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April 20, 2016

Arkansas Department of
Environmental Quality
NPDES Enforcement Section
5301 N. Shore DR.
North Little Rock, Arkansas 72118

RE: NPDES PERMIT NO. AR0021580
Biomonitoring January 01, 2016 thru March 31, 2016

Enclosed is the Discharge Monitoring Report for the City of Osceola for the period of **January 01, 2016 thru March 31, 2016** on Biomonitoring test as required by our permit. The tests show that we passed all tests.

All tests were performed by WAYPOINT ANALYTICAL., 2790 Whitten Rd. Memphis, TN. 38133. We are enclosing all summary forms and analysis sheets as required by our permit.

Thanks,

Brandon Haynes
WWTP SUPT.
Enclosure



2790 Whitten Road, Memphis, TN 38133
Main 901.213.2400 ° Fax 901.213.2440
www.waypointanalytical.com

03/30/2016

Osceola Water Department
Mr. Brandon Haynes
PO Box 443
Osceola, AR, 72370

Ref: Analytical Testing
ETC Report Number: 16-075-0190
Client Project Description: Bioassay

Dear Mr. Brandon Haynes

The results of this WET (Whole Effluent Toxicity) test are acceptable according to test review criteria. There were no significant deficiencies found in sample handling, test performance, or reporting. The test results are within the limits established by your NPDES permit and were entered into the permittee's records in the database.

Results: NOEL/CV = 0.17%
Permit Limit: 0.13%

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.8.6.1). CETIS created by Tidepool Scientific Software

Respectfully,

A handwritten signature in cursive script that reads "Connie Cook".

Connie Cook
Lab Supervisor

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

CETIS Test Evaluation Report

Report Date: 30 Mar-16 15:28 (1 of 1)
 Test Code: DP 16-075-0190 | 17-6922-8404

Facility: Osceola Water Department
 Sample Site:
 Sample Code: 16-075-0190
 Sample Date: 14 Mar-16 07:00
 Sample Age: 34h (1.6 °C)
 Project: WET Biannual Compliance Test (1st)

Test Name: Daphnia pulex 48-h Acute Survival Test
 Organism: Daphnia pulex (Water Flea)
 Protocol: EPA/821/R-02-012 (2002)
 Start Date: 15 Mar-16 16:50
 End Date: 17 Mar-18 15:00
 Duration: 731d 22h Organism Age: < 24

Permittee: Osceola Water Department
 Address: 303 W. Hale
 PO Box 443
 Osceola, AR 72370
 Contact: Mr. Brandon Haynes
 Phone: 870-563-2628
 Email: bhaynes58@yahoo.com

Laboratory: Waypoint Analytical Tennessee, Inc.
 Address: 2790 Whitten Road
 Memphis, TN 38133
 Contact: Ms. Connie Cook, Lab Supervisor
 Phone: 901-213-2454, 901-213-2440(fax)
 Email: ccook@etcmemphis

Comments:

Receiving Stream collected 03/15/16 08:30
 Receiving Stream collected 03/15/16 08:30

Acute Toxicity Evaluation

Endpoint	Criteria	Conc-%	IWC	Decision	Method
48h Survival Rate	NOEL/LOEL	0.17/>0.17	0.13	Passes IWC	Steel Many-One Rank Sum Test

Test Acceptability Criteria

Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
			Lower	Upper		
48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Acceptability Criteria

48h Survival Rate Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	R	5	1	1	1	1	1	0	0	0.00%	0.0%
0.05		5	1	1	1	1	1	0	0	0.00%	0.0%
0.07		5	1	1	1	1	1	0	0	0.00%	0.0%
0.1		5	1	1	1	1	1	0	0	0.00%	0.0%
0.13		5	1	1	1	1	1	0	0	0.00%	0.0%
0.17		5	1	1	1	1	1	0	0	0.00%	0.0%

CETIS Summary Report

Report Date: 30 Mar-16 15:28 (p 1 of 1)
 Test Code: DP 16-075-0190 | 17-6922-8404

Daphnia pulex 48-h Acute Survival Test Waypoint Analytical Tennessee, Inc.

