



Georgia-Pacific LLC
Consumer Products

Crossett Paper Operations
100 Mill Supply Rd.
P.O. Box 3333
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May 22, 2013

Mr. Craig Uyeda
NPDES Enforcement Section
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Reference: Georgia-Pacific LLC: Crossett Paper Operations
NPDES Permit # **AR0001210**

Dear Mr. Uyeda:

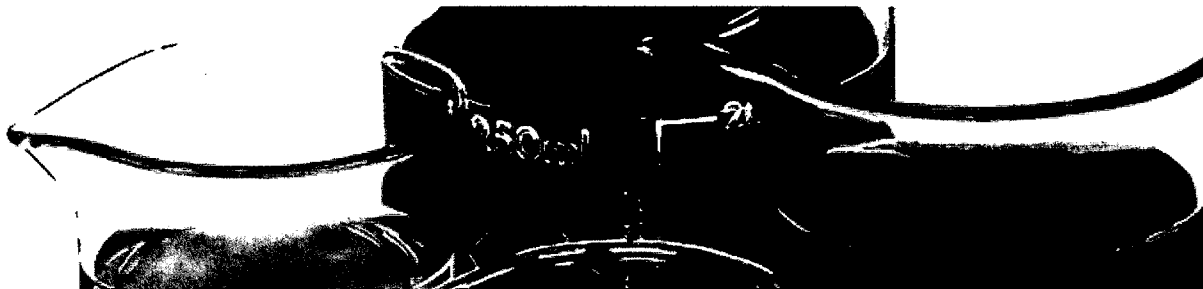
Attached are the Discharge Monitoring Reports (DMRs) for the Georgia-Pacific Crossett Paper Operations' - NPDES Permit # **AR0001210** - for April 2013. As required by Part III, Section 4 paragraph a, of our NPDES Permit, a full report of the chronic toxicity testing has also been included with this submittal.

If you have any questions or need additional information, please feel free to contact me at (870) 567-8144 or by email at james.cutbirth@gapac.com.

Sincerely,

A handwritten signature in cursive script that reads 'James W. Cutbirth'.

James W. Cutbirth
Environmental Services Superintendent



**Chronic Toxicity Test Results
Outfall 001 Effluent**

Prepared for:
**Georgia Pacific Crossett Mill
Crossett, Arkansas**

Prepared by:
**ENVIRON International Corporation
Nashville, Tennessee**

Date:
April 2013

Project Number:
20-19675E





April 22, 2013

Ms. Rachel Johnson
Georgia-Pacific Crossett Mill
100 Mill Supply Road
Crossett, Arkansas 71635

**Re: Chronic Toxicity Test Results - March 2013
ENVIRON Project No. 20-19675E**

Dear Ms. Johnson:

ENVIRON conducted chronic (7-day) whole effluent toxicity (WET) tests for Georgia-Pacific in Crossett, AR. The tests were conducted according to requirements in Arkansas NPDES permit AR0001210. Composite samples of Outfall 001 effluent were collected on March 25, 27, and 29, 2013. The samples were received at ENVIRON on March 26, 28, and 30, 2013, within the USEPA-required receipt temperature range of 0-6.0 °C. The grab samples of river water were received on March 26, 28, and 30, 2013 in good condition. Test organisms utilized for the chronic toxicity tests were the fathead minnow (*Pimephales promelas*) and *Ceriodaphnia dubia* (*C. dubia*). The tests were initiated upon receipt of the first sample. Test concentrations consisted of 25, 34, 45, 60, and 80 percent effluent and a river water control. A secondary control of moderately hard water was also initiated. All control organisms met USEPA test acceptability criteria. The results of the chronic toxicity tests are as follows:

TEST RESULTS FOR OUTFALL 001 EFFLUENT		
Permit Limits	Fathead Minnow	<i>C. dubia</i>
NOEC Value 80% (lethality)	80%	80%
NOEC Value 80% (sub-lethality)	80%	25%

The results of the chronic tests with the fathead minnow indicated No Observable Effect Concentration (NOEC) values for survival (lethality) of 80 percent effluent. The fathead minnow test results indicate no significant toxicity at the critical dilution to the survival of fathead minnow. The sub-lethal NOEC value for fathead minnow growth was 80 percent, which demonstrates no sub-lethal toxicity to the fathead minnow. The results of the chronic tests with *C. dubia* indicated No Observable Effect Concentration (NOEC) values for survival (lethality) of 80 percent effluent. The *C. dubia* test results indicate no significant toxicity at the critical dilution to the survival of *C. dubia*. The sub-lethal NOEC value for *C. dubia* reproduction was 25 percent, which demonstrates sub-lethal toxicity to *C. dubia*.

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NELAP Accredited and Laboratory Certification in the following States: AR (02-008-0), AZ (0751), CA (2465), FL (E87896), IA (386), KS (E-10391), LA (02061), MN, NC (003), OK (9973), SC (84015), TX (T104704410-11-2), VA (460171), WI (399050850), WV (351) Test Results Contained in this Report Meet NELAP Requirements

environcorp.com

ENVIRON Test Log No. 15999

The river water control for the fathead minnow test met USEPA criteria for test acceptability. The Coefficient of Variation (CV) values for survival in the control and critical dilution are 22 and 6 percent respectively. The CV values for growth in the control and critical dilution are 14 and 18 percent respectively, and are below the CV limit of 40 percent for findings of no toxicity. The PMSD value was 19 percent, which is within the USEPA PMSD bounds of 12 to 30 percent for fathead minnow growth. The effluent concentration-response curve can be described as a Type 4 dose response in EPA 821-B-00-004 *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing*. A Type 4 response is characterized by stimulation in the lower test concentrations, but no significant effect at the higher test concentrations. This test is considered valid for assessment of permit compliance. The monthly reference toxicant test also met all the test acceptability criteria.

All *C. dubia* test controls met USEPA criteria for test acceptability. The reproduction CV values for the control and critical dilution are 12 and 25 percent respectively, which meets the Test Acceptability Criteria (TAC) limit of 40 percent for a finding of no toxicity (even though the test demonstrates toxicity). The PMSD value was 14 percent, which is within the USEPA PMSD bounds of 13 to 47 percent for *C. dubia* reproduction indicating high test sensitivity. The effluent concentration-response can be described as a Type 1 response in EPA 821-B-00-004: an ideal dose response. Although the test precision is high, the percent effects in the 34%, 45%, 60% and 80% test concentrations are within the range of acceptable precision values for *C. dubia* tests, and are not considered a false positive. This test is considered valid for assessment of permit compliance. The monthly reference toxicant test also met all the test acceptability criteria.

Copies of the laboratory bench sheets with statistical data are presented in Attachment 1. Chain-of-custody documentation and reference toxicant data are presented in Attachment 2.

In order to meet the NELAP requirement for listing the total number of report pages; this report consists of 35 pages including this cover letter, attachment pages and separator pages.

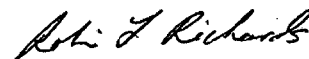
If you have any questions please contact Rick Lockwood at (615) 277-7523. ENVIRON appreciates the opportunity to assist Georgia-Pacific with their testing needs.

Sincerely,

ENVIRON International Corporation



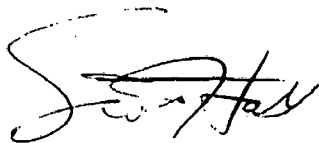
Richard E. Lockwood
Project Manager



Robin L. Richards, REM
Principal

DATA REVIEW FORM
ACUTE AND CHRONIC WET TESTS
ENVIRON International Corporation

The raw data (i.e., laboratory bench sheets) and data in the applicable summary sheets have been checked and found to be complete. Additionally, test conditions and control performance meet test acceptability criteria specified by the US Environmental Protection Agency and the certifying state authority for the tests conducted.¹



Scott Hall, Manager
Ecotoxicology Group

¹ Any data limitations regarding their applicability for determining NPDES permit compliance are discussed in the report cover letter.

**Attachment 1:
Statistical Analysis and
Raw Data Sheets**

CETIS Analytical Report

Report Date: 09 Apr-13 15:49 (p 1 of 4)
 Test Code: 15999fm | 12-3439-3557

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 09-3607-0314	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.4
Analyzed: 09 Apr-13 12:52	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes
Sample ID: 03-5415-6013	Code: 151BFDED	Client: GPAC Crosssett
Sample Date: 25 Mar-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (MAR)
Receive Date: 26 Mar-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	NA	C > T	NA	NA	80	>80	NA	1.25	16.6%

Steel Many-One Rank Sum Test

Control	vs C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water	25	32.5	16	1	8	0.9870	Asymp	Non-Significant Effect
	34	32.5	16	1	8	0.9870	Asymp	Non-Significant Effect
	45	31	16	1	8	0.9676	Asymp	Non-Significant Effect
	60	29.5	16	1	8	0.9290	Asymp	Non-Significant Effect
	80	26.5	16	1	8	0.7637	Asymp	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.85	0.8 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1624336	0.03248672	5	1.816	0.1477	Non-Significant Effect
Error	0.4292868	0.01788695	24			
Total	0.5917204		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	241.2	15.09	<0.0001	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8898	0.9031	0.0048	Non-normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	0.85	0.595	1	1	0.625	1	0.09186	24.16%	0.0%
25		5	1	1	1	1	1	1	0	0.0%	-17.65%
34		5	1	1	1	1	1	1	0	0.0%	-17.65%
45		5	0.975	0.9056	1	1	0.875	1	0.025	5.73%	-14.71%
60		5	0.925	0.7862	1	1	0.75	1	0.05	12.09%	-8.82%
80		5	0.9	0.8306	0.9694	0.875	0.875	1	0.025	6.21%	-5.88%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Wate	5	1.201	0.8732	1.528	1.393	0.9117	1.393	0.1179	21.96%	0.0%
25		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.0%	-16.04%
34		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.0%	-16.04%
45		5	1.356	1.254	1.458	1.393	1.209	1.393	0.03673	6.06%	-12.98%
60		5	1.287	1.094	1.481	1.393	1.047	1.393	0.06974	12.12%	-7.22%
80		5	1.246	1.144	1.348	1.209	1.209	1.393	0.03673	6.59%	-3.8%

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	8/8	8/8	5/8	8/8	5/8
25		8/8	8/8	8/8	8/8	8/8
34		8/8	8/8	8/8	8/8	8/8
45		7/8	8/8	8/8	8/8	8/8
60		7/8	8/8	8/8	8/8	6/8
80		7/8	7/8	7/8	8/8	7/8

CETIS Analytical Report

Report Date: 09 Apr-13 15:49 (p 2 of 4)
Test Code: 15999fm | 12-3439-3557

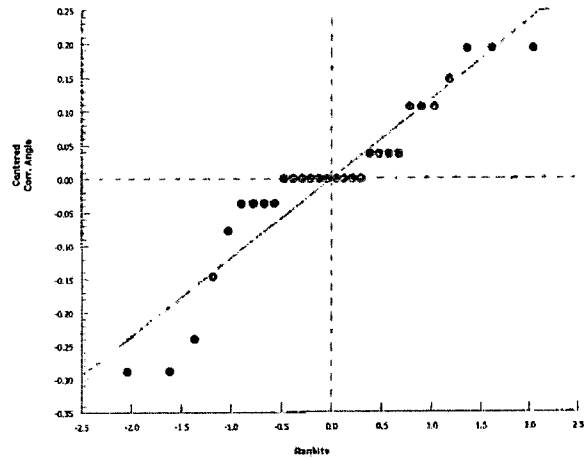
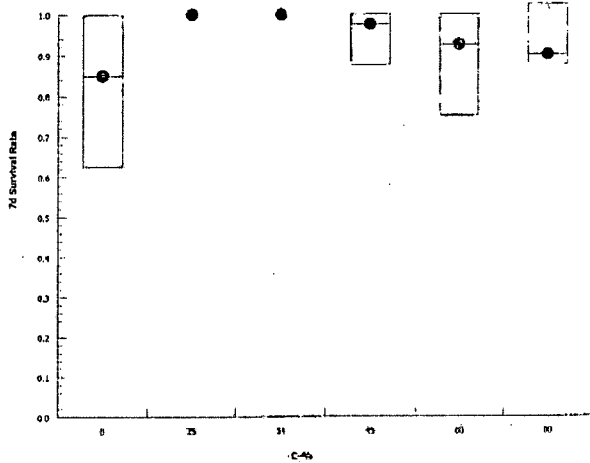
Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 09-3607-0314 Endpoint: 7d Survival Rate
Analyzed: 09 Apr-13 12:52 Analysis: Nonparametric-Control vs Treatments

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 17 Apr-13 10:49 (p 1 of 2)
 Test Code: 15999fm | 12-3439-3557

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 17-2252-9686	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.8.4
Analyzed: 10 Apr-13 8:20	Analysis: Parametric-Control vs Treatments	Official Results: Yes
Sample ID: 03-5415-6013	Code: 151BFDED	Client: GPAC Crossett
Sample Date: 25 Mar-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (MAR)
Receive Date: 26 Mar-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	NA	C > T	NA	NA	80	>80	NA	1.25	18.7%

Dunnett Multiple Comparison Test

Control	vs C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water	25	-3.379	2.362	0.127	8	1.0000	CDF	Non-Significant Effect
	34	-4.789	2.362	0.127	8	1.0000	CDF	Non-Significant Effect
	45	-4.524	2.362	0.127	8	1.0000	CDF	Non-Significant Effect
	60	-1.88	2.362	0.127	8	0.9989	CDF	Non-Significant Effect
	80	0.7121	2.362	0.127	8	0.5514	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.6768	0.25 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1875	0.12 - 0.3	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.3872595	0.07745191	5	10.74	<0.0001	Significant Effect
Error	0.173127	0.007213626	24			
Total	0.5603865		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	3.377	15.09	0.6420	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.954	0.9031	0.2164	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	0.6768	0.5585	0.795	0.7	0.5112	0.75	0.0426	14.07%	0.0%
25		5	0.8582	0.7721	0.9444	0.8625	0.7562	0.9287	0.03104	8.09%	-26.82%
34		5	0.934	0.8802	0.9878	0.9413	0.8625	0.97	0.01939	4.64%	-38.01%
45		5	0.9198	0.8168	1.023	0.9337	0.8063	1.03	0.03707	9.01%	-35.91%
60		5	0.7777	0.6698	0.8857	0.7887	0.645	0.8887	0.03887	11.17%	-14.92%
80		5	0.6385	0.4965	0.7805	0.65	0.4887	0.795	0.05116	17.92%	5.65%

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	0.7288	0.75	0.5112	0.6938	0.7
25		0.9287	0.83	0.8625	0.7562	0.9137
34		0.97	0.93	0.8625	0.9413	0.9662
45		0.8063	0.8812	1.03	0.9337	0.9475
60		0.7762	0.7887	0.8887	0.79	0.645
80		0.65	0.4887	0.5788	0.795	0.68

