

From: [Hoffman, Al MEM:EX](#)
To: [Narynski, Heather M MEM:EX](#); [Hupman, C Bruce MEM:EX](#); [Warnock, George MEM:EX](#); [Thorpe, Rolly MEM:EX](#); [Booth, Richard MEM:EX](#); [Koncohrada, Karen MEM:EX](#); [Howe, Diane J MEM:EX](#); [Demchuk, Tania MEM:EX](#); [Bellefontaine, Kim MEM:EX](#); [Thorpe, Rolly MEM:EX](#); [Wagar, Kathie L MEM:EX](#); [Cullen, Heather J MEM:EX](#); [Rollo, Andrew MEM:EX](#); [Nakatsuka, Caroline M MEM:EX](#); [Kuppers, Haley MEM:EX](#); [Brody, Margo X MEM:EX](#)
Cc: [Rothman, Stephen MEM:EX](#)
Subject: Tailings Dam Breach Mount Polley
Date: Monday, August 4, 2014 9:14:09 AM

A tailings dam breach occurred at Mount Polley earlier this morning. Steve Rothman and George Warnock are on their way to investigate.

I will update you when I can.

Al Hoffman



MOUNT POLLEY MINING CORPORATION

A DIVISION OF IMPERIAL METALS CORPORATION

August 7, 2014

Steve Rothman, P.Eng
Senior Inspector of Mines – Health and Safety
Ministry of Energy and Mines
441 Columbia Street
Kamloops, B.C
V2C 2T3

Dear Mr. Rothman:

RE: Notice of Work (Polley Lake) – Tailings Breach Remediation

As requested by the Ministry of Energy and Mines (MEM) in an onsite meeting held with Mount Polley Mining Corporation (MPMC), AMEC and BGC Engineering (BGC) on August 6th, 2014 regarding the tailings storage facility (TSF) breach remediation planning, please find below an outline of the work planned by MPMC in reducing the artificially high level of water in Polley Lake caused by a plug of the main outlet by tailings debris.

This plan has been developed in coordination with AMEC and BGC. The work will consist of reducing the raised water level of Polley Lake back to original stable levels. The pumped water will be discharged back into Hazeltine Creek downstream of the tailings material deposit at the outflow at the south of Polley Lake into Hazeltine Creek. Pumping infrastructure will be installed at the terminus of Polley Lake Road and conveyed by pipeline to the discharge location. Please see Figure 1 below depicting the proposed area of construction.



Figure 1 – Upstream Dyke



**MOUNT POLLEY MINING
CORPORATION**
A DIVISION OF IMPERIAL METALS CORPORATION

Work is to commence immediately on this project, and updates will be provided to MEM as per regularly scheduled meetings.

Should you have any questions, please do not hesitate to contact me at (250) 790-2215 ext. 2600.

Sincerely,

Dale Reimer, Mine Manager
Mount Polley Mining Corporation
DReimer@MountPolley.com

Reviewed and Endorsed:

Iain Bruce, Chief Technical Officer
BGC

Steve Rice, Principal Engineer
AMEC

Cc. George Warnock, Heather Narynski, Brian Kynoch, Art Frye, Luke Moger, Ryan Brown, Steve Rice, Iain Bruce, Daryl Dufault

From: [Rothman, Stephen MEM:EX](#)
To: [Thorpe, Rolly MEM:EX](#); [Hoffman, Al MEM:EX](#); [Kuppers, Haley MEM:EX](#)
Subject: Fwd: Polley Lake - Tailings Breach Remediation
Date: Thursday, August 7, 2014 1:56:31 PM
Attachments: image001.png
ATT00001.htm
Notice of Work (Polley Lake) - Tailings Breach Remediation - 2014 08 06.pdf
ATT00002.htm

Sent from my iPhone

Begin forwarded message:

From: "Luke Moger" <lmoger@mountpolley.com>
To: "Rothman, Stephen MEM:EX" <Stephen.Rothman@gov.bc.ca>
Cc: "Warnock, George MEM:EX" <George.Warnock@gov.bc.ca>, "Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca>, "Brian Kynoch" <bkynoch@imperialmetals.com>, "Dale Reimer" <dreimer@mountpolley.com>, "Art Frye" <afrye@mountpolley.com>, "Ryan Brown" <rbrown@mountpolley.com>, "Steve.Rice@Amec.com" <Steve.Rice@Amec.com>, "ibruce@bgcengineering.com" <ibruce@bgcengineering.com>, "Daryl Dufault" <DDufault@bgcengineering.ca>
Subject: Polley Lake - Tailings Breach Remediation

Steve;

As per our conversation yesterday, please find attached a document from Dale Reimer, General Manager of MPMC, endorsed by AMEC and BGC, outlining the work MPMC will be undertaking in the reduction of the water level in Polley Lake.

Kindest Regards,

Luke

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To: [Hoffman, AI MEM:EX](#); [Thorpe, Rolly MEM:EX](#); [Kuppers, Haley MEM:EX](#)
Subject: Fwd: Polley Lake - Tailings Breach Remediation
Date: Thursday, August 7, 2014 1:57:54 PM
Attachments: image001.png
ATT00001.htm
Notice of Work (Polley Lake) - Tailings Breach Remediation - 2014 08 06.pdf
ATT00002.htm

Sent from my iPhone

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Cc: "Warnock, George MEM:EX" <George.Warnock@gov.bc.ca>, "Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca>, "Brian Kynoch" <bkynoch@imperialmetals.com>, "Dale Reimer" <dreimer@mountpolley.com>, "Art Frye" <afrye@mountpolley.com>, "Ryan Brown" <rbrown@mountpolley.com>, "Steve.Rice@Amec.com" <Steve.Rice@Amec.com>, "ibruce@bgcengineering.com" <ibruce@bgcengineering.com>, "Daryl Dufault" <DDufault@bgcengineering.ca>
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From: [Hoffman, Al MEM:EX](#)
To: [Demchuk, Tania MEM:EX](#); [Bellefontaine, Kim EMPR:EX \(Kim.Bellefontaine@gov.bc.ca\)](#); [Thorpe, Rolly MEM:EX](#); [Kuppers, Haley MEM:EX](#); [Howe, Diane J EMPR:EX \(Diane.Howe@gov.bc.ca\)](#)
Subject: FW: Polley Lake - Tailings Breach Remediation
Date: Thursday, August 7, 2014 4:35:00 PM
Attachments: image001.png
ATT00001.htm
Notice of Work (Polley Lake) - Tailings Breach Remediation - 2014 08 06.pdf
ATT00002.htm

Whats your opinion of this? Need to talk about it.

From: Rothman, Stephen MEM:EX
Sent: Thursday, August 7, 2014 1:57 PM
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Subject: Fwd: Polley Lake - Tailings Breach Remediation

Sent from my iPhone

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Kindest Regards,

Luke

From: [Bellefontaine, Kim MEM:EX](#)
To: [Hoffman, Al MEM:EX](#)
Subject: Fwd: Polley Lake - Tailings Breach Remediation
Date: Thursday, August 7, 2014 9:50:02 PM
Attachments: image001.png
ATT00001.htm
ATT00002.htm

Kim Bellefontaine, M.Sc., P.Geo.
Manager Environmental Geoscience and Permitting
BC Ministry of Energy & Mines
250-952-0489
Kim.Bellefontaine@gov.bc.ca

Begin forwarded message:

From: "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca>
To: "Demchuk, Tania MEM:EX" <Tania.Demchuk@gov.bc.ca>, "Bellefontaine, Kim MEM:EX" <Kim.Bellefontaine@gov.bc.ca>, "Thorpe, Rolly MEM:EX" <Rolly.Thorpe@gov.bc.ca>, "Kuppers, Haley MEM:EX" <Haley.Kuppers@gov.bc.ca>, "Howe, Diane J MEM:EX" <Diane.Howe@gov.bc.ca>
Subject: FW: Polley Lake - Tailings Breach Remediation

Whats your opinion of this? Need to talk about it.

From: Rothman, Stephen MEM:EX
Sent: Thursday, August 7, 2014 1:57 PM
To: Hoffman, Al MEM:EX; Thorpe, Rolly MEM:EX; Kuppers, Haley MEM:EX
Subject: Fwd: Polley Lake - Tailings Breach Remediation

Sent from my iPhone

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Cc: "Warnock, George MEM:EX" <George.Warnock@gov.bc.ca<<mailto:George.Warnock@gov.bc.ca>>>, "Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca<<mailto:Heather.Narynski@gov.bc.ca>>>, "Brian Kynoch" <bkynoch@imperialmetals.com<<mailto:bkynoch@imperialmetals.com>>>, "Dale Reimer" <dreimer@mountpolley.com<<mailto:dreimer@mountpolley.com>>>, "Art Frye" <afrye@mountpolley.com<<mailto:afrye@mountpolley.com>>>, "Ryan Brown" <rbrown@mountpolley.com<<mailto:rbrown@mountpolley.com>>>, "Steve.Rice@Amec.com" <<mailto:Steve.Rice@Amec.com>>>, <Steve.Rice@Amec.com<<mailto:Steve.Rice@Amec.com>>>, "ibruce@bgcengineering.com" <<mailto:ibruce@bgcengineering.com>>>

<ibruce@bgcengineering.com<<mailto:ibruce@bgcengineering.com>>>, "Daryl Dufault"

<DDufault@bgcengineering.ca<<mailto:DDufault@bgcengineering.ca>>>

Subject: Polley Lake - Tailings Breach Remediation

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Kindest Regards,

Luke

From: [Demchuk, Tania MEM:EX](#)
To: [Hoffman, Al MEM:EX](#)
Subject: FW: Polley Lake - Tailings Breach Remediation
Date: Friday, August 8, 2014 2:18:49 PM

For response to DM - no difference in the yellow line on the figure. All represents pipe layout.

-----Original Message-----

From: Luke Moger [<mailto:lmoger@mountpolley.com>]
Sent: Friday, August 8, 2014 2:04 PM
To: Demchuk, Tania MEM:EX; Jack Love
Cc: Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation

Hi Tania;

No difference; all is the pipe layout.

Regards,

Luke Moger, PMP
Project Engineer, Mining Operations
Mount Polley Mining Corporation

Tel: +1 (250) 790-2215 ext. 2113
Fax: +1 (250) 790-2613
Email: LMoger@MountPolley.com

-----Original Message-----

From: Demchuk, Tania MEM:EX [<mailto:Tania.Demchuk@gov.bc.ca>]
Sent: August-08-14 11:10 AM
To: Jack Love
Cc: Luke Moger; Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX
Subject: Re: Polley Lake - Tailings Breach Remediation

Understood, when you can would be great!

Tania Demchuk, MSc, GIT
Sr Environmental Geoscientist
Ministry of Energy and Mines
(250) 952-0417

From my mobile device

On Aug 8, 2014, at 11:07 AM, "Jack Love" <JLove@imperialmetals.com<<mailto:JLove@imperialmetals.com>>>>
wrote:

Still trying to find out

Luke is on the run a bit today we may have to wait for his response.

Luke dashed vs solid yellow line

JL

From: Demchuk, Tania MEM:EX [<mailto:Tania.Demchuk@gov.bc.ca>]
Sent: Friday, August 08, 2014 9:39 AM
To: Jack Love; Luke Moger
Cc: Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation

Thank-you!

Can you tell us the difference between the solid and dashed parts of the yellow line? We're being asked.

Tania

From: Jack Love [<mailto:JLove@imperialmetals.com>]
Sent: Friday, August 8, 2014 9:36 AM
To: Demchuk, Tania MEM:EX; Luke Moger
Cc: Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation

Hi Tania,

Here it is

Jack

From: Demchuk, Tania MEM:EX [<mailto:Tania.Demchuk@gov.bc.ca>]
Sent: Friday, August 08, 2014 8:31 AM
To: Luke Moger; Jack Love
Cc: Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation
Importance: High

Hi Both,

Could one of you please send us a standalone file of Figure 1 – the Figure showing the plan?
I know you are very busy – if you could send as soon as possible that would be appreciated!

Thank-you,
Tania

From: Hoffman, Al MEM:EX
Sent: Thursday, August 7, 2014 9:58 PM
To: Haslam, David GCPE:EX
Cc: Amann-Blake, Nathaniel MEM:EX; Narynski, Heather M MEM:EX; Demchuk, Tania MEM:EX; Bellefontaine, Kim MEM:EX; Koncohrada, Karen MEM:EX
Subject: FW: Polley Lake - Tailings Breach Remediation

This is the mine's plan to lower the level in Polley Lake. I have drafted a letter indicating that I have received it and that I consider it emergency work.

Al

From: Rothman, Stephen MEM:EX
Sent: Thursday, August 7, 2014 1:55 PM
To: Thorpe, Rolly MEM:EX; Hoffman, Al MEM:EX; Koppers, Haley MEM:EX
Subject: Fwd: Polley Lake - Tailings Breach Remediation

Sent from my iPhone

Begin forwarded message:

From: "Luke Moger" <lmoger@mountpolley.com<<mailto:lmoger@mountpolley.com>>>
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Subject: Polley Lake - Tailings Breach Remediation Steve;

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Kindest Regards,

Luke

From: [Demchuk, Tania MEM:EX](#)
To: [Hoffman, AI MEM:EX](#); [Nikolejsin, Dave MEM:EX](#); [Morel, David P MEM:EX](#)
Cc: [Bellefontaine, Kim MEM:EX](#); [Amann-Blake, Nathaniel MEM:EX](#); [Narynski, Heather M MEM:EX](#)
Subject: RE: Polley Lake - Tailings Breach Remediation
Date: Friday, August 8, 2014 2:25:27 PM

The yellow line on the figure represents the pipeline route. No difference between the solid and the dashed. This was confirmed by the company.

Tania

From: Hoffman, AI MEM:EX
Sent: Friday, August 8, 2014 9:47 AM
To: Nikolejsin, Dave MEM:EX; Morel, David P MEM:EX
Cc: Bellefontaine, Kim MEM:EX; Demchuk, Tania MEM:EX; Amann-Blake, Nathaniel MEM:EX; Narynski, Heather M MEM:EX
Subject: FW: Polley Lake - Tailings Breach Remediation

Dave

This is a better photo showing the location of the proposed pipeline. Note the satellite image that had to be used was taken before the dam breached.

AI Hoffman

From: Jack Love [<mailto:JLove@imperialmetals.com>]
Sent: Friday, August 8, 2014 9:36 AM
To: Demchuk, Tania MEM:EX; Luke Moger
Cc: Hoffman, AI MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation

Hi Tania,

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Cc: Hoffman, AI MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation
Importance: High

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Thank-you,

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To: Haslam, David GCPE:EX
Cc: Amann-Blake, Nathaniel MEM:EX; Narynski, Heather M MEM:EX; Demchuk, Tania MEM:EX; Bellefontaine, Kim MEM:EX; Koncohrada, Karen MEM:EX
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Kindest Regards,

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To: [Jack Love](#)
Cc: [Luke Moger](#); [Hoffman, Al MEM:EX](#); [Bellefontaine, Kim MEM:EX](#)
Subject: Re: Polley Lake - Tailings Breach Remediation
Date: Friday, August 8, 2014 6:21:01 PM

Thanks!

Tania Demchuk, MSc, GIT
Sr Environmental Geoscientist
Ministry of Energy and Mines
(250) 952-0417

From my mobile device

> On Aug 8, 2014, at 6:18 PM, "Jack Love" <JLove@imperialmetals.com> wrote:

>

>

> Hi Tania

> Luke Indicated there is no difference in the proposed infrastructure for the two different line types.

>

> Regards,

> Jack

>

> -----Original Message-----

> From: Demchuk, Tania MEM:EX [<mailto:Tania.Demchuk@gov.bc.ca>]

> Sent: Friday, August 08, 2014 11:10 AM

> To: Jack Love

> Cc: Luke Moger; Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX

> Subject: Re: Polley Lake - Tailings Breach Remediation

>

> Understood, when you can would be great!

>

> Tania Demchuk, MSc, GIT

> Sr Environmental Geoscientist

> Ministry of Energy and Mines

> (250) 952-0417

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> From my mobile device

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> wrote:

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> Still trying to find out

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> Luke dashed vs solid yellow line

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> To: Jack Love; Luke Moger

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> Subject: RE: Polley Lake - Tailings Breach Remediation
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> Thank-you!
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> Tania
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Bellefontaine, Kim MEM:EX; Koncohrada, Karen MEM:EX
> Subject: FW: Polley Lake - Tailings Breach Remediation
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"Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca<<mailto:Heather.Narynski@gov.bc.ca>>>, "Brian Kynoch" <bkynoch@imperialmetals.com<<mailto:bkynoch@imperialmetals.com>>>, "Dale Reimer" <dreimer@mountpolley.com<<mailto:dreimer@mountpolley.com>>>, "Art Frye" <afrye@mountpolley.com<<mailto:afrye@mountpolley.com>>>, "Ryan Brown" <rbrown@mountpolley.com<<mailto:rbrown@mountpolley.com>>>, "Steve.Rice@Amec.com<<mailto:Steve.Rice@Amec.com>>" <Steve.Rice@Amec.com<<mailto:Steve.Rice@Amec.com>>>, "ibruce@bgcengineering.com<<mailto:ibruce@bgcengineering.com>>" <ibruce@bgcengineering.com<<mailto:ibruce@bgcengineering.com>>>, "Daryl Dufault" <DDufault@bgcengineering.ca<<mailto:DDufault@bgcengineering.ca>>>>
> Subject: Polley Lake - Tailings Breach Remediation Steve;
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Cc: [Morel, David P MEM:EX](#); [Demchuk, Tania MEM:EX](#); [Bellefontaine, Kim MEM:EX](#)
Subject: RE: Polley Lake - Tailings Breach Remediation
Date: Friday, August 8, 2014 8:57:00 AM

We are going to obtain a better drawing from the company.

From: Nikolejsin, Dave MEM:EX
Sent: Friday, August 8, 2014 7:59 AM
To: Koncohrada, Karen MEM:EX; Hoffman, Al MEM:EX
Subject: Re: Polley Lake - Tailings Breach Remediation

Thanks.

Can someone tell me the difference between the solid yellow line depicting the pipeline route, and the dashed line?

Also - can you confirm moe has seen this and are in agreement that the discharge point will NOT increase contamination in Quesnel lake?

Thanks.

Dave Nikolejsin
Deputy Minister
Energy and Mines

On Aug 8, 2014, at 5:41 AM, "Koncohrada, Karen MEM:EX" <Karen.Koncohrada@gov.bc.ca> wrote:

FYI

Begin forwarded message:

From: "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca>
To: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Cc: "Amann-Blake, Nathaniel MEM:EX" <Nathaniel.Amann-Blake@gov.bc.ca>, "Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca>, "Demchuk, Tania MEM:EX" <Tania.Demchuk@gov.bc.ca>, "Bellefontaine, Kim MEM:EX" <Kim.Bellefontaine@gov.bc.ca>, "Koncohrada, Karen MEM:EX" <Karen.Koncohrada@gov.bc.ca>
Subject: FW: Polley Lake - Tailings Breach Remediation

This is the mine's plan to lower the level in Polley Lake. I have drafted a letter indicating that I have received it and that I consider it emergency work.

Al

From: Rothman, Stephen MEM:EX
Sent: Thursday, August 7, 2014 1:55 PM
To: Thorpe, Rolly MEM:EX; Hoffman, Al MEM:EX; Koppers, Haley MEM:EX
Subject: Fwd: Polley Lake - Tailings Breach Remediation

Sent from my iPhone

Begin forwarded message:

From: "Luke Moger" <lmoger@mountpolley.com>
To: "Rothman, Stephen MEM:EX"
<Stephen.Rothman@gov.bc.ca>
Cc: "Warnock, George MEM:EX"
<George.Warnock@gov.bc.ca>, "Narynski, Heather M
MEM:EX" <Heather.Narynski@gov.bc.ca>, "Brian Kynoch"
<bkynoch@imperialmetals.com>, "Dale Reimer"
<dreimer@mountpolley.com>, "Art Frye"
<afrye@mountpolley.com>, "Ryan Brown"
<rbrown@mountpolley.com>, "Steve.Rice@Amec.com"
<Steve.Rice@Amec.com>, "ibruce@bgcengineering.com"
<ibruce@bgcengineering.com>, "Daryl Dufault"
<DDufault@bgcengineering.ca>
Subject: Polley Lake - Tailings Breach Remediation

Steve;

As per our conversation yesterday, please find attached a document from Dale Reimer, General Manager of MPMC, endorsed by AMEC and BGC, outlining the work MPMC will be undertaking in the reduction of the water level in Polley Lake.

Kindest Regards,

Luke

Direct: +1 (250) 790-2215 ext. 2113

Fax: +1 (250) 790-2613

E-mail: LMoger@MountPolley.com

From: [Demchuk, Tania MEM:EX](#)
To: [Hoffman, Al MEM:EX](#)
Subject: Out of Office: Polley Lake - Tailings Breach Remediation
Date: Friday, August 8, 2014 8:57:19 AM

Thank you for your email. I am currently unable to respond to all emails and information requests as we are dealing with aspects of the Mount Polley tailings breach. I will get back to you as soon as possible.

Tania Demchuk, MSc, GIT
Senior Environmental Geoscientist
Ministry of Energy and Mines

From: [Brody, Margo X MEM:EX](#)
To: [dreimer@mountpolley.com](#); [bkynoch@imperialmetals.com](#); [afrye@mountpolley.com](#); [rbrown@mountpolley.com](#); [Steve.Rice@Amec.com](#); [lbruce@bgcengineering.com](#); [DDufault@bgcengineering.ca](#); [lmoger@mountpolley.com](#); [jlove@imperialmetals.com](#); [dparsons@imperialmetals.com](#)
Cc: [Hoffman, Al MEM:EX](#); [Musgrove, Kate MEM:EX](#); [Morel, David P MEM:EX](#); [Howe, Diane J MEM:EX](#); [Booth, Richard MEM:EX](#); [Thorpe, Rolly MEM:EX](#); [Narynski, Heather M MEM:EX](#); [Rothman, Stephen MEM:EX](#); [Demchuk, Tania MEM:EX](#); [Bellefontaine, Kim MEM:EX](#); [Warnock, George MEM:EX](#); [Bunce, Hubert ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Subject: August 8 2014 Tailings Breach Remediation at Mount Polley
Date: Friday, August 8, 2014 9:17:09 AM
Attachments: Mount Polley August 8 2014.pdf

Hello Mr. Reimer,

Please find enclosed in the attachment a letter from the Chief Inspector regarding Tailings Breach Remediation.

The signed paper copy will be in today's mail to you today. Please let me know if you are unable to open the attachment.

Thank you,

Margo Brody

Branch Coordinator

Health, Safety and Permitting Branch

Ministry of Energy and Mines

250 952 0793

From: [Hoffman, Al MEM:EX](#)
To: [Nikolejsin, Dave MEM:EX](#); [Koncohrada, Karen MEM:EX](#)
Cc: [David.Morel@gov.bc.ca](#); [Demchuk, Tania MEM:EX](#); [Bellefontaine, Kim EMPR:EX \(Kim.Bellefontaine@gov.bc.ca\)](#); [Howe, Diane J EMPR:EX \(Diane.Howe@gov.bc.ca\)](#); [Amann-Blake, Nathaniel MEM:EX](#)
Subject: RE: Polley Lake - Tailings Breach Remediation
Date: Friday, August 8, 2014 9:21:00 AM

Dave I missed the second question.

MOE is aware of the plan to discharge to Hazeltine Creek. No one is able to confirm that the discharge will not increase contamination to Quesnel Lake; however, to be clear these efforts are to ensure that the plug of tailings at the end of Polley Lake does not fail and cause further large volumes of tailings and supernatant to be released.

Al

From: Nikolejsin, Dave MEM:EX
Sent: Friday, August 8, 2014 7:59 AM
To: Koncohrada, Karen MEM:EX; Hoffman, Al MEM:EX
Subject: Re: Polley Lake - Tailings Breach Remediation

Thanks.

Can someone tell me the difference between the solid yellow line depicting the pipeline route, and the dashed line?

Also - can you confirm moe has seen this and are in agreement that the discharge point will NOT increase contamination in Quesnel lake?

Thanks.

Dave Nikolejsin
Deputy Minister
Energy and Mines

On Aug 8, 2014, at 5:41 AM, "Koncohrada, Karen MEM:EX" <Karen.Koncohrada@gov.bc.ca> wrote:

FYI

Begin forwarded message:

From: "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca>
To: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Cc: "Amann-Blake, Nathaniel MEM:EX" <Nathaniel.Amann-Blake@gov.bc.ca>, "Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca>, "Demchuk, Tania MEM:EX" <Tania.Demchuk@gov.bc.ca>, "Bellefontaine, Kim MEM:EX" <Kim.Bellefontaine@gov.bc.ca>, "Koncohrada, Karen MEM:EX" <Karen.Koncohrada@gov.bc.ca>
Subject: FW: Polley Lake - Tailings Breach Remediation

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AI

From: Rothman, Stephen MEM:EX
Sent: Thursday, August 7, 2014 1:55 PM
To: Thorpe, Rolly MEM:EX; Hoffman, AI MEM:EX; Kupperts, Haley MEM:EX
Subject: Fwd: Polley Lake - Tailings Breach Remediation

Sent from my iPhone

Begin forwarded message:

From: "Luke Moger" <lmoger@mountpolley.com>
To: "Rothman, Stephen MEM:EX" <Stephen.Rothman@gov.bc.ca>
Cc: "Warnock, George MEM:EX" <George.Warnock@gov.bc.ca>, "Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca>, "Brian Kynoch" <bkynoch@imperialmetals.com>, "Dale Reimer" <dreimer@mountpolley.com>, "Art Frye" <afrye@mountpolley.com>, "Ryan Brown" <rbrown@mountpolley.com>, "Steve.Rice@Amec.com" <Steve.Rice@Amec.com>, "ibruce@bgcengineering.com" <ibruce@bgcengineering.com>, "Daryl Dufault" <DDufault@bgcengineering.ca>
Subject: Polley Lake - Tailings Breach Remediation

Steve;

As per our conversation yesterday, please find attached a document from Dale Reimer, General Manager of MPMC, endorsed by AMEC and BGC, outlining the work MPMC will be undertaking in the reduction of the water level in Polley Lake.

Kindest Regards,

Luke

Direct: +1 (250) 790-2215 ext. 2113

Fax: +1 (250) 790-2613

E-mail: LMoger@MountPolley.com



August 8, 2014

Mr. Dale Reimer
Mine Manager
Mount Polley Mining
Box 12 Likely, BC V0L 1N0

Mine: 1101163
ORCS: 19020-40

By mail and email: dreimer@mountpolley.com; bkynoch@imperialmetals.com
afrye@mountpolley.com; rbrown@mountpolley.com; Steve.Rice@Amec.com;
ibruce@bgcengineering.com; DDufault@bgcengineering.ca; Imoger@mountpolley.com
jlove@imperialmetals.com; dparsons@imperialmetals.com

Dear Mr. Reimer:

Re: Notice of Work (Polley Lake) – Tailings Breach Remediation

I am in receipt of your August 7, 2014 letter entitled “Notice of Work (Polley Lake) – Tailings Breach Remediation”. I understand this letter is to provide notification of emergency works you will be undertaking to mitigate the risk of a breach of the tailings and debris plug located in Polley Lake.

Please continue to provide me with regular updates as the work proceeds.

I also remind you of my two orders of August 7, 2014 to ensure Safe Work Procedures are in place for all work on and off the mine related to the tailings breach.

Sincerely,

Al Hoffman, P.Eng.
Chief Inspector of Mines

.../2

Cc: Mr. David Morel, Assistant Deputy Minister, MEM
Ms. Diane Howe, Deputy Chief Inspector of Mines, Permitting and Reclamation, MEM
Mr. Rolly Thorpe, Deputy Chief Inspector of Mines, Health and Safety, MEM
Ms. Heather Narynski, Senior Geotechnical Inspector, MEM
Mr. Stephen Rothman, Senior Inspector of Mines, Kamloops, MEM
Ms. Tania Demchuk, Senior Environmental Geoscientist, MEM
Mr. George Warnock, Manager, Geotechnical Engineering, MEM
Mr. Art Frye, Chief Operating Manager, Imperial Metals Corporation
Mr. Jack Love, Environmental Superintendent, Imperial Metals Corporation
Mr. Don Parsons, Chief Operating Officer, Imperial Metals Corporation
Mr. Hubert Bunce, Environmental Protection, Mining Operations Director, MOE
Ms. Gabi Matscha, Environmental Quality Section Head, Ministry of Environment
Ms. Jennifer McGuire, Executive Director, Environmental Protection Division, MOE

From: [Hoffman, Al MEM:EX](#)
To: [Nikolejsin, Dave MEM:EX](#); [David.Morel@gov.bc.ca](#)
Cc: [Bellefontaine, Kim EMPR:EX \(Kim.Bellefontaine@gov.bc.ca\)](#); [Demchuk, Tania MEM:EX](#); [Amann-Blake, Nathaniel MEM:EX](#); [Narynski, Heather M MEM:EX](#)
Subject: FW: Polley Lake - Tailings Breach Remediation
Date: Friday, August 8, 2014 9:46:00 AM
Attachments: Figure 1 Mitigation Plan V2.png

Dave

This is a better photo showing the location of the proposed pipeline. Note the satellite image that had to be used was taken before the dam breached.

Al Hoffman

From: Jack Love [mailto:JLove@imperialmetals.com]
Sent: Friday, August 8, 2014 9:36 AM
To: Demchuk, Tania MEM:EX; Luke Moger
Cc: Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation

Hi Tania,

Here it is

Jack

From: Demchuk, Tania MEM:EX [mailto:Tania.Demchuk@gov.bc.ca]
Sent: Friday, August 08, 2014 8:31 AM
To: Luke Moger; Jack Love
Cc: Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX
Subject: RE: Polley Lake - Tailings Breach Remediation
Importance: High

Hi Both,

Could one of you please send us a standalone file of Figure 1 – the Figure showing the plan?

I know you are very busy – if you could send as soon as possible that would be appreciated!

Thank-you,

Tania

From: Hoffman, Al MEM:EX
Sent: Thursday, August 7, 2014 9:58 PM
To: Haslam, David GCPE:EX
Cc: Amann-Blake, Nathaniel MEM:EX; Narynski, Heather M MEM:EX; Demchuk, Tania MEM:EX; Bellefontaine, Kim MEM:EX; Koncohrada, Karen MEM:EX
Subject: FW: Polley Lake - Tailings Breach Remediation
This is the mine's plan to lower the level in Polley Lake. I have drafted a letter indicating that I have received it and that I consider it emergency work.

Al

From: Rothman, Stephen MEM:EX
Sent: Thursday, August 7, 2014 1:55 PM
To: Thorpe, Rolly MEM:EX; Hoffman, Al MEM:EX; Kupperts, Haley MEM:EX
Subject: Fwd: Polley Lake - Tailings Breach Remediation

Sent from my iPhone

Begin forwarded message:

From: "Luke Moger" <lmoger@mountpolley.com>

To: "Rothman, Stephen MEM:EX" <Stephen.Rothman@gov.bc.ca>

Cc: "Warnock, George MEM:EX" <George.Warnock@gov.bc.ca>, "Narynski, Heather M MEM:EX" <Heather.Narynski@gov.bc.ca>, "Brian Kynoch"

<bkynoch@imperialmetals.com>, "Dale Reimer" <dreimer@mountpolley.com>, "Art

Frye" <afrye@mountpolley.com>, "Ryan Brown" <rbrown@mountpolley.com>,"

"Steve.Rice@Amec.com" <Steve.Rice@Amec.com>, "ibruce@bgcengineering.com"

<ibruce@bgcengineering.com>, "Daryl Dufault" <DDufault@bgcengineering.ca>

Subject: Polley Lake - Tailings Breach Remediation

Steve;

As per our conversation yesterday, please find attached a document from Dale Reimer, General Manager of MPMC, endorsed by AMEC and BGC, outlining the work MPMC will be undertaking in the reduction of the water level in Polley Lake.

Kindest Regards,

Luke



Polley Lake

Polley Lake Road

Hazeltine Creek

Tailings Haul Road

Proposed New Pipeline

Upstream Tailings Dyke

TSF

EMALS_Part 8 Page 44 of 400



From: [Counce, Cassandra ENV:EX](#)
To: [Kuppers, Haley MEM:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [Epps, Deb ENV:EX](#); [Hoffman, Al MEM:EX](#); [Thorpe, Rolly MEM:EX](#); [Rothman, Stephen MEM:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Metcalf, Shelley ENV:EX](#); [Miller, Lana L ENV:EX](#)
Subject: Re: Tailings Sample
Date: Saturday, August 9, 2014 10:04:33 PM

Hi Haley

Leave them at the front desk. We'll arrange to pick them up.

Thanks for trying!

Cassandra

> On Aug 9, 2014, at 9:17 PM, "Kuppers, Haley MEM:EX" <Haley.Kuppers@gov.bc.ca> wrote:
>
> Hi Jennifer,
>
> Unfortunately Rolly Thorpe and Myself were unable to collect samples from the requested areas with the sample containers you provided us on Thursday on arrival at the Williams Lake airport. The locations suggested were considered unstable/unsafe on Friday when we investigated the area of the breach.
>
> We will be leaving Williams Lake around 8:30 am tomorrow, heading back to Victoria. We currently have the cooler with sampling containers as well as MOE satellite phone that we would like to give back. We would be happy to drop them off if you provide a location/address, alternatively we could leave them with hotel front desk (Best Western). Please let me know what you prefer. I will give you a call in the morning to follow up.
>
> Thanks,
>
> Haley Kuppers
> Inspector of Mines
> Ministry of Energy and Mines
> 778-677-0624
>
> Sent from my iPhone
>
>> On Aug 9, 2014, at 10:45 AM, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca> wrote:
>>
>> Agreed - i believe the company has some sample results posted which characterize the tailings.
>>
>> -----Original Message-----
>> From: Epps, Deb ENV:EX
>> Sent: Saturday, August 9, 2014 10:44 AM
>> To: McGuire, Jennifer ENV:EX; Hoffman, Al MEM:EX
>> Cc: Thorpe, Rolly MEM:EX; Rothman, Stephen MEM:EX; Kuppers, Haley MEM:EX; Counce, Cassandra ENV:EX; Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX
>> Subject: RE: Tailings Sample
>>
>> I think it is really important for MEM/MOE to get a sediment sample from both the area below the breach, and from Hazeltine creek itself. Especially since they may be discharging from Polley lake later today or tomorrow. We currently do not have this info. I am contacting Jack to see if we can at a minimum work out an arrangement for collecting samples at the mouth early this afternoon. And I wonder about getting samples from the breached area.
>>
>> Deb
>>

>> Deborah Epps, M.Sc., RPBio.
>> Section Head, Provincial Water Quality
>> Ministry of Environment
>> 2080A Labieux Road
>> Nanaimo, BC V9T 6J9
>> Phone: (250) 751-3146
>> Email: Deb.Epps@gov.bc.ca

>>
>>

>> -----Original Message-----

>> From: McGuire, Jennifer ENV:EX
>> Sent: Friday, August 8, 2014 10:34 PM
>> To: Hoffman, Al MEM:EX
>> Cc: Thorpe, Rolly MEM:EX; Rothman, Stephen MEM:EX; Koppers, Haley MEM:EX; Caunce, Cassandra ENV:EX; Zacharias-Homer, Christa ENV:EX; Epps, Deb ENV:EX; Metcalfe, Shelley ENV:EX
>> Subject: Re: Tailings Sample

>>

>> thank you - pls let either Deb Epps or Shelley Metcalfe know and we can get you the appropriate sample containers.

>>

>> Sent from my iPad

>>

>>> On Aug 7, 2014, at 2:33 PM, "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca> wrote:

>>>

>>> Jennifer

>>>

>>> We could take samples when it is safe to do so.

>>>

>>> -----Original Message-----

>>> From: Thorpe, Rolly MEM:EX
>>> Sent: Thursday, August 7, 2014 2:25 PM
>>> To: McGuire, Jennifer ENV:EX
>>> Cc: Rothman, Stephen MEM:EX; Koppers, Haley MEM:EX; Hoffman, Al MEM:EX
>>> Subject: Tailings Sample

>>>

>>> Jennifer: Steve Rothman passed on the sample bottles to me this morning. I have a concern about the samples, as we cannot access the area below the breach as it is unstable. Also, it would be impossible to get a representative sample as the slimes have washed away, leaving only the coarse sand portion. If a non-representative sample is analyzed, the results would be misleading. I believe the mine has records of the tailings going into the pond over time. I would think these sample results would be more representative. Regards, Rolly

>>>

>>> Sent from my iPhone

From: [Alan Day](#)
To: [Demchuk, Tania MEM:EX](#); [Bellefontaine, Kim MEM:EX](#); [Hoffman, Al MEM:EX](#)
Subject: Tailings discharge sediments mix with the Polley Lake Discharge water
Date: Monday, August 11, 2014 8:30:42 PM
Attachments: photo.JPG



Sent from my iPad
Alan Day
Health and Safety Inspector of Mines
Ministry of Energy And Mines
250-893-9543 cell
250-565-6131 office



From: [Hupman, C Bruce MEM:EX](#)
To: [Adams, Rick MEM:EX](#); [Renfrew, Kristin MEM:EX](#); [Spear, Ashley MEM:EX](#); [Charles, Tom MEM:EX](#); [Feldinger, Grant M MEM:EX](#); [Hoffman, Al MEM:EX](#); [Hart, Ann MEM:EX](#); [Britton, Jim MEM:EX](#)
Subject: Mount Polley tailings pond situation update
Date: Tuesday, August 12, 2014 10:02:40 AM
Attachments: image001.gif

Mount Polley tailings pond situation update



WILLIAMS LAKE - Government and Cariboo Regional District (CRD) officials continue to work together to address the breach at the Mount Polley tailings pond, to test the local drinking water to determine if it is safe for locals to drink or bathe in, and to help ensure the safety and well-being of local residents.

This factsheet will be updated daily with the latest information available.

New today:

1. Independent Ministry of Environment sample results from Polley Lake are expected late today. Government will provide an update as soon as these results are received and reviewed. If results align with those of Imperial Metals' samples, Interior Health (IH) may consider a full or partial rescind of the drinking water advisory.
2. First Nations Health Authority (FNHA) staff, including those from Environmental Health, are developing a sampling program to address the concerns of immediate consumption of fish, and will focus on salmon tissue sampling in the confluence areas of the Quesnel and Fraser River.
3. Mt. Polley Mine staff are assisting waterfront property owners with debris clean up.
4. The Conservation Officer Service (COS) delivered and posted an information package in Likely to update residents on the current situation. As updates occur this will continue.

Current situation:

- The flow out of the breach has decreased dramatically, but has not completely stopped. Imperial Metals has begun building a temporary dike to stop flow out of the pond.
- Imperial Metals is also now pumping water out of Polley Lake both down Hazeltine Creek into Quesnel Lake and back into Wight and Springer Pits, two open pits on the mine. By controlling this water release as soon as possible, it will significantly lower the potential risk of another breach. An uncontrolled release of the stored water in Polley Lake could cause additional risks to human health and a further delay in possible rescinding of the drinking water advisory currently in place.
- Until further notice, the water quality advisory remains in place for communities that get their water from Polley Lake, Hazeltine Creek, Cariboo Creek and all parts of Quesnel Lake, as well as the Quesnel River south of 6236 Cedar Creek Road. This includes the communities

of Winkley Creek, Abbott Creek, Mitchell Bay and the East Arm of Quesnel Lake. Interior Health will continue to evaluate water samples as they arrive and will update the communities as more information becomes available. ****Note: boiling will not help****

- The state of local emergency (SOLE) remains in place, giving the CRD exceptional powers in the interest of ensuring public safety, allowing it to better enable an equitable distribution of potable water to the residents of Likely.
- Under the SOLE, the CRD has also issued an Order to Restrict Access to the Mt. Polley mine area to help ensure public safety. Mine employees and government officials are exempt. Mt. Polley staff have said they will use their personnel to secure and control entry into the area. The CRD is having signage made that will be posted to mark the area on the ground.
- Points that help define this area are located at the north end of Polley Lake, on the Bootjack Forest Service Road, on Gavin Lake Road and two points on the Horsefly Likely Road (Ditch Road). In addition, an area on Quesnel Lake near the mouth of the Hazeltine Creek is also restricted.
- There have been no reports of injuries or people getting sick from drinking water. There have been no reports of property damage.
- Portable showers have been installed at the old Forestry camp site at 5989 Cedar Creek Road and are now open for residents and visitors to use.
- The cause of the breach is still unknown at this time. Ministry of Environment conservation officers are investigating the breach. Ministry of Energy and Mines mine inspectors also are investigating, two of whom have been monitoring the site by helicopter.
- Tug boats continue to work in the area to boom the debris in the water and excavators are on standby in the event they are needed as well. Significant progress has been made.
- The Province has established regular briefings with First Nations to ensure they are getting as much real-time information as possible.
- Emergency Management BC (EMBC) and the CRD Emergency Operations Centre (EOC) are working together on response and recovery of this event. Government resource specialists are in the Likely area to support the EOC in Williams Lake. This team will co-ordinate site-level Provincial response and recovery activities in cooperation with Imperial Metals, the party responsible for site management.
- The CRD EOC has offered that Imperial Metals position a liaison in the EOC in Williams Lake to help improve a co-ordinated response.
- A disaster psycho-social team is available to offer local residents emotional support for their unique impacts and coping needs. These trained volunteers provide services to communities affected by emergencies and disasters. The CRD, EMBC and Provincial Health Services Authority are coordinating this effort and will be making more information available to all impacted communities.
- All costs associated with the cleanup of the breach are the responsibility of Imperial Metals, and will not be borne by B.C. taxpayers.

Polley Lake water stabilization plan:

Sediments and debris have created an unstable blockage at Polley Lake that has resulted in a build-up of water that could result in a sudden uncontrolled breach. It's necessary to reduce the excess water in Polley Lake in order to stabilize the situation and to avoid a potential breach and further release of sediments and debris into the surrounding waterways.

The potential for rain could further increase water levels in Polley Lake and outflows from Hazeltine Creek. A controlled release of excess water with a discharge pipe will help to stabilize the area and reduce the risk of a breach and further sediments reaching Quesnel Lake.

Imperial Metals has completed constructing a discharge pipe to Hazeltine Creek downstream from the tailings blockage and is now pumping water from Polley Lake. The pumps are operating at their capacity, pumping approximately 8,000 gallons per minute.

The water will then flow downstream into Quesnel Lake where it will be tested daily. Once the water level is reduced to a safe level, technicians will commence water and sediment sampling in Hazeltine Creek. The map of the discharge pipe route is available at:
<http://www.env.gov.bc.ca/eemp/incidents/2014/mount-polley.htm>

Currently, water is also being pumped out of Polley Lake into Wight and Springer Pits, two open pits on the mine, also at a rate of approximately 8,000 gallons per minute.

Water sampling:

Environmental testing has shown that the vast majority of water samples have come back at safe levels, according to Canadian Drinking Water Guidelines. Water samples taken by Imperial Metals from the shore of Polley Lake on Aug. 7, 2014, have been tested and are very close to historical levels prior to the breach of the tailings pond.

Additionally, Ministry of Environment water samples taken on Aug. 6, 2014, from six locations in Quesnel River and Quesnel Lake have been tested and confirm all samples from these two water sources meet provincial and federal drinking water guidelines.

The Ministry of Environment will continue to provide water sampling results to First Nations, the FNHA, IH officials and the CRD EOC as they become available. The ministry will continue to conduct water sampling tests daily to determine the impacts on water quality and is also working with Imperial Metals to develop both short- and long-term plans for further water quality testing

IH will continue to evaluate water samples as they arrive and will update the communities as more information becomes available. There are approximately 100-200 residents within the affected area.

The ministry is now posting results on its website, including a map of sampling locations:
<http://www.env.gov.bc.ca/eemp/incidents/2014/mount-polley.htm>

Drinking water advisory:

Despite the encouraging results from the Imperial Metals' tests of Polley Lake that were released on Friday, the **DO NOT USE** Order by IH's Regional Medical Health Officer remains in place until corroborating independent Ministry of Environment sample results from Polley Lake are reviewed by all parties involved. These are expected late today.

On Aug. 8, 2014, IH lifted the do not use water advisory for communities that get their water from Quesnel River. The water quality advisory remains in place for communities that get their water from Polley Lake, Hazeltine Creek, Cariboo Quesnel Lake, as well as the Quesnel

River south of 6236 Cedar Creek Road. This includes the communities of Winkley Creek, Abbott Creek, Mitchell Bay and Quesnel Lake. It is important to note, in the event of an unplanned large flow of water from Polley Lake, the **DO NOT USE** order will be reinstated on the larger area.

The advisory does not apply to people in Williams Lake, Quesnel or other towns along the Fraser River. Fishing by First Nations along the Fraser is also not affected.

On Aug. 7, 2014, Save-On-Foods, in conjunction with the Canadian Red Cross donated 18,000 500ml bottles of water and 1,440 four-litre bottles of water. These bottles have been distributed to Likely and area residents in need. This donation supplements the work of the CRD, which has organized delivery of water to Likely because the main supplier of bottled water in the area, a small grocery store, could not keep up with the demand.

Wildlife:

There have been no adverse effects on fish or wildlife observed to date. Freshwater fish have been collected daily for tissue analysis.

FNHA staff, including Environmental Health staff, First Nations Health Authority (FNHA) staff, including those from Environmental Health, are developing a sampling program to address the concerns of immediate consumption of fish, and will focus on salmon tissue sampling in the confluence areas of the Quesnel and Fraser River.

Collection of salmon will be coordinated with First Nation fisheries departments with analysis co-ordinated through the FNHA Environmental Health Services contracted laboratory. A two-to-three day turnaround time is anticipated following the arrival to the lab.

The Ministry of Forests, Lands and Natural Resource Operations (FLNRO) has also made its wildlife team available to investigate reported wildlife concerns.

Pollution abatement order:

On Aug. 6, 2014, the Ministry of Environment issued a Pollution Abatement Order (PAO) to Mt. Polley Mining Corp. This order required immediate action to stop the further release of mine tailings into nearby waterways and to submit environmental impact assessments and clean-up action plans to the ministry.

It also required the company to submit a written summary of actions taken to stop the release of mine tailings and to undertake preliminary environmental impact assessment and submit an action plan.

Imperial Metals met the Aug. 6, 2014, deadline requirements of the order to submit an Action Plan for the Preliminary Environmental Impact Assessment (EIA) and initiate environmental monitoring. The Ministry of Environment conditionally approved the submission on Aug. 10., 2014, Imperial Metals has provided, and will be initiating a plan to stop the flow from the tailings impoundment breach as required by item 1 of the PAO.

The company must also submit a detailed action plan by Aug. 15, 2014, and it is required to report weekly on the implementation of action plan measures.

Investigation:

Ministry of Energy and Mines inspectors continue their investigation and are continuing with interviews of mine staff and a review of all applicable documentation on the mine site.

Ministry of Environment conservation officers are independently investigating the breach. Conservation officers are Special Provincial Constables under the Police Act with a wide suite of powers associated with that designation. Although part of government, the COS is unfettered in its investigations as it has the power to investigate and forward recommendations for charges when warranted directly to provincial crown counsel.

If the public has any information, they are asked to call the Report all Poachers and Polluters (RAPP) line at 1 877 952-7277 or online at: www.env.gov.bc.ca/cos/rapp/form.htm

The inspectors of mines and other agencies will undertake a comprehensive investigation to determine causes for the breach. This will take several months. Lessons learned will be applied to other mines in the province as appropriate.

Dike construction at the tailings pond and other infrastructure:

Work continues on dike construction at the tailings pond breach. The dike is being built in a horseshoe shape just on the inside of the breach to stabilize the tailings material and keep it inside the impoundment when it rains. The company estimates that it will take about three weeks to complete.

Three hundred Imperial Metals employees are working on the dike construction and clean up.

In addition, good progress continues to be made by West Fraser to boom the debris in Quesnel Lake and prevent it from reaching the bridge. The Likely Bridge is not at risk.

Most of the large woody debris is now contained within booms and Imperial Metals is working with West Fraser and FLNRO on a disposal plan.

Worker supports:

Staff from the Ministry of Jobs, Tourism, and Skills Training (JTST) are in contact with the company to understand current job impacts and to communicate provincial support services. Initial information from the company suggests that, at this time, most of the mine employees remain working.

The JTST Community Transition Manager will be on the ground today, co-locating with the United Steelworkers at their local office in Williams Lake, to co-ordinate support and gather intelligence on worker and community impacts and services.

WorkBC Employment Services Centre (ESC) supports help connect people with employment opportunities and skills training. These will be mobilized in the area this week and work is being done to determine the best way to connect with impacted workers. The WorkBC ESC will be available to join in any on the ground services and support in Likely as needed, and will be available to visit Likely early this week.

Tourism information:

All tourism businesses in the affected area and the entire region remain open, operational, and

ready to welcome guests.

People with vacation plans that include travelling to, or through, this area of the Cariboo Chilcotin Coast, the most up-to-date information on the affected area can be found on the CRD EOC Facebook page at www.facebook.com/CRDemergencyoperations, the CRD website www.cariboord.ca, or by calling 250 398-5581.

Previous site inspections:

The Mount Polley mine has a valid Mines Act permit and the company has been generally compliant with the Health, Safety and Reclamation Code and their Mines Act permit conditions.

Following reports of a previous breach at the mine, Ministry of Energy and Mines officials investigated an incident on May 24, 2014, and determined this was not a breach. Rather, the height of the tailings pond was above regulation. This occurred in a different area of the tailings pond than the Aug. 4, 2014, dam failure.

At the time of the advisory, the distance between the water elevation and the crest of the dam (freeboard) was less than one meter. The tailings pond level returned to authorized levels and freeboard was approximately 2.4 meters when last measured. Mine records show that the operation was carrying out visual dam inspections and measuring freeboard at an acceptable frequency, including daily measurements following the incident.

The Ministry of Energy and Mines conducted a geotechnical inspection at the mine in September 2013, which resulted in no inspection orders related to the tailings facility.

Here is a list of recent advisories to Mount Polley from the Ministry of Environment, only one of which was related to height of the tailings pond. The Ministry of Environment is responsible to ensure no unauthorized effluent discharge from the tailings pond structure:

- May 24, 2014: The ministry issued an advisory to Mount Polley Mining Corporation for exceedance of the height of effluent within the tailings impoundment. The effluent level returned to authorized levels commencing June 30, 2014.
- April 18, 2014: The ministry issued an advisory to Mount Polley Mining Corporation for bypass of authorized treatment works. The site experienced high flows due to spring freshet which caused the pump system to become blocked and resulted in an overflow of effluent to the long ditch. Flow did not reach the creek and was directed into Till Borrow Pit.
- January and April 2012: The ministry issued an advisory to Mount Polley Mining Corporation for not submitting monitoring data for one of the groundwater monitoring wells.
- Aug. 30, 2012: The ministry issued a warning to Mount Polley Mining Corporation for failure to report exceedance of the height of effluent for the perimeter pond. This perimeter pond overflowed, releasing approximately 150 cubic metres of effluent over 13 hours to ground.

As required by the Health, Safety and Reclamation Code for Mines in British Columbia, companies must submit Annual Dam Safety Inspection reports to the Chief Inspector on an annual basis. Inspections of dams by ministry geotechnical inspectors are conducted at a frequency informed by the dam consequence classification that is designated by the dam design engineers in accordance with the Canadian Dam Association Dam Safety Guidelines.

Since the Mount Polley mine was permitted in 1995, there have been 16 geotechnical inspections conducted by ministry geotechnical inspectors. One inspection was conducted each year from 1995-2001 and in 2006, 2008 and 2013. Two inspections were conducted in each of 2005, 2007 and 2012.

In summary, seven geotechnical inspections took place before the mine went into care and maintenance in 2001 and nine geotechnical inspections have taken place since it re-opened in March 2005. The last geotechnical inspection was conducted in September 2013 and resulted in no inspection orders related to the tailings facility.

Here is a historical record of the number of all types of inspections (including geotechnical) each year from 1999 to 2014:

- 1999 - 1
- 2000 - 4
- 2001 - 22 (care and maintenance started September 2001)
- 2002 - 4
- 2003 - 2
- 2004 - 5
- 2005 - 15 (mine re-opened March 2005)
- 2006 - 10
- 2007 - 10
- 2008 - 8
- 2009 - 9
- 2010 - 7
- 2011 - 4
- 2012 - 6
- 2013 - 15
- 2014 (to-date) - 8

Monitoring devices, called piezometers, designed to measure the pressure of water in the dam, did not show any changes in the water pressure before the dam breach. The last piezometer readings were taken on Aug. 2, 2014. The investigation will determine if the piezometers were located correctly.

Additional background:

Early in the morning of Aug. 4, 2014, the tailings pond dam at the Mount Polley Mine site breached and released an estimated 10 million cubic metres of water and 4.5 million cubic metres of fine sand into Polley Lake. Hazeltine Creek flows out of Polley Lake and the flow of contaminated water continued into Quesnel Lake.

During the initial breach of the tailings dam the bulk of the original flow created an unstable plug at the base of Polley Lake. The balance of the tailings and water went down Hazeltine Creek and deposited at the confluence of the creek and river. Hazeltine Creek was originally about 1.2 metres wide and is now up to 150 metres wide.

Waterways affected by this event include Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek. Additionally the Horsefly Likely Forest Service (Ditch Road) has been

washed out at Hazeltine Creek and the Gavin Lake Forest Service Road was washed out closer to the dam breach area.

The Mount Polley Mine is owned by Imperial Metals and is approximately 30 kilometres from the community of Likely.

The tailings pond at Mount Polley Mine is four kilometres by four kilometres. This is a large breach and extremely rare. Officials with the Ministry of Energy and Mines do not recall anything of this magnitude in at least the last 40 years.

Fishery impacts:

Fisheries and Oceans Canada has issued a precautionary closure on a portion of the Chinook salmon fishery until sample results have come in. See the notice here: http://www-ops2.pac.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=161980&ID=all

~~~~~  
*Bruce Hupman PAg  
Regional Director, South Region  
Office of the Chief Inspector  
Ministry of Energy and Mines*  
~~~~~

From: [Stueck, Wendy](#)
To: [Day, Alan MEM:EX](#)
Cc: [Hoffman, Al MEM:EX](#); [Jacobs, Jake GCPE:EX](#); [Thorpe, Rolly MEM:EX](#)
Subject: RE: construction permit for Mount Polley
Date: Wednesday, August 13, 2014 4:50:15 PM

Alan - thanks for this - s.22 but other folks in communications (David Haslam, Sandra Steilo) are looking into it for me.

Wendy Stueck I National Correspondent I Editorial
p: 604.631.6618 I f: 604.684.7956 I c: 604.340.2895 I e: wstueck@globeandmail.com

-----Original Message-----

From: Day, Alan MEM:EX [<mailto:Alan.Day@gov.bc.ca>]
Sent: Wednesday, August 13, 2014 4:39 PM
To: Stueck, Wendy
Cc: Hoffman, Al MEM:EX; Jacobs, Jake GCPE:EX; Thorpe, Rolly MEM:EX
Subject: Re: construction permit for Mount Polley

Wendy,
I will direct your enquiry to Jake.
Regards,

Sent from my iPad
Alan Day
Health and Safety Inspector of Mines
Ministry of Energy And Mines
250-893-9543 cell
250-565-6131 office

On Aug 13, 2014, at 12:25 PM, "Stueck, Wendy"
<WStueck@globeandmail.com<<mailto:WStueck@globeandmail.com>>> wrote:

Mr. Day – hello. My name is Wendy Stueck and I am a reporter with the Globe and Mail, based in Vancouver. My colleagues have been working with the communications staff of the ministry with regard to several lines of inquiry related to the Mount Polley incident. I am getting in touch with you about something specific – AMEC, the engineer for the tailings facility, recently told me it was doing construction at the facility around the time the breach occurred. Presumably, they would have had a permit for this work. Is there any way I could see that permit – or failing that, find out when it was issued and what it included? Please let me know. I am cc'ing Jake Jacobs, the media contact for the ministry. I would like to obtain this information as soon as possible. Thank you,

- Wendy Stueck

<image001.jpg>
Wendy Stueck I National Correspondent I Editorial

p: 604.631.6618 I f: 604.684.7956 I c: 604.340.2895 I e:
wstueck@globeandmail.com<<mailto:youremail@globeandmail.com>>

From: [Warnock, George MEM:EX](#)
To: [Hoffman, AI MEM:EX](#)
Subject: RE: Just to confrim KCB was not involved in design of Mt. Polley Tailings Dam
Date: Wednesday, August 13, 2014 9:59:49 AM

[Confirmed.](#)

From: Hoffman, AI MEM:EX
Sent: Wednesday, August 13, 2014 9:58 AM
To: Warnock, George MEM:EX
Subject: Just to confrim KCB was not involved in design of Mt. Polley Tailings Dam
As I recall it has been KP, AMEC and BCG?
Just confirm so we can get contract out the door.
AI

From: [Warnock, George MEM:EX](#)
To: [Hoffman, Al MEM:EX](#); [Kuppers, Haley MEM:EX](#)
Cc: [Narynski, Heather M MEM:EX](#); [Bailey, Kristopher W MEM:EX](#); [Day, Alan MEM:EX](#)
Subject: RE: Update
Date: Thursday, August 14, 2014 6:47:55 PM

Hi Al,

The purpose of the temporary embankment is to prevent additional tailings from migrating out of the TSF and off-site - likely being established to satisfy the abatement order. It is intended to be coarse enough to allow water to drain, but keep tailings in place. If they get a heavy storm before it is complete, they will likely lose more tailings downstream. It will be entirely encapsulated by the permanent dam embankment if/when it is rebuilt. If production resumes, it would simply be left in place and buried with tailings. I am assuming that the satellite berm is being constructed across an area that they consider to be at higher risk (and so want to block this area first), but I'm not positive on that.

Kris or Al - can you shed any light on the location and purpose of the satellite dam?

George

-----Original Message-----

From: Hoffman, Al MEM:EX
Sent: Thursday, August 14, 2014 6:29 PM
To: Kuppers, Haley MEM:EX
Cc: Warnock, George MEM:EX; Narynski, Heather M MEM:EX
Subject: Re: Update

Thx

Raises some questions about dam construction

I saw that satellite dam on drawing

George

What is its purpose?

Sent from my iPhone

- > On Aug 14, 2014, at 6:23 PM, "Kuppers, Haley MEM:EX" <Haley.Kuppers@gov.bc.ca> wrote:
- >
- > Yes sure I will pick up another micro chip.
- >
- > Update from today's meeting with Al Day and Steve Rothman:
- > - Al Day: Confirmed there are 4 pumps pumping out of Polley Lake and discharging into Hazeltine Creek. They are also pumping from Polley Lake into Whyte Pit and Springer Pit.
- > - There was a cross-shift change with survey crew working at coffer dam construction area. They were pushing material out towards the breach area, just shy of the forward limit. Al Day stopped progress towards breach area and instructed them to move right to avoid the area of the breach, he requested the area be surveyed. He has not seen an Engineer (BGC) on-site, and will follow up with the site tomorrow on Engineer presence, supervision and survey plans. Al Day mentioned the Engineering Map has changed and was different than 2 days ago, he will follow up tomorrow.
- > - They have made a lot of progress on the satellite dyke. Plan to create a sump to put pump.
- > - WEATHER: Heavy rain, sporadic down-pours, started prior to leaving site today.
- > Steve Rothman and Luke Moger (MPMC) will be providing updates on any changes resulting from weather

conditions, correspondence to Tania and David Morel.

> - Blasted around 10:30am today (blast area was loaded before the dam breach), Al Day reported no obvious effects from the blast. All good, as predicted.

> - Steve Rothman has sourced flight pumps and pipes from Highland Valley Copper, they will be used to potentially pump from Polley Lake directly to Springer Pit. HVC ready to supply when confirmation is received from MPMC/Steve R.

> - Front end loader was missing from day of the breach. Al Day put pressure on site to locate. It was later found at the Orica Site.

> - Tania: Water Management Plan has not been received from site. Al Day to follow up with site on progress.

> - MoE ordered an Air Quality Assessment. In response to complaints received from workers and from First Nations.

>

> Next meeting tomorrow at 5pm. Let me know if there is anything else I can do.

>

> See you tomorrow,

>

> Haley Koppers, MSc.

> Inspector of Mines

> Health and Safety Specialist

>

> Ministry of Energy and Mines

> 1810 Blanshard Street, Victoria, B.C. V8W 9N3

> Phone: 250-387-4808 | Cell: 778-677-0624 | Fax: 250-952-0491

> Email: haley.koppers@gov.bc.ca | Website: www.em.gov.bc.ca

>

>

>

>

> -----Original Message-----

> From: Hoffman, Al MEM:EX

> Sent: Thursday, August 14, 2014 5:21 PM

> To: Koppers, Haley MEM:EX

> Subject:

>

> You will need another micro chip. Regrets I need to keep the one I used. Can you pick one up

>

> Sent from my iPhone

From: [Jack Love](#)
To: [Counce, Cassandra ENV:EX](#); [Bunce, Hubert ENV:EX](#)
Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); "[chughes@mountpolley.com](#)"; "[dreimer@mountpolley.com](#)"; [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bev Sellars \(b.sellars@xatsull.com\)](#); [Ann Louie \(ann.louie@williamslakeband.ca\)](#); [Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)](#); [Julia Banks \(nrcoordinator@xatsull.com\)](#); [Steve Robertson; Demchuk, Tanja MEM:EX](#); [Pierre Stecko](#); [Green, Jack E ENV:EX](#); [Brian Kynoch](#); [dreimer@mountpolley.com](#); [RC Cory Koenig](#); [Don Parsons](#); [Luke Moger \(lmoger@mountpolley.com\)](#); [Art Frye \(afrye@mountpolley.com\)](#); [Johnson, Gordon](#); [Bellefontaine, Kim MEM:EX](#); [Howe, Diane J MEM:EX](#); [McConkey, Trevor](#); [Jancicka, Erik](#); [Hill, Douglas J FLNR:EX](#); [Vanderburgh, Ken FLNR:EX](#); [Luke Moger \(lmoger@mountpolley.com\)](#); [Paslawski, Janice](#); [Katie McMahan](#)
Subject: Critical Tasks and Initial Schedule Mnt Polley Tailings Breach EIA
Date: Tuesday, August 26, 2014 9:30:05 PM
Attachments: [image001.jpg](#)
[Critical Task Workflow_Schedule_Draft_August 26 2014.pdf](#)
[Mt Polley Project Schedule_Draft\(as of 140826\).pdf](#)

Hi Hubert and Cassandra,
Attached are two additional documents outlining the schedules and tasks for review and discussion. I look forward to further discussions and collaboration as we work through the various assessments and activities.

