AMERICAN INTERPLEX CORPORATION
LABORATORIES

August 6, 2012

Test Results of
Third Quarter
Acute 48 hour Renewal
Biomonitoring Testing
for
Outfall 001
Van Buren, AR South Plant

Control No. 159681-1

Prepared for:

Ms. Kim Redo
Van Buren Municipal Utilities
2806 Bryan Road
Van Buren, AR 72956

Prepared by:

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

Van Buren Municipal Utilities
ATTN: Ms. Kim Redo
2806 Bryan Road
Van Buren, AR 72956

Re: Acute 48 hour Renewal Biomonitoring utilizing *Pimephales promelas* (Fathead Minnow) and *Daphnia pulex*
Outfall 001 - Van Buren, AR South Plant
Client NPDES Permit No. AR0021482 AFIN#17-00062

Dear Ms. Kim Redo:

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 appropriate laboratory director or qualified designee.

Testing procedures and Quality Assurance were in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" EPA-821-R-02-012, Fifth Edition, October 2002. Test results are summarized below:

Acute *Pimephales promelas* (Fathead Minnow) Survival Test: The No Observable Effects Concentration (NOEC) for survival was 35% effluent, and the LC-50 value was >35% effluent; the sample, therefore, **PASSED** at low flow of 26% effluent for lethal effects.

Acute *Daphnia pulex* Survival Test: The No Observable Effects Concentration (NOEC) for survival was 35% effluent, and the LC-50 value was >35% effluent; the sample, therefore, **PASSED** at low flow of 26% effluent for lethal effects.

AMERICAN INTERPLEX CORPORATION

John Overbey
Laboratory Director

PDF cc: Van Buren Municipal Utilities
ATTN: Ms. Kim Redo
kimredo@aol.com

Table of Contents

I. Introduction and Summary

Biomonitoring testing of 48-hour renewal definitive toxicity tests using *Daphnia pulex* and *Pimephales promelas* were performed.

The *Daphnia pulex* test was conducted from July 26, 2012 at 1440 to July 28, 2012 at 1610.

The *Pimephales promelas* test was conducted from July 26, 2012 at 1600 to July 28, 2012 at 1430.

The tests were performed in accordance with EPA-821-R-02-012. Statistical analyses were performed on the observed data.

The tests were conducted in temperature and light cycle controlled environmental chamber. The test temperature was 25 degrees C +/- 1 degree for the *Daphnia pulex* and 25 degrees C +/- 1 degree for the *Pimephales promelas.*

II. Control Acceptance Criteria

ORGANISM	CRITERIA	RESULTS	PASS/FAIL
Daphnia pulex	Control Survival >= 90%	100	PASS
Pimephales promelas	Control Survival >= 90%	100	PASS

III. Outlined Report

A. Introduction

1. Permit Number: AR0021482 AFIN#17-00062
2. Test Requirements: 48-hour renewal definitive toxicity test using:
   Daphnia pulex
   Pimephales promelas

B. Source of Effluent/Dilution Water

1. Effluent Samples:
   a. Sampling Point: Outfall 001
      July 25 to July 26
   b. Chemical Data:

Analysis	Sample 1	Sample 2
Dissolved oxygen (mg/l)	7.7	7.9
pH (standard units)	8.1	7.6
Alkalinity (mg/l as CaCO3)	130	140
Hardness (mg/l as CaCO3)	58	65
Conductivity (umhos/cm)	340	430
Residual Chlorine (mg/l)	0.050	0.050

2. Dilution Water Samples: Synthetic Moderately Hard Water #3893
   a. Dates Collected/Prepared: July 18 through August 1, 2012
   b. Chemical Data:

Analysis	Sample 1	Sample 2
Dissolved oxygen (mg/l)	7.8	8.0
pH (standard units)	8.2	8.2
Alkalinity (mg/l as CaCO3)	57	57
Hardness (mg/l as CaCO3)	83	83
Conductivity (umhos/cm)	140	160
Residual Chlorine (mg/l)	<0.05	<0.05

C. Test Methods
1. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, (Fifth Ed.), EPA-821-R-02-012, 48-hour acute definitive test.
   a. Endpoints:
      Death; the criteria employed to establish death are:
      i. No movement
      ii. No reaction to gentle prodding