CETIS Analytical Report

Report Date: 17 Apr-13 10:49 (p 2 of 2)
Test Code: 15999fm | 12-3439-3557

Fathead Minnow 7-d Larval Survival and Growth Test

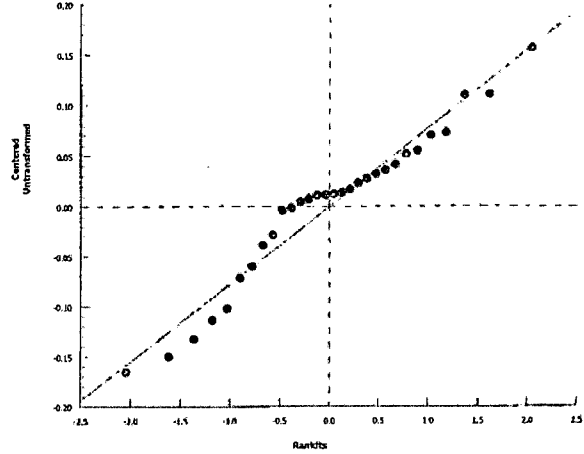
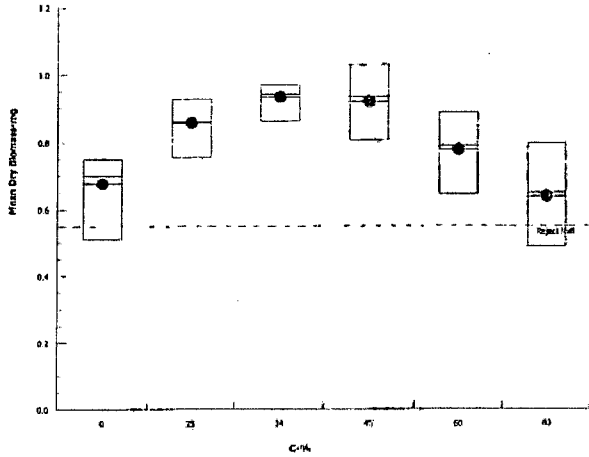
ENVIRON International Corp

Analysis ID: 17-2252-9686
Analyzed: 10 Apr-13 8:20

Endpoint: Mean Dry Biomass-mg
Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 17 Apr-13 10:50 (p 1 of 1)
 Test Code: 15999fm | 12-3439-3557

Fathead Minnow 7-d Larval Survival and Growth Test

ENVIRON International Corp

Analysis ID: 15-5693-7718 Endpoint: Mean Dry Biomass-mg CETIS Version: CETISv1.8.4
 Analyzed: 17 Apr-13 10:49 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

Sample ID: 03-5415-6013 Code: 151BFDED Client: GPAC Crossett
 Sample Date: 25 Mar-13 Material: Industrial Effluent Project: WET Monthly Compliance Test (MAR)
 Receive Date: 26 Mar-13 Source: Discharge Monitoring Report
 Sample Age: 24h Station: 001

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1531155	1000	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.6768	0.25 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>80	N/A	N/A	<1.25	NA	NA

Mean Dry Biomass-mg Summary

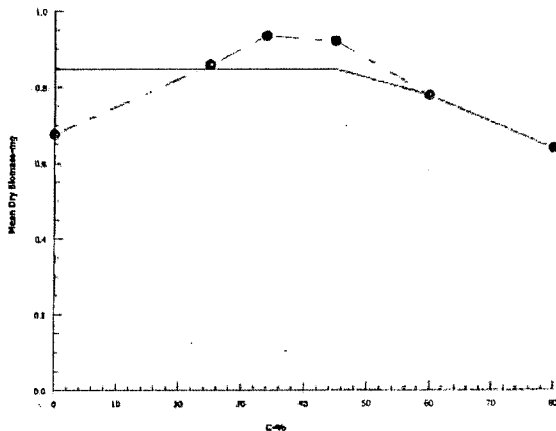
Calculated Variate

C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	5	0.6768	0.5112	0.75	0.0426	0.09525	14.07%	0.0%
25		5	0.8582	0.7562	0.9287	0.03104	0.06941	8.09%	-26.82%
34		5	0.934	0.8625	0.97	0.01939	0.04335	4.64%	-38.01%
45		5	0.9198	0.8063	1.03	0.03707	0.08289	9.01%	-35.91%
60		5	0.7777	0.645	0.8887	0.03887	0.08691	11.17%	-14.92%
80		5	0.6385	0.4887	0.795	0.05116	0.1144	17.92%	5.65%

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	0.7288	0.75	0.5112	0.6938	0.7
25		0.9287	0.83	0.8625	0.7562	0.9137
34		0.97	0.93	0.8625	0.9413	0.9662
45		0.8063	0.8812	1.03	0.9337	0.9475
60		0.7762	0.7887	0.8887	0.79	0.645
80		0.65	0.4887	0.5788	0.795	0.68

Graphics



ENVIRON FATHEAD MINNOW SURVIVAL AND GROWTH 7-DAY CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1000.0

TEST LOG NO.: 15999
 JOB NUMBER: 20-19675G
 INDUSTRY: Georgia Pacific Crossett
 EFFLUENT: Outfall 001
 DILUTION WATER: River Water
 NPDES: Yes No
 FOOD BATCH: 41760

BEGINNING: HRS: 1231 DATE: 3/26/13 PHOTOPERIOD: 16 hr light/8 hr dark
 ENDING: HRS: 1149 DATE: 4/2/13 FEEDING REGIME:
 TEST DILUTIONS: 25, 34, 45, 60, 80% 0.15 mL Artemia @ 2 times/day
 ORGANISM AGE (date): 3/25/13 TEST VESSEL CAPACITY: 450 mL
 ORGANISM SOURCE: ECT # 4276 TEST SOLUTION VOLUME: 250 - 300 mL
 SOURCE TEMP @ TEST START: 24.3 NO. ORGANISMS/TREATMENT: 8
 RANDOMIZED BY: AH NO. REPLICATES: 5

CONC (%)	REP ID	SURVIVAL (#)							
		START	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
RW	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	6	5	5
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	5	5	5
	Temp(°C):old/new	24.1	24.0/24.0	25.1/24.3	25.1/24.5	24.7/24.6	24.0/24.7	24.0/24.4	24.0
25	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8
	Temp(°C):old/new	24.1	24.1/24.0	24.4/24.5	24.6/24.4	24.6/24.5	24.1/24.1	24.4/24.9	24.1
34	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8
	Temp(°C):old/new	24.3	24.3/24.0	24.4/24.5	24.4/24.2	24.6/24.4	24.2/24.1	24.4/24.9	24.0
45	A	8	8	8	8	8	8	7	7
	B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8
	Temp(°C):old/new	24.5	24.0/24.0	24.5/24.4	24.5/24.3	24.8/24.5	24.2/24.2	24.1/24.9	24.0
60	A	8	8	8	8	8	7	7	7
	B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	7	7	6
	Temp(°C):old/new	24.1	24.1/24.2	24.4/24.3	24.6/24.3	24.3/24.4	24.0/24.6	24.0/24.6	24.1
80	A	8	8	8	8	8	8	7	7
	B	8	8	8	8	7	7	7	7
	C	8	8	8	8	7	7	7	7
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	7	7	7	7
	Temp(°C):old/new	24.3	24.3/24.0	24.5/24.2	24.5/24.2	24.6/24.3	24.1/24.2	24.1/24.3	24.3
Test Renewal	Time	1231	1320	1320	1042	1215	1134	1024	1149
	Date	3/26/13	3/27/13	3/28/13	3/28/13	3/29/13	3/31/13	4/1/13	4/2/13
	Initials	AH	AH	AH	AH	AH	AH	AH	AH
morning feeding	Int/Time		AH0730	AH0730	LM0730	AH0745	AH0746	AH0740	
afternoon feeding	Int/Time	AH1105	AH1520	AH1530	PM0455	AH1555	AH1550	AH1700	

no noticeable signs of infection or illness

ENVIRON FATHEAD MINNOW SURVIVAL AND GROWTH 7-DAY CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1000.0

TEST LOG NO.: 15999
 JOB NUMBER.: 20-19675G
 INDUSTRY: Georgia Pacific Crossett
 EFFLUENT: 001
 DILUTION WATER: River Water
 NPDES: Yes Y No
 FOOD BATCH: 4176

BEGINNING: HRS: 1251 DATE: 3/26/13
 ENDING: HRS: 1149 DATE: 4/2/13

PHOTOPERIOD: 16 hr light/8 hr dark
 FEEDING REGIME:
 0.15 mL Artemia @ 2 times/day
 TEST VESSEL CAPACITY: 450 mL
 TEST SOLUTION VOLUME: 250 - 300 mL
 NO. ORGANISMS/TREATMENT: 8
 NO. REPLICATES: 5

CONC (%)	REP ID	SURVIVAL (#)							
		START	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
MH	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8
	Temp(°c):old/new	24.4	24.2/24.1	24.3/24.2	24.5/24.2	24.1/24.6	24.1/24.2	24.0/24.1	24.0
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
	A								
	B								
	C								
	D								
	E								
	Temp(°c):old/new								
Test Renewal	Time								
	Date								
	Initials								
morning feeding	Int/Time								
afternoon feeding	Int/Time								

ENVIRON FATHEAD MINNOW SURVIVAL AND GROWTH 7-DAY CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1000.0

TEST LOG NO.: 15999 BEGINNING: HRS: 1231 DATE: 3/26/13
 JOB NO.: 20-19675G ENDING: HRS: 1149 DATE: 4/2/13
 INDUSTRY: Georgia Pacific-Crossett
 EFFLUENT: Outfall 001 NO. ORGANISMS/TREATMENT: 8
 NPDES: Yes No NO. REPLICATES: 5

PHOTOPERIOD: 16 hr light
 FEEDING REGIME:
 0.15 mL Artemia @ 2 times/day
 TEST VESSEL CAPACITY: 450 mL
 TEST SOLUTION VOLUME: 250 mL

GROWTH RESULTS							
CONC (%)	REP ID	Boat ID	Tare wt (g)	Combined wt (g)	Tot Fish wt (g)	# of Fish	Fish Wt (mg) Per Final # of Fish
		<u>51</u>					
RW	A	1	1.10295	1.10878	0.00583	8	0.728
	B	2	1.08316	1.08916	0.00600	8	0.750
	C	3	1.10138	1.10547	0.00409	5	0.818
	D	4	1.08273	1.08828	0.00555	8	0.694
	E	5	1.08741	1.09301	0.00560	5	1.12
25	A	6	1.06902	1.07645	0.00743	8	
	B	7	1.09947	1.10611	0.00664	8	
	C	8	1.07689	1.08379	0.00690	8	
	D	9	1.06939	1.07544	0.00605	8	
	E	10	1.10480	1.11211	0.00731	8	
34	A	11	1.10282	1.11058	0.00776	8	
	B	12	1.08043	1.08787	0.00744	8	
	C	13	1.07650	1.08340	0.00690	8	
	D	14	1.09027	1.09780	0.00753	8	
	E	15	1.10435	1.11208	0.00773	8	
45	A	16	1.08298	1.08943	0.00645	7	
	B	17	1.08231	1.08936	0.00705	8	
	C	18	1.09355	1.10179	0.00824	8	
	D	19	1.09324	1.10071	0.00747	8	
	E	20	1.08646	1.09404	0.00758	8	
60	A	21	1.10225	1.10846	0.00621	7	
	B	22	1.09864	1.10495	0.00631	8	
	C	23	1.09442	1.10153	0.00711	8	
	D	24	1.06780	1.07462	0.00632	8	
	E	25	1.08664	1.09180	0.00516	6	
80	A	26	1.08659	1.09179	0.00520	7	
	B	27	1.08579	1.08970	0.00391	7	
	C	28	1.09525	1.09988	0.00463	7	
	D	29	1.08369	1.09005	0.00636	8	
	E	30	1.06105	1.06649	0.00544	7	
MH	A	31	1.09511	1.10070	0.00559	8	
	B	32	1.08849	1.09364	0.00515	8	
	C	33	1.10233	1.10778	0.00545	8	
	D	34	1.05061	1.05524	0.00463	7	
	E	35	1.08883	1.09406	0.00523	8	
Initials / Date:		<u>LTH 3/25/13</u>		<u>LTH 4/5/13</u>		—	

AVG Control Fish wt. 0.822
 (using final #)

Oven ID: 1
 Tins In:
 Date: 4/2/13
 Time: 1348
 Temp (°C): 100
 Initials: LTH
 Tins Out:
 Date: 4/3/13
 Time: 1357
 Temp (°C): 100
 Initials: LTH

FINAL WEIGHTS
 DATE: 4/5/13
 INITIALS: LTH

TEST LOG NO.

15999

CLIENT/SAMPLE ID: Georgia Pacific Crossett

JOB NO.

20-19675G

TEST ORGANISM: Fm

DATE:

3/26/13

ENVIRONMENTAL TEST LOG No. 15999

to 129.3
Sweep adds a new
they in
w/ri: Spot

D.O. (mg/L)

Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	26	8.4	8.3	8.6	8.4	8.6	8.5	8.6	8.2	8.5	8.6	8.7	8.4	
25	25	8.4	8.7	8.6	8.6	8.4	8.2	8.6	8.6	8.6	8.6	8.6	8.5	
34	27	8.5	8.7	8.2	8.6	8.5	8.3	8.6	8.6	8.6	8.6	8.6	8.4	
45	26	8.7	8.7	8.6	8.7	8.6	8.4	8.4	8.7	8.1	8.7	8.7	8.4	
60	25	8.6	8.4	8.4	8.9	8.7	8.6	8.1	8.6	8.6	8.7	8.5	8.4	
80	25	8.5	8.5	8.2	8.3	8.7	8.7	7.8	8.5	8.5	8.6	8.4	8.5	
MH	25	8.3	8.7	8.6	8.6	8.6	8.7	7.8	8.4	7.8	8.6	8.4	8.5	

pH (s.u.)

Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	250	7.30	7.59	7.69	7.60	7.69	7.55	7.36	7.80	7.34	7.59	7.30	6.83	7.45
25	251	7.60	7.69	7.81	7.61	7.87	7.78	7.76	7.64	7.74	7.56	7.30	7.70	7.66
34	275	7.43	8.21	8.06	7.83	8.09	7.86	8.01	7.70	7.92	7.71	7.90	7.74	7.66
45	275	7.90	8.23	8.20	7.89	8.57	7.89	8.05	7.71	8.02	7.75	8.05	7.82	8.05
60	284	7.97	8.39	8.33	7.90	8.21	7.90	8.24	7.83	8.20	7.79	8.46	7.83	8.20
80	291	9.94	8.41	8.34	7.94	8.28	8.09	8.24	7.87	8.23	7.85	8.23	7.85	8.31
MH	282	7.81	7.89	7.89	7.25	7.73	7.84	7.92	7.80	7.85	7.97	7.59	7.95	7.55

Conductivity (µmhos/cm)

Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	105	105	104	105	104	108	99	129	142	112	121	97	85	94
25	657	1074	512	524	687	672	642	605	665	606	594	797	615	635
34	849	841	824	844	891	810	830	826	860	822	806	782	850	823
45	1063	1057	1018	1021	1091	1094	1084	1090	1087	1054	1094	1052	1074	1061
60	1412	1580	1344	1279	1399	1295	1371	1279	1402	1370	1353	1287	1391	1335
80	1807	1604	1766	1769	1794	1769	1892	1739	1764	1729	1811	1749	1782	1780
MH	217	215	223	216	210	206	207	228	212	232	214	217	234	229

Params In/Time:	AW 1016	AW 0749 CR 0950	AW 0746 AW 1015	AW 0758 AW 0925	AW 0809 CR 1000	AW 0810 AW 1000	AW 0820 AW 0900	AW 0850
Dilutions In/Time:	AW 1010	AW 0915	AW 1045	AW 0915	CR 0945	AW 0930	AW 0850	
Control Water Batch:	5168	5169	5167, RW #1608	5169, RW #1608	16088, 5171	AW 16095	AW 16095, 5171	AW 16095, 5171
Food Batch:	4176	4170	4176	4176	4280, 4176	4176	4176	4176

AW 3/24/13

TEST LOG NO. 15999

CLIENT: Georgia Pacific Crossett

DATE OF TEST: 3/26/13

JOB NO. 20-19675G

TEST TYPE(S) PERFORMED: Fm & Cd Chronic

ENVIRON Test Log No. 15999

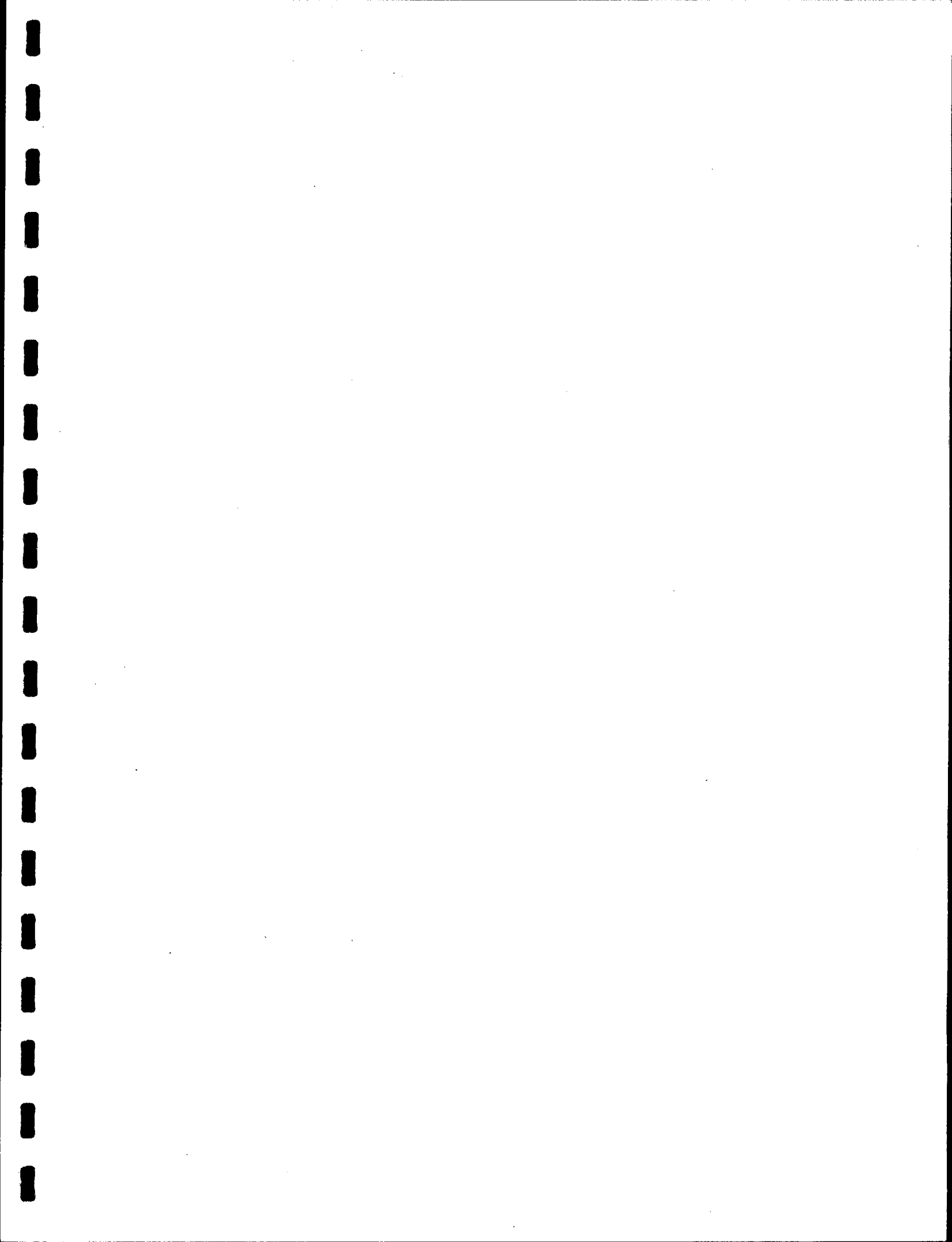
100% EFFLUENT

Batch #	Sample ID	Sample Date	1st Use Date	Hardness mg/L CaCO ₃	Alkalinity mg/L ^{3/26/13} _{AW}	TRC mg/L	NH ₃ N mg/L
16065	Outfall 001	3/24-25/13	3/26/13	300	49587	<0.02	<0.1
16082	Outfall 001	3/26-27/13	3/28/13	284	577	<0.02	3.23
16099	Outfall 001	3/28-29/13	3/30/13	284	572	<0.02	3.60

CONTROL / DILUTION WATER

Batch #	Sample ID	Sample Date	1st Use Date	Hardness mg/L CaCO ₃	Alkalinity mg/L	TRC mg/L	NH ₃ N mg/L
16066	River Water	3/25/13	3/26/13	28.8	19	0.03	0.505
5168	MH	3/23/13	3/25/13	80.8	48	<0.02	—
5169	MH	3/24/13	3/27/13	88.1	51	<0.02	—
16081	RW	3/25/13	3/28/13	26.4	19	0.04	<0.1
16098	RW	3/29/13	3/30/13	20	17	0.04	<0.1
5171	MH	3/25/13	3/29/13	85.6	46	<0.02	—

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CETIS Analytical Report

Report Date: 09 Apr-13 12:59 (p 1 of 1)
 Test Code: 15999 | 06-2306-3422

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 08-3069-2150	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.4
Analyzed: 09 Apr-13 12:58	Analysis: STP 2x2 Contingency Tables	Official Results: Yes
Sample ID: 10-3576-8343	Code: 3DBC9217	Client: GPAC Crossett
Sample Date: 25 Mar-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (MAR)
Receive Date: 26 Mar-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU
Untransformed		C > T	NA	NA	80	>80	NA	1.25

Fisher Exact/Bonferroni-Holm Test

Control	vs	C-%	Test Stat	P-Value	P-Type	Decision(α:5%)
Receiving Water		25	1	1.0000	Exact	Non-Significant Effect
		34	0.5	1.0000	Exact	Non-Significant Effect
		45	1	1.0000	Exact	Non-Significant Effect
		60	1	1.0000	Exact	Non-Significant Effect
		80	1	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

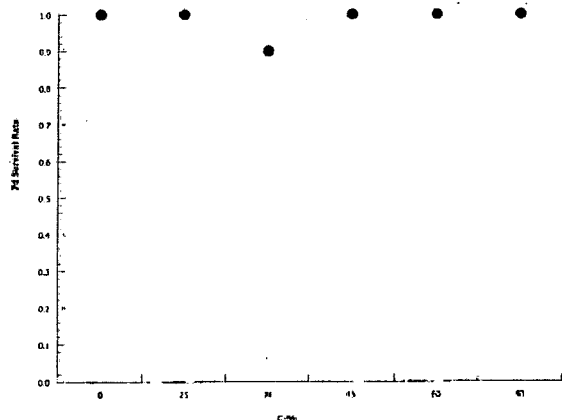
Data Summary

C-%	Control Type	NR	R	NR + R	Prop NR	Prop R	%Effect
0	Receiving Water	10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
34		9	1	10	0.9	0.1	10.0%
45		10	0	10	1	0	0.0%
60		10	0	10	1	0	0.0%
80		10	0	10	1	0	0.0%

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
34		1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1	1/1	1/1
45		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
60		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
80		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Graphics



CETIS Analytical Report

Report Date: 09 Apr-13 12:59 (p 1 of 2)
 Test Code: 15999 | 06-2306-3422

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 08-5000-7706	Endpoint: Reproduction	CETIS Version: CETISv1.8.4
Analyzed: 09 Apr-13 12:58	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes
Sample ID: 10-3576-8343	Code: 3DBC9217	Client: GPAC Crossett
Sample Date: 25 Mar-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (MAR)
Receive Date: 26 Mar-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	NA	C > T	NA	NA	25	34	29.15	4	13.5%

Steel Many-One Rank Sum Test

Control	vs C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water	25	94	75	2	18	0.4923	Asymp	Non-Significant Effect
	34*	73.5	75	3	18	0.0350	Asymp	Significant Effect
	45*	73.5	75	2	18	0.0350	Asymp	Significant Effect
	60*	65	75	0	18	0.0056	Asymp	Significant Effect
	80*	56	75	0	18	0.0005	Asymp	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	33.7	15 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1353	0.13 - 0.47	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1438.55	287.71	5	14.51	<0.0001	Significant Effect
Error	1071.1	19.83519	54			
Total	2509.65		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	13.61	15.09	0.0183	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9106	0.9459	0.0003	Non-normal Distribution

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	10	33.7	30.7	36.7	34	25	40	1.325	12.44%	0.0%
25		10	32.8	30.78	34.82	32.5	29	38	0.8919	8.6%	2.67%
34		10	27.6	22.35	32.85	29	9	35	2.32	26.58%	18.1%
45		10	29	26.5	31.5	28	23	35	1.106	12.06%	13.95%
60		10	27.1	25.27	28.93	27	24	33	0.809	9.44%	19.58%
80		10	18.7	15.43	21.97	19	12	26	1.446	24.45%	44.51%

CETIS Analytical Report

Report Date: 09 Apr-13 12:59 (p 2 of 2)
Test Code: 15999 | 06-2306-3422

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 08-5000-7706

Endpoint: Reproduction

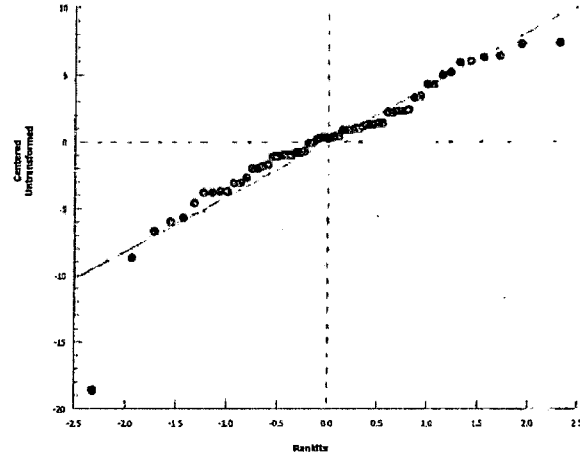
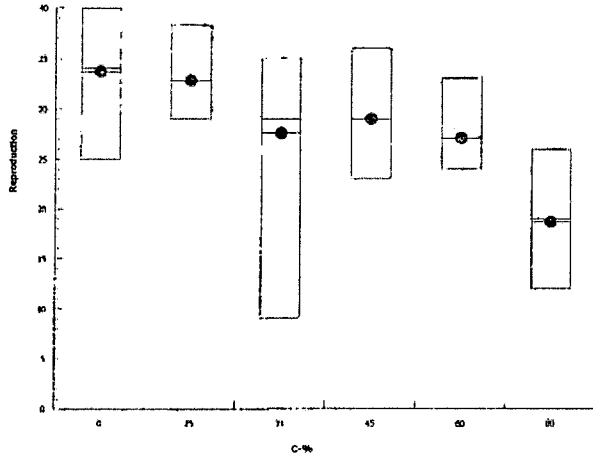
CETIS Version: CETISv1.8.4

Analyzed: 09 Apr-13 12:58

Analysis: Nonparametric-Control vs Treatments

Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 09 Apr-13 12:59 (p 1 of 1)
 Test Code: 15999 | 06-2306-3422

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 10-0391-0048 Endpoint: Reproduction CETIS Version: CETISv1.8.4
 Analyzed: 09 Apr-13 12:59 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

Sample ID: 10-3576-8343 Code: 3DBC9217 Client: GPAC Crossett
 Sample Date: 25 Mar-13 Material: Industrial Effluent Project: WET Monthly Compliance Test (MAR)
 Receive Date: 26 Mar-13 Source: Discharge Monitoring Report
 Sample Age: 24h Station: 001

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1003771	1000	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	33.7	15 - NL	Yes	Passes Acceptability Criteria

Point Estimates

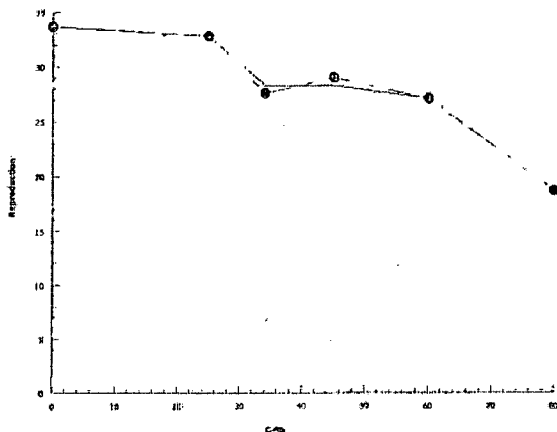
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	64.35	52.06	69.29	1.554	1.443	1.921

Reproduction Summary

Calculated Variate

C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	10	33.7	25	40	1.325	4.191	12.44%	0.0%
25		10	32.8	29	38	0.8919	2.821	8.6%	2.67%
34		10	27.6	9	35	2.32	7.336	26.58%	18.1%
45		10	29	23	35	1.106	3.496	12.06%	13.95%
60		10	27.1	24	33	0.809	2.558	9.44%	19.58%
80		10	18.7	12	26	1.446	4.572	24.45%	44.51%

