

02/08/2021

Harrison Wastewater Treatment Plant  
Ms. Kathryn Catlin  
PO Box 1715  
Harrison, AR 72601

Ref: Analytical Testing  
Report Number: 21-026-0392  
Client Project Description: Bioassay QTR 1  
AR0034321

Dear Ms. Kathryn Catlin:

The WET (Whole Effluent Toxicity) test results for the species *Ceriodaphnia dubia* cannot be used to make regulatory determinations, and are unacceptable for effluent characterization or compliance monitoring.

The WET test is invalid due to the control performance not meeting criteria. Control performance criteria are used to ensure that test organisms are healthy and responding normally; so that poor test organism health does not affect effluent toxicity.

The results of this WET (Whole Effluent Toxicity) test are acceptable according to test review criteria for the species *Pimephales promelas*.

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>Ceriodaphnia dubia</i> NOEL = N/A	CV = N/A	PMSD = N/A
	Fathead minnow NOEL = 84 %	CV = 14.24 %	PMSD = 27.6 %

Permit Limit: Critical dilution = 84 %  
Maximum Coefficient of Variation (CV) < 40 %

EPA Methods: 1002.0 *Ceriodaphnia dubia* Survival and Reproduction  
1000.0 *Pimephales promelas* Larval Survival and Growth

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.9.1.4). CETIS created by Tidepool Scientific Software

Respectfully,



Blake Andres  
Lab Supervisor

# CETIS Test Evaluation Report

Report Date: 03 Feb-21 16:39 ( 1 of 1 )  
 Test Code: 21-026-0392 cd | 17-9322-6172

Facility: Harrison Treatment Plant  
 Sample Site:  
 Sample Code: 21-026-0392  
 Sample Date: 25 Jan-21 12:00  
 Sample Age: 24h (0.4 °C)  
 Project: WET Quarterly Compliance Test (1Q)

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Permittee: Harrison Treatment Plant  
 Address: PO Box 1715  
 Harrison, AR 72601  
 Contact: Ms. Kathryn Catlin  
 Phone: 870-741-5527  
 Email: kathryn.catlin@cityofharrison.com

Test Name: **Ceriodaphnia 7-d Survival and Reproduction Test**  
 Organism: Ceriodaphnia dubia (Water Flea)  
 Protocol: EPA/821/R-02-013 (2002)  
 Start Date: 26 Jan-21 11:31  
 End Date: 02 Feb-21 12:28  
 Duration: 7d 1h      **Organism Age: <24**

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Laboratory: Waypoint Analytical Tennessee , LLC.  
 Address: 2790 Whitten Road  
 Memphis, TN 38133  
 Contact: Ms. Blake Andres, Lab Supervisor  
 Phone: 901-271-5200, 901-213-2440(fax)  
 Email: sandres@waypointanalytical.com

**Comments:**

**Chronic Toxicity Evaluation**

Endpoint	Criteria	Conc-%	IWC	Decision	Method
7d Survival Rate	NOEL/LOEL	84/>84	83.99	Passes IWC	Fisher Exact/Bonferroni-Holm Test
Reproduction	NOEL/LOEL	84/>84	83.99	Passes IWC	Steel Many-One Rank Sum Test

**Test Acceptability Criteria**

Endpoint	Attribute	Test Stat	TAC Limits			Decision
			Lower	Upper	Overlap	
7d Survival Rate	Control Resp	0.8	0.8	>>	Yes	Passes Acceptability Criteria
<b>Reproduction</b>	<b>Control Resp</b>	<b>2.3</b>	<b>15</b>	<b>&gt;&gt;</b>	<b>Yes</b>	<b>Below Acceptability Criteria</b>

**Reproduction Data Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	2.3	0.2247	4.375	0	18	1.789	5.658	246.00%	0.0%
27		10	7.7	3.51	11.89	0	29	3.612	11.42	148.30%	-234.8%
35		10	8.6	3.855	13.35	0	34	4.091	12.94	150.40%	-273.9%
47		10	14.4	9.673	19.13	0	39	4.075	12.89	89.48%	-526.1%
63		10	9.7	5.194	14.21	0	31	3.885	12.28	126.60%	-321.7%
84		10	18.4	11.78	25.02	0	47	5.704	18.04	98.03%	-700.0%

**7d Survival Rate Data Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	0.8	0.6453	0.9547	0	1	0.1333	0.4216	52.70%	0.0%
27		10	0.8	0.6453	0.9547	0	1	0.1333	0.4216	52.70%	0.0%
35		10	0.8	0.6453	0.9547	0	1	0.1333	0.4216	52.70%	0.0%
47		10	1	1	1	1	1	0	0	0.00%	-25.0%
63		10	0.8	0.6453	0.9547	0	1	0.1333	0.4216	52.70%	0.0%
84		10	0.9	0.784	1	0	1	0.1	0.3162	35.14%	-12.5%

# CETIS Summary Report

Report Date: 03 Feb-21 16:39 (p 1 of 2)  
 Test Code: 21-026-0392 cd | 17-9322-6172

## Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 07-9842-5168 Test Type: Reproduction-Survival (7d) Analyst: Ivey E. Wilkinson  
 Start Date: 26 Jan-21 11:31 Protocol: EPA/821/R-02-013 (2002) Diluent: 20% DMW  
 Ending Date: 02 Feb-21 12:28 Species: Ceriodaphnia dubia Brine: Not Applicable  
 Duration: 7d 1h Source: In-House Culture Age: <24

Sample ID: 00-2521-5097 Code: 21-026-0392 Client: Harrison Treatment Plant  
 Sample Date: 25 Jan-21 12:00 Material: POTW Effluent Project: WET Quarterly Compliance Test (1Q)  
 Receipt Date: 26 Jan-21 09:50 Source: Harrison Treatment Plant (AR0034321)  
 Sample Age: 24h (0.4 °C) Station:

### Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	21-026-0392	26 Jan-21 12:30	27 Jan-21 09:40	28 Jan-21 00:00	0.2
2	21-026-0392	28 Jan-21 12:30	29 Jan-21 09:40	30 Jan-21 00:00	0.3

### Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
12-3359-7764	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	84	> 84	n/a	1.19	n/a
04-6925-3301	Reproduction	Steel Many-One Rank Sum Test	84	> 84	n/a	1.19	567.0

### Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
12-3359-7764	7d Survival Rate	Control Resp	0.8	0.8	>>	Yes	Passes Acceptability Criteria
04-6925-3301	Reproduction	Control Resp	2.3	15	>>	Yes	Below Acceptability Criteria

### 7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	0.8000	0.4984	1.0000	0.0000	1.0000	0.1333	0.4216	52.70%	0.00%
27		10	0.8000	0.4984	1.0000	0.0000	1.0000	0.1333	0.4216	52.70%	0.00%
35		10	0.8000	0.4984	1.0000	0.0000	1.0000	0.1333	0.4216	52.70%	0.00%
47		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-25.00%
63		10	0.8000	0.4984	1.0000	0.0000	1.0000	0.1333	0.4216	52.70%	0.00%
84		10	0.9000	0.6738	1.0000	0.0000	1.0000	0.1000	0.3162	35.14%	-12.50%

### Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	2.3	-1.747	6.347	0	18	1.789	5.658	245.99%	0.00%
27		10	7.7	-0.4706	15.87	0	29	3.612	11.42	148.33%	-234.78%
35		10	8.6	-0.6549	17.85	0	34	4.091	12.94	150.44%	-273.91%
47		10	14.4	5.182	23.62	0	39	4.075	12.89	89.48%	-526.09%
63		10	9.7	0.9125	18.49	0	31	3.885	12.28	126.64%	-321.74%
84		10	18.4	5.496	31.3	0	47	5.704	18.04	98.03%	-700.00%

**CETIS Summary Report**

**Report Date:** 03 Feb-21 16:39 (p 2 of 2)  
**Test Code:** 21-026-0392 cd | 17-9322-6172

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Waypoint Analytical Tennessee, LLC.**

**7d Survival Rate Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	0.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
27		0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
35		0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
47		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
63		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000
84		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000

**Reproduction Detail**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	0	0	0	0	0	0	1	0	4	18
27		5	0	9	28	0	0	6	29	0	0
35		0	0	0	34	0	0	15	28	9	0
47		4	30	18	39	0	0	14	15	19	5
63		4	21	0	25	0	0	16	31	0	0
84		23	39	0	34	0	0	27	13	47	1

**7d Survival Rate Binomials**

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	0/1	1/1	1/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1
27		0/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
35		0/1	0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
47		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
63		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	0/1
84		1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1

# CETIS Measurement Report

Report Date: 03 Feb-21 16:39 (p 1 of 3)  
Test Code: 21-026-0392 cd | 17-9322-6172

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## Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee , LLC.