Batch ID: 02-4499-9104	Test Type: Survival (48h)	Analyst: Ava Davis
Start Date: 15 Mar-16 16:50	Protocol: EPA/821/R-02-012 (2002)	Diluent: Receiving Water
Ending Date: 17 Mar-18 15:00	Species: Daphnia pulex	Brine: Not Applicable
Duration: 731d 22h	Source: In-House Culture	Age: < 24
Sample ID: 14-4826-8677	Code: 16-075-0190	Client: Osceola Water Department
Sample Date: 14 Mar-16 07:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)
Receipt Date: 15 Mar-16 13:00	Source: Osceola Water Department (AR0021580)	
Sample Age: 34h (1.6 °C)	Station:	

Comments:
 Receiving Stream collected 03/15/16 08:30
 Receiving Stream collected 03/15/16 08:30

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	16-075-0190	15 Mar-16 07:00	15 Mar-16 13:00	16 Mar-16 00:00	3.5

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
16-1363-4498	48h Survival Rate	Steel Many-One Rank Sum Test	0.17	> 0.17	n/a	588.2	n/a

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
16-1363-4498	48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Acceptability Criteria

48h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	R	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.05		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.07		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.1		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.13		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.17		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

48h Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	1.0000
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
0.05		1.0000	1.0000	1.0000	1.0000	1.0000
0.07		1.0000	1.0000	1.0000	1.0000	1.0000
0.1		1.0000	1.0000	1.0000	1.0000	1.0000
0.13		1.0000	1.0000	1.0000	1.0000	1.0000
0.17		1.0000	1.0000	1.0000	1.0000	1.0000

48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	8/8	8/8	8/8	8/8	8/8
0	L	8/8	8/8	8/8	8/8	8/8
0.05		8/8	8/8	8/8	8/8	8/8
0.07		8/8	8/8	8/8	8/8	8/8
0.1		8/8	8/8	8/8	8/8	8/8
0.13		8/8	8/8	8/8	8/8	8/8
0.17		8/8	8/8	8/8	8/8	8/8

CETIS Measurement Report

Report Date: 30 Mar-16 15:28 (p 1 of 3)
Test Code: DP 16-075-0190 | 17-6922-8404

Daphnia pulex 48-h Acute Survival Test

Waypoint Analytical Tennessee, Inc.

Batch ID: 02-4499-9104	Test Type: Survival (48h)	Analyst: Ava Davis
Start Date: 15 Mar-16 16:50	Protocol: EPA/821/R-02-012 (2002)	Diluent: Receiving Water
Ending Date: 17 Mar-18 15:00	Species: Daphnia pulex	Brine: Not Applicable
Duration: 731d 22h	Source: In-House Culture	Age: < 24

Sample ID: 14-4826-8677	Code: 16-075-0190	Client: Osceola Water Department
Sample Date: 14 Mar-16 07:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)
Receipt Date: 15 Mar-16 13:00	Source: Osceola Water Department (AR0021580)	
Sample Age: 34h (1.6 °C)	Station:	

Comments:

Receiving Stream collected 03/15/16 08:30
Receiving Stream collected 03/15/16 08:30

CETIS Measurement Report

Report Date: 30 Mar-16 15:28 (p 2 of 3)

Test Code: DP 16-075-0190 | 17-6922-8404

Daphnia pulex 48-h Acute Survival Test Waypoint Analytical Tennessee, Inc.

