



AquaTox Testing & Consulting Inc.
 11B Nicholas Beaver Rd.
 RR 3
 Guelph ON N1H 6H9
 Tel: (519) 763-4412 Fax: (519) 763-4419

TOXICITY TEST REPORT

Daphnia magna

Page 1 of 2

Work Order : 213743
 Sample Number : 22271

SAMPLE IDENTIFICATION

Company :	SGS Lakefield Research Limited	Time Collected :	Not given
Location :	Lakefield ON	Date Collected :	2008-08-14
Substance :	10 PPM WAD Cyanide sample (Oct. 10)	Date Received :	2008-08-14
Sampling Method :	Chemical	Date Tested :	2008-10-10
Sampled By :	Not given	Temp. on arrival :	Not measured
Sample Description:	Cloudy grey liquid.		
Test Method :	Reference Method for Determining Acute Lethality of Effluents to <i>Daphnia magna</i> . Environment Canada EPS 1/RM/14 (Second Edition, December 2000) with deviation(s) as noted below.		

TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested.

SODIUM CHLORIDE REFERENCE TOXICANT DATA

Organism Batch :	Dm08-19		
Date Tested (yyyy/mm/dd) :	2008-10-07	Historical Mean LC50 :	6.1 g/L
LC50 (95% Confidence Limits) :	6.2 g/L (6.0 - 6.3)	Warning Limits (± 2SD) :	5.6 - 6.8 g/L
Statistical Method :	Trimmed Spearman-Kärber	Analyst(s) :	SM/NK

***Daphnia magna* CULTURE HEALTH DATA**

Time to First Brood :	8.4 days	Mean Young Per Brood :	26.0
Culture Mortality :	2.8% (previous 7 days)		

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	None	Test Organisms / Replicate :	10
Test Aeration :	None	Total Organisms / Test Level :	30
Organism Batch :	Dm08-19	Organism Loading Rate :	15.0 mL/organism

Noted Deviation: Sample was settled for 56 days from 2008-08-15 to 2008-10-10 outdoors, loosely covered with bags to allow air exchange. The sample was siphoned prior to testing.

Date: 2008-10-27
 yyyy-mm-dd

Approved by:
 Project Manager



Daphnia magna TOXICITY TEST REPORT

Work Order: 213743
Sample Number: 22271

Table with 9 columns: Hardness (mg/L as CaCO3), Hardness Adjustment, pH, D.O. (mg/L), Cond. (umhos/cm), Temp. (C), O2 Sat. (%)*, Total Pre-Aeration Time (h) @ 30 mL/min/L. Row: Initial Water Chemistry: 430, None, 8.2, 9.8, 5820, 18.0, 108, 0:30

0 hours

Date & Time: 2008-10-10 14:15
Technician: NK

Table with 9 columns: Test Conc. (%), Mortality, Immobility, pH, D.O., Cond., Temp., O2 Sat. (%)*, Hardness. Rows: 100A, 100B, 100C, Control A, Control B, Control C

Notes:

24 hours

Date & Time: 2008-10-11 14:15
Technician: FS

Table with 7 columns: Test Conc. (%), Mortality, Immobility, pH, D.O., Cond., Temp. Rows: 100A, 100B, 100C, Control A, Control B, Control C

Notes:

48 hours

Date & Time: 2008-10-12 14:15
Technician: FS

Table with 7 columns: Test Conc. (%), Mortality, Immobility, pH, D.O., Cond., Temp. Rows: 100A, 100B, 100C, Control A, Control B, Control C

Notes:

of control organisms showing stress: 0
Daphnia Batch #: Dm08-19

Number immobile does not include number of mortalities.

- = not measured

* adjusted for actual temp. & barometric pressure

Test Data Reviewed By: [Signature]
Date: 2008-10-15



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Work Order : 213743
 Sample Number : 22271

SAMPLE IDENTIFICATION

Company :	SGS Lakefield Research Limited	Time Collected :	Not given
Location :	Lakefield ON	Date Collected :	2008-08-14
Substance :	10 PPM WAD Cyanide sample (Oct. 10)	Date Received :	2008-08-14
Sampling Method :	Chemical	Date Tested :	2008-10-10
Sampled By :	Not given	Temp. on arrival :	Not measured
Sample Description :	Cloudy grey liquid.		
Test Method :	Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007 amendments), with deviation(s) as noted below.		

TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested.

