Sanitary Sewer Overflow Monthly Report

Facility Name: (INDEN WATER UTILITIES Permit Number: AROD 22365 Reporting Period (Month/Year): ☐ No Sanitary Sewer Overflows This Monitoring Period

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

Location	Manhole #	Start Date of	End Date of	Estimated	Course of SCC			,
0.4/1		SSO	880	Volume (in	Cause of SSO	Environmental Impact	Action (s) Taken to Address SSO	Ultimate Discharge Location
1614 Williams		07/24/2013	07/24/2013	Quo gallers	RusTS-DI	NEAH	HC	GR
					110			
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	.*							

Signature of Cognizant or Ranking Official

"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."

Environmental Services Company, Inc.

Corporate Office 13715 West Markham Little Rock, AR 72211 Tel. (501)221-2565 Fax (501)221-1341

Northwest Arkansas Branch 1107 Century Avenue Springdale, AR 72762 Tel. (479)750-1170 Fax (479)750-1172

Control Number: 1307010284

Customer Name : CAMDEN WATER & WASTEWATER UTILTY

Composite Date: 07/16/13 -07/17/13 Sample Time : 1020-1020

Collected By: ANNETTE STRICKL

Delivery By : TMO

Customer Number: 1550 Report Date : 07/19/13

Sample Type : COMPOSITE WATER Sample From : EFFLUENT

Work Order : Purchase Order :

		Laboratory Analysis		,	Quality A	ssurance
Analysis					Precision	Accuracy
Date Time By	<u> Parameter</u>	Result Not	es <u>Ouantity</u>	<u> Method</u>	% RPD	% Recovery
07/19 0945 NTR	Phosphorous, Total (as P)	0.31 mg/L		EPA 365.3	0.00	97.9
07/18 1340 NTR	Nitrate + Nitrite	12.23 mg/L	•	SM 18th 4500-NO3 E	2.20	100.9 *

All equipment used is checked and/or calibrated daily. All NPDES testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Quality Assurance Plan on file with Arkansas Department of Environmental Quality. Analysis time indicates the time of the start of the analytical batch in which the specific sample was included.

^{*} OA data shown is from a different sample or standard on the same date.

Bio-Analytical Laboratories (BAL) ADEQ#88-0630 Project X5148

Bio-Analytical Laboratories' Executive Summary

Permittee: Camden Water Utilities

P.O. Drawer J

Camden, AR 71711

Project #: X5148

Outfall: Outfall 002 (treated municipal wastewater)

Permit #: AR0022365/ AFIN 52-00073

Contact: David Richardson **Test Dates:** June 19 - 21, 2013

Test Type: 48-hour acute definitive toxicity test using *Daphnia pulex* (EPA 2021.0)

48-hour acute definitive toxicity test using *Pimephales promelas* (EPA 2000.0)

Results:

For Daphnia pulex:

- 1. If the NOEC for survival is less than the critical dilution (28.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D-0 (Pass)
- 2. Report the NOEC for survival, Parameter TOM3D 37.0%.
- 3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D 12.12%.

For Pimephales promelas (Fathead Minnow):

- 1. If the NOEC for survival is less than the critical dilution (28.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C-0 (Pass).
- 2. Report the NOEC for survival, Parameter TOM6C 37.0%.
- 3.Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM6C 0.00%.

This report contains a total of 34 pages, including this page. The results pertain only to the samples listed in the chain of custody documents in Appendix A. The information contained within meets the requirements set forth by ADEQ. The chemical results in this report are for monitoring purposes only and should not be included on discharge monitoring reports.