Criteria	*Pimephales promelas*	*Daphnia pulex*
Type and Volume of Test Chamber	500 ml disposable beaker	30 ml disposable beaker
Volume of Sample	250 ml	25 ml
Organisms per chamber	8	8
Replicates per dilution	5	5
Test Temperature	25 deg. C	25 deg. C
Test Initiated	July 26, 2012 at 1600	July 26, 2012 at 1440
Test Terminated	July 28, 2012 at 1430	July 28, 2012 at 1610
Feeding	None required	None required
Age of Test Organisms	8 days	<24 hours

2. Chemical Methods Employed:

Analysis	Method
Dissolved oxygen (mg/l)	SM 4500-O C
pH (standard units)	SM 4500-H+ B
Alkalinity (mg/l as CaCO3)	SM 2320 B
Hardness (mg/l as CaCO3)	EPA 200.7
Conductivity (umhos/cm)	EPA 120.1
Residual Chlorine (mg/l)	SM 4500-CL- F
Temperature (deg.C)	EPA 170.1

D. Test Organisms
1. Scientific Name
Daphnia pulex
Pimephales promelas

2. Acclimation of test organisms:
Daphnia pulex
Organisms were obtained from in-house cultures. The organisms were raised in moderately hard reconstituted water.
Pimephales promelas
Organisms were obtained from in-house cultures. The organisms were raised in moderately hard reconstituted water.

E. Quality Assurance
1. Toxicity Tests
a. Reference Toxicant: Sodium Chloride
b. Date of test:
Daphnia pulex: July 23, 2012 at 1545 to July 25, 2012 at 1410
Pimephales promelas: July 10, 2012 a 1430 to July 12, 2012 at 1240
c. Synthetic moderately hard dilution water used

Organism	LC50	Warning Limits
Daphnia pulex	2.10 g/l	1.36-2.18 g/l
Pimephales promelas	6.81 g/l	6.18-8.22 g/l

2. Chemical and Physical Analyses

Analysis	% Recovery	Relative % Difference
Alkalinity	NA	0.00
Hardness	102	0.450
pH	101	0.133
Conductivity	106	3.74

F. Organism History
Daphnia pulex
Date: July 26, 2012 at 1440
Age: <24 hours
Source: In-house culture
Water Chemistry Record:
Alkalinity: 57-64 mg/l
Hardness: 80-100 mg/l
Temperature: 25 deg.C
Pimephales promelas (Fathead minnow)
Date: July 26, 2012 at 1600
Age: 8 days
Source: In-house culture
Water Chemistry Record:
Alkalinity: 57-64 mg/l
Hardness: 80-100 mg/l
Temperature: 25 deg.C

IV. Results Summary

Daphnia pulex and *Pimephales promelas* are exposed in a static renewal system to different concentrations of effluent and dilution water. Effluent dilutions for this test were 11%, 15%, 20%, 26%, 35%. The low-flow concentration was 26%. Test results were based on survival.

Daphnia pulex

Statistical analyses:
NOEC = 35%
LC50 = >35%

Concentration	24 hour % Survival	48 hour % Survival
Control	100	100
11%	100	100
15%	100	100
20%	100	100
26%	100	100
35%	100	100

Pimephales promelas

Statistical analyses:
NOEC = 35%
LC50 = >35%

Concentration	24 hour % Survival	48 hour % Survival
Control	100	100
11%	100	100
15%	100	97.5
20%	95.0	95.0
26%	100	100
35%	100	100

Appendix: A1

Daphnia pulex
Survival Data

Number of organisms per chamber: 8
Volume of test chamber: 30 ml

Age of organisms: <24 hours
Volume of test solution: 25 ml

Effluent Concentration		Number of Survivors 24 Hours	Number of Survivors 48 Hours	% Survival	CV %
Control	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
11%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
15%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
20%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
26%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
35%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		

