

# Nautilus Environmental

8664 Commerce Court, Burnaby, BC V5A 4N7

WO#: 12048-049

Ms. Colleen Hughes  
Mount Polley Mining Corp.  
Box 12  
Likely, BC  
V0L 1N0

March 19, 2012

Dear Ms. Hughes:

**Re: Toxicity testing on the samples identified as E4, E1 and E7 (Collected on February 8, 2012)**

Nautilus Environmental is pleased to provide you the results of the 96-h LC50 rainbow trout and the 48-h LC50 *Daphnia magna* toxicity tests on the above samples, received on February 9, 2012. Testing was conducted according to Environment Canada 1/RM/13, (Second Edition, 2000, with May 2007 amendments) and 1/RM/14, (Second Edition, 2000) protocols. The results of these tests are provided in the tables below and are based on the appended data. All acceptability criteria outlined in the Environment Canada protocols were met.

Table A. Results for the 96-h rainbow trout test.

Sample ID	Collection Date and Time	96-h LC50 (% v/v) <sup>1</sup>	Results <sup>1</sup>
E4	February 8, 2012 @ 1429h	>100	Non Lethal (i.e. no mortalities)

Table B. Results for the 48-h *D. magna* tests.

Sample ID	Collection Date and Time	48-h LC50 (% v/v) <sup>1</sup>	Results <sup>1</sup>
E4	February 8, 2012 @ 1429h	>100	Non Lethal (i.e. no mortalities)
E1	February 8, 2012 @ 1306h	>100	Non Lethal (i.e. no mortalities)
E7	February 8, 2012 @ 1400h	>100	Non Lethal (i.e. no mortalities)

<sup>1</sup> Results relate only to the samples tested.

Please feel free to contact the undersigned at 604-420-8773 should you have any questions or require any additional information.

Yours truly,

**Nautilus Environmental**

Karen Lee, B.Sc.  
Laboratory Biologist

## Rainbow Trout Summary Sheet

Client: Mount Polley

Start Date/Time: Feb 10/12 @ 1450h.

Work Order No.: 12048

Test Species: Oncorhynchus mykiss

### Sample Information:

Sample ID:

E4

Sample Date:

Feb 8/12

Date Received:

Feb 9/12

Sample Volume:

1x20L

Other:

-

### Test Validity Criteria:

≥ 90% control survival

### WQ Ranges:

T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

### Dilution Water:

Type:

Dechlorinated Municipal Tap Water

Hardness (mg/L CaCO<sub>3</sub>):

11

Alkalinity (mg/L CaCO<sub>3</sub>):

10

### Test Organism Information:

Batch No.:

~~42050~~ 010512

Source:

Miracle Springs

No. Fish/Volume (L):

10/12L

Loading Density:

0.50g/L

Mean Length ± SD (mm):

37 ± 4

Mean Weight ± SD (g):

0.60 ± 0.16

Range: 33-46

Range: 0.43-0.93 <sup>100%</sup> 0.98

### Nitrate Reference Toxicant Results:

Reference Toxicant ID:

RTNt17

Stock Solution ID:

11Nt01

Date Initiated:

February 10, 2012

96-h LC50 (95% CL):

4.7 (3.8 - 5.8) mg/L NaNO<sub>2</sub>

Reference Toxicant Mean (2SD Range):

5.6, 3.0 - 10.8 mg/L NaNO<sub>2</sub>

Reference Toxicant CV (%):

38

Test Results:

The 96-hr LC50 is >100% (LVIV).

Reviewed by:

JGh

Date reviewed:

March 16/12

# 96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Mouht Polley  
Sample I.D. E4  
W.O. # 12048  
RBT Batch #: 010512  
Date Collected/Time: Feb 8/12 @ 1429  
Date Setup/Time: Feb 10/12 @ 1450h  
Sample Setup By: KJU

D.O. meter: DO-1  
pH meter: pH-1  
Cond. Meter: C-1

Number Fish/Volume: 60/12L  
7-d % Mortality: 1.0%  
Total Pre-aeration Time (mins): 30 mins  
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
pH	7.7		7.7
D.O. (mg/L)	10.2		10.2
Cond. (µS/cm)	1232		1239

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	14.0	14.0	14.0	14.0	14.0	10.3	9.7	9.8	9.7	9.5	7.0	6.9	6.9	7.0	7.1	30	36
6.25				10	10	10	10	14.0	14.0	14.0	14.0	14.0	10.3	9.8	9.7	9.6	9.5	7.3	7.1	7.2	7.2	7.2	112	116
12.5				10	10	10	10	14.0	14.0	14.0	14.0	14.0	10.3	9.8	9.9	9.6	9.5	7.3	7.4	7.5	7.3	7.3	190	202
25				10	10	10	10	14.0	14.0	14.0	14.0	14.0	10.3	9.9	9.8	9.6	9.5	7.4	7.5	7.6	7.5	7.5	298	405
50				10	10	10	10	14.0	14.0	14.0	14.0	14.0	10.2	9.8	9.9	9.6	9.5	7.6	7.6	7.8	7.6	7.6	705	709
100				10	10	10	10	14.0	14.0	14.0	14.0	14.0	10.2	9.8	9.9	9.6	9.5	7.7	7.8	7.9	7.9	7.9	1239	1242
Initials				~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~

Sample Description/Comments: clear, colorless

Fish Description at 96? Fish look o/c

Other Observations: \_\_\_\_\_

Reviewed by: JGH

Date Reviewed: March 16/12

## Daphnia magna Summary Sheet

Client:

Mount Polley

Work Order No.:

12049

Start Date/Time:

Feb 9/12 @ 1600<sup>1615h</sup>

Test Species:

Daphnia magna

Set up by:

AWD

### Sample Information:

Sample ID:

21

Sample Date:

Feb 8/12

Date Received:

Feb 9/12

Sample Volume:

1 x 1 L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.:

011812B

Age of young (Day 0):

< 24 hours

Avg No. young per brood in previous 7 d:

19

Mortality (%) in previous 7 d:

0

Days to first brood:

8

### NaCl Reference Toxicant Results:

Reference Toxicant ID:

Dm79

Stock Solution ID:

11Na02

Date Initiated:

Feb 7/12

48-h LC50 (95% CL):

4.2 (3.7-4.8)

g/L NaCl

Reference Toxicant Mean and Historical Range: 4.0 (3.6-4.4)

g/L NaCl

Reference Toxicant CV (%):

6

Test Results:

The 48-h LC50 is > 100% (v/v)

Reviewed by:

JGU

Date reviewed:

March 16/12

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Pelley mines  
 Sample ID: E1  
 Work Order No.: 12 249

Start Date/Time: Feb 9/12 @ 16103  
 No. Organisms/volume: 10/200mL  
 Test Organism: D.magna  
 Set up by: AS

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Number of Live Organisms Rep	No. of Live Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	24	48
Control	A	10	10	0	20.5	20.5	20.0	8.9		8.7	8.0		8.2	318	326
	B														
	C														
	D														
6.25	A	10	10	0	20.0	20.5	20.0	8.8		8.6	8.0		8.0	321	420
	B														
	C														
	D														
12.5	A	10	10	0	20.2	20.5	20.0	8.9		8.6	8.1		8.1	445	458
	B														
	C														
	D														
25	A	10	10	0	19.5	20.5	20.0	8.9		8.5	8.2		8.3	646	655
	B														
	C														
	D														
50	A	10	10	0	19.0	20.5	20.0	8.9		8.6	8.4		8.4	923	955
	B														
	C														
	D														
100	A	10	10	0	19.0	20.5	20.0	9.0		8.6	8.5		8.5	1255	1285
	B														
	C														
	D														
Technician Initials		KL	~	~	~	KL	-	~		~	~		~	~	~

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

	Hardness*	Alkalinity*
Conc.	*(mg/L as CaCO <sub>3</sub> )	
Control (MHW)	94	68
Highest conc.	430	20