Bio-Analytical Laboratories

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 745-2772 1-800-259-1246 Fax: (318) 745-2773

THE RESULTS OF TWO 48-HOUR ACUTE DEFINITIVE TOXICITY TESTS FOR OUTFALL 002 AT

CAMDEN WATER UTILITIES
Camden, Arkansas

NPDES #AR0022365

EPA Methods 2000.0 and 2021.0

Project X5148

Test Dates: June 19 - 21, 2013 Report Date: July 18, 2013

Prepared for: Mr. David Richardson Camden Water Utilities P.O. Drawer J Camden, AR 71711 Prepared by: Ginger Briggs Bio-Analytical Laboratories P.O. Box 527 Doyline, LA 71023 ADEQ #88-0630

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1.0 Introduction

Bio-Analytical Laboratories (BAL), Doyline, Louisiana conducted two 48-hour acute definitive toxicity tests for Outfall 002 at Camden Water Utilities, Camden, Arkansas. The test organisms used were the cladoceran, *Daphnia pulex*, and the fathead minnow, *Pimephales promelas*. The purpose of this study is to determine if an appropriately dilute effluent sample adversely affects the survival of the test organism. Toxicity is defined as a statistically significant difference at the 95 percent confidence level between the survival of the test organisms in the critical dilution (the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions) compared to the survival of the test organisms in the control. The test endpoints are the No-Observed-Effect-Concentration (NOEC), which is defined as the highest effluent concentration that is not statistically different from the control, and the 48-hour LC₅₀, the concentration in which 50 percent of the test organisms died.

2.0 Methods and Materials

2.1 Test Methods

All methods followed were according to the latest edition of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012).

2.2 Test Organisms

The *Daphnia pulex* test organisms were raised in-house and were less than 24 hours old at test initiation. The fathead minnow test organisms were also raised in-house and were approximately three days old at test initiation. The test organisms were acclimated to test temperature and dilution water hardness prior to test initiation. Forty-eight hour reference toxicant tests were conducted monthly in order to document organism sensitivity and demonstration of capability.

2.3 Dilution Water

Soft reconstituted water made per EPA guidelines was used as the dilution water and the control for the tests.

2.4 Test Concentrations

The test concentrations used in the acute toxicity tests were 37.0, 28.0, 21.0, 16.0 and 12.0 percent effluent and a control. The critical dilution was defined as 28.0 percent effluent. The tests were conducted using five replicates of eight animals each for a total of 40 animals per concentration.

2.5 Sample Collection

Two 24-hour composite samples of Outfall 002 were collected by Camden Water Utilities personnel on June 18 and 19, 2013. Upon completion of collection, the samples were chilled to approximately 6.0° Celsius and delivered to Bio-Analytical Laboratories by BAL personnel.

2.6 Sample Preparation

Upon arrival, the samples were logged in, given an identification number and refrigerated unless needed. Prior to use, each sample was warmed to $25\pm1^{\circ}$ Celsius. The total residual chlorine levels were measured with a Capital Controls^R amperometric titrator and recorded if present. The total ammonia levels were measured using a HACH^R test strip. Dissolved oxygen, pH and conductivity measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity and hardness levels were measured on the control and the highest effluent concentration.

2.7 Monitoring of the Tests

The tests were run in a Precision^R dual controlled illuminated incubator at a temperature of 25±1⁰ Celsius. An AEMC^R data logger was used to monitor diurnal temperature throughout the testing period. Light cycle and intensity were recorded twice a month.

2.8 Data Analysis

The NOEC and LC_{50} values values were obtained by approved EPA methods of analysis, using the ToxCalc statistical program.

3.0 Results and Discussion

The results of the tests can be found in Table 1. Significant differences in survival were not noted in either test. The NOEC value for both tests was 37.0 percent effluent (p=.05). The 48-hour LC₅₀ value for both tests was >37.0 percent effluent (p=.05).

Table 1: Results of the 48-hour Acute Definitive Toxicity Tests

Percent Effuent		
Test Organism	Daphnia pulex	Fathead minnow
Control	92.5	100.0
12.0	90.0	100.0
16.0	82.5	100.0
21.0	90.0	100.0
28.0	90.0	100.0
37.0	97.5	97.5

The 48-hour reference toxicant test results indicate that the test organisms were within the respective sensitivity range. The graphs of the acute reference toxicant tests can be found in Appendix D- Quality Assurance Charts.

