June 24, 2020

Biomonitoring Testing
for
Plant Effluent
City of Hot Springs

Control No. 246105-1

Prepared for:

Mr. Harold Mauldin
City of Hot Springs
320 Davidson Drive
Hot Springs, AR 71901

Prepared by:

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

City of Hot Springs
ATTN: Mr. Harold Mauldin
320 Davidson Drive
Hot Springs, AR 71901

Re: Chronic 7-Day Renewal*Pimephales promelas* (Fathead minnow)
Plant Effluent - City of Hot Springs
NPDES Permit No. AR0033880 AFIN#26-00145

Dear Mr. Harold Mauldin:

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 Chief Operating Officer 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 1000.0 Chronic *Pimephales promelas* (Fathead minnow) Survival and Growth Test: The No Observable Effects Concentration (NOEC) for survival occurred at 77 % effluent, which is above the critical dilution of 58 %. The NOEC for growth occurred at 77 % effluent, which is above the critical dilution of 58 %. **The sample, therefore, PASSED both lethal and sub-lethal effects for the Fathead minnow test.**

AMERICAN INTERPLEX CORPORATION

John Overbey
Chief Operating Officer

PDF cc: City of Hot Springs
ATTN: Ms. Jessica Burks
jburks@cityhs.net

City of Hot Springs
ATTN: Mr. Dennis Brunson
dbrunson@cityhs.net

City of Hot Springs
ATTN: Mr. Harold Mauldin
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City of Hot Springs
ATTN: Mr. Gordon Yates
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Table of Contents

I. Control Acceptance Criteria

Pimephales promelas (Fathead minnow) Method 1000.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Growth > or = 0.25 mg per Surviving minnow	0.313	PASS
Control Growth CV < or = 40%	13.4	PASS
Growth Minimum Significant Difference 12 to 30%	22.3	PASS
Critical Dilution CV < or = 40%	17.1	PASS

II. Outlined Report

A. Introduction

1. Permit Number: AR0033880 AFIN#26-00145
2. Test Requirements: Chronic Biomonitoring, Quarterly
   Test Method 1000.0

B. Source of Effluent/Dilution Water:

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

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	8.1	8.3	7.8
pH (standard units)	7.0	7.1	6.9
Alkalinity (mg/l as CaCO3)	20	20	25
Hardness (mg/l as CaCO3)	34	34	33
Conductivity (umhos/cm)	220	240	240
Residual Chlorine (mg/l)	<0.05	<0.05	<0.05
Ammonia as N (mg/l)	<0.1	<0.1	<0.1

2. Dilution Water Samples:
   Soft

Analysis	245948-1
Dissolved oxygen (mg/l)	7.1
pH (standard units)	7.6
Alkalinity (mg/l as CaCO3)	32
Hardness (mg/l as CaCO3)	43
Conductivity (umhos/cm)	170
Residual Chlorine (mg/l)	<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 1000.0, Fathead Minnow Survival and Growth.
2. Endpoint: No Observable Effects Concentration (NOEC)
3. Test Conditions:

Pimephales promelas (Fathead minnow) Survival and Growth Method 1000.0

Date & Time Test Initiated:	June 16, 2020 at 0909
Date & Time Test Terminated:	June 23, 2020 at 0855
Type & Volume of Test Chamber:	500 ml disposable beaker
Volume of Sample:	250 ml
Number of Organisms per replicate:	8
Number of Replicates per dilution:	5

4. Source of test organisms: Obtained from in-house cultures
5. Test Temperature: 25 +/- 1 degree Celsius

D. Test Organisms
1. Scientific Name
a. Test 1000.0 *Pimephales promelas*

III. Data Analysis

The data was analyzed using American Interplex Corporation's Laboratory Information Management Software based on Toxstat and following EPA method criteria.

