

April 17, 2013

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

Control No. 166476-1

Prepared for:

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

Prepared by:

AMERICAN INTERPLEX CORPORATION
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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:

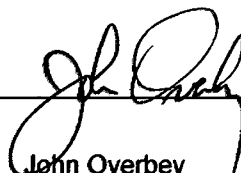
This report is the analytical results and supporting information for the samples submitted to American Interplex Corporation (AIC). The following results are applicable only to the sample identified by the control number referenced above. Accurate assessment of the data requires access to the entire 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
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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 April 11, 2013 at 1355 to April 13, 2013 at 1330.

The *Pimephales promelas* test was conducted from April 11, 2013 at 1545 to April 13, 2013 at 1555.

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
<i>Daphnia pulex</i>	Control Survival >= 90%	100	PASS
<i>Pimephales promelas</i>	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
April 10 to April 11
 - b. Chemical Data:

Analysis	Sample 1	Sample 2
Dissolved oxygen (mg/l)	6.0	8.0
pH (standard units)	7.4	7.7
Alkalinity (mg/l as CaCO3)	100	99
Hardness (mg/l as CaCO3)	55	55
Conductivity (umhos/cm)	580	600
Residual Chlorine (mg/l)	<0.05	<0.05

2. Dilution Water Samples: Synthetic Moderately Hard Water #3979
 a. Dates Collected/Prepared: April 4 through April 18, 2013
 b. Chemical Data:

Analysis	Sample 1	Sample 2
Dissolved oxygen (mg/l)	7.7	7.7
pH (standard units)	7.8	7.8
Alkalinity (mg/l as CaCO ₃)	57	57
Hardness (mg/l as CaCO ₃)	88	88
Conductivity (umhos/cm)	300	310
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	<i>Pimephales promelas</i>	<i>Daphnia pulex</i>
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	April 11, 2013 at 1545	April 11, 2013 at 1355
Test Terminated	April 13, 2013 at 1555	April 13, 2013 at 1330
Feeding	None required	None required
Age of Test Organisms	7 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 CaCO ₃)	SM 2320 B
Hardness (mg/l as CaCO ₃)	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: April 2, 2013 at 1615 to April 4, 2013 at 1430

Pimephales promelas: April 2, 2013 at 1040 to April 4, 2013 at 1050

c. Synthetic moderately hard dilution water used

Organism	LC50	Warning Limits
<i>Daphnia pulex</i>	1.94 g/l	1.23-2.52 g/l
<i>Pimephales promelas</i>	6.25 g/l	6.10-7.94 g/l

2. Chemical and Physical Analyses

Analysis	% Recovery	Relative % Difference
Alkalinity	NA	1.37
Hardness	99.5	0.460
pH	101	0.00
Conductivity	104	0.656

F. Organism History

Daphnia pulex

Date: April 11, 2013 at 1355

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: April 11, 2013 at 1545

Age: 7 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

The *Daphnia pulex* test was conducted from April 11, 2013 at 1355 to April 13, 2013 at 1330.

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

The *Pimephales promelas* test was conducted from April 11, 2013 at 1545 to April 13, 2013 at 1555.

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

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		% Survival	CV %
		24 Hours	48 Hours		
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: 7 days
Volume of test solution: 250 ml

Effluent Concentration		Number of Survivors		% Survival	CV %
		24 Hours	48 Hours		
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 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	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