4.0 Conclusions

The two composite samples of Outfall 002 collected from Camden Water Utilities, Camden, Arkansas, on June 18 and 19, 2013, were not found to be lethally toxic to the fathead minnow test organisms nor the *Daphnia pulex* test organisms in the 28 percent critical dilution after 48 hours of exposure (p=.05).

5.0 References

- EPA, 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA-821-R-02-012, Office of Water.
- EPA, 2000. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System. EPA-833-R-00-003, Office of Wastewater Management.
- EPA, 2000. Method Guidance and Recommendations for Whole Effluent (WET)
 Testing. EPA-821-B-00-04, Office of Water
- APHA, 1998. Standard Methods for The Examination of Water and Wastewater. 20th Edition.

APPENDIX A CHAIN-OF-CUSTODY DOCUMENTS



Bio-Analytical Laboratories

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 745-2772 1-800-259-1246 Fax: (318) 745-2773

NELAP/LELAP 01975, ADEQ 88-0630, TCEQ T104704278

Laboratory Use Only: Analysis: Phone: Number: Company: (870) 836-4329 Camden Water Utilities Fecal Coliform Acute Daphnia species Acute Mysid Acute Ceriodaphnia Chronic Ceriodaphnia Chronic minnow Acute minnow(fresh/marine) Fax: Address: (870) 836-5190 P.O. Box J. Camden, AR 71711 Purchase Order: Permit #: temperature upon artival: AR0022365/ AFIN 52-00073 Thermometer #: Sampler's Signature/Printed Name/Affiliation: Tech: Date: Annette Strickland Strulland Preservative Lab Control Sample Identification (below) \mathbf{C} G # and type of Time Start Date Start Number: container Date End Time End 1582 ハモ 8 Am 6-17-13 X X 002 X 2 half gallons mod of L- 18-13 Time: Date: Received by/Affiliation: Date: Time: Relinquished by/Affiliation: 6-13 1020 1020 Received by/Affiliation: Time: Date: Relinquished by/Affiliation: Date: Time: Received by Affiliation: Time: Relinquished by/Affiliation: Date: **Wher** Tracking # Client DHL UPS **Method of Shipment:** \$ · · · · · Comments:



Bio-Analytical Laboratories

3240 Sourgin Road Post Office Box 527 Doylino, LA 71023 (318) 746-2772 1-800-269-1240 Fex; (318) 746-2773

NELAP/LELAP 01975, ADEQ 88-0630, TCEQ T104704278

Laboratory Use Only: Analysis: Phone: Company: (870) 836-4329 **Camden Water Utilities** Acute Mysid Acute Ceriodaphnia Fecal Coliform Chronic minnow Acute minnow(fresh/marine) Acute Daphnia species Chronic Ceriodaphnia Fax: Address: (870) 836-5190 P.O. Box J. Camden, AR 71711 semperature abon amyal: Purchase Order: Permit #: AR0022365/ AFIN 52-00073 Thermometer#: Sampler's Signature/Printed Name/Affiliation: Tech: Date: Annette Strickland Strickland Annette Preservative Lab Control Number: Sample Identification (below) Time Start Time End \mathbf{C} \mathbf{G} # and type of Date Start container Date End 6-18-13 8 Am X X X 2 half gallons 002 19-13 [L. NW Time: Date: Received by/Affiliation: Time: Relinquished by/Affiliation Date: りつクナ 1020 Received by/Affiliation: Date: Time: Relinquished by/Affiliation: Date: Time: Received by Affiliation Time: Date: Relinquished by/Affiliation: Tracking # Client Fed Ex UPS DHL Method of Shipment: Comments:

APPENDIX B
RAW DATA SHEETS

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Project# XSI4	dress: P.O. Box J, Camden, AR 71711 DES#AR0022365 Outfall 002 Chnicians: EGB/AH/LGZ/BCGO Time 340 Time 340														
Client: CMDN/Car	mden Water	Utilit:	<u>ies</u>												
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NPDES# <u>AR0022365</u>	Outfall	L <u>002</u>													
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SOF+ HZO 3507			7-01-3		70 48	0 32.0) PH								
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Test Dilution	Replicate	Test Salinity		# Liv	e Org	anism	s		Disso	lved	0xyge:	n.		-	Нф				Co	onduct	tivity	
		MA	0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
37	A		8	8	8			1,8	1.8	70			14	1/0	13			221	22	260		
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APPENDIX C STATISTICAL ANALYSIS

				Dap	hnid Acute	Test-48 Hr Survival	
Start Date:	6/19/2013		Test ID:	X5148DP		Sample ID:	AR0022365 NPDES 002
End Date:	6/21/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF1-POTW
Sample Date:	6/18/2013		Protocol:	EPAAW02	2-EPA/821/F	R-02-01 Test Species:	DP-Daphnia pulex
Comments:							
Conc-%	1	2	3	4	5		
D-Control	0.7500	1.0000	0.8750	1.0000	1.0000		
12	1.0000	1.0000	1.0000	1.0000	0.5000		
16	0.6250	0.8750	0.7500	1.0000	0.8750		
21	0.8750	0.7500	0.8750	1.0000	1.0000		
28	0.8750	0.7500	1.0000	0.8750	1.0000		
37	0.8750	1.0000	1.0000	1.0000	1.0000		

			Tra	ansform:	Arcsin Sc	quare Root	t	Rank	1-Tailed	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N_	Sum	Critical	
D-Control	0.9250	1.0000	1.2872	1.0472	1.3931	12.116	5			
12	0.9000	0.9730	1.2715	0.7854	1.3931	21.373	5	29.00	16.00	
16	0.8250	0.8919	1.1542	0.9117	1.3931	15.823	5	22.00	16.00	
21	0.9000	0.9730	1.2504	1.0472	1.3931	11.683	5	25.50	16.00	
28	0.9000	0.9730	1.2504	1.0472	1.3931	11.683	5	25.50	16.00	
37	0.9750	1.0541	1.3564	1.2094	1.3931	6.055	5	30.50	16.00	

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non	-normal dis	stribution (p <= 0.05)	0.89547	0.927	-1.2028	1.62483
Bartlett's Test indicates equal var			•		5.13374	15.0863		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	37	>37		2.7027				
Treatments vs D-Control								

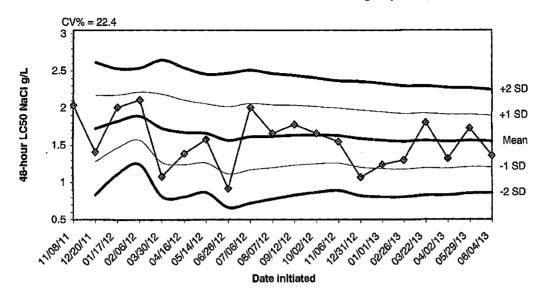
				Ac	ute Fish Tes	t-48 Hr Survival	
Start Date:	6/19/2013	· · · · · · · · · · · · · · · · · · ·	Test ID:	X5148PP		Sample ID:	AR0022365 NPDES 002
End Date:	6/21/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF1-POTW
Sample Date:	6/18/2013		Protocol:	EPAAW02	-EPA/821/R-0	02-01 Test Species:	PP-Pimephales promelas
Comments:							
Conc-%	1	2	3	4	5		
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000		
12	1.0000	1.0000	1.0000	1.0000	1.0000		
16	1.0000	1.0000	1.0000	1.0000	1.0000		
21	1.0000	1.0000	1.0000	1.0000	1.0000		
28	1.0000	1.0000	1.0000	1.0000	1.0000		
37	1.0000	0.8750	1.0000	1.0000	1.0000		