Pimephales promelas (Fathead minnow) survival data was transformed using the Arc Sine transformation. Normality and homogeneity of variance were checked using Shapiro-Wilk's. The survival data was then analyzed using Steel's Many-One Rank Test to determine the No Observable Effects Concentration (NOEC).

Fathead minnow growth data was analyzed for normality and homogeneity of variance using Shapiro-Wilk's and Bartlett's test. Dunnett's Test was used to determine the No Observable Effects Concentration (NOEC) for growth.

IV. Standard Reference Toxicants

The sensitivity of the offspring is determined by performing a standard reference toxicant test monthly. Sodium chloride in synthetic moderately hard water is used as prescribed in EPA-821-R-02-013.

Pimephales promelas (Fathead minnow)

A chronic reference test was performed on June 02, 2020 at 1418 to June 09, 2020 at 1310
The results were as follows: (Control No. 245673-1.)

Survival LC-50: 3610.4 mg/l
Growth IC-25: 2364 mg/l
Growth PMSD: 0

V. Organism History

Pimephales promelas (Fathead minnow)

Date: June 16, 2020
Age: <24 hours
Source: In-house culture
Water: Moderately hard synthetic
Temperature: 25 deg.C

VII. Results Summary *Pimephales promelas*, Fathead minnow Larval Survival and Growth Test -- Method 1000.0

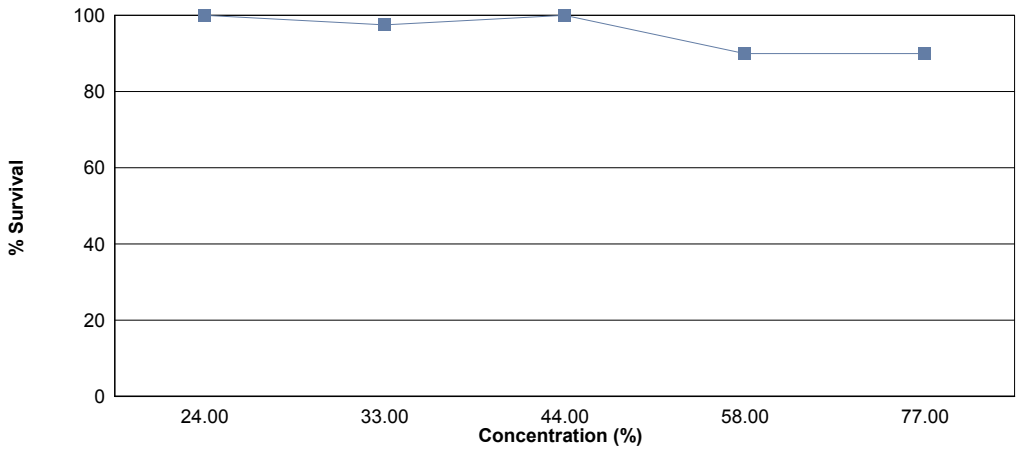
Larvae are exposed in a static renewal system for seven days to different concentrations of effluent with dilution water. Test results are based on the survival and growth (weight) of the larvae.

Effluent dilutions for this test were 24 %, 33 %, 44 %, 58 %, 77 % in accordance with the NPDES permit.

The low flow or 'critical' dilution is specified in the NPDES permit as 58 % effluent.

The test was initiated on June 16, 2020 at 0909 and continued through June 23, 2020 at 0855. Statistical analyses were performed on the observed data and the no observable effects concentrations (NOECs) were as follows:

a.) NOEC survival = 77 % effluent
b.) NOEC growth = 77 % effluent



Summary of the 7-day Fathead Minnow Survival and Growth		
Concentration	Percent Survival	Mean Growth (mg)
Control	100	0.313
24 %	100	0.306
33 %	97.5	0.347
44 %	100	0.327
58 %	90.0	0.285
77 %	90.0	0.300

Appendix A1: Test 1000.0

Pimephales promelas (Fathead Minnow) 7-Day Survival

Date and Time Test Initiated: June 16, 2020 at 0909
Date and Time Test Terminated: June 23, 2020 at 0855