Alkalinity (CaCO3)-mg/L			
Conc-%	Code	1	2
0	R		
0	L	63	63
0.05			
0.07			
0.1			
0.13			
0.17			

Total Residual Chlorine-mg/L			
Conc-%	Code	1	2
0	R	0	0
0	L	0	0
0.05			
0.07			
0.1			
0.13			
0.17		0	0

Conductivity-µS/cm			
Conc-%	Code	1	2
0	R	383	403
0	L	174	179
0.05			
0.07			
0.1			
0.13			
0.17		532	546

Final Dissolved Oxygen-mg/L			
Conc-%	Code	1	2
0	R	8.5	9
0	L	8.3	9.1
0.05		8.7	9
0.07		8.7	9.1
0.1		8.7	8.9
0.13		8.6	8.9
0.17		8.6	9

Initial Dissolved Oxygen-mg/L			
Conc-%	Code	1	2
0	R	9.7	9.5
0	L	8.2	8.6
0.05		9.7	9.5
0.07		9.7	9.6
0.1		9.7	9.7
0.13		9.5	9.6
0.17		9.5	9.5

CETIS Measurement Report

Report Date: 30 Mar-16 15:28 (p 3 of 3)

Test Code: DP 16-075-0190 | 17-6922-8404

Daphnia pulex 48-h Acute Survival Test

Waypoint Analytical Tennessee, Inc.

Hardness (CaCO3)-mg/L

Conc-%	Code	1	2
0	R		
0	L	95	95
0.05			
0.07			
0.1			
0.13			
0.17			

Final pH-Units

Conc-%	Code	1	2
0	R	7.8	8.1
0	L	7.8	8
0.05		7.6	8.1
0.07		7.6	8.1
0.1		7.6	8.1
0.13		7.7	8.1
0.17		7.7	8.1

Initial pH-Units

Conc-%	Code	1	2
0	R	7.7	7.9
0	L	7.8	7.7
0.05		7.7	7.9
0.07		7.7	7.9
0.1		7.7	7.9
0.13		7.7	7.8
0.17		7.7	7.8

Final Temperature-°C

Conc-%	Code	1	2
0	R	23	23
0	L	23	23
0.05		23	23
0.07		23	23
0.1		23	23
0.13		23	23
0.17		23	23

Initial Temperature-°C

Conc-%	Code	1	2
0	R	23	23
0	L	23	23
0.05		23	23
0.07		23	23
0.1		23	23
0.13		23	23
0.17		23	23

CETIS Test Evaluation Report

Report Date: 30 Mar-16 15:29 (1 of 1)
 Test Code: FH 16-075-0190 | 02-9762-7223

Facility: Osceola Water Department	Test Name: Fathead Minnow 48-h Acute Survival Test
Sample Site:	Organism: Pimephales promelas (Fathead Minnow)
Sample Code: 16-075-0190	Protocol: EPA/821/R-02-012 (2002)
Sample Date: 14 Mar-16 07:00	Start Date: 15 Mar-16 16:30
Sample Age: 34h (1.6 °C)	End Date: 17 Mar-16 14:00
Project: WET Biannual Compliance Test (1st)	Duration: 46h Organism Age: < 48
Permittee: Osceola Water Department	Laboratory: Waypoint Analytical Tennessee , Inc.
Address: 303 W. Hale PO Box 443 Osceola, AR 72370	Address: 2790 Whitten Road Memphis, TN 38133
Contact: Mr. Brandon Haynes	Contact: Ms. Connie Cook, Lab Supervisor
Phone: 870-563-2628	Phone: 901-213-2454, 901-213-2440(fax)
Email: bhaynes58@yahoo.com	Email: ccook@etcmemphis

Comments:
 Receiving Stream collected 03/15/16 08:30
 Receiving Stream collected 03/15/16 08:30

Acute Toxicity Evaluation

Endpoint	Criteria	Conc-%	IWC	Decision	Method
48h Survival Rate	NOEL/LOEL	0.17/>0.17	0.13	Passes IWC	Steel Many-One Rank Sum Test

Test Acceptability Criteria

Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
			Lower	Upper		
48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Acceptability Criteria

