

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) 1	Results
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) ¹	Results
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)

¹ 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@ 14504
Work Order No.:	Mount-Polley 12048	Test Species: Oncorhynchus mykiss
Sample Information Sample ID: Sample Date: Date Received: Sample Volume: Other:	EBS/12 Feb 8/12 1x20L	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: Hardness (mg/L CaC Alkalinity (mg/L CaCC		icipal Tap Water
Test Organism Infor	mation:	
Batch No.: Source: No. Fish/Volume (L): Loading Density: Mean Length ± SD (mean Weight ± SD (general section))		Range: 33-46 16W
Nitrate Reference T	oxicant Results:	
Reference Toxicant II Stock Solution ID: Date Initiated: 96-h LC50 (95% CL):	11Nt01 February 10,	2012) mg/L NaNO ₂
Reference Toxicant M	lean (2SD Range):	5.6, 3.0 - 10.8 mg/L NaNO ₂
Reference Toxicant C		38
Test Results:	The 96-hr 20	50 Es >100/-(U1V).
Reviewed by:	Joh	Date reviewed: harch 16/12

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project# Sample I.D. W.O. # RBT Batch #: Date Collected Date Setup/Tii	l/Tim	- - - e:			048 512 81	12	((Q)	142	<u>'</u>			7-d % Tota Aera	∕ն Moւ I Pre- tion ւ		: ion T djust	ime (ed to				(0) 1.c 3 1/L? (0 m		Ş	
Sample Setup		-		Est		10	(a)	1 ()					ramet			itial W	/Q	Adi	ustm	ent	30	min W	/Q	
•		-								~	•		emp '			4.0		· · · · · ·		/		14.0		l
D.O. meter:				DO-1									рΗ		7	4.7	-					17		
pH meter:				pH-1				•). (m <u>զ</u>			0.2						pr		
Cond. Meter:		_		C-1								Con	d. (µS	/cm)		232						239		
Concentration			# 5	Surviv	ors			7	emp	eratui	re (°C)	Diss	olved	Oxyg	jen (n	ng/L)			рН	<u></u>	·		uctivity 5/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				0	10	6	10	140	(4,0	140	bes	140	10.3	42	8,8	27	9-5		69	6,9	7.0	71	30	36
6.25				10	10	10	10	140			140		10.3	28	27	9.6	9.5	73	21	3,2	72	アン	112	116
12.5				10	10	10	10	40	140	140	140	(Y.3	103		7,9			23	29	እ ሪ	73	73	190	202
25				10	10	(0	(0	14,0	14,0	14,0	14.0	14.0	10.3	99	9,8	9.6	9.5	74	25	76	4		298	405
50				10	10	10	10	14,0			beno			28	99	26	9.5	26	20/0	3,8	7.6	76	705	709
100				10	13	(1)	w	14,0			14.0							7.7	78	3,9		79	1269	1242
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																					-			
Initials				~	-	ien	OIL	icsi	~	1	KIL	2002	100	_	~	fest	EJU	KIL	~		EST	1550	lesc	(CJL
Sample Description Fish Description Other Observa	n at 9	96?	nents	· 3:				orle																
Reviewed by:				161	<u>. </u>											Date	Revie	ewed:		M	arcl	(16	/12	

Client:	Marot Polles	Start Date/Time: Feb 9112 @ 1615h Test Species: Daphnia magna
Work Order No.:	12049	Test Species: Daphnia magna
	100.	Set up by: AwO
Sample Information Sample ID: Sample Date: Date Received: Sample Volume:	n:	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 Info	ormation:	
Broodstock No.:		0118128
Age of young (Day 0	· '\	< 24 hours
-	orood in previous 7 d:	19
Mortality (%) in prev		0
Days to first brood:	ious / u.	<u> </u>
NaCl Reference To:	ID: <u>0m79</u>	
Stock Solution ID:	11Na02	
Date Initiated:	R67/12	
48-h LC50 (95% CL)	: 4,2(3,7-4.9	g/LNaCL
Reference Toxicant	Mean and Historical Range CV (%):	: 4.0(3.6-4.4) g/L NaCL
Test Results:	The 48-h LCS	0 is 7 100% (viv)
Reviewed by:	Joh	Date reviewed: March 16/12

Client: Sample ID: Work Order No.	Mo	rest f	Polley E 949	Minses 1		- 	No. C	Organisr	Date/Tim ms/volum Organisi Set up b	e: <u>10/2</u> n: <i>D.ma</i>	200mL Igna			2/6/6
DO meter:	DO-1		.		рН	meter		pH-1		Condu	ctivity	meter:	<u>C-1</u>	
Concentration		Number e Organ		No. Immobilized	Te	empera (°C)		1	ved oxyge mg/L)	en	рН			uctivity /cm)
% (v/v)	1,00	24	48	48	0	24	48	0	24 48	3 0	24	48	M 0 -	48
Control	Α	10	10	Ö	20,5	20,5	20,0	६९	&7	- P.O	9 <u>02</u>	S.S	348	326
	В													
	С								10 20	500			100	1304
	D						7.5							
6.25	Α	10	10	2	20	20.5	20,0	23	P.	80	No.	J.0	391	420
	В				To Page									
	C	<u> </u>			linka		44.					1000	\$1600	164
	D	100							6.0		Sept.	77.1		
12.5	A	10	10	ס	20.0	20,5	20,0	24	53	13	200	P.1	445	458
	В	├ ─			6	100		100						
	C					1		F 50 110	100		Till Party		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	666
	D	10			kis.	0.0		0.9	10 a C			2 7	1111	2
25	I A	10	10	0	19/5	20.5	20,0	21	(2)	AZ		£3	646	652
	В					Editor.				1884A	100	2.54		200
	C D	ļ			(Car		5.00			70	i i i i i i i i i i i i i i i i i i i	201	7,000	7724
50		10	10	2	ign	Das	20,0	29	2,4	R4		24	923	272
50	В	110		 	Q.V	au	7.		000	, , , , ,			700	,33
	C	-						See 2 let			100	-21 (5/64)	- 42	
	D	-					T-14.					-50	· · · · · · · · · · · · · · · · · · ·	
100	A	10	12	0	190	205	20.0	۹,٦	۶,۲	- R5	State of	1-5	inss	1285
100	В	10	12			NOIS	1 S. C.			2				7 20 3
	С	†			Mia.			esten.			1,00			200
	D												- 1	
Technician Ir	nitials	rus	~	^	<u>~</u>	KIB	-	Λ	^	. ^		~	~	2
WQ Ranges: T) ± 2; D	O (mg/	L) = 3.6 to 9.4;	pH =	6 to 8.	5							
	Hardness	*		Alkalinity*				Initial V	NO.	Adjustme	ent		Adjusted \	NO
Conc.			/L as Ca			Temp	(°C)	19/2		7				
Control (MHW)	90			28		DO (m	g/L)	9,0	?					
Highest conc.	43	0	6	RO		рН		P.S		_/				
						Cond ((µS/cm)	1250	·			L		
Sample Descrip	tion:			So		,								
Campic Descrip		01181	23		w									
Comments:	Batch#:		7-d prev	vious # young/bro	od: l	9	Day of	1st Brood	d: 8	Previo	us 7-d %	6 Morta	lity: Q	
Reviewed by:			. 1	QI.		Da	te revi	ewed.		4-	-de	. 16	/_	

Nautilus Environmental

Version 1.4; Issued January 26, 2011

Client: Work Order No.:	Mount Polley 12049	Start Date/Time: Feb 9/12@ 16005 Test Species: Daphnia magna Set up by: CCS
Sample Information Sample ID: Sample Date: Date Received: Sample Volume:	n: 	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 Info	ormation:	
Broodstock No.: Age of young (Day 0 Avg No. young per b Mortality (%) in previous to first brood:	rood in previous 7 d:	4 hours
NaCl Reference To	xicant Results:	
Reference Toxicant Stock Solution ID: Date Initiated: 48-h LC50 (95% CL)	11NaO2 Rb7/12	g/LNaCL
Reference Toxicant (Mean and Historical Range: ५०(३,	6-4.4) g/L NaCL
Test Results:	The 48th LCSO is	7 100% (UIU)
Reviewed by:	JOL	Date reviewed: March 16/12

Client: Sample ID: Work Order No.:	May Eu	t Polle	<u>?</u> y	40 Hour		- - -		Star Organi:	t Date sms/vo st Orga	olume: anism:		200mL gna		1600h	
DO meter:	DO-1_		-		рН	meter:		pH-1			Condu	ctivity	meter:	<u>C-1</u>	
Concentration		lumber Orgar		No. Immobilized	Те	mpera (°C)	ture	1	lved c (mg/L			рН			uctivity /cm)
% (v/v)	Keb	24	48	48	0	24	48	0	24	48	0	24	48	0	48
Control	Α	10	10	2	19,0	20,5	100	8.6	A Line	4.2	8,0		80	315	326
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	С														in the
	D									01184					
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	В	1	ļ. .												
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12,5	A	10	10	٥	19.3	20,5	20,0	9.0		8-6	7,7		800	440	460
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25		10	10	_	10 5	30,5	120	9,1		855	7.7		29	564	585
ده	A B	10	('/	<u> </u>	171.5	40,5	حرحر،	۹,۱			7.7			30)	20-3
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	A	10	10	<u> </u>	19.7	190,7	20,0	9.1		0 - 3	7,7		10	, ιφ	854
	В														-54
	C										23 mily 1				
100	D	<u> </u>	10	0	10.0	2.5		0.1		51	77		2.0	2014	10
100)	A	10	12		19.5	2012	10,3	9,1		<i>T</i> -	7.7		75	1214	1248
	В														100 E
	С													300	100 miles
	D	10.0			200	30.B		2000			V (0			Y. A	
Technician In		NUB	~	~	res		^	rub		~	KUB		_	LIB	•
WQ Ranges: T (°C) = 20	± 2; D	O (mg/l	L) = 3.6 to 9.4;	pH = 6	5 to 8.	5								
	Hardness			Alkalinity*		T	(0.0)	Initia 19,5	IWQ	Α	djustme	ent	,	Adjusted \	V Q
Conc.	Q.		L as Ca			Temp		9,1						<u> </u>	
Control (MHW)	5		68	90 10		DO (m	y/L)	7.7							
Highest conc.		10	l	30	J	pH Cond (C/om)		4						
Sample Descripti	ion:		Cle	u/		Cona (µ5/cm)	1210							
		118128		vious # young/bro	od:]9	,	Day of	1st Bro	od: 8		Previou	us 7- <u>d</u> %	6 Morta	lity: O	
Reviewed by:			JG			Da	te revi						h 11	~~~	