Regards,
Jack

Jack Love, RPBio., Environmental Manager Mt Polley Tailings Breach
jlove@imperialmetals.com
mobile 604.358.2699 | 604.800.9200 ext 329 Red Chris | 250.790.2215 ext 2560 Mt. Polley
Red Chris Development Company Ltd.
Hwy 37 Power Corp.
Mount Polley Mining Corp.
Imperial Metals Corporation
200-580 Hornby Street, Vancouver, BC V6C3B6
604.669.8959 | www.imperialmetals.com



From: [Hoffman, Al MEM:EX](#)
To: [Thorpe, Rolly MEM:EX](#); [Kuppers, Haley MEM:EX](#); [Warnock, George MEM:EX](#)
Subject: Fwd: Critical Tasks and Initial Schedule Mnt Polley Tailings Breach EIA
Date: Tuesday, August 26, 2014 9:57:27 PM
Attachments: image001.jpg
ATT00001.htm
Critical Task Workflow_Schedule_Draft_August 26 2014.pdf
ATT00002.htm
Mt Polley Project Schedule_Draft(as of 140826).pdf
ATT00003.htm

Sent from my iPhone

Begin forwarded message:

From: Jack Love <JLove@imperialmetals.com>
Date: August 26, 2014 at 9:29:05 PM PDT
To: "Caunce, Cassandra ENV:EX" <Cassandra.Caunce@gov.bc.ca>, "Bunce, Hubert ENV:EX" <Hubert.Bunce@gov.bc.ca>
Cc: "Zacharias-Homer, Christa ENV:EX" <Christa.ZachariasHomer@gov.bc.ca>, "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca>, "chughes@mountpolley.com" <chughes@mountpolley.com>, "dreimer@mountpolley.com" <dreimer@mountpolley.com>, "Metcalf, Shelley ENV:EX" <Shelley.Metcalf@gov.bc.ca>, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>, "Bev Sellars (b.sellars@xatsull.com)" <b.sellars@xatsull.com>, "Ann Louie (ann.louie@williamslakeband.ca)" <ann.louie@williamslakeband.ca>, "Aaron Higginbottom (Aaron.Higginbottom@williamslakeband.ca)" <Aaron.Higginbottom@williamslakeband.ca>, "Julia Banks (nrcoordinator@xatsull.com)" <nrcoordinator@xatsull.com>, Steve Robertson <SRobertson@imperialmetals.com>, "Demchuk, Tania MEM:EX" <Tania.Demchuk@gov.bc.ca>, Pierre Stecko <pstecko@minnow.ca>, "Green, Jack E ENV:EX" <Jack.Green@gov.bc.ca>, Brian Kynoch <bkynoch@imperialmetals.com>, "dreimer@mountpolley.com" <dreimer@mountpolley.com>, RC Cory Koenig <ckoenig@redchrismine.ca>, Don Parsons <dparsons@imperialmetals.com>, "Luke Moger (lmoger@mountpolley.com)" <lmoger@mountpolley.com>, "Art Frye (afrye@mountpolley.com)" <afrye@mountpolley.com>, "Johnson, Gordon" <Gordon.Johnson@snclavalin.com>, "Bellefontaine, Kim MEM:EX" <Kim.Bellefontaine@gov.bc.ca>, "Howe, Diane J MEM:EX" <Diane.Howe@gov.bc.ca>, "McConkey, Trevor" <Trevor.Mcconkey@snclavalin.com>, "Jancicka, Erik" <erik.jancicka@snclavalin.com>, "Hill, Douglas J FLNR:EX" <Doug.Hill@gov.bc.ca>, "Vanderburgh, Ken FLNR:EX" <Ken.Vanderburgh@gov.bc.ca>, "Luke Moger (lmoger@mountpolley.com)" <lmoger@mountpolley.com>, "Paslawski, Janice" <Janice.Paslawski@snclavalin.com>, Katie McMahan <kmcmahan@mountpolley.com>

Subject: Critical Tasks and Initial Schedule Mt Polley Tailings Breach EIA

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From: [Hoffman, Al MEM:EX](#)
To: [Metcalf, Megan MEM:EX](#)
Subject: Fwd: Critical Tasks and Initial Schedule Mnt Polley Tailings Breach EIA
Date: Tuesday, August 26, 2014 10:40:56 PM
Attachments: image001.jpg
ATT00001.htm
Critical Task Workflow_Schedule_Draft_August 26 2014.pdf
ATT00002.htm
Mt Polley Project Schedule_Draft(as of 140826).pdf
ATT00003.htm

Please print off email plus 5 copies of each attached file

Sent from my iPhone

Begin forwarded message:

From: Jack Love <JLove@imperialmetals.com>
Date: August 26, 2014 at 9:29:05 PM PDT
To: "Counce, Cassandra ENV:EX" <Cassandra.Counce@gov.bc.ca>, "Bunce, Hubert ENV:EX" <Hubert.Bunce@gov.bc.ca>
Cc: "Zacharias-Homer, Christa ENV:EX" <Christa.ZachariasHomer@gov.bc.ca>, "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca>, "chughes@mountpolley.com" <chughes@mountpolley.com>, "dreimer@mountpolley.com" <dreimer@mountpolley.com>, "Metcalf, Shelley ENV:EX" <Shelley.Metcalf@gov.bc.ca>, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>, "Bev Sellars (b.sellars@xatsull.com)" <b.sellars@xatsull.com>, "Ann Louie (ann.louie@williamslakeband.ca)" <ann.louie@williamslakeband.ca>, "Aaron Higginbottom (Aaron.Higginbottom@williamslakeband.ca)" <Aaron.Higginbottom@williamslakeband.ca>, "Julia Banks (nrcoordinator@xatsull.com)" <nrcoordinator@xatsull.com>, Steve Robertson <SRobertson@imperialmetals.com>, "Demchuk, Tania MEM:EX" <Tania.Demchuk@gov.bc.ca>, Pierre Stecko <pstecko@minnow.ca>, "Green, Jack E ENV:EX" <Jack.Green@gov.bc.ca>, Brian Kynoch <bkynoch@imperialmetals.com>, "dreimer@mountpolley.com" <dreimer@mountpolley.com>, RC Cory Koenig <ckoenig@redchrismine.ca>, Don Parsons <dparsons@imperialmetals.com>, "Luke Moger (lmoger@mountpolley.com)" <lmoger@mountpolley.com>, "Art Frye (afrye@mountpolley.com)" <afrye@mountpolley.com>, "Johnson, Gordon" <Gordon.Johnson@snclavalin.com>, "Bellefontaine, Kim MEM:EX" <Kim.Bellefontaine@gov.bc.ca>, "Howe, Diane J MEM:EX" <Diane.Howe@gov.bc.ca>, "McConkey, Trevor" <Trevor.Mcconkey@snclavalin.com>, "Jancicka, Erik" <erik.jancicka@snclavalin.com>, "Hill, Douglas J FLNR:EX" <Doug.Hill@gov.bc.ca>, "Vanderburgh, Ken FLNR:EX" <Ken.Vanderburgh@gov.bc.ca>, "Luke Moger (lmoger@mountpolley.com)" <lmoger@mountpolley.com>, "Paslawski, Janice" <Janice.Paslawski@snclavalin.com>, Katie McMahan <kmcmahan@mountpolley.com>

Subject: Critical Tasks and Initial Schedule Mt Polley Tailings Breach EIA

Hi Hubert and Cassandra,

Attached are two additional documents outlining the schedules and tasks for review and discussion. I look forward to further discussions and collaboration as we work through the various assessments and activities.

Regards,

Jack

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TO: Mr. Jack Love **Date:** August 26, 2014
C.C.: Gordon Johnson
FROM: David Tarnocai □ Janice Paslawski **Ref.:** 621717
Subject: Mount Polley Comprehensive Environmental Impact Critical Tasks

The Comprehensive Environmental Impact Assessment (CEIA) workplan is structured to consist of three parallel components in order to mitigate the mine tailings breach: Environmental Impact Assessment; Environmental Effects Monitoring and Mitigation/Rehabilitation of the impacted area. To facilitate these components eight (8) concurrently conducted tasks are undertaken to link the data collection of the region in order to best mitigate the impact and restore the area to pre-impact conditions. Each of the components incorporates the data at different times and forms with the use of an overall Risk Assessment approach throughout the process to inform the critical path.

Tasks and subtasks referred to in this memo are identified according to the Task numbering in the accompanying GANTT chart. The concurrent tasks consist of:

- 3.1 - Hydrology Impact Assessment;
- 3.2 - Water Quality Impact Assessment;
- 3.3 - Soil Quality Impact Assessment;
- 3.4 - Sediment Impact Assessment;
- 3.5 - Terrestrial Impact Assessment;
- 3.6 - Fish and Aquatic Habitat Impact Assessment;
- 3.7 - Archeological Impact Assessment; and,
- 3.8 - Environmental Risk Assessment.

The Water Quality Impact Assessment (Task 3.2) to Fish and Aquatic Habitat Impact Assessment (Task 3.6) Tasks produce information that informs the quantitative Environmental Risk Assessment Task, with the early project phase subtasks of Task 3.6 being used to identify data gaps, focus on critical uncertainties and also guide/refine the monitoring program and Tasks 3.2 through 3.6 work programs



where necessary to ensure impacts are identified in the critical stages. The results of Tasks 3.2 through 3.6 ultimately are used in whole or in part in the Detailed Quantitative risk assessment subtask of Task 3.8 in order to identify areas of the site requiring management and site management options.

There are multiple critical paths within the CEIA. These critical paths are identified below:

TASK 3.1 HYDROLOGY IMPACT ASSESSMENT

The overall Task 3.1 objective is channel design and construction to rehabilitate Hazeltine Creek if determined to be the most environmentally beneficial to the ecology and aquatic wellbeing. To meet this objective, a number of concurrent Task 1 subtasks need to be completed. The critical subtasks, in order of timing are:

- 3.1.1 - Data review and gap analysis,
- 3.1.6 - Hydrometric gauging and sediment discharge assessment
- 3.1.9 - Channel design and construction

TASK 3.2 - WATER QUALITY IMPACT ASSESSMENT

Task 3.2 results provide information on sediment plume dispersion and delineation and provide water quality information that is utilized in Task 3.8. There are two critical paths in Task 3.2. The Task 3.2 critical path that link to Task 3.8 consists of the following subtasks, in order of timing:

- 3.2.1 - Data review and gap analysis; and,
- 3.2.2 and 3.2.3 Water quality sampling.

The second Task 3.2 critical path which identifies sediment plume extent consists of the following subtasks, in order of timing:

- 3.2.4 - Plume delineation field program;
- 3.2.5 - Plume Model development; and,
- 3.2.6.3 - Detailed report related to plume delineation.



TASK 3.3 - SOIL QUALITY IMPACT ASSESSMENT

The output of Task 3.3 will be utilized in Task 3.8. The critical path for Task 3.3 subtasks, in order of timing is as follows:

- 3.3.1 to 3.3.3 Data gap and sampling programs; and,
- 3.3.4 – Reporting related to outcome of the soil impact assessment.

TASK 3.4 SEDIMENT IMPACT ASSESSMENT

Task 3.4 results provide sediment characterization information which will be incorporated into Task 3.2 to provide additional data on sediment plume extents and in Task 3.8. The Task 3.4 critical path that links to Task 3.4 and Task 3.8 consists of the following subtasks, in order of timing:

- 3.4.1 Data review and gap analysis;
- 3.4.2 Tier 1 and Tier 2 sediment sampling; and,
- 3.4.3 Reporting related to sediment characterization.

TASK 3.5 - TERRESTRIAL IMPACT ASSESSMENT

The output of Task 3.5 will be utilized in Task 3.8. The critical path for Task 3.5 subtasks, in order of timing is as follows:

- 3.5.1 Data review and gap analysis;
- 3.5.2 to 3.5.4 Field activities;
- 3.5.5 Analysis and Assessment; and
- 3.5.6 Reporting of analysis and assessment results. identified in the schedule – for work leading to Task 3.8.

Note:

Some tasks may require work to discontinue at the point the data is collected before continuing. Some tasks will be analyzed during the field programs to determine additional scope.



TASK - 3.6 - FISH AND AQUATIC HABITAT IMPACT ASSESSMENT

The output of Task 3.6 will be utilized in Task 3.8. The critical path for Task 3.6 subtasks, in order of timing is as follows:

- 3.6.1 Data review and gap analysis;
- 3.6.2 to 3.6.4 Fish, community and habitat assessments; and,
- 3.6.6 Reporting related to results of Tasks 3.6.2 to 3.6.4.

TASK - 3.7 - ARCHEOLOGICAL IMPACT ASSESSMENT

The objective of Task 3.7 is to identify impacts to archaeological and traditional land use sites caused by the tailings release from the TSF and potential impacts that may occur to these sites as a result of clean-up and reclamation work. The critical path for Task 3.7 subtasks, in order of timing is as follows:

- 3.7.1 and 3.7.2 Data collection and review and preliminary field reconnaissance;
- 3.7.4.3.1 Preliminary assessment reporting
- 3.7.3 Archeological inventory assessment; and,
- 3.7.4.3.2 Archeological inventory assessment reporting.

3.8 - ENVIRONMENTAL RISK ASSESSMENT

There is one critical path for Task 3.8, with information from other tasks as identified above informing the final stage of the risk assessment (Task 3.8.4). The critical path for Task 3.8, in order of timing is as follows:

- 3.8.1 and 3.8.2 data review, gap analysis and problem formulation;
- 3.8.3 Preliminary risk assessment in addition to Task 3.2 to 3.6 results; and,
- 3.8.4 Detailed quantitative risk assessment.

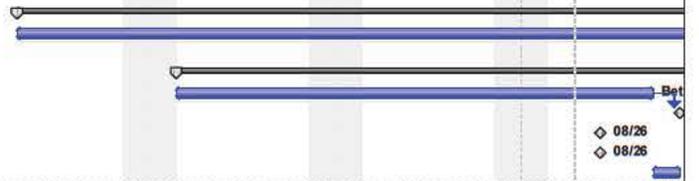
Work conducted in later stages of the CEIA may be subject to change based on the outcome of preceding stages of work. The critical path for the CEIA will include detailed reporting for soil, sediment and surface water in February-March of 2015.

ID	Task Name	Duration	Start	Finish	'14 Aug 03					'14 Aug 10					'14 Aug 17					'14 Aug 24								
					S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
251	3.3.2 Drilling Program (3-5 days)	14 days	Tue 14/09/02	Fri 14/09/19																								
252	3.3.3 Transect Sampling	10 days	Mon 14/09/01	Fri 14/09/12																								
253	3.3.4 Reporting	608 days	Fri 14/09/05	Fri 16/12/30																								
254	3.3.4.1 Reporting - Weekly	343 days	Fri 14/09/05	Fri 15/12/25																								
324	3.3.4.2 Reporting - Monthly	590 days	Tue 14/09/30	Fri 16/12/30																								
353	3.3.4.3 Reporting (Detailed)	13 days	Mon 14/09/15	Tue 14/09/30																								
354	3.3.4.4 Reporting (Detailed) (Additional reports TBD)	21 days	Fri 15/02/13	Fri 15/03/13																								
355	3.4 Sediment Impact Assessment	623 days	Fri 14/09/15	Fri 16/12/30																								
356	3.4.1 Data Review and Gap Analysis - Historical sediment quality - Polley L, Hazeltine Cr, Quesnel L, local references	47 days	Mon 14/09/01	Fri 14/10/31																								
357	3.4.1.1 Review existing source chemistry to identify analytes of potential concern	23 days	Mon 14/09/01	Tue 14/09/30																								
358	3.4.1.2 Compile, review and synthesize historical sediment quality data	47 days	Mon 14/09/01	Fri 14/10/31																								
359	3.4.1.3 Complete the gap analysis on sediment quality data	47 days	Mon 14/09/01	Fri 14/10/31																								
360	3.4.1.4 Historical sediment quality data reporting	47 days	Mon 14/09/01	Fri 14/10/31																								
361	3.4.2 Sediment Quality Sampling - Polley L, Hazeltine Cr, Quesnel L, local references	58 days	Fri 14/08/15	Fri 14/10/31																								
362	3.4.2.1 Polley Lake, Hazeltine Creek, Quesnel Lake, sediment quality sampling plan development	22 days	Fri 14/08/15	Mon 14/09/15																								
363	3.4.2.2 Implementation in Quesnel Lake	22 days	Fri 14/08/15	Mon 14/09/15																								
364	3.4.2.3 Implementation in Polley Lake	37 days	Mon 14/09/15	Fri 14/10/31																								
365	3.4.2.4 Implementation in Hazeltine Creek	24 days	Mon 14/09/15	Wed 14/10/15																								
366	3.4.3 Sediment Geochemical Characterization - Polley L, Hazeltine Cr, Quesnel L, local references	58 days	Fri 14/08/15	Fri 14/10/31																								
367	3.4.3.1 Polley Lake, Hazeltine Creek, Quesnel Lake, sediment quality sampling plan development	22 days	Fri 14/08/15	Mon 14/09/15																								
368	3.4.3.2 Implementation in Quesnel Lake	22 days	Fri 14/08/15	Mon 14/09/15																								
369	3.4.3.3 Implementation in Polley Lake	37 days	Mon 14/09/15	Fri 14/10/31																								
370	3.4.3.4 Implementation in Hazeltine Creek	24 days	Mon 14/09/15	Wed 14/10/15																								
371	3.4.4 Sediment Tox Testing & Benthic Invertebrate Community Char - Polley L, Hazeltine Cr, Quesnel L, local references	58 days	Fri 14/08/15	Fri 14/10/31																								
372	3.4.4.1 Polley Lake, Hazeltine Creek, Quesnel Lake, sediment quality sampling plan development	22 days	Fri 14/08/15	Mon 14/09/15																								
373	3.4.4.2 Implementation in Quesnel Lake	22 days	Fri 14/08/15	Mon 14/09/15																								
374	3.4.4.3 Implementation in Polley Lake	37 days	Mon 14/09/15	Fri 14/10/31																								
375	3.4.4.4 Implementation in Hazeltine Creek	24 days	Mon 14/09/15	Wed 14/10/15																								
376	3.4.5 Reporting	608 days	Fri 14/09/05	Fri 16/12/30																								
377	3.4.5.1 Reporting - Weekly	343 days	Fri 14/09/05	Fri 15/12/25																								
447	3.4.5.2 Reporting - Monthly	590 days	Tue 14/09/30	Fri 16/12/30																								
476	3.4.5.3 Reporting (Detailed)	13 days	Mon 14/09/15	Tue 14/09/30																								
477	3.4.5.4 Reporting (Detailed) (Additional reports TBD)	21 days	Fri 15/02/13	Fri 15/03/13																								
478	3.5 Terrestrial Impact Assessment	610 days	Wed 14/09/03	Fri 16/12/30																								
479	3.5.1 Data Review and Gap Analysis	21 days	Wed 14/09/03	Tue 14/09/30																								
480	3.5.2 Field - Preliminary Assessment and Surveys	22 days	Wed 14/09/03	Wed 14/10/01																								
481	3.5.3 Timed Wildlife Surveys	265 days	Mon 14/09/15	Wed 15/09/16																								
482	3.5.4 Follow-up Field Activities (as required - tentative)	173 days	Thu 15/01/01	Mon 15/08/31																								
483	3.5.5 Analysis and Assessment	15 days	Mon 14/09/29	Fri 14/10/17																								
484	3.5.6 Reporting	608 days	Fri 14/09/05	Fri 16/12/30																								
485	3.5.6.1 Reporting - Weekly	343 days	Fri 14/09/05	Fri 15/12/25																								
555	3.5.6.2 Reporting - Monthly	590 days	Tue 14/09/30	Fri 16/12/30																								
584	3.5.6.3 Reporting (Detailed) (Additional reports TBD)	13 days	Mon 14/09/15	Tue 14/09/30																								
585	3.6 Fish and Aquatic Impact Assessment	611 days	Tue 14/09/02	Fri 16/12/30																								
586	3.6.1 Data Review and Gap Analysis	19 days	Tue 14/09/02	Thu 14/09/25																								
587	3.6.2 Fish Assessments	306 days	Tue 14/09/02	Fri 15/10/30																								
588	3.6.2.1 Fish species determination	194 days	Thu 14/09/04	Fri 15/05/29																								
589	3.6.2.2 Fish spawning surveys	194 days	Tue 14/09/02	Wed 15/05/27																								
590	3.6.2.3 Fish growth & performance	304 days	Thu 14/09/04	Fri 15/10/30																								
591	3.6.2.4 Fish survival	304 days	Thu 14/09/04	Fri 15/10/30																								
592	3.6.2.5 Fish migration corridors	194 days	Tue 14/09/02	Wed 15/05/27																								
593	3.6.3 Community Assessment	304 days	Thu 14/09/04	Fri 15/10/30																								
594	3.6.3.1 Benthic invertebrates	304 days	Thu 14/09/04	Fri 15/10/30																								
595	3.6.3.2 Phytoplankton, periphyton, macrophyte	194 days	Thu 14/09/04	Fri 15/05/29																								
596	3.6.3.3 Fish community	194 days	Thu 14/09/04	Fri 15/05/29																								
597	3.6.4 Habitat Assessments (riparian, shoreline, benthic)	44 days	Thu 14/09/04	Fri 14/10/31																								

Project: Mt Polley Project Schedule (F) Task Progress Summary External Tasks Deadline
 Date: Tue 14/08/26 Split Milestone Project Summary External Milestone

Page 2

ID	Task Name	Duration	Start	Finish	'14 Aug 03							'14 Aug 10							'14 Aug 17							'14 Aug 24						
					S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	
598	3.6.5 Reporting	608 days	Fri 14:09:05	Fri 16:12:30																												
599	3.6.5.1 Reporting - Weekly	343 days	Fri 14:09:05	Fri 15:12:25																												
669	3.6.5.2 Reporting - Monthly	590 days	Tue 14:09:30	Fri 16:12:30																												
698	3.6.5.3 Reporting (Detailed) (Additional reports TBD)	13 days	Mon 14:09:15	Tue 14:09:30																												
699	3.7 Archaeological Impact Assessment	611 days?	Tue 14:09:02	Fri 16:12:30																												
700	3.7.1 Data Review and Collection	20 days?	Tue 14:09:02	Fri 14:09:26																												
701	3.7.2 Preliminary Field Reconnaissance	9 days?	Tue 14:09:02	Fri 14:09:12																												
702	3.7.3 Archeological Inventory Assessment	14 days	Tue 14:10:07	Fri 14:10:24																												
703	3.7.4 Reporting	608 days	Fri 14:09:05	Fri 16:12:30																												
704	3.7.4.1 Reporting - Weekly	343 days	Fri 14:09:05	Fri 15:12:25																												
774	3.7.4.2 Reporting - Monthly	590 days	Tue 14:09:30	Fri 16:12:30																												
803	3.7.4.3 Reporting (Detailed) (Additional reports TBD)	59 days	Thu 14:09:11	Fri 14:11:28																												
804	3.7.4.3.1 Preliminary Reconnaissance Report	24 days	Thu 14:09:11	Mon 14:10:13																												
805	3.7.4.3.2 AIA Final Report	26 days	Sat 14:10:25	Fri 14:11:28																												
806	3.8 Environmental Risk Assessment	612 days	Mon 14:09:01	Fri 16:12:30																												
807	3.8.1 Data Review and Gap Analysis	45 days	Mon 14:09:01	Wed 14:10:29																												
808	3.8.2 Problem Formulation	14 days	Wed 14:10:15	Fri 14:10:31																												
809	3.8.3 Preliminary Risk Assessment	304 days	Mon 14:11:03	Thu 15:12:31																												
810	3.8.4 Detailed Quantitative Risk Assessment	261 days	Fri 16:01:01	Fri 16:12:30																												
811	3.9 Monitoring Program	366 days?	Tue 14:08:05	Fri 15:12:25																												
812	3.9.1 Program in progress - to continue as determined by assessment work	282 days?	Tue 14:08:05	Mon 15:08:31																												
813	3.9.2 Reporting - Weekly	343 days	Fri 14:09:05	Fri 15:12:25																												
883	3.10 Project Management	627 days	Mon 14:08:11	Fri 16:12:30																												
884	3.10.1 Development of Work Plans	14 days	Mon 14:08:11	Thu 14:08:28																												
885	3.10.2 Issuance of Work Plans	1 day	Fri 14:08:29	Fri 14:08:29																												
886	3.10.3 Issuance of Project Schedule	1 day	Tue 14:08:26	Tue 14:08:26																												
887	3.10.4 Critical Task Pathway	1 day	Tue 14:08:26	Tue 14:08:26																												
888	3.10.5 Weekly WBS, Schedule, Budget Updates	613 days	Fri 14:08:29	Fri 16:12:30																												



EMAILS_Part 8-1 Page 9 of 100

Project: Mt Polley Project Schedule.FI
Date: Tue 14:08:26

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

From: [Bunce, Hubert ENV:EX](#)
To: "Jack Love"; [Caunce, Cassandra ENV:EX](#)
Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); ["chughes@mountpolley.com"](mailto:chughes@mountpolley.com); ["dreimer@mountpolley.com"](mailto:dreimer@mountpolley.com); [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bev Sellars \(b.sellars@xatsull.com\)](#); ["Ann Louie \(ann.louie@williamslakeband.ca\)"](#); ["Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)"](#); ["Julia Banks \(nrcoordinator@xatsull.com\)"](#); ["Steve Robertson; Demchuk, Tania MEM:EX; "Pierre Stecko"; Green, Jack E ENV:EX; "Brian Kynoch"; "dreimer@mountpolley.com"; "RC Cory Koenig"; "Don Parsons"; "Luke Moger \(Imoger@mountpolley.com\)"; "Art Frye \(afrye@mountpolley.com\)"; "Johnson, Gordon"; Bellefontaine, Kim MEM:EX; Howe, Diane J MEM:EX; "McConkey, Trevor"; "Jancicka, Erik"; Hill, Douglas J FLNR:EX; Vanderburgh, Ken FLNR:EX; "Luke Moger \(Imoger@mountpolley.com\)"; "Paslawski, Janice"; "Katie McMahan"](#)
Subject: RE: Critical Tasks and Initial Schedule Mnt Polley Tailings Breach EIA
Date: Wednesday, August 27, 2014 8:40:32 AM
Attachments: image001.jpg

Thank you Jack

The meeting yesterday that provided supporting information on these documents was most helpful. MOE will be providing a response to the Conceptual Interim Erosion and Sediment Control Plan submitted Friday

While you are away who should we be using as a replacement primary contact with MPMC for yourself. Don Parsons or Luke Moger or both?

Hubert Bunce

A/Mining Director, Environmental Protection
Regional Operations

ph (250) 751-3254 fax (250) 751-3103

2080A Labieux Road
Nanaimo BC V9T 6J9

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From: Jack Love [mailto:JLove@imperialmetals.com]
Sent: Tuesday, August 26, 2014 9:29 PM
To: Caunce, Cassandra ENV:EX; Bunce, Hubert ENV:EX
Cc: Zacharias-Homer, Christa ENV:EX; Hoffman, Al MEM:EX; 'chughes@mountpolley.com'; 'dreimer@mountpolley.com'; Metcalf, Shelley ENV:EX; McGuire, Jennifer ENV:EX; Bev Sellars (b.sellars@xatsull.com); Ann Louie (ann.louie@williamslakeband.ca); Aaron Higginbottom (Aaron.Higginbottom@williamslakeband.ca); Julia Banks (nrcoordinator@xatsull.com); Steve Robertson; Demchuk, Tania MEM:EX; Pierre Stecko; Green, Jack E ENV:EX; Brian Kynoch; dreimer@mountpolley.com; RC Cory Koenig; Don Parsons; Luke Moger (Imoger@mountpolley.com); Art Frye (afrye@mountpolley.com); Johnson, Gordon; Bellefontaine, Kim MEM:EX; Howe, Diane J MEM:EX; McConkey, Trevor; Jancicka, Erik; Hill, Douglas J FLNR:EX; Vanderburgh, Ken FLNR:EX; Luke Moger (Imoger@mountpolley.com); Paslawski, Janice; Katie McMahan
Subject: Critical Tasks and Initial Schedule Mnt Polley Tailings Breach EIA

Hi Hubert and Cassandra,

Attached are two additional documents outlining the schedules and tasks for review and discussion. I look forward to further discussions and collaboration as we work through the various assessments and activities.

Regards,

Jack

Jack Love, RPBio., Environmental Manager Mt Polley Tailings Breach
jlove@imperialmetals.com

mobile 604.358.2699 | 604.800.9200 ext 329 Red Chris | 250.790.2215 ext 2560 Mt. Polley
Red Chris Development Company Ltd.

Hwy 37 Power Corp.
Mount Polley Mining Corp.
Imperial Metals Corporation
200-580 Hornby Street, Vancouver, BC V6C3B6
604.669.8959 | www.imperialmetals.com



From: [Jack Love](#)
To: [Bunce, Hubert ENV:EX](#)
Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); ["chughes@mountpolley.com"](#); ["dreimer@mountpolley.com"](#); [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bev Sellars \(b.sellars@xatsull.com\)](#); [Ann Louie \(ann.louie@williamslakeband.ca\)](#); [Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)](#); [Julia Banks \(nrcoordinator@xatsull.com\)](#); [Steve Robertson; Demchuk, Tania MEM:EX](#); [Pierre Stecko](#); [Green, Jack E ENV:EX](#); [Brian Kynoch](#); [dreimer@mountpolley.com](#); [RC Cory Koenig](#); [Don Parsons](#); [Luke Moger \(lmoger@mountpolley.com\)](#); [Art Frye \(afrye@mountpolley.com\)](#); [Johnson, Gordon](#); [Bellefontaine, Kim MEM:EX](#); [Howe, Diane J MEM:EX](#); [McConkey, Trevor](#); [Jancicka, Erik](#); [Hill, Douglas J FLNR:EX](#); [Vanderburgh, Ken FLNR:EX](#); [Luke Moger \(lmoger@mountpolley.com\)](#); [Paslawski, Janice](#); [Jancicka, Erik](#); [amy@fairmining.ca](#); [Katie McMahan](#)
Subject: Weekly Update For August 29, 2014 Mount Polley Tailings Breach
Date: Friday, August 29, 2014 4:02:14 PM
Attachments: image001.jpg
Weekly Update for week ending August 29 2014 (2).pdf
621717-005_SampleLocPlan_140829.pdf
QusnellLake_SEDMaster_20140826.pdf
PolleyLake_SWMMaster_20140827.pdf
HazelTineCreek_SW_20140827.pdf
621717-006_SEDLocPlan_140829.pdf
QusnellLake_SWMMaster_20140827REV1.pdf

Hello Hubert and all,

See attached update reports.

Regards,

Any questions I am available on my mobile phone.

Jack Love, RPBio., Environmental Manager Mt Polley Tailings Breach

jlove@imperialmetals.com

mobile 604.358.2699 | 604.800.9200 ext 329 Red Chris | 250.790.2215 ext 2560 Mt. Polley

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01_Red Chris_corporate_RGB



From: [Bunce, Hubert ENV:EX](#)
To: "Jack Love"
Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); ["chughes@mountpolley.com"](#); ["dreimer@mountpolley.com"](#); [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); ["Bev Sellars \(b.sellars@xatsull.com\)"](#); ["Ann Louie \(ann.louie@williamslakeband.ca\)"](#); ["Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)"](#); ["Julia Banks \(nrcoordinator@xatsull.com\)"](#); ["Steve Robertson"](#); [Demchuk, Tania MEM:EX](#); ["Pierre Stecko"](#); [Green, Jack E ENV:EX](#); ["Brian Kynoch"](#); ["dreimer@mountpolley.com"](#); ["RC Cory Koenig"](#); ["Don Parsons"](#); ["Luke Moger \(Imoger@mountpolley.com\)"](#); ["Art Frye \(afrye@mountpolley.com\)"](#); ["Johnson, Gordon"](#); [Bellefontaine, Kim MEM:EX](#); [Howe, Diane J MEM:EX](#); ["McConkey, Trevor"](#); ["Jancicka, Erik"](#); [Hill, Douglas J FLNR:EX](#); [Vanderburgh, Ken FLNR:EX](#); ["Luke Moger \(Imoger@mountpolley.com\)"](#); ["Paslawski, Janice"](#); ["Jancicka, Erik"](#); ["amy@fairmining.ca"](#); ["Katie McMahan"](#)
Subject: RE: Weekly Update For August 29, 2014 Mount Polley Tailings Breach
Date: Friday, August 29, 2014 4:33:22 PM
Attachments: image001.jpg

Thanks for this Jack, I will review the submission and get back to you with any questions or concerns

Hubert Bunce

A/Mining Director, Environmental Protection
Regional Operations

ph (250) 751-3254 fax (250) 751-3103

2080A Labieux Road
Nanaimo BC V9T 6J9

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From: Jack Love [mailto:JLove@imperialmetals.com]

Sent: Friday, August 29, 2014 3:58 PM

To: Bunce, Hubert ENV:EX

Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); ["chughes@mountpolley.com"](#); ["dreimer@mountpolley.com"](#); [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bev Sellars \(b.sellars@xatsull.com\)](#); [Ann Louie \(ann.louie@williamslakeband.ca\)](#); [Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)](#); [Julia Banks \(nrcoordinator@xatsull.com\)](#); [Steve Robertson](#); [Demchuk, Tania MEM:EX](#); [Pierre Stecko](#); [Green, Jack E ENV:EX](#); [Brian Kynoch](#); [dreimer@mountpolley.com](#); [RC Cory Koenig](#); [Don Parsons](#); [Luke Moger \(Imoger@mountpolley.com\)](#); [Art Frye \(afrye@mountpolley.com\)](#); [Johnson, Gordon](#); [Bellefontaine, Kim MEM:EX](#); [Howe, Diane J MEM:EX](#); [McConkey, Trevor](#); [Jancicka, Erik](#); [Hill, Douglas J FLNR:EX](#); [Vanderburgh, Ken FLNR:EX](#); [Luke Moger \(Imoger@mountpolley.com\)](#); [Paslawski, Janice](#); [Jancicka, Erik](#); [amy@fairmining.ca](#); [Katie McMahan](#)

Subject: Weekly Update For August 29, 2014 Mount Polley Tailings Breach

Hello Hubert and all,

See attached update reports.

Regards,

Any questions I am available on my mobile phone.

Jack Love, RPBio., Environmental Manager Mt Polley Tailings Breach

jlove@imperialmetals.com

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From: [Jancicka, Erik](#)
To: [Bunce, Hubert ENV:EX](#)
Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); [Jack Love](#); ["chughes@mountpolley.com"](#); ["dreimer@mountpolley.com"](#); [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bev Sellars \(b.sellars@xatsull.com\)](#); [Ann Louie \(ann.louie@williamslakeband.ca\)](#); [Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)](#); [Julia Banks \(nrcoordinator@xatsull.com\)](#); [Steve Robertson; Demchuk, Tania MEM:EX](#); [Pierre Stecko](#); [Green, Jack E ENV:EX](#); [Brian Kynoch](#); [dreimer@mountpolley.com](#); [RC Cory Koenig](#); [Don Parsons](#); [Luke Moger \(lmoger@mountpolley.com\)](#); [Art Frye \(afrye@mountpolley.com\)](#); [Johnson, Gordon](#); [Bellefontaine, Kim MEM:EX](#); [Howe, Diane J MEM:EX](#); [McConkey, Trevor](#); [Hill, Douglas J FLNR:EX](#); [Vanderburgh, Ken FLNR:EX](#); [Luke Moger \(lmoger@mountpolley.com\)](#); [Paslawski, Janice](#); [amy@fairmining.ca](#); [Katie McMahan](#)
Subject: Work Plan for CEIA and Monitoring - Mount Polley Tailings Breach - 2014-08-29
Date: Friday, August 29, 2014 5:12:37 PM
Attachments: image002.jpg
image003.jpg
Mount Polley CEIA & Monitoring Work Plan_140829.pdf

Hello Hubert and all.

Attached please find the work plan for Comprehensive Environmental Impact Assessment (CEIA) and Monitoring.

Thank you.

Erik Jancicka, P.Chem.

Operations Manager, Prince George
Environment & Water

Tel.: 250-562-5172 x 56553

SNC-Lavalin Inc.

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From: Jack Love [mailto:JLove@imperialmetals.com]

Sent: August 29, 2014 3:58 PM

To: Hubert.Bunce@gov.bc.ca

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Subject: Weekly Update For August 29, 2014 Mount Polley Tailings Breach

Hello Hubert and all,

See attached update reports.

Regards,

Any questions I am available on my mobile phone.

Jack Love, RPBio., Environmental Manager Mt Polley Tailings Breach

jlove@imperialmetals.com

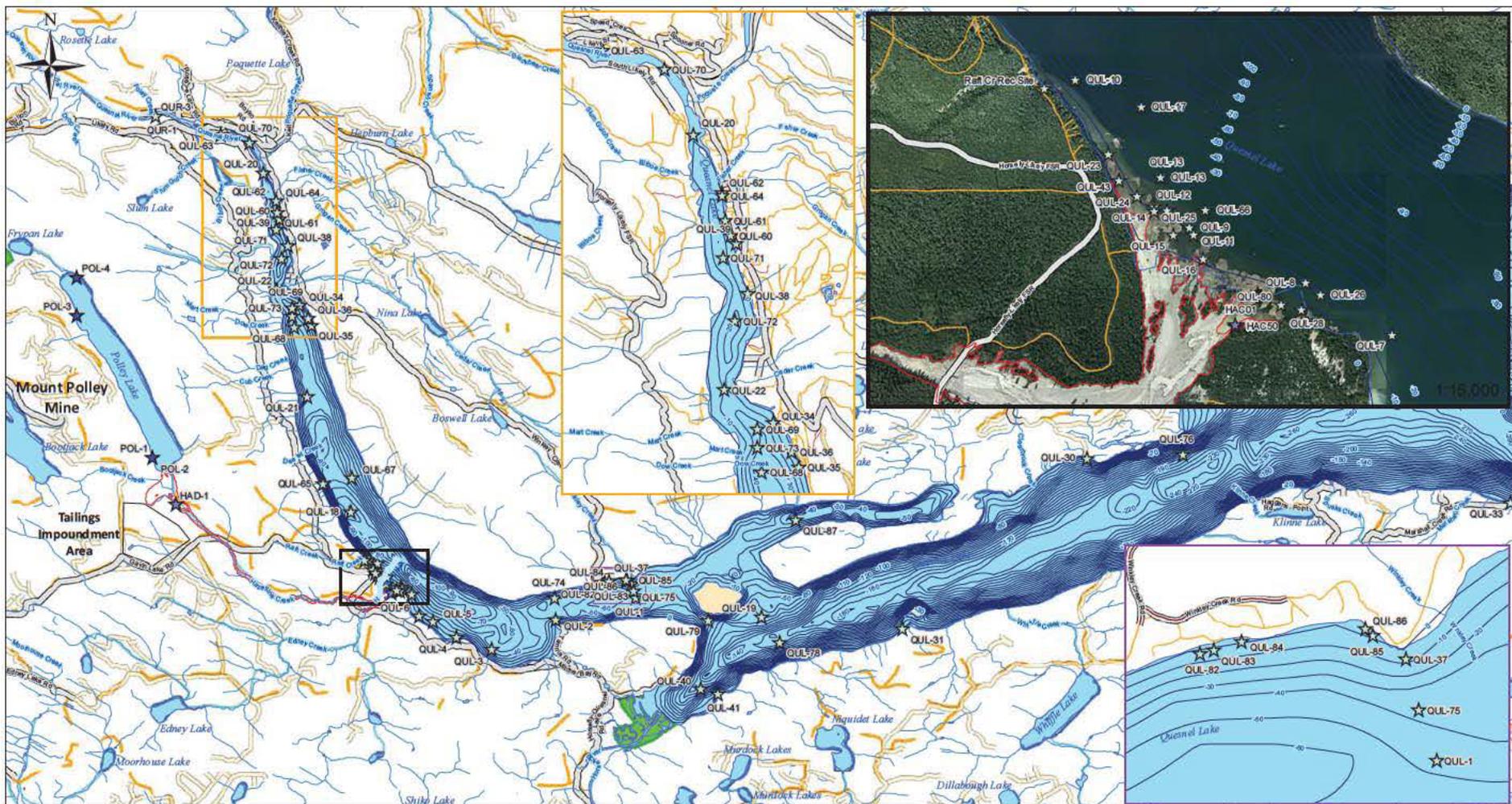
mobile 604.358.2699 | 604.800.9200 ext 329 Red Chris | 250.790.2215 ext 2560 Mt. Polley

Red Chris Development Company Ltd.
Hwy 37 Power Corp.
Mount Polley Mining Corp.
Imperial Metals Corporation
200-580 Hornby Street, Vancouver, BC V6C3B6
604.669.8959 | www.imperialmetals.com

01_Red Chris_corporate_RGB



EMALS Part 1 of 400

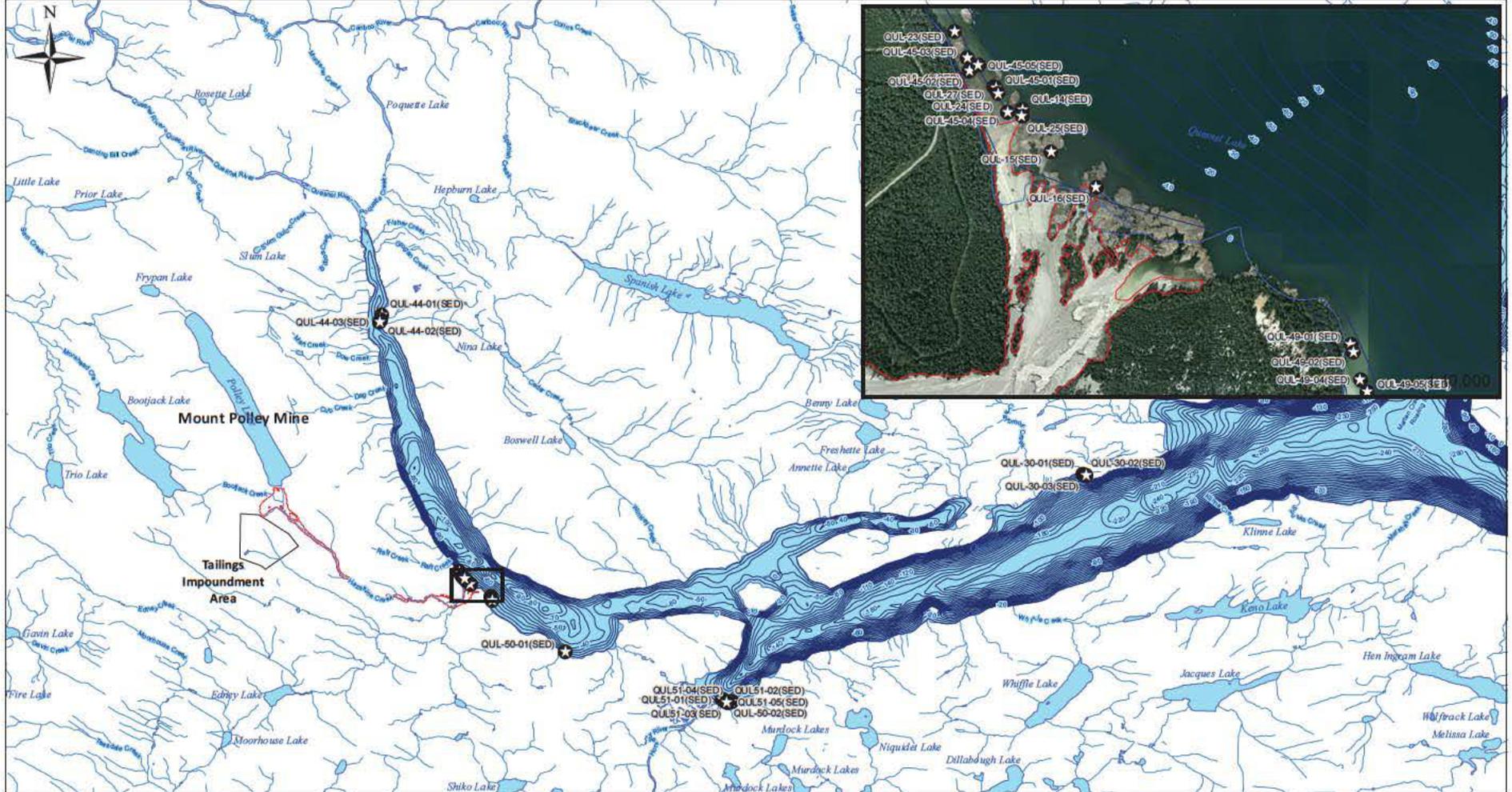


LEGEND	
Surface Water Sampling Locations	FWA Rivers
Hazeltine Creek (3)	FWA Streams
Polley Lake (4)	Tailings Impoundment Area
Quesnel Lake (69)	Area of Disturbance
Bathymetric 10m Contours	Digital Roads Atlas (106)
FWA Lakes	Forest Tenure Roads (487)

NOTES
1. Original in colour.
2. Numerical scale reflects full-size print. Print scaling will distort this scale, however scale bar will remain accurate.
3. Intended for illustration purposes, accuracy has not been verified for construction or navigation purposes.

REFERENCES
1. Toporama WMS service provided by NRCAN. http://data.gc.ca/king/open-government-licence-canada
2. GPS Data Collected using field grade GPS. Accuracy expected to be approximately +/- 3.5m.
3. Satellite image collected by NASA on August 15, 2014.

CLIENT NAME: MPMC	PROJECT LOCATION: Mount Polley Mine, British Columbia		
Figure 5: Current Monitoring Locations			
BY: CJW	SCALE: 1:110,000	DATE: 2014/08/29	REF No: REV: 0
CHKD: GJ	PROJ.COORD.SYS: NAD 1983 UTM Zone 10N	621717-005	



LEGEND

- Sediment Sampling Locations (30)
- Bathymetric 10m Contours (90)
- FWA Lakes (285)
- FWA Rivers (11)
- FWA Streams (4,012)
- Tailings Impoundment Area
- Area of Disturbance (1)

NOTES

1. Original in colour.
2. Numerical scale reflects full-size print. Print scaling will distort this scale, however scale bar will remain accurate.
3. Intended for illustration purposes, accuracy has not been verified for construction or navigation purposes.

REFERENCES

1. Toporama WMS service provided by NRCAN. <http://data.gc.ca/king/open-government-licence-canada>
2. GPS Data Collected using an eTrex. Accuracy expected to be approximately +/- 3.5m.



CLIENT NAME: MPMC	PROJECT LOCATION: Mount Polley Mine, British Columbia		
Sediment Sampling Locations			
BY: CJW	SCALE: 1:125,000	DATE: 2014/08/29	REF No: REV: 0
CHKD: GJ	PROJ/COORD SYS: NAD 1983 UTM Zone 10N	621717-006	

TABLE 4: Summary of Analytical Results for Mount Polley, Hazeline Creek - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Dissolved Inorganics										
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)	
BC WQG Aquatic Life (AW) ^{b,c}			n/a	6.5-9	6.5-9	n/a	Under Review by SNC Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	700-5680 ^d	32 800 (max)	1 000	10 000	150	812.1-1345.9 ^d	309 ^d	n/a	n/a	0.005 - 0.015
BC WQG Aquatic Life (30day) (AW) ^{b,c}			n/a	6.5-8.5	6.5-8.5	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	10 000	1 000	10 000	250	500	500	n/a	n/a	0.01
BC WQG Drinking Water (DW)			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	135-1 090 ^d	3 000	20 (Cl. 2)	3 000	1 500	309 ^d	n/a	n/a	n/a	n/a
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10 000	1 000	10 000	250	1 500	500	n/a	n/a	n/a	
HAD-1	HAD-1	2014 08 10	99	8.964	8.68	19.8	5.24	198	140	10.7	6.82	0.378	0.5	5	0.1	-	0.5	64	27.5	71.8	0.001	0.0056	
	HAD-1	2014 08 11	102	8.938	8.5	8.938	2.16	199	139	0.3	6.77	0.366	0.5	5	0.1	-	0.5	62	27.4	74.4	0.001	0.0056	
	HAD-1	2014 08 12	99.9	8.993	8.65	8.993	2.64	198	148	0.3	6.12	0.348	0.5	5	0.1	-	0.5	63	27.2	74.7	0.001	0.0061	
	HAD-1	2014 08 13	97.4	9.108	8.8	9.108	1.5	194	135	0.3	6.32	0.386	6.7	5	0.1	-	0.5	65	27.3	73.9	0.001	0.0053	
	HAD-1	2014 08 14	99	9	8.59	9	1.24	200	131	0.3	6.45	0.341	0.5	5	0.1	-	0.5	63	27.4	76.2	0.001	0.0048	
	HAD-1	2014 08 15	99.1	8.792	8.43	8.792	1.25	201	136	0.3	6.39	0.37	0.5	5	0.1	0.61	0.5	81	27.3	75	0.001	0.0057	
	HAD-1	2014 08 16	101	8.666	8.26	8.666	3.21	203	141	4.5	6.71	0.363	0.5	5	0.1	0.61	0.5	67	27.6	75.2	0.001	0.0058	
	HAD-1X	2014 08 16	102	8.666	8.21	8.666	3.04	203	138	3.4	6.73	0.371	0.5	5	0.1	0.61	0.5	69	27.5	74.8	0.001	0.0061	
	QA/QC RPD %			0.1	0	0.1	0	5	0	2	0	0.1	2	0	0	0	0	0	0	0.1	0	0	0
	HAD-1	2014 08 17	97.9	-	8.21	-	2.95	201	141	0.3	6.57	0.352	0.5	5	0.1	-	0.5	69	27.5	75	0.001	0.0068	
	HAD-1	2014 08 18	100	-	8.37	-	1.51	201	135	0.3	7.37	0.425	5.7	0.5	0.1	-	0.5	67	27.4	76.1	0.001	0.0064	
	HAD-1	2014 08 19	98	-	8.28	-	1.52	200	105	0.3	7.02	0.372	0.5	5	0.1	-	0.5	75	26.8	76.3	0.001	0.0059	
	HAD-1	2014 08 20	102	8.721	8.21	20.7	7.79	201	139	8.5	6.45	0.364	0.5	5	0.1	-	0.5	63	26.8	76	0.001	0.0062	
	HAD-1	2014 08 10	100	9.08	8.86	21.3	2.75	193	138	0.3	6.58	0.361	0.5	5	0.1	-	0.5	65	27.4	74.7	0.001	0.0075	
	HAD-1-140821	2014 08 21	101	-	8.32	-	5.14	200	141	4	6.29	0.34	0.5	5	0.1	-	0.5	65	27.5	74.8	0.001	0.0046	
	HAD-1-140822	2014 08 22	103	8.58	8.29	-	4.33	200	131	4.2	6.61	0.349	0.5	5	0.1	-	0.5	66	27.5	75.2	0.001	0.0069	
	HAD-FIELD BLANK	FIELD BLANK	2014 08 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Associated ALS files: L1500203, L1500608, L1501501, L1501554, L1502400, L1503098, L1503928, L1503934, L1503943, L1504261, L1504997, L1505933, L1506592, L1506998.

All items defined within the body of SNC-Lavalin's report (available upon request).

□ Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard.

□ RPDs are not normally calculated where one or more concentrations are less than five times MDL.

SHADED Concentration greater than BCWQG Aquatic Life (AW) guideline.

BOLD Concentration greater than BCWQG Drinking Water (DW) guideline.

SHADED Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.

BOLD Concentration greater than or equal to Canadian Drinking Water Quality (DW) guideline.

^a Laboratory detection limit out of range.

^b British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

^c A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

^d Guideline varies with pH, and/or Temperature or Hardness.

TABLE 3: Summary of Analytical Results for Mount Polley, Polley Lake - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters				Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Microbiological Tests		Dissolved Inorganics											
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Total Coliform (MPN/0.1L)							E. Coli (MPN/0.1L)	Total Nitrogen (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
BC Standards																										
BCWQG Aquatic Life (AW) ^{b,c}			n/a	6.5-9.0	6.5-9.0	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	700-24,500	32 800	60 (Cl: 2)	32 800	600	1263.5-1361.3 ^d	128-309 ^d	n/a	n/a	0.005 - 0.15	
BCWQG Aquatic Life (30day) (AW) ^{b,c}			n/a	6.5-8.5	6.5-8.5	n/a		n/a	n/a	n/a	n/a	n/a	1	n/a	n/a	n/a	10,000	1,000	10,000	250	1,500	500	n/a	n/a	0.01	
BCWQG Drinking Water (DW)			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	135-1780	3,000	20 (Cl: 2)	3,000	150	n/a	128-309 ^d	n/a	n/a	n/a	
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a		n/a	500	n/a	n/a	n/a	1	n/a	n/a	n/a	10,000	1,000	10,000	250	1,500	500	n/a	n/a	n/a	
POL-1	POL-1	2014 08 07	97.1	-	9.06	-	2.52	187	127	0.3	6.09	-	-	0.389	0.5	6.6	0.1	-	0.5	60	26.3	75.4	0.001	0.0044		
POL-2	POL-2	2014 08 07	95.2	-	9.01	-	3.96	184	126	0.3	6.81	0.201	> 201	0.402	0.5	5	0.1	-	0.5	61	27.6	70.8	0.001	0.005		
	POL-2	2014 08 08	96.7	9.02	8.68	20.4	3.4	192	139	0.3	6.86	0.2420	365	0.376	0.5	5	0.1	-	0.5	61	27.2	70.5	0.0011	0.0056		
POL-2X	POL-2	2014 08 09	96.7	9.0	8.87	21.0	4.82	194	145	4.3	7.01	-	-	0.381	0.5	5	0.1	-	0.5	61	27.8	71.2	0.001	0.0057		
	POL-2X	2014 08 09	97.2	9.05	8.88	21.3	4.13	195	144	5.9	6.97	-	-	0.372	0.5	5	0.1	-	0.5	64	28	71.6	0.001	0.0053		
QA/QC RPD %			1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
POL-2	POL-2	2014 08 12	99.6	8.55	8.16	23.0	3.59	203	143	0.3	7.57	-	-	0.56	0.5	5	0.1	-	0.5	68	27.6	75.3	0.0011	0.0079		
POL-2	POL-2	2014 08 12	94.8	8.99	8.58	20.6	1.58	198	135	0.3	6.29	-	-	0.355	0.5	5	0.1	-	0.5	69	27.1	73.4	0.001	0.0061		
POL-2	POL-2	2014 08 13	96.4	8.98	8.65	21.4	1.18	194	132	0.3	6.3	-	-	0.512	7.6	0.5	0.1	-	0.5	68	27.2	73.7	0.001	0.0053		
POL-2	POL-2	2014 08 14	99.8	8.87	8.53	22.5	1.66	200	130	0.3	6.69	-	-	0.373	5	0.5	0.1	-	0.5	63	27.4	75.7	0.001	0.0049		
POL-2	POL-2	2014 08 17	95.9	8.83	8.18	20.1	3.05	203	93	4.8	6.48	-	-	0.328	0.5	5	0.1	-	0.5	68	27.5	74.9	0.001	0.0061		
POL-2	POL-2	2014 08 16	100	8.60	8.28	20.2	1.7	203	142	0.3	6.57	-	-	0.339	0.5	5	0.1	0.5	0.5	68	27.3	76	0.001	0.0058		
POL-2	POL-2	2014 08 15	99.9	8.76	8.26	21.8	1.07	202	137	0.3	6.6	-	-	0.345	0.5	5	0.1	0.5	0.5	81	27.4	75.5	0.001	0.0064		
POL-2	POL-2	2014 08 19	102	8.66	8.09	20.7	3.02	198	133	5.2	6.84	-	-	0.505	5.4	0.5	0.1	-	0.5	74	26.7	74.9	0.001	0.0066		
POL-2	POL-2	2014 08 18	97.5	8.66	8.33	20.7	1.38	200	139	0.3	7.38	-	-	0.389	6.1	0.5	0.1	-	0.5	67	27.4	75.7	0.001	0.006		
POL-2	POL-2	2014 08 20	102	8.38	8.17	20.4	4.8	201	110	5.6	6.43	-	-	0.345	0.5	5	0.1	-	0.5	67	27	75.7	0.0011	0.0063		
POL-2	POL-2	2014 08 21	100	-	8.17	-	7.9	200	141	5.6	6.39	-	-	0.333	0.5	5	0.1	-	0.5	67	27.3	74	0.001	0.0052		
POL-3	POL-3	2014 08 08	99.8	9.02	8.79	19.0	1.66	194	131	3.1	6	0.2420	10	0.333	0.5	5	0.1	-	0.5	60	26.3	75.5	0.001	0.0048		
	POL-3	2014 08 09	97.8	8.98	8.7	18.8	2.98	198	139	5.5	6.49	-	-	0.404	0.5	5	0.1	-	0.5	60	26.5	73.8	0.0058	0.0117		
POL-3	POL-3	2014 08 11	107	7.1	7.89	22.0	2.91	224	162	5.9	8.27	-	-	0.835	15	0.5	0.1	-	0.5	64	25.8	87.6	0.001	0.0476	0.08	
POL-3	POL-3	2014 08 12	96.3	8.85	8.39	21.7	1.15	200	142	0.3	6.3	-	-	0.406	6.4	0.5	0.1	-	0.5	65	27.2	73.7	0.001	0.0068		
POL-3	POL-3	2014 08 13	97.9	8.94	8.56	21.7	1.69	197	136	3.5	6.65	-	-	0.402	10.7	0.5	0.1	-	0.5	66	27	75.2	0.0021	0.0069		
POL-3	POL-3	2014 08 14	98.3	8.89	8.57	22.5	3.36	200	130	0.3	6.77	-	-	0.363	7.2	5.5	0.1	-	0.5	64	27.2	74.9	0.001	0.005		
POL-3	POL-3	2014 08 17	99.6	8.932	8.27	19.7	1.04	202	135	3.5	6.38	-	-	0.365	0.5	5	0.1	-	0.5	68	27.4	74.7	0.001	0.0052		
POL-3	POL-3	2014 08 16	99.7	8.7	5.64	21.0	0.62	200	139	3.7	6.25	-	-	0.333	0.5	5	0.1	0.5	0.5	68	27.1	73.3	0.001	0.006		
POL-3	POL-3	2014 08 15	98.5	8.89	8.38	22.5	3.68	199	133	0.3	6.31	-	-	0.359	0.5	5	0.1	0.5	0.5	80	27.1	74.1	0.001	0.0056		
POL-3	POL-3	2014 08 19	101	8.843	8.32	19.8	0.82	199	138	0.3	6.4	-	-	0.42	6.3	0.5	0.1	-	0.5	77	26.9	74.7	0.001	0.0061		
POL-3	POL-3	2014 08 18	99.6	8.843	8.52	19.8	0.89	200	117	0.3	7.15	-	-	0.386	7.3	0.5	0.1	-	0.5	76	27.5	74.5	0.001	0.0051		
POL-3X	POL-3X	2014 08 18	99.1	8.843	8.49	19.8	0.85	201	96	0.3	7.06	-	-	0.381	7	0.5	0.1	-	0.5	67	27.5	75.3	0.001	0.006		
QA/QC RPD %			1	0	0	1	0	5	1	20	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
POL-3	POL-3	2014 08 20	102	8.53	8.23	20.5	0.75	201	110	0.3	6.38	-	-	0.351	8.3	0.5	0.1	-	0.5	66	27.3	75.9	0.0012	0.0067		
POL-3X	POL-3X	2014 08 20	100	8.53	8.23	20.5	0.66	204	145	0.3	6.28	-	-	0.347	9	0.5	0.1	-	0.5	64	27.1	77.2	0.0011	0.0069		
QA/QC RPD %			2	0	0	0	13	2	28	0	2	-	-	1	0	0	0	0	0	0	0	0	0	0	0	0
POL-4	POL-4	2014 08 21	100	-	8.43	-	0.85	202	135	0.3	5.99	-	-	0.384	8.2	0.5	0.1	-	0.5	66	27.9	76	0.001	0.0045		
	POL-4	2014 08 08	100	9.099	8.89	18.2	2.39	192	132	4.6	6.14	0.2420	28	0.33	0.5	5	0.1	-	0.5	60	26.3	75.6	0.001	0.0053		
POL-4	POL-4	2014 08 09	99.2	8.929	8.78	18.3	2.7	199	139	3.1	7.29	-	-	0.44	0.5	5	0.1	-	0.5	60	26.6	75	0.001	0.0054		
POL-4	POL-4	2014 08 11	83.9	8.726	8.56	22.8	2.25	198	116	0.3	6.48	-	-	0.404	0.5	6.1	0.1	-	0.5	72	26.9	73.6	0.001	0.0063		
POL-4	POL-4	2014 08 12	94.6	8.898	8.52	22.0	1.4	199	140	0.3	6.24	-	-	0.397	0.5	5	0.1	-	0.5	67	27.1	73.4	0.001	0.0056		
POL-4X	POL-4X	2014 08 12	96.7	-	8.52	-	1.08	200	141	0.3	6.17	-	-	0.393	0.5	5	0.1	-	0.5	64	27.2	74.8	0.001	0.0056		
QA/QC RPD %			2	0	0	0	26	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
POL-4	POL-4	2014 08 13	98.1	8.831	8.62	21.1	1.09	196	137	0.3	6.4	-	-	0.373	5.4	6	0.1	-	0.5	72	27.2	75.5	0.001	0.006		
POL-4	POL-4	2014 08 14	97.9	8.993	8.69	22.4	1.09	199	134	0.3	6.53	-	-	0.34	6	0.5	0.1	-	0.5	64	27.2	75	0.001	0.0048		
POL-4	POL-4	2014 08 17	101	8.843	8.26	19.4	0.87	204	90	0.3	6.5	-	-	0.342	6.1	0.5	0.1	-	0.5	68	27.4	76.5	0.001	0.006		
POL-4	POL-4	2014 08 16	99.5	8.403	8.28	21.4	0.66	201	137	0.3	6.44	-	-	0.345	8.6	0.5	0.1	0.5	0.5	65	26.9	75.2	0.001	0.0058		
POL-4	POL-4	2014 08 15	97.8	7.																						