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	19.0		
DO (mg/L)	9.0		
pH	8.5		
Cond (µS/cm)	1205		

Sample Description: clear

Comments: Batch#: 0118123 7-d previous # young/brood: 19 Day of 1st Brood: 8 Previous 7-d % Mortality: 0

Reviewed by: JCh Date reviewed: March 16/12

## Daphnia magna Summary Sheet

Client: Mount Polley  
Work Order No.: 12049

Start Date/Time: Feb 9/12 @ 1600h  
Test Species: Daphnia magna  
Set up by: LCB

### Sample Information:

Sample ID: EU  
Sample Date: Feb 8/12  
Date Received: Feb 9/12  
Sample Volume: 1 x 1L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 011812B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 19  
Mortality (%) in previous 7 d: 80  
Days to first brood: 8

### NaCl Reference Toxicant Results:

Reference Toxicant ID: Dm79  
Stock Solution ID: 11Na02  
Date Initiated: Feb 7/12  
48-h LC50 (95% CL): 4.2 (3.7-4.9) g/L NaCl

Reference Toxicant Mean and Historical Range: 4.0 (3.6-4.4) g/L NaCl  
Reference Toxicant CV (%): 6

Test Results: The 48-h LC50 is 7 100% (v/v)

Reviewed by: JCh

Date reviewed: March 16/12

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mant Policy  
 Sample ID: E4  
 Work Order No.: 12049

Start Date/Time: Feb 9/12 @ 1600h  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: YCB

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Number of Live Organisms Rep	No. of Live Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
Control	A	10	10	0	19.0	20.5	20.0	8.6		8.7	8.0		8.0	315	326
	B														
	C														
	D														
<sup>YCB</sup> 100.625	A	10	10	0	19.5	20.5	20.0	9.0		8.7	7.8		8.0	360	386
	B														
	C														
	D														
12.5	A	10	10	0	19.5	20.5	20.0	9.0		8.6	7.7		8.0	440	460
	B														
	C														
	D														
25	A	10	10	0	19.5	20.5	20.0	9.1		8.5	7.7		7.9	564	585
	B														
	C														
	D														
50	A	10	10	0	19.5	20.5	20.0	9.1		8.4	7.7		7.8	796	854
	B														
	C														
	D														
100	A	10	10	0	19.5	20.5	20.0	9.1		8.2	7.7		7.8	1214	1248
	B														
	C														
	D														
Technician Initials		YCB	~	~	YCB	YCB	~	YCB		~	YCB		~	YCB	~

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )		
Control (MHW)	94	68	
Highest conc.	540	90	

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	19.5		
DO (mg/L)	9.1		
pH	7.7		
Cond (µS/cm)	1214		

Sample Description: Clear

Comments: Batch#: 018128 7-d previous # young/brood: 19 Day of 1st Brood: 8 Previous 7-d % Mortality: 0

Reviewed by: JCB Date reviewed: March 16/12

## Daphnia magna Summary Sheet

Client: Mount Polley  
Work Order No.: 12049

Start Date/Time: Feb 10/12 @ 1030h  
Test Species: Daphnia magna  
Set up by: AWO/KCP

### Sample Information:

Sample ID: E7  
Sample Date: Feb 8/12  
Date Received: Feb 9/12  
Sample Volume: 1 x 1 L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 01812 A  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 19  
Mortality (%) in previous 7 d: 0  
Days to first brood: 8

### NaCl Reference Toxicant Results:

Reference Toxicant ID: Dm79  
Stock Solution ID: 11NaO2  
Date Initiated: Feb 7/12  
48-h LC50 (95% CL): 4.2 (3.7-4.9) g/L NaCl

Reference Toxicant Mean and Historical Range: 4.0 (3.6-4.4) g/L NaCl  
Reference Toxicant CV (%): 6

Test Results: The 48-h LC50 is > 100% (v/v)

Reviewed by: JGh Date reviewed: March 16/12



# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Palmy Mines  
 Sample ID: E7  
 Work Order No.: 12049

Start Date/Time: Feb 10/12 @ 1030h  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: AS / KLB

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Number of Live Organisms Rep	24		No. Immobilized 48	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
Control	A	10	10	0	20.5	20.0	20.0	8.9			8.5	8.1		20	348
	B														
	C														
	D														
6.25	A	10	10	0	20.5	20.0	20.0	8.7			8.5	8.0		20	376
	B														
	C														
	D														
12.5	A	10	10	0	20.5	20.0	20.0	8.7			8.6	8.0		21	431
	B														
	C														
	D														
25	A	10	10	0	20.5	20.0	20.0	8.6			8.5	8.0		21	552
	B														
	C														
	D														
50	A	10	10	0	20.5	20.0	20.0	8.6			8.5	8.0		20	770
	B														
	C														
	D														
100	A	10	10	0	20.5	20.0	20.0	8.7			8.5	7.9		20	1130
	B														
	C														
	D														
Technician Initials		~	~	~	~	~	~	~	~	~	~	~	~	~	~

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )		
Control (MHW)	94	68	
Highest conc.	550	110	

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	20.5		
DO (mg/L)	8.7		
pH	7.9		
Cond (µS/cm)	1130		

Sample Description: clear  
 Comments: Batch#: 011812A7-d previous # young/brood: 19 Day of 1st Brood: 8 Previous 7-d % Mortality: 0  
 Reviewed by: JGK Date reviewed: March 16/12

☐ California: 5550 Morehouse Drive, Suite 150, San Diego, CA 92121

☐ Washington: 5009 Pacific Highway East, Suite 2, Tacoma, WA 98424

☒ British Columbia: 8664 Commerce Court, Burnaby, BC, V5A 4N7

Feb 8, 2012

Date 31/10/2011 of

Sample Collection By: <u>Katie McMahon Colleen Hughes</u>							ANALYSES REQUIRED											
Report to: Colleen Hughes		Invoice to: Colleen Hughes					48 hr LC50 Daphnia Magna	96 hr LC50 RBT										Receipt Temperature (°C)
Company: Mount Polley Mining Corporation		Same																
Address: Box 12																		
City/State/Zip: Likely BC V0L 1N0																		
Contact: Colleen Hughes																		
Phone: (250) 790-2215 ext 167																		
Email: chughes@mountpolley.com																		
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	# OF CONTAINERS	COMMENTS												
1 E4	08/02/2012	14:29	water	20L	3	1L for daphnia & 20 L for RBT	x	x										3-7
2 E1	08/02/2012	13:06	water	1L	1	1L for daphnia	x											
3 E7	08/02/2012	14:00	water	20L	1	1L for daphnia	x											
4																		
5																		
6																		
7																		
8																		
9																		
10																		
PROJECT INFORMATION			SAMPLE RECEIPT			RELIQUINSHED BY (CLIENT)			RELIQUINSHED BY (COURIER)									
Client: MPMC			Total # Containers:			Signature: <u>[Signature]</u>			Signature:									
P.O. No.:			Good Condition?			Print: <u>Katie McMahon Colleen Hughes</u>			Print:									
Shipped Via: Greyhound			Matches Schedule?			Company: Mount Polley Mining Corporation			Company:									
						Time/Date: <u>June 4, 2011 17:00 Feb 8, 2012</u>			Time/Date:									
SPECIAL INSTRUCTIONS/COMMENTS:						RECEIVED BY (COURIER)			RECEIVED BY (LABORATORY)									
						Signature:			Signature:									
						Print:			Print: <u>Kevin</u>									
						Company:			Company:									
						Time/Date:			Time/Date: <u>0845h, Feb 9/12</u>									

Additional costs may be required for sample disposal or storage. Net 30 unless otherwise contracted.

W.O.#: 12049

## Hardness and Alkalinity Datasheet

[illegible]

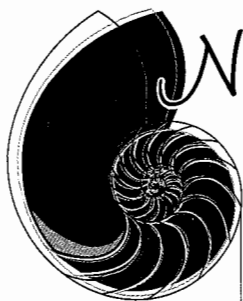
Notes: ① Diluted to 100ml w/ DI water.

