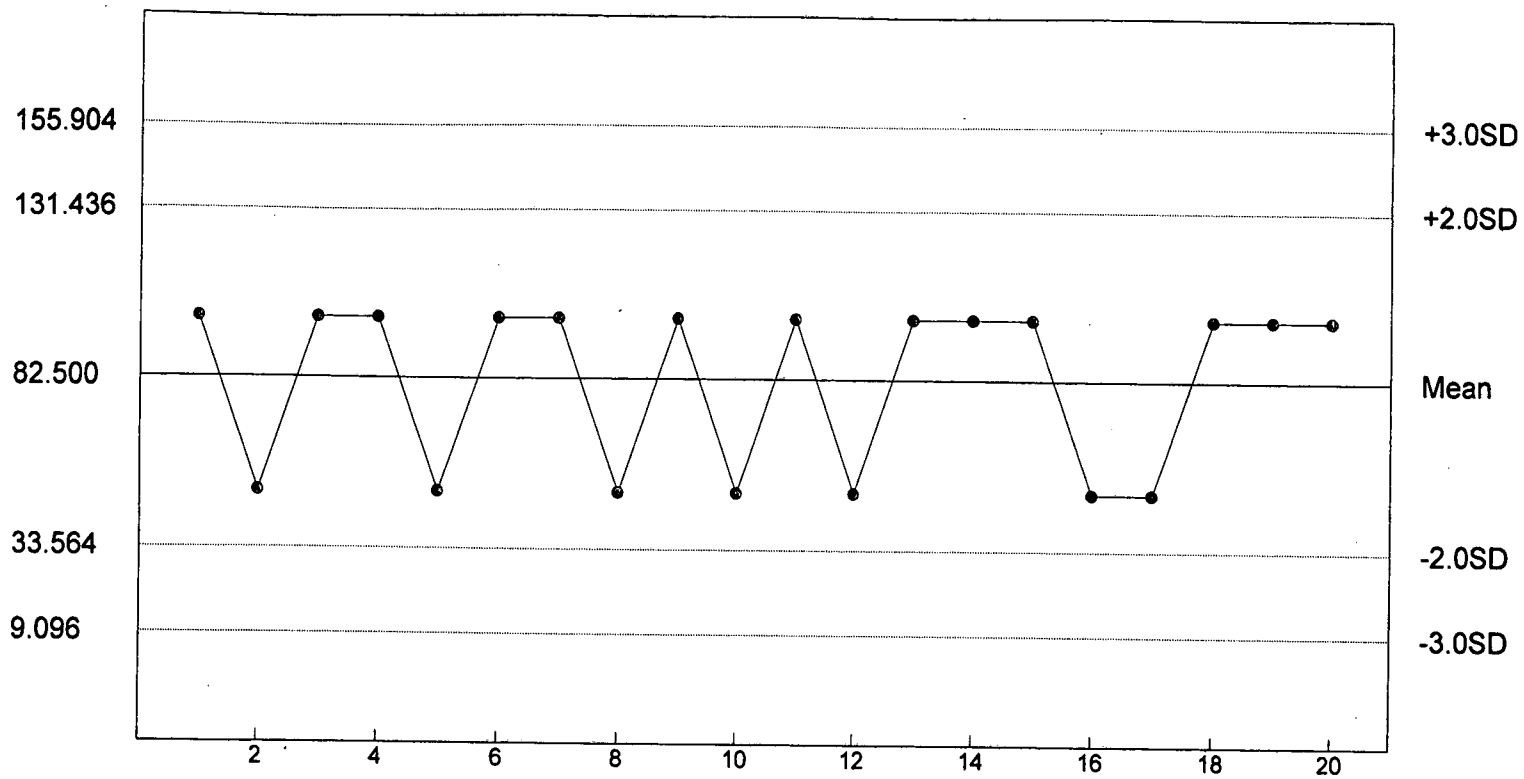
CHRONIC REFERENCE TOXICANT TEST RESULTS

SPECIES: *Pimephales promelas*
 CHEMICAL: Copper Nitrate
 DURATION: 7-Days
 TEST NUMBER: 3
 TEST DATE: 03/04/15 - 03/11/15
 1540 Hrs - 1540 Hrs
 STATISTICAL METHOD: Dunnetts/Steels

