BENTONVILLE WASTEWATER TREATMENT PLANT
OUTFALL 001

Chronic Biomonitoring Report
Permit Number NPDES AR0022403
AFIN Number 04-00154

Ceriodaphnia dubia
Pimephales promelas

February 3, 2015

Reviewed by: _____

Bruce Huther, Technical Director
Huther & Associates, Inc.
1156 North Bonnie Brae
Denton, Texas 76201
(940) 387-1025, Fax: (940) 387-1036

TABLE OF CONTENTS

TOXICITY TEST REPORT - CHRONIC

Client ..Bentonville Wastewater Treatment Plant
Permit No. .....NPDES AR0022403
Sample.....Outfall 001

Laboratory I.D. 23730
Begin Date .....February 3, 2015

Results: **Pass** *Ceriodaphnia dubia* survival and reproduction and *Pimephales promelas* survival and growth at the critical low flow concentration (99% effluent).

SAMPLE COLLECTION

Composite effluent samples from Bentonville Wastewater Treatment Plant were delivered by Federal Express courier to Huther & Associates on February 3, February 5, and February 7, 2015. 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 and receiving water 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 receiving 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 1415 hours, February 3, 2015. Five concentrations were prepared (31%, 42%, 56%, 74%, and 99% effluent) utilizing receiving water (Town Branch) as dilution water. The test was conducted in 25 mL distilled water rinsed plastic beakers containing 15 mL of solution (one neonate 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 true control of ten replicate chambers containing one neonate each in receiving water was conducted concurrently with the test. There was 100% survival in the true control. In addition, a performance control of ten replicate chambers containing one neonate each in synthetic laboratory water was conducted concurrently with the test. The purpose of the performance control was to assess the health of the test organisms and to identify receiving water toxicity. The performance control data was not used in the statistical analysis of the test data. There was 100% survival in the performance control. The test ended at 1415 hours, February 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.

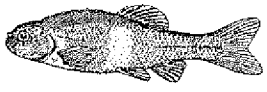
LOEC: Not Applicable
NOEC: 99% Effluent

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 **PMSD: 9.3%**
NOEC: 99% Effluent

TEST SETUP
Pimephales promelas



The seven-day *Pimephales promelas* larval survival and growth test was initiated at 1540 hours, February 3, 2015. Five concentrations were prepared (31%, 42%, 56%, 74%, and 99% effluent) utilizing receiving water (Town Branch) as dilution water. 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 true control of five replicate chambers of eight larvae each in receiving water was conducted currently with the test. There was 100% survival in the true control. In addition, a performance control of five replicate chambers of eight larvae each in synthetic laboratory water was conducted concurrently with the test. The purpose of the performance control was to assess the health of the test larvae and to identify receiving water toxicity. The performance control data was not used in the statistical analysis of the test data. There was 100% survival in the performance control. At the end of the test, all larvae were sacrificed, dried, and weighed. The test ended at 1540 hours, February 10, 2015. 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: 99% Effluent

GROWTH
Pimephales promelas

P. promelas growth data failed Shapiro Wilk's test for normality at the 0.01 alpha level (0.900). Bartlett's test for homogeneity is sensitive to non-normal data and should not be performed on the non-normally distributed data. Therefore, a nonparametric test was performed on the data. Steel's Many-One Rank 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 **PMSD: 10.7%**
NOEC: 99% Effluent

SUMMARY

There were no statistically significant differences between the control and the critical low flow concentration (99% 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 AR0022403 for Bentonville Wastewater Treatment Plant, Outfall 001 **passed** for this testing period

Huther and Associates

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

CLIENT	Bentonville WWTP	SAMPLE TYPE	24 Hour Composite
NPDES #	AR0022403	DATE COLLECTED	02/02/15 02/04/15 02/06/15
LAB ID #	23730	DATE RECEIVED	02/03/15 02/05/15 02/07/15
TEST TYPE	7 Day Chronic	BEGIN DATE/TIME	02/03/15 1415
TEST ORGANISM	*Ceriodaphnia dubia*	END DATE/TIME	02/10/15 1415
ORGANISM AGE	< 24 Hours	TEST TEMPERATURE (°C)	25 ± 1
ORGANISM SOURCE	In House	PHOTO PERIOD	16-hr. Light 8-hr. Dark
RECEIVING WATER	Town Branch	LIGHT INTENSITY	50-100 ft. cndl.
DILUTION WATER	Town Branch	TECHNICIAN	N. Lehr

SURVIVAL & REPRODUCTION SUMMARY

Performance Control

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
	A	A	A	A	A	A	A	A	A	A
02/04/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/05/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/06/15	0	0	0	0	0	0	0	0	0	0
	3	2	2	2	3	2	2	3	4	2
02/07/15	3	2	2	2	3	2	2	3	4	2
	A	A	A	A	A	A	A	A	A	A
02/08/15	3	2	2	2	3	2	2	3	4	2
	7	6	7	8	6	8	6	6	7	6
02/09/15	10	8	9	10	9	10	8	9	11	8
	13	12	13	12	12	12	13	12	14	11
02/10/15	23	20	22	22	21	22	21	21	25	19

x # Young 21.6 C.V. 7.62%

x% Survival 100% C.V. 0.00%

True Control

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
	A	A	A	A	A	A	A	A	A	A
02/04/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/05/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/06/15	0	0	0	0	0	0	0	0	0	0
	4	2	3	2	5	2	3	2	2	3
02/07/15	4	2	3	2	5	2	3	2	2	3
	A	A	A	A	A	A	A	A	A	A
02/08/15	4	2	3	2	5	2	3	2	2	3
	8	7	6	8	7	6	9	8	8	8
02/09/15	12	9	9	10	12	8	12	8	10	11
	12	12	13	12	12	14	12	12	13	12
02/10/15	24	21	22	22	24	22	24	20	23	23

x # Young 22.5 C.V. 6.02%

x% Survival 100% C.V. 0.00%

31% Effluent

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
	A	A	A	A	A	A	A	A	A	A
02/04/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/05/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/06/15	0	0	0	0	0	0	0	0	0	0
	3	2	2	4	3	2	4	3	2	4
02/07/15	3	2	2	4	3	2	4	3	2	4
	A	A	A	A	A	A	A	A	A	A
02/08/15	3	2	2	4	3	2	4	3	2	4
	8	6	7	8	9	10	8	6	7	7
02/09/15	11	8	9	12	12	12	12	9	9	11
	12	14	12	13	12	12	13	11	14	12
02/10/15	23	22	21	25	24	24	25	20	23	23

x # Young 23.0 C.V. 7.10%

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
	A	A	A	A	A	A	A	A	A	A
02/04/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/05/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/06/15	0	0	0	0	0	0	0	0	0	0
	3	2	4	4	2	3	2	2	3	2
02/07/15	3	2	4	4	2	3	2	2	3	2
	A	A	A	A	A	A	A	A	A	A
02/08/15	3	2	4	4	2	3	2	2	3	2
	7	9	10	7	7	10	9	6	8	7
02/09/15	10	11	14	11	9	13	11	8	11	9
	13	14	13	11	12	13	13	12	11	12
02/10/15	23	25	27	22	21	26	24	20	22	21