Concentration	Replicate	Number of Survivors						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Control	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
24 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
33 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	7	7	7	7	7
	E	8	8	8	8	8	8	8
44 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
58 %	A	8	8	8	8	8	8	8
	B	8	8	7	6	6	6	6
	C	8	8	8	8	8	8	8
	D	7	7	7	7	7	7	7
	E	8	8	8	7	7	7	7
77 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	7	7	6
	C	8	8	8	7	7	7	7
	D	8	8	8	8	8	8	8
	E	8	8	8	8	7	7	7

Appendix A1: Test 1000.0

Pimephales promelas (Fathead Minnow) 7-Day Growth

Test Initiated: June 16, 2020 at 0909
Test Terminated: June 23, 2020 at 0855

Concentration	Replicate	Weight of pan	Weight of pan + fish	Total weight of fish (g)	Original # of fish	Mean dry weight (mg)
Control	A	.66922	.67200	0.00278	8	0.348
	B	.66666	.66910	0.00244	8	0.305
	C	.66940	.67187	0.00247	8	0.309
	D	.67088	.67288	0.00200	8	0.250
	E	.67445	.67729	0.00284	8	0.355
24 %	A	.66913	.67131	0.00218	8	0.272
	B	.66671	.66888	0.00217	8	0.271
	C	.65856	.66081	0.00225	8	0.281
	D	.66161	.66431	0.00270	8	0.338
	E	.66825	.67121	0.00296	8	0.370
33 %	A	.66775	.67054	0.00279	8	0.349
	B	.67330	.67615	0.00285	8	0.356
	C	.66298	.66552	0.00254	8	0.318
	D	.67124	.67388	0.00264	8	0.330
	E	.67439	.67743	0.00304	8	0.380
44 %	A	.66457	.66724	0.00267	8	0.334
	B	.67274	.67534	0.00260	8	0.325
	C	.66808	.67034	0.00226	8	0.282
	D	.66806	.67024	0.00218	8	0.272
	E	.67144	.67482	0.00338	8	0.422
58 %	A	.66341	.66590	0.00249	8	0.311
	B	.67733	.67925	0.00192	8	0.240
	C	.66656	.66942	0.00286	8	0.358
	D	.66920	.67122	0.00202	8	0.252
	E	.66934	.67147	0.00213	8	0.266
77 %	A	.66927	.67167	0.00240	8	0.300
	B	.66469	.66635	0.00166	8	0.208
	C	.67088	.67341	0.00253	8	0.316
	D	.66223	.66499	0.00276	8	0.345
	E	.67214	.67479	0.00265	8	0.331

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Survival

		Transformation of Data		Transform: Arc Sin(Square Root(Y))
Group	Identification	Rep	Value	Transformed
1	Control	1	1.00000	1.39310
1	Control	2	1.00000	1.39310
1	Control	3	1.00000	1.39310
1	Control	4	1.00000	1.39310
1	Control	5	1.00000	1.39310
2	24 %	1	1.00000	1.39310
2	24 %	2	1.00000	1.39310
2	24 %	3	1.00000	1.39310
2	24 %	4	1.00000	1.39310
2	24 %	5	1.00000	1.39310
3	33 %	1	1.00000	1.39310
3	33 %	2	1.00000	1.39310
3	33 %	3	1.00000	1.39310
3	33 %	4	0.87500	1.20940
3	33 %	5	1.00000	1.39310
4	44 %	1	1.00000	1.39310
4	44 %	2	1.00000	1.39310
4	44 %	3	1.00000	1.39310
4	44 %	4	1.00000	1.39310
4	44 %	5	1.00000	1.39310
5	58 %	1	1.00000	1.39310
5	58 %	2	0.75000	1.04720
5	58 %	3	1.00000	1.39310
5	58 %	4	0.87500	1.20940
5	58 %	5	0.87500	1.20940
6	77 %	1	1.00000	1.39310
6	77 %	2	0.75000	1.04720
6	77 %	3	0.87500	1.20940
6	77 %	4	1.00000	1.39310
6	77 %	5	0.87500	1.20940

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Survival

Shapiro - Wilk's Test for Normality		Transform: Arc Sin(Square Root(Y))
D = 0.1978		
W = 0.822		
Critical W = 0.9	(alpha = 0.01, N = 30)	
Critical W = 0.927	(alpha = 0.05, N = 30)	

Data FAIL normality test (alpha = 0.01).