CONCENTRATION (ug/L)	NUMBER EXPOSED	NUMBER DEAD
25	40	0
50	40	0
100	40	0
200	40	6
400	40	15
800	40	40

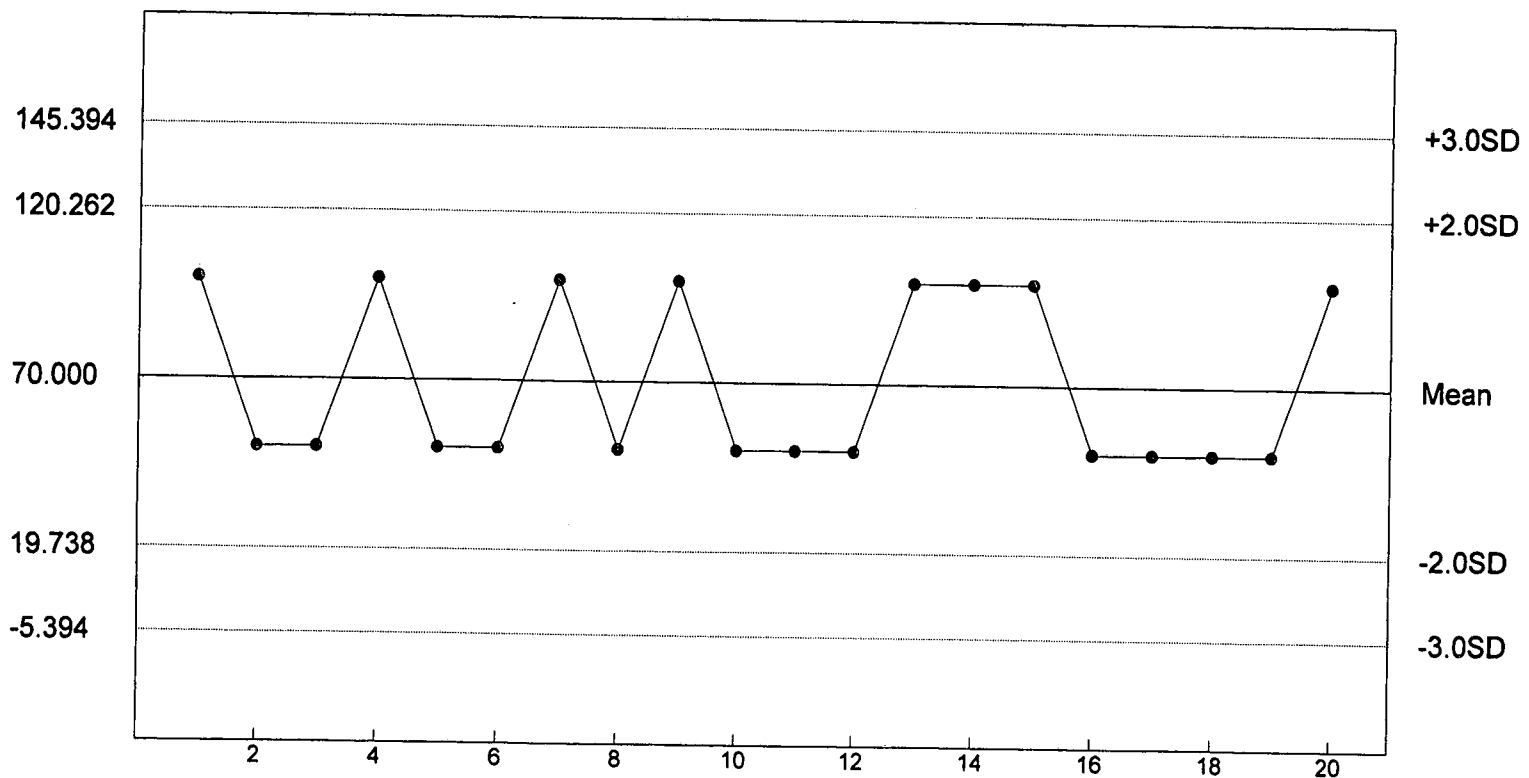
LOEC FOR SURVIVAL	NOEC FOR SURVIVAL	LOEC FOR GROWTH	NOEC FOR GROWTH
200 ug/L	100 ug/L	200 ug/L	100 ug/L