x # Young 23.1 C.V. 10.09%

x% Survival 100% C.V. 0.00%

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

ex 1: A alive today; 4 total young to date

ex 2: 5 alive, 5 young today; 12 total young to date

Huther and Associates

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

Bentonville WWTP | Lab ID# 23730 | Test Date: February 3, 2015

56% Effluent

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
	A	A	A	A	A	A	A	A	A	A
02/04/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/05/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/06/15	0	0	0	0	0	0	0	0	0	0
	2	2	4	5	4	3	2	2	3	2
02/07/15	2	2	4	5	4	3	2	2	3	2
	A	A	A	A	A	A	A	A	A	A
02/08/15	2	2	4	5	4	3	2	2	3	2
	6	8	9	6	9	7	8	6	7	8
02/09/15	8	10	13	11	13	10	10	8	10	10
	12	13	12	12	14	12	12	14	12	13
02/10/15	20	23	25	23	27	22	22	22	22	23

x # Young 22.9 C.V. 8.35%

x% Survival 100% C.V. 0.00%

74% Effluent

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
	A	A	A	A	A	A	A	A	A	A
02/04/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/05/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/06/15	0	0	0	0	0	0	0	0	0	0
	2	3	4	4	5	3	4	2	2	2
02/07/15	2	3	4	4	5	3	4	2	2	2
	A	A	A	A	A	A	A	A	A	A
02/08/15	2	3	4	4	5	3	4	2	2	2
	9	6	8	7	10	7	6	10	9	10
02/09/15	11	9	12	11	15	10	10	12	11	12
	12	12	14	12	13	12	12	14	14	13
02/10/15	23	21	26	23	28	22	22	26	25	25

x # Young 24.1 C.V. 9.27%

x% Survival 100% C.V. 0.00%

99% Effluent

Date	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
	A	A	A	A	A	A	A	A	A	A
02/04/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/05/15	0	0	0	0	0	0	0	0	0	0
	A	A	A	A	A	A	A	A	A	A
02/06/15	0	0	0	0	0	0	0	0	0	0
	2	4	2	4	3	2	2	3	2	2
02/07/15	2	4	2	4	3	2	2	3	2	2
	A	A	A	A	A	A	A	A	A	A
02/08/15	2	4	2	4	3	2	2	3	2	2
	7	9	6	8	10	6	7	9	7	8
02/09/15	9	13	8	12	13	8	9	12	9	10
	12	13	12	12	14	12	13	13	14	13
02/10/15	21	26	20	24	27	20	22	25	23	23

x # Young 23.1 C.V. 10.50%

x% Survival 100% C.V. 0.00%

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

ex 1:

A	alive today
4	total young to date

ex 2:

5	alive, 5 young today
12	total young to date

Bentonville WWTP | Lab ID# 23730 | Test Date: February 3, 2015

WET CHEMISTRY MEASUREMENTS

Date	Time	Temp	Samp. No.	pH of Solution							Analyst
				PCON	TCON	31%	42%	56%	74%	99%	
02/03/15	Start	25.0	1	8.76	8.01	7.97	7.91	7.89	7.80	7.78	CS
02/04/15	24 Hr.	25.4	1	8.34	8.33	8.32	8.31	8.30	8.28	8.27	CS
02/04/15	Renew	25.8	1	8.76	8.17	8.09	8.05	8.01	7.95	7.90	CS
02/05/15	48 Hr.	25.5	1	8.22	8.19	8.17	8.16	8.15	8.14	8.13	CS
02/05/15	Renew	25.8	2	8.76	8.24	8.22	8.19	8.15	8.12	8.06	CS
02/06/15	72 Hr.	25.5	2	8.54	8.10	8.16	8.29	8.30	8.31	8.34	EMS
02/06/15	Renew	25.5	2	8.76	8.04	7.95	7.96	7.84	7.84	7.66	EMS
02/07/15	96 Hr.	25.4	2	8.27	8.25	8.24	8.23	8.21	8.20	8.17	CS
02/07/15	Renew	25.9	3	8.76	8.20	8.15	8.13	8.12	8.09	8.07	CS
02/08/15	120 Hr.	25.7	3	8.37	8.37	8.36	8.36	8.32	8.27	8.23	EMS
02/08/15	Renew	25.7	3	7.65	8.36	8.29	8.32	8.16	8.05	7.95	EMS
02/09/15	144 Hr.	25.3	3	7.98	8.86	8.60	8.45	8.44	8.46	8.48	EMS
02/09/15	Renew	25.3	3	7.65	7.66	8.66	8.62	8.50	8.45	8.38	EMS
02/10/15	168 Hr.	25.6	3	8.42	8.66	8.68	8.64	8.63	8.62	8.61	CS

Date	Time	Temp	Samp. No.	DO (mg/L) of Solution							Analyst
				PCON	TCON	31%	42%	56%	74%	99%	
02/03/15	Start	25.0	1	8.73	8.46	8.61	8.74	8.16	8.26	8.63	CS
02/04/15	24 Hr.	25.4	1	8.86	8.19	8.47	8.38	8.74	8.39	8.41	CS
02/04/15	Renew	25.8	1	8.73	8.11	8.94	8.74	8.58	8.62	8.51	CS
02/05/15	48 Hr.	25.5	1	8.05	8.23	8.31	8.38	8.45	8.49	8.56	CS
02/05/15	Renew	25.8	2	8.73	8.33	8.56	8.04	8.21	8.77	8.50	CS
02/06/15	72 Hr.	25.5	2	8.61	8.32	8.41	8.26	8.17	8.26	8.32	EMS
02/06/15	Renew	25.5	2	8.73	8.20	8.06	8.93	8.19	8.06	8.08	EMS
02/07/15	96 Hr.	25.4	2	8.66	8.51	8.47	8.42	8.38	8.36	8.31	CS
02/07/15	Renew	25.9	3	8.67	8.84	8.16	8.37	8.59	8.55	8.26	CS
02/08/15	120 Hr.	25.7	3	8.72	8.82	8.17	7.92	8.34	8.77	7.89	EMS
02/08/15	Renew	25.7	3	8.19	8.21	8.65	8.79	8.25	8.74	8.79	EMS
02/09/15	144 Hr.	25.3	3	8.90	8.88	8.51	8.39	8.21	8.03	8.18	EMS
02/09/15	Renew	25.3	3	8.19	8.19	8.82	8.80	8.03	8.71	8.64	EMS
02/10/15	168 Hr.	25.6	3	8.85	8.79	8.77	8.62	8.58	8.36	8.52	CS

Bentonville WWTP | Lab ID# 23730 | Test Date: February 3, 2015

INITIAL CHEMISTRY MEASUREMENTS @ 100% EFFLUENT

Date	Samp. No.	pH	DO	Hardness mg/L CaCO3 [1]	Alkalinity mg/L CaCO3 [1]	Conduct. umhos/cm [1]	Resid.Cl2 mg/L [1]	Dechlor(mL) Na2S2O3 mg/L [1]	Analyst
02/03/15	1	7.77	8.47	188	110	465	<0.01	N/A	TG
02/05/15	2	7.74	8.28	184	114	458	<0.01	N/A	TG
02/07/15	3	7.82	8.39	188	120	485	<0.01	N/A	TG

INITIAL CHEMISTRY MEASUREMENTS @ RECEIVING WATER

Date	Samp. No.	pH	DO	Hardness mg/L CaCO3 [1]	Alkalinity mg/L CaCO3 [1]	Conduct. umhos/cm [1]	Resid.Cl2 mg/L [1]	Dechlor(mL) Na2S2O3 mg/L [1]	Analyst
02/03/15	RS1	8.23	8.60	136	110	362	<0.01	N/A	TG
02/05/15	RS2	8.24	8.33	136	118	342	<0.01	N/A	TG
02/07/15	RS3	8.20	8.67	132	118	351	<0.01	N/A	TG

[1] Measurements taken in 100% solution.