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<b>Batch ID:</b> 07-9842-5168	<b>Test Type:</b> Reproduction-Survival (7d)	<b>Analyst:</b> Ivey E. Wilkinson
<b>Start Date:</b> 26 Jan-21 11:31	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> 20% DMW
<b>Ending Date:</b> 02 Feb-21 12:28	<b>Species:</b> Ceriodaphnia dubia	<b>Brine:</b> Not Applicable
<b>Duration:</b> 7d 1h	<b>Source:</b> In-House Culture	<b>Age:</b> <24

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<b>Sample ID:</b> 00-2521-5097	<b>Code:</b> 21-026-0392	<b>Client:</b> Harrison Treatment Plant
<b>Sample Date:</b> 25 Jan-21 12:00	<b>Material:</b> POTW Effluent	<b>Project:</b> WET Quarterly Compliance Test (1Q)
<b>Receipt Date:</b> 26 Jan-21 09:50	<b>Source:</b> Harrison Treatment Plant (AR0034321)	
<b>Sample Age:</b> 24h (0.4 °C)	<b>Station:</b>	

**CETIS Measurement Report**

**Report Date:** 03 Feb-21 16:39 (p 2 of 3)  
**Test Code:** 21-026-0392 cd | 17-9322-6172

**Ceriodaphnia 7-d Survival and Reproduction Test**

**Waypoint Analytical Tennessee , LLC.**

**Total Residual Chlorine-mg/L**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	0	0	0	0	0	0	0
27								
35								
47								
63								
84		0	0	0	0	0	0	0

**Conductivity-µS/cm**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	150.1	157.5	159.7	165.8	156	165.5	155.6
27								
35								
47								
63								
84		431	453	420	433	400	355	365

**Final Dissolved Oxygen-mg/L**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	8.9	8.7	8.6	9.1	9.1	9.8	8.8
27		9	8.6	8.6	8.9	9.2	9.8	9
35		8.9	8.5	8.5	9	9.1	9.8	9
47		8.8	8.5	8.5	9	9.1	9.7	8.7
63		8.7	8.5	8.5	8.9	9.1	9.8	8.7
84		8.8	8.4	8.5	8.9	9.2	9.8	8.8

**Initial Dissolved Oxygen-mg/L**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	8.2	8.5	8.1	8.2	8.1	8.7	8.2
27		8.4	8.6	8.2	8.1	8.4	8.4	8.3
35		8.4	7.9	8.4	8.1	8.5	8.4	8.5
47		8.8	8.2	8.5	8.2	8.5	8.4	8.9
63		8.9	8.4	8.5	8.4	8.8	8.5	8.9
84		9.1	8.9	8.7	8.6	9.2	8.8	9.4

**Final pH-Units**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	7.7	7.6	8.1	7.7	7.6	8.1	7.8
27		7.7	7.6	8	7.6	7.6	8.1	8
35		7.8	7.6	8	7.6	7.6	8.1	8
47		7.8	7.6	8	7.6	7.6	8.2	8.1
63		7.8	7.7	8	7.7	7.6	8.2	8.1
84		7.8	7.7	8	7.8	7.7	8.3	8.1

**Initial pH-Units**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	7.6	7.6	7.5	7.8	7.6	7.5	7.5
27		7.3	7.3	7.3	7.5	7.4	7.3	7.5
35		7.2	7.2	7.2	7.5	7.4	7.2	7.5
47		7.1	7	7.1	7.4	7.3	7.1	7.4
63		7	7.1	7	7.3	7.3	7	7.3
84		6.7	6.9	6.9	7.2	7.1	6.9	7.2

# CETIS Measurement Report

Report Date: 03 Feb-21 16:39 (p 3 of 3)  
Test Code: 21-026-0392 cd | 17-9322-6172

## Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

### Final Temperature-°C

Conc.-%	Code	1	2	3	4	5	6	7
0	L	23.2	23.9	23.5	24.1	23.8	23.8	23.2
27		23.6	23.6	23.6	24.1	24.1	23.9	23.2
35		23.4	23.7	23.2	24.1	24.1	24	23.1
47		23.7	23.8	23.3	24.1	24.2	24	23.4
63		23.5	23.8	23.5	24	24.1	24	23.4
84		23.6	23.9	23.5	24.2	24.2	24	23.2

### Initial Temperature-°C

Conc.-%	Code	1	2	3	4	5	6	7
0	L	23.1	23.6	23.2	23.3	23.8	23.8	23.2
27		23.1	23.8	23.1	23.4	24.5	23.8	23.6
35		23	24.1	23.1	23.3	24.8	23.6	23.4
47		23.1	24.6	23.3	23.6	25.2	23.3	23.8
63		23.3	24.8	23.5	23.5	25.5	22.9	23.6
84		23.7	25.2	24.1	24.2	26.6	22.8	23.8

# CETIS Test Evaluation Report

**Report Date:** 03 Feb-21 16:39 ( 1 of 1)  
**Test Code:** 21-026-0392 fh | 18-9538-2214

**Facility:** Harrison Treatment Plant  
**Sample Site:**  
**Sample Code:** 21-026-0392  
**Sample Date:** 25 Jan-21 12:00  
**Sample Age:** 24h (0.4 °C)  
**Project:** WET Quarterly Compliance Test (1Q)

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**Permittee:** Harrison Treatment Plant  
**Address:**  
 PO Box 1715  
 Harrison, AR 72601

**Contact:** Ms. Kathryn Catlin  
**Phone:** 870-741-5527  
**Email:** kathryn.catlin@cityofharrison.com

**Test Name:** Fathead Minnow 7-d Larval Survival and Growth Test  
**Organism:** Pimephales promelas (Fathead Minnow)  
**Protocol:** EPA/821/R-02-013 (2002)  
**Start Date:** 26 Jan-21 11:31  
**End Date:** 02 Feb-21 11:46  
**Duration:** 7d 0h **Organism Age:** <24

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**Laboratory:** Waypoint Analytical Tennessee , LLC.  
**Address:** 2790 Whitten Road  
 Memphis, TN 38133

**Contact:** Ms. Blake Andres, Lab Supervisor  
**Phone:** 901-271-5200, 901-213-2440(fax)  
**Email:** sandres@waypointanalytical.com

**Comments:**

**Chronic Toxicity Evaluation**

Endpoint	Criteria	Conc-%	IWC	Decision	Method
7d Survival Rate	NOEL/LOEL	84/>84	83.99	Passes IWC	Dunnett Multiple Comparison Test
Mean Dry Weight-mg	NOEL/LOEL	84/>84	83.99	Passes IWC	Dunnett Multiple Comparison Test

**Test Acceptability Criteria**

Endpoint	Attribute	Test Stat	TAC Limits			Decision
			Lower	Upper	Overlap	
7d Survival Rate	Control Resp	0.925	0.8	>>	Yes	Passes Acceptability Criteria
Mean Dry Weight-mg	Control Resp	0.495	0.25	>>	Yes	Passes Acceptability Criteria

**Mean Dry Weight-mg Data Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.495	0.4691	0.5209	0.4125	0.5875	0.03152	0.07049	14.24%	0.0%
27		5	0.675	0.6501	0.6999	0.6125	0.775	0.03036	0.06789	10.06%	-36.36%
35		5	0.5675	0.5272	0.6078	0.45	0.7125	0.04915	0.1099	19.37%	-14.65%
47		5	0.6375	0.5983	0.6767	0.5	0.7375	0.04776	0.1068	16.75%	-28.79%
63		5	0.6	0.5633	0.6367	0.475	0.7375	0.04472	0.1	16.67%	-21.21%
84		5	0.715	0.684	0.746	0.6	0.7875	0.03779	0.0845	11.82%	-44.44%

**7d Survival Rate Data Summary**

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.925	0.8635	0.9865	0.625	1	0.075	0.1677	18.13%	0.0%
27		5	0.9	0.8795	0.9205	0.875	1	0.025	0.0559	6.21%	2.7%
35		5	0.8	0.7477	0.8523	0.625	1	0.06374	0.1425	17.82%	13.51%
47		5	0.875	0.8102	0.9398	0.625	1	0.07906	0.1768	20.20%	5.41%
63		5	0.775	0.7366	0.8134	0.625	0.875	0.04677	0.1046	13.49%	16.22%
84		5	0.95	0.9249	0.9751	0.875	1	0.03062	0.06847	7.21%	-2.7%