Steel's Many-One Rank Test					Transform: Arc Sin(Square Root(Y))
Ho:Control<Treatment					
Group	Identification	Rank Sum	Critical Value	DF	Sig 0.05
1	Control				
2	24 %	27.50	16.00	5.00	
3	33 %	25.00	16.00	5.00	
4	44 %	27.50	16.00	5.00	
5	58 %	20.00	16.00	5.00	
6	77 %	20.00	16.00	5.00	

Critical values are 1 tailed (k=5)

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Growth

Shapiro - Wilk's Test for Normality		No Transformation
D = 0.05278		
W = 0.992		
Critical W = 0.9	(alpha = 0.01, N = 30)	
Critical W = 0.927	(alpha = 0.05, N = 30)	
Data PASS normality test (alpha = 0.01).		

Bartlett's Test for Homogeneity of Variance		No Transformation
Calculated B1 statistic = 2.947		
Critical B = 15.086	(alpha = 0.01, df = 5)	
Data PASS B1 homogeneity test at 0.01 level.		

Appendix A2: Statistics

Pimephales promelas (Fathead minnow) Growth

ANOVA Table				No Transformation
SOURCE	DF	SS	MS	F
Between	5	0.0115	0.002299	1.045
Within (Error)	24	0.05278	0.002199	
Total	29	0.06428		

Critical F = 3.9 (alpha = 0.01, df = 5,24)
2.62 (alpha = 0.05, df = 5,24)

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	0.3134	0.3134		
2	24 %	0.3064	0.3064	0.236	
3	33 %	0.3466	0.3466	-1.119	
4	44 %	0.327	0.327	-0.4586	
5	58 %	0.2854	0.2854	0.9441	
6	77 %	0.3	0.3	0.4518	

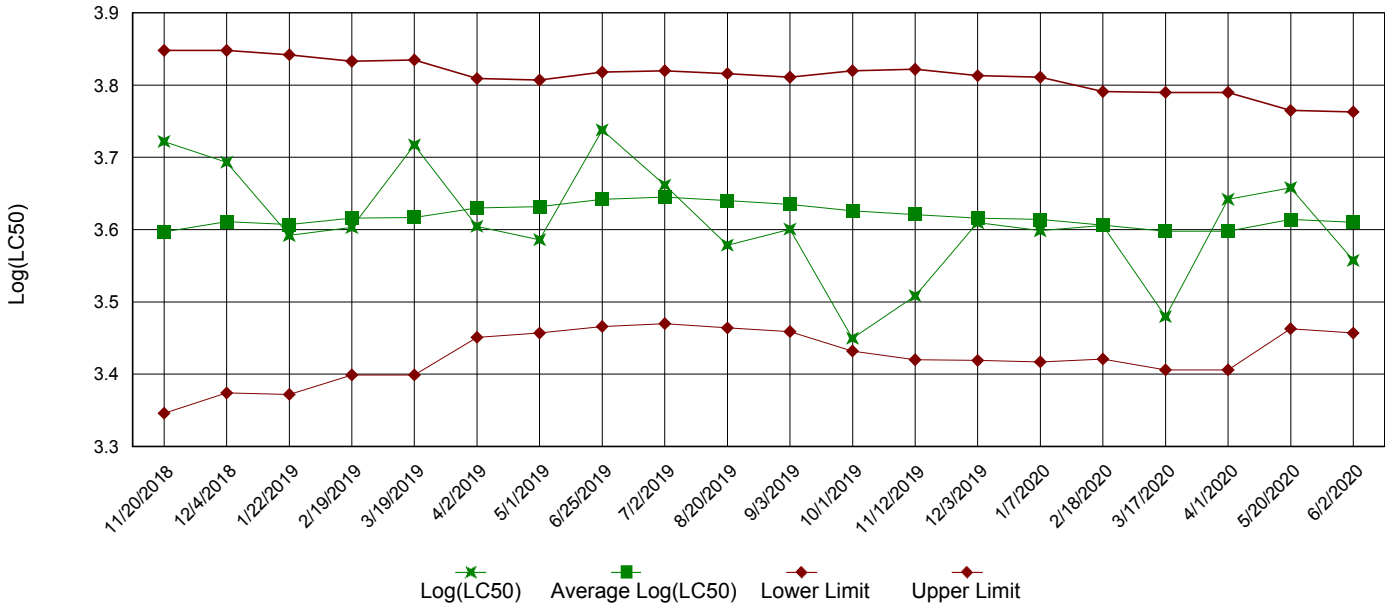
Dunnett's critical value = 2.36 (1 Tailed, alpha = 0.05, df = 5,24)