Huther and Associates, Inc.
Begin Date: February 03, 2015
Lab I.D.# 23730

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	24.000	22.500
2	31% Effluent	10	20.000	25.000	23.000
3	42% Effluent	10	20.000	27.000	23.100
4	56% Effluent	10	20.000	27.000	22.900
5	74% Effluent	10	21.000	28.000	24.100
6	99% Effluent	10	20.000	27.000	23.100

Summary Statistics on Transformed Data Table 2 of 2

Grp	Identification	Variance	Sd	Sem	C.V.%
1	Control	1.833	1.354	0.428	6.02
2	31% Effluent	2.667	1.633	0.516	7.10
3	42% Effluent	5.433	2.331	0.737	10.09
4	56% Effluent	3.656	1.912	0.605	8.35
5	74% Effluent	4.989	2.234	0.706	9.27
6	99% Effluent	5.878	2.424	0.767	10.50

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	3	12	27	14	4

Calculated Chi-Square goodness of fit test statistic = 1.4412
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 = 4.11

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	14.083	2.817	0.691
Within (Error)	54	220.100	4.076	
Total	59	234.183		

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 Calculated In Original Units	T Stat	Sig
1	Control	22.500	22.500		
2	31% Effluent	23.000	23.000	-0.554	
3	42% Effluent	23.100	23.100	-0.665	
4	56% Effluent	22.900	22.900	-0.443	
5	74% Effluent	24.100	24.100	-1.772	
6	99% Effluent	23.100	23.100	-0.665	

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	31% Effluent	10	2.086	9.3	-0.500
3	42% Effluent	10	2.086	9.3	-0.600
4	56% Effluent	10	2.086	9.3	-0.400
5	74% Effluent	10	2.086	9.3	-1.600
6	99% Effluent	10	2.086	9.3	-0.600

Huther and Associates

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

CLIENT	Bentonville WWTP	SAMPLE TYPE	24 Hour Composite
NPDES #	AR0022403	DATE COLLECTED	02/02/15 02/04/15 02/06/15
LAB ID #	23730	DATE RECEIVED	02/03/15 02/05/15 02/07/15
TEST TYPE	7 Day Chronic	BEGIN DATE/TIME	02/03/15 1540
TEST ORGANISM	*Pimephales promelas*	END DATE/TIME	02/10/15 1540
ORGANISM AGE	< 24 Hours	TEST TEMPERATURE (°C)	25 ± 1
ORGANISM SOURCE	In House	PHOTO PERIOD	16-hr. Light 8-hr. Dark
RECEIVING WATER	Town Branch	LIGHT INTENSITY	50-100 ft. cndl.
DILUTION WATER	Town Branch	TECHNICIAN	M. Horner

SURVIVAL SUMMARY

Conc.	02/04/15					02/05/15					02/06/15					02/07/15					02/08/15				
	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
Pcon	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
Tcon	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
31%	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
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
74%	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
99%	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.	02/09/15					02/10/15					x % Survival	C.V. %
	A	B	C	D	E	A	B	C	D	E		
Pcon	8	8	8	8	8	8	8	8	8	8	100.0	0.00
Tcon	8	8	8	8	8	8	8	8	8	8	100.0	0.00
31%	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
74%	8	8	8	8	8	8	8	8	8	8	100.0	0.00
99%	8	8	8	8	8	8	8	8	8	8	100.0	0.00

MEAN DRY WEIGHT PER REP

% Effluent	Rep A	Rep B	Rep C	Rep D	Rep E	x	C.V.%
Pcon	0.4820	0.5060	0.4290	0.4710	0.5030	0.4782	6.51
Tcon	0.4460	0.4120	0.4750	0.4560	0.4320	0.4442	5.37
31%	0.4550	0.4230	0.4450	0.4920	0.5010	0.4632	7.06
42%	0.4760	0.4930	0.4280	0.4690	0.5040	0.4740	6.16
56%	0.4470	0.4820	0.4260	0.5030	0.4960	0.4708	7.02
74%	0.5020	0.4470	0.4860	0.5010	0.4390	0.4750	6.32
99%	0.4260	0.5040	0.4870	0.4290	0.5060	0.4704	8.47

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

Bentonville WWTP Lab ID# 23730 Test Date: February 3, 2015

WET CHEMISTRY MEASUREMENTS

Date	Time	Temp	Samp. No.	pH of Solution							Analyst
				PCON	TCON	31%	42%	56%	74%	99%	
02/03/15	Start	25.0	1	8.76	8.01	7.97	7.91	7.89	7.80	7.78	CS
02/04/15	24 Hr.	25.6	1	8.72	8.68	8.66	8.62	8.60	8.57	8.55	CS
02/04/15	Renew	25.8	1	8.76	8.17	8.09	8.05	8.01	7.95	7.90	CS
02/05/15	48 Hr.	25.8	1	8.09	8.07	8.06	8.05	8.03	8.02	8.01	CS
02/05/15	Renew	25.8	2	8.76	8.24	8.22	8.19	8.15	8.12	8.06	CS
02/06/15	72 Hr.	25.3	2	7.92	7.91	7.92	7.88	7.89	7.85	7.75	EMS
02/06/15	Renew	25.3	2	8.76	8.04	7.95	7.96	7.84	7.84	7.66	EMS
02/07/15	96 Hr.	25.5	2	8.04	8.02	7.98	7.96	7.95	7.94	7.93	CS
02/07/15	Renew	25.9	3	8.76	8.20	8.15	8.13	8.12	8.09	8.07	CS
02/08/15	120 Hr.	25.1	3	8.33	8.38	8.38	8.27	8.37	8.24	8.21	EMS
02/08/15	Renew	25.1	3	7.65	8.36	8.29	8.32	8.16	8.05	7.95	EMS
02/09/15	144 Hr.	25.8	3	8.18	8.17	8.11	8.05	8.20	8.02	8.30	EMS
02/09/15	Renew	25.8	3	7.65	7.66	8.66	8.62	8.50	8.45	8.38	EMS
02/10/15	168 Hr.	25.8	3	8.15	8.14	8.13	8.12	8.11	8.08	8.07	CS