TABLE 1: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters							Microbiological Tests			Dissolved Inorganics															
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (µg/L)	Fluoride (µg/L)	Sulphate (µg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
BC Standards																												
BCWQG Aquatic Life (AW) ^a			n.a	6.5-9.0	6.5-9.0	n.a																						
BCWQG Aquatic Life (30day) (AW) ^b			n.a	n.a	n.a	n.a	Under Review by	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a	SNC	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a	Lavalin	n.a	500	n.a	n.a	n.a	1	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
QUR-1	QUR-1	2014 08 06	48.5	-	7.94	-	0.33	97.2	54	0.3	2.03	-	-	-	0.173	5	62.7	0.1	62.7	0.5	35	5.65	44.4	-	0.001	0.002 ^c		
	QUR-1X	2014 08 06	48.7	-	7.93	-	0.38	96.7	63	0.3	2.06	-	-	-	0.163	5	61.2	0.1	61.2	0.5	35	5.6	43.8	-	0.001	0.002 ^c		
	QA/QC RPD %		0.1	-	0.1	-	0.0	0.1	15	0.0	0.0	-	-	-	0.0	0.0	2	0.0	2	0.0	0.0	0.1	1	-	0.0	0.0		
	QUR-1	2014 08 06	48.7	-	7.93	-	0.52	97.1	58	0.3	2.06	-	-	-	0.132	5	61.9	1	62.9	0.5	34	5.6	44.7	-	0.001	0.002 ^c		
	QUR-1	2014 08 07	47.6	-	7.93	-	0.53	96.9	62	0.3	1.86	-	-	0.115	0.174	5	77.3	0.1	-	0.5	33	5.71	44.5	-	0.001	0.002 ^c		
	QUR-1(11 33)	2014 08 08	50	-	7.98	-	0.5	102	63	0.3	1.95	-	-	-	0.162	5	104	0.1	-	0.5	35	5.76	47.5	-	0.001	0.002 ^c		
	QUR-1(15 43)	2014 08 08	50.8	7.801	7.93	9.9	0.45	103	66	0.3	1.85	-	-	-	0.171	5	116	0.1	-	0.5	35	5.9	47	-	0.001	0.002 ^c		
	QUR-1(10 08)	2014 08 09	52.8	7.34	7.95	9.6	0.4	104	73	0.3	2.09	-	-	-	0.184	5	114	0.1	-	0.5	35	5.89	46.3	-	0.001	0.002 ^c		
	QUR-1(14 30)	2014 08 09	51.6	7.54	7.95	10.9	0.3	103	74	0.3	2.09	-	-	-	0.178	5	110	0.1	-	0.5	34	5.83	45.8	-	0.001	0.002 ^c		
	QUR-1(10 19)	2014 08 10	49.8	7.76	7.87	12.8	0.63	99.9	67	0.3	2.07	-	-	-	0.172	5	93.1	0.1	-	0.5	34	5.77	46.1	-	0.001	0.002 ^c		
	QUR-1(17 45)	2014 08 10	50.3	7.91	7.92	13.6	0.31	100	68	0.3	2.09	-	-	-	0.176	5	92.5	0.1	-	0.5	34	5.77	46.6	-	0.001	0.002 ^c		
	QUR-1(11 18)	2014 08 11	49.3	-	7.88	-	0.45	99.8	70	0.3	2.03	-	-	-	0.154	5	73.9	0.1	-	0.5	34	5.75	45.1	-	0.001	0.002 ^c		
	QUR-1(17 12)	2014 08 11	49.8	7.732	7.93	16.8	0.52	100	68	0.3	2.16	-	-	-	0.148	5	72.2	0.1	-	0.5	34	5.73	45.3	-	0.001	0.002 ^c		
	QUR-1(14 04)	2014 08 12	49.1	-	7.92	-	1.2	99.5	-	-	-	-	-	-	-	-	66.2	1	-	0.5	34	5.77	-	0.05	-	-		
	QUR-1(16 34)	2014 08 12	49.7	8.14	7.88	17.4	0.55	99.4	68	0.3	1.92	-	-	0.142	0.5	64.4	0.1	-	-	0.5	36	5.74	45.2	-	0.001	0.002 ^c		
	QUR-1(20 00)	2014 08 12	49.5	-	7.92	-	0.75	99.6	-	-	-	-	-	-	-	-	64.7	0.1	-	0.5	37	5.78	-	0.05	-	-		
	QUR-1(04 00)	2014 08 13	50.1	-	7.9	-	0.37	99.1	-	-	-	-	-	-	-	-	62.1	0.1	-	0.5	36	5.77	-	0.05	-	-		
	QUR-1(12 00)	2014 08 13	49.4	-	7.91	-	1.22	99.1	-	-	-	-	-	-	-	-	57.5	0.1	-	0.5	34	5.76	-	0.05	-	-		
	QUR-1(13 18)	2014 08 13	48.4	8.2	7.93	18.5	0.25	99.1	68	0.3	1.92	-	-	-	0.139	0.5	56	1.2	-	0.5	36	5.75	45.3	-	0.001	0.002 ^c		
	QUR-1(20 00)	2014 08 13	48.3	-	7.94	-	0.22	96.5	-	-	-	-	-	-	-	-	54.2	0.1	-	0.5	32	5.74	-	-	-	-		
	QUR-1(20 00)	2014 08 14	49	-	7.89	-	0.42	99	-	-	-	-	-	-	-	-	50.7	0.1	-	0.5	34	5.75	-	-	-	-		
	QUR-1(14 45)	2014 08 14	49.1	7.96	7.97	19.8	0.18	95.9	66	0.3	2.17	-	-	-	0.124	0.5	48.4	0.1	-	0.5	33	5.71	45.7	-	0.001	0.002 ^c		
	QUR-1X(14 50)	2014 08 14	46.8	-	7.98	-	0.14	96.4	59	0.3	2.03	-	-	-	0.124	0.5	48.8	0.1	-	0.5	33	5.72	45	-	0.001	0.002 ^c		
	QA/QC RPD %			5	0	0	0	1	11	0	0	-	-	-	0	0	1	0	-	0	0	0.1	0.1	0.1	-	0	0	
	QUR-1(04 00)	2014 08 15	49	-	7.97	-	0.28	100	-	-	-	-	-	-	-	-	56.4	0.1	-	0.5	36	5.75	-	-	-	-		
	QUR-1(12 00)	2014 08 15	48.7	-	8	-	0.32	101	-	-	-	-	-	-	-	-	61.2	0.1	-	0.5	37	5.78	-	-	-	-		
	QUR-1(13 28)	2014 08 15	48.1	8.19	7.94	17.4	0.28	99.6	61	0.3	1.96	-	-	0.133	0.5	61.4	0.1	-	-	0.5	36	5.74	44.6	-	0.001	0.002 ^c		
	QUR-1	2014 08 17	48.4	8.19	7.96	18.0	0.43	99.2	69	0.3	2.08	-	-	-	0.137	0.5	57	0.1	-	0.5	36	5.72	45.2	-	0.001	0.002 ^c		
	QUR-1(14 59)	2014 08 16	49.1	8.21	7.96	18.1	0.45	100	68	0.3	2.18	-	-	-	0.129	0.5	58.2	0.1	58.2	0.5	36	5.72	45.2	-	0.001	0.002 ^c		
	QUR-1(04 00)	2014 08 14	49.2	-	7.94	-	0.14	96.5	-	-	-	-	-	-	-	-	53.6	0.1	-	0.5	32	5.73	-	-	-	-		
	QUR-1(12 00)	2014 08 14	48.4	-	7.97	-	0.18	97.1	-	-	-	-	-	-	-	-	50.2	0.1	-	0.5	32	5.73	-	-	-	-		
	QUR-1(20 00)	2014 08 16	50.3	-	7.97	-	0.28	100	-	-	-	-	-	-	-	-	61.4	0.1	-	0.5	34	5.77	-	-	-	-		
	QUR-1(04 00)	2014 08 19	50.6	-	7.93	-	0.41	99	-	-	-	-	-	-	-	-	58.5	0.1	-	0.5	34	5.68	-	-	-	-		
	QUR-1(12 00)	2014 08 18	50.1	-	7.92	-	0.33	98.8	-	-	-	-	-	-	-	-	62.3	0.1	-	0.5	34	5.68	-	-	-	-		
	QUR-1(12 00)	2014 08 19	49.5	-	7.93	-	0.42	98.9	-	-	-	-	-	-	-	-	66.8	0.1	-	0.5	34	5.7	-	-	-	-		
	QUR-1(13 27)	2014 08 19	49.8	-	7.88	-	0.36	97.5	67	0.3	2.07	-	-	0.142	0.5	58.1	0.1	-	-	0.5	34	5.65	45.2	-	0.001	0.002 ^c		
	QUR-1(20 00)	2014 08 18	51.4	-	7.93	-	0.36	98.9	-	-	-	-	-	-	-	-	57.7	0.1	-	0.5	35	5.66	-	-	-	-		
	QUR-1(09 18)	2014 08 18	48.6	8.11	7.99	17.3	0.54	99	69	0.3	2.5	-	-	0.153	5.3	62.6	0.1	-	-	0.5	34	5.76	44.7	-	0.001	0.002 ^c		
	QUR-1(20 00)	2014 08 17	49.5	-	7.97	-	0.29	99.5	-	-	-	-	-	-	-	-	61.6	0.1	-	0.5	33	5.78	-	-	-	-		
	QUR-1(04 00)	2014 08 18	49.5	-	7.96	-	0.4	99.8	-	-	-	-	-	-	-	-	63.4	0.1	-	0.5	33	5.79	-	-	-	-		
QUR-1(04 00)	2014 08 20	49.7	-	7.89	-	0.36	99.1	-	-	-	-	-	-	-	-	62.4	0.1	-	0.5	33	5.62	-	-	-	-			
QUR-1(12 00)	2014 08 20	50.6	-	7.9	-	0.41	99.4	-	-	-	-	-	-	-	-	65.6	0.1	-	0.5	34	5.69	-	-	-	-			
QUR-1(16 40)	2014 08 20	50.5	-	7.9	-	0.63	99.8	65	0.3	1.8	-	-	0.132	0.5	74.2	0.1	-	-	0.5	34	5.72	44.7	-	0.001	0.002 ^c			
QUR-1(20 00)	2014 08 19	50	-	7.94	-	0.31	99.1	-	-	-	-	-	-	-	-	59.2	0.1	-	0.5	35	5.64	-	-	-	-			
QUR-1(20 00)	2014 08 20	50.9	-	7.85	-	0.52	101	-	-	-	-	-	-	-	-	92	0.1	-	0.5	34	5.88	-	-	-	-			
QUR-1(04 00)	2014 08 21	51.2	-	7.86	-	0.69	99.3	-	-	-	-	-	-	-	-	81	0.1	-	0.5	36	5.82	-	-	-	-			
QUR-1(12 00)	2014 08 21	50.9	-	7.87	-	0.5	99.6	-	-	-	-	-	-	-	-	82.7	0.1	-	0.5	36	5.83	-	-	-	-			
QUR-1(120 00)	2014 08 21	51.3	-	7.88	-	0.81	1																					

TABLE 1: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics																
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (mg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)					
BC Standards																															
BCWQG Aquatic Life (AW) ^{3,c}			n.a	6.5-9.0	6.5-9.0	n.a																									
BCWQG Aquatic Life (30day) (AW) ^{3,d}			n.a	n.a	n.a	n.a	Under Review by SNC Lavalin																								
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a																									
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a																									
QUL-1	QUL-1	2014 08 06	48	8.13	7.97	20.4	0.35	94.6	59	0.3	2.16	-	-	-	0.146	5	50.3	0.1	-	0.5	31	5.6	43.8	-	0.001	0.002 ²					
	QUL-2	2014 08 06	48.3	8.13	7.98	20.6	0.33	94.4	58	0.3	2.06	-	-	-	0.152	5	48.3	0.1	-	0.5	31	5.59	43.7	-	0.001	0.002 ²					
	QUL-2	2014 08 09	48.8	7.79	7.85	18.0	0.49	96.4	64	0.3	2.38	-	-	-	0.136	5	54.8	0.1	-	0.5	35	5.54	43.5	-	0.001	0.002 ²					
	QUL-2	2014 08 11	47.7	7.69	7.93	20.2	0.27	97.8	67	0.3	2.39	-	-	-	0.139	5	52.3	0.1	-	0.5	34	5.62	43.7	-	0.001	0.002 ²					
	QUL-2-0M	2014 08 16	48.8	8.07	7.97	-	0.4	95	54	0.3	2.08	-	-	-	0.111	5	42.5	0.1	-	0.5	36	5.64	43.2	-	0.001	0.002 ²					
	QUL-2-10M	2014 08 16	50.6	7.89	7.93	12.1	0.3	97.7	60	0.3	1.97	-	-	-	0.14	5	86	0.1	-	0.5	36	5.75	44.4	-	0.001	0.002 ²					
	QUL-2-30M	2014 08 16	53.3	7.62	7.84	4.7	1.94	107	68	0.3	1.81	-	-	-	0.181	5	141	0.1	-	0.5	38	6.34	48.1	-	0.001	0.002 ²					
	QUL-2-47M	2014 08 21	62.8	7.94	7.88	5.5	48.2	133	90	22.9	1.99	-	-	-	0.328	28.3	195	0.1	-	0.5	55	12	55.4	-	0.0407	0.21					
	QUL-3	2014 08 06	47.6	8.08	7.96	20.9	0.34	93.8	57	0.3	2.32	-	-	-	0.17	5	46.8	0.1	-	0.5	33	5.57	44.1	-	0.001	0.002 ²					
	QUL-3	2014 08 09	48.3	7.94	7.89	18.7	0.4	95.8	67	0.3	2.27	-	-	-	0.13	5	55.4	0.1	-	0.5	34	5.52	42.8	-	0.001	0.002 ²					
QUL-3	2014 08 10	48.2	7.94	7.94	21.7	0.32	95.8	68	0.3	2.28	-	-	-	0.121	5	53.7	1.1	-	0.5	36	5.55	44.4	-	0.001	0.002 ²						
QUL-3X	2014 08 10	48.7	7.94	7.94	21.7	0.37	96	60	0.3	2.19	-	-	-	0.12	5	54.4	0.1	-	0.5	35	5.56	44.8	-	0.001	0.002 ²						
QA/QC RPD %			1	0	0	0	0	1	13	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
QUL-3	2014 08 11	48	7.8	7.91	20.5	0.54	97.2	66	0.3	2.15	-	-	-	0.136	5	51.1	0.1	-	0.5	33	5.61	43.3	-	0.001	0.002 ²						
QUL-3	2014 08 12	47.4	8.02	7.97	21.0	0.28	95.3	67	0.3	1.9	-	-	-	0.128	5	45.7	0.1	-	0.5	36	5.65	44	-	0.012	0.002 ²						
QUL-3	2014 08 13	47.2	-	7.99	20.6	0.25	97.8	60	0.3	2.18	-	-	-	0.132	5	44.1	0.1	-	0.5	33	5.63	44.7	-	0.001	0.002 ²						
QUL-3	2014 08 14	49	8.05	7.96	21.6	0.21	98.5	68	0.3	2	-	-	-	0.114	5	48.8	0.1	-	0.5	35	5.66	44.1	-	0.001	0.002 ²						
QUL-3	2014 08 15	48.6	8.07	7.98	21.2	0.32	96.9	62	0.3	1.8	-	-	-	0.105	5	45.4	0.1	-	0.5	35	5.66	44.2	-	0.001	0.002 ²						
QUL-3	2014 08 16	47.9	8.08	7.96	20.1	0.33	95.3	65	0.3	2.18	-	-	-	0.109	5	43.4	0.1	-	0.5	36	5.62	51.4	-	0.001	0.002 ²						
QUL-3X	2014 08 16	48.3	8.08	7.98	-	0.41	95.1	59	0.3	1.92	-	-	-	0.117	5	43.8	0.1	-	0.5	37	5.63	43.8	-	0.001	0.002 ²						
QA/QC RPD %			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QUL-3	2014 08 17	48.3	7.94	7.98	20.8	0.3	96.7	60	0.3	2.36	-	-	-	0.125	5	42.2	0.1	-	0.5	34	5.64	43.9	-	0.001	0.002 ²						
QUL-3	2014 08 19	48.7	-	7.94	-	0.28	96.6	75	0.3	1.94	-	-	-	0.115	5	44.6	0.1	-	0.5	32	5.55	44	-	0.001	0.002 ²						
QUL-4	2014 08 06	48.6	8.03	7.95	21.4	0.81	94.9	61	0.3	2.17	-	-	-	0.146	5	43.4	0.1	-	0.5	33	5.62	43.9	-	0.001	0.002 ²						
QUL-5	2014 08 06	48.1	8.01	7.94	21.1	0.76	95.9	57	0.3	2.16	-	-	-	0.237	5	43.8	0.1	-	0.5	33	5.66	43.6	-	0.001	0.002 ²						
QUL-6	2014 08 06	48	8.05	7.96	21.3	0.83	95.8	57	0.3	2.23	-	-	-	0.168	5	44	0.1	-	0.5	33	5.76	44	-	0.001	0.002 ²						
QUL-7	2014 08 06	48	7.91	7.92	21.2	0.83	95	59	0.3	2.19	-	-	-	0.178	5	40.8	0.1	-	0.5	34	5.82	44.1	-	0.001	0.002 ²						
QUL-8	2014 08 06	47.8	7.96	7.91	21.6	1.4	95.8	60	0.3	2.21	-	-	-	0.149	5	36.4	1.8	-	0.5	34	5.87	44.5	-	0.001	0.002 ²						
QUL-9	2014 08 06	48.3	8.01	7.93	21.5	1.14	94.6	58	0.3	2.15	-	-	-	0.15	5	42.4	1.1	-	0.5	34	5.82	44.2	-	0.001	0.002 ²						
QUL-9	2014 08 09	49	7.84	7.84	16.8	0.78	96.7	70	0.3	2.42	-	-	-	0.141	5	57.6	0.1	-	0.5	35	5.81	43.5	-	0.001	0.002 ²						
QUL-9	2014 08 10	49.2	7.81	7.94	20.7	0.56	96.5	68	0.3	2.33	-	-	-	0.13	5	54.4	0.1	-	0.5	35	5.62	45.4	-	0.001	0.002 ²						
QUL-9	2014 08 12	47.1	7.95	7.96	20.5	0.32	96	64	0.3	1.99	-	-	-	0.151	5	49.2	0.1	-	0.5	36	5.66	44.5	-	0.011	0.002 ²						
QUL-9	2014 08 13	47.7	-	7.88	20.5	0.65	98.9	61	0.3	2.69	-	-	-	0.115	5	12.8	1.1	-	0.5	34	5.6	45.1	-	0.001	0.002 ²						
QUL-9X	2014 08 13	48.1	-	7.92	-	0.54	98.7	60	0.3	2.68	-	-	-	0.125	5	11.9	1.2	-	0.5	33	5.59	44.9	-	0.001	0.002 ²						
QA/QC RPD %			1	0	1	0	18	1	2	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
QUL-9	2014 08 14	49	8.02	7.95	20.4	0.25	97.7	67	0.3	2.15	-	-	-	0.128	5	41.9	0.1	-	0.5	36	5.65	43.8	-	0.001	0.002 ²						
QUL-9	2014 08 15	49.2	-	7.92	-	0.74	96.6	66	0.3	1.97	-	-	-	0.102	5	27.6	1.3	-	0.5	36	5.64	43.6	-	0.012	0.002 ²						
QUL-9	2014 08 16	48.3	8.07	7.96	20.4	0.31	95.6	60	0.3	2	-	-	-	0.116	5	42.9	0.1	-	0.5	36	5.64	43.4	-	0.001	0.002 ²						
QUL-9	2014 08 17	48.4	7.82	7.94	21.2	0.35	96.7	62	0.3	2.5	-	-	-	0.136	5	36.7	0.1	-	0.5	34	5.63	43.8	-	0.001	0.002 ²						
QUL-9	2014 08 19	47.7	-	7.92	-	0.24	96.7	68	0.3	2.17	-	-	-	0.111	5	42.6	0.1	-	0.5	32	5.54	44.2	-	0.001	0.002 ²						
QUL-9X	2014 08 19	49	-	7.85	-	0.24	95.8	65	0.3	2.03	-	-	-	0.113	5	42	0.1	-	0.5	37	5.55	43.7	-	0.0026	0.002 ²						
QA/QC RPD %			3	0	0	0	0	1	5																						

TABLE 1: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics													
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
BC Standards																												
BCWQG Aquatic Life (AW) ^{a,c}			n.a	6.5-9.0	6.5-9.0	n.a																						
BCWQG Aquatic Life (30day) (AW) ^{b,d}			n.a	n.a	n.a	n.a	Under Review by SNC Lavalin																					
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a																						
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a																						
QUL-12	QUL-12-0M	2014 08 07	49.8	-	7.89	-	13.1	97.9	73	13.8	2.53	-	-	-	0.106	5	38.7	0.1	-	0.5	36	5.85	45.9	-	0.001	0.002 ^e		
	QUL-12-10M	2014 08 07	50.7	-	7.91	-	1.08	99.7	77	0.3	2	-	-	-	0.164	5	112	0.1	-	0.5	35	5.77	47	-	0.001	0.002 ^e		
	QUL-12-15M	2014 08 07	52.7	-	7.92	-	1.09	104	74	0.3	1.88	-	-	-	0.181	5	139	0.1	-	0.5	37	6.04	48.7	-	0.001	0.002 ^e		
	QUL-12-20M	2014 08 07	53.5	-	7.91	-	0.7	105	74	0.3	1.85	-	-	-	0.18	5	140	0.1	-	0.5	36	6.07	49	-	0.001	0.002 ^e		
	QUL-12-5M	2014 08 07	48.6	-	7.97	-	0.47	94.8	68	0.3	2	-	-	-	0.135	5	71.2	0.1	-	0.5	35	5.51	44.3	-	0.001	0.002 ^e		
QUL-13	QUL-13-0M	2014 08 07	47.9	-	7.94	-	3.01	94.6	68	3.2	2.21	-	-	-	0.113	5	54.8	0.1	-	0.5	35	5.55	44.6	-	0.001	0.002 ^e		
	QUL-13-10M	2014 08 07	49.8	-	7.93	-	0.87	99.2	70	0.3	1.94	-	-	-	0.164	5	111	0.1	-	0.5	35	5.72	46.3	-	0.001	0.002 ^e		
	QUL-13-15M	2014 08 07	52.5	-	7.92	-	1.18	104	75	0.3	1.84	-	-	-	0.174	5	136	0.1	-	0.5	36	6.02	48.3	-	0.001	0.002 ^e		
	QUL-13-20M	2014 08 07	50.2	-	7.94	-	0.61	106	68	0.3	1.79	-	-	-	0.185	5	141	0.1	-	0.5	36	6.08	49.2	-	0.001	0.002 ^e		
	QUL-13-5M	2014 08 07	48.2	-	7.96	-	0.49	94.5	66	0.3	2.08	-	-	-	0.176	5	72.8	0.1	-	0.5	34	5.5	44.5	-	0.001	0.002 ^e		
QUL-14	QUL-14-0M	2014 08 07	48.6	-	7.87	-	7.45	98.8	69	9.4	2.69	2420	236	-	0.124	5	27.5	0.1	-	0.5	36	5.84	45.7	-	0.001	0.002 ^e		
	QUL-14-3M	2014 08 07	47.9	-	7.94	-	1.25	95.9	66	0.3	2.05	-	-	-	0.137	5	66.5	0.1	-	0.5	34	5.56	44.5	-	0.001	0.002 ^e		
QUL-15	QUL-15-0M	2014 08 07	49.9	-	7.91	-	2.26	97.5	69	0.3	2.58	2420	461	-	0.127	5	34.8	0.1	-	0.5	35	5.78	52.2	-	0.001	0.002 ^e		
	QUL-15-4.5M	2014 08 07	48.1	-	7.92	-	1.15	95.6	67	0.3	2.1	-	-	-	0.131	5	70	0.1	-	0.5	34	5.54	50	-	0.001	0.002 ^e		
QUL-16	QUL-16-0M	2014 08 07	48.3	-	7.93	-	0.97	95	64	0.3	2.21	-	-	-	0.144	5	56.7	0.1	-	0.5	34	5.53	44.3	-	0.001	0.002 ^e		
	QUL-16-4.5M	2014 08 07	48	-	7.96	-	0.5	95.3	61	0.3	2.07	-	-	-	0.13	5	68	0.1	-	0.5	33	5.5	44.3	-	0.001	0.002 ^e		
QUL-17	QUL-17	2014 08 08	48.7	8.01	7.97	17.3	1.31	95.5	60	0.3	2.45	46	2	-	0.122	5	65.1	0.1	-	0.5	34	5.51	44.2	-	0.001	0.002 ^e		
	QUL-17	2014 08 09	48.6	7.86	7.88	18.2	0.44	96.3	66	0.3	2.31	-	-	-	0.135	5	63	0.1	-	0.5	34	5.49	42.9	-	0.001	0.002 ^e		
	QUL-17	2014 08 11	48	7.97	7.91	20.2	0.41	97.5	64	0.3	2.36	-	-	-	0.133	5	52.4	0.1	-	0.5	34	5.68	43.3	-	0.001	0.002 ^e		
	QUL-17	2014 08 12	47	8.01	7.97	20.6	0.44	95.6	64	0.3	1.91	-	-	-	0.135	5	49.5	0.1	-	0.5	36	5.65	44	-	0.013	0.002 ^e		
	QUL-17	2014 08 13	47.5	-	7.99	20.6	0.39	97.8	58	0.3	2.15	-	-	-	0.12	5	42.7	0.1	-	0.5	33	5.63	44.5	-	0.001	0.002 ^e		
	QUL-17	2014 08 14	49.4	7.95	7.95	20.9	0.29	97.5	63	0.3	2.11	-	-	-	0.107	5	43	0.1	-	0.5	36	5.63	44.2	-	0.001	0.002 ^e		
	QUL-17X	2014 08 14	48.5	7.95	7.95	-	0.26	97.8	66	0.3	2.15	-	-	-	0.111	5	43	0.1	-	0.5	36	5.65	44.3	-	0.001	0.002 ^e		
	QAVQC RPD %		2	0	0			1	5	0.3							0				1							
	QUL-18	QUL-17	2014 08 15	48.4	8.13	7.98	21.0	0.25	96.2	59	0.3	1.92	-	-	-	0.103	5	41.1	0.1	-	0.5	36	5.63	43.7	-	0.001	0.002 ^e	
		QUL-17	2014 08 16	48.6	8.12	7.95	20.6	0.52	95.6	59	0.3	2.04	-	-	-	0.117	5	46	0.1	-	0.5	36	5.62	42.5	-	0.001	0.002 ^e	
QUL-17		2014 08 17	47.9	7.78	7.97	21.1	0.36	96.5	62	0.3	2.32	-	-	-	0.122	5	40.8	0.1	-	0.5	34	5.64	43.6	-	0.001	0.002 ^e		
QUL-18-0M		2014 08 08	48.6	8.03	7.95	-	0.38	95.4	64	0.3	2.07	27	1	-	0.129	5	68.9	0.1	-	0.5	34	5.5	44	-	0.001	0.002 ^e		
QUL-18-8M		2014 08 08	50.7	-	7.97	-	0.58	98.9	68	0.3	1.92	-	-	-	0.153	5	99.3	0.1	-	0.5	35	5.66	46.1	-	0.001	0.002 ^e		
QUL-18-30M		2014 08 08	54.6	-	7.95	-	0.96	107	69	0.3	1.89	-	-	-	0.185	5	143	0.1	-	0.5	36	6.11	49.3	-	0.001	0.002 ^e		
QUL-18-0M		2014 08 09	48.6	7.93	7.81	16.6	0.64	94.4	68	0.3	2.03	-	-	-	0.143	5	64.4	0.1	-	0.5	35	5.53	42.8	-	0.001	0.002 ^e		
QUL-18-30M		2014 08 09	54.5	-	7.87	-	3.4	106	75	0.3	1.91	-	-	-	0.186	5	138	0.1	-	0.5	37	6.15	48	-	0.001	0.002 ^e		
QUL-18-8M		2014 08 09	49.8	-	7.87	-	0.37	97.1	73	0.3	2.01	-	-	-	0.158	5	87.7	0.1	-	0.5	34	5.6	43.8	-	0.001	0.002 ^e		
QUL-18		2014 08 10	48.8	7.77	7.91	20.5	0.39	96.2	63	0.3	2.25	-	-	-	0.136	5	56.3	0.1	-	0.5	34	5.59	45	-	0.001	0.002 ^e		
QUL-18		2014 08 11	47.8	7.73	7.91	20.2	0.38	97.7	67	0.3	2.22	-	-	-	0.203	5	53.6	0.1	-	0.5	34	5.63	44.3	-	0.001	0.002 ^e		
QUL-18		2014 08 12	47.4	7.92	7.94	21.0	0.51	95.6	64	0.3	1.96	-	-	-	0.126	5	51.1	0.1	-	0.5	36	5.67	44.1	-	0.001	0.002 ^e		
QUL-18-0M		2014 08 13	47.2	-	7.98	-	0.34	98.2	57	0.3	2.1	-	-	-	0.12	5	44.8	0.1	-	0.5	33	5.63	44.7	-	0.001	0.002 ^e		
QUL-18-16M		2014 08 13	50.2	-	7.97	-	0.27	103	70	0.3	1.95	-	-	-	0.173	5	111	0.1	-	0.5	34	5.85	46.2	-	0.001	0.002 ^e		
QUL-18-30M		2014 08 13	52.3	-	7.97	-	0.49	109	69	0.3	1.91	-	-	-	0.188	5	139	0.1	-	0.5	35	6.21	48.9	-	0.001	0.002 ^e		
QUL-18		2014 08 14	49.2	8.04	7.97	21.2	0.22	97.9	67	0.3	1.98	-	-	-	0.105	5	46	0.1	-	0.5	35	5.65	44.1	-	0.001	0.002 ^e		
QUL-18		2014 08 15	48.9	8.09	7.93	21.0	0.28	94.7	66	0.3	1.86	-	-	-	0.102	5	42.1	0.1	-	0.5	36	5.62	43.3	-	0.001	0.002 ^e		
QUL-18-0M		2014 08 16	48.3	8.08	7.95	-	0.62	94.7	64	0.3	2.02	-	-	-	0.106	5	41	0.1	-	0.5	36	5.6	43.9	-	0.001	0.002 ^e		
QUL-18-10M	2014 08 16	50	7.82	7.94	13.9	1.4	97.4	64	0.3	2.06	-	-	-	0.136	5	87.9	0.1	-	0.5	36	5.82	44.6	-	0.001	0.002 ^e			
QUL-18-30M	2014 08 16	54.6	7.6	7.91	4.7	3.17	106	68	0.3	1.7	-	-	-	0.173	5	141	0.1	-	0.5	38	6.37	49.1	-	0.001	0.002 ^e			
QUL-18	2014 08 19	48.6	-	7.93	-	0.35	96.5	63	0.3	2.07	-	-	-	0.112	5	40.3	0.1	-	0.5	32	5.							

TABLE 1: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																												
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards			26.1-100 ^a	n/a	350	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
BCWOG Aquatic Life (AW) ^{b,c}			50-1000 ^d	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
BCWOG Drinking Water (DW)			200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
QUL-12	QUL-12-0M	2014 08 07	12.4	16.7	0.30	1.94	6.45	0.556	1.02	0.1	0.13	7.42	0.1	0.10	0.01	0.5	0.1	1.7	0.05	0.74	-	0.413	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3	
	QUL-12-10M	2014 08 07	8	17.1	0.30	1.98	0.459	0.459	0.927	0.1	0.1	5.44	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.84	-	0.274	0.5	0.5	0.01	0.01	0.10	0.142	0.1	0.3	
	QUL-12-15M	2014 08 07	6.7	17.8	0.30	2.04	0.522	0.466	1.03	0.1	0.11	5.34	0.1	0.10	0.01	0.5	0.1	0.67	0.05	0.72	-	0.275	0.5	0.5	0.01	0.01	0.10	0.149	0.1	0.3	
	QUL-12-20M	2014 08 07	5.5	18	0.30	2.05	0.496	0.471	0.997	0.1	0.1	5.13	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.79	-	0.266	0.5	0.5	0.01	0.01	0.10	0.152	0.1	0.3	
	QUL-12-5M	2014 08 07	10.2	16.3	0.30	1.9	0.174	0.453	0.912	0.1	0.1	5.15	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.81	-	0.29	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3	
QUL-13	QUL-13-0M	2014 08 07	11	16.1	0.30	1.88	2.03	0.49	1	0.1	0.11	5.94	0.1	0.10	0.01	0.5	0.1	0.79	0.05	0.8	-	0.32	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3	
	QUL-13-10M	2014 08 07	8.2	16.7	0.30	1.95	0.275	0.469	0.953	0.1	0.11	5.27	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.89	-	0.273	0.5	0.5	0.01	0.01	0.10	0.14	0.1	0.3	
	QUL-13-15M	2014 08 07	6.1	17.7	0.30	2.03	0.287	0.47	0.986	0.1	0.1	5.08	0.1	0.10	0.01	0.5	0.1	0.57	0.05	0.87	-	0.273	0.5	0.5	0.01	0.01	0.10	0.15	0.1	0.3	
	QUL-13-20M	2014 08 07	6.1	16.9	0.30	1.95	0.342	0.478	1	0.1	0.1	5.11	0.1	0.10	0.01	0.5	0.1	0.57	0.05	0.8	-	0.269	0.5	0.5	0.01	0.01	0.10	0.15	0.1	0.3	
	QUL-13-5M	2014 08 07	10.4	16.2	0.30	1.87	0.158	0.461	0.904	0.1	0.1	5.21	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.81	-	0.272	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3	
QUL-14	QUL-14-0M	2014 08 07	11.1	16.3	0.30	1.92	6.63	0.576	0.991	0.1	0.14	6.99	0.1	0.10	0.01	0.5	0.1	1.38	0.05	0.65	-	0.386	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3	
	QUL-14-3M	2014 08 07	12.3	16.1	0.30	1.87	0.934	0.478	0.937	0.1	0.1	5.42	0.1	0.10	0.01	0.5	0.1	0.59	0.05	0.65	-	0.299	0.5	0.5	0.01	0.01	0.10	0.136	0.1	0.3	
	QUL-14-5M	2014 08 07	28.6	16.4	0.30	1.95	6.24	0.59	1	0.1	0.3	6.82	0.1	0.10	0.01	0.5	0.1	1.33	0.05	0.75	-	0.374	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3	
QUL-15	QUL-15-0M	2014 08 07	10.3	16.2	0.30	1.89	0.405	0.47	0.901	0.1	0.1	5.19	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.75	-	0.277	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3	
	QUL-15-4.5M	2014 08 07	11.1	16.2	0.30	1.9	2.18	0.505	0.82	0.1	0.13	5.71	0.1	0.10	0.01	0.5	0.1	0.64	0.05	0.8	-	0.315	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3	
QUL-16	QUL-16-0M	2014 08 07	10.4	16.1	0.30	1.89	0.864	0.49	0.919	0.1	0.13	5.36	0.1	0.10	0.01	0.5	0.1	0.58	0.05	0.78	-	0.29	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3	
	QUL-16-4.5M	2014 08 07	12.2	16.4	0.30	1.91	0.754	0.464	0.838	0.1	0.1	5.49	0.1	0.10	0.01	0.5	0.1	0.66	0.05	0.55	-	0.279	0.5	0.5	0.01	0.01	0.10	0.127	0.1	0.3	
QUL-17	QUL-17	2014 08 09	9.9	16.4	0.30	1.88	0.656	0.483	0.839	0.1	0.1	5.35	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.56	-	0.296	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3	
	QUL-17	2014 08 11	11	16.1	0.30	1.89	1.76	0.503	0.847	0.1	0.12	5.46	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.77	-	0.286	0.5	0.5	0.01	0.01	0.10	0.129	0.1	0.3	
	QUL-17	2014 08 12	10	15.8	0.30	1.83	0.222	0.466	0.85	0.1	0.1	5.41	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.77	-	0.311	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3	
	QUL-17	2014 08 13	9.4	15.9	0.30	1.9	0.284	0.471	0.833	0.1	0.1	5.47	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.89	-	0.332	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3	
	QUL-17	2014 08 14	12.6	16.6	0.30	1.93	0.843	0.475	0.815	0.1	0.1	5.39	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.63	-	0.298	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3	
	QUL-17X	2014 08 14	10	16.3	0.30	1.88	0.802	0.461	0.829	0.1	0.12	5.33	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.64	-	0.299	0.5	0.5	0.01	0.01	0.10	0.124	0.1	0.3	
	QA/QC RPD %			2	3	5	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	QUL-18	QUL-18	2014 08 15	9.6	16.3	0.30	1.88	0.574	0.473	0.836	0.1	0.12	5.52	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.301	0.5	0.5	0.01	0.01	0.10	0.127	0.1	0.3
		QUL-18	2014 08 16	10.3	16.3	0.30	1.89	0.484	0.469	0.797	0.1	0.1	5.43	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.64	-	0.287	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3
		QUL-18	2014 08 17	10	16.1	0.30	1.88	0.894	0.47	0.82	0.1	0.1	5.37	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.59	-	0.292	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3
QUL-18-0M		2014 08 08	10.9	16.3	0.30	1.91	0.294	0.468	0.824	0.1	0.11	5.37	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.57	-	0.301	0.5	0.5	0.01	0.01	0.10	0.128	0.1	0.3	
QUL-18-8M		2014 08 08	11.1	17	0.30	1.97	0.188	0.46	0.856	0.1	0.1	5.32	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.62	-	0.282	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3	
QUL-18-30M		2014 08 08	5.9	18.4	0.30	2.11	1.73	0.462	0.911	0.1	0.1	5.25	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.71	-	0.265	0.5	0.5	0.01	0.01	0.10	0.143	0.1	0.3	
QUL-18-0M		2014 08 09	10.3	16.4	0.30	1.89	0.959	0.474	0.839	0.1	0.1	5.42	0.1	0.10	0.01	0.5	0.1	0.58	0.05	0.5	-	0.312	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3	
QUL-18-30M		2014 08 09	5.6	18.4	0.30	2.08	9.54	0.469	0.925	0.1	0.11	5.9	0.1	0.10	0.01	0.5	0.1	0.82	0.05	0.64	-	0.297	0.5	0.5	0.01	0.01	0.10	0.157	0.1	0.3	
QUL-18-8M		2014 08 09	9.4	16.8	0.30	1.9	0.149	0.469	0.833	0.1	0.1	5.02	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.261	0.5	0.5	0.01	0.01	0.10	0.142	0.1	0.3	
QUL-18		2014 08 10	11.4	16.4	0.30	1.89	1.18	0.493	0.854	0.1	0.1	5.53	0.1	0.10	0.01	0.5	0.1	0.54	0.05	0.54	-	0.29	0.5	0.5	0.01	0.01	0.10	0.131	0.1	0.3	
QUL-18		2014 08 11	12.3	16.1	0.30	1.86	1.07	0.495	0.829	0.1	0.11	5.38	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.03	-	0.286	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3	
QUL-18		2014 08 12	10.1	16	0.30	1.84	0.438	0.484	0.827	0.1	0.1	5.22	0.1	0.10	0.01	0.5	0.1	0.53	0.05	0.76	-	0.3	0.5	0.5	0.01	0.01					

TABLE 1: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics														
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)			
BC Standards																													
BCWQG Aquatic Life (AW) ^{a,c}			na	6.5-9.0	6.5-9.0	na																							
BCWQG Aquatic Life (30day) (AW) ^{b,c}			na	na	na	na	Under Review by SNC																						
BCWQG Drinking Water (DW)			na	6.5-8.5	6.5-8.5	na																							
Canadian Drinking Water Quality (DW)			na	na	na	na	Lavalin																						
QUL-19	QUL-19	2014 08 08	48.4	8.1	7.99	18.7	0.37	95.3	61	0.3	2.08	236	1	na	0.122	0.5	49.6	0.1	-	0.5	34	5.51	43.8	-	0.001	0.002 ^d			
	QUL-19	2014 08 09	48.5	7.93	7.9	17.9	0.34	95.5	67	0.3	2.25	-	-	na	0.126	0.5	57.1	0.1	-	0.5	35	5.5	42.6	-	0.001	0.002 ^d			
	QUL-19	2014 08 10	48.2	7.87	7.92	20.7	0.42	95.7	65	0.3	2.3	-	-	na	0.126	0.5	43.4	0.1	-	0.5	35	5.63	45.3	-	0.001	0.002 ^d			
	QUL-19	2014 08 11	46.3	7.99	7.93	19.5	0.34	97.1	68	0.3	2.2	-	-	na	0.13	0.5	45.6	0.1	-	0.5	34	5.63	43.8	-	0.001	0.002 ^d			
	QUL-19X	2014 08 11	46.1	7.99	7.93	-	0.38	97	67	0.3	2.35	-	-	na	0.126	0.5	47.5	0.1	-	0.5	33	5.62	44	-	0.001	0.002 ^d			
	QA/QC RPD %		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	QUL-19	2014 08 12	47.8	8.01	7.97	21.4	0.35	96	59	0.3	1.66	-	-	na	0.112	0.5	54.6	0.1	-	0.5	35	5.72	44.4	-	0.001	0.002 ^d			
	QUL-19	2014 08 13	47.5	-	7.99	20.9	0.38	98.5	54	0.3	2.03	-	-	na	0.117	0.5	49.1	0.1	-	0.5	32	5.6	44.5	-	0.001	0.002 ^d			
	QUL-19	2014 08 14	49.4	8.15	7.96	22.0	0.25	98.3	67	0.3	1.87	-	-	na	0.116	0.5	48.9	0.1	-	0.5	35	5.69	44.4	-	0.001	0.002 ^d			
	QUL-19	2014 08 15	48.8	8.12	7.99	21.1	0.21	97.1	62	0.3	1.84	-	-	na	0.102	0.5	47.7	0.1	-	0.5	35	5.65	43.8	-	0.001	0.002 ^d			
	QUL-19	2014 08 16	48.8	8.1	7.95	20.5	0.28	93.4	63	0.3	2.07	-	-	na	0.105	0.5	42.4	0.1	-	0.5	35	5.67	43.5	-	0.001	0.002 ^d			
	QUL-19	2014 08 17	49.1	7.79	7.97	20.6	0.38	98.8	62	0.3	2.48	-	-	na	0.117	0.5	31.5	0.1	-	0.5	35	5.79	45	-	0.001	0.002 ^d			
	QUL-19X	2014 08 17	48.7	7.79	7.99	20.6	0.39	98.6	67	0.3	2.47	-	-	na	0.12	0.5	31.2	0.1	-	0.5	35	5.81	44.2	-	0.001	0.002 ^d			
	QA/QC RPD %		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	QUL-19	2014 08 19	48.6	-	7.85	-	0.3	96.4	67	0.3	2.01	-	-	na	0.112	0.5	41.6	0.1	-	0.5	33	5.72	50.4	-	0.001	0.002 ^d			
	QUL-19	2014 08 21	49.7	8.35	7.9	18.8	0.39	96	62	0.3	2.04	-	-	na	0.12	0.5	45.9	0.1	-	0.5	35	5.64	43.7	-	0.001	0.002 ^d			
	QUL-20	2014 08 08	52.5	7.78	7.95	8.1	0.43	104	68	0.3	2.04	15	0.1	na	0.164	0.5	123	0.1	-	0.5	35	5.88	47.7	-	0.001	0.002 ^d			
	QUL-20X	2014 08 08	52.7	7.78	7.96	-	0.45	104	69	0.3	1.89	15	0.1	na	0.174	0.5	123	0.1	-	0.5	35	5.9	48.5	-	0.001	0.002 ^d			
	QA/QC RPD %		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	QUL-20	2014 08 09	50.8	7.73	7.84	11.0	0.48	100	69	0.3	2.14	-	-	na	0.174	0.5	104	0.1	-	0.5	34	5.77	45	-	0.001	0.002 ^d			
QUL-20	2014 08 11	47.5	7.89	7.93	16.2	0.41	98.9	71	0.3	2.28	-	-	na	0.183	0.5	73	0.1	-	0.5	34	5.67	44.7	-	0.001	0.002 ^d				
QUL-20	2014 08 12	47.6	8	7.9	17.0	0.26	97.2	68	0.3	1.83	-	-	na	0.144	0.5	65.7	0.1	-	0.5	33	5.64	44.2	-	0.001	0.002 ^d				
QUL-20	2014 08 13	47.8	-	7.98	19.2	0.53	98.2	59	0.3	2.16	-	-	na	0.13	0.5	51.5	0.1	-	0.5	33	5.62	44.6	-	0.001	0.002 ^d				
QUL-20	2014 08 14	49.3	8.06	7.96	19.3	0.26	99.1	70	0.3	2.17	-	-	na	0.139	0.5	49.4	0.1	-	0.5	36	5.63	44.4	-	0.001	0.002 ^d				
QUL-20	2014 08 15	49.4	8.05	7.99	17.6	0.4	97.6	62	0.3	1.86	-	-	na	0.123	0.5	62	0.1	-	0.5	36	5.65	43.7	-	0.001	0.002 ^d				
QUL-20X	2014 08 15	49.6	8.05	7.98	-	0.28	97.6	65	0.3	1.79	-	-	na	0.123	0.5	59.5	0.1	-	0.5	36	5.65	43.8	-	0.001	0.002 ^d				
QA/QC RPD %		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QUL-20	2014 08 16	49	7.94	7.97	17.7	0.31	95.6	66	0.3	1.95	-	-	na	0.114	0.5	57.5	0.1	-	0.5	35	5.64	43.6	-	0.001	0.002 ^d				
QUL-20	2014 08 17	47.5	7.79	7.97	17.9	0.37	97.2	63	0.3	2.5	-	-	na	0.144	0.5	58.6	0.1	-	0.5	34	5.65	44	-	0.001	0.002 ^d				
QUL-21-0M	2014 08 08	49.5	7.9	7.91	-	0.29	97.6	72	0.3	2.51	-	-	na	0.159	0.5	85.6	0.1	-	0.5	34	5.57	43.6	-	0.001	0.002 ^d				
QUL-21-7M	2014 08 08	50.7	-	7.91	-	0.25	99.5	72	0.3	2.11	-	-	na	0.174	0.5	100	0.1	-	0.5	35	5.66	44.5	-	0.001	0.002 ^d				
QUL-21-30M	2014 08 08	54.3	-	7.9	-	0.78	108	77	0.3	2.16	-	-	na	0.193	0.5	141	0.1	-	0.5	36	6.12	48	-	0.001	0.002 ^d				
QUL-21	2014 08 09	49.3	7.81	7.88	16.1	0.36	96.7	68	0.3	2.33	-	-	na	0.137	0.5	73.9	0.1	-	0.5	34	5.52	43.2	-	0.001	0.002 ^d				
QUL-21	2014 08 11	47.8	7.9	7.92	19.7	0.77	97.8	65	0.3	2.27	-	-	na	0.132	0.5	57.3	0.1	-	0.5	33	5.64	44	-	0.001	0.002 ^d				
QUL-21-0M	2014 08 12	48.1	7.98	7.96	-	0.4	95.9	65	0.3	1.97	-	-	na	0.13	0.5	55.1	0.1	-	0.5	36	5.66	43.8	-	0.001	0.002 ^d				
QUL-21X	2014 08 12	48.9	7.98	7.95	-	0.49	96.3	65	0.3	1.95	-	-	na	0.126	0.5	54.1	0.1	-	0.5	36	5.64	44.3	-	0.001	0.002 ^d				
QA/QC RPD %		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
QUL-21-12M	2014 08 12	48.2	8.15	7.94	12.90	0.55	98.7	68	0.3	1.87	-	-	na	0.171	0.5	88.2	0.1	-	0.5	36	5.77	44.6	-	0.001	0.002 ^d				
QUL-21-30M	2014 08 12	54.3	7.57	7.96	4.59	0.39	107	72	0.3	1.74	-	-	na	0.191	0.5	139	0.1	-	0.5	38	6.19	49.6	-	0.001	0.002 ^d				
QUL-21	2014 08 13	47.6	-	8	-	0.29	98.2	59	0.3	2.09	-	-	na	0.135	0.5	44.2	0.1	-	0.5	32	5.62	44.4	-	0.001	0.002 ^d				
QUL-21	2014 08 14	49.6	8.15	7.96	21.34	0.22	97.2	65	0.3	2.11	-	-	na	0.106	0.5	41.5	0.1	-	0.5	35	5.62	43.4	-	0.001	0.002 ^d				
QUL-21-0M	2014 08 15	48.7	8.12	7.98	-	0.22	95.4	66	0.3	1.96	-	-	na	0.102	0.5	39.7	0.1	-	0.5	36	5.64	43.1	-	0.001	0.002 ^d				
QUL-21-10M	2014 08 15	50.3	7.82	7.94	13.14	0.3	98.3	67	0.3	1.73	-	-	na	0.138	0.5	89.9	0.1	-	0.5	35	5.76	44.6	-	0.001	0.002 ^d				
QUL-21-30M	2014 08 15	53.5	7.65	7.9	4.64	0.35	106	71	0.3	1.65	-	-	na	0.175	0.5	140	0.1	-	0.5	38	6.17	48	-	0.001	0.002 ^d				
QUL-21	2014 08 16	48.2	8.21	7.97	20.41	0.24	95.1	75	0.3	1.81	-	-	na	0.108	0.5	42	0.1	-	0.5										

TABLE 1: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics														
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (µg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)			
BC Standards																													
BCWQG Aquatic Life (AW) ^{a,c}			n.a	6.5-9.0	6.5-9.0	n.a																							
BCWQG Aquatic Life (30day) (AW) ^{b,d}			n.a	n.a	n.a	n.a	Under Review by SNC																						
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a	LaValin																						
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a																							
QUL-22	QUL-22	2014 08 08	49.6	7.85	7.91	13.80	0.34	99.5	70	0.3	2.21	-	-	-	0.162	5	95.5	0.1	-	0.5	34	5.62	44.2	-	-	0.001	0.002		
	QUL-22	2014 08 09	49.5	7.77	7.87	16.84	0.4	97.1	69	0.3	2.26	-	-	-	0.148	5	78.6	0.1	-	0.5	35	5.6	43	-	-	0.001	0.002		
	QUL-22	2014 08 10	48.7	7.9	7.92	18.40	0.35	96.3	64	0.3	2.26	-	-	-	0.135	5	67.4	0.1	-	0.5	35	5.59	45.4	-	-	0.001	0.002		
	QUL-22	2014 08 11	47.3	7.81	7.94	19.95	0.51	98.5	67	0.3	2.23	-	-	-	0.144	5	60.1	0.1	-	0.5	34	5.64	44.3	-	-	0.001	0.002		
	QUL-22	2014 08 12	47.3	8.01	7.97	20.41	0.51	95.3	64	0.3	1.94	-	-	-	0.132	5	58.2	0.1	-	0.5	34	5.69	44.3	-	-	0.0014	0.002		
	QUL-22	2014 08 13	47.4	-	7.98	20.59	0.32	98.1	60	0.3	2.2	-	-	-	0.123	5	44.8	0.1	-	0.5	32	5.63	44.5	-	-	0.001	0.002		
	QUL-22	2014 08 14	49.6	7.84	7.91	21.14	0.31	97.2	65	0.3	2.1	-	-	-	0.108	5	41.2	0.1	-	0.5	36	5.62	43.3	-	-	0.001	0.002		
	QUL-22	2014 08 15	45.2	8.11	7.99	20.74	0.21	95.9	70	0.3	1.89	-	-	-	0.101	5	40.1	0.1	-	0.5	35	5.61	43.7	-	-	0.001	0.002		
	QUL-22	2014 08 16	47.9	8.19	7.91	20.69	0.29	94.2	63	0.3	2.09	-	-	-	0.106	5	40.6	0.1	-	0.5	36	5.59	43.4	-	-	0.001	0.002		
	QUL-22	2014 08 17	47.4	7.88	7.98	21.05	0.29	96.6	63	0.3	2.4	-	-	-	0.123	5	41.3	0.1	-	0.5	34	5.61	44.2	-	-	0.001	0.002		
	QUL-22	2014 08 19	48.5	-	7.92	-	0.44	96.7	64	0.3	2.1	-	-	-	0.111	5	39	0.1	-	0.5	32	5.53	44.3	-	-	0.001	0.002		
	QUL-22	2014 08 21	49.5	8.25	7.76	17.39	0.65	96.6	63	0.3	1.95	-	-	-	0.131	5	60.7	0.1	-	0.5	35	5.67	43	-	-	0.001	0.002		
	QUL-26-0M	2014 08 11	49	7.37	7.9	-	0.82	98.2	68	0.3	2.67	-	-	-	0.132	5	41	0.1	-	0.5	34	5.71	44.7	-	-	0.001	0.002		
	QUL-26-13M	2014 08 11	50.3	7.74	7.92	9.5	0.7	102	66	0.3	2.15	-	-	-	0.179	5	106	0.1	-	0.5	34	5.85	45.9	-	-	0.001	0.002		
	QUL-26-24M	2014 08 11	53.2	7.56	7.92	5.0	0.89	109	69	0.3	1.94	-	-	-	0.189	5	137	0.1	-	0.5	36	6.19	48.2	-	-	0.001	0.002		
	QUL-26	2014 08 12	47.8	7.87	7.93	20.2	0.4	96.1	66	0.3	2.21	-	-	-	0.141	5	45.3	0.1	-	0.5	36	5.68	44.7	-	-	0.001	0.002		
	QUL-26	2014 08 13	48.5	-	7.87	20.5	0.77	101	66	0.3	3.22	-	-	-	0.138	5	5	0.1	-	0.5	35	5.55	46.2	-	-	0.001	0.002		
	QUL-26-0M	2014 08 14	49.3	7.85	7.95	-	0.34	97.7	64	0.3	2.25	-	-	-	0.116	5	32.1	1	-	0.5	36	5.61	43.9	-	-	0.001	0.002		
	QUL-26-12M	2014 08 14	52.3	7.83	7.97	12.1	7.07	103	73	12.5	1.9	-	-	-	0.134	5	93.3	0.1	-	0.5	37	6.19	46.2	-	-	0.001	0.002		
	QUL-26-27M	2014 08 14	56	7.66	7.98	4.7	4.14	110	74	5.7	2.02	-	-	-	0.174	5	143	0.1	-	0.5	38	6.48	49.6	-	-	0.001	0.002		
	QUL-26	2014 08 15	49.1	7.97	7.97	22.0	0.34	97	62	0.3	1.95	-	-	-	0.109	5	39.5	0.1	-	0.5	36	5.63	43.2	-	-	0.001	0.002		
	QUL-26	2014 08 16	48.8	8.06	7.96	20.4	0.25	95	58	0.3	2.13	-	-	-	0.114	5	42.2	0.1	-	0.5	36	5.62	43.6	-	-	0.001	0.002		
	QUL-26-0M	2014 08 17	47.9	-	7.9	-	0.43	96.6	70	0.3	2.47	-	-	-	0.146	5	29.9	0.1	-	0.5	35	5.61	44.2	-	-	0.001	0.002		
	QUL-26-12M	2014 08 17	51.6	-	7.95	-	4.85	103	60	9.7	2.1	-	-	-	0.179	5	111	0.1	-	0.5	35	5.96	46.4	-	-	0.001	0.002		
	QUL-26-26M	2014 08 17	54.4	-	7.94	-	3.31	108	67	4.6	2.09	-	-	-	0.2	5	146	0.1	-	0.5	37	6.38	49.2	-	-	0.001	0.002		
	QUL-26-0M	2014 08 19	48.8	-	7.93	-	0.33	96.5	69	0.3	2	-	-	-	0.118	5	42.7	0.1	-	0.5	32	5.55	43.9	-	-	0.001	0.002		
	QUL-26-10M	2014 08 19	50.4	-	7.92	-	8.47	100	69	6.5	1.93	-	-	-	0.15	5.7	75.2	0.1	-	0.5	33	5.97	45.6	-	-	0.001	0.002		
	QUL-26-20M	2014 08 19	52.5	-	7.93	-	6.66	107	69	9.2	1.92	-	-	-	0.179	5	131	0.1	-	0.5	34	6.08	48.7	-	-	0.001	0.002		
QUL-26-0M	2014 08 21	49.2	8.27	7.87	18.9	1.07	95.1	62	0.3	2.16	-	-	-	0.114	5	48.9	0.1	-	0.5	36	5.71	44.3	-	-	0.001	0.002			
QUL-28-0M	2014 08 11	49.3	7.52	7.82	-	0.53	101	69	0.3	2.32	-	-	-	0.134	5	34.5	0.1	-	0.5	35	5.71	45.5	-	-	0.001	0.002			
QUL-28	2014 08 12	48.1	7.73	7.93	20.9	0.77	96.6	62	0.3	2.06	-	-	-	0.121	5	45.9	0.1	-	0.5	37	5.68	44.6	-	-	0.001	0.002			
QUL-28	2014 08 13	47.6	-	7.93	21.1	0.45	98.7	62	0.3	2.61	-	-	-	0.125	5	33.2	1	-	0.5	34	5.63	44.8	-	-	0.001	0.002			
QUL-30	2014 08 07	49	7.24	7.99	20.4	1.07	98.4	63	0.3	1.85	201	0.1	0.086	0.141	5	54.9	0.1	-	0.5	33	5.62	46.7	-	-	0.001	0.002			
QUL-31	2014 08 07	47.5	8.2	7.97	21.0	0.6	95.8	55	0.3	2.08	130	1	0.117	0.144	5	67.3	0.1	-	0.5	33	5.61	44.9	-	-	0.001	0.002			
QUL-32	2014 08 06	48.7	-	7.96	-	0.38	101	81	0.3	1.89	-	-	-	0.162	5	77.9	1.5	79.4	0.5	34	5.6	46	-	-	0.001	0.002			
QUL-33	2014 08 06	49	-	7.95	20.0	0.32	99	63	0.3	1.9	-	-	-	0.129	5	63.8	0.1	63.8	0.5	34	5.63	45.6	-	-	0.001	0.002			
QUL-34	2014 08 13	47.2	-	7.97	-	0.31	97.8	62	0.3	2.03	-	-	-	0.118	5	50.5	0.1	-	0.5	32	5.62	44.1	-	-	0.001	0.002			
QUL-35	2014 08 14	48.8	8.16	7.9	-	0.34	97.5	63	0.3	2.1	-	-	-	0.102	5	40.6	0.1	-	0.5	36	5.62	43.7	-	-	0.001	0.002			
QUL-36	2014 08 14	48.4	8.08	7.95	-	0.29	97.3	66	0.3	2.05	-	-	-	0.12	5	52.1	0.1	-	0.5	36	5.62	43.7	-	-	0.001	0.002			
QUL-37	QUL-37-0M	2014 08 15	49.1	8.13	7.98	20.1	0.27	96.9	66	0.3	1.77	-	-	0.103	5	48.7	0.1	-	0.5	35	5.66	44.3	-	-	0.0011	0.002			
	QUL-37-7M	2014 08 15	49	8.13	7.97	18.6	0.28	97	63	0.3	1.72	-	-	0.113	5	58.9	0.1	-	0.5	36	5.64	43.6	-	-	0.001	0.002			
	QUL-37-TAP	2014 08 15	49.4	-	-	-	0.32	-	63	3.9	1.68	-	-	0.111	5	50.6	0.1	-	0.5	35	5.67	43.7	-	-	0.001	0.002			
QUL-38	2014 08 18	48.4	7.11	7.97	18.3	0.35	97.5	59	0.3	2.44	48	0.1	0.155	5.3	48.9														

TABLE 1: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics														
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)			
BC Standards																													
BCWQG Aquatic Life (AW) ^a			n.a	6.5-9.0	6.5-9.0	n.a																							
BCWQG Aquatic Life (30day) (AW) ^b			n.a	n.a	n.a	n.a	Under Review by SNC Lavalin																						
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a																							
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a																							
QUL-66	QUL66-40M	2014 08 21	69.4	8.09	7.9	6.8	111	146	106	20.9	1.86	-	-	-	-	-	-	0.339	40.1	209	1.4	-	0.56	69	16.5	58.5	-	0.001	0.002 ^c
	QUL66-40M	2014 08 19	72.5	7.81	8	5.4	122	159	113	32.9	1.9	-	-	-	-	-	-	0.375	46.9	232	1.7	-	0.63	73	18.2	60.8	-	0.001	0.002 ^c
	QUL66-40MX	2014 08 19	72.9	8.09	7.99	6.8	127	159	117	40.9	1.93	-	-	-	-	-	-	0.375	50.6	230	1.6	-	0.61	72	18.1	60.4	-	0.001	0.002 ^c
	QA/QC RPD %		1	4	1	22	4	0	3	22	1	-	-	-	-	-	-	0	1	1	1	-	1	1	1	1	1	-	1
QUL-67	QUL-67-34M	2014 08 20	64.6	7.74	7.9	5.7	49.5	136	91	10	1.91	-	-	-	-	-	-	0.324	32.1	195	1.1	-	0.5	52	12.4	55.5	-	0.001	0.002 ^c
QUL-74	QUL-74-46M	2014 08 21	60.9	7.9	7.85	4.9	37.5	124	83	7.9	1.79	-	-	-	-	-	-	0.286	23	183	1.1	-	0.5	50	10.5	52.4	-	0.0188	0.0413
QUL-75	QUL-75-40M	2014 08 21	62	7.92	7.85	5.4	42.3	127	90	4.7	1.84	-	-	-	-	-	-	0.301	27.2	191	1.1	-	0.5	53	11.3	53.9	-	0.017	0.0276
QUL-77	QUL-77	2014 08 22	50.4	7.66	7.95	16.9	0.67	98.4	68	3	2.2	-	-	-	-	-	-	0.154	5	65.2	1.1	-	0.5	34	5.77	45	-	0.001	0.002 ^c
QUL-EQUIPMENT BLANK	QUL-EQUIPMENT BLANK	2014 08 12	0.5	-	5.51	-	0.1	2	10	3	0.5	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	QUL-EQUIPMENT BLANK	2014 08 14	0.5	-	-	-	0.1	-	10	3	0.5	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	QUL-EQUIPMENT BLANK	2014 08 15	0.5	-	-	-	0.1	-	10	3	0.5	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	QUL-EQUIPMENT BLANK	2014 08 16	0.5	-	-	-	0.1	-	10	3	0.5	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
QUL-FIELD BLANK	EQUIPMENT BLANK	2014 08 19	0.5	-	5.85	-	0.26	2	10	3	0.5	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	EQUIPMENT BLANK	2014 08 19	0.5	-	5.42	-	0.1	2	10	3	0.5	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	FIELD BLANK	2014 08 06	-	-	5.58	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	FIELD BLANK OIL	2014 08 08	0.5	-	5.48	-	0.1	2	10	3	0.5	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	FIELD BLANK	2014 08 10	-	-	5.87	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	QUL-FIELD BLANK	2014 08 15	-	-	-	-	0.1	-	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	FIELD BLANK	2014 08 12	0.5	-	5.49	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	FIELD BLANK	2014 08 17	0.5	-	5.64	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	ALS FIELD BLANK	2014 08 12	0.5	-	5.61	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	0.5,1	0.5	20	0.5	1.1	-	0.001	0.002
	FIELD BLANK	2014 08 12	0.5	-	5.49	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	FIELD BLANK	2014 08 17	0.5	-	5.64	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002
	QUL-FIELD BLANK	2014 08 19	0.5	-	5.89	-	0.1	2	10	3	-	-	-	-	-	-	-	0.05	5	5	1.1	-	0.5	20	0.5	1.1	-	0.001	0.002

Associated ALS files: L1498519, L1498533, L1499166, L1499203, L1499703, L1499710, L1499926, L1499947, L1500619, L1501501, L1501518, L1502349, L1502364, L1502370, L1502388, L1503057, L1503061, L1503079, L1503910, L1503913, L1503928, L1503932, L1503933, L1503934, L1504180, L1504213, L1504220, L1504251, L1504261, L1504997, L1505918, L1506551, L1506571, L1506577, L1506586, L1500164, L1502370, L1506989, L1506996, L1507001, L1507291, L1507298.

All terms defined within the body of SNC-Lavalin's report (available upon request).

- Denotes concentration less than indicated detection limit or RPD less than indicated value.
- n.a Denotes analysis not conducted.
- n.a Denotes no applicable standard.
- RPDs are not normally calculated where one or more concentrations are less than five times MDL.
- SHADED Concentration greater than BCWQG Aquatic Life (AW) guideline.
- BOLD Concentration greater than BCWQG Drinking Water (DW) guideline.
- SHADED Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.
- BOLD Concentration greater than or equal to Canadian Drinking Water Quality (DW) guideline.

^a Laboratory detection limit out of range.
^b British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.
^c A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.
^d Guideline varies with pH, and/or Temperature or Hardness.



**MOUNT POLLEY MINING
CORPORATION**
IMPERIAL METALS CORPORATION

Date August 29, 2014

Ministry of Environment,
Mining Operations Environmental Protection
2080 Labieux Rd.
Nanaimo, B.C. V9T 6J9

Attention: Hubert Bunce., Director Environmental Management Act

Re: Weekly Update for week ending August 29, 2014

Monitoring Update

As of August 27, 2014, the Monitoring Program implemented in response to the tailings release consists of the following: 1) Water Quality Programs (Quesnel Lake, Polley Lake, Residential Intakes, and Hazeltine Creek), 2) Sediment Quality (Quesnel Lake), and 3) Fish Sampling. The following sections summarize the programs, changes, and key actions and interactions relevant to the program.