48h Survival Rate Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	R	5	1	1	1	1	1	0	0	0.00%	0.0%
0.05		5	1	1	1	1	1	0	0	0.00%	0.0%
0.07		5	1	1	1	1	1	0	0	0.00%	0.0%
0.1		5	1	1	1	1	1	0	0	0.00%	0.0%
0.13		5	1	1	1	1	1	0	0	0.00%	0.0%
0.17		5	1	1	1	1	1	0	0	0.00%	0.0%

CETIS Summary Report

Report Date: 30 Mar-16 15:29 (p 1 of 1)
 Test Code: FH 16-075-0190 | 02-9762-7223

Fathead Minnow 48-h Acute Survival Test				Waypoint Analytical Tennessee, Inc.			
Batch ID: 18-9498-4423	Test Type: Survival (48h)	Analyst: Ava Davis					
Start Date: 15 Mar-16 16:30	Protocol: EPA/821/R-02-012 (2002)	Diluent: Receiving Water					
Ending Date: 17 Mar-16 14:00	Species: Pimephales promelas	Brine: Not Applicable					
Duration: 46h	Source: Aquatox, AR	Age: < 48					
Sample ID: 14-4826-8677	Code: 16-075-0190	Client: Osceola Water Department					
Sample Date: 14 Mar-16 07:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)					
Receipt Date: 15 Mar-16 13:00	Source: Osceola Water Department (AR0021580)						
Sample Age: 34h (1.6 °C)	Station:						

Comments:
 Receiving Stream collected 03/15/16 08:30
 Receiving Stream collected 03/15/16 08:30

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	16-075-0190	15 Mar-16 07:00	15 Mar-16 13:00	16 Mar-16 00:00	3.5

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
02-6448-1216	48h Survival Rate	Steel Many-One Rank Sum Test	0.17	> 0.17	n/a	588.2	n/a

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
02-6448-1216	48h Survival Rate	Control Resp	1	0.9	>>	Yes	Passes Acceptability Criteria

48h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	R	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.05		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.07		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.1		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.13		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.17		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

48h Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	1.0000
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
0.05		1.0000	1.0000	1.0000	1.0000	1.0000
0.07		1.0000	1.0000	1.0000	1.0000	1.0000
0.1		1.0000	1.0000	1.0000	1.0000	1.0000
0.13		1.0000	1.0000	1.0000	1.0000	1.0000
0.17		1.0000	1.0000	1.0000	1.0000	1.0000

48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	8/8	8/8	8/8	8/8	8/8
0	L	8/8	8/8	8/8	8/8	8/8
0.05		8/8	8/8	8/8	8/8	8/8
0.07		8/8	8/8	8/8	8/8	8/8
0.1		8/8	8/8	8/8	8/8	8/8
0.13		8/8	8/8	8/8	8/8	8/8
0.17		8/8	8/8	8/8	8/8	8/8

CETIS Measurement Report

Report Date: 30 Mar-16 15:29 (p 1 of 3)
Test Code: FH 16-075-0190 | 02-9762-7223

Fathead Minnow 48-h Acute Survival Test

Waypoint Analytical Tennessee, Inc.

Batch ID: 18-9498-4423	Test Type: Survival (48h)	Analyst: Ava Davis
Start Date: 15 Mar-16 16:30	Protocol: EPA/821/R-02-012 (2002)	Diluent: Receiving Water
Ending Date: 17 Mar-16 14:00	Species: Pimephales promelas	Brine: Not Applicable
Duration: 46h	Source: Aquatox, AR	Age: < 48
<hr/>		
Sample ID: 14-4826-8677	Code: 16-075-0190	Client: Osceola Water Department
Sample Date: 14 Mar-16 07:00	Material: POTW Effluent	Project: WET Biannual Compliance Test (1st)
Receipt Date: 15 Mar-16 13:00	Source: Osceola Water Department (AR0021580)	
Sample Age: 34h (1.6 °C)	Station:	

Comments:

Receiving Stream collected 03/15/16 08:30
Receiving Stream collected 03/15/16 08:30

CETIS Measurement Report

Report Date: 30 Mar-16 15:29 (p 2 of 3)
 Test Code: FH 16-075-0190 | 02-9762-7223

Fathead Minnow 48-h Acute Survival Test

Waypoint Analytical Tennessee, Inc.