Client: Work Order No.:	Mount Polley 12049	Start Date/Time: Feb 10/12@(030h Test Species: Daphnia magna Set up by: Aw0/Icc/8
Sample Information Sample ID: Sample Date: Date Received: Sample Volume:	1: EebBlie FebBlie I XIL	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 Info	rmation:	
Broodstock No.: Age of young (Day 0 Avg No. young per b Mortality (%) in prev Days to first brood:	rood in previous 7 d: (9	A hours
NaCl Reference To	xicant Results:	
Reference Toxicant Stock Solution ID: Date Initiated: 48-h LC50 (95% CL)	11Na02 RS7/12	g/LNaCL
Reference Toxicant Reference Toxicant	Mean and Historical Range: ५.०(३ CV (%):	, 6 - 4, 4) g/L NaCL
Test Results:	The 48th LCSO is	7 100% (010)
Reviewed by:	JGn	Date reviewed: March 16/12

Client: Sample ID: Work Order No.:	Ma	ust 1	Palley	Minés 7		- -	No. (Start Organis	Date/Tii ms/volui	me:	Feb /200ml	310	/126	2103c
Work Order No.:		120	247			-		rest	t Organii Set up	sm: <u><i>D.m.</i></u> by:	agna		5 /K	B
DO meter:	DO-1		_		pНı	meter	-	pH-1				meter:	r	
Concentration	1	lumber Orgar		No. Immobilized	Ter	npera (°C)		1	ved oxyg mg/L)	gen	рН			uctivity 5/cm)
% (v/v)		24	48	48	0	24	48	0	24	8 0	24	48	0	48
Control	Α	10	10	2	205	20,0	20,0	89	F	5 P.1		20	348	325
	В													
	С													
	D													
6.25	Α	10	10	٥	20,5	28,0	V. 3	8.7	8	5 8.0		دیم	376	408
	В				W-30									
	С									Paidy, S				
	D						3.4							
12.5	Α	10	10	٥	20,5	6,0	10,0	8.7	۶	6 8.0		21	431	436
	В													
	С													
	D										e GLYOS?			
25	Α	10	10	٥	2015	しゃ	20,0	8.6	٦ ٢	5 8,0		RI	552	22t
	В													
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50	Α	10	10	3	20.5	20.0	V.0	8.6	8	580		80	770	181
	В								ù M					
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	D													
100	Α	10	10	9	20,5	20,2	20,3	8.7		7.9		وأع	1130	1135
	В													
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	D													
Technician Ini		_^_	~	~	~	^	~	7	\$ \$ <u></u>	1/2				1
WQ Ranges: T (°	C) = 20	± 2; D	O (mg/l	_) = 3.6 to 9.4;	pH = 6	to 8.5	5							
H	lardness*			Alkalinity*	_			Initial V	vq	Adjustme	ent	A	djusted V	/Q
Conc.		*(mg	L as Ca	Co3)		emp (°C)	20,5						
Control (MHW)	94		(8		00 (mg		8.7						
Highest conc.		550		0	i i	Н		7.9		_/				
Sample Description	on.		clea	V		Cond (L	uS/cm)	1130						
	-	11412	* Vub											
Comments: E	Batch#: (>11812A	7-d prev	ious # young/broo	od: 15		Day of 1	1st Brood	: 8	Previou	us 7-d %	Mortali	ty: O	
Reviewed by:			16h			Dat	e revie	ewed:	M	arch	16/1	2		

la	utilus Envir	onmenta	1								Cha	ain	of (Cus	stod	y (ele	ctronic
-	California: 5550 Morehouse	Drive, Suite 150, Sar	n Diego, CA 92	121					/						_	A	u 12
	Washington: 5009 Pacific H														5	ebop	1012 2011 of_
(British Columbia: 8664 Com	merce Court, Burnab	y, BC, V5A 4N	7			•								Date	- 	OT
	Sample Collection By:	Katie McMaher	- Colle	en du	ahe 5						ANAL	YSE	SRE	QUIF	RED		10.7
	,	Report to:	Colleen Hu			Invoice to:	Colleen Hughes						Т				∏ ठ
								na			ì	- 1					Receipt Temperature (°C)
	Company	Mount Polley M	Mining Corpo	oration		Same		Magna				- 1					5
	Address	Box 12	4110					ia N					1				je
	City/State/Zip	Likely BC V0L			1			Daphnia	—				İ		,		
	Phone -	Colleen Hughe (250) 790-2215							RBT				ĺ				
	Email	chughes@mou		m				C50	C50				1,		`\		de
	Lillaii	Chagnes@noc	T. T	<u></u>	•		1						- 1	4:			Sec.
	SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	# OF CONTAINERS	COMMENTS	48 hr	96 hr								
1	E4	08/02/2012	14:29	water	20L	3	1L for daphnia & 20 L for RBT	х	Х								3-7
2	E1	08/02/2012	13:06	water	1L	11	1L for daphnia	х	_								
3	E7	08/02/2012	14:00	water	20L	1	1L for daphnia	X	λÝ								. H
4					,		:	×6γος	3								
5								3									
6								ىدە	G				-				8
7									3					-			100
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9																	
10																	
10	PROJECT INFO	ORMATION	SA	MPLE REC	EIPT	RELIQUINSI	HED BY (CLIENT)			RELI	QUINS	HED	BY (COU	RIER)		[79940]K 223
	Client: MPMC		Total # Co	ontainers:		Signature:				Sian	ature:						
							5			-							
	P.O. No.:		Good Cor	ndition?		Print: Katio	McMahen Coleen du	he=	>	Print	:						
	Shipped Via: Greyho	ound	Matches	Schedule?			Mount Polley Mining Corporation		,	Com	pany:						
	Shipped via. Greyno	Junu	Matches	ochedule:		Time/Date:	June 1, 2011 17:00 66 8	,201	2	Time	/Date:						
	SPECIAL INSTRUCT	IONS/COMMEN	TS:			RECEIVED I	BY (COURIER)	1		REC	EIVED	BY(LABC	DRAT	ORY)		
						Signature:				Sign	ature:						
	4.5					Print:				Print	::	Cer	res	_			
						Company:				Com	pany:						
						Time/Date:				Time	/Date:	CS	45	h	Feb	9/12	
	Additional costs ma	y be required fo	r sample d	isposal or s	torage. Net	30 unless ot	herwise contracted.		***								

Client: EnMant Polley

Hardness and Alkalinity Datasheet

			Alkalinity				Hardnes	s	
Sample ID	Sample Date	Sample Volume (mL)	(mL) 0.02N HCL/H ₂ SO ₄ used to pH 4.5	(mL) of 0.02N HCL/H ₂ SO ₄ used to pH 4.2	Total Alkalinity (mg/LCaCO ₃)	Sample Volume (mL)	Volume of 0.01M EDTA Used (mL)	Total Hardness (mg/L CaCO ₃)	Technicia
દા	Feb9112	100	0.3	9.9	30	100	4.3	430	KIB
24	Feb9/12	100	1.0	1.1	90	100	5,4	540	YUB
٤7	Feb9/12	100	1,2	1.3	110	100	5,5	550	KLB
m HW	Feb9/12		3.5	3.6	68	50	4,7	94	rus
		ļ				<u> </u>			<u> </u>
· · · · · · · · · · · · · · · · · · ·									<u> </u>
A. W									
		Notes:	O Diluted	to (00m	L w 01	- water.			-
Reviewed by:		76	h		Date Revi	iewed:	Marcl	(6/12	/

Vautilus 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) 1	Results 1
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) ¹	Results
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)

¹ 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/Projects Sample I.D. W.O. # RBT Batch #: Date Collected Date Setup/Tin	d/Tim		Ë		191	12	/2 /		112	94	7-d % Mortality: Total Pre-aeration Time (mins): Aeration rate adjusted to 6.5 ± 1 m					10/16L 0.6 30 nL/min/L? (Y/N): Les								
Sample Setup	By:	Ţ			ک	BF						Pai	ramet	ers	lni	tial W	Q	Ad	justm	ent	30	min V	/Q	
												T	emp '	C		15,0	,			/	l!	5,0		
D.O. meter:				DO-1									рН			3.4			\angle			8.4		
pH meter:				pH-1). (mg		<u>-</u>	.8		_/				9.5		
Cond. Meter:				C-1								Con	d. (μS	/cm)	10	<u>83</u>					(090) 	
Concentration			# 5	Survivo	ors			ī	emp	eratui	e (°C)	Diss	olved	Oxyg	en (m	ng/L)			. рН				uctivity /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	140	4.0	4.3	98	96	0.0	7.4	7.0	6.9	69	69	28	33
100 6,25				10	10	12	10	15.0	14.5	145	146	14.0	4.1	9.7	97	9.7	10.0	7.2	6.8	70	20	7.0	121	125
12.5				10	10	19	10	15.0	14.5		145	14.0	4.3	9.8	9.8	97			7.0	7.1	22	7.3	224	228
25				10	10	10				145	145	14.0		9.8		9,8	9.9	79	7.1	73	$\lambda \varphi$	7.4	334	340
50				10	10	10		15,0							9.8		9.9		7.3	7.4	76	7.6	607	612
100				10	10	10	10	15.0			145			9.9					7.8		79			1097
			 		12			1	•			, · · ·					•••							
			<u> </u>					<u> </u>			 -									 -	 			
Initials				76F	$\overline{}$	^	186	SBF	SOF	1	1	SBE	135	385	~	~	386	SBF	JBF	$\overline{}$	7	38 72	X8F	SBF
WQ Ranges: T	(°C)	= 15								to 8.		12.71										100		
Sample Descri				•		المدن								· ···	· · · · · · ·			·						·····
Fish Description	n at 9	96?			Au	£	15 %	04																
Other Observa	tions																							·
Reviewed by:		A	. 7	2	2		-									Date	Revie	ewed:			Иa	y 11	0,20	12

Version 2.1; Issued January 26, 2011.