# CETIS Summary Report

Report Date: 03 Feb-21 16:39 (p 1 of 2)  
 Test Code: 21-026-0392 fh | 18-9538-2214

## Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 21-2266-8112      Test Type: Growth-Survival (7d)      Analyst: Chase M. Featherston  
 Start Date: 26 Jan-21 11:31      Protocol: EPA/821/R-02-013 (2002)      Diluent: 20% DMW  
 Ending Date: 02 Feb-21 11:46      Species: Pimephales promelas      Brine: Not Applicable  
 Duration: 7d 0h      Source: Aquatic Biosystems, CO      Age: <24

Sample ID: 00-2521-5097      Code: 21-026-0392      Client: Harrison Treatment Plant  
 Sample Date: 25 Jan-21 12:00      Material: POTW Effluent      Project: WET Quarterly Compliance Test (1Q)  
 Receipt Date: 26 Jan-21 09:50      Source: Harrison Treatment Plant (AR0034321)  
 Sample Age: 24h (0.4 °C)      Station:

### Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	21-026-0392	26 Jan-21 12:30	27 Jan-21 09:40	28 Jan-21 00:00	0.2
2	21-026-0392	28 Jan-21 12:30	29 Jan-21 09:40	30 Jan-21 00:00	0.3

### Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
14-5229-4378	7d Survival Rate	Dunnett Multiple Comparison Test	84	> 84	n/a	1.19	18.9%
07-3152-3858	Mean Dry Weight-mg	Dunnett Multiple Comparison Test	84	> 84	n/a	1.19	27.6%

### Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
14-5229-4378	7d Survival Rate	Control Resp	0.925	0.8	>>	Yes	Passes Acceptability Criteria
07-3152-3858	Mean Dry Weight-mg	Control Resp	0.495	0.25	>>	Yes	Passes Acceptability Criteria

### 7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.9250	0.7168	1.0000	0.6250	1.0000	0.0750	0.1677	18.13%	0.00%
27		5	0.9000	0.8306	0.9694	0.8750	1.0000	0.0250	0.0559	6.21%	2.70%
35		5	0.8000	0.6230	0.9770	0.6250	1.0000	0.0637	0.1425	17.82%	13.51%
47		5	0.8750	0.6555	1.0000	0.6250	1.0000	0.0791	0.1768	20.20%	5.41%
63		5	0.7750	0.6451	0.9049	0.6250	0.8750	0.0468	0.1046	13.49%	16.22%
84		5	0.9500	0.8650	1.0000	0.8750	1.0000	0.0306	0.0685	7.21%	-2.70%

### Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.495	0.4075	0.5825	0.4125	0.5875	0.03152	0.07049	14.24%	0.00%
27		5	0.675	0.5907	0.7593	0.6125	0.775	0.03036	0.06789	10.06%	-36.36%
35		5	0.5675	0.431	0.704	0.45	0.7125	0.04915	0.1099	19.37%	-14.65%
47		5	0.6375	0.5049	0.7701	0.5	0.7375	0.04776	0.1068	16.75%	-28.79%
63		5	0.6	0.4758	0.7242	0.475	0.7375	0.04472	0.1	16.67%	-21.21%
84		5	0.715	0.6101	0.8199	0.6	0.7875	0.03779	0.0845	11.82%	-44.44%

# CETIS Summary Report

Report Date: 03 Feb-21 16:39 (p 2 of 2)  
Test Code: 21-026-0392 fh | 18-9538-2214

## Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

### 7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	0.6250	1.0000	1.0000	1.0000
27		0.8750	1.0000	0.8750	0.8750	0.8750
35		0.7500	0.8750	0.7500	1.0000	0.6250
47		1.0000	0.7500	1.0000	1.0000	0.6250
63		0.7500	0.6250	0.7500	0.8750	0.8750
84		1.0000	1.0000	0.8750	1.0000	0.8750

### Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.5125	0.4125	0.525	0.4375	0.5875
27		0.6125	0.7125	0.625	0.65	0.775
35		0.6375	0.5625	0.475	0.7125	0.45
47		0.725	0.55	0.7375	0.675	0.5
63		0.5375	0.475	0.6375	0.7375	0.6125
84		0.7875	0.7625	0.6	0.775	0.65

### 7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	8/8	5/8	8/8	8/8	8/8
27		7/8	8/8	7/8	7/8	7/8
35		6/8	7/8	6/8	8/8	5/8
47		8/8	6/8	8/8	8/8	5/8
63		6/8	5/8	6/8	7/8	7/8
84		8/8	8/8	7/8	8/8	7/8

# CETIS Measurement Report

Report Date: 03 Feb-21 16:39 (p 1 of 3)  
Test Code: 21-026-0392 fh | 18-9538-2214

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## Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

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<b>Batch ID:</b> 21-2266-8112	<b>Test Type:</b> Growth-Survival (7d)	<b>Analyst:</b> Chase M. Featherston
<b>Start Date:</b> 26 Jan-21 11:31	<b>Protocol:</b> EPA/821/R-02-013 (2002)	<b>Diluent:</b> 20% DMW
<b>Ending Date:</b> 02 Feb-21 11:46	<b>Species:</b> Pimephales promelas	<b>Brine:</b> Not Applicable
<b>Duration:</b> 7d 0h	<b>Source:</b> Aquatic Biosystems, CO	<b>Age:</b> <24

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<b>Sample ID:</b> 00-2521-5097	<b>Code:</b> 21-026-0392	<b>Client:</b> Harrison Treatment Plant
<b>Sample Date:</b> 25 Jan-21 12:00	<b>Material:</b> POTW Effluent	<b>Project:</b> WET Quarterly Compliance Test (1Q)
<b>Receipt Date:</b> 26 Jan-21 09:50	<b>Source:</b> Harrison Treatment Plant (AR0034321)	
<b>Sample Age:</b> 24h (0.4 °C)	<b>Station:</b>	

**CETIS Measurement Report**

**Report Date:** 03 Feb-21 16:39 (p 2 of 3)  
**Test Code:** 21-026-0392 fh | 18-9538-2214

**Fathead Minnow 7-d Larval Survival and Growth Test**

**Waypoint Analytical Tennessee , LLC.**

**Total Residual Chlorine-mg/L**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	0	0	0	0	0	0	0
27								
35								
47								
63								
84		0	0	0	0	0	0	0

**Conductivity-µS/cm**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	150.1	157.5	159.7	165.8	156	165.5	155.6
27								
35								
47								
63								
84		431	453	420	433	400	355	365

**Final Dissolved Oxygen-mg/L**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	8.3	5.9	6.9	6.4	6.2	6.2	6.3
27		8.1	6.6	6.9	6.5	6.2	6.1	6
35		7.6	6.6	6.3	6.1	6	6	5.7
47		7.5	6.3	6.5	6.4	5.9	5.3	5.7
63		7.5	6.4	7	6.4	6	5.5	5.8
84		7.9	6.3	6.9	6.8	6.3	6.3	6.2

**Initial Dissolved Oxygen-mg/L**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	8.2	8.5	8.1	8.2	8.1	8.7	8.2
27		8.4	8.6	8.2	8.1	8.4	8.4	8.3
35		8.4	7.9	8.4	8.1	8.5	8.4	8.5
47		8.8	8.2	8.5	8.2	8.5	8.4	8.9
63		8.9	8.4	8.5	8.4	8.8	8.5	8.9
84		9.1	8.9	8.7	8.6	9.2	8.8	9.4

**Final pH-Units**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	7.4	6.9	6.9	7.2	7	7.6	7.5
27		7.2	6.9	6.1	7.2	7	7.6	7.4
35		7.2	6.9	6.9	7.1	7	7.6	7.5
47		7.2	6.9	7	7.3	7	7.5	7.5
63		7.2	6.9	7.3	7.3	7.2	7.6	7.5
84		7.3	7	7.2	7.4	7.2	7.7	7.6