CV = Coefficient of variance = standard deviation X 100/mean

Appendix: A1

Pimephales promelas
Survival Data

Number of organisms per chamber: 8
Volume of test chamber: 500 ml

Age of organisms: 8 days
Volume of test solution: 250 ml

Effluent Concentration		Number of Survivors 24 Hours	Number of Survivors 48 Hours	% Survival	CV %
Control	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
11%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
15%	rep. A	8	7	97.5	5.73
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
20%	rep. A	8	8	95.0	7.21
	rep. B	7	7		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	7	7		
26%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		
35%	rep. A	8	8	100	0.00
	rep. B	8	8		
	rep. C	8	8		
	rep. D	8	8		
	rep. E	8	8		

CV = Coefficient of variance = standard deviation X 100/mean

Appendix A2: Statistics

Daphnia pulex

		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	11%	1	1.00000	1.39310
2	11%	2	1.00000	1.39310
2	11%	3	1.00000	1.39310
2	11%	4	1.00000	1.39310
2	11%	5	1.00000	1.39310
3	15%	1	1.00000	1.39310
3	15%	2	1.00000	1.39310
3	15%	3	1.00000	1.39310
3	15%	4	1.00000	1.39310
3	15%	5	1.00000	1.39310
4	20%	1	1.00000	1.39310
4	20%	2	1.00000	1.39310
4	20%	3	1.00000	1.39310
4	20%	4	1.00000	1.39310
4	20%	5	1.00000	1.39310
5	26%	1	1.00000	1.39310
5	26%	2	1.00000	1.39310
5	26%	3	1.00000	1.39310
5	26%	4	1.00000	1.39310
5	26%	5	1.00000	1.39310
6	35%	1	1.00000	1.39310
6	35%	2	1.00000	1.39310
6	35%	3	1.00000	1.39310
6	35%	4	1.00000	1.39310
6	35%	5	1.00000	1.39310

Appendix A2: Statistics

Daphnia pulex

Shapiro - Wilk's Test for Normality		Transform: Arc Sin(Square Root(Y))
D = 0		
W = 0		
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	11%	27.50	16.00	5.00	
3	15%	27.50	16.00	5.00	
4	20%	27.50	16.00	5.00	
5	26%	27.50	16.00	5.00	
6	35%	27.50	16.00	5.00	

Critical values are 1 tailed (k=5)

Appendix A2: Statistics

Pimephales promelas

		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	11%	1	1.00000	1.39310
2	11%	2	1.00000	1.39310
2	11%	3	1.00000	1.39310
2	11%	4	1.00000	1.39310
2	11%	5	1.00000	1.39310
3	15%	1	0.87500	1.20940
3	15%	2	1.00000	1.39310
3	15%	3	1.00000	1.39310
3	15%	4	1.00000	1.39310
3	15%	5	1.00000	1.39310
4	20%	1	1.00000	1.39310
4	20%	2	0.87500	1.20940
4	20%	3	1.00000	1.39310
4	20%	4	1.00000	1.39310
4	20%	5	0.87500	1.20940
5	26%	1	1.00000	1.39310
5	26%	2	1.00000	1.39310
5	26%	3	1.00000	1.39310
5	26%	4	1.00000	1.39310
5	26%	5	1.00000	1.39310
6	35%	1	1.00000	1.39310
6	35%	2	1.00000	1.39310
6	35%	3	1.00000	1.39310
6	35%	4	1.00000	1.39310
6	35%	5	1.00000	1.39310

Appendix A2: Statistics

Pimephales promelas

Shapiro - Wilk's Test for Normality		Transform: Arc Sin(Square Root(Y))
D = 0.06749		
W = 0.7138		
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