Graphics



ENVIRON CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION 3-BROOD CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1002.0

TEST LOG NO.: 15999 PHOTOPERIOD: 16 hr light/8 hr dark
 JOB NUMBER: 20-19675G FEEDING REGIME: 0.1 mL YCT / 0.1 mL P. subcapitata per 15 mL
 INDUSTRY: Georgia Pacific-Crosssett TEST VESSEL CAPACITY: 30 mL
 EFFLUENT: Outfall 001 TEST SOLUTION VOLUME: 15 mL
 DILUTION WATER: River Water NO. ORGANISMS/REPLICATE: 1
 NPDES (Y/N): Yes NO. REPLICATES: 10

ORGANISM SOURCE INFORMATION:

AGE (date): 3/25/13
 TEMP @ TEST START: 24.8
 RANDOMIZED BY: LM
 TEST START: HOURS: 1120 DATE: 3/26/13
 TEST END: HOURS: 1141 DATE: 4/2/13

SOURCE ID:	AGE (time):
10199	1507-2245
10201	1509-2252
10202	1530-2253

SURVIVAL AND REPRODUCTION DATA

Test Start & Feeding/End Initials/Time	Daily Renewal & Feeding Initials/Time	Date	Control		REPLICATES										Notes		
			River Water		191					201						202	
			Temp (°C)		1	2	3	4	5	6	7	8	9	10			
LM 1120		3/26	24.2		Adult	15	14	4	8	12	14	20	13	17	5		
	LM 1227	3/27	24.9	24.1	Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	LM 1242	3/28	24.8	25.1	Day 1	✓	/	/	/	/	/	/	/	/	/		
	LM 1258	3/29	24.8	24.7	Day 2	✓	/	/	/	/	/	/	/	/	/		
	AW 1408	3/30	24.0	24.1	Day 3	✓	/	/	/	3	✓	/	/	/	/		
	AW 1030	3/31	24.0	24.1	Day 4	4	5	4	5	✓	3	6	5	4	4		
	AW 0932	4/1	24.1	24.8	Day 5	7	12	13	12	9	11	13	14	14	15		
LM 1141		4/2	24.8		Day 6	✓	17	19	20	18	✓	15	✓	✓	✓		
					Day 7	14	✓	✓	✓	✓	17	✓	21	16	17		
					Day 8												
			Total			25	34	36	37	30	31	34	40	34	36	337	

2.75 = 253

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-) = Dead neonates M = Male

TEST LOG # 15999

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes
			25%	Temp (°C)		1	2	3	4	5	6	7	8	9	10	
CM 1120		3/26	246		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	1227	3/27	249	246	Day 1	-	-	-	-	-	-	-	-	-	-	
	1242	3/28	244	246	Day 2	-	-	-	-	-	-	-	-	-	-	
	1258	3/29	251	248	Day 3	5	✓	5	✓	7	-	-	-	-	-	
	1408	3/30	240	240	Day 4	✓	4	9	6	10	5	6	6	6	5	
	1030	3/31	240	240	Day 5	8	9	✓	9	✓	8	8	11	9	7	
	0932	4/1	241	240	Day 6	16	19	20	20	21	18	21	16	17	✓	
CM 1141		4/2	244		Day 7	✓	✓	19	✓	19	✓	✓	18	✓	17	
					Day 8											
			Total			29	32	34	35	38	31	35	33	32	29	328

SURVIVAL AND REPRODUCTION DATA																
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes
			34%	Temp (°C)		1	2	3	4	5	6	7	8	9	10	
CM 1120		3/26	244		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	1227	3/27	241	240	Day 1	-	-	-	-	-	-	-	-	-	-	
	1242	3/28	246	244	Day 2	-	-	-	-	-	-	-	-	-	-	
	1128	3/29	251	245	Day 3	5	✓	5	4	✓	4	-	-	-	5	
	1408	3/30	240	240	Day 4	✓	7	✓	✓	7	✓	4	5	6	✓	
	1030	3/31	240	240	Day 5	7	8	11	7	11	7	10	14	9	8	
	0932	4/1	240	241	Day 6	17	16	18	19	17	17	15		13	10	
CM 1141		4/2	249		Day 7	✓	✓	✓	✓	✓	16	✓		✓	14	
					Day 8											
			Total			29	31	34	30	35	28	29	19	28	23	276

✓ = Test Organism Alive
D = Test Organism Dead

0 = Live neonates
(-0) = Dead neonates

Miss = Lost or Missing
M = Male

TEST LOG # 15999

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes	
			45%	Temp (°C)		1	2	3	4	5	6	7	8	9	10		
CH 1120		3/26	25.0		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	D27	3/27	244	243	Day 1	-	-	-	-	-	-	-	-	-	-	-	
	D22	3/28	249	249	Day 2	-	-	-	-	-	-	-	-	-	-	-	
	D28	3/29	251	252	Day 3	3	5	5	✓	4	✓	5	-	5	-	5	
	AW 1408	3/30	240	241	Day 4	✓	✓	✓	5	✓	3	✓	4	3	✓		
	AW 1036	3/31	240	240	Day 5	7	11	10	9	8	7	8	6	9	11		
	AW 0932	4/1	240		Day 6	17	19	19	14	16	13	17	✓	16	14		
CH 1141		4/2	24.9		Day 7	✓	16	18	✓	14	✓	16	17	✓	15		
					Day 8												
Total						27	35	34	28	28	23	30	27	28	30	290	

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes	
			60%	Temp (°C)		1	2	3	4	5	6	7	8	9	10		
CH 1120		3/26	244		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	D27	3/27	244	249	Day 1	-	-	-	-	-	-	-	-	-	-	-	
	D22	3/28	249	247	Day 2	-	-	-	-	-	-	-	-	-	-	-	
	D28	3/29	250	253	Day 3	✓	✓	6	4	4	4	✓	-	-	-	✓	
	AW 1408	3/30	241	240	Day 4	4	6	✓	✓	✓	✓	5	5	6	5		
	AW 1036	3/31	240	240	Day 5	6	9	8	8	9	11	8	10	10	9		
	AW 0932	4/1	24.1		Day 6	13	13	13	16	11	11	13	✓	14	13		
CH 1141		4/2	24.4		Day 7	14	✓	✓	✓	13	11	✓	13	✓	✓		
					Day 8												
Total						24	28	27	28	24	26	26	28	33	27	271	

✓ = Test Organism Alive
 D = Test Organism Dead

0 = Live neonates
 (-0) = Dead neonates

Miss = Lost or Missing
 M = Male

TEST LOG # 15999

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration			REPLICATES										Notes	
			80%	Temp (°C)		1	2	3	4	5	6	7	8	9	10		
					Adult												
LM 1120		3/26	246		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		3/27	253	243	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		3/28	249	246	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		3/29	252	252	Day 3	4	✓	4	✓	✓	✓	✓	✓	✓	✓	✓	4
		3/30	24.5	24.0	Day 4	✓	5	✓	5	5	5	3	4	4	✓	✓	✓
		3/31	240	241	Day 5	7	7	✓	2	4	7	5	5	4	6	✓	✓
		4/1		243	Day 6	12	8	7	8	8	13	7	✓	5	✓	✓	✓
LM 1141		4/2		246	Day 7	✓	✓	12	✓	✓	big	3	8	✓	10	✓	✓
					Day 8												
			Total			23	20	23	15	12	26	18	17	13	20	18	17

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration			REPLICATES										Notes	
			MH	Temp (°C)		1	2	3	4	5	6	7	8	9	10		
LM 1120		3/26	246		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
					Day 1												
					Day 2												
					Day 3												
					Day 4												
					Day 5												
					Day 6												
					Day 7												
					Day 8												
			Total														

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-0) = Dead neonates M = Male

TEST LOG NO. 15929

CLIENT/SAMPLE ID: Georgia Pacific Crossett

JOB NO. 20-19675G

TEST ORGANISM: Cd

DATE: 3/26/13

ENVIRON Test Log No. 15939

24 OF 35

		D.O. (mg/L)													
Concentration (%)		Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
			Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
FW		56	50	5.4	53	54	79	5.5	8.4	5.6	82	5.5	5.4	5.7	9.4
25		8.5	8.0	8.4	8.4	8.6	78	5.2	8.5	5.7	82	5.6	5.4	8.6	5.1
34		57	55	5.5	55	56	85	8.2	5.4	5.8	81	5.6	5.2	5.6	5.1
45		56	55	5.7	55	57	85	8.4	5.5	5.7	79	5.7	5.2	5.7	5.0
60		52	50	8.6	54	56	81	8.0	5.6	5.6	78	5.7	7.8	5.5	7.9
80		8.5	8.0	8.5	8.4	8.6	83	8.7	8.4	8.5	78	8.8	5.0	5.6	7.7
MH		53	50	5.3		56	80	5.3	8.0	8.4	85	5.6	5.4	5.6	7.5

		pH (s.u.)													
Concentration (%)		Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
			Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
FW		250	7.49	7.20	7.51	7.60	7.29	7.15	7.64	7.80	7.22	6.54	7.28	6.83	7.22
25		7.51	8.31	7.80	8.34	2.61	8.31	7.78	8.24	7.64	8.21	7.56	7.83	7.70	8.21
34		7.77	8.43	7.85	8.40	2.83	8.44	7.86	8.42	7.70	8.45	7.71	8.43	7.74	8.28
45		7.25	8.53	7.96	8.52	2.89	8.53	7.89	8.55	7.77	8.57	7.75	8.59	7.82	8.25
60		7.84	8.62	7.97	8.65	2.90	8.64	7.90	8.65	7.85	8.67	7.79	8.67	7.82	8.10
80		7.91	8.69	7.94	8.74	2.94	8.69	8.00	8.67	7.87	8.70	7.85	8.70	7.88	8.21
MH		7.82	7.72	7.81	7.82	2.85	7.71	7.84	7.92	7.80	7.82	7.93	7.86	7.95	7.74


		Conductivity (µmhos/cm)													
Concentration (%)		Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
			Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
FW		105	102	105	111	104	114	99	121	122	110	121	100	85	112
25		67	69	67.4	63	67	69	64.2	69	69.5	67	69.4	67	65	620
34		84	80	84.1	83	81	89	83.6	88	86	84	80.6	83	85	820
45		106	105	108.7	106	109	108	108.9	115	108.7	108	109.4	110	107.4	1050
60		142	1430	1380	137	139	140	137.1	140	140.2	134	135.3	135	129.1	1392
80		180	187	180.4	183	179	178	168.2	180	171.4	174	181	179	178.2	1781
MH		212	226	213	223	210	216	207	225	212	233	214	239	234	234

Params Int/Time:		AW 1016	AW 1050	AW 1050	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1000	AW 1000	AW 1000	AW 1000
Dilutions Int/Time:		AW 1016	AW 1015	AW 1015	AW 1005	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015	AW 1015
Control Water Batch#:		5168	5169	5169	5169	5169	5169	5169	5169	5169	5169	5169	5169	5169	5169
Food Batch		425276	75,103	75,103	75.63	75.63	75.63	75.63	75.63	75.63	75.63	75.63	75.63	75.63	75.63

**Attachment 2:
Chain-Of-Custody Documentation and
Reference Toxicant Data**

ENVIRON Test Log No. 15999

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Project Name:				Project Number:				Analysis Requested										CHAIN-OF-CUSTODY  201 Summit View Drive, Suite 300 Brentwood, TN 37027 PHONE: (615) 277-7570 FAX: (615) 377-4976															
Industry: <i>Georgia-Pacific</i>				Phone: <i>870-567-8170</i>				FAX: <i>870-364-9076</i>				Total Volume in liters		Acute Fathead minnow		Acute Bannerfin shiner				Acute Ceriodaphnia dubia		Acute Daphnia pulex		Chronic Fathead minnow		Chronic Ceriodaphnia dubia		Continuous Batch Tests		Discrete Batch Tests		Other	
County: <i>Ashley</i>				City: <i>Crossett</i>				State: <i>AR</i>																									
Sample Collected by (print): <i>R. Johnson</i>				NPDES Permit No.: <i>AR0001210</i>				No. of Cntrs		Acute Fathead minnow		Acute Bannerfin shiner		Acute Ceriodaphnia dubia		Acute Daphnia pulex				Chronic Fathead minnow		Chronic Ceriodaphnia dubia		Continuous Batch Tests		Discrete Batch Tests		Other					
Sample Collected by (signature): <i>Rach Johnson</i>				NPDES Test: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes																													
Sample Location / ID	Comp/Grab	Container Type	Chilled During Collection (Y/N)	Start Date/Time	End Date/Time	No. of Cntrs	Total Volume in liters	Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests	Discrete Batch Tests	Other	Description Definitive or Screen	Sample B# (lab only)															
<i>Outfall 001</i>	<i>Comp</i>	<i>Plastic</i>	<i>Y</i>	<i>3/24/13 5:00</i>	<i>3/25/13 6:22</i>	<i>2</i>	<i>20</i>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																				
<i>River</i>	<i>Grab</i>	<i>Plastic</i>	<i>NA</i>	<i>3/25/13 11:01</i>		<i>2</i>	<i>20</i>										<i>Dilution Water</i>	<i>1606b</i>															
* Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____ Remarks: Measured TRC (if applicable): <i>0.00</i> mg/L																																	
Relinquished by: (Signature) <i>Rach Johnson</i>				Date: <i>3/25/13</i>		Time: <i>4:00pm</i>		Received by: (Signature)				Samples shipped via: <input type="checkbox"/> FedEx <input type="checkbox"/> Other <input type="checkbox"/> Courier <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Delivered				Condition: (lab use only)																	
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)				Receipt Temp: <i>1.8°C, 1.5°C</i>				Containers/Volume Received: <i>20L of each</i>																	
Relinquished by: (Signature)				Date:		Time:		Received for lab by: (Signature) <i>Anita Bryant-Winton</i>				Date: <i>3/26/13</i>		Time: <i>0847</i>		pH upon arrival: <i>7.88, 7.24</i>		DO upon arrival: <i>9.5, 8.5</i>															

Sample Receipt Checklist:

Client: GP Crossett

Date/Time received 3/26/13 by AW

- 1. Cooler sealed and intact upon arrival? Yes No
- 2. Custody seals present? Yes No
- 3. Samples received below 6 degrees Celsius? Yes No
- 4. Was ice present? Yes No
- 5. Is the COC filled out correctly including the sample date/time and signed? Yes No
- 6. Was the sample received within 36 hours of collection? Yes No
- 7. Did the sample(s) arrive in good condition? Yes No
- 8. Was pH and DO measured and in range? Yes No
- 9. Was residual chlorine present? Yes No
 > 1.0 mg/L? (did dechlor occur) Yes No *in River water*