**Initial pH-Units**

Conc.-%	Code	1	2	3	4	5	6	7
0	L	7.6	7.6	7.5	7.8	7.6	7.5	7.5
27		7.3	7.3	7.3	7.5	7.4	7.3	7.5
35		7.2	7.2	7.2	7.5	7.4	7.2	7.5
47		7.1	7	7.1	7.4	7.3	7.1	7.4
63		7	7.1	7	7.3	7.3	7	7.3
84		6.7	6.9	6.9	7.2	7.1	6.9	7.2

# CETIS Measurement Report

Report Date: 03 Feb-21 16:39 (p 3 of 3)  
Test Code: 21-026-0392 fh | 18-9538-2214

## Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

### Final Temperature-°C

Conc.-%	Code	1	2	3	4	5	6	7
0	L	23.6	23.8	23.9	24.4	24.3	23.7	24.1
27		23.7	24.4	23.6	24.5	24.7	23.5	23.8
35		23.8	24.6	23.8	24.6	24.9	23.7	24.1
47		23.7	24.2	23.9	24.5	24.9	24	23.9
63		23.6	24.3	23.7	24.3	24.8	24.3	23.9
84		23.4	24.2	23.8	24.4	24.6	24	24.1

### Initial Temperature-°C

Conc.-%	Code	1	2	3	4	5	6	7
0	L	23.1	23.6	23.2	23.3	23.8	23.8	23.2
27		23.1	23.8	23.1	23.4	24.5	23.8	23.6
35		23	24.1	23.1	23.3	24.8	23.6	23.4
47		23.1	24.6	23.3	23.6	25.2	23.3	23.8
63		23.3	24.8	23.5	23.5	25.5	22.9	23.6
84		23.7	25.2	24.1	24.2	26.6	22.8	23.8

### Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
  - Dissolved oxygen, DM 4: (SM 4500-O G-2011)
  - pH, PH 21: (SM 4500-H + B-2011)
  - Temperature, T 83
  - Conductivity, C 1: (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 0.02 mg/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: BIO Thermometer ID: 120554
  - 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 1002.0 *Ceriodaphnia dubia* Survival and Reproduction
  - Test chambers: 30 mL disposable plastic beakers
  - Volume per chamber: 15 mL
  - Number of organisms per chamber: 1
  - Number of replicates: 10
  - Food: *Ceriodaphnia dubia* are fed 0.15mL *Raphidocelis subcapitata* (Algae) and YTC solution daily.
  - Acclimation of organisms: In house cultures are raised at 25°C. Purchased organisms are allowed to reach 25°C prior to use.
4. Method 1000.0 *Pimephales promelas* (Fathead minnow) Larval Survival and Growth
  - 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 0.15 mL *Artemia* brine shrimp hatched in laboratory 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 6156984
  - Sodium Chloride is used as the reference toxicity chemical for invertebrate species
  - Current chemical ID: CS 6159667
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

03322

Harrison Wastewater Treatment Plant  
 Mr. Randy Reese  
 1508 Silver Valley Road  
 Harrison , AR 72601

Project Bioassay  
 Information :

Report Date : 02/08/2021

Report Number : **21-026-0392**

**REPORT OF ANALYSIS**

Received : 01/26/2021

Lab No : **89371**

Matrix: **Aqueous**

Sample ID : **Effluent Composite 1/24-25/21**

Sampled: **1/25/2021 12:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO <sub>3</sub> )	<b>75</b>	mg/L	1	1	02/03/21 10:00	CJD	2320B-2011
Calcium	<b>47.6</b>	mg/L	0.500	1	02/03/21 21:48	TJS	EPA-200.7
Hardness as CaCO <sub>3</sub> (SM-2340B)	<b>131</b>	mg/L	0.100	1	02/03/21 21:48		EPA-200.7
Magnesium	<b>2.89</b>	mg/L	0.100	1	02/03/21 21:48	TJS	EPA-200.7

Lab No : **89857**

Matrix: **Aqueous**

Sample ID : **Effluent Composite 1/25-26/21**

Sampled: **1/26/2021 12:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO <sub>3</sub> )	<b>106</b>	mg/L	1	1	02/03/21 10:00	CJD	2320B-2011
Calcium	<b>42.4</b>	mg/L	0.500	1	02/03/21 22:04	TJS	EPA-200.7
Hardness as CaCO <sub>3</sub> (SM-2340B)	<b>117</b>	mg/L	0.100	1	02/03/21 22:04		EPA-200.7
Magnesium	<b>2.76</b>	mg/L	0.100	1	02/03/21 22:04	TJS	EPA-200.7

Lab No : **91049**

Matrix: **Aqueous**

Sample ID : **Effluent Composite 1/27-28/21**

Sampled: **1/28/2021 12:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO <sub>3</sub> )	<b>94</b>	mg/L	1	1	02/03/21 10:00	CJD	2320B-2011
Calcium	<b>46.4</b>	mg/L	0.500	1	02/03/21 22:09	TJS	EPA-200.7
Hardness as CaCO <sub>3</sub> (SM-2340B)	<b>126</b>	mg/L	0.100	1	02/03/21 22:09		EPA-200.7
Magnesium	<b>2.45</b>	mg/L	0.100	1	02/03/21 22:09	TJS	EPA-200.7

**Qualifiers/  
Definitions**

DF Dilution Factor  
 MQL Method Quantitation Limit

L Limit Exceeded



### CHAIN-OF-CUSTODY

<b>Kit ID:</b>	151383
<b>Initiated By:</b>	Sydney Andres
<b>Initiated Date:</b>	1/11/2021
<b>Project Comment</b>	Harrison WWTP Bioassay

<b>Company Name</b>	<b>Company Number</b>	<b>Client Project Manager/Contact</b>	<b>Purchase Order Number</b>
Harrison Wastewater Treatment Plant	03322	Harrison Wastewater Treatment Plant	
<b>Site Name</b>	<b>Project Number</b>	<input type="checkbox"/> RUSH – Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	<b>Method of Shipment</b> <input type="checkbox"/> Fed Ex <input checked="" type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
QTR 1 A - Bioassay 01/24-25/2021			
<b>LIMS Project ID</b>	<b>Project Manager Phone #</b>	<b>Project Manager Email</b>	<b>Site/Facility ID #</b>
Harrison - Bioassay	(870) 741-5527		

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
1/24-25/21	12:00 to 12:00	Composite 1	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
1/24-25/21	12:00 to 12:00	Composite 1	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
1/24-25/21	12:00 to 12:00	Composite 1	Aqueous	C	2	Plastic - Gallon	NONE	Chronic CD/FH

21-026-0392  
 03322  
 Harrison Wastewater Treatment Plant  
 Bioassay  
 01-26-2021  
 10:15:17

Track# LZ A48 A05 84 91639822

<b>For Laboratory Use Only</b>			<b>Sampled by (Name - Print)</b>		<b>Client Remarks/Comments</b>			
<b>Ice</b>	<b>Custody Seals</b>	<b>Lab Comments</b>	<i>Randy Reese</i>					
(Y/N)	(Y/N)		<b>Relinquished by: (SIGNATURE)</b>	<b>Date Time</b>	<b>Received by: (SIGNATURE)</b>	<b>Date Time</b>		
			<i>Randy Reese</i>	1-25-21/12:30				
<b>Blank/ Cooler Temp</b>			<b>Relinquished by: (SIGNATURE)</b>	<b>Date Time</b>	<b>Received by: (SIGNATURE)</b>	<b>Date Time</b>		
0.4 T102 mw					<i>Summer Hanison</i>	1/26/21 09:50		





#2

CHAIN-OF-CUSTODY

<b>Kit ID:</b>	151384
<b>Initiated By:</b>	Sydney Andres
<b>Initiated Date:</b>	1/11/2021
<b>Project Comment</b>	Harrison WWTP Bioassay

<b>Company Name</b>	<b>Company Number</b>	<b>Client Project Manager/Contact</b>	<b>Purchase Order Number</b>
Harrison Wastewater Treatment Plant	03322	Harrison Wastewater Treatment Plant	
<b>Site Name</b>	<b>Project Number</b>	<input type="checkbox"/> RUSH - Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	<b>Method of Shipment</b> <input type="checkbox"/> Fed Ex <input checked="" type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
QTR 1 B - Bioassay 01/26-27/2021			
<b>LIMS Project ID</b>	<b>Project Manager Phone #</b>	<b>Project Manager Email</b>	<b>Site/Facility ID #</b>
Harrison - Bioassay	(870) 741-5527		