Nautilus Environmental

Client: Work Order No.:	Mount Polley Mining 12197	<u>Corporation</u>	Start Date/Time: Test Species: Set up by:	Daphnia magna
Sample Information	on:		Test Validity Crite ≥ 90% mean control	eria: survival (no more than 2
Sample ID:	E 4		mortalities in any co	a contract and a contract the contract of the contract of the
Sample Date:	May 2/12			
Date Received:	May 3/12		WQ Ranges:	
Sample Volume:	3 x 20L		$T (^{\circ}C) = 20 \pm 2; DO$	(mg/L) = 3.6 to 9.4; pH = 6 to 8.5
•		•		
Test Organism Info	ormation:			
Broodstock No.:		041812	A	
Age of young (Day (O):	< 24	hours	
	prood in previous 7 d:	18		
Mortality (%) in prev	rious 7 d:	0		
Days to first brood:		9		
NaCl Reference To Reference Toxicant Stock Solution ID: Date Initiated: 48-h LC50 (95% CL)	ID: <u>Ja</u>	183 No 02 Now 2/12	g/LNaCL_	
)	
Reference Toxicant Reference Toxicant	Mean and Historical Rang CV (%):	e: 4,5 (3.	6 - 4.41 g/L NaC	<u></u>
Test Results:	The 48h LC 50 is	> 100 %	·	
Reviewed by:	A. terg		Date revie	wed: May 10,2012

Client: Sample ID: Work Order No.:	1	MOUNT	Polley	1				Star	t Date	/Time:		M	ey 3	1126	145
Sample ID:	A~1	74.	r. 0	E4		_	No. (Organi	sms/v	olume:	10/2	200ml	0 /		
Work Order No.:			1219	计		_		Tes	st Org	anism:	D.ma	gna.			
									Set	up by:			4-		
DO meter:	DO-1		_		рН	meter:		pH-1		_ (Conduc	ctivity	meter:	C-1	
Concentration	N	lumbe	of	No.	Tei	mperat	ure	Disso	lved c	xygen		рН		Cond	uctivity
	Live Rep	Orgai	nisms	Immobilized		(°C)			(mg/L)				(µS	5/cm)
% (v/v)		24	48	48	0	24	48	0	24	48	0	24	48	0	48
Control	Α	10	10	В	20.0	199	170	8,6		29	82		6.9	350	350
	В														
	С														
	D					/# //#									
6.25	Α	IP	10	0	200	19,0	190	28		9,0	66		60	400	411
	В														
	С														
	D	<u> </u>													
12.5	A	10	10	٥	107	19,0	190	25		90	12		81	449	450
	В~														
	С														
	D														
25	Α	10	10	0	200	69 3	17,0	9,0		9,0	81		21	575	584
	В														
	С														
	D														
50	Α	10	10	D	20,0	19,0	190	90		9,0	82		51	त्रक	769
	В														
	С					a Since									
	D														
100	Α	12	10	۵	v.D	19,0	19,0	9,0		9.1	らと		AL	1047	1023
	В					Thomas A		t feet gaaret							
	С														
	D														
Technician Init	tials	A	~	\sim	سزا	0	<u>^</u>	~		<u>^</u>	\sim		Μ	^	B
WQ Ranges: T (°	C) = 20	± 2; D0	O (mg/L) = 3.6 to 9.4;	pH = 6	to 8.5									
	lardness*			Alkalinity*			ſ	Initial	wa	Adi	ustmen	t	A	djusted V	/Q
Conc.			L as CaC		[-	Temp (°	C)	201							
Control (MHW)	94			64	Г	DO (mg/		9,3							
Highest conc.	450		C	10	E	Н		22							
						Cond (µ	S/cm)	104	7						
Sample Description	on:			11-	7ht	yello	كعب								
		04181	2 ∳ 7-d previ	ous # young/broo		1		st Brood	d:	9 F	revious	7-d %	Mortalit	y <i>9</i>	
Paviewed by:		1	10	•		Date	revie	wed.		1	12.	10	. 201	2-	

Version 1.4; Issued January 26, 2011

Nautilus Environmental

Client:	Mount Polley Mining	corporation	Start Date/Time:	May 3/12 @ 1140h
Work Order No.:	12197		Test Species:	
			Set up by:	
				and the second s
Sample Information	on:		est Validity Criter	
Carrala ID:	13		the state of the same of the s	survival (no more than 2
Sample ID:		n	ortalities in any co	ntroi replicate)
Sample Date: Date Received:	May 2/12 May 3/12		(O Banasa)	
			/Q Ranges:	
Sample Volume:	1 x 1L		('C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5
			사고 가족하게 사고 Ben 4 행동호는 (최고기 기고 기술) -	元日 - 大変を持ち、日本の1990年1月1日 - 1991年1日 - 1991年1日の発表課題。
•				
Test Organism Inf	ormation:			
Broodstock No.:		041812 A		
Age of young (Day	0):	< 24 hou	ırs	
Avg No. young per	brood in previous 7 d:	18		
Mortality (%) in prev	vious 7 d:	0		
Days to first brood:		9		
NaCl Reference To	oxicant Results:			
Reference Toxicant	ID. JW	183		
Stock Solution ID:		Nc 02	-	
Date Initiated:		Nau 2/12		
48-h LC50 (95% CL		X /	 NaCL	
40 11 2000 (0070 02	<i></i>	9/-	1	
Reference Toxicant	Mean and Historical Range	e 45(36-	· 4.4) g/L NaCL	
Reference Toxicant	~	<u> </u>		
Trong to Toxicomic				
			_	
Test Results:	The 48h - LC 50	is greater	than 100 %	
	White the control of		· · · · · · · · · · · · · · · · · · ·	
	, -			. /
Reviewed by:	_ A. Tore		Date review	red: May 10, 2012
	<u> </u>	- .		

Client:	1	MOUNT	Polley	ſ				Star	rt Date	/Time		JY	ley 3	1126	1143
Client: Sample ID: Work Order No.:	A~	1 74	r. ()	EI		-	No. C	Organi	sms/v	olume	10/2	200ml	- 0 7		1143
Work Order No.:			1219	7				Te	st Org	anism:	D.ma	gna			
									Set	up by:			1-		
											O	_41		C 1	
DO meter:	DO-1				рн	meter:		pH-1		- '	Jonaud	ctivity	meter:	<u>C-1</u>	
Concentration	1	lumber	of	No.	Te	mperat	ure	Disso	olved o	xygen		рН		Cond	uctivity
		e Organ	nisms	Immobilized		(°C)			(mg/L)				(µS	/cm)
	Rep	<u> </u>	T .:_		-				T	10		-	10		10
% (v/v)	ļ	24	48	48	0	24		0	24			24		0	356
Control	Α	11-	10	0	70.0	197	19,0	F,0		0 ;1	82			350	
	В	 	 												
	С														
	D	 	<u> </u>			\$ (p) & -					- Marie 1997				
6.25	Α	10	10	۵	JO. 3	19.0	19,0	5-1		9,5	ها		20	414	417
	В					7.72									
	С	 													
	D	<u> </u>													
12.5	Α	10	(0	D	10)	190	19,0	RY		6,3	1		8.0	338	509
	В	ļ													
	С														
	D														
25	A	10	15	0	72.8	19,5	19,0	89		9,0	80		80	602	614
	В						The state of	P.V.						3.4.2 (1)	
and the second s	С														
	D								Ä,						
50	Α	10	10	0	20,O	19,0	190	4,2		F.A	80		7-9	713	735
	В														
	С					23.1									
	D														· V
100	Α .	10	10	ာ	2.0	19,0	19,0	9.1		9,3	20		33	1066	100%
	В														
	С				See 2 See	and V									
	D														
Technician Ini	tials	A	~	<u></u>	~	a	\wedge	~	12-	n	~		Λ	^	A
WQ Ranges: T (°	C) = 20	± 2; D0	O (mg/L	.) = 3.6 to 9.4;	pH = 6	to 8.5									
							_								
	lardness'		F	Alkalinity*	_			Initial	WQ	Ac	ljustmen	t	A	djusted V	/Q
Conc.		*(mg/	L as Ca(Co3)	-	Temp (°	C)	20	ره ا						
Control (MHW)	94			,4	1	00 (mg/	(L)	9,	(
Highest conc.	420		((O	Ţ	Н			201						
					•	Cond (µ	S/cm)	11	766		/				
Sample Description	nn.			-		1.160	Fish			,					
sample Description		04,8	12 A			_	ran	op	9				-,		
Comments: E	Batch#:	- 7101	7-d previ	ous # young/broo	d 18		Day of 1	st Broo	od:	9	Previous	7-d %	6 Mortali	ty: 🔗	
Reviewed by:		1	10			Date	e revie	wed:		4	1/2	118	0,2	012	

Version 1.4; Issued January 26, 2011

Nautilus Environmental

Client:	Mount Polley Mining	corporation	Start Date/Time:	May 3/12 @ 1190h
Work Order No.:	121914 7		Test Species:	Daphnia magna
	W		Set up by:	AWD
Sample Informatio	on:		Test Validity Crite	
	C 7	•	The state of the s	survival (no more than 2
Sample ID:	F 7		mortalities in any co	ontroj replicate)
Sample Date:	May 2 / 12			
Date Received:	May 3 / 12		WQ Ranges:	
Sample Volume:	1 × 1L			(mg/L) = 3.6 to 9.4; pH = 6 to 8.5
•				
Test Organism Info	ormation:			
rest Organism mit	Jimation.			
Broodstock No.:		041812 B		
Age of young (Day ())·	< 24 h	iours	
	prood in previous 7 d:	18	iouro .	
Mortality (%) in prev	•	0		
Days to first brood:	, out 1 a.	9		
NaCl Reference To	xicant Results:			
Reference Toxicant	ID: \mathfrak{I} n	183		
Stock Solution ID:		No 02		
Date Initiated:		nzu 2/12		
48-h LC50 (95% CL)		X)	g/LNaCL	
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		· · · · · · · · · · · · · · · · · · ·	```	
Reference Toxicant	Mean and Historical Rang	_{je:} 4,5 (3.0	5 - 4.4 g/L NaCl	L
Reference Toxicant	CV (%):		5	
	•			
Test Results:	The 48h LC50 is	7 (00 %		
	1 —			11
Reviewed by:	A. Tong		Date review	wed: May (0,2012
	Λ			