Water Quality Programs

More than 70 water quality sampling locations have been established as of August 27, 2014 to assess and monitor water quality as part of the program. Drawing 621717-005 shows sample locations

The following parameters continue to form the basis for the monitoring program and evaluating impacts to water quality as a result of the release.

- Total and dissolved metals (including mercury);
- Anions: sulphate, chloride, fluoride;
- Nutrients: total ammonia, nitrate, nitrite, total nitrogen, total Kjeldahl nitrogen, orthophosphate, total phosphorous, dissolved phosphorous; and
- Bacteria: coliforms and e. coli.
- Toxicity testing: acute and chronic tests

Table A below summarizes the various Water Quality Programs. With the exception of toxicity testing, results have been provided in Tables 1, 3, and 4 (attached).

TABLE A: Summary of Water Quality Monitoring Programs:

Monitoring Program	Area	Frequency	Sample Locations
Surface Water Quality	Quesnel Lake	Single Sample	QUL-4 to QUR-8, QUR-10 to QUR-16, QUL-31, QUL-32, QUL-33, QUL-36, QUL-39, QUL-62, QUL-63, QUL-64, QUL-67, QUR-68, QUR-69, QUL-74, QUL-75, QUL-77, QUL-79, QUL-81, QUL-82, QUL-83, QUL-84, QUL-85, QUL-88
		Repeated Sites	QUL-1, QUL-2, QUL-3, QUL-9, QUL-17 to QUL-23, QUL-26, QUL-28, QUL-30, QUL-35, QUL-37, QUL-38, QUL-60, QUL-61, QUL-66 As of week of August 23, 2014: Ongoing repeated sampling (daily or every other day) is being carried out at locations QUL-18, QUL-20, and QUL-23.
	Polley Lake	Repeated Sites	POL-1, POL-2, POL-3, POL-4 As of week of August 23, 2014: Ongoing repeated sampling (weekly) is being carried out at locations POL-3 and POL-4.
	Polley Discharge and Hazeltine Crk.	Repeated Sites	HAD-1 (Daily), HAC-01 (Daily).
	Quesnel River	Repeated Sites	QUR-1 (includes QURU-1x & QUR-3). ISKO sampler collects 3 samples per day. A fourth grab sample is also collected at this location. A datalogger records measurements of pH, temperature, conductivity, and conductivity every 15 minutes).
Water Quality Profiles	Quesnel Lake	One Time	QUL-3, QUL-19, QUL-65, QUL-66.
		Repeated Sites	As of week of August 23, 2014: QUL-2, QUL-21, QUL-22, QUL-66, and QUL-79 are visited on a rotational basis (every other day). QUL-18 no longer included in Profile Program. Samples collected near surface and near lake bottom, and in consideration of CTD field monitoring results.
Residential Water Intake Sampling Program		Single Sample	QUL-34, QUL-35, QUL-36, QUL-37, QUL-38, QUL-39, QUL-60, QUL-61, QUL-62, QUL-63, QUL-64

Results of the toxicity testing completed to date are provided in Table B.

Table B: Summary of Draft Water Toxicity Testing

Date	Location	Location Description	Acute (96h) Rainbow Trout ¹	Acute (48-h) Daphnia magna ²	Sublethal (7-d) fish survival and growth ³	Sublethal (7-d) invertebrate survival and reproduction ⁴	Sublethal (72-h) algal growth ⁵	Sublethal (7-d) plant growth ⁶	Results
August 6, 2014	QUR-1	Quesnel River at Research Station				✓			LC50, IC25, IC50 all >100%
August 9, 2014	POL-2	Polley Lake near South End				✓			LC50, IC25, IC50 all >100%
August 13, 2014	HAD-1	Discharge from Polley to Hazeltine	☐	☐	✓	✓	✓	✓	> 100% for all tests
August 20, 2014	HAD-1	Discharge from Polley to Hazeltine	✓	✓					100% survival
August 21, 2014	QUL-66-40m	Quesnel Lake Plume	✓	✓	✓	✓	✓	✓	100% acute survival; awaiting sub-lethals
August 28, 2014	QUL-66-40m	Quesnel Lake Plume	✓	✓	✓	✓	✓	✓	Pending

¹Rainbow trout acute lethality (96-hours)

²Daphnia magna acute lethality (48-hours)

³Fathead minnow survival and growth (7-days)

⁴Ceriodaphnia dubia survival and reproduction (up to 8-d)

⁵Algal growth (Pseudokirchneriella subcapitata - 72-hours)

⁶Plant growth (Lemna minor - 7-days)

Sediment Quality Program

Table C below summarizes the sediment program. Draft results are provided in Table 2 (attached).

Table C: Summary of Sediment Quality Program

Program	Area	Station	Date	UTM Easting (Zone 10U)	UTM Northing (Zone 10U)	Tier 1 Sediment	Tier 2 Sediment	Benthos
Initial Response	Near-Field Hazeltine Creek at Mouth	QUL-14	07-AUG-14	601593	5817934	✓		
		QUL-15	07-AUG-14	601666	5817825	✓		
		QUL-16	07-AUG-14	601782	5817734	✓		
		QUL23	10-AUG-14	601418	5818134	✓		
		QUL24	10-AUG-14	601529	5817974	✓		
		QUL25	10-AUG-14	601591	5817917	✓		
		QUL-27	13-Aug-14	601519	5817992	✓		
Study Design (to date)	Near-Field Shallow	QUL-45-01	13-Aug-14	601524	5817990	✓	✓	✓
		QUL-45-02	13-Aug-14	601457	5818033	✓	✓	✓
		QUL-45-03	15-Aug-14	601451	5818067	✓	✓	✓
		QUL-45-04	16-Aug-14	61555	5817927	✓	✓	✓
		QUL-45-05	16-Aug-14	601479	5818047	✓	✓	✓
	Near-Field Shallow 2	QUL-49-01	18-Aug-14	602436	5817331	✓	✓	✓
		QUL-49-02	20-Aug-14	602443	5817311	✓	✓	✓
		QUL-49-03	20-Aug-14	602447	5817278	✓	✓	✓
		QUL-49-04	20-Aug-14	602461	5817240	☐	☐	✓
	Upstream Far-Field	QUL-50-01	18-Aug-14	604832	5815573	✓	✓	✓

Sediment Quality Tier 1 (T1) sampling includes particle size, total organic carbon, and total metals analysis (<63 µm). Tier II sampling additionally includes Sediment Quality Tier II (T2) includes toxicity testing using Hyalella and Chironomus organisms, Tessier extraction (metals), Shake Flask Metals, and Acid-base accounting (ABA).

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Summary of Modifications to the Monitoring Program

- A review of current analytical and field monitoring results is progress and adaptations to the monitoring program will be considered on an ongoing basis.
- POL-3 and POL-4 (Polley Lake) have been reduced to a weekly sampling frequency.
- A sampling location has been established for daily sampling within the Hazeltine Creek channel within its delta. Other sampling locations have been selected along the length of the channel. Results include testing (sedimentation, grain size, etc.) for inputs into Sedimentation Pond design.
- E. coli and coliforms are no longer being monitored for.
- Requests for monitoring of water quality at residential intakes are being catalogued and an appropriate program will be developed for ongoing response to these requests.
- Toxicity testing added to QUL-66 (within plume) on a weekly basis.
- Total mercury has been added to any samples from the plume, at depth or surface.
- Profiling locations (CTD and sampling) are being completed on a daily rotational basis (every other day) to confirm surface water quality and quality near the bottom of the lake, and at elevated CTD readings.

Gaps Identified in the Monitoring Program and Next Actions

Plume Monitoring remains a priority. Some additional profiling was completed near the mouth of Hazeltine Creek within Quesnel Lake. Two vessels have been deployed for mapping and deep water / sediment work.

Summary of Actions and Public Interactions

August 23 to 29 – Ongoing dialogue and data review with private property and lodge owners regarding water quality results as requested.

August 26 – A Community Meeting in Likely was held.

August 27 and 28 – Technical Leads for the Comprehensive Environmental Impact Assessment have been mobilized to site.

August 28 – Two vessels equipped for bottom, sediment, and plume mapping has arrived and will be implementing related scopes of work. Equipment on board vessels includes deep water monitoring and sampling devices for sediment and water.

August 29 – UNBC has submitted proposals to MPMC for review for integration with the planned CEIA.

16th – spoke briefly with sampling team from Soda Creek

August 17th – discussed incident with Skeed Borkowski (Northern Lights Lodge) and informed him about our sampling regime. Again on August 19th.

August 17th – dropped sample at QRRC for arsenic speciation.

August 18th – Sam Albers at QRRC provided paper on Quesnel Lake flow patterns.

August 18th - spoke with residents of the drinking water campaign with the exception of

6112 Steele Rd. and 6151 Cedar Creek Rd. Also observed a group of people filming the mouth of Hazeltine Creek, they asked who we were collecting samples for.

Sincerely,

MOUNT POLLEY MINING CORPORATION

Via email

Jack Love, R.P.Bio.
Environmental Manager
Imperial Metals-Red Chris Mine-Mount Polley Mine-Hwy37 Power Corp
604-358-2699 MOBILE
250-790-2215*2560

From: [Brody, Margo X MEM:EX](#)
To: [Hoffman, Al MEM:EX](#); [Howe, Diane J MEM:EX](#)
Subject: FW: Permit information for Mt. Polley tailings pond.
Date: Wednesday, September 3, 2014 9:02:53 AM

Hello Al and Diane,

Jake Jacobs has indicated that since this isn't a media inquiry, we should answer with information that is publically releaseable.

Should I tell him to go to the ministry's website or can we answer, in general terms, his questions?

Margo

From: s.22
Sent: Tuesday, September 2, 2014 5:23 PM
To: Brody, Margo X MEM:EX
Subject: Re: Permit information for Mt. Polley tailings pond.

Thanks for getting back to me, Margo. My request centers around a desire to better understand the permitting process in instances like the Mount Polley tailings pond. Could you outline for me the process involved, namely, who is ultimately responsible for granting the permit? What sort of logics are applied when evaluating a permit application---for instance, does the government of BC have engineers who study the proposal and issue a green light if they think it is a workable proposal? Obviously, someone in the chain of governmental oversight is responsible for granting mining companies permits, correct? Or there wouldn't be permits issued. But who is that person? What is his/her position? Name? Or is the Minister the responsible one?

On 2 September 2014 14:30, Brody, Margo X MEM:EX <Margo.Brody@gov.bc.ca> wrote:
Hello s.22

My apologies for the delay in response

s.22

I have forwarded your email onto our communications department that will hopefully get back to you as soon as they are able.

Virtually all of our staff are working on the situation at Mount Polley and we should have some results in the near future.

An investigation is ongoing and few people are presently in the office at this time.

Thank you for email and for expressing your concerns to us.

Sincerely,

Margo Brody

Branch Coordinator

Health, Safety and Permitting Branch

Ministry of Energy and Mines

250 952 0793

From: s.22
Sent: Tuesday, September 2, 2014 1:35 PM
To: Brody, Margo X MEM:EX
Subject: Re: Permit information for Mt. Polley tailings pond.

Hi, Margo. I am writing as it is September 2nd and I haven't heard from your office. I attempted to contact Megan Metcalfe but, as I outlined previously, Metcalfe@gov.bc.ca is an inoperative account and results in a delivery failure notification. I wrote you ten days ago to learn more about the tailings pond permit process in BC. It appears to be a bit of a disaster up at Mt. Polley (the Imperial Metals tailings pond) and I am writing to ask for information on their permit. Specifically, who approved it? What baseline criteria are used when assessing a permit? I also have asked the Honorable Bill Bennett MEM about the constituents of the tailings pond at that site as ample time has passed for tests to be made and the results to be made public. Do you have any information on this?

On 23 August 2014 16:22,

s.22

> wrote:

Hi, Margo, my name is s.22 I am writing to learn more about the tailings pond permit process in BC. Theoretically, how would, say, Imperial Metals go about obtaining a permit for the construction and operation of a tailings pond? And, let's just say, if they obtained such a permit, what would they need to do if they wished to increase the volume of materials in that pond? It seems---and I'm just a lay observer---that the volume in the Mt. Polley tailings pond exceeded the capacity of the structure built to contain it.

s.22

--

Coherence is the ideological structure whereby capital interpellates the subj etc.

.....- Line variation of Burnham's *The Only Poetry That Matters* (2011).

--

Coherence is the ideological structure whereby capital interpellates the subj etc.

.....- Line variation of Burnham's *The Only Poetry That Matters* (2011).

From: [Bunce, Hubert ENV:EX](#)
To: "[Jancicka, Erik](#)"
Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); "Jack Love"; "[chughes@mountpolley.com](#)"; "[dreimer@mountpolley.com](#)"; [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); "Bev Sellars ([b.sellars@xatsull.com](#))"; "[Ann Louie \(ann.louie@williamslakeband.ca\)](#)"; "[Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)](#)"; "[Julia Banks \(nrcoordinator@xatsull.com\)](#)"; "Steve Robertson"; [Demchuk, Tania MEM:EX](#); "Pierre Stecko"; [Green, Jack E ENV:EX](#); "Brian Kynoch"; "[dreimer@mountpolley.com](#)"; "[RC Cory Koenig](#)"; "Don Parsons"; "[Luke Moger \(Imoger@mountpolley.com\)](#)"; "[Art Frye \(afrye@mountpolley.com\)](#)"; "[Johnson, Gordon](#)"; [Bellefontaine, Kim MEM:EX](#); [Howe, Diane J MEM:EX](#); "[McConkey, Trevor](#)"; [Hill, Douglas J FLNR:EX](#); [Vanderburgh, Ken FLNR:EX](#); "Luke Moger ([Imoger@mountpolley.com](#))"; "[Paslawski, Janice](#)"; "[amy@fairmining.ca](#)"; "[Katie McMahan](#)"
Subject: RE: Weekly Update For September 5 2014 - Mount Polley Tailings Breach
Date: Friday, September 5, 2014 4:43:29 PM
Attachments: image001.jpg

Thank you Erik, weekly report as required by Order 107461 received

Hubert Bunce

A/Mining Director, Environmental Protection

Regional Operations

ph (250) 751-3254 fax (250) 751-3103

2080A Labieux Road

Nanaimo BC V9T 6J9

Please consider the environment before printing this email

BC Pollution Free

From: Jancicka, Erik [<mailto:erik.jancicka@snclavalin.com>]

Sent: Friday, September 5, 2014 4:35 PM

To: Bunce, Hubert ENV:EX

Cc: [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); Jack Love; "[chughes@mountpolley.com](#)"; "[dreimer@mountpolley.com](#)"; [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bev Sellars \(b.sellars@xatsull.com\)](#); [Ann Louie \(ann.louie@williamslakeband.ca\)](#); [Aaron Higginbottom \(Aaron.Higginbottom@williamslakeband.ca\)](#); [Julia Banks \(nrcoordinator@xatsull.com\)](#); [Steve Robertson](#); [Demchuk, Tania MEM:EX](#); [Pierre Stecko](#); [Green, Jack E ENV:EX](#); [Brian Kynoch](#); [dreimer@mountpolley.com](#); [RC Cory Koenig](#); [Don Parsons](#); [Luke Moger \(Imoger@mountpolley.com\)](#); [Art Frye \(afrye@mountpolley.com\)](#); [Johnson, Gordon](#); [Bellefontaine, Kim MEM:EX](#); [Howe, Diane J MEM:EX](#); [McConkey, Trevor](#); [Hill, Douglas J FLNR:EX](#); [Vanderburgh, Ken FLNR:EX](#); [Luke Moger \(Imoger@mountpolley.com\)](#); [Paslawski, Janice](#); [amy@fairmining.ca](#); [Katie McMahan](#)

Subject: Weekly Update For September 5 2014 - Mount Polley Tailings Breach

Hello Hubert and all.

On behalf of Mount Polley Mining Corp, attached please find the weekly update report.

Thank you.

Erik Jancicka, P.Chem.

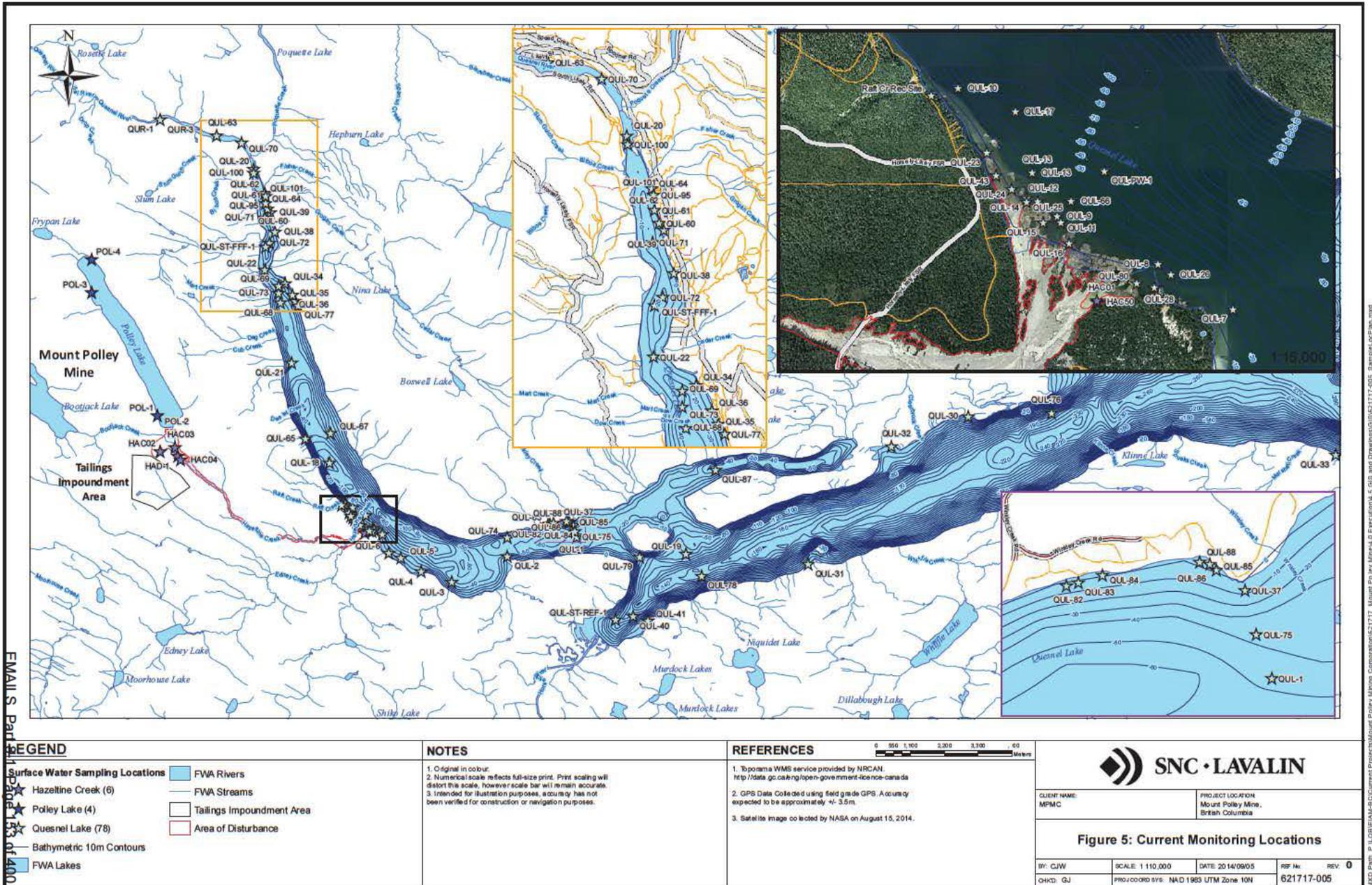
Operations Manager, Prince George

Environment & Water

Tel.: 250-562-5172 x 56553

SNC-Lavalin Inc.

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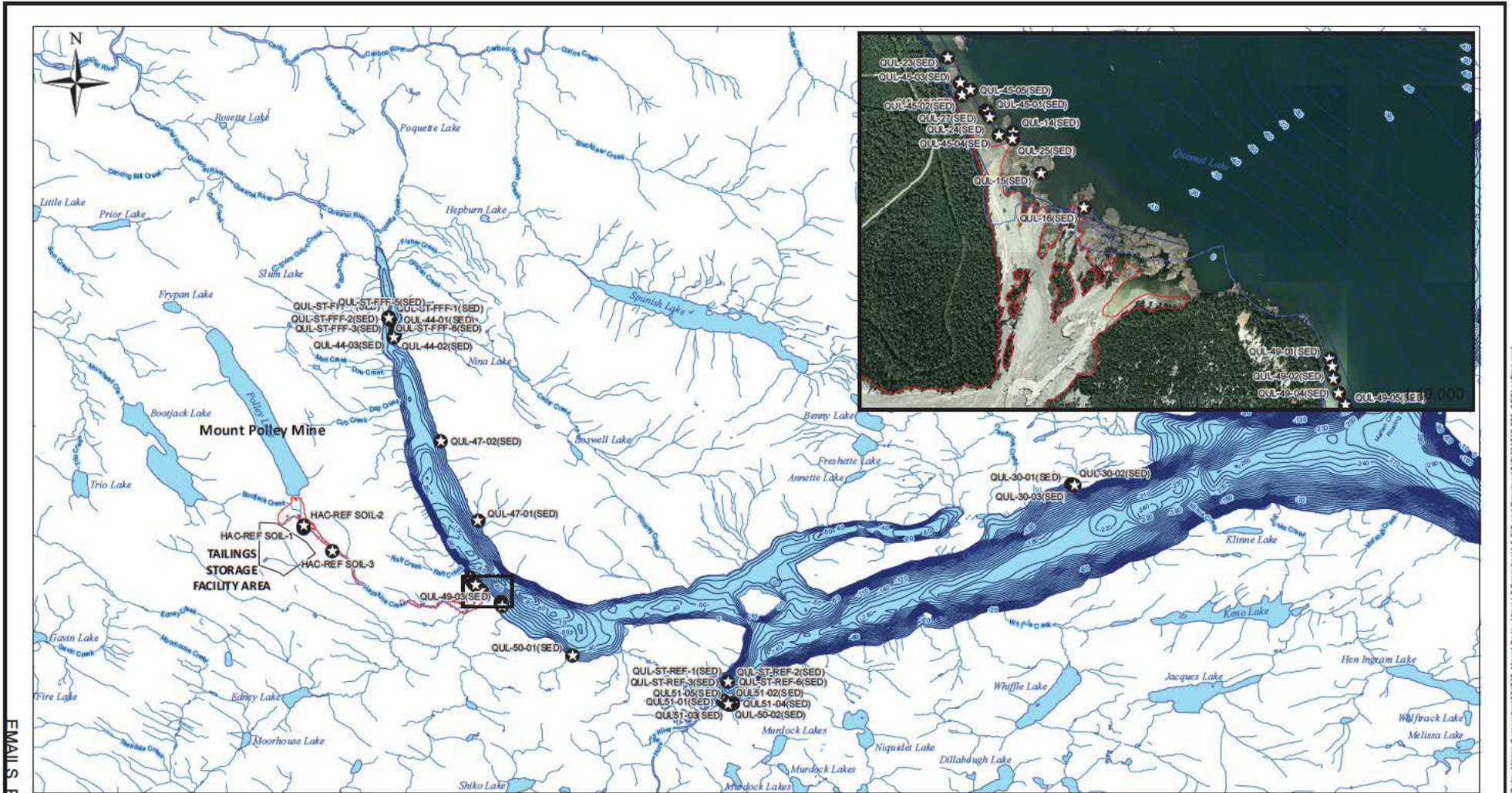
EMALS Part 1 of 400

LEGEND	
Surface Water Sampling Locations	FWA Rivers
Hazeltine Creek (6)	FWA Streams
Polley Lake (4)	Tailings Impoundment Area
Quesnel Lake (78)	Area of Disturbance
Bathymetric 10m Contours	
FWA Lakes	

NOTES
1. Original in colour.
2. Numerical scale reflects full-size print. Print scaling will distort this scale, however scale bar will remain accurate.
3. Intended for illustration purposes, accuracy has not been verified for construction or navigation purposes.

REFERENCES
1. Toporama WMS service provided by NRCAN. http://data.gc.ca/king/open-government-licence-canada
2. GPS Data Collected using field grade GPS. Accuracy expected to be approximately +/- 3.5m.
3. Satellite image collected by NASA on August 15, 2014.

CLIENT NAME: MPMC	PROJECT LOCATION: Mount Polley Mine, British Columbia		
Figure 5: Current Monitoring Locations			
BY: CJW	SCALE: 1:110,000	DATE: 2014/09/05	REF No: REV: 0
CHKD: GJ	PROJ COORD SYS: NAD 1983 UTM Zone 10N	621717-005	



EMAIL: S. Par...
 Page: 154 of 140

LEGEND	
	Sediment Sampling Locations (48)
	Bathymetric 10m Contours (90)
	FWA Lakes (285)
	FWA Rivers (11)
	FWA Streams (4,012)
	Tailings Impoundment Area
	Area of Disturbance (1)

NOTES	
1.	Original in colour.
2.	Numerical scale reflects full-size print. Print scaling will distort this scale, however scale bar will remain accurate.
3.	Intended for illustration purposes, accuracy has not been verified for construction or navigation purposes.

REFERENCES	
1.	Toporama WMS service provided by NRCAN. http://data.gc.ca/ing/open-government-licence-canada
2.	GPS Data Collected using an eTrex. Accuracy expected to be approximately +/- 3.5m.

CLIENT NAME: MPMC	PROJECT LOCATION: Mount Polley Mine, British Columbia			
Sediment Sampling Locations				
BY: CJW	SCALE: 1:125,000	DATE: 2014/09/05	REF. No:	REV: 0
CHKD: GJ	PROJ.COORD.SYS: NAD 1983 UTM Zone 10N	621717-006		

TABLE 5a: Summary of Analytical Results for Mt.Polley Hazeltine Creek - Sediment

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Grain Size			
			Gravel (%)	Sand (%)	Silt (%)	Clay (%)
BC Standards						
CSR Fresh Water Sediment (FW Sediment)			n/a	n/a	n/a	n/a
HAC-REF SOIL-1	HAC-REF SOIL-1A	2014 08 19	21.4	7.88	54.7	16
	HAC-REF SOIL-1B	2014 08 19	0.56	10.2	68.3	21
	HAC-REF SOIL-1C	2014 08 19	4	23.9	47.2	24.9
HAC-REF SOIL-2	HAC-REF SOIL-2A	2014 08 19	1.07	12.3	71.3	15.4
	HAC-REF SOIL-2B	2014 08 19	4.83	15.6	62.4	17.2
	HAC-REF SOIL-2C	2014 08 19	12.4	23	43.2	21.4
HAC-REF SOIL-3	HAC-REF SOIL-3A	2014 08 19	4.64	16.2	65.6	13.6
	HAC-REF SOIL-3B	2014 08 19	38.3	23	29.5	9.22
	HAC-REF SOIL-3C	2014 08 19	13	36.8	40.4	9.83

Associated ALS file: L1507380.

All terms defined within the body of SNC-Lavalin's report (available upon request).

□ Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard.

RPD Denotes relative percent difference.



TABLE 5c: Summary of Analytical Results for Mt.Polley Hazeltine Creek - Sediment

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters							Soil Salinity				
			Moisture (%)	TOC (%)	Total Carbon (µg/g)	Available Nitrate (µg/g)	Total Nitrogen %	Available Phosphate (µg/g)	Available Sulphate (µg/g)	% Saturation	Conductivity (µS/cm)	Sodium Adsorption Ratio (None)	Saturated Paste Sodium (µg/g)	Saturated Paste Chloride (µg/g)
HAC-REF SOIL-1	HAC-REF SOIL-1A	2014 08 19	29.1	6.65	6.7	□4	0.312	7	38.1	66.8	349	□0.4	□7	11.4
	HAC-REF SOIL-1B	2014 08 19	16.6	1.35	1.4	□4	0.097	27.3	9.5	41.5	98	□0.7	□4	2.2
	HAC-REF SOIL-1C	2014 08 19	15.7	0.78	0.8	□4	0.055	6.2	□6	32.9	57	□1	□3	□2
HAC-REF SOIL-2	HAC-REF SOIL-2A	2014 08 19	44.7	21.8	22.1	□6	1.04	14.1	112	112	605	0.43	20	16.7
	HAC-REF SOIL-2B	2014 08 19	20.6	1.4	1.5	□4	0.083	137	22.4	49	235	□0.4	□5	5.7
	HAC-REF SOIL-2C	2014 08 19	16.6	1	1	□4	0.063	53.8	12.2	34.7	180	□0.5	□3	2.6
HAC-REF SOIL-3	HAC-REF SOIL-3A	2014 08 19	34.2	10.9	11	□6	0.501	14.7	91.2	104	598	0.67	28	15.9
	HAC-REF SOIL-3B	2014 08 19	15.5	1.94	2	□4	0.122	5.3	15.4	49.7	206	□0.5	□5	3.1
	HAC-REF SOIL-3C	2014 08 19	12.5	0.63	0.7	□4	0.051	2.7	7.5	29.7	268	0.44	□3	23.2

Associated ALS file: L1507380.

All terms defined within the body of SNC-Lavalin's report (available upon request).

□ Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard.

RPD Denotes relative percent difference.

TABLE 4: Summary of Analytical Results for Mount Polley, Hazeline Creek - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Dissolved Inorganics											
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
BC Standards																								
BCWQG Aquatic Life (AW) ^{a,c}			n/a	6.5-9	6.5-9	n/a	Under Review by SNC Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	700-5,680 ^d	32,800 (max)	60 (Cl 2)	32,800 (max)	600	1323.5-1537.8	309 ^d	n/a	n/a	0.005 - 0.015	
BCWQG Aquatic Life (30day) (AW) ^{b,c}			n/a	6.5-8.5	6.5-8.5	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	10,000	1,000	10,000	250	1,500	500	n/a	n/a	0.01	
BCWQG Drinking Water (DW)			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	135-1,090 ^d	3,000	20 (Cl 2)	3,000	150	n/a	309 ^d	n/a	n/a	n/a
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	10,000	1,000	10,000	250	1,500	500	n/a	n/a	n/a	n/a
HAD-1	HAD-1	2014 08 10	99	8.96	8.68	19.8	5.24	198	140	10.7	6.82	0.378	0.5	5	0.1	-	0.5	64	27.5	71.8	0.001	0.0056		
	HAD-1	2014 08 11	102	8.94	8.50	8.9	2.16	199	139	0.3	6.77	0.366	0.5	5	0.1	-	0.5	62	27.4	74.4	0.001	0.0056		
	HAD-1	2014 08 12	99.9	8.99	8.65	9.0	2.64	198	148	0.3	6.12	0.348	0.5	5	0.1	-	0.5	63	27.2	73.9	0.001	0.0061		
	HAD-1	2014 08 13	97.4	9.11	8.80	9.1	1.5	194	135	0.3	6.32	0.386	6.7	0.5	0.1	-	0.5	65	27.3	74.7	0.001	0.0053		
	HAD-1	2014 08 14	99	9.00	8.59	9.0	1.24	200	131	0.3	6.45	0.341	0.5	0.5	0.1	-	0.5	63	27.4	76.2	0.001	0.0048		
	HAD-1	2014 08 15	99.1	8.79	8.43	8.8	1.25	201	136	0.3	6.39	0.37	0.5	0.5	0.1	0.5,1	0.5	81	27.3	75	0.001	0.0057		
	HAD-1	2014 08 16	101	8.67	8.26	8.7	3.21	203	141	4.5	6.71	0.363	0.5	0.5	0.1	0.5,1	0.5	67	27.6	75.2	0.001	0.0058		
	HAD-1X	2014 08 16	102	8.67	8.21	8.7	3.04	203	138	3.4	6.73	0.371	0.5	0.5	0.1	0.5,1	0.5	69	27.5	74.8	0.001	0.0061		
	QA/QC RPD %			0.1	0	0.1	0	5	0	2	0	0.1	2	0	0	0	0	0	0	0.1	0	0	0	
	HAD-1	2014 08 17	97.9	-	8.21	-	2.95	201	141	0.3	6.57	0.352	0.5	0.5	0.1	-	0.5	69	27.5	75	0.001	0.0068		
	HAD-1	2014 08 18	100	-	8.37	-	1.51	201	135	0.3	7.37	0.425	5.7	0.5	0.1	-	0.5	67	27.4	76.1	0.001	0.0064		
	HAD-1	2014 08 19	98	-	8.28	-	1.52	200	105	0.3	7.02	0.372	0.5	0.5	0.1	-	0.5	75	26.8	76.3	0.001	0.0059		
	HAD-1	2014 08 20	102	8.72	8.21	20.7	7.79	201	139	8.5	6.45	0.364	0.5	0.5	0.1	-	0.5	63	26.8	76	0.001	0.0062		
	HAD-1	2014 08 10	100	9.08	8.86	21.3	2.75	193	138	0.3	6.58	0.361	0.5	0.5	0.1	-	0.5	65	27.4	74.7	0.001	0.0075		
	HAD-1	2014 08 21	101	-	8.32	-	5.14	200	141	4	6.29	0.34	0.5	0.5	0.1	-	0.5	65	27.5	74.8	0.001	0.0046		
	HAD-1	2014 08 22	103	8.58	8.29	-	4.33	200	131	4.2	6.61	0.349	0.5	0.5	0.1	-	0.5	66	27.5	75.2	0.001	0.0069		
	HAD-1	2014 08 24	104	8.22	8.11	18.2	7.44	207	140	7.8	6.95	0.354	0.5	0.5	0.1	-	0.5	69	27.2	77.7	0.001	0.0036		
	HAD-1	2014 08 26	106	8.66	8.47	17.6	1.14	204	130	0.3	6.2	0.364	7.6	10.4	0.1	-	0.5	67	29.5	77	0.001	0.0044		
	HAD-1	2014 08 28	108	8.78	8.33	18.2	1.08	209	132	0.3	6.88	0.335	5	0.5	0.1	-	0.5	67	28.9	76.8	0.001	0.0075		
	HAC01	HAC01	2014 08 24	161	8.22	8.17	18.19	0.4000	343	243	3,350	6.04	0.902	62.2	453	6.1	-	1.56	120	75.9	93.4	0.0056	0.009	
		HAC01-24HRS	2014 08 24	159	-	8.24	-	52.1	345	255	38.7	5.71	0.691	72.9	461	6.4	-	1.58	119	77.7	95.5	0.0061	0.0077	
		HAC01	2014 08 25	155	8.62	8.23	18.6	4.090	320	140	4,040	5.73	1.81	63.2	408	4.4	-	1.3	111	69	92.1	0.0032	0.0082	
		HAC01	2014 08 26	151	8.76	8.3	17.99	0.4000	317	219	3,930	6.16	0.73	67.3	418	4.8	-	1.01	120	65.1	94.7	0.0066	0.0099	
HAC01		2014 08 27	166	8.83	8.17	18.8	0.4000	396	280	35,000	5.43	2.7	183	356	20.9	-	3.45	226	101	90.6	0.0024	0.0068		
HAD-FIELD BLANK	FIELD BLANK	2014 08 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	HAC01-FB	2014 08 27	0.5	-	5.99	-	0.1	0.2	0.10	0.3	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	0.001	0.002 ^e		
HAD-TRAVEL BLANK	TRIP BLANK	2014 08 27	0.5	-	5.65	-	0.1	0.2	0.10	0.3	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	0.001	0.002 ^e		

Associated ALS files L1500203, L1500608, L1501501, L1501554, L1502400, L1503098, L1503928, L1503934, L1503943, L1504261, L1504997, L1505933, L1506592, L1506998, L1507977, L1508649, L1509589, L1509671, L1510298, L1510307, L1507958.

All terms defined within the body of SNC-Lavalin's report (available upon request).

□ Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes not applicable standard.

□ RPDs are not normally calculated where one or more concentrations are less than five times MDL.

SHADED Concentration greater than BCWQG Aquatic Life (AW) guideline.

BOLD Concentration greater than BCWQG Drinking Water (DW) guideline.

SHADED Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.

BOLD Concentration greater than or equal to Canadian Drinking Water Quality (DW) guideline.

^a Laboratory detection limit out of range.

^b British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

^c A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

^d Guideline varies with pH, and/or Temperature or Hardness.

TABLE 4: Summary of Analytical Results for Mount Polley, Hazeltine Creek - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Total Metals																													
			Aluminum (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Bismuth (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Lithium (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Potassium (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards			n/a	20	5	5,000	5.3	n/a	1,200	0.032-0.034 ^d	n/a	1 (Cr. 6)	110	11.2-11.7 ^d	1,000	78.9-84.8 ^f	870	n/a	1,613-1,675 ^d	Under review by SNC-Lavalin	2,000	65 ^d	373,000	2	0.1-3 ^d	n/a	0.3	2,000	300	6	38.55-42.75 ^f	
BCWQG Aquatic Life (AW) ^{b,c}			n/a	14	25	n/a	4	n/a	5,000	n/a	n/a	n/a	n/a	500	50	n/a	n/a	n/a	n/a	250	n/a	n/a	10	n/a	n/a	2	n/a	n/a	n/a	n/a	5,000	
BCWQG Aquatic Life (30day) (AW) ^{b,c}			n/a	n/a	n/a	1,000	n/a	n/a	n/a	n/a	n/a	n/a	4	3.9-4.12 ^d	n/a	6.4-6.6 ^d	14	n/a	1,034-1,056 ^d	1	1,000	n/a	n/a	n/a	0.05-1.5 ^d	n/a	n/a	n/a	n/a	n/a	13.05-17.25 ^f	
BCWQG Drinking Water (DW)			100	6	10	1,000	n/a	n/a	5,000	5	n/a	50	n/a	1,000	300	10	n/a	n/a	50	1	n/a	n/a	10	n/a	200,000	n/a	n/a	n/a	20	n/a	5,000	
Canadian Drinking Water Quality (DW)			100	6	10	1,000	n/a	n/a	5,000	5	n/a	50	n/a	1,000	300	10	n/a	n/a	50	1	n/a	n/a	10	n/a	200,000	n/a	n/a	n/a	20	n/a	5,000	
HAD-1	HAD-1	2014 08 10	356	0.1	1.07	17	0.1	0.5	20	0.01	31,900	0.5	0.24	21.5	247	0.162	0.5	5,030	28.9	0.05	3.01	0.5	559	0.59	0.01	4,690	0.01	19	0.131	2.1	0.3	
	HAD-1	2014 08 11	76.8	0.1	0.56	8.68	0.1	0.5	23	0.01	32,300	0.5	0.1	4.11	49	0.05	0.5	4,960	9.59	0.05	2.93	0.5	401	0.66	0.01	4,100	0.01	0.10	0.122	1.2	0.3	
	HAD-1	2014 08 12	36.8	0.1	0.54	7.25	0.1	0.5	22	0.01	31,400	0.5	0.1	2.82	0.30	0.05	0.5	4,950	5.57	0.05	2.72	0.5	346	0.62	0.01	3,970	0.01	0.10	0.122	1.1	0.3	
	HAD-1	2014 08 13	26.7	0.1	0.66	7.91	0.1	0.5	22	0.01	31,400	0.5	0.1	3.21	0.30	0.05	0.5	4,800	4.8	0.05	2.51	0.5	420	0.57	0.01	4,630	0.01	0.10	0.103	1.2	0.3	
	HAD-1	2014 08 14	30.9	0.1	0.68	8.08	0.1	0.5	23	0.01	32,800	0.5	0.1	3.29	0.30	0.05	0.5	4,840	6.54	0.05	2.76	0.5	418	0.58	0.01	4,620	0.01	0.10	0.115	1.3	0.3	
	HAD-1	2014 08 15	44.2	0.1	0.64	8.34	0.1	0.5	20	0.01	31,800	0.5	0.1	3.51	0.30	0.05	0.5	4,790	8.96	0.05	2.6	0.5	439	0.6	0.01	4,530	0.01	0.10	0.107	1.2	0.3	
	HAD-1	2014 08 16	164	0.1	0.64	10.6	0.1	0.5	21	0.01	32,000	0.5	0.14	6.79	110	0.051	0.5	4,910	16.8	0.05	2.71	0.5	511	0.58	0.01	4,530	0.01	0.10	0.112	1.4	0.3	
	HAD-1X	2014 08 16	128	0.1	0.63	9.87	0.1	0.5	21	0.01	32,300	0.5	0.11	6.15	99	0.05	0.5	4,900	16.7	0.05	2.68	0.5	516	0.57	0.01	4,450	0.01	0.10	0.108	1.4	0.3	
	QA/QC RPD %			25	0.2	2	7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	HAD-1	2014 08 17	121	0.1	0.64	9.62	0.1	0.5	21	0.01	32,800	0.5	0.11	6.51	93	0.05	0.5	4,910	12.5	0.05	2.67	0.5	510	0.57	0.01	4,750	0.01	0.10	0.107	1.4	0.3	
	HAD-1	2014 08 18	64.7	0.1	0.65	9.22	0.1	0.5	22	0.01	32,100	0.5	0.1	4.34	59	0.05	0.5	4,800	14.2	0.01	2.63	0.5	495	0.58	0.01	4,600	0.01	0.10	0.107	1.3	0.3	
	HAD-1	2014 08 19	52.8	0.1	0.65	9.03	0.1	0.5	23	0.01	32,300	0.5	0.1	3.8	49	0.05	0.5	4,910	10.9	0.05	2.78	0.5	482	0.6	0.01	4,680	0.01	0.10	0.108	1.2	0.3	
	HAD-1	2014 08 20	382	0.1	0.75	13.8	0.1	0.5	22	0.01	32,500	0.5	0.28	13.9	273	0.103	0.57	4,990	19.2	0.05	2.87	0.5	596	0.5	0.01	4,710	0.01	0.19	0.118	2	0.3	
	HAD-1	2014 08 10	121	0.1	0.68	12.9	0.1	0.5	20	0.01	31,700	0.5	0.1	6.69	86	0.061	0.5	4,860	13.1	0.05	2.94	0.5	489	0.61	0.01	4,720	0.01	0.10	0.106	1.6	0.3	
	HAD-1	2014 08 21	288	0.1	0.72	12.3	0.1	0.5	21	0.01	33,600	0.5	0.21	11.8	206	0.069	0.51	5,290	13.7	0.05	2.75	0.5	572	0.59	0.01	4,860	0.01	0.17	0.119	1.8	0.3	
	HAD-1	2014 08 22	227	0.1	0.72	11.9	0.1	0.5	21	0.01	33,500	0.5	0.17	9.07	159	0.058	0.5	5,040	12.5	0.05	2.92	0.5	566	0.61	0.01	4,700	0.01	0.13	0.121	1.8	0.3	
	HAD-1	2014 08 24	392	0.1	0.79	15.3	0.1	0.5	21	0.01	34,400	0.5	0.3	15.1	285	0.107	0.6	5,260	15.8	0.05	3	0.5	652	0.6	0.01	4,820	0.01	0.16	0.124	2	0.3	
	HAD-1	2014 08 26	62.3	0.1	0.66	9.05	0.1	0.5	19	0.01	32,700	0.5	0.1	4.1	40	0.05	0.5	4,950	7.67	0.05	3.34	0.5	511	0.65	0.01	4,880	0.01	0.10	0.123	1.2	0.3	
	HAD-1	2014 08 28	46.9	0.1	0.63	9	0.1	0.5	23	0.01	33,100	0.5	0.1	3.87	0.30	0.05	0.5	4,890	5.53	0.01	3.13	0.5	504	0.65	0.01	4,940	0.01	0.10	0.12	1.3	0.3	
	HAC01	HAC01-140824	2014 08 24	75,200	0.67	47.4	795	2.4	2.5	54	1.02	178,000	114	66.2	1,860	111,000	42.4	80.5	55,400	2,990	0.183	13.3	126	10,900	5.8	1.02	12,800	0.363	4,290	4.91	265	285
HAC01-24HRS		2014 08 24	14,400	0.18	16.4	311	1.01	0.5	38	0.825	156,000	19.3	20.9	1,360	20,200	25.3	12.1	19,200	1,540	0.193	2.91	42.3	4,210	3.25	0.023	11,300	0.055	52	2.8	53.9	84.2	
HAC01		2014 08 25	63,400	0.6	35.1	660	2.03	1.1	43	1.05	146,000	119	60.1	1,200	113,000	40.1	77.9	51,500	2,590	0.312	8.46	131	9,200	4.88	0.865	10,500	0.391	3,220	3.82	223	266	
HAC01		2014 08 26	73,300	0.72	42.1	736	2.25	2.5	53	1.04	145,000	132	67.8	1,490	118,000	43.5	81	57,500	2,870	0.265	9.16	146	9,710	5.31	0.954	10,700	0.426	3,910	4.41	266	300	
HAC01		2014 08 27	360,000	0.2	245	4,970	15.3	10	270	4.78	757,000	309	378	19,000	413,000	254	432	232,000	16,600	2,89	49.8	355	42,100	18.4	8.17	41,300	1.02	10,600	20.6	1,250	1,490	
HAD-FIELD BLANK	FIELD BLANK	2014 08 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	
	HAC01-FB	2014 08 27	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 ^a	0.50	0.5	0.1	0.5	0.30	0.05	0.5	0.100	0.05	0.01	0.05	0.5	0.50	0.5	0.01	0.50	0.01	0.10	0.01	0.1	0.3	
HAD-TRAVEL BLANK	TRIP BLANK	2014 08 27	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 ^a	0.50	0.5	0.1	0.5	0.30	0.05	0.5	0.100	0.05	0.01	0.05	0.5	0.50	0.5	0.01	0.50	0.01	0.10	0.01	0.1	0.3	

Associated ALS files L1500203, L1500608, L1501501, L1501554, L1502400, L1503098, L1503928, L1503934, L1503943, L1504261, L1504997, L1505933, L1506592, L1506998, L1507977, L1508649, L1509589, L1509671, L1510298, L1510307, L1507958.

All terms defined within the body of SNC-Lavalin's report (available upon request).

□ Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard.

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SHADED Concentration greater than BCWQG Aquatic Life (AW) guideline.

BOLD Concentration greater than BCWQG Drinking Water (DW) guideline.

SHADED Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.

BOLD Concentration greater than or equal to Canadian Drinking Water Quality (DW) guideline.

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^d Guideline varies with pH, and/or Temperature or Hardness.

TABLE 3: Summary of Analytical Results for Mount Polley, Polley Lake - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters				Microbiological Tests							Dissolved Inorganics													
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)			
BC Standards																											
BCWQG Aquatic Life (AW) ^{b,c}			n/a	6.5-9.0	6.5-9.0	n/a	Under Review	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	700-24,500	32,800	60 (Cl: 2)	32,800	600	1263.5-1361.3 ^d	128-309 ^d	n/a	n/a	0.005 - 0.15
BCWQG Aquatic Life (30day) (AW) ^{b,c}			n/a	6.5-8.5	6.5-8.5	n/a	by SNC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10,000	1,000	10,000	250	1,500	500	n/a	n/a	0.01	
BCWQG Drinking Water (DW)			n/a	n/a	n/a	n/a	Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	135-1,780	3,000	20 (Cl: 2)	3,000	150	n/a	128-309 ^d	n/a	n/a	n/a
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10,000	1,000	10,000	250	1,500	500	n/a	n/a	n/a	
POL-1	POL-1	2014 08 07	97.1	-	9.06	-	2.52	187	127	0.3	6.09	-	-	0.389	0.5	6.6	0.1	-	0.5	60	26.3	75.4	0.001	0.0044			
POL-2	POL-2	2014 08 07	95.2	-	9.01	-	3.96	184	126	0.3	6.81	201	>201	0.402	0.5	0.5	0.1	-	0.5	61	27.6	70.8	0.001	0.005			
POL-2	POL-2	2014 08 08	96.7	9.02	8.68	20.4	3.4	192	139	0.3	6.86	2420	365	0.376	0.5	0.5	0.1	-	0.5	61	27.2	70.5	0.001	0.0056			
POL-2	POL-2	2014 08 09	96.7	9.0	8.87	21.0	4.82	194	145	0.3	7.01	-	-	0.381	0.5	0.5	0.1	-	0.5	61	27.8	71.2	0.001	0.0057			
POL-2X	POL-2X	2014 08 09	97.2	9.05	8.88	21.3	4.13	195	144	0.3	6.97	-	-	0.372	0.5	0.5	0.1	-	0.5	64	28	71.6	0.001	0.0053			
QA/QC RPD %																											
POL-2	POL-2	2014 08 11	99.6	8.55	8.16	23.0	3.59	203	143	0.3	7.57	-	-	0.56	0.5	0.5	0.1	-	0.5	68	27.6	75.3	0.001	0.0079			
POL-2	POL-2	2014 08 12	94.8	8.99	8.58	20.6	1.58	198	135	0.3	6.29	-	-	0.355	0.5	0.5	0.1	-	0.5	69	27.1	73.4	0.001	0.0061			
POL-2	POL-2	2014 08 13	96.4	8.98	8.65	21.4	1.18	194	132	0.3	6.3	-	-	0.512	7.6	0.5	0.1	-	0.5	68	27.2	73.7	0.001	0.0053			
POL-2	POL-2	2014 08 14	99.8	8.87	8.53	22.5	1.66	200	130	0.3	6.69	-	-	0.373	5	0.5	0.1	-	0.5	63	27.4	75.7	0.001	0.0049			
POL-2	POL-2	2014 08 17	95.9	8.83	8.18	20.1	3.05	203	93	4.8	6.48	-	-	0.328	0.5	0.5	0.1	-	0.5	68	27.5	74.9	0.001	0.0061			
POL-2	POL-2	2014 08 16	100	8.60	8.28	20.2	1.7	203	142	0.3	6.57	-	-	0.339	0.5	0.5	0.1	5.1	0.5	68	27.3	76	0.001	0.0058			
POL-2	POL-2	2014 08 15	99.9	8.76	8.26	21.8	1.07	202	137	0.3	6.6	-	-	0.345	0.5	0.5	0.1	5.1	0.5	81	27.4	75.5	0.001	0.0064			
POL-2	POL-2	2014 08 19	102	8.66	8.09	20.7	3.02	198	133	5.2	6.84	-	-	0.505	5.4	0.5	0.1	-	0.5	74	26.7	74.9	0.001	0.0066			
POL-2	POL-2	2014 08 18	97.5	8.66	8.33	20.7	1.98	200	139	0.3	7.38	-	-	0.389	6.1	0.5	0.1	-	0.5	67	27.4	75.7	0.001	0.006			
POL-2	POL-2	2014 08 20	102	8.38	8.17	20.4	4.8	201	110	5.6	6.43	-	-	0.345	0.5	0.5	0.1	-	0.5	67	27	75.7	0.001	0.0063			
POL-3	POL-3	2014 08 21	100	8.17	7.9	20.0	141	5.6	6.39	-	-	-	-	0.333	0.5	0.5	0.1	-	0.5	67	27.3	74	0.001	0.0052			
POL-3	POL-3	2014 08 08	99.8	9.02	8.79	19.0	1.65	194	131	3.1	6	2420	10	0.333	0.5	0.5	0.1	-	0.5	60	26.3	75.5	0.001	0.0048			
POL-3	POL-3	2014 08 09	97.8	8.98	8.7	18.8	2.98	198	139	5.5	6.49	-	-	0.404	0.5	0.5	0.1	-	0.5	60	26.5	73.8	0.001	0.0117			
POL-3	POL-3	2014 08 11	107	7.1	7.89	22.0	2.91	224	162	5.9	8.27	-	-	0.835	15	0.5	0.1	-	0.5	64	25.8	87.6	0.001	0.0476			
POL-3	POL-3	2014 08 12	96.3	8.85	8.39	21.7	1.15	200	142	0.3	6.3	-	-	0.406	6.4	0.5	0.1	-	0.5	65	27.2	73.7	0.001	0.0068			
POL-3	POL-3	2014 08 13	97.9	8.94	8.56	21.7	1.69	197	136	3.5	6.65	-	-	0.402	10.7	0.5	0.1	-	0.5	66	27	75.2	0.001	0.0069			
POL-3	POL-3	2014 08 14	98.3	8.89	8.57	22.5	3.38	200	130	0.3	6.77	-	-	0.363	7.2	5.5	0.1	-	0.5	64	27.2	74.9	0.001	0.005			
POL-3	POL-3	2014 08 17	99.6	8.932	8.27	19.7	1.04	202	135	3.5	6.28	-	-	0.365	0.5	0.5	0.1	-	0.5	68	27.4	74.7	0.001	0.0052			
POL-3	POL-3	2014 08 16	99.7	8.7	5.64	21.0	0.62	200	139	3.7	6.35	-	-	0.333	0.5	0.5	0.1	5.1	0.5	68	27.1	73.3	0.001	0.006			
POL-3	POL-3	2014 08 15	98.5	8.89	8.38	22.5	3.68	199	133	0.3	6.31	-	-	0.359	0.5	0.5	0.1	5.1	0.5	80	27.1	74.1	0.001	0.0056			
POL-3	POL-3	2014 08 19	101	8.643	8.32	19.8	0.82	199	138	0.3	6.4	-	-	0.42	6.3	0.5	0.1	-	0.5	77	26.9	74.7	0.001	0.006			
POL-3	POL-3	2014 08 18	99.6	8.843	8.52	19.8	0.89	200	117	0.3	7.15	-	-	0.386	7.3	0.5	0.1	-	0.5	76	27.5	74.5	0.001	0.0051			
POL-3X	POL-3X	2014 08 18	99.1	8.843	8.49	19.8	0.85	201	96	0.3	7.06	-	-	0.381	7	0.5	0.1	-	0.5	67	27.5	75.3	0.001	0.006			
QA/QC RPD %																											
POL-3	POL-3	2014 08 20	102	8.53	8.23	20.5	0.75	201	110	0.3	6.38	-	-	1	8.3	0.5	0.1	-	0.5	66	27.3	75.9	0.001	0.0067			
POL-3X	POL-3X	2014 08 20	100	8.53	8.23	20.5	0.66	204	145	0.3	6.28	-	-	0.347	9	0.5	0.1	-	0.5	64	27.1	77.2	0.001	0.0069			
QA/QC RPD %																											
POL-3	POL-3	2014 08 21	100	-	8.43	-	0.85	202	135	0.3	5.99	-	-	0.384	8.2	0.5	0.1	-	0.5	66	27.9	76	0.001	0.0045			
POL-3-140827	POL-3-140827	2014 08 27	105	8.74	8.3	19.4	0.93	209	135	0.3	6.92	-	-	0.376	0.5	0.5	0.1	-	0.5	70	28.5	77.2	0.001	0.0059			
POL-4	POL-4	2014 08 08	100	9.099	8.89	18.2	2.39	192	132	4.6	6.14	2420	28	0.33	0.5	0.5	0.1	-	0.5	60	26.3	75.6	0.001	0.0053			
POL-4	POL-4	2014 08 09	99.2	8.929	8.78	18.3	2.7	199	139	3.1	7.29	-	-	0.44	0.5	0.5	0.1	-	0.5	60	26.6	75	0.001	0.0054			
POL-4	POL-4	2014 08 11	83.9	8.726	8.36	22.8	2.25	198	116	0.3	6.48	-	-	0.404	0.5	6.1	0.1	-	0.5	72	26.9	73.6	0.001	0.0063			
POL-4	POL-4	2014 08 12	94.6	8.898	8.52	22.0	1.4	199	140	0.3	6.24	-	-	0.397	0.5	0.5	0.1	-	0.5	67	27.1	73.4	0.001	0.0056			
POL-4X	POL-4X	2014 08 12	96.7	-	8.52	-	1.08	200	141	0.3	6.17	-	-	0.393	0.5	0.5	0.1	-	0.5	64	27.2	74.8	0.001	0.0056			
QA/QC RPD %																											
POL-4	POL-4	2014 08 13	98.1	8.831	8.62	21.1	1.09	196	137	0.3	8.4	-	-	0.373	5.4	6	0.1	-	0.5	72	27.2	75.5	0.001	0.006			
POL-4	POL-4	2014 08 14	97.9	8.993	8.69	22.4	1.09	199	134	0.3	6.53	-	-	0.34	6	0.5	0.1	-	0.5	64	27.2	75	0.001	0.0048			
POL-4	POL-4	2014 08 17	101	8.843	8.26	19.4	0.87	204	90	0.3	6.5	-	-	0.342	6.1	0.5	0.1	-	0.5	68	27.4	76.5	0.001	0.006			
POL-4	POL-4	2014 08 16	99.5	8.403	8.28	21.4	0.66	201	137	0.3	6.44	-	-	0.345	8.6	0.5	0.1	5.1	0.5	65	26.9	75.2	0.001	0.00			

TABLE 3: Summary of Analytical Results for Mount Polley, Polley Lake - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																												
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards																															
BCWQG Aquatic Life (AW) ^{b,c}			100 (pH ± 6.5)	n/a	350	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
BCWQG Aquatic Life (30day) (AW) ^{b,c}			200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
BCWQG Drinking Water (DW)			50 (pH ± 6.5)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
POL-1 POL-2	POL-1	2014 08 07	6.3	31.1	0.30	4.72	0.377	0.341	4.24	0.01	0.55	6.36	0.1	19	0.01	0.05	0.01	1.67	0.05	0.05	0.05	2.2	0.05	0.56	0.01	0.01	0.10	0.102	1.1	0.3	
	POL-2	2014 08 07	12.5	30.2	0.30	4.78	3.86	0.483	4.44	0.01	0.61	7.72	0.1	20	0.01	0.05	0.01	2.77	0.05	0.05	0.05	2.58	0.05	0.55	0.01	0.01	0.10	0.101	1.1	0.3	
	POL-2	2014 08 08	11.4	30.7	0.30	4.83	7.95	0.527	4.63	0.01	0.63	9.11	0.1	18	0.01	0.05	0.01	2.86	0.05	0.05	0.05	2.45	0.05	0.57	0.01	0.01	0.10	0.1	1.1	0.3	
	POL-2	2014 08 09	14.8	30.9	0.30	4.76	0.815	0.466	4.52	0.01	0.61	8.3	0.1	20	0.01	0.05	0.01	3.19	0.05	0.05	0.05	2.67	0.05	0.55	0.01	0.01	0.10	0.143	1.2	0.3	
	POL-2X	2014 08 09	15.2	31	0.30	4.8	0.728	0.474	4.63	0.01	0.6	8.25	0.1	20	0.01	0.05	0.01	3.21	0.05	0.05	0.05	2.77	0.05	0.56	0.01	0.01	0.10	0.144	1.2	0.3	
	QA/QC RPD %			0.1	0.1	0.1	1.1	2	2	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	POL-2	2014 08 11	12.1	31.9	0.30	4.85	22.4	0.708	4.66	0.01	0.66	9.62	0.1	19	0.01	0.05	0.01	3.16	0.05	0.05	0.05	2.49	0.05	0.57	0.01	0.01	0.10	0.091	1.1	0.3	
	POL-2	2014 08 12	10.5	30.4	0.30	4.61	0.361	0.422	4.54	0.01	0.58	7.3	0.1	20	0.01	0.05	0.01	2.18	0.05	0.05	0.05	2.38	0.05	0.55	0.01	0.01	0.10	0.096	1.2	0.3	
	POL-2	2014 08 13	10.3	30.7	0.30	4.8	0.487	0.422	4.43	0.01	0.54	8.04	0.1	21	0.01	0.05	0.01	2.3	0.05	0.05	0.05	2.53	0.05	0.55	0.01	0.01	0.10	0.102	1.1	0.3	
	POL-2	2014 08 14	9.5	32.1	0.30	4.8	0.501	0.41	4.48	0.01	0.61	7.48	0.1	21	0.01	0.05	0.01	2.25	0.05	0.05	0.05	2.57	0.05	0.53	0.01	0.01	0.10	0.109	1.1	0.3	
	POL-2	2014 08 17	11.9	30.8	0.30	4.63	0.815	0.468	4.68	0.01	0.61	7.75	0.1	20	0.01	0.05	0.01	2.53	0.05	0.05	0.05	2.65	0.05	0.55	0.01	0.01	0.10	0.118	1.2	0.3	
	POL-2	2014 08 16	9	32.2	0.30	4.8	2.87	0.45	4.51	0.01	0.61	7.66	0.1	18	0.01	0.05	0.01	2.3	0.05	0.05	0.05	2.51	0.05	0.6	0.01	0.01	0.10	0.097	1.1	0.3	
	POL-2	2014 08 15	10.2	32	0.30	4.87	3.41	0.435	4.47	0.01	0.58	7.58	0.1	19	0.01	0.05	0.01	2.34	0.05	0.05	0.05	2.53	0.05	0.57	0.01	0.01	0.10	0.099	1.1	0.3	
	POL-2	2014 08 19	10	32.8	0.30	4.86	31.2	0.529	4.38	0.01	0.61	9.63	0.1	20	0.01	0.05	0.01	2.34	0.05	0.05	0.05	2.56	0.05	0.57	0.01	0.01	0.10	0.1	1.1	0.3	
	POL-2	2014 08 18	11.7	31.3	0.30	4.69	4.93	0.46	4.46	0.01	0.55	8.1	0.1	19	0.01	0.05	0.01	2.33	0.05	0.05	0.05	2.56	0.05	0.54	0.01	0.01	0.10	0.105	1.1	0.3	
	POL-2	2014 08 20	12.5	32.7	0.30	4.92	8.18	0.502	4.6	0.01	0.62	8.88	0.1	21	0.01	0.05	0.01	2.99	0.05	0.05	0.05	2.72	0.05	0.62	0.01	0.01	0.10	0.105	1.1	0.3	
	POL-2	2014 08 21	16.6	32.1	0.30	4.88	1.44	0.482	4.61	0.01	0.59	8.59	0.1	19	0.01	0.05	0.01	3.41	0.05	0.05	0.05	2.64	0.05	0.5	0.01	0.01	0.10	0.105	1.1	0.3	
	POL-3	2014 08 08	7.1	32	0.30	4.82	3.02	0.404	4.51	0.01	0.6	6.96	0.1	16	0.01	0.05	0.01	2.12	0.05	0.05	0.05	2.19	0.05	0.52	0.01	0.01	0.10	0.094	1.1	0.3	
	POL-3	2014 08 09	7.4	31.4	0.30	4.71	0.583	0.419	4.37	0.01	0.65	6.84	0.1	20	0.01	0.05	0.01	1.82	0.05	0.05	0.05	2.36	0.05	0.51	0.01	0.01	0.10	0.097	1.1	0.3	
	POL-3	2014 08 11	5.9	34.6	0.30	5.04	73	1.46	4.61	0.01	0.78	10.7	0.1	21	0.015	0.05	0.01	2.74	0.05	0.52	0.05	2.13	0.05	0.52	0.01	0.01	0.10	0.033	1.1	0.3	
	POL-3	2014 08 12	8.8	30.9	0.30	4.67	0.327	0.481	4.59	0.01	0.63	7.03	0.1	19	0.01	0.05	0.01	2.15	0.05	0.51	0.05	2.4	0.05	0.53	0.01	0.01	0.10	0.096	1.1	0.3	
	POL-3	2014 08 13	10.3	31.3	0.30	4.79	0.408	0.451	4.48	0.01	0.58	7.42	0.1	20	0.01	0.05	0.01	2.25	0.05	0.05	0.05	2.48	0.05	0.55	0.01	0.01	0.10	0.104	1.1	0.3	
	POL-3	2014 08 14	9.3	31.5	0.30	4.78	0.448	0.428	4.45	0.01	0.65	7.2	0.1	21	0.01	0.05	0.01	2.16	0.05	0.05	0.05	2.5	0.05	0.57	0.01	0.01	0.10	0.107	1.2	0.3	
	POL-3	2014 08 17	8.9	31.9	0.30	4.82	0.345	0.447	4.73	0.01	0.6	7.21	0.1	20	0.01	0.05	0.01	2.12	0.05	0.05	0.05	2.65	0.05	0.57	0.01	0.01	0.10	0.109	1.1	0.3	
	POL-3	2014 08 16	8.4	31.9	0.30	4.85	1.77	0.419	4.27	0.01	0.61	7.08	0.1	18	0.01	0.05	0.01	2.15	0.05	0.05	0.05	2.44	0.05	0.57	0.01	0.01	0.10	0.094	1.1	0.3	
	POL-3	2014 08 15	9.8	31.5	0.30	4.83	2.06	0.415	4.52	0.01	0.59	7.21	0.1	19	0.01	0.05	0.01	2.21	0.05	0.05	0.05	2.6	0.05	0.56	0.01	0.01	0.10	0.093	1.1	0.3	
	POL-3	2014 08 19	10.6	32.4	0.30	4.83	2.62	0.452	4.43	0.01	0.58	7.49	0.1	21	0.01	0.05	0.01	2.25	0.05	0.05	0.05	2.57	0.05	0.61	0.01	0.01	0.10	0.099	1.1	0.3	
	POL-3	2014 08 18	9.2	32	0.30	4.79	0.527	0.443	4.52	0.01	0.61	7.46	0.1	20	0.01	0.05	0.01	2.06	0.05	0.05	0.05	2.65	0.05	0.55	0.01	0.01	0.10	0.111	1.1	0.3	
POL-3X	2014 08 18	9	31.9	0.30	4.71	0.79	0.441	4.44	0.01	0.57	7.37	0.1	21	0.01	0.05	0.01	2.06	0.05	0.05	0.05	2.6	0.05	0.57	0.01	0.01	0.10	0.107	1.1	0.3		
QA/QC RPD %			0.1	0.1	0.1	2	40	1	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
POL-3	2014 08 20	9.4	32.9	0.30	4.82	3.96	0.53	4.59	0.01	0.65	7.81	0.1	20	0.01	0.05	0.01	2.32	0.05	0.05	0.05	2.82	0.05	0.64	0.01	0.01	0.10	0.109	1.1	0.3		
POL-3X	2014 08 20	8.7	32.2	0.30	4.81	3.71	0.506	4.47	0.01	0.61	7.84	0.1	19	0.01	0.05	0.01	2.17	0.05	0.05	0.05	2.76	0.05	0.63	0.01	0.01	0.10	0.11	1.1	0.3		
QA/QC RPD %			2	0.1	0.1	7	5	3	3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
POL-3	2014 08 21	8.7	32.1	0.30	4.83	2.35	0.497	4.66	0.01	0.59	7.88	0.1	23	0.01	0.05	0.01	2.21	0.05	0.05	0.05	2.92	0.05	0.57	0.01	0.01	0.10	0.096	1.1	0.3		
POL-3-140827	2014 08 27	9.6	33.8	0.30	5.02	8.29	0.567	4.64	0.01	0.59	8.35	0.1	18	0.01	0.05	0.01	2.49	0.05	0.05	0.05	2.98	0.05	0.61	0.01	0.01	0.10	0.112	1.1	0.3		
POL-4	2014 08 08	7.9	32.2	0.30	4.84	2.3	0.398	4.48	0.01	0.6	6.58	0.1	19	0.01	0.05	0.01	2.19	0.05	0.05	0.05	2.25	0.05	0.58	0.01	0.01	0.10	0.098	1.1	0.3		