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
1/25-26/21	12:30 to 12:30	Composite 2	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
1/25-26/21	12:30 to 12:30	Composite 2	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
1/25-26/21	12:30 to 12:30	Composite 2	Aqueous	C	2	Plastic - Gallon	NONE	Chronic CD/FH


 21-026-0392  
 03322  
 Harrison Wastewater Treatment Plant  
 Bioassay / 1/26/21  
 01-26-2021  
 10:15:17

Track # LZ A48 A05 84 9157 6211

For Laboratory Use Only			Sampled by (Name - Print)		Client Remarks/Comments			
<b>Ice</b>	<b>Custody Seals</b>	<b>Lab Comments</b>	Randy Reese					
(Y/N)	(Y/N)		<b>Relinquished by: (SIGNATURE)</b>	<b>Date Time</b>	<b>Received by: (SIGNATURE)</b>	<b>Date Time</b>		
			Randy Reese	1-26-21/12:45				
<b>Blank/Cooler Temp</b>			<b>Relinquished by: (SIGNATURE)</b>	<b>Date Time</b>	<b>Received by: (SIGNATURE)</b>	<b>Date Time</b>		
0.2 T101 mw					Makayla Mann	1/27/21 09:00		



#3

**CHAIN-OF-CUSTODY**

<b>Kit ID:</b>	151385
<b>Initiated By:</b>	Sydney Andres
<b>Initiated Date:</b>	1/11/2021
<b>Project Comment</b>	Harrison WWTP Bioassay

<b>Company Name</b> Harrison Wastewater Treatment Plant	<b>Company Number</b> 03322	<b>Client Project Manager/Contact</b> Harrison Wastewater Treatment Plant	<b>Purchase Order Number</b>
<b>Site Name</b> QTR 1 C - Bioassay 01/28-29/2021	<b>Project Number</b>	<input type="checkbox"/> RUSH - Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	<b>Method of Shipment</b> <input type="checkbox"/> Fed Ex <input checked="" type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
<b>LIMS Project ID</b> Harrison - Bioassay	<b>Project Manager Phone #</b> (870) 741-5527	<b>Project Manager Email</b>	<b>Site/Facility ID #</b>

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
1/27-28/21	12:30 to 12:30	Composite 3	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
1/27-28/21	12:30 to 12:30	Composite 3	Aqueous	C	1	Plastic - Pint	NONE	Alkalinity
1/27-28/21	12:30 to 12:30	Composite 3	Aqueous	C	3	Plastic - Gallon	NONE	Chronic CD/FH


 21-026-0392  
 03322  
 01-26-2021  
 Harrison Wastewater Treatment Plant  
 Bioassav / 1/26/21/1/27/21  
 10:15:17

Track # LZ A48 A05 84 9096 4035

For Laboratory Use Only			Sampled by (Name - Print)		Client Remarks/Comments			
<b>Ice</b> Y/N	<b>Custody Seals</b> Y/N	<b>Lab Comments</b>  0.3 T102 mw	Randy Reese					
			Relinquished by: (SIGNATURE) Randy Reese		Date Time	Received by: (SIGNATURE)	Date Time	
			Relinquished by: (SIGNATURE)		Date Time	Received by: (SIGNATURE)	Date Time	
			Relinquished by: (SIGNATURE)		Date Time	Received by: (SIGNATURE)	Date Time	

Sample ID: Harrison Date/Time Start: 1/26/2021 11:31 Analyst: IW

Report # 21-026-0392 Date/Time End: 2/2/2021 12:28 Analyst: IW

Data Entered By: 2/2/21 IW Data Reviewed By: BA 2/3/21  
 date / initial date / initial

Method 1002.0 - Ceriodaphnia dubia Survival and Reproduction Data

Conc.	Day	Replicate										Total live young	# live Adults	Young per Live adult
% EFF	#	1	2	3	4	5	6	7	8	9	10			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	3	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	4	0	0	0	x	0	0	1	0	0	5	6	10	0.6
	5	x	0	0	x	0	0	0	0	0	12	12	10	1.2
	6	x	0	0	x	0	0	0	0	4	1	5	10	0.5
	7	x	0	0	x	0	0	0	0	0	0	0	10	0.0
Replicate Totals	----	0	0	0	0	0	0	1	0	4	18	Avg. Yng/ adult=	2	% Coeff 245.99
32	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	3	5	0	3	3	0	0	0	0	0	0	11	10	1.1
	4	x	0	0	0	0	0	0	3	0	0	3	10	0.3
	5	x	x	2	13	0	0	6	10	0	0	31	10	3.1
	6	x	x	4	12	0	0	0	16	0	0	32	10	3.2
	7	x	x	0	0	0	0	0	0	0	0	0	10	0.0
Replicate Totals	----	5	0	9	28	0	0	6	29	0	0	Avg. Yng/ adult=	8	% Coeff 148.33
42	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	3	0	0	0	3	0	0	3	4	0	0	10	10	1.0
	4	x	x	0	0	0	0	0	0	0	0	0	10	0.0
	5	x	x	0	12	0	0	8	11	3	0	34	10	3.4
	6	x	x	0	19	0	0	4	13	6	0	42	10	4.2
	7	x	x	0	0	0	0	0	0	0	0	0	10	0.0
Replicate Totals	----	0	0	0	34	0	0	15	28	9	0	Avg. Yng/ adult=	9	% Coeff 150.44
56	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	3	4	0	0	3	0	0	0	2	2	4	15	10	1.5
	4	0	4	0	0	0	0	0	1	0	0	5	10	0.5
	5	0	16	12	12	0	0	10	12	12	0	74	10	7.4
	6	0	9	6	17	0	0	4	0	5	1	42	10	4.2
	7	0	1	0	7	0	0	0	0	0	0	8	10	0.8
Replicate Totals	----	4	30	18	39	0	0	14	15	19	5	Avg. Yng/ adult=	14	% Coeff 89.48
75	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	3	4	0	0	0	0	0	0	0	0	x	4	10	0.4
	4	0	6	0	6	0	0	1	0	0	x	13	10	1.3
	5	0	8	0	9	0	0	3	13	0	x	33	10	3.3
	6	0	7	0	10	0	0	12	18	x	x	47	10	4.7
	7	0	0	0	0	0	0	0	0	x	x	0	10	0.0
Replicate Totals	----	4	21	0	25	0	0	16	31	0	0	Avg. Yng/ adult=	10	% Coeff 126.64
100	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0
	3	0	0	0	3	0	0	3	4	4	0	14	10	1.4
	4	0	7	0	0	0	0	0	0	0	1	8	10	0.8
	5	5	16	0	13	0	0	10	9	11	0	64	10	6.4
	6	18	16	0	18	0	0	14	x	18	x	84	10	8.4
	7	0	0	0	0	0	0	0	x	14	x	14	10	1.4
Replicate Totals	----	23	39	0	34	0	0	27	13	47	1	Avg. Yng/ adult=	18	% Coeff 98.03

Parameters for control acceptability:  
 Page 19 of 30  
 - the average number of live adults must be >= 80 %  
 - the average number a young per live adult must be >= 15.  
 - 60 % of the controls must produce 3 broods.

Sample ID:

REP	Control	32	42	56	75	100
A	0	5	0	4	4	23
B	0	0	0	30	21	39
C	0	9	0	18	0	0
D	0	28	34	39	25	34
E	0	0	0	0	0	0
F	0	0	0	0	0	0
G	1	6	15	14	16	27
H	0	29	28	15	31	13
I	4	0	9	19	0	47
J	18	0	0	5	0	1
%CV	246.0	148.3	150.4	89.5	126.6	98.0

Invalid

Control failures

Client notified 2/3/21. BA.