Client: Sample ID: Work Order No.:	mount Polley mple ID: AM W: E7 rk Order No.: 12197							Start Date/Time: No. Organisms/volume: Test Organism: D.magna Set up by:									
DO meter:	DO-1		_		ı Hq	meter:		pH-1			Conduc	ctivity	meter:	C-1			
Concentration	Live	Number e Organ		No. Immobilized	Ter	mpera (°C)		Dissol ^o	ved o mg/L)			рН			uctivity /cm)		
% (v/v)	Rep	24	48	48	0	24	48	0	24	48	0	24	48	0	48		
Control	А	10	10	a				P,6			82		F.i	350	354		
Control	В	1															
	c										74. G						
	D																
6.25	Α	10	10	D	20.0	19,0	19,0	80		8,9	80		8,0	447	435		
	В																
	С					/////						Constant Action					
	D																
12.5	Α	10	10	P	10,0	19,0	19.0	8.8		9,0	Sio		A	475	468		
	В																
	С							\$1,127 B									
	D																
25	Α	10	10	0	72/2	10,0	19,13	9,0		9,0	وذع		Pr1	537	540		
	В					-											
	С																
	D																
50	Α	10	10	0	20,0	19,0	19,0	9,0		9.0	JP.		12	654	667		
	В																
	C					Ş î	Y										
	D																
100	Α	10	10	2	20,0	190	19,0	9.1		90	ጉዓ		22	958	957		
	В																
	C									Will Sales							
	D																
Technician Ini		A	~-	<u></u>	~	C	^	<u>~</u>		n.	~		^	^	B		
WQ Ranges: T (°			O (mg/L						,			STATE SERVICES					
	lardness*	.		Alkalinity*			ſ	Initial V	VO.	Δdi	ustmen	. 1	Δ,	djusted W	10		
Conc.	laruness		L as Ca(F-	Temp (°	·C)	20,0	1	710	dounce	+		ajusteu vi	, ,		
Control (MHW)	94	(1119/		64		OO (mg		9,1									
lighest conc.	480			50		oH	, _ ,	79									
					F	Cond (µ	S/cm)	958	-		/						
Sample Description	_			g.e	low.		a de										
Comments: E	Batch#:	04181	7-d previ	ous # young/broo	d: 18		Day of	1st Brood	: .	h F	revious	7-d %	Mortalit	y: -D			
Reviewed by:		\mathcal{A}	· 10	re,		Date	e revie	ewed:		N	lan	10	,20	12			

Nautilus Environmental

Version 1.4; Issued January 26, 2011

W.O.#: 12197 -

Hardness and Alkalinity Datasheet

			Alkalinity				Hardnes	s	
Sample ID	Sample Date	Volume	(mL) $0.02N$ HCL/H ₂ SO ₄ used to pH 4.5	(mL) of 0.02N HCL/H ₂ SO ₄ used to pH 4.2	Total Alkalinity (mg/LCaCO₃)	Sample Volume (mL)	Volume of 0.01M EDTA Used (mL)	Total Hardness (mg/L CaCO ₃)	Technician
MHW	May 3/12	50	3.3	3.4	64	50	4.7	94	JW
ET		10 0	0.4	0.5	110	10	4.2	420	WE
E4		10	1.0	1.1	90	10	4.5	450	JW
E7		10	6.7	0.8	60	10	4.8	480	JW

		<u> </u>							
		-							
L	I	Notes:	① Pîluted to	100 ML with	DI H2O				
Reviewed by:	· .	4.6	ig_		Date Review	wed:	May (0,2012	

a	utilus Envir	onmental									Chai	n of	Cu	stod	y (electro	onic)
1	California: 5550 Morehouse l Washington: 5009 Pacific Hi British Columbia: 8664 Comi	ghway East, Suite 2,	Tacoma, WA 9	98424										Date	31/10/2011	_of
١	British Columbia: 8664 Comi	merce Court, Burnaby	7, BC, VSA 4N	7										Date		
	Sample Collection By:	Katie McMaher	n, Colleen H	lughes							ANAL	/SES R	EQUI	RED		
Ī		Report to:	Colleen Hu	ıghes		Invoice to:	Colleen Hughes									်ပ
-	Company	Mount Polley M	lining Corne	oration		Same		Magna								Receipt Temperature (°C)
H	Address	Box 12	illing corpe	Jiadon		Garric		Має								
Ŀ	City/State/Zip	Likely BC V0L	1N0					nia								be
H	Contact	Colleen Hughe	S					Daphnia	RBT							L L
Ì	Phone	(250) 790-2215	ext 167						0 R							l ˈˈʦː
	Email	chughes@mou	intpolley.coi	<u>m</u>				LC50	LC50							8
	SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	# OF CONTAINERS	COMMENTS	48 hr I	96 hr I						-	. **
1	E4	02/05/2012	11:29	water	20L	3	1L for daphnia & 40 L for RBT	х	Х							2.9
2	E1	02/05/2012	9:34	water	1L	1	1L for daphnia	X	8					,		1,5
3	E7	02/05/2012	10:19	water	1L.	1	1L for daphnia	Х	20							1,2
4		02/00/2012	10.10	- Hatel	1 22				14					1		
5		4 .						14								
6	-							9	20							
7								7	3				1			
′							,		<u> </u>	 			+	_		
8								3		 			+			
9								<u> </u>	<u> </u>	 			+			
0	PROJECT INFO	DRMATION	SA	AMPLE REC	EIPT	RELIQUINSI	HED BY (CLIENT)	<u></u>	L	REL	QUINSI	HED BY	(COL	JRIER)		la se di Kar
				ontainers:		Signature:				-	ature:					
	Client: MPMC		Total # Co	ontainers.		Signature.				Joign	ature.					
	P.O. No.:		Good Co	ndition?		Print: Collec	en Hughes			Print	t:					
	Shipped Via: Greyho	und	Matches	Schedule?			Nount Polley Mining Corporati	on			pany:					
	Chipped via: Groyne		Matorico				May 2, 2012 17:30			Time	e/Date:					
	SPECIAL INSTRUCT	IONS/COMMEN	TS:			RECEIVED	BY (COURIER)			REC	EIVED	BY (LAE	BORA	TORY)		
						Signature:				Sign	ature:	prese	-1	we		
						Print:				Prin	t: Ja	عدما	0 1	Tan	k '	
						Company:				Con	pany:	Dai	Hil	US		
						Time/Date:				Time	e/Date:	091			May 3/1	12
-	Additional costs ma	y be required fo	r sample d	isposal or s	storage. Net	30 unless of	herwise contracted.			1					3	

Vautilus 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) ¹
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) 1
E4	August 1, 2012 @ 1103h	>100
E1	August 1, 2012 @ 0946h	>100
E7	August 1, 2012 @ N/A	>100

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	Te	est Species:	Oncorhynchus mykiss
			•	
Sample Information:			/alidity Criteria	
Sample ID:	E4		anges:	
Sample Date:	August 1/12 @ 110) = 7.0 to 10.3; pH = 5.5 to 8.5
Date Received:	August 2/12 @ 091			,
Sample Volume:	2 x 20L			
Other:	N/A			
Dilution Water:				
Type:		Municipal Tap Wat	er	
Hardness (mg/L CaCo	O ₃):	10		
Alkalinity (mg/L CaCC	D ₃):	8		
Test Organism Infor	mation:			
Batch No.:		062212		
Source:	Mira	acle Spings		
No. Fish/Volume (L):	-	10/15L		
Loading Density:	\	0.46		ae: 37 - 0.42 5 1
Mean Length ± SD (m Mean Weight ± SD (g		43 ± 5 70 ± 0.25	Rang	ge: 0.42 - 1.11
Mean Weight ± 3D (g)	70 ± 0.23	ı\ang	ge. <u>0.42 - 1.11</u>
NaNO2 Reference To	oxicant Results:			
Defenses Toxicont II	DTN#22			
Reference Toxicant ID:	D: <u>RTNt23</u> 12Nt01			
Date Initiated:	July 26/12			
96-h LC50 (95% CL):		/I NaNO2		
30-11 LO30 (30 % OL).	0.0 (2.0 4.0) mg/	LIMANOZ		
Reference Toxicant M	lean and Historical Range	e: <u>5.4 (2.9 - 9.8</u>) mg/L NaNO2	
Reference Toxicant C	V (%):	35		<u> </u>
Test Results:	The 96h I CEO is >100%	(v/v)		
rest nesults.	The 96h LC50 is >100%	(V/V).		
•	٠	<u> </u>		1 . (
Reviewed by:	Joh		Date reviewe	ed: Ary. 16/12

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Projects Sample I.D. W.O. # RBT Batch #: Date Collected Date Setup/Til Sample Setup	d/Tim me:	-	£	JBF	4 23 061 1 2	63 22 1	12 @ 12 @	236	Z 03	ratio		7-d % Tota Aera Undil	6 Mor I Pre- tion r luted ramet emp °	°C 16.0										
D.O. meter:				DO-1									pН		7	2.4	_		$-\!\!\!/$			7. 0		
pH meter:				pH-1). (mg			9.		_/				0.0 2E C	·····	
Cond. Meter:			y	C-1								Con	d. (µS	/cm)		CC	0	/			T 1.	150		
Concentration			# \$	Surviv	ors			7	empe	eratui	e (°C		Diss	olved		jen (m				рН				uctivity /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	(0	19	10	14.5		145	146	145	9.7	9.7	98	7,9	9.8				6.8	プラ	31	38
6.25				10	10	10	10	14.5	14.0	145	145	145	8.8	9.9	9,9	19,7	97	7-1	6.9	20	30	7.0	166	172
12.5				(0	10	10	20	15.0	14.0	146	145	145	9.9	00	28	9	98	7,2	7.0	34	3,3	7.1	259	264
25				10	10	10	19		14.0	146	145	145	9.9	10.1	29	23	9,8	7.4	7.2	73	72	72	447	454
50				10	۵۱	10	10	13.5			146		0.0		9,9	9,9			7.3			75	740	747
100				10	10	10		16.0			146	-	10.0	· ·	9,9	9.8			7.6			7.3	1250	1266
				 	<u> </u>	67	10		1 .	140				1		170	<i>U</i> ()			<u> </u>	, ,			
				-				1			<u> </u>													
Initials	<u> </u>			13F				JBF	VRF-		_	<u> </u>	JB1=	1131	~	 		V3F	JD7=	_			JBF	
WQ Ranges: T	[- 15	<u> </u>			701						1	JV.	ועכ	_		^	971	יעטן			_ ~	2307	
Sample Descri	` '		·	`	• /			5, pri				to Walk r							,					
Fish Description	on at 9	96?			all	_0	4	egyc.	1 0	k														
Other Observa	tions																							· .
Reviewed by:			_ <	160		·										Date	Revie	ewed:			Au	g - 11	1/12	