Date	Time	Temp	Samp. No.	DO (mg/L) of Solution							Analyst
				PCON	TCON	31%	42%	56%	74%	99%	
02/03/15	Start	25.0	1	8.73	8.46	8.61	8.74	8.16	8.26	8.63	CS
02/04/15	24 Hr.	25.6	1	8.71	8.66	8.51	8.19	8.51	8.75	8.41	CS
02/04/15	Renew	25.8	1	8.73	8.11	8.94	8.74	8.58	8.62	8.51	CS
02/05/15	48 Hr.	25.8	1	8.24	8.35	8.16	8.57	8.49	8.55	8.28	CS
02/05/15	Renew	25.8	2	8.73	8.33	8.56	8.04	8.21	8.77	8.50	CS
02/06/15	72 Hr.	25.3	2	8.14	8.59	8.52	8.56	8.39	8.06	8.34	EMS
02/06/15	Renew	25.3	2	8.73	8.20	8.06	8.93	8.19	8.06	8.08	EMS
02/07/15	96 Hr.	25.5	2	8.15	8.59	8.55	8.44	8.40	8.37	8.33	CS
02/07/15	Renew	25.9	3	8.67	8.84	8.16	8.37	8.59	8.55	8.26	CS
02/08/15	120 Hr.	25.1	3	8.61	8.82	8.35	8.76	8.81	8.62	8.72	EMS
02/08/15	Renew	25.1	3	8.19	8.21	8.65	8.79	8.25	8.74	8.79	EMS
02/09/15	144 Hr.	25.8	3	8.04	8.22	8.06	8.12	8.26	7.94	8.20	EMS
02/09/15	Renew	25.8	3	8.19	8.19	8.82	8.80	8.03	8.71	8.64	EMS
02/10/15	168 Hr.	25.8	3	8.74	8.85	8.65	8.35	8.25	8.14	8.56	CS

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

Bentonville WWTP Lab ID# 23730 Test Date: February 3, 2015

INITIAL CHEMISTRY MEASUREMENTS @ 100% EFFLUENT

Date	Samp. No.	pH	DO	Hardness mg/L CaC03 [1]	Alkalinity mg/L CaCO3 [1]	Conduct. umhos/cm [1]	Resid.Cl2 mg/L [1]	Dechlor(mL) Na2S2O3 mg/L [1]	Analyst
02/03/15	1	7.77	8.47	188	110	465	<0.01	N/A	TG
02/05/15	2	7.74	8.28	184	114	458	<0.01	N/A	TG
02/07/15	3	7.82	8.39	188	120	485	<0.01	N/A	TG

INITIAL CHEMISTRY MEASUREMENTS @ RECEIVING WATER

Date	Samp. No.	pH	DO	Hardness mg/L CaC03 [1]	Alkalinity mg/L CaCO3 [1]	Conduct. umhos/cm [1]	Resid.Cl2 mg/L [1]	Dechlor(mL) Na2S2O3 mg/L [1]	Analyst
02/03/15	RS1	8.23	8.60	136	110	362	<0.01	N/A	TG
02/05/15	RS2	8.24	8.33	136	118	342	<0.01	N/A	TG
02/07/15	RS3	8.20	8.67	132	118	351	<0.01	N/A	TG

[1] Measurements taken in 100% solution.

Huther and Associates, Inc.
Begin Date: February 03, 2015
Lab I.D.# 23730

PIMEPHALES PROMELAS STATISTICAL ANALYSES
Growth

Summary Statistics on Transformed Data Table 1 of 2

Grp	Identification	N	Min	Max	Mean
1	Control	5	0.412	0.475	0.444
2	31% Effluent	5	0.423	0.501	0.463
3	42% Effluent	5	0.428	0.504	0.474
4	56% Effluent	5	0.426	0.503	0.471
5	74% Effluent	5	0.439	0.502	0.475
6	99% Effluent	5	0.426	0.506	0.470

Summary Statistics on Transformed Data Table 2 of 2

Grp	Identification	Variance	Sd	Sem	C.V.%
1	Control	0.001	0.024	0.011	5.37
2	31% Effluent	0.001	0.033	0.015	7.06
3	42% Effluent	0.001	0.029	0.013	6.16
4	56% Effluent	0.001	0.033	0.015	7.02
5	74% Effluent	0.001	0.030	0.013	6.32
6	99% Effluent	0.002	0.040	0.018	8.47

Shapiro - Wilk's Test For Normality

D = 0.024

W = 0.892

Critical W (P = 0.05) (n = 30) = 0.927
Critical W (P = 0.01) (n = 30) = 0.900
Data **Fail** normality test. Try another transformation.

Warning - The first three homogeneity tests are sensitive to non-normal data and should not be performed.

Steel's Many-One Rank Test - Ho:Control < Treatment

Grp	Identification	Transformed Mean	Rank Sum	Crit. Value	Df	Sig
1	Control	0.444				
2	31% Effluent	0.463	31.00	16.00	5.00	
3	42% Effluent	0.474	35.00	16.00	5.00	
4	56% Effluent	0.471	34.00	16.00	5.00	
5	74% Effluent	0.475	35.00	16.00	5.00	
6	99% Effluent	0.470	32.00	16.00	5.00	

Critical values use k = 5, are 1 tailed, and alpha = 0.05
No statistically significant difference

APPENDIX A
RAW DATA

7-DAY *CERIODAPHNIA DUBIA* SURVIVAL & REPRODUCTION
DAILY RAW DATA TABLE

CLIENT Bentonville

OUTFALL 001

LAB ID # 23730

START DATE/TIME 2-3-15 NL 1415

END DATE/TIME 2-10-15 NL 1415

Pcon

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
2/4	A	A	A	A	A	A	A	A	A	A	NL	1415
2/5	A	A	A	A	A	A	A	A	A	A	NL	1330
2/6	A	A	A	A	A	A	A	A	A	A	ZG	1110
2/7	3	2	2	2	3	2	2	3	4	2	MH	1300
2/8	A	A	A	A	A	A	A	A	A	A	NL	1045
2/9	7	6	7	8	6	8	6	6	7	6	TG	1445
2/10	13	12	13	12	12	12	13	12	14	11	NL	1415
	23	20	22	22	21	22	21	21	25	19		

$\bar{x}$ # Young w/o Dead = 21.6 CV% = 7.62

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

$\bar{x}$ % Survival = 100 CV% = 0.00

Tcon

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
2/4	A	A	A	A	A	A	A	A	A	A	NL	1415
2/5	A	A	A	A	A	A	A	A	A	A	NL	1330
2/6	A	A	A	A	A	A	A	A	A	A	ZG	1110
2/7	4	2	3	2	5	2	3	2	2	3	MH	1300
2/8	A	A	A	A	A	A	A	A	A	A	NL	1045
2/9	8	7	6	8	7	6	9	6	8	8	TG	1445
2/10	12	12	13	12	12	14	12	12	13	12	NL	1415
	24	21	22	22	24	22	24	20	23	23		

$\bar{x}$ # Young w/o Dead = 22.5 CV% = 6.02

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

$\bar{x}$ % Survival = 100 CV% = 0.00

31

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
2/4	A	A	A	A	A	A	A	A	A	A	NL	1415
2/5	A	A	A	A	A	A	A	A	A	A	NL	1330
2/6	A	A	A	A	A	A	A	A	A	A	ZG	1110
2/7	3	2	2	4	3	2	4	3	2	4	MH	1300
2/8	A	A	A	A	A	A	A	A	A	A	NL	1045
2/9	8	6	7	8	9	10	8	6	7	7	TG	1445
2/10	12	14	12	13	12	12	13	11	14	12	NL	1415
	23	22	21	25	24	24	25	20	23	23		