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
16065	Outfall 001	1.8	7.88	9.5	0.03 ^{AW} 20.02
16066	River	1.5	7.24	8.5	0.03

ENVIRON Test Log No. 15999

Project Name:		Project Number:	
Industry: <u>GEORGIA PACIFIC TRIPER</u>			
Phone: <u>870-567-8170</u>		FAX: <u>870-364-9074</u>	
County: <u>ASHLEY</u>		City: <u>CROSSETT</u>	State: <u>AR.</u>
Sample Collected by (print): <u>DANNY/RACHEL</u>		NPDES Permit No.: <u>AR0001210</u>	
Sample Collected by (signature):		NPDES Test: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	

CHAIN-OF-CUSTODY

ENVIRON

201 Summit View Drive, Suite 300
Brentwood, TN 37027
PHONE: (615) 377-4775
FAX: (615) 377-4976

Sample Location / ID	Comp/Grab	Container Type	Chilled During Collection (Y/N)	Start Date/Time	End Date/Time	No. of Cntrs	Total Volume in liters	Analysis Requested								Description Definitive or Screen	Sample B# (lab only)
								Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests	Discrete Batch Tests		
<u>RIVER</u>	<u>G</u>	<u>PLASTIC</u>	<u>NA</u>	<u>3-25-13</u>	<u>11:01am</u>	<u>2</u>	<u>20</u>										<u>Dilution WATER 110081</u>
<u>OUTFALL 001</u>	<u>C</u>	<u>PLASTIC</u>	<u>YES</u>	<u>3-26-13</u>	<u>3-27-13</u>	<u>2</u>	<u>20</u>										<u>110082</u>
				<u>6:18am</u>	<u>6:20am</u>												

* Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____

Remarks:

Measured TRC (if applicable): 0.00 mg/L

Relinquished by: (Signature) <u>Danny Ric</u>	Date: <u>3-27-13</u>	Time: <u>3:00pm</u>	Received by: (Signature)	Samples shipped via: <input type="checkbox"/> FedEx <input checked="" type="checkbox"/> Other Courier <input type="checkbox"/> UPS Hand Delivered	Condition: (lab use only) <u>good on ice</u>		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)		Receipt Temp: <u>1.3, 0.3°C</u>	Containers/Volume Received: <u>4 10L</u>	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <u>Courtney Abbotts</u>	Date: <u>3/28/13</u>	Time: <u>0830</u>	pH upon arrival: <u>9.54, 7.93</u>	DO upon arrival: <u>0.2, 9.8</u>

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Sample Receipt Checklist:

Client: Al Crossett

Date/Time received 3/25/12 0830 by CR

1. Cooler sealed and intact upon arrival? Yes No
2. Custody seals present? Yes No
3. Samples received below 6 degrees Celsius? Yes No
4. Was ice present? Yes No
5. Is the COC filled out correctly including the sample date/time and signed? Yes No
6. Was the sample received within 36 hours of collection? Yes No
7. Did the sample(s) arrive in good condition? Yes No
8. Was pH and DO measured and in range? Yes No
9. Was residual chlorine present? Yes No
 - 1.0 mg/L? (did dechlor occur) Yes No

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
116081	RW	1.3	7.54	9.2	0.04
116082	Effluent	0.3	7.93	9.8	<0.02

Ceriodaphnia dubia CHRONIC REFERENCE TOXICANT TESTING - SODIUM CHLORIDE (NaCl) 2011-2013

ENVIRONMENTAL Test Log No. 15999

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Test Number	Log Number	Test Initiation Date	Control Survival (%) (*)	3 Brood Production (%) (*)	Control Average Repro (*)	Survival		Reproduction			IC25 VALUE (mg/L)	IC25 CUMULATIVE MEAN (mg/L)	IC25 ST. DEV. (mg/L)	IC25 2+ STD. DEV.	IC25 2- STD. DEV.	Coefficient of Variation (%)
						NOEC (mg/L)	LOEC (mg/L)	NOEC (mg/L)	LOEC (mg/L)	PMSD						
1	13829	07-Sep-11	100	100	31.3	1,000	2,000	250	500	8.7	823	823				0
2	13887	11-Oct-11	100	100	28.3	2,000	>2,000	500	1,000	16.2	775	799	34	867	731	3
3	13963	08-Nov-11	100	90	17.9	2,000	>2,000	500	1,000	26.1	603	734	116	965	502	13
4	14306	13-Dec-11	100	100	21.4	1,000	2,000	500	1,000	16.8	750	738	95	927	548	11
5	14055	04-Jan-12	90	80	25.4	1,000	2,000	500	1,000	46.4	504	691	133	957	425	17
6	15131	07-Feb-12	100	100	27.1	1,000	2,000	500	1,000	29.7	530	664	136	936	392	19
7	15206	06-Mar-12	100	100	31.4	1,000	2,000	500	1,000	24.6	592	654	127	908	400	18
8	15283	03-Apr-12	100	100	33.4	500	1,000	500	1,000	27.3	560	642	122	886	398	18
9	15344	01-May-12	100	90	32.9	2,000	>2,000	500	1,000	22.4	1036	686	174	1,034	338	24
10	15100	01-Jun-12	80	100	28.8	2,000	>2,000	500	1,000	14.6	759	693	166	1,025	362	23
11	15402	06-Jul-12	100	100	27.8	1,000	2,000	500	1,000	9.9	1003	721	183	1,087	356	24
12	15549	14-Aug-12	100	100	32.7	2,000	>2,000	500	1,000	10.3	1121	755	209	1,173	337	27
13	15604	05-Sep-12	100	100	26.3	1,000	2,000	500	1,000	12.5	1109	782	223	1,228	336	27
14	15653	02-Oct-12	100	100	34.8	2,000	>2,000	500	1,000	22.0	737	779	215	1,208	350	27
15	15742	13-Nov-12	100	100	31.6	2,000	>2,000	1,000	2,000	10.4	1183	806	232	1,269	342	28
16	15784	05-Dec-12	100	100	36.6	2,000	>2,000	500	1,000	12.6	1050	821	232	1,285	357	27
17	15864	08-Jan-13	100	80	30.5	2,000	>2,000	250	500	24.3	420	797	245	1,287	308	30
18	15937	14-Feb-13	100	100	32.2	2,000	>2,000	500	1,000	18.1	875	802	238	1,278	325	29
19	15966	05-Mar-13	100	100	33.7	2,000	>2,000	500	1,000	21.8	960	810	234	1,279	341	28
20	16018	02-Apr-13	90	100	29.3	2,000	>2,000	500	1,000	16.8	979	818	231	1,281	356	28

Avg	98	97	30	1575	750	500	1000	20	818	751	176	1099	395
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Notes:

NOEC - No Observable Effect Concentration (survival or reproduction)

LOEC - Lowest Observable Effect Concentration (survival or reproduction)

ACCEPTABLE TEST RESULTS - A reproduction NOEC ranging from 250 mg/L to 1,000 mg/L.

(*) Minimum USEPA CONTROL CRITERIA - 80 percent survival, 80 percent with 3 broods, and average reproduction of 15 neonates/adult.



**Chronic Toxicity Test Results
Outfall 001 Effluent**

Prepared for:
**Georgia Pacific Crossett Mill
Crossett, Arkansas**

Prepared by:
**ENVIRON International Corporation
Nashville, Tennessee**

Date:
May 2013

Project Number:
20-19675E





May 13, 2013

Ms. Rachel Johnson
Georgia-Pacific Crossett Mill
100 Mill Supply Road
Crossett, Arkansas 71635

Re: Chronic Toxicity Test Results - April 2013
ENVIRON Project No. 20-19675E

Dear Ms. Johnson:

ENVIRON conducted chronic (7-day) whole effluent toxicity (WET) tests for Georgia-Pacific in Crossett, AR. The tests were conducted according to requirements in Arkansas NPDES permit AR0001210. Composite samples of Outfall 001 effluent were collected on April 22, 24, and 26, 2013. The samples were received at ENVIRON on April 23, 25, and 27, 2013, within the USEPA-required receipt temperature range of 0-6.0 °C. The grab samples of river water were received on April 23, 25, and 27, 2013 in good condition. Test organisms utilized for the chronic toxicity tests were the *Ceriodaphnia dubia* (*C. dubia*). The tests were initiated upon receipt of the first sample. Test concentrations consisted of 25, 34, 45, 60, and 80 percent effluent and a river water control. A secondary control of moderately hard water was also initiated. All control organisms met USEPA test acceptability criteria. The results of the chronic toxicity tests are as follows:

TEST RESULTS FOR OUTFALL 001 EFFLUENT	
Permit Limits	<i>C. dubia</i>
NOEC Value 80% (lethality)	80%
NOEC Value 80% (sub-lethality)	60%

The results of the chronic tests with *C. dubia* indicated No Observable Effect Concentration (NOEC) values for survival (lethality) of 80 percent effluent. The *C. dubia* test results indicated no significant toxicity at the critical dilution to the survival of *C. dubia*. The sub-lethal NOEC value for *C. dubia* reproduction was 60 percent, which demonstrates sub-lethal toxicity to *C. dubia* at the critical dilution.

All *C. dubia* test controls met USEPA criteria for test acceptability. The reproduction CV values for the control and critical dilution are 18 and 26 percent respectively, which meets the Test Acceptability Criteria (TAC) limit of 40 percent for a finding of no toxicity (even though the test demonstrates toxicity). The PMSD value was 21 percent, which is within the USEPA PMSD bounds of 13 to 47 percent for *C. dubia* reproduction indicating normal test sensitivity. The effluent concentration-response can be described as a Type 1 response in EPA 821-B-00-004: an ideal

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NELAP Accredited and Laboratory Certification in the following States: AR (02-008-0), AZ (0751), CA (2465), FL (E87896), IA (386), KS (E-10391), LA (02061), MN, NC (003), OK (9973), SC (84015), TX (T104704410-11-2), VA (460171), WI (399050850), WV (351) Test Results Contained in this Report Meet NELAP Requirements

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ENVIRON Test Log No. 16061

2 of 27

dose response. This test is considered valid for assessment of permit compliance. The monthly reference toxicant test also met all the test acceptability criteria.

Copies of the laboratory bench sheets with statistical data are presented in Attachment 1. Chain-of-custody documentation and reference toxicant data are presented in Attachment 2.

In order to meet the NELAP requirement for listing the total number of report pages; this report consists of 27 pages including this cover letter, attachment pages and separator pages.

If you have any questions please contact Rick Lockwood at (615) 277-7523. ENVIRON appreciates the opportunity to assist Georgia-Pacific with their testing needs.

Sincerely,

ENVIRON International Corporation



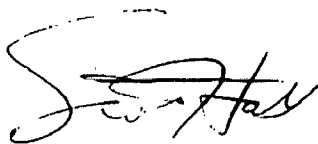
Richard E. Lockwood
Project Manager



Robin L. Richards, REM
Principal

DATA REVIEW FORM
ACUTE AND CHRONIC WET TESTS
ENVIRON International Corporation

The raw data (i.e., laboratory bench sheets) and data in the applicable summary sheets have been checked and found to be complete. Additionally, test conditions and control performance meet test acceptability criteria specified by the US Environmental Protection Agency and the certifying state authority for the tests conducted.¹



Scott Hall, Manager
Ecotoxicology Group

¹ Any data limitations regarding their applicability for determining NPDES permit compliance are discussed in the report cover letter.

**Attachment 1:
Laboratory Bench Sheets and
Statistical Data**

CETIS Analytical Report

Report Date: 30 Apr-13 15:52 (p 1 of 2)
 Test Code: 16061cd | 07-0573-8406

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 17-9032-6282	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.4
Analyzed: 30 Apr-13 15:25	Analysis: STP 2x2 Contingency Tables	Official Results: Yes
Batch ID: 16-4269-6712	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 23 Apr-13	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 29 Apr-13	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 0h	Source: In-House Culture	Age:
Sample ID: 19-3943-1632	Code: 739960D0	Client: GPAC Crossett
Sample Date: 22 Apr-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (APR)
Receive Date: 23 Apr-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU
Untransformed		C > T	NA	NA	80	>80	NA	1.25

Fisher Exact/Bonferroni-Holm Test

Control	vs	C-%	Test Stat	P-Value	P-Type	Decision(α:5%)
Receiving Water		25	1	1.0000	Exact	Non-Significant Effect
		34	1	1.0000	Exact	Non-Significant Effect
		45	0.5	1.0000	Exact	Non-Significant Effect
		60	0.5	1.0000	Exact	Non-Significant Effect
		80	1	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

Data Summary

C-%	Control Type	NR	R	NR + R	Prop NR	Prop R	%Effect
0	Receiving Water	10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
34		9	0	9	1	0	0.0%
45		9	1	10	0.9	0.1	10.0%
60		9	1	10	0.9	0.1	10.0%
80		10	0	10	1	0	0.0%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	1	1	1	1	1	1	1	1	1	1
25		1	1	1	1	1	1	1	1	1	1
34		1	1	1	1	1	1	1	1	1	1
45		1	1	1	1	1	1	1	1	1	0
60		0	1	1	1	1	1	1	1	1	1
80		1	1	1	1	1	1	1	1	1	1

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
25		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
34		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	
45		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1
60		0/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
80		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 30 Apr-13 15:52 (p 2 of 2)
Test Code: 16061cd | 07-0573-8406

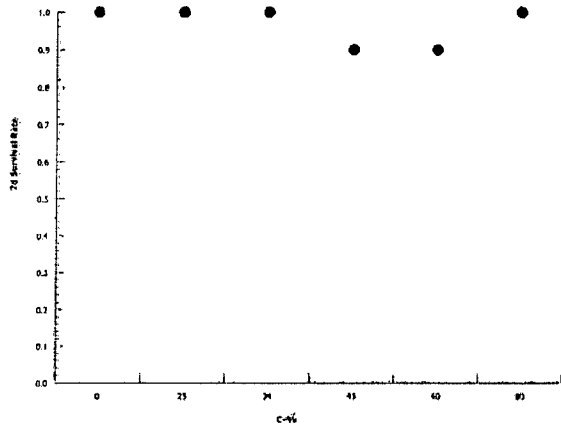
Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 17-9032-6282 Endpoint: 7d Survival Rate
Analyzed: 30 Apr-13 15:25 Analysis: STP 2x2 Contingency Tables

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 30 Apr-13 15:52 (p 1 of 4)
 Test Code: 16061cd | 07-0573-8406