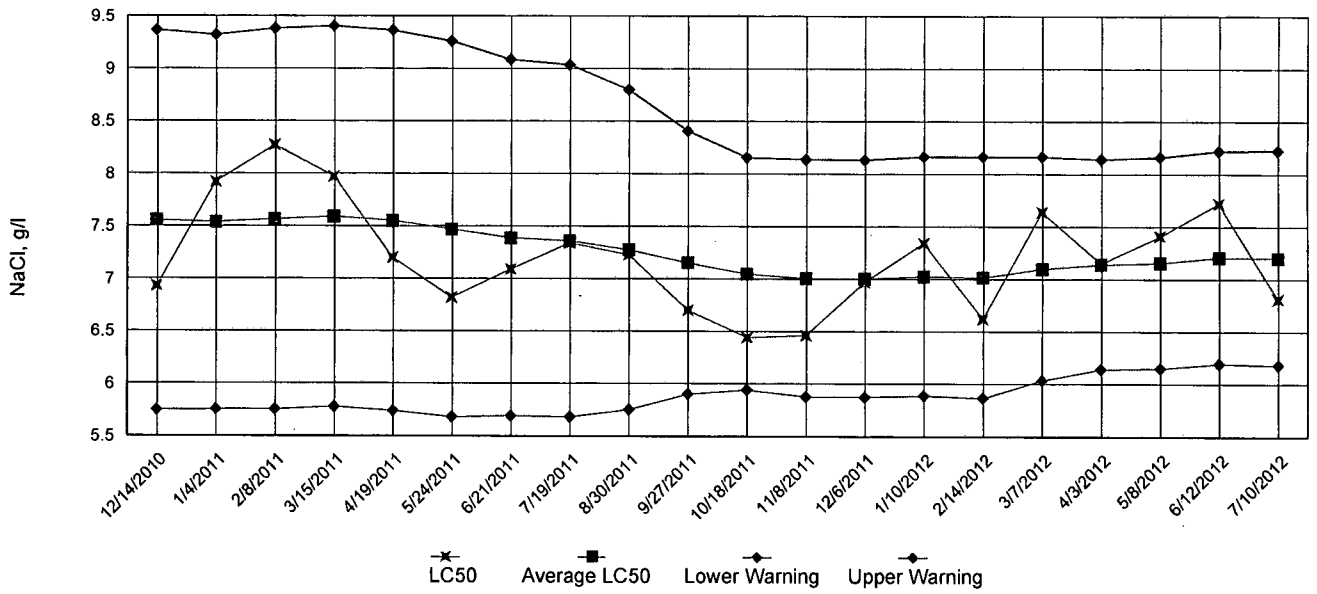
Group	Identification	Rank Sum	Critical Value	DF	Sig 0.05
1	Control				
2	11%	27.50	16.00	5.00	
3	15%	25.00	16.00	5.00	
4	20%	22.50	16.00	5.00	
5	26%	27.50	16.00	5.00	
6	35%	27.50	16.00	5.00	

Critical values are 1 tailed (k=5)

Appendix: A3

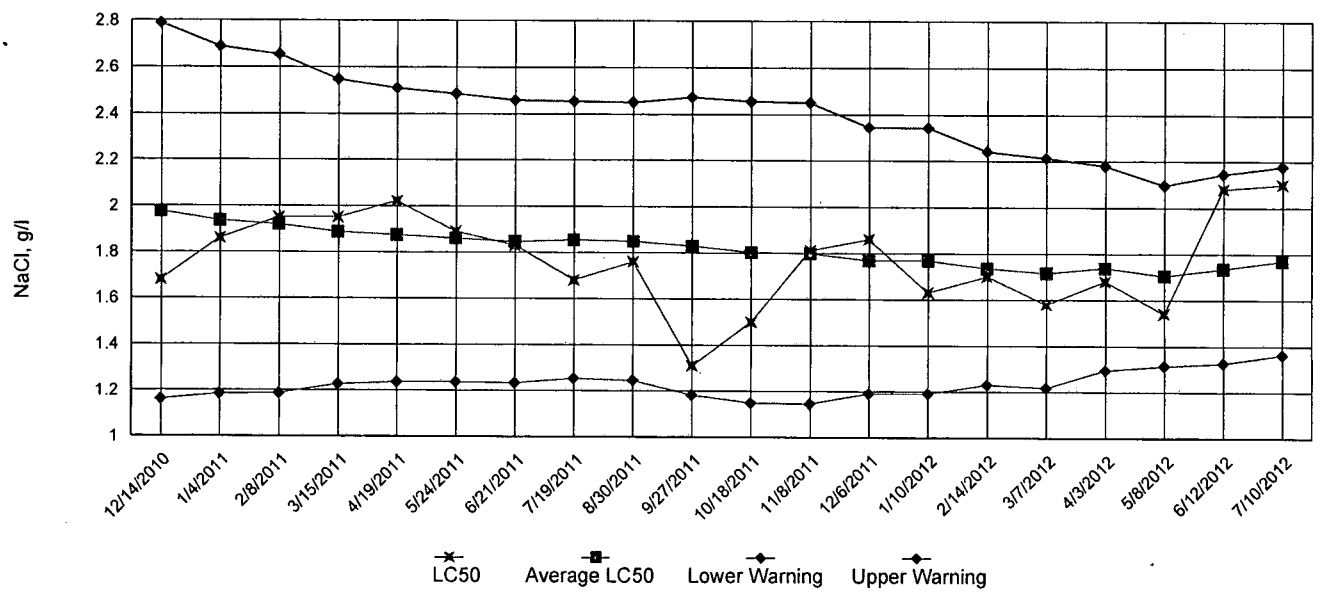
Acute Reference Toxicant, *Pimephales promelas* (Fathead Minnow)