Sample ID: Harrison Date/Time Start: 1/26/2021 11:31 Analyst: CF

Report # 21-026-0392 Date/Time End: 2/2/21 11:46 Analyst: IW

Data Entered By: 2/2/21 IW Data Reviewed By: FDA 2/3/21  
 date / initial date / initial

Method 1000.0 - *Pimephales promelas* (Fathead Minnow) Survival and Growth Data

Conch % EFF	REP	DAY								Proportion Survival	Avg. Dry Wt. surviving org (mg)	Avg. Dry Wt. original org (mg)	initial weight	final weight
		0	1	2	3	4	5	6	7					
Control	A	8	8	8	8	8	8	8	8	1.00	0.513	0.513	30.1773	30.1814
	B	8	8	7	5	5	5	5	5	0.63	0.660	0.412	24.6936	24.6969
	C	8	8	8	8	8	8	8	8	1.00	0.525	0.525	30.8789	30.8831
	D	8	8	8	8	8	8	8	8	1.00	0.437	0.437	27.8263	27.8298
	E	8	8	8	8	8	8	8	8	1.00	0.587	0.587	29.5081	29.5128
Mean proportion survival = 0.93											Survival % COEF = 18.13			
Mean average weight (original organisms) mg = 0.4950											Growth % COEF = 14.24			
Mean average weight (surviving organisms) mg = 0.5445														
32	A	8	8	8	8	7	7	7	7	0.88	0.612	0.612	34.5940	34.5989
	B	8	8	8	8	8	8	8	8	1.00	0.713	0.713	31.0976	31.1033
	C	8	8	8	8	7	7	7	7	0.88	0.625	0.625	22.5574	22.5624
	D	8	8	8	8	8	8	7	7	0.88	0.650	0.650	28.1523	28.1575
	E	8	8	8	7	7	7	7	7	0.88	0.775	0.775	35.6333	35.6395
Mean proportion survival = 0.90											Survival % COEF = 6.21			
Mean average weight (original organisms) mg = 0.6750											Growth % COEF = 10.06			
42	A	8	8	8	8	7	7	7	6	0.75	0.637	0.637	31.2083	31.2134
	B	8	8	8	8	7	7	7	7	0.88	0.563	0.563	30.4880	30.4925
	C	8	8	8	8	8	7	6	6	0.75	0.475	0.475	33.8100	33.8138
	D	8	8	8	8	8	8	8	8	1.00	0.713	0.713	31.2689	31.2746
	E	8	8	8	8	6	5	5	5	0.63	0.450	0.450	28.5830	28.5866
Mean proportion survival = 0.80											Survival % COEF = 17.82			
Mean average weight (original organisms) mg = 0.5675											Growth % COEF = 19.37			
56	A	8	8	8	8	8	8	8	8	1.00	0.725	0.725	30.2797	30.2855
	B	8	8	8	8	6	6	6	6	0.75	0.550	0.550	31.7241	31.7285
	C	8	8	8	8	8	8	8	8	1.00	0.738	0.738	24.3421	24.3480
	D	8	8	8	8	8	8	8	8	1.00	0.675	0.675	31.6157	31.6211
	E	8	8	8	8	5	5	5	5	0.63	0.500	0.500	34.3288	34.3328
Mean proportion survival = 0.88											Survival % COEF = 20.20			
Mean average weight (original organisms) mg = 0.6375											Growth % COEF = 16.75			
75	A	8	8	8	7	6	6	6	6	0.75	0.538	0.538	25.1911	25.1954
	B	8	8	7	7	5	5	5	5	0.63	0.475	0.475	30.2938	30.2976
	C	8	8	8	8	6	6	6	6	0.75	0.638	0.638	28.6405	28.6456
	D	8	8	8	8	8	7	7	7	0.88	0.738	0.738	28.9349	28.9408
	E	8	8	8	8	8	8	8	7	0.88	0.612	0.612	31.3815	31.3864
Mean proportion survival = 0.78											Survival % COEF = 13.49			
Mean average weight (original organisms) mg = 0.6000											Growth % COEF = 16.67			
100	A	8	8	8	8	8	8	8	8	1.00	0.788	0.788	27.0723	27.0786
	B	8	8	8	8	8	8	8	8	1.00	0.762	0.762	27.6716	27.6777
	C	8	8	8	8	7	7	7	7	0.88	0.600	0.600	30.5106	30.5154
	D	8	8	8	8	8	8	8	8	1.00	0.775	0.775	31.2072	31.2134
	E	8	8	7	7	7	7	7	7	0.88	0.650	0.650	33.7790	33.7842
Mean proportion survival = 0.95											Survival % COEF = 7.21			
Mean average weight (original organisms) mg = 0.7150											Growth % COEF = 11.82			

Parameters for control acceptability:

- the mean proportion survival must be  $\geq 80\%$
- the mean average weight must be  $\geq 0.250\text{mg}$

Sample ID:

SURVIVAL

<u># org</u>	CONC	A	B	C	D	E	24HR	48HR	7DAY	%CV
Control	100	63	100	100	100	100	100	98	93	18.13
8	32	88	100	88	88	88	100	100	90	6.21
5	42	75	88	75	100	63	100	100	80	17.82
8	56	100	75	100	100	63	100	100	88	20.20
8	75	75	63	75	88	88	100	98	78	13.49
8	100	100	100	88	100	88	100	98	95	7.21

GROWTH

CONC	A	B	C	D	E	MEAN	%CV
Control	0.513	0.412	0.525	0.437	0.587	0.4950	14.24
32	0.612	0.713	0.625	0.650	0.775	0.6750	10.06
42	0.637	0.563	0.475	0.713	0.450	0.5675	19.37
56	0.725	0.550	0.738	0.675	0.500	0.6375	16.75
75	0.538	0.475	0.638	0.738	0.612	0.6000	16.67
100	0.788	0.762	0.600	0.775	0.650	0.7150	11.82

SAMPLE ID: HARRISON, AR

Report Number: 21-026-0392

Date test started: 1/26/21

		DAY 1	2	3	4	5	6	7
INITIAL READINGS	pH CTRL	7.6	7.6	7.5	7.8	7.6	7.5	7.5
	Initial R							
	1	7.3	7.3	7.3	7.5	7.4	7.3	7.5
	2	7.2	7.2	7.2	7.5	7.4	7.2	7.5
	3	7.1	7.0	7.1	7.4	7.3	7.1	7.4
	4	7.0	7.1	7.0	7.3	7.3	7.0	7.3
	5	6.7	6.9	6.9	7.2	7.1	6.9	7.2
	DO CTRL	8.2	8.5	8.1	8.2	8.1	8.7	8.2
	Initial (mg/L) R							
	1	8.4	8.6	8.2	8.1	8.4	8.4	8.3
	2	8.4	7.9	8.4	8.1	8.5	8.4	8.5
	3	8.8	8.2	8.5	8.2	8.5	8.4	8.9
	4	8.9	8.4	8.5	8.4	8.8	8.5	8.9
	5	9.1	8.9	8.7	8.6	9.2	8.8	9.4
	Temp CTRL	23.1	23.6	23.2	23.3	23.8	23.8	23.2
Initial (°C) R								
1	23.1	23.8	23.1	23.4	24.5	23.8	23.6	
2	23.0	24.1	23.1	23.3	24.8	23.0	23.4	
3	23.1	24.6	23.3	23.6	25.2	23.3	23.8	
4	23.3	24.8	23.5	23.5	25.5	22.9	23.6	
5	23.7	25.2	24.1	24.2	26.6	22.8	23.8	
ANALYST:	CF	iw	CF	CF	PBA	PBA	iw	
DATE:	1/26/21	1/27/21	1/28/21	1/29/21	1/30/21	1/31/21	2/1/21	

		DAY 1	2	3	4	5	6	7
CERIODAPHNIA DUBIA READINGS	pH - CD CTRL	7.7	7.6	8.1	7.7	7.6	8.1	7.8
	After 24 hrs. R							
	1	7.7	7.6	8.0	7.6	7.6	8.1	8.0
	2	7.8	7.6	8.0	7.6	7.6	8.1	8.0
	3	7.8	7.6	8.0	7.6	7.6	8.2	8.1
	4	7.8	7.7	8.0	7.7	7.6	8.2	8.1
	5	7.8	7.7	8.0	7.8	7.7	8.3	8.1
	DO - CD CTRL	8.9	8.7	8.6	9.1	9.1	9.8	8.8
	After 24 hrs. R							
	1	9.0	8.6	8.6	8.9	9.2	9.8	9.0
	2	8.9	8.5	8.5	9.0	9.1	9.8	9.0
	3	8.8	8.5	8.5	9.0	9.1	9.7	8.7
	4	8.7	8.5	8.5	8.9	9.1	9.8	8.7
	5	8.8	8.4	8.5	8.9	9.2	9.8	8.8
	Temp CTRL	23.2	23.9	23.5	24.1	23.8	23.8	23.2
After 24 hrs (°C)R								
1	23.6	23.6	23.6	24.1	24.1	23.9	23.2	
2	23.4	23.7	23.2	24.1	24.1	24.0	23.1	
3	23.7	23.8	23.3	24.1	24.2	24.0	23.4	
4	23.5	23.8	23.5	24.0	24.1	24.0	23.4	
5	23.6	23.9	23.5	24.2	24.2	24.0	23.2	
ANALYST:	iw	CF	CF	PBA	PBA	iw	iw	
DATE:	1/27/21	1/28/21	1/29/21	1/30/21	1/31/21	2/1/21	2/2/21	