$\bar{x}$ # Young w/o Dead = 23.0 CV% = 7.10

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

$\bar{x}$ % Survival = 100 CV% = 0.00

42

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
2/4	A	A	A	A	A	A	A	A	A	A	NL	1415
2/5	A	A	A	A	A	A	A	A	A	A	NL	1330
2/6	A	A	A	A	A	A	A	A	A	A	ZG	1110
2/7	3	2	4	4	2	3	2	2	3	2	MH	1300
2/8	A	A	A	A	A	A	A	A	A	A	NL	1045
2/9	7	9	10	7	7	10	9	6	8	7	TG	1445
2/10	13	14	13	11	12	13	13	12	11	12	NL	1415
	23	25	27	22	21	26	24	20	22	21		

$\bar{x}$ # Young w/o Dead = 23.1 CV% = 10.09

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

$\bar{x}$ % Survival = 100 CV% = 0.00

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

CLIENT Bentonville
OUTFALL 001
LAB ID # 23730

START DATE/TIME 2-3-15 NL 1415
END DATE/TIME 2-10-15 NL 1415

56

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
2/4	A	A	A	A	A	A	A	A	A	A	NL	1415
2/5	A	A	A	A	A	A	A	A	A	A	NL	1330
2/6	A	A	A	A	A	A	A	A	A	A	ZG	1110
2/7	2	2	4	5	4	3	2	2	3	2	MH	1300
2/8	A	A	A	A	A	A	A	A	A	A	NL	1045
2/9	6	8	9	6	9	7	8	6	7	8	TG	1445
2/10	12	13	12	12	14	12	12	14	12	13	NL	1415
	20	23	25	23	27	22	22	22	22	23		

x̄ # Young w/o Dead = 22.9 CV% = 8.35
x̄ # Young w/Dead = CV% =
x̄ % Survival = 100 CV% = 0.00

74

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
2/4	A	A	A	A	A	A	A	A	A	A	NL	1415
2/5	A	A	A	A	A	A	A	A	A	A	NL	1330
2/6	A	A	A	A	A	A	A	A	A	A	ZG	1110
2/7	2	3	4	4	5	3	4	2	2	2	MH	1300
2/8	A	A	A	A	A	A	A	A	A	A	NL	1045
2/9	9	6	8	7	10	7	6	10	9	10	TG	1445
2/10	12	12	14	12	13	12	12	14	14	13	NL	1415
	23	21	26	23	28	22	22	26	25	25		

x̄ # Young w/o Dead = 24.1 CV% = 9.27
x̄ # Young w/Dead = CV% =
x̄ % Survival = 100 CV% = 0.00

99

Date	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	Rep10	Analyst	Time
2/4	A	A	A	A	A	A	A	A	A	A	NL	1415
2/5	A	A	A	A	A	A	A	A	A	A	NL	1330
2/6	A	A	A	A	A	A	A	A	A	A	ZG	1110
2/7	2	4	2	4	3	2	2	3	2	2	MH	1300
2/8	A	A	A	A	A	A	A	A	A	A	NL	1045
2/9	7	9	6	8	10	6	7	9	7	8	TG	1445
2/10	12	13	12	12	14	12	13	13	14	13	NL	1415
	21	26	20	24	27	20	22	25	23	23		

x̄ # Young w/o Dead = 23.1 CV% = 10.50
x̄ # Young w/Dead = CV% =
x̄ % Survival = 100 CV% = 0.00

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

x̄ # Young w/o Dead = CV% =
x̄ # Young w/Dead = CV% =
x̄ % Survival = CV% =

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

CLIENT/FACILITY: Bentonville

OUTFALL #: 001 PROJECT #: 23730

ORGANISM ID#: PPO-15-033

DATE/TIME STARTED: 2-3-15 MH 1540

DATE/TIME ENDED: 2-10-15 MH 1540

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
Pcon	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
Tcon	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
31	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
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
74	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
99	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	2-4-15 MH 1540					2-5-15 MH 0850					2-6-15 TG 0855					2-7-15 MH 0905					2-8-15 MH 0805				

Conc.	A	B	C	D	E	A	B	C	D	E	Mean Survival	C.V.%
Pcon	8	8	8	8	8	8	8	8	8	8	100.0	0.00
Tcon	8	8	8	8	8	8	8	8	8	8	100.0	0.00
31	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
74	8	8	8	8	8	8	8	8	8	8	100.0	0.00
99	8	8	8	8	8	8	8	8	8	8	100.0	0.00
Initials Date/Time	29-15 TG 0855					2-10-15 MH 1540						

7-DAY CHRONIC TOXICITY TEST
PIMEPHALES PROMELAS (fathead minnow) MEAN WEIGHT/REP

Client: Pentair

Project#: 23730

Date/Time Start: 2/3/15 1540

Date/Time End: 2/10/15 1540

% Effluent	Rep A	Rep B	Rep C	Rep D	Rep E	$\bar{x}$	C.V.%	Analyst
Pen	.4820	.5060	.4290	.4710	.5030	.4782	6.51	BH
Tue	.4460	.4120	.4750	.4560	.4320	.4442	5.37	|
31	.4550	.4230	.4450	.4920	.5010	.4632	7.016	|
42	.4760	.4930	.4280	.4690	.5040	.4740	6.16	|
56	.4470	.4820	.4260	.5030	.4960	.4708	7.02	|
74	.5020	.4470	.4960	.5010	.4350	.4750	6.32	|
99	.4260	.5040	.4870	.4290	.5060	.4704	8.47	|

Huther and Associates, Inc.
environmental toxicologists, biologists, and consultants

Client / Facility Bentonville

Lab ID Number 23730

Outfall Number 001

Test Date 2-3-15

INITIAL CHEMISTRY MEASUREMENTS @ 100% EFFLUENT

Date	Samp. No.	pH	DO	Hardness mg/L CaCO3 [1]	Alkalinity mg/L CaCO3 [1]	Conduct. umhos/cm [1]	Resid.Cl2 mg/L [1]	Dechlor(mL) Na2S2O3 mg/L [1]	Analyst
2/3	1	7.77	8.47	188	110	465	<0.01	Na	TG
2/5	2	7.74	8.28	184	114	458	"	"	"
2/7	3	7.82	8.39	188	120	485	"	"	"

INITIAL CHEMISTRY MEASUREMENTS @ RECEIVING WATER

Date	Samp. No.	pH	DO	Hardness mg/L CaCO3 [1]	Alkalinity mg/L CaCO3 [1]	Conduct. umhos/cm [1]	Resid.Cl2 mg/L [1]	Dechlor(mL) Na2S2O3 mg/L [1]	Analyst
2/3	RS1	8.23	8.100	136	110	362	<0.01	Na	TG
2/5	RS2	8.24	8.33	136	118	342	"	"	"
2/7	RS3	8.20	8.67	132	118	351	"	"	"

Notes:

APPENDIX B
REFERENCE TOXICANTS

CHRONIC REFERENCE TOXICANT TEST RESULTS

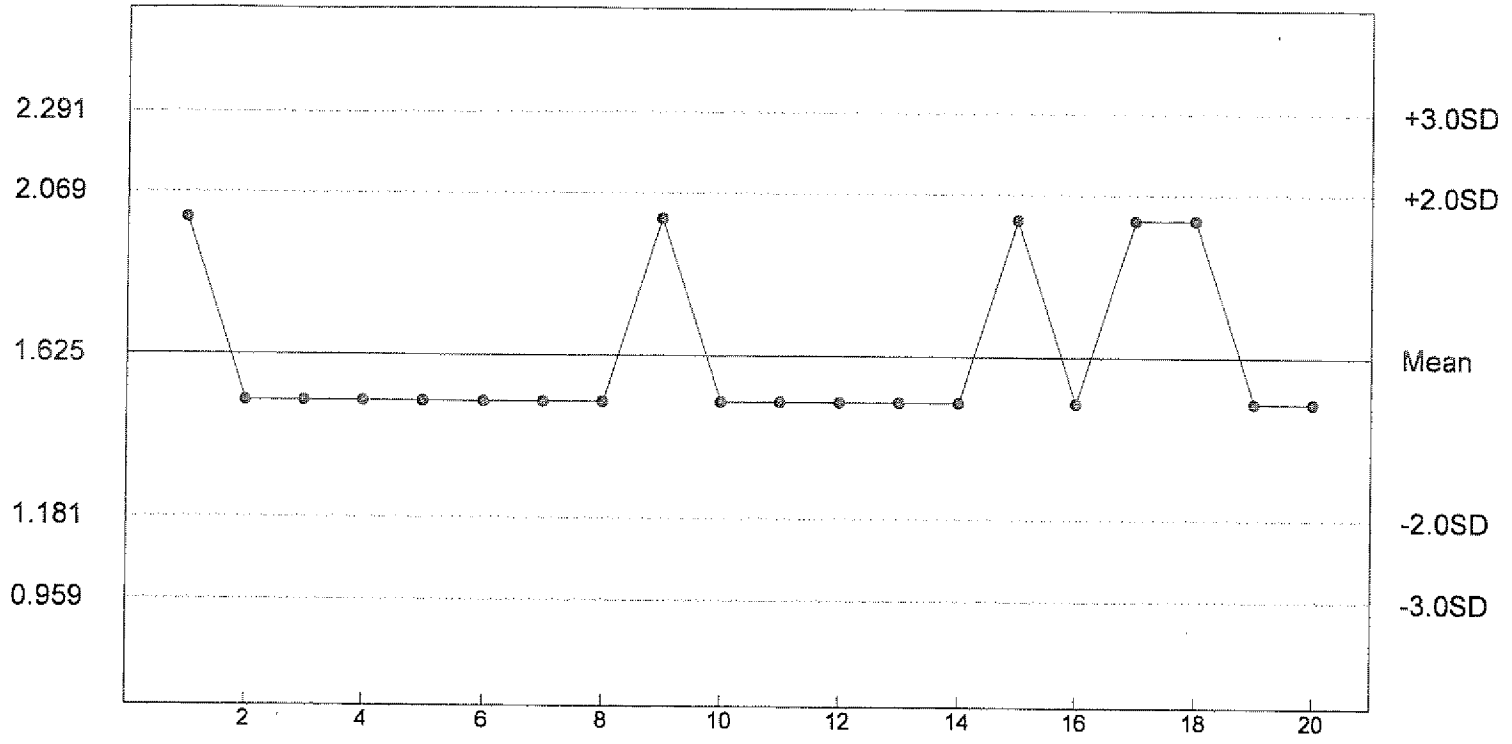
SPECIES:	*Ceriodaphnia dubia*
CHEMICAL:	Copper Nitrate
DURATION:	7-Days
TEST NUMBER:	2
TEST DATE:	02/04/15 - 02/11/15 1500 Hrs - 1500 Hrs
STATISTICAL METHOD:	Dunnetts/Steels

CONCENTRATION (ug/L)	NUMBER EXPOSED	NUMBER DEAD
0.5	10	0
1.0	10	0
1.5	10	0
2.0	10	4
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**	**1.5 *ug*/L**	**1.0 *ug*/L**

Reference Tox Sodium Chloride g/L

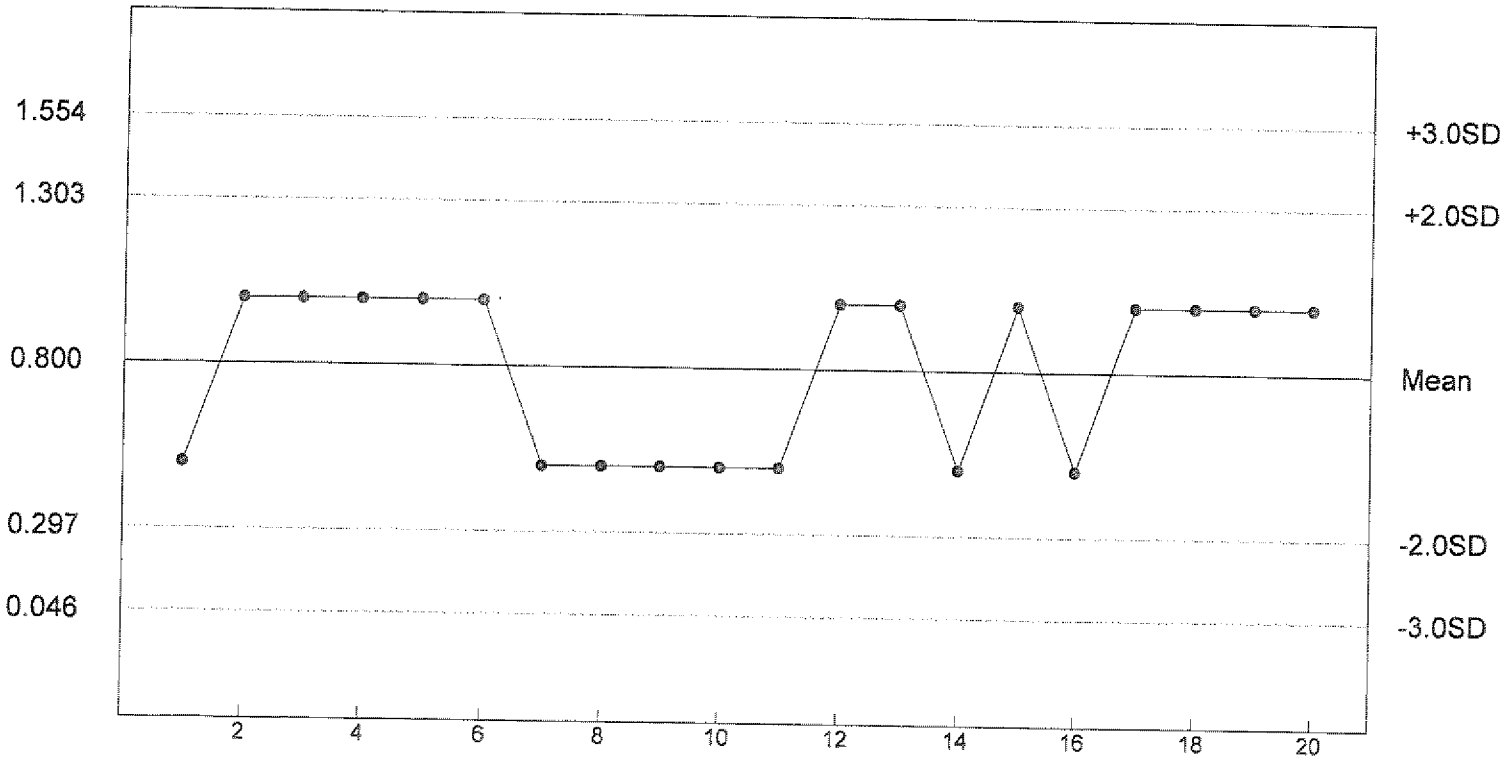
C. dubia Survival - NOEC



n= 20 Mean= 1.625 SD= 0.222 CV= 13.67% Min= 1.500 Max= 2.000

Reference Tox Sodium Cloride 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