Reviewed by:

JBW

Date Reviewed:

March 16/12



# Nautilus Environmental

8664 Commerce Court, Burnaby, BC V5A 4N7

WO#: 12196-97

Ms. Colleen Hughes  
Mount Polley Mining Corp.  
Box 12  
Likely, BC  
V0L 1N0

May 18, 2012

Dear Ms. Hughes:

**Re: Toxicity testing on the samples identified as E4, E1 and E7 (Collected on May 2, 2012)**

Nautilus Environmental is pleased to provide you the results of the 96-h LC50 rainbow trout and the 48-h LC50 *Daphnia magna* toxicity tests on the above samples, received on May 3, 2012. Testing was conducted according to Environment Canada 1/RM/13, (Second Edition, 2000, with May 2007 amendments) and 1/RM/14, (Second Edition, 2000) protocols. The results of these tests are provided in the tables below and are based on the appended data. All acceptability criteria outlined in the Environment Canada protocols were met.

Table A. Results for the 96-h rainbow trout test.

Sample ID	Collection Date and Time	96-h LC50 (% v/v) <sup>1</sup>	Results <sup>1</sup>
E4	May 2, 2012 @ 1129h	>100	Non Lethal (i.e. no mortalities)

Table B. Results for the 48-h *D. magna* tests.


Sample ID	Collection Date and Time	48-h LC50 (% v/v) <sup>1</sup>	Results <sup>1</sup>
E4	May 2, 2012 @ 1129h	>100	Non Lethal (i.e. no mortalities)
E1	May 2, 2012 @ 0934h	>100	Non Lethal (i.e. no mortalities)
E7	May 2, 2012 @ 1019h	>100	Non Lethal (i.e. no mortalities)

<sup>1</sup> Results relate only to the samples tested.

Please feel free to contact the undersigned at 604-420-8773 should you have any questions or require any additional information.

Yours truly,

**Nautilus Environmental**

  
Jeslin Wijaya, B.Sc.  
Laboratory Biologist

## 96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Mount Polley Mining Corporation  
 Sample I.D. E4  
 W.O. # 12196  
 RBT Batch #: 030712  
 Date Collected/Time: May 2 / 12 R 1129h  
 Date Setup/Time: May 3 / 12 R 1030h  
 Sample Setup By: SBF

D.O. meter: DO-1  
 pH meter: pH-1  
 Cond. Meter: C-1

Number Fish/Volume: 10 / 15L  
 7-d % Mortality: 0.6  
 Total Pre-aeration Time (mins): 30  
 Aeration rate adjusted to  $6.5 \pm 1$  mL/min/L? (Y/N): Yes

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	15.0	/	15.0
pH	8.4		8.4
D.O. (mg/L)	9.8		9.5
Cond. (µS/cm)	1083		1090

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	15.0	14.5	14.5	14.5	14.0	9.0	9.3	9.8	9.6	10.0	7.4	7.0	6.9	6.9	6.9	28	33
100 6.25				10	10	10	10	15.0	14.5	14.5	14.5	14.0	9.1	9.7	9.8	9.7	10.0	7.2	6.8	7.0	7.0	7.0	121	125
12.5				10	10	10	10	15.0	14.5	14.5	14.5	14.0	9.3	9.8	9.8	9.7	9.9	7.3	7.0	7.1	7.2	7.3	224	228
25				10	10	10	10	15.0	14.5	14.5	14.5	14.0	9.3	9.8	9.9	9.8	9.9	7.1	7.1	7.3	7.4	7.4	334	340
50				10	10	10	10	15.0	14.5	14.5	14.5	14.0	9.5	9.9	9.8	9.7	9.9	8.3	7.3	7.4	7.6	7.6	607	612
100				10	10	10	10	15.0	14.5	14.5	14.5	14.0	9.5	9.9	9.8	9.7	9.8	8.4	7.8	7.9	7.9	7.9	1090	1097
Initials				SBF	~	~	SBF	SBF	SBF	~	~	SBF	SBF	SBF	~	~	SBF	SBF	SBF	~	~	SBF	SBF	SBF

WQ Ranges: T (°C) =  $15 \pm 1$ ; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Sample Description/Comments: yellowish, lightly turbid.

Fish Description at 96? All Fish OK

Other Observations:

Reviewed by: A. Tong

Date Reviewed: May 10, 2012

## Daphnia magna Summary Sheet

Client: Mount Polley Mining Corporation Start Date/Time: May 3 / 12 @ 1145h  
Work Order No.: 12197 Test Species: Daphnia magna  
Set up by: AWD

### Sample Information:

Sample ID: E 4  
Sample Date: May 2 / 12  
Date Received: May 3 / 12  
Sample Volume: 3 x 20L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 041812 A  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 18  
Mortality (%) in previous 7 d: 0  
Days to first brood: 9

### NaCl Reference Toxicant Results:

Reference Toxicant ID: DM 83  
Stock Solution ID: 11 NaCl  
Date Initiated: May 2 / 12  
48-h LC50 (95% CL): 3.9 (3.2 - 4.9) g/L NaCl  
Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCl  
Reference Toxicant CV (%): 5

Test Results: The 48h LC 50 is > 100 %.

Reviewed by: A. Terry

Date reviewed: May 10, 2012

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: M 22 E 4  
 Work Order No.: 12197

Start Date/Time: May 3/12 @ 1145h  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: AS

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration  % (v/v)	Number of Live Organisms Rep	No. of Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
Control	A	10	10	0	20.0	19.0	19.0	8.6		8.9	8.2		8.0	350	350
	B														
	C														
	D														
6.25	A	10	10	0	20.0	19.0	19.0	8.8		9.0	8.0		8.0	400	411
	B														
	C														
	D														
12.5	A	10	10	0	20.0	19.0	19.0	8.9		9.0	8.1		8.1	449	450
	B														
	C														
	D														
25	A	10	10	0	20.0	19.0	19.0	9.0		9.0	8.1		8.1	575	584
	B														
	C														
	D														
50	A	10	10	0	20.0	19.0	19.0	9.0		9.0	8.2		8.1	806	769
	B														
	C														
	D														
100	A	10	10	0	20.0	19.0	19.0	9.0		9.1	8.2		8.2	1047	1053
	B														
	C														
	D														
Technician Initials		AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )	Conc.	(mg/L as CaCO <sub>3</sub> )
Control (MHW)	94	Control (MHW)	64
Highest conc.	450	Highest conc.	90

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	20.0		
DO (mg/L)	9.0		
pH	8.2		
Cond (µS/cm)	1047		

Sample Description: light yellow

Comments: 041812 Batch#: 7-d previous # young/brood: 8 Day of 1st Brood: 9 Previous 7-d % Mortality: 0

Reviewed by: A. Teng Date reviewed: May 10, 2012

## Daphnia magna Summary Sheet

Client: Mount Polley Mining Corporation Start Date/Time: May 3 / 12 @ 1140h  
Work Order No.: 12197 Test Species: Daphnia magna  
Set up by: AWD

### Sample Information:

Sample ID: E1  
Sample Date: May 2 / 12  
Date Received: May 3 / 12  
Sample Volume: 1 x 1L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 041812 A  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 18  
Mortality (%) in previous 7 d: 0  
Days to first brood: 9

### NaCl Reference Toxicant Results:

Reference Toxicant ID: DM 83  
Stock Solution ID: 11 NaCl  
Date Initiated: May 2 / 12  
48-h LC50 (95% CL): 3.9 (3.2 - 4.9) g/L NaCl

Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCl

Reference Toxicant CV (%): 5

Test Results: The 48h - LC 50 is greater than 100 %

Reviewed by: A. Tong

Date reviewed: May 10, 2012



# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: M1 H E1  
 Work Order No.: 12197

Start Date/Time: May 3/12 @ 1140L  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: AO