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 13-1780-8680	Endpoint: Reproduction	CETIS Version: CETISv1.8.4
Analyzed: 30 Apr-13 15:38	Analysis: Nonparametric-Multiple Comparison	Official Results: Yes
Batch ID: 16-4269-6712	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 23 Apr-13	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 29 Apr-13	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 0h	Source: In-House Culture	Age:
Sample ID: 19-3943-1632	Code: 739960D0	Client: GPAC Crosssett
Sample Date: 22 Apr-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (APR)
Receive Date: 23 Apr-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	NA	C > T	NA	NA	60	80	69.28	1.667	21.0%

Wilcoxon/Bonferroni Adj Test

Control	vs C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water	25	115.5	NA	3	18	1.0000	Exact	Non-Significant Effect
	34	88	NA	2	17	1.0000	Exact	Non-Significant Effect
	45	94.5	NA	4	18	1.0000	Exact	Non-Significant Effect
	60	76.5	NA	4	18	0.0736	Exact	Non-Significant Effect
	80*	58	NA	0	18	0.0002	Exact	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	34.5	15 - NL	Yes	Passes Acceptability Criteria
PMSD	0.2101	0.13 - 0.47	Yes	Passes Acceptability Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	4.582	3.193	<0.0001	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1619.37	323.874	5	7.093	<0.0001	Significant Effect
Error	2420.156	45.66331	53			
Total	4039.525		58			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	14.09	15.09	0.0151	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8469	0.9451	<0.0001	Non-normal Distribution

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	10	34.5	30.15	38.85	33.5	25	43	1.922	17.62%	0.0%
25		10	36.4	34.06	38.74	36	31	42	1.035	8.99%	-5.51%
34		9	33.22	28.04	38.4	35	17	39	2.247	20.29%	3.7%
45		10	29.6	21.61	37.59	33	0	40	3.531	37.73%	14.2%
60		10	28.1	24.31	31.89	29.5	15	33	1.676	18.86%	18.55%
80		10	20.6	16.81	24.39	21.5	10	28	1.675	25.71%	40.29%

CETIS Analytical Report

Report Date: 30 Apr-13 15:52 (p 2 of 4)
 Test Code: 16061cd | 07-0573-8406

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

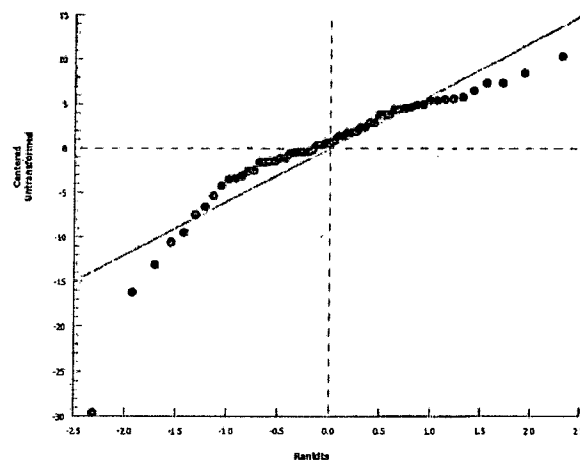
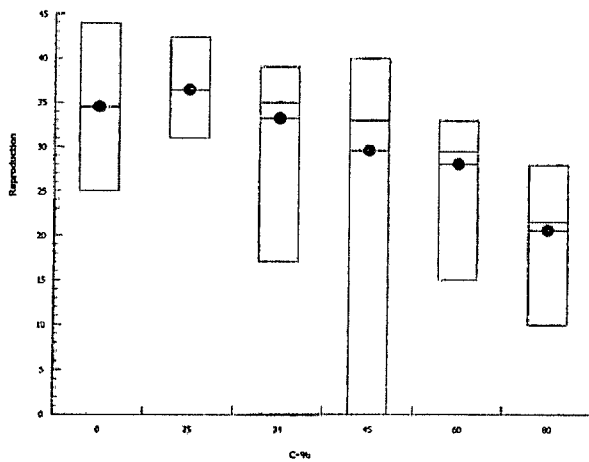
Analysis ID: 13-1780-8680 Endpoint: Reproduction
 Analyzed: 30 Apr-13 15:38 Analysis: Nonparametric-Multiple Comparison

CETIS Version: CETISv1.8.4
 Official Results: Yes

Reproduction Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	43	32	34	39	41	40	33	31	25	27
25		37	41	36	42	31	35	36	36	33	37
34		35	33	37	29	37	37	39	17	35	
45		35	37	29	34	40	27	34	28	32	0
60		15	25	27	29	31	30	33	27	33	31
80		21	14	22	26	21	22	28	10	19	23

Graphics



CETIS Analytical Report

Report Date: 30 Apr-13 15:52 (p 1 of 1)
 Test Code: 16061cd | 07-0573-8406

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 15-8505-4099	Endpoint: Reproduction	CETIS Version: CETISv1.8.4
Analyzed: 30 Apr-13 15:39	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes
Batch ID: 16-4269-6712	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 23 Apr-13	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 29 Apr-13	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 0h	Source: In-House Culture	Age:
Sample ID: 19-3943-1632	Code: 739960D0	Client: GPAC Crossett
Sample Date: 22 Apr-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (APR)
Receive Date: 23 Apr-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1186506	1000	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	34.5	15 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	64.03	42.14	70.38	1.562	1.421	2.373

Reproduction Summary

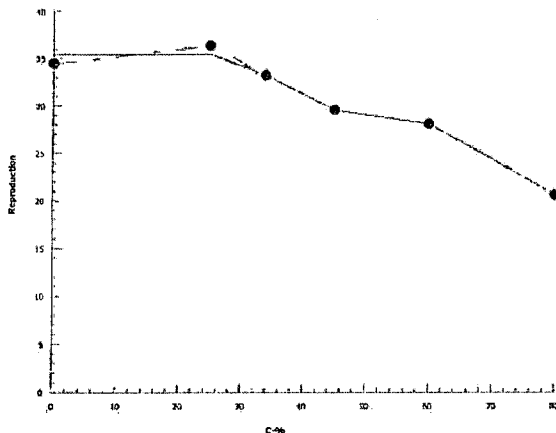
Calculated Variate

C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Receiving Water	10	34.5	25	43	1.922	6.078	17.62%	0.0%
25		10	36.4	31	42	1.035	3.273	8.99%	-5.51%
34		9	33.22	17	39	2.247	6.741	20.29%	3.7%
45		10	29.6	0	40	3.531	11.17	37.73%	14.2%
60		10	28.1	15	33	1.676	5.301	18.86%	18.55%
80		10	20.6	10	28	1.675	5.296	25.71%	40.29%

Reproduction Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Receiving Water	43	32	34	39	41	40	33	31	25	27
25		37	41	36	42	31	35	36	36	33	37
34		35	33	37	29	37	37	39	17	35	
45		35	37	29	34	40	27	34	28	32	0
60		15	25	27	29	31	30	33	27	33	31
80		21	14	22	26	21	22	28	10	19	23

Graphics



CETIS Analytical Report

Report Date: 30 Apr-13 15:52 (p 3 of 4)
Test Code: 16061cd | 07-0573-8406

Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 09-9748-3004	Endpoint: Reproduction	CETIS Version: CETISv1.8.4
Analyzed: 30 Apr-13 15:40	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 16-4269-6712	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 23 Apr-13	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 29 Apr-13	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 0h	Source: In-House Culture	Age:
Sample ID: 19-3943-1632	Code: 739960D0	Client: GPAC Crossett
Sample Date: 22 Apr-13	Material: Industrial Effluent	Project: WET Monthly Compliance Test (APR)
Receive Date: 23 Apr-13	Source: Discharge Monitoring Report	
Sample Age: 24h	Station: 001	

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result	PMSD
Untransformed	NA	C > T	NA	NA	Sample passes reproduction endpoint	19.3%

Wilcoxon Rank Sum Two-Sample Test

Control	vs Control	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water	Lab Water	106	NA	3	18	0.5368	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	33	15 - NL	Yes	Passes Acceptability Criteria
Control Resp	34.5	15 - NL	Yes	Passes Acceptability Criteria
PMSD	0.1933	0.13 - 0.47	Yes	Passes Acceptability Criteria

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Extreme Value	Grubbs Extreme Value	3.466	2.708	0.0002	Outlier Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	11.25	11.25	1	0.1522	0.7010	Non-Significant Effect
Error	1330.5	73.91666	18			
Total	1341.75		19			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	3.002	6.541	0.1171	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7675	0.866	0.0003	Non-normal Distribution

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	10	34.5	30.15	38.85	35.5	25	43	1.922	17.62%	0.0%
0	Lab Water	10	33	25.47	40.53	35.5	4	40	3.33	31.91%	4.35%

Reproduction Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	32	4	32	36	38	35	37	37	39	40
0	Receiving Water	43	32	34	39	41	40	33	31	25	27

CETIS Analytical Report

Report Date: 30 Apr-13 15:52 (p 4 of 4)
Test Code: 16061cd | 07-0573-8406

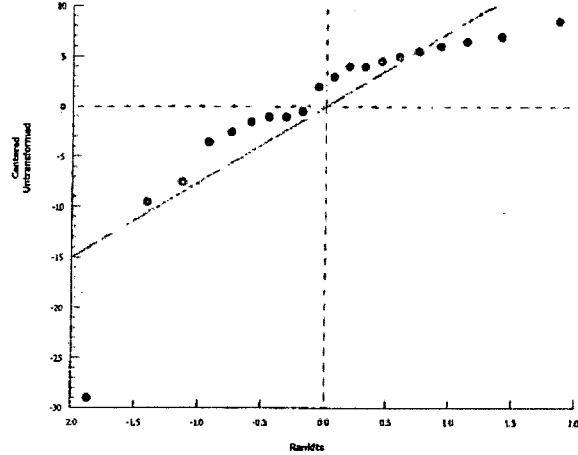
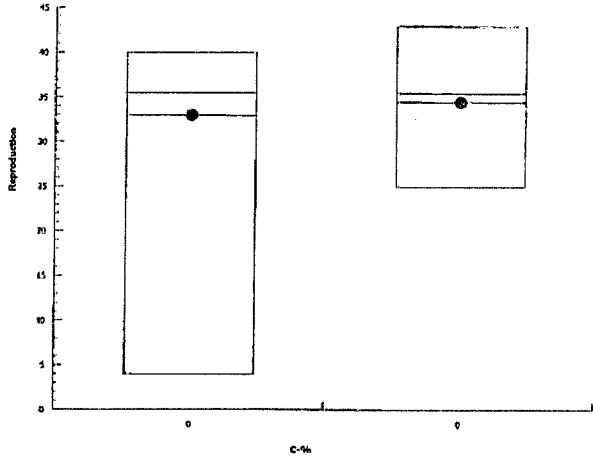
Ceriodaphnia 7-d Survival and Reproduction Test

ENVIRON International Corp

Analysis ID: 09-9748-3004 Endpoint: Reproduction
Analyzed: 30 Apr-13 15:40 Analysis: Nonparametric-Two Sample

CETIS Version: CETISv1.8.4
Official Results: Yes

Graphics



**ENVIRON CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION 3-BROOD CHRONIC TOXICITY TEST
EPA-821-R-02-013 Method 1002.0**

TEST LOG NO.: 16061
 JOB NUMBER.: 20-19675G
 INDUSTRY: Georgia Pacific-Crossett
 EFFLUENT: Outfall 001
 DILUTION WATER: River Water
 NPDES (Y/N): Yes

PHOTOPERIOD: 16 hr light/8 hr dark
 FEEDING REGIME: 0.1 mL YCT / 0.1 mL P. subcapitata per 15 mL
 TEST VESSEL CAPACITY: 30 mL
 TEST SOLUTION VOLUME: 15 mL
 NO. ORGANISMS/REPLICATE: 1
 NO. REPLICATES: 10

ORGANISM SOURCE INFORMATION:

AGE (date): 4/22-23/13
 TEMP @ TEST START: 22.0
 RANDOMIZED BY: AW
 TEST START:
 HOURS: 1117 DATE: 4/23/13
 TEST END:
 HOURS: 1302 DATE: 4/29/13

SOURCE ID:	AGE (time):
10233	2330-0730

SURVIVAL AND REPRODUCTION DATA																
Test Start & Feeding/ End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Control River Water		REPLICATES										Notes	
			Temp (°C)	Temp (°C)	1	2	3	4	5	6	7	8	9	10		
					Adult	15	11	6	14	20	13	12	10	19	20	
Aw 1117		4/23	24.1	24.1	Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0959	4/24	24.4	24.3	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0938	4/25	24.5	24.4	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Aw 0950	4/26	24.8	24.4	Day 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 1035	4/27	24.6	24.5	Day 4	6	4	6	11	8	6	7	4	3	5	
	Aw 1000	4/28	24.2	24.9	Day 5	15	9	14	13	15	16	10	12	9	10	
Aw 1302		4/29	24.6	24.6	Day 6	22	19	14	21	18	18	16	14	13	12	
					Day 7											
					Day 8											
			Total			43	32	34	39	41	40	33	31	25	27	345

2.75 = 25%

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-) = Dead neonates M = Male

TEST LOG #

16061

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes
			25%	Temp (°C)		1	2	3	4	5	6	7	8	9	10	
AW 1117		4/23	24.1		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0959	4/24	24.2	24.3	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LA 0938	4/25	24.3	25.1	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0950	4/26	24.4	24.8	Day 3	✓	✓	3	4	3	✓	✓	3	✓	✓	
	HM 1035	4/27	24.5	24.2	Day 4	0	7	"	"	✓	8	5	✓	0	8	
	AW 1000	4/28	24.1	24.5	Day 5	13	14	12	16	13	12	12	14	11	12	
AW 1302		4/29		24.8	Day 6	18	20	20	21	15	15	19	19	16	17	
					Day 7											
					Day 8											
			Total			37	41	36	42	31	35	36	36	33	37	3104

SURVIVAL AND REPRODUCTION DATA																
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Adult	REPLICATES										Notes
			34%	Temp (°C)		1	2	3	4	5	6	7	8	9	10	
AW 1117		4/23	24.2		Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0959	4/24	24.4	24.3	Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	LA 0938	4/25	24.8	25.4	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0950	4/26	24.3	24.9	Day 3	✓	✓	✓	3	✓	✓	✓	4	4	✓	
	HM 1035	4/27	24.5	24.1	Day 4	0	5	0	2	5	0	7	✓	✓	0	
	AW 1000	4/28	24.1	24.8	Day 5	14	Miss	13	14	8	13	13	14	13	15	
AW 1302		4/29		24.6	Day 6	15		14	18	16	18	17	21	✓	14	
					Day 7											
					Day 8											
			Total			35	21	33	37	29	37	37	39	17	35	299

✓ = Test Organism Alive
 D = Test Organism Dead

0 = Live neonates
 (-0) = Dead neonates

Miss = Lost or Missing
 M = Male

(332)

