

To: Clearflow Enviro Systems Group Inc.
#140, 134 Pembina Road
Sherwood Park, AB T8H 0M2

File: 32620ad
Date: July 8, 2010
Client PO: 0132010-04
Attention: Jennifer Kerr

Project: CFPL & CFGP Toxicity

1. SAMPLE INFORMATION

Sample Origin: Clearflow Enviro Systems Group Inc.
Sherwood Park, AB
Sample Description: CFPL-394
Sample Weight (g): 400
Date and Time Received: Apr. 28/10 @ 1435 hrs.
Transit Irregularities: None

2. TEST INFORMATION

Test Organism: *Daphnia magna* (neonates)
Test Description: Acute, 48-hour, static, multi-dilution (LC₅₀)
Test Method Procedure: 15.4.8710.20
Reference Method: EPS1/RM/14, Second Edition – December 2000
Environment Canada
Performed By: Liam Potter
Start of Test Date and Time: Apr. 30/10 @ 1600 hrs.
End of Test Date and Time: May 1/10 @ 1600 hrs.
Source of Holding/Dilution Water: Dechlorinated City of Edmonton tap water
Container Description: 250 mL, Borosilicate Glass
Control/Dilution Water Initial Temperature (°C): 17.0
Control/Dilution Water Hardness (mg/L CaCO₃): 164
Test Solution Volume (mL): 200
Number of Test Organisms/Container: 10
pH Adjustment: Test solutions are not to be pH adjusted.
Deviations from Reference Method: Solid material was broke into pieces (<1cm); weighed and then added into pails. 20L of dilution water – was added to each pail, immersing the solid material. The pails were allowed to sit for a 24 hour period with intermittent stirring. Solutions were then aerated and test organisms were added.



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3. LABORATORY ANALYSIS OF SAMPLE WHEN RECEIVED

Observations	Colour:	White solid
	Odour:	Slight solvent-like odour

4. PRE-AERATION

Duration at 25 - 50 mL/min•L⁻¹ (min): 0

		<u>2500 mg/L Sample Test</u>	<u>0 mg/L Sample Test</u>
		<u>Concentration</u>	<u>Concentration</u>
Before Pre-Aeration	Dissolved Oxygen (mg/L):	--	8.80
	Air Saturation (%):	--	99
After Pre-Aeration	Dissolved Oxygen (mg/L):	--	--
	Air Saturation (%):	--	--

5. TEST ORGANISM DATA

Parent Lot Number:	100405
Weekly Mortality Preceding Test (%):	<10
Health Test Starting Date:	Apr. 8/10
Average Time to First Brood (d):	14
Average Number of Neonates/Brood:	12
Average Number of Broods/Test:	3
Sample Size:	4

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6. TEST DATA

Sample Concentration	(mg/L)	2500	2000	1500	1000	500	0
Time:	0 hours						
Temperature	(°C)	19.0	19.0	19.0	19.1	19.2	19.3
pH		7.72	7.80	7.89	7.99	8.09	8.19
Conductivity @ 25°C	(µmhos/cm)	485	450	434	425	405	380
Dissolved Oxygen	(mg/L)	-	-	-	-	-	8.68
Time:	48 hours						
% Immobility		10/0	30	30	30	30	0/0
% Mortality		90/100	70	50	30	0	0/0
Temperature	(°C)	19.2	19.3	19.1	19.4	19.3	19.1
pH		8.20	8.18	8.20	8.21	8.27	8.26
Conductivity @ 25°C	(µmhos/cm)	541	512	486	462	428	397
Dissolved Oxygen	(mg/L)	-	-	-	-	-	7.21

Measurement of dissolved oxygen not possible due to sample viscosity.

7. REPLICATION

Sample Concentration (mg/L):	2500	0
Average Immobility at 48 hours (%):	5	0
Average Mortality at 48 hours (%):	95	0

8. SUBLETHAL BIOLOGICAL EFFECTS

Sample Concentration v/v (%)	Time(s) Observed (h)	Effect(s) Observed
--	--	None

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9. OBSERVATIONS/COMMENTS

None

10. RESULTS

48-hour LC ₅₀ (mg/L):	1415
95% Lower Confidence Interval (mg/L):	1093
95% Upper Confidence Interval (mg/L):	1741
Method of Calculation:	Stephan LC ₅₀ Computer Program, Probit method
Confirmed by Graph:	Yes
48-hour EC ₅₀ (Immobility) (mg/L):	833
95% Lower Confidence Interval (mg/L):	-
95% Upper Confidence Interval (mg/L):	-
Method of Calculation:	Binomial Linear – Interpolation
Confirmed by Graph:	Yes

11. REFERENCE TOXICANT DATA

Toxicant:	Chromium
Test Starting Date:	May 3/10
48-hour LC ₅₀ (mg/L):	0.118
95% Lower Confidence Interval (mg/L):	0.101
95% Upper Confidence Interval (mg/L):	0.141
Method of Calculation:	Stephan LC ₅₀ Computer Program, Probit method
Confirmed by Graph:	Yes
Historic Geometric Mean LC ₅₀ (mg/L):	0.125
95% Lower Confidence Interval (mg/L):	0.099
95% Upper Confidence Interval (mg/L):	0.151

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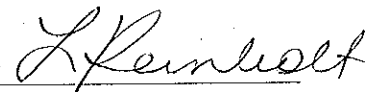
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Analysis Verified and
Report Authorized by:



Lisa Reinbolt

Note: All samples will be disposed of 30 days after analysis. Please advise the laboratory if you require additional sample storage time.