Alkalinity (CaCO3)-mg/L

Conc-%	Code	1	2
0	R		
0	L	63	63
0.05			
0.07			
0.1			
0.13			
0.17			

Total Residual Chlorine-mg/L

Conc-%	Code	1	2
0	R	0	0
0	L	0	0
0.05			
0.07			
0.1			
0.13			
0.17		0	0

Conductivity-µS/cm

Conc-%	Code	1	2
0	R	383	403
0	L	174	179
0.05			
0.07			
0.1			
0.13			
0.17		532	546

Final Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	R	8.8	8.3
0	L	8.6	8.3
0.05		8.7	8.3
0.07		8.7	8.4
0.1		8.5	8.4
0.13		8.8	8.4
0.17		8.6	8.5

Initial Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	R	9.7	9.5
0	L	8.2	8.6
0.05		9.7	9.5
0.07		9.7	9.6
0.1		9.7	9.7
0.13		9.5	9.6
0.17		9.5	9.5

CETIS Measurement Report

Report Date: 30 Mar-16 15:29 (p 3 of 3)

Test Code: FH 16-075-0190 | 02-9762-7223

Fathead Minnow 48-h Acute Survival Test

Waypoint Analytical Tennessee, Inc.

Hardness (CaCO3)-mg/L

Conc-%	Code	1	2
0	R		
0	L	95	95
0.05			
0.07			
0.1			
0.13			
0.17			

Final pH-Units

Conc-%	Code	1	2
0	R	7.8	7.9
0	L	7.9	7.7
0.05		7.8	8
0.07		7.6	8.1
0.1		7.6	8.2
0.13		7.9	8.2
0.17		7.9	8.2

Initial pH-Units

Conc-%	Code	1	2
0	R	7.7	7.9
0	L	7.8	7.7
0.05		7.7	7.9
0.07		7.7	7.9
0.1		7.7	7.9
0.13		7.7	7.8
0.17		7.7	7.8

Final Temperature-°C

Conc-%	Code	1	2
0	R	23	23
0	L	23	23
0.05		23	23
0.07		23	23
0.1		23	23
0.13		23	23
0.17		23	23

Initial Temperature-°C

Conc-%	Code	1	2
0	R	23	23
0	L	23	23
0.05		23	23
0.07		23	23
0.1		23	23
0.13		23	23
0.17		23	23

Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
 - Dissolved oxygen: 4500-O G YSI MODEL - 50B
 - pH: 4500-H + B METTLER TOLEDO FIVE EASY
 - Temperature: 2550 B METTLER TOLEDO FIVE EASY
 - Conductivity: 2510 B CORNING METER 441
 - Alkalinity: 2320 B
 - Hardness: 200.7
 - Total Residual Chlorine: 4500-Cl G - REPORTED VALUE OF "0" INDICATES RESULT BELOW DETECTION LIMIT OF 0.02 mg/L
 - EPA Acute/Chronic Manual Edition and Date: EPA-821-R-02-012
OCT 2002 (Fifth edition)
2. Laboratory
 - Temperature: Average - 25 C Range - 23 - 26
 - Light Cycle: 16 hours light/ 8 hours dark
 - Light intensity: 100 foot-candles, average
 - Control Water: Dilute mineral water made with 20 % Perrier in Nanopure
 - Dilution Water: Laboratory control water
 - Pretreatment: none
3. Method 2002.0
 - Test chambers: 30 mL disposable plastic beakers
 - Volume per chamber: 15 mL
 - Number of organisms per chamber: 8
 - Number of replicates: 5
 - Food: Organisms are not fed during test.
4. Method 2000.0
 - Test chambers: 20 oz. Disposable plastic cups
 - Volume per chamber: 200 mL
 - Average number of organisms per chamber: 8
 - Number of replicates per concentration: 5
 - Food: Artemia brine shrimp hatched in laboratory during holding, prior to test.
 - Acclimation of organisms: Organisms are allowed to reach test temperature. Dilution water is added at half-hour intervals until organisms are contained in a culture media that consists of 80% dilution water.
5. Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that were necessary for these tests as well as any sample manipulations which were performed, such as aeration, dechlorination with sodium thiosulfate, etc. and the justification for such manipulations or deviations. Attach additional pages as needed.
 - None