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	5			
2	24 %	5	0.06999	22.3	0.007
3	33 %	5	0.06999	22.3	-0.0332
4	44 %	5	0.06999	22.3	-0.0136
5	58 %	5	0.06999	22.3	0.028
6	77 %	5	0.06999	22.3	0.0134

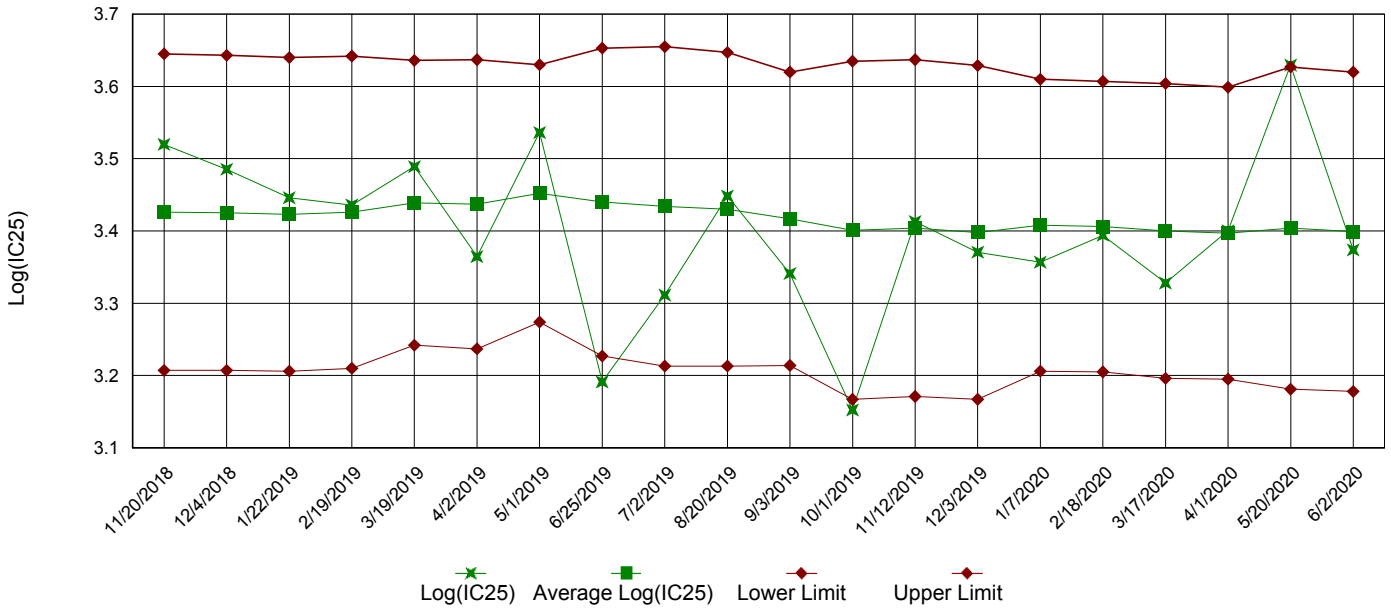
Appendix A3: Test 1000.0

Chronic Reference Toxicant, *Pimephales promelas* (Fathead Minnow)

LC50 Survival Data



IC25 Growth Data



Appendix B: Test 1000.0

SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Pimephales promelas (Fathead Minnow)
SURVIVAL AND GROWTH

Permittee: City of Hot Springs

NPDES No.: AR0033880 AFIN#26-00145

Date and Time Test Initiated: June 16, 2020 at 0909
Date and Time Test Terminated: June 23, 2020 at 0855
Dilution water used: Soft

DATA TABLE FOR SURVIVAL

Effluent Conc. %	Percent Survival in replicate chambers A	B	C	D	E	Mean percent survival 24 hr	48 hr	7 days	CV%
Control	100	100	100	100	100	100	100	100	0.00
24 %	100	100	100	100	100	100	100	100	0.00
33 %	100	100	100	87.5	100	100	100	97.5	5.73
44 %	100	100	100	100	100	100	100	100	0.00
58 %	100	75.0	100	87.5	87.5	97.5	97.5	90.0	11.6
77 %	100	75.0	87.5	100	87.5	100	100	90.0	11.6

DATA TABLE FOR GROWTH

Effluent Conc. %	Average dry weight, mg replicate chambers A	B	C	D	E	Mean dry weight, mg	CV%
Control	0.348	0.305	0.309	0.250	0.355	0.313	13.4
24 %	0.272	0.271	0.281	0.338	0.370	0.306	14.7
33 %	0.349	0.356	0.318	0.330	0.380	0.347	6.92