Pimephales promelas

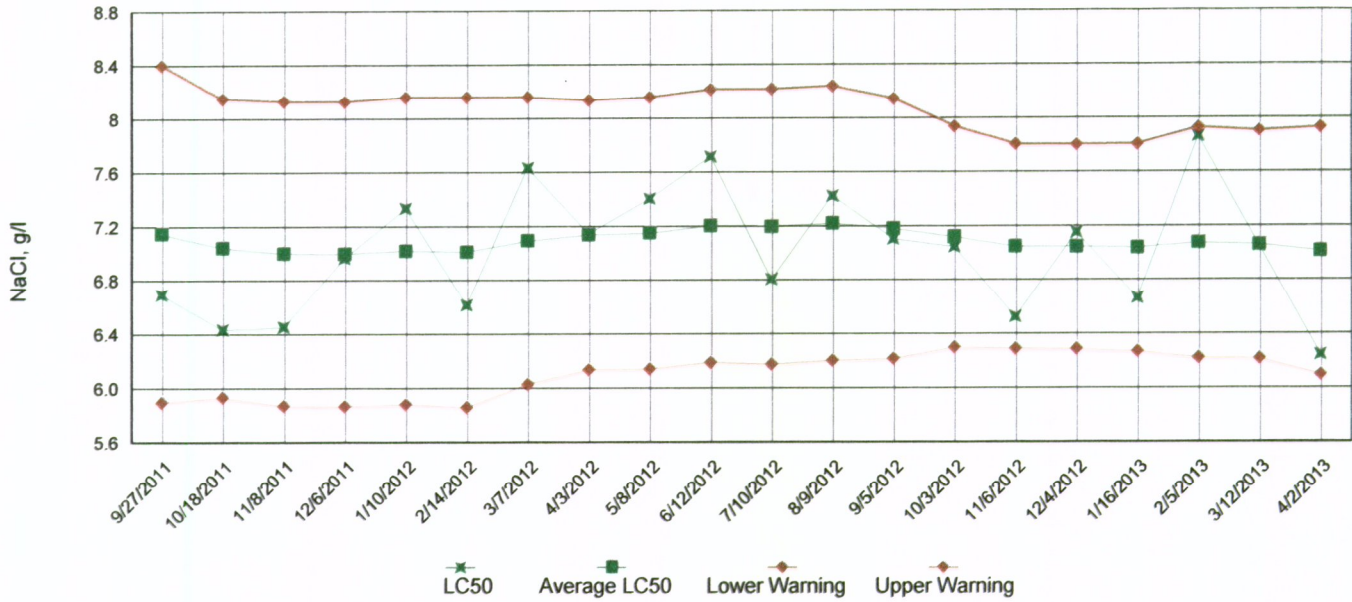
Shapiro - Wilk's Test for Normality		Transform: Arc Sin(Square Root(Y))
D = 0 W = 0 Critical W = 0.9 (alpha = 0.01, N = 30) Critical W = 0.927 (alpha = 0.05, N = 30)		
Data FAIL normality test (alpha = 0.01).		

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: A3

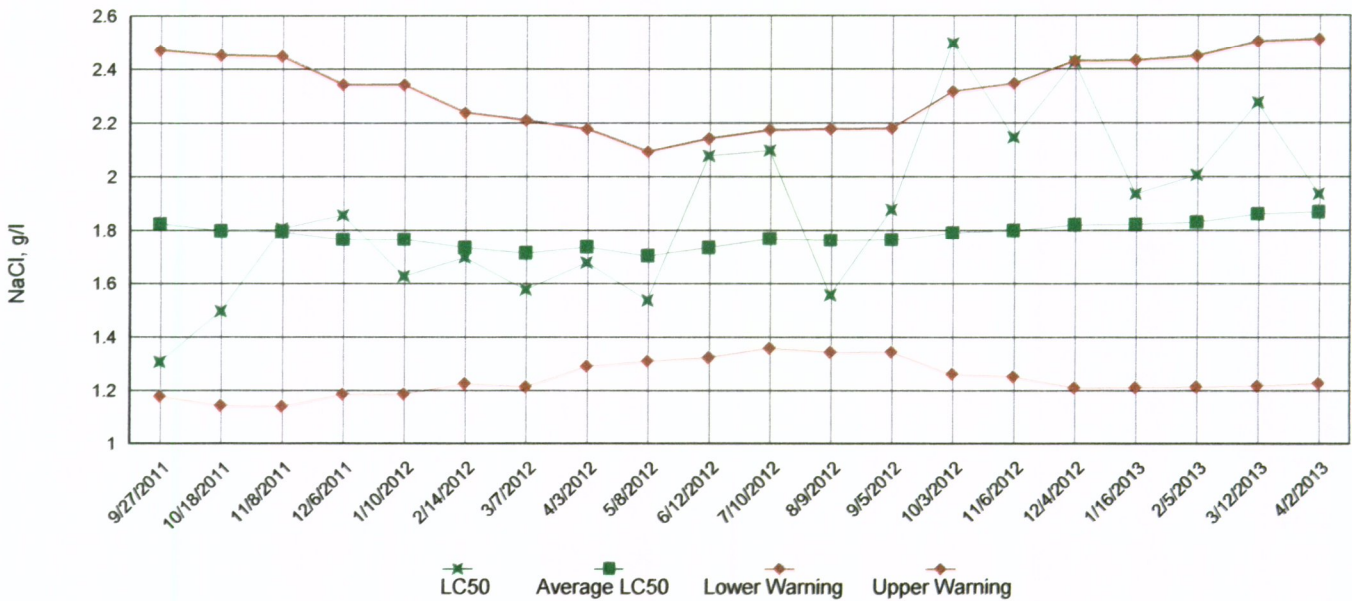
Acute Reference Toxicant, *Pimephales promelas* (Fathead Minnow)

