

04/04/2024

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

Ref: Analytical Testing
Report Number: 24-074-0390
Client Project Description: Bioassay

AR0021580 – Qtr 1

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:	<i>Daphnia pulex</i>	NOEL = 0.23 %	CV = 0.00 %
	Fathead minnow	NOEL = 0.23 %	CV = 0.00 %

Permit Limit: Critical Dilution = 0.17 %
Maximum Coefficient of Variation (CV) < 40 %

EPA Methods: 2021.0 *Daphnia pulex* Acute Toxicity
2000.0 *Pimephales promelas* Acute Toxicity

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v2.1.4.6X64). CETIS created by Tidepool Scientific Software

Respectfully,



Blake Smith
Lab Supervisor

CETIS Summary Report

Report Date: 04 Apr-24 15:20 (p 1 of 1)
 Test Code/ID: 24-074-0390-dp / 06-8098-5998

Daphnia pulex 48-h Acute Survival Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 07-1495-2240	Test Type: Survival (48h)	Analyst: Lauren N. Richardson
Start Date: 14 Mar-24 14:01	Protocol: EPA/821/R-02-012 (2002)	Diluent: 20% DMW
Ending Date: 16 Mar-24 15:33	Species: Daphnia pulex	Brine: Not Applicable
Test Length: 50h	Taxon:	Source: In-House Culture Age: <24
Sample ID: 06-4892-9983	Code: 24-074-0390	Project: WET Quarterly Compliance Test (1Q)
Sample Date: 13 Mar-24 07:00	Material: POTW Effluent	Source: Osceola Water Department (AR002158)
Receipt Date: 14 Mar-24 12:00	CAS (PC):	Station: Outfall 001
Sample Age: 31h (0.7 °C)	Client: Osceola Water Department	

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	24-074-0390	14 Mar-24 07:00	14 Mar-24 12:00	15 Mar-24 00:00	0.7

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
07-5361-1615	48h Survival Rate	Steel Many-One Rank Sum Test	0.23	>0.23	---	---	434.8	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
07-5361-1615	48h Survival Rate	Control Resp	1	0.9	<<	Yes	Passes 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%
0.07		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%
0.23		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

48h Survival Rate Detail

MD5: 50DE3B345E797876C8501C9D9B9F320F

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
0.07		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
0.23		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
0.07		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
0.23		8/8	8/8	8/8	8/8	8/8

CETIS Measurement Report

Report Date: 04 Apr-24 15:20 (p 1 of 3)
Test Code/ID: 24-074-0390-dp / 06-8098-5998

Daphnia pulex 48-h Acute Survival Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 07-1495-2240	Test Type: Survival (48h)	Analyst: Lauren N. Richardson
Start Date: 14 Mar-24 14:01	Protocol: EPA/821/R-02-012 (2002)	Diluent: 20% DMW
Ending Date: 16 Mar-24 15:33	Species: Daphnia pulex	Brine: Not Applicable
Test Length: 50h	Taxon:	Source: In-House Culture Age: <24

Sample ID: 06-4892-9983	Code: 24-074-0390	Project: WET Quarterly Compliance Test (1Q)
Sample Date: 13 Mar-24 07:00	Material: POTW Effluent	Source: Osceola Water Department (AR002158)
Receipt Date: 14 Mar-24 12:00	CAS (PC):	Station: Outfall 001
Sample Age: 31h (0.7 °C)	Client: Osceola Water Department	

CETIS Measurement Report

Report Date: 04 Apr-24 15:20 (p 2 of 3)
Test Code/ID: 24-074-0390-dp / 06-8098-5998

Daphnia pulex 48-h Acute Survival Test

Waypoint Analytical Tennessee , LLC.