44 %	0.334	0.325	0.282	0.272	0.422	0.327	18.2
58 %	0.311	0.240	0.358	0.252	0.266	0.285	17.1
77 %	0.300	0.208	0.316	0.345	0.331	0.3	18.0

CV = Coefficient of variation = standard deviation * 100 / mean

Appendix B: Test 1000.0

SUMMARY REPORTING FORMS
CHRONIC BIOMONITORING
Pimephales promelas (Fathead Minnow)
SURVIVAL AND GROWTH

1. Steel's Many-One Rank 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 (58 %) ____YES __X__ NO
   b.) 1/2 LOW FLOW DILUTION (NA) ____YES ____ NO

2. Dunnett's Test:

   Is the mean dry weight (growth) significantly different (p=0.05) than the control's dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

   a.) LOW FLOW OR CRITICAL DILUTION (58 %) ____YES __X__ NO
   b.) 1/2 LOW FLOW DILUTION (NA) ____YES ____ NO

3. If you answered NO to 1.a) enter [0] otherwise enter [1]: 0 (TLP6C)

4. If you answered NO to 2.a) enter [0] otherwise enter [1]: 0 (TGP6C)

5. NOEC Pimephales Lethality: 77 % (TOP6C)

6. LOEC Pimephales Lethality: 77 % (TXP6C)

7. NOEC Pimephales Sublethality: 77 % (TPP6C)

8. LOEC Pimephales Sublethality: 77 % (TYP6C)

9. Coefficient of variation for Pimephales growth: 17.1 (TQP6C)

10. Sublethality for this test: 77 % (51714 or 51714S)

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Appendix B: Test 1000.0

CHRONIC TOXICITY SUMMARY FORM
Pimephales promelas (Fathead minnow)
CHEMICAL PARAMETERS CHART