TABLE 3: Summary of Analytical Results for Mount Polley, Polley Lake - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Total Metals																												
			Aluminum (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Bismuth (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Lithium (µg/L)	Manganese (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Potassium (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium (µg/L)	Thallium (µg/L)	Tin (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
BC Standards			n.a	20	5	5,000	5.3 (chronic)	n.a	1,200	0.03-0.035 ^d	n.a	1 (Cr: 6)	110	9.9-12.06 ^d	1,000	65.3-88.99 ^d	870	1464.5-1.719 ^d	Under review by SNC-Lavalin	2,000	25-65 ^d	373,000	2	0.1-3.0 ^d	n.a	0.3	n.a	2,000	300	6	33-45.75 ^d
BCWQG Aquatic Life (AW) ^{b,c}			n.a	14	25	n.a	4	n.a	5,000	n.a	n.a	n.a	n.a	500	n.a	50	n.a	n.a	n.a	250	n.a	n.a	10	n.a	n.a	2	n.a	n.a	n.a	n.a	5,000
BCWQG Aquatic Life (30day) (AW) ^{b,c}			n.a	n.a	n.a	1,000	n.a	n.a	n.a	n.a	n.a	n.a	4	2-4.28 ^d	n.a	3.3-6.8 ^d	14	607.2-1076 ^d	1	1,000	n.a	n.a	n.a	0.05-1.5 ^d	n.a	n.a	n.a	n.a	n.a	n.a	7.5-20.25 ^d
Canadian Drinking Water Quality (DW)			100	6	10	1,000	n.a	n.a	5,000	5	n.a	50	n.a	1,000	300	10	n.a	50	1	n.a	n.a	n.a	10	n.a	200,000	n.a	n.a	20	n.a	5,000	
POL-1	POL-1	2014 08 07	53.7	0.01	0.57	6.91	0.01	0.05	19	0.01	30,900	0.05	0.01	3.16	34	0.05	0.05	8.21	0.05	2.17	0.05	355	0.53	0.01	4,060	0.01	0.01	10	0.098	1.2	0.3
POL-2	POL-2	2014 08 07	139	0.01	0.63	9.62	0.01	0.05	19	0.01	29,900	0.05	0.1	6.31	86	0.054	0.05	11.7	0.05	2.51	0.05	519	0.56	0.01	4,360	0.01	0.01	10	0.107	1.5	0.3
	POL-2	2014 08 08	114	0.01	0.65	11	0.01	0.05	20	0.01	29,600	0.05	0.01	5.29	89	0.05	0.05	15.3	0.05	2.5	0.05	570	0.55	0.01	4,350	0.01	0.01	10	0.114	1.4	0.3
	POL-2	2014 08 09	237	0.01	0.72	11.4	0.01	0.05	21	0.01	31,800	0.05	0.18	9.6	160	0.068	0.05	13.7	0.05	2.91	0.05	551	0.56	0.01	4,730	0.01	0.01	13	0.163	1.9	0.3
	POL-2X	2014 08 09	241	0.01	0.72	11.7	0.01	0.05	21	0.01	31,700	0.05	0.18	9.24	175	0.083	0.05	14.5	0.05	2.78	0.05	557	0.59	0.01	4,650	0.01	0.01	13	0.157	1.8	0.3
	QA/QC RPD %			2	0	3	0	0	0	0	1	0	0	0	9	0	0	0	0	0	5	0	1	0	0	2	0	0	4	0	0
	POL-2	2014 08 11	67.5	0.01	0.66	10	0.01	0.05	19	0.01	30,400	0.05	0.01	4.8	47	0.05	0.05	24.3	0.05	2.64	0.05	696	0.52	0.01	4,650	0.01	0.01	10	0.1	1.3	0.3
	POL-2	2014 08 12	38.7	0.01	0.69	7.73	0.01	0.05	19	0.01	31,000	0.05	0.01	3.15	30	0.05	0.05	7.98	0.05	2.57	0.05	440	0.56	0.01	4,610	0.01	0.01	10	0.104	1.3	0.3
	POL-2	2014 08 13	35.3	0.01	0.62	7.68	0.01	0.05	21	0.01	31,100	0.05	0.01	3.36	30	0.05	0.05	6.64	0.05	2.48	0.05	446	0.6	0.01	4,430	0.01	0.01	10	0.107	1.3	3.1
	POL-2	2014 08 14	35.4	0.01	0.66	7.97	0.01	0.05	22	0.01	32,400	0.05	0.01	3.26	30	0.05	0.05	6.84	0.05	2.6	0.05	458	0.56	0.01	4,590	0.01	0.01	10	0.112	1.4	0.3
	POL-2	2014 08 17	99.7	0.01	0.65	9.09	0.01	0.05	21	0.01	31,600	0.05	0.01	5.28	83	0.05	0.05	9.39	-	2.79	0.05	496	0.58	0.01	4,700	0.01	0.01	10	0.127	1.4	0.3
POL-2	2014 08 16	50.8	0.01	0.63	8.32	0.01	0.05	21	0.01	32,000	0.05	0.01	3.57	37	0.05	0.05	9.47	-	2.57	0.05	470	0.57	0.01	4,550	0.01	0.01	10	0.106	1.2	0.3	
POL-2	2014 08 15	57.9	0.01	0.64	7.98	0.01	0.05	20	0.01	31,600	0.05	0.01	3.73	38	0.05	0.05	7.94	-	2.64	0.05	453	0.59	0.01	4,580	0.01	0.01	10	0.104	1.3	0.3	
POL-2	2014 08 19	168	0.01	0.71	12.1	0.01	0.05	23	0.01	33,600	0.05	0.16	5.99	148	0.074	0.05	50	-	2.74	0.05	599	0.6	0.022	4,770	0.01	0.01	11	0.108	1.5	0.3	
POL-2	2014 08 18	58.3	0.01	0.61	8.97	0.01	0.05	20	0.01	31,700	0.05	0.01	3.87	54	0.05	0.05	11.8	-	2.63	0.05	482	0.58	0.01	4,560	0.01	0.01	10	0.108	1.2	0.3	
POL-2	2014 08 20	286	0.01	0.72	13.3	0.01	0.05	21	0.01	33,800	0.05	0.2	10.3	187	0.079	0.05	18.2	-	2.88	0.05	615	0.57	0.01	4,930	0.01	0.01	15	0.122	1.8	0.3	
POL-3	POL-2	2014 08 21	435	0.01	0.74	14.6	0.01	0.05	20	0.01	32,500	0.05	0.31	15.5	302	0.102	0.62	16.5	-	2.71	0.05	612	0.59	0.01	4,730	0.01	0.01	24	0.12	2.1	0.3
	POL-3	2014 08 08	45.6	0.01	0.64	7.41	0.01	0.05	22	0.01	31,300	0.05	0.01	2.94	30	0.05	0.05	7.69	0.05	2.29	0.05	390	0.57	0.01	4,390	0.01	0.01	10	0.1	1.2	0.3
	POL-3	2014 08 09	49	0.01	0.71	7.57	0.01	0.05	20	0.01	31,200	0.05	0.01	3.18	30	0.05	0.05	11.3	0.05	2.31	0.05	437	0.52	0.01	4,280	0.01	0.01	10	0.098	1.3	0.3
	POL-3	2014 08 11	37	0.01	0.81	10.7	0.01	0.05	20	0.022	33,400	0.05	0.01	4.5	30	0.05	0.05	82.6	0.05	2.46	0.05	1,380	0.5	0.01	4,370	0.01	0.01	10	0.041	1.1	0.3
	POL-3	2014 08 12	41.9	0.01	0.67	8.02	0.01	0.05	18	0.01	31,100	0.05	0.01	3.35	30	0.05	0.05	8.03	0.05	2.25	0.05	507	0.59	0.01	4,650	0.01	0.01	10	0.095	1.3	0.3
	POL-3	2014 08 13	38	0.01	0.63	7.6	0.01	0.05	21	0.01	30,500	0.05	0.01	3.37	30	0.05	0.05	10.6	0.05	2.49	0.05	450	0.57	0.01	4,390	0.01	0.01	10	0.101	1.3	0.3
	POL-3	2014 08 14	34.6	0.01	0.67	7.95	0.01	0.05	23	0.01	32,700	0.05	0.01	3.23	30	0.05	0.05	8.58	0.05	2.63	0.05	485	0.58	0.01	4,740	0.01	0.01	10	0.109	1.5	0.3
	POL-3	2014 08 17	27.3	0.01	0.63	7.52	0.01	0.05	20	0.01	31,800	0.05	0.01	2.88	30	0.05	0.05	7.67	-	2.69	0.05	458	0.6	0.01	4,720	0.01	0.01	10	0.111	1.2	3
	POL-3	2014 08 16	20.3	0.01	0.59	7.35	0.01	0.05	20	0.01	31,700	0.05	0.01	2.59	30	0.05	0.05	7.47	-	2.55	0.05	426	0.56	0.01	4,340	0.01	0.01	10	0.105	1.2	0.3
	POL-3	2014 08 15	22.8	0.01	0.62	7.35	0.01	0.05	20	0.01	31,400	0.05	0.01	2.74	30	0.05	0.05	6.09	-	2.62	0.05	439	0.57	0.01	4,600	0.01	0.01	10	0.105	1.2	0.3
POL-3	2014 08 19	22.2	0.01	0.63	7.96	0.01	0.05	23	0.01	32,800	0.05	0.01	2.81	30	0.05	0.05	6.23	-	2.79	0.05	482	0.62	0.01	4,670	0.01	0.01	10	0.106	1.2	0.3	
POL-3	2014 08 18	22.8	0.01	0.59	7.44	0.01	0.05	20	0.01	31,000	0.05	0.01	2.61	30	0.05	0.05	8.86	-	2.56	0.05	435	0.59	0.01	4,360	0.01	0.01	10	0.109	1.1	0.3	
POL-3X	2014 08 18	22.9	0.01	0.6	7.54	0.01	0.05	21	0.01	31,400	0.05	0.01	2.61	30	0.05	0.05	9.46	-	2.61	0.05	440	0.58	0.01	4,440	0.01	0.01	10	0.106	1.1	0.3	
QA/QC RPD %			1	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	1	0	0	2	0	0	3	0	0	
POL-3	2014 08 20	20.4	0.01	0.66	8.15	0.01	0.05	23	0.01	32,700	0.05	0.01	2.73	30	0.05	0.05	7.26	-	2.99	0.05	533	0.51	0.01	4,650	0.01	0.01	10	0.111	1.2	0.3	
POL-3X	2014 08 20	18.3	0.01	0.67	8.32	0.01	0.05	23	0.01	33,800	0.05	0.01	2.76	30	0.05	0.05	7.69	-	3.07	0.05	546	0.5	0.01	4,840	0.01	0.01	10	0.119	1.3	0.3	
QA/QC RPD %			11	2	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	2	0	0	4	0	0	7	0	0	
POL-4	POL-3	2014 08 21	25.9	0.01	0.64	7.81	0.01	0.05	21	0.01	33,000	0.05	0.01	2.88	30	0.05	0.05	7.39	-	3	0.05	489	0.59	0.01	4,910	0.01	0.01	10	0.114	1.2	0.3
	POL-3-140827	2014 08 27	32.8	0.01	0.66	8.76	0.01	0.05	20	0.01	33,900	0.05	0.01	3.45	30	0.05	0.05	9.5	-	3.24	0.05	561	0.62	0.01	4,880	0.01	0.01	10	0.118	1.3	0.3
	POL-4	2014 08 08	71.9	0.01	0.65	7.83	0.01	0.05	20	0.01	31,700	0.05	0.01	3.48	39	0.05	0.05	9.6	0.05	2.34	0.05	404	0.56	0.01	4,390	0.01	0.01	10	0.106	1.3	0.3
	POL-4	2014 08 09	59.7	0.01	0.62	7.86	0.01	0.05	20	0.01	31,800	0.05	0.01	3.21	37	0.05	0.05	15.1	0.05	2.37	0.05	434	0.55	0.01	4,300	0.01	0.01	10	0.112	1.2	0.3
	POL-4	2014 08 11	43.1	0.01	0.66	7.44	0.01	0.05	18	0.01	29,900	0.05	0.01	3.23	30	0.05	0.05	8.43	0.05	2.47	0.05	470	0.51	0.01	4,450	0.01	0.01	10	0.1	1.3	0.3
	POL-4	2014 08 12	35.8	0.01	0.68	7.59	0.01	0.05	19	0.01	30,800	0.05	0.01	3.06	30	0.05	0.05	6.52	0.05	2.43	0.05	453	0.54	0.01	4,650	0.01	0.0				

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters							Microbiological Tests			Dissolved Inorganics																
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)			
BC Standards																													
BCWQG Aquatic Life (AW) ^{b,c}			n.a	6.5-9.0	6.5-9.0	n.a																							
BCWQG Aquatic Life (30day) (AW) ^{b,c}			n.a	n.a	n.a	n.a	Under Review by	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a	SNC	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a	Lavalin	n.a	500	n.a	n.a	n.a	1	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	
QUR-1	QUR-1	2014 08 06	48.5	-	7.94	-	0.33	97.2	54	0.3	2.03	-	-	-	0.173	5	62.7	0.1	62.7	0.5	35	5.65	44.4	-	0.001	0.002 ^d			
	QUR-1X	2014 08 06	48.7	-	7.93	-	0.38	96.7	63	0.3	2.06	-	-	-	0.163	5	61.2	0.1	61.2	0.5	35	5.6	43.8	-	0.001	0.002 ^d			
	QA/QC RPD %		0.1	-	0.1	-	0.1	15	0.1	0.1	0.1	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	QUR-1	2014 08 06	48.7	-	7.93	-	0.52	97.1	58	0.3	2.06	-	-	-	0.132	5	61.9	1	62.9	0.5	34	5.6	44.7	-	0.001	0.002 ^d			
	QUR-1	2014 08 07	47.6	-	7.93	-	0.53	96.9	62	0.3	1.86	-	-	0.115	0.174	5	77.3	0.1	-	0.5	33	5.71	44.5	-	0.001	0.002 ^d			
	QUR-1(11 33)	2014 08 08	50	-	7.98	-	0.5	102	63	0.3	1.95	-	-	-	0.162	5	104	0.1	-	0.5	35	5.76	47.5	-	0.001	0.002 ^d			
	QUR-1(15 43)	2014 08 08	50.8	7.801	7.93	9.9	0.45	103	66	0.3	1.85	-	-	-	0.171	5	116	0.1	-	0.5	35	5.9	47	-	0.001	0.002 ^d			
	QUR-1(10 08)	2014 08 09	52.8	7.34	7.95	9.6	0.4	104	73	0.3	2.09	-	-	-	0.184	5	114	0.1	-	0.5	35	5.89	46.3	-	0.001	0.002 ^d			
	QUR-1(14 30)	2014 08 09	51.6	7.54	7.95	10.9	0.3	103	74	0.3	2.09	-	-	-	0.178	5	110	0.1	-	0.5	34	5.83	45.8	-	0.001	0.002 ^d			
	QUR-1(10 19)	2014 08 10	49.8	7.76	7.87	12.8	0.63	99.9	67	0.3	2.07	-	-	-	0.172	5	93.1	0.1	-	0.5	34	5.77	46.1	-	0.001	0.002 ^d			
	QUR-1(17 45)	2014 08 10	50.3	7.91	7.92	13.6	0.31	100	68	0.3	2.09	-	-	-	0.176	5	92.5	0.1	-	0.5	34	5.77	46.6	-	0.001	0.002 ^d			
	QUR-1(11 18)	2014 08 11	49.3	-	7.88	-	0.45	99.8	70	0.3	2.03	-	-	-	0.154	5	73.9	0.1	-	0.5	34	5.75	45.1	-	0.001	0.002 ^d	0.0028		
	QUR-1(17 12)	2014 08 11	49.8	7.732	7.93	16.8	0.52	100	68	0.3	2.16	-	-	-	0.148	5	72.2	0.1	-	0.5	34	5.73	45.3	-	0.001	0.002 ^d			
	QUR-1(14 04)	2014 08 12	49.1	-	7.92	-	1.2	99.5	-	-	-	-	-	-	-	-	66.2	1	-	0.5	34	5.77	-	0.05	-	-	-	-	
	QUR-1(16 34)	2014 08 12	49.7	8.14	7.88	17.4	0.55	99.4	68	0.3	1.92	-	-	-	0.142	5	64.4	0.1	-	0.5	36	5.74	45.2	-	0.001	0.002 ^d			
	QUR-1(20 00)	2014 08 12	49.5	-	7.92	-	0.75	99.6	-	-	-	-	-	-	-	-	64.7	0.1	-	0.5	37	5.78	-	0.05	-	-	-	-	
	QUR-1(04 00)	2014 08 13	50.1	-	7.9	-	0.37	99.1	-	-	-	-	-	-	-	-	62.1	0.1	-	0.5	36	5.77	-	0.05	-	-	-	-	
	QUR-1(12 00)	2014 08 13	49.4	-	7.91	-	1.22	99.1	-	-	-	-	-	-	-	-	57.5	0.1	-	0.5	34	5.76	-	0.05	-	-	-	-	
	QUR-1(13 18)	2014 08 13	48.4	8.2	7.93	18.5	0.25	99.1	68	0.3	1.92	-	-	-	0.139	5	56	1.2	-	0.5	36	5.75	45.3	-	0.011	0.002 ^d			
	QUR-1(20 00)	2014 08 13	48.3	-	7.94	-	0.22	96.5	-	-	-	-	-	-	-	-	54.2	0.1	-	0.5	32	5.74	-	-	-	-	-	-	
	QUR-1(20 00)	2014 08 14	49	-	7.89	-	0.42	99	-	-	-	-	-	-	-	-	50.7	0.1	-	0.5	34	5.75	-	-	-	-	-	-	
	QUR-1(14 45)	2014 08 14	49.1	7.96	7.97	19.8	0.18	95.9	66	0.3	2.17	-	-	-	0.124	5	48.4	0.1	-	0.5	33	5.71	45.7	-	0.001	0.002 ^d			
	QUR-1X(14 50)	2014 08 14	46.8	-	7.98	-	0.14	96.4	59	0.3	2.03	-	-	-	0.124	5	48.8	0.1	-	0.5	33	5.72	45	-	0.001	0.002 ^d			
	QA/QC RPD %			5	0	0	0	1	11	0.3	0.3	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	QUR-1(04 00)	2014 08 15	49	-	7.97	-	0.28	100	-	-	-	-	-	-	-	-	56.4	0.1	-	0.5	36	5.75	-	-	-	-	-	-	
	QUR-1(12 00)	2014 08 15	48.7	-	8	-	0.32	101	-	-	-	-	-	-	-	-	61.2	0.1	-	0.5	37	5.78	-	-	-	-	-	-	
	QUR-1(13 28)	2014 08 15	48.1	8.19	7.94	17.4	0.28	99.6	61	0.3	1.96	-	-	-	0.133	5	61.4	0.1	-	0.5	36	5.74	44.6	-	0.001	0.002 ^d	0.0024		
	QUR-1	2014 08 17	48.4	8.19	7.96	18.0	0.43	99.2	69	0.3	2.08	-	-	-	0.137	5	57	0.1	-	0.5	36	5.72	45.2	-	0.001	0.002 ^d			
	QUR-1(14 59)	2014 08 16	49.1	8.21	7.96	18.1	0.45	100	68	0.3	2.18	-	-	-	0.129	5	58.2	0.1	58.2	0.5	36	5.72	45.2	-	0.001	0.002 ^d			
	QUR-1(04 00)	2014 08 14	49.2	-	7.94	-	0.14	96.5	-	-	-	-	-	-	-	-	53.6	0.1	-	0.5	32	5.73	-	-	-	-	-	-	
	QUR-1(12 00)	2014 08 14	48.4	-	7.97	-	0.18	97.1	-	-	-	-	-	-	-	-	50.2	0.1	-	0.5	32	5.73	-	-	-	-	-	-	
	QUR-1(20 00)	2014 08 16	50.3	-	7.97	-	0.28	100	-	-	-	-	-	-	-	-	61.4	0.1	-	0.5	34	5.77	-	-	-	-	-	-	
	QUR-1(04 00)	2014 08 19	50.6	-	7.93	-	0.41	99	-	-	-	-	-	-	-	-	58.5	0.1	-	0.5	34	5.68	-	-	-	-	-	-	
	QUR-1(12 00)	2014 08 18	50.1	-	7.92	-	0.33	98.8	-	-	-	-	-	-	-	-	62.3	0.1	-	0.5	34	5.68	-	-	-	-	-	-	
	QUR-1(12 00)	2014 08 19	49.5	-	7.93	-	0.42	98.9	-	-	-	-	-	-	-	-	68.8	0.1	-	0.5	34	5.7	-	-	-	-	-	-	
	QUR-1(13 27)	2014 08 19	49.8	-	7.88	-	0.36	97.5	67	0.3	2.07	-	-	-	0.142	5	58.1	0.1	-	0.5	34	5.65	45.2	-	0.001	0.002 ^d			
	QUR-1(20 00)	2014 08 18	51.4	-	7.93	-	0.36	98.9	-	-	-	-	-	-	-	-	57.7	0.1	-	0.5	35	5.66	-	-	-	-	-	-	
	QUR-1(09 18)	2014 08 18	48.6	8.11	7.99	17.3	0.54	99	69	0.3	2.5	-	-	-	0.153	5.3	62.6	0.1	-	0.5	34	5.76	44.7	-	0.001	0.002 ^d			
	QUR-1(20 00)	2014 08 17	49.5	-	7.97	-	0.29	99.5	-	-	-	-	-	-	-	-	61.6	0.1	-	0.5	33	5.78	-	-	-	-	-	-	
	QUR-1(04 00)	2014 08 18	49.5	-	7.96	-	0.4	99.8	-	-	-	-	-	-	-	-	63.4	0.1	-	0.5	33	5.79	-	-	-	-	-	-	
QUR-1(04 00)	2014 08 20	49.7	-	7.89	-	0.36	99.1	-	-	-	-	-	-	-	-	62.4	0.1	-	0.5	33	5.62	-	-	-	-	-	-		
QUR-1(12 00)	2014 08 20	50.6	-	7.9	-	0.41	99.4	-	-	-	-	-	-	-	-	65.6	0.1	-	0.5	34	5.69	-	-	-	-	-	-		
QUR-1(16 40)	2014 08 20	50.5	-	7.9	-	0.63	99.8	65	0.3	1.8	-	-	-	0.132	5	74.2	0.1	-	0.5	34	5.72	44.7	-	0.001	0.002 ^d				
QUR-1(20 00)	2014 08 19	50	-	7.94	-	0.31	99.1	-	-	-	-	-	-	-	-	59.2	0.1	-	0.5	35	5.64	-	-	-	-	-	-		
QUR-1(20 00)	2014 08 20	50.9	-	7.85	-	0.52	101	-	-	-	-	-	-	-	-	92	0.1	-	0.5	34									

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Total Metals																															
			Aluminum (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Bismuth (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Lithium (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Potassium (µg/L)	Selenium (µg/L)	Silicon (µg/L)	Silver (µg/L)	Sodium (µg/L)	Thallium (µg/L)	Tin (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards			n.a.	20	5	5000	5.3	n.a.	1200	0.02-0.025 ^d	n.a.	1 Cr((6))	110	6.0-8.8 ^d	1000	27.3-54.6 ^d	870	n.a.	100.6-1.343 ^d	Under review by SNC-Lavalin	2000	25-65 ^d	373 000-432 000	2	n.a.	0.1 ^d	n.a.	0.3	n.a.	2000	300	6	33 ^d	
BCWQG Aquatic Life (AW) ^{5,c}			n.a.	n.a.	n.a.	1000	n.a.	n.a.	n.a.	n.a.	n.a.	4	2-2.9	n.a.	3.3-5.4 ^d	14	n.a.	607.2-925.8 ^d	1000	n.a.	n.a.	n.a.	n.a.	0.05 ^d	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7.5 ^d
BCWQG Drinking Water (DW)			n.a.	14	25	n.a.	4	n.a.	5,000	n.a.	n.a.	n.a.	500	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	250	n.a.	n.a.	10	n.a.	n.a.	2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5,000	
Canadian Drinking Water Quality (DW)			100	6	10	1000	n.a.	n.a.	5000	5	n.a.	50	n.a.	1000	300	10	n.a.	n.a.	50	1	n.a.	n.a.	10	n.a.	n.a.	200 000	n.a.	n.a.	20	n.a.	n.a.	5000		
QUR-1	QUR-1	2014 08 06	19.6	0.1	0.13	5.62	0.1	0.5	10	0.01	16700	0.5	0.1	0.66	30	0.05	0.73	2030	1.42	0.05	0.331	0.5	493	0.5	1.720	0.01	902	0.01	0.1	10	0.136	0.1	0.3	
	QUR-1X	2014 08 06	19.7	0.1	0.14	5.61	0.1	0.5	10	0.01	16500	0.5	0.1	0.65	30	0.05	0.7	1990	1.38	0.05	0.323	0.5	475	0.5	1.680	0.01	874	0.01	0.1	10	0.135	0.1	0.3	
	QA/QC RPD %		1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	4	0	3	0	0	0	0	0	1	0	0	
	QUR-1	2014 08 06	22.1	0.1	0.14	5.35	0.1	0.5	10	0.01	16300	0.5	0.1	0.65	30	0.05	0.71	1980	1.41	0.05	0.316	0.5	476	0.5	1.670	0.01	867	0.01	0.1	10	0.127	0.1	0.3	
	QUR-1	2014 08 07	23.8	0.1	0.13	5.34	0.1	0.5	10	0.01	16400	0.5	0.1	0.68	30	0.05	0.77	1970	1.35	0.05	0.305	0.5	484	0.5	1.650	0.01	859	0.01	0.1	10	0.135	0.1	0.3	
	QUR-1(1133)	2014 08 08	24.2	0.1	0.13	5.42	0.1	0.5	10	0.01	17000	0.5	0.1	0.64	48	0.05	0.51	2010	1.62	0.05	0.283	0.5	474	0.5	1.670	0.01	888	0.01	0.1	10	0.14	0.1	0.3	
	QUR-1(1543)	2014 08 08	20.4	0.1	0.13	5.26	0.1	0.5	10	0.01	17100	0.5	0.1	0.62	30	0.05	0.55	2030	1.27	0.05	0.281	0.5	470	0.5	1.670	0.01	885	0.01	0.1	10	0.142	0.1	0.3	
	QUR-1(1008)	2014 08 09	27.8	0.1	0.12	5.34	0.1	0.5	10	0.01	17400	0.5	0.1	0.72	33	0.05	0.71	2040	1.73	0.05	0.295	0.5	472	0.5	1.680	0.01	872	0.01	0.1	10	0.187	0.1	0.3	
	QUR-1(1430)	2014 08 09	28.2	0.1	0.14	5.31	0.1	0.5	10	0.01	17200	0.5	0.1	0.68	31	0.05	0.69	2030	1.59	0.05	0.297	0.5	466	0.5	1.660	0.01	861	0.01	0.1	10	0.182	0.1	0.3	
	QUR-1(1019)	2014 08 10	21.7	0.1	0.12	5.06	0.1	0.5	10	0.01	16600	0.5	0.1	0.65	30	0.05	0.5	1930	1.15	0.05	0.283	0.5	480	0.5	1.620	0.01	893	0.01	0.1	10	0.139	0.1	0.3	
	QUR-1(1745)	2014 08 10	19.5	0.1	0.12	5.11	0.1	0.5	10	0.01	16900	0.5	0.1	0.61	30	0.05	0.54	1940	1.2	0.05	0.277	0.5	491	0.5	1.640	0.01	899	0.01	0.1	10	0.145	0.1	0.3	
	QUR-1(1118)	2014 08 11	23.8	0.1	0.14	5.28	0.1	0.5	10	0.01	16400	0.5	0.1	0.64	30	0.05	0.98	1900	1.39	0.05	0.293	0.5	487	0.5	1.550	0.01	873	0.01	0.1	10	0.141	0.1	0.3	
	QUR-1(1712)	2014 08 11	23.6	0.1	0.13	5.41	0.1	0.5	10	0.01	16500	0.5	0.1	0.66	30	0.05	0.82	1910	1.37	0.05	0.293	0.5	490	0.5	1.560	0.01	859	0.01	0.1	10	0.13	0.1	0.3	
	QUR-1(1404)	2014 08 12	16.6	0.1	0.14	5.25	0.1	0.5	10	0.01	16400	0.5	0.1	0.68	30	0.05	0.85	1990	1.17	-	0.304	0.5	473	0.5	1.620	0.01	866	0.01	0.1	10	0.129	0.1	0.3	
	QUR-1(1634)	2014 08 12	20.4	0.1	0.13	5.41	0.1	0.5	10	0.01	16200	0.5	0.1	0.7	30	0.05	0.81	1970	1.18	0.05	0.317	0.5	475	0.5	1.600	0.01	857	0.01	0.1	10	0.132	0.1	0.3	
	QUR-1(2000)	2014 08 12	15.8	0.1	0.14	5.26	0.1	0.5	10	0.01	16600	0.5	0.1	0.63	30	0.05	0.84	1960	1.15	-	0.311	0.5	469	0.5	1.590	0.01	863	0.01	0.1	10	0.135	0.1	0.3	
	QUR-1(0400)	2014 08 13	25.3	0.1	0.14	5.49	0.1	0.5	10	0.01	16300	0.5	0.1	0.68	30	0.05	0.83	1980	1.47	-	0.307	0.5	482	0.5	1.610	0.01	881	0.01	0.1	10	0.134	0.1	0.3	
	QUR-1(1200)	2014 08 13	18.6	0.1	0.15	5.41	0.1	0.5	10	0.01	16600	0.5	0.1	0.64	30	0.05	0.82	1950	1.38	-	0.312	0.5	466	0.5	1.600	0.01	858	0.01	0.1	10	0.131	0.1	0.3	
	QUR-1(1318)	2014 08 13	18.9	0.1	0.14	5.43	0.1	0.5	10	0.01	16400	0.5	0.1	0.63	30	0.05	0.84	1930	1.22	0.05	0.316	0.5	480	0.5	1.580	0.01	863	0.01	0.1	10	0.134	0.1	0.3	
	QUR-1(2000)	2014 08 13	15.6	0.1	0.16	5.3	0.1	0.5	10	0.01	16200	0.62	0.1	0.62	30	0.05	0.74	1930	1.32	-	0.331	0.58	465	0.5	1.560	0.01	846	0.01	0.1	10	0.131	0.1	0.3	
	QUR-1(2000)	2014 08 14	19.2	0.1	0.17	5.08	0.1	0.5	10	0.01	16400	0.5	0.1	0.61	30	0.05	0.5	1950	1.67	-	0.335	0.5	472	0.5	1.630	0.01	861	0.01	0.1	10	0.127	0.1	0.3	
	QUR-1(1445)	2014 08 14	16.4	0.1	0.13	5.39	0.1	0.5	10	0.01	16200	0.5	0.1	0.6	30	0.05	0.67	1910	1.38	-	0.316	0.5	462	0.5	1.570	0.01	843	0.01	0.1	10	0.135	0.1	0.3	
	QUR-1X(1450)	2014 08 14	18.7	0.1	0.15	5.44	0.1	0.5	10	0.01	16000	0.5	0.1	0.64	30	0.05	0.74	1860	1.41	-	0.326	0.5	470	0.5	1.530	0.01	854	0.01	0.1	10	0.136	0.1	0.3	
	QA/QC RPD %			13	0	0	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	0	2	0	3	0	1	0	0	0	1	0	0	
	QUR-1(0400)	2014 08 15	23.1	0.1	0.16	5.2	0.1	0.5	10	0.01	16400	0.5	0.1	0.64	30	0.05	0.5	1940	1.8	-	0.322	0.5	478	0.5	1.630	0.01	866	0.01	0.1	10	0.122	0.1	0.3	
	QUR-1(1200)	2014 08 15	15	0.1	0.14	5.04	0.1	0.5	10	0.01	16300	0.5	0.1	0.64	30	0.05	0.5	1920	1.24	-	0.324	0.5	470	0.5	1.590	0.01	880	0.01	0.1	10	0.128	0.1	0.3	
	QUR-1(1328)	2014 08 15	18.5	0.1	0.16	5.58	0.1	0.5	10	0.01	16600	0.5	0.1	0.63	30	0.05	0.5	1950	1.35	-	0.3	0.5	489	0.5	1.630	0.01	881	0.01	0.1	10	0.132	0.1	0.3	
	QUR-1	2014 08 17	20	0.1	0.13	5.17	0.1	0.5	10	0.01	16400	0.5	0.1	0.63	30	0.05	0.62	1920	1.35	-	0.312	0.5	475	0.5	1.600	0.01	875	0.01	0.1	10	0.132	0.1	0.3	
	QUR-1(1459)	2014 08 16	18.9	0.1	0.13	5.27	0.1	0.5	10	0.01	16300	0.5	0.1	0.62	30	0.05	0.71	1910	1.54	-	0.315	0.5	465	0.5	1.580	0.01	837	0.01	0.1	10	0.137	0.1	0.3	
	QUR-1(0400)	2014 08 14	19.5	0.1	0.16	5.46	0.1	0.5	10	0.01	16400	0.5	0.1	0.62	30	0.05	0.76	1970	1.53	-	0.314	0.5	475	0.5	1.600	0.01	852	0.01	0.1	10	0.134	0.1	0.3	
	QUR-1(1200)	2014 08 14	18.7	0.56	0.17	5.46	0.1	0.5	10	0.01	16300	0.5	0.1	0.59	30	0.05	0.7	1890	1.63	-	0.324	0.5	476	0.5	1.560	0.01	869	0.01	0.1	10	0.136	0.1	0.3	
	QUR-1(2000)	2014 08 16	13.6	0.1	0.13	5.36	0.1	0.5	10	0.01	16900	0.5	0.1	0.51	30	0.05	0.71	1980	1.13	-	0.328	0.5	482	0.5	1.630	0.01	882	0.01	0.1	10	0.142	0.1	0.3	
	QUR-1(0400)	2014 08 19	22.5	0.1	0.13	5.48	0.1	0.5	10	0.01	17000	0.5	0.1	0.77	30	0.05	0.85	1970	1.62	-	0.311	0.5	489	0.5	1.640	0.01	892	0.01	0.1	10	0.137	0.1	0.3	
	QUR-1(1200)	2014 08 18	20.1	0.1	0.13	5.34	0.1	0.5	10	0.01	16900	0.5	0.1	0.68	30	0.05	0.8	1930	1.25	-	0.304	0.5	487	0.5	1.610	0.01	871	0.01	0.1	10	0.139	0.1	0.3	
	QUR-1(1200)	2014 08 19	21.6	0.1	0.16	5.39	0.1	0.5	10	0.01	16700	0.5	0.1	0.76	30	0.05	0.83	1920	1.56	-	0.308	0.5	477	0.5	1.600	0.01	866	0.01	0.1	10	0.138	0.1	0.3	
	QUR-1(1327)	2014 08 19	30.4	0.1	0.18	5.39	0.1	0.5	10	0.01	16900	0.5	0.1	0.87	30	0.05	0.82	1950	1.61	-	0.318	0.5	495	0.5	1.620	0.01	874	0.01	0.1	10	0.142	0.1	0.3	
	QUR-1(2000)	2014 08 18	16.7	0.1	0.14	5.52	0.1	0.5	10	0.01	17																							

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics													
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
BC Standards																												
BCWQG Aquatic Life (AW) ^{a,c}			n.a	6.5-9.0	6.5-9.0	n.a																						
BCWQG Aquatic Life (30day) (AW) ^{b,d}			n.a	n.a	n.a	n.a	Under Review by	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a	SNC	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a	Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
QUL-3	QUL-3	2014 08 06	47.6	8.08	7.96	20.9	0.34	93.8	57	0.3	2.32	-	-	-	0.17	0.5	46.8	0.1	-	0.5	33	5.7	44.1	-	0.001	0.002 ^e		
	QUL-3	2014 08 09	48.3	7.94	7.89	18.7	0.4	95.8	67	0.3	2.27	-	-	-	0.13	0.5	55.4	0.1	-	0.5	34	5.2	42.8	-	0.001	0.002 ^e		
	QUL-3	2014 08 10	48.2	7.94	7.94	21.7	0.32	95.8	68	0.3	2.28	-	-	-	0.121	0.5	53.7	1.1	-	0.5	36	5.55	44.4	-	0.001	0.002 ^e		
	QUL-3X	2014 08 10	48.7	7.94	7.94	21.7	0.37	96	60	0.3	2.19	-	-	-	0.12	0.5	54.4	0.1	-	0.5	35	5.56	44.8	-	0.001	0.002 ^e		
	QA/QC RPD %			1	0	0	0	0	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	QUL-3	2014 08 11	48	7.8	7.91	20.5	0.54	97.2	66	0.3	2.15	-	-	-	0.136	0.5	51.1	0.1	-	0.5	33	5.61	43.3	-	0.001	0.003 ^e		
	QUL-3	2014 08 12	47.4	8.02	7.97	21.0	0.28	95.3	67	0.3	1.9	-	-	-	0.128	0.5	45.7	0.1	-	0.5	36	5.65	44	-	0.0012	0.002 ^e		
	QUL-3	2014 08 13	47.2	-	7.99	20.6	0.25	97.8	60	0.3	2.18	-	-	-	0.132	0.5	44.1	0.1	-	0.5	33	5.63	44.7	-	0.001	0.002 ^e		
	QUL-3	2014 08 14	49	8.05	7.96	21.6	0.21	98.5	68	0.3	2	-	-	-	0.114	0.5	48.8	0.1	-	0.5	35	5.66	44.1	-	0.001	0.002 ^e		
	QUL-3	2014 08 15	48.6	8.07	7.98	21.2	0.32	96.9	62	0.3	1.8	-	-	-	0.105	0.5	45.4	0.1	-	0.5	35	5.66	44.2	-	0.001	0.002 ^e		
	QUL-3	2014 08 16	47.9	8.08	7.96	20.1	0.33	95.3	65	0.3	2.18	-	-	-	0.109	0.5	43.4	0.1	-	0.5	36	5.62	51.4	-	0.001	0.002 ^e		
	QUL-3X	2014 08 16	48.3	8.08	7.98	-	0.41	95.1	59	0.3	1.92	-	-	-	0.117	0.5	43.8	0.1	-	0.5	37	5.63	43.8	-	0.001	0.002 ^e		
	QA/QC RPD %			1	0	1	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	QUL-3	2014 08 17	48.3	7.94	7.98	20.8	0.3	96.7	60	0.3	2.36	-	-	-	0.125	0.5	42.2	0.1	-	0.5	34	5.64	43.9	-	0.001	0.002 ^e		
	QUL-3	2014 08 19	48.7	-	7.94	-	0.28	96.6	75	0.3	1.94	-	-	-	0.115	0.5	44.6	0.1	-	0.5	32	5.55	44	-	0.001	0.002 ^e		
	QUL-3	2014 08 22	49.5	-	7.94	-	0.34	96.6	71	0.3	2.06	-	-	-	0.136	0.5	46.2	0.1	-	0.5	34	5.65	44.1	-	0.001	0.002 ^e		
	QUL-3-37M	2014 08 22	69.7	-	8.02	-	0.19	75.1	150	115	9.5	1.93	-	-	0.371	45.3	225	1.3	-	0.56	66	16.5	58.9	-	0.0069	0.0084		
	QUL-4	2014 08 06	48.6	8.03	7.95	21.4	0.81	94.9	61	0.3	2.17	-	-	-	0.145	0.5	43.4	0.1	-	0.5	33	5.62	43.9	-	0.001	0.002 ^e		
	QUL-5	2014 08 06	48.1	8.01	7.94	21.1	0.76	95.9	57	0.3	2.15	-	-	-	0.237	0.5	43.8	0.1	-	0.5	33	5.96	43.5	-	0.001	0.002 ^e		
	QUL-6	2014 08 06	48	8.05	7.96	21.3	0.83	95.8	57	0.3	2.23	-	-	-	0.168	0.5	44	0.1	-	0.5	33	5.78	44	-	0.001	0.002 ^e		
QUL-7	2014 08 06	48	7.91	7.92	21.2	0.83	95	59	0.3	2.19	-	-	-	0.178	0.5	40.8	0.1	-	0.5	34	5.62	44.1	-	0.001	0.002 ^e			
QUL-8	2014 08 06	47.8	7.96	7.9	21.6	1.4	95.8	60	0.3	2.21	-	-	-	0.149	0.5	36.4	1.8	-	0.5	34	5.67	44.5	-	0.001	0.002 ^e			
QUL-9	2014 08 06	48.3	8.01	7.93	21.5	1.14	94.6	58	0.3	2.15	-	-	-	0.15	0.5	42.4	1.1	-	0.5	34	5.62	44.2	-	0.001	0.002 ^e			
QUL-9	2014 08 09	49	7.84	7.84	16.8	0.78	96.7	70	0.3	2.42	-	-	-	0.141	0.5	57.6	0.1	-	0.5	35	5.61	43.5	-	0.001	0.002 ^e			
QUL-9	2014 08 10	49.2	7.81	7.94	20.7	0.56	96.5	68	0.3	2.33	-	-	-	0.13	0.5	54.4	0.1	-	0.5	35	5.62	45.4	-	0.001	0.002 ^e			
QUL-9	2014 08 12	47.1	7.95	7.96	20.5	0.32	96	64	0.3	1.99	-	-	-	0.151	0.5	49.2	0.1	-	0.5	36	5.66	44.5	-	0.011	0.002 ^e			
QUL-9	2014 08 13	47.7	-	7.88	20.5	0.65	98.9	61	0.3	2.69	-	-	-	0.115	0.5	12.8	1.1	-	0.5	34	5.6	45.1	-	0.001	0.002 ^e			
QUL-9X	2014 08 13	48.1	-	7.92	-	0.54	98.7	60	0.3	2.68	-	-	-	0.125	0.5	11.9	1.2	-	0.5	33	5.59	44.9	-	0.001	0.002 ^e			
QA/QC RPD %			1	1	1	0	18	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
QUL-9	2014 08 14	49	8.02	7.95	20.4	0.25	97.7	67	0.3	2.15	-	-	-	0.128	0.5	41.9	0.1	-	0.5	36	5.65	43.8	-	0.001	0.002 ^e			
QUL-9	2014 08 15	49.2	-	7.92	-	0.74	96.6	66	0.3	1.97	-	-	-	0.102	0.5	27.6	1.3	-	0.5	36	5.64	43.6	-	0.0012	0.002 ^e			
QUL-9	2014 08 16	48.3	8.07	7.96	20.4	0.31	95.6	60	0.3	2	-	-	-	0.116	0.5	42.9	0.1	-	0.5	36	5.64	43.4	-	0.001	0.002 ^e			
QUL-9	2014 08 17	48.4	7.82	7.94	21.2	0.35	96.7	62	0.3	2.5	-	-	-	0.136	0.5	36.7	0.1	-	0.5	34	5.63	43.8	-	0.001	0.002 ^e			
QUL-9	2014 08 19	47.7	-	7.92	-	0.24	96.7	68	0.3	2.17	-	-	-	0.111	0.5	42.6	0.1	-	0.5	32	5.54	44.2	-	0.001	0.002 ^e			
QUL-9X	2014 08 19	49	-	7.85	-	0.24	95.8	65	0.3	2.03	-	-	-	0.113	0.5	42	0.1	-	0.5	37	5.55	43.7	-	0.0026	0.002 ^e			
QA/QC RPD %			3	1	1	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
QUL-10	2014 08 22	50.3	7.74	7.88	19.78	1.73	98.3	69	0.3	2.3	-	-	-	0.136	0.5	42.4	0.1	-	0.5	34	5.76	44.9	-	0.001	0.002 ^e			
QUL-10	2014 08 06	47.7	8.08	7.95	21.4	0.41	94.9	55	0.3	2.1	-	-	-	0.195	0.5	45	0.1	-	0.5	33	5.58	44.2	-	0.001	0.002 ^e			
QUL-11-0M	2014 08 07	49.2	-	7.79	-	2.43	95.4	74	3.6	2.5	-	-	-	0.122	0.5	35	0.1	-	0.5	36	5.79	44.7	-	0.001	0.002 ^e			
QUL-11-10M	2014 08 07	50.8	-	7.9	-	1.3	98.9	76	0.3	2.02	-	-	-	0.171	0.5	112	0.1	-	0.5	35	5.76	46.7	-	0.001	0.002 ^e			
QUL-11-15M	2014 08 07	53.4	-	7.91	-	0.59	103	84	0.3	1.85	-	-	-	0.181	0.5	136	0.1	-	0.5	36	6.05	48.8	-	0.001	0.002 ^e			
QUL-11-20M	2014 08 07	53.7	-	7.91	-	0.9	105	75	0.3	1.78	-	-	-	0.186	0.5	141	0.1	-	0.5	36	6.08	49.1	-	0.001	0.002 ^e			
QUL-11-24M	2014 08 07	53.8	-	7.91	-	0.98	105	76	0.3	1.84	-	-	-	0.191	0.5	140	0.1	-	0.5	36	6.14	49.5	-	0.001	0.002 ^e			
QUL-11-5M	2014 08 07	48.1	-	7.93	-	0.85	93	71	0.3	2.08	-	-	-	0.135	0.5	66.7	0.1	-	0.5	34	5.52	44.4	-	0.001	0.002 ^e			
QUL-11-5MX	2014 08 07	48.5	-	7.95	-	0.58	93.4	73	0.3	2.12	-	-	-	0.137	0.5	68	0.1	-	0.5	34	5.51	44.7	-	0.0				

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																												
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards			26.1-100 ^d	n/a	350	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
BCWOG Aquatic Life (AW) ^{e,c}			50-1000 ^d	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
BCWOG Aquatic Life (30day) (AW) ^{e,c}			200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
BCWOG Drinking Water (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
QUL-3	2014 08 06	10.6	16.2	0.30	1.9	0.608	0.5	1.1	0.1	0.1	5.36	0.1	0.10	0.01	0.5	0.1	0.56	0.05	0.54	0.05	0.421	0.5	0.05	0.01	0.01	0.10	0.124	0.1	0.3		
	2014 08 09	10.6	16.2	0.30	1.88	0.599	0.473	0.831	0.1	0.1	5.38	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.67	0.05	0.339	0.5	0.05	0.01	0.01	0.10	0.147	0.1	0.3		
	2014 08 10	10.9	16.2	0.30	1.86	0.639	0.483	0.85	0.1	0.1	5.24	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.65	-	0.291	0.5	0.05	0.01	0.01	0.10	0.129	0.1	0.3		
	2014 08 10	11	16.4	0.30	1.88	0.667	0.478	0.847	0.1	0.11	5.14	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.291	0.5	0.05	0.01	0.01	0.10	0.137	0.1	0.3		
	QA/QC RPD %			1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2014 08 11	11.6	16.1	0.30	1.88	0.734	0.496	0.857	0.1	0.1	5.39	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.02	-	0.293	0.5	0.05	0.01	0.01	0.10	0.121	0.1	0.3		
	2014 08 12	10.6	16.9	0.30	1.9	0.368	0.477	0.878	0.1	0.1	5.58	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.68	-	0.341	0.5	0.05	0.01	0.01	0.10	0.132	0.1	0.3		
	2014 08 13	10	15.8	0.30	1.88	0.18	0.458	0.826	0.1	0.11	5.26	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.04	-	0.324	0.5	0.05	0.01	0.01	0.10	0.131	0.1	0.3		
	2014 08 14	11	16.5	0.30	1.88	0.516	0.457	0.798	0.1	0.1	5.06	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.64	-	0.274	0.5	0.05	0.01	0.01	0.10	0.133	0.1	0.3		
	2014 08 15	10.2	16.4	0.30	1.87	0.482	0.462	0.8	0.1	0.1	5.19	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.301	0.5	0.05	0.01	0.01	0.10	0.138	0.1	0.3		
	2014 08 16	10.7	16.1	0.30	1.85	0.466	0.475	0.815	0.1	0.11	5.4	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.79	-	0.298	0.5	0.05	0.01	0.01	0.10	0.132	0.1	0.3		
	2014 08 16	10.8	16.2	0.30	1.88	0.509	0.475	0.821	0.1	0.12	5.47	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.7	-	0.299	0.5	0.05	0.01	0.01	0.10	0.137	0.1	0.3		
	QA/QC RPD %			1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2014 08 17	10.6	16.2	0.30	1.91	0.558	0.468	0.825	0.1	0.1	5.27	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.66	-	0.293	0.5	0.05	0.01	0.01	0.10	0.139	0.1	0.3		
	2014 08 19	10.7	16.4	0.30	1.89	0.308	0.472	0.833	0.1	0.1	5.08	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.74	-	0.275	0.5	0.05	0.01	0.01	0.10	0.133	0.1	0.3		
	2014 08 22	10.4	16.6	0.30	1.93	0.6	0.467	0.822	0.1	0.1	5.3	0.1	0.10	0.01	0.5	0.1	0.66	0.05	0.74	-	0.28	0.5	0.05	0.01	0.01	0.10	0.136	0.1	0.3		
	2014 08 22	14.3	23.6	0.30	2.62	81.1	0.971	3.25	0.24	0.7	17.8	0.1	0.10	0.01	0.5	0.1	4.9	0.05	1.05	-	5.04	0.5	0.05	0.01	0.01	0.10	0.807	0.1	0.3		
	2014 08 06	10.3	16.3	0.30	1.94	1.43	0.504	1.09	0.1	0.11	5.52	0.1	0.10	0.01	0.5	0.1	0.66	0.05	0.5	0.05	0.494	0.5	0.05	0.01	0.01	0.10	0.128	0.1	0.3		
	2014 08 06	11.6	16.1	0.30	1.92	1.5	0.532	1.09	0.1	0.1	5.65	0.1	0.10	0.01	0.5	0.1	0.95	0.05	0.5	0.05	0.365	0.5	0.05	0.01	0.01	0.10	0.129	0.1	0.3		
	2014 08 06	11.3	16.1	0.30	1.91	1.31	0.517	1.06	0.1	0.1	5.52	0.1	0.10	0.01	0.5	0.1	0.87	0.05	0.5	0.05	0.407	0.5	0.05	0.01	0.01	0.10	0.127	0.1	0.3		
	2014 08 06	10.9	16.1	0.30	1.92	1.79	0.508	1.09	0.1	0.11	5.6	0.1	0.10	0.01	0.5	0.1	0.67	0.05	0.55	0.05	0.369	0.5	0.05	0.01	0.01	0.10	0.124	0.1	0.3		
	2014 08 06	11.3	16	0.30	1.92	2.29	0.524	1.1	0.1	0.11	5.84	0.1	0.10	0.01	0.5	0.1	0.81	0.05	0.5	0.05	0.358	0.5	0.05	0.01	0.01	0.10	0.125	0.1	0.3		
	2014 08 06	11.8	16.2	0.30	1.92	2.43	0.525	1.07	0.1	0.12	5.71	0.1	0.10	0.01	0.5	0.1	0.84	0.05	0.52	0.05	0.347	0.5	0.05	0.01	0.01	0.10	0.126	0.1	0.3		
	2014 08 09	10.1	16.5	0.30	1.89	1.2	0.478	0.838	0.1	0.1	5.43	0.1	0.10	0.01	0.5	0.1	0.52	0.05	0.59	-	0.302	0.5	0.05	0.01	0.01	0.10	0.132	0.1	0.3		
	2014 08 10	10.8	16.6	0.30	1.89	1.53	0.491	0.835	0.1	0.11	5.44	0.1	0.10	0.01	0.5	0.1	0.54	0.05	0.52	-	0.293	0.5	0.05	0.01	0.01	0.10	0.133	0.1	0.3		
	2014 08 12	10.5	15.8	0.30	1.85	0.408	0.488	0.83	0.1	0.1	5.29	0.1	0.10	0.01	0.5	0.1	0.57	0.05	0.73	-	0.308	0.5	0.05	0.01	0.01	0.10	0.129	0.1	0.3		
	2014 08 13	9.4	16	0.30	1.88	3.09	0.544	0.848	0.1	0.12	6.14	0.1	0.10	0.01	0.5	0.1	0.55	0.05	1.06	-	0.313	0.5	0.05	0.01	0.01	0.10	0.122	0.1	0.3		
	2014 08 13	9.5	16.1	0.30	1.91	3.89	0.57	0.864	0.1	0.1	6.34	0.1	0.10	0.01	0.5	0.1	0.67	0.05	1.07	-	0.314	0.5	0.05	0.01	0.01	0.10	0.123	0.1	0.3		
QA/QC RPD %			1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2014 08 14	10.4	16.5	0.30	1.91	1.18	0.471	0.821	0.1	0.11	5.45	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.72	-	0.301	0.5	0.05	0.01	0.01	0.10	0.128	0.1	0.3			
2014 08 15	10.2	16.6	0.30	1.9	2.82	0.511	0.85	0.1	0.12	6.12	0.1	0.10	0.01	0.5	0.1	0.58	0.05	0.5	-	0.322	0.5	0.05	0.01	0.01	0.10	0.13	0.1	0.3			
2014 08 16	10.1	16.2	0.30	1.88	0.489	0.464	0.799	0.1	0.11	5.4	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.69	-	0.289	0.5	0.05	0.01	0.01	0.10	0.131	0.1	0.3			
2014 08 17	9.8	16.2	0.30	1.91	2.31	0.474	0.8	0.1	0.13	5.47	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.59	-	0.287	0.5	0.05	0.01	0.01	0.10	0.131	0.1	0.3			
2014 08 19	10.2	16	0.30	1.87	0.465	0.465	0.815	0.1	0.11	5.19	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.65	-	0.288	0.5	0.05	0.01	0.01	0.10	0.13	0.1	0.3			
2014 08 19	9.9	16.5	0.30	1.9	0.432	0.442	0.766	0.1	0.1	4.88	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.73	-	0.288	0.5	0.05	0.01	0.01	0.10	0.135	0.1	0.3			
QA/QC RPD %			3	2	7	5	6	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2014 08 22	11	16.9	0.30	1.94	0.958	0.481	0.843	0.1	0.1	5.43	0.1	0.10	0.01	0.5	0.1	0.65	0.05	0.87	-	0.28	0.5	0.05	0.01	0.01	0.10	0.133	0.1	0.3			
2014 08 06	11.4	16	0.30	1.91	0.813	0.506	1.06	0.1	0.1	5.19	0.1	0.10	0.01	0.5	0.1</																