POTASSIUM CHLORIDE REFERENCE TOXICANT DATA

Organism Batch :	T08-18		
Date Tested (yyy-mm-dd) :	2008-10-15	Historical Mean LC50 :	3826 mg/L
LC50 (95% Confidence Limits) :	4043 mg/L (3585 - 4539)	Warning Limits (± 2SD) :	3211 - 4564 mg/L
Statistical Method :	Linear Regression (MLE)	Analyst(s) :	CN/KLW

TEST FISH

Control Fish Sample Size :	10	Cumulative stock tank mortality:	0 % (prev. 7 days)
Mean Fish Weight (± 2 SD) :	0.42 ± 0.20 g	Mean Fish Fork Length (± 2 SD) :	37.0 ± 7.3 mm
Range of Weights :	0.29 - 0.57 g	Range of Fork Lengths (mm) :	30 - 41 mm
Fish Loading Rate :	0.28 g/L		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	15
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 1 mL/min/L	Total Organisms Per Test Level :	10
Organism Batch :	T08-18		

Noted Deviation: Sample was settled for 56 days from 2008-08-15 to 2008-10-10 outdoors, loosely covered with bags to allow air exchange. The sample was siphoned prior to testing.

Date: 2008-10-27
 yyyy-mm-dd

Approved by:
 Project Manager

Work Order: 213743
 Sample Number: 22271

Total Pre-Aeration Time (h)		pH	D.O. (mg/L)	Cond. (µmhos/cm)	Temp. (°C)	O ₂ Sat. (%) [*]
2:00	Initial Water Chemistry:	8.4	10.5	5450	14.0	-
	Chemistry after 30min air:	8.4	10.2	5430	14.0	102

0 hours

Date & Time	2008-10-10	13:30					
Technician:	CN/FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	O ₂ Sat. (%) [*]
100	0	0	8.3	9.8	5430	14.0	100
Control	0	0	8.0	9.4	578	15.5	98

Notes:

24 hours

Date & Time	2008-10-11	13:30					
Technician:	FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	0	0	-	-	-	15.0	
Control	0	0	-	-	-	15.0	

Notes:

48 hours

Date & Time	2008-10-12	13:30					
Technician:	FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	0	0	-	-	-	15.5	
Control	0	0	-	-	-	15.5	

Notes:

72 hours

Date & Time	2008-10-13	13:30					
Technician:	FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	0	0	-	-	-	15.0	
Control	0	0	-	-	-	15.0	

Notes:

96 hours

Date & Time	2008-10-14	13:30					
Technician:	FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	0	0	8.1	8.2	5350	16.0	
Control	0	0	8.2	8.9	547	16.0	

Notes:

of control organisms showing stress: 0

Trout Batch #: T08-18

"-" = not measured

Number immobile does not include number of mortalities.

* adjusted for actual temp. & barometric pressure

Test Data Reviewed By: J
 Date: 2008-10-15



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TOXICITY TEST REPORT

Daphnia magna

Page 1 of 2

Work Order : 213743
 Sample Number : 22272

SAMPLE IDENTIFICATION

Company :	SGS Lakefield Research Limited	Time Collected :	Not given
Location :	Lakefield ON	Date Collected :	2008-08-14
Substance :	20 PPM WAD Cyanide sample (Oct. 10)	Date Received :	2008-08-14
Sampling Method :	Chemical	Date Tested :	2008-10-10
Sampled By :	Not given	Temp. on arrival :	Not measured
Sample Description:	Cloudy grey liquid.		
Test Method :	Reference Method for Determining Acute Lethality of Effluents to <i>Daphnia magna</i> . Environment Canada EPS 1/RM/14 (Second Edition, December 2000) with deviation(s) as noted below.		

TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested.

SODIUM CHLORIDE REFERENCE TOXICANT DATA

Organism Batch :	Dm08-19		
Date Tested (yyyy/mm/dd) :	2008-10-07	Historical Mean LC50 :	6.1 g/L
LC50 (95% Confidence Limits) :	6.2 g/L (6.0 - 6.3)	Warning Limits (± 2SD) :	5.6 - 6.8 g/L
Statistical Method :	Trimmed Spearman-Kärber	Analyst(s) :	SM/NK

***Daphnia magna* CULTURE HEALTH DATA**

Time to First Brood :	8.4 days	Mean Young Per Brood :	26.0
Culture Mortality :	2.8% (previous 7 days)		

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	None	Test Organisms / Replicate :	10
Test Aeration :	None	Total Organisms / Test Level :	30
Organism Batch :	Dm08-19	Organism Loading Rate :	15.0 mL/organism

Noted Deviation: Sample was settled for 56 days from 2008-08-15 to 2008-10-10 outdoors, loosely covered with bags to allow air exchange. The sample was siphoned prior to testing.