PERMITTEE: City of Hot Springs
NPDES NO.: AR0033880 AFIN#26-00145
CONTACT: Mr. Harold Mauldin
ANALYST: 280, 310, 343, 345

Test Initiated: DATE: June 16, 2020 TIME: 0909
Test Terminated: DATE: June 23, 2020 TIME: 0855

DILUTION Control		DAY 1	2	3	4	5	6	7
D.O.	Initial	7.1	7.0	7.3	7.2	7.2	7.5	7.3
	Final	6.4	6.5	6.1	6.6	7.0	7.1	6.7
pH	Initial	7.6	7.6	7.7	7.6	7.6	7.6	7.4
	Final	7.5	7.4	7.4	7.4	7.5	7.6	7.3

DILUTION 24 %		DAY 1	2	3	4	5	6	7
D.O.	Initial	7.7	7.2	7.7	7.5	7.4	7.2	7.2
	Final	6.3	6.6	6.3	6.4	6.8	7.1	6.8
pH	Initial	7.5	7.6	7.6	7.4	7.5	7.5	7.4
	Final	7.4	7.4	7.3	7.3	7.4	7.5	7.3

DILUTION 33 %		DAY 1	2	3	4	5	6	7
D.O.	Initial	7.7	7.2	7.8	7.7	7.6	7.0	7.2
	Final	6.5	6.5	6.7	6.4	6.6	7.2	6.5
pH	Initial	7.5	7.5	7.5	7.4	7.3	7.5	7.4
	Final	7.4	7.3	7.4	7.2	7.4	7.5	7.2

DILUTION 44 %		DAY 1	2	3	4	5	6	7
D.O.	Initial	7.5	7.0	7.3	7.2	7.4	7.3	7.2
	Final	6.1	6.1	6.2	6.2	6.9	7.2	7.0
pH	Initial	7.4	7.5	7.4	7.4	7.3	7.5	7.3
	Final	7.3	7.3	7.3	7.3	7.4	7.6	7.3

DILUTION 58 %		DAY 1	2	3	4	5	6	7
D.O.	Initial	7.8	7.1	7.4	7.1	7.5	7.4	7.3
	Final	6.1	6.3	6.6	6.0	7.0	7.4	6.9
pH	Initial	7.3	7.5	7.4	7.3	7.3	7.5	7.4
	Final	7.3	7.3	7.3	7.2	7.4	7.6	7.2

DILUTION 77 %		DAY 1	2	3	4	5	6	7
D.O.	Initial	8.0	7.2	8.0	3.8	7.5	7.1	7.2
	Final	6.4	6.5	7.0	6.6	6.9	7.2	6.6
pH	Initial	7.2	7.3	7.3	7.3	7.1	7.4	7.2
	Final	7.3	7.3	7.4	7.3	7.4	7.5	7.2

Alkalinity	Hardness	Conductivity	Chlorine	Sample ID
20	34	220	<0.05	Plant Effluent 14-JUN-20
20	34	240	<0.05	Plant Effluent 16-JUN-20
25	33	240	<0.05	Plant Effluent 18-JUN-20

Alkalinity	Hardness	Conductivity	Chlorine	Sample ID
32	43	170	<0.05	245948-1

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CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

Client: **City of Hot Springs**

P.O. Number: 2020-459

Project Reference: **Quarterly Bio-Monitoring**

Project Manager: **Harold Mauldin**

Sampled By: SR

ANALYSIS REQUESTED

AIC Control Number: 246105

AIC Proposal Number:

Carrier: BILL G.