LC50 Survival Data



Acute Reference Toxicant, *Daphnia pulex*

LC50 Survival Data



Appendix: A4

Chemical Data for
Pimephales promelas
and
Daphnia pulex

Day 1		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.8	7.7	7.6	7.8	7.7	7.4
DO, mg/l	Final 1*	7.8	7.5	7.6	7.7	7.7	7.5
DO, mg/l	Final 2*	7.8	7.7	7.7	7.7	7.7	7.6
pH, su	Initial	8.2	8.1	8.1	8.0	8.0	7.9
pH, su	Final 1*	8.1	8.0	8.0	8.0	8.0	8.0
pH, su	Final 2*	8.2	8.1	8.1	8.1	8.0	8.0
Alkalinity, mg/l		57	NA	NA	NA	76	NA
Hardness, mg/l		83	NA	NA	NA	80	NA
Conductivity, umho/cm		140	170	180	200	210	230
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

Day 2		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	8.0	7.6	7.7	7.8	7.5	7.6
DO, mg/l	Final 1*	7.9	7.8	7.7	8.0	7.7	7.7
DO, mg/l	Final 2*	7.7	7.5	7.5	7.5	7.5	7.4
pH, su	Initial	8.2	8.1	8.1	8.1	8.0	8.0
pH, su	Final 1*	8.1	8.1	8.1	8.1	8.1	8.1
pH, su	Final 2*	8.1	8.1	8.1	8.1	8.1	8.1
Alkalinity, mg/l		57	NA	NA	NA	86	NA
Hardness, mg/l		83	NA	NA	NA	97	NA
Conductivity, umho/cm		160	170	180	190	210	230
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

*1 data from *Pimephales promelas*
*2 data from *Daphnia pulex*

Appendix: B

Daphnia pulex Survival Data

Permitee:	Van Buren Municipal Utilities	Critical Dilution:	26%
NPDES No:	AR0021482 AFIN#17-00062	Sample Source:	Outfall 001
Contact:	Ms. Kim Redo	Species Age:	<24 hours
Test Type:	48-hour renewal definitive toxicity test	Analysts:	275, 280, 298, 304
Dilution Water:	Synthetic Moderately Hard Water #3893		
Test Initiated:	July 26, 2012 at 1440		
Test Terminated:	July 28, 2012 at 1610		

PERCENT SURVIVAL

24 hours	Control	11%	15%	20%	26%	35%
Rep. A	100	100	100	100	100	100
Rep. B	100	100	100	100	100	100
Rep. C	100	100	100	100	100	100
Rep. D	100	100	100	100	100	100
Rep. E	100	100	100	100	100	100

48 hours	Control	11%	15%	20%	26%	35%
Rep. A	100	100	100	100	100	100
Rep. B	100	100	100	100	100	100
Rep. C	100	100	100	100	100	100
Rep. D	100	100	100	100	100	100
Rep. E	100	100	100	100	100	100

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate. Is the mean survival at 48 hours significantly different (p=0.05) than the control survival for the % effluent corresponding to:

a) Low Flow 26%: _____ Yes X No
b) 1/2 Low Flow (NA): _____ Yes _____ No

If you answered No to 1a) enter [0], otherwise enter [1]: 0

Enter response to item 2 on the DMR Form, parameter #TEM3D.