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Total Metals																														
			Aluminum (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Bismuth (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Lithium (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Potassium (µg/L)	Selenium (µg/L)	Silicon (µg/L)	Silver (µg/L)	Sodium (µg/L)	Thallium (µg/L)	Tin (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
BC Standards			n/a	20	5	5000	5.3	n/a	1200	0.02-0.025 ^a	n/a	1 (Cr(6))	110	6.0-8.8 ^b	1000	27.3-54 ^c	870	n/a	100.6-1,343 ^d	Under review by SNC-Lavalin	2000	25-65 ^e	373,000-432,000	2	n/a	0.1 ^f	n/a	0.3	n/a	2000	300	6	33 ^g
BCWOG Aquatic Life (AW) ^h			n/a	n/a	n/a	1000	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 ^d	14	n/a	607.2-925.8 ^d	1000	n/a	n/a	n/a	n/a	n/a	0.05 ^f	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5 ^g
BCWOG Drinking Water (DW)			n/a	14	25	n/a	4	n/a	5,000	n/a	n/a	n/a	500	n/a	50	n/a	n/a	n/a	n/a	1	250	n/a	n/a	10	n/a	n/a	n/a	2	n/a	n/a	n/a	5,000	
Canadian Drinking Water Quality (DW)			100	6	10	1000	n/a	n/a	5,000	5	n/a	50	n/a	1,000	300	10	n/a	n/a	50	1	n/a	n/a	n/a	10	n/a	n/a	200,000	n/a	n/a	20	n/a	5,000	
QUL-3	QUL-3	2014 08 06	18.9	0.01	0.12	5.47	0.1	0.5	10	0.01	16,000	0.5	0.1	0.7	30	0.05	0.5	1,940	1.47	0.05	0.327	0.5	489	0.5	1,620	0.01	831	0.01	0.1	10	0.13	0.1	0.3
	QUL-3	2014 08 09	23.7	0.01	0.13	5.53	0.1	0.5	10	0.01	16,200	0.5	0.1	0.74	30	0.05	0.69	1,910	1.45	0.05	0.322	0.5	485	0.5	1,590	0.01	853	0.01	0.1	10	0.14	0.1	0.3
	QUL-3	2014 08 10	16.3	0.01	0.13	5.52	0.1	0.5	10	0.01	16,200	0.5	0.1	0.58	30	0.05	0.5	1,910	1.18	0.05	0.303	0.5	484	0.5	1,600	0.01	873	0.01	0.1	10	0.13	0.1	0.3
	QUL-3X	2014 08 10	14.4	0.01	0.13	5.24	0.1	0.5	10	0.01	15,600	0.5	0.1	0.56	30	0.05	0.5	1,830	1.08	0.05	0.304	0.5	474	0.5	1,530	0.01	856	0.01	0.1	10	0.13	0.1	0.3
	QA/QC RPD %					5					4						4				1		2		4		2					0	
	QUL-3	2014 08 11	17.1	0.01	0.13	5.39	0.1	0.5	10	0.01	15,700	0.5	0.1	0.57	30	0.05	0.82	1,870	1.41	0.05	0.322	0.5	484	0.5	1,540	0.01	839	0.01	0.1	10	0.129	0.1	0.3
	QUL-3	2014 08 12	14.4	0.01	0.13	5.57	0.1	0.5	10	0.01	16,100	0.5	0.1	0.57	30	0.05	0.79	1,920	1.53	0.05	0.352	0.5	475	0.5	1,640	0.01	878	0.01	0.1	10	0.137	0.1	0.3
	QUL-3	2014 08 13	13.6	0.01	0.14	5.63	0.1	0.5	10	0.01	16,300	0.5	0.1	0.53	30	0.05	0.89	1,950	1.31	0.05	0.341	0.5	478	0.5	1,620	0.01	867	0.01	0.1	10	0.14	0.1	0.3
	QUL-3	2014 08 14	14.4	0.01	0.11	5.24	0.1	0.5	10	0.01	16,400	0.5	0.1	0.57	30	0.05	0.68	1,870	1.02	-	0.304	0.5	481	0.5	1,540	0.01	855	0.01	0.1	10	0.141	0.1	0.3
	QUL-3	2014 08 15	15	0.01	0.12	5.14	0.1	0.5	10	0.01	16,400	0.74	0.1	0.59	30	0.05	0.5	1,880	1.1	-	0.99	0.5	461	0.5	1,580	0.01	813	0.01	0.1	10	0.141	0.1	0.3
	QUL-3	2014 08 16	16	0.01	0.14	5.42	0.1	0.5	10	0.01	16,200	0.5	0.1	0.6	30	0.05	0.5	1,870	1.33	-	0.294	0.5	468	0.5	1,540	0.01	815	0.013	0.1	10	0.126	0.1	0.3
	QUL-3X	2014 08 16	18.2	0.01	0.12	5.51	0.1	0.5	10	0.01	15,900	0.5	0.1	0.8	30	0.05	0.5	1,860	1.44	-	0.321	0.5	486	0.5	1,530	0.01	842	0.01	0.1	10	0.139	0.1	0.3
	QA/QC RPD %			13			2				2						1				9		4		3		3					10	
	QUL-3	2014 08 17	20.3	0.01	0.12	5.36	0.1	0.5	10	0.01	15,900	0.5	0.1	1	30	0.05	0.78	1,880	1.43	-	0.305	0.5	487	0.5	1,530	0.01	858	0.01	0.1	10	0.141	0.1	0.3
	QUL-3	2014 08 19	15.2	0.01	0.13	5.46	0.1	0.5	10	0.01	16,500	0.5	0.1	0.55	30	0.05	0.92	1,940	1.2	-	0.309	0.5	495	0.5	1,570	0.01	881	0.01	0.1	10	0.141	0.1	0.3
	QUL-3	2014 08 22	28.2	0.01	0.11	5.52	0.1	0.5	10	0.01	16,900	0.5	0.1	1.02	30	0.05	0.72	1,940	1.56	-	0.324	0.5	468	0.5	1,570	0.01	838	0.01	0.1	10	0.141	0.1	0.3
	QUL-3-37M	2014 08 22	3,830	0.3	1.84	94.5	0.1	0.5	10	0.01	24,100	1.89	1.54	76.8	2,230	1.34	2.79	3,670	151	-	5.35	2.01	2,550	0.64	10,100	0.032	3,840	0.014	0.12	156	0.726	7.4	7.6
	QUL-4	2014 08 06	47.2	0.01	0.13	6.03	0.1	0.5	10	0.01	16,100	0.5	0.1	1.25	45	0.05	0.5	1,960	3.05	0.05	0.332	0.5	503	0.5	1,690	0.01	839	0.01	0.1	10	0.133	0.1	0.3
	QUL-5	2014 08 06	49.4	0.01	0.11	5.95	0.1	0.5	10	0.01	15,700	0.5	0.1	1.5	44	0.05	0.5	1,920	2.92	0.05	0.332	0.5	492	0.5	1,660	0.01	840	0.01	0.1	10	0.129	0.1	0.3
	QUL-6	2014 08 06	53.9	0.01	0.13	6.22	0.1	0.5	10	0.01	16,200	0.5	0.1	1.63	46	0.05	0.5	1,970	2.94	0.05	0.337	0.5	507	0.5	1,710	0.01	898	0.01	0.1	10	0.132	0.1	0.3
	QUL-7	2014 08 06	57.1	0.01	0.13	6.13	0.1	0.5	10	0.01	16,100	0.5	0.1	1.72	42	0.05	0.53	1,970	3.31	0.05	0.332	0.5	522	0.5	1,700	0.01	869	0.01	0.1	10	0.132	0.1	0.3
	QUL-8	2014 08 06	101	0.01	0.15	7.04	0.1	0.5	10	0.01	16,100	0.5	0.1	2.78	82	0.05	0.5	2,000	4.79	0.05	0.354	0.5	557	0.5	1,820	0.01	887	0.01	0.1	10	0.138	0.1	0.3
	QUL-9	2014 08 06	93.8	0.01	0.15	6.48	0.1	0.5	10	0.01	16,200	0.5	0.1	2.38	80	0.05	0.59	1,980	4.3	0.05	0.333	0.5	534	0.5	1,770	0.01	893	0.01	0.1	10	0.135	0.1	0.3
	QUL-9	2014 08 09	31.4	0.01	0.13	5.75	0.1	0.5	10	0.01	16,200	0.5	0.1	1.09	30	0.05	0.63	1,910	2.59	0.05	0.33	0.5	496	0.5	1,600	0.01	841	0.01	0.1	10	0.142	0.1	0.3
	QUL-9	2014 08 10	22.7	0.01	0.12	5.35	0.1	0.5	10	0.01	15,600	0.5	0.1	0.78	30	0.05	0.5	1,790	1.84	0.05	0.31	0.5	491	0.5	1,530	0.01	851	0.01	0.1	10	0.132	0.1	0.3
	QUL-9	2014 08 12	17.2	0.01	0.13	5.28	0.1	0.5	10	0.01	16,100	0.5	0.1	0.73	30	0.05	0.77	1,900	1.61	0.05	0.323	0.5	488	0.5	1,600	0.01	849	0.01	0.1	10	0.138	0.1	0.3
	QUL-9	2014 08 13	20.8	0.01	0.16	6.28	0.1	0.5	10	0.01	16,300	0.5	0.1	0.93	30	0.05	0.76	1,950	5.69	0.05	0.325	0.5	560	0.5	1,640	0.01	861	0.01	0.1	10	0.13	0.1	0.3
	QUL-9X	2014 08 13	28.9	0.01	0.15	6.52	0.1	0.5	10	0.01	16,700	0.5	0.1	1.1	38	0.05	0.85	1,990	6.04	0.05	0.332	0.5	579	0.5	1,690	0.01	880	0.01	0.1	10	0.131	0.1	0.3
	QA/QC RPD %			33			4				2						2				2		3		3		2					1	
	QUL-9	2014 08 14	17.1	0.01	0.12	5.52	0.1	0.5	10	0.01	16,300	0.5	0.1	0.7	30	0.05	0.62	1,910	2.2	-	0.33	0.5	489	0.5	1,620	0.01	844	0.01	0.1	10	0.139	0.1	0.3
QUL-9	2014 08 15	43.1	0.01	0.17	6.35	0.1	0.5	10	0.01	16,500	0.5	0.1	1.61	44	0.05	0.5	1,940	4.36	-	0.339	0.5	539	0.5	1,700	0.01	883	0.01	0.1	10	0.136	0.1	0.3	
QUL-9	2014 08 16	15.8	0.01	0.13	5.48	0.1	0.5	10	0.01	16,300	0.5	0.1	0.6	30	0.05	0.5	1,900	1.34	-	0.321	0.5	467	0.5	1,560	0.01	814	0.01	0.1	10	0.138	0.1	0.3	
QUL-9	2014 08 17	19.1	0.01	0.14	5.69	0.1	0.5	10	0.01	16,000	0.5	0.1	0.6 ⁵	30	0.065	0.69	1,900	2.59	-	0.32	0.5	496	0.5	1,560	0.01	843	0.01	0.1	10	0.143	0.1	0.3	
QUL-9	2014 08 19	14	0.01	0.12	4.96	0.1	0.5	10	0.01	16,500	0.5	0.1	0.35	30	0.05	0.99	1,930	1.06	-	0.304	0.5	448	0.5	1,560	0.01	783	0.01	0.1	10	0.142	0.1	0.3	
QUL-9X	2014 08 19	15.2	0.01	0.12	5.36	0.1	0.5	10	0.01	16,600	0.5	0.1	0.54	30	0.05	0.8	1,930	1.14	-	0.305	0.5	479	0.5	1,570	0.01	851	0.01	0.1	10	0.142	0.1	0.3	
QA/QC RPD %			8			8				1						0				1		7		1		8					0		
QUL-9	2014 08 22	79.5	0.01	0.15	7.13	0.1	0.5	10	0.01	16,500	0.5	0.1	3.17	75	0.05	0.77	1,940	5.01	-	0.33	0.5	523	0.5	1,660	0.01	872	0.01	0.1	10	0.145	0.1	0.3	
QUL-10	2014 08 06	26.6	0.01	0.13	5.44	0.1	0.5	10	0.01	16,200	0.5	0.1	0.73	30	0.05	0.5	1,980	1.79	0.05	0.326	0.5	501	0.5	1,650	0.01								

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics													
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
BC Standards																												
BCWQG Aquatic Life (AW) ^a			n.a	6.5-9.0	6.5-9.0	n.a																						
BCWQG Aquatic Life (30day) (AW) ^b			n.a	n.a	n.a	n.a																						
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a																						
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a																						
QUL-13	QUL-13-0M	2014 08 07	47.9	-	7.94	-	3.01	94.6	68	3.2	2.21	-	-	-	0.113	5	54.8	0.1	-	0.5	35	5.55	44.6	-	0.001	0.002 ^c		
	QUL-13-10M	2014 08 07	49.8	-	7.93	-	0.87	99.2	70	0.3	1.94	-	-	-	0.164	5	111	0.1	-	0.5	35	5.72	46.3	-	0.001	0.002 ^c		
	QUL-13-15M	2014 08 07	52.5	-	7.92	-	1.18	104	75	0.3	1.84	-	-	-	0.174	5	136	0.1	-	0.5	36	6.02	48.3	-	0.001	0.002 ^c		
	QUL-13-20M	2014 08 07	50.2	-	7.94	-	0.61	106	68	0.3	1.79	-	-	-	0.185	5	141	0.1	-	0.5	36	6.08	49.2	-	0.001	0.002 ^c		
	QUL-13-5M	2014 08 07	48.2	-	7.96	-	0.49	94.5	66	0.3	2.08	-	-	-	0.176	5	72.8	0.1	-	0.5	34	5.5	44.5	-	0.001	0.002 ^c		
QUL-14	QUL-14-0M	2014 08 07	48.6	-	7.87	-	7.45	98.8	69	9.4	2.69	2420	236	-	0.124	5	27.5	0.1	-	0.5	36	5.84	45.7	-	0.001	0.002 ^c		
	QUL-14-3M	2014 08 07	47.9	-	7.94	-	1.25	95.9	66	0.3	2.05	-	-	-	0.137	5	66.5	0.1	-	0.5	34	5.56	44.5	-	0.001	0.002 ^c		
QUL-15	QUL-15-0M	2014 08 07	48.9	-	7.91	-	2.26	97.5	69	0.3	2.58	2420	461	-	0.127	5	34.8	0.1	-	0.5	35	5.78	52.2	-	0.001	0.002 ^c		
	QUL-15-4.5M	2014 08 07	48.1	-	7.92	-	1.15	95.6	67	0.3	2.1	-	-	-	0.131	5	70	0.1	-	0.5	34	5.54	50	-	0.001	0.002 ^c		
QUL-16	QUL-16-0M	2014 08 07	48.3	-	7.93	-	0.97	95	64	0.3	2.21	-	-	-	0.144	5	56.7	0.1	-	0.5	34	5.53	44.3	-	0.001	0.002 ^c		
	QUL-16-4.5M	2014 08 07	48.4	-	7.96	-	0.5	95.3	61	0.3	2.07	-	-	-	0.13	5	68	0.1	-	0.5	33	5.5	44.3	-	0.001	0.002 ^c		
QUL-17	QUL-17	2014 08 08	48.7	8.01	7.97	17.3	1.31	95.5	60	0.3	2.45	46	2	-	0.122	5	65.1	0.1	-	0.5	34	5.51	44.2	-	0.001	0.002 ^c		
	QUL-17	2014 08 09	48.6	7.86	7.88	18.2	0.44	96.3	66	0.3	2.31	-	-	-	0.135	5	63	0.1	-	0.5	34	5.49	42.9	-	0.001	0.002 ^c		
	QUL-17	2014 08 11	48	7.97	7.91	20.2	0.41	97.5	64	0.3	2.36	-	-	-	0.133	5	52.4	0.1	-	0.5	34	5.68	43.3	-	0.001	0.0024		
	QUL-17	2014 08 12	47	8.01	7.97	20.6	0.44	95.6	64	0.3	1.91	-	-	-	0.135	5	49.5	0.1	-	0.5	36	5.65	44	-	0.0013	0.002 ^c		
	QUL-17	2014 08 13	47.5	-	7.99	20.6	0.39	97.8	58	0.3	2.15	-	-	-	0.12	5	42.7	0.1	-	0.5	33	5.63	44.5	-	0.001	0.002 ^c		
	QUL-17	2014 08 14	49.4	7.95	7.95	20.9	0.29	97.5	63	0.3	2.11	-	-	-	0.107	5	43	0.1	-	0.5	36	5.63	44.2	-	0.001	0.0024		
	QUL-17X	2014 08 14	48.5	7.95	7.95	-	0.26	97.8	66	0.3	2.15	-	-	-	0.111	5	43	0.1	-	0.5	36	5.65	44.3	-	0.001	0.002 ^c		
	QA/QC RPD %			2	0	0			1	5								0					1					
QUL-18	QUL-17	2014 08 15	48.4	8.13	7.98	21.0	0.25	96.2	66	0.3	1.92	-	-	-	0.103	5	41.1	0.1	-	0.5	36	5.63	43.7	-	0.001	0.002 ^c		
	QUL-17	2014 08 16	48.6	8.12	7.95	20.6	0.52	96.6	56	0.3	2.04	-	-	-	0.117	5	46	0.1	-	0.5	36	5.62	42.5	-	0.001	0.002 ^c		
	QUL-17	2014 08 17	47.9	7.78	7.97	21.1	0.36	96.5	62	0.3	2.32	-	-	-	0.122	5	40.8	0.1	-	0.5	34	5.64	43.6	-	0.001	0.002 ^c		
	QUL-18-0M	2014 08 08	48.6	8.03	7.95	-	0.38	95.4	64	0.3	2.07	27	1	-	0.129	5	68.9	0.1	-	0.5	34	5.5	44	-	0.001	0.002 ^c		
	QUL-18-8M	2014 08 08	50.7	-	7.97	-	0.58	98.9	68	0.3	1.92	-	-	-	0.153	5	99.3	0.1	-	0.5	35	5.66	46.1	-	0.001	0.002 ^c		
	QUL-18-30M	2014 08 08	54.6	-	7.95	-	0.96	107	69	0.3	1.89	-	-	-	0.185	5	143	0.1	-	0.5	36	6.11	49.3	-	0.001	0.002 ^c		
	QUL-18-0M	2014 08 09	48.6	7.93	7.81	18.6	0.64	94.4	68	0.3	2.03	-	-	-	0.143	5	64.4	0.1	-	0.5	35	5.53	42.8	-	0.001	0.002 ^c		
	QUL-18-30M	2014 08 09	54.5	-	7.87	-	3.4	106	75	0.3	1.91	-	-	-	0.186	5	138	0.1	-	0.5	37	6.15	48	-	0.001	0.002 ^c		
	QUL-18-5M	2014 08 09	49.8	-	7.87	-	0.37	97.1	73	0.3	2.01	-	-	-	0.158	5	87.7	0.1	-	0.5	34	5.6	43.8	-	0.001	0.002 ^c		
	QUL-18	2014 08 10	48.8	7.77	7.91	20.5	0.39	96.2	63	0.3	2.25	-	-	-	0.136	5	56.3	0.1	-	0.5	34	5.69	45	-	0.001	0.002 ^c		
	QUL-18	2014 08 11	47.8	7.73	7.91	20.2	0.38	97.7	67	0.3	2.22	-	-	-	0.203	5	53.6	0.1	-	0.5	34	5.63	44.3	-	0.001	0.002 ^c		
	QUL-18	2014 08 12	47.4	7.92	7.94	21.0	0.51	95.6	64	0.3	1.96	-	-	-	0.126	5	51.1	0.1	-	0.5	36	5.67	44.1	-	0.001	0.002		
	QUL-18-0M	2014 08 13	47.2	-	7.98	-	0.34	98.2	57	0.3	2.1	-	-	-	0.12	5	44.8	0.1	-	0.5	33	5.63	44.7	-	0.001	0.002 ^c		
	QUL-18-16M	2014 08 13	50.2	-	7.97	-	0.27	103	70	0.3	1.95	-	-	-	0.173	5	111	0.1	-	0.5	34	5.85	46.2	-	0.001	0.002 ^c		
	QUL-18-30M	2014 08 13	52.3	-	7.97	-	0.49	109	69	0.3	1.91	-	-	-	0.188	5	139	0.1	-	0.5	35	6.21	48.9	-	0.001	0.002 ^c		
	QUL-18	2014 08 14	49.2	8.04	7.97	21.2	0.22	97.9	67	0.3	1.98	-	-	-	0.105	5	46	0.1	-	0.5	35	5.65	44.1	-	0.001	0.002 ^c		
	QUL-18	2014 08 15	48.9	8.09	7.93	21.0	0.28	94.7	66	0.3	1.86	-	-	-	0.102	5	42.1	0.1	-	0.5	36	5.62	43.3	-	0.001	0.0025		
	QUL-18-0M	2014 08 16	48.3	8.08	7.95	-	0.62	94.7	64	0.3	2.02	-	-	-	0.106	5	41	0.1	-	0.5	36	5.6	43.9	-	0.001	0.002 ^c		
	QUL-18-10M	2014 08 16	50	7.82	7.94	13.9	1.4	97.4	64	0.3	2.06	-	-	-	0.136	5	87.9	0.1	-	0.5	36	5.82	44.6	-	0.001	0.002 ^c		
	QUL-18-30M	2014 08 16	54.6	7.6	7.91	4.7	3.17	106	68	0.3	1.7	-	-	-	0.173	5	141	0.1	-	0.5	38	6.37	49.1	-	0.001	0.002 ^c		
QUL-18	2014 08 19	48.6	-	7.93	-	0.35	96.5	63	0.3	2.07	-	-	-	0.112	5	40.3	0.1	-	0.5	32	5.54	43.6	-	0.001	0.002 ^c			
QUL-18	2014 08 26	50.6	7.79	8	18.45	0.45	97.8	74	0.3	2.2	-	-	-	0.143	5	50.7	0.1	-	0.5	35	5.75	44.8	-	0.001	0.002 ^c			
QUL-18X	2014 08 26	50.9	7.79	7.99	18.45	0.38	97.4	78	0.3	2.11	-	-	-	0.12	5	50.9	0.1	-	0.5	35	5.75	42.1	-	0.001	0.002 ^c			
QA/QC RPD %			1	0	1	0		1	5								1					0						
QUL-18	2014 08 25	49.7	7.94	7.95	17.33	0.66	99.2	66	0.3	1.81	-	-	-	0.151	5	55.3	0.1	-	0.5	34	5.8	44.5	-	0.001	0.002 ^c			
QUL-18	2014 08 27	49.6	7.95	7.99	18.7	0.32	98.4	69	0.3	2.11	-	-	-	0.122	5	46.2	0.1	-	0.5	34	5.75	44.6	-	0.001	0.0021			

Associated ALS files L

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																											
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
BC Standards			26.1-100 ^a	n/a	350	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
BCWQG Aquatic Life (AW) ^{b,c}			50-1000 ^d	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
BCWQG Aquatic Life (30day) (AW) ^{b,c}			200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
BCWQG Drinking Water (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
QUL-13	QUL-13-0M	2014 08 07	11	16.1	30	1.88	2.03	0.49	1	0.1	0.11	5.94	0.1	0.10	0.01	0.5	0.1	0.79	0.05	0.8	-	0.32	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3
	QUL-13-10M	2014 08 07	8.2	16.7	30	1.95	0.275	0.469	0.953	0.1	0.11	5.27	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.89	-	0.273	0.5	0.5	0.01	0.01	0.10	0.14	0.1	0.3
	QUL-13-15M	2014 08 07	6.1	17.7	30	2.03	0.287	0.47	0.986	0.1	0.1	5.08	0.1	0.10	0.01	0.5	0.1	0.57	0.05	0.87	-	0.273	0.5	0.5	0.01	0.01	0.10	0.15	0.1	0.3
	QUL-13-20M	2014 08 07	6.1	16.9	30	1.95	0.342	0.478	1	0.1	0.1	5.11	0.1	0.10	0.01	0.5	0.1	0.57	0.05	0.8	-	0.269	0.5	0.5	0.01	0.01	0.10	0.15	0.1	0.3
	QUL-13-5M	2014 08 07	10.4	16.2	30	1.87	0.158	0.461	0.904	0.1	0.1	5.21	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.81	-	0.272	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3
QUL-14	QUL-14-0M	2014 08 07	11.1	16.3	30	1.92	6.63	0.576	0.991	0.1	0.14	6.99	0.1	0.10	0.01	0.5	0.1	1.38	0.05	0.65	-	0.386	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3
	QUL-14-3M	2014 08 07	12.3	16.1	30	1.87	0.934	0.478	0.937	0.1	0.1	5.42	0.1	0.10	0.01	0.5	0.1	0.59	0.05	0.65	-	0.299	0.5	0.5	0.01	0.01	0.10	0.136	0.1	0.3
QUL-15	QUL-15-0M	2014 08 07	28.6	16.4	30	1.95	6.24	0.59	1	0.1	0.3	6.82	0.1	0.10	0.01	0.5	0.1	1.33	0.05	0.75	-	0.374	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3
	QUL-15-4.5M	2014 08 07	10.3	16.2	30	1.89	0.405	0.47	0.901	0.1	0.1	5.19	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.75	-	0.277	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3
QUL-16	QUL-16-0M	2014 08 07	11.1	16.2	30	1.9	2.18	0.505	0.92	0.1	0.13	5.71	0.1	0.10	0.01	0.5	0.1	0.64	0.05	0.8	-	0.315	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3
	QUL-16-4.5M	2014 08 07	10.4	16.1	30	1.89	0.864	0.49	0.919	0.1	0.13	5.36	0.1	0.10	0.01	0.5	0.1	0.58	0.05	0.78	-	0.29	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3
QUL-17	QUL-17	2014 08 08	12.2	16.4	30	1.91	0.754	0.464	0.838	0.1	0.1	5.49	0.1	0.10	0.01	0.5	0.1	0.66	0.05	0.55	-	0.279	0.5	0.5	0.01	0.01	0.10	0.127	0.1	0.3
	QUL-17	2014 08 09	9.9	16.4	30	1.88	0.656	0.483	0.839	0.1	0.1	5.35	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.56	-	0.296	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3
	QUL-17	2014 08 11	11	16.1	30	1.89	1.76	0.503	0.847	0.1	0.12	5.46	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.04	-	0.286	0.5	0.5	0.01	0.01	0.10	0.129	0.1	0.3
	QUL-17	2014 08 12	10	15.8	30	1.83	0.222	0.466	0.85	0.1	0.1	5.41	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.77	-	0.311	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3
	QUL-17	2014 08 13	9.4	15.9	30	1.9	0.284	0.471	0.833	0.1	0.1	5.47	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.89	-	0.332	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3
	QUL-17	2014 08 14	12.6	16.6	30	1.93	0.843	0.475	0.815	0.1	0.1	5.39	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.63	-	0.298	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3
	QUL-17X	2014 08 14	10	16.3	30	1.88	0.802	0.461	0.829	0.1	0.12	5.33	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.64	-	0.299	0.5	0.5	0.01	0.01	0.10	0.124	0.1	0.3
QA/QC RPD %			2	3	5	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
QUL-18	QUL-17	2014 08 15	9.6	16.3	30	1.88	0.574	0.473	0.836	0.1	0.12	5.52	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.301	0.5	0.5	0.01	0.01	0.10	0.127	0.1	0.3
	QUL-17	2014 08 16	10.3	16.3	30	1.89	0.484	0.469	0.797	0.1	0.1	5.43	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.64	-	0.287	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3
	QUL-17	2014 08 17	10	16.1	30	1.88	0.894	0.47	0.82	0.1	0.1	5.37	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.59	-	0.292	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3
	QUL-18-0M	2014 08 08	10.9	16.3	30	1.91	0.294	0.468	0.824	0.1	0.11	5.37	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.57	-	0.301	0.5	0.5	0.01	0.01	0.10	0.128	0.1	0.3
	QUL-18-8M	2014 08 08	11.1	17	30	1.97	0.188	0.46	0.856	0.1	0.1	5.32	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.62	-	0.282	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3
	QUL-18-30M	2014 08 08	5.9	18.4	30	2.11	1.73	0.492	0.911	0.1	0.1	5.25	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.71	-	0.265	0.5	0.5	0.01	0.01	0.10	0.143	0.1	0.3
	QUL-18-0M	2014 08 09	10.3	16.4	30	1.89	0.959	0.474	0.839	0.1	0.1	5.42	0.1	0.10	0.01	0.5	0.1	0.58	0.05	0.5	-	0.312	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3
	QUL-18-30M	2014 08 09	5.6	18.4	30	2.08	9.54	0.469	0.925	0.1	0.11	5.9	0.1	0.10	0.01	0.5	0.1	0.62	0.05	0.64	-	0.297	0.5	0.5	0.01	0.01	0.10	0.157	0.1	0.3
	QUL-18-30M	2014 08 09	9.4	16.8	30	1.9	0.149	0.469	0.833	0.1	0.1	5.02	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.261	0.5	0.5	0.01	0.01	0.10	0.142	0.1	0.3
	QUL-18	2014 08 10	11.4	16.4	30	1.89	1.18	0.493	0.854	0.1	0.1	5.53	0.1	0.10	0.01	0.5	0.1	0.54	0.05	0.54	-	0.29	0.5	0.5	0.01	0.01	0.10	0.131	0.1	0.3
	QUL-18	2014 08 11	12.3	16.1	30	1.86	1.07	0.495	0.829	0.1	0.11	5.38	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.03	-	0.286	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3
	QUL-18	2014 08 12	10.1	16	30	1.84	0.438	0.484	0.827	0.1	0.1	5.22	0.1	0.10	0.01	0.5	0.1	0.53	0.05	0.76	-	0.3	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3
	QUL-18-0M	2014 08 13	9.2	15.8	30	1.87	0.224	0.463	0.834	0.1	0.1	5.43	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.93	-	0.315	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3
	QUL-18-16M	2014 08 13	10.5	17	30	1.91	0.094	0.449	0.834	0.1	0.1	4.96	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.98	-	0.257	0.5	0.5	0.01	0.01	0.10	0.145	0.1	0.3
	QUL-18-30M	2014 08 13	5.8	17.7	30	2	0.639	0.466	0.922	0.1	0.1	4.96	0.1	0.10	0.01	0.5	0.1	0.62	0.05	0.87	-	0.289	0.5	0.5	0.01	0.01	0.10	0.157	0.1	0.3
	QUL-18	2014 08 14	10	16.6	30	1.9	0.493	0.459	0.808	0.1	0.1	5.13	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.68	-	0.291	0.5	0.5	0.01	0.01	0.10	0.129	0.1	0.3
	QUL-18	2014 08 15	10.1	16.5	30	1.9	0.508	0.469	0.826	0.1	0.11	5.45	0.1	0.10	0.01															

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Total Metals																														
			Aluminum (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Bismuth (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Lithium (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Potassium (µg/L)	Selenium (µg/L)	Silicon (µg/L)	Silver (µg/L)	Sodium (µg/L)	Thallium (µg/L)	Tin (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
BC Standards			n/a	20	5	5000	5.3	n/a	1200	0.02-0.025 ¹	n/a	1 (Cr (6))	110	6.0-8.8 ²	1000	27.3-54.6 ³	870	n/a	100.6-1.343 ⁴	Under review by SNC-Lavalin	2000	25-65 ⁵	373,000-432,000	2	n/a	0.1 ⁶	n/a	0.3	n/a	2000	300	6	33 ⁷
BCWQG Aquatic Life (AW) ⁸			n/a	n/a	n/a	1000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 ⁴	14	n/a	607.2-925.8 ⁹	1000	n/a	n/a	n/a	n/a	0.05 ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5 ⁷
BCWQG Drinking Water (DW)			n/a	14	25	n/a	4	n/a	5,000	n/a	n/a	n/a	n/a	500	n/a	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	5,000
Canadian Drinking Water Quality (DW)			100	6	10	1000	n/a	n/a	5000	5	n/a	50	n/a	1000	300	10	n/a	n/a	50	1	n/a	n/a	n/a	10	n/a	n/a	200 000	n/a	n/a	n/a	20	n/a	5000
QUL-13	QUL-13-0M	2014 08 07	164	0.01	0.19	7.74	0.1	0.5	10	0.01	16000	0.05	0.11	4.34	125	0.056	0.73	1960	0.05	0.339	0.05	544	0.5	1.860	0.01	872	0.01	0.1	10	0.143	0.1	0.3	
	QUL-13-10M	2014 08 07	39.2	0.01	0.13	5.62	0.1	0.5	10	0.01	16300	0.05	0.1	1.09	37	0.05	0.5	1930	1.77	0.05	0.286	0.05	473	0.5	1.650	0.01	836	0.01	0.1	10	0.147	0.1	0.3
	QUL-13-15M	2014 08 07	66.2	0.01	0.14	6.1	0.1	0.5	10	0.01	17300	0.05	0.1	1.84	58	0.05	0.77	2050	2.5	0.05	0.276	0.05	482	0.5	1.780	0.01	884	0.01	0.1	10	0.16	0.1	0.3
	QUL-13-20M	2014 08 07	36.2	0.01	0.12	5.43	0.1	0.5	10	0.01	17800	0.05	0.1	1.04	36	0.05	0.59	2070	1.81	0.05	0.278	0.05	488	0.5	1.750	0.01	909	0.01	0.1	10	0.156	0.1	0.3
	QUL-13-5M	2014 08 07	22.4	0.01	0.12	5.42	0.1	0.5	10	0.01	15900	0.05	0.1	0.71	30	0.05	0.69	1870	1.16	0.05	0.277	0.05	465	0.5	1.550	0.01	803	0.01	0.1	10	0.142	0.1	0.3
	QUL-14-0M	2014 08 07	449	0.01	0.3	12.6	0.1	0.5	10	0.01	16400	0.05	0.31	11.8	348	0.134	0.8	2160	16.2	0.05	0.42	0.67	717	0.5	2.520	0.01	963	0.01	0.1	23	0.148	1.2	0.3
	QUL-14-3M	2014 08 07	55.9	0.01	0.13	5.89	0.1	0.5	10	0.01	15600	0.05	0.1	1.72	46	0.05	0.55	1850	2.76	0.05	0.295	0.05	499	0.5	1.600	0.01	814	0.01	0.1	10	0.137	0.1	0.3
	QUL-15-0M	2014 08 07	139	0.01	0.19	8.57	0.1	0.5	10	0.01	16000	0.05	0.1	4.22	108	0.05	0.6	1980	9.05	0.05	0.373	0.05	620	0.5	1.850	0.01	901	0.01	0.1	10	0.137	0.1	0.3
	QUL-15-4.5M	2014 08 07	54.3	0.01	0.14	5.87	0.1	0.5	10	0.01	16000	0.05	0.1	1.34	53	0.05	0.59	1910	2.21	0.05	0.303	0.05	483	0.5	1.640	0.01	813	0.01	0.1	10	0.143	0.1	0.3
	QUL-16-0M	2014 08 07	47.3	0.01	0.15	6.18	0.1	0.5	10	0.01	16200	0.05	0.1	1.84	41	0.07	0.57	1930	3.31	0.05	0.322	0.05	668	0.5	1.640	0.01	998	0.01	0.16	10	0.138	0.1	3.2
	QUL-16-4.5M	2014 08 07	30.2	0.01	0.14	5.71	0.1	0.5	10	0.01	15800	0.05	0.1	0.86	30	0.05	0.57	1880	1.86	0.05	0.283	0.05	487	0.5	1.570	0.01	825	0.01	0.1	10	0.137	0.1	0.3
	QUL-17	2014 08 08	90.5	0.01	0.15	6.6	0.1	0.5	10	0.01	16600	0.05	0.1	2.21	73	0.05	0.65	1970	3.18	0.05	0.291	0.05	511	0.5	1.760	0.01	876	0.01	0.1	10	0.138	0.1	0.3
	QUL-17	2014 08 09	23.9	0.01	0.12	5.52	0.1	0.5	10	0.01	16400	0.05	0.1	0.8	30	0.05	0.53	1910	1.36	0.05	0.298	0.05	482	0.5	1.590	0.01	835	0.01	0.1	10	0.143	0.1	0.3
	QUL-17	2014 08 11	22.7	0.01	0.13	5.55	0.1	0.5	10	0.01	15900	0.05	0.1	0.8	30	0.05	0.9	1890	2.15	0.05	0.322	0.05	515	0.5	1.540	0.01	848	0.01	0.1	10	0.139	0.1	0.3
	QUL-17	2014 08 12	15.6	0.01	0.12	5.48	0.1	0.5	10	0.01	16200	0.05	0.1	0.6	30	0.05	0.86	1910	1.37	0.05	0.325	0.05	473	0.5	1.600	0.01	859	0.01	0.1	10	0.142	0.1	0.3
	QUL-17	2014 08 13	13.9	0.01	0.13	5.32	0.1	0.5	10	0.01	15800	0.05	0.1	0.64	30	0.05	0.72	1870	1.63	0.05	0.32	0.05	452	0.5	1.560	0.01	824	0.01	0.1	10	0.127	0.1	0.3
	QUL-17	2014 08 14	17.1	0.01	0.13	5.47	0.1	0.5	10	0.01	16400	0.05	0.1	0.61	30	0.05	0.62	1920	1.74	0.05	0.323	0.05	491	0.5	1.630	0.01	873	0.01	0.1	10	0.139	0.1	0.3
QUL-17X	2014 08 14	16.1	0.01	0.13	5.53	0.1	0.5	10	0.01	16200	0.05	0.1	0.68	30	0.05	0.62	1900	1.78	0.05	0.323	0.05	491	0.5	1.610	0.01	860	0.01	0.1	10	0.139	0.1	0.3	
QA/QC RPD %			6	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	
QUL-17	2014 08 15	19.6	0.01	0.12	5.75	0.1	0.5	10	0.01	16000	0.05	0.1	0.7	30	0.05	0.5	1860	1.5	0.05	0.335	0.05	475	0.5	1.590	0.01	841	0.01	0.1	10	0.136	0.1	0.3	
QUL-17	2014 08 16	17.4	0.01	0.13	5.43	0.1	0.5	10	0.01	16000	0.05	0.1	0.69	30	0.05	0.5	1880	1.27	0.05	0.279	0.05	469	0.5	1.540	0.01	825	0.01	0.1	10	0.129	0.1	0.3	
QUL-17	2014 08 17	18.9	0.01	0.14	5.43	0.1	0.5	10	0.01	15700	0.05	0.1	1	30	0.05	0.7	1860	1.64	0.05	0.306	0.05	485	0.5	1.520	0.01	848	0.01	0.1	10	0.144	0.1	0.3	
QUL-18-0M	2014 08 08	24.2	0.01	0.13	5.36	0.1	0.5	10	0.01	15900	0.05	0.1	0.68	30	0.05	0.52	1900	1.17	0.05	0.286	0.05	468	0.5	1.580	0.01	825	0.01	0.1	10	0.135	0.1	0.3	
QUL-18-8M	2014 08 08	28.3	0.01	0.13	5.47	0.1	0.5	10	0.01	16400	0.05	0.1	0.94	30	0.05	0.56	1930	1.36	0.05	0.279	0.05	464	0.5	1.620	0.01	847	0.01	0.1	10	0.137	0.1	0.3	
QUL-18-30M	2014 08 08	57.8	0.01	0.13	5.86	0.1	0.5	10	0.01	18100	0.05	0.1	1.42	57	0.05	0.88	2110	3.61	0.05	0.365	0.05	491	0.5	1.830	0.01	943	0.01	0.1	10	0.155	0.1	0.3	
QUL-18-0M	2014 08 09	33.1	0.01	0.13	5.64	0.1	0.5	10	0.01	16900	0.05	0.1	1.1	30	0.05	0.65	1890	1.91	0.05	0.307	0.05	475	0.5	1.600	0.01	830	0.01	0.1	10	0.141	0.1	0.3	
QUL-18-30M	2014 08 09	206	0.01	0.19	8.54	0.1	0.5	10	0.01	18200	0.05	0.13	4.29	183	0.05	0.87	2180	13.7	0.05	0.293	0.05	541	0.5	2.170	0.01	959	0.01	0.1	12	0.157	0.1	0.3	
QUL-18-9M	2014 08 09	18.7	0.01	0.11	5.11	0.1	0.5	10	0.01	16400	0.05	0.1	0.63	30	0.05	0.51	1880	1.02	0.05	0.274	0.05	455	0.5	1.550	0.01	811	0.01	0.1	10	0.148	0.1	0.3	
QUL-18	2014 08 10	24	0.01	0.12	5.65	0.1	0.5	10	0.01	16200	0.05	0.1	0.81	30	0.05	0.5	1900	1.89	0.05	0.302	0.05	500	0.5	1.620	0.01	869	0.01	0.1	10	0.137	0.1	0.3	
QUL-18	2014 08 11	22.3	0.01	0.13	5.55	0.1	0.5	10	0.01	16200	0.05	0.1	0.78	30	0.05	0.84	1890	1.74	0.05	0.319	0.05	494	0.5	1.540	0.01	840	0.01	0.1	10	0.14	0.1	0.3	
QUL-18	2014 08 12	17.9	0.01	0.11	5.25	0.1	0.5	10	0.01	16000	0.05	0.1	0.74	30	0.05	0.89	1890	1.83	0.05	0.327	0.05	480	0.5	1.570	0.01	839	0.01	0.1	10	0.145	0.1	0.3	
QUL-18-0M	2014 08 13	13.7	0.01	0.13	5.47	0.1	0.5	10	0.01	15800	0.05	0.1	0.6	30	0.05	0.77	1890	1.52	0.05	0.335	0.05	465	0.5	1.580	0.01	843	0.01	0.1	10	0.135	0.1	0.3	
QUL-18-16M	2014 08 13	13.8	0.01	0.11	4.99	0.1	0.5	10	0.01	16800	0.05	0.1	0.53	30	0.05	0.81	1920	0.882	0.05	0.25	0.05	446	0.5	1.570	0.01	838	0.01	0.1	10	0.146	0.1	0.3	
QUL-18-30M	2014 08 13	28.5	0.01	0.13	5.54	0.1	0.5	10	0.01	17800	0.05	0.1	0.92	30	0.05	0.96	2030	1.85	0.05	0.287	0.05	487	0.5	1.720	0.01	933	0.01	0.1	10	0.163	0.1	0.3	
QUL-18	2014 08 14	15.5	0.01	0.11	5.23	0.1	0.5	10	0.01	16300	0.05	0.1	0.56	30	0.05	0.63	1890	1.04	0.05	0.307	0.05	473	0.5	1.590	0.01	823	0.01	0.1	10	0.135	0.1	0.3	
QUL-18	2014 08 15	15.7	0.01	0.15	5.42	0.1	0.5	10	0.01	15900	0.05	0.1	0.58	30	0.05	0.5	1850	1.28	0.05	0.347	0.05	469											

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics																
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)					
BC Standards																															
BCWQG Aquatic Life (AW) ^{a,c}			n.a	6.5-9.0	6.5-9.0	n.a																									
BCWQG Aquatic Life (30day) (AW) ^{b,c}			n.a	n.a	n.a	n.a	Under Review by SNC																								
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a	Lavalin																								
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a																									
QUL-19	QUL-19	2014 08 08	48.4	8.1	7.99	18.7	0.37	95.3	61	0.3	2.08	236	1	-	0.122	0.5	49.6	0.1	-	0.5	34	5.51	43.8	-	0.001	0.002 ^d					
	QUL-19	2014 08 09	48.5	7.93	7.9	17.9	0.34	95.5	67	0.3	2.25	-	-	-	0.126	0.5	57.1	0.1	-	0.5	35	5.5	42.6	-	0.001	0.002 ^d					
	QUL-19	2014 08 10	48.2	7.87	7.92	20.7	0.42	95.7	65	0.3	2.3	-	-	-	0.126	0.5	43.4	0.1	-	0.5	35	5.63	45.3	-	0.001	0.002 ^d					
	QUL-19	2014 08 11	46.3	7.99	7.93	19.5	0.34	97.1	68	0.3	2.2	-	-	-	0.13	0.5	45.6	0.1	-	0.5	34	5.63	43.8	-	0.001	0.002 ^d					
	QUL-19X	2014 08 11	46.1	7.99	7.93	-	0.38	97	67	0.3	2.35	-	-	-	0.126	0.5	47.5	0.1	-	0.5	33	5.62	44	-	0.001	0.002 ^d					
	QA/QC RPD %			0.1	0	0	0	0	0.1	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
	QUL-19	2014 08 12	47.8	8.01	7.97	21.4	0.35	96	59	0.3	1.66	-	-	-	0.112	0.5	54.6	0.1	-	0.5	35	5.72	44.4	-	0.001	0.002 ^d					
	QUL-19	2014 08 13	47.5	-	7.99	20.9	0.38	98.5	54	0.3	2.03	-	-	-	0.117	0.5	49.1	0.1	-	0.5	32	5.6	44.5	-	0.001	0.002 ^d					
	QUL-19	2014 08 14	49.4	8.15	7.96	22.0	0.25	98.3	67	0.3	1.87	-	-	-	0.116	0.5	48.9	0.1	-	0.5	35	5.69	44.4	-	0.001	0.002 ^d					
	QUL-19	2014 08 15	48.8	8.12	7.99	21.1	0.21	97.1	62	0.3	1.84	-	-	-	0.102	0.5	47.7	0.1	-	0.5	35	5.65	43.8	-	0.001	0.002 ^d					
	QUL-19	2014 08 16	48.8	8.1	7.95	20.5	0.28	93.4	63	0.3	2.07	-	-	-	0.105	0.5	42.4	0.1	-	0.5	35	5.67	43.5	-	0.001	0.002 ^d					
	QUL-19	2014 08 17	49.1	7.79	7.97	20.6	0.38	98.8	62	0.3	2.48	-	-	-	0.117	0.5	31.5	0.1	-	0.5	35	5.79	45	-	0.001	0.002 ^d					
	QUL-19X	2014 08 17	48.7	7.79	7.99	20.6	0.39	98.6	67	0.3	2.47	-	-	-	0.12	0.5	31.2	0.1	-	0.5	35	5.81	44.2	-	0.001	0.002 ^d					
	QA/QC RPD %			0.1	0	0.1	0	0	0.1	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	QUL-19	2014 08 19	48.6	-	7.85	-	0.3	96.4	67	0.3	2.01	-	-	-	0.112	0.5	41.6	0.1	-	0.5	33	5.59	50.4	-	0.001	0.002 ^d					
	QUL-19	2014 08 21	49.7	8.35	7.9	18.8	0.39	96	62	0.3	2.04	-	-	-	0.12	0.5	45.9	0.1	-	0.5	35	5.64	43.7	-	0.001	0.002 ^d					
	QUL-19-0M	2014 08 27	49.8	7.96	7.9	18.96	0.27	97.6	70	0.3	1.91	-	-	-	0.122	0.5	45.9	0.1	-	0.5	33	5.78	44.1	-	0.001	0.002 ^d					
	QUL-19-35M	2014 08 27	53.9	7.46	7.95	5.05	3.23	106	68	0.3	1.94	-	-	-	0.184	0.5	124	0.1	-	0.5	36	6.44	48.2	-	0.011	0.002 ^d					
	QUL-19-55M	2014 08 27	53.9	7.35	7.93	4.01	0.49	108	67	0.3	1.9	-	-	-	0.174	0.5	145	0.1	-	0.5	36	6.31	48.9	-	0.015	0.002 ^d					
	QUL-20	2014 08 08	52.5	7.76	7.95	8.1	0.43	104	68	0.3	2.04	15	0.1	-	0.164	0.5	123	0.1	-	0.5	35	5.88	47.7	-	0.001	0.002 ^d					
QUL-20X	2014 08 08	52.7	7.76	7.96	-	0.45	104	69	0.3	1.89	15	0.1	-	0.174	0.5	123	0.1	-	0.5	35	5.9	48.5	-	0.001	0.002 ^d						
QA/QC RPD %			0.1	0	0.1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
QUL-20	2014 08 09	50.8	7.73	7.84	11.0	0.46	100	69	0.3	2.14	-	-	-	0.174	0.5	104	0.1	-	0.5	34	5.77	45	-	0.001	0.002 ^d						
QUL-20	2014 08 11	47.5	7.89	7.93	16.2	0.41	98.9	71	0.3	2.28	-	-	-	0.183	0.5	73	0.1	-	0.5	34	5.67	44.7	-	0.001	0.002 ^d						
QUL-20	2014 08 12	47.6	8	7.9	17.0	0.26	97.2	68	0.3	1.83	-	-	-	0.144	0.5	65.7	0.1	-	0.5	33	5.64	44.2	-	0.001	0.002 ^d						
QUL-20	2014 08 13	47.8	-	7.98	19.2	0.53	98.2	59	0.3	2.16	-	-	-	0.13	0.5	51.5	0.1	-	0.5	33	5.62	44.6	-	0.001	0.002 ^d						
QUL-20	2014 08 14	49.3	8.06	7.96	19.3	0.26	99.1	70	0.3	2.17	-	-	-	0.139	0.5	49.4	0.1	-	0.5	36	5.63	44.4	-	0.001	0.002 ^d						
QUL-20	2014 08 15	49.4	8.05	7.99	17.6	0.4	97.6	62	0.3	1.86	-	-	-	0.123	0.5	62	0.1	-	0.5	36	5.65	43.7	-	0.001	0.002 ^d						
QUL-20X	2014 08 15	49.6	8.05	7.98	-	0.28	97.6	65	0.3	1.79	-	-	-	0.123	0.5	59.5	0.1	-	0.5	36	5.65	43.8	-	0.001	0.002 ^d						
QA/QC RPD %			0.1	0	0.1	0	0	5	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0		
QUL-20	2014 08 16	49	7.94	7.97	17.7	0.31	95.6	66	0.3	1.95	-	-	-	0.114	0.5	57.5	0.1	-	0.5	35	5.64	43.6	-	0.001	0.002 ^d						
QUL-20	2014 08 17	47.5	7.79	7.97	17.9	0.37	97.2	63	0.3	2.5	-	-	-	0.144	0.5	58.6	0.1	-	0.5	34	5.65	44	-	0.001	0.002 ^d						
QUL-20-0M	2014 08 23	50.5	7.73	7.8	114.3	0.84	99.6	62	0.3	2.18	-	-	-	0.184	0.5	84.3	0.1	-	0.5	35	5.75	44.8	-	0.001	0.002 ^d						
QUL-20-10M	2014 08 23	50.6	7.48	7.88	13.69	1	102	65	0.3	2.13	-	-	-	0.162	0.5	86.5	0.1	-	0.5	35	5.76	45.6	-	0.0025	0.0036						
QUL-20	2014 08 22	50.4	7.8	7.86	13.6	1	98.2	69	0.3	2.51	-	-	-	0.162	0.5	81.4	0.1	-	0.5	34	5.78	44.4	-	0.001	0.002 ^d						
QUL-20-20M	2014 08 23	53.8	7.43	7.86	13.08	1.06	101	67	0.3	2.1	-	-	-	0.15	0.5	91.1	0.1	-	0.5	35	5.76	45.8	-	0.001	0.002 ^d						
QUL-20	2014 08 26	50.5	7.57	7.98	16.72	0.63	97.1	71	0.3	2.2	-	-	-	0.17	0.5	63.5	0.1	-	0.5	37	5.82	44.8	-	0.001	0.002 ^d						
QUL-20	2014 08 27	50.3	7.9	7.98	17.53	0.76	99.2	70	0.3	2.21	-	-	-	0.126	0.5	58.6	0.1	-	0.5	34	5.8	44.1	-	0.001	0.002 ^d						
QUL-20	2014 08 27	50	-	7.93	-	0.87	101	69	0.3	1.94	-	-	-	0.145	0.5	64.2	0.1	-	0.5	35	5.84	45.2	-	0.001	0.002 ^d						

Associated ALS files: L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, L1499710, L1499926, L1499947, L1500619, L1501501, L1501518, L1502249, L1502364, L1502370, L1502388, L1502398, L1503057, L1503061, L1503079, L1503910, L1503913, L1503928, L1503932, L1503933, L1503934, L1504180, L1504213, L1504220, L1504251, L1504261, L1504997, L1505918, L1506551, L1506571, L1506586, L1506614, L1506230, L1506989, L1506996, L1507001, L1507291, L1507298, L1506929, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509057, L1508649, L1509057, L1510231, L1510268, L1510289.

All terms defined within the body of SNC-Lavalin's report (available upon request).

- Denotes concentration less than indicated detection limit or RPD less than indicated value.
- Denotes analysis not conducted.
- n.a Denotes no applicable standard.
- RPDs are not normally calculated where one or more concentrations are less than five times MDL.

SHADED	Concentration greater than BCWQG Aquatic Life (AW) guideline.
BOLD	Concentration greater than BCWQG Drinking Water (DW) guideline.
SHADED	Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																												
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards			26.1-100 ^a	na	350	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
BCWQG Aquatic Life (AW) ^{b,c}			50-1000 ^d	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
BCWQG Aquatic Life (30day) (AW) ^{b,c}			200	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
BCWQG Drinking Water (DW)			na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
Canadian Drinking Water Quality (DW)			na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
QUL-19	QUL-19	2014 08 08	10.7	16.1	30	1.98	0.819	0.488	0.877	0.1	0.13	5.89	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.346	0.5	0.5	0.01	0.01	0.10	0.116	0.1	0.3	
	QUL-19	2014 08 09	10.1	16.3	30	1.88	0.443	0.472	0.828	0.1	0.1	5.26	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.54	-	0.318	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3	
	QUL-19	2014 08 10	11.2	16	30	2	1.66	0.524	0.944	0.1	0.17	6.17	0.1	0.10	0.01	0.5	0.1	0.55	0.05	0.5	-	0.394	0.5	0.5	0.01	0.01	0.10	0.122	0.1	0.3	
	QUL-19	2014 08 11	12	15.4	30	1.87	0.745	0.496	0.871	0.1	0.12	5.89	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.96	-	0.328	0.5	0.5	0.01	0.01	0.10	0.123	0.1	0.3	
	QUL-19X	2014 08 11	10.7	15.4	30	1.89	0.938	0.516	0.906	0.1	0.12	5.83	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.02	-	0.353	0.5	0.5	0.01	0.01	0.10	0.123	0.1	0.3	
	QA/QC RPD %			0	0	30	1	23	4	4	0	0	2	0	0	0	0	0	0	0	0	-	7	0	0	0	0	0	0	0	0
	QUL-19	2014 08 12	9.7	16.2	30	1.8	0.17	0.439	0.783	0.1	0.1	4.85	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.86	-	0.243	0.5	0.5	0.01	0.01	0.10	0.145	0.1	0.3	
	QUL-19	2014 08 13	9.6	16	30	1.83	0.098	0.436	0.789	0.1	0.1	4.79	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.01	-	0.282	0.5	0.5	0.01	0.01	0.10	0.142	0.1	0.3	
	QUL-19	2014 08 14	12	16.7	30	1.86	0.381	0.445	0.783	0.1	0.1	4.98	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.73	-	0.259	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3	
	QUL-19	2014 08 15	10	16.5	30	1.86	0.367	0.463	0.798	0.1	0.1	5.31	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.285	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3	
	QUL-19	2014 08 16	9.9	16.3	30	1.94	0.442	0.464	0.826	0.1	0.11	5.54	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.76	-	0.318	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3	
	QUL-19	2014 08 17	8.9	16.2	30	2.12	0.987	0.507	0.945	0.1	0.15	6.33	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.55	-	0.43	0.5	0.5	0.01	0.01	0.10	0.121	0.1	0.3	
	QUL-19X	2014 08 17	9.6	16	30	2.09	0.977	0.522	0.955	0.1	0.17	6.45	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.441	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3	
	QA/QC RPD %			0	1	30	1	1	3	1	0	2	0	0	0	0	0	0	0	0	0	-	3	0	0	0	0	0	0	0	0
	QUL-19	2014 08 19	10.2	16.3	30	1.92	0.322	0.477	0.843	0.1	0.11	5.4	0.1	0.10	0.01	0.5	0.1	0.52	0.05	0.71	-	0.308	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3	
	QUL-19	2014 08 21	9.3	16.7	30	1.92	0.344	0.454	0.814	0.1	0.11	5.2	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.83	-	0.292	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3	
	QUL-19-0M	2014 08 27	9.7	16.8	30	1.89	0.218	0.437	0.811	0.1	0.1	4.92	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.75	-	0.244	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3	
	QUL-19-35M	2014 08 27	8.1	18.2	30	2.05	3.23	0.479	0.988	0.1	0.1	5.55	0.1	0.10	0.01	0.5	0.1	0.91	0.05	0.84	-	0.389	0.5	0.5	0.01	0.01	0.10	0.167	0.1	0.3	
	QUL-19-55M	2014 08 27	4.8	18.2	30	2.06	0.342	0.459	0.924	0.1	0.1	5.04	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.91	-	0.254	0.5	0.5	0.01	0.01	0.10	0.156	0.1	0.3	
	QUL-20	2014 08 08	7.4	17.7	30	2.04	0.365	0.463	0.892	0.1	0.11	5.25	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.73	-	0.276	0.5	0.5	0.01	0.01	0.10	0.136	0.1	0.3	
QUL-20X	2014 08 08	7.5	17.7	30	2.04	0.339	0.466	0.892	0.1	0.1	5.14	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.68	-	0.263	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3		
QA/QC RPD %			0	0	30	0	7	1	0	0	2	0	0	0	0	0	0	0	0	0	-	5	0	0	0	0	0	0	0	0	
QUL-20	2014 08 09	8.1	17.1	30	1.95	0.355	0.459	0.847	0.1	0.1	5.12	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.61	-	0.287	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3		
QUL-20	2014 08 11	12.1	16	30	1.85	0.301	0.489	0.847	0.1	0.11	5.22	0.1	0.10	0.01	0.5	0.1	0.51	0.05	1.07	-	0.26	0.53	0.5	0.01	0.01	0.10	0.132	0.1	0.3		
QUL-20	2014 08 12	9.9	16.1	30	1.82	0.127	0.463	0.823	0.1	0.1	5.51	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.75	-	0.299	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3		
QUL-20	2014 08 13	9.6	16.1	30	1.88	0.163	0.476	0.847	0.1	0.1	5.3	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.04	-	0.312	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3		
QUL-20	2014 08 14	10.6	16.6	30	1.89	0.392	0.471	0.825	0.1	0.11	5.26	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.7	-	0.299	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3		
QUL-20	2014 08 15	9.9	16.7	30	1.9	0.354	0.469	0.826	0.1	0.12	5.73	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.3	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3		
QUL-20X	2014 08 15	10.1	16.7	30	1.89	0.35	0.472	0.826	0.1	0.11	5.65	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.299	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3		
QA/QC RPD %			0	0	30	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	-	1	0	0	0	0	0	0	0	0	
QUL-20	2014 08 16	9.9	16.4	30	1.93	0.333	0.45	0.791	0.1	0.11	5.18	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.281	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3		
QUL-20	2014 08 17	9.9	16	30	1.86	0.423	0.471	0.832	0.1	0.11	5.28	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.57	-	0.28	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3		
QUL-20-0M	2014 08 23	10.7	17.1	30	1.92	0.946	0.512	0.872	0.1	0.1	5.45	0.1	0.10	0.01	0.5	0.1	1.34	0.134	0.93	-	0.282	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3		
QUL-20-10M	2014 08 23	8.5	17.1	30	1.91	0.781	0.468	0.829	0.1	0.1	5.47	0.1	0.10	0.01	0.5	0.1	1.09	0.05	1.03	-	0.274	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3		
QUL-20	2014 08 22	10.2	17	30	1.91	0.767	0.461	0.837	0.1	0.1	5.51	0.1	0.10	0.01	0.5	0.1	0.85	0.05	0.89	-	0.267	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3		
QUL-20-20M	2014 08 23	11.8	18.2	30	2.06	0.749	0.476	0.831	0.1	0.1	5.46	0.1	0.10	0.01	0.5	0.1	1.01	0.05	1	-	0.275	0.5	0.5	0.01	0.01	0.10	0.14	0.1	0.3		
QUL-20	2014 08 26	8.9	17	30	1.94	0.694	0.451	0.805	0.1	0.11	5.52	0.1	0.10	0.01	0.5																

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Total Metals																															
			Aluminum (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Bismuth (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Lithium (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Potassium (µg/L)	Selenium (µg/L)	Silicon (µg/L)	Silver (µg/L)	Sodium (µg/L)	Thallium (µg/L)	Tin (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards			n.a	20	5	5000	5.3	n.a	1200	0.02-0.025 ^f	n.a	1 (Cr(6))	110	6.0-8.8 ^g	1000	27.3-54.6 ^h	870	n.a	100.6-1,343 ⁱ	Under review by SNC-Lavalin	2000	25-65 ^j	373,000-432,000	2	n.a	0.1 ^k	n.a	0.3	n.a	2000	300	6	33 ^l	
BCWOG Aquatic Life (AW) ^m			n.a	n.a	n.a	1000	n.a	n.a	n.a	n.a	n.a	4	2-2.9	n.a	3.3-5.4 ^d	14	n.a	n.a	607.2-925.8 ^e	1000	n.a	n.a	n.a	n.a	2	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,000	
BCWOG Drinking Water (DW)			n.a	14	25	n.a	4	n.a	5,000	n.a	n.a	n.a	n.a	500	n.a	50	n.a	n.a	n.a	n.a	1	250	n.a	n.a	10	n.a	n.a	n.a	2	n.a	n.a	5,000		
Canadian Drinking Water Quality (DW)			100	6	10	1000	n.a	n.a	5000	5	n.a	50	n.a	1000	300	10	n.a	n.a	n.a	50	1	n.a	n.a	n.a	10	n.a	n.a	200 000	n.a	n.a	20	n.a	5000	
QUL-19	QUL-19	2014 08 08	19.9	0.01	0.15	5.79	0.1	0.5	10	0.01	15600	0.5	0.1	0.6	33	0.05	0.5	1950	2.49	0.05	0.373	0.5	479	0.5	1.680	0.01	867	0.01	0.1	10	0.121	0.1	0.3	
	QUL-19	2014 08 09	20	0.01	0.11	5.48	0.1	0.5	10	0.01	16200	0.5	0.1	0.66	30	0.05	0.5	1910	1.27	0.05	0.307	0.5	481	0.5	1.580	0.01	834	0.01	0.1	10	0.138	0.1	0.3	
	QUL-19	2014 08 10	18.7	0.01	0.16	6.21	0.1	0.5	10	0.01	15800	0.5	0.1	0.63	31	0.05	0.5	1980	2.84	0.05	0.426	0.5	519	0.5	1.770	0.01	948	0.01	0.1	10	0.125	0.1	0.3	
	QUL-19	2014 08 11	17.9	0.01	0.15	5.85	0.1	0.5	10	0.01	15800	0.5	0.1	0.6	30	0.05	0.5	1940	1.79	0.05	0.36	0.5	504	0.5	1.630	0.01	885	0.01	0.1	10	0.133	0.1	0.3	
	QUL-19X	2014 08 11	19	0.01	0.17	6.1	0.1	0.5	10	0.01	15600	0.5	0.1	0.76	30	0.05	0.82	1960	2.2	0.05	0.419	0.5	543	0.5	1.670	0.01	934	0.01	0.1	10	0.131	0.1	0.3	
	QA/QC RPD %			6	0.1	0.1	4	0.1	0.5	10	0.01	1	0.5	0.1	0.5	30	0.05	0.82	1870	0.81	0.05	0.253	0.5	437	0.5	1.460	0.01	787	0.01	0.1	10	0.147	0.1	0.3
	QUL-19	2014 08 12	15.2	0.01	0.11	5.14	0.1	0.5	10	0.01	16800	0.5	0.1	0.5	30	0.05	0.9	1930	0.823	0.05	0.287	0.5	455	0.5	1.530	0.01	824	0.01	0.1	10	0.153	0.1	0.3	
	QUL-19	2014 08 13	13.5	0.01	0.11	5.14	0.1	0.5	10	0.01	16800	0.5	0.1	0.5	30	0.05	0.9	1930	0.823	0.05	0.287	0.5	455	0.5	1.530	0.01	824	0.01	0.1	10	0.153	0.1	0.3	
	QUL-19	2014 08 14	13.6	0.01	0.11	4.96	0.1	0.5	10	0.01	16400	0.5	0.1	0.5	30	0.05	0.68	1850	0.81	-	0.282	0.5	447	0.5	1.510	0.01	807	0.01	0.1	10	0.142	0.1	0.3	
	QUL-19	2014 08 15	13.5	0.01	0.12	5.28	0.1	0.5	10	0.01	16500	0.5	0.1	0.5	30	0.05	0.5	1870	1.03	-	0.296	0.5	451	0.5	1.540	0.01	796	0.01	0.1	10	0.144	0.1	0.3	
	QUL-19	2014 08 16	15.3	0.01	0.13	5.58	0.1	0.5	10	0.01	16300	0.5	0.1	0.59	30	0.05	0.5	1930	1.68	-	0.345	0.5	476	0.5	1.590	0.01	840	0.01	0.1	10	0.14	0.1	0.3	
	QUL-19	2014 08 17	17.5	0.01	0.18	6.58	0.1	0.5	10	0.01	16000	0.5	0.1	1	34	0.05	0.67	2,120	3.97	-	0.458	0.5	529	0.5	1.790	0.01	977	0.01	0.1	10	0.131	0.1	0.3	
	QUL-19X	2014 08 17	18.5	0.01	0.2	6.59	0.1	0.5	10	0.01	15800	0.5	0.1	1	35	0.05	0.5	2,060	4.02	-	0.47	0.5	532	0.5	1.760	0.01	978	0.01	0.1	10	0.136	0.1	0.3	
	QA/QC RPD %			6	0.1	0.1	4	0.1	0.5	10	0.01	1	0.5	0.1	0.5	30	0.05	0.82	1870	0.81	0.05	0.253	0.5	437	0.5	1.460	0.01	787	0.01	0.1	10	0.147	0.1	0.3
	QUL-19	2014 08 19	14	0.01	0.13	5.54	0.1	0.5	10	0.01	16200	0.5	0.1	0.57	30	0.05	1	1930	1.44	-	0.333	0.5	486	0.5	1.570	0.01	875	0.01	0.1	10	0.139	0.1	0.3	
	QUL-19	2014 08 21	22.1	0.01	0.12	5.26	0.1	0.5	10	0.01	16300	0.5	0.1	0.73	30	0.05	0.67	1880	1.34	-	0.299	0.5	467	0.5	1.500	0.01	826	0.01	0.1	10	0.146	0.1	0.3	
	QUL-19-0M	2014 08 27	13.5	0.01	0.1	4.85	0.1	0.5	10	0.01	16000	0.5	0.1	0.51	30	0.05	0.68	1810	0.754	0.01	0.261	0.5	435	0.5	1.490	0.01	820	0.01	0.1	10	0.14	0.1	0.3	
	QUL-19-35M	2014 08 27	160	0.01	0.16	8.07	0.1	0.5	10	0.01	17800	0.5	0.1	4.83	102	0.06	0.83	2,060	7.5	0.01	0.411	0.5	521	0.5	1.970	0.01	1,010	0.01	0.1	10	0.178	0.1	0.3	
	QUL-19-55M	2014 08 27	30.6	0.01	0.1	5.22	0.1	0.5	10	0.01	18100	0.5	0.1	0.78	30	0.05	0.85	2,060	1.47	0.01	0.267	0.5	471	0.5	1.690	0.01	936	0.01	0.1	10	0.165	0.1	0.3	
	QUL-20	2014 08 08	22.4	0.01	0.13	5.42	0.1	0.5	10	0.01	17400	0.5	0.1	0.66	30	0.05	0.58	2,040	1.48	0.05	0.288	0.5	483	0.5	1.720	0.01	901	0.01	0.1	10	0.145	0.1	0.3	
QUL-20X	2014 08 08	26.2	0.01	0.12	5.45	0.1	0.5	10	0.01	17600	0.5	0.1	0.7	30	0.05	0.59	2,070	1.49	0.05	0.285	0.5	487	0.5	1.740	0.01	928	0.01	0.1	10	0.15	0.1	0.3		
QA/QC RPD %			16	0.1	0.1	4	0.1	0.5	10	0.01	1	0.5	0.1	0.5	30	0.05	0.82	1870	0.81	0.05	0.253	0.5	437	0.5	1.460	0.01	787	0.01	0.1	10	0.147	0.1	0.3	
QUL-20	2014 08 09	20	0.01	0.11	5.21	0.1	0.5	10	0.01	17200	0.5	0.1	0.69	30	0.05	0.59	1980	1.24	0.05	0.281	0.5	475	0.5	1.670	0.01	867	0.01	0.1	10	0.148	0.1	0.3		
QUL-20	2014 08 11	23.4	0.01	0.14	5.25	0.1	0.5	10	0.01	15900	0.5	0.1	0.71	30	0.05	0.9	1,860	1.16	0.05	0.3	0.5	487	0.5	1.530	0.01	843	0.01	0.1	10	0.143	0.1	0.3		
QUL-20	2014 08 12	19.9	0.01	0.12	5.12	0.1	0.5	10	0.01	16300	0.5	0.1	0.69	30	0.05	0.82	1,850	1.18	0.05	0.293	0.5	471	0.5	1.560	0.01	836	0.01	0.1	10	0.14	0.1	0.3		
QUL-20	2014 08 13	15.6	0.01	0.16	5.44	0.1	0.5	10	0.01	16600	0.5	0.1	0.74	30	0.05	0.65	1,940	1.26	0.05	0.31	0.5	489	0.5	1.600	0.01	871	0.01	0.1	10	0.141	0.1	0.3		
QUL-20	2014 08 14	17.1	0.01	0.12	5.41	0.1	0.5	10	0.01	16300	0.5	0.1	0.66	30	0.05	0.69	1,880	1.35	-	0.306	0.5	472	0.5	1.610	0.01	833	0.01	0.1	10	0.136	0.1	0.3		
QUL-20	2014 08 15	20.3	0.01	0.13	5.84	0.1	0.5	10	0.01	16500	0.5	0.1	0.64	30	0.05	0.5	1,890	1.31	-	0.323	0.5	472	0.5	1.590	0.01	833	0.01	0.1	10	0.14	0.1	0.3		
QUL-20X	2014 08 15	17.4	0.01	0.13	5.93	0.1	0.5	10	0.01	16500	0.5	0.1	0.61	30	0.05	0.5	1,890	1.38	-	0.292	0.5	476	0.5	1.610	0.01	848	0.01	0.1	10	0.134	0.1	0.3		
QA/QC RPD %			15	0.1	0.1	2	0.1	0.5	10	0.01	0	0.5	0.1	0.5	30	0.05	0.82	1870	0.81	0.05	0.253	0.5	437	0.5	1.460	0.01	787	0.01	0.1	10	0.147	0.1	0.3	
QUL-20	2014 08 16	17.6	0.01	1.06	5.28	0.1	0.5	10	0.034	16,000	0.5	0.1	0.59	30	0.05	0.56	1,870	1.26	-	0.303	0.5	465	0.5	1.540	0.01	821	0.01	0.1	10	0.145	0.1	0.3		
QUL-20	2014 08 17	19	0.01	0.13	5.3	0.1	0.5	10	0.01	16100	0.5	0.1	1	30	0.05	0.63	1,880	1.46	-	0.294	0.5	471	0.5	1.560	0.01	850	0.01	0.1	10	0.147	0.1	0.3		
QUL-20-0M	2014 08 23	59.8	0.01	0.14	5.87	0.1	0.5	10	0.01	16900	0.5	0.1	2.35	47	0.05	0.99	1,930	2.79	0.05	0.275	0.5	511	0.5	1.660	0.01	851	0.01	0.1	10	0.143	0.1	0.3		
QUL-20-10M	2014 08 23	56.9	0.01	0.13	6	0.1	0.5	10	0.01	17,000	0.5	0.1	2.16	47	0.05	0.93	1,930	2.56	0.05	0.303	0.5	477	0.5	1.660	0.01	840	0.01	0.1	10	0.146	0.1	0.3		
QUL-20	2014 08 22	50.8	0.01	0.13	5.92	0.1	0.5	10	0.01	16,700	0.5	0.1	2.03	41	0.05	0.76	1,930	2.45	-	0.287	0.5	479	0.5	1.600	0.01	855	0.01	0.1	10	0.145	0.1	0.3		
QUL-20-20M	2014 08 23	57.9	0.01	0.13	6.04	0.1	0.5	10	0.01	18,100	0.5	0.1	2.3	51	0.05	0.98	2,070	2.87	0.05	0.294	0.5	498	0.5	1.770	0.01	875	0.01	0.1	10	0.142	0.1	0.3		
QUL-20	2014 08 26	48.5	0.01	0.13	6.15	0.1	0.5	10	0.01	16,70																								