Received Temperature °c: 2.8

AIC No.	Sample Identification	Date/Time Collected	Matrix: Composite	Matrix: Water	Number of Bottles	Bio- Monitoring		Remarks
1	**Plant Effluent**	06-14-2020 0000-2400	X	X	2 ~~3~~ SR	X		

G= Glass P=Plastic NO=None S=Sulfuric Acid pH2 V=VOA Vials
N=Nitric Acid pH2 H=HCl to pH2 B=NaOH to pH12
T=Sodium Thiosulfate Z=Zinc Acetate A=(NH4)2NH4OH

		P	
		NO	

Field pH Calibration
on_____@_____
Buffer

Turnaround Time Requested in: (Please Circle)
NORMAL or EXPEDITED IN _____DAYS
Expedited results requested by:
Who should AIC contact with questions:
Amanda Cates
Phone: **501-262-1881**
Fax: **501-262-0339**
Report Attention to: **Harold Mauldin**
Report Address to: **320 Davidson Drive**
Hot Springs, Ar. 71901
E-Mail Address: **Hmauldin@cityhs.net**

Relinquished By:	Date/Time	Received By:	Date/Time
S. Ryders	06-15-2020 0904	B. Gann	6-15-20 @ 0904
B. Gann	6-15-2020 @ 1036	D. Brown	6-15-20/1036

Comments

AMERICAN INTERPLEX CORPORATION LABORATORIES

CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

Client: **City of Hot Springs**

P.O. Number: 2020-459

Project Reference: **Quarterly Bio-Monitoring**

Project Manager: **Harold Mauldin**

Sampled By: SR

ANALYSIS REQUESTED

AIC Control Number: 246105

AIC Proposal Number:

Carrier:

Received Temperature °c

AIC No.	Sample Identification	Date/Time Collected	Matrix: Composite	Matrix: Water	Number of Bottles	Bio- Monitoring	
2	**Plant Effluent**	06-16-20@0000-2400	X	X	2 ~~3~~ SR	X	

Remarks

G= Glass P=Plastic NO=None S=Sulfuric Acid pH2 V=VOA Vials
N=Nitric Acid pH2 H=HCl to pH2 B=NaOH to pH12
T=Sodium Thiosulfate Z=Zinc Acetate A=(NH4)2NH4OH

	P	
	NO	

Field pH Calibration
on_____@_____
Buffer

Turnaround Time Requested in: (Please Circle)
NORMAL or EXPEDITED IN _____DAYS
Expedited results requested by:
Who should AIC contact with questions:
Amanda Cates
Phone: **501-262-1881**
Fax: **501-262-0339**
Report Attention to: **Harold Mauldin**
Report Address to: **320 Davidson Drive**
Hot Springs, Ar. 71901
E-Mail Address: **Hmauldin@cityhs.net**

Relinquished By:	Date/Time	Received By:	Date/Time
S. Ryders	06-17-20@0900	Bill Garner	6-17-2020 @ 0900
Bill Garner	6-17-2020 @ 1120	[illegible]	6-17-20 1120

Comments

0.8°C

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P.O. Number: 2020-459

Project Reference: **Quarterly Bio-Monitoring**

Project Manager: **Harold Mauldin**

Sampled By: SR

ANALYSIS REQUESTED

AIC Control Number: 246105

AIC Proposal Number:

Carrier:

Received Temperature °c: 0.9

AIC No.	Sample Identification	Date/Time Collected	Matrix: Composite	Matrix: Water	Number of Bottles	ANALYSIS REQUESTED: Bio- Monitoring	
3	**Plant Effluent**	06-18-20@0900-2400	X	X	2 SR 3	X	
G= Glass P=Plastic NO=None S=Sulfuric Acid pH2 V=VOA Vials					P		
N=Nitric Acid pH2 H=HCl to pH2 B=NaOH to pH12					NO		
T=Sodium Thiosulfate Z=Zinc Acetate A=(NH4)2NH4OH							

Remarks

Field pH Calibration

on_____@_____

Buffer

Turnaround Time Requested in: (Please Circle)
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Relinquished By:	Date/Time	Received By:	Date/Time
S. Ryders	06-18-20@0740	[signature] 0740Hrs	19 Jun 2020 0740Hrs
[signature]	19 Jun 2020 0937Hrs	D. Brown	6-19-20 0937

Comments