READINGS DATA SHEET FOR 7-DAY CHRONIC TESTING

SAMPLE ID: HARRISON, AR

Report Number: 21-026-0392

Date test started: 1/26/21

DAY		1	2	3	4	5	6	7
FATHEAD MINNOW READINGS	pH - FH CTRL	7.4	6.9	6.9	7.2	7.0	7.6	7.5
	After 24 hrs. R							
	1	7.2	6.9	6.1	7.2	7.0	7.6	7.4
	2	7.2	6.9	6.9	7.1	7.0	7.6	7.5
	3	7.2	6.9	7.0	7.3	7.0	7.5	7.5
	4	7.2	6.9	7.3	7.3	7.2	7.6	7.5
	5	7.3	7.6	7.2	7.4	7.2	7.7	7.6
	DO - FH CTRL	8.3	5.9	6.9	6.4	6.2	6.2	6.3
	After 24 hrs. R							
	1	8.1	6.6	6.9	6.5	6.2	6.1	6.0
	2	7.6	6.6	6.3	6.1	6.0	6.0	5.7
	3	7.5	6.3	6.5	6.4	5.9	5.3	5.7
	4	7.5	6.4	7.0	6.4	6.0	5.5	5.8
	5	7.9	6.3	6.9	6.8	6.3	6.3	6.2
	Temp CTRL	23.6	23.8	23.9	24.4	24.3	23.7	24.1
After 24 hrs (°C)R								
1	23.7	24.4	23.6	24.5	24.7	23.5	23.8	
2	23.8	24.6	23.8	24.1	24.9	23.7	24.1	
3	23.7	24.2	23.9	24.5	24.9	24.0	23.9	
4	23.6	24.3	23.7	24.3	24.8	24.3	23.9	
5	23.4	24.2	23.8	24.4	24.6	24.0	24.1	
ANALYST:	iw	CF		POA	POA	iw	CF	
DATE:	1/27/21	1/28/21	1/29/21	1/30/21	1/31/21	2/1/21	2/2/21	

Conductivity (µS/cm)

INITIAL READINGS	Initial CTRL	150.1	157.5	158.7	165.8	156.0	165.5	155.6	
	R				433				
	100%	431	453	420	536.4	400	355	365	
	INITIAL:	CF	iw	CF	CF	POA	POA	iw	
	DATE:	1/26/21	1/27/21	1/28/21	1/29/21	1/30/21	1/31/21	2/1/21	
	Total Residual Chlorine DL = 0.02mg/L								
	Initial CTRL	<0.02		<0.02		<0.02			
	R								
	100%	<0.02		<0.02		<0.02			
	INITIAL:	CF		iw		POA			
DATE:	1/26/21		1/28/21		1/30/21				
DPD Cl2 Reagent	21-Reag- iw 20	4346	21-Reag- iw 20	4346	21-Reag- iw 20	43410			

Comments / Observations:

Tests are maintained at 25 ± 1 ° C  
Incubator ID: BIO Thermometer ID: 120554

Meter	ID
pH	PH 21
Conductivity	C1
DO	DM4
Temp.	T83



Waypoint Analytical, LLC.  
**CERIODAPHNIA SURVIVAL AND REPRODUCTION DATA**

SAMPLE ID: HARRISON, AR TEST START - DATE/TIME: 1/26/21 1131 ANALYST: lw  
 REPORT #: 21-026-0392 TEST END - DATE/TIME: 2/2/21 1228 ANALYST: lw  
 ORGANISM REF#: 21-REAG-0017 RANDOMIZING KEY #: 33 ANALYST: CF

CONC.	REPLICATE										INITIALS	DATE	
1	DAY	1	2	3	4	5 <sup>f</sup>	6 <sup>f</sup>	7	8 <sup>m</sup>	9 <sup>f</sup>	10 <sup>f</sup>		
	1	0	0	0	0	0	0	0	0	0	0	lw	1/27/21
	2	0	0	0	0	0	0	0	0	0	0	CF	1/28/21
	3	0	0	0	0	0	0	0	0	0	0	CF	1/29/21
	4	X	X	0	6	0	0	1	0	0	0	PBA	1/30/21
	5	I	I	12	9	0	0	3	0	0	0	PBA	1/31/21
	6			6	10	120	120	12	0	0	0	lw	2/1/21
	7	I	I	0	0	0	0	0	0	0	0	lw	2/2/21
CONC.	REPLICATE										INITIALS		
2	DAY	1	2 <sup>m</sup>	3 <sup>f</sup>	4	5 <sup>f</sup>	6 <sup>f</sup>	7	8	9	10		
	1	0	0	0	0	0	0	0	0	0	0	lw	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	4	0	0	3	0	0	3	0	0	0	CF	
	4	0	0	0	0	0	0	0	0	0	1	PBA	
	5	0	0	0	12	0	0	8	13	4	0	PBA	
	6	0	0	0	9	0	0	4	18	4	X	lw	
	7	0	0	0	0	0	0	0	0	0	I	lw	
CONC.	REPLICATE										INITIALS		
3	DAY	1	2	3 <sup>f</sup>	4	5 <sup>m</sup>	6 <sup>m</sup>	7	8	9	10		
	1	0	0	0	0	0	0	0	0	0	0	lw	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	5	0	0	3	0	0	0	0	2	4	CF	
	4	X	0	0	0	0	0	1	3	0	0	PBA	
	5	I	X	0	13	0	0	0	10	12	0	PBA	
	6	I	I	0	18	0	0	0	16	5	1	lw	
	7	I	I	0	0	0	0	0	0	0	0	lw	
CONC.	REPLICATE										INITIALS		
4	DAY	1	2	3 <sup>m</sup>	4	5 <sup>f</sup>	6 <sup>f</sup>	7	8	9	10 <sup>m</sup>		
	1	0	0	0	0	0	0	0	0	0	0	lw	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	4	0	0	0	0	0	3	2	4	0	CF	
	4	0	0	0	X	0	0	0	1	0	0	PBA	
	5	0	8	0	I	0	0	10	12	11	0	PBA	
	6	0	7	0	I	0	0	14	180	18	0	lw	
	7	0	0	0	I	0	0	0	0	14	0	lw	
CONC.	REPLICATE										INITIALS		
5	DAY	1	2	3 <sup>f</sup>	4	5 <sup>f</sup>	6 <sup>f</sup>	7	8	9	10		
	1	0	0	0	0	0	0	0	0	0	0	lw	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	0	3	0	0	0	4	0	0	CF	
	4	0	4	0	0	0	0	0	0	0	5	PBA	
	5	5	16	0	13	0	0	6	9	0	12	PBA	
	6	18	9	0	12	0	0	0	X	X	1	lw	
	7	0	1	0	0	0	0	0	I	I	0	lw	
CONC.	REPLICATE										INITIALS		
6	DAY	1	2	3	4	5 <sup>f</sup>	6 <sup>f</sup>	7	8	9	10		
	1	0	0	0	0	0	0	0	0	0	0	lw	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	3	3	0	0	0	4	0	X	CF	
	4	0	7	0	0	0	0	0	0	0	0	PBA	
	5	X	16	2	12	0	0	10	11	3	0	PBA	
	6	I	16	4	17	0	0	4	13	6	X	lw	
	7	I	0	0	7	0	0	0	0	0	I	lw	

WAYPOINT ANALYTICAL, LLC.  
 TEST TRACEABILITY RECORD  
**7-DAY CERIODAPHNIA DUBIA**

SAMPLE ID: HARRISON, AR REPORT # 21-026-0392

DATE START: 1/26/21 DATE END: 2/2/21

CERIODAPHNIA DUBIA REFERENCE # 21-REAG-0017

Neonates obtained from: Brood Tray ID: Monday / Tuesday / Wednesday A / B  
 (circle) Brood Tray Set: Y / P / B / O / G

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	ALGAE	YCT
CHRONIC	1/26/21	lw	0	21-REAG-0307	21-REAG-0308
	1/27/21	lw	1	21-REAG-0307	21-REAG-0308
	1/28/21	CF	2	21-REAG-0307	21-REAG-0308
	1/29/21	CF	3	21-REAG-0307	21-REAG-0308
	1/30/21	FOA	4	21-REAG-0307	21-REAG-0308
	1/31/21	FOA	5	21-REAG-0307	21-REAG-0308
	2/1/21	CF	6	21-REAG-0307	21-REAG-0308