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Number of Live Organisms Rep	No. of Live Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
Control	A	10	10	0	20.0	19.0	19.0	8.6	8.9	8.2	8.0	8.0	8.0	350	356
	B														
	C														
	D														
6.25	A	10	10	0	20.0	19.0	19.0	8.7	9.0	8.0	8.0	8.0	8.0	414	417
	B														
	C														
	D														
12.5	A	10	10	0	20.0	19.0	19.0	8.7	9.0	8.0	8.0	8.0	8.0	538	529
	B														
	C														
	D														
25	A	10	10	0	20.0	19.0	19.0	8.9	9.0	8.0	8.0	8.0	8.0	602	614
	B														
	C														
	D														
50	A	10	10	0	20.0	19.0	19.0	9.0	8.9	8.0	8.0	8.0	8.0	723	735
	B														
	C														
	D														
100	A	10	10	0	20.0	19.0	19.0	9.1	9.0	8.0	8.0	8.0	8.0	1066	1068
	B														
	C														
	D														
Technician Initials		A	~	C	M	A	M	M	A	M	M	M	M	M	M

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )	Conc.	(mg/L as CaCO <sub>3</sub> )
Control (MHW)	94	Control (MHW)	64
Highest conc.	420	Highest conc.	110

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	20.0		
DO (mg/L)	9.1		
pH	8.0		
Cond (µS/cm)	1066		

Sample Description: Whitish - opaque

Comments: Batch#: 041812 A 7-d previous # young/brood: 18 Day of 1st Brood: 9 Previous 7-d % Mortality: 0

Reviewed by: A. Tong Date reviewed: May 10, 2012

## Daphnia magna Summary Sheet

Client: Mount Polley Mining Corporation Start Date/Time: May 3/12 @ 1150h  
Work Order No.: 12194 7 Test Species: Daphnia magna  
JW Set up by: AWD

### Sample Information:

Sample ID: E 7  
Sample Date: May 2 / 12  
Date Received: May 3 / 12  
Sample Volume: 1 x 1L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 041812 B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 18  
Mortality (%) in previous 7 d: 0  
Days to first brood: 9

### NaCl Reference Toxicant Results:

Reference Toxicant ID: DM 83  
Stock Solution ID: 11 NaCl  
Date Initiated: May 2/12  
48-h LC50 (95% CL): 3.9 (3.2 - 4.9) g/L NaCl  
Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCl  
Reference Toxicant CV (%): 5

Test Results: The 48h LC50 is > 100 %.

Reviewed by: A. Teng Date reviewed: May 10, 2012

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: MS W E7  
 Work Order No.: 12197

Start Date/Time: May 3/12 @ 4:50h  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: AW

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration  % (v/v)	Number of Live Organisms Rep	No. of Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
Control	A	10	10	0	20.0	19.0	19.0	8.6		8.9	8.2		8.1	350	354
	B														
	C														
	D														
6.25	A	10	10	0	20.0	19.0	19.0	8.8		8.9	8.0		8.0	447	435
	B														
	C														
	D														
12.5	A	10	10	0	20.0	19.0	19.0	8.8		9.0	8.0		8.1	470	468
	B														
	C														
	D														
25	A	10	10	0	20.0	19.0	19.0	9.0		9.0	8.0		8.1	537	540
	B														
	C														
	D														
50	A	10	10	0	20.0	19.0	19.0	9.0		9.0	8.0		8.1	664	667
	B														
	C														
	D														
100	A	10	10	0	20.0	19.0	19.0	9.1		9.0	7.9		8.2	958	957
	B														
	C														
	D														
Technician Initials		AW	AW	AW	AW	AW	AW	AW	AW	AW	AW	AW	AW	AW	AW

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )	Conc.	(mg/L as CaCO <sub>3</sub> )
Control (MHW)	94	Control (MHW)	64
Highest conc.	480	Highest conc.	60

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	20.0		
DO (mg/L)	9.1		
pH	7.9		
Cond (µS/cm)	958		

Sample Description: yellowish opaque

Comments: 041812B Batch#: 18 7-d previous # young/brood: 9 Day of 1st Brood: 9 Previous 7-d % Mortality: 0

Reviewed by: A. Teng Date reviewed: May 10, 2012

W.O.#: 12197.

W.O.#: 12197.

W.O.#: 12197.

Notes: ① Diluted to 100 mL with DI H<sub>2</sub>O

Reviewed by:

Date Reviewed:

Version 1.0 Issued June 26, 2006

Nautilus Environmental

# Nautilus Environmental

## Chain of Custody (electronic)

- ☐ California: 5550 Morehouse Drive, Suite 150, San Diego, CA 92121  
☐ Washington: 5009 Pacific Highway East, Suite 2, Tacoma, WA 98424  
☒ British Columbia: 8664 Commerce Court, Burnaby, BC, V5A 4N7

Date 31/10/2011 of

Sample Collection By: Katie McMahan, Colleen Hughes							ANALYSES REQUIRED												Receipt Temperature (°C)		
Report to: Colleen Hughes		Invoice to: Colleen Hughes					48 hr LC50 Daphnia Magna	96 hr LC50 RBT													
Company: Mount Polley Mining Corporation		Same																			
Address: Box 12																					
City/State/Zip: Likely BC V0L 1N0																					
Contact: Colleen Hughes																					
Phone: (250) 790-2215 ext 167																					
Email: chughes@mountpolley.com																					
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	# OF CONTAINERS	COMMENTS															
1 E4	02/05/2012	11:29	water	20L	3	1L for daphnia & 40 L for RBT	x	x													2.9
2 E1	02/05/2012	9:34	water	1L	1	1L for daphnia	x														1.5
3 E7	02/05/2012	10:19	water	1L	1	1L for daphnia	X														1.2
4																					
5																					
6																					
7																					
8																					
9																					
10																					
PROJECT INFORMATION			SAMPLE RECEIPT			RELIQUINSHED BY (CLIENT)				RELIQUINSHED BY (COURIER)											
Client: MPMC			Total # Containers:			Signature:				Signature:											
P.O. No.:			Good Condition?			Print: Colleen Hughes				Print:											
Shipped Via: Greyhound			Matches Schedule?			Company: Mount Polley Mining Corporation				Company:											
						Time/Date: May 2, 2012 17:30				Time/Date:											
SPECIAL INSTRUCTIONS/COMMENTS:						RECEIVED BY (COURIER)				RECEIVED BY (LABORATORY)											
						Signature:				Signature: <i>Jacob Frank</i>											
						Print:				Print: <i>Jacob Frank</i>											
						Company:				Company: <i>Nautilus</i>											
						Time/Date:				Time/Date: <i>0910h May 3/12</i>											

Additional costs may be required for sample disposal or storage. Net 30 unless otherwise contracted.



# Nautilus Environmental

8664 Commerce Court, Burnaby, BC V5A 4N7

WO#: 12362-363

Ms. Colleen Hughes  
Mount Polley Mining Corp.  
Box 12  
Likely, BC  
V0L 1N0

August 22, 2012

Dear Ms. Hughes:

**Re: Toxicity testing on the samples identified as E4, E1 and E7 (Collected on August 1, 2012)**

Nautilus Environmental is pleased to provide you the results of the 96-h LC50 rainbow trout and the 48-h LC50 *Daphnia magna* toxicity tests on the above samples, received on August 2, 2012. Testing was conducted according to Environment Canada 1/RM/13, (Second Edition, 2000, with May 2007 amendments) and 1/RM/14, (Second Edition, 2000) protocols. The results of these tests are provided in the tables below and are based on the appended data. All acceptability criteria outlined in the Environment Canada protocols were met.

Table A. Results for the 96-h rainbow trout test.

Sample ID	Collection Date and Time	96-h LC50 (% v/v) <sup>1</sup>
E4	August 1, 2012 @ 1103h	>100

Table B. Results for the 48-h *D. magna* tests.