Date: 2008-10-27
 yyyy-mm-dd

Approved by:
 Project Manager



Work Order: 213743
Sample Number: 22272

Table with 9 columns: Hardness (mg/L as CaCO3), Hardness Adjustment, pH, D.O. (mg/L), Cond. (µmhos/cm), Temp. (°C), O2 Sat. (%)*, Total Pre-Aeration Time (h) @ 30 mL/min/L. Row: Initial Water Chemistry: 410, None, 8.1, 9.4, 6150, 18.0, 103, 0:30

0 hours

Date & Time: 2008-10-10 14:20
Technician: NK

Table with 9 columns: Test Conc. (%), Mortality, Immobility, pH, D.O., Cond., Temp., O2 Sat. (%)*, Hardness. Rows: 100A, 100B, 100C, Control A, Control B, Control C

Notes:

24 hours

Date & Time: 2008-10-11 14:20
Technician: FS

Table with 7 columns: Test Conc. (%), Mortality, Immobility, pH, D.O., Cond., Temp. Rows: 100A, 100B, 100C, Control A, Control B, Control C

Notes:

48 hours

Date & Time: 2008-10-12 14:20
Technician: FS

Table with 7 columns: Test Conc. (%), Mortality, Immobility, pH, D.O., Cond., Temp. Rows: 100A, 100B, 100C, Control A, Control B, Control C

Notes:

of control organisms showing stress: 0

Daphnia Batch #: Dm08-19

Number immobile does not include number of mortalities.

- = not measured

* adjusted for actual temp. & barometric pressure

Test Data Reviewed By: EW
Date: 2008-10-15



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TOXICITY TEST REPORT
Rainbow Trout
Page 1 of 2

Work Order : 213743
Sample Number : 22272

SAMPLE IDENTIFICATION

Company : SGS Lakefield Research Limited
Location : Lakefield ON
Substance : 20 PPM WAD Cyanide sample (Oct. 10)
Sampling Method : Chemical
Sampled By : Not given
Sample Description : Cloudy grey liquid.
Test Method : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007 amendments), with deviation(s) as noted below.

Time Collected : Not given
Date Collected : 2008-08-14
Date Received : 2008-08-14
Date Tested : 2008-10-10
Temp. on arrival : Not measured

TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	30.0 %

The results reported relate only to the sample tested.

POTASSIUM CHLORIDE REFERENCE TOXICANT DATA

Organism Batch : T08-18
Date Tested (yyy-mm-dd) : 2008-10-15
LC50 (95% Confidence Limits) : 4043 mg/L (3585 - 4539)
Statistical Method : Linear Regression (MLE)

Historical Mean LC50 : 3826 mg/L
Warning Limits (\pm 2SD) : 3211 - 4564 mg/L
Analyst(s) : CN/KLW

TEST FISH

Control Fish Sample Size : 10
Mean Fish Weight (\pm 2 SD) : 0.40 \pm 0.19 g
Range of Weights : 0.27 - 0.57 g
Fish Loading Rate : 0.20 g/L

Cumulative stock tank mortality: 0 % (prev. 7 days)
Mean Fish Fork Length (\pm 2 SD) : 35.9 \pm 7.1 mm
Range of Fork Lengths (mm) : 29 - 40 mm

TEST CONDITIONS

Sample Treatment : None
pH Adjustment : None
Test Aeration : Yes
Pre-aeration/Aeration Rate : 6.5 \pm 1 mL/min/L
Organism Batch : T08-18

Volume Tested (L) : 20
Number of Replicates : 1
Organisms Per Replicate : 10
Total Organisms Per Test Level : 10

Noted Deviation: Sample was settled for 56 days from 2008-08-15 to 2008-10-10 outdoors, loosely covered with bags to allow air exchange. The sample was siphoned prior to testing.

Date: 2008-10-27
yyyy-mm-dd

Approved by: 
Project Manager

Work Order: 213743
 Sample Number: 22272

Total Pre-Aeration Time (h)		pH	D.O. (mg/L)	Cond. (µmhos/cm)	Temp. (°C)	O ₂ Sat. (%) [*]
2:00	Initial Water Chemistry:	8.3	10.4	5750	14.0	-
	Chemistry after 30min air:	8.3	10.1	5740	14.0	101

0 hours

Date & Time	2008-10-10	13:30					
Technician:	CN/FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	O ₂ Sat. (%) [*]
100	0	0	8.3	9.7	5750	14.0	99
Control	0	0	8.0	9.4	578	15.5	98

Notes:

24 hours

Date & Time	2008-10-11	13:30					
Technician:	CN(FS)						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	3	0	-	-	-	15.0	
Control	0	0	-	-	-	15.0	

Notes:

48 hours

Date & Time	2008-10-12	13:30					
Technician:	FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	3	0	-	-	-	15.5	
Control	0	0	-	-	-	15.5	

Notes:

72 hours

Date & Time	2008-10-13	13:30					
Technician:	FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	3	0	-	-	-	15.0	
Control	0	0	-	-	-	15.0	

Notes:

96 hours

Date & Time	2008-10-14	13:30					
Technician:	FS						
Test Conc. (%)	Mortality	Immobility	pH	D.O.	Cond.	Temp.	
100	3	0	8.3	8.8	5680	16.0	
Control	0	0	8.4	9.3	567	16.0	

Notes:

of control organisms showing stress: 0

Trout Batch #: T08-18

"-" = not measured

Number immobile does not include number of mortalities.

* adjusted for actual temp. & barometric pressure

Test Data Reviewed By: JE
 Date: 2008-10-15