Total Residual Chlorine-mg/L

Conc-%	Code	1	2
0	R	0	0
0	L	0	0
0.23		1	1

Conductivity-µS/cm

Conc-%	Code	1	2
0	R	357.9	361
0	L	189.6	191.5
0.23		566.4	560.9

Final Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	R	8.2	8.9
0	L	8.4	9
0.07		8.5	8.7
0.1		8.6	8.6
0.13		8.8	8.7
0.17		8.3	8.7
0.23		8.5	8.8

Initial Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	R	9.1	8.1
0	L	8.5	8
0.07		9.3	8.9
0.1		9.2	9.1
0.13		9.2	9.1
0.17		9.2	8.8
0.23		9.1	8.9

Final pH-Units

Conc-%	Code	1	2
0	R	8.1	8.3
0	L	8.2	8.2
0.07		8.2	8.3
0.1		8.2	8.3
0.13		8.2	8.3
0.17		8.2	8.3
0.23		8.1	8.3

Initial pH-Units

Conc-%	Code	1	2
0	R	8.1	8.2
0	L	8.3	8.3
0.07		8.1	8.1
0.1		8.1	8
0.13		8.1	8
0.17		8.1	8.1
0.23		8.1	8.2

CETIS Measurement Report

Report Date: 04 Apr-24 15:20 (p 3 of 3)
Test Code/ID: 24-074-0390-dp / 06-8098-5998

Daphnia pulex 48-h Acute Survival Test

Waypoint Analytical Tennessee , LLC.

Final Temperature-°C

Conc-%	Code	1	2
0	R	23.8	23.8
0	L	23.8	24
0.07		23.9	24
0.1		23.8	24
0.13		23.4	24.2
0.17		23.4	24.2
0.23		23.2	24

Initial Temperature-°C

Conc-%	Code	1	2
0	R	24.3	23.4
0	L	24.3	23.1
0.07		24.2	23.2
0.1		24.3	23.1
0.13		24.3	23.1
0.17		24.4	23.1
0.23		24.3	23.4

CETIS Summary Report

Report Date: 04 Apr-24 15:29 (p 1 of 1)
Test Code/ID: 24-074-0390-fh / 09-9452-7091

Fathead Minnow 48-h Acute Survival Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 08-3247-3816	Test Type: Survival (48h)	Analyst: Chase M. Featherston
Start Date: 14 Mar-24 14:02	Protocol: EPA/821/R-02-012 (2002)	Diluent: 20% DMW
Ending Date: 16 Mar-24 15:50	Species: Pimephales promelas	Brine: Not Applicable
Test Length: 50h	Taxon:	Source: Aquatic Biosystems, CO Age: <72
Sample ID: 06-4892-9983	Code: 24-074-0390	Project: WET Quarterly Compliance Test (1Q)
Sample Date: 13 Mar-24 07:00	Material: POTW Effluent	Source: Osceola Water Department (AR002158)
Receipt Date: 14 Mar-24 12:00	CAS (PC):	Station: Outfall 001
Sample Age: 31h (0.7 °C)	Client: Osceola Water Department	

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	24-074-0390	14 Mar-24 07:00	14 Mar-24 12:00	15 Mar-24 00:00	0.7

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	TU	S
21-3292-1060	48h Survival Rate	Steel Many-One Rank Sum Test	0.23	>0.23	---	14.5%	434.8	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
21-3292-1060	48h Survival Rate	Control Resp	1	0.9	<<	Yes	Passes 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	0.9750	0.9056	1.0440	0.8750	1.0000	0.0250	0.0559	5.73%	2.50%
0.07		5	0.7250	0.3885	1.0610	0.3750	1.0000	0.1212	0.2710	37.38%	27.50%
0.1		5	0.9750	0.9056	1.0440	0.8750	1.0000	0.0250	0.0559	5.73%	2.50%
0.13		5	0.9750	0.9056	1.0440	0.8750	1.0000	0.0250	0.0559	5.73%	2.50%
0.17		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0.23		5	0.9500	0.8650	1.0350	0.8750	1.0000	0.0306	0.0685	7.21%	5.00%

48h Survival Rate Detail

MD5: 38F54FE9A47C7F0DA9A5DBAB957927B0

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	0.8750	1.0000
0.07		0.3750	0.5000	0.8750	1.0000	0.8750
0.1		1.0000	1.0000	0.8750	1.0000	1.0000
0.13		1.0000	1.0000	0.8750	1.0000	1.0000
0.17		1.0000	1.0000	1.0000	1.0000	1.0000
0.23		1.0000	1.0000	1.0000	0.8750	0.8750