Sample ID	Collection Date and Time	48-h LC50 (% v/v) <sup>1</sup>
E4	August 1, 2012 @ 1103h	>100
E1	August 1, 2012 @ 0946h	>100
E7	August 1, 2012 @ N/A	>100

<sup>1</sup> Results relate only to the samples tested.

Please feel free to contact the undersigned at 604-420-8773 should you have any questions or require any additional information.

Yours truly,

**Nautilus Environmental**

Jacob Frank, B.Sc.  
Laboratory Biologist

## Rainbow Trout Summary Sheet

Client: Mount Polley Mining corp.

Start Date/Time: August 2/12 @ 1100

Work Order No.: 12362

Test Species: Oncorhynchus mykiss

### Sample Information:

Sample ID: E4  
Sample Date: August 1/12 @ 1103  
Date Received: August 2/12 @ 0915  
Sample Volume: 2 x 20L  
Other: N/A

### Test Validity Criteria:

≥ 90% control survival

### WQ Ranges:

T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

### Dilution Water:

Type: Dechlorinated Municipal Tap Water  
Hardness (mg/L CaCO<sub>3</sub>): 10  
Alkalinity (mg/L CaCO<sub>3</sub>): 8

### Test Organism Information:

Batch No.: 062212  
Source: Miracle Spings  
No. Fish/Volume (L): 10/15L  
Loading Density: 0.46  
Mean Length ± SD (mm): 43 ± 5  
Mean Weight ± SD (g): 0.70 ± 0.25

Range: 37 - <sup>JB</sup>0.42 <sup>F</sup>51  
Range: 0.42 - 1.11

### NaNO<sub>2</sub> Reference Toxicant Results:

Reference Toxicant ID: RTNt23  
Stock Solution ID: 12Nt01  
Date Initiated: July 26/12  
96-h LC<sub>50</sub> (95% CL): 3.5 (2.6 - 4.8) mg/L NaNO<sub>2</sub>

Reference Toxicant Mean and Historical Range: 5.4 (2.9 - 9.8) mg/L NaNO<sub>2</sub>  
Reference Toxicant CV (%): 35

Test Results: The 96h LC<sub>50</sub> is >100% (v/v).

Reviewed by: JG

Date reviewed: Aug. 16/12

# 96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Mount Polley Mining Corporation  
 Sample I.D. E4  
 W.O. # SBF 42363 12362  
 RBT Batch #: 062212  
 Date Collected/Time: Aug 1 12 @ 1103  
 Date Setup/Time: Aug 2 12 @ 1100  
 Sample Setup By: SBF

D.O. meter: DO-1  
 pH meter: pH-1  
 Cond. Meter: C-1

Number Fish/Volume: 10/15L  
 7-d % Mortality: 0.2  
 Total Pre-aeration Time (mins): 30  
 Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	16.0	/	16.0
pH	7.4		7.0
D.O. (mg/L)	9.2		10.0
Cond. (µS/cm)	1228		1250

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
CONT				10	10	10	10	14.5	14.0	14.5	14.5	14.5	9.7	9.7	9.8	9.9	9.8	7.1	6.8	6.9	6.8	7.0	31	38
6.25				10	10	10	10	14.5	14.0	14.5	14.5	14.5	9.8	9.9	9.9	10.0	9.7	7.1	6.9	7.0	7.0	7.0	166	172
12.5				10	10	10	10	15.0	14.0	14.5	14.5	14.5	9.9	10.0	9.8	9.9	9.8	7.2	7.0	7.1	7.0	7.1	259	264
25				10	10	10	10	15.0	14.0	14.5	14.5	14.5	9.9	10.1	9.9	9.9	9.8	7.4	7.2	7.3	7.2	7.2	447	454
50				10	10	10	10	15.5	14.0	14.5	14.5	14.5	10.0	10.1	9.9	9.9	9.7	7.6	7.3	7.5	7.4	7.5	740	747
100				10	10	10	10	16.0	14.0	14.5	14.5	14.5	10.0	10.0	9.9	9.8	9.7	7.8	7.6	7.6	7.7	7.7	1250	1266
Initials				SBF	~	~	~	SBF	SBF	~	~	~	SBF	SBF	~	~	~	SBF	SBF	~	~	~	SBF	~

WQ Ranges: T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Sample Description/Comments: yellow, clear

Fish Description at 96? all fish appear ok

Other Observations: \_\_\_\_\_

Reviewed by: JGK Date Reviewed: Aug. 15/12



## Daphnia magna Summary Sheet

Client: Mount Polley  
Work Order No.: 12363

Start Date/Time: Aug 2, 2012 @ 1750h  
Test Species: Daphnia magna  
Set up by: JW

### Sample Information:

Sample ID: E4  
Sample Date: 01-Aug-12  
Date Received: 02-Aug-12  
Sample Volume: 2 x 1L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 071912 A+B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 15  
Mortality (%) in previous 7 d: 0  
Days to first brood: 9

### NaCl Reference Toxicant Results:

Reference Toxicant ID: Dm86  
Stock Solution ID: 12Na01  
Date Initiated: 25-Jul-12  
48-h LC50 (95% CL): 4.2 (3.7 - 4.8) g/L NaCL

Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL  
Reference Toxicant CV (%): 6

Test Results: The 48h LC50 is >100% (v/v)  
\_\_\_\_\_  
\_\_\_\_\_

Reviewed by: Joh

Date reviewed: Aug. 15/12

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
Sample ID: ~24 E4  
Work Order No.: 12368

Start Date/Time: Aug 2/12 @ 1750h  
No. Organisms/volume: 10/200mL  
Test Organism: D. magna  
Set up by: JW

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Number of Live Organisms Rep	24		48	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
CONTROL	A	10	10	0	21.0	21.0	21.0	8.7		8.4	7.8		7.8	354	366
	B														
	C														
	D														
6.25	A	10	10	0	21.0	21.0	21.0	8.8		8.5	7.8		7.9	397	408
	B														
	C														
	D														
12.5	A	10	10	0	21.0	21.0	21.0	8.8		8.6	7.8		7.9	452	465
	B														
	C														
	D														
25	A	10	10	0	21.0	21.0	21.0	8.9		8.8	7.9		8.0	591	595
	B														
	C														
	D														
50	A	10	10	0	21.0	21.0	21.0	8.9		8.8	7.8		8.0	800	808
	B														
	C														
	D														
100	A	10	10	0	21.0	21.0	21.0	8.9		8.9	7.8		8.0	1229	1242
	B														
	C														
	D														
Technician Initials		A	A	A	A	A	A	A	A	A	A	A	A	A	A

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )	Conc.	(mg/L as CaCO <sub>3</sub> )
Control (MHW)	98	Control (MHW)	70
Highest conc.	550	Highest conc.	92

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	21.0		
DO (mg/L)	8.9		
pH	7.8		
Cond (µS/cm)	1229		

Sample Description: clean

Comments: 071912 A+B Batch#: 7-d previous # young/brood: 15 Day of 1st Brood: 0 Previous 7-d % Mortality: 0

Reviewed by: JG Date reviewed: Aug. 15/12

## Daphnia magna Summary Sheet

Client: Mount Polley  
Work Order No.: 12363

Start Date/Time: Aug 2, 2012 @ 1745h  
Test Species: Daphnia magna  
Set up by: JW

### Sample Information:

Sample ID: E1  
Sample Date: 01-Aug-12  
Date Received: 02-Aug-12  
Sample Volume: 2 x 1L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 071912 A+B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 15  
Mortality (%) in previous 7 d: 0  
Days to first brood: 9

### NaCl Reference Toxicant Results:

Reference Toxicant ID: Dm86  
Stock Solution ID: 12Na01  
Date Initiated: 25-Jul-12  
48-h LC50 (95% CL): 4.2 (3.7 - 4.8) g/L NaCL

Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL  
Reference Toxicant CV (%): 6

Test Results: The 48h LC50 is >100% (v/v)