Reference Tox Copper Nitrate ug/L
P. promelas Chronic Survival - NOEC



n= 20 Mean= 82.500 SD= 24.468 CV= 29.66% Min= 50.000 Max= 100.000

Reference Tox Copper Nitrate ug/L
P. promelas Growth - NOEC



n= 20 Mean= 70.000 SD= 25.131 CV= 35.90% Min= 50.000 Max= 100.000

APPENDIX C
CHAIN OF CUSTODY SHEETS

HUTHER & ASSOCIATES
 1156 NORTH BONNIE BRAE STREET
 DENTON, TX 76201
 (940) 387-1025 • FAX (940) 387-1036

CHAIN OF CUSTODY RECORD

PROJECT # 23819 PROJECT NAME Mena PERMIT# AR 00360692

OUTFALL SAMPLES

24-Hr Flow Weighted Composite Other _____

OUTFALL NUMBER	PERSON TAKING SAMPLE	START DATE/TIME	END DATE/TIME	# OF PORTIONS COMPOSITED	METHODS OF COLLECTION AND COMPOSITE			# OF CONTAINERS TO BE SHIPPED
					AUTO COLL. AUTO COMP.	MANUAL COLL. MANUAL COMP.	AUTO COLL. MANUAL COMP.	
Outfall 1	Mike	1 MAR 15 12:00	2 MAR 15 12:00	24	AUTO	-	-	1

RECEIVING WATER SAMPLES

SAMPLE IDENTIFICATION (FOR REC'NG) H ₂ O GRABS, GIVE NAME OF STREAM AND LOCATION	PERSON TAKING SAMPLE	DATE	TIME	# OF CONTAINERS TO BE SHIPPED
 				

TYPE OF TEST 7 day C/F

NAME OF RECEIVING WATER Let. of Prairie Creek

DILUTION WATER USED FOR THIS TEST Lab

RELINQUISHED BY: Mike Spencer DATE: 2 MAR 15 TIME: 12:00 RECEIVED BY AT THIS DATE/TIME OFFICE STORE (UPS) 1:00

RELINQUISHED BY: _____ DATE: _____ TIME: _____ RECEIVED BY AT THIS DATE/TIME _____

RELINQUISHED BY: _____ DATE: _____ TIME: _____ RECEIVED BY AT THIS DATE/TIME _____

METHOD OF SHIPMENT: Greyhound Pick Up _____ Client Delivered _____ Other UPS

RECEIVED: Matt Horner DATE: 3-3-15 TIME: 1000 SAMPLE TEMP. @ RECEIPT. 0.5

CHAIN OF CUSTODY RECORD

PROJECT # 23819 PROJECT NAME Mena PERMIT# _____

OUTFALL SAMPLES

24-Hr Flow Weighted Composite Other _____

OUTFALL NUMBER	PERSON TAKING SAMPLE	START DATE/TIME	END DATE/TIME	# OF PORTIONS COMPOSITED	METHODS OF COLLECTION AND COMPOSITE			# OF CONTAINERS TO BE SHIPPED
					AUTO COLL. AUTO COMP.	MANUAL COLL. MANUAL COMP.	AUTO COLL. MANUAL COMP.	
<u>OUTfall 11</u>	<u>Mike</u>	<u>0730 3 MAR 15</u>	<u>0730 4 MAR 15</u>	<u>24</u>	<u>AUTO</u>			<u>1</u>