Client:	Mount Pol	lley		Start Date/Time: Au	ug 2, 2012 @ 1750h
Work Order No.:	12363			Test Species:	Daphnia magna
				Set up by: <u>JV</u>	<u>V</u>
Sample Information	on:			Test Validity Criteria	a:
					ırvival (no more than 2
Sample ID:	E4			mortalities in any cont	
Sample Date:	01-Aug-1	12			
Date Received:	02-Aug-1			WQ Ranges:	
Sample Volume:	2 x 1L			$T (^{\circ}C) = 20 \pm 2$; DO (n	ng/L) = 3.6 to 9.4; pH = 6 to 8.5
Test Organism In	formation:				
Broodstock No.:			071912 A	+B	
Age of young (Day	0):			4 hours	
Avg No. young per		evious 7 d:	15		•
Mortality (%) in pre			0		
Days to first brood:			9		
NaCl Reference T	oxicant Res	sults:			
Reference Toxican	t ID:	Dm86			•
Stock Solution ID:		12Na01			
Date Initiated:		25-Jul-12			
48-h LC50 (95% C	L):	4.2 (3.7 - 4.8)		g/LNaCL	
Reference Toxican		Historical Range:	4.0 (3.6 - 4	4.4) g/L NaCL	
Reference Toxican	t CV (%):		6	·	«
Test Results:	The 48h I	_C50 is >100% (v/v)			
restricoults.	THE HOIL	_000 13 > 100 /0 (0/0)			
		401			, i
Reviewed by:		John		Date review	ed: My. 15/12

													,		
Client: Sample ID: Work Order No.:	n	ount	ρ_{a}	le				Start	Date	e/Time:		1	his 2	-/12	0 179
Sample ID:		~	W	EY		-	No. (Organisi	ms/v	olume:	10/2	.00mL	0	1:-	e 179
Work Order No.:	:	1	2363					Test	Org	anism:	D.ma	gna			
						_				up by:				JW	
DO meter:	DO-1		_ 1		рН	meter:		pH-1		_ (Conduc	tivity	meter:	<u>C-1</u>	
Concentration	N	lumber	of	l Na	Те	mpera	ture	Dissolv	ved o	xvaen		рН		Cond	uctivity
	Live	Orgar	nisms	No. Immobilized		(°C)			mg/L				:		/cm)
% (V/V)	Rep	<u> </u>	т	mmobilized				<u> </u>						-	
		24	48	48	0	24	48	0	24		0	24	48	0	48
control	Α	10	10	5	210	21,0	2,0	8.7		24	78		78	354	366
	В	`													
	С														
	D														
6.25	Α	10	10	Э	น จ	200	2. 0	2.8		14	28		29	397	408
	В	1	<u> </u>				ν. •	0 .		0-1	7,0		111) []	108
	C														
	D														
· · ·		10		3	1/2	2.	4	2 2		C 1	2-8		20	1.63	145
12.5	<u>A</u>	10	10)	\$ (, 5	up	પ્ર	P.F		5.6	1.8		1!	452	463
	В			,											
	С														
	D							<i>p</i> .							
22	Α	10	10	. 3	up	21.0	us	8.9		28	2,9		L2	591	595
	В														
	С														
	D														
50	Α	10	10	3	21,2	21.0	40	29		28	28		8,0	890	808
	В														
	С														
	D														
10D	A	10	10	5	21.0	21.0	21.0	F.9		29	20	,	6.2	1228	1242
	В						-{/	0 1 1			170		0 1.0		
	С														
	D														
Tarkariai an Ini															
Technician Ini		Δ			_~	^		~		~	٨		~	~	_
WQ Ranges: T (°	C) = 20	± 2; D0	O (mg/L	.) = 3.6 to 9.4; _I	oH = 6	to 8.5									
		т										т			
	lardness*			Alkalinity*	Г		-	Initial W		Ad	ustmen	t	· A	djusted W	/Q
Conc.	98	*(mg/	L as Ca		Г	Temp (°		21,0	_				_		
Control (MHW)				70.	Г	DO (mg	/L)	<u> ዱ</u> ዋ							
Highest conc.	550			-	۲	pH	-	7,8	_						
					L	Cond (µ	S/cm)	1229	۲						
Sample Description	on.			clen											
Ja.ripio Doooripiid		0719	12 A+	В		_									
Comments: I	Batch#:		7-d previ	ous # young/broo	d: 15		Day of 1	st Brood:		₽ _F	revious	7-d %	Mortalit	y: O	
5			76			Date					1	15	-/		

Version 1.4; Issued January 26, 2011

Nautilus Environmental

Client:	Mount Polle	ey .		Start Date	e/Time: Aug	2, 2012 @ 1745h
Work Order No.:	12363				pecies:	
				Set	t up by: JW	
				1.64		
Sample Informatio	n:			Test Valid	ity Criteria:	
						rival (no more than 2
Sample ID:	E1			mortalities	in any contro	l replicate)
Sample Date:	01-Aug-12					
Date Received:	02-Aug-12			WQ Range		
Sample Volume:	2 x 1L			$T (^{\circ}C) = 20$	± 2; DO (mg	/L) = 3.6 to 9.4; pH = 6 to 8.5
						100 100 100 100 100 100 100 100 100 100
						ě
Test Organism Info	ormation:					•
Dun a data als Mais			074040 4 . [Б		
Broodstock No.:	۵۱.		071912 A+E	hours		
Age of young (Day (ious 7 d	***	nours		
Avg No. young per l		ious / a.	15			
Mortality (%) in prev	nous / u.	•	9			
Days to first brood:	,		9			
NaCl Reference To	vicant Resu	lte.				
Naor Neierenee re	Alculit Nosu	11.5.				
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/LNaCL		
,	,-			<u>g </u>		
Reference Toxicant	Mean and H	istorical Range:	4.0 (3.6 - 4.4	.4)	g/L NaCL	
Reference Toxicant		· ·	6			_
	. ,					
						4
Test Results:	The 48h LC	50 is >100% (v/v)				
		761				1 1
Reviewed by:		J64		Da	ate reviewed	: Aug 15/12

Client:		ount	Pa	lley		_		Star	t Date	e/Time:			hy 7	-/12	@ 174
Sample ID:						-	No. (Organis	sms/v	olume:	10/2	200mL			
Work Order No.:	:	- (4565					ies		anism:				W	
									Sei	up by:			<u> </u>	W	
DO meter:	<u>DO-1</u>		-		рН	meter:	-	pH-1		_ (Conduc	ctivity	meter:	<u>C-1</u>	
Concentration	_ N	lumber	of	No.	Те	mpera		Disso	lved (oxygen		рН		Cond	uctivity
		Orgar	nisms	Immobilized		(°C)			(mg/L	-)				(µS	S/cm)
% (V/V)	Rep	<u></u>	T		 	T	T	-		T			T		
Opplopi	 	10	48	48	0	24			24		0	24		0	48
CONTROL	A	113	10	2	4,5	M,S	21,2	8.7		24	4.8		711	554	366
	В	<u> </u>	ļ												,
	С														
	D	<u> </u>													
6.25	Α	10	10	0	212	21,0	40	29		المك	7.8		7.9	448	403
	В														
	С														
	D														
12.5	Α	Ø	(0)	0	212	MP	no	2.9		43	7-8		28	479	472
	В														
	C	†		· ·											
	D														
20		10	10	0	210		4 2	0 0		LT	20		. 0	5 400	556
32	A	10	10		11,3	up	"u"	5.8		\bowtie	\mathcal{T}^{γ}		7.8	3 70	220
	В	 													
	C	<u> </u>													
	D	ļ	4.0		0			1 9		C 13			- CV	9.0 9.	000
50	Α	10	10	Δ	U,5	UP	us	29		57	1.7		*8	みらと	150
	В	-													
	С														
	D														,
10D	Α	10	10	0	21.0	20	NO	F.9		حبر	79		28	1226	1276
	В														
	С														
	D														
Technician Ini	itials			, pa	$\overline{}$	1	•	^		^	^		~	^	2
WQ Ranges: T (°		+ 2· D	O (ma/) = 3.6 to 9.4	nH = 6	to 8.5								•	
rva ranges. T	0) - 20	12, 0	o (mg/	L) = 0.0 to 0.4,	pi i o	0.0	•								
				A II 12 - 26 - 4			ſ	1-141-1	14/0					alivate al N	N/O
	Hardness'			Alkalinity*	Г	T		Initial 21,		Ad	justmer	11	· A	Adjusted V	vQ
Conc.	98	"(mg	/L as Ca	70		Temp (7							
Control (MHW)	5(0			40	1 [DO (mg	3/L)	7.0							
Highest conc.	3(0			10	' F	pH Cond (µ	IS/cm)	122							
						cona (L	10/GII)]	100		L					
Sample Description	on:			light	! يما	llow	- cl	lear							
		0715	12 A 1	+3	J										
Comments:	Batch#:		7-d prev	rious # young/broo	od: 2	KK	Day of	1st Broo	d: 9		Previous	s 7-d %	6 Mortali	ity: C)
		. 1	GU			Det	o roule	ouro d.		1	4	1.1	112		
Reviewed by:			U			vat	e revie	wed: _		-	ug.	' 1	110		

Version 1.4; Issued January 26, 2011

Nautilus Environmental

Client:	Mount Po	llev		Start Date/Time: /	Aug 2, 2012 @ 1755h
Work Order No.:	12363				Daphnia magna
				Set up by: <u>.</u>	
Sample Information	on:			Test Validity Crite	ria:
•					survival (no more than 2
Sample ID:	E7			mortalities in any co	
Sample Date:	01-Aug-1	12			
Date Received:	02-Aug-1			WQ Ranges:	
Sample Volume:	2 x 1L			$T (^{\circ}C) = 20 \pm 2; DO$	(mg/L) = 3.6 to 9.4; pH = 6 to 8.5
Test Organism In	formation:				
Broodstock No.:			071912 A	ν+ Β	
Age of young (Day	0):			4 hours	
Avg No. young per		evious 7 d:	15		
Mortality (%) in pre	evious 7 d:		0		
Days to first brood:			9		
					4
NaCl Reference T	oxicant Res	sults:			,
Reference Toxicar	nt ID:	Dm86			
Stock Solution ID:		12Na01			
Date Initiated:		25-Jul-12			
48-h LC50 (95% C	L):	4.2 (3.7 - 4.8)		g/LNaCL	
Reference Toxicar	nt Mean and	Historical Range:	4.0 (3.6 -	4.4) g/L NaC	L
Reference Toxicar			6		
	1				
Test Results:	The 48h I	LC50 is >100% (v/v)		
			L		
Payiowed by		JOh		Date revie	wod: And is / in
Reviewed by:				Date revie	weu. 74, 41