Reviewed by: JGH

Date reviewed: Aug 15/12

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: E1  
 Work Order No.: 12368

Start Date/Time: Aug 2/12 @ 1745  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: JW

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Number of Live Organisms Rep	No. Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
CONTROL	A	10	10	0	21.0	21.0	21.0	8.7		8.7	7.8		7.9	354	366
	B														
	C														
	D														
6.25	A	10	10	0	21.0	21.0	21.0	8.9		8.9	7.8		7.9	448	453
	B														
	C														
	D														
12.5	A	10	10	0	21.0	21.0	21.0	8.9		8.9	7.8		7.9	479	472
	B														
	C														
	D														
25	A	10	10	0	21.0	21.0	21.0	8.8		8.8	7.9		7.8	548	556
	B														
	C														
	D														
50	A	10	10	0	21.0	21.0	21.0	8.9		8.9	7.9		7.8	762	770
	B														
	C														
	D														
100	A	10	10	0	21.0	21.0	21.0	8.9		8.9	7.9		7.8	1226	1236
	B														
	C														
	D														
Technician Initials															

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )		
Control (MHW)	98	70	
Highest conc.	510	40	

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	21.0		
DO (mg/L)	8.9		
pH	7.9		
Cond (µS/cm)	1226		

Sample Description: light yellow - clear

Comments: Batch#: 071912A+B 7-d previous # young/brood: 28 Day of 1st Brood: 9 Previous 7-d % Mortality: 0

Reviewed by: JW Date reviewed: Aug. 15/12

## Daphnia magna Summary Sheet

Client: Mount Polley  
Work Order No.: 12363

Start Date/Time: Aug 2, 2012 @ 1755h  
Test Species: Daphnia magna  
Set up by: JW

### Sample Information:

Sample ID: E7  
Sample Date: 01-Aug-12  
Date Received: 02-Aug-12  
Sample Volume: 2 x 1L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 071912 A+B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 15  
Mortality (%) in previous 7 d: 0  
Days to first brood: 9

### NaCl Reference Toxicant Results:

Reference Toxicant ID: Dm86  
Stock Solution ID: 12Na01  
Date Initiated: 25-Jul-12  
48-h LC50 (95% CL): 4.2 (3.7 - 4.8) g/L NaCL

Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL  
Reference Toxicant CV (%): 6

Test Results: The 48h LC50 is >100% (v/v)  
\_\_\_\_\_  
\_\_\_\_\_

Reviewed by: JGh

Date reviewed: Aug. 15/12

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: ET  
 Work Order No.: 12363

Start Date/Time: Aug 2/12 @ 1752  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: JW

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Rep	Number of Live Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
CONTROL	A	10	10	0	21.0	21.0	21.0	8.2		8.4	7.8		7.8	354	366
	B														
	C														
	D														
6.25	A	10	10	0	21.0	21.0	21.0	8.9		8.6	7.9		7.8	418	430
	B														
	C														
	D														
12.5	A	10	10	0	21.0	21.0	21.0	8.8		8.7	7.9		7.9	536	541
	B														
	C														
	D														
25	A	10	10	0	21.0	21.0	21.0	8.9		8.9	7.9		7.9	665	672
	B														
	C														
	D														
50	A	10	10	0	21.0	21.0	21.0	8.9		8.8	7.9		7.9	861	870
	B														
	C														
	D														
100	A	10	10	0	21.0	21.0	21.0	8.9		8.8	7.9		7.9	1317	1328
	B														
	C														
	D														
Technician Initials		A	A		A	A	A			A	A		A	A	A

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	*(mg/L as CaCO <sub>3</sub> )		
Control (MHW)	98	70	
Highest conc.	740	116	

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	21.0		
DO (mg/L)	8.5		
pH	7.9		
Cond (µS/cm)	1317		

Sample Description: yellowish brown - slightly opaque

Comments: 071912 A+B Batch#: 7-d previous # young/brood: 15 Day of 1st Brood: 7 Previous 7-d % Mortality: 0

Reviewed by: JGH Date reviewed: Aug 15/12

W.O.#: 12363

## Hardness and Alkalinity Datasheet

[illegible]

Notes:

① Diluted to 100 mL w/ DI

Reviewed by:

IGH

Date Reviewed:

Aug. 15/12

Nautilus Environmental

Chain of Custody (electronic)

- ☐ California: 5550 Morehouse Drive, Suite 150, San Diego, CA 92121
- ☐ Washington: 5009 Pacific Highway East, Suite 2, Tacoma, WA 98424
- ☒ British Columbia: 8664 Commerce Court, Burnaby, BC, V5A 4N7

Date, 10/31/2012 Page 1 of 1

Sample Collection By: Katie McMahan, Colleen Hughes								ANALYSES REQUIRED												Receipt Temperature (°C)		
Report to: Colleen Hughes		Invoice to: Colleen Hughes						48 hr LC50Daphnia Magna	96 hr LC50 RBT													
Company		Mount Polley Mining Corporation																				
Address		Box 12																				
City/State/Zip		Likely BC V0L 1N0																				
Contact		Colleen Hughes																				
Phone		(250) 790-2215 ext 167																				
Email		chughes@mountpolley.com																				
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	# OF CONTAINERS	COMMENTS																
1 E4	8/1/2012	11:03	water	20L	3	2L for daphnia & 40 L for RBT	x	x														5.8
2 E1	8/1/2012	9:46	water	1L	2	1L for daphnia	x															1.8
3 E7	8/1/2012		water	1L	2	1L for daphnia	x															↓
4																						
5																						
6																						
7																						
8																						
9																						
10																						
PROJECT INFORMATION			SAMPLE RECEIPT			RELIQUINSHED BY (CLIENT)				RELIQUINSHED BY (COURIER)												
Client: MPMC			Total # Containers:			Signature:				Signature:												
P.O. No.:			Good Condition?			Print: Colleen Hughes				Print:												
Shipped Via: Greyhound			Matches Schedule?			Company: Mount Polley Mining Corporation				Company:												
						Time/Date: Aug 1, 2012 17:30				Time/Date:												
SPECIAL INSTRUCTIONS/COMMENTS:						RECEIVED BY (COURIER)				RECEIVED BY (LABORATORY)												
						Signature:				Signature: Jacob Frank												
						Print:				Print: Jacob Frank												
						Company:				Company: Nautilus												
						Time/Date:				Time/Date: Aug 2/12 @ 0915												





# Nautilus Environmental

8664 Commerce Court, Burnaby, BC V5A 4N7

WO#: 12584 - 12585

Ms. Colleen Hughes  
Mount Polley Mining Corp.  
Box 12  
Likely, BC  
V0L 1N0

December 20, 2012

Dear Ms. Hughes:

**Re: Toxicity testing on the samples identified as E4, E1 and E7 (Collected on November 15, 2012)**

Nautilus Environmental is pleased to provide you the results of the 96-h LC50 rainbow trout and the 48-h LC50 *Daphnia magna* toxicity tests on the above samples, received on November 16, 2012. Testing was conducted according to Environment Canada 1/RM/13, (Second Edition, 2000, with May 2007 amendments) and 1/RM/14, (Second Edition, 2000) protocols. The results of these tests are provided in the tables below and are based on the appended data. All acceptability criteria outlined in the Environment Canada protocols were met.

Table A. Results for the 96-h rainbow trout test.

Sample ID	Collection Date and Time	96-h LC50 (% v/v) <sup>1</sup>
E4	November 15, 2012 @ 1254h	>100

Table B. Results for the 48-h *D. magna* tests.

Sample ID	Collection Date and Time	48-h LC50 (% v/v) <sup>1</sup>
E4	November 15, 2012 @ 1254h	>100
E1	November 15, 2012 @ 1355h	>100
E7	November 15, 2012 @ 1339h	>100

<sup>1</sup> Results relate only to the samples tested.

Please feel free to contact the undersigned at 604-420-8773 should you have any questions or require any additional information.