			Tra	ansform:	Arcsin Sc	quare Root	t .	Rank	1-Tailed	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5			
12	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00	
16	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00	
21	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00	
28	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00	
37	0.9750	0.9750	1.3564	1.2094	1.3931	6.055	5	25.00	16.00	

Auxiliary Tests			,		Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution (p <= 0.05	5)	0.41613	0.927	-3.8705	19.8512
Equality of variance cannot be co								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	ΤU				
Steel's Many-One Rank Test	37	>37		2.7027	<u> </u>			
Treatments vs D-Control								

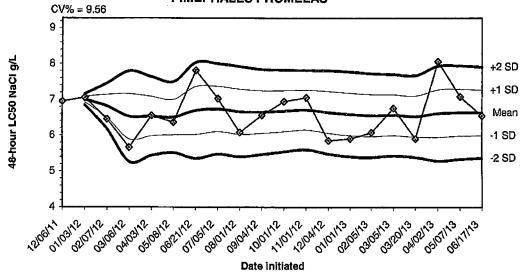
APPENDIX D QUALITY ASSURANCE CHARTS

2013 48-hour Reference Toxicant Test Results Using Daphnia pulex



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
11/08/11	2.0400					
12/20/11	1.4100	1.7250	1.2795	0.8340	2.1705	2.6160
01/17/12	2.0100	1.8200	1.4646	1.1092	2.1754	2.5308
02/06/12	2.1100	1.8925	1.5681	1.2437	2.2169	2.5413
03/30/12	1.0800	1.7300	1.2707	0.8114	2.1893	2.6486
04/16/12	1.3900	1.6733	1.2397	0.8061	2.1070	2.5406
05/14/12	1.5800	1.6600	1.2626	0.8652	2.0574	2.4548
06/26/12	0.9200	1.5675	1.1160	0.6646	2.0190	2.4704
07/06/12	2.0100	1.6167	1.1693	0.7220	2.0640	2.5113
08/07/12	1.6600	1.6210	1.1990	0.7771	2.0430	2.4649
09/12/12	1.7800	1.6355	1.2323	0.8291	2.0386	2.4418
10/02/12	1.6600	1.6375	1.2530	0.8686	2.0220	2.4064
11/06/12	1.5500	1.6308	1.2619	0.8930	1.9997	2.3686
12/31/12	1.0700	1.5907	1.2059	0.8211	1.9755	2.3603
01/01/13	1.2400	1.5673	1.1856	0.8039	1.9490	2.3308
02/26/13	1.3000	1.5506	1.1758	0.8011	1.9254	2.3002
03/22/13	1.8100	1.5659	1 .1976	0.8293	1.9342	2.3025
04/02/13	1.3200	1.5522	1.1903	0.8283	1.9142	2.2762
05/29/13	1.7300	1.5616	1.2075	0.8533	1.9157	2.2698
06/04/13	1.3600	1.5515	1.2039	0.8563	1.8991	2.2467

2013 48-HOUR REFERENCE TOXICANT TEST RESULTS USING PIMEPHALES PROMELAS



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
12/06/11	6.9500					
01/03/12	7.0600	7.0050	6.9272	6.8494	7.0828	7.1606
02/07/12	6.4600	6.8233	6.5039	6.1845	7.1428	7.4622
03/06/12	5.6700	6.5350	5.9021	5.2692	7.1679	7.8008
04/03/12	6.5600	6.5400	5.9918	5.4436	7.0882	7.6364
05/08/12	6.3700	6.5117	6.0164	5.5212	7.0069	7.5021
06/21/12	7.8200	6.6986	6.0286	5.3586	7.3686	8.0386
07/05/12	7.0300	6.7400	6.1087	5.4774	7.3713	8.0026
08/01/12	6.0900	6.6678	6.0388	5.4098	7.2968	7.9258
09/04/12	6.5700	6.6580	6.0642	5.4703	7.2518	7.8457
10/01/12	6.9500	6.6845	6.1143	5.5441	7.2547	7.8249
11/01/12	7.0600	6.7158	6.1615	5.6071	7.2702	7.8246
12/04/12	5.8600	6.6500	6.0686	5.4872	7.2314	7.8128
01/01/13	5.9200	6.5979	6.0062	5.4145	7.1896	7.7813
02/05/13	6.0900	6.5640	5.9789	5.3939	7.1491	7.7341
03/05/13	6.7700	6.5769	6.0093	5.4417	7.1444	7.7120
03/20/13	5.9200	6.5382	5.9661	5.3939	7.1104	7.6826
04/02/13	8.0700	6.6233	5.9612	5.2990	7.2855	7.9477
05/07/13	7.0900	6.6479	5.9955	5.3432	7.3003	7.9526
06/17/13	6.5600	6.6435	6.0082	5.3730	7.2788	7.9140