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	7.7	7.9	7.8	7.7	7.3	7.1
DO, mg/l	Final 1*	7.4	7.2	7.2	7.4	7.5	7.3
DO, mg/l	Final 2*	7.6	7.7	7.6	7.7	7.6	7.8
pH, su	Initial	7.8	7.7	7.6	7.6	7.6	7.6
pH, su	Final 1*	7.9	7.8	7.8	7.9	7.9	7.8
pH, su	Final 2*	7.8	7.9	7.9	7.9	7.9	8.0
Alkalinity, mg/l		57	NA	NA	NA	70	NA
Hardness, mg/l		88	NA	NA	NA	79	NA
Conductivity, umho/cm		300	330	340	360	370	400
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

Day 2		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.7	7.7	7.6	7.8	7.6	7.8
DO, mg/l	Final 1*	7.6	7.4	7.4	7.7	7.8	7.6
DO, mg/l	Final 2*	7.6	7.4	7.4	7.2	7.4	7.5
pH, su	Initial	7.8	7.9	7.9	7.9	7.9	8.0
pH, su	Final 1*	7.8	7.8	7.8	7.8	7.9	7.9
pH, su	Final 2*	8.0	7.9	7.9	7.9	7.9	7.9
Alkalinity, mg/l		57	NA	NA	NA	68	NA
Hardness, mg/l		88	NA	NA	NA	78	NA
Conductivity, umho/cm		310	340	350	360	380	410
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

Permittee:	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:	280, 298, 304, 307
Dilution Water:	Synthetic Moderately Hard Water #3979		
Test Initiated:	April 11, 2013 at 1355		
Test Terminated:	April 13, 2013 at 1330		

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 April 2, 2013 at 1615 to April 4, 2013 at 1430:

LC-50 effluent: 1.94 g/l
 Warning Limits: 1.23 to 2.52 g/l

Appendix: B

Daphnia pulex 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:	<24 hours
Test Type:	48-hour renewal definitive toxicity test	Analysts:	280, 298, 304, 307
Dilution Water:	Synthetic Moderately Hard Water #3979		
Test Initiated:	April 11, 2013 at 1355		
Test Terminated:	April 13, 2013 at 1330		

Day 1		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.7	7.9	7.8	7.7	7.3	7.1
DO, mg/l	Final	7.6	7.7	7.6	7.7	7.6	7.8
pH, su	Initial	7.8	7.7	7.6	7.6	7.6	7.6
pH, su	Final	7.8	7.9	7.9	7.9	7.9	8.0
Alkalinity, mg/l		57	NA	NA	NA	70	NA
Hardness, mg/l		88	NA	NA	NA	79	NA
Conductivity, umho/cm		300	330	340	360	370	400
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