Client: Sample ID: Work Order No.:	90)	ount	Pd E7 2363	ley		- -		Start Organis	ms/v	olume:	10/2 D.mag	<u>00mL</u>	hy ?	-/12	Q 17
TOIN O'GO! INO			7 4 44			en nave a perè							び	W	
DO meter:	DO-1		-		рН	meter:		pH-1		_ (Conduc	tivity	meter:	<u>C-1</u>	
Concentration		umber		No.	Те	mpera	ture	Disso	lved c	xygen		рН		Cond	ductivity
% (٧/٧)	Live Rep	Orgar		Immobilized		(°C)		ļ.,	(mg/L	· ·			T		S/cm)
		24	48	48	0	24	48	0	24	48	0	24	48	0	48
CONTROL	Α	10	10	5	W,9	NO	21.0	8.7		£ψ	7.8		3.8	35Y	366
	В														
	С														
0.55	D					- (0	0 0				Ó A		- 1	4 0	200,000
6.25	A	10	10	2	N.O	NB	u,°	A.9		8-6	<i>ት</i> ሳ		178	418	430
	В														
	С	<u> </u>													
10.5	D	10			040	44.0	2 0	46		6.2	- B-10		7 9	NO1	O.A.
12.5	Α	110	10	<u> </u>	1017	VC,~	u,s	7.8		~7	29		Λ'	536	541
	В														
	C D														
25		10		9	212	210	140	8,9		ca	20		ገና	665	122
<u> </u>	A B	TQ.	(0		ur		и,	6.		7-1	רוכ		۴۰,	600	672
, , , , , , , , , , , , , , , , , , , ,	С														
	D														
50	A	10	10	2	21,0	3/0	MP	29		C.F	79		ጊዓ	86)	870
30	В		1,5			Lin		0 V		15,0	7		A7	001	0 90
	С														
	D														
10D	A	10	12	0	21.0	212	UP	£3		S.8	ገ ባ		29	1317	1328
	В			-											
	C														
	D														
Technician Ini	tials	۸.	h	^	And Ac	- 1	^	^		~	Z.		^	^	_
NQ Ranges: T (°			O (mg/	,	pH = 6	6 to 8.5	5				/~ ×*				1
- H	lardness'	k		Alkalinity*				Initial	WQ	A	djustmer	nt	. ,	Adjusted	WQ
Conc.		*(mg	/L as Ca	Co3)		Temp (°C)	21,							
Control (MHW)	98			70.		DO (mç	g/L)	8.							
Highest conc.	740			116		рН		<u>7</u>	3		/				
						Cond (uS/cm)	13	1,						
Sample Description	on:	^ *7 · C	712 A	yellooch b	1em	- 51	light	14 0	pag	Je				S	
Comments:	Batch#:	U41		が ち vious # young/brod	od: //		Day of	/ 1st Broo	d:	7	Previou	s 7-d %	% Morta	lity: 🖸	
Reviewed by:			JGh					ewed:				hu)		

Version 1.4; Issued January 26, 2011

Nautilus Environmental

Client: Mount Polley
W.O.#: 12363

Hardness and Alkalinity Datasheet

			Alkalinity					Hardnes	s	
Sample ID	Sample Date	Sample Volume (mL)	(mL) $0.02N$ HCL/H ₂ SO ₄ used to pH 4.5	(mL) of 0.02N HCL/H $_2$ SO $_4$ used to pH 4.2	Total Alkalinity (mg/LCaCO ₃)		Sample Volume (mL)	Volume of 0.01M EDTA Used (mL)	Total Hardness (mg/L CaCO ₃)	
٤١	August 2112	100	0.5	0.6	40		100	5.1	510	KUB
EY	1	50	4.7	4.8	92		100	5.5	550	KB
E4 E7		50	5.9	6.0	116		100	7.4	740	KUB
MHW		50	3,6	3.7	OF		50	4.9	98	res
· · · · · · · · · · · · · · · · · · ·					•					4
						1				
						1				
						İ				
<u></u>	_									,
		<u> </u>								
		Notes:	(Diluka	to 100 nc .	ı DI					
			- Diracu							
Reviewed by:			Joh		Date Revie	ewed:		Aug. 1	5/12	
					r				//-	

aut	tilus Enviro	onmental									Chain	of	Custo	dy (elect	ronic
_ Cali	fornia: 5550 Morehouse I	Drive, Suite 150, San	Diego, CA 9212	21											
	shington: 5009 Pacific Hig			424											
Briti	sh Columbia: 8664 Comr	merce Court, Burnaby	, BC, V5A 4N7										Date /	10 <u>/31/</u> 20dgt	eof
Sar	nple Collection By:	Katie McMahei	n, Colleen Hi	ıghes						Α	NALYSE	S RE	QUIRED		
		Report to:	Colleen Hu	ghes		Invoice to:	Colleen Hughes	g							Receipt Temperature (°C)
Co	mpany	Mount Polley N	Minina Corpo	ration		Same		LC50Daphnia Magna					.		L e
Ad	dress	Box 12						a	RBT				.		<u>ज</u>
	y/State/Zip	Likely BC V0L	1N0					hi	00						l ed
	ntact	Colleen Hughe)ag	LC50						<u>F</u>
Ph	one	(250) 790-2215						50	<u>ا</u>						<u>'</u> #
Em	nail	chughes@mou	intpolley.com)				17	96						l <u>ia</u>
	SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	# OF CONTAINERS	COMMENTS	48 hr							Re
1	E4	8/1/2012	11:03	water	20L	3	2L for daphnia & 40 L for RBT	х	х						5.8
2	E1	8/1/2012	9:46	water	1L	2	1L for daphnia	х							1.8
3	E7	8/1/2012		water	1L	2	1L for daphnia	х	7						1
1								N	9						
5								2%	N						
						<u> </u>		7	12						
7				+				0	ō						
<u></u>								3	3		-				
8 9								 	+-	-					
9 				-											
' -	PROJECT INFO	DRMATION	S	AMPLE REC	EIPT	RELIQUINSH	ED BY (CLIENT)	L	<u> </u>	RELIQUI	NSHED I	BY (C	OURIER)		
Cli	ent: MPMC		Total # Co		-	Signature:				Signatur					
P.0	 D. No.:		Good Con	dition?		Print: Collee	1 Hughes		-	Print:		-			
	-						ount Polley Mining Corporation			Company					
Sh	ipped Via: Greyhoı	und	Matches S	Schedule?			Aug 1, 2012 17:30	1		Time/Dat					
SP	ECIAL INSTRUCTION	ONS/COMMENT	S·			RECEIVED B				<u> </u>		ABOF	RATORY)		
		511676611111 <u>1</u> 2111	.			Signature:							Fork	•	
						Print:				Print:	_		Fra		
						Company:				Company		aut			
						Time/Date:				Time/Dat	- 7		100	0915	
											10	~/ (716	: - 11/	



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) ¹
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) 1
E4	November 15, 2012 @ 1254h	>100
E1	November 15, 2012 @ 1355h	>100
E7	November 15, 2012 @ 1339h	>100

¹ 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: Sample Date: Date Received: Sample Volume: Other:	E4 November 15/12 @ 1254 November 16/12 @ 0833 2 x 20L N/A	Test Validity Crite ≥ 90% control survival WQ Ranges: T (°C) = 15 ± 1; DO (mg	ria: g/L) = 7.0 to 10.3; pH = 5.5 to 8.5
Dilution Water:			
Type: Hardness (mg/L CaCO ₃): Alkalinity (mg/L CaCO ₃):		al Tap Water	
Test Organism Informa	ation:		
Batch No.: Source: No. Fish/Volume (L): Loading Density: Mean Length ± SD (mm	101212 Miracle Spin 10/15L 0.33): 39 ± 3		ange: 36 - 45
Mean Weight ± SD (g):	0.50 ± 0.12		ange: 0.36 - 0.73
NaNO2 Reference Toxi	cant Results:		
Reference Toxicant ID: Stock Solution ID: Date Initiated: 96-h LC50 (95% CL):	RTNt28 12Nt01 November 14/12 7.6 (6.6 - 8.6) mg/L NaNO2	2	
Reference Toxicant Mea		1 (2.9 - 9.0) mg/L NaN0 33	<u>)2</u>
Test Results: <u>Th</u>	ne 96-h LC50 is > 100% (v/v).		
Reviewed by:	Joh	Date revie	wed: Dec. 10/12

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Projects Sample I.D. W.O. # RBT Batch #: Date Collected Date Setup/Til Sample Setup	d/Tim me:		Non	Mount Polley Mining Corporation E4 12584 101212 November 15 112@ 1254 Vovember 20 112@ 0930 DBF DO-1 pH-1							on	7-d % Tota Aera Undi Pa	ber F 6 Mod I Pre- tion I	rtality aerat rate a Samp	r: ion T djust ole W	ime (6.5 ±	1 m	L/min		⊘. Y/N):	10/15 O.(30 /N): Y								
D.O. meter:				DO-1								рН			7.7					7.		7								
pH meter:		·		-). (m		9.7							10.1	-								
Cond. Meter:				C-1														Con	d. (µS	(cm)	1	265)					1268	3	
Concentration			# 5	Surviv	vors Temperat				eratui	e (°C)	Diss	olved	Oxyg	jen (n	ng/L)			рН				uctivity /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				[0	10	10	10	14.5	145		14.0	14,0	0.0				98	-	7.0		7.1	プロ	34	38						
6.25				10	10	10	10	14.5	14.5		14.0	17.0		99							7.2	2.1	138	137						
12.5				10	10	10	10	14.5	14.5	14.5	14.0	14.0	(0.1	(0.0)	9.6	9.9	99	7.2	7.3	7.3	7.2	ጉ3	225	232						
25				10	10	10	2	14.5	14.5	H.5	14.0	14.0	10.1	10.0	9.6	9.9	98	7.3	7.3	7.3	7.2	24	397	425						
50				10	10	10	10	14.5	14.5	14.5	14.0	140	10.1	10.1	9.7	10.0	9,9	7.5	7.4	7.4	7.4	26	753	758						
100				10	10	10	10	14.5	14.5	14.5	14.0	(4,0	10.1	1.01	9.7	(0.0)	9.8	7.7	7.7	7.7	7.7	7.8	1268	1271						
															,															
Initials				JBF.)BF	JBF	~	JBF	JBF	SBF	JBF	(JBF	JBF	JB1=	SBF	~	SBF	SBF	WF	JBF	~	JBF	^						
WQ Ranges: T	(°C)	= 15	± 1; [00 (m	g/L) =	7.0 t	o 10.	3; pH	= 5.5	to 8.	5																			
Sample Descri	ption/	Comr	nents	3 :		lea												.*						·						
Fish Descriptio	n at 9	6?	all					ane	inin) p	h o	h											· · · · · · · · · · · · · · · · · · ·							
Other Observa	tions:		all ranging																		· · · · · · · · · · · · · · · · · · ·									
Reviewed by:					JGL											Date	Revie	ewed:		De	e:	10/	12_							