APPENDIX E AGENCY FORMS

Acute Forms <u>Daphnia pulex</u> Survival

Permittee: Camden Water Utilities

NPDES Permit Number: AR0022365/ AFIN 52-00073

Composite Collected

From: 6/17/13

To: 6/18/13

From: 6/18/13

To: 6/19/13

Test Initiated: 6/19/13

Dilution Water Used:

Receiving Water

Reconstituted Water

Dilution Series Results - Percent Survival

	JIIIIIIIII	DOI 103 ICC	3u1t3 - 1 Cl C	CIII DUI VI	7 611		
TIME OF READING	REP	0	12.0	16.0	21.0	28.0	37.0
24-hour	A	75.0	100	75.0	100	87.5	87.5
	В	100	100	87.5	100	75.0	100
÷	С	100	100	75.0	100	100	100
	D	100	100	100	100	87.5	100
	E	100	62.5	100	100	100	100
48-hour	A	75.0	100	62.5	87.5	87.5	87.5
<u>,</u>	В	100	100	87.5	75.0	75.0	100
	С	87.5	100	75.0	87.5	100	100
	D	100	100	100	100	87.5	100
	E	100	50.0	87.5	100	100	100
	Mean	92.5	90.0	82.5	90.0	90.0	97.5

1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different (p=.05) than the control survival for the % effluent corresponding to:

a.) LOW FLOW OR CRITICAL DILUTION (28.0%)

YES

X NO

b.)½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%)

YES

NO

2. Enter percent effluent corresponding to the LC₅₀ below:

 $LC_{50} =$

>28.0% effluent

95 % confidence limits: N/A

Method of LC₅₀ calculation: N/A

- 3. If you answered NO to 1.a) enter (P) otherwise enter (F): P
- 4. Enter response to item 3 on DMR Form, parameter TEM3D
- 5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A
- 6. Enter response to item 5 on DMR Form, parameter TFM3D

Biomonitoring Daphnia 48 hour Acute Static Renewal Chemical Parameters Chart*

Permittee: Camden Water Utilities

NPDES Number: AR0022365/ AFIN 52-00073

Contact: David Richardson

Analyst: Haughton, Cotty, Williams

Sample Collected From:

To:

Date 6/17/13 Date 6/18/13 Time 0800

Date 6/19/13

Time 0600 Time 1525

Test Begin Test End

Time 1335 Date 6/21/13

Parameter		D.O.		7	emperature			Alkalinity			Hardness			рH	
Dilut./Time	Ohrs.	24hrs	48hrs	Ohrs -	24hrs	Para the North A	Ohrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs
0	8.3	8.2	7.7	24.9	24.5	24.6	32.0			48.0			7.4	7.4	7.5
12	8.2	8.2	7.8	24.9	24.5	24.6							7.3	7.3	7.5
16	8.2	8.2	7.8	24.9	24.5	24.6							7.3	7.3	7.6
21	8.2	8.2	7.7	24.9	24.5	24.6							7.4	7.2	7.6
28	8.1	8.2	7.7	24.9	24.5	24.6							7.4	7.1	7.6
37	8.1	8.2	7.7	24.9	24.5	24.6	24.0	28.0		56.0	56.0		7.4	7.0	7.6

^{*}This Form is to be submitted with each DMR.