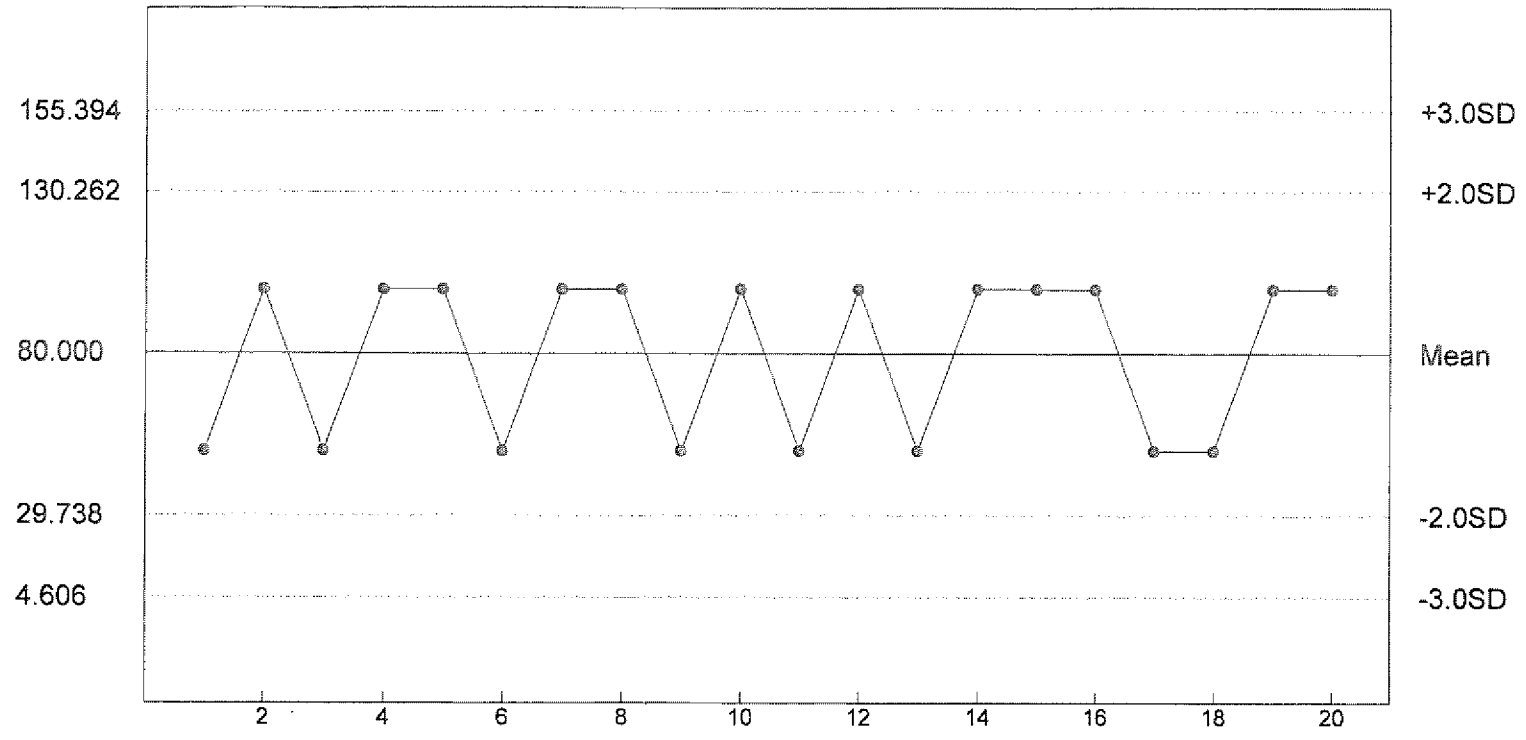
SPECIES:	*Pimephales promelas*
CHEMICAL:	Copper Nitrate
DURATION:	7-Days
TEST NUMBER:	2
TEST DATE:	02/04/15 - 02/11/15 1515 Hrs - 1515 Hrs
STATISTICAL METHOD:	Dunnetts/Steels

CONCENTRATION (ug/L)	NUMBER EXPOSED	NUMBER DEAD
25	40	2
50	40	4
100	40	5
200	40	22
400	40	40
800	40	40

LOEC FOR SURVIVAL	NOEC FOR SURVIVAL	LOEC FOR GROWTH	NOEC FOR GROWTH
200 *ug*/L	**100 *ug*/L**	**100 *ug*/L**	**50 *ug*/L**