03334
 Osceola Water Department
 Mr. Brandon Haynes
 303 W. Hale
 Osceola , AR 72370

Project Bioassay
 Information :

Report Date : 3/30/2016

Report Number : 16-075-0190

REPORT OF ANALYSIS

Received : 3/15/2016

Lab No : 90002
 Sample ID : Outfall 001 - Composite 1

Matrix: Aqueous
 Sampled: 3/14/2016 7:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	251	mg/L	1	1	03/24/16 09:37	CJR	2320B-2011
Total Calcium	57.8	mg/L	0.100	1	03/24/16 23:22	CCR	EPA-200.7
Hardness as CaCO3(SM-2340B)	204	mg/L	0.100	1	03/24/16 23:22		EPA-200.7
Total Magnesium	14.5	mg/L	0.100	1	03/24/16 23:22	CCR	EPA-200.7

Lab No : 90003
 Sample ID : River Water

Matrix: Aqueous
 Sampled: 3/15/2016 8:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	109	mg/L	1	1	03/24/16 09:37	CJR	2320B-2011
Total Calcium	41.3	mg/L	0.100	1	03/24/16 23:27	CCR	EPA-200.7
Hardness as CaCO3(SM-2340B)	153	mg/L	0.100	1	03/24/16 23:27		EPA-200.7
Total Magnesium	12.2	mg/L	0.100	1	03/24/16 23:27	CCR	EPA-200.7

Lab No : 90004
 Sample ID : Outfall 001 - Composite 2

Matrix: Aqueous
 Sampled: 3/15/2016 7:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	256	mg/L	1	1	03/24/16 09:37	CJR	2320B-2011
Total Calcium	56.9	mg/L	0.100	1	03/24/16 23:31	CCR	EPA-200.7
Hardness as CaCO3(SM-2340B)	201	mg/L	0.100	1	03/24/16 23:31		EPA-200.7
Total Magnesium	14.3	mg/L	0.100	1	03/24/16 23:31	CCR	EPA-200.7

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit



03334

Osceola Water Department
 Mr. Brandon Haynes
 303 W. Hale
 Osceola , AR 72370

Project Bioassay
 Information :

Report Date : 3/30/2016

Report Number : 16-075-0190

REPORT OF ANALYSIS

Received : 3/15/2016

Lab No : 90005

Sample ID : River Water

Matrix: Aqueous

Sampled: 3/15/2016 8:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO3)	109	mg/L	1	1	03/24/16 09:37	CJR	2320B-2011
Total Calcium	41.3	mg/L	0.100	1	03/24/16 23:36	CCR	EPA-200.7
Hardness as CaCO3(SM-2340B)	153	mg/L	0.100	1	03/24/16 23:36		EPA-200.7
Total Magnesium	12.1	mg/L	0.100	1	03/24/16 23:36	CCR	EPA-200.7

Qualifiers/
Definitions

DF

Dilution Factor

MQL

Method Quantitation Limit



Kit ID:	0000061979
Initiated By:	Connie Cook
Project Comment	Bioassay

CHAIN-OF-CUSTODY

	16-075-0190 03334 03-15-2016 16:47:19
Osceola Water Department Bioassay	

Company Name Osceola Water Department	Company Number 03334	Client Project Manager/Contact Osceola Water Dept.	Purchase Order Number 222941
Site Name Semi-annual Bioassay Kit 1	Project Number	<input type="checkbox"/> RUSH - Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
LIMS Project ID Osceola Water - Bioassay	Project Manager Phone # (870) 563-2628	Project Manager Email bhaynes58@yahoo.com	Site/Facility ID #

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
3/13/16 3/14/16	7:00 AM	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
3/13/16 3/14/16	7:00 AM	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
3/13/16 3/14/16	7:00 AM	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Quart	NONE	48 hr bioassay - renewal
3/15/16	8:30 AM	River Water	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
3/15/16	8:30 AM	river water	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
3/15/16	8:30 AM	river water	Aqueous	C	2	Plastic - Gallon	NONE	dilution water

For Laboratory Use Only		Sampled by (Name - Print) BRANDON HAYNES	Client Remarks/Comments	
Ice ON	Custody Seals Y/N	Relinquished by: (SIGNATURE) <i>[Signature]</i>	Date Time 3/15/16 1020	Received by: (SIGNATURE) <i>[Signature]</i>
Blank/Coolep Temp 1.4 #		Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)
		Relinquished by: (SIGNATURE) <i>[Signature]</i>	Date Time 3/15/16 1300	Received by: (SIGNATURE) <i>[Signature]</i>



Kit ID:	000061980
Initiated By:	Connie Cook
Project Comment	Bioassay

CHAIN-OF-CUSTODY





Osceola Water Department
Bioassay

16-075-0190
03334
03-15-2016
16:47:19

Company Name	Company Number	Client Project Manager/Contact	Purchase Order Number
Osceola Water Department	03334	Osceola Water Dept.	222941
Site Name	Project Number	<input type="checkbox"/> RUSH - Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other:
Semi-annual Bioassay Kit 2			
LIMS Project ID	Project Manager Phone #	Project Manager Email	Site/Facility ID #
Osceola Water - Bioassay	(870) 563-2628	blaynes58@yahoo.com	


Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
3/14/16 3/15/16	7 ⁰⁰ AM	Outfall 001 composite 2	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
3/14/16 3/15/16	7 ⁰⁰ AM	Outfall 001 Composite 2	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
3/14/16 3/15/16	7 ⁰⁰ AM	Outfall 001 Composite 2	Aqueous	C	1	Plastic - Quart	NONE	48 hr bioassay - renewal
3/15/16	8 ³⁰ AM	River Water	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
3/15/16	8 ³⁰ AM	river water	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
3/15/16	8 ³⁰ AM	river water	Aqueous	C	2	Plastic - Gallon	NONE	dilution water

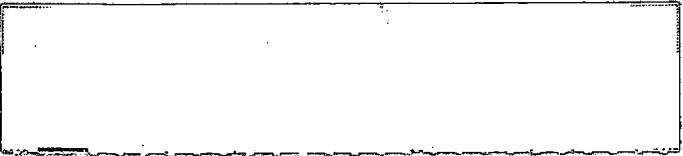
For Laboratory Use Only			Sampled by: (Name - Print)	Client Remarks/Comments			
Ice	Custody Seals	Lab Comments	Brandon Haynes				
(V)N	V/N		Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time	
			(Signature)	3/15/16 1020	(Signature)	3/15/16 1020	
			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time	
			(Signature)	3/15/16 1300	(Signature)	3/15/16 1300	
Blank/ Cooler Temp			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time	
3.5	V/N		(Signature)	3/15/16 1300	(Signature)	3/15/16 1300	

 City Of Osceola
@ Brandon Haynes
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303 West Hale
Osceola, AR 72370 

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Arkansas Department of Environmental Quality
5301 N. Shore DR.
North Little Rock, Arkansas 72118-5317