NOEL *Daphnia pulex* lethality #TOM3D: 35%

Coefficient of variation for *Daphnia pulex* survival #TQM3D: 0

Enter percent effluent corresponding to LC-50 below.
LC-50 effluent: >35%
Method of LC-50 calculation: NA

Reference Toxicity Test Performed on July 23, 2012 at 1545 to July 25, 2012 at 1410:
LC-50 effluent: 2.10 g/l
Warning Limits: 1.36 to 2.18 g/l

Appendix: B

Daphnia pulex Chemical Parameters Chart

Permitee: Van Buren Municipal Utilities
NPDES No: AR0021482 AFIN#17-00062
Contact: Ms. Kim Redo
Test Type: 48-hour renewal definitive toxicity test
Dilution Water: Synthetic Moderately Hard Water #3893
Test Initiated: July 26, 2012 at 1440
Test Terminated: July 28, 2012 at 1610

Critical Dilution: 26%
Sample Source: Outfall 001
Species Age: <24 hours
Analysts: 275, 280, 298, 304

Day 1		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.8	7.7	7.6	7.8	7.7	7.4
DO, mg/l	Final	7.8	7.7	7.7	7.7	7.7	7.6
pH, su	Initial	8.2	8.1	8.1	8.0	8.0	7.9
pH, su	Final	8.2	8.1	8.1	8.1	8.0	8.0
Alkalinity, mg/l		57	NA	NA	NA	76	NA
Hardness, mg/l		83	NA	NA	NA	80	NA
Conductivity, umho/cm		140	170	180	200	210	230
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

Day 2		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	8.0	7.6	7.7	7.8	7.5	7.6
DO, mg/l	Final	7.7	7.5	7.5	7.5	7.5	7.4
pH, su	Initial	8.2	8.1	8.1	8.1	8.0	8.0
pH, su	Final	8.1	8.1	8.1	8.1	8.1	8.1
Alkalinity, mg/l		57	NA	NA	NA	86	NA
Hardness, mg/l		83	NA	NA	NA	97	NA
Conductivity, umho/cm		160	170	180	190	210	230
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

Appendix: B

Pimephales promelas Survival Data

Permitee:	Van Buren Municipal Utilities	Critical Dilution:	26%
NPDES No:	AR0021482 AFIN#17-00062	Sample Source:	Outfall 001
Contact:	Ms. Kim Redo	Species Age:	8 days
Test Type:	48-hour renewal definitive toxicity test	Analysts:	275, 280, 298, 304
Dilution Water:	Synthetic Moderately Hard Water #3893		
Test Initiated:	July 26, 2012 at 1600		
Test Terminated:	July 28, 2012 at 1430		

PERCENT SURVIVAL

24 hours	Control	11%	15%	20%	26%	35%
Rep. A	100	100	100	100	100	100
Rep. B	100	100	100	87.5	100	100
Rep. C	100	100	100	100	100	100
Rep. D	100	100	100	100	100	100
Rep. E	100	100	100	87.5	100	100

48 hours	Control	11%	15%	20%	26%	35%
Rep. A	100	100	87.5	100	100	100
Rep. B	100	100	100	87.5	100	100
Rep. C	100	100	100	100	100	100
Rep. D	100	100	100	100	100	100
Rep. E	100	100	100	87.5	100	100

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate. Is the mean survival at 48 hours significantly different (p=0.05) than the control survival for the % effluent corresponding to:

a) Low Flow 26%: _____ Yes X No
b) 1/2 Low Flow (NA): _____ Yes _____ No

If you answered No to 1a) enter [0], otherwise enter [1]: 0

Enter response to item 2 on the DMR Form, parameter #TEM6C.

NOEL *Pimephales promelas* lethality #TOM6C: 35%

Coefficient of variation for *Pimephales promelas* survival #TQM6C: 0

Enter percent effluent corresponding to LC-50 below.
LC-50 effluent: >35%
Method of LC-50 calculation: NA

Reference Toxicity Test Performed on July 10, 2012 a 1430 to July 12, 2012 at 1240:
LC-50 effluent: 6.81 g/l
Warning Limits: 6.18 to 8.22 g/l