TEST LOG # 16061

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																
Test Start & Feeding / End Initials / Time	Daily Renewal & Feeding Initials / Time	Date	Concentration		Adult	REPLICATES										Notes
			45%	Temp (°C)		1	2	3	4	5	6	7	8	9	10	
AW 117		4/23	24.1		Day 0	✓	✓	✓	✓	-	-	✓	✓	-	-	
	AW 0959	4/24	24.4	24.2	Day 1	✓	-	-	-	-	-	-	-	-	✓	
	AW 0938	4/25	24.4	24.5	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0950	4/26	24.8	24.5	Day 3	✓	✓	3	✓	✓	✓	✓	3	5	✓	
	HM 1035	4/27	24.2	24.4	Day 4	7	8	✓	5	7	6	5	✓	"	✓	
	AW 1000	4/28	24.1	24.6	Day 5	9	10	11	12	13	9	14	11	11	D/O	
AW 1302		4/29	24.6		Day 6	19	19	15	17	20	12	15	14	15		
					Day 7											
					Day 8											
			Total			35	37	29	34	40	27	34	28	32	D/O	296

SURVIVAL AND REPRODUCTION DATA																
Test Start & Feeding / End Initials / Time	Daily Renewal & Feeding Initials / Time	Date	Concentration		Adult	REPLICATES										Notes
			60%	Temp (°C)		1	2	3	4	5	6	7	8	9	10	
AW 117		4/23	24.3		Day 0	✓	✓	✓	✓	-	✓	✓	✓	-	-	
	AW 0950	4/24	24.4	24.3	Day 1	✓	✓	-	-	-	-	✓	✓	-	✓	
	AW 0938	4/25	24.6	24.1	Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	AW 0950	4/26	24.8	24.4	Day 3	✓	✓	3	5	5	✓	✓	4	✓	✓	pale
	HM 1035	4/27	24.4	24.3	Day 4	5	4	✓	9	✓	7	5	✓	8	5	
	AW 1000	4/28	24.1	24.8	Day 5	D/O	8	9	✓	9	12	14	10	13	12	
AW 1302		4/29	24.7		Day 6		13	15	15	17	11	14	13	12	14	
					Day 7											
					Day 8											
			Total			D/O	25	27	29	31	30	33	27	33	31	281

✓ = Test Organism Alive
D = Test Organism Dead

0 = Live neonates
(-0) = Dead neonates

Miss = Lost or Missing
M = Male

TEST LOG # 16061

JOB # 20-19675G

CLIENT/SAMPLE ID: Georgia Pacific - Crossett

LAB/STATE: ENVIRON / TN

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Temp (°C)	REPLICATES										Notes	
			80%			1	2	3	4	5	6	7	8	9	10		
						Adult											
AW 117		4/23	24.1			Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	AH 0959	4/24	24.1	24.2		Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	LM 0938	4/25	24.5	25.1		Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	AW 0950	4/26	24.7	24.7		Day 3	✓	✓	4	5	2	✓	✓	3	✓		
	HM 1035	4/27	24.6	24.4		Day 4	0	4	1	✓	✓	2	0	3	✓		
	AW 1000	4/28	24.1	24.6		Day 5	7	5	7	7	7	7	9	✓	5		
AW 1302		4/29		25.0		Day 6	8	5	10	14	17	13	13	7	11		
						Day 7											
						Day 8											
			Total				21	14	22	26	21	22	28	10	19	23	206

SURVIVAL AND REPRODUCTION DATA																	
Test Start & Feeding / End Initials/ Time	Daily Renewal & Feeding Initials/ Time	Date	Concentration		Temp (°C)	REPLICATES										Notes	
			MH			1	2	3	4	5	6	7	8	9	10		
						Day 0	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	AH 0959	4/24	24.2	24.6		Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	LM 0938	4/25	24.6	25.4		Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	AW 0950	4/26	24.6	24.9		Day 3	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	HM 1035	4/27	24.4	24.1		Day 4	0	4	7	0	5	7	0	7	7		
	AW 1000	4/28	24.0	24.5		Day 5	9	✓	12	13	14	11	13	13	17		
AW 1302		4/29	24.6	24.6		Day 6	17	✓	13	17	19	16	18	17	19		
						Day 7											
						Day 8											
			Total				32	4	32	36	38	35	37	37	39	40	330

✓ = Test Organism Alive 0 = Live neonates Miss = Lost or Missing
 D = Test Organism Dead (-0) = Dead neonates M = Male

TEST LOG NO. 16061

CLIENT/SAMPLE ID: Georgia Pacific Crossett

JOB NO. 20-19675G

TEST ORGANISM: Cd

DATE: 4/25/13

ENVIRON Test Log No. 16061

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Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	7.9	8.5	8.5	8.1	8.5	7.8	8.5	7.8	8.6	8.3	8.0	7.7		
25	7.9	8.1	8.5	8.1	8.5	7.8	8.5	7.8	8.6	8.3	8.0	7.7		
34	8.2	8.2	8.5	8.2	8.5	7.7	8.5	7.7	8.6	8.3	8.0	7.7		
45	8.2	8.2	8.5	8.2	8.5	7.7	8.5	7.7	8.6	8.3	8.0	7.7		
60	8.2	8.2	8.5	8.2	8.5	7.7	8.5	7.7	8.6	8.3	8.0	7.7		
80	8.2	8.2	8.5	8.2	8.5	7.7	8.5	7.7	8.6	8.3	8.0	7.7		
MH	8.2	8.2	8.5	8.2	8.5	7.7	8.5	7.7	8.6	8.3	8.0	7.7		

Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	7.60	7.55	7.40	7.20	6.58	7.24	7.62	7.16	6.84	7.22	6.90	7.69		
25	7.00	7.55	7.40	7.20	6.58	7.24	7.62	7.16	6.84	7.22	6.90	7.69		
34	7.52	8.12	7.88	8.32	7.13	8.10	7.24	8.18	7.24	8.15	7.38	8.19		
45	7.53	8.32	7.58	8.44	7.60	8.33	7.52	8.30	7.51	8.33	7.53	8.36		
60	7.60	8.45	7.71	8.54	7.70	8.47	7.68	8.47	7.68	8.43	7.68	8.47		
80	7.55	8.58	7.81	8.62	7.70	8.56	7.78	8.56	7.78	8.55	7.78	8.56		
MH	7.67	7.49	7.60	7.61	7.57	7.76	7.56	7.61	7.91	7.63	7.86	7.78		

Concentration (%)	Start	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7
		Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
RW	67	91	78	86	80	82	87	85	89	81	97	74		
25	537	546	552	545	514	561	572	555	540	543	565	553		
34	724	719	732	759	737	738	715	710	747	738	735	710		
45	948	940	915	957	888	886	955	929	946	930	979	942		
60	1198	1164	1155	1253	1209	1183	1244	1242	1194	1172	1194	1160		
80	1517	1500	1550	1617	1591	1496	1527	1524	1500	1461	1555	1521		
MH	217	233	280	233	214	228	225	245	217	214	219	211		

Params Intl/Time:	AW 1107	AW 1112	AW 0844	AW 0942	AW 0901	AW 0853	AW 0817	AW 1205	AW 0958	AW 1155	AW 0922	AW 1154	
Dilutions Intl/Time:	AW 1100		AW 0538		AW 0852		AW 0813	AW 0948	AW 0948	AW 0912			
Control Water Batch:	161570, 5191 (MH)	16157 (RW), 5191 (MH)		16104, 414		16164, 424		16173, 201		16172, 5201			
Food Batch:	91, 65	91, 65		4291, 4310		4291, 4310		4291, 4310		4291, 4311			

TEST LOG NO. 16061

CLIENT: Georgia Pacific Crossett

DATE OF TEST: 4/25/13

JOB NO. 20-19675G

TEST TYPE(S) PERFORMED: Cd Chronic

ENVIRON Test Log No. 16061

100% EFFLUENT

Batch #	Sample ID	Sample Date	1st Use Date	Hardness mg/L CaCO3	Alkalinity mg/L	TRC mg/L	NH ₃ N mg/L
16158	Outfall 001	4/21-22/13	4/23/13	292	502	20.02	3.06
16165	Outfall 001	4/23-24/13	4/25/13	304	509	20.02	3.21
16173	Outfall 001	4/25-26/13	4/27/13	288	511	20.02	3.09

CONTROL / DILUTION WATER

Batch #	Sample ID	Sample Date	1st Use Date	Hardness mg/L CaCO3	Alkalinity mg/L	TRC mg/L	NH ₃ N mg/L
16157	River Water	4/22-13	4/23/13	20	28	0.04	20.1
5193	MH	4/17/13	4/18/13	84	47	<0.02	-
16164	River Water	4/24/13	4/25/13	248	33	0.06	20.1
5194	MH	4/18/13	4/19/13	82.4	46	<0.02	-
16172	River Water	4/22/13	4/27/13	21.6	28	0.06	20.1
5201	MH	4/24/13	4/25/13	81.6	48	20.02	-

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**Attachment 2:
Chain-Of-Custody Documentation and
Reference Toxicant Data**

Project Name: _____ Project Number: _____

Industry: GEORGIA PACIFIC PAPER

Phone: 870-567-8170 FAX: 870-364-9074

County: ASHLEY City: CROSSEX State: AR

Sample Collected by (print): _____ NPDES Permit No.: AP0001210

Sample Collected by (signature): _____ NPDES Test: No Yes

No. of Cntrs: _____

Sample Location / VD	Comp/Grab	Container Type	Chilled During Collection (Y/N)	Start Date/Time	End Date/Time	No. of Cntrs	Total Volume in liters	Analysis Requested										Description Definitive or Screen	Sample B# (lab only)	
								Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests	Discrete Batch Tests	Other				
<u>RIVER</u>	<u>G</u>	<u>PLASTIC</u>	<u>NA</u>	<u>4-22-13</u>	<u>10:55am</u>	<u>2</u>	<u>20</u>												<u>DILUTION WATER</u>	<u>3.2°C</u>
<u>FALL CREEK</u>	<u>C</u>	<u>PLASTIC</u>	<u>YES</u>	<u>4-21-13</u>	<u>4-22-13</u>	<u>2</u>	<u>20</u>												<u>16:57</u> <u>16:58</u>	<u>2.5°C</u>

* Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____

Remarks: _____
Measured TRC (if applicable): 0.00 mg/L

Relinquished by: (Signature) _____ Date: 4-22-13 Time: 3:00pm
 FedEx Other Courier UPS Hand Delivered
 Condition: (lab use only) CRITICAL

Relinquished by: (Signature) _____ Date: _____ Time: _____
 Received by: (Signature) _____
 Receipt Temp: 5°C above Containers/Volume Received: 2/10L

Relinquished by: (Signature) _____ Date: _____ Time: _____
 Received for lab by: (Signature) _____
 Date: 4/23/13 Time: 08:55 pH upon arrival: 5.7 6.8 DO upon arrival: 8.8 9.4

CHAIN-OF-CUSTODY



201 Summit View Drive, Suite 300
 Brentwood, TN 37027
 PHONE: (615) 277-7570
 FAX: (615) 377-4976

ENVIRON Test Log No. 16061

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Sample Receipt Checklist:

Client: APCrossett

Date/Time received 4/25/13 0835 by AD


- 1. Cooler sealed and intact upon arrival? Yes No
- 2. Custody seals present? Yes No
- 3. Samples received below 6 degrees Celsius? Yes No
- 4. Was ice present? Yes No
- 5. Is the COC filled out correctly including the sample date/time and signed? Yes No
- 6. Was the sample received within 36 hours of collection? Yes No
- 7. Did the sample(s) arrive in good condition? Yes No
- 8. Was pH and DO measured and in range? Yes No
- 9. Was residual chlorine present? Yes No
 - 1.0 mg/L? (did dechlor occur) Yes No

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
16157	R.M.C	3.2	6.80	8.8	0.09
16158	O.Jell on	2.7	7.78	9.4	<0.02

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ENVIRON Test Log No. 16061

Project Name:		Project Number:		Analysis Requested										CHAIN-OF-CUSTODY  201 Summit View Drive, Suite 300 Brentwood, TN 37027 PHONE: (615) 277-7570 FAX: (615) 377-4976					
Industry: <u>GEORGIA PACIFIC PAPER</u>				Total Volume in liters	Acute Fathead minnow	Acute Bannerfin shiner	Acute Ceriodaphnia dubia	Acute Daphnia pulex	Chronic Fathead minnow	Chronic Ceriodaphnia dubia	Continuous Batch Tests	Discrete Batch Tests	Other						
Phone: <u>870-567-8170</u> FAX: <u>870-364-9076</u>		State: <u>AR</u>																	
County: <u>ASALET</u> City: <u>CROSSETT</u>		NPDES Permit No.: <u>AR0001210</u>																	
Sample Collected by (print): <u>DANNY / ROBBIE</u>		NPDES Test: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes																	
Sample Collected by (signature):		No. of Cntrs												Description					
Sample Location / ID	Comp/Grab	Container Type	Chilled During Collection (Y/N)	Start Date/Time	End Date/Time													Definitive or Screen	Sample B# (lab only)
<u>RIVER</u>	<u>G</u>	<u>PLASTIC</u>	<u>NA</u>	<u>4-24-13</u>	<u>9:55AM</u>	<u>1</u>	<u>10</u>											<u>DILUTION WATER</u>	<u>1.3</u>
<u>OUTFALL 001</u>	<u>C</u>	<u>PLASTIC</u>	<u>YES</u>	<u>4-23-13</u> <u>6:18am</u>	<u>4-24-13</u> <u>6:20am</u>	<u>1</u>	<u>10</u>	✓										<u>16.64</u> <u>16.65</u>	<u>1.6</u>
* Matrix: SS - Soil GW - Groundwater WW - Wastewater AW - Ambient Water ML - Mixed Liquor SL - Sludge SD - Sediment OT - Other _____																			
Remarks:																			
Measured TRC (if applicable): <u>0.00</u> mg/L																			
Relinquished by: (Signature) <u>Danny W. Rice</u>		Date: <u>4-24-13</u>	Time: <u>3:00pm</u>	Received by: (Signature)		Samples shipped via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other Courier				<input type="checkbox"/> UPS Hand Delivered <input type="checkbox"/> UPS Courier		Condition: (lab use only) <u>Once</u>							
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Receipt Temp: <u>See above</u>		Containers/Volume Received: <u>2-10L</u>											
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature) <u>[Signature]</u>		Date: <u>4/25/13</u>		Time: <u>0836</u>		pH upon arrival: <u>6.75, 7.84</u>		DO upon arrival: <u>9.0, 9.3</u>							

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Sample Receipt Checklist:

Client: GPCrowsett

Date/Time received 4/25/13 0836 by A12

1. Cooler sealed and intact upon arrival? Yes No
2. Custody seals present? Yes No
3. Samples received below 6 degrees Celsius? Yes No
4. Was ice present? Yes No
5. Is the COC filled out correctly including the sample date/time and signed? Yes No
6. Was the sample received within 36 hours of collection? Yes No
7. Did the sample(s) arrive in good condition? Yes No
8. Was pH and DO measured and in range? Yes No
9. Was residual chlorine present? Yes No
 ➤ 1.0 mg/L? (did dechlor occur) Yes No

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
160164	River	1.3	6.75	9.0	0.06
16165	Outlet Out	1.6	7.84	9.3	<0.02

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Sample Receipt Checklist:

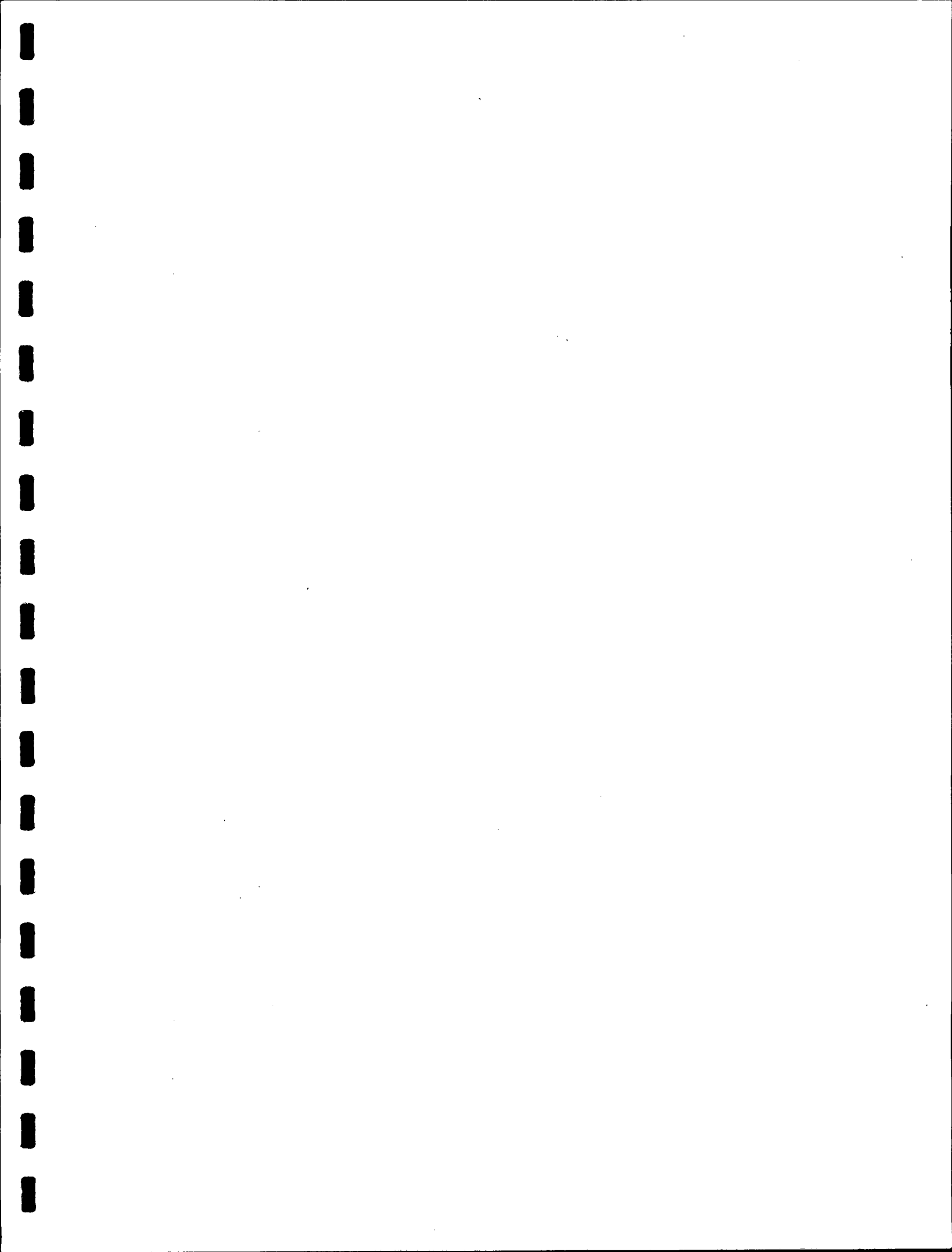
Client: GP Crossett

Date/Time received 4/27/13 9:00 by AW

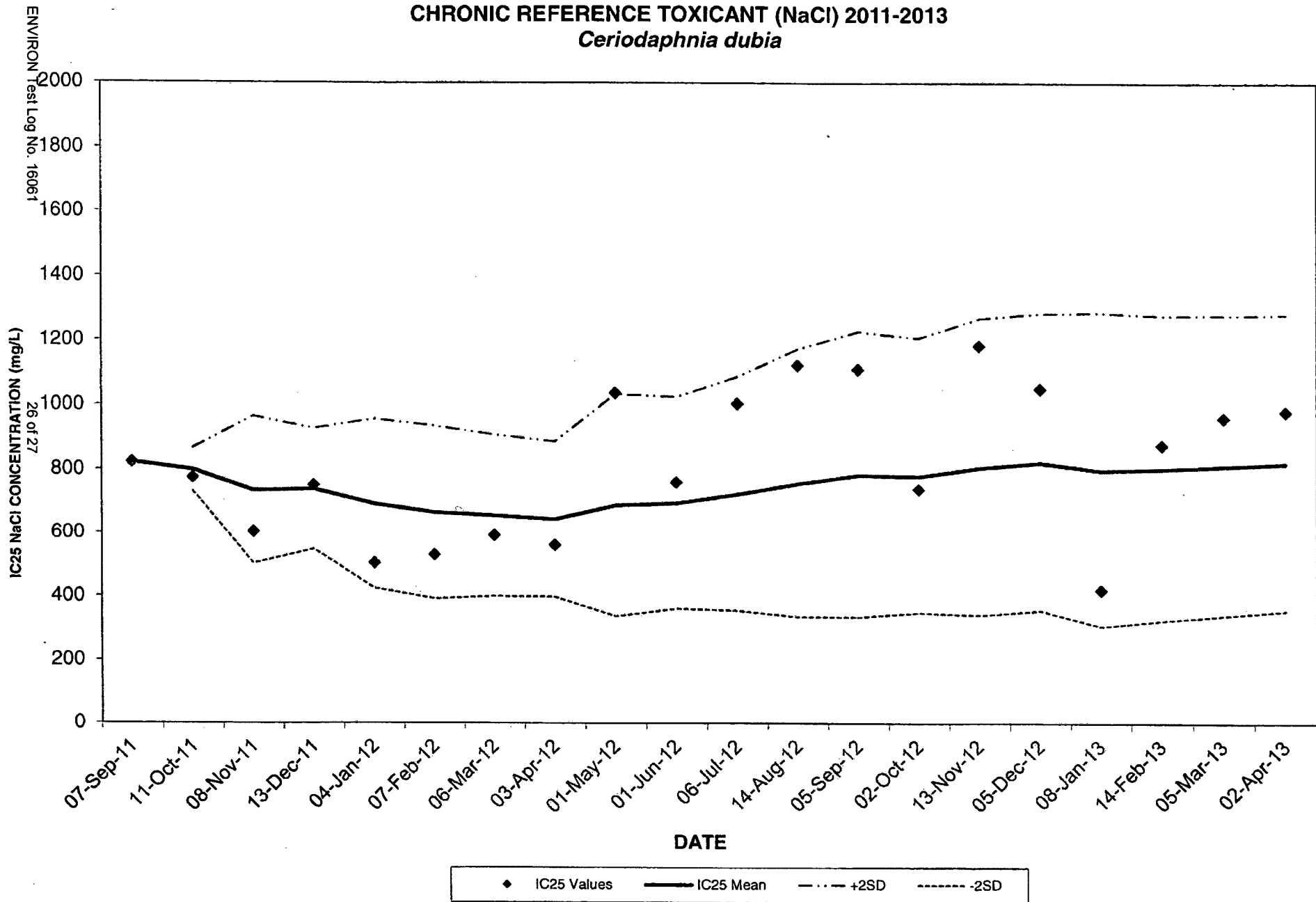
- 1. Cooler sealed and intact upon arrival? Yes No
- 2. Custody seals present? Yes No
- 3. Samples received below 6 degrees Celsius? Yes No
- 4. Was ice present? Yes No
- 5. Is the COC filled out correctly including the sample date/time and signed? Yes No
- 6. Was the sample received within 36 hours of collection? Yes No
- 7. Did the sample(s) arrive in good condition? Yes No
- 8. Was pH and DO measured and in range? Yes No
- 9. Was residual chlorine present? Yes No
 ➤ 1.0 mg/L? (did dechlor occur) Yes No *in the River water*

Comments:

Batch #	Sample ID	Temp (C°)	pH	DO	TRC
16172	River	1.3	7.01	9.4	0.06
16173	Outfall 001	2.2	7.83	8.4	<0.02



CHRONIC REFERENCE TOXICANT (NaCl) 2011-2013
Ceriodaphnia dubia



Ceriodaphnia dubia CHRONIC REFERENCE TOXICANT TESTING - SODIUM CHLORIDE (NaCl) 2011-2013

ENVIRON TEST Log No. 18061

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Test Number	Log Number	Test Initiation Date	Control Survival (%) (*)	3 Brood Production (%) (*)	Control Average Repro (*)	Survival		Reproduction			IC25 VALUE (mg/L)	IC25 CUMULATIVE MEAN (mg/L)	IC25 ST. DEV. (mg/L)	IC25 2+ STD. DEV.	IC25 2- STD. DEV.	Coefficient of Variation (%)
						NOEC (mg/L)	LOEC (mg/L)	NOEC (mg/L)	LOEC (mg/L)	PMSD						
1	13829	07-Sep-11	100	100	31.3	1,000	2,000	250	500	8.7	823	823				0
2	13887	11-Oct-11	100	100	28.3	2,000	>2,000	500	1,000	16.2	775	799	34	867	731	3
3	13963	08-Nov-11	100	90	17.9	2,000	>2,000	500	1,000	26.1	603	734	116	965	502	13
4	14306	13-Dec-11	100	100	21.4	1,000	2,000	500	1,000	16.8	750	738	95	927	548	11
5	14055	04-Jan-12	90	80	25.4	1,000	2,000	500	1,000	46.4	504	691	133	957	425	17
6	15131	07-Feb-12	100	100	27.1	1,000	2,000	500	1,000	29.7	530	664	136	936	392	19
7	15206	06-Mar-12	100	100	31.4	1,000	2,000	500	1,000	24.6	592	654	127	908	400	18
8	15283	03-Apr-12	100	100	33.4	500	1,000	500	1,000	27.3	560	642	122	886	398	18
9	15344	01-May-12	100	90	32.9	2,000	>2,000	500	1,000	22.4	1036	686	174	1,034	338	24
10	15100	01-Jun-12	80	100	28.8	2,000	>2,000	500	1,000	14.6	759	693	166	1,025	362	23
11	15402	06-Jul-12	100	100	27.8	1,000	2,000	500	1,000	9.9	1003	721	183	1,087	356	24
12	15549	14-Aug-12	100	100	32.7	2,000	>2,000	500	1,000	10.3	1121	755	209	1,173	337	27
13	15604	05-Sep-12	100	100	26.3	1,000	2,000	500	1,000	12.5	1109	782	223	1,228	336	27
14	15653	02-Oct-12	100	100	34.8	2,000	>2,000	500	1,000	22.0	737	779	215	1,208	350	27
15	15742	13-Nov-12	100	100	31.6	2,000	>2,000	1,000	2,000	10.4	1183	806	232	1,269	342	28
16	15784	05-Dec-12	100	100	36.6	2,000	>2,000	500	1,000	12.6	1050	821	232	1,285	357	27
17	15864	08-Jan-13	100	80	30.5	2,000	>2,000	250	500	24.3	420	797	245	1,287	308	30
18	15937	14-Feb-13	100	100	32.2	2,000	>2,000	500	1,000	18.1	875	802	238	1,278	325	29
19	15966	05-Mar-13	100	100	33.7	2,000	>2,000	500	1,000	21.8	960	810	234	1,279	341	28
20	16018	02-Apr-13	90	100	29.3	2,000	>2,000	500	1,000	16.8	979	818	231	1,281	356	28

Avg	98	97	30	1575	750	500	1000	20	818	751	176	1099	395
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Notes:

NOEC - No Observable Effect Concentration (survival or reproduction)

LOEC - Lowest Observable Effect Concentration (survival or reproduction)

ACCEPTABLE TEST RESULTS - A reproduction NOEC ranging from 250 mg/L to 1,000 mg/L.

(*) Minimum USEPA CONTROL CRITERIA - 80 percent survival, 80 percent with 3 broods, and average reproduction of 15 neonates/adult.

earthsmart

FedEx carbon-neutral
envelope shipping

Align top of FedEx Express® shipping label here.

100
Express

RT 177 1 A
ST 3 0219 05.28

From: (870) 567-8812
Becky Blankenship
Georgia-Pacific
100 Supply Road
Drop Point 33
Crossett, AR 71635

Origin ID: ELDA



J13111302120328

Ship Date: 24MAY13
ActWgt: 1.0 LB
CAD: 102787395/NET3370

Delivery Address Bar Code



SHIP TO: (501) 661-2623
CRAIG UYEDA
ADEQ
5301 NORTSHORE DR

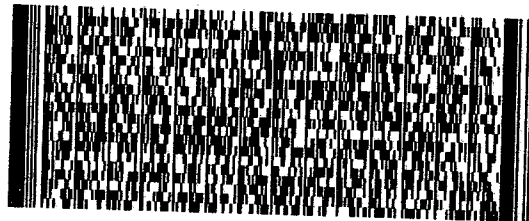
BILL SENDER

Ref # dmr's
Invoice #
PO #
Dept #

NORTH LITTLE ROCK, AR 72118

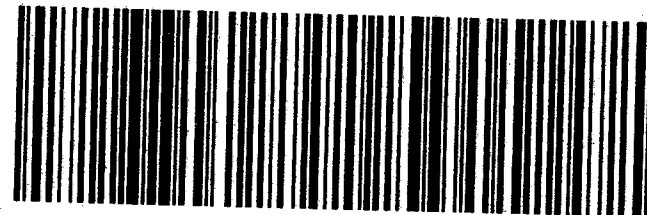
TUE - 28 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 7998 4643 0219
0201



X2 LITA

72118
AR-US
LIT



518G1/9983/83AB

Align bottom of peel and stick airbill here.