Alkalinity and hardness to be reported as mg/l CaCO₃

Acute Forms Pimephales promelas Survival

Permittee: Camden Water Utilities

NPDES Permit Number: AR0022365/ AFIN 52-00073

Composite Collected

From: 6/17/13

To: 6/18/13

From: 6/18/13

To: 6/19/13

Test Initiated: 6/19/13

Dilution Water Used:

Receiving Water

Reconstituted Water

Dilution Series Results - Percent Survival

District Street									
TIME OF READING	REP	0	12.0	16.0	21.0	28.0	37.0		
24-hour	A	100.0	100.0	100.0	100.0	100.0	100.0		
	В	100.0	100.0	100.0	100.0	100.0	100.0		
	С	100.0	100.0	100.0	100.0	100.0	100.0		
	D	100.0	100.0	100.0	100.0	100.0	100.0		
	E	100.0	100.0	100.0	100.0	100.0	100.0		
48-hour	A	100.0	100.0	100.0	100.0	100.0	100.0		
	В	100.0	100.0	100.0	100.0	100.0	87.5		
	С	100.0	100.0	100.0	100.0	100.0	100.0		
	D	100.0	100.0	100.0	100.0	100.0	100.0		
	E	100.0	100.0	100.0	100.0	100.0	100.0		
	Mean	100.0	100.0	100.0	100.0	100.0	97.5		

1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different (p=.05) than the control survival for the % effluent corresponding to:

a.) LOW FLOW OR CRITICAL DILUTION (28.0%)

YES

X NO

b.)½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%)

YES

NO

2. Enter percent effluent corresponding to the LC₅₀ below:

 $LC_{50} =$

>28.0% effluent

95 % confidence limits: N/A

Method of LC₅₀ calculation: N/A

- 3. If you answered NO to 1.a) enter (P) otherwise enter (F): P
- 4. Enter response to item 3 on DMR Form, parameter TEM3D
- 5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A
- 6. Enter response to item 5 on DMR Form, parameter TFM3D

Biomonitoring Pimephales promelas (Fathead Minnow) 48 hour Acute Static Renewal Chemical Parameters Chart*

Permittee: Camden Water Utilities

NPDES Number: AR0022365/ AFIN 52-00073

Contact: David Richardson Analyst: Cotty, Williams

Sample Collected

From: To: Date 6/17/13 Date 6/18/13 Time 0800

Test Begin

Test End

Time 0600 Time 1540

Date 6/19/13 Date 6/21/13

Time 1340

Parameter	D.O.			Temperature			Alkalinity			Hardness			рН		
Dilut./Time	Ohrs.	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs "	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs:	24hrs	48hrs
0	8.3	8.2	7.1	24.0	24.0	25.0	32.0			48.0			7.4	7.4	7.3
12	8.2	8.2	6.8	24.0	24.0	25.0							7.3	7.3	7.2
16	8.2	8.2	6.8	24.0	24.0	25.0							7.3	7.3	7.2
21	8.2	8.2	6.9	24.0	24.0	25.0							7.4	7.2	7.2
28	8.1	8.2	7.0	24.0	24.0	25.0							7.4	7.1	7.2
37	8.1	8.2	7.0	24.0	24.0	25.0	24.0	28.0		56.0	56.0		7.4	7.0	7.3

^{*}This Form is to be submitted with each DMR.

Alkalinity and hardness to be reported as mg/l CaCO₃

CAM DEN WATER UTILITIES P.O. BOXI CAMBEN

Ֆիլինանիսի հայարակիրանության և հարարարին



A. D. E. Q.
NPDES ENFORCEMENT DIV.
5301 NORTHSHORE DR. N. LITTLE ROCK AR 72118-5317

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