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	7/8	8/8
0.07		3/8	4/8	7/8	8/8	7/8
0.1		8/8	8/8	7/8	8/8	8/8
0.13		8/8	8/8	7/8	8/8	8/8
0.17		8/8	8/8	8/8	8/8	8/8
0.23		8/8	8/8	8/8	7/8	7/8

CETIS Measurement Report

Report Date: 04 Apr-24 15:29 (p 1 of 3)
Test Code/ID: 24-074-0390-fh / 09-9452-7091

Fathead Minnow 48-h Acute Survival Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 08-3247-3816	Test Type: Survival (48h)	Analyst: Chase M. Featherston
Start Date: 14 Mar-24 14:02	Protocol: EPA/821/R-02-012 (2002)	Diluent: 20% DMW
Ending Date: 16 Mar-24 15:50	Species: Pimephales promelas	Brine: Not Applicable
Test Length: 50h	Taxon:	Source: Aquatic Biosystems, CO Age: <72

Sample ID: 06-4892-9983	Code: 24-074-0390	Project: WET Quarterly Compliance Test (1Q)
Sample Date: 13 Mar-24 07:00	Material: POTW Effluent	Source: Osceola Water Department (AR002158)
Receipt Date: 14 Mar-24 12:00	CAS (PC):	Station: Outfall 001
Sample Age: 31h (0.7 °C)	Client: Osceola Water Department	

CETIS Measurement Report

Report Date: 04 Apr-24 15:29 (p 2 of 3)
Test Code/ID: 24-074-0390-fh / 09-9452-7091

Fathead Minnow 48-h Acute Survival Test

Waypoint Analytical Tennessee, LLC.

Total Residual Chlorine-mg/L

Conc-%	Code	1	2
0	R	0	0
0	L	0	0
0.23		1	1

Conductivity-µS/cm

Conc-%	Code	1	2
0	R	357.9	361
0	L	189.6	191.5
0.23		566.4	560.9

Final Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	R	7.6	8.4
0	L	7.7	8.5
0.07		7.7	8.5
0.1		7.7	8.6
0.13		7.8	8.7
0.17		8	8.7
0.23		8	8.7

Initial Dissolved Oxygen-mg/L

Conc-%	Code	1	2
0	R	9.1	8.1
0	L	8.5	8
0.07		9.3	8.9
0.1		9.2	9.1
0.13		9.2	9.1
0.17		9.2	8.8
0.23		9.1	8.9

Final pH-Units

Conc-%	Code	1	2
0	R	8	8.2
0	L	7.8	8.1
0.07		8.2	8.2
0.1		8.1	8.3
0.13		8.2	8.2
0.17		8.2	8.3
0.23		8.2	8.3

Initial pH-Units

Conc-%	Code	1	2
0	R	8.1	8.2
0	L	8.3	8.3
0.07		8.1	8.1
0.1		8.1	8
0.13		8.1	8
0.17		8.1	8.1
0.23		8.1	8.2

CETIS Measurement Report

Report Date: 04 Apr-24 15:29 (p 3 of 3)
Test Code/ID: 24-074-0390-fh / 09-9452-7091

Fathead Minnow 48-h Acute Survival Test

Waypoint Analytical Tennessee , LLC.

Final Temperature-°C

Conc-%	Code	1	2
0	R	24.1	24
0	L	24.1	24
0.07		24.1	23.9
0.1		24.1	24.1
0.13		24	24.2
0.17		24.1	24.2
0.23		24.2	24.2

Initial Temperature-°C

Conc-%	Code	1	2
0	R	24.3	23.4
0	L	24.3	23.1
0.07		24.2	23.2
0.1		24.3	23.1
0.13		24.3	23.1
0.17		24.4	23.1
0.23		24.3	23.4

Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
 - Dissolved oxygen, DM 4: (SM 4500-O G-2016)
 - pH, PH 21: (SM 4500-H + B-2011)
 - Temperature, T148 & T1124
 - Conductivity, C 2: (SM 2510 B-2011)
 - Alkalinity: (SM 2320 B-2011)
 - Hardness: (EPA 200.7 / SM 2340 B-2011)
 - Total Residual Chlorine: (SM 4500-CL G-2011)
 - Reported value of “0” indicates result below detection limit of 0.02 mg/L
 - Reported value of “1” indicates result above detection limit of 0.02mg/L
 - EPA Acute Manual Edition and Date: EPA-821-R-02-012, OCT 2002 (Fifth edition)
 - EPA Chronic Manual Edition and Date: EPA-821-R-02-013, OCT 2002 (Fourth edition)
2. Laboratory
 - Incubator Temperature: 25± 1°C
 - Incubator ID: Bioassay Room Thermometer ID: TG196
 - Sample Temperature: 25± 3°C
 - Sample Temperatures are read after the organisms have been transferred and counted.
 - Depending on temperature of laboratory and time spent on organisms the temperature of the sample may drop below limits. However, the organisms are maintained at 25± 3°C
 - Light Cycle: 16 hours light/ 8 hours dark
 - Light intensity: 50-100 foot-candles, average
 - Control (Dilution) Water: Dilute mineral water made with 20 % Perrier in Nanopure (20%DMW)
 - Maintained in the incubator at 25± 1°C
 - Pretreatment: none
3. Method 2021.0 *Daphnia pulex* Acute Toxicity Testing
 - Test chambers: 30 mL disposable plastic beakers
 - Volume per chamber: 25 mL
 - Number of organisms per chamber: 8
 - Number of replicates: 5
 - Food: *Daphnia pulex* are fed 0.15mL *Raphidocelis subcapitata* (Algae) and YTC solution while holding prior to testing.
 - Acclimation of organisms: In house cultures are raised at 25°C. Purchased organisms are allowed to reach 25°C prior to use.
4. Method 2000.0 *Pimephales promelas* (Fathead minnow) Acute Toxicity Testing
 - Test chambers: 20 oz. Disposable plastic cups
 - Volume per chamber: 250 mL
 - Average number of organisms per chamber: 8
 - Number of replicates per concentration: 5
 - Food: Fathead minnows are fed 0.15mL *Artemia* brine shrimp hatched in laboratory during holding, prior to test twice daily
 - Acclimation of organisms: Dilution water is added until organisms are contained in a culture media that consists of 80% dilution water. Organisms are allowed to reach 25°C prior to use.
5. Reference Toxicity
 - Reference toxicity tests are performed monthly on each method performed by the laboratory.
 - Potassium Chloride is used as the reference toxicity chemical for vertebrate species
 - Current chemical ID: CS 8205744
 - Sodium Chloride is used as the reference toxicity chemical for invertebrate species
 - Current chemical ID: CS 8207709
6. 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 : 04/04/2024

Report Number : **24-074-0390**

REPORT OF ANALYSIS

Received : 03/14/2024

Lab No : **93143**

Matrix: **Aqueous**

Sample ID : **Outfall 001 - Composite 3/12-13/24**

Sampled: **3/13/2024 7:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	235	mg/L	1	1	03/26/24 09:30	JJZ	2320B-2011
Calcium	51.7	mg/L	0.100	1	03/20/24 01:34	SML	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	181	mg/L	0.100	1	03/20/24 01:34		EPA-200.7
Magnesium	12.5	mg/L	0.100	1	03/20/24 01:34	SML	EPA-200.7

Lab No : **93144**

Matrix: **Aqueous**

Sample ID : **Outfall 001 - Composite 3/13-14/24**

Sampled: **3/14/2024 7:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	237	mg/L	1	1	03/27/24 09:35	TMB	2320B-2011
Calcium	50.6	mg/L	0.100	1	03/20/24 01:39	SML	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	177	mg/L	0.100	1	03/20/24 01:39		EPA-200.7
Magnesium	12.3	mg/L	0.100	1	03/20/24 01:39	SML	EPA-200.7