Test Species:	Client:	Mount Pol	ley Mining Corp.		Start Date/Time: N	November 20, 2012 @ 1030h
Set up by: EMM	Work Order No.:					
Sample ID: E4					_	
Sample ID: E4						
Sample ID: E4	Sample Information	on:			Test Validity Criter	·la:
Sample Date: Nov 15/12 WQ Ranges: Date Received: 1 x 2L WQ Ranges: T (*C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5 Test Organism Information: Broodstock No.: Age of young (Day 0): Ayg No. young per brood in previous 7 d: Ayg No. young per brood in previous 7 d: Days to first brood: 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					≥ 90% mean control :	survival (no more than 2
Date Received: Nov 16/12 WQ Ranges: Sample Volume: 1 x 2L 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	Sample ID:	E4			mortalities in any co	ntrol replicate)
T (°C) = 20 ± 2; DO (mg/L) = 3.6 to 9.4; pH = 6 to 8.5	Sample Date:	Nov 15/12	2			
Days to first brood: Dm91	Date Received:	Nov 16/12	2		WQ Ranges:	
Broodstock No.: Age of young (Day 0): Avg No. young per brood in previous 7 d: Mortality (%) in previous 7 d: Days to first brood: NaCl Reference Toxicant Results: Reference Toxicant ID: Stock Solution ID: Date Initiated: Nov 20/12 48-h LC50 (95% CL): Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL	Sample Volume:	1 x 2L			$T(^{\circ}C) = 20 \pm 2$; DO	(mg/L) = 3.6 to 9.4; pH = 6 to 8.5
Broodstock No.: Age of young (Day 0): Avg No. young per brood in previous 7 d: Mortality (%) in previous 7 d: Days to first brood: NaCl Reference Toxicant Results: Reference Toxicant ID: Stock Solution ID: Date Initiated: Nov 20/12 48-h LC50 (95% CL): Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL						
Broodstock No.: Age of young (Day 0): Avg No. young per brood in previous 7 d: Mortality (%) in previous 7 d: Days to first brood: NaCl Reference Toxicant Results: Reference Toxicant ID: Stock Solution ID: Date Initiated: Nov 20/12 48-h LC50 (95% CL): Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL						
Broodstock No.: Age of young (Day 0): Avg No. young per brood in previous 7 d: Mortality (%) in previous 7 d: Days to first brood: NaCl Reference Toxicant Results: Reference Toxicant ID: Stock Solution ID: Date Initiated: Nov 20/12 48-h LC50 (95% CL): Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL	Tank Ourse law law					
Age of young (Day 0): Avg No. young per brood in previous 7 d: Mortality (%) in previous 7 d: Days to first brood: NaCI Reference Toxicant Results: Reference Toxicant ID: Stock Solution ID: Date Initiated: Nov 20/12 48-h LC50 (95% CL): Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL	l est Organism ini	rormation:				
Avg No. young per brood in previous 7 d: Mortality (%) in previous 7 d: Days to first brood: NaCl Reference Toxicant Results: Reference Toxicant ID: Stock Solution ID: Dm91 Stock Solution ID: 12Na02 Date Initiated: Nov 20/12 48-h LC50 (95% CL): Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL	Broodstock No.:			103112B		
Mortality (%) in previous 7 d: Days to first brood: NaCl Reference Toxicant Results: Reference Toxicant ID: Stock Solution ID: Dm91 Stock Solution ID: Date Initiated: Nov 20/12 48-h LC50 (95% CL): Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL	Age of young (Day	0):		< 24	hours	
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	Avg No. young per	brood in pre	vious 7 d:	24		
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	Mortality (%) in pre	vious 7 d:		0		
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	Days to first brood:			11		et e
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 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						
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	NaCl Reference T	oxicant Res	sults:			
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						
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 Toxican	t ID:	Dm91			
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	Stock Solution ID:		12Na02			
Reference Toxicant Mean and Historical Range: 4.0 (3.6 - 4.4) g/L NaCL	Date Initiated:		Nov 20/12			
	48-h LC50 (95% C	L):	4.2 (3.7 - 4.8)		g/LNaCL	
	Defense Taidean	4.845.55.55.6	Historical Danser	40.00	4.4	
Reference Toxicant CV (%): 5			Historical Range.		1.4) g/L NaC	<u>L</u>
	Reference Loxican	t CV (%):		5		
Test Results: The 48h LC50 is >100% (v/v).	Toot Populto:	Tho 49h I	CEO io >100% (v/v			
Test Results: The 48h LC50 is >100% (v/v).	rest nesults.	111 0 4 011 L	.C30 IS > 10076 (V/V	<i>)</i> ·		·
		•	· · · · · · · · · · · · · · · · · · ·			
						3
Reviewed by: Date reviewed: Dec 10/12	Reviewed hv		Jou		Date revie	wed Dec. 10/12

Client: Sample ID: Work Order No.:	Mow EY 1258	nt Pol	lley				Start Date/Time: No. Organisms/volume: 10/200mL Test Organism: D.magna Set up by: EMMY								
DO meter:	DO-1		-		pH r	meter:		pH-1	<u></u>	Conduc	ctivity	meter:	<u>C-1</u>		
Concentration	1	lumber Organ		No. Immobilized	Ter	nperat (°C)			ed oxygen g/L)		рН	H Conductiv			
% (v/v)	l Nop	24	48	48	0	24	48	0 2	24 48	0	24	48	0	48	
Control	Α	10	ib	0	20.0	20.6	19.5	8.7	8.7	7.8		7.9	350	359	
	В	1													
	С														
	D		-												
6.25	Α	10	10	0	20.0	20.0	12.5	8.6	8.7	7.9		7.9	408	408	
·	В														
	С														
	D			<u> </u>											
12.5	A	10	10	0	20.0	20.0	19.5	8.6	8.7	7.9		7.9	474	466	
1.	В								100						
	С								10000						
	D				-	1 1 1 2									
25	A	10	10	0	20.0	20.0	19.5	8.6	8.7	7.9		7.9	593	583	
	В	<u> </u>	ļ												
	C														
	D	 				0/0 5		0.7	10.00	- 0			2		
50	A	10	lo_	0	20.0	20.0	19.5	8.7	87	1.4		7.9	823	803	
	В	 													
	C D								Harrison Harrison						
100	A	10	10	0	20.0	20.0	105	8.7	ſΞ	7.8		20	1260	200	
100	В	110	10		20.0	au.	1113	8.7	0	7,0		0,0	1260	11240	
	C	1	 												
	D		<u> </u>												
Technician Ir		IMM	ŧmm	EMM	FINM	Emm	Ehm	EMM	EMM	Emm		Emm	Emm	Emm	
WQ Ranges: T (4									
	Hardness	s*		Alkalinity*	1			Initial W	VQ A	djustme	ent	T	Adjusted	WQ	
Conc.			g/L as Ca			Temp	(°C)	20.0							
Control (MHW)	100	>	<u></u>	£		DO (m	ıg/L)	8.4							
Highest conc.	500	>	74	4		рН		7.72				1_			
						Cond	(µS/cm)	1266							
Sample Descrip	tion:	_cle	or,s	ilightly C	<u>jella</u>	<u>. </u>									
Comments:	Batch#:	1031126	37-d pre	vious # young/bro	ood: 2	4	Day of	f 1st Brood		Previo	us 7-d	% Morta	ality: O		
Reviewed by:			70	le		Da	ite rev	iewed:		De	c.10	/12			

Client:	Mount Po	lley Mining Corp.		Start Date/Time:	November 20, 2012 @ 1030h
Work Order No.:	12585	,		Test Species:	Daphnia magna
				Set up by:	
				STATE OF THE STATE	
Sample Information	on:			Test Validity Crite	ria:
					survival (no more than 2
Sample ID:	<u>E1</u>			mortalities in any co	ntrol replicate)
Sample Date:	Nov 15/12			The State of	
Date Received:	Nov 16/12	2		WQ Ranges:	
Sample Volume:	1 x 2L			$T (^{\circ}C) = 20 \pm 2$; DO	(mg/L) = 3.6 to 9.4; pH = 6 to 8.5
				Colored Section 1985	General Control of the Control of th
		,			
Test Organism Inf	formation:				
Broodstock No.:			103112B		
Age of young (Day	0).			4 hours	
Avg No. young per		evious 7 d·	24	+ Hours	
Mortality (%) in pre		svious / u.	0		
Days to first brood:			11		
Days to mot brood.					
NaCl Reference T	oxicant Res	sults:			
Reference Toxican	nt ID:	Dm91			
Stock Solution ID:		12Na02			
Date Initiated:		Nov 20/12			
48-h LC50 (95% C	L):	4.2 (3.7 - 4.8)		g/LNaCL	
Reference Toxicar	t Mean and	Historical Range:	4.0 (3.6 -	4.4) g/L Na(CL
Reference Toxicar	nt CV (%):	· · · · · · · · · · · · · · · · · · ·	5		
Test Results:	The 48h	LC50 is >100% (v/\	v).		
		10.1			to 101.
Reviewed by:		Joh		Date revi	ewed: <u>Dec 10/12</u>