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																												
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards			26.1-100 ^a	n/a	350	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
BCWQG Aquatic Life (AW) ^{b,c}			50-1000 ^d	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
BCWQG Drinking Water (DW)			200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
QUL-21	QUL-21-0M	2014 08 08	9.3	16.7	0.30	1.93	0.368	0.462	0.832	0.1	0.1	5.21	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.273	0.5	0.5	0.01	0.01	0.10	0.158	0.1	0.3	
	QUL-21-7M	2014 08 08	8.8	17.1	0.30	1.94	0.2	0.476	0.863	0.1	0.1	5.2	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.269	0.5	0.5	0.01	0.01	0.10	0.163	0.1	0.3	
	QUL-21-30M	2014 08 08	4.9	18.3	0.30	2.08	2.29	0.474	0.919	0.1	0.1	5.26	0.1	0.10	0.01	0.5	0.1	0.53	0.05	0.51	-	0.269	0.5	0.5	0.01	0.01	0.10	0.176	0.1	0.3	
	QUL-21	2014 08 09	10	16.6	0.30	1.9	0.49	0.465	0.83	0.1	0.11	5.28	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.56	-	0.298	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3	
	QUL-21	2014 08 11	10.3	16.1	0.30	1.84	0.673	0.487	0.832	0.1	0.11	5.27	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.02	-	0.283	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3	
	QUL-21-0M	2014 08 12	8	16.1	0.30	1.94	0.275	0.488	0.855	0.1	0.1	5	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.51	-	0.324	0.5	0.5	0.01	0.01	0.10	0.08	0.1	0.3	
	QUL-21X	2014 08 12	11	16.4	0.30	1.92	0.653	0.458	0.823	0.1	0.11	5.37	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.84	-	0.276	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3	
	QA/QC RPD %			2	1	81	6	4	7	16	48																				
	QUL-21-12M	2014 08 12	10.5	16.3	0.30	1.82	0.212	0.46	0.815	0.1	0.1	5.06	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.77	-	0.288	0.5	0.5	0.01	0.01	0.10	0.146	0.1	0.3	
	QUL-21-30M	2014 08 12	6	18.3	0.30	2.09	0.407	0.468	0.919	0.1	0.1	4.99	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.66	-	0.258	0.5	0.5	0.01	0.01	0.10	0.149	0.1	0.3	
	QUL-21	2014 08 13	9.5	16	0.30	1.88	0.222	0.473	0.833	0.1	0.11	5.34	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.89	-	0.314	0.5	0.5	0.01	0.01	0.10	0.127	0.1	0.3	
	QUL-21	2014 08 14	10.3	16.7	0.30	1.94	0.721	0.463	0.812	0.1	0.1	5.28	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.58	-	0.294	0.5	0.5	0.01	0.01	0.10	0.126	0.1	0.3	
	QUL-21-0M	2014 08 15	10.4	16.4	0.30	1.89	0.496	0.48	0.837	0.1	0.12	5.54	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.289	0.5	0.5	0.01	0.01	0.10	0.119	0.1	0.3	
	QUL-21-10M	2014 08 15	10	17.1	0.30	1.87	0.143	0.468	0.832	0.1	0.1	5.12	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.52	-	0.262	0.5	0.5	0.01	0.01	0.10	0.164	0.1	0.3	
	QUL-21-30M	2014 08 15	6	18.1	0.30	2.03	0.345	0.479	0.92	0.1	0.1	5.28	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.66	-	0.272	0.5	0.5	0.01	0.01	0.10	0.177	0.1	0.3	
	QUL-21	2014 08 16	9.7	16.2	0.30	1.9	0.415	0.479	0.822	0.1	0.12	5.41	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.58	-	0.29	0.5	0.5	0.01	0.01	0.10	0.12	0.1	0.3	
	QUL-21	2014 08 17	9.8	16.1	0.30	1.9	0.545	0.464	0.823	0.1	0.12	5.47	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.54	-	0.295	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3	
	QUL-21-0M	2014 08 23	10.5	16.9	0.30	1.94	0.886	0.466	0.815	0.1	0.1	5.4	0.1	0.10	0.01	0.5	0.1	0.87	0.05	0.96	-	0.283	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3	
	QUL-21-20M	2014 08 23	8.4	18.2	0.30	2.08	0.629	0.49	0.902	0.1	0.1	5.09	0.1	0.10	0.01	0.5	0.1	0.71	0.05	0.99	-	0.255	0.5	0.5	0.01	0.01	0.10	0.146	0.1	0.3	
	QUL-21-46M	2014 08 23	13.2	25	0.30	2.8	108	0.952	3.2	0.23	0.72	17.9	0.1	0.10	0.01	0.5	0.1	4.5	0.05	1.17	-	4.98	0.5	0.59	0.01	0.01	0.10	0.643	0.1	0.3	
	QUL-21-0M	2014 08 25	10	16.9	0.30	1.92	0.724	0.461	0.805	0.1	0.1	5.49	0.1	0.10	0.01	0.5	0.1	0.93	0.05	1.05	-	0.288	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3	
	QUL-21-45M	2014 08 25	12.9	23.8	0.30	2.63	94.7	0.95	3.09	0.22	0.66	17.5	0.1	0.10	0.01	0.5	0.1	4.65	0.05	0.61	-	4.68	0.5	0.53	0.01	0.01	0.10	0.58	0.1	0.3	
	QUL-21-9M	2014 08 25	9.9	17.2	0.30	1.91	1.24	0.443	0.851	0.1	0.1	5.88	0.1	0.10	0.01	0.5	0.1	1.37	0.05	1.05	-	0.293	0.5	0.5	0.01	0.01	0.10	0.14	0.1	0.3	
	QUL-21-0M	2014 08 26	9.3	16.8	0.30	1.92	0.699	0.448	0.793	0.1	0.12	5.5	0.1	0.10	0.01	0.5	0.1	0.96	0.05	0.64	-	0.287	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3	
	QUL-21-21M	2014 08 26	9.9	17.2	0.30	1.94	1.01	0.452	0.82	0.1	0.1	5.62	0.1	0.10	0.01	0.5	0.1	1.21	0.05	0.57	-	0.284	0.5	0.5	0.01	0.01	0.10	0.128	0.1	0.3	
	QUL-21-47M	2014 08 26	11.7	23.7	0.30	2.64	95.8	0.907	2.99	0.21	0.66	17.3	0.1	0.10	0.01	0.5	0.1	4.54	0.05	0.75	-	4.63	0.5	0.54	0.01	0.01	0.10	0.591	0.1	0.3	
	QUL-22	QUL-22	2014 08 08	9	16.7	0.30	1.92	0.518	0.466	0.839	0.1	0.1	5.15	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.281	0.52	0.5	0.01	0.01	0.10	0.15	0.1	0.3
		QUL-22	2014 08 09	9.8	16.7	0.30	1.9	0.467	0.462	0.827	0.1	0.1	5.19	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.6	-	0.263	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3
		QUL-22	2014 08 10	10.8	16.4	0.30	1.88	0.53	0.478	0.845	0.1	0.11	5.16	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.05	-	0.281	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3
		QUL-22	2014 08 11	11.7	15.9	0.30	1.84	0.692	0.488	0.833	0.1	0.11	5.23	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.02	-	0.271	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3
		QUL-22	2014 08 12	10.4	15.9	0.30	1.85	0.38	0.471	0.831	0.1	0.11	5.09	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.71	-	0.308	0.5	0.5	0.01	0.01	0.10	0.141	0.1	0.3
		QUL-22	2014 08 13	10.6	15.9	0.30	1.86	0.185	0.467	0.825	0.1	0.1	5.31	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1	-	0.289	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3
		QUL-22	2014 08 14	10.2	16.7	0.30	1.94	0.579	0.487	0.83	0.1	0.11	5.42	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.62	-	0.312	0.5	0.5	0.01	0.01	0.10	0.12	0.1	0.3
		QUL-22	2014 08 15	10.5	15.2	0.30	1.76	0.481	0.483	0.851	0.1	0.12	5.56	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.315	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3
		QUL-22	2014 08 16	10.1	16.1	0.30	1.88	0.511	0.496	0.838	0.1	0.11	6.23	0.1	0.10	0.01	0.5	0.1	0.54	0.05	0.52	-	0.335	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3
		QUL-22	2014 08 17	10.7	15.9	0.30	1.88	0.517	0.475	0.847	0.1	0.12	5.37	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.51	-	0.3	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3
		QUL-22	2014 08 19	9.7	16.3	0.30	1.91	0.449	0.467	0.819	0.1																				

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Microbiological Tests		Dissolved Inorganics													
			Hardness (mg/L)	pH (field) (pH)	pH (pH)	Temperature (field) (C)	Turbidity (NTU)	Conductivity (µS/cm)	TDS (mg/L)	TSS (mg/L)	DOC (mg/L)	Total Coliform (MPN/0.1L)	E. Coli (MPN/0.1L)	Total Kjeldahl Nitrogen (N) (mg/L)	Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)	Chloride (mg/L)	Fluoride (µg/L)	Sulphate (mg/L)	Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
BC Standards																												
BCWQG Aquatic Life (AW) ^{a,c}			n.a	6.5-9.0	6.5-9.0	n.a																						
BCWQG Aquatic Life (30day) (AW) ^{b,d}			n.a	n.a	n.a	n.a																						
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	n.a																						
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a																						
QUL-26	QUL-26-0M	2014 08 11	49	7.37	7.9	-	0.82	98.2	68	0.3	2.67	-	-	-	0.132	0.5	41	0.1	-	0.5	34	5.71	44.7	-	0.001	0.0021		
	QUL-26-13M	2014 08 11	50.3	7.74	7.92	9.5	0.7	102	66	0.3	2.15	-	-	-	0.179	0.5	106	0.1	-	0.5	34	5.85	45.9	-	0.001	0.002 ^e		
	QUL-26-24M	2014 08 11	53.2	7.56	7.92	5.0	0.89	109	69	0.3	1.94	-	-	-	0.189	0.5	137	0.1	-	0.5	36	6.19	48.2	-	0.001	0.002 ^e		
	QUL-26	2014 08 12	47.8	7.87	7.93	20.2	0.4	96.1	66	0.3	2.21	-	-	-	0.141	0.5	45.3	0.1	-	0.5	36	5.68	44.7	-	0.001	0.002 ^e		
	QUL-26	2014 08 13	48.5	-	7.87	20.5	0.77	101	66	0.3	3.22	-	-	-	0.138	0.5	0.5	0.1	-	0.5	35	5.55	46.2	-	0.001	0.002 ^e		
	QUL-26-0M	2014 08 14	49.3	7.85	7.95	-	0.34	97.7	64	0.3	2.25	-	-	-	0.116	0.5	32.1	1	-	0.5	36	5.61	43.9	-	0.001	0.0021		
	QUL-26-12M	2014 08 14	52.3	7.83	7.97	12.1	0.77	103	73	0.3	1.9	-	-	-	0.134	0.5	93.3	0.1	-	0.5	37	6.19	46.2	-	0.001	0.002 ^e		
	QUL-26-27M	2014 08 14	56	7.66	7.98	4.7	4.14	110	74	5.7	2.02	-	-	-	0.174	0.5	143	0.1	-	0.5	38	6.48	49.6	-	0.001	0.0022		
	QUL-26	2014 08 15	49.1	7.97	7.97	22.0	0.34	97	62	0.3	1.95	-	-	-	0.109	0.5	39.5	0.1	-	0.5	36	5.63	43.2	-	0.001	0.002 ^e		
	QUL-26	2014 08 16	48.8	8.06	7.96	20.4	0.25	95	58	0.3	2.13	-	-	-	0.114	0.5	42.2	0.1	-	0.5	36	5.62	43.8	-	0.001	0.0023		
	QUL-26-0M	2014 08 17	47.9	-	7.9	-	0.43	96.6	70	0.3	2.47	-	-	-	0.146	0.5	29.9	0.1	-	0.5	35	5.61	44.2	-	0.001	0.002 ^e		
	QUL-26-12M	2014 08 17	51.6	-	7.95	-	4.85	103	60	0.7	2.1	-	-	-	0.179	0.5	111	0.1	-	0.5	35	5.96	46.4	-	0.001	0.002 ^e		
	QUL-26-26M	2014 08 17	54.4	-	7.94	-	3.31	108	67	4.6	2.09	-	-	-	0.2	0.5	146	0.1	-	0.5	37	6.38	49.2	-	0.001	0.002 ^e		
	QUL-26-0M	2014 08 19	48.8	-	7.93	-	0.33	96.5	69	0.3	2	-	-	-	0.118	0.5	42.7	0.1	-	0.5	32	5.55	43.9	-	0.001	0.002 ^e		
	QUL-26-10M	2014 08 19	50.4	-	7.92	-	8.47	100	69	6.5	1.93	-	-	-	0.15	5.7	75.2	0.1	-	0.5	33	5.97	45.6	-	0.001	0.002 ^e		
	QUL-26-20M	2014 08 19	52.5	-	7.93	-	6.66	107	69	9.2	1.92	-	-	-	0.179	0.5	131	0.1	-	0.5	34	6.08	48.7	-	0.001	0.002 ^e		
	QUL-26-0M	2014 08 21	49.2	8.27	7.87	18.9	1.07	95.1	62	0.3	2.16	-	-	-	0.114	0.5	48.9	0.1	-	0.5	36	5.71	44.3	-	0.001	0.002 ^e		
	QUL-28	QUL-28-0M	2014 08 11	49.3	7.52	7.82	-	0.53	101	69	0.3	2.32	-	-	-	0.134	0.5	34.5	0.1	-	0.5	35	5.71	45.5	-	0.001	0.0029	
		QUL-28	2014 08 12	48.1	7.73	7.93	20.9	0.77	96.6	62	0.3	2.06	-	-	-	0.121	0.5	48.9	0.1	-	0.5	37	5.68	44.6	-	0.001	0.002 ^e	
		QUL-28	2014 08 13	47.6	-	7.93	21.1	0.45	98.7	62	0.3	2.61	-	-	-	0.125	0.5	33.2	1	-	0.5	34	5.63	44.8	-	0.001	0.002 ^e	
QUL-30	QUL-30	2014 08 07	49	7.24	7.99	20.4	1.07	98.4	63	0.3	1.85	201	0.1	0.086	0.141	0.5	54.9	0.1	-	0.5	33	5.62	46.7	-	0.001	0.002 ^e		
QUL-31	QUL-31	2014 08 07	47.5	8.2	7.97	21.0	0.6	95.8	55	0.3	2.08	130	1	0.117	0.144	0.5	67.3	0.1	-	0.5	33	5.61	44.9	-	0.001	0.002 ^e		
QUL-32	QUL-32	2014 08 06	48.7	-	7.96	-	0.38	101	81	0.3	1.89	-	-	-	0.162	0.5	77.9	1.5	79.4	0.5	34	5.6	46	-	0.001	0.002 ^e		
QUL-33	QUL-33	2014 08 06	49	-	7.95	20.0	0.32	99	63	0.3	1.9	-	-	-	0.129	0.5	63.8	0.1	63.8	0.5	34	5.63	45.6	-	0.001	0.002 ^e		
QUL-34	QUL-34-6M	2014 08 13	47.2	-	7.97	-	0.31	97.8	62	0.3	2.03	-	-	-	0.118	0.5	50.5	0.1	-	0.5	32	5.62	44.1	-	0.001	0.002 ^e		
QUL-35	QUL-35-3M	2014 08 14	48.8	8.16	7.9	-	0.34	97.5	63	0.3	2.1	-	-	-	0.102	0.5	40.6	0.1	-	0.5	36	5.62	43.7	-	0.001	0.002 ^e		
QUL-36	QUL-36-6M	2014 08 14	48.4	8.08	7.95	-	0.29	97.3	66	0.3	2.05	-	-	-	0.12	0.5	52.1	0.1	-	0.5	36	5.62	43.7	-	0.001	0.002 ^e		
QUL-37	QUL-37-0M	2014 08 15	49.1	8.13	7.98	20.1	0.27	96.9	66	0.3	1.77	-	-	-	0.103	0.5	48.7	0.1	-	0.5	35	5.66	44.3	-	0.001	0.002 ^e		
	QUL-37-7M	2014 08 15	49	8.13	7.97	18.6	0.28	97	63	0.3	1.72	-	-	-	0.113	0.5	58.9	0.1	-	0.5	36	5.64	43.8	-	0.001	0.0021		
	QUL-37-TAP	2014 08 15	49.4	-	-	-	0.32	-	63	3.9	1.68	-	-	-	0.111	0.5	50.6	0.1	-	0.5	35	5.67	43.7	-	0.001	0.0021		
	QUL-38	2014 08 18	48.4	7.11	7.97	18.3	0.35	97.5	59	0.3	2.44	48	0.1	-	0.155	5.3	48.9	0.1	-	0.5	34	5.64	43.9	-	0.001	0.002 ^e		
QUL-38-2M	2014 08 26	50.2	7.93	7.98	17.63	0.71	100	62	0.3	2.1	-	-	-	0.128	0.5	55	0.1	-	0.5	35	5.78	45.1	-	0.001	0.002 ^e			
QUL-39	QUL-39	2014 08 18	49.8	7.64	7.9	16.1	0.46	98	71	0.3	2.3	24	0.1	-	0.163	5.9	86.3	0.1	-	0.5	34	5.75	44	-	0.001	0.002 ^e		
QUL-60	QUL-60	2014 08 18	49.4	7.7	7.97	15.3	0.64	97.8	69	0.3	2.43	27	0.1	-	0.149	5.6	72.4	0.1	-	0.5	34	5.71	44.2	-	0.001	0.002 ^e		
	QUL-60-3M	2014 08 26	49.8	7.91	7.94	17.41	0.78	100	69	0.3	2.23	-	-	-	0.131	0.5	56.5	0.1	-	0.5	34	5.79	45	-	0.001	0.002 ^e		
QUL-61	QUL-61	2014 08 18	49.2	7.76	7.97	13.9	0.54	97.9	66	0.3	2.25	15	0.1	-	0.154	5.8	79.3	0.1	-	0.5	34	5.73	44.6	-	0.001	0.002 ^e		
	QUL-61-2M	2014 08 26	50.2	7.93	7.99	17.75	0.67	100	62	0.3	2.2	-	-	-	0.13	0.5	56.2	0.1	-	0.5	34	5.78	44.7	-	0.001	0.002 ^e		
QUL-62	QUL-62	2014 08 18	48.5	7.83	7.97	17.7	0.36	96.9	67	0.3	2.4	31	1	-	0.252	5.2	57.5	0.1	-	0.5	34	5.66	44	-	0.001	0.002 ^e		
QUL-63	QUL-63	2014 08 18	48.9	7.81	7.96	17.4	0.45	97.4	67	0.3	2.31	53	2	-	0.137	6.2	60.5	0.1	-	0.5	34	5.68	44	-	0.001	0.002 ^e		
QUL-64	QUL-64	2014 08 18	48.1	7.88	7.97	18.3	0.29	96.9	70	0.3	2.37	36	2	-	0.135	5.7	48.2	0.1	-	0.5	34	5.65	44.1	-	0.001	0.002 ^e		
	QUL-64-2M	2014 08 27	49.7	8.03	7.99	17.71	0.78	99	71	0.3	2.14	-	-	-	0.122	0.5	52.9	0.1	-	0.5	34	5.79	44.4	-	0.001	0.0021		
QUL-65	QUL-65-45M	2014 08 19	72.7	7.83	7.97	6.4	104	160	112	28.2	1.9	-	-	-	0.486	53.9	243	1.9	-	0.62	70	18.3	60.3	-	0.001	0.002 ^e		
QUL-66	QUL-66-40M	2014 08 21	69.4	8.09	7.9	6.8	111	146	106	20.9	1.86	-	-	-	0.339	40.1	209	1.4	-	0.56	69	16.5	58.5	-	0.001	0.002 ^e		
	QUL-66-40M	2014 08 19	72.5	7.81	8	5.4	122	159																				

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																											
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
BC Standards			26.1-100 ^a	n/a	350	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BCWOG Aquatic Life (AW) ^{b,c}			50-1000 ^d	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BCWOG Drinking Water (DW)			200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
QUL-26	QUL-26-0M	2014 08 11	11.3	16.5	0.30	1.89	4.79	0.541	0.846	0.1	0.12	6.05	0.1	0.10	0.01	0.5	0.1	0.54	0.05	1.02	-	0.303	0.5	0.5	0.01	0.01	0.10	0.12	0.1	0.3
	QUL-26-13M	2014 08 11	9.6	17	0.30	1.93	0.228	0.486	0.856	0.1	0.1	5.18	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.01	-	0.262	0.5	0.5	0.01	0.01	0.10	0.131	0.1	0.3
	QUL-26-24M	2014 08 11	5.7	17.9	0.30	2.03	0.677	0.481	0.911	0.1	0.11	5.19	0.1	0.10	0.01	0.5	0.1	0.5	0.05	1.08	-	0.264	0.5	0.5	0.01	0.01	0.10	0.143	0.1	0.3
	QUL-26	2014 08 12	10.6	16.1	0.30	1.87	0.554	0.499	0.856	0.1	0.11	5.42	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.71	-	0.309	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3
	QUL-26	2014 08 13	11	16.3	0.30	1.92	10.4	0.598	0.842	0.1	0.15	7.06	0.1	0.10	0.01	0.5	0.1	0.6	0.05	1.07	-	0.33	0.5	0.5	0.01	0.01	0.10	0.12	0.1	0.3
	QUL-26-0M	2014 08 14	11.2	16.6	0.30	1.91	2.64	0.509	0.837	0.1	0.1	5.61	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.67	-	0.294	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3
	QUL-26-12M	2014 08 14	11.7	17.8	0.30	1.93	5.07	0.483	0.838	0.1	0.11	8.11	0.1	0.10	0.01	0.5	0.1	2.62	0.05	0.71	-	0.404	0.5	0.5	0.01	0.01	0.10	0.145	0.1	0.3
	QUL-26-27M	2014 08 14	5.3	19	0.30	2.1	8.77	0.476	0.952	0.1	0.13	6.14	0.1	0.10	0.01	0.5	0.1	1.03	0.05	0.86	-	0.375	0.5	0.5	0.01	0.01	0.10	0.158	0.1	0.3
	QUL-26	2014 08 15	10.2	16.5	0.30	1.92	1	0.476	0.824	0.1	0.12	5.94	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.294	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3
	QUL-26	2014 08 16	10.2	16.4	0.30	1.9	0.643	0.476	0.816	0.1	0.12	5.48	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.72	-	0.339	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3
	QUL-26-0M	2014 08 17	9.6	16.1	0.30	1.88	3.09	0.518	0.828	0.1	0.11	5.83	0.1	0.10	0.01	0.5	0.1	0.52	0.05	0.55	-	0.286	0.5	0.5	0.01	0.01	0.10	0.118	0.1	0.3
	QUL-26-12M	2014 08 17	8.7	17.4	0.30	1.96	1.5	0.459	0.84	0.1	0.1	6.02	0.1	0.10	0.01	0.5	0.1	1.33	0.05	0.72	-	0.28	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3
	QUL-26-26M	2014 08 17	5.1	18.3	0.30	2.09	4.49	0.482	0.939	0.1	0.11	5.72	0.1	0.10	0.01	0.5	0.1	1.01	0.05	0.75	-	0.348	0.5	0.5	0.01	0.01	0.10	0.161	0.1	0.3
	QUL-26-0M	2014 08 19	10.3	16.4	0.30	1.89	0.417	0.464	0.818	0.1	0.1	5.16	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.71	-	0.291	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3
	QUL-26-10M	2014 08 19	10.9	17.1	0.30	1.9	3.66	0.475	0.879	0.1	0.11	7.32	0.1	0.10	0.01	0.5	0.1	2.21	0.05	0.85	-	0.402	0.5	0.5	0.01	0.01	0.10	0.143	0.1	0.3
	QUL-26-20M	2014 08 19	5.6	17.6	0.30	2.04	3.03	0.488	0.923	0.1	0.1	6.14	0.1	0.10	0.01	0.5	0.1	1.27	0.05	0.86	-	0.324	0.5	0.5	0.01	0.01	0.10	0.142	0.1	0.3
	QUL-26-0M	2014 08 21	10.7	16.6	0.30	1.91	1.47	0.467	0.83	0.1	0.12	5.99	0.1	0.10	0.01	0.5	0.1	0.79	0.05	0.81	-	0.312	0.5	0.5	0.01	0.01	0.10	0.138	0.1	0.3
	QUL-28-0M	2014 08 11	11.4	16.6	0.30	1.91	7.17	0.531	0.843	0.1	0.11	6.08	0.1	0.10	0.01	0.5	0.1	0.56	0.05	0.5	-	0.286	0.5	0.5	0.01	0.01	0.10	0.129	0.1	0.3
	QUL-28	2014 08 12	11.1	16.2	0.30	1.86	2.58	0.485	0.86	0.1	0.11	5.73	0.1	0.10	0.01	0.5	0.1	0.56	0.05	0.78	-	0.312	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3
	QUL-28	2014 08 13	11.2	15.9	0.30	1.9	2.4	0.508	0.846	0.1	0.14	5.83	0.1	0.10	0.01	0.5	0.1	0.52	0.05	0.97	-	0.306	0.5	0.5	0.01	0.01	0.10	0.123	0.1	0.3
	QUL-30	2014 08 07	11.5	16.6	0.30	1.84	0.412	0.46	0.781	0.1	0.1	4.74	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.74	0.05	0.252	0.5	0.5	0.01	0.01	0.10	0.147	0.1	0.3
	QUL-31	2014 08 07	11.4	15.9	0.30	1.89	0.789	0.485	0.837	0.1	0.12	5.19	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.56	0.05	0.311	0.5	0.5	0.01	0.01	0.10	0.133	0.1	0.3
	QUL-32	2014 08 06	10.9	16.4	0.30	1.85	0.355	0.454	0.853	0.1	0.1	4.86	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.7	0.05	0.253	0.5	0.5	0.01	0.01	0.10	0.142	0.1	0.3
	QUL-33	2014 08 06	10.9	16.6	0.30	1.84	0.237	0.434	0.767	0.1	0.1	4.61	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.83	0.05	0.225	0.5	0.5	0.01	0.01	0.10	0.14	0.1	0.3
QUL-34	2014 08 13	10.8	15.9	0.30	1.84	0.13	0.458	0.826	0.1	0.1	5.23	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.74	-	0.31	0.5	0.5	0.01	0.01	0.10	0.141	0.1	0.3	
QUL-35	2014 08 14	11.1	16.4	0.30	1.91	0.547	0.488	0.858	0.1	0.11	5.37	0.1	0.10	0.01	0.5	0.1	0.54	0.05	0.71	-	0.314	0.5	0.5	0.01	0.01	0.10	0.124	0.1	0.3	
QUL-36	2014 08 14	11.4	16.3	0.30	1.86	0.203	0.472	0.818	0.1	0.11	5.2	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.66	-	0.288	0.5	0.5	0.01	0.01	0.10	0.126	0.1	0.3	
QUL-37	2014 08 15	10.3	16.6	0.30	1.86	0.37	0.456	0.808	0.1	0.1	5.05	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.29	0.5	0.5	0.01	0.01	0.10	0.136	0.1	0.3	
QUL-37-7M	2014 08 15	10.2	16.5	0.30	1.86	0.233	0.459	0.805	0.1	0.1	5.01	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.27	0.5	0.5	0.01	0.01	0.10	0.135	0.1	0.3	
QUL-37-TAP	2014 08 15	10.7	16.7	0.30	1.87	0.145	0.451	0.799	0.1	0.11	5.33	0.1	0.10	0.01	0.5	0.1	2.36	0.321	0.5	-	0.302	0.5	0.5	0.01	0.01	0.10	0.143	0.1	0.4	
QUL-38	2014 08 18	9.8	16.2	0.30	1.9	0.386	0.462	0.822	0.1	0.11	5.28	0.1	0.10	0.01	0.5	0.1	0.55	0.05	0.72	-	0.292	0.5	0.5	0.01	0.01	0.10	0.132	0.1	0.3	
QUL-38-2M	2014 08 26	9.6	16.9	0.30	1.92	0.786	0.453	0.825	0.1	0.12	5.47	0.1	0.10	0.01	0.5	0.1	0.98	0.05	0.58	-	0.301	0.5	0.5	0.01	0.01	0.10	0.129	0.1	0.3	
QUL-39	2014 08 18	9.9	16.8	0.30	1.91	0.271	0.446	0.83	0.1	0.1	4.96	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.79	-	0.262	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3	
QUL-60	2014 08 18	10.7	16.6	0.30	1.91	0.529	0.459	0.815	0.1	0.1	5.27	0.1	0.10	0.01	0.5	0.1	0.63	0.05	0.7	-	0.277	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3	
QUL-60-3M	2014 08 26	10	16.8	0.30	1.91	0.847	0.452	0.808	0.1	0.1	5.22	0.1	0.10	0.01	0.5	0.1	1.07	0.05	0.55	-	0.296	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3	
QUL-61	2014 08 18	10	16.6	0.30	1.89	0.412	0.456	0.818	0.1	0.11	5.47	0.1	0.10	0.01	0.5	0.1	0.57	0.05	0.84	-	0.269									

TABLE 1a: Summary of Analytical Results for Mount Polley, Quesnel Lake and River - Surface Water DRAFT

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Dissolved Metals																											
			Dissolved Aluminum (µg/L)	Dissolved Calcium (mg/L)	Dissolved Iron (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Lithium (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
BC Standards			26.1-100 ^d	n.a	350	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
BCWQG Aquatic Life (AW) ^e			50-1000 ^d	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
BCWQG Aquatic Life (30day) (AW) ^{e,c}			200	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
BCWQG Drinking Water (DW)			n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
QUL-67	QUL-67-34M	2014 08 20	11.9	21.8	0.30	2.47	79.9	0.78	2.37	0.15	0.52	15.6	0.1	0.10	0.01	0.5	0.1	3.97	0.05	0.53	-	3.14	0.5	0.5	0.01	0.01	0.10	0.466	0.1	0.3
QUL-68	QUL-68-40M	2014 08 21	11.7	23.3	0.30	2.62	106	0.889	3.46	0.2	0.67	17.3	0.1	0.10	0.01	0.5	0.1	4.2	0.05	1.08	-	4.45	0.5	0.51	0.01	0.01	0.10	0.593	0.1	0.3
QUL-69	QUL-69-32M	2014 08 21	10.1	19.8	0.30	2.26	47.4	0.597	1.72	0.1	0.31	10.3	0.1	0.10	0.01	0.5	0.1	2.53	0.05	0.99	-	1.49	0.5	0.5	0.01	0.01	0.10	0.287	0.1	0.3
QUL-74	QUL-74-46M	2014 08 21	11.4	20.6	0.30	2.29	42.8	0.652	2.11	0.11	0.38	11.4	0.1	0.10	0.01	0.5	0.1	3.33	0.05	0.95	-	2.09	0.5	0.5	0.01	0.01	0.10	0.362	0.1	0.3
QUL-75	QUL-75-40M	2014 08 21	10.5	21	0.30	2.35	46.1	0.685	2.08	0.12	0.42	12	0.1	0.10	0.01	0.5	0.1	3.29	0.05	1	-	2.51	0.5	0.5	0.01	0.01	0.10	0.408	0.1	0.3
QUL-77	QUL-77	2014 08 22	10.2	17	0.30	1.93	0.945	0.458	0.829	0.1	0.1	5.56	0.1	0.10	0.01	0.5	0.1	1.06	0.05	0.85	-	0.272	0.5	0.5	0.01	0.01	0.10	0.137	0.1	0.3
QUL-79	QUL-79-0M	2014 08 25	8.1	14.2	0.30	1.66	0.269	0.382	0.689	0.1	0.1	4.43	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.229	0.5	0.5	0.01	0.01	0.10	0.111	0.1	0.3
	QUL-79-27M	2014 08 25	6.8	18.5	0.30	2.08	5.6	0.491	1.74	0.1	0.12	6.1	0.1	0.10	0.01	0.5	0.1	1.62	0.05	0.5	-	0.528	0.5	0.5	0.01	0.01	0.10	0.177	0.1	0.3
	QUL-79-79M	2014 08 25	6.3	19	0.30	2.11	8.68	0.517	1.32	0.1	0.17	6.65	0.1	0.10	0.01	0.5	0.1	1.4	0.05	0.59	-	0.741	0.5	0.5	0.01	0.01	0.10	0.203	0.1	0.3
	QUL-79-0M	2014 08 27	10.2	16.7	0.30	1.91	0.304	0.44	0.818	0.1	0.1	4.91	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.74	-	0.254	0.5	0.5	0.01	0.01	0.10	0.136	0.1	0.3
	QUL-79-55M	2014 08 27	4.9	18.5	0.30	2.08	0.562	0.46	0.923	0.1	0.1	5.16	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.8	-	0.27	0.5	0.5	0.01	0.01	0.10	0.152	0.1	0.3
QUL-82	QUL-82-2M	2014 08 25	9	16.7	0.30	1.93	0.499	0.465	1.01	0.1	0.11	5.29	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.279	0.5	0.5	0.01	0.01	0.10	0.131	0.1	0.3
	QUL-82-TAP	2014 08 25	9	16.7	0.30	1.91	0.149	0.45	0.806	0.1	0.1	5.29	0.1	0.10	0.01	0.5	0.1	17.6	0.085	0.5	-	0.273	0.5	0.5	0.01	0.01	0.10	0.13	0.1	4.4
QUL-83	QUL-83-2M	2014 08 25	9.1	16.7	0.30	1.92	0.368	0.468	0.831	0.1	0.11	5.33	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.268	0.5	0.5	0.01	0.01	0.10	0.125	0.1	0.3
QUL-84	QUL-84-1M	2014 08 25	9.8	16.9	0.30	1.95	0.406	0.467	0.824	0.1	0.1	5.36	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.51	-	0.269	0.5	0.5	0.01	0.01	0.10	0.126	0.1	0.3
QUL-85	QUL-85-1M	2014 08 25	8.8	16.7	0.30	1.92	0.416	0.46	0.822	0.1	0.13	5.34	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.277	0.5	0.5	0.01	0.01	0.10	0.136	0.1	0.3
QUL-86	QUL-86-1M	2014 08 25	9.8	17	0.30	1.95	0.467	0.459	0.827	0.1	0.16	5.34	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.295	0.5	0.5	0.01	0.01	0.10	0.14	0.1	0.3
QUL-87	QUL-87-0M	2014 08 25	10.3	16.4	0.30	1.89	0.41	0.465	0.807	0.1	0.1	5.07	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.273	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3
	QUL-87-13M	2014 08 25	8.1	17.3	0.30	1.93	0.271	0.455	1.04	0.1	0.1	4.98	0.1	0.10	0.01	0.5	0.1	0.53	0.05	0.5	-	0.248	0.5	0.5	0.01	0.01	0.10	0.143	0.1	0.3
	QUL-87-55M	2014 08 25	5.5	18.1	0.30	2.06	0.142	0.468	0.965	0.1	0.1	4.91	0.1	0.10	0.01	0.5	0.1	0.51	0.05	0.5	-	0.235	0.5	0.5	0.01	0.01	0.10	0.141	0.1	0.3
QUL-88	QUL-88-2M	2014 08 26	9.6	17	0.30	1.97	0.622	0.459	0.809	0.1	0.11	5.01	0.1	0.10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.286	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3
QUL-89	QUL-89-1M	2014 08 27	10.3	16.7	0.30	1.91	0.781	0.474	0.871	0.1	0.12	5.56	0.1	0.10	0.013	0.5	0.1	1.02	0.05	0.5	-	0.295	0.5	0.5	0.01	0.01	0.10	0.134	0.1	0.3
QUL-90	QUL-90	2014 08 27	10	16.7	0.30	1.95	3.63	0.431	0.872	0.1	0.39	5.46	0.1	0.10	0.01	0.5	0.1	0.93	0.05	0.68	-	0.289	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3
	QUL-90-TAP	2014 08 27	4.8	22.9	67	4.61	3.43	0.365	2.16	0.16	0.81	4.77	0.1	0.10	0.01	0.5	0.1	1.85	0.05	0.5	-	0.273	0.5	0.5	0.01	0.01	0.10	0.022	0.1	4.2
SPANISH DW	SPANISH DW	2014 08 23	0.3	41.4	0.30	40.8	0.15	0.734	14.4	8.37	46.7	25.8	0.1	0.10	0.015	0.5	0.41	56.2	2.05	5.99	-	6.82	14.4	0.5	0.016	0.01	0.10	0.283	0.1	65.9

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499710, L1499710, L1499926, L1499947, L1500619, L1501501, L1501518, L1502349, L1502364, L1502370, L1502388, L1503057, L1503061, L1503079, L1503910, L1503913, L1503928, L1503932, L1503933, L1503934, L1504180, L1504213, L1504220, L1504251, L1504261, L1504997, L1505918, L1506551, L1506571, L1506577, L1506586, L1506184, L1502370, L1506989, L1506996, L1507001, L1507291, L1507298, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509507, L1508649, L1509597, L1510231, L1510268, L1510289.

A) Terms defined within the body of SNC-Lavalin's report (available upon request).

□ Denotes concentration less than indicated detection limit or RPD less than indicated value.

- - Denotes analysis not conducted.

n.a Denotes not applicable standard.

□ RPDs are not normally calculated where one or more concentrations are less than five times MDL.

SHADED Concentration greater than BCWQG Aquatic Life (AW) guideline.

BOLD Concentration greater than BCWQG Drinking Water (DW) guideline.

SHADED Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.

BOLD Concentration greater than or equal to Canadian Drinking Water Quality (DW) guideline.

^a Laboratory detection limit out of range.

^b British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

^c A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

^d Guideline varies with pH, and/or Temperature or Hardness.

TABLE 2a: Summary of Analytical Results for Mount Polley, Quesnel Lake - Sediment

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Grain Size			
			Gravel (%)	Sand (%)	Silt (%)	Clay (%)
QUL-14	QUL-14-S	2014 08 07	3.19	50.2	39.3	7.27
QUL-15	QUL-15-S	2014 08 07	1.43	68.7	28.4	1.52
QUL-16	QUL-16-S	2014 08 07	□ 0.1	68.7	30.1	1.23
QUL-23	QUL23	2014 08 10	□ 0.1	52.7	44.5	2.85
QUL-24	QUL24	2014 08 10	0.61	52	37.8	9.64
QUL-25	QUL25	2014 08 10	2.09	52.7	38.2	7.05
QUL-27	QUL27-140813	2014 08 13	□ 0.1	66.5	31.6	1.89
	QUL27	2014 08 13	□ 0.1	66.5	31.6	1.89
QUL-30-01	QUL30-01	2014 08 12	7.12	57.9	33.8	1.13
QUL-30-02	QUL30-02	2014 08 12	0.64	81.5	17.2	0.66
QUL-30-03	QUL30-03	2014 08 12	2.86	89.3	7.32	0.49
QUL-43	QUL43-140813	2014 08 13	5.54	45.9	39.3	9.31
	QUL43	2014 08 13	5.54	45.9	39.3	9.31
QUL-44-01	QUL44-01	2014 08 12	□ 0.1	26	70	3.92
QUL-44-02	QUL44-02	2014 08 12	8.81	74.9	15.1	1.25
QUL-44-03	QUL44-03	2014 08 12	8.23	56.9	32.3	2.56
QUL-45-01	QUL-45-01	2014 08 13	□ 0.1	50.2	41.7	8.07
QUL-45-02	QUL-45-02	2014 08 13	5.34	45.7	38.2	10.8

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- Denotes analysis not conducted.
- n/a Denotes no applicable standard.

RPD Denotes relative percent difference.

TABLE 2: Summary of Analytical Results for Mount Polley, Quesnel Lake - Sediment

Sample Location	Sample ID	Sample Date (yyyy mm dd)	TOC (%)
QUL-14	QUL-14-S-1	2014 08 07	0.18
	QUL-14-S-163UM	2014 08 07	0.12
	QUL-14-S-2	2014 08 07	0.12
	QUL-14-S-263UM	2014 08 07	0.16
	QUL-14-S-3	2014 08 07	0.1
	QUL-14-S-363UM	2014 08 07	0.12
QUL-15	QUL-15-S-1	2014 08 07	□ 0.1
	QUL-15-S-163UM	2014 08 07	0.1
	QUL-15-S-2	2014 08 07	0.11
	QUL-15-S-263UM	2014 08 07	□ 0.1
	QUL-15-S-3	2014 08 07	0.12
	QUL-15-S-363UM	2014 08 07	0.15
QUL-16	QUL-16-S-1	2014 08 07	0.11
	QUL-16-S-163UM	2014 08 07	□ 0.1
	QUL-16-S-2	2014 08 07	0.11
	QUL-16-S-263UM	2014 08 07	0.12
	QUL-16-S-3	2014 08 07	0.1
	QUL-16-S-363UM	2014 08 07	0.13
QUL-23	QUL23	2014 08 10	0.27
	QUL2363UM	2014 08 10	0.22
QUL-24	QUL24	2014 08 10	0.25
	QUL2463UM	2014 08 10	0.28
QUL-25	QUL25	2014 08 10	0.22
	QUL2563UM	2014 08 10	0.18
QUL-27	QUL27	2014 08 13	0.17
	QUL27 63UM TOC	2014 08 13	0.15
	QUL27	2014 08 13	0.17
	QUL2763UMTOC	2014 08 13	0.15
QUL-30-01	QUL30-01	2014 08 12	0.51
	QUL30-0163UMTOC	2014 08 12	0.61
QUL-30-02	QUL30-02	2014 08 12	0.37
	QUL30-0263UMTOC	2014 08 12	0.58
QUL-30-03	QUL30-03	2014 08 12	0.25
	QUL30-0363UMTOC	2014 08 12	0.63
QUL-43	QUL43	2014 08 13	0.24
	QUL43 63UM TOC	2014 08 13	0.12
	QUL43	2014 08 13	0.24
	QUL4363UMTOC	2014 08 13	0.12
QUL-44-01	QUL44-01	2014 08 12	3.59
	QUL44-0163UMTOC	2014 08 12	2.69
QUL-44-02	QUL44-02	2014 08 12	0.69
	QUL44-0263UMTOC	2014 08 12	1.39
QUL-44-03	QUL44-03	2014 08 12	1.79
	QUL44-0363UMTOC	2014 08 12	1.97
QUL-45-01	QUL-45-01	2014 08 13	0.25
	QUL-45-0163UMTOC	2014 08 13	0.23
QUL-45-02	QUL-45-02	2014 08 13	0.3
	QUL-45-0263UMTOC	2014 08 13	0.26

Associated ALS files: L1499703, L1500632, L1502319, L1503198, L1503207.

All terms defined within the body of SNC-Lavalin's report (available upon request).

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RPD Denotes relative percent difference.



**MOUNT POLLEY MINING
CORPORATION**
IMPERIAL METALS CORPORATION

Date September 5, 2014

Ministry of Environment,
Mining Operations Environmental Protection
2080 Labieux Rd.
Nanaimo, B.C. V9T 6J9

Attention: Hubert Bunce, Director Environmental Management Act

Re: Weekly Update for week ending September 3, 2014

Monitoring Update

As of September 3, 2014, the Monitoring Program implemented in response to the tailings release consists of the following: 1) Water Quality Programs (Quesnel Lake, Polley Lake, Residential Intakes, and Hazeltine Creek), 2) Sediment Quality (Quesnel Lake), 3) Fish Sampling, and 4) Soil Sampling. The following sections summarize the programs, changes, and key actions and interactions relevant to the program.

Water Quality Programs

More than 80 water quality sampling locations have been established as of September 3, 2014 to assess and monitor water quality as part of the program. Drawing 621717-005 shows sample locations

The following parameters continue to form the basis for the monitoring program and evaluating impacts to water quality as a result of the release.

- Total and dissolved metals (including mercury);
- Anions: sulphate, chloride, fluoride;
- Nutrients: total ammonia, nitrate, nitrite, total nitrogen, total Kjeldahl nitrogen, orthophosphate, total phosphorous, dissolved phosphorous; and
- Toxicity testing: acute and/or chronic

Table A below summarizes the various Water Quality Programs. With the exception of toxicity testing, results have been provided in Tables 1a, 3, and 4 (attached).

TABLE A: Summary of Water Quality Monitoring Programs

Monitoring Program	Area	Frequency	Sample Locations
Surface Water Quality	Quesnel Lake	Single Sample	No additional sample locations added to program
		Repeated Sites	QUL-3 , QUL-18, QUL-20, QUL-23 As of week of August 28, 2014: Ongoing repeated sampling (approximately every other day) is being carried out at locations QUL-18, QUL-20, and QUL-23
	Polley Lake	Repeated Sites	POL-3, POL-4 As of week of August 28, 2014: Ongoing repeated sampling (weekly) is being carried out at locations POL-3 and POL-4.
	Polley Discharge and Hazeltine Crk.	Sampling Sites	HAD-1 (Daily), HAD-2 (Daily), HAC-01 (every other day), HAC-02, HAC-03, HAC-04, HAC-05, and HAC-06. As of week of August 28, 2014: HAD-1 and HAD-2 collected on an approximate daily basis. HAC-01 collected every other day.
	Quesnel River	Repeated Sites	QUR-1 (includes QURU-1x & QUR-3). ISKO sampler collects 3 samples per day. A fourth grab sample is also collected at this location. A datalogger records measurements of pH, temperature, conductivity, and conductivity every 15 minutes).
Water Quality Profiles	Quesnel Lake	Single Sample	QUL-ST-FFF-1, QUL-ST-REF-1, QUL-96
		Repeated Sites	QUL-2,, QUL-20, QUL-21, QUL-22, QUL-66, QUL-79, As of week of August 28, 2014: QUL-2, QUL-21, QUL-22, QUL-66, and QUL-79 are visited on a rotational basis approximately every other day. Samples are collected near surface and near lake bottom, and in consideration of CTD field monitoring results.
Residential Water Intake Sampling Program	Quesnel Lake	Single Sample	QUL-91, QUL-92, QUL-93, QUL-94, QUL-95, QUL-100, QUL-101
		Repeated Sites	QUL-37, QUL-38, QUL-60, and QUL-61.

Results of the toxicity testing completed to date are provided in Table B. Additional results are pending and will be updated as they become available.

Table B: Summary of Draft Water Toxicity Testing

Date	Location	Location Description	Acute (96h) Rainbow Trout ¹	Acute (48-h) Daphnia magna ²	Sublethal (7-d) fish survival and growth ³	Sublethal (7-d) invertebrate survival and reproduction ⁴	Sublethal (72-h) algal growth ⁵	Sublethal (7-d) plant growth ⁶	Results
August 6, 2014	QUR-1	Quesnel River at Research Station				✓			LC50, IC25, IC50 all >100%
August 9, 2014	POL-2	Polley Lake near South End				✓			LC50, IC25, IC50 all >100%
August 13, 2014	HAD-1	Discharge from Polley to Hazeltine	□	□	✓	✓	✓	✓	> 100% for all tests
August 20, 2014	HAD-1	Discharge from Polley to Hazeltine	✓	✓					100% survival
August 21, 2014	QUL-66-40m	Quesnel Lake Plume	✓	✓	✓	✓	✓	✓	100% acute survival; awaiting sub-lethals
August 28, 2014	QUL-66-40m	Quesnel Lake Plume	✓	✓	✓	✓	✓	✓	Pending
September 3, 2014	QUL-66-45m	Quesnel Lake Plume			✓	✓			Pending
September 3, 2014	HAD-2	Discharge from Polley to Hazeltine			✓	✓			Pending

¹Rainbow trout acute lethality (96-hours)

²Daphnia magna acute lethality (48-hours)

³Fathead minnow survival and growth (7-days)

⁴Ceriodaphnia dubia survival and reproduction (up to 8-d)

⁵Algal growth (Pseudokirchneriella subcapitata - 72-hours)

⁶Plant growth (Lemna minor - 7-days)

Sediment Quality Program

Since August 28, 2014, an additional five sampling locations (HAC-REF-1, HAC-REF-2, HAC-REF-3, QUL-ST-REF, QUL-ST-FFF) have been established as part of the sediment monitoring program. These and previously collected sediment sample locations are shown on Drawing 621717-006 (attached). Available sediment data is provided on Tables 2a and 5a (attached).

Summary of Modifications to the Monitoring Program

- A review of current analytical and field monitoring results in progress and adaptations to the monitoring program will be considered on an ongoing basis.
- Water quality at HAD-2 is similar to that measured at HAD-1 (similar intake locations). Therefore HAD-1 is being dropped from the sampling program. Field monitoring will continue to confirm similar field measurements (EC, pH, etc.). HAD-1 will be monitored on a weekly basis going forward.
- POL-3 and POL-4 will be reduced to sampling on a monthly basis going forward. Additional sampling and profiling being considered for water quality impact assessment.
- HAC-01 will continue with sampling every other day.
- Requests for monitoring of water quality at residential intakes are being catalogued and an appropriate program will be developed for ongoing response to these requests.
- Toxicity testing at QUL-66 (within plume) will continue on a weekly basis; however, only for sublethal tests.
- Mercury parameters are being dropped from routine monitoring program and are being considered as part of water quality impact assessment.
- Profiling locations (CTD and sampling) are being completed on a daily rotational basis (every other day) to confirm surface water quality and quality near the bottom of the lake, and at elevated CTD and/or turbidity readings.
- Evidence of a sediment plume near surface in Quesnel Lake in the area of Hazeltine Creek triggered some reactive profiling and sampling by field crews.
- Water samples below TSF breach location (BREACH-1) added to routine monitoring program on a weekly basis.

Gaps Identified in the Monitoring Program and Next Actions

Plume Monitoring remains a priority. Some additional profiling and sampling was completed near the mouth of Hazeltine Creek within Quesnel Lake. Data from the EBA Tetra-Tech vessels are being evaluated and considered in monitoring program going forward.

Summary of Daily Observations and Public Interactions

August 28 to September 3 □ Ongoing dialogue and data review with private property and lodge owners regarding water quality results as requested.

September 3- Residential sample data made available for review on a request by request basis.

August 28 □ Two vessels (EBA TetraTech) equipped for bottom, sediment, and plume mapping are implementing related scopes of work. Equipment on board vessels includes deep water monitoring and sampling devices.

August 29 □ MPMC is evaluating proposals from UNBC for opportunities for partnering and integration with the planned CEIA.

September 3- Evidence of a sediment plume near surface in Quesnel Lake in the area of Hazeltine Creek toward Mitchell Bay triggered some reactive profiling and sampling by field crews.

Sincerely,

MOUNT POLLEY MINING CORPORATION

Via email

Jack Love, R.P.Bio.
Environmental Manager
Imperial Metals-Red Chris Mine-Mount Polley Mine-Hwy37 Power Corp
604-358-2699 MOBILE
250-790-2215 2560

From: [Brody, Margo X MEM:EX](#)
To: [Howe, Diane J MEM:EX](#); [Hoffman, Al MEM:EX](#); [Demchuk, Tania MEM:EX](#)
Subject: FW: Permit information for Mt. Polley tailings pond.
Date: Monday, September 8, 2014 9:02:07 AM

Hi Diane and Al,

How would you advise that I respond t s.22

If this particular document exists, then he should apply through the FOI process.

I can send him the link? I believe he is seeking information particular to Mount Polley only as stated in the subject line.

Margo

From s.22
Sent: Saturday, September 6, 2014 9:02 AM
To: Brody, Margo X MEM:EX
Subject: Re: Permit information for Mt. Polley tailings pond.

Hi, Margo. I have written to the Minister of Energy and Mines, as well as Heather Cullen, MEM Regional Director and Victor Koyangi, Senior Inspector of Mines, Permitting requesting a copy of the Mining Operations guidelines for tailings impoundment facilities (Sep. 3rd, 2014) but have received no response. In fact, my requests for information to the minister have gone unanswered since mid-August. I was curious if you knew how I might obtain guidelines for design of tailings impoundment facilities and for water storage facilities, as required under:

APPLICATION REQUIREMENTS FOR A PERMIT APPROVING THE MINE PLAN AND RECLAMATION PROGRAM PURSUANT TO THE MINES ACT R.S.B.C. 1996, C. 293 (March 1998) on the MEM website, part 2.3.2 Mine Plan and Reclamation Program Information Requirements for the Project Report, found on (<http://www.empr.gov.bc.ca/mining/permitting-reclamation/permitapplicationrequirements/pages/default.aspx#3.5>).

Thanks for any suggestions you might have.

On 3 September 2014 09:24, Brody, Margo X MEM:EX <Margo.Brody@gov.bc.ca> wrote:
Hell s.22

All the information you are seeking is outlined in the Ministry's website including government contacts for permit applications.

There are sections within the website that outline the permitting process.

<http://www.gov.bc.ca/ener/> or if you google: Ministry of Energy and Mines, Victoria the website should appear.

There are also daily updates on Mount Polley. I hope this information will answer your questions.

Thank you,

Margo Brody

Branch Coordinator

Health, Safety and Permitting Branch

Ministry of Energy and Mines

[250-952-0793](tel:250-952-0793)

From: s.22
Sent: Tuesday, September 2, 2014 5:23 PM

To: Brody, Margo X MEM:EX

Subject: Re: Permit information for Mt. Polley tailings pond.

Thanks for getting back to me, Margo. My request centers around a desire to better understand the permitting process in instances like the Mount Polley tailings pond. Could you outline for me the process involved, namely, who is ultimately responsible for granting the permit? What sort of logics are applied when evaluating a permit application---for instance, does the government of BC have engineers who study the proposal and issue a green light if they think it is a workable proposal? Obviously, someone in the chain of governmental oversight is responsible for granting mining companies permits, correct? Or there wouldn't be permits issued. But who is that person? What is his/her position? Name? Or is the Minister the responsible one?

On 2 September 2014 14:30, Brody, Margo X MEM:EX <Margo.Brody@gov.bc.ca> wrote:
Hello s.22

My apologies for the delay in response s.22

I have forwarded your email onto our communications department that will hopefully get back to you as soon as they are able.

Virtually all of our staff are working on the situation at Mount Polley and we should have some results in the near future.

An investigation is ongoing and few people are presently in the office at this time.

Thank you for email and for expressing your concerns to us.

Sincerely,

Margo Brody

Branch Coordinator

Health, Safety and Permitting Branch

Ministry of Energy and Mines

[250 952 0793](tel:250-952-0793)

From s.22

Sent: Tuesday, September 2, 2014 1:35 PM

To: Brody, Margo X MEM:EX

Subject: Re: Permit information for Mt. Polley tailings pond.

Hi, Margo. I am writing as it is September 2nd and I haven't heard from your office. I attempted to contact Megan Metcalfe but, as I outlined previously, Metcalfe@gov.bc.ca, is an inoperative account and results in a delivery failure notification. I wrote you ten days ago to learn more about the tailings pond permit process in BC. It appears to be a bit of a disaster up at Mt. Polley (the Imperial Metals tailings pond) and I am writing to ask for information on their permit. Specifically, who approved it? What baseline criteria are used when assessing a permit? I also have asked the Honorable Bill Bennett MEM about the constituents of the tailings pond at that site as ample time has passed for tests to be made and the results to be made public. Do you have any information on this?

On 23 August 2014 16:22 s.22 > wrote:

Hi, Margo, my name is s.22 I am writing to learn more about the tailings pond permit process in BC. Theoretically, how would, say, Imperial Metals go about obtaining a permit for the construction and operation of a tailings pond? And, let's just say, if they obtained such a permit, what would they need to do if they wished to increase the volume of materials in that pond? It seems---and I'm just a lay observer---that the volume in the Mt. Polley tailings pond exceeded the capacity of the structure built to contain it.

s.22

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.....- Line variation of Burnham's *The Only Poetry That Matters* (2011).

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From: [Demchuk, Tania MEM:EX](#)
To: [Brody, Margo X MEM:EX](#); [Howe, Diane J MEM:EX](#); [Hoffman, AI MEM:EX](#)
Subject: RE: Permit information for Mt. Polley tailings pond.
Date: Monday, September 8, 2014 9:23:36 AM
Attachments: image001.png

Margo,
I will reply and cc you.
Cheers,
Tania

From: Brody, Margo X MEM:EX
Sent: Monday, September 8, 2014 9:23 AM
To: Howe, Diane J MEM:EX; Hoffman, AI MEM:EX; Demchuk, Tania MEM:EX
Subject: RE: Permit information for Mt. Polley tailings pond.
So how should I reply?

From: Howe, Diane J MEM:EX
Sent: Monday, September 8, 2014 9:12 AM
To: Brody, Margo X MEM:EX; Hoffman, AI MEM:EX; Demchuk, Tania MEM:EX
Subject: RE: Permit information for Mt. Polley tailings pond.
Heather sent me the same and I have forwarded to Sara. I figure anything with Mt Polley needs to be handled as we have set out to do.
Regards, Diane

Diane Howe

Deputy Chief Inspector, Reclamation and Permitting
Ministry of Energy and Mines
Victoria, BC
(250) 952-0183



From: Brody, Margo X MEM:EX
Sent: Monday, September 8, 2014 9:02 AM
To: Howe, Diane J MEM:EX; Hoffman, AI MEM:EX; Demchuk, Tania MEM:EX
Subject: FW: Permit information for Mt. Polley tailings pond.
Hi Diane and AI,

How would you advise that I respond to s.22
If this particular document exists, then he should apply through the FOI process.
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AND RECLAMATION PROGRAM PURSUANT TO THE MINES ACT R.S.B.C. 1996, C. 293 (March 1998) on the MEM website, part 2.3.2 Mine Plan and Reclamation Program Information Requirements for the Project Report, found on (<http://www.empr.gov.bc.ca/mining/permitting-reclamation/permitapplicationrequirements/pages/default.aspx#3.5>).

Thanks for any suggestions you might have.

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There are also daily updates on Mount Polley. I hope this information will answer your questions.

Thank you,

Margo Brody

Branch Coordinator

Health, Safety and Permitting Branch

Ministry of Energy and Mines

[250 952 0793](tel:250-952-0793)

From

s.22

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Margo Brody

Branch Coordinator
Health, Safety and Permitting Branch
Ministry of Energy and Mines
[250 952 0793](tel:250-952-0793)

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From: [Demchuk, Tania MEM:EX](#)
To: [Demchuk, Tania MEM:EX](#); [Hoffman, Al MEM:EX](#); [Thorpe, Rolly MEM:EX](#); [Pocklington, Cheryl M MEM:EX](#); [Kuppers, Haley MEM:EX](#); [Hemphill, Naomi MEM:EX](#); [Warnock, George MEM:EX](#); [McLeod, Harvey](#); [Nakatsuka, Caroline M MEM:EX](#); [Cumming, Rory MEM:EX](#); [Day, Alan MEM:EX](#)
Cc: [Morel, David P MEM:EX](#); [Howe, Diane J MEM:EX](#); [Bellefontaine, Kim MEM:EX](#); [Narynski, Heather M MEM:EX](#); [Rothman, Stephen MEM:EX](#)
Subject: RE: Mount Polley - highlights from the Sept 16 phone calls
Date: Wednesday, September 17, 2014 6:47:07 AM

Highlights from 11:00 am EMBC call (from Kim Bellefontaine):

- Weather today is sunny and warm. Cloudy tomorrow with rain Wednesday evening; 5-10mm expected overnight. Thursday scattered showers with 2-5mm expected. Return to sunny and warm conditions Friday through Monday next week.
- The main dyke is now 100% complete. They are monitoring the dyke and there have been no signs of instability and no rock falls.
- Work will begin tomorrow on a ramp on the upstream side to provide access to the sump.
- Geotech engineers have given a maximum 4m elevation of slurry in the upstream sump before it has to be pumped out. Current level is 3.6m, but is increasing gradually. They have the ability to drop in a pump if needed. New slurry pumps are expected to be on-site on Friday and should be in place in the upstream sump by early next week.
- All breach water is currently contained.
- Polley Lake is at elevation 922.69 (down 66 cm since the breach); pumping at a rate of 17,000 gpm. The sediment plug is stable.
- MPMC has engineered bridge drawings for Gavin Road. Hope to proceed soon.
- The silt curtain is in place at the mouth of Hazeltine Creek. The company continues to make progress with removing debris in this area.
- Sampling is occurring by MOE and company in Polley Lake. Company reports that elevated turbidity continues at depth in Quesnel Lake, and that they have seen some improvement yesterday.
- Company taking some residential intake sampling.
- Company has conducted grass seeding of the plug, Hazeltine Creek and TSF areas.
- MOE will have more results posted on its website later this week.
- The State of Local Emergency has been extended for another week.