Appendix: B

Pimephales promelas Chemical Parameters Chart

Permitee:	Van Buren Municipal Utilities	Critical Dilution:	26%
NPDES No:	AR0021482 AFIN#17-00062	Sample Source:	Outfall 001
Contact:	Ms. Kim Redo	Species Age:	8 days
Test Type:	48-hour renewal definitive toxicity test	Analysts:	275, 280, 298, 304
Dilution Water:	Synthetic Moderately Hard Water #3893		
Test Initiated:	July 26, 2012 at 1600		
Test Terminated:	July 28, 2012 at 1430		

Day 1		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.8	7.7	7.6	7.8	7.7	7.4
DO, mg/l	Final	7.8	7.5	7.6	7.7	7.7	7.5
pH, su	Initial	8.2	8.1	8.1	8.0	8.0	7.9
pH, su	Final	8.1	8.0	8.0	8.0	8.0	8.0
Alkalinity, mg/l		57	NA	NA	NA	76	NA
Hardness, mg/l		83	NA	NA	NA	80	NA
Conductivity, umho/cm		140	170	180	200	210	230
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

Day 2		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	8.0	7.6	7.7	7.8	7.5	7.6
DO, mg/l	Final	7.9	7.8	7.7	8.0	7.7	7.7
pH, su	Initial	8.2	8.1	8.1	8.1	8.0	8.0
pH, su	Final	8.1	8.1	8.1	8.1	8.1	8.1
Alkalinity, mg/l		57	NA	NA	NA	86	NA
Hardness, mg/l		83	NA	NA	NA	97	NA
Conductivity, umho/cm		160	170	180	190	210	230
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

AMERICAN INTERPLEX CORPORATION LABORATORIES

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: Van Buren Municipal Utilities
Project Reference: South Plant - Bio monitoring
Project Manager: Kim Redo
Sampled By: KR / DG / JT

PO No.

Sample Matrix: WATER, SOIL

No of BOTTLES

Analyses Requested: Acute Biomonitoring; Table III Metals + Hg; (P) No Preservative; (P) 1:1 HNO_3

AIC Control No: 159681
AIC Proposal No:
Carrier: UPS
Received Temperature °C: ice

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	WATER	SOIL	BOTTLES	pH (s.u.)	Temp (°C)	D.O. (mg/L)
1	VBSPE1	7/24-25/12		✓	✓		1	7.47	4.7	4.1
	VBSPE	7/24-25/12		✓	✓		1	7.47	4.7	4.1
	VBSPI	7/24-25/12		✓	✓			7.42	10.8	

G = Glass, NO = none; P = Plastic, 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

Turnaround Time Requested: (Please circle)
NORMAL or EXPEDITED IN ___ DAYS
Expedited results requested by: ___
Who should AIC contact with questions: Kim Redo
Phone: 479-474-0941 Fax: 479-471-8964
Report Attention to: Kim Redo
Report Address to: kimredo@aol.com

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/25/12 + cUPS		
Relinquished By:	Date/Time	Received in Lab By:	Date/Time
		[signature]	7-26-12 10:00a

Comments: UPS 1ZA53E530395400 8865

AMERICAN INTERPLEX CORPORATION
LABORATORIES

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: Van Buren Municipal Utilities
Project Reference: South Plant - Biomonitoring
Project Manager: Kim Redo
Sampled By: RR / DG / JT

PO No.

AIC Control No: 159681
AIC Proposal No:
Carrier: UPS
Received Temperature °C: 2C

AIC No.	Sample Identification	Date/Time Collected	GRAB	COMP	Sample Matrix: WATER	Sample Matrix: SOIL	No of BOTTLES	Analyses Requested: Acute Biomonitoring	Analyses Requested: NH3-N	Analyses Requested: pres w/ H2SO4
2	VBSPE2	7/25-26/12 7:55AM		✓	✓		2	N	✓	

pH (S.U.)	Temp (°C)	D.O. (mg/L)
7.67	10.7	7.5

G = Glass, NO = none; P = Plastic, 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

Turnaround Time Requested: (Please circle)
NORMAL or EXPEDITED IN ___ DAYS
Expedited results requested by: ___
Who should AIC contact with questions: Kim Redo
Phone: 479-474-0541 Fax: 479-471-8965
Report Attention to: Kim Redo
Report Address to: kimredo@aol.com

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/26/12 to UPS		
Relinquished By:	Date/Time	Received in Lab By: [signature]	Date/Time 7-27-12 1030A

Comments: 12A5365303996809