Reference Tox Copper Nitrate ug/L

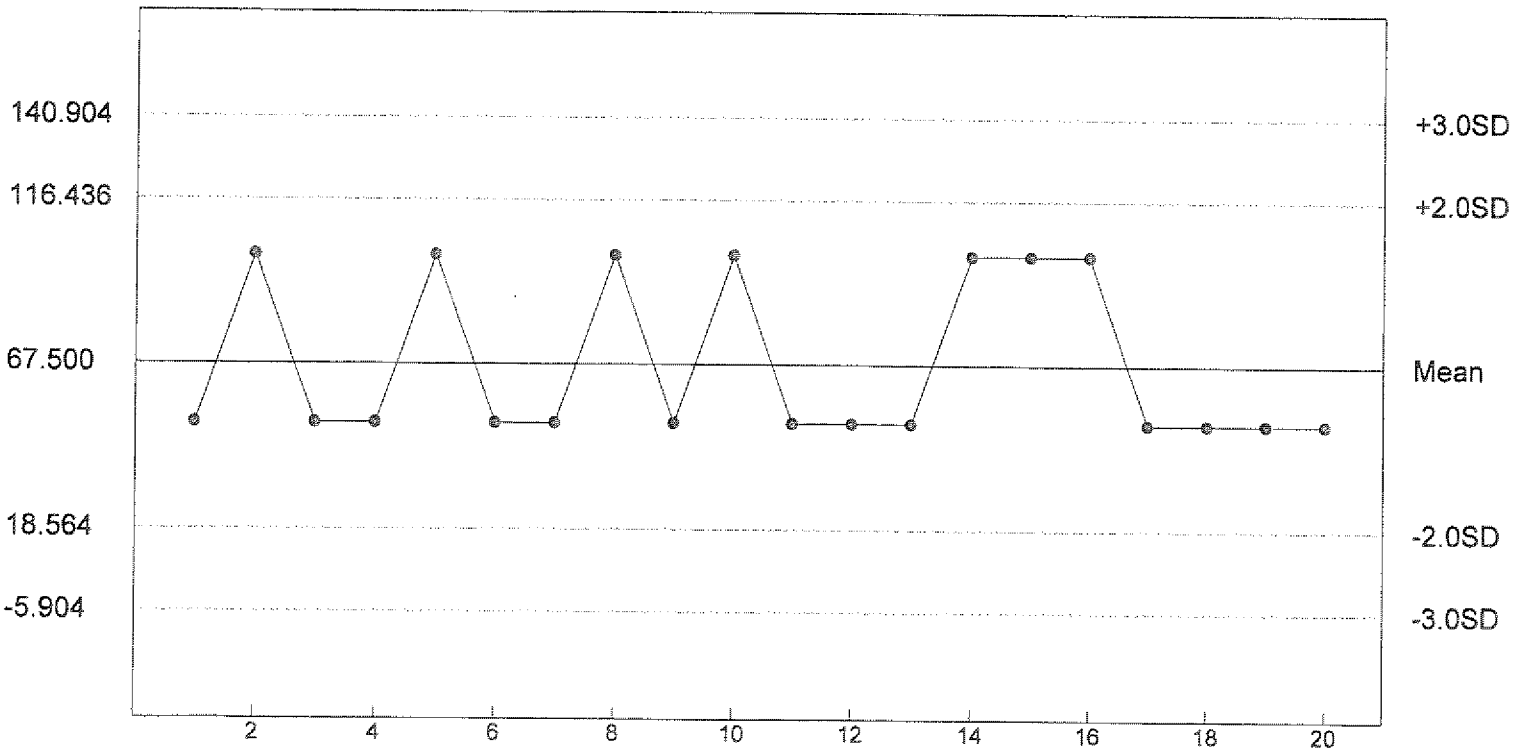
P. promelas Chronic Survival - NOEC



n= 20 Mean= 80.000 SD= 25.131 CV= 31.41% Min= 50.000 Max= 100.000

Reference Tox Copper Nitrate ug/L

P. promelas Growth - NOEC



n= 20 Mean= 67.500 SD= 24.468 CV= 36.25% 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 # 23730 PROJECT NAME Bentonville PERMIT# AR0022403

OUTFALL SAMPLES

24-Hr Flow Weighted Composite_____ Other_____

					METHODS OF COLLECTION AND COMPOSITE			
OUTFALL NUMBER	PERSON TAKING SAMPLE	START DATE/TIME	END DATE/TIME	# OF PORTIONS COMPOSITED	AUTO COLL. AUTO COMP.	MANUAL COLL. MANUAL COMP.	AUTO COLL. MANUAL COMP.	# OF CONTAINERS TO BE SHIPPED
001	E. Snook	2/1/15 0900	2/2/15 0900	70	X			1

RECEIVING WATER SAMPLES

SAMPLE IDENTIFICATION (FOR REC'NG) H_2O GRABS, GIVE NAME OF STREAM AND LOCATION	PERSON TAKING SAMPLE	DATE	TIME	# OF CONTAINERS TO BE SHIPPED
Town Branch Creek	B. Almeter	2/1/15	903	1

TYPE OF TEST 7day C/F

NAME OF RECEIVING WATER Town Branch

DILUTION WATER USED FOR THIS TEST RS

RELINQUISHED BY: E. Snook DATE: 2/2/15 TIME: 10:00 RECEIVED BY AT THIS DATE/TIME _____

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 Fed-Ex

RECEIVED: Matt Dorner DATE: 2-3-15 TIME: 1100 SAMPLE TEMP. @ RECEIPT. 3.4

1ST PAGE - LAB COPY 2ND PAGE - FACILITY COPY

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

CHAIN OF CUSTODY RECORD

PROJECT # 23730 PROJECT NAME Bentonville PERMIT# AR0022403

OUTFALL SAMPLES

24-Hr Flow Weighted Composite_____ Other_____

					METHODS OF COLLECTION AND COMPOSITE			
OUTFALL NUMBER	PERSON TAKING SAMPLE	START DATE/TIME	END DATE/TIME	# OF PORTIONS COMPOSITED	AUTO COLL. AUTO COMP.	MANUAL COLL. MANUAL COMP.	AUTO COLL. MANUAL COMP.	# OF CONTAINERS TO BE SHIPPED
001	E. Snook	2/3/15 8:55am	2/4/15 9:00am	51	X			1

RECEIVING WATER SAMPLES

SAMPLE IDENTIFICATION (FOR REC'NG) H_2O GRABS, GIVE NAME OF STREAM AND LOCATION	PERSON TAKING SAMPLE	DATE	TIME	# OF CONTAINERS TO BE SHIPPED
Town Branch Creek	E. Snook	2/3/15	9:04am	1

TYPE OF TEST 7day C/F

NAME OF RECEIVING WATER Town Branch

DILUTION WATER USED FOR THIS TEST RS

RELINQUISHED BY: E. Snook DATE: 2/4/15 TIME: 9:20am RECEIVED BY AT THIS DATE/TIME _____

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 FedEx

RECEIVED: Matt Stoner DATE: 2-5-15 TIME: 1040 SAMPLE TEMP. @ RECEIPT. 1.9

1ST PAGE - LAB COPY 2ND PAGE - FACILITY COPY

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

CHAIN OF CUSTODY RECORD

PROJECT # 23730 PROJECT NAME Bentonville PERMIT# AR0022403

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: AUTO COLL. AUTO COMP.	MANUAL COLL. MANUAL COMP.	AUTO COLL. MANUAL COMP.	# OF CONTAINERS TO BE SHIPPED
001	E Snook	2/5/15 0900	2/6/15 0859	49	X			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
Town Branch Creek	E. Snook	2/5/15	0905	1

TYPE OF TEST 7day C/F

NAME OF RECEIVING WATER Town Branch

DILUTION WATER USED FOR THIS TEST RS

RELINQUISHED BY: E. Snook DATE: 2/6/15 TIME: 1000 RECEIVED BY AT THIS DATE/TIME _____

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 FedEx

RECEIVED: Matt Horner DATE: 2-7-15 TIME: 0955 SAMPLE TEMP. @ RECEIPT. 1.4

1ST PAGE - LAB COPY 2ND PAGE - FACILITY COPY

Huther and Associates, Inc.
environmental toxicologists, biologists, and consultants

BENTONVILLE WWTP
NPDES PERMIT NO. AR0022403
AFIN 04-00154
BIOMONITORING REPORTING
TEST DATE: 02/03/15

Ceriodaphnia dubia	**Response**
A. If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0". **Parameter TLP3B**	0
B. If the NOEC for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0". **Parameter TGP3B**	0
C. Report the NOEC value for survival. **Parameter TOP3B**	99%
D. Report the NOEC value for reproduction. **Parameter TPP3B**	99%
E. Report the higher (critical dilution or control) Coefficient of Variation (CV%), **Parameter TQP3B**	10.50%

Pimephales promelas	**Response**
A. If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0". **Parameter TLP6C**	0
D. If the NOEC for growth is less than the critical dilution, enter a "1"; otherwise, enter a "0". **Parameter TGP6C**	0
B. Report the NOEC value for survival. **Parameter TOP6C**	99%
C. Report the NOEC value for growth. **Parameter TPP6C**	99%
E. Report the higher (critical dilution or control) Coefficient of Variation (CV%), **Parameter TQP6C**	8.47%

1156 North Bonnie Brae Denton, Texas 76201 Ph: (940) 387-1025 Fax: (940) 387-1036