	TEST DAY	CONTROL WATER	SAMPLE LAB ID
(Comp. 1)	0	21-REAG-0390	L89371
	1	21-REAG-0390 <sup>lw</sup>	↓
(Comp. 2)	2	21-REAG-0406	L89857
	3	21-REAG-0415/19	↓
(Comp. 3)	4	21-REAG-0437	L91049
	5	21-REAG-0453	↓
	6	21-REAG-0459	↓

COMMENTS: YCT is filtered with 60 - micron mesh to remove additional debris.  
 Organisms are fed 0.15 mL Algae and YCT daily after renewal.  
 Test conducted at 25 ±1 °C Incubator ID: BIO / Thermometer ID: 120554

ANALYST COMMENTS:  
 If an organisms did not produce any broods, check under microscope for sex of organism.  
 Annotate the Concentration and Replicate of organism that is MALE: \_\_\_\_\_

CERIODAPHNIA RANDOMIZATION TRANSLATION

RANDOMIZING KEY #:

33

REPORT #

21-0260392

TEST CONCENTRATIONS:

1: Control

2: 21

3: 35

4: 47

5: 63

6: 84

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
1	3	3	4	5	2	6	5	1	2	3

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
2	5	1	1	3	1	4	3	5	1	6

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
3	2	2	3	6	5	1	1	2	4	4

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
4	4	5	6	1	3	3	6	4	6	2

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
5	6	4	5	2	6	5	2	6	5	1

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
6	1	6	2	4	4	2	4	3	3	5

Waypoint Analytical, LLC.  
**TEST DATA SHEET FOR FATHEAD MINNOW SURVIVAL (7-DAY)**

SAMPLE ID: HARRISON, AR REPORT #: 21-026-0392

TEST START - DATE/TIME: 1/26/21 1131 ANALYST: CF

TEST END - DATE/TIME : 2/2/21 1146 ANALYST: lw

NOTE: PER ADEQ REQUIREMENTS THE INTIAL NUMBER OF FISH PER REPLICATE MUST BE **8** !!

CONC.	REP NO.	NO. OF SURVIVORS									REMARKS
		DAY									
		0	1	2	3	4	5	6	7		
1	47 A	8	8	8	8	8	8	8	8	8	
	27 B	8	8	8	8	7	7	7	7	7	
	47 C	8	8	8	8	6	6	6	6	6	
	C D	8	8	8	8	8	8	8	8	8	
	47 E	8	8	8	8	8	8	8	8	8	
2	63 A	8	8	8	7	6	6	6	6	6	
	35 B	8	8	8	8	7	7	7	7	6	
	C C	8	8	7	5	5	5	5	5	5	
	63 D	8	8	7	7	5	5	5	5	5	
	84 E	8	8	8	8	8	8	8	8	8	
3	35 A	8	8	8	8	7	7	7	7	7	
	84 B	8	8	8	8	8	8	8	8	8	
	27 C	8	8	8	8	8	8	8	8	8	
	84 D	8	8	8	8	7	7	7	7	7	
	C E	8	8	8	8	8	8	8	8	8	
4	47 A	8	8	8	8	8	8	8	8	8	
	35 B	8	8	8	8	8	7	CF/6	6	6	
	63 C	8	8	8	8	6	6	6	6	6	
	27 D	8	8	8	8	7	7	7	7	7	
	84 E	8	8	8	8	8	8	8	8	8	
5	84 A	8	8	7	7	7	7	CF/7	7	7	
	27 B	8	8	8	8	8	8	CF/7	7	7	
	C C	8	8	8	8	8	8	8	8	8	
	63 D	8	8	8	8	8	7	7	7	7	
	35 E	8	8	8	8	8	8	8	8	8	
6	C A	8	8	8	8	8	8	8	8	8	
	27 B	8	8	8	7	7	7	7	7	7	
	35 C	8	8	8	8	6	5	5	5	5	
	47 D	8	8	8	8	5	5	5	5	5	
	63 E	8	8	8	8	8	8	8	8	7	
INITIALS		CF	lw	CF	CF	POA	POA	CF	lw		
DATE		1/26/21	1/27/21	1/28/21	1/29/21	1/30/21	1/31/21	2/1/21	2/2/21		

ORGANISM REF#: 20-REAG-0397

COMMENTS:

WAYPOINT ANALYTICAL, LLC.  
 TEST TRACEABILITY RECORD  
7-DAY FATHEAD MINNOW

SAMPLE ID: Harrison. AR REPORT # 21-026-0392

DATE START: 1/26/21 DATE END: 2/2/21

FATHEAD MINNOW REFERENCE # 21-REAG- 0397

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	CONTROL WATER	BRINE SHRIMP	SAMPLE LAB ID:	
CHRONIC	1/26/21	CF	0	21-REAG- 0390	21-REAG- 0380	L89371	(Comp. 1)
	1/27/21	IW	1	21-REAG- 0392	21-REAG- 0389	J	
	1/28/21	CF	2	21-REAG- 0406	21-REAG- 0407	L89857	(Comp. 2)
	1/29/21	CF	3	21-REAG- 0415/19	21-REAG- 0420	J	
	1/30/21	FOA	4	21-REAG- 0437	21-REAG- 0438	L 91049	(Comp. 3)
	1/31/21	FOA	5	21-REAG- 0453	21-REAG- 0452	J	
	2/1/21	CF	6	21-REAG- 0459	21-REAG- 0457	J	

COMMENTS: Fathead minnows are fed 0.15 mL Artemia Brine Shrimp x2 daily.  
 Test conducted at 25 ±1 °C Incubator ID: BIO / Thermometer ID: 120554

ANALYST COMMENTS:

## FATHEAD MINNOW FINAL WEIGHT SHEET

SAMPLE ID: HarrisonREPORT #: 21-0210-0392INITIAL WEIGHT DATE/TIME: 2/2/21 856ANALYST: CFDATE/TIME IN OVEN: 2/2/21 1607 TEMP (°C): 91ANALYST: IWDATE/TIME OUT OVEN: 2/3/21 820 TEMP (°C): 83ANALYST: IWFINAL WEIGHT DATE/TIME: 2/3/21 1241ANALYST: CF

Oven ID: 03

Thermometer ID: T49

Balance ID: B12

Temp Range: 50 - 105 °C

	REP ID	CRUC ID	INT WEIGHT (g)	FINAL WEIGHT (g)	# LARV	REMARKS
1	A	RUX	30.2797	30.2855	8	
	B	BS	34.5940	34.5989	7	
	C	Sour	31.7241	31.7285	6	
	D	529	30.1773	30.1814	8	
	E	QB	24.3421	24.3480	8	
2	A	Ted	25.1911	25.1954	6	
	B	Pce	31.2083	31.2134	6	
	C	Bob	24.6936	24.6969	5	
	D	3R	30.2938	30.2976	5	
	E	345	27.0723	27.0786	8	
3	A	Tree	30.4880	30.4925	7	
	B	HRW	27.6716	27.6777	8	
	C	Coc	31.0976	31.1033	8	
	D	Key	30.5106	30.5154	7	
	E	1779	30.8789	30.8831	8	
4	A	Mel	31.6157	31.6211	8	
	B	King#1	33.8100	33.8138	6	
	C	Hum	28.6405	28.6456	6	
	D	Taco	22.5574	22.5624	7	
	E	CTM	31.2072	31.2134	8	
5	A	Am	33.7790	33.7842	7	
	B	Pond	28.1523	28.1575	7	
	C	.308	27.8263	27.8298	8	
	D	Shi	28.9349	28.9403	7	
	E	153	31.2689	31.2746	8	
6	A	Soph	29.5081	29.5128	8	
	B	WKE	35.6333	35.6395	7	
	C	athz	28.5830	28.5866	5	
	D	DS	34.3288	34.3328	5	
	E	FRAN	31.3815	31.3864	7	

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Crucibles must be in the oven a minimum of 6 hours. Immediately after removal from the oven the crucibles must be allowed to cool in the dessicator a minimum of 2 hours.

## Comments/Observations:

F:\CETIS\bio report forms\BIO BATCH SHEETS\2021 Bio Batch Sheets\21 - 5 rep FH Weights