Highlights from 3:00 pm MPMC/MOE/MEM call (from Tania Demchuk): (building on the above notes)

- * Polley Lake level at 922.66 m. (NOTE: clarification from Al Day that one pipeline is currently in use as the site adjusts the alignment of the other)
- * Ponded water on the upstream side of the main dyke increased approx 5 cm, however Greg (BGC) indicated this may be related to construction causing tailing to shift in the area.
- * When installed the pumps on the upstream side will convey water to an area between the satellite dyke and the main dyke where there is good flow through the main dyke.
- * The breach sump was not working for a period of time, however secondary pumps continued to pump water and there was no discharge to the receiving environment.
- * The piles of sediment beside the newly constructed channel will be "knocked down" and seeded.
- * 18 soil sampling transects at 500 m intervals have been completed by SNC and SRK. > 500 samples have been collected.
- * Monitoring is ongoing. Noted that Quesnel Lake is appearing darker and clearer. Have added 3 new residential sampling sites.
- * Work in the area of the TSF is being challenged by 3 bears (mom and 2 cubs). They have been around the area for a while, appear habituated. Site has been in contact with the conservation service. (note: these are the same 3 bears discussed in mid-August).
- * ASIDE: Mount Polley gave notification to MEM that they will be submitting an application for permit amendment

to install water treatment to discharge from the Springer pit to Bootjack Lake. Similar notice has been sent to MOE. They would like to have MEM and MOE approvals in place ahead of freshet to ensure there continues to be adequate storage capacity for site contact water in the Springer Pit.

Tania

Tania Demchuk, MSc, GIT
Senior Environmental Geoscientist
Mines and Mineral Resources Division
Ministry of Energy and Mines
250-952-0417

Drafted by: Policy , MMRD
Approved by: David Morel, ADM, MMRD ✓
Dave Nikolejsin, DM, MEM ✓

Ref.: 86135

Mount Polley Tailings Dam Failure

Standard Wording – MO approved as of Sept 22, 2014

Writer's Name
Address (if letter)

Email: (Writer's Email Address)

Dear (Writer's Name):

Thank you for your (date) (email/letter) regarding the Mount Polley tailings pond breach.

The Government of British Columbia has ordered an independent inquiry into the Mount Polley tailings pond breach and independent third-party reviews of all 2014 Dam Safety Inspections for every tailings pond in the Province.

The independent geotechnical inquiry is authorized under Section 8 of the *Ministry of Energy and Mines Act*, and will be conducted by a panel of experts that will investigate and report out on the cause of the August 4, 2014 breach. The panel will make recommendations to ensure that such an incident never happens again, and will have the ability to compel evidence and witness testimony. A final report will be provided by January 31, 2015 and subsequently be made public.

The Chief Inspector of Mines has also issued a directive to all mining companies to conduct a Dam Safety Inspection for every permitted tailings storage facility by December 1, 2014. Under this directive, those inspections must be reviewed by an independent qualified third-party professional engineer from a firm not associated with the tailings facility. All information obtained under this directive will be made public.

Mining is a critical industry in British Columbia that supports dozens of communities and thousands of families. Mining also supports more First Nations jobs than any other industry in Canada. The independent geotechnical inquiry and third-party reviews of Dam Safety Inspections for every permitted tailings facility in the Province will get the answers necessary to provide public confidence following this serious incident.

Please be assured that the Ministry of Energy and Mines takes the Mount Polley incident very seriously. The Province has a responsibility, as the jurisdiction where this failure took place, to find out exactly why it happened and ensure it never happens again.

Thank you(, again,) for writing.

Sincerely,

Bill Bennett
Minister (if response is a letter)
Minister of Energy and Mines (if response is an email)

From: [Demchuk, Tania MEM:EX](#)
To: [Warnock, George MEM:EX](#); [Hoffman, Al MEM:EX](#)
Cc: [Howe, Diane J MEM:EX](#); [Narynski, Heather M MEM:EX](#)
Subject: RE: When you get a chance
Date: Thursday, October 2, 2014 3:44:10 PM
Attachments: Statement_CIM-Sep30-ADMApproved.docx

FYI - Al's statement has been changed. (attached)

The sentence in question now reads:

"We have a responsibility to find out exactly why the breach at the tailings storage facility at the Mount Polley mine happened and take actions to reduce the risk of this happening again. To that end, there are currently three comprehensive investigations taking place."

-----Original Message-----

From: Warnock, George MEM:EX
Sent: Tuesday, September 30, 2014 9:12 PM
To: Hoffman, Al MEM:EX
Cc: Morel, David P MEM:EX; Demchuk, Tania MEM:EX; Howe, Diane J MEM:EX; Amann-Blake, Nathaniel MEM:EX; Narynski, Heather M MEM:EX
Subject: Re: When you get a chance

I agree Al,

We could not guarantee that failures would not occur even if we had a geotechnical inspector living at each mine in the province. How about: "take actions to reduce the risk of something like this happening again", or similar.

I always think of the Titanic engineer that said, "even God can't sink this ship." There are too many variables in geotechnical engineering to guarantee that a failure will not occur. That is not to say that we accept failures - we will do everything that we can to avoid them.

My two bits,

George

Sent from my iPhone

On Sep 30, 2014, at 8:35 PM, "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca> wrote:

The statement that I " take actions to ensure that this never happens again" is very strong. I don't think that we can guarantee this.

Al

Sent from my iPhone

Begin forwarded message:

From: "Demchuk, Tania MEM:EX" <Tania.Demchuk@gov.bc.ca<<mailto:Tania.Demchuk@gov.bc.ca>>>
To: "Hoffman, Al MEM:EX" <Al.Hoffman@gov.bc.ca<<mailto:Al.Hoffman@gov.bc.ca>>>
Subject: RE: When you get a chance

Please see attached.

T

-----Original Message-----

From: Hoffman, Al MEM:EX

Sent: Tuesday, September 30, 2014 6:08 PM

To: Demchuk, Tania MEM:EX

Subject: When you get a chance

Can you send a draft of my public statement

Sent from my iPhone

<Q1 Statement from CIM_Sep30(MMRD2).docx>

From: [Morel, David P MEM:EX](#)
To: [Howe, Diane J MEM:EX](#); [Hoffman, Al MEM:EX](#); [Warnock, George MEM:EX](#); [Demchuk, Tania MEM:EX](#); [Amann-Blake, Nathaniel MEM:EX](#); [Bose, Sara MEM:EX](#)
Subject: Tailings Presentation to SSN
Date: Thursday, October 2, 2014 12:04:36 PM
Attachments: Tailings Management.pdf

Attached FYI is presentation given by New Gold to SNN Chiefs and Councils earlier today. SNN had raised concerns about TSFs after Mt Polley. I think these types of presentations are very helpful in explaining to FNs and communities TSFs and ongoing work and safety and build confidence in mining.

David

STATEMENT

For Immediate Release
[release number]
[date]

Ministry of Energy and Mines and
Responsible for Core Review

Statement from the Chief Inspector of Mines on Mount Polley

VICTORIA – British Columbia’s Chief Inspector of Mines issued the following statement regarding his investigation of, and public release of information potentially related to, the breach of the tailings storage facility at the Mount Polley mine on August 4, 2014:

“We have a responsibility to find out exactly why the breach at the tailings storage facility at the Mount Polley mine happened and take actions to reduce the risk of this happening again. To that end, there are currently three comprehensive investigations taking place.

“As Chief Inspector of Mines, I am conducting an independent investigation under the Mines Act to determine the root cause of the breach. My investigation team has been at the mine site examining every aspect of the failure – collecting information, conducting geotechnical studies and interviewing individuals associated with operation of the mine. All documents related to the history, design, construction, operation, and monitoring of the tailings facility are being thoroughly reviewed. The team has already interviewed over 50 individuals and compiled many volumes of information. This investigation is expected to take several more months.”

The Conservation Officer Service, an independent law enforcement body, is conducting its own independent investigation with the authority to forward any recommendations for charges if warranted directly to the provincial Crown Counsel.

With the support of the Soda Creek Indian Band (Xats’ull First Nation) and the Williams Lake Indian Band, the Government of British Columbia has also ordered an independent investigation that is being conducted by a panel of geotechnical experts.

“Government must protect the integrity and independence of these investigations to ensure we determine how the breach occurred, and that we do not compromise the integrity of the collection of information and evidence.

“For that reason I have advised the Ministry of Energy and Mines not to release or comment on materials directly or indirectly related to the Mount Polley investigation, including annual dam safety inspection reports submitted by the company in accordance with the Health, Safety and Reclamation Code for Mines in British Columbia.

“It is important to note that upon completion of the investigations, and within the law, it is my intent that findings and other appropriate documentation will be made available to the public and media.

“I understand the public’s high level of interest in information related to the tailings facility at the Mount Polley mine, but to release this material while investigations are underway would be contrary to sound investigative practise and the public interest.”

Contact:

Jake Jacobs

Ministry of Energy and Mines

250 952-0628



New Afton Tailings Management

SSN Joint Chief and Council

October 2, 2014

- Objectives
- What are Tailings?
- Tailings Storage Facilities
- Tailings Storage Facility Design
- What if?
- Inspection and Monitoring
- Reporting
- Closure Plan
- Q&A

- What are tailings?
- Overview of tailings dams and their construction
- Overview of New Afton TSF and its management
- Opportunity for questions/dialogue on tailings management at New Afton

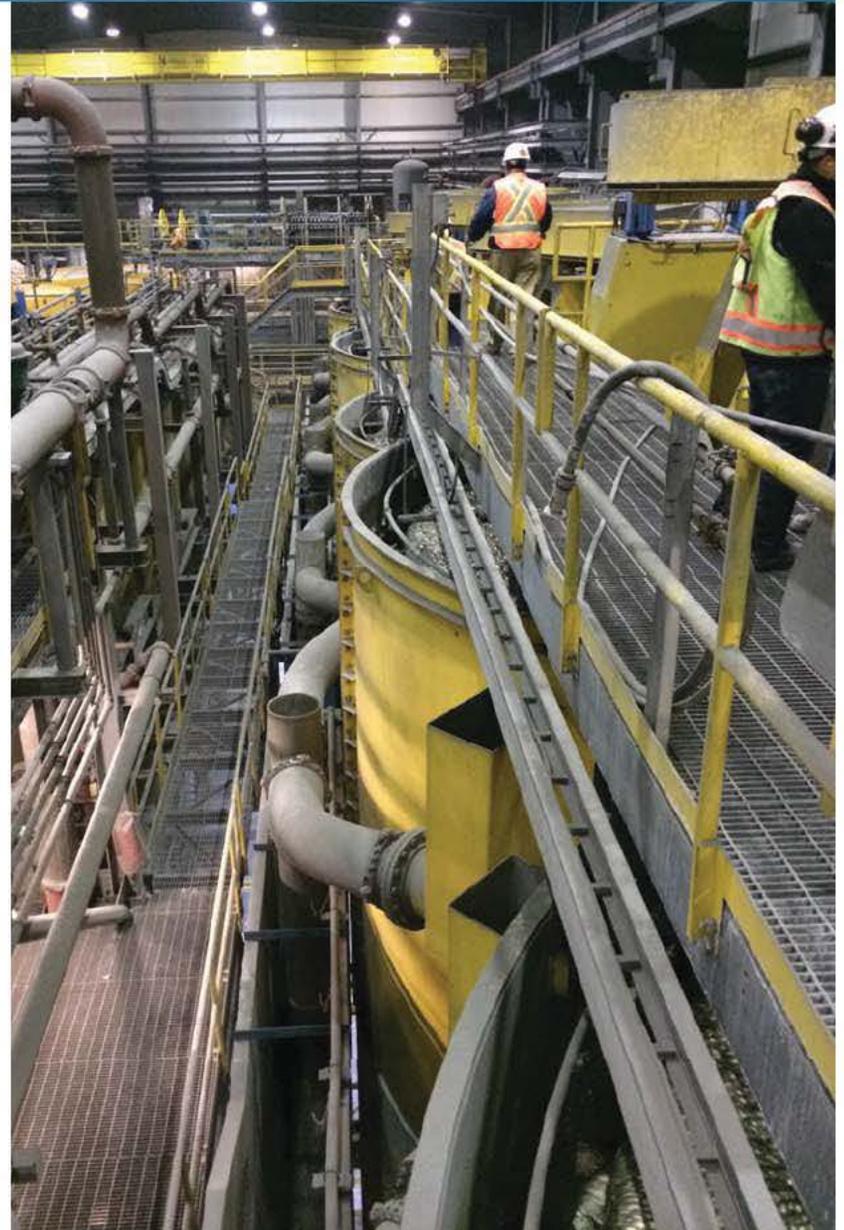
Tailings – What are they?

- Rock from the underground mine is crushed and conveyed to the process plant for further crushing down to sand size particles.
- Mechanical and chemical processes are used to extract the minerals, and the remaining sand are called tailings.



- Chemicals added during processing in order to extract the metals
 - Flocculant
 - PAX
 - MIBC
 - Lime

- What are in the tailings?
 - Primarily silica and aluminum (~64%)
 - Iron (~7%)
 - Calcium and Magnesium (~19%)
 - Low sulphur (0.3-0.6%)
 - Some trace metals present
 - Copper
 - Arsenic
 - Lead



Tailings – Transportation



Tailings are pumped as a slurry consisting of ~20% solids and 80% water

Tailings pipes are either rubber lined steel or heavy duty poly-ethylene



Tailings deposited into storage facility



Tailings – Water reclaim

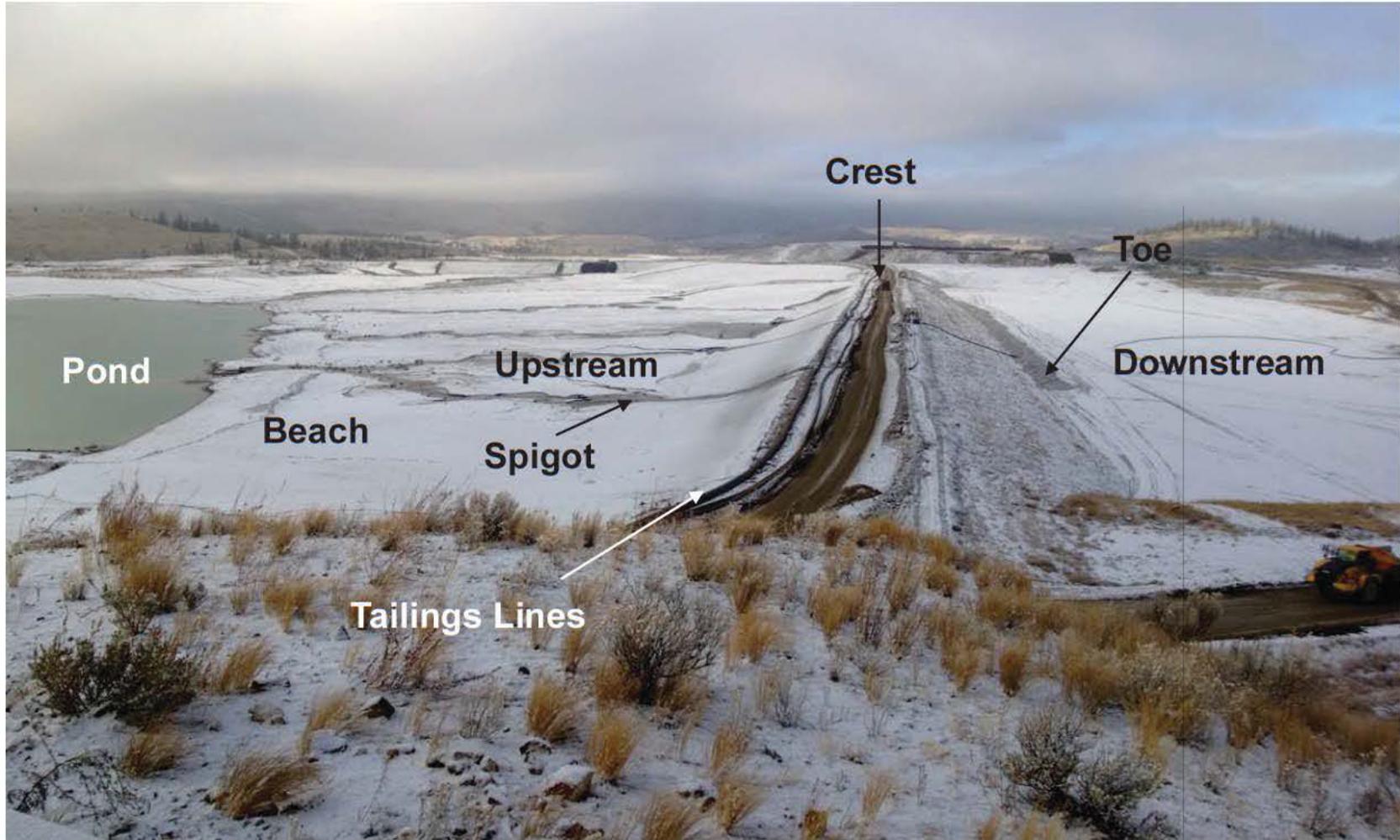
newgold™

Water is pumped back from the tailings facility for re-use in the processing

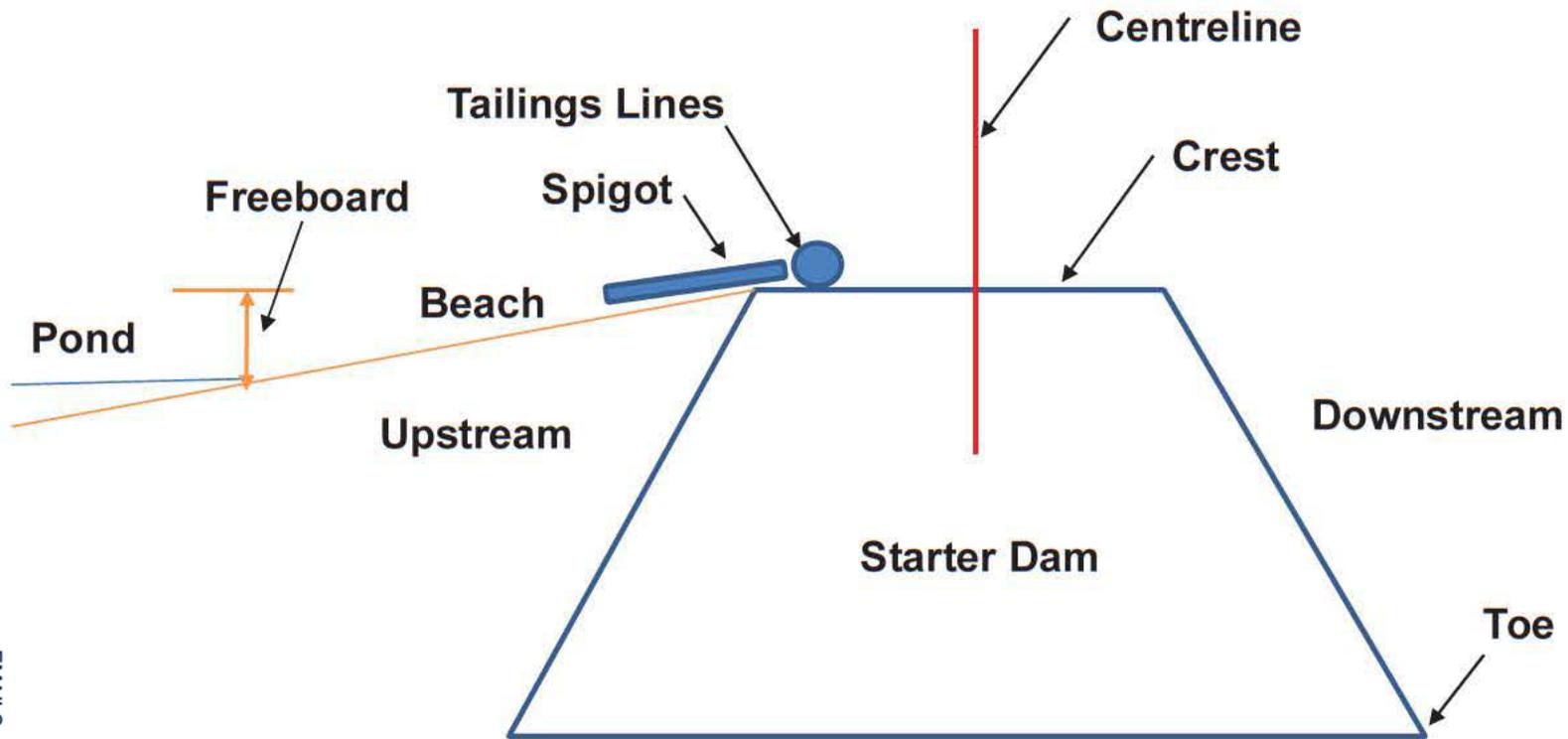


Tailings Storage Facility – Layout at New Afton





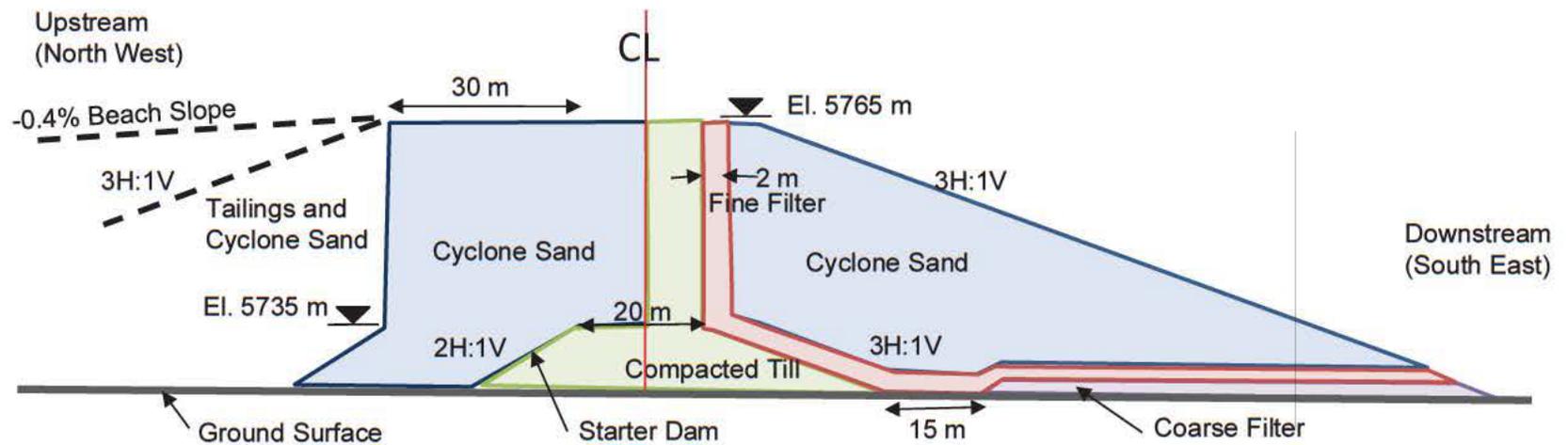
Tailings Dam - Terminology



Tailings Dam - Components



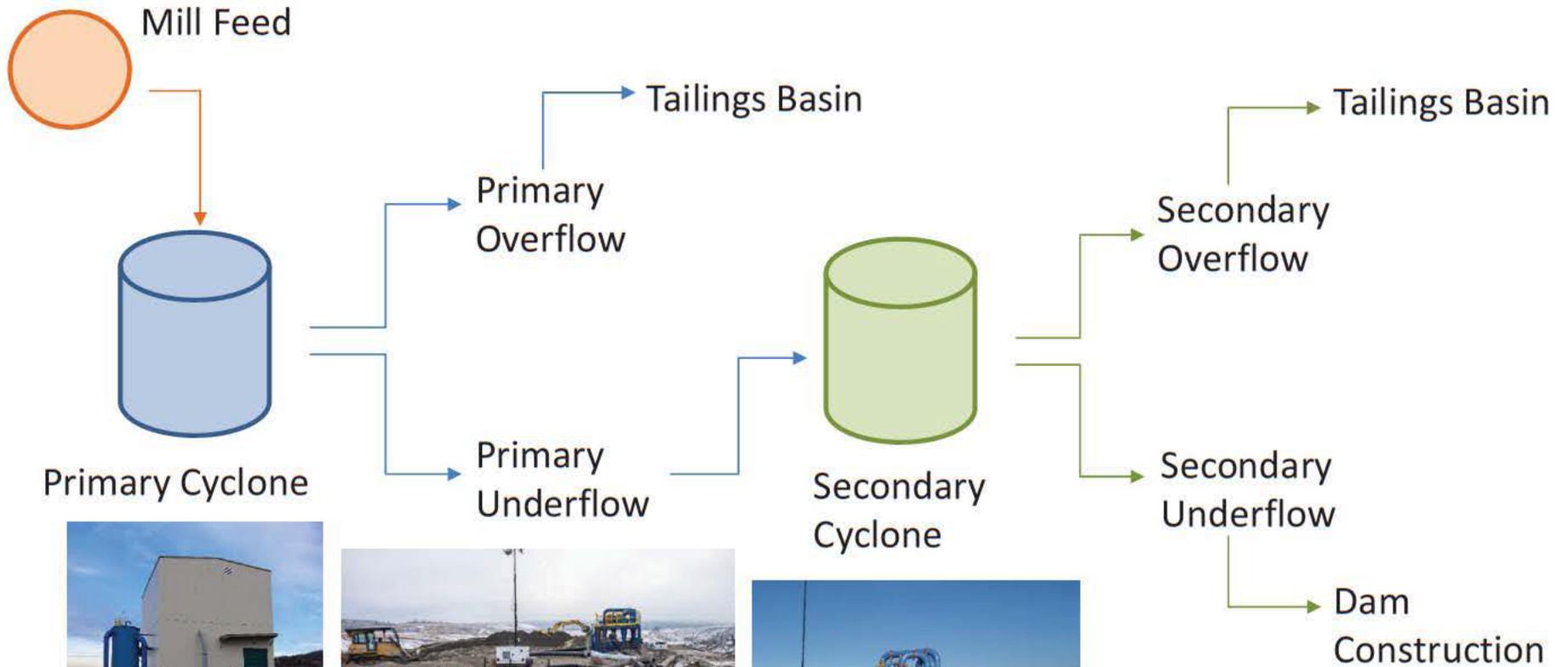
- Schematic cross-section of New Afton tailings dam at its ultimate height of 40 m.



- The tailings dams are constructed of locally available materials:
 - **Till:** Compacted glacial till comprising a mixture of gravel, sand, and fines. This is the water retaining element of the dam.
 - **Cyclone Sand:** Obtained from primary and secondary cycloning of whole tailings.
 - **Filters:** Non-reactive rock/soil materials processed into very specific gradations.
 - **Geomembrane:** Liner over the portion of the impoundment and dam founded on waste rock.



Tailings Dam – Cycloning Process



Tailings Dam – Sand Cell Construction (upstream)

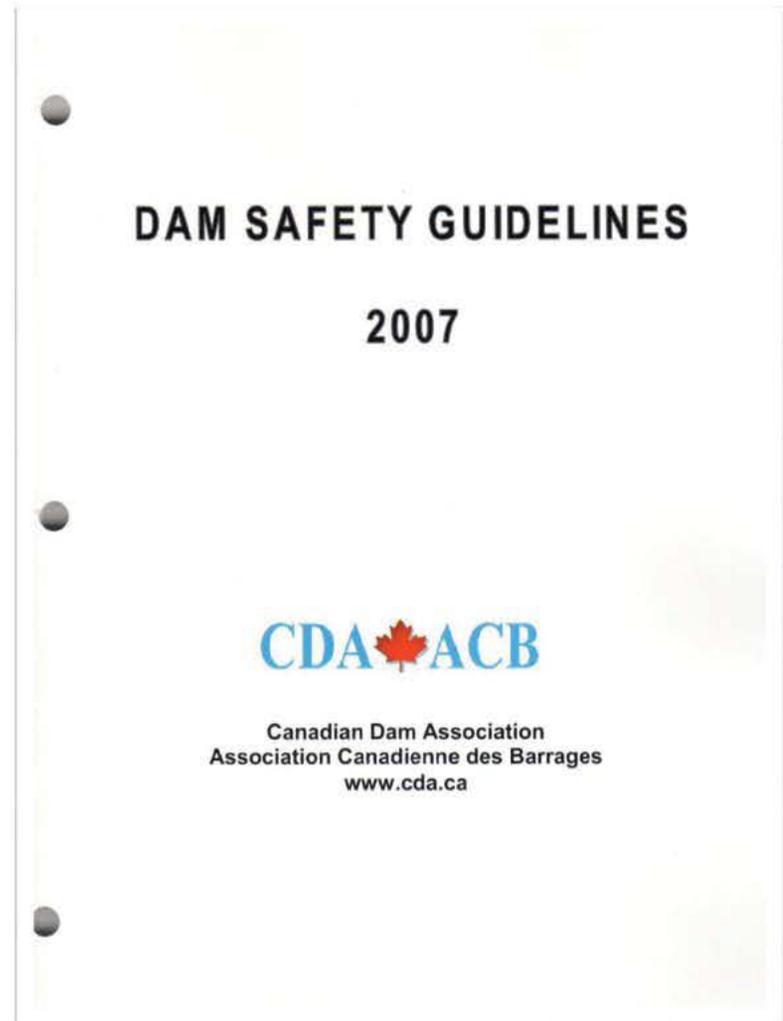


Tailings Dam – Sand Cell Construction (downstream)



- Dam design guidelines:
 - International Commission on Large Dams, Design Bulletins.
 - e.g. Embankment dams – Granular filters and drains, bulletin 95, 1994.
 - United States Army Corps of Engineers, Engineering Manuals.
 - e.g. Flood-Runoff Analysis, EM1110-2-1417, 1994
 - United States Department of the Interior, Bureau of Reclamation, Design Manuals.
 - e.g. Design of Small Dams, 3rd Ed., 1987.
 - United States Department of Agriculture, Engineering Handbooks.
 - e.g. Earth Spillway Design, Part 682, Chapter 50, 1997.
 - Numerous books and papers.
 - e.g. Geotechnical Engineering of Dams, Fell, R., et. al. Taylor & Francis Group PLC, UK, 2005.
 - e.g. Bray, J.D., Travasarou, T., Simplified Procedure for Estimating Earthquake-Induced Deviatoric Slope Displacements, ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol. 133, No. 4, 2007.

- Canadian Dam Association, Dam Safety Guidelines, 2007 (revision 2013).
 - Physical stability factors of safety
 - Inflow design flood
 - Design earthquake
 - Required manuals
 - Frequency and scope of monitoring
 - Expectations for dam owners and designers
 - Consequence classification
 - Dam break analyses

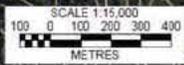
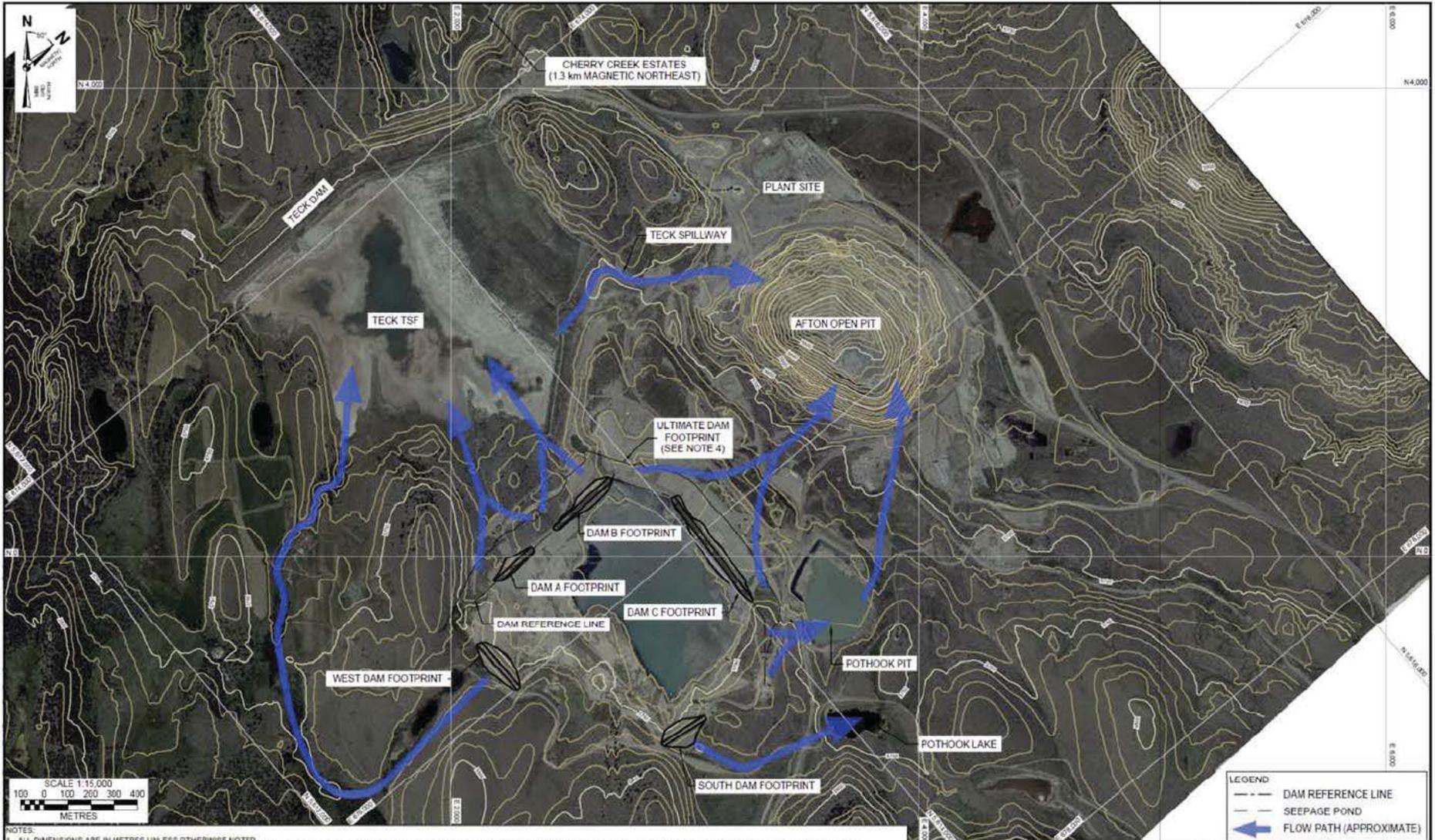


- The New Afton TSF comprises 5 dams.
- Although the dams are designed NOT to fail, what would happen any of them did?
- To answer that, qualitative dam break modelling was completed.
- Numerical modelling is presently underway.
 - Both “sunny day” and incremental above flood.
 - This does not give an indication of the likelihood of a failure, only describes the potential impact downstream should a failure occur.
 - Informs the Emergency Preparedness Response Plan.

Tailings Dam – What if?



Tailings Dam – What if?



---	DAM REFERENCE LINE
---	SEEPAGE POND
→	FLOW PATH (APPROXIMATE)

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. THIS DRAWING MUST BE READ IN CONJUNCTION WITH BGC'S REPORT TITLED 'NEW AFTON MINE - RESPONSE TO THE MINISTRY OF ENERGY AND MINES REPORT OF GEOTECHNICAL INSPECTOR, DATED JULY 22, 2013', AND DATED MARCH 2014.
3. BASE TOPOGRAPHIC DATA AND ORTHO PHOTO BASED ON LIDAR PROVIDED BY CHALLENGER GEOMATICS LTD., DATED JULY 2013. CONTOUR INTERVAL IS 10 m.
4. PROJECTION OF ULTIMATE DAM DOWNSTREAM FOOTPRINT IS BASED ON ULTIMATE DAM CREST ELEVATION 5795.0 m AND WILL NEED TO BE FIELD FIT.
5. STARTER DAM FOOTPRINTS ARE BASED ON CONSTRUCTION RECORDS SURFACE TAKEN FROM JANUARY 8, 2012 SURVEY, PROVIDED BY ACRES ENTERPRISES LTD.
6. ALL CO-ORDINATES ARE PROVIDED IN BOTH UTM NAD 83 ZONE 10 AND MINE GRID CO-ORDINATE SYSTEM. ELEVATIONS ARE PROVIDED IN MINE GRID CO-ORDINATE SYSTEM ONLY.
7. UNLESS BGC AGREES OTHERWISE IN WRITING, THIS DRAWING SHALL NOT BE MODIFIED OR USED FOR ANY PURPOSES OTHER THAN THE PURPOSE FOR WHICH BGC GENERATED IT. BGC SHALL HAVE NO LIABILITY FOR ANY DAMAGES OR LOSS ARISING IN ANY WAY FROM ANY USE OR MODIFICATION OF THIS DOCUMENT NOT AUTHORIZED BY BGC. ANY USE OF OR RELIANCE UPON THIS DOCUMENT OR ITS CONTENT BY THIRD PARTIES SHALL BE AT SUCH THIRD PARTIES' SOLE RISK.

SCALE:	1:15,000	BGC ENGINEERING INC. AN APPLIED EARTH SCIENCES COMPANY	PROJECT:	NEW AFTON MINE - RESPONSE TO THE MINISTRY OF ENERGY AND MINES REPORT OF GEOTECHNICAL INSPECTOR, DATED JULY 22, 2013			
DATE:	MAR 2014		TITLE:	NEW AFTON TSF - FLOW PATHS			
DRAWN:	CJT	CLIENT:	NEW GOLD INC.	PROJECT NO:	0921011	DWG NO:	NA-RB-03-06
CHECKED:	JB						
APPROVED:	CL						

- New Afton has an Operations, Monitoring, and Surveillance Manual that outlines the inspection requirements, frequency, and persons responsible.

Table 7-1 Surveillance Requirements for the Tailings Facility

Structure	Weekly ^{1,2}	Monthly ¹	Annual ³	Five Years ⁴
Dam	X		X	X
Liner	X		X	X
Diversions Ditches	X		X	X
Seepage Collection System	X		X	X
Spillways	X		X	X
Pipelines	X		X	X
Tailings Pond Monitoring		X	X	X
Instrumentation		X	X	X

NOTES:

1. All weekly and monthly inspections are to be performed by trained personnel and should be performed and recorded by the same person to ensure relevant incremental changes are observed.
2. Weekly inspections are to be completed a minimum of once a week.
3. All annual inspections are to be performed by a qualified engineer.
4. All 5-year inspections are to be performed by a qualified engineer.

Tailings Dam - Monitoring and Inspections



- New Afton has implemented a training program on tailings dam inspections for operators and environmental staff.
- Training includes classroom instruction, field workshop, and testing; completed annually.
- Key message is that it is EVERYONE'S responsibility to observe and report problems.





Call supervisor (or control room if it is an emergency) to report issues

- Settlement
- Erosion and sink holes
- Lines, leaks, and valve condition
- Condition of seepage ponds
- Blockages of spillway and pond location and level
- Cracks and displacement
- Seepage
- Piping
- Deformation of slopes
- Excessive vegetation
- Anything that looks out of place

- Instrumentation: Piezometers, inclinometers, settlement cells, and survey monuments.
- Used to monitor performance of the dam and provide warning signs.



- Reporting:
 - Serves as a checklist to ensure that all components of the TSF are reviewed.
 - Documents that the inspections have been undertaken.
 - Provides a basis for comparison for subsequent inspections.
 - Annual Inspection recommendations are considered as mandatory obligations for implementation by MEM

- Requirements at New Afton
 - Tailings spills
 - Dangerous occurrences
 - e.g. settlement cracks on Dam B
 - Dam construction
 - Annual inspection**
 - Dam design
 - Dam safety reviews



Dam B – Settlement Cracking

- ❑ Cracking noticed on upstream side of Dam B by tailings operators
- ❑ BGC Engineering notified immediately and onsite same day
- ❑ New Afton classified as dangerous occurrence and notified the Ministry of Energy and Mines
- ❑ BGC conducted inspection and increased monitoring was initiated:
 - ❑ Topographic surveys
 - ❑ Inclinator readings
 - ❑ Crack Monitoring
 - ❑ Test pitting of Cracking Area



Dam B – Settlement Cracking

- Cause of cracking was determined to be a result of settlement of the waste rock foundation in that portion of the impoundment.
- Upstream portion of TSF is lined in this area.
- Installation of an additional inclinometer in this area was recommended for 2014.
- Area continues to be monitored and no further cracking has been observed.



- Dry cover at closure to prevent the build-up of water on the surface of the facility
 - Water to be drained from pond
 - Cover to be placed onto surface
 - Surface to be graded to prevent build-up of water

- Facility will be subject to post closure monitoring program

- Bonding will be in place for repairs to the cover system



Thank you for your attention.

Questions?

From: [Kuppers, Haley MEM:EX](#)
To: [Hynes, Michelle MEM:EX](#); [Hemphill, Naomi MEM:EX](#)
Cc: s.22 [offman, Al MEM:EX](#)
Subject: FW: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus
Date: Tuesday, October 7, 2014 9:44:05 AM

FYI.. need to discuss briefing upwards and messaging to the Panel.

Haley

From: Warnock, George MEM:EX
Sent: Monday, October 6, 2014 10:28 PM
To: Narynski, Heather M MEM:EX
Cc: Douglas Kiloh; Kuppers, Haley MEM:EX
Subject: Re: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus

s.22

Sent from my iPhone

On Oct 6, 2014, at 9:30 PM, "Narynski, Heather M MEM:EX"
<Heather.Narynski@gov.bc.ca> wrote:

Thanks for sharing, Kim.

Possibly we should be reminding the Panel that information must be kept confidential in order to avoid compromising the other investigations. The Panel is being held in a very high regard with much weighting being placed on their findings. As such, even the perception that these discussions may have occurred s.22 As a minimum, they should be made aware of what is being publicly posted regarding comments they may (or may not) have made.

s.22

Sent from my iPhone

On Oct 6, 2014, at 8:10 PM, Bellefontaine, Kim MEM:EX <Kim.Bellefontaine@gov.bc.ca> wrote:

FYI

Kim Bellefontaine, M.Sc., P.Geo.
Manager Environmental Geoscience and Permitting
BC Ministry of Energy & Mines
250-952-0489
Kim.Bellefontaine@gov.bc.ca

Begin forwarded message:

From: I THINK MINING <comment-reply@wordpress.com>
Date: October 6, 2014 at 7:03:55 PM PDT
To: "Bellefontaine, Kim MEM:EX"

<Kim.Bellefontaine@gov.bc.ca>

Subject: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus

Reply-To: I THINK MINING

<comment+lydphoxtqjta09weua_58k@comment.wordpress.com>

Jack Caldwell posted: " The first day of presentations at the Tailings and Mine Waste 2014 Conference. Gordon McPhail delivered a talk in honor of Geoff Blight, who passed away earlier this year. Geoff made so many contributions to tailings that we were talking for at least "

Respond to this post by replying above this line

New post on I THINK
MINING



[Tailings and Mine Waste 2014: Mt Polley in Focus](#)

by [Jack Caldwell](#)

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From: [Hynes, Michelle MEM:EX](#)
To: [Kuppers, Haley MEM:EX](#); [Hemphill, Naomi MEM:EX](#)
Cc: s.22 [offman, Al MEM:EX](#)
Subject: RE: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus
Date: Tuesday, October 7, 2014 10:10:57 AM

Sounds good.

Michelle Hynes

Senior Policy Analyst I Mines and Mineral Resources Division
Ministry of Energy and Mines
Mailto: Michelle.Hynes@gov.bc.ca

From: Kuppers, Haley MEM:EX
Sent: Tuesday, October 7, 2014 9:43 AM
To: Hynes, Michelle MEM:EX; Hemphill, Naomi MEM:EX
Cc: s.22 [offman, Al MEM:EX](#)
Subject: FW: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus
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s.22

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FYI

Kim Bellefontaine, M.Sc., P.Geo.
Manager Environmental Geoscience and Permitting

BC Ministry of Energy & Mines
250-952-0489
Kim.Bellefontaine@gov.bc.ca

Begin forwarded message:

From: I THINK MINING <comment-reply@wordpress.com>
Date: October 6, 2014 at 7:03:55 PM PDT
To: "Bellefontaine, Kim MEM:EX"
<Kim.Bellefontaine@gov.bc.ca>
Subject: [New post] **Tailings and Mine Waste 2014: Mt Polley in Focus**
Reply-To: I THINK MINING
<comment+lydphoxtqita09wcuu_58k@comment.wordpress.com>

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Respond to this post by replying above this line

New post on I THINK
MINING



[Tailings and Mine Waste 2014: Mt Polley in Focus](#)

by [Jack Caldwell](#)

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From: [Hynes, Michelle MEM:EX](#)
To: "Douglas Kiloh"
Cc: [Kuppers, Haley MEM:EX](#); [Hoffman, AI MEM:EX](#)
Subject: RE: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus
Date: Tuesday, October 7, 2014 11:49:28 AM

Perfect – thanks Doug!

Michelle Hynes

Senior Policy Analyst I Mines and Mineral Resources Division
Ministry of Energy and Mines
Mailto Michelle.Hynes@gov.bc.ca

From: Douglas Kiloh s.22
Sent: Tuesday, October 7, 2014 11:49 AM
To: Hynes, Michelle MEM:EX
Cc: Kuppers, Haley MEM:EX; Hoffman, AI MEM:EX
Subject: Re: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus

Michelle,

This is the electronic copy of our draft,...

Doug

On Tue, Oct 7, 2014 at 11:30 AM, Hynes, Michelle MEM:EX <Michelle.Hynes@gov.bc.ca> wrote:

Ok sounds good.

Michelle Hynes

Senior Policy Analyst I Mines and Mineral Resources Division
Ministry of Energy and Mines
Mailto Michelle.Hynes@gov.bc.ca

From: Kuppers, Haley MEM:EX
Sent: Tuesday, October 7, 2014 9:43 AM
To: Hynes, Michelle MEM:EX; Hemphill, Naomi MEM:EX
Cc: s.22 ; Hoffman, AI MEM:EX
Subject: FW: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus
FYI.. need to discuss briefing upwards and messaging to the Panel.

Haley

From: Warnock, George MEM:EX
Sent: Monday, October 6, 2014 10:28 PM
To: Narynski, Heather M MEM:EX
Cc: Douglas Kiloh; Kuppers, Haley MEM:EX
Subject: Re: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus

s.22

Sent from my iPhone

On Oct 6, 2014, at 9:30 PM, "Narynski, Heather M MEM:EX"
<Heather.Narynski@gov.bc.ca> wrote:

Thanks for sharing, Kim.

Possibly we should be reminding the Panel that information must be kept confidential in order to avoid compromising the other investigations. The Panel is being held in a very high regard with much weighting being placed on their findings. As such, even the perception that these discussions may have occurred s.22 As a minimum, they should be made aware of what is being publicly posted regarding comments they may (or may not) have made.

Sent from my iPhone

On Oct 6, 2014, at 8:10 PM, Bellefontaine, Kim MEM:EX <Kim.Bellefontaine@gov.bc.ca> wrote:

FYI

Kim Bellefontaine, M.Sc., P.Geo.
Manager Environmental Geoscience and Permitting
BC Ministry of Energy & Mines
[250-952-0489](tel:250-952-0489)
Kim.Bellefontaine@gov.bc.ca

Begin forwarded message:

From: I THINK MINING <comment-reply@wordpress.com>
Date: October 6, 2014 at 7:03:55 PM PDT
To: "Bellefontaine, Kim MEM:EX"
<Kim.Bellefontaine@gov.bc.ca>
Subject: [New post] Tailings and Mine Waste 2014: Mt Polley in Focus
Reply-To: I THINK MINING
<comment+lydphoxtqjta09wcu_58k@comment.wordpress.com>

Jack Caldwell posted: " The first day of presentations at the Tailings and Mine Waste 2014 Conference. Gordon McPhail delivered a talk in honor of Geoff Blight, who passed away earlier this year. Geoff made so many contributions to tailings that we were talking for at least "

Respond to this post by replying above this line

New post on I THINK MINING



[Tailings and Mine Waste 2014: Mt Polley in Focus](#)

by [Jack Caldwell](#)



Ministry of Energy and Mines- British Columbia Strategic Communication Plan

GOAL

To frame the BC MINISTRY OF ENERGY AND MINES –BC as the principle regulatory investigative agency in BC with respect to safeguarding the public, workers and the environment from risks in connection with activities at mines in British Columbia Mining. ?????

(All of our objectives flow from that simple goal. If we are viewed as the principle regulatory body for the mining industry in the province this will enhance MEM capacity and effectiveness in the regulation of the mines. We will instill confidence among our stakeholders – governments, partner agencies, and our citizens in our ability to defend public safety, protect the environment, support the mining industry, and strengthen the integrity of mining practices in BC).

AIM

The aim of this document is to provide a practical framework to assist MEM, Mines and Mineral Resources Division (MMRD) in developing a thoughtful, consistent and united approach to strategic communications, both internally and externally. This will be done by proactively seizing and analyzing opportunities that highlight the unique nature of MEM its, regulation, code, act, investigations and initiatives when appropriate. The intention of this document is to guide and encourage a cohesive response from all ~~of our units~~ parts of the ministry in order to increase accountability, capacity, public trust and confidence, all of which are key elements to MMRD continuing success.

RATIONALE

It has never been more important for MMRD to provide a consistent and united message as it relates to our core mandate to:

- Protect employees and all other persons from undue risks to their health and safety arising out of or in connection with activities at mines.
- Safeguard the public from risks arising out of or in connection with activities at mines.
- Protect and reclaim the land and watercourses affected by mining.

An effective communication strategy will advance the MMRD exposure as the go-to Agency with respect to mining. That, in effect, will build on our ability to mitigate risk, ensure a high standard of mining practices, strengthen the safety of the public, workers, and environment as well as secure continued support of senior government. Our goals are not only permitting and investigation, but also prevention through education of the public and our stakeholders about the practice, value and regulation, of mining in BC. Equally important is our effort to reduce risk through innovative enforcement measures, and to increase our capacity to respond effectively to the needs of the public, government and

industry. It is important that the public and our stakeholders become aware, when appropriate, about what role MEM plays in educating, regulating, permitting, health and safety, as well as investigating. This awareness is key from a number of standpoints, including government support and accountability, coordination of long term strategies for the industry and in particular, the environment and public safety. Additionally, failure to communicate our objectives could result in public ambivalence toward the ~~gravity~~ importance of mine regulation and the environment.

GUIDING PRINCIPLES:

- The MEM communication plan will be consistent and united with strategic messaging to be delivered at every opportunity, where appropriate.
- Key messages communicated to the public and our stakeholders will include the spirit of MEM mandate, vision, mission, ~~motto~~, the agency's culture, ~~pillars~~ and goals.
- Public communication will be open, professional, thoughtful and accurate.
- Willingness by all MEM units to move forward as one entity. This conveys to our stakeholders and the public that we are a well-organized unit united in its effort to strengthen the mining industry including: environment; workers; public; etc...
- MEM communication strategy places a strong emphasis on the environment, public safety, worker safety, education, enhanced accountability and regulatory success.
- Key messages will be communicated in a variety of innovative ways, using creative tools and methods to engage the public and our stakeholders. This will include....
- In summary, our guiding principles should answer these three questions when dealing with the public and/or our stakeholders: **Are we protecting the environment? Is the Worker Safe? Am I Safe? Are we Competent? Can the public Trust us?**

COMMUNICATIONS OBJECTIVES:

(The objectives reflect MEM mandate, vision, motto, etc.)

- To increase the viability of mining by increasing the public's knowledge and, regulating the industry in a fair transparent and active way, ~~???~~ in British Columbia.

- To increase the public's confidence in our ability to mitigate threats to the environment, raise the level of safe mining practices, address recommendations resulting from investigations of the Mount Polley tailings dam breach.???
- To increase MEM accountability so that we continue to benefit from the public's trust.
- To build upon the confidence MEM enjoys from our regulatory partners, government, the mining industry and the public.
- To decrease public fear by ~~providing~~ providing timely, factual information on mining practices.
- To increase capacity so that MEM has the ability to evolve ahead of mining practices through strategic deployment of resources and creative uses of technology.
- To demonstrate that collaboration and integration among agencies including those outside the scope of MEM- is resulting in a highly-successful coordinated response in mitigating risk to the environment, public ~~and~~ workers. ~~...???~~
- To increase MEM effectiveness through open communication, internally and externally.
- To establish internal communication protocols so that staff ~~is~~ are aware of ~~MEM~~ the ongoing investigations and our shared public response.
- To share and highlight successes of MEM investigations and MEM staff with the aim of encouraging pride in what we do, and a sense of camaraderie among staff.

KEY MESSAGES:

- Globally, our key messages, when appropriate, must aim to encapsulate themes and answer these questions: **Are we protecting the environment? Is the Worker Safe? Am I Safe? Are we Competent? Can the public Trust us?**
- Safeguarding the environment, worker public safety are MEM chief concern.
- Poor mining operations places all of us, cultural heritage resources, and the environment at risk.
- ~~MEM employs innovative enforcement initiatives, which ensures public safety to the point where our streets and public places are safe.~~

Comment [TD1]: First Nations need to be appropriate incorporated into this messaging

- MEM is united in its efforts to safeguard the public and environment, and against risks associated with mining in the province and beyond.
- Everyone is part of the solution in risk mitigation: mining industry, government and the public; ~~worker, mine, and Ministry~~.
- The public's cooperation is encouraged as we all have an interest in maintaining the mining industry so that B.C. families and businesses can continue to flourish.
- Provincial (COS, MOE, FLNRO, etc) and Federal (DFO, DFAIT, etc) government support is a key component to our success.

Comment [TD2]: ?

APPENDIX A - Draft and Confidential

CURRENT COMMUNICATION TOOLS:

- Continue in support of operations and in consultation with CIM, to prepare media materials and disseminate news releases that reflect MEM guiding principles and communications objectives.
- Continue to provide operational communications advice, where appropriate, to promote and/or identify investigative, regulatory or communication opportunities.
- Continue to provide advice on the most appropriate response for any given issue facing MEM in line with our guiding principles and objectives and to choose the best spokespersons available for specific issues.
- Continue to consult with stakeholder agencies, preparing and disseminating information of public interest and in support of public and environmental safety.
- Continue to reach out and include key personnel to ensure public news releases are in keeping with management's expectations and with MEM guiding principles and objectives.
- Continue to provide advice and briefing notes to management on emerging communications issues and trends.
- Continue to provide province-wide staff with talking lines on global/provincial issues that are current and relevant in order to present a consistent, accurate and thoughtful message.
- Continue to modernize by developing social media opportunities. Develop a MEM Facebook page, Twitter account and You Tube channel. Use these social media tools to carry MEM message to the public. These tools can be further developed to enhance MEM public profile.
- Consider work on the completion and evolution of the new MEM Website, and the promotion of an MEM communique, the "Blast", a quarterly internal newsletter for staff.

APPENDIX A - Draft and Confidential

CURRENT COMMUNICATIONS PROTOCOLS:

- Briefing note provided to MEM senior management prior to news release, press conference or any major interviews for approval, input, and review.
- Where appropriate, alert the Ministers office, partner agencies and staff through a courtesy notification of a pending news release or conference.
- Protocol established between MEM and GSPE communications in relation to mining topics throughout the Province.
- Following approvals maximize exposure as appropriate such as news release with accompanying photos and/or videos uploaded to the MEM website, Twitter account and Facebook page via MEM IT (SHARED SERVICES?) section at the direction of CIM.
- Provides news content analysis to senior management following a major news event that concerns MEM to ensure we are meeting our guidelines and objectives and identifying areas of interest and/or concern.
- Continues to monitor potential media opportunities through meetings with regulatory or investigative lead investigators/file coordinators or by monitoring public media on issues of ongoing concern.
- Media and communication reporting protocols established: establish reporting lines i.e. Deputy.. CIM... ADM????
- Develop a communications. This is a log of media calls, communications requests that will be used in a number of ways including to generate data for MEM performance indicators in line with the province to measure outcomes for MEM and communications.
- Communication Strategist participate in GSPE weekly media conference calls.????

APPENDIX B - Draft and Confidential

NEXT STEPS

Protocols for further consideration

- Require MEM staff including senior managers to inform the Communication Strategist, via email or phone, any requests for interviews from the media including the theme of the request.

Rationale: *Strict reporting on media contacts will ensure that MEM strategic communications is able to meet accountability expectations by management and the ADM/DM/MINISTER?. This data will also help Strat-Comm detect media trends allowing us to identify future opportunities and/or gaps in our communication, and to ensure consistency of message.*

- Scheduled meetings with the Communications person and the MEM – CIM (and Deputies)

Rationale: *A consistent meeting schedule will streamline reporting requirements for the communication person cutting down on daily reporting to the CIM. It will also have an opportunity to ensure strat-comm is meeting management's expectations*

- Provide Communications section with 30-day reports and/or whatever reporting vehicle to be devised.????

Rationale: *This will help enhance communication opportunities for MEM units and will enable the Communications person to be up-to-date on any potential media opportunities and/or conflicts.*

- Share communications on a distribution system so that any problems, potential conflicts and/or opportunities are immediately communicated to the witer. Develop guidelines/protocols on consistent messaging, and criteria for when staff, or management speaks to the media.

Rationale: *This will enable the Communication person to immediately identify conflicts and/or opportunities. It also ensures that the Communications section is fully briefed on any public action or concern should we receive calls from the media.*

NEXT STEPS

Future Opportunities for consideration:

- Strategic Communications person to meet with and/or shadow the many specialties that make up MEM.
Rationale: *If the Strat-Comm section is the face of MEM it is incumbent upon that person to familiarize themselves with the many facets that make up MEM. These visits will also generate new ideas on the communication front, both externally and internally.*
- In consultation with MEM key sections, create a library of generic communication briefs/lines on MEM operations and mining issues in the province to be used internally and externally when appropriate.
Rationale: *The library of communication briefs will be accessible to senior staff and appropriate people in the event they are required to speak publicly. In some circumstances, the briefs will be turned into communication vehicles via a news release or for the website.*
- Renew interaction with website team.
Rationale: *In keeping with our prevention goals. To ensure the website remains current and relevant, a committee should be established and meet twice a year or quarterly. Committee members should be a mix of staff from a variety of areas to get a variety of ideas.*
- Prepare and provide content updates for MEM Intranet site
Rationale: *The Intranet can become an excellent internal communications tool. We could supply the media brief, video, and news video highlighting MEM successes. A comment section for staff may encourage people to share ideas or concerns. This data could be used to improve MEM communications.*
- Chief Inspector's Annual Report
Rationale: *This would assist MEM to meet some of our accountability goals. Additionally, it could be used to enhance our presence and inform the public of our existence, our goals and where appropriate our efforts in protecting the environment/public/jobs/industry ... etc...*

APPENDIX C

Mount Polley Communications Plan

- 1. Regularly scheduled briefings**
 - a. Recommend – weekly through Oct/Nov.**
 - b. Key facts and information to be reported**
 - i. Status of remediation**
 - ii. Standard wording regarding investigation**
- 2. Clarity regarding document release and follow-up questions**
 - a. Standard wording has been developed.**
 - b. Provide guidance regarding information that CAN be released**
- 3. News Release regarding status of investigation**
- 4. Clarity regarding which types of requests are required to be vetted by the investigation team**

From: [Doyle, Carina MEM:EX](#)
To: [Kuppers, Haley MEM:EX](#)
Cc: [Nakatsuka, Caroline M MEM:EX](#); [Thorpe, Rolly MEM:EX](#); [Hoffman, Al MEM:EX](#); [Pocklington, Cheryl M MEM:EX](#)
Subject: Re: Our priorities
Date: Friday, November 21, 2014 1:27:10 PM

Ok, so this is a bit different than what Caroline and I spoke about (ex a list of concerns for immediate follow up/orders from site visit). I believe she has spoken with Al about it so I'll follow up with Caroline and we can seek clarification from Tanya about what they plan to run when it comes to drafting permit conditions.

Thanks

Carina

Sent from my iPhone

> On Nov 21, 2014, at 1:07 PM, "Kuppers, Haley MEM:EX" <Haley.Kuppers@gov.bc.ca> wrote:

>

> Hi Carina,

>

> Please generate a high priority list with consideration of Mount Polley re-opening, we do not have the details of their plans moving forward at this time, however, we have heard it will be modified operation at a lower production rate with ore from underground and current stockpiles. FYI Tania is the Mount Polley Project Manager and will be reviewing the sites plans and the permit. The high priority list will be used to support the permitting process, with options of including high priority issues (such as dust collection system) as a permit condition with defined expectations and timelines. The context for the comprehensive list of risks is to support the investigation process and final Chief Inspector's Investigation report, we need a comprehensive list of historical issues, non-compliances, recommendations made, orders issued, follow-up actions taken by the mine to date (if any), etc. (Caroline may have further reporting requirements).

>

> I hope that helps, please continue to work and provide the information to Caroline.

>

> Thanks,

>

> Haley Kuppers, MSc.

> Inspector of Mines

> Health and Safety Specialist

>

> Ministry of Energy and Mines

> 1810 Blanshard Street, Victoria, B.C. V8W 9N3

> Phone: 250-387-4808 | Cell: 778-677-0624 | Fax: 250-952-0491

> Email: haley.kuppers@gov.bc.ca | Website: www.em.gov.bc.ca

>

>

>

> -----Original Message-----

> From: Doyle, Carina MEM:EX

> Sent: Friday, November 21, 2014 12:14 PM

> To: Kuppers, Haley MEM:EX; Nakatsuka, Caroline M MEM:EX

> Cc: Thorpe, Rolly MEM:EX; Hoffman, Al MEM:EX

> Subject: Our priorities

>

> Haley/Caroline,

>

> Caroline and I were just chatting about the list of priorities, however our call cut out. It was not clear to me in the

meeting the context for which you wanted the priorities. Caroline has just passed on that you want priorities for our findings from our site visits as well as for future operation (i.e. All the priority concerns we have identified).

>

> Information that will be helpful for drafting our list is some insight about Polley's plans moving forward. Is the permit they are requesting to run the mill/crusher as per usual operation? Or modified operation without tailings dam? Knowing what the plan is for activities on the site moving forward will be helpful for identifying our key concerns.

>

> Carina

>

> Sent from my iPhone