Yours truly,

**Nautilus Environmental**

Jeslin Wijaya, B.Sc.  
Laboratory Biologist

## Rainbow Trout Summary Sheet

Client: Mount Polley Mining Corp.

Start Date/Time: November 20/12 @ 0930

Work Order No.: 12584

Test Species: Oncorhynchus mykiss

### Sample Information:

Sample ID: E4  
Sample Date: November 15/12 @ 1254  
Date Received: November 16/12 @ 0833  
Sample Volume: 2 x 20L  
Other: N/A

### Test Validity Criteria:

≥ 90% control survival

### WQ Ranges:

T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

### Dilution Water:

Type: Dechlorinated Municipal Tap Water  
Hardness (mg/L CaCO<sub>3</sub>): 12  
Alkalinity (mg/L CaCO<sub>3</sub>): 7

### Test Organism Information:

Batch No.: 101212  
Source: Miracle Spings  
No. Fish/Volume (L): 10/15L  
Loading Density: 0.33  
Mean Length ± SD (mm): 39 ± 3 Range: 36 - 45  
Mean Weight ± SD (g): 0.50 ± 0.12 Range: 0.36 - 0.73

### NaNO<sub>2</sub> Reference Toxicant Results:

Reference Toxicant ID: RTNt28  
Stock Solution ID: 12Nt01  
Date Initiated: November 14/12  
96-h LC50 (95% CL): 7.6 (6.6 - 8.6) mg/L NaNO<sub>2</sub>

Reference Toxicant Mean and Historical Range: 5.1 (2.9 - 9.0) mg/L NaNO<sub>2</sub>  
Reference Toxicant CV (%): 33

Test Results: The 96-h LC50 is > 100% (v/v).

Reviewed by: JGh

Date reviewed: Dec. 10/12

# 96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: Mount Polley Mining Corporation  
 Sample I.D. E4  
 W.O. # 12584  
 RBT Batch #: 101212  
 Date Collected/Time: November 15 12@ 1254  
 Date Setup/Time: November 20 12@ 0930  
 Sample Setup By: SBF

D.O. meter: DO-1  
 pH meter: pH-1  
 Cond. Meter: C-1

Number Fish/Volume: 10/15  
 7-d % Mortality: 0.1  
 Total Pre-aeration Time (mins): 30  
 Aeration rate adjusted to  $6.5 \pm 1$  mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.5	/	14.5
pH	7.7		7.7
D.O. (mg/L)	9.7		10.1
Cond. (µS/cm)	1265		1268

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
CONT				10	10	10	10	14.5	14.5	14.5	14.0	14.0	10.0	9.9	9.8	10.0	9.8	6.9	7.0	7.0	7.1	7.0	34	38
6.25				10	10	10	10	14.5	14.5	14.5	14.0	14.0	10.0	9.9	9.6	10.0	9.9	7.2	7.4	7.4	7.2	7.1	138	133
12.5				10	10	10	10	14.5	14.5	14.5	14.0	14.0	10.1	10.0	9.6	9.9	9.9	7.2	7.3	7.3	7.2	7.3	225	232
25				10	10	10	10	14.5	14.5	14.5	14.0	14.0	10.1	10.0	9.6	9.9	9.8	7.3	7.3	7.3	7.2	7.4	397	425
50				10	10	10	10	14.5	14.5	14.5	14.0	14.0	10.1	10.1	9.7	10.0	9.9	7.5	7.4	7.4	7.4	7.6	753	758
100				10	10	10	10	14.5	14.5	14.5	14.0	14.0	10.1	10.1	9.7	10.0	9.8	7.7	7.7	7.7	7.7	7.8	1268	1274
Initials				SBF	SBF	SBF	~	SBF	SBF	SBF	SBF	~	SBF	SBF	SBF	SBF	~	SBF	SBF	SBF	SBF	~	SBF	~

WQ Ranges: T (°C) =  $15 \pm 1$ ; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Sample Description/Comments: Clear

Fish Description at 96? all surviving fish ok

Other Observations: \_\_\_\_\_

Reviewed by: JGH Date Reviewed: Dec. 10/12

## Daphnia magna Summary Sheet

Client: Mount Polley Mining Corp.  
Work Order No.: 12585

Start Date/Time: November 20, 2012 @ 1030h  
Test Species: Daphnia magna  
Set up by: EMM

### Sample Information:

Sample ID: E4  
Sample Date: Nov 15/12  
Date Received: Nov 16/12  
Sample Volume: 1 x 2L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 103112B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 24  
Mortality (%) in previous 7 d: 0  
Days to first brood: 11

### NaCl Reference Toxicant Results:

Reference Toxicant ID: Dm91  
Stock Solution ID: 12Na02  
Date Initiated: Nov 20/12  
48-h LC50 (95% CL): 4.2 (3.7 - 4.8) g/L NaCL

Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL  
Reference Toxicant CV (%): 5

Test Results: The 48h LC50 is >100% (v/v).

Reviewed by: Jou

Date reviewed: Dec. 10/12

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: E4  
 Work Order No.: 12585

Start Date/Time: NOV 20/12 @ 1030h  
 No. Organisms/volume: 10/200mL  
 Test Organism: D.magna  
 Set up by: EMM

DO meter: DO-1

pH meter: pH-1

Conductivity meter: C-1

Concentration  % (v/v)	Number of Live Organisms Rep	No. of Immobilized		Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)		
		24	48	48	0	24	48	0	24	48	0	24	48	0	48
Control	A	10	10	0	20.0	20.0	19.5	8.7		8.7	7.8		7.9	350	359
	B														
	C														
	D														
6.25	A	10	10	0	20.0	20.0	19.5	8.6		8.7	7.9		7.9	408	408
	B														
	C														
	D														
12.5	A	10	10	0	20.0	20.0	19.5	8.6		8.7	7.9		7.9	474	466
	B														
	C														
	D														
25	A	10	10	0	20.0	20.0	19.5	8.6		8.7	7.9		7.9	593	583
	B														
	C														
	D														
50	A	10	10	0	20.0	20.0	19.5	8.7		8.7	7.9		7.9	823	803
	B														
	C														
	D														
100	A	10	10	0	20.0	20.0	19.5	8.7		8.7	7.8		8.0	1260	1240
	B														
	C														
	D														
Technician Initials		EMM	EMM	EMM	EMM	EMM	EMM	EMM		EMM	EMM		EMM	EMM	EMM

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )		
Control (MHW)	100	68	
Highest conc.	500	74	

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	20.0		
DO (mg/L)	8.4 7 <sup>EMM</sup>		
pH	7.7 8 <sup>EMM</sup>		
Cond (µS/cm)	1260		

Sample Description: clear, slightly yellow

Comments: Batch#: 103112B 7-d previous # young/brood: 24 Day of 1st Brood: 11 Previous 7-d % Mortality: 0

Reviewed by: JGh Date reviewed: Dec. 10/12

## Daphnia magna Summary Sheet

Client: Mount Polley Mining Corp.  
Work Order No.: 12585

Start Date/Time: November 20, 2012 @ 1030h  
Test Species: Daphnia magna  
Set up by: EMM

### Sample Information:

Sample ID: E1  
Sample Date: Nov 15/12  
Date Received: Nov 16/12  
Sample Volume: 1 x 2L

### Test Validity Criteria:

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### WQ Ranges:

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### Test Organism Information:

Broodstock No.: 103112B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 24  
Mortality (%) in previous 7 d: 0  
Days to first brood: 11

### NaCl Reference Toxicant Results:

Reference Toxicant ID: Dm91  
Stock Solution ID: 12Na02  
Date Initiated: Nov 20/12  
48-h LC50 (95% CL): 4.2 (3.7 - 4.8) g/L NaCL

Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL  
Reference Toxicant CV (%): 5

Test Results: The 48h LC50 is >100% (v/v).  
\_\_\_\_\_  
\_\_\_\_\_

Reviewed by: JGh

Date reviewed: Dec 10/12

# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: E1  
 Work Order No.: 12585