Lab No : **93145**

Matrix: **Aqueous**

Sample ID : **Receiving Steam (River Water)**

Sampled: **3/14/2024 8:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	106	mg/L	1	1	03/27/24 09:35	TMB	2320B-2011
Calcium	38.5	mg/L	0.100	1	03/20/24 01:45	SML	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	143	mg/L	0.100	1	03/20/24 01:45		EPA-200.7
Magnesium	11.5	mg/L	0.100	1	03/20/24 01:45	SML	EPA-200.7

**Qualifiers/
Definitions**

DF Dilution Factor
 MQL Method Quantitation Limit

L Limit Exceeded



Kit ID:	232551
Initiated By:	Blake Smith
Initiated Date:	2/29/2024
Project Comment	Bioassay

CHAIN-OF-CUSTODY



Osceola Water Department
 Bioassav

24-074-0390
 03334
 03-14-2024
 12:09:34

Company Name Osceola Water Department	Company Number 03334	Client Project Manager/Contact <i>Brandon Haynes</i> Osceola Water Dept.	Purchase Order Number <i>183116</i>
Site Name QTR 1 Bioassay 03/12-14/2024	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 <i>bhaynes58@yahoo.com</i>	Site/Facility ID #

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
<i>3/12/24</i> <i>3/13/24</i>	<i>7⁰⁰ AM</i>	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Quart	NONE	48 hr bioassay - renewal
<i>3/12/24</i> <i>3/13/24</i>	<i>7⁰⁰ AM</i>	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
<i>3/12/24</i> <i>3/13/24</i>	<i>7⁰⁰ AM</i>	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
<i>3/13/24</i> <i>3/14/24</i>	<i>7⁰⁰ AM</i>	Outfall 001 - Composite 2	Aqueous	C	1	Plastic - Quart	NONE	48 hr bioassay - renewal
<i>3/13/24</i> <i>3/14/24</i>	<i>7⁰⁰ AM</i>	Outfall 001 - Composite 2	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
<i>3/13/24</i> <i>3/14/24</i>	<i>7⁰⁰ AM</i>	Outfall 001 - Composite 2	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
<i>3/14/24</i>	<i>8³⁰ AM</i>	Receiving Stream (River Water)	Aqueous	G	4	Plastic - Gallon	NONE	dilution water
<i>3/14/24</i>	<i>8³⁰ AM</i>	Receiving Stream (River Water)	Aqueous	G	1	Plastic - Pint	NONE	Alkalinity

For Laboratory Use Only			Sampled by (Name - Print)		Client Remarks/Comments			
Ice	Custody Seals	Lab Comments	<i>Brandon Haynes</i>					
<i>(Y/N)</i>	<i>(Y/N)</i>		Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
			<i>(Signature)</i>	<i>3/14/24 1010</i>	<i>(Signature)</i>	<i>3/14/24 1010</i>		
			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
Blank/Cooler Temp			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
<i>0.7 GF</i>			<i>(Signature)</i>	<i>3/14/24 1200</i>	<i>(Signature)</i>	<i>3/14/24 1200</i>		



Kit ID:	232551
Initiated By:	Blake Smith
Initiated Date:	2/29/2024
Project Comment	Bioassay

CHAIN-OF-CUSTODY



Osceola Water Department
 Bioassay

24-074-0390
 03334
 03-14-2024
 12:09:34

Company Name Osceola Water Department		Company Number 03334		Client Project Manager/Contact <i>BRANDON HAYNES</i> Osceola Water Dept.		Purchase Order Number <i>183116</i>		
Site Name QTR 1 Bioassay 03/12-14/2024		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 <i>bhaynes58@yahoo.com</i>		Site/Facility ID #		
Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
<i>3/14/24</i>	<i>8:30 AM</i>	Receiving Stream (River Water)	Aqueous	G	1	Plastic - Pint	HNO3 - Nitric Acid	hardness

For Laboratory Use Only			Sampled by (Name - Print)		Client Remarks/Comments			
Ice	Custody Seals	Lab Comments	<i>BRANDON HAYNES</i>					
<i>(Y/N)</i>	Y/N		Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
			<i>[Signature]</i>	<i>3/14/24 1010</i>	<i>Filaingw</i>	<i>3/14/24 1010</i>		
Blank/Cooler Temp			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
<i>-0.7</i>	<i>[Signature]</i>							
			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
			<i>Filaingw</i>	<i>3/14/24 1200</i>	<i>Filaingw</i>	<i>3/14/24 1200</i>		

Waypoint Analytical, LLC.