RECEIVING WATER SAMPLES

SAMPLE IDENTIFICATION (FOR REC'NG) H ₂ O GRABS, GIVE NAME OF STREAM AND LOCATION	PERSON TAKING SAMPLE	DATE	TIME	# OF CONTAINERS TO BE SHIPPED
 	 	 	 	

TYPE OF TEST 7day CF
NAME OF RECEIVING WATER _____
DILUTION WATER USED FOR THIS TEST Lab

RELINQUISHED BY: Mike Spencer DATE: 4 MAR 15 TIME: 1000 RECEIVED BY AT THIS DATE/TIME: UPS STORE / Terrell, TX

RELINQUISHED BY: _____ DATE: _____ TIME: _____ RECEIVED BY AT THIS DATE/TIME: _____

RELINQUISHED BY: _____ DATE: _____ TIME: _____ RECEIVED BY AT THIS DATE/TIME: _____

METHOD OF SHIPMENT: Greyhound _____ Pick Up _____ Client Delivered _____ Other UPS

RECEIVED: Matt Horner DATE: 3-6-15 TIME: 1050 SAMPLE TEMP. @ RECEIPT. 21.2

HUTHER & ASSOCIATES
 1156 NORTH BONNIE BRAE STREET
 DENTON, TX 76201
 (940) 387-1025 • FAX (940) 387-1036

CHAIN OF CUSTODY RECORD

PROJECT # 23819 PROJECT NAME Mena PERMIT# AR 00360692

OUTFALL SAMPLES

24-Hr Flow Weighted Composite Other _____

OUTFALL NUMBER	PERSON TAKING SAMPLE	START DATE/TIME	END DATE/TIME	# OF PORTIONS COMPOSITED	METHODS OF COLLECTION AND COMPOSITE			# OF CONTAINERS TO BE SHIPPED
					AUTO COLL. AUTO COMP.	MANUAL COLL. MANUAL COMP.	AUTO COLL. MANUAL COMP.	
<u>OUTfall 11</u>	<u>Mike</u>	<u>5 MAR 15 0800</u>	<u>6 MAR 15 0800</u>	<u>24</u>	<u>Auto</u>			<u>1</u>

RECEIVING WATER SAMPLES

SAMPLE IDENTIFICATION (FOR REC'NG) H ₂ O GRABS, GIVE NAME OF STREAM AND LOCATION	PERSON TAKING SAMPLE	DATE	TIME	# OF CONTAINERS TO BE SHIPPED
 	 	 	 	
 	 	 	 	
 	 	 	 	

TYPE OF TEST 7 day C/F

NAME OF RECEIVING WATER Let. of Prairie Creek

DILUTION WATER USED FOR THIS TEST Lab

RELINQUISHED BY: Mike Spence DATE: 6 MAR 15 TIME: 1400 RECEIVED BY AT THIS DATE/TIME: Rhonda Dutka ³⁻⁶⁻¹⁵ 1400

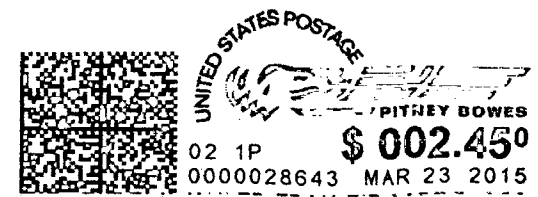
RELINQUISHED BY: _____ DATE: _____ TIME: _____ RECEIVED BY AT THIS DATE/TIME: _____

RELINQUISHED BY: _____ DATE: _____ TIME: _____ RECEIVED BY AT THIS DATE/TIME: _____

METHOD OF SHIPMENT: Greyhound Pick Up _____ Client Delivered Other _____

RECEIVED: Matt Turner DATE: 3-6-15 TIME: 1355 SAMPLE TEMP. @ RECEIPT. 1.6

MEWA WWTB
323 FOLK SB
MEWA AZ
71953



ADEQ
(WPPDES - BIO MONITORING)
GINA PORTER

5301 NORTHSIDE DR
NORTH LITTLE ROCK, AZ

72118-5317