				40 HOUL I	OXIO	.,	J. D.								
Client:	Mov	nt Po	lley					Start	Date/	Time:	NOV	20/	12 0	J 103	0h
Sample ID:	13		· ·	,			No. C	rganis							
Work Order No.:	192	65						resi		nism: .ıp by:					
									Oct	ap by.	CIT				
DO meter:	DO-1		- -		pH r	neter:		pH-1		C	onduc	ctivity	meter:	C-1	
Concentration	•	umber		No.	Ter	nperat	ure	Dissol				рН			uctivity
	Live Rep	Orgar I	isms	Immobilized		(°C)		. ((mg/L)				(µS/cm)		
% (v/v)	кер	24	48	48	0	24	48	0	24	48	0	24	48	0	48
Control	Α	10	16	0				8.7		8.6	7.9		7.9	350	343
Control	В	10	10		20.0	a0.0	,,,,	Δ,		0.0				3.00	
	С						- 16								Hills.
	D	<u> </u>												100	1680
6.25	A	10	10	0	100	0.00	20.0	81.		8.7	19		29	410	403
0.25	В	10	10		au.0	act	20.	0.0		0.7	- 1			110	
	С														
	D										************				
12.5	A	10	10	0	200	0.00	12.5	8.7		8.8	7.9	ĕ ÷	7.9	478	476
12.0	В	1.0	10		AU.					0 11				.,,	
	С	-								10.00					9000
	D		<u> </u>												
25	A	10	10	0	20.0	20.0	19.5	8.7		8.8	7.9		7.89	603	600
20	В	1.0	1.0		J.O.		1,1,0			014			4 - 044		
	С	 	-												
	D	 													
50	A	10	10	0	20.0	20.0	19.5	8.7		87	7.9		7.8	839	818
	В	1.0	10												Million
	С														
	D														
100	Α	10	10	0	20.0	20.6	19.5	8.7		8.7	7.8		7.7	1287	1278
	В														
	С														(fileson)
	D														14454
Technician In	itials	EMM	EMM	EWW	EMM	EMM	Emm	Emm		Emm	BAM		EMM	Emm	Emm
WQ Ranges: T (-												
,	,		, , ,		•										
	Hardness	s*		Alkalinity*		€ Transfer i		Initia	I WQ	A	djustme	ent		Adjusted	WQ
Conc.		*(m	g/L as Ca			Temp	(°C)	20.0	٥						
Control (MHW)	100	>	68			DO (m			87						
Highest conc.	420	>	3-	<i>t</i>		рН			48 ^{₹m}						
						Cond	(µS/cm)	138	7						
Sample Descript	tion:	_cle	or,	slightly L	pelle	<u> </u>									
Comments:	Batch#:			evious # young/bro			Day of	f 1st Bro	od: (1	Previo	us 7-d	% Morta	ality: C	>
Reviewed by:	-		9	Oh		_ Da	ate rev	iewed:		ل ا)ce	10/	12		

Client:	Mount Pol	ley Mining Corp.		Start Da	ate/Time: No	ovember 20, 2012 @ 1030h
Work Order No.:	12585				Species:	Daphnia magna
					Set up by: El	
Sample Information	n:			Test Val	idity Criteria	a:
•				≥ 90% me	an control su	ırvival (no more than 2
Sample ID:	E7		<u> </u>			trol replicate)
Sample Date:	Nov 15/12	2				
Date Received:	Nov 16/12			WQ Ran	ges:	
Sample Volume:	1 x 2L			T (°C) = :	20 ± 2; DO (n	ng/L) = 3.6 to 9.4; pH = 6 to 8.5
Test Organism Info	ormation:					
Broodstock No.:			103112B			
Age of young (Day 0)):		< 24	hours	,	
Avg No. young per b	prood in pre	vious 7 d:	24			
Mortality (%) in prev	rious 7 d:		0			
Days to first brood:			11			
NaCl Reference To	xicant Res	ults:				
Reference Toxicant	ID:	Dm91				
Stock Solution ID:		12Na02		<u> </u>	- ,	
Date Initiated:		Nov 20/12				
48-h LC50 (95% CL):	4.2 (3.7 - 4.8)		g/LNaCL	······	
Reference Toxicant	Mean and I	Historical Range:	4.0 (3.6 - 4	1.4)	g/L NaCL	
Reference Toxicant	CV (%):		5			
Test Results:	The 48h L	.C50 is >100% (v/v)			
,		·				
	· .	Joh				Jee. 10/12
Reviewed by:					Date review	/ed:

Client: Sample ID: Work Order No.:	Moun F3 125				Start Date/Time: N()V 20/12									· .		
DO meter:	DO-1	· · · · · · · · · · · · · · · · · · ·	•		pНı	meter:		pH-1		Conductivity meter: <u>C-1</u>						
Concentration	•	umber Organ		No. Immobilized	Tei	mperat (°C)	ture	Dissolved (mg			рН			uctivity S/cm)		
% (v/v)	IXEP	24	48	48	0	24	48	0 2	4 48	0	24	48	0	48		
Control	A	10	10	0	_		_	8.7	8.7	1.8		7.9	350	344		
Control	В	10	10		20.0	W	- 11 -	0	0.7				330			
	С							1000 C								
	D		-					2000								
0.05	+	10	10	0	200	00.6	OF	19	67	0.8		9.0	408	2101		
6.25	A	10	10	0	20.0	20.0	19,5	8.6	8.7	0.0		7.9	700	406		
	В	 	-	-										Establish		
	C	 				-	1000	10120000						1		
	D	12			4. 0	0		6.7		50		-	1115	40		
12.5	A	10	10	0	20.0	20.0	19.5	8.6	8.8	1.7		7.9	465	455		
	В	<u> </u>						CONTRACTOR								
	С	<u> </u>											1			
	D	<u> </u>												4.5		
25	Α	10	10	0	20.0	20.0	19.5	8.6	8.8	7.9		7.9	574	571		
	В					L							189			
	С											1				
	D							100000					1.00			
50	Α	10	10	0	20.0	20.0	195	8.6	8.8	7.9		7.9	782	762		
	В															
	С															
	D															
100	Α	10	10	0 1	E 19.5	20.0	195	8.6	8.7	7.8		8,0	1184	1136		
100	В	1.~			7,10									1,00		
	С		 										53.0			
	D						5.50			130						
Technician I		Thin	Emm	Emm	Than	Inam	Thin	Emm	EMM	amm	dinas	Thain	EMM	Emm		
WQ Ranges: T						7	77.77	// C (/////		Turir		EVIII	11 (11)	Chin		
WQ Ranges. 1	(0) - 20) I Z, D	o (mg/	(L) = 3.0 to 9.4	, рп –	0 10 0.	3									
			T		7				.							
	Hardness			Alkalinity*	-		(0.0)	Initial W	Q /	Adjustme	ent	-	Adjusted	WQ		
Conc.			g/L as C		- 100	Temp	-	19.5								
Control (MHW)	100		6		- 1	DO (m	ig/L)	7.8								
Highest conc.	conc. 560 90						(110/2		+-							
						Cond	(µS/cm)	1184				1				
Sample Descrip	otion:	ve	uan ¹	tint, clea	c . h	ЭШ	604									
		10131	2019	æ í												
Comments:	Batch#:	103112	57-d pre	evious # young/bro	ood: 2	٦	Day o	f 1st Brood:	_11	Previo	us 7-d	% Mort	ality:			

Date reviewed:

Reviewed by:

Client: <u>Mount Polley</u> W.O.#: 12585

Hardness and Alkalinity Datasheet

		-	Alkalinity			Hardness							
Sample ID	Sample Date	Sample Volume (mL)	(mL) 0.02N HCL/H ₂ SO ₄ used to pH 4.5	(mL) of 0.02N HCL/H ₂ SO ₄ used to pH 4.2	Total Alkalinity (mg/LCaCO ₃)	Sample Volume (mL)	Volume of 0.01M EDTA Used (mL)	Total Hardness (mg/L CaCO ₃)	Technicia				
67	UOU 77/17	50	4.7	4.9	90	100	5.6	560	EMM				
٤4	NUV 20/12	50	3.9	4.(74	ido	5.0	500	EMM				
13	NOV2012	50	1.8	1.9	34	100	4.2	420	Emm				
MHW	NOVZO12	1	3.5	3.6	68	50	5.0	100	Emm				
									<u> </u>				

						Anna Maria de Caracteria de Ca							
							·		Walter Committee				
to the second se					-								
			L				L.,						
		Notes:	Diluted to	100ml w/ 0	.l. water								
		40.											
Reviewed by:		10h			Date Reviewe	ed: <u>De</u>	e 10/1	<u></u>					

autilus Envir	onmenta										Ch	ain	of	Cus	tod	y (ele	ectror	nic
California: 5550 Morehouse	Drive, Suite 150, Sa	n Diego, CA 92	2121													Α,	. 1 -	
Washington: 5009 Pacific Hi																1001	13/12	10
British Columbia: 8664 Com	merce Court, Burnat	by, BC, V5A 4N	17								Date 31/10/2011 of							
Sample Collection By:	Katie McMahe	n, Colleen H	Hughes							· · · · · · · · · · · · · · · · · · ·	ANALYSES REQUIRED							
7. 	Report to:	Colleen H			Invoice to:	Colleen F	Hughes	-										Ç
Company	Mount Polley N	Mining Corn	oration		Same			ma										Receipt Temperature (°C)
Address	Box 12	viii iii g corpi	oration		Came			Magna						1				ratu
City/State/Zip	Likely BC V0L	1N0						nia										edu
Contact	Colleen Hughe							Daphnia	RBT									Ferr
Phone	(250) 790-221	5 ext 167																pt
Email	chughes@moi	untpolley.co	<u>m</u>					LC50	LC50									Scei
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	R #OF COMMENTS			48 hr I	96 hr I			. '						ď
E4	15/11/2012	12:54	water	20L	A	2L for da	phnia & 40 L for RBT	х	Х					1.				2.6
E1	15/11/2012	13:55	water	1L	2	2	L for daphnia	X										
E7	15/11/2012	13:39	water	1L	2	х												
		The state of the s							7									
						1		20	28							-1		
						1.		5	2		3							
		1						2	-:	1.5			-					
						11.		Ö	9					- " ,				
								3	3									
PROJECT INFO	RMATION	SA	MPLE REC	EIPT	RELIQUINS	HED BY (C	LIENT)			RELI	QUINS	SHED	BY (COU	RIER)			
Client: MPMC		Total # Co	ntainers:	41	Signature:				ì	Sign	ature:							
P.O. No.:		Good Con	ndition?		Print: Collee	n Hughes	1			Print	:			. 44.				
Shipped Via: Greyhou	und	Matches S	Schedule?		Company: N	lount Poll	ey Mining Corporati	on		Com	pany:			•				
ompped via. Greynor		Matorico					r 15, 2012 17:30				/Date:							
SPECIAL INSTRUCTION	ONS/COMMEN	TS:			RECEIVED BY (COURIER) RE					RECEIVED BY (LABORATORY)								
				Signature: Sig						Signature: Wal Fax								
				Print: Prir						Print: Jacob Frank								
White the state of				Company: Cor						Company: Nautius								
												ime/Date: 1 by 1 6/17 0 0 8 33						