Start Date/Time: NOV 20/12 @ 1030h  
 No. Organisms/volume: 10/200mL  
 Test Organism: D. magna  
 Set up by: EMM

DO meter: DO-1

pH meter: pH-1

Conductivity meter: C-1

Concentration  % (v/v)	Number of Live Organisms Rep	No. of Live Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		48	0	24	48	0	24	48	0	24	48	0
Control	A	10	10	0	20.0	20.0	20.0	8.7		8.6	7.9		7.9	350	343
	B														
	C														
	D														
6.25	A	10	10	0	20.0	20.0	20.0	8.6		8.7	7.9		7.9	410	403
	B														
	C														
	D														
12.5	A	10	10	0	20.0	20.0	19.5	8.7		8.9	7.9		7.9	478	476
	B														
	C														
	D														
25	A	10	10	0	20.0	20.0	19.5	8.7		8.8	7.9		7.9	603	600
	B														
	C														
	D														
50	A	10	10	0	20.0	20.0	19.5	8.7		8.7	7.9		7.8	839	818
	B														
	C														
	D														
100	A	10	10	0	20.0	20.0	19.5	8.7		8.7	7.8		7.7	1287	1278
	B														
	C														
	D														
Technician Initials		EMM	EMM	EMM	EMM	EMM	EMM	EMM		EMM	EMM		EMM	EMM	EMM

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )		
Control (MHW)	100	68	
Highest conc.	420	34	

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	20.0		
DO (mg/L)	8.5 8.7		
pH	7.7 8.7		
Cond (µS/cm)	1287		

Sample Description: clear, slightly yellow

Comments: Batch#: 103112B7-d previous # young/brood: 24 Day of 1st Brood: 11 Previous 7-d % Mortality: 0

Reviewed by: Joh Date reviewed: Dec 10/12

## ***Daphnia magna* Summary Sheet**

Client: Mount Polley Mining Corp.  
Work Order No.: 12585

Start Date/Time: November 20, 2012 @ 1030h  
Test Species: *Daphnia magna*  
Set up by: EMM

### **Sample Information:**

Sample ID: E7  
Sample Date: Nov 15/12  
Date Received: Nov 16/12  
Sample Volume: 1 x 2L

### **Test Validity Criteria:**

≥ 90% mean control survival (no more than 2 mortalities in any control replicate)

### **WQ Ranges:**

T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

### **Test Organism Information:**

Broodstock No.: 103112B  
Age of young (Day 0): < 24 hours  
Avg No. young per brood in previous 7 d: 24  
Mortality (%) in previous 7 d: 0  
Days to first brood: 11

### **NaCl Reference Toxicant Results:**

Reference Toxicant ID: Dm91  
Stock Solution ID: 12Na02  
Date Initiated: Nov 20/12  
48-h LC50 (95% CL): 4.2 (3.7 - 4.8) g/LNaCL

Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL  
Reference Toxicant CV (%): 5

Test Results: The 48h LC50 is >100% (v/v).  
\_\_\_\_\_  
\_\_\_\_\_

Reviewed by: *John*

Date reviewed: *Dec. 10/12*



# Freshwater Acute 48 Hour Toxicity Test Data Sheet

Client: Mount Polley  
 Sample ID: E7  
 Work Order No.: 12585

Start Date/Time: NOV 20/12 @ 1030h  
 No. Organisms/volume: 10/200mL  
 Test Organism: D.magna  
 Set up by: EMM

DO meter: DO-1 pH meter: pH-1 Conductivity meter: C-1

Concentration % (v/v)	Number of Live Organisms Rep	No. of Live Organisms		No. Immobilized	Temperature (°C)			Dissolved oxygen (mg/L)			pH			Conductivity (µS/cm)	
		24	48		0	24	48	0	24	48	0	24	48	0	48
Control	A	10	10	0	20.0	20.0	19.5	8.7		8.7	7.8		7.9	350	344
	B														
	C														
	D														
6.25	A	10	10	0	20.0	20.0	19.5	8.6		8.7	8.0		7.9	408	406
	B														
	C														
	D														
12.5	A	10	10	0	20.0	20.0	19.5	8.6		8.8	7.9		7.9	465	455
	B														
	C														
	D														
25	A	10	10	0	20.0	20.0	19.5	8.6		8.8	7.9		7.9	574	571
	B														
	C														
	D														
50	A	10	10	0	20.0	20.0	19.5	8.6		8.8	7.9		7.9	782	762
	B														
	C														
	D														
100	A	10	10	0	19.5	20.0	19.5	8.6		8.7	7.8		8.0	1184	1136
	B														
	C														
	D														
Technician Initials		EMM	EMM	EMM	EMM	EMM	EMM	EMM	EMM	EMM	EMM	EMM	EMM	EMM	EMM

WQ Ranges: T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5

Hardness*		Alkalinity*	
Conc.	(mg/L as CaCO <sub>3</sub> )		
Control (MHW)	100	68	
Highest conc.	560	90	

	Initial WQ	Adjustment	Adjusted WQ
Temp (°C)	19.5		
DO (mg/L)	8.6		
pH	7.8		
Cond (µS/cm)	1184		

Sample Description: yellow tint, clear, little ppt.

Comments: 10311267-d Batch#: 10311267-d previous # young/brood: 24 Day of 1st Brood: 11 Previous 7-d % Mortality: 0

Reviewed by: Jole Date reviewed: Dec. 10/12

W.O.#: 12585

## Hardness and Alkalinity Datasheet

[illegible]

Notes: Diluted to 100ml w/ D.I. water.

Reviewed by:

106

Date Reviewed:

Dec. 10/12

# Nautilus Environmental

## Chain of Custody (electronic)

- ☐ California: 5550 Morehouse Drive, Suite 150, San Diego, CA 92121  
☐ Washington: 5009 Pacific Highway East, Suite 2, Tacoma, WA 98424  
☒ British Columbia: 8664 Commerce Court, Burnaby, BC, V5A 4N7

Date Nov 15/12/12 of 31/10/2011

Sample Collection By: Katie McMahan, Colleen Hughes							ANALYSES REQUIRED												Receipt Temperature (°C)		
Report to: Colleen Hughes		Invoice to: Colleen Hughes					48 hr LC50 Daphnia Magna	96 hr LC50 RBT													
Company: Mount Polley Mining Corporation		Same																			
Address: Box 12																					
City/State/Zip: Likely BC V0L 1N0																					
Contact: Colleen Hughes																					
Phone: (250) 790-2215 ext 167																					
Email: chughes@mountpolley.com																					
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	# OF CONTAINERS	COMMENTS															
1 E4	15/11/2012	12:54	water	20L	4	2L for daphnia & 40 L for RBT	x	x											2.6		
2 E1	15/11/2012	13:55	water	1L	2	2L for daphnia	x														
3 E7	15/11/2012	13:39	water	1L	2	2L for daphnia	x														
4																					
5																					
6																					
7																					
8																					
9																					
10																					
PROJECT INFORMATION			SAMPLE RECEIPT			RELIQUINSHED BY (CLIENT)			RELIQUINSHED BY (COURIER)												
Client: MPMC			Total # Containers:			Signature:			Signature:												
P.O. No.:			Good Condition?			Print: Colleen Hughes			Print:												
Shipped Via: Greyhound			Matches Schedule?			Company: Mount Polley Mining Corporation			Company:												
						Time/Date: November 15, 2012 17:30			Time/Date:												
SPECIAL INSTRUCTIONS/COMMENTS:						RECEIVED BY (COURIER)			RECEIVED BY (LABORATORY)												
						Signature:			Signature: <i>Jacob Frank</i>												
						Print:			Print: <i>Jacob Frank</i>												
						Company:			Company: <i>Nautilus</i>												
						Time/Date:			Time/Date: <i>Nov 16/12 @ 0833</i>												

Additional costs may be required for sample disposal or storage. Net 30 unless otherwise contracted.