Day 2		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.7	7.7	7.6	7.8	7.6	7.8
DO, mg/l	Final	7.6	7.4	7.4	7.2	7.4	7.5
pH, su	Initial	7.8	7.9	7.9	7.9	7.9	8.0
pH, su	Final	8.0	7.9	7.9	7.9	7.9	7.9
Alkalinity, mg/l		57	NA	NA	NA	68	NA
Hardness, mg/l		88	NA	NA	NA	78	NA
Conductivity, umho/cm		310	340	350	360	380	410
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:	7 days
Test Type:	48-hour renewal definitive toxicity test	Analysts:	280, 298, 304, 307
Dilution Water:	Synthetic Moderately Hard Water #3979		
Test Initiated:	April 11, 2013 at 1545		
Test Terminated:	April 13, 2013 at 1555		

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 #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 April 2, 2013 at 1040 to April 4, 2013 at 1050:

LC-50 effluent: 6.25 g/l
 Warning Limits: 6.10 to 7.94 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:	7 days
Test Type:	48-hour renewal definitive toxicity test	Analysts:	280, 298, 304, 307
Dilution Water:	Synthetic Moderately Hard Water #3979		
Test Initiated:	April 11, 2013 at 1545		
Test Terminated:	April 13, 2013 at 1555		

Day 1		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.7	7.9	7.8	7.7	7.3	7.1
DO, mg/l	Final	7.4	7.2	7.2	7.4	7.5	7.3
pH, su	Initial	7.8	7.7	7.6	7.6	7.6	7.6
pH, su	Final	7.9	7.8	7.8	7.9	7.9	7.8
Alkalinity, mg/l		57	NA	NA	NA	70	NA
Hardness, mg/l		88	NA	NA	NA	79	NA
Conductivity, umho/cm		300	330	340	360	370	400
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

Day 2		Control	11%	15%	20%	26%	35%
DO, mg/l	Initial	7.7	7.7	7.6	7.8	7.6	7.8
DO, mg/l	Final	7.6	7.4	7.4	7.7	7.8	7.6
pH, su	Initial	7.8	7.9	7.9	7.9	7.9	8.0
pH, su	Final	7.8	7.8	7.8	7.8	7.9	7.9
Alkalinity, mg/l		57	NA	NA	NA	68	NA
Hardness, mg/l		88	NA	NA	NA	78	NA
Conductivity, umho/cm		310	340	350	360	380	410
Residual Chlorine, mg/l		<0.05	NA	NA	NA	<0.05	NA

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: Van Buren Municipal Utilities			PO No.		NO OF BOTTLES	ANALYSES REQUESTED ¹										AIC CONTROL NO: 1166476				
Project Reference: South Plant			SAMPLE MATRIX			AIC PROPOSAL NO:	Water	Soil	Biomonitors	Metals									Carrier/Tracking No. FedEx	
Project Manager: Kim Redo			GRA B	COMP	WATER														SOIL	NO OF BOTTLES
Sampled By: KR/DGL/JT																				
AIC No.	Sample Identification	Date/Time Collected	GRA B	COMP	WATER	SOIL	NO OF BOTTLES	Biomonitors	Metals											
1	VBSPE1	4/9-10/13 7:55AM	✓	✓	✓		1	✓												
	VBSPE	4/9-10/13 7:55AM	✓	✓	✓		1	✓												
	VBSPE	4/9-10/13 7:50AM	✓	✓	✓		1	✓												
																		pH (s.u.) 7.57		
																		Temp (C) 4.8		
																		D.O. (mg/L) 8.07		
																		VBSPE pH = 7.19 s.u. Temp = 5.4 °C		
																		Field pH calibration on _____ @ _____ Buffer.		
			G = Glass NO = none		R = 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							Relinquished By: <i>Kim Redo</i>		Date/Time: 4/10/13		Received By:		Date/Time:							
Expedited results requested by: _____									7:00 Fed. EX											
Who should AIC contact with questions: <i>Kim Redo</i>							Relinquished By:		Date/Time:		Received in Lab By: <i>Kim Redo</i>		Date/Time: 4-11-13 1000							
Phone: _____ Fax: _____																				
Report Attention to: <i>Kim Redo</i>																				
Report Address to: <i>kimr@vbmua.arcoxmail.com</i>																				
							Comments:		(9612019) 0298656 1500168											



CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: <u>Van Buren Municipal Utilities</u>			PO No.		NO OF BOTTLES <i>1</i>	ANALYSES REQUESTED ¹										AIC CONTROL NO: <u>166476</u>			
Project Reference: <u>South Plant</u>			SAMPLE MATRIX			WATER SOIL											AIC PROPOSAL NO:		
Project Manager: <u>Kim Redo</u>																	Carrier/Tracking No. <u>FedEx</u>		
Sampled By:			G	C														Received Temperature C <u>2.6°C</u>	
AIC No.	Sample Identification	Date/Time Collected	A	O														pH (su) <u>7.63</u>	
<u>2</u>	<u>URSPE2</u>	<u>4/10-11/13 7:55am</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														Temp (C) <u>2.3</u>	
																		DO (mg/L) <u>9.11</u>	
Container Type																Field pH calibration on _____ @ _____			
Preservative																Buffer:			
G = Glass <u>NO = None</u>			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) <u>NORMAL</u> or EXPEDITED IN _____ DAYS					Relinquished By: <u>Kim Redo</u>		Date/Time: <u>4/11/13</u>		Received By:		Date/Time								
Expedited results requested by: _____					Relinquished By:		Date/Time		Received in Lab By: <u>Luigi 22</u>		Date/Time: <u>4-12-13 1200</u>								
Who should AIC contact with questions: <u>Kim Redo</u>					Comments: <u>ON ICE</u>														
Phone: _____ Fax: _____																			
Report Attention to: <u>Kim Redo</u>																			
Report Address to: <u>kim@vbm.u.arcoxmail.com</u>																			

CITY OF VAN BUREN Sanitary Sewer Overflow Monthly Report

Facility Name: MAIN PLANT Permit Number: ARO021482 Reporting Period (Month/Year): MAY 2013

No Sanitary Sewer Overflows This Monitoring Period

Summary Report Code Descriptions			
Cause(s) of SSO	SSO Impact	Action(s) Taken	Ultimate Discharge Location
CO-Construction	D-Debris	NEAH-No Evidence of Adverse Health or Environmental Impact	WO-Work Order
E-Equipment Failure	G-Grease	OEHC-Observed or Evidence of Human Contact	EC-Environmental Cleanup
HC-Hydro Clean	LF-Line Failure/Break	EFK-Evidence of Fish Kill	HC-Hydro Cleaned
R-Rainfall	RG-Roots & Grease	HR-Hand Rodded	GR-Ground Surface
RO-Roots	V-Vandalism	EN-Referred to Engineering	PA-Paved Area
		PN-Public Notification	CB-Contained in Building

Location	Manhole #	Start Date of SSO	End Date of SSO	Estimated Volume (in gallons)	Cause of SSO	Environmental Impact	Action (s) Taken to Address SSO	Ultimate Discharge Location
102 N. 36TH	TOILETS	4-27-13	4-27-13	40	G	OEHC	HC	CB

Steve Lee

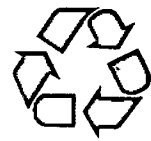
6-19-2013

Signature of Cognizant or Ranking Official

Date

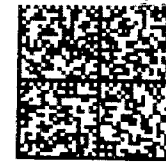
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

VAN BUREN MUNICIPAL UTILITIES
2806 BRYAN RD.
P.O. DRAWER 1269
VAN BUREN, AR 72957



Recycle

First Class Mail
ComBasPrice



UNITED STATES POSTAGE
PITNEY BOWES
02 1P \$ 002.73⁰
0003195454 JUN 19 2013
MAILED FROM ZIP CODE 72956

Arkansas Dept. Environmental Quality
NPDES Enforcement Section
5301 Northshore Drive
North Little Rock, AR 72118-5317