48 HOUR RENEWAL DAILY READINGS SHEET

SAMPLE ID: OSceola
 REPORT #: 24-074-0390
 DATE START: 3/14/24

pH	DAY 1	DAY 2	AFTER - DAY 1	AFTER - DAY 2	AFTER - DAY 1	AFTER - DAY 2
	INITIAL	INITIAL	Daphnia pulex	Daphnia pulex	Fathead Minnow	Fathead Minnow
CONTROL	8.3	8.3	8.2	8.2	7.8	8.1
R	8.1	8.2	8.1	8.3	8.0	8.2
1	8.1	8.1	8.2	8.3	8.2	8.2
2	8.1	8.0	8.2	8.3	8.1	8.3
3	8.1	8.0	8.2	8.3	8.2	8.2
4	8.1	8.1	8.2	8.3	8.2	8.3
5	8.1	8.2	8.1	8.3	8.2	8.3

DO mg/L	DAY 1	DAY 2	AFTER - DAY 1	AFTER - DAY 2	AFTER - DAY 1	AFTER - DAY 2
	INITIAL	INITIAL	Daphnia pulex	Daphnia pulex	Fathead Minnow	Fathead Minnow
CONTROL	8.5	8.0	8.4	9.0	7.7	8.5
R	9.1	8.1	8.2	8.9	7.6	8.4
1	9.3	8.9	8.5	8.7	7.7	8.5
2	9.2	9.1	8.6	8.6	7.7	8.6
3	9.2	9.1	8.8	8.7	7.8	8.7
4	9.2	8.8	8.3	8.7	8.0	8.7
5	9.1	8.9	8.5	8.8	8.0	8.7

TEMP. (C°)	DAY 1	DAY 2	AFTER - DAY 1	AFTER - DAY 2	AFTER - DAY 1	AFTER - DAY 2
	INITIAL	INITIAL	Daphnia pulex	Daphnia pulex	Fathead Minnow	Fathead Minnow
CONTROL	24.3	23.1	23.8	24.0	24.1	24.0
R	24.3	23.4	23.8	23.8	24.1	24.0
1	24.2	23.2	23.9	24.0	24.1	23.9
2	24.3	23.1	23.8	24.0	24.1	24.1
3	24.3	23.1	23.4	24.2	24.0	24.2
4	24.4	23.1	23.4	24.2	24.1	24.2
5	24.3	23.4	23.2	24.0	24.2	24.2

ANALYST:	PS	UR	UR	CR	UR	CR
DATE:	3/14/24	3/15/24	3/15/24	3/16/24	3/15/24	3/16/24

	CONDUCTIVITY (micromhos)		CHLORINE mg/L		DL = 0.02 mg/L
	DAY 1	DAY 2	DAY 1	DAY 2	23 DAY 1 DPD Cl2 Reagent ID
CONTROL	189.6	196.5	20.02	20.02	24-REAG- 2820
Rec. Stream	357.9	361.0	20.02	20.02	25 DAY 2 DPD Cl2 Reagent ID
EFFLUENT	546.4	540.9	>0.02	>0.02	24-REAG- 2820
ANALYST:	UR	UR	UR	UR	23
DATE:	3/14/24	3/15/24	3/14/24	3/15/24	

Meter	ID
pH	PH 21
Conductivity	C 2
DO	DM 4
Temp.	T148

Tests are maintained at 25 ± 1 ° C / Incubator ID: Bioassay Room / Therm. ID: TG196
 Samples stored in fridge at 0-6 ° C / Fridge ID: R6 / Therm. ID: TG210
 Samples warmed in waterbath then maintained in Bio2 until use / Waterbath Therm. ID: T1124
 Bio2 Therm. ID: T113
 Comments / Observations:

48 HOUR SURVIVAL DATA SHEET (5 replicates)

SAMPLE ID: Osceola
 REPORT #: 24-074-0320
 TEST START - DATE/TIME: 3/14/24 1401 ANALYST: LR
 TEST END - DATE/TIME: 3/16/24 1533 ANALYST: CF
 TEST TYPE: RENEWAL

CONC. (% EFF)	REP NO.	NO. OF SURVIVORS		
		HOUR		
		0	24	48
CONTROL	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
RECEIVING STREAM	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
0.07	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
0.1	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
0.13	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
0.17	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
0.23	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
ANALYST:		LR	LR	CF
DATE:		3/14/24	3/15/24	3/16/24

TEST ORGANISM: Daphnia pulex

ORGANISM RN: 24-REAG-0013

WAYPOINT ANALYTICAL, LLC.
 TEST TRACEABILITY RECORD
48 HOUR DAPHNIA PULEX

SAMPLE ID: Osceola REPORT # 24-074-0390

DATE START: 3/14/24 DATE END: 3/16/24

DAPHNIA PULEX REFERENCE # : 24-REAG-0013

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	CONTROL WATER	ALGAE	YCT
ACUTE	<u>3/14/24</u>	<u>UR</u>	<u>0</u>	<u>24-REAG-1203</u>	<u>24-REAG-1454</u>	<u>24-REAG-1665</u>
	<u>3/15/24</u>	<u>UR</u>	<u>24 HRS</u>	<u>24-REAG-1704</u>	<u>24-REAG-1454</u>	<u>24-REAG-1665</u>

TEST DAY	SAMPLE LAB ID:	RECEIVING STREAM LAB ID:
<u>0</u>	<u>L93143</u>	<u>L93143</u>
<u>24 HRS</u>	<u>L93144</u>	<u>L93145</u>

COMMENTS: Organisms are fed 0.15 mL Algae and YCT while holding prior to test set up.
 YCT is filtered with 60-micron mesh to removed additional debris
 Test conducted at 25 ± 1°C Incubator ID: Bioassay Room / Thermometer ID: TG196

ANALYST COMMENTS:

48 HOUR SURVIVAL DATA SHEET (5 replicates)

SAMPLE ID: Osceola
 REPORT #: 24-074-0390
 TEST START - DATE/TIME: 3/14/24 1402 ANALYST: CF
 TEST END - DATE/TIME: 3/16/24 1550 ANALYST: CF
 TEST TYPE: RENEWAL

CONC. (% EFF)	REP NO.	NO. OF SURVIVORS		
		HOUR		
		0	24	48
CONTROL	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	7	7
	E	8	8	8
RECEIVING STREAM	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
0.07	A	8	8	3
	B	8	7	4
	C	8	8	7
	D	8	8	8
	E	8	8	7
0.1	A	8	8	8
	B	8	8	8
	C	8	8	7
	D	8	8	8
	E	8	8	8
0.13	A	8	8	8
	B	8	8	8
	C	8	7	7
	D	8	8	8
	E	8	8	8
0.17	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	8	8
	E	8	8	8
0.23	A	8	8	8
	B	8	8	8
	C	8	8	8
	D	8	7	7
	E	8	7	7
ANALYST:		CF	YR	CF
DATE:		3/14/24	3/15/24	3/16/24

TEST ORGANISM: Fathead minnow
 ORGANISM RN: 24-REAG- 16666

WAYPOINT ANALYTICAL, LLC.
 TEST TRACEABILITY RECORD
48 HOUR FATHEAD MINNOW

SAMPLE ID: Osceola REPORT # 24-074-0390

DATE START: 3/14/24 DATE END: 3/16/24

FATHEAD MINNOW REFERENCE # 24-REAG- 16666

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	CONTROL WATER	SAMPLE LAB ID:	RECEIVING STREAM:
ACUTE	3/14/24	UR	0	24-REAG- 1703	L93143	L93145
	3/15/24	UR	24 HRS	24-REAG- 1704	L93144	L93145

(if applicable)

COMMENTS: Fathead minnows are fed 0.15 mL Artemia brine shrimp x2 daily while holding prior to test set up.
 Test conducted at 25 ± 1°C Incubator ID: Bioassay Room / Thermometer ID: TG196

ANALYST COMMENTS: