

**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 6<sup>th</sup>, 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**  
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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](mailto:DReimer@MountPolley.com)

Reviewed and Endorsed:

Iain Bruce, Chief Technical Officer  
BGC

Steve Rice, Principal Engineer  
AMEC

Cc. George Warnock, Heather Narynksi, 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](mailto:lmoger@mountpolley.com)>  
**To:** "Rothman, Stephen MEM:EX" <[Stephen.Rothman@gov.bc.ca](mailto:Stephen.Rothman@gov.bc.ca)>  
**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

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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**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

---

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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)>  
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Luke



**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  
**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" <[Steve.Rice@Amec.com](mailto:Steve.Rice@Amec.com)>, "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:** [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](mailto:Kim.Bellefontaine@gov.bc.ca)

Begin forwarded message:

**From:** "Hoffman, Al MEM:EX" <[Al.Hoffman@gov.bc.ca](mailto:Al.Hoffman@gov.bc.ca)>  
**To:** "Demchuk, Tania MEM:EX" <[Tania.Demchuk@gov.bc.ca](mailto:Tania.Demchuk@gov.bc.ca)>, "Bellefontaine, Kim MEM:EX" <[Kim.Bellefontaine@gov.bc.ca](mailto:Kim.Bellefontaine@gov.bc.ca)>, "Thorpe, Rolly MEM:EX" <[Rolly.Thorpe@gov.bc.ca](mailto:Rolly.Thorpe@gov.bc.ca)>, "Kuppers, Haley MEM:EX" <[Haley.Kuppers@gov.bc.ca](mailto:Haley.Kuppers@gov.bc.ca)>, "Howe, Diane J MEM:EX" <[Diane.Howe@gov.bc.ca](mailto: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  
Begin forwarded message:  
From: "Luke Moger"  
<[lmoger@mountpolley.com](mailto:lmoger@mountpolley.com)<<mailto:lmoger@mountpolley.com>>>  
To: "Rothman, Stephen MEM:EX"  
<[Stephen.Rothman@gov.bc.ca](mailto:Stephen.Rothman@gov.bc.ca)<<mailto:Stephen.Rothman@gov.bc.ca>>>  
Cc: "Warnock, George MEM:EX"  
<[George.Warnock@gov.bc.ca](mailto: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)<<mailto:Heather.Narynski@gov.bc.ca>>>, "Brian Kynoch"  
<[bkynoch@imperialmetals.com](mailto:bkynoch@imperialmetals.com)<<mailto:bkynoch@imperialmetals.com>>>, "Dale Reimer" <[dreimer@mountpolley.com](mailto:dreimer@mountpolley.com)<<mailto:dreimer@mountpolley.com>>>, "Art Frye" <[afrye@mountpolley.com](mailto:afrye@mountpolley.com)<<mailto:afrye@mountpolley.com>>>, "Ryan Brown" <[rbrown@mountpolley.com](mailto: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)<<mailto:Steve.Rice@Amec.com>>>, "ibruce@bgcengineering.com" <<mailto:ibruce@bgcengineering.com>>>

<[ibruce@bgcengineering.com](mailto:ibruce@bgcengineering.com)<<mailto:ibruce@bgcengineering.com>>>, "Daryl Dufault"

<[DDufault@bgcengineering.ca](mailto: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](mailto: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)<<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; Kuppers, 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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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 Steve;

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Kindest Regards,

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**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,

Here it is

Jack

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Hi Both,

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AI

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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)>  
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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  
>  
> 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  
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> 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; Kuppers, 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)<<mailto:lmoger@mountpolley.com>>>  
> To: "Rothman, Stephen MEM:EX" <[Stephen.Rothman@gov.bc.ca](mailto:Stephen.Rothman@gov.bc.ca)<<mailto:Stephen.Rothman@gov.bc.ca>>>  
> Cc: "Warnock, George MEM:EX" <[George.Warnock@gov.bc.ca](mailto: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 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  
>

**From:** [Hoffman, Al MEM:EX](#)  
**To:** [Nikolejsin, Dave MEM:EX](#); [Koncohrada, Karen MEM:EX](#)  
**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](mailto:Karen.Koncohrada@gov.bc.ca)> wrote:

FYI

Begin forwarded message:

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**To:** "Haslam, David GCPE:EX" <[David.Haslam@gov.bc.ca](mailto:David.Haslam@gov.bc.ca)>  
**Cc:** "Amann-Blake, Nathaniel MEM:EX" <[Nathaniel.Amann-Blake@gov.bc.ca](mailto:Nathaniel.Amann-Blake@gov.bc.ca)>, "Narynski, Heather M MEM:EX" <[Heather.Narynski@gov.bc.ca](mailto:Heather.Narynski@gov.bc.ca)>, "Demchuk, Tania MEM:EX" <[Tania.Demchuk@gov.bc.ca](mailto:Tania.Demchuk@gov.bc.ca)>, "Bellefontaine, Kim MEM:EX" <[Kim.Bellefontaine@gov.bc.ca](mailto:Kim.Bellefontaine@gov.bc.ca)>, "Koncohrada, Karen MEM:EX" <[Karen.Koncohrada@gov.bc.ca](mailto: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; Kuppers, 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)>  
**To:** "Rothman, Stephen MEM:EX"  
<[Stephen.Rothman@gov.bc.ca](mailto:Stephen.Rothman@gov.bc.ca)>  
**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**

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](mailto: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?

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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](mailto:Karen.Koncohrada@gov.bc.ca)> wrote:

FYI

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

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Al

---

**From:** Rothman, Stephen MEM:EX  
**Sent:** Thursday, August 7, 2014 1:55 PM  
**To:** Thorpe, Rolly MEM:EX; Hoffman, Al MEM:EX; Kuppers, 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)>  
**To:** "Rothman, Stephen MEM:EX" <[Stephen.Rothman@gov.bc.ca](mailto:Stephen.Rothman@gov.bc.ca)>  
**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

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](mailto: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](mailto:dreimer@mountpolley.com); [bkynoch@imperialmetals.com](mailto:bkynoch@imperialmetals.com)  
[afrye@mountpolley.com](mailto:afrye@mountpolley.com); [rbrown@mountpolley.com](mailto:rbrown@mountpolley.com); [Steve.Rice@Amec.com](mailto:Steve.Rice@Amec.com);  
[ibruce@bgcengineering.com](mailto:ibruce@bgcengineering.com); [DDufault@bgcengineering.ca](mailto:DDufault@bgcengineering.ca); [Imoger@mountpolley.com](mailto:Imoger@mountpolley.com)  
[jlove@imperialmetals.com](mailto:jlove@imperialmetals.com); [dparsons@imperialmetals.com](mailto: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

---

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**Cc:** Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX  
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**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,

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**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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---

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Sent from my iPhone

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**To:** "Rothman, Stephen MEM:EX" <[Stephen.Rothman@gov.bc.ca](mailto:Stephen.Rothman@gov.bc.ca)>  
**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





Polley Lake

Polley Lake Road

Hazeltine Creek

Tailings Haul Road

Proposed New Pipeline

Upstream Tailings Dyke

TSF



**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

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# 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](http://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](http://www.facebook.com/CRDEmergencyoperations), the CRD website [www.cariboord.ca](http://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](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](mailto: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)<<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, Al 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

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[Confirmed.](#)

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**From:** Hoffman, Al 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.  
Al

**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, 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; Katie McMahon](#)  
**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](mailto: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](http://www.imperialmetals.com)

01\_Red Chris\_corporate\_RGB



**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](mailto:JLove@imperialmetals.com)>  
**Date:** August 26, 2014 at 9:29:05 PM PDT  
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**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

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

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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

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Please print off email plus 5 copies of each attached file

Sent from my iPhone

Begin forwarded message:

**From:** Jack Love <[JLove@imperialmetals.com](mailto:JLove@imperialmetals.com)>  
**Date:** August 26, 2014 at 9:29:05 PM PDT  
**To:** "Caunce, Cassandra ENV:EX" <[Cassandra.Caunce@gov.bc.ca](mailto:Cassandra.Caunce@gov.bc.ca)>, "Bunce, Hubert ENV:EX" <[Hubert.Bunce@gov.bc.ca](mailto:Hubert.Bunce@gov.bc.ca)>  
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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

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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	W	T	F	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	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	S	S	M	T	W	T	F	S	S	M

Project: Mt Polley Project Schedule: CI  
Date: Tue 14/08/26

Task  
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Milestone

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External Tasks  
External Milestone

Deadline





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 S
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	<b>3.7 Archaeological Impact Assessment</b>	<b>611 days?</b>	<b>Tue 14:09:02</b>	<b>Fri 16:12:30</b>				
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	<b>3.8 Environmental Risk Assessment</b>	<b>612 days</b>	<b>Mon 14:09:01</b>	<b>Fri 16:12:30</b>				
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	<b>3.9 Monitoring Program</b>	<b>366 days?</b>	<b>Tue 14:08:05</b>	<b>Fri 15:12:25</b>				
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	<b>3.10 Project Management</b>	<b>627 days</b>	<b>Mon 14:08:11</b>	<b>Fri 16:12:30</b>				
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				



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 S
1	<b>1 Erosion and Sediment Mitigation</b>	52 days?	Mon 14/08/25	Fri 14/10/31				
2	1.1 Hazeltine Creek Water Management (options under consideration)	52 days?	Mon 14/08/25	Fri 14/10/31				
3	1.2 Spawning Salmon Accommodation (options under consideration)	52 days?	Mon 14/08/25	Fri 14/10/31				
4	<b>2 Hazeltine Creek Rehabilitation Program</b>	215 days?	Mon 14/11/03	Fri 15/08/28				
5	2.1 Creek Rehabilitation - Timing Option 1	55 days?	Mon 14/11/03	Fri 15/01/16				
6	2.2 Creek Rehabilitation - Timing Option 2	65 days?	Mon 15/06/01	Fri 15/08/28				
7	<b>3 CEIA and Monitoring</b>	631 days?	Tue 14/08/05	Fri 16/12/30				
8	3.1 Hydrology Impact Assessment	611 days	Tue 14/09/02	Fri 16/12/30				
9	3.1.1 Data Review and Gap Analysis	19 days	Tue 14/09/02	Thu 14/09/25				
10	3.1.2 Channel Assessment	34 days	Wed 14/09/17	Thu 14/10/30				
11	3.1.3 Time Series (LiDAR)	98 days	Thu 14/09/04	Thu 15/01/15				
12	3.1.4 RTK GPS Survey	34 days	Mon 14/09/15	Tue 14/10/28				
13	3.1.5 Regional Hydrological Analysis	120 days	Thu 14/09/04	Mon 15/02/16				
14	3.1.6 Hydrometric Gauges and Sediment Discharge	274 days	Wed 14/09/17	Thu 15/10/01				
15	3.1.7 Assessment of Tailings - Channel & Floodplain	34 days	Mon 14/09/15	Tue 14/10/28				
16	3.1.8 Hydraulic Analysis	142 days	Wed 14/09/17	Tue 15/03/31				
17	3.1.9 Channel Design and Construction	175 days	Mon 15/02/16	Fri 15/10/16				
18	3.1.10 Reporting	608 days	Fri 14/09/05	Fri 16/12/30				
19	3.1.10.1 Reporting - Weekly	343 days	Fri 14/09/05	Fri 15/12/25				
89	3.1.10.2 Reporting - Monthly	590 days	Tue 14/09/30	Fri 16/12/30				
118	3.1.10.3 Reporting (Detailed)	13 days	Mon 14/09/15	Tue 14/09/30				
119	<b>3.2 Water Quality Impact Assessment</b>	631 days?	Tue 14/08/05	Fri 16/12/30				
120	3.2.1 Data Review and Gap Analysis	227 days	Mon 14/09/01	Fri 15/07/10				
121	3.2.1.1 Historical WQ data - Polley L, Hazeltine Cr, Quesnel L & R	45 days	Mon 14/09/01	Wed 14/10/29				
122	3.2.1.1.1 Assembly & synthesis of historical data into data mgmt system	45 days	Mon 14/09/01	Wed 14/10/29				
123	3.2.1.1.2 Data and Gap analysis	45 days	Mon 14/09/01	Wed 14/10/29				
124	3.2.1.1.3 Historical data reporting	45 days	Mon 14/09/01	Wed 14/10/29				
125	3.2.1.2 Physical & bathymetric data for plume model development	22 days	Tue 14/09/02	Tue 14/09/30				
126	3.2.1.2.1 Assembly & synthesis of historical data into data mgmt system	22 days	Tue 14/09/02	Tue 14/09/30				
127	3.2.1.2.2 Physical data reporting	7 days	Mon 14/09/22	Tue 14/09/30				
128	3.2.1.3 Geochemical Investigation data sets	217 days	Mon 14/09/15	Fri 15/07/10				
129	3.2.1.3.1 Review pre-existing geochem data sets to inform sampling program	21 days	Mon 14/09/15	Fri 14/10/10				
130	3.2.1.3.2 Review SRK geochem data set (static) to inform soil sampling program	14 days	Tue 14/11/11	Fri 14/11/28				
131	3.2.1.3.3 Review SRK geochem data set (leachate) to inform soil sampling program	14 days	Tue 15/06/23	Fri 15/07/10				
132	3.2.2 Water Quality Sampling - Polley L, Quesnel L, lower Hazeltine Cr	260 days	Tue 14/08/05	Thu 15/07/30				
133	3.2.2.1 Quesnel L, Polley L, Upper Quesnel R WQ sampling plan development	22 days	Mon 14/09/01	Mon 14/09/29				
134	3.2.2.2 Lower Hazeltine Cr WQ sampling plan development	24 days	Tue 14/09/30	Thu 14/10/30				
135	3.2.2.3 Implementation of WQ field sampling plans for Quesnel L, Upper Quesnel R & Polley L	260 days	Tue 14/08/05	Thu 15/07/30				
136	3.2.2.4 Implementation of WQ field plan for lower Hazeltine Cr	44 days	Tue 14/09/02	Wed 14/10/29				
137	3.2.3 Event based water quality sampling	232 days	Mon 14/09/15	Fri 15/07/31				
138	3.2.3.1 Event based WQ plan development	12 days	Mon 14/09/15	Mon 14/09/29				
139	3.2.3.2 Event based WQ plan implementation	220 days	Tue 14/09/30	Fri 15/07/31				
140	3.2.4 Plume Delineation Field Program	250 days?	Wed 14/08/27	Fri 15/08/07				
141	3.2.5 Groundwater Quality	232 days?	Mon 14/09/15	Fri 15/07/31				
142	3.2.5.1 Installation of up to 5 shallow piezometers immediately down gradient of main tailings volumes	13 days?	Mon 14/09/15	Tue 14/09/30				
143	3.2.5.2 Event based WQ plan implementation	220 days?	Tue 14/09/30	Fri 15/07/31				
144	3.2.6 Plume Model Development	39 days?	Wed 14/10/01	Fri 14/11/21				
145	3.2.7 Geochemical Modeling	261 days?	Tue 14/08/05	Fri 15/07/31				
146	3.2.7.1 As needed use of PHREEQC to analyse WQ data set	261 days?	Tue 14/08/05	Fri 15/07/31				
147	3.2.8 Reporting	608 days	Fri 14/09/05	Fri 16/12/30				
148	3.2.8.1 Reporting - Weekly	343 days	Fri 14/09/05	Fri 15/12/25				
149	3.2.8.2 Reporting - Monthly	590 days	Tue 14/09/30	Fri 16/12/30				
150	3.2.8.3 Reporting (Detailed)	13 days	Mon 14/09/15	Tue 14/09/30				
151	3.2.8.4 Reporting (Detailed) (Additional reports TBD)	21 days	Fri 15/02/13	Fri 15/03/13				
152	<b>3.3 Soil Quality Impact Assessment</b>	612 days	Mon 14/09/01	Fri 16/12/30				
153	3.3.1 Data Review and Gap Analysis	19 days	Tue 14/09/02	Thu 14/09/25				

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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	
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	<b>3.4 Sediment Impact Assessment</b>	<b>623 days</b>	<b>Fri 14/08/15</b>	<b>Fri 16/12/30</b>																												
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	<b>3.5 Terrestrial Impact Assessment</b>	<b>610 days</b>	<b>Wed 14/09/03</b>	<b>Fri 16/12/30</b>																												
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	<b>3.6 Fish and Aquatic Impact Assessment</b>	<b>611 days</b>	<b>Tue 14/09/02</b>	<b>Fri 16/12/30</b>																												
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  
Date: Tue 14/08/26

Task  
Split



Progress  
Milestone



Summary  
Project Summary



External Tasks  
External Milestone

Deadline





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	S
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 14:09:05	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																												

**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"; 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; 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 (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

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](mailto:jlove@imperialmetals.com)

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**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\_SWMaster\_20140827.pdf  
HazelTineCreek\_SW\_20140827.pdf  
621717-006\_SEDLocPlan\_140829.pdf  
QusnellLake\_SWMaster\_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](mailto:jlove@imperialmetals.com)

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**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 \(lmoger@mountpolley.com\)"](#); ["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:** 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

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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 \(lmoger@mountpolley.com\)](#); [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

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](mailto: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](mailto:JLove@imperialmetals.com)]

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

**To:** [Hubert.Bunce@gov.bc.ca](#)

**Cc:** [Zacharias-Homer, Christa ENV:EX](#); [Hoffman, Al MEM:EX](#); ["chughes@mountpolley.com"](#); ["dreimer@mountpolley.com"](#); [Metcalf, Shelley ENV:EX](#); [Jennifer.Mcguire@gov.bc.ca](#); [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; Kim.Bellefontaine@gov.bc.ca](#); [Diane.Howe@gov.bc.ca](#); [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

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**

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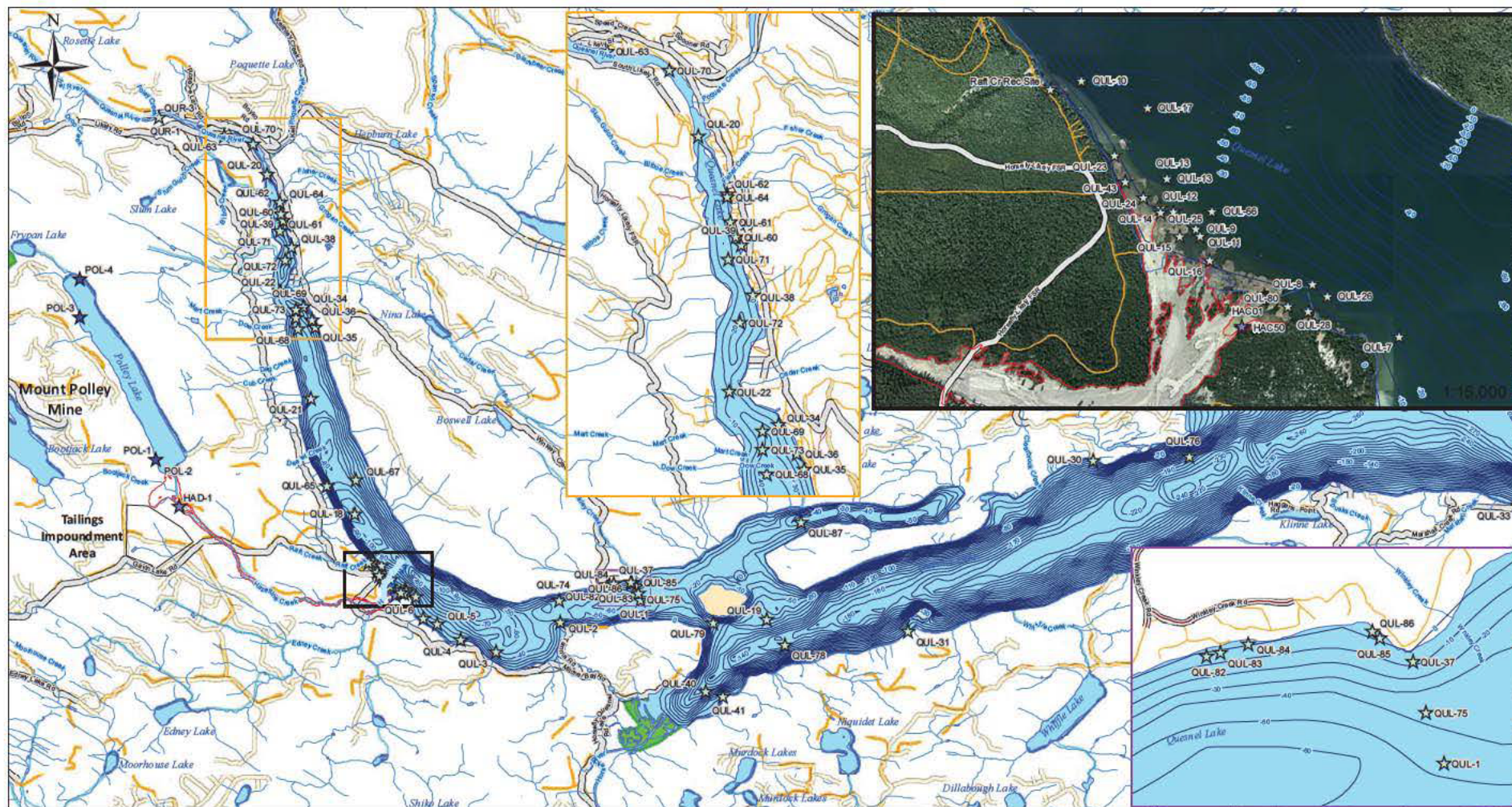
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LEGEND		NOTES	REFERENCES	SNC • LAVALIN	
Surface Water Sampling Locations	FWA Rivers	1. Original in colour.	1. Toporama WMS service provided by NRCAN. <a href="http://data.gc.ca/eng/open-government-licence-canada">http://data.gc.ca/eng/open-government-licence-canada</a>	CLIENT NAME:	PROJECT LOCATION:
Hazeltine Creek (3)	FWA Streams	2. Numerical scale reflects full-size print. Print scaling will distort this scale, however scale bar will remain accurate.	2. GPS Data Collected using field grade GPS. Accuracy expected to be approximately +/- 3.5m.	MPMC	Mount Polley Mine, British Columbia
Polley Lake (4)	Tailings Impoundment Area	3. Intended for illustration purposes, accuracy has not been verified for construction or navigation purposes.	3. Satellite image collected by NASA on August 15, 2014.	Figure 5: Current Monitoring Locations	
Quesnel Lake (69)	Area of Disturbance			BY: CJW	SCALE: 1:110,000
Bathymetric 10m Contours	Digital Roads Atlas (106)			CHKD: GJ	DATE: 2014/08/29
FWA Lakes	Forest Tenure Roads (487)			PROJ.COORD SYS: NAD 1983 UTM Zone 10N	REF No: 621717-005
					REV: 0





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

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Physical Parameters										Dissolved Inorganics										Total Alkalinity (as CaCO3) (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)
			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)						
BC Standards																									
BCWQG Aquatic Life (AW) <sup>b,c</sup>			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	700-5,680 <sup>d</sup>	32 800 (max)	60 (Cl. 2)	32 800 (max)	600	812.1-1345.9 <sup>d</sup>	309 <sup>d</sup>	n/a	n/a	0.005 - 0.015			
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	6.5-8.5	6.5-8.5	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	135-1,090 <sup>d</sup>	3,000	20 (Cl. 2)	3,000	150	n/a	309 <sup>d</sup>	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	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	0.5	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	0.5	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	0.5	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	0.5	0.1	-	0.5	65	27.3	73.9	0.0011	0.0053			
	HAD-1	2014 08 14	99	9	8.59	9	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	8.792	8.43	8.792	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	8.666	8.26	8.666	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	8.666	8.21	8.666	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	5	0	2	0	0.1	2	0	0	0	0	0	0	0.1	0.1	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	8.721	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-1-140821	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-1-140822	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-FIELD BLANK			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

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

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.

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

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.



TABLE 4: Summary of Analytical Results for Mount Polley, Hazelitine Creek - 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)	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) <sup>a,c</sup>			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) <sup>b,c</sup>			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
HAD-1	HAD-1	2014 08 10	14.8	31.6	30	4.85	5.48	0.458	4.4	0.1	0.61	10.9	0.1	19	0.01	0.5	0.1	3.4	0.05	0.5	2.84	0.5	0.56	0.01	0.01	10	0.11	1.1	0.3
	HAD-1	2014 08 11	10.4	32.5	30	4.97	2.44	0.407	4.25	0.1	0.53	8.45	0.1	21	0.01	0.5	0.1	2.49	0.05	0.5	2.68	0.5	0.58	0.01	0.01	10	0.106	1.1	0.3
	HAD-1	2014 08 12	9.5	32	30	4.85	1.4	0.356	4.14	0.1	0.53	7.48	0.1	22	0.01	0.5	0.1	2.15	0.05	0.5	2.62	0.5	0.59	0.01	0.01	10	0.107	1.1	0.3
	HAD-1	2014 08 13	10	31.2	30	4.73	0.282	0.397	4.43	0.1	0.58	7.67	0.1	20	0.01	0.5	0.1	2.41	0.05	0.5	2.41	0.5	0.53	0.01	0.01	10	0.098	1.2	0.3
	HAD-1	2014 08 14	8.9	31.9	30	4.67	0.224	0.388	4.48	0.1	0.6	7.51	0.1	22	0.01	0.5	0.1	2.19	0.05	0.5	2.63	0.5	0.57	0.01	0.01	10	0.113	1.1	0.3
	HAD-1	2014 08 15	10.1	31.7	30	4.86	3.31	0.434	4.59	0.1	0.61	7.72	0.1	19	0.01	0.5	0.1	2.51	0.05	0.5	2.51	0.5	0.58	0.01	0.01	10	0.118	1.1	0.3
	HAD-1	2014 08 16	11.1	32.4	30	4.9	7.12	0.463	4.43	0.1	0.62	8.52	0.1	18	0.01	0.5	0.1	2.77	0.05	0.5	2.59	0.5	0.59	0.01	0.01	10	0.101	1.1	0.3
	HAD-1X	2014 08 16	10.9	32.6	30	4.92	7.97	0.477	4.47	0.1	0.6	8.45	0.1	18	0.01	0.5	0.1	2.67	0.05	0.5	2.52	0.5	0.57	0.01	0.01	10	0.102	1.1	0.3
	QA/QC RPD %		0	1	0	1	11	3	1	0	3	1	0	0	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0
	HAD-1	2014 08 17	10.4	31.5	30	4.7	0.578	0.467	4.56	0.1	0.57	8.05	0.1	21	0.01	0.5	0.1	2.65	0.05	0.5	2.66	0.5	0.54	0.01	0.01	10	0.106	1.1	0.3
	HAD-1	2014 08 18	10	32.2	30	4.78	4.26	0.463	4.43	0.1	0.57	8.29	0.1	20	0.01	0.5	0.1	2.41	0.05	0.5	2.62	0.5	0.52	0.01	0.01	10	0.108	1.1	0.3
	HAD-1	2014 08 19	10.8	31.5	30	4.71	7.21	0.465	4.44	0.1	0.61	8.15	0.1	20	0.01	0.5	0.1	2.44	0.05	0.5	2.6	0.5	0.57	0.01	0.01	10	0.1	1.2	0.3
	HAD-1	2014 08 20	15.1	32.7	30	4.85	4.9	0.478	4.52	0.1	0.61	9.04	0.1	19	0.01	0.5	0.1	3.31	0.05	0.5	2.62	0.5	0.58	0.01	0.01	10	0.105	1.1	0.3
	HAD-1	2014 08 10	13.9	32.3	30	4.81	4.56	0.444	4.52	0.1	0.6	11	0.1	19	0.01	0.5	0.1	3.19	0.05	0.5	2.77	0.5	0.55	0.01	0.01	10	0.099	1.2	0.3
	HAD-1-140821	2014 08 21	13.5	32.3	30	4.9	0.453	0.467	4.57	0.1	0.59	8.23	0.1	20	0.01	0.5	0.1	2.99	0.05	0.5	2.61	0.5	0.55	0.01	0.01	10	0.103	1	0.3
	HAD-1-140822	2014 08 22	10.7	33.1	30	4.91	3.02	0.48	4.66	0.1	0.63	8.69	0.1	20	0.01	0.5	0.1	2.92	0.05	0.5	2.66	0.5	0.57	0.01	0.01	10	0.104	1.1	0.3
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.

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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 Drinking Water (DW) guide line.

<sup>a</sup> Laboratory detection limit Concentration greater than or equal to Canadian Drinking Water Quality Drinking Water (DW) guide line.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

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<sup>d</sup> 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)	Tin (µg/L)	Titanium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	
BC Standards																																	
BCWQG Aquatic Life (AW) <sup>b,c</sup>			n/a	20	5	5 000	5.3	n/a	1 200	0.032-0.034 <sup>d</sup>	n/a	1 (Cr( 6))	110	11.2-11.7 <sup>d</sup>	1 000	78.9-84.8 <sup>d</sup>	870	n/a	1,613-1,675 <sup>d</sup>	Under review by SNC-Lavalin	2 000	65 <sup>d</sup>	373 000	2	0.1-3 <sup>d</sup>	n/a	0.3	n/a	2 000	300	6	38.55-42.75 <sup>d</sup>	
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			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	n/a	5,000	
BCWQG Drinking Water (DW)			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 <sup>d</sup>	n/a	6.4-6.6 <sup>d</sup>	14	n/a	1,034-1,058 <sup>d</sup>	1	1,000	n/a	n/a	n/a	0.05-1.5 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	13.05-17.25 <sup>d</sup>		
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	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	0.1	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	0.1	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	30	0.05	0.5	4,950	5.57	0.05	2.72	0.5	346	0.62	0.01	3,970	0.01	0.1	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	30	0.05	0.5	4,800	4.8	0.05	2.51	0.5	420	0.57	0.01	4,630	0.01	0.1	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	30	0.05	0.5	4,840	6.54	0.05	2.76	0.5	418	0.58	0.01	4,620	0.01	0.1	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	30	0.05	0.5	4,790	8.96	0.05	2.6	0.5	439	0.6	0.01	4,530	0.01	0.1	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	0.1	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	0.1	10	0.108	1.4	0.3	
	QA/QC RPD %			25	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	4	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	0.1	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	4,500	0.01	0.1	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	0.1	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	0.1	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	0.1	10	0.106	1.6	0.3	
	HAD-1-140821	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	0.1	17	0.119	1.8	0.3	
	HAD-1-140822	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	0.1	13	0.121	1.8	0.3	
HAD-FIELD BLANK	FIELD BLANK	2014 08 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-		

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

All terms defined within the body of SNC-Lavalin's report (ava table 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.

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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 Drinking Water (DW) guideline.

<sup>a</sup> Laboratory detection in Concentration greater than or equal to Canadian Drinking Water Quality Drinking Water (DW) guideline.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> 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				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)	Temperature (field) (C)						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) <sup>b,c</sup>			n/a	6.5-9.0	6.5-9.0	n/a	Under Review by SNC	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 <sup>d</sup>	128-309 <sup>d</sup>	n/a	n/a	0.005 - 0.15			
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			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	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	135-1,780	3,000	20 (Cl: 2)	3,000	150	n/a	128-309 <sup>d</sup>	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	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	-	<b>9.06</b>	-	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	<b>0.0044</b>			
	POL-2	2014 08 07	95.2	-	<b>9.01</b>	-	3.96	184	126	0.3	6.81	201	<b>&gt; 201</b>	0.402	0.5	0.5	0.1	-	0.5	61	27.6	70.8	0.001	0.005			
	POL-2	2014 08 08	96.7	<b>9.02</b>	<b>8.68</b>	20.4	3.4	192	139	0.3	6.86	2420	<b>365</b>	0.376	0.5	0.5	0.1	-	0.5	61	27.2	70.5	0.0011	0.0056			
POL-2	POL-2	2014 08 09	96.7	<b>9.0</b>	<b>8.87</b>	21.0	4.82	194	145	4.3	7.01	-	-	0.381	0.5	0.5	0.1	-	0.5	61	27.8	71.2	0.001	0.0057			
	POL-2X	2014 08 09	97.2	<b>9.05</b>	<b>8.88</b>	21.3	4.13	195	144	5.9	6.97	-	-	0.372	0.5	0.5	0.1	-	0.5	64	28	71.6	0.001	0.0053			
	QA/QC RPD %		1	0	0	1	15	1	1	1	1	-	-	2	0	0	0	-	0	1	1	0	0	0			
POL-2	POL-2	2014 08 11	99.6	<b>8.55</b>	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	0.0011	0.0079			
	POL-2	2014 08 12	94.8	<b>8.99</b>	<b>8.58</b>	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	2014 08 13	96.4	<b>8.96</b>	<b>8.65</b>	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	<b>8.87</b>	<b>8.53</b>	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	<b>0.0049</b>			
	POL-2	2014 08 17	95.9	<b>8.83</b>	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	2014 08 16	100	<b>8.60</b>	8.28	20.2	1.7	203	142	0.3	6.57	-	-	0.339	0.5	0.5	0.1	0.51	0.5	68	27.3	76	0.001	0.0058			
POL-2	POL-2	2014 08 15	99.9	<b>8.76</b>	8.26	21.8	1.07	202	137	0.3	6.6	-	-	0.345	0.5	0.5	0.1	0.51	0.5	81	27.4	75.5	0.001	0.0064			
	POL-2	2014 08 19	102	<b>8.66</b>	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	2014 08 18	97.5	<b>8.66</b>	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	0.5	0.1	-	0.5	67	27	75.7	0.0011	0.0063			
	POL-2	2014 08 21	100	-	8.17	-	7.9	200	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	2014 08 08	99.8	<b>9.02</b>	<b>8.79</b>	19.0	1.66	194	131	3.1	6	2420	<b>10</b>	0.333	0.5	0.5	0.1	-	0.5	60	26.3	75.5	0.001	<b>0.0048</b>			
POL-3	POL-3	2014 08 09	97.8	<b>8.98</b>	<b>8.7</b>	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	0.0058	<b>0.0117</b>			
	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	0.0476	<b>0.08</b>			
	POL-3	2014 08 12	96.3	<b>8.85</b>	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	<b>8.94</b>	<b>8.56</b>	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	2014 08 14	98.3	<b>8.89</b>	<b>8.57</b>	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	2014 08 17	99.6	<b>8.932</b>	8.27	19.7	1.04	202	135	3.5	6.38	-	-	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	<b>8.7</b>	<b>5.64</b>	21.0	0.62	200	139	3.7	6.25	-	-	0.333	0.5	0.5	0.1	0.51	0.5	68	27.1	73.3	0.001	0.006			
	POL-3	2014 08 15	98.5	<b>8.89</b>	8.38	22.5	3.68	199	133	0.3	6.31	-	-	0.359	0.5	0.5	0.1	0.51	0.5	80	27.1	74.1	0.001	0.0056			
	POL-3	2014 08 19	101	<b>8.843</b>	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	<b>8.843</b>	<b>8.52</b>	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	2014 08 18	99.1	<b>8.843</b>	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	0	5	1	20	0	1	-	-	1	0	0	0	-	0	0	0	0	1	0	0		
POL-3	POL-3	2014 08 20	102	<b>8.53</b>	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	2014 08 20	100	<b>8.53</b>	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	1	2	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	<b>0.0045</b>			
	POL-4	2014 08 08	100	<b>9.099</b>	<b>8.89</b>	18.2	2.39	192	132	4.6	6.14	2420	<b>28</b>	0.33	0.5	0.5	0.1	-	0.5	60	26.3	75.6	0.001	0.0053			
	POL-4	2014 08 09	99.2	<b>8.929</b>	<b>8.78</b>	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	<b>8.726</b>	<b>8.56</b>	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	2014 08 12	94.6	<b>8.898</b>	<b>8.52</b>	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	2014 08 12	96.7	-	<b>8.52</b>	-	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 %		2	0	0	0	26	1	0	1	1	-	-	1	0	0	0	-	0	0	0	1	2	0	0		
POL-4	POL-4	2014 08 13	98.1	<b>8.831</b>	<b>8.62</b>	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	2014 08 14	97.9	<b>8.993</b>	<b>8.69</b>	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	<b>0.0048</b>			
	POL-4	2014 08 17	101	<b>8.843</b>	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	0.51	0.5	65	26.9	75.2	0.001	0.0058			
	POL-4	2014 08 15	97.8	7.724	8.41	20.7	3.37	200	122	0.3	6.26	-	-	0.468	0.5	0.5	0.1	0.51	0.5	85	27.2	75.4	0.001	0.0059			
	POL-4	2014 08 19	103	<b>8.815</b>	8.23	19.5	1.11	201	134	0.3	6.83	-	-	0.472	10.3	5.9	0.1	-	0.5	76	27.1	78.1	0.001	0.0063			
POL-4	POL-4	2014 08 18	99.5	<b>8.815</b>	<b>8.52</b>	19.5	1.02	200	139	0.3	6.77	-	-	0.404	0.5	15.4	0.1	-	0.5	76	27.6	76	0.001	<b>0.0049</b>			

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) <sup>a,c</sup>			100 (pH ≥ 6.5)	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	na
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			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	na
BCWQG Drinking Water (DW)			50 (pH ≥ 6.5)	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
POL-2	POL-1	2014 08 07	6.3	31.1	30	4.72	0.377	0.341	4.24	0.1	0.55	6.36	0.1	19	0.01	0.05	0.1	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	30	4.78	3.86	0.483	4.44	0.1	0.61	7.72	0.1	20	0.01	0.05	0.1	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	30	4.83	7.95	0.527	4.63	0.1	0.63	9.11	0.1	18	0.01	0.05	0.1	2.86	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	30	4.76	0.815	0.466	4.52	0.1	0.61	8.3	0.1	20	0.01	0.05	0.1	3.19	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	30	4.8	0.728	0.474	4.63	0.1	0.6	8.25	0.1	20	0.01	0.05	0.1	3.21	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 %			1	1	1	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1
	POL-2	2014 08 11	12.1	31.9	30	4.85	22.4	0.708	4.66	0.1	0.66	9.62	0.1	20	0.01	0.05	0.1	3.16	0.05	0.58	-	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	30	4.61	0.361	0.422	4.54	0.1	0.58	7.3	0.1	19	0.01	0.05	0.1	2.18	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	30	4.8	0.487	0.422	4.43	0.1	0.54	8.04	0.1	21	0.01	0.05	0.1	2.3	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	30	4.8	0.501	0.41	4.48	0.1	0.61	7.48	0.1	21	0.01	0.05	0.1	2.25	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	30	4.63	0.815	0.468	4.68	0.1	0.61	7.75	0.1	20	0.01	0.05	0.1	2.53	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	30	4.8	2.87	0.45	4.51	0.1	0.61	7.66	0.1	18	0.01	0.05	0.1	2.3	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	30	4.87	3.41	0.435	4.47	0.1	0.58	7.58	0.1	19	0.01	0.05	0.1	2.34	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	30	4.86	31.2	0.529	4.38	0.1	0.61	9.63	0.1	20	0.01	0.05	0.1	2.34	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	30	4.69	4.93	0.46	4.46	0.1	0.55	8.1	0.1	19	0.01	0.05	0.1	2.33	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	30	4.92	8.18	0.502	4.6	0.1	0.62	8.88	0.1	21	0.01	0.05	0.1	2.99	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	30	4.88	1.44	0.482	4.61	0.1	0.59	8.59	0.1	19	0.01	0.05	0.1	3.41	0.05	0.05	-	2.64	0.05	0.5	0.01	0.01	0.10	0.105	1.1	0.3	
	POL-3	POL-3	2014 08 08	7.1	32	30	4.82	3.02	0.404	4.51	0.1	0.6	6.96	0.1	16	0.01	0.05	0.1	2.12	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	30	4.71	0.583	0.419	4.37	0.1	0.65	6.84	0.1	20	0.01	0.05	0.1	1.82	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	30	5.04	7.3	1.46	4.61	0.1	0.78	10.7	0.1	21	0.01	0.05	0.1	2.74	0.05	0.52	-	2.13	0.05	0.52	0.01	0.01	0.10	0.033	0.1	0.3
POL-3		2014 08 12	8.8	30.9	30	4.67	0.327	0.481	4.59	0.1	0.63	7.03	0.1	19	0.01	0.05	0.1	2.15	0.05	0.51	-	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	30	4.79	0.408	0.451	4.48	0.1	0.58	7.42	0.1	20	0.01	0.05	0.1	2.25	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	30	4.78	0.448	0.428	4.45	0.1	0.65	7.2	0.1	21	0.01	0.05	0.1	2.16	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	30	4.82	0.345	0.447	4.73	0.1	0.6	7.21	0.1	20	0.01	0.05	0.1	2.12	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	30	4.85	1.77	0.419	4.27	0.1	0.61	7.08	0.1	18	0.01	0.05	0.1	2.15	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	30	4.83	2.06	0.415	4.52	0.1	0.59	7.21	0.1	19	0.01	0.05	0.1	2.21	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	30	4.83	2.62	0.452	4.43	0.1	0.58	7.49	0.1	21	0.01	0.05	0.1	2.25	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	30	4.79	0.527	0.443	4.52	0.1	0.61	7.46	0.1	20	0.01	0.05	0.1	2.06	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	30	4.71	0.79	0.441	4.44	0.1	0.57	7.37	0.1	21	0.01	0.05	0.1	2.06	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 %			1	1	1	1	2	40	1	2	1	1	1	1	1	1	1	1	1	1	7	1	1	1	1	1	1	1	1	1	
POL-3		2014 08 20	9.4	32.9	30	4.82	3.96	0.53	4.59	0.1	0.65	7.81	0.1	20	0.01	0.05	0.1	2.32	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	30	4.81	3.71	0.506	4.47	0.1	0.61	7.84	0.1	19	0.01	0.05	0.1	2.17	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	2	1	7	5	3	6	1	6	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	
POL-4		POL-3	2014 08 21	8.7	32.1	30	4.83	2.35	0.497	4.66	0.1	0.59	7.88	0.1	23	0.01	0.05	0.1	2.21	0.05	0.05	-	2.92	0.05	0.57	0.01	0.01	0.10	0.096	1.1	0.3
		POL-4	2014 08 08	7.9	32.2	30	4.84	2.3	0.398	4.48	0.1	0.6	6.58	0.1	19	0.01	0.05	0.1	2.19	0.05	0.05	-	2.25	0.05	0.58	0.01	0.01	0.10	0.098	1.1	0.3
		POL-4	2014 08 09	6.4	31.9	30	4.72	0.481	0.413	4.31	0.1	0.57	6.88	0.1	20	0.01	0.05	0.1	1.77	0.05	0.05	-	2.34	0.05	0.54	0.01	0.01	0.10	0.112	1.1	0.3
		POL-4	2014 08 11	10.1	26.9	30	4.06	2.74	0.429	4.74	0.1	0.59	7.41	0.1	19	0.01	0.05	0.1	2.55	0.05	0.56	-	2.35	0.05	0.61	0.01	0.01	0.10	0.092	1.2	0.3
	POL-4	2014 08 12	10.2	30.3	30	4.58	0.324	0.448	4.78	0.1	0.7	7.54	0.1	19	0.01	0.05	0.1	2.28	0.05	0.51	-	2.34	0.05	0.55	0.01	0.01					

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Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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.

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

n/a Denotes no applicable standard.

**SHADED** Concentration greater than BCWQG Aquatic Life (AW) guide line.

QUAD 2

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

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014

<sup>d</sup> Guideline varies with pH, and or Temperature or Hardness.

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)	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																																			
BCWOG Aquatic Life (AW) <sup>1,c</sup>			n/a	20	5	5,000	5.3	n/a	1,200	0.01-0.025 <sup>d</sup>	n/a	1 (Cr( VI ))	110	6.4-8.8 <sup>d</sup>	1,000	31.2-54.6 <sup>d</sup>	870	n/a	1057.9-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2,000	25-65 <sup>d</sup>	373,000-432,000	2	n/a	0.1 <sup>d</sup>	n/a	0.3	n/a	2,000	300	6	33 <sup>d</sup>		
BCWOG Aquatic Life (30day) (AW) <sup>1,c,e</sup>			n/a	n/a	n/a	1,000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>	1,000	n/a	n/a	n/a	n/a	0.05 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	7.5 <sup>d</sup>			
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	1	250	n/a	n/a	10	n/a	n/a	2	n/a	n/a	n/a	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	n/a	10	n/a	n/a	200,000	n/a	n/a	20	n/a	5,000			
QUR-1	2014 08 06		19.6	0.01	0.13	5.62	0.01	0.05	10	0.01	16,700	0.05	0.01	0.65	30	0.05	0.73	2,030	1.42	0.05	0.331	0.05	493	0.05	1,720	0.01	902	0.01	0.01	10	0.136	0.1	0.3		
	QUR-1X		19.7	0.01	0.14	5.61	0.01	0.05	10	0.01	16,500	0.05	0.01	0.65	30	0.05	0.7	1,990	1.38	0.05	0.323	0.05	475	0.05	1,680	0.01	874	0.01	0.01	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	0	2	0	4	0	3	0	0	0	0	1	0	0		
	QUR-1		22.1	0.01	0.14	5.35	0.01	0.05	10	0.01	16,300	0.05	0.01	0.65	30	0.05	0.71	1,980	1.41	0.05	0.316	0.05	476	0.05	1,670	0.01	867	0.01	0.01	10	0.127	0.1	0.3		
	QUR-1		23.8	0.01	0.13	5.34	0.01	0.05	10	0.01	16,400	0.05	0.01	0.68	30	0.05	0.77	1,970	1.35	0.05	0.305	0.05	484	0.05	1,650	0.01	859	0.01	0.01	10	0.135	0.1	0.3		
QUR-1(11 33)	2014 08 08		24.2	0.01	0.13	5.42	0.01	0.05	10	0.01	17,000	0.05	0.01	0.64	48	0.05	0.51	2,010	1.62	0.05	0.283	0.05	474	0.05	1,670	0.01	888	0.01	0.01	10	0.14	0.1	0.3		
	2014 08 08		20.4	0.01	0.13	5.26	0.01	0.05	10	0.01	17,100	0.05	0.01	0.62	30	0.05	0.55	2,030	1.27	0.05	0.281	0.05	470	0.05	1,670	0.01	885	0.01	0.01	10	0.142	0.1	0.3		
	2014 08 09		27.8	0.01	0.12	5.34	0.01	0.05	10	0.01	17,400	0.05	0.01	0.72	33	0.05	0.71	2,040	1.73	0.05	0.295	0.05	472	0.05	1,680	0.01	872	0.01	0.01	10	0.187	0.1	0.3		
	2014 08 09		28.2	0.01	0.14	5.31	0.01	0.05	10	0.01	17,200	0.05	0.01	0.68	31	0.05	0.69	2,030	1.59	0.05	0.297	0.05	466	0.05	1,660	0.01	861	0.01	0.01	10	0.182	0.1	0.3		
	2014 08 10		21.7	0.01	0.12	5.06	0.01	0.05	10	0.01	16,600	0.05	0.01	0.65	30	0.05	0.5	1,930	1.15	0.05	0.283	0.05	480	0.05	1,620	0.01	893	0.01	0.01	10	0.139	0.1	0.3		
QUR-1(17 45)	2014 08 10		19.5	0.01	0.12	5.11	0.01	0.05	10	0.01	16,900	0.05	0.01	0.61	30	0.05	0.54	1,940	1.2	0.05	0.277	0.05	491	0.05	1,640	0.01	899	0.01	0.01	10	0.145	0.1	0.3		
	2014 08 11		23.8	0.01	0.14	5.28	0.01	0.05	10	0.01	16,400	0.05	0.01	0.64	30	0.05	0.98	1,900	1.39	0.05	0.293	0.05	487	0.05	1,550	0.01	873	0.01	0.01	10	0.141	0.1	0.3		
	2014 08 11		23.6	0.01	0.13	5.41	0.01	0.05	10	0.01	16,500	0.05	0.01	0.66	30	0.05	0.82	1,910	1.37	0.05	0.293	0.05	490	0.05	1,560	0.01	859	0.01	0.01	10	0.13	0.1	0.3		
	2014 08 12		16.6	0.01	0.14	5.25	0.01	0.05	10	0.01	16,400	0.05	0.01	0.68	30	0.05	0.85	1,990	1.17	-	0.304	0.05	473	0.05	1,620	0.01	866	0.01	0.01	10	0.129	0.1	9.4		
	2014 08 12		20.4	0.01	0.13	5.41	0.01	0.05	10	0.01	16,200	0.05	0.01	0.7	30	0.05	0.81	1,970	1.18	0.05	0.317	0.05	475	0.05	1,600	0.01	857	0.01	0.01	10	0.132	0.1	0.3		
QUR-1(20 00)	2014 08 12		15.8	0.01	0.14	5.26	0.01	0.05	10	0.01	16,600	0.05	0.01	0.63	30	0.05	0.84	1,960	1.15	-	0.311	0.05	469	0.05	1,590	0.01	863	0.01	0.01	10	0.135	0.1	8		
	2014 08 13		25.3	0.01	0.14	5.49	0.01	0.05	10	0.01	16,800	0.05	0.01	0.68	30	0.05	0.83	1,980	1.47	-	0.307	0.05	482	0.05	1,610	0.01	881	0.01	0.01	10	0.134	0.1	6		
	2014 08 13		18.6	0.01	0.15	5.41	0.01	0.05	10	0.01	16,600	0.05	0.01	0.64	30	0.05	0.82	1,950	1.38	-	0.312	0.05	466	0.05	1,600	0.01	858	0.01	0.01	10	0.131	0.1	6.6		
	2014 08 13		18.9	0.01	0.14	5.43	0.01	0.05	10	0.01	16,400	0.05	0.01	0.63	30	0.05	0.84	1,930	1.22	0.05	0.316	0.05	480	0.05	1,580	0.01	863	0.01	0.01	10	0.134	0.1	0.3		
	2014 08 13		15.6	0.01	0.16	5.3	0.01	0.05	10	0.01	16,200	0.05	0.01	0.62	30	0.05	0.74	1,930	1.32	-	0.331	0.05	465	0.05	1,560	0.01	846	0.01	0.01	10	0.131	0.1	8		
QUR-1(20 00)	2014 08 14		19.2	0.01	0.17	5.08	0.01	0.05	10	0.01	16,400	0.05	0.01	0.61	30	0.05	0.5	1,950	1.67	-	0.335	0.05	472	0.05	1,630	0.01	861	0.01	0.01	10	0.127	0.1	10.1		
	2014 08 14		16.4	0.01	0.13	5.39	0.01	0.05	10	0.01	16,200	0.05	0.01	0.6	30	0.05	0.67	1,910	1.38	-	0.316	0.05	462	0.05	1,570	0.01	843	0.01	0.01	10	0.135	0.1	0.3		
	2014 08 14		18.7	0.01	0.15	5.44	0.01	0.05	10	0.01	16,000	0.05	0.01	0.64	30	0.05	0.74	1,860	1.41	-	0.326	0.05	470	0.05	1,530	0.01	854	0.01	0.01	10	0.136	0.1	0.3		
	QA/QC RPD %		13	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	3	0	2	0	3	0	1	0	0	1	0	0		
	QUR-1(04 00)		23.1	0.01	0.16	5.2	0.01	0.05	10	0.01	16,400	0.05	0.01	0.64	30	0.05	0.5	1,940	1.8	-	0.322	0.05	478	0.05	1,630	0.01	866	0.01	0.01	10	0.122	0.1	6.2		
QUR-1(12 00)	2014 08 15		15	0.01	0.14	5.04	0.01	0.05	10	0.01	16,300	0.05	0.01	0.64	30	0.05	0.5	1,920	1.24	-	0.324	0.05	470	0.05	1,590	0.01	880	0.01	0.01	10	0.128	0.1	5.7		
	2014 08 15		18.5	0.01	0.16	5.58	0.01	0.05	10	0.01	16,600	0.05	0.01	0.63	30	0.05	0.5	1,950	1.35	-	0.3	0.05	489	0.05	1,630	0.01	881	0.01	0.01	10	0.132	0.1	0.3		
	2014 08 17		20	0.01	0.13	5.17	0.01	0.05	10	0.01	16,400	0.05	0.01	0.63	30	0.05	0.62	1,920	1.35	-	0.312	0.05	475	0.05	1,600	0.01	875	0.01	0.01	10	0.132	0.1	0.3		
	2014 08 16		18.9	0.01	0.13	5.27	0.01	0.05	10	0.01	16,300	0.05	0.01	0.62	30	0.05	0.71	1,910	1.54	-	0.315	0.05	465	0.05	1,580	0.01	837	0.01	0.01	10	0.137	0.1	0.3		
	2014 08 14		19.5	0.01	0.16	5.46	0.01	0.05	10	0.01	16,400	0.05	0.01	0.62	30	0.05	0.76	1,970	1.53	-	0.314	0.05	475	0.05	1,600	0.01	852	0.01	0.01	10	0.134	0.1	6.8		
QUR-1(20 00)	2014 08 14		18.7	0.06	0.17	5.46	0.01	0.05	10	0.01	16,300	0.05	0.01	0.59	30	0.05	0.7	1,890	1.63	-	0.324	0.05	476	0.05	1,560	0.01	869	0.01	0.01	10	0.136	0.1	8		
	2014 08 16		13.6	0.01	0.13	5.36	0.01	0.05	10	0.01	16,900	0.05	0.01	0.51	30	0.05	0.71	1,980	1.13	-	0.328	0.05	482	0.05	1,630	0.01	882	0.01	0.01	10	0.142	0.1	6.2		
	2014 08 19		22.5	0.01	0																														

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) <sup>b,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a	Under Review by SNC Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	1030.6-1207 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a	0.005-0.015
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n.a	n.a	n.a	n.a		n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n.a	128-218 <sup>d</sup>	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		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	n.a	n.a	0.01
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	n.a	250	1 500	500	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-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 <sup>a</sup>	
	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	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-3	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 <sup>a</sup>	
	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 <sup>a</sup>	
QA/QC RPD %			1	0	0	0	0	1	13	0	0	-	-	-	0	0	1	0	-	0	0	1	1	0	0	0	
QUL-3	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	0.0033	
	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 <sup>a</sup>	
QUL-3	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-3	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-3	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 <sup>a</sup>	
	QA/QC RPD %		1	0	1	0	0	1	10	0	0	-	-	-	0	0	1	0	-	0	0	1	1	0	0	0	
QUL-3	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-4	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-6	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 <sup>a</sup>	
	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	5.62	44.1	-	0.001	0.002 <sup>a</sup>	
QUL-8	QUL-8	2014 08 06	47.8	7.96	7.9	21.6	1.4	95.8	60	0.3	2.21	-	-	-	0.149	5	36.4	1.8	-	0.5	34	5.67	44.5	-	0.001	0.002 <sup>a</sup>	
	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	5.62	44.2	-	0.001	0.002 <sup>a</sup>	
QUL-9	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	5.61	43.5	-	0.001	0.002 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-9	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-9	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 <sup>a</sup>	
	QA/QC RPD %		1	-	1	0	18	1	2	0	1	-	-	-	0	0	1	0	-	0	0	1	1	-	0	0	
QUL-9	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	0.0026	
	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	0.0023	
QUL-9	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 <sup>a</sup>	
	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 <sup>a</sup>	
QUL-9	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 <sup>a</sup>	
	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 <sup>a</sup>	
QA/QC RPD %			3	-	1	-	0	1	5	0	0	-	-	-	0	0	1	0	-	0	0	1	1	-	0	0	
QUL-10	QUL-10	2014 08 06	47.7	8.08	7.95	21.4	0.41	94.9	55	0.3	2.1	-	-	-	0.195	5	45	0.1	-	0.5	33	5.58	44.2	-	0.001	0.002 <sup>a</sup>	
	QUL-11-0M	2014 08 07	49.2	-	7.79	-	2.43	95.4	74	3.6	2.5	-	-	-	0.122	5	35	0.1	-	0.5	36	5.79	44.7	-	0.001	0.002 <sup>a</sup>	
QUL-11	QUL-11-10M	2014 08 07	50.8	-	7.9	-	1.3	98.9	76	0.3	2.02	-	-	-	0.171	5	112	0.1	-	0.5	35	5.76	46.7	-	0.001	0.002 <sup>a</sup>	
	QUL-11-15M	2014 08 07	53.4	-	7.91	-	0.59	103	84	0.3	1.85	-	-	-	0.181	5	136	0.1	-	0.5	36	6.6					



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)	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	5,000	5.3	n/a	1,200	0.01-0.025 <sup>a</sup>	n/a	1 (Cr(6))	110	6.4-8.8 <sup>b</sup>	1,000	31.2-54.6 <sup>d</sup>	870	n/a	1057.9-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2,000	25-65 <sup>e</sup>	373,000-432,000	2	n/a	0.1 <sup>f</sup>	n/a	0.3	n/a	2,000	300	6	33 <sup>g</sup>	
			n/a	n/a	n/a	1,000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>	1,000	n/a	n/a	n/a	10	n/a	0.05 <sup>h</sup>	n/a	n/a	n/a	n/a	n/a	n/a	5,000	
			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	1	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
			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	n/a	200,000	n/a	n/a	n/a	20	n/a	n/a	5,000	
QUL-1	QUL-1	2014 08 06	21.7	0.01	0.1	5.28	0.01	0.05	10	0.01	16,100	0.05	0.01	0.71	30	0.05	0.5	1,920	1.36	0.05	0.295	0.5	475	0.5	1,610	0.01	857	0.01	0.1	10	0.14	0.1	0.3	
	QUL-2	2014 08 06	17.6	0.01	0.11	5.34	0.01	0.05	10	0.01	15,900	0.05	0.01	0.62	30	0.05	0.5	1,910	1.4	0.05	0.302	0.5	473	0.5	1,590	0.01	822	0.01	0.1	10	0.131	0.1	0.3	
QUL-2	QUL-2	2014 08 09	21.4	0.01	0.12	5.57	0.01	0.05	10	0.01	16,100	0.05	0.01	0.67	30	0.05	0.61	1,900	1.93	0.05	0.303	0.5	484	0.5	1,580	0.01	828	0.01	0.1	10	0.139	0.1	0.3	
	QUL-2	2014 08 11	17.5	0.01	0.16	5.36	0.01	0.05	10	0.01	16,000	0.05	0.01	0.72	30	0.05	0.83	1,880	1.23	0.05	0.317	0.5	496	0.5	1,530	0.01	849	0.01	0.1	10	0.131	0.1	0.3	
QUL-2-0M	QUL-2-0M	2014 08 16	18.9	0.01	0.14	5.52	0.01	0.05	10	0.01	16,000	0.05	0.01	0.66	30	0.05	0.51	1,870	1.45	-	0.315	0.5	477	0.5	1,560	0.01	836	0.01	0.1	10	0.14	0.1	0.3	
	QUL-2-10M	2014 08 16	21	0.01	0.11	5.31	0.01	0.05	10	0.01	16,500	0.05	0.01	0.95	30	0.05	0.52	1,840	1.07	-	0.268	0.5	467	0.5	1,520	0.01	810	0.01	0.1	10	0.151	0.1	0.3	
QUL-2-30M	QUL-2-30M	2014 08 16	<b>126</b>	0.01	0.15	7.32	0.01	0.05	10	0.01	18,300	0.05	0.01	<b>2.8</b>	97	0.05	0.5	2,120	7.03	-	0.358	0.5	522	0.5	1,980	0.01	987	0.01	0.1	10	0.198	0.1	0.3	
	QUL-2-47M	2014 08 21	<b>2,810</b>	0.17	1.2	61.6	0.01	0.05	10	0.02	21,100	<b>1.68</b>	<b>1.25</b>	<b>51.7</b>	<b>1,800</b>	1.03	2.26	3,160	<b>109</b>	-	3.02	1.8	1,740	0.5	7,730	0.023	3,290	0.012	0.15	113	0.526	5.4	7.3	
QUL-3	QUL-3	2014 08 06	18.9	0.01	0.12	5.47	0.01	0.05	10	0.01	16,000	0.05	0.01	0.7	30	0.05	0.5	1,940	1.47	0.05	0.327	0.5	489	0.5	1,620	0.01	835	0.01	0.1	10	0.13	0.1	0.3	
	QUL-3	2014 08 09	23.7	0.01	0.13	5.53	0.01	0.05	10	0.01	16,200	0.05	0.01	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	QUL-3	2014 08 10	16.3	0.01	0.13	5.52	0.01	0.05	10	0.01	16,200	0.05	0.01	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	0.01	0.05	10	0.01	15,800	0.05	0.01	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	QUL-3	2014 08 11	17.1	0.01	0.13	5.39	0.01	0.05	10	0.01	15,700	0.05	0.01	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	0.01	0.05	10	0.01	16,100	0.05	0.01	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	QUL-3	2014 08 13	13.6	0.01	0.14	5.63	0.01	0.05	10	0.01	16,300	0.05	0.01	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	0.01	0.05	10	0.01	16,400	0.05	0.01	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	QUL-3	2014 08 15	15	0.01	0.12	5.14	0.01	0.05	10	0.01	16,400	0.05	0.01	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	0.01	0.05	10	0.01	16,200	0.05	0.01	0.8	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	QUL-3X	2014 08 16	18.2	0.01	0.12	5.51	0.01	0.05	10	0.01	15,900	0.05	0.01	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 %					2					2						3				0		4		1		1				10			
QUL-3	QUL-3	2014 08 17	20.3	0.01	0.12	5.36	0.01	0.05	10	0.01	15,900	0.05	0.01	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	0.01	0.05	10	0.01	16,500	0.05	0.01	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-4	QUL-4	2014 08 06	47.2	0.01	0.13	6.03	0.01	0.05	10	0.01	16,100	0.05	0.01	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	5.96	0.01	0.05	10	0.01	15,700	0.05	0.01	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	QUL-6	2014 08 06	53.9	0.01	0.13	6.22	0.01	0.05	10	0.01	16,200	0.05	0.01	1.63	46	0.05	0.5	1,970	2.84	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	0.01	0.05	10	0.01	16,100	0.05	0.01	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	QUL-8	2014 08 06	<b>101</b>	0.01	0.15	7.04	0.01	0.05	10	0.01	16,100	0.05	0.01	<b>2.78</b>	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	0.01	0.05	10	0.01	16,200	0.05	0.01	<b>2.38</b>	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	QUL-9	2014 08 09	31.4	0.01	0.13	5.75	0.01	0.05	10	0.01	16,200	0.05	0.01	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	0.01	0.05	10	0.01	15,600	0.05	0.01	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	QUL-9	2014 08 12	17.2	0.01	0.13	5.28	0.01	0.05	10	0.01	16,100	0.05	0.01	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	0.01	0.05	10	0.01	16,300	0.05	0.01	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	QUL-9X	2014 08 13	28.9	0.01	0.15	6.52	0.01	0.05	10	0.01	16,700	0.05	0.01	1.1	38	0																		



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) <sup>b,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a	Under Review by SNC Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	1030.6-1207 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	0.005-0.015		
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n.a	n.a	n.a	n.a		n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n.a	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a		
BCWQG Drinking Water (DW)			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	10 000	250	1 500	500	n.a	n.a	n.a	0.01		
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	n.a	250	1 500	500	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	51	-	5	36	5.85	45.9	-	0.001	0.002 <sup>2</sup>			
	QUL-12-10M	2014 08 07	50.7	-	7.91	-	1.08	99.7	77	3	2	-	-	-	0.164	5	112	51	-	5	35	5.77	47	-	0.001	0.002 <sup>2</sup>			
	QUL-12-15M	2014 08 07	52.7	-	7.92	-	1.09	104	74	3	1.88	-	-	-	0.181	5	139	51	-	5	37	6.04	48.7	-	0.001	0.002 <sup>2</sup>			
	QUL-12-20M	2014 08 07	53.5	-	7.91	-	0.7	105	74	3	1.85	-	-	-	0.18	5	140	51	-	5	36	6.07	49	-	0.001	0.002 <sup>2</sup>			
	QUL-12-5M	2014 08 07	48.6	-	7.97	-	0.47	94.8	68	3	2	-	-	-	0.135	5	71.2	51	-	5	35	5.51	44.3	-	0.001	0.002 <sup>2</sup>			
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	51	-	5	35	5.55	44.6	-	0.001	0.002 <sup>2</sup>			
	QUL-13-10M	2014 08 07	49.8	-	7.93	-	0.87	99.2	70	3	1.94	-	-	-	0.164	5	111	51	-	5	35	5.72	46.3	-	0.001	0.002 <sup>2</sup>			
	QUL-13-15M	2014 08 07	52.5	-	7.92	-	1.18	104	75	3	1.84	-	-	-	0.174	5	136	51	-	5	36	6.02	48.3	-	0.001	0.002 <sup>2</sup>			
	QUL-13-20M	2014 08 07	50.2	-	7.94	-	0.61	106	68	3	1.79	-	-	-	0.185	5	141	51	-	5	36	6.08	49.2	-	0.001	0.002 <sup>2</sup>			
	QUL-13-5M	2014 08 07	48.2	-	7.96	-	0.49	94.5	66	3	2.08	-	-	-	0.176	5	72.8	51	-	5	34	5.5	44.5	-	0.001	0.002 <sup>2</sup>			
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	51	-	5	36	5.84	45.7	-	0.001	0.002 <sup>2</sup>			
	QUL-14-3M	2014 08 07	47.9	-	7.94	-	1.25	95.9	66	3	2.05	-	-	-	0.137	5	66.5	51	-	5	34	5.56	44.5	-	0.001	0.002 <sup>2</sup>			
QUL-15	QUL-15-0M	2014 08 07	48.9	-	7.91	-	2.26	97.5	69	3	2.58	2420	461	0.127	5	34.8	51	-	5	35	5.78	52	-	0.001	0.002 <sup>2</sup>				
	QUL-15-4.5M	2014 08 07	48.1	-	7.92	-	1.15	95.6	67	3	2.1	-	-	-	0.131	5	70	51	-	5	34	5.54	50	-	0.001	0.002 <sup>2</sup>			
QUL-16	QUL-16-0M	2014 08 07	48.3	-	7.93	-	0.97	95	64	3	2.21	-	-	-	0.144	5	56.7	51	-	5	34	5.53	44.3	-	0.001	0.002 <sup>2</sup>			
	QUL-16-4.5M	2014 08 07	48	-	7.96	-	0.5	95.3	61	3	2.07	-	-	-	0.13	5	68	51	-	5	33	5.5	44.3	-	0.001	0.002 <sup>2</sup>			
QUL-17	QUL-17	2014 08 08	48.7	8.01	7.97	17.3	1.31	95.5	60	3	2.45	46	2	0.122	5	65.1	51	-	5	34	5.51	44.2	-	0.001	0.002 <sup>2</sup>				
	QUL-17	2014 08 09	48.6	7.86	7.88	18.2	0.44	96.3	66	3	2.31	-	-	-	0.135	5	63	51	-	5	34	5.49	42.9	-	0.001	0.002 <sup>2</sup>			
	QUL-17	2014 08 11	48	7.97	7.91	20.2	0.41	97.5	64	3	2.36	-	-	-	0.133	5	52.4	51	-	5	34	5.68	43.3	-	0.001	0.002 <sup>2</sup>			
	QUL-17	2014 08 12	47	8.01	7.97	20.6	0.44	95.6	64	3	1.91	-	-	-	0.135	5	49.5	51	-	5	36	5.65	44	-	0.0013	0.002 <sup>2</sup>			
	QUL-17	2014 08 13	47.5	-	7.99	20.6	0.39	97.8	58	3	2.15	-	-	-	0.12	5	42.7	51	-	5	33	5.63	44.5	-	0.001	0.002 <sup>2</sup>			
	QUL-17	2014 08 14	49.4	7.95	7.95	20.9	0.29	97.5	63	3	2.11	-	-	-	0.107	5	43	51	-	5	36	5.63	44.2	-	0.001	0.002 <sup>2</sup>			
	QUL-17X	2014 08 14	48.5	7.95	7.95	-	0.26	97.8	66	3	2.15	-	-	-	0.111	5	43	51	-	5	36	5.65	44.3	-	0.001	0.002 <sup>2</sup>			
	QAVQC RPD %			2	0	0		1	5	1			-	-	-	0	0	0	-	1	1	1	-	-	-	-			
	QUL-17	2014 08 15	48.4	8.13	7.98	21.0	0.25	96.2	56	3	1.92	-	-	-	0.103	5	41.1	51	-	5	36	5.63	43.7	-	0.001	0.002 <sup>2</sup>			
	QUL-17	2014 08 16	48.6	8.12	7.95	20.6	0.52	95.6	56	3	2.04	-	-	-	0.117	5	46	51	-	5	36	5.62	42.5	-	0.001	0.002 <sup>2</sup>			
QUL-18	QUL-17	2014 08 17	47.9	7.78	7.97	21.1	0.36	96.5	62	3	2.32	-	-	-	0.122	5	40.8	51	-	5	34	5.64	43.6	-	0.001	0.002 <sup>2</sup>			
	QUL-18-0M	2014 08 08	48.6	8.03	7.95	-	0.38	95.4	64	3	2.07	27	1	0.129	5	68.9	51	-	5	34	5.5	44	-	0.001	0.002 <sup>2</sup>				
	QUL-18-8M	2014 08 08	50.7	-	7.97	-	0.58	98.9	68	3	1.92	-	-	-	0.153	5	99.3	51	-	5	35	5.66	46.1	-	0.001	0.002 <sup>2</sup>			
	QUL-18-30M	2014 08 08	54.6	-	7.95	-	0.96	107	69	3	1.89	-	-	-	0.185	5	143	51	-	5	36	6.11	49.3	-	0.001	0.002 <sup>2</sup>			
	QUL-18-0M	2014 08 09	48.6	7.93	7.81	16.6	0.64	94.4	68	3	2.03	-	-	-	0.143	5	64.4	51	-	5	35	5.53	42.8	-	0.001	0.002 <sup>2</sup>			
	QUL-18-30M	2014 08 09	54.5	-	7.87	-	3.4	106	75	3	1.91	-	-	-	0.186	5	138	51	-	5	37	6.15	48	-	0.001	0.002 <sup>2</sup>			
	QUL-18-8M	2014 08 09	49.8	-	7.87	-	0.37	97.1	73	3	2.01	-	-	-	0.158	5	87.7	51	-	5	34	5.6	43.8	-	0.001	0.002 <sup>2</sup>			
	QUL-18	2014 08 10	48.8	7.77	7.91	20.5	0.39	96.2	63	3	2.25	-	-	-	0.136	5	56.3	51	-	5	34	5.59	45	-	0.001	0.002 <sup>2</sup>			
	QUL-18	2014 08 11	47.8	7.73	7.91	20.2	0.38	97.7	67	3	2.22	-	-	-	0.203	5	53.6	51	-	5	34	5.63	44.3	-	0.001	0.002 <sup>2</sup>			
	QUL-18	2014 08 12	47.4	7.92	7.94	21.0	0.51	95.6	64	3	1.96	-	-	-	0.126	5	51.1	51	-	5	36	5.67	44.1	-	0.001	0.002 <sup>2</sup>			
QUL-18	QUL-18-0M	2014 08 13	47.2	-	7.98	-	0.34	98.2	57	3	2.1	-	-	-	0.12	5	44.8	51	-	5	33	5.63	44.7	-	0.001	0.002 <sup>2</sup>			
	QUL-18-16M	2014 08 13	50.2	-	7.97	-	0.27	103	70	3	1.95	-	-	-	0.173	5	111	51	-	5	34	5.85	46.2	-	0.001	0.002 <sup>2</sup>			
	QUL-18-30M	2014 08 13	52.3	-	7.97	-	0.49	109	69	3	1.91	-	-	-	0.188	5	139	51	-	5	35	6.21	48.9	-	0.001	0.002 <sup>2</sup>			
	QUL-18	2014 08 14	49.2	8.04	7.97	21.2	0.22	97.9	67	3	1.98	-	-	-	0.105	5	46	51	-	5	35	5.65	44.1	-	0.001	0.002 <sup>2</sup>			
	QUL-18	2014 08 15	48.9	8.09	7.93	21.0	0.28	94.7	66	3	1.86	-	-	-	0.102	5	42.1	51	-	5	36	5.62	43.3	-	0.001	0.002 <sup>2</sup>			
	QUL-18-0M	2014 08 16	48.3	8.08	7.95	-	0.62	94.7	64	3	2.02	-	-	-	0.106	5	41	51	-	5	36	5.6	43.9	-	0.001	0.002 <sup>2</sup>			
	QUL-18-10M	2014 08 16	50	7.82	7.94	13.9	1.4	97.4	64	3	2.06	-	-	-	0.136	5	87.9	51	-	5	36	5.82	44.6	-	0.001	0.002 <sup>2</sup>			
	QUL-18-30M	2014 08 16	54.6	7.6	7.91	4.7	3.17	106	68	3	1.7	-	-	-	0.173	5	141	51	-	5	38	6.37	49.1	-	0.001	0.002 <sup>2</sup>			
	QUL-18	2014 08 19	48.6	-	7.93	-	0.35	96.5	63	3	2.07	-	-	-	0.112	5	40.3	51	-	5	32	5.54	43.6	-	0.001	0.002 <sup>2</sup>			

Associated ALS files: L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L150

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Associated ALS files 1498519, 1498533, 1499166, 1499203, 1499703, 1499707, 1499710, 1499926, 1499947, 1500619, 1501501, 1501518, 1502349, 1502364, 1502370, 1502388, 1503057, 1503061, 1503079, 1503091, 1503913, 1503928, 1503932, 1503933, 1503934, 1504180, 1504213, 1504220, 1504251, 1504261, 1504997, 1505091, 1505651, 1505655, 1505657, 1506577, 1506586, 1500164, 1501501, 1501518, 1502349, 1502364, 1502370, 1502388, 1503057, 1503061, 1503079, 1503091, 1503913, 1503928, 1503932, 1503933, 1503934

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.
- Denotes not applicable standard.

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

<b>SHADED</b>	Concentration greater than BCWQG Aquatic Life (AW) guide line.
<b>BOLD</b>	Concentration greater than BCWQG Drinking Water (DW) guideline.
<b>SHADED</b>	Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.
<b>BOLD</b>	Concentration greater than or equal to Canadian Drinking Water Quality (DW) guide line.

<sup>d</sup> Guideline varies with pH, and or Temperature or Hardness.

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SHADED	Concentration greater than BCOWG Aquatic Life (AW) guideline.
BOLD	Concentration greater than BCOWG Drinking Water (DW) guideline.
SHADED	Concentration greater than BCOWG Aquatic Life (30day) (AW) guideline.
BOLD	Concentration greater than or equal to Canadian Drinking Water Quality (DW) guideline.

SNC-LAVALIN INC.

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												Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
			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)										
BC Standards																																
BCWQG Aquatic Life (AW) <sup>a,c</sup>			n/a	6.5-9.0	6.5-9.0	n/a	Under Review by SNC Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	1030.6-1207 <sup>d</sup>	128-218 <sup>d</sup>	n/a	n/a	n/a	n/a	0.005-0.015				
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n/a	128-218 <sup>d</sup>	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		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	n/a	n/a	n/a	0.01				
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	n/a	250	1 500	500	n/a	n/a	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	QA/QC RPD %		0.1	0	0	0	0	0.1	8	0	0	-	-	-	0	0	4	0	-	0	0	0.1	0.1	-	0	0.001	0.002 <sup>a</sup>	-	-	-	-	
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	QA/QC RPD %		0.1	0	0.1	0	0	0.1	8	0	0	-	-	-	0	0	1	0	-	0	0	0.1	0.1	-	0	0.001	0.002 <sup>a</sup>	-	-	-	-	
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	QA/QC RPD %		0.1	0	0.1	-	-	0	5	0	0	-	-	-	0	0	2	0	-	0	0	0.1	0.1	-	0	0.001	0.002 <sup>a</sup>	-	-	-	-	
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
	QA/QC RPD %		0.1	0	0.1	0	0	0	5	0	0	-	-	-	0	0	4	0	-	0	0	0	0.1	0.1	-	0	0.001	0.002 <sup>a</sup>	-	-	-	-
	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 <sup>a</sup>	-	-	-	-		
	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 <sup>a</sup>	-	-	-	-		
QUL-21	QUL-21-0M	2014 08 08	49.5	7.9	7.91	-	0.29	97.6	72	0.3	2.51	-	-	-	0.159	0.5	85.6	0.1	-	0.5	34	5.57	43.6	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21-7M	2014 08 08	50.7	-	7.91	-	0.25	99.5	72	0.3	2.11	-	-	-	0.174	0.5	100	0.1	-	0.5	35	5.66	44.5	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21-30M	2014 08 08	54.3	-	7.9	-	0.78	108	77	0.3	2.16	-	-	-	0.193	0.5	141	0.1	-	0.5	36	6.12	48	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21	2014 08 09	49.3	7.81	7.88	16.1	0.36	96.7	68	0.3	2.33	-	-	-	0.137	0.5	73.9	0.1	-	0.5	34	5.52	43.2	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21	2014 08 11	47.8	7.9	7.92	19.7	0.77	97.8	65	0.3	2.27	-	-	-	0.132	0.5	57.3	0.1	-	0.5	33	5.64	44	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21-0M	2014 08 12	48.1	7.98	7.96	-	0.4	95.9	65	0.3	1.97	-	-	-	0.13	0.5	55.1	0.1	-	0.5	36	5.66	43.8	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21X	2014 08 12	48.9	7.98	7.95	-	0.49	96.3	65	0.3	1.95	-	-	-	0.126	0.5	54.1	0.1	-	0.5	36	5.64	44.3	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QA/QC RPD %		2	0	0.1	-	0	0	0	0	0	-	-	-	0	0	2	0	-	0	0	0.1	0.1	-	0	0.001	0.002 <sup>a</sup>	-	-	-	-	
	QUL-21-12M	2014 08 12	48.2	8.15	7.94	12.90	0.55	98.7	68	0.3	1.87	-	-	-	0.171	0.5	88.2	0.1	-	0.5	36	5.77	44.6	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21-30M	2014 08 12	54.3	7.57	7.96	4.59	0.39	107	72	0.3	1.74	-	-	-	0.191	0.5	139	0.1	-	0.5	38	6.19	49.6	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21	2014 08 13	47.6	-	8	-	0.29	98.2	59	0.3	2.09	-	-	-	0.135	0.5	44.2	0.1	-	0.5	32	5.62	44.4	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
	QUL-21	2014 08 14	49.6	8.15	7.96	21.34	0.22	97.2	65	0.3	2.11	-	-	-	0.106	0.5	41.5	0.1	-	0.5	35	5.62	43.7	-	0.001	0.002 <sup>a</sup>	-	-	-	-		
QUL-21-0M	2014 08 15	48.7	8.12	7.98	-	0.22	95.4	66	0.3	1.96	-	-	-	0.102	0.5	39.7	0.1	-	0.5	36	5.64	43.1	-	0.001	0.002 <sup>a</sup>	-	-	-	-			
QUL-21-10M	2014 08 15	50.3	7.82	7.94	13.14	0.3	98.3	67	0.3	1.73	-	-	-	0.138	0.5	89.9	0.1	-	0.5	35	5.76	44.6	-	0.001	0.002 <sup>a</sup>	-	-	-	-			
QUL-21-30M	2014 08 15	53.5	7.65	7.9	4.64	0.35	106	71	0.3	1.65	-	-	-	0.175	0.5	140	0.1	-	0.5	38	6.17	48	-	0.001	0.002 <sup>a</sup>	-	-	-	-			
QUL-21	2014 08 16	48.2	8.																													

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 (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) <sup>a,c</sup>			26.1-100 <sup>d</sup>	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	n/a		
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			50-1000 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	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	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	n/a		
QUL-19	QUL-19	2014 08 08	10.7	16.1	30	1.98	0.819	0.488	0.877	0.01	0.13	5.89	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.05	-	0.346	0.05	0.05	0.01	0.01	0.10	0.116	0.1	0.3			
		2014 08 09	10.1	16.3	30	1.88	0.443	0.472	0.828	0.01	0.1	5.26	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.54	-	0.318	0.05	0.05	0.01	0.01	0.10	0.138	0.1	0.3			
		2014 08 10	11.2	16	30	2	1.66	0.524	0.944	0.01	0.17	6.17	0.01	0.10	0.01	0.05	0.01	0.55	0.05	0.05	-	0.394	0.05	0.05	0.01	0.01	0.10	0.122	0.1	0.3			
		2014 08 11	12	15.4	30	1.87	0.745	0.496	0.871	0.01	0.12	5.69	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.96	-	0.328	0.05	0.05	0.01	0.01	0.10	0.123	0.1	0.3			
		2014 08 11	10.7	15.4	30	1.89	0.938	0.516	0.906	0.01	0.12	5.83	0.01	0.10	0.01	0.05	0.01	0.5	0.05	1.02	-	0.353	0.05	0.05	0.01	0.01	0.10	0.123	0.1	0.3			
	QA/QC RPD %		0	0	1	23	4	4	4	0	0	2	0	0	0	0	0	0	0	0	-	7	0	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	0.01	0.01	4.85	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.86	-	0.243	0.05	0.05	0.01	0.01	0.10	0.145	0.1	0.3			
		2014 08 13	9.6	16	30	1.83	0.098	0.436	0.789	0.01	0.01	4.79	0.01	0.10	0.01	0.05	0.01	0.05	0.05	1.01	-	0.282	0.05	0.05	0.01	0.01	0.10	0.142	0.1	0.3			
		2014 08 14	12	16.7	30	1.86	0.381	0.445	0.783	0.01	0.01	4.98	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.73	-	0.259	0.05	0.05	0.01	0.01	0.10	0.135	0.1	0.3			
		2014 08 15	10	16.5	30	1.86	0.367	0.463	0.798	0.01	0.01	5.31	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.05	-	0.285	0.05	0.05	0.01	0.01	0.10	0.138	0.1	0.3			
		2014 08 16	9.9	16.3	30	1.94	0.442	0.464	0.826	0.01	0.11	5.54	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.76	-	0.318	0.05	0.05	0.01	0.01	0.10	0.133	0.1	0.3			
		2014 08 17	8.9	16.2	30	2.12	0.987	0.507	0.945	0.01	0.15	6.33	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.55	-	0.43	0.05	0.05	0.01	0.01	0.10	0.121	0.1	0.3			
		2014 08 17	9.6	16	30	2.09	0.977	0.522	0.955	0.01	0.17	6.45	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.5	-	0.441	0.05	0.05	0.01	0.01	0.10	0.125	0.1	0.3			
		QA/QC RPD %		1	1	1	3	1	1	0	0	2	0	0	0	0	0	0	0	0	-	3	0	0	0	0	0	0	0	0	0		
		2014 08 19	10.2	16.3	30	1.92	0.322	0.477	0.843	0.01	0.11	5.4	0.01	0.10	0.01	0.05	0.01	0.52	0.05	0.71	-	0.308	0.05	0.05	0.01	0.01	0.10	0.133	0.1	0.3			
		2014 08 21	9.3	16.7	30	1.92	0.344	0.454	0.814	0.01	0.11	5.2	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.83	-	0.292	0.05	0.05	0.01	0.01	0.10	0.139	0.1	0.3			
		2014 08 20	7.4	17.7	30	2.04	0.365	0.463	0.892	0.01	0.11	5.25	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.73	-	0.276	0.05	0.05	0.01	0.01	0.10	0.136	0.1	0.3			
		2014 08 08	7.5	17.7	30	2.04	0.339	0.466	0.892	0.01	0.1	5.14	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.68	-	0.263	0.05	0.05	0.01	0.01	0.10	0.137	0.1	0.3			
	QA/QC RPD %		0	0	7	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	-	5	0	0	0	0	0	0	0	0	0		
	2014 08 09	8.1	17.1	30	1.95	0.355	0.459	0.847	0.01	0.01	5.12	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.61	-	0.287	0.05	0.05	0.01	0.01	0.10	0.138	0.1	0.3				
	2014 08 11	12.1	16	30	1.85	0.301	0.489	0.847	0.01	0.11	5.22	0.01	0.10	0.01	0.05	0.01	0.51	0.05	1.07	-	0.26	0.53	0.05	0.01	0.01	0.10	0.132	0.1	0.3				
	2014 08 12	9.9	16.1	30	1.82	0.127	0.463	0.823	0.01	0.01	5.51	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.75	-	0.299	0.05	0.05	0.01	0.01	0.10	0.137	0.1	0.3				
	2014 08 13	9.6	16.1	30	1.88	0.163	0.476	0.847	0.01	0.01	5.3	0.01	0.10	0.01	0.05	0.01	0.05	0.05	1.04	-	0.312	0.05	0.05	0.01	0.01	0.10	0.135	0.1	0.3				
	2014 08 14	10.6	16.6	30	1.89	0.392	0.471	0.825	0.01	0.11	5.26	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.7	-	0.299	0.05	0.05	0.01	0.01	0.10	0.13	0.1	0.3				
	2014 08 15	9.9	16.7	30	1.9	0.354	0.469	0.826	0.01	0.12	5.73	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.5	-	0.3	0.05	0.05	0.01	0.01	0.10	0.139	0.1	0.3				
	2014 08 15	10.1	16.7	30	1.89	0.35	0.472	0.826	0.01	0.11	5.65	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.05	-	0.299	0.05	0.05	0.01	0.01	0.10	0.138	0.1	0.3				
	QA/QC RPD %		0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	-	1	0	0	0	0	0	0	0	0	0		
QUL-20	QUL-20	2014 08 16	9.9	16.4	30	1.93	0.333	0.45	0.791	0.01	0.11	5.18	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.5	-	0.281	0.05	0.05	0.01	0.01	0.10	0.132	0.1	0.3			
		2014 08 17	9.9	16	30	1.86	0.423	0.471	0.832	0.01	0.11	5.28	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.57	-	0.28	0.05	0.05	0.01	0.01	0.10	0.137	0.1	0.3			
		2014 08 08	9.3	16.7	30	1.93	0.368	0.462	0.832	0.01	0.01	5.21	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.5	-	0.273	0.05	0.05	0.01	0.01	0.10	0.158	0.1	0.3			
		2014 08 08	8.8	17.1	30	1.94	0.2	0.476	0.863	0.01	0.01	5.2	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.5	-	0.269	0.05	0.05	0.01	0.01	0.10	0.163	0.1	0.3			
		2014 08 08	4.9	18.3	30	2.08	2.29	0.474	0.919	0.01	0.01	5.26	0.01	0.10	0.01	0.05	0.01	0.53	0.05	0.51	-	0.269	0.05	0.05	0.01	0.01	0.10	0.176	0.1	0.3			
	QUL-21	2014 08 09	10	16.6	30	1.9	0.49	0.465	0.83	0.01	0.11	5.28	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.56	-	0.298	0.05	0.05	0.01	0.01	0.10	0.132	0.1	0.3			
		2014 08 11	10.3	16.1	30	1.84	0.673	0.487	0.832	0.01	0.11	5.27	0.01	0.10	0.01	0.05	0.01	0.5	0.05	1.02	-	0.283	0.05	0.05	0.01	0.01	0.10	0.125	0.1	0.3			
		2014 08 12	8	16.1	30	1.94	0.275	0.488	0.855	0.01	0.1	5	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.81	-	0.324	0.05	0.05	0.01	0.01	0.10	0.08	0.1	0.3			
		2014 08 12	11	16.4	30	1.92	0.653	0.458	0.823	0.01	0.11	5.37	0.01	0.10	0.01	0.05	0.01	0.05	0.05	0.54	-	0.276	0.05	0.05	0.01	0.01	0.10	0.13	0.1	0.3			
		QA/QC RPD %		2	1	81	6	4	4	0	0	7	0	0	0	0	0	0	0	0	-	16	0	0	0	0	0	48	0	0	0		
		2014 08 12	10.5	16.3	30	1.82	0.212	0.46	0.815	0.01	0.01	5.06	0.01	0.10	0.01	0.05	0.01	0.5	0.05	0.77													



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)	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																																				
BCWOG Aquatic Life (AW) <sup>1,c</sup>			n/a	20	5	5,000	5.3	n/a	1,200	0.01-0.025 <sup>d</sup>	n/a	1 (Cr(6))	110	6.4-8.8 <sup>d</sup>	1,000	31.2-54.6 <sup>d</sup>	870	n/a	1057.9-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2,000	25-65 <sup>d</sup>	373,000-432,000	2	n/a	0.1 <sup>d</sup>	n/a	0.3	n/a	2,000	300	6	33 <sup>d</sup>			
BCWOG Aquatic Life (30day) (AW) <sup>1,c</sup>			n/a	n/a	n/a	1,000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>	1	1,000	n/a	n/a	n/a	0.05 <sup>d</sup>	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	2	n/a	n/a	n/a	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	n/a	10	n/a	n/a	200,000	n/a	n/a	20	n/a	5,000				
QUL-19	QUL-19	2014 08 08	19.9	0.01	0.15	5.79	0.01	0.05	10	0.01	15,600	0.05	0.01	0.6	33	0.05	0.5	1,950	2.49	0.05	0.373	0.05	479	0.5	1,680	0.01	867	0.01	0.1	10	0.121	0.1	0.3			
		2014 08 09	20	0.01	0.11	5.48	0.01	0.05	10	0.01	16,200	0.05	0.01	0.66	30	0.05	0.5	1,910	1.27	0.05	0.307	0.05	481	0.5	1,580	0.01	834	0.01	0.1	10	0.138	0.1	0.3			
		2014 08 10	18.7	0.01	0.16	6.21	0.01	0.05	10	0.01	15,800	0.05	0.01	0.63	31	0.05	0.5	1,980	2.84	0.05	0.426	0.05	519	0.5	1,770	0.01	948	0.01	0.1	10	0.125	0.1	0.3			
		2014 08 11	17.9	0.01	0.15	5.85	0.01	0.05	10	0.01	15,800	0.05	0.01	0.6	30	0.05	0.82	1,940	1.79	0.05	0.36	0.05	504	0.5	1,630	0.01	885	0.01	0.1	10	0.133	0.1	0.3			
		2014 08 11	19	0.01	0.17	6.1	0.01	0.05	10	0.01	15,600	0.05	0.01	0.76	30	0.05	0.83	1,960	2.2	0.05	0.419	0.05	543	0.5	1,670	0.01	934	0.01	0.1	10	0.131	0.1	0.3			
	QA/QC RPD %		6	0	0	4	0	0	0	1	0	0	0	0.5	30	0.05	0.82	1,870	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	0.1	5.4	0.01	0.05	10	0.01	16,600	0.05	0.01	0.5	30	0.05	0.9	1,930	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			
		2014 08 13	13.5	0.01	0.11	5.14	0.01	0.05	10	0.01	16,800	0.05	0.01	0.5	30	0.05	0.9	1,930	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			
		2014 08 14	13.6	0.01	0.1	4.96	0.01	0.05	10	0.01	16,400	0.05	0.01	0.5	30	0.05	0.68	1,850	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			
		2014 08 15	13.5	0.01	0.12	5.28	0.01	0.05	10	0.01	16,500	0.05	0.01	0.5	30	0.05	0.5	1,870	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			
		2014 08 16	15.3	0.01	0.13	5.58	0.01	0.05	10	0.01	16,300	0.05	0.01	0.59	30	0.05	0.5	1,930	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-19X	2014 08 17	17.5	0.01	0.18	6.58	0.01	0.05	10	0.01	16,000	0.05	0.01	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			
		2014 08 17	18.5	0.01	0.2	6.59	0.01	0.05	10	0.01	15,800	0.05	0.01	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	0	1	0	0	0	1	0	0	0	0.5	30	0.05	0.82	1,930	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			
	2014 08 19	14	0.01	0.13	5.54	0.01	0.05	10	0.01	16,200	0.05	0.01	0.57	30	0.05	1	1,930	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				
	2014 08 21	22.1	0.01	0.12	5.26	0.01	0.05	10	0.01	16,300	0.05	0.01	0.73	30	0.05	0.67	1,880	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-20	2014 08 22	22.4	0.01	0.13	5.42	0.01	0.05	10	0.01	17,400	0.05	0.01	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			
		2014 08 28	26.2	0.01	0.12	5.45	0.01	0.05	10	0.01	17,000	0.05	0.01	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	0	1	0	0	0	1	0	0	0	0.5	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			
	2014 08 29	20	0.01	0.11	5.21	0.01	0.05	10	0.01	17,200	0.05	0.01	0.69	30	0.05	0.59	1,980	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				
	2014 08 31	23.4	0.01	0.14	5.25	0.01	0.05	10	0.01	15,900	0.05	0.01	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	0.01	0.05	10	0.01	16,300	0.05	0.01	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			
		2014 08 13	15.6	0.01	0.16	5.44	0.01	0.05	10	0.01	16,600	0.05	0.01	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			
		2014 08 14	17.1	0.01	0.12	5.41	0.01	0.05	10	0.01	16,300	0.05	0.01	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			
		2014 08 15	20.3	0.01	0.13	5.84	0.01	0.05	10	0.01	16,500	0.05	0.01	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			
		2014 08 15	17.4	0.01	0.13	5.93	0.01	0.05	10	0.01	16,500	0.05	0.01	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	0	2	0	0	0	0	0	0	0	0.5	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-21	2014 08 16	17.6	0.01	1.06	5.28	0.01	0.05	10	0.034	16,000	0.05	0.01	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			
		2014 08 17	19	0.01	0.13	5.3	0.01	0.05	10	0.01	16,100	0.05	0.01	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			
		2014 08 21-0M	17.4	0.01	0.12	5.43	0.01	0.05	10	0.01	16,700	0.05	0.01	0.6	30	0.05	0.63	1,960	1.04	0.05	0.305	0.5	473	0.5	1,650	0.01	847	0.01	0.1	10	0.167	0.1	0.3			
		2014 08 21-7M	18.7	0.01	0.11	5.24	0.01	0.05	10	0.01	16,900	0.05	0.01	0.58	30	0.05	0.5	1,970	1.03	0.05	0.296	0.5	470	0.5	1,640	0.01	854	0.01	0.1	10	0.167	0.1	0.3			
		2014 08 21-30M	70.4	0.01	0.13	6.05	0.01	0.05	10	0.01	18,600	0.05	0.01	1.64	67	0.05	0.74	2,170	4.07	0.05	0.283	0.5	484	0.5	1,870	0.01	913	0.01	0.1	10	0.18	0.1	0.3			
	QUL-21	2014 08 09	17.8	0.01	0.11	5.42	0.01	0.05	10	0.01	16,400	0.05	0.01	0.66	30	0.05	0.63	1,910	0.924	0.05	0.311	0.5	471	0.5	1,590	0.01	840	0.01	0.1	10	0.14	0.1	0.3			
		2014 08 11	22.5	0.01	0.14	5.51	0.01	0.05																												

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)	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) <sup>b,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a						n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32,800	60 (Cl: 2)	32,800	600	1030-6120 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	0.005-0.015		
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n.a	n.a	n.a	n.a						n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3,000	20 (Cl: 2)	3,000	150	n.a	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a		
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	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	0.01		
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a						n.a	n.a	n.a	n.a	n.a	10,000	1,000	n.a	250	1,500	500	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	0.5	95.5	0.1	-	0.5	34	5.62	44.2	-	0.001	0.002 <sup>e</sup>		
		2014 08 09	49.5	7.77	7.87	16.84	0.4	97.1	69	0.3	2.26	-	-	-	0.148	0.5	78.6	0.1	-	0.5	35	5.6	43	-	0.001	0.002 <sup>e</sup>		
		2014 08 10	48.7	7.9	7.92	18.40	0.35	96.3	64	0.3	2.26	-	-	-	0.135	0.5	67.4	0.1	-	0.5	35	5.59	45.4	-	0.001	0.002 <sup>e</sup>		
		2014 08 11	47.3	7.81	7.94	19.95	0.51	98.5	67	0.3	2.23	-	-	-	0.144	0.5	60.1	0.1	-	0.5	34	5.64	44.3	-	0.001	0.002 <sup>e</sup>		
		2014 08 12	47.3	8.01	7.97	20.41	0.51	95.3	64	0.3	1.94	-	-	-	0.132	0.5	58.2	0.1	-	0.5	34	5.69	44.3	-	0.0014	0.002 <sup>e</sup>		
		2014 08 13	47.4	-	7.98	20.59	0.32	98.1	60	0.3	2.2	-	-	-	0.123	0.5	44.8	0.1	-	0.5	32	5.63	44.5	-	0.001	0.002 <sup>e</sup>		
		2014 08 14	49.6	7.84	7.91	21.14	0.31	97.2	65	0.3	2.1	-	-	-	0.108	0.5	41.2	0.1	-	0.5	36	5.62	43.3	-	0.001	0.002 <sup>e</sup>		
		2014 08 15	45.2	8.11	7.99	20.74	0.21	95.9	70	0.3	1.89	-	-	-	0.101	0.5	40.1	0.1	-	0.5	35	5.61	43.7	-	0.001	0.0024		
		2014 08 16	47.9	8.19	7.91	20.69	0.29	94.2	63	0.3	2.09	-	-	-	0.106	0.5	40.6	0.1	-	0.5	36	5.59	43.4	-	0.001	0.002 <sup>e</sup>		
		2014 08 17	47.4	7.88	7.98	21.05	0.29	96.6	63	0.3	2.4	-	-	-	0.123	0.5	41.3	0.1	-	0.5	34	5.61	44.2	-	0.001	0.002 <sup>e</sup>		
		2014 08 19	48.5	-	7.92	-	0.44	96.7	64	0.3	2.1	-	-	-	0.111	0.5	39	0.1	-	0.5	32	5.53	44.3	-	0.001	0.002 <sup>e</sup>		
		2014 08 21	49.5	8.25	7.76	17.39	0.65	96.6	63	0.3	1.95	-	-	-	0.131	0.5	60.7	0.1	-	0.5	35	5.67	43	-	0.001	0.002 <sup>e</sup>		
		2014 08 11	49.5	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		
		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 <sup>e</sup>		
		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 <sup>e</sup>		
		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 <sup>e</sup>		
		2014 08 13	48.5	-	7.87	20.5	0.77	101	66	0.3	3.22	-	-	-	0.138	0.5	5	0.1	-	0.5	35	5.55	46.2	-	0.001	0.002 <sup>e</sup>		
		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		
		2014 08 14	52.3	7.83	7.97	12.1	7.07	103	73	12.5	1.9	-	-	-	0.134	0.5	93.3	0.1	-	0.5	37	6.19	46.2	-	0.001	0.002 <sup>e</sup>		
		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		
		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 <sup>e</sup>		
		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		
		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 <sup>e</sup>		
		2014 08 17	51.6	-	7.95	-	4.85	103	60	9.7	2.1	-	-	-	0.179	0.5	111	0.1	-	0.5	35	5.96	48.4	-	0.001	0.002 <sup>e</sup>		
		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 <sup>e</sup>		
		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 <sup>e</sup>		
		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 <sup>e</sup>		
		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 <sup>e</sup>		
		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 <sup>e</sup>		
		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	45.9	0.1	-	0.5	37	5.68	44.6	-	0.001	0.002 <sup>e</sup>		
		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 <sup>e</sup>		
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 <sup>e</sup>		
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 <sup>e</sup>		
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 <sup>e</sup>		
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 <sup>e</sup>		
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 <sup>e</sup>		
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 <sup>e</sup>		
QUL-36	QUL-36-8M	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 <sup>e</sup>		
QUL-37		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	-	0.0011	0.0027		
		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	43.6	-	0.001	0.0021		
		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	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	0.5	5.3	48.9	0.1	-	0.5	34	5.64	43.9	-	0.001	0.002 <sup>e</sup>		
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	0.5	5.9	86.3	0.1	-	0.5	34	5.75	44	-	0.001	0.002 <sup>e</sup>		
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	0.5	5.6	72.4	0.1	-	0.5	34	5.71	44.2	-	0.001	0.002 <sup>e</sup>		
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	0.5	5.8	79.3	0.1	-	0.5	34							

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 (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) <sup>a,c</sup>			26.1-100 <sup>d</sup>	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 (30day) (AW) <sup>b,c</sup>			50-1000 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	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	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-22	QUL-22	2014 08 08	9	16.7	30	1.92	0.518	0.466	0.839	0.1	0.1	5.15	0.1	0.1	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	30	1.9	0.467	0.462	0.827	0.1	0.1	5.19	0.1	0.1	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	30	1.88	0.53	0.478	0.845	0.1	0.11	5.16	0.1	0.1	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-22	2014 08 11	11.7	15.9	30	1.84	0.692	0.488	0.833	0.1	0.11	5.23	0.1	0.1	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	30	1.85	0.38	0.471	0.831	0.1	0.11	5.09	0.1	0.1	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	30	1.86	0.185	0.467	0.825	0.1	0.1	5.31	0.1	0.1	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	30	1.94	0.579	0.487	0.83	0.1	0.11	5.42	0.1	0.1	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	30	1.76	0.481	0.483	0.851	0.1	0.12	5.56	0.1	0.1	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	30	1.88	0.511	0.496	0.838	0.1	0.11	6.23	0.1	0.1	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	30	1.88	0.517	0.475	0.847	0.1	0.12	5.37	0.1	0.1	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	30	1.91	0.449	0.467	0.819	0.1	0.11	5.4	0.1	0.1	0.01	0.5	0.1	0.5	0.05	0.74	-	0.31	0.5	0.5	0.01	0.01	0.10	0.13	0.1	0.3		
	QUL-22	2014 08 21	10.6	16.7	30	1.9	0.7	0.455	0.822	0.1	0.11	5.39	0.1	0.1	0.01	0.5	0.1	0.74	0.05	0.86	-	0.28	0.5	0.5	0.01	0.01	0.10	0.139	0.1	0.3		
	QUL-26-0M	2014 08 11	11.3	16.5	30	1.89	4.79	0.541	0.846	0.1	0.12	6.05	0.1	0.1	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	30	1.93	0.228	0.486	0.856	0.1	0.11	5.18	0.1	0.1	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	30	2.03	0.677	0.481	0.911	0.1	0.11	5.19	0.1	0.1	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	30	1.87	0.554	0.499	0.856	0.1	0.11	5.42	0.1	0.1	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	30	1.92	10.4	0.598	0.842	0.1	0.15	7.06	0.1	0.1	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	30	1.91	2.64	0.509	0.837	0.1	0.1	5.61	0.1	0.1	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	30	1.93	5.07	0.483	0.878	0.1	0.11	8.11	0.1	0.1	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	30	2.1	8.77	0.476	0.952	0.1	0.13	6.14	0.1	0.1	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	30	1.92	1	0.476	0.824	0.1	0.12	5.94	0.1	0.1	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	30	1.9	0.643	0.476	0.816	0.1	0.12	5.48	0.1	0.1	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	30	1.88	3.09	0.518	0.828	0.1	0.11	5.83	0.1	0.1	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	30	1.96	1.5	0.459	0.84	0.1	0.1	6.02	0.1	0.1	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	30	2.09	4.49	0.482	0.939	0.1	0.11	5.72	0.1	0.1	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	30	1.89	0.417	0.464	0.818	0.1	0.1	5.16	0.1	0.1	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	30	1.9	3.66	0.475	0.879	0.1	0.11	7.32	0.1	0.1	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	30	2.04	3.03	0.488	0.923	0.1	0.1	6.14	0.1	0.1	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	30	1.91	1.47	0.467	0.83	0.1	0.12	5.59	0.1	0.1	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	QUL-28-0M	2014 08 11	11.4	16.6	30	1.91	7.17	0.531	0.843	0.1	0.11	6.08	0.1	0.1	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	30	1.86	2.58	0.485	0.86	0.1	0.11	5.73	0.1	0.1	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	30	1.9	2.4	0.508	0.846	0.1	0.14	5.83	0.1	0.1	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-28	2014 08 17	11.5	16.6	30	1.84	0.412	0.46	0.781	0.1	0.1	4.74	0.1	0.1	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-30	QUL-30	2014 08 07	11.5	16.6	30	1.84	0.412	0.46	0.781	0.1	0.1	4.74	0.1	0.1	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	QUL-31	2014 08 07	11.4	15.9	30	1.89	0.789	0.485	0.837	0.1	0.12	5.19	0.1	0.1	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	QUL-32	2014 08 06	10.9	16.4	30	1.85	0.355	0.454	0.853	0.1	0.1	4.86	0.1	0.1	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	QUL-33	2014 08 06	10.9	16.6	30	1.84	0.237	0.434	0.767	0.1	0.1	4.61	0.1	0.1	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	QUL-34-6M	2014 08 13	10.8	15.9																												

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)	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																																				
BCWOG Aquatic Life (AW) <sup>1,c</sup>			n/a	20	5	5,000	5.3	n/a	1,200	0.01-0.025 <sup>d</sup>	n/a	1 (Cr( VI ))	110	6.4-8.8 <sup>d</sup>	1,000	31.2-54.6 <sup>d</sup>	870	n/a	1057.9-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2,000	25-65 <sup>d</sup>	373,000-432,000	2	n/a	0.1 <sup>d</sup>	n/a	0.3	n/a	2,000	300	6	33 <sup>d</sup>			
BCWOG Aquatic Life (30day) (AW) <sup>1,c</sup>			n/a	n/a	n/a	1,000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>	1,000	n/a	n/a	n/a	n/a	0.05 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5 <sup>d</sup>			
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	1	250	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	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	n/a	10	n/a	n/a	200,000	n/a	n/a	20	n/a	n/a	5,000			
QUL-22	QUL-22	2014 08 08	18	0.1	0.12	5.4	0.1	0.5	10	0.01	16,500	0.5	0.1	0.62	30	0.05	0.54	1,940	1.14	0.05	0.291	0.5	471	0.5	1,630	0.01	849	0.01	0.1	10	0.154	0.1	0.3			
	QUL-22	2014 08 09	22.3	0.1	0.11	5.26	0.1	0.5	10	0.01	16,500	0.5	0.1	0.63	30	0.05	0.56	1,920	0.947	0.05	0.306	0.5	457	0.5	1,610	0.01	825	0.01	0.1	10	0.136	0.1	0.3			
	QUL-22	2014 08 10	21.8	0.1	0.13	5.58	0.1	0.5	10	0.01	16,400	0.5	0.1	0.8	30	0.05	0.5	1,890	1.12	0.05	0.288	0.5	496	0.5	1,610	0.01	877	0.01	0.1	10	0.131	0.1	0.3			
	QUL-22	2014 08 11	23	0.1	0.14	5.31	0.1	0.5	10	0.01	16,400	0.5	0.1	0.76	30	0.05	0.89	1,910	1.26	0.05	0.307	0.5	488	0.5	1,570	0.01	848	0.01	0.1	10	0.137	0.1	0.3			
	QUL-22	2014 08 12	17.1	0.1	0.11	5.14	0.1	0.5	10	0.01	16,000	0.5	0.1	0.65	30	0.05	0.81	1,870	1.29	0.05	0.304	0.5	469	0.5	1,570	0.01	837	0.01	0.1	10	0.136	0.1	0.3			
	QUL-22	2014 08 13	15.8	0.1	0.14	5.43	0.1	0.5	10	0.01	16,500	0.5	0.1	0.59	30	0.05	0.78	1,950	1.17	0.05	0.319	0.5	477	0.5	1,610	0.01	852	0.01	0.1	10	0.136	0.1	0.3			
	QUL-22	2014 08 14	15.4	0.1	0.11	5.48	0.1	0.5	10	0.01	16,400	0.5	0.1	0.83	30	0.05	1.08	1,910	1.41	-	0.324	0.5	476	0.5	1,640	0.01	893	0.01	0.1	10	0.137	0.1	0.3			
	QUL-22	2014 08 15	15	0.1	0.14	5.56	0.1	0.5	10	0.01	16,000	0.5	0.1	0.63	30	0.05	0.5	1,870	1.37	-	0.324	0.5	472	0.5	1,610	0.01	843	0.01	0.1	10	0.135	0.1	0.3			
	QUL-22	2014 08 16	13.8	0.1	0.12	5.45	0.1	0.5	10	0.01	15,900	0.5	0.1	0.63	30	0.05	0.5	1,880	1.29	-	0.296	0.5	469	0.5	1,570	0.01	827	0.01	0.1	10	0.129	0.1	0.3			
	QUL-22	2014 08 17	14.8	0.1	0.14	5.36	0.1	0.5	10	0.01	15,700	0.5	0.1	0.1	30	0.05	0.64	1,860	1.18	-	0.32	0.5	481	0.5	1,550	0.01	866	0.01	0.1	10	0.136	0.1	0.3			
	QUL-22	2014 08 19	16.1	0.1	0.12	5.46	0.1	0.5	10	0.01	16,200	0.5	0.1	0.64	30	0.05	0.86	1,920	1.17	-	0.324	0.5	478	0.5	1,580	0.01	843	0.01	0.1	10	0.136	0.1	0.3			
	QUL-22	2014 08 21	48.4	0.1	0.15	5.88	0.1	0.5	10	0.01	16,500	0.5	0.1	1.65	41	0.05	0.75	1,940	2.04	-	0.325	0.5	466	0.5	1,600	0.01	823	0.01	0.1	10	0.146	0.1	0.3			
	QUL-26-0M	2014 08 11	29.1	0.1	0.14	5.87	0.1	0.5	10	0.01	16,400	0.5	0.1	1	30	0.05	0.91	1,910	4.27	0.05	0.332	0.5	536	0.5	1,570	0.01	861	0.01	0.1	10	0.132	0.1	0.3			
	QUL-26-13M	2014 08 11	30.9	0.1	0.11	5.48	0.1	0.5	10	0.01	17,600	0.5	0.1	1	30	0.05	0.89	2,000	1.41	0.05	0.301	0.5	492	0.5	1,670	0.01	871	0.01	0.1	10	0.151	0.1	0.3			
	QUL-26-24M	2014 08 11	41.7	0.1	0.14	5.7	0.1	0.5	10	0.01	18,100	0.5	0.1	1.2	38	0.05	0.97	2,080	2.31	0.05	0.286	0.5	502	0.5	1,740	0.01	923	0.01	0.1	10	0.154	0.1	0.3			
	QUL-26	2014 08 12	20.4	0.1	0.14	5.63	0.1	0.5	10	0.01	16,400	0.5	0.1	0.89	30	0.05	0.76	1,930	2.32	0.05	0.339	0.5	515	0.5	1,620	0.01	886	0.01	0.1	10	0.139	0.1	0.3			
	QUL-26	2014 08 13	20.2	0.1	0.17	7.19	0.1	0.5	10	0.01	16,600	0.5	0.1	0.95	46	0.05	0.94	1,980	11.1	0.05	0.349	0.5	616	0.5	1,650	0.01	888	0.01	0.1	10	0.123	0.1	0.3			
	QUL-26-0M	2014 08 14	16.9	0.1	0.12	5.72	0.1	0.5	10	0.01	16,200	0.5	0.1	0.67	30	0.05	0.75	1,900	3.2	0.05	0.329	0.5	509	0.5	1,610	0.01	854	0.01	0.1	10	0.132	0.1	0.3			
	QUL-26-12M	2014 08 14	653	0.1	0.37	16.6	0.1	0.5	10	0.01	17,900	0.5	0.42	21.9	530	0.349	1.16	2,250	21.5	0.05	0.462	0.68	697	0.5	3,170	0.01	989	0.01	0.1	43	0.171	1.9	3.6			
	QUL-26-27M	2014 08 14	342	0.1	0.24	11.2	0.1	0.5	10	0.01	18,800	0.5	0.19	7.7	288	0.148	0.98	2,220	17.1	0.05	0.406	0.51	601	0.5	2,470	0.01	1,030	0.01	0.1	18	0.181	0.1	0.3			
	QUL-26	2014 08 15	19.8	0.1	0.13	6.42	0.1	0.5	10	0.01	16,100	0.5	0.1	0.75	30	0.05	0.5	1,900	2.02	-	0.325	0.5	489	0.5	1,610	0.01	852	0.01	0.1	10	0.136	0.1	0.3			
	QUL-26	2014 08 16	16.3	0.1	0.12	5.52	0.1	0.5	10	0.01	16,100	0.5	0.1	0.64	30	0.05	0.5	1,880	1.56	0.05	0.313	0.5	470	0.5	1,540	0.01	811	0.01	0.1	10	0.137	0.1	0.3			
	QUL-26-0M	2014 08 17	20.1	0.1	0.13	5.79	0.1	0.5	10	0.01	15,900	0.5	0.1	0.1	30	0.05	0.73	1,860	3.46	0.05	0.303	0.5	518	0.5	1,540	0.01	830	0.01	0.1	10	0.131	0.1	0.3			
	QUL-26-12M	2014 08 17	317	0.1	0.25	10.4	0.1	0.5	10	0.01	17,300	0.5	0.18	9.16	252	0.142	1	2,090	9.72	0.05	0.304	0.54	574	0.5	2,280	0.01	999	0.01	0.1	20	0.16	1.1	0.3			
	QUL-26-25M	2014 08 17	211	0.1	0.2	8.49	0.1	0.5	10	0.01	18,300	0.5	0.12	5.2	170	0.084	1.01	2,180	9.41	0.05	0.355	0.5	562	0.5	2,160	0.01	985	0.01	0.1	13	0.173	0.1	0.3			
	QUL-26-0M	2014 08 19	15	0.1	0.13	5.47	0.1	0.5	10	0.01	16,400	0.5	0.1	0.58	30	0.05	0.86	1,900	1.07	-	0.318	0.5	483	0.5	1,540	0.01	860	0.01	0.1	10	0.133	0.1	0.3			
	QUL-26-10M	2014 08 19	245	0.1	0.23	10.3	0.1	0.5	10	0.01	17,000	0.5	0.17	10	213	0.161	1.05	2,010	9.39	-	0.394	0.53	565	0.5	2,040	0.01	935	0.01	0.1	14	0.155	0.1	0.3			
	QUL-26-20M	2014 08 19	365	0.1	0.29	11.5	0.1	0.5	10	0.01	18,300	0.5	0.25	10.7	339	0.179	1.23	2,240	12.5	0.05	0.325	0.6	600	0.5	2,470	0.01	982	0.01	0.1	26	0.162	1.2	0.3			
	QUL-26-0M	2014 08 21	79.7	0.1	0.17	6.44	0.1	0.5	10	0.01	16,800	0.5	0.1	2.41	65	0.05	0.77	1,970	3.69	-	0.327	1.01	495	0.5	1,700	0.01	865	0.01	0.1	10	0.143	0.1	0.3			
	QUL-28-0M	2014 08 11	28.2	0.1	0.15	6.41	0.1	0.5	10	0.01	16,200	0.5	0.1	1.03	30	0.05	0.58	1,910	9.7	0.05	0.305	0.52	542	0.5	1,560	0.01	863	0.01	0.1	10	0.131	0.1	0.3			
QUL-28	QUL-28	2014 08 12	51.3	0.1	0.14	6.32	0.1	0.5	10	0.01	16,500	0.5	0.1	1.68	44	0.05	0.84	1,900	4.5	0.05	0.33	0.5	507	0.5	1,660	0.01	874	0.01	0.1	10	0.139	0.1	0.3			
	QUL-28	2014 08 13	22.2	0.1	0.15	6.18	0.1	0.5	10	0.01	16,400	0.5	0.1	0.86	30	0.05	0.88	1,950	4.82	0.05	0.358	0.5	536	0.5	1,640	0.01	888	0.01	0.1	10	0.132	0.1	0.3			
QUL-30	QUL-30	2014 08 07	45.4	0.1	0.12	5.08	0.1	0.5	10	0.01	17,200	0.5	0.1	0.5	65	0.05	0.77	1,940	2.32	0.05	0.246	0.5	476	0.5	1,550	0.01	807	0.01	0.1	10	0.15	0.1	0.3			
QUL-31	QUL-31	2014 08 07	28.8																																	

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) <sup>b,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a	Under Review by SNC Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	1030.6-1207 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	0.005-0.015		
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n.a	n.a	n.a	n.a		n.a	n.a	n.a	n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n.a	128-218 <sup>d</sup>	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		n.a	n.a	n.a	n.a	n.a	1	n.a	n.a	10,000	1,000	10,000	250	1,500	500	n.a	n.a	n.a	n.a	0.01		
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	n.a	250	1 500	500	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 <sup>e</sup>		
	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 <sup>e</sup>		
	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 <sup>e</sup>		
	QA/QC RPD %		0.1	4	0.1	22	4	0	3	22	0	-	-	-	-	0	0	0.1	0	-	0	0	0.1	-	0	0		
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	0.1	-	0.5	52	12.4	55.5	-	0.001	0.002 <sup>e</sup>		
	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	0.1	-	0.5	50	10.5	52.4	-	0.0188	0.0413		
	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	0.1	-	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	0.3	2.2	-	-	-	0.154	0.5	65.2	0.1	-	0.5	34	5.77	45	-	0.001	0.002 <sup>e</sup>		
QUL-EQUIPMENT BLANK	QUL-EQUIPMENT BLANK	2014 08 12	0.5	-	5.51	-	0.1	0.2	0.10	0.3	0.5	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002		
	QUL-EQUIPMENT BLANK	2014 08 14	0.5	-	-	-	0.1	-	0.10	0.3	0.5	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002		
	QUL-EQUIPMENT BLANK	2014 08 15	0.5	-	-	-	0.1	-	0.10	0.3	0.5	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002		
	QUL-EQUIPMENT BLANK	2014 08 16	0.5	-	-	-	0.1	-	0.10	0.3	0.5	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002 <sup>e</sup>		
	EQUIPMENT BLANK	2014 08 19	0.5	-	5.85	-	0.26	0.2	0.10	0.3	0.5	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002 <sup>e</sup>		
QUL-FIELD BLANK	QUL-EQUIPMENTBLANK	2014 08 19	0.5	-	5.42	-	0.1	0.2	0.10	0.3	0.5	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002 <sup>e</sup>		
	FIELD BLANK	2014 08 06	-	-	5.58	-	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 <sup>e</sup>		
	FIELD BLANK DI	2014 08 08	0.5	-	5.48	-	0.1	0.2	0.10	0.3	0.5	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002 <sup>e</sup>		
	FIELD BLANK	2014 08 10	-	-	5.87	-	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 <sup>e</sup>		
	QUL-FIELD BLANK	2014 08 15	-	-	-	-	0.1	-	0.10	0.3	-	-	-	-	0.05	0.5	0.5	0.1	-	0.5	0.20	0.5	0.1	-	0.001	0.002 <sup>e</sup>		
	FIELDBLANK	2014 08 12	0.5	-	5.49	-	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 <sup>e</sup>		
	FIELDBLANK	2014 08 17	0.5	-	5.64	-	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 <sup>e</sup>		
	ALS FIELD BLANK	2014 08 12	0.5	-	5.61	-	0.1	0.2	0.10	0.3	-	-	-	-	0.05	0.5	0.5	0.1	0.5.1	0.5	0.20	0.5	0.1	-	0.001	0.002 <sup>e</sup>		
	FIELD BLANK	2014 08 12	0.5	-	5.49	-	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 <sup>e</sup>		
	FIELD BLANK	2014 08 17	0.5	-	5.64	-	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 <sup>e</sup>		
	QUL-FIELDBLANK	2014 08 19	0.5	-	5.89	-	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 <sup>e</sup>		

Associated ALS files: L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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.

- 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.

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.



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 (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) <sup>a,c</sup>		26.1-100 <sup>d</sup>	n/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
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>		50-1000 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	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	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	n/a
QUL-66	QUL66-40M	2014 08 21	13.7	23.5	30	2.59	77.3	1.05	3.51	0.25	0.7	18.9	0.1	10	0.01	0.5	0.1	5.52	0.05	0.55	0.05	5.66	0.5	0.55	0.01	0.01	10	0.656	1	3
	QUL66-40M	2014 08 19	15.9	24.5	30	2.73	100	1.12	3.83	0.29	0.84	19.7	0.1	10	0.01	0.5	0.1	5.58	0.05	1.2	-	6.36	0.5	0.62	0.01	0.01	10	0.728	1	3
	QUL66-40MX	2014 08 19	16.8	24.7	30	2.75	100	1.12	3.87	0.29	0.85	19.8	0.1	10	0.01	0.5	0.1	5.46	0.05	1.11	-	6.31	0.5	0.64	0.01	0.01	10	0.723	1	3
	QA/QC RPD %		6	1	1	1	0	0	1	1	1	1	1	1	1	1	1	2	1	1	-	1	1	1	1	1	1	1	1	1
QUL-67	QUL-67-34M	2014 08 20	11.9	21.8	30	2.47	79.9	0.78	2.37	0.15	0.52	15.6	0.1	10	0.01	0.5	0.1	3.97	0.05	0.53	-	3.14	0.5	0.5	0.01	0.01	10	0.466	1	3
QUL-74	QUL-74-46M	2014 08 21	11.4	20.6	30	2.29	42.8	0.652	2.11	0.11	0.38	11.4	0.1	10	0.01	0.5	0.1	3.33	0.05	0.95	-	2.09	0.5	0.5	0.01	0.01	10	0.362	1	3
QUL-75	QUL-75-40M	2014 08 21	10.5	21	30	2.35	46.1	0.685	2.08	0.12	0.42	12	0.1	10	0.01	0.5	0.1	3.29	0.05	1	-	2.51	0.5	0.5	0.01	0.01	10	0.408	1	3
QUL-76	QUL-77	2014 08 22	10.2	17	30	1.93	0.945	0.458	0.829	0.1	0.1	5.56	0.1	10	0.01	0.5	0.1	1.06	0.05	0.85	-	0.272	0.5	0.5	0.01	0.01	10	0.137	1	3
QUL-EQUIPMENT BLANK	QUL-EQUIPMENT BLANK	2014 08 12	3	0.05	30	0.1	0.05	0.05	0.05	0.1	0.1	0.05	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.05	0.5	0.5	0.01	0.01	10	0.01	1	3
	QUL-EQUIPMENT BLANK	2014 08 14	3	0.05	30	0.1	0.05	0.05	0.05	0.1	0.1	0.05	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.05	0.5	0.5	0.01	0.01	10	0.01	1	3
	QUL-EQUIPMENT BLANK	2014 08 15	3	0.05	30	0.1	0.05	0.05	0.05	0.1	0.1	0.05	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.05	0.5	0.5	0.01	0.01	10	0.01	1	3
	QUL-EQUIPMENT BLANK	2014 08 16	3	0.05	30	0.1	0.05	0.05	0.05	0.1	0.1	0.05	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.05	0.5	0.5	0.01	0.01	10	0.01	1	3
	EQUIPMENT BLANK	2014 08 19	3	0.129	30	0.1	0.449	0.05	0.05	0.1	0.1	0.114	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.05	0.5	0.5	0.01	0.01	10	0.01	1	3
QUL-FIELD BLANK	QUL-EQUIPMENT BLANK	2014 08 19	3	0.05	30	0.1	0.05	0.05	0.05	0.1	0.1	0.05	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.05	0.5	0.5	0.01	0.01	10	0.01	1	3
	FIELD BLANK	2014 08 06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FIELD BLANK DI	2014 08 08	3	0.05	30	0.1	0.05	0.05	0.05	0.1	0.1	0.05	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.05	0.5	0.5	0.01	0.01	10	0.01	1	3
	FIELD BLANK	2014 08 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QUL-FIELD BLANK	2014 08 15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FIELD BLANK	2014 08 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FIELD BLANK	2014 08 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ALS FIELD BLANK	2014 08 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FIELD BLANK	2014 08 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FIELD BLANK	2014 08 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QUL-FIELD BLANK	2014 08 19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Associated ALS files: L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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.

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**SHADED** Concentration greater than BCWOG Aquatic Life (AW) guideline.

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

Sample Location	Sample ID	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																																	
BCWQG Aquatic Life (AW) <sup>1,c</sup>			n/a	20	5	5 000	5.3	n/a	1 200	0.01-0.025 <sup>d</sup>	n/a	1 (Cr( 6))	110	6.4-8.8 <sup>d</sup>	1 000	31.2-54.6 <sup>d</sup>	870	n/a	1057.9-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2 000	25-65 <sup>d</sup>	373,000-432,000	2	n/a	0.1 <sup>d</sup>	n/a	0.3	n/a	2 000	300	6	33 <sup>d</sup>
BCWQG Aquatic Life (30day) (AW) <sup>1,c</sup>			n/a	n/a	n/a	1 000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>	1 000	n/a	n/a	n/a	n/a	0.05 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5 <sup>d</sup>
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	1	250	n/a	n/a	10	n/a	n/a	n/a	2	n/a	n/a	n/a	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	n/a	10	n/a	n/a	200 000	n/a	n/a	20	n/a	n/a	5 000
QUL-66	QUL66-40M	2014 08 21	4,940	0.34	2.27	119	0.13	0.5	10	0.032	24 800	2.46	2.06	106	2,880	1.8	3.04	4 110	168	0.05	5.89	2.53	3 090	0.63	12 900	0.043	4 500	0.016	0.15	216	0.821	9.8	9.8
	QUL66-40M	2014 08 19	5,490	0.34	2.41	126	0.14	0.5	10	0.03	25 500	2.4	2.21	111	3,090	2.03	3.72	4 340	192	-	6.29	2.54	3 360	0.64	13 300	0.042	4 640	0.018	0.1	229	0.849	10.4	11.2
	QUL66-40MX	2014 08 19	5,590	0.34	2.41	129	0.14	0.5	10	0.029	25 500	2.51	2.17	114	3,090	2.03	3.62	4 370	193	-	6.18	2.54	3 420	0.64	13 500	0.041	4 770	0.019	0.1	230	0.857	10.4	11.4
	QA/QC RPD %	2	0	2	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	2	0	2	0	1	0	3	0	0	1	0	0	0
QUL-67	QUL-67-34M	2014 08 20	2,510	0.21	1.44	60.8	0.1	0.5	10	0.019	22 100	1.69	1.29	59.1	1,820	1.03	1.89	3 320	143	-	3.68	1.85	1 690	0.5	6 780	0.025	2 900	0.01	0.1	108	0.56	5.6	6.4
QUL-74	QUL-74-46M	2014 08 21	2,080	0.15	1.03	45.7	0.1	0.5	10	0.015	20 500	1.38	0.98	40.3	1,480	0.78	2.13	2 930	89	-	2.32	1.51	1 360	0.5	6 000	0.018	2 110	0.01	0.1	90	0.421	4.4	5.4
QUL-75	QUL-75-40M	2014 08 21	2,570	0.16	1.16	56.1	0.1	0.5	10	0.021	21 400	1.56	1.14	49.8	1,690	1.01	2.2	3 170	102	-	2.92	1.58	1 640	0.5	7 160	0.021	2 580	0.011	0.1	108	0.504	5.1	7.3
QUL-EQUIPMENT BLANK	QUL-77	2014 08 22	84.3	0.1	0.14	6.08	0.1	0.5	10	0.01	16 200	0.5	0.1	2.48	98	0.05	0.87	1 900	3.67	-	0.3	0.51	466	0.5	1 600	0.01	838	0.01	0.1	10	0.146	0.1	0.3
	QUL-EQUIPMENT BLANK	2014 08 12	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	0.05	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-EQUIPMENT BLANK	2014 08 14	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-EQUIPMENT BLANK	2014 08 15	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
QUL-FIELD BLANK	QUL-EQUIPMENT BLANK	2014 08 16	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	EQUIPMENT BLANK	2014 08 19	11.4	0.1	0.1	0.272	0.1	0.5	10	0.01 <sup>a</sup>	84	0.5	0.1	0.5	30	0.11	0.5	100	0.314	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-EQUIPMENT BLANK	2014 08 19	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	FIELD BLANK	2014 08 06	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	0.05	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
QUL-FIELD BLANK	FIELD BLANK DI	2014 08 08	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	0.05	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	FIELD BLANK	2014 08 10	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	0.05	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-FIELD BLANK	2014 08 15	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	FIELD BLANK	2014 08 12	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	FIELD BLANK	2014 08 17	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	ALS FIELD BLANK	2014 08 12	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	0.05	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	FIELD BLANK	2014 08 12	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	FIELD BLANK	2014 08 17	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-FIELD BLANK	2014 08 19	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-FIELD BLANK	2014 08 19	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-FIELD BLANK	2014 08 19	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3
	QUL-FIELD BLANK	2014 08 19	0.3	0.1	0.1	0.05	0.1	0.5	10	0.01 <sup>a</sup>	50	0.5	0.1	0.5	30	0.05	0.5	100	0.05	-	0.05	0.5	50	0.5	50	0.01	50	0.01	0.1	10	0.01	0.1	0.3

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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.

- 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 BCWOG Aquatic L fe (AW) guideline.

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

SHADED Concentration greater than BCWOG Aquatic L fe (30day) (AW) guideline.

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

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Qua ty Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.

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

			Grain Size														Total Metals																							
Sample Location	Sample ID	Sample Date (yyyy mm dd)	pH	TOC (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Aluminum (ug/g)	Antimony (ug/g)	Arsenic (ug/g)	Barium (ug/g)	Beryllium (ug/g)	Cadmium (ug/g)	Calcium (ug/g)	Chromium (ug/g)	Cobalt (ug/g)	Copper (ug/g)	Iron (ug/g)	Lead (ug/g)	Lithium (ug/g)	Magnesium (ug/g)	Manganese (ug/g)	Mercury (ug/g)	Molybdenum (ug/g)	Nickel (ug/g)	Phosphorus (ug/g)	Potassium (ug/g)	Selenium (ug/g)	Silver (ug/g)	Sodium (ug/g)	Strontium (ug/g)	Tin (ug/g)	Thallium (ug/g)	Titanium (ug/g)	Uranium (ug/g)	Vanadium (ug/g)	Zinc (ug/g)		
BC Standards																																								
CSR Fresh Water Sediment (FW Sediment)																																								
QUL-14	QUL-14-S	2014 08 07	-	-	-	3.19	50.2	39.3	7.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
	QUL-14-S-1	2014 08 07	8.82	0.18	-	-	-	-	19,000	0.48	14.4	205	0.74	0.165	32,200	16.2	21.6	721	71,200	5.99	20	11,700	755	0.0793	4.31	12.5	1,840	1,670	1.16	0.375	1,050	192	2.05	0.05	2,940	1.35	268	70.3		
	QUL-14-S-1 2MM	2014 08 07	-	-	-	-	-	-	15,800	0.39	11.9	160	0.6	0.136	25,500	11.7	16.4	863	49,700	4.74	15.4	9,450	640	-	4.41	9.25	1,270	1,340	0.98	0.37	980	158	2	0.05	1,370	1.02	192	59.2		
	QUL-14-S-13UM	2014 08 07	-	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	QUL-14-S-2	2014 08 07	8.5	0.12	-	-	-	-	18,400	0.45	14	199	0.71	0.149	31,200	15.2	20.6	711	69,600	5.69	18.8	11,400	740	0.0761	3.95	11.8	1,770	1,620	1.11	0.333	1,030	182	1.88	0.05	1,930	1.26	260	67.8		
	QUL-14-S-2 2MM	2014 08 07	-	-	-	-	-	-	14,900	0.35	12.1	153	0.57	0.144	24,400	12	18.1	820	49,100	5.05	15	8,980	691	-	4.07	9.36	1,250	1,240	0.95	0.35	880	142	2	0.05	1,190	0.949	181	55.3		
	QUL-14-S-3	2014 08 07	8.78	0.1	-	-	-	-	18,900	0.44	14.5	205	0.74	0.178	31,600	15.6	21.5	736	71,100	5.6	19.9	11,900	760	0.0764	4.07	12.4	1,840	1,660	1.17	0.329	1,040	184	1.88	0.05	1,850	1.24	266	70.5		
	QUL-14-S-3 2MM	2014 08 07	-	0.12	-	-	-	-	14,800	0.38	11.3	154	0.58	0.156	24,400	11.5	16.2	828	47,700	4.78	14.9	9,340	669	-	4.39	11.1	1,210	1,250	1	0.37	890	147	2	0.05	1,200	0.898	178	58		
	QUL-14-S-363UM	2014 08 07	-	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	QUL-15	QUL-15-S	2014 08 07	-	-	1.43	68.7	28.4	1.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QUL-15-S-1		2014 08 07	8.82	0.1	-	-	-	-	11,800	0.35	12.2	125	0.51	0.129	23,800	21.7	18.1	526	89,600	5.06	12.6	7,200	528	0.0633	2.9	12.8	1,840	1,020	0.9	0.266	620	118	1.03	0.05	1,040	0.892	330	54.3		
QUL-15-S-1 2MM		2014 08 07	-	-	-	-	-	-	10,800	0.31	9.17	120	0.44	0.121	18,800	13.6	13.2	620	48,700	3.94	11.2	6,500	467	-	3.27	9.66	1,190	980	0.76	0.25	700	112	2	0.05	866	0.673	183	44.1		
QUL-15-S-13UM		2014 08 07	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
QUL-15-S-2		2014 08 07	8.75	0.11	-	-	-	-	11,800	0.36	12.9	118	0.49	0.136	24,600	21.3	18.8	533	94,600	4.87	11.5	6,690	551	0.0636	3.11	12.2	1,950	930	0.96	0.26	600	117	1.27	0.05	1,290	0.979	353	54.4		
QUL-15-S-2 2MM		2014 08 07	-	-	-	-	-	-	11,500	0.35	10.1	121	0.49	0.126	20,500	13.6	13.4	641	53,300	4.07	11	6,470	485	-	3.25	8.97	1,240	960	0.83	0.28	740	119	2	0.05	1,000	0.769	202	44.9		
QUL-15-S-3		2014 08 07	8.74	0.12	-	-	-	-	11,600	0.4	13.5	116	0.48	0.366	22,600	29.8	21.7	539	119,000	5.86	12.1	6,510	567	0.0653	2.99	15.7	1,770	930	1.07	0.284	540	106	1.26	0.05	1,300	1.01	440	62.1		
QUL-15-S-3 2MM		2014 08 07	-	-	-	-	-	-	10,200	0.32	9.4	76.3	0.39	0.108	15,000	17.2	11.2	528	37,700	5.9	10.3	6,260	463	-	2.06	11.4	909	730	0.57	0.27	550	83.7	2	0.05	870	0.597	134	44.2		
QUL-15-S-363UM		2014 08 07	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
QUL-16		QUL-16-S	2014 08 07	-	-	0.1	68.7	30.1	1.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QUL-16	QUL-16-S-1	2014 08 07	8.8	0.11	-	-	-	-	12,200	0.38	11.6	124	0.5	0.146	25,000	20.8	18	504	95,200	4.7	11.8	6,530	545	0.0562	2.78	12.1	1,740	990	0.86	0.266	640	127	1.42	0.05	1,450	0.994	355	55.6		
	QUL-16-S-1 2MM	2014 08 07	-	-	-	-	-	-	12,000	0.31	9.28	129	0.47	0.193	20,700	13	12.6	626	49,200	3.94	11.1	6,370	472	-	3.88	8.67	1,000	980	0.8	0.28	810	132	2	0.05	1,120	0.733	184	44		
	QUL-16-S-13UM	2014 08 07	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	QUL-16-S-2	2014 08 07	8.79	0.11	-	-	-	-	11,600	0.4	11.5	118	0.49	0.155	24,200	22	17.9	496	92,100	4.73	11.1	6,280	537	0.0551	3.56	11.8	1,700	910	0.94	0.266	630	121	1.27	0.05	1,390	0.958	343	55.9		
	QUL-16-S-2 2MM	2014 08 07	-	-	-	-	-	-	11,500	0.33	9.11	116	0.47	0.122	20,500	14	12.5	604	50,500	4.1	10.7	6,120	475	-	3.22	8.78	1,050	940	0.79	0.3	730	127	2	0.05	1,110	0.769	188	44		
	QUL-16-S-263UM	2014 08 07	-	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	QUL-16-S-3	2014 08 07	8.64	0.1	-	-	-	-	11,700	0.38	11.6	121	0.46	0.249	23,800	24.3	19.1	532	102,000	11.7	11.6	6,470	547	0.0619	3.22	13.4	1,760	920	0.96	0.263	630	118	1.77	0.05	1,340	0.974	378	63.3		
	QUL-16-S-3 2MM	2014 08 07	-	-	-	-	-	-	11,800	0.32	8.53	125	0.44	0.112	19,400	11.7	11.4	678	39,800	3.77	10.8	6,220	462	-	3.47	8.19	905	950	0.78	0.31	830	134	2	0.05	1,090	0.681	151	41.7		
	QUL-16-S-363UM	2014 08 07	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	QUL-23	QUL23	2014 08 10	-	-	-	-	-	-	12,600	0.36	9.63	138	0.52	0.145	20,400	15.4	13.6	577	53,200	4.46	12.2	6,950	513	-	3.48	10.3	1,080	1,120	0.76	0.28	810	137	2	0.05	1,130	0.781	197	46.5	
QUL23 2MM		2014 08 10	8.24	0.27	0.1	52.7	44.5	2.85	13,100	0.39	11.6	139	0.51	0.142	23,200	23.5	19	518	33,400	5.41	13.2	7,600	578	0.0822	3.02	13.5	1,770	1,160	0.87	0.273	720	125	1.29	0.05	1,260	0.948	348	55.7		
QUL-24	QUL2363UM	2014 08 10	-	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	QUL24 2MM	2014 08 10	-	-	-	-	-	-	15,600	0.37	11.6	144	0.59	0.126	24,600	12.5	16	733	43,800	4.57	15.3	9,620	601	-	3.49	9.6	1,150	1,340	0.95	0.35	960	160	2	0.05	1,260	0.898	168	54.4		
QUL-25	QUL24 2MM	2014 08 10	8.67	0.25	0.61	52	37.8	9.64	19,600	0.47	13.8	195	0.74	0.129	29,300	15.2	21	628	59,900	5.44	18.6	12,400	706	0.0908	3.4	11.6	1,780	1,930	1.04	0.309	1,210	208	1.87	0.05	1,690	1.28	229	62.6		
	QUL2463UM	2014 08 10	-	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
QUL-25	QUL25 2MM	2014 08 10	-	-	-	-	-	-	13,400	0.32	10.6	146	0.54	0.128	21,800	12	14.8	732	44,900	4.31	14.2	8,620	532	-	3.58	9.97	1,110	1,170	0.94	0.33	890	143	2	0.05	966	0.765				
	QUL25	2014 08 10	8.76	0.22	2.09	52.7	38.2	7.05	17,400	0.43	13.3	181	0.68	0.137	27,600	16.1	19.9	627	68,900	5	16.7	10,600	662	0.0801	3.72	11.6	1,750	1,580	0.99	0.298	1,030	177	1.8	0.05	1,570	1.13	262	60.6		
QUL-27	QUL2563UM	2014 08 10	-	0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	QUL27	2014 08 13	8.46	0.17	0.1	66.5	31.6	1.89	12,400	0.44	12.4	142	0.58	0.149	21,700	20.2	20.2	628	92,300	5.01	13	7,680	572	0.0704	3.56	12.4	1,820	1,150	0.95	0.414	780	118	1.03	0.16	1,08,					



**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	<b>Quesnel Lake</b>	<b>Single Sample</b>	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
		<b>Repeated Sites</b>	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.
	<b>Polley Lake</b>	<b>Repeated Sites</b>	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.
	<b>Polley Discharge and Hazeltine Crk.</b>	<b>Repeated Sites</b>	HAD-1 (Daily), HAC-01 (Daily).
	<b>Quesnel River</b>	<b>Repeated Sites</b>	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	<b>Quesnel Lake</b>	<b>One Time</b>	QUL-3, QUL-19, QUL-65, QUL-66.
		<b>Repeated Sites</b>	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		<b>Single Sample</b>	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 <sup>1</sup>	Acute (48-h) Daphnia magna <sup>2</sup>	Sublethal (7-d) fish survival and growth <sup>3</sup>	Sublethal (7-d) invertebrate survival and reproduction <sup>4</sup>	Sublethal (72-h) algal growth <sup>5</sup>	Sublethal (7-d) plant growth <sup>6</sup>	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

<sup>1</sup>Rainbow trout acute lethality (96-hours)

<sup>2</sup>Daphnia magna acute lethality (48-hours)

<sup>3</sup>Fathead minnow survival and growth (7-days)

<sup>4</sup>Ceriodaphnia dubia survival and reproduction (up to 8-d)

<sup>5</sup>Algal growth (Pseudokirchneriella subcapitata - 72-hours)

<sup>6</sup>Plant 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).

**Leave blank**

## **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](mailto: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](mailto: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 \(lmoger@mountpolley.com\)"](#); ["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:** RE: Weekly Update For September 5 2014 - Mount Polley Tailings Breach  
**Date:** Friday, September 5, 2014 4:43:29 PM  
**Attachments:** image001.jpg

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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

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**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 (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:** 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*

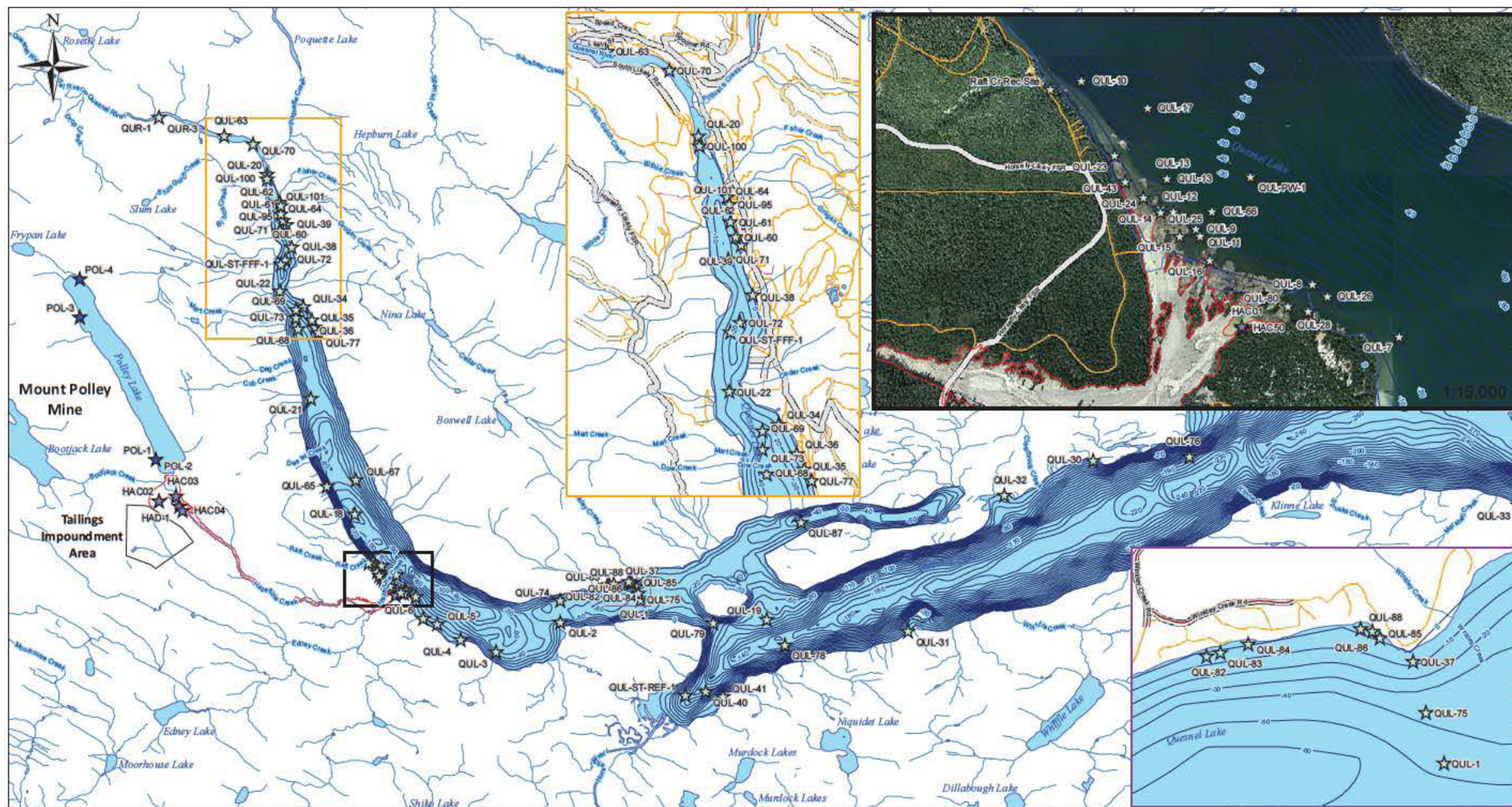
Environment & Water

Tel.: 250-562-5172 x 56553

**SNC-Lavalin Inc.**

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LEGEND	NOTES	REFERENCES	<div data-bbox="1633 1230 1936 1289"> </div>											
<p>Surface Water Sampling Locations</p> <ul style="list-style-type: none"> <li>Hazeltine Creek (6)</li> <li>Polley Lake (4)</li> <li>Quesnel Lake (78)</li> <li>Bathymetric 10m Contours</li> <li>FWA Lakes</li> </ul>	<p>1. Original in colour.</p> <p>2. Numerical scale reflects full-size print. Print scaling will distort this scale, however scale bar will remain accurate.</p> <p>3. Intended for illustration purposes, accuracy has not been verified for construction or navigation purposes.</p>	<p>1. Toporama WMS service provided by NRCAN. <a href="http://data.gc.ca/eng/open-government-licence-canada">http://data.gc.ca/eng/open-government-licence-canada</a></p> <p>2. GPS Data Collected using field grade GPS. Accuracy expected to be approximately +/- 3.5m.</p> <p>3. Satellite image collected by NASA on August 15, 2014.</p>	<p>CLIENT NAME: MPMC</p>	<p>PROJECT LOCATION: Mount Polley Mine, British Columbia</p> <p><b>Figure 5: Current Monitoring Locations</b></p> <table border="1"> <tr> <td>BY: CJW</td> <td>SCALE: 1:110,000</td> <td>DATE: 2014/09/05</td> <td>REF No: 621717-005</td> <td>REV: 0</td> </tr> <tr> <td>CHKD: GJ</td> <td>PROJ/COORD SYS: NAD 1983 UTM Zone 10N</td> <td colspan="3"></td> </tr> </table>	BY: CJW	SCALE: 1:110,000	DATE: 2014/09/05	REF No: 621717-005	REV: 0	CHKD: GJ	PROJ/COORD SYS: NAD 1983 UTM Zone 10N			
BY: CJW	SCALE: 1:110,000	DATE: 2014/09/05	REF No: 621717-005	REV: 0										
CHKD: GJ	PROJ/COORD SYS: NAD 1983 UTM Zone 10N													





**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 5b: Summary of Analytical Results for Mt.Polley Hazeltine Creek - Sediment

Sample Location	Sample ID	Sample Date (yyyy mm dd)	pH (pH)	Total Metals																													
				Aluminum (µg/g)	Antimony (µg/g)	Arsenic (µg/g)	Barium (µg/g)	Beryllium (µg/g)	Cadmium (µg/g)	Calcium (µg/g)	Chromium (µg/g)	Cobalt (µg/g)	Copper (µg/g)	Iron (µg/g)	Lead (µg/g)	Lithium (µg/g)	Magnesium (µg/g)	Manganese (µg/g)	Mercury (µg/g)	Molybdenum (µg/g)	Nickel (µg/g)	Phosphorus (µg/g)	Potassium (µg/g)	Selenium (µg/g)	Silver (µg/g)	Sodium (µg/g)	Strontium (µg/g)	Tin (µg/g)	Thallium (µg/g)	Titanium (µg/g)	Uranium (µg/g)	Vanadium (µg/g)	Zinc (µg/g)
BC Standards																																	
CSR Fresh Water Sediment (FW Sediment)				n/a	n/a	11	n/a	n/a	2 2	n/a	56	n/a	120	21,200 <sup>a</sup>	57	n/a	n/a	460 <sup>a</sup>	0.3	n/a	16 <sup>a</sup>	n/a	n/a	2 <sup>a</sup>	0.5 <sup>a</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	200
HAC-REF SOIL-1	HAC-REF SOIL-1A	2014 08 19	5.54	15,200	0.29	3.48	186	0.38	0.362	4,870	34.3	21 5	35 3	26,100	12 3	17 5	5,200	2,180	0.0824	0.68	19.5	673	1,280	0.2	0.47	150	42.7	2	0.116	511	0.451	56.7	90.5
	HAC-REF SOIL-1B	2014 08 19	5.29	15,700	0.34	4.65	86.1	0.36	0.219	3,390	37.5	11 5	22 6	28,500	7 81	20 9	6,330	591	0.0382	0.5	23.1	701	1,070	0.2	0.17	120	32.8	2	0.088	665	0.52	60	67.8
	HAC-REF SOIL-1C	2014 08 19	5.9	18,500	0.42	6.42	108	0.47	0.151	3,800	45	14.1	35 8	32,500	8 84	21.1	7,400	730	0.0533	0.52	29.7	593	1,600	0.2	0.1	140	41.8	2	0.112	871	0.6	67.5	66
HAC-REF SOIL-2	HAC-REF SOIL-2A	2014 08 19	7.74	5,870	0.16	1.84	572	0.2	7.74	42,800	12	14	68.4	10,700	4 02	6	3,210	5,950	0.0953	0.79	18.3	831	720	0.31	1.25	200	251	2	0.087	240	0.172	24.2	771
	HAC-REF SOIL-2B	2014 08 19	6.49	18,300	0.32	5.7	77 5	0.44	0.429	5,770	41.5	11 2	29.1	29,800	6.72	20 2	6,520	509	0.0316	0.5	27.8	1,410	1,290	0.2	0.3	140	51.7	2	0.073	693	0.517	62.9	95.3
	HAC-REF SOIL-2C	2014 08 19	6.7	19,200	0.39	6.15	109	0.47	0.299	5,630	43.9	13 5	34 8	31,900	8 38	20 9	7,290	638	0.0509	0.52	31	987	1,780	0.21	0.21	160	50.6	2	0.106	784	0.572	67.4	96.9
HAC-REF SOIL-3	HAC-REF SOIL-3A	2014 08 19	7.03	16,900	0.38	5.02	145	0.55	0.387	16,100	34.4	14 3	137	25,900	8 39	14.1	6,240	948	0.13	1.79	23.6	827	1,560	0.41	0.5	340	103	2	0.13	669	0.729	68.3	78.3
	HAC-REF SOIL-3B	2014 08 19	5.15	17,300	0.46	4.75	70 6	0.44	0.242	3,950	59.2	10 5	28 9	26,800	6 26	19.1	7,840	482	0.0309	0.96	28.8	576	1,260	0.26	0.26	170	27.7	2	0.099	1,030	0.643	76.7	62
	HAC-REF SOIL-3C	2014 08 19	5.34	13,000	0.25	3.77	46.4	0.29	0.091	3,040	44.8	7.79	16.7	21,700	4 93	18.1	6,760	313	0.0258	0.59	23.2	570	970	0.21	0.1	120	18.1	2	0.083	778	0.533	54	43.8

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.

**BOLD** Concentration greater than CSR Fresh Water Sediment (FW Sediment) standard.

<sup>a</sup> No CSR Sediment Criteria, BCWQG guideline shown.



**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, Hazeltine Creek - Surface Water DRAFT

			Physical Parameters										Dissolved Inorganics										Total Alkalinity		Ortho	Total
Sample Location	Sample ID	Sample Date (yyyy mm dd)	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)	(as CaCO3)	phosphate (mg/L)	Phosphorus (mg/L)				
BC Standards																										
BCWQG Aquatic Life (AW) <sup>a,c</sup>			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	700-5,680 <sup>d</sup>	32,800 (max)	60 (Cl 2)	32,800 (max)	600	1323.5-1537.8	309 <sup>d</sup>	n/a	n/a	0.005 - 0.015				
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	6.5-8.5	6.5-8.5	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	135-1,090 <sup>d</sup>	3,000	20 (Cl 2)	3,000	150	n/a	309 <sup>d</sup>	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	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	8.96	8.68	19.8	5.24	198	140	10.7	6.82	0.378	0.5	0.5	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	0.5	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	0.5	0.1	-	0.5	63	27.2	74.7	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	73.9	0.0011	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	0.0012	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	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	0.05	-	5.99	-	0.01	0.2	0.10	0.3	-	0.005	0.5	0.5	0.1	-	0.05	0.20	0.05	0.1	0.001	0.002 <sup>e</sup>				
HAD-TRAVEL BLANK	TRIP BLANK	2014 08 27	0.05	-	5.65	-	0.01	0.2	0.10	0.3	-	0.005	0.5	0.5	0.1	-	0.05	0.20	0.05	0.1	0.001	0.002 <sup>e</sup>				

Associated ALS files L1500203, L1500608, L1501501, L1501554, L1502400, L1503098, L1503928, L1503934, L1503943, L1504261, L1504997, L1505933, L1506992, L1506998, L1507977, L1508649, L1509589, L1509671, L1510298, L1510307, L1507958.

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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.

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guide lines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.

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

			Dissolved Metals																										
Sample Location	Sample ID	Sample Date (yyyy mm dd)	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)	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) <sup>b,c</sup>			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) <sup>b,c</sup>			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
HAD-1	HAD-1	2014 08 10	14.8	31.6	30	4.85	5.48	0.458	4.4	0.1	0.61	10.9	0.1	19	0.01	0.5	0.1	3.4	0.05	0.5	2.84	0.5	0.56	0.01	0.01	10	0.11	1.1	3
	HAD-1	2014 08 11	10.4	32.5	30	4.97	2.44	0.407	4.25	0.1	0.53	8.45	0.1	21	0.01	0.5	0.1	2.49	0.05	0.5	2.68	0.5	0.58	0.01	0.01	10	0.106	1.1	3
	HAD-1	2014 08 12	9.5	32	30	4.85	1.4	0.356	4.14	0.1	0.53	7.48	0.1	22	0.01	0.5	0.1	2.15	0.05	0.5	2.62	0.5	0.59	0.01	0.01	10	0.107	1.1	3
	HAD-1	2014 08 13	10	31.2	30	4.73	0.282	0.397	4.43	0.1	0.58	7.67	0.1	20	0.01	0.5	0.1	2.41	0.05	0.5	2.41	0.5	0.53	0.01	0.01	10	0.098	1.2	3
	HAD-1	2014 08 14	8.9	31.9	30	4.67	0.224	0.388	4.48	0.1	0.6	7.51	0.1	22	0.01	0.5	0.1	2.19	0.05	0.5	2.63	0.5	0.57	0.01	0.01	10	0.113	1.1	3
	HAD-1	2014 08 15	10.1	31.7	30	4.86	3.31	0.434	4.59	0.1	0.61	7.72	0.1	19	0.01	0.5	0.1	2.51	0.05	0.5	2.51	0.5	0.58	0.01	0.01	10	0.118	1.1	3
	HAD-1	2014 08 16	11.1	32.4	30	4.9	7.12	0.463	4.43	0.1	0.62	8.52	0.1	18	0.01	0.5	0.1	2.77	0.05	0.5	2.59	0.5	0.59	0.01	0.01	10	0.101	1.1	3
	HAD-1X	2014 08 16	10.9	32.6	30	4.92	7.97	0.477	4.47	0.1	0.6	8.45	0.1	18	0.01	0.5	0.1	2.67	0.05	0.5	2.52	0.5	0.57	0.01	0.01	10	0.102	1.1	3
	QA/QC RPD %		1	1	1	11	3	1	3	1	3	1	1	1	1	1	1	4	1	1	3	1	1	1	1	1	1	1	1
	HAD-1	2014 08 17	10.4	31.5	30	4.7	0.578	0.467	4.56	0.1	0.57	8.05	0.1	21	0.01	0.5	0.1	2.65	0.05	0.5	2.66	0.5	0.54	0.01	0.01	10	0.106	1.1	3
	HAD-1	2014 08 18	10	32.2	30	4.78	4.26	0.463	4.43	0.1	0.57	8.29	0.1	20	0.01	0.5	0.1	2.41	0.05	0.5	2.62	0.5	0.52	0.01	0.01	10	0.108	1.1	3
	HAD-1	2014 08 19	10.8	31.5	30	4.71	7.21	0.465	4.44	0.1	0.61	8.15	0.1	20	0.01	0.5	0.1	2.44	0.05	0.5	2.6	0.5	0.57	0.01	0.01	10	0.1	1.2	3
	HAD-1	2014 08 20	15.1	32.7	30	4.85	4.9	0.478	4.52	0.1	0.61	9.04	0.1	19	0.01	0.5	0.1	3.31	0.05	0.5	2.62	0.5	0.58	0.01	0.01	10	0.105	1.1	3
	HAD-1	2014 08 10	13.9	32.3	30	4.81	4.56	0.444	4.52	0.1	0.6	11	0.1	19	0.01	0.5	0.1	3.19	0.05	0.5	2.77	0.5	0.55	0.01	0.01	10	0.099	1.2	3
	HAD-1	2014 08 21	13.5	32.3	30	4.9	0.453	0.467	4.57	0.1	0.59	8.23	0.1	20	0.01	0.5	0.1	2.99	0.05	0.5	2.61	0.5	0.55	0.01	0.01	10	0.103	1	3
	HAD-1	2014 08 22	10.7	33.1	30	4.91	3.02	0.48	4.66	0.1	0.63	8.69	0.1	20	0.01	0.5	0.1	2.92	0.05	0.5	2.66	0.5	0.57	0.01	0.01	10	0.104	1.1	3
	HAD-1	2014 08 24	15.1	33.5	30	4.92	3.04	0.532	4.69	0.1	0.67	9.76	0.1	18	0.01	0.5	0.1	3.71	0.05	0.5	2.79	0.5	0.56	0.01	0.01	10	0.107	1.1	3
	HAD-1	2014 08 26	31.5	34.4	30	4.98	4.05	0.675	5	0.1	0.63	9.06	0.1	19	0.014	0.5	0.1	3.59	0.078	0.5	4.53	0.5	0.63	0.01	0.01	10	0.117	1.1	56.5
	HAC01	HAD-1	2014 08 28	10.9	34.7	30	5.07	2.33	0.495	4.96	0.1	0.65	8.74	0.1	21	0.01	0.5	0.1	2.82	0.05	0.5	2.98	0.5	0.69	0.01	0.01	10	0.116	1.1
HAC01-140824		2014 08 24	11.6	50	30	8.79	52.7	2.08	9.63	0.5	1.72	35.2	0.5	60	0.05	0.5	0.5	17.5	0.25	3.2	12.3	2.5	3.44	0.05	0.05	10	0.986	5	6
HAC01-24HRS		2014 08 24	10.3	49.2	30	8.83	53.9	2.16	9.82	0.27	1.93	37.9	0.1	29	0.013	0.5	0.12	17.8	0.05	1.11	12.2	0.74	3.77	0.01	0.01	10	0.984	3.2	3
HAC01		2014 08 25	9.6	48	30	8.45	51.6	1.78	8.23	0.23	1.65	38.6	0.2	24	0.02	0.5	0.2	15.8	0.1	1	10.1	1	3.35	0.02	0.02	10	0.66	2.5	3
HAC01		2014 08 26	12.1	46.4	30	8.44	52.8	1.7	7.95	0.5	1.67	38.4	0.5	60	0.05	0.5	0.5	16	0.25	2.5	10.4	2.5	3.43	0.05	0.05	10	0.746	5	6
HAD-FIELD BLANK	HAC01	2014 08 27	27	53	30	8.28	49.2	4.2	18.5	2	2.5	44.6	2	200	0.2	2	2	19.6	1	10	35.9	10	3	0.2	0.2	10	1.51	20	20
	FIELD BLANK	2014 08 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HAD-TRAVEL BLANK	HAC01-FB	2014 08 27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	TRIP BLANK	2014 08 27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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

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<sup>d</sup> 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																																	
BCWQG Aquatic Life (AW) <sup>a,c</sup>			n/a	20	5	5,000																											
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			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	2	n/a	n/a	n/a	n/a	n/a	n/a	5,000
BCWQG Drinking Water (DW)			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 <sup>d</sup>	n/a	6.4-6.6 <sup>d</sup>	14	n/a	1,034-1,058 <sup>d</sup>	1	1,000	n/a	n/a	n/a	0.05-1.5 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	13.05-17.25 <sup>d</sup>	
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	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		2	7				1							1			1									4			
	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	4,500	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	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	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	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	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	0.5	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	0.1	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	0.5	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	0.10	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	0.10	0.01*	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	0.10	0.01*	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-Lava in'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.

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guide lines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> 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		Total Nitrogen (N) (mg/L)	Ammonia Nitrogen (µg/L)	Nitrate Nitrogen (µg/L)	Nitrite Nitrogen (µg/L)	Dissolved Inorganics		Total Alkalinity (as CaCO3) (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)		
			Hardness (mg/L)	pH (field)	pH (pH)	Total Coliform (MPN/0.1L)							E. Coli (MPN/0.1L)	Chloride (mg/L)					Fluoride (µg/L)	Sulphate (mg/L)					
BC Standards																									
BCWQG Aquatic Life (AW) <sup>b,c</sup>			n/a	6.5-9.0	6.5-9.0	n/a	Under Review by SNC Lavalin	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	1263.3 <sup>d</sup>	128-309 <sup>d</sup>	n/a	n/a	0.005 - 0.15
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			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	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	n/a	135-1,780	3,000	20 (Cl: 2)	3,000	150	n/a	128-309 <sup>d</sup>	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	13	6.09	-	-	0.389	15	6.6	11	-	10.5	60	26.3	75.4	0.001	0.0044	
POL-2	POL-2	2014 08 07	95.2	-	9.01	-	3.96	184	126	13	6.81	201	> 201	0.402	15	15	11	-	10.5	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	13	6.86	2420	365	0.376	15	15	11	-	10.5	61	27.2	70.5	0.0011	0.0056	
	POL-2	2014 08 09	96.7	9.0	8.87	21.0	4.82	194	145	4.3	7.01	-	-	0.381	15	15	11	-	10.5	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	15	15	11	-	10.5	64	28	71.6	0.001	0.0053	
QA/QC RPD %			1	1	1	1	15	11	11	11	11	-	-	2	11	11	11	-	10.5	11	11	11	11	11	11
POL-2	POL-2	2014 08 11	99.6	8.55	8.16	23.0	3.59	203	143	13	7.57	-	-	0.56	15	15	11	-	10.5	68	27.6	75.3	0.0011	0.0079	
	POL-2	2014 08 12	94.8	8.99	8.58	20.6	1.58	198	135	13	6.29	-	-	0.355	15	15	11	-	10.5	69	27.1	73.4	0.001	0.0061	
	POL-2	2014 08 13	96.4	8.98	8.65	21.4	1.18	194	132	13	6.3	-	-	0.512	7.6	15	11	-	10.5	68	27.2	73.7	0.001	0.0053	
	POL-2	2014 08 14	99.8	8.87	8.53	22.5	1.66	200	130	13	6.69	-	-	0.373	5	15	11	-	10.5	63	27.4	75.7	0.001	0.0049	
	POL-2	2014 08 17	95.9	8.83	8.18	20.1	3.05	203	93	4.8	6.48	-	-	0.328	15	15	11	-	10.5	68	27.5	74.9	0.001	0.0061	
	POL-2	2014 08 16	100	8.60	8.28	20.2	1.7	203	142	13	6.57	-	-	0.339	15	15	11	15.1	10.5	68	27.3	76	0.001	0.0058	
	POL-2	2014 08 15	99.9	8.76	8.26	21.8	1.07	202	137	13	6.6	-	-	0.345	15	15	11	15.1	10.5	81	27.4	75.5	0.001	0.0064	
	POL-2	2014 08 19	102	8.66	8.09	20.7	3.02	198	133	5.2	6.84	-	-	0.505	5.4	15	11	-	10.5	74	26.7	74.9	0.001	0.0066	
	POL-2	2014 08 18	97.5	8.66	8.33	20.7	1.38	200	139	13	7.38	-	-	0.389	6.1	15	11	-	10.5	67	27.4	75.7	0.001	0.006	
	POL-2	2014 08 20	102	8.38	8.17	20.4	4.8	201	110	5.6	6.43	-	-	0.345	15	15	11	-	10.5	67	27	75.7	0.0011	0.0063	
POL-3	POL-2	2014 08 21	100	-	8.17	-	7.9	200	141	5.6	6.39	-	-	0.333	15	15	11	-	10.5	67	27.3	74	0.001	0.0052	
	POL-3	2014 08 08	99.8	9.02	8.79	19.0	1.66	194	131	3.1	6	2420	10	0.333	15	15	11	-	10.5	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	15	15	11	-	10.5	60	26.5	73.8	0.0058	0.0117	
	POL-3	2014 08 11	107	7.1	7.89	22.0	2.91	224	162	5.9	8.27	-	-	0.835	15	15	11	-	10.5	64	25.8	87.6	0.0476	0.08	
	POL-3	2014 08 12	96.3	8.85	8.39	21.7	1.15	200	142	13	6.3	-	-	0.406	6.4	15	11	-	10.5	65	27.2	73.7	0.001	0.0068	
	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	15	11	-	10.5	66	27	75.2	0.0021	0.0069	
	POL-3	2014 08 14	98.3	8.89	8.57	22.5	3.36	200	130	13	6.77	-	-	0.363	7.2	5.5	11	-	10.5	64	27.2	74.9	0.001	0.005	
	POL-3	2014 08 17	99.6	8.932	8.27	19.7	1.04	202	135	3.5	6.38	-	-	0.365	15	15	11	-	10.5	68	27.4	74.7	0.001	0.0052	
	POL-3	2014 08 16	99.7	8.7	5.64	21.0	0.62	200	139	3.7	6.25	-	-	0.333	15	15	11	15.1	10.5	68	27.1	73.3	0.001	0.006	
	POL-3	2014 08 15	98.5	8.89	8.38	22.5	3.68	199	133	13	6.31	-	-	0.359	15	15	11	15.1	10.5	80	27.1	74.1	0.001	0.0056	
	POL-3	2014 08 19	101	8.843	8.32	19.8	0.82	199	138	13	6.4	-	-	0.42	6.3	15	11	-	10.5	77	26.9	74.7	0.001	0.006	
	POL-3	2014 08 18	99.6	8.843	8.52	19.8	0.89	200	117	13	7.15	-	-	0.386	7.3	15	11	-	10.5	76	27.5	74.5	0.001	0.0051	
	POL-3X	2014 08 18	99.1	8.843	8.49	19.8	0.85	201	96	13	7.06	-	-	0.381	7	15	11	-	10.5	67	27.5	75.3	0.001	0.006	
QA/QC RPD %			1	0	1	1	5	11	20	11	1	-	-	1	11	11	11	-	10.5	11	11	11	11	11	11
POL-3	POL-3	2014 08 20	102	8.53	8.23	20.5	0.75	201	110	13	6.38	-	-	0.351	8.3	15	11	-	10.5	66	27.3	75.9	0.0012	0.0067	
	POL-3X	2014 08 20	100	8.53	8.23	20.5	0.66	204	145	13	6.28	-	-	0.347	9	15	11	-	10.5	64	27.1	77.2	0.0011	0.0069	
QA/QC RPD %			2	0	0	0	13	2	28	11	2	-	-	1	11	11	11	-	10.5	11	11	11	11	11	11
POL-3	POL-3	2014 08 21	100	-	8.43	-	0.85	202	135	13	5.99	-	-	0.384	8.2	15	11	-	10.5	66	27.9	76	0.001	0.0045	
	POL-3-140827	2014 08 27	105	8.74	8.3	19.4	0.93	209	135	13	6.92	-	-	0.376	15	15	11	-	10.5	70	28.5	77.2	0.0013	0.0059	
	POL-4	2014 08 08	100	9.099	8.89	18.2	2.39	192	132	4.6	6.14	2420	28	0.33	15	15	11	-	10.5	60	26.3	75.6	0.001	0.0053	
	POL-4	2014 08 09	99.2	8.929	8.78	18.3	2.7	199	139	3.1	7.29	-	-	0.44	15	15	11	-	10.5	60	26.6	75	0.001	0.0054	
	POL-4	2014 08 11	83.9	8.726	8.56	22.8	2.25	198	116	13	6.48	-	-	0.404	15	6.1	11	-	10.5	72	26.9	73.6	0.001	0.0063	
	POL-4	2014 08 12	94.6	8.898	8.52	22.0	1.4	199	140	13	6.24	-	-	0.397	15	15	11	-	10.5	67	27.1	73.4	0.001	0.0056	
	POL-4X	2014 08 12	96.7	-	8.52	-	1.08	200	141	13	6.17	-	-	0.393	15	15	11	-	10.5	64	27.2	74.8	0.001	0.0056	
QA/QC RPD %			2	0	1	1	26	11	11	1	1	-	-	1	11	11	11	-	10.5	11	11	11	11	11	11
POL-4	POL-4	2014 08 13	98.1	8.831	8.62	21.1	1.09	196	137	13	6.4	-	-	0.373	5.4	6	11	-	10.5	72	27.2	75.5	0.001	0.006	
	POL-4	2014 08 14	97.9	8.993	8.69	22.4	1.09	199	134	13	6.53	-	-	0.34	6	15	11	-	10.5	64	27.2	75	0.001	0.0048	
	POL-4	2014 08 17	101	8.843	8.26	19.4	0.87	204	90	13	6.5	-	-	0.342	6.1	15	11	-	10.5	68	27.4	76.5	0.001	0.006	
	POL-4	2014 08 16	99.5	8.403	8.28	21.4	0.66	201	137	13	6.44	-	-	0.345	8.6	15	11	15.1	10.5	65	26.9	75.2	0.001	0.0058	
	POL-4	2014 08 15	97.8	7.724	8.41	20.7	3.37	200	122	13	6.26	-	-	0.468	15	15	11	15.1	10.5	85	27.2	75.4	0.001	0.0059	
	POL-4	2014 08 19	103	8.815	8.23	19.5	1.11	201	134	13	6.83	-	-	0.472	10.3	5.9	11	-	10.5	76	27.1	78.1	0.001	0.0063	
	POL-4	2014 08 18	99.5	8.815	8.52	19.5	1.02	200	139	13	6.77	-	-	0.404	15	15	11	-	10.5	76	27.6	76	0.001	0.0049	
	POL-4	2014 08 20	103	8.59	8.26	20.4	0.66	204	140	13	6.44	-	-	0.339	5.2	15	11	-	10.5	67	27.3	77.5	0.0012	0.006	
	POL-4	2014 08 21	101	-	8.5	-	0.71	204	161	13	6.05	-	-	0.335	6	7.8	11	-	10.5	67	28	76	0.001	0.0041	
	POL-4-140827	2014 08 27	106	8.67	8.21	19.2	1.01	209	131	13	6.94	-	-	0.											



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) <sup>b,c</sup>			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) <sup>b,c</sup>			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-1	2014 08 07	6.3	31.1	0.30	4.72	0.377	0.341	4.24	0.01	0.55	6.36	0.01	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	0.01	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	0.01	18	0.01	0.05	0.01	2.86	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	0.01	20	0.01	0.05	0.01	3.19	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	0.01	20	0.01	0.05	0.01	3.21	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	2	11	2	2	0.1	2	11	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	0.01	20	0.01	0.05	0.01	3.16	0.05	0.58	-	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	0.01	19	0.01	0.05	0.01	2.18	0.05	0.5	-	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	0.01	21	0.01	0.05	0.01	2.3	0.05	0.5	-	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	0.01	21	0.01	0.05	0.01	2.25	0.05	0.5	-	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	0.01	20	0.01	0.05	0.01	2.53	0.05	0.5	-	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	0.01	18	0.01	0.05	0.01	2.3	0.05	0.5	-	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	0.01	19	0.01	0.05	0.01	2.34	0.05	0.5	-	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	0.01	20	0.01	0.05	0.01	2.34	0.05	0.5	-	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	0.01	19	0.01	0.05	0.01	2.33	0.05	0.5	-	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	0.01	21	0.01	0.05	0.01	2.99	0.05	0.5	-	2.72	0.05	0.62	0.01	0.01	0.10	0.105	1.1	0.3	
	POL-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	0.01	19	0.01	0.05	0.01	3.41	0.05	0.5	-	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	0.01	16	0.01	0.05	0.01	2.12	0.05	0.5	-	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	0.01	20	0.01	0.05	0.01	1.82	0.05	0.5	-	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	7.07	0.01	21	0.015	0.05	0.01	2.74	0.05	0.52	-	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	0.01	19	0.01	0.05	0.01	2.15	0.05	0.51	-	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	0.01	20	0.01	0.05	0.01	2.25	0.05	0.5	-	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	0.01	21	0.01	0.05	0.01	2.16	0.05	0.5	-	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	0.01	20	0.01	0.05	0.01	2.12	0.05	0.5	-	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	0.01	18	0.01	0.05	0.01	2.15	0.05	0.5	-	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	0.01	19	0.01	0.05	0.01	2.21	0.05	0.5	-	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	0.01	21	0.01	0.05	0.01	2.25	0.05	0.5	-	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	0.01	20	0.01	0.05	0.01	2.06	0.05	0.5	-	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	0.01	21	0.01	0.05	0.01	2.06	0.05	0.5	-	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	7	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	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	0.01	20	0.01	0.05	0.01	2.32	0.05	0.5	-	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	0.01	19	0.01	0.05	0.01	2.17	0.05	0.5	-	2.76	0.05	0.63	0.01	0.01	0.10	0.11	1.1	0.3	
QA/QC RPD %		2	2	0.1	1	7	5	3	0.1	6	11	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	0.1	
POL-4	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	0.01	23	0.01	0.05	0.01	2.21	0.05	0.5	-	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	0.01	18	0.01	0.05	0.01	2.49	0.05	0.5	-	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	6.88	0.01	19	0.01	0.05	0.01	2.19	0.05	0.5	-	2.25	0.05	0.58	0.01	0.01	0.10	0.098	1.1	0.3	
	POL-4	2014 08 09	6.4	31.9	0.30	4.72	0.481	0.413	4.31	0.01	0.57	6.88	0.01	20	0.01	0.05	0.01	1.77	0.05	0.5	-	2.34	0.05	0.54	0.01	0.01	0.10	0.112	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																																
BCWQG Aquatic Life (AW) <sup>b,c</sup>			n.a	20	5	5,000	5.3 (chronic)	n.a	1,200	0.03-0.035 <sup>d</sup>	n.a	1 (Cr (6))	110	9.9-12.06 <sup>d</sup>	1,000	65.3-88.99 <sup>d</sup>	870	1464.5-1.719 <sup>d</sup>	Under review by SNC-Lavalin	2,000	25-65 <sup>d</sup>	373,000	2	0.1-3.0 <sup>d</sup>	n.a	0.3	n.a	2,000	300	6	33-45.75 <sup>d</sup>	
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			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	250	n.a	n.a	n.a	10	n.a	n.a	2	n.a	n.a	n.a	n.a	n.a	5,000
BCWQG Drinking Water (DW)			n.a	n.a	n.a	1,000	n.a	n.a	n.a	n.a	n.a	n.a	4	2-4.28 <sup>d</sup>	n.a	3.3-6.8 <sup>d</sup>	14	607.2-1076 <sup>d</sup>	1	1,000	n.a	n.a	n.a	0.05-1.5 <sup>d</sup>	n.a	n.a	n.a	n.a	n.a	7.5-20.25 <sup>d</sup>		
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	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	0.10	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	0.10	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	0.10	0.114	1.4	0.3	
POL-2X	POL-2X	2014 08 09	237	0.01	0.72	11.4	0.01	0.05	21	0.01	31,800	0.05	0.18	160	0.068	0.05	0.05	13.7	0.05	2.81	0.05	551	0.56	0.01	4,730	0.01	0.01	0.13	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	0.13	0.157	1.8	0.3	
QA/QC RPD %			2	0	3	0	0	0	0	0	0	0	0	9	9	0	0	0	0	5	0	1	0	0	2	0	0	0	4	0	0	
POL-3	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	4,550	0.01	0.01	0.10	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	0.10	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	0.10	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	0.10	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	0.10	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	0.10	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	0.10	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	0.11	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	0.10	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	0.15	0.122	1.8	0.3	
	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	0.58	0.01	4,730	0.01	0.01	0.24	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	0.10	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	0.10	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	82.5	0.05	2.46	0.05	1,380	0.5	0.01	4,370	0.01	0.01	0.10	0.041	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	0.58	8.03	0.05	2.25	0.05	507	0.59	0.01	4,650	0.01	0.01	0.10	0.096	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	0.10	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	0.10	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	0.10	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	0.10	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	0.10	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	0.10	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	0.10	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	0.10	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	-	2	0	1	0	0	2	0	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	0.10	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	0.10	0.119	1.3	0.3		
QA/QC RPD %			11	2	2	2	0	0	0	3	0	0	0	0	0	0	0	0	-	3	0	2	0	0	4	0	0	0	7	0	0	
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	0.10	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	-														

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												Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)
			Hardness (mg/L)	pH (field)	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)								
BC Standards																														
BCWQG Aquatic Life (AW) <sup>a,b,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a	Under Review by SNC Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	988.2- 1207 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a	n.a	0.005-0.015		
BCWQG Aquatic Life (30day) (AW) <sup>b,c,e</sup>			n.a	n.a	n.a	n.a		n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n.a	128-218 <sup>d</sup>	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		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	n.a	n.a	n.a	0.01		
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	n.a	250	1 500	500	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	0.5	62.7	0.1	62.7	0.5	35	5.65	44.4	-	0.001	0.002 <sup>2</sup>	-	-		
	QUR-1X	2014 08 06	48.7	-	7.93	-	0.38	96.7	63	0.3	2.06	-	-	-	0.163	0.5	61.2	0.1	61.2	0.5	35	5.6	43.8	-	0.001	0.002 <sup>2</sup>	-	-		
	QA/QC RPD %		0.1	-	-	-	0	0.1	15	0	0	-	-	-	0	0	2	0	2	0	0	0.1	1	-	0	0	-	-		
	QUR-1	2014 08 06	48.7	-	7.93	-	0.52	97.1	58	0.3	2.06	-	-	-	0.132	0.5	61.9	1	62.9	0.5	34	5.6	44.7	-	0.001	0.002 <sup>2</sup>	-	-		
	QUR-1	2014 08 07	47.6	-	7.93	-	0.53	96.9	62	0.3	1.86	-	-	0.115	0.5	77.3	0.1	-	-	0.5	33	5.71	44.5	-	0.001	0.002 <sup>2</sup>	-	-		
	QUR-1(11 33)	2014 08 08	50	-	7.98	-	0.5	102	63	0.3	1.95	-	-	-	0.162	0.5	104	0.1	-	0.5	35	5.76	47.5	-	0.001	0.002 <sup>2</sup>	-	-		
	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	0.5	116	0.1	-	0.5	35	5.9	47	-	0.001	0.002 <sup>2</sup>	-	-		
	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	0.5	114	0.1	-	0.5	35	5.89	46.3	-	0.001	0.002 <sup>2</sup>	-	-		
	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	0.5	110	0.1	-	0.5	34	5.83	45.8	-	0.001	0.002 <sup>2</sup>	-	-		
	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	0.5	93.1	0.1	-	0.5	34	5.77	46.1	-	0.001	0.002 <sup>2</sup>	-	-		
	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	0.5	92.5	0.1	-	0.5	34	5.77	46.6	-	0.001	0.002 <sup>2</sup>	-	-		
	QUR-1(11 18)	2014 08 11	49.3	-	7.88	-	0.45	99.8	70	0.3	2.03	-	-	-	0.154	0.5	73.9	0.1	-	0.5	34	5.75	45.1	-	0.001	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	0.5	72.2	0.1	-	0.5	34	5.73	45.3	-	0.001	0.002 <sup>2</sup>	-	-		
	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	-	0.0013	0.002 <sup>2</sup>	-	-		
	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	-	0.0011	0.002 <sup>2</sup>	-	-		
	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 <sup>2</sup>	-	-		
	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 <sup>2</sup>	-	-		
	QA/QC RPD %		5	0	0	0	0	1	11	0	0	-	-	-	0	0	1	0	0	0	0	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	0.0024	-	-	-		
	QUR-1	2014 08 17	48.4	8.19	7.96	18.0	0.43	99.2	69	0.3	2.08	-	-	0.137	0.5	57	0.1	-	0.5	36	5.72	45.2	-	0.001	0.002 <sup>2</sup>	-	-	-		
	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 <sup>2</sup>	-	-	-		
	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	-	-	-	-	-	-	-	-	60.8	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 <sup>2</sup>	-	-	-		
	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	0.5	62.6	0.1	-	0.5	34	5.76	44.7	-	0.001	0.002 <sup>2</sup>	-	-	-		
	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 <sup>2</sup>	-	-	-		
	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	5.68	-	-	-	-	-	-			
QUR-1(04 00)	2014 08 21	51.2	-	7.86	-	0.69	99.3	-	-	-	-	-	-	-	-	81.1	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	101	-	-	-	-	-	-	-	-	92.4	0.1	-	0.5	37	5.88	-	-	-	-	-	-			
QUR-1(16 28)	2014 08 21	51.7	-	7.87	-	0.81	100	62	0.3	2.1	-	-	-	0.1																

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Associated ALS lists 15098519, 15098533, 15099166, 15099203, 15099703, 15099708, 15099926, 15099947, 15000619, 15001501, 15001518, 15002349, 15002364, 15002370, 15002388, 15003057, 15003061, 15003079, 15003910, 15003913, 15003928, 15003932, 15003933, 15003934, 15004180, 15004213, 15004220, 15004251, 15004261, 15004997, 15005918, 15006551, 15006571, 15006577, 15006577, 15006586, 15001604, 15002370, 15006899, 15006996, 15007001, 15007291, 15007298, 15006992, 15007259, 15007347, 15007948, 15007988, 15007977, 15008637, 15008673, 15009057, 15008649, 15009597, 15010231, 15010268, 15010289.

□ 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

<b>SHADED</b>	Concentration greater than BCWQG Aquatic Life (AW) guideline.
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**BOLD** Concentration greater than BCWQG Drinking Water (DW) guideline

Concentration greater than 20 mg/L drinking water (DW) guideline:

<sup>a</sup> Laboratory detection limit out of range

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>a</sup> Guideline varies with pH, and or Temperature or Hardness.

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)
BCWOG Aquatic Life (AW) <sup>h</sup> c																																	
BCWOG Aquatic Life (30day) (AW) <sup>h</sup> c																																	
BCWOG Drinking Water (DW)																																	
Canadian Drinking Water Quality (DW)																																	
QUR-1	QUR-1	2014 08 06	19.6	0.1	0.13	5.62	0.1	0.05	10	0.01	16 700	0.05	0.1	0.66	30	0.05	0.73	2 030	1.42	0.05	0.331	0.05	493	0.05	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	0.05	10	0.01	16 500	0.05	0.1	0.65	30	0.05	0.7	1 990	1.38	0.05	0.323	0.05	475	0.05	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	0.05	10	0.01	16 300	0.05	0.1	0.65	30	0.05	0.71	1 980	1.41	0.05	0.316	0.05	476	0.05	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	0.05	10	0.01	16 400	0.05	0.1	0.68	30	0.05	0.77	1 970	1.35	0.05	0.305	0.05	484	0.05	1 650	0.01	859	0.01	0.1	10	0.135	0.1	0.3
	QUR-1(11 33)	2014 08 08	24.2	0.1	0.13	5.42	0.1	0.05	10	0.01	17 000	0.05	0.1	0.64	48	0.05	0.51	2 010	1.62	0.05	0.283	0.05	474	0.05	1 670	0.01	888	0.01	0.1	10	0.14	0.1	0.3
	QUR-1(15 43)	2014 08 08	20.4	0.1	0.13	5.26	0.1	0.05	10	0.01	17 100	0.05	0.1	0.62	30	0.05	0.55	2 030	1.27	0.05	0.281	0.05	470	0.05	1 670	0.01	885	0.01	0.1	10	0.142	0.1	0.3
	QUR-1(10 08)	2014 08 09	27.8	0.1	0.12	5.34	0.1	0.05	10	0.01	17 400	0.05	0.1	0.72	33	0.05	0.71	2 040	1.73	0.05	0.295	0.05	472	0.05	1 680	0.01	872	0.01	0.1	10	0.187	0.1	0.3
	QUR-1(14 30)	2014 08 09	28.2	0.1	0.14	5.31	0.1	0.05	10	0.01	17 200	0.05	0.1	0.68	31	0.05	0.69	2 030	1.59	0.05	0.297	0.05	466	0.05	1 660	0.01	861	0.01	0.1	10	0.182	0.1	0.3
	QUR-1(10 19)	2014 08 10	21.7	0.1	0.12	5.06	0.1	0.05	10	0.01	16 600	0.05	0.1	0.65	30	0.05	0.5	1 930	1.15	0.05	0.283	0.05	480	0.05	1 620	0.01	893	0.01	0.1	10	0.139	0.1	0.3
	QUR-1(17 45)	2014 08 10	19.5	0.1	0.12	5.11	0.1	0.05	10	0.01	16 900	0.05	0.1	0.61	30	0.05	0.54	1 940	1.2	0.05	0.277	0.05	491	0.05	1 640	0.01	899	0.01	0.1	10	0.145	0.1	0.3
	QUR-1(11 18)	2014 08 11	23.8	0.1	0.14	5.28	0.1	0.05	10	0.01	16 400	0.05	0.1	0.64	30	0.05	0.98	1 900	1.39	0.05	0.293	0.05	487	0.05	1 550	0.01	873	0.01	0.1	10	0.141	0.1	0.3
	QUR-1(17 12)	2014 08 11	23.6	0.1	0.13	5.41	0.1	0.05	10	0.01	16 500	0.05	0.1	0.66	30	0.05	0.82	1 910	1.37	0.05	0.293	0.05	490	0.05	1 560	0.01	859	0.01	0.1	10	0.13	0.1	0.3
	QUR-1(14 04)	2014 08 12	16.6	0.1	0.14	5.25	0.1	0.05	10	0.01	16 400	0.05	0.1	0.68	30	0.05	0.85	1 990	1.17	-	0.304	0.05	473	0.05	1 620	0.01	866	0.01	0.1	10	0.129	0.1	9.4
	QUR-1(16 34)	2014 08 12	20.4	0.1	0.13	5.41	0.1	0.05	10	0.01	16 200	0.05	0.1	0.7	30	0.05	0.81	1 970	1.18	0.05	0.317	0.05	475	0.05	1 600	0.01	857	0.01	0.1	10	0.132	0.1	0.3
	QUR-1(20 00)	2014 08 12	15.8	0.1	0.14	5.26	0.1	0.05	10	0.01	16 600	0.05	0.1	0.63	30	0.05	0.84	1 960	1.15	-	0.311	0.05	469	0.05	1 590	0.01	863	0.01	0.1	10	0.135	0.1	8
	QUR-1(04 00)	2014 08 13	25.3	0.1	0.14	5.49	0.1	0.05	10	0.01	16 800	0.05	0.1	0.68	30	0.05	0.83	1 980	1.47	-	0.307	0.05	482	0.05	1 610	0.01	881	0.01	0.1	10	0.134	0.1	6
	QUR-1(12 00)	2014 08 13	18.6	0.1	0.15	5.41	0.1	0.05	10	0.01	16 600	0.05	0.1	0.64	30	0.05	0.82	1 950	1.38	-	0.312	0.05	466	0.05	1 600	0.01	858	0.01	0.1	10	0.131	0.1	6.6
	QUR-1(13 18)	2014 08 13	18.9	0.1	0.14	5.43	0.1	0.05	10	0.01	16 400	0.05	0.1	0.63	30	0.05	0.84	1 930	1.22	0.05	0.316	0.05	480	0.05	1 580	0.01	863	0.01	0.1	10	0.134	0.1	0.3
	QUR-1(20 00)	2014 08 13	15.6	0.1	0.16	5.3	0.1	0.05	10	0.01	16 200	0.05	0.1	0.62	30	0.05	0.74	1 930	1.32	-	0.331	0.05	465	0.05	1 560	0.01	846	0.01	0.1	10	0.131	0.1	8
	QUR-1(20 00)	2014 08 14	19.2	0.1	0.17	5.08	0.1	0.05	10	0.01	16 400	0.05	0.1	0.61	30	0.05	0.5	1 950	1.67	-	0.335	0.05	472	0.05	1 630	0.01	861	0.01	0.1	10	0.127	0.1	10.1
	QUR-1(14 45)	2014 08 14	16.4	0.1	0.13	5.39	0.1	0.05	10	0.01	16 200	0.05	0.1	0.6	30	0.05	0.67	1 910	1.38	-	0.316	0.05	462	0.05	1 570	0.01	843	0.01	0.1	10	0.135	0.1	0.3
	QUR-1X(14 50)	2014 08 14	18.7	0.1	0.15	5.44	0.1	0.05	10	0.01	16 000	0.05	0.1	0.64	30	0.05	0.74	1 860	1.41	-	0.326	0.05	470	0.05	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	0	1	0	0	0	0	0	0	3	0	0	3	0	2	0	3	0	0	0	0	0	1	0	0
	QUR-1(04 00)	2014 08 15	23.1	0.1	0.16	5.2	0.1	0.05	10	0.01	16 400	0.05	0.1	0.64	30	0.05	0.5	1 940	1.8	-	0.322	0.05	478	0.05	1 630	0.01	866	0.01	0.1	10	0.122	0.1	6.2
	QUR-1(12 00)	2014 08 15	15	0.01	0.14	5.04	0.01	0.05	10	0.01	16 300	0.05	0.1	0.64	30	0.05	0.5	1 920	1.24	-	0.324	0.05	470	0.05	1 590	0.01	880	0.01	0.1	10	0.128	0.1	5.7
	QUR-1(13 28)	2014 08 15	18.5	0.01	0.16	5.58	0.01	0.05	10	0.01	16 600	0.05	0.1	0.63	30	0.05	0.5	1 950	1.35	-	0.3	0.05	489	0.05	1 630	0.01	881	0.01	0.1	10	0.132	0.1	0.3
	QUR-1	2014 08 17	20	0.01	0.13	5.17	0.01	0.05	10	0.01	16 400	0.05	0.1	0.63	30	0.05	0.62	1 920	1.35	-	0.312	0.05	475	0.05	1 600	0.01	875	0.01	0.1	10	0.132	0.1	0.3
	QUR-1(14 59)	2014 08 16	18.9	0.01	0.13	5.27	0.01	0.05	10	0.01	16 300	0.05	0.1	0.62	30	0.05	0.71	1 910	1.54	-	0.315	0.05	465	0.05	1 580	0.01	837	0.01	0.1	10	0.137	0.1	0.3
	QUR-1(04 00)	2014 08 14	19.5	0.1	0.16	5.46	0.1	0.05	10	0.01	16 400	0.05	0.1	0.62	30	0.05	0.76	1 970	1.53	-	0.314	0.05	475	0.05	1 600	0.01	852	0.01	0.1	10	0.134	0.1	6.8
	QUR-1(12 00)	2014 08 14	18.7	0.56	0.17	5.46	0.1	0.05	10	0.01	16 300	0.05	0.1	0.59	30	0.05	0.7	1 890	1.63	-	0.324	0.05	476	0.05	1 560	0.01	869	0.01	0.1	10	0.136	0.1	8
	QUR-1(20 00)	2014 08 16	13.6	0.1	0.13	5.36	0.1	0.05	10	0.01	16 900	0.05	0.1	0.51	30	0.05	0.71	1 980	1.13	-	0.328	0.05	482	0.05	1 630	0.01	892	0.01	0.1	10	0.142	0.1	6.2
	QUR-1(04 00)	2014 08 19	22.5	0.1	0.13	5.48	0.1	0.05	10	0.01	17 000	0.05	0.1	0.77	30	0.05	0.85	1 970	1.62	-	0.311	0.05	489	0.05	1 640	0.01	892	0.01	0.1	10	0.137	0.1	4.1
	QUR-1(12 00)	2014 08 18	20.1	0.1	0.13	5.34	0.1	0.05	10	0.01	16 900	0.05	0.1	0.68	30	0.05	0.76	1 960	1.38	-	0.331	0.05	473	0.05	1 610	0.01	871	0.01	0.1	10	0.141	0.1	4.6
QUR-1(12 00)	2014 08 19	21.6	0.1	0.16	5.39	0.1	0.05	10	0.01	16 700	0.05	0.1	0.67	30	0.05	0.83	1 920	1.56	-	0.308	0.05	477	0.05	1 600	0.01	866	0.01	0.1	10	0.138	0.1	5	
QUR-1(13 27)	2014 08 19	30.4	0.1	0.18	5.39	0.1	0.05	10	0.01	16 900	0.05	0.1	0.87	30	0.05	0.82	1 950	1.61	-	0.318	0.05	495	0.05	1 620	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) <sup>b,c</sup>			n/a	6.5-9.0	6.5-9.0	n/a	Under Review by SNC Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	988.2-1207 <sup>d</sup>	128-218 <sup>d</sup>	n/a	n/a	n/a	0.005-0.015	
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n/a	128-218 <sup>d</sup>	n/a	n/a	n/a	n/a	
BCWQG Drinking Water (DW)			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	n/a	0.01	
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	n/a	250	1 500	500	n/a	n/a	n/a	n/a	
QUR-1	QUR-1	2014 08 23	51.2	8.08	7.94	14.7	1.05	99.7	70	0.3	2.03	-	-	-	0.151	0.5	80.7	0.1	-	0.5	34	5.86	45.5	-	0.001	0.002 <sup>a</sup>	
	QUR-1	2014 08 24	52.6	7.726	7.89	14.4	0.67	102	61	0.3	0.05	-	-	-	0.176	0.5	85.1	0.1	-	0.5	36	5.82	45.7	-	0.001	0.002 <sup>a</sup>	
	QUR-1-12 00	2014 08 24	50.9	-	7.93	-	0.81	103	-	0.3	-	-	-	-	-	-	83.4	0.1	-	0.5	35	5.87	-	-	-	-	
	QUR-1-16 00	2014 08 24	51.1	-	7.96	-	1.1	103	-	0.3	-	-	-	-	-	-	90.7	0.1	-	0.5	35	6.02	-	-	-	-	
	QUR-1-20 00	2014 08 24	51.3	-	7.86	-	0.66	102	-	0.3	-	-	-	-	-	-	86.7	0.1	-	0.5	33	5.85	-	-	-	-	
	QUR-1-4 00	2014 08 24	52	-	7.9	-	0.66	102	-	0.3	-	-	-	-	-	-	77	0.1	-	0.5	35	5.85	-	-	-	-	
	QUR-1	2014 08 25	51.3	-	7.98	-	1.06	104	-	0.3	-	-	-	-	-	-	97.8	0.1	-	0.5	35	6.04	-	-	-	-	
	QUR-1	2014 08 25	51	8.08	7.94	14.63	1.28	102	72	0.3	2.14	-	-	-	0.153	0.5	81.7	0.1	-	0.5	35	5.94	46	-	0.001	0.002 <sup>a</sup>	
	QUR-1-08 00	2014 08 25	51.7	-	7.99	-	1.14	103	-	0.3	-	-	-	-	-	-	85.4	0.1	-	0.5	35	6.02	-	-	-	-	
	QUR-1	2014 08 26	51.1	8.17	8	16.37	0.84	102	63	0.3	2.14	-	-	-	0.143	0.5	64.6	0.1	-	0.5	35	5.91	45.9	-	0.001	0.002 <sup>a</sup>	
	QUR-1X	2014 08 26	51.5	8.17	7.98	16.37	0.75	102	63	0.3	2.17	-	-	-	0.148	0.5	65.1	0.1	-	0.5	35	5.91	45.7	-	0.001	0.002 <sup>a</sup>	
	QA/QC RPD %		0	0	0	0	11	0	0	0	0	-	-	-	-	-	0	0	-	0	0	0	-	-	-	-	
	QUR-1-8 00	2014 08 26	50.6	-	8.02	-	0.82	103	-	0.3	-	-	-	-	-	-	67.2	0.1	-	0.5	35	5.94	-	0.05	-	-	
	QUR-1-00 00	2014 08 26	51.6	-	7.97	-	0.87	103	-	0.3	-	-	-	-	-	-	74.5	0.1	-	0.5	35	5.99	-	0.05	-	-	
	QUR-1-16 00	2014 08 25	52.2	8.08	8.01	14.63	1.03	103	-	0.3	-	-	-	-	-	-	79.8	0.1	-	0.5	35	6	-	0.05	-	-	
	QUR-1-08 00	2014 08 27	50.1	-	8	-	0.76	101	-	0.3	-	-	-	-	-	-	60.7	0.1	-	0.5	34	5.92	-	-	-	-	
	QUR-1	2014 08 27	50.9	8.19	8	17.2	0.8	102	73	0.3	2.02	-	-	-	0.132	0.5	60	0.1	-	0.5	34	5.93	45.4	-	0.001	0.002 <sup>a</sup>	
	QUR-1-00 00	2014 08 27	47.4	-	7.97	-	1.23	102	-	0.3	-	-	-	-	-	-	62.9	0.1	-	0.5	35	5.95	-	-	-	-	
	QUR-1-16 00	2014 08 26	49	-	7.99	-	0.76	102	-	0.3	-	-	-	-	-	-	64.9	0.1	-	0.5	33	5.97	-	-	-	-	
	QUR-1	2014 08 28	49	-	7.93	-	0.66	100	67	0.3	2.02	-	-	-	0.131	0.5	54.8	0.1	-	0.5	35	5.86	44.4	-	0.001	0.0021	
	QUR-1-00 00	2014 08 28	-	-	7.96	-	0.55	101	-	0.3	-	-	-	-	-	-	57.6	0.1	-	0.5	35	5.93	-	-	-	-	
	QUR-1-08 00	2014 08 28	-	-	7.97	-	0.89	101	-	0.3	-	-	-	-	-	-	55.6	1.1	-	0.5	35	5.91	-	-	-	-	
	QUR-1-16 00	2014 08 28	-	-	7.97	-	0.55	97.8	-	0.3	-	-	-	-	-	-	56.9	0.1	-	0.5	33	5.72	-	-	-	-	
QUL-1 QUL-2	QUL-1	2014 08 06	48	8.13	7.97	20.4	0.35	94.6	59	0.3	2.16	-	-	-	0.146	0.5	59.3	0.1	-	0.5	31	5.6	43.8	-	0.001	0.002 <sup>a</sup>	
	QUL-2	2014 08 06	48.3	8.13	7.98	20.6	0.33	94.4	58	0.3	2.06	-	-	-	0.152	0.5	48.3	0.1	-	0.5	31	5.59	43.7	-	0.001	0.002 <sup>a</sup>	
	QUL-2	2014 08 09	48.8	7.79	7.85	18.0	0.49	96.4	64	0.3	2.38	-	-	-	0.136	0.5	54.8	0.1	-	0.5	35	5.54	43.5	-	0.001	0.002 <sup>a</sup>	
	QUL-2	2014 08 11	47.7	7.69	7.93	20.2	0.27	97.8	67	0.3	2.39	-	-	-	0.139	0.5	52.3	0.1	-	0.5	34	5.62	43.7	-	0.001	0.002 <sup>a</sup>	
	QUL-2-0M	2014 08 16	48.8	8.07	7.97	-	0.4	95	54	0.3	2.08	-	-	-	0.111	0.5	42.5	0.1	-	0.5	36	5.64	43.2	-	0.001	0.002 <sup>a</sup>	
	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	0.5	86	0.1	-	0.5	36	5.75	44.4	-	0.001	0.002 <sup>a</sup>	
	QUL-2-30M	2014 08 16	53.3	7.62	7.84	4.7	1.94	107	68	0.3	1.81	-	-	-	0.181	0.5	141	0.1	-	0.5	38	6.34	48.1	-	0.001	0.002 <sup>a</sup>	
	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	65	12	55.4	-	0.0407	0.21	
	QUL-2-0M	2014 08 25	49.5	7.93	7.97	18.4	0.27	98.4	64	0.3	2.03	-	-	-	0.131	0.5	47.9	0.1	-	0.5	35	5.76	43.8	-	0.001	0.002 <sup>a</sup>	
	QUL-2X-0M	2014 08 25	49.6	7.93	7.97	18.4	0.24	98.3	67	0.3	1.97	-	-	-	0.132	0.5	48	0.1	-	0.5	34	5.76	44.3	-	0.001	0.0158	
	QA/QC RPD %		0	0	0	0	0	0	0	0	0	-	-	-	-	-	0	0	-	0	0	0	-	-	-	-	
	QUL-2-40M	2014 08 25	58.6	7.39	7.91	5.24	17.9	119	79	11.7	1.71	-	-	-	0.246	11	166	0.1	-	0.5	44	8.92	51.1	-	0.0069	0.0214	
	QUL-2-8M	2014 08 25	50	7.94	7.95	18.06	0.27	99.9	69	0.3	1.8	-	-	-	0.145	0.5	74.7	0.1	-	0.5	34	5.85	45	-	0.013	0.0156	
	QUL-2-0M	2014 08 27	49.5	7.97	7.98	18.94	0.25	98.2	63	0.3	2.1	-	-	-	0.12	0.5	43.6	0.1	-	0.5	34	5.76	44.6	-	0.001	0.002 <sup>a</sup>	
	QUL-2-15M	2014 08 27	50.7	-	7.97	-	3.55	102	65	0.3	2.06	-	-	-	0.15	0.5	81.8	0.1	-	0.5	35	6.11	45.5	-	0.001	0.002 <sup>a</sup>	
	QUL-2-42M	2014 08 27	63	-	7.97	-	49	135	107	11.3	1.92	-	-	-	0.29	33.1	189	0.1	-	0.5	56	12.8	54.1	-	0.0019	0.0034	

Associated ALS files: L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, L1499710, L1499826, L1499947, L1500619, L1501501, L1501518, L1502348, L1502364, L1502370, L1502388, L1503057, L1503061, L1503079, L1503910, L1503913, L1503928, L1503932, L1503933, L1503934, L1504180, L1504213, L1504220, L1504251, L1504261, L1504897, L1505918, L1505951, L1505957, L1505958, L1506184, L1506230, L1506898, L1506996, L1507001, L1507291, L1507296, L1508992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509507, L1508649, L1509597, L1510231, L1510268, L1510269.

□ 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.

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.



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Associated ALS files: L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1506577, L1506586, L1506614, L15062370, L1506989, L1506996, L1507001, L1507291, L1507298, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509507, L1508649, L1509597, L1510231, L1510268, L1510289.

A Items defined within the body of SNC-Cavallari'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.

<b>SHADED</b>	Concentration greater than BCWQG Aquatic Life (AW) guide line.
<b>BOLD</b>	Concentration greater than BCWQG Drinking Water (DW) guideline.
<b>SHADED</b>	Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.
<b>BOLD</b>	Concentration greater than or equal to Canadian Drinking Water Quality (DW) guide line.

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

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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																																	
BCWQG Aquatic Life (AW) <sup>a,c</sup>			n/a	20	5	5 000	5 3	n/a	1 200	0.02-0.025 <sup>d</sup>	n/a	1 Cr (Cr-6)	110	6.0-8.8 <sup>d</sup>	1 000	27.3-54.6 <sup>d</sup>	870	n/a	100.6-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2 000	25-65 <sup>d</sup>	373,000-432,000	2	n/a	0.1 <sup>d</sup>	n/a	0 3	n/a	2 000	300	6	33 <sup>d</sup>
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	n/a	n/a	1 000	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	33.5-4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>		1 000	n/a	n/a	n/a	n/a	0.05 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5 <sup>d</sup>
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	n/a	n/a	n/a	1	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	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	n/a	200 000	n/a	n/a	n/a	20	n/a	n/a	5 000
QUR-1	QUR-1	2014 08 23	63.2	0.1	0.16	6.16	0.01	0.05	0.10	0.01	17.400	0.5	0.01	2.06	63	0.05	0.87	2.010	3.12	0.05	0.294	0.5	487	0.5	1.680	0.01	873	0.01	0.01	0.10	0.148	0.1	0.3
	QUR-1	2014 08 24	49	0.01	0.13	6.16	0.01	0.05	0.10	0.01	17.500	0.5	0.01	1.98	41	0.05	0.87	1.980	2.31	-	0.311	0.5	488	0.5	1.680	0.01	867	0.01	0.01	0.10	0.151	0.1	0.3
	QUR-1-120	2014 08 24	35.6	0.01	0.13	5.68	0.01	0.05	0.10	0.01	17.200	0.6	0.01	1.78	35	0.05	0.71	1.930	1.99	-	0.331	0.5	471	0.5	1.640	0.01	866	0.01	0.01	0.10	0.143	0.1	3.2
	QUR-1-160	2014 08 24	54.8	0.01	0.17	6.17	0.01	0.05	0.10	0.01	17.200	0.5	0.01	1.93	50	0.05	0.5	1.960	2.5	-	0.299	0.5	470	0.5	1.680	0.01	855	0.01	0.01	0.10	0.148		
	QUR-1-200	2014 08 24	39.5	0.01	0.13	6	0.01	0.05	0.10	0.01	17.300	0.5	0.01	1.85	34	0.05	0.82	1.970	2.37	-	0.301	0.5	485	0.5	1.660	0.01	882	0.01	0.01	0.10	0.143	0.1	10.3
	QUR-1-400	2014 08 24	27.3	0.01	0.13	5.73	0.01	0.05	0.10	0.01	17.600	0.5	0.01	1.55	30	0.05	0.85	1.960	1.59	-	0.308	0.5	477	0.5	1.650	0.01	872	0.01	0.01	0.10	0.146	0.1	3
	QUR-1	2014 08 25	63.9	0.01	0.17	6.31	0.01	0.05	0.10	0.01	17.300	0.5	0.01	2.31	53	0.05	0.5	1.960	2.88	-	0.284	0.5	469	0.5	1.690	0.01	848	0.01	0.01	0.10	0.147	0.1	3.4
	QUR-1	2014 08 25	68.4	0.01	0.17	6.47	0.01	0.05	0.10	0.01	17.400	0.5	0.01	2.41	62	0.05	0.5	1.940	2.86	-	0.296	0.5	478	0.5	1.660	0.01	854	0.01	0.01	0.10	0.144	0.1	0.3
	QUR-1-080	2014 08 25	65.2	0.01	0.19	6.47	0.01	0.05	0.10	0.01	17.400	0.5	0.01	2.16	63	0.05	0.5	1.980	3.07	-	0.315	0.5	479	0.5	1.680	0.01	863	0.01	0.01	0.10	0.149	0.1	0.3
	QUR-1	2014 08 26	47.1	0.01	0.13	6.24	0.01	0.05	0.10	0.01	17.100	0.5	0.01	1.91	40	0.05	0.51	1.970	2.29	0.01	0.303	0.5	480	0.5	1.610	0.01	868	0.01	0.01	0.10	0.143	0.1	0.3
	QUR-1X	2014 08 26	46.5	0.01	0.13	6.05	0.01	0.05	0.10	0.01	17.000	0.5	0.01	1.89	39	0.05	0.6	1.950	2.26	0.01	0.32	0.5	468	0.5	1.590	0.01	860	0.01	0.01	0.10	0.137	0.1	0.3
	QUR-1AQ RPD %			1			3				1							1			3					1						4	
	QUR-1-800	2014 08 26	41.2	0.01	0.15	5.85	0.01	0.05	0.10	0.01	17.000	0.5	0.01	1.86	31	0.05	0.57	1.940	2.08	-	0.396	0.5	469	0.5	1.610	0.01	873	0.01	0.01	0.10	0.145	0.1	0.3
	QUR-1-000	2014 08 26	52.4	0.01	0.13	6.17	0.01	0.05	0.10	0.01	17.400	0.5	0.01	2.12	38	0.05	0.55	1.970	2.23	-	0.343	0.5	475	0.5	1.640	0.01	893	0.01	0.01	0.10	0.142	0.1	0.3
	QUR-1-160	2014 08 25	47.6	0.01	0.16	6	0.01	0.05	0.10	0.01	17.600	0.5	0.01	4.8	36	0.117	0.57	1.990	2.32	-	0.33	0.5	478	0.5	1.640	0.01	891	0.01	0.01	0.10	0.144	0.1	4.6
	QUR-1-008	2014 08 27	32.7	0.01	0.15	6	0.01	0.05	0.10	0.01	16.900	0.5	0.01	1.63	30	0.05	0.65	1.940	1.73	-	0.304	0.5	465	0.5	1.570	0.01	900	0.01	0.01	0.10	0.143	0.1	3
	QUR-1	2014 08 27	38.9	0.01	0.14	6.03	0.01	0.05	0.10	0.01	16.800	0.5	0.01	1.84	32	0.05	0.64	1.940	2.29	0.01	0.318	0.5	483	0.5	1.560	0.01	902	0.01	0.01	0.10	0.143	0.1	0.3
	QUR-1-000	2014 08 27	29.6	0.01	0.13	5.8	0.01	0.05	0.10	0.01	15.900	0.5	0.01	1.53	30	0.05	0.65	1.840	1.66	-	0.314	0.5	461	0.5	1.480	0.01	886	0.01	0.01	0.10	0.142	0.1	3.1
	QUR-1-160	2014 08 26	27.8	0.01	0.14	5.83	0.01	0.05	0.10	0.01	16.500	0.5	0.01	1.47	30	0.05	0.67	1.900	1.7	-	0.316	0.5	479	0.5	1.520	0.01	904	0.01	0.01	0.10	0.146	0.1	4.2
	QUR-1	2014 08 28	40.5	0.01	0.16	5.91	0.01	0.05	0.10	0.01	16.900	0.5	0.01	1.37	42	0.05	0.62	1.960	2.1	0.01	0.286	0.5	487	0.5	1.580	0.01	890	0.01	0.01	0.10	0.144	0.1	0.3
QUR-1-000	2014 08 28	41.7	0.01	0.14	5.94	0.01	0.05	0.10	0.01	17.000	0.5	0.01	1.58	40	0.05	0.6	1.970	2.35	-	0.303	0.5	490	0.5	1.590	0.01	896	0.01	0.01	0.10	0.141	0.1	0.3	
QUR-1-080	2014 08 28	29.1	0.01	0.14	5.81	0.01	0.05	0.10	0.01	17.200	0.5	0.01	1.24	30	0.05	0.59	1.980	1.48	-	0.303	0.5	483	0.5	1.590	0.01	891	0.01	0.01	0.10	0.141	0.1	0.3	
QUR-1-160	2014 08 28	42.5	0.01	0.14	5.84	0.01	0.05	0.10	0.01	16.700	0.5	0.01	1.47	34	0.05	0.62	1.930	2.11	-	0.305	0.5	478	0.5	1.580	0.01	880	0.01	0.01	0.10	0.136	0.1	3.2	
QUL-1 QUL-2	QUL-1	2014 08 06	21.7	0.01	0.1	5.28	0.01	0.05	0.10	0.01	16.100	0.5	0.01	0.71	30	0.05	0.5	1.920	1.36	0.05	0.295	0.5	475	0.5	1.610	0.01	857	0.01	0.01	0.10	0.14	0.1	0.3
	QUL-2	2014 08 06	17.6	0.01	0.11	5.34	0.01	0.05	0.10	0.01	15.900	0.5	0.01	0.62	30	0.05	0.5	1.910	1.4	0.05	0.302	0.5	473	0.5	1.590	0.01	822	0.01	0.01	0.10	0.131	0.1	0.3
	QUL-2	2014 08 09	21.4	0.01	0.12	5.57	0.01	0.05	0.10	0.01	16.100	0.5	0.01	0.67	30	0.05	0.61	1.900	1.93	0.05	0.303	0.5	484	0.5	1.580	0.01	828	0.01	0.01	0.10	0.139	0.1	0.3
	QUL-2	2014 08 11	17.5	0.01	0.16	5.36	0.01	0.05	0.10	0.01	16.000	0.5	0.01	0.72	30	0.05	0.83	1.880	1.23	0.05	0.317	0.5	496	0.5	1.530	0.01	849	0.01	0.01	0.10	0.131	0.1	0.3
	QUL-2-0M	2014 08 16	18.9	0.01	0.14	5.52	0.01	0.05	0.10	0.01	16.000	0.5	0.01	0.66	30	0.05	0.51	1.870	1.45	-	0.315	0.5	477	0.5	1.560	0.01	836	0.01	0.01	0.10	0.14	0.1	0.3
	QUL-2-10M	2014 08 16	21	0.01	0.11	5.31	0.01	0.05	0.10	0.01	16.500	0.5	0.01	0.95	30	0.05	0.52	1.840	1.07	-	0.268	0.5	467	0.5	1.520	0.01	810	0.01	0.01	0.10	0.151	0.1	0.3
	QUL-2-30M	2014 08 16	126	0.01	0.15	7.32	0.01	0.05	0.10	0.01	18.300	0.5	0.01	2.8	97	0.05	0.5	2.120	7.03	-	0.358	0.5	522	0.5	1.980	0.01	3,290	0.01	0.01	0.10	0.198	0.1	0.3
	QUL-2-47M	2014 08 21	2,510	0.17	1.12	6.16	0.01	0.05	0.10	0.02	21.100	1.68	1.25	51.7	1,800	1.03	2.26	3.160	109	-	3.02	1.8	1,740	0.5	7,730	0.023	3,290	0.012	0.15	113	0.526	5.4	7.3
	QUL-2-0M	2014 08 25	16.8	0.01	0.11	5.42	0.01	0.05	0.10	0.01	16.700	0.5	0.01	0.67	30	0.05	0.5	1.930	1.15	-	0.308	0.5	477	0.5	1.560	0.01	837	0.01	0.01	0.10	0.143	0.1	0.3
	QUL-2X-0M	2014 08 25	16	0.01	0.13	5.36	0.01	0.05	0.10	0.01	16.500	0.5	0.01	0.63	30	0.05	0.5	1.880	1.08	-	0.293	0.5	465	0.5	1.520	0.01	831	0.01	0.01	0.10	0.134	0.1	0.3
	QUL-2AQ RPD %			5			5				5							5			5					5						5	
	QUL-2-40M	2014 08 25	1,050	0.1	0.55	28	0.01	0.05	0.10	0.01	19.400	0.65	0.42	22	630	0.384	1.1	2,420	43.1	0.05	1.56	0.85	986	0.5	4,070	0.01	1,710	0.01	0.01	0.1	43	0.309	2.1
QUL-2-8M	2014 08 25	18.2	0.01	0.11	5.18	0.01	0.05	0.10	0.01	17.300	0.5	0.01	0.61	30	0.05	0.5	1.940	1.16	-	0.292	0.5	466	0.5	1.570	0.01	874	0.01	0.01	0.10	0.148	0.1	0.3	
QUL-2-0M	2014 08 27	13.2	0.01	0.11	5.21	0.01	0.05	0.10	0.01	16.500	0.5	0.01	0.5	30	0.05	0.63	1.930	0.891	0.01	0.291	0.5	454	0.5	1.510	0.01	845	0.01	0.01	0.10				

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1

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

Derivates concentration less than  
Derivates analysis not conducted

n/a Denotes no applicable standard

⊖ BPDs are not normally calculated

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

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

**QUAD** ..... 4-11

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

<u><b>BOLD</b></u>	Concentration
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<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia

<sup>d</sup> Guideline varies with pH, and or Temperature or Hardness.

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) <sup>b,c</sup>			n/a	6.5-9.0	6.5-9.0	n/a	Under Review by SNC Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	988.2-1207 <sup>e</sup>	128-218 <sup>d</sup>	n/a	n/a	n/a	0.005-0.015
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n/a	128-218 <sup>d</sup>	n/a	n/a	n/a	n/a
BCWQG Drinking Water (DW)			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	n/a	10 000	1 000	10 000	250	1 500	500	n/a	n/a	n/a	n/a	0.01
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	n/a	250	1 500	500	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	5.57	44.1	-	0.001	0.002 <sup>a</sup>		
	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	5.52	42.8	-	0.001	0.002 <sup>a</sup>		
	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 <sup>a</sup>		
	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 <sup>a</sup>		
	QA/QC RPD %			1	0	0	0	0.1	13	0	0	-	-	-	0	0	1	0	-	0	0	0.1	0.1	-	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	0.0033		
	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 <sup>a</sup>		
	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 <sup>a</sup>		
	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 <sup>a</sup>		
	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	0.0027		
	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 <sup>a</sup>		
	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 <sup>a</sup>		
	QA/QC RPD %			1	0	0.1	0	0	1	10	0	0	-	-	-	0	0	0.1	0	-	0	0	0.1	0.1	-	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 <sup>a</sup>		
	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 <sup>a</sup>		
	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 <sup>a</sup>		
	QUL-3-37M	2014 08 22	69.7	-	8.02	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	-	-	-	0.146	0.5	43.4	0.1	-	0.5	33	5.62	43.9	-	0.001	0.002 <sup>a</sup>		
	QUL-5	2014 08 06	48.1	8.01	7.94	21.1	0.76	95.9	57	0.3	2.16	-	-	-	0.237	0.5	43.8	0.1	-	0.5	33	5.66	43.6	-	0.001	0.002 <sup>a</sup>		
	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	5.76	44	-	0.001	0.002 <sup>a</sup>		
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
QA/QC RPD %			0.1	-	0.1	0	0.18	0.1	2	0.1	1	-	-	-	0	0	0	0	-	0	0	0.1	0.1	-	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	0.0026			
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	0.0023			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
QA/QC RPD %			3	-	0.1	-	0	0.1	5	0	0	-	-	-	0	0	1	0	-	0	0	0.1	0.1	-	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	0.0025			
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 <sup>a</sup>			
QUL-11	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 <sup>a</sup>			
QUL-11-0M	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 <sup>a</sup>			
QUL-11-10M	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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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 <sup>a</sup>			
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	-	0.001	0.002 <sup>a</sup>			
QA/QC RPD %			0.1	-	0.1	-	38	0.1	3	0	0	-	-	-	0	0	2	0	-	0	0	0.1	0.1	-	0	0		
QUL-12	2014 08 07	49.8	-	7.89	-	13.1	97.9	73	13.8	2.53	-	-	-	0.106	0.5	38.7	0.1	-	0.5	36	5.85	45.9	-	0.001	0.002 <sup>a</sup>			
QUL-12-10M	2014 08 07																											

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Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509507, L1508649, L1509597, L1510231, L1510268, L1510289.

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

- Denotes analysis not conducted.

n/a Denotes no applicable standard.

□ BPDs are not normally calculated.

**SHADED** Concentration greater than RCWOG Aquatic Life (AAL) guideline.

**SHADED** Concentration greater than BCWQG Aquatic Life (AW) guide line.

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

QUADER

<sup>a</sup> Laboratory detection limit out of range

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness

**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																																		
BCWQG Aquatic Life (AW) <sup>a,c</sup>			n/a	20	5	5 000	5.3	n/a	1 200	0.02-0.025 <sup>d</sup>	n/a	1 (Cr( 6))	110	6.0-8.8 <sup>e</sup>	1 000	27.3-54.6 <sup>f</sup>	870	n/a	100.6-1.343 <sup>g</sup>	Under review by SHC-Lavalin	2 000	25-65 <sup>h</sup>	373,000-432,000	2	n/a	0.1 <sup>i</sup>	n/a	0.3	n/a	2 000	300	6	33 <sup>j</sup>	
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	n/a	n/a	1 000	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>k</sup>	14	n/a	607.2-925.8 <sup>l</sup>	1 000	1 500	n/a	n/a	n/a	n/a	0.05 <sup>m</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5 <sup>n</sup>	
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	1	250	n/a	n/a	10	n/a	n/a	n/a	2	n/a	n/a	n/a	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	50	1	n/a	n/a	n/a	10	n/a	n/a	200 000	n/a	n/a	20	n/a	n/a	n/a	5 000	
QUL-3	QUL-3	2014 08 06	18.9	-0.1	0.12	5.47	0.01	0.05	10	0.01	16.000	0.05	-0.1	0.7	30	0.05	0.5	1.940	1.47	0.05	0.327	0.05	489	0.05	1.620	0.01	835	-0.01	-0.1	10	0.13	-1	3	
	QUL-3	2014 08 09	23.7	-0.1	0.13	5.53	0.01	0.05	10	0.01	16.200	0.05	-0.1	0.74	30	0.05	0.69	1.910	1.45	0.05	0.322	0.05	485	0.05	1.590	0.01	853	-0.01	-0.1	10	0.14	-1	3	
	QUL-3	2014 08 10	16.3	-0.1	0.13	5.52	0.01	0.05	10	0.01	16.200	0.05	-0.1	0.58	30	0.05	0.5	1.910	1.18	0.05	0.303	0.05	484	0.05	1.600	0.01	873	-0.01	-0.1	10	0.13	-1	3	
	QUL-3X	2014 08 10	14.4	-0.1	0.13	5.24	0.01	0.05	10	0.01	15.600	0.05	-0.1	0.56	30	0.05	0.5	1.830	1.08	0.05	0.304	0.05	474	0.05	1.530	0.01	856	-0.01	-0.1	10	0.13	-1	3	
	QA/QC RPD %				5						4						4					2			4					0				
	QUL-3	2014 08 11	17.1	-0.1	0.13	5.39	0.01	0.05	10	0.01	15.700	0.05	-0.1	0.57	30	0.05	0.82	1.870	1.41	0.05	0.322	0.05	484	0.05	1.540	0.01	839	-0.01	-0.1	10	0.129	-1	3	
	QUL-3	2014 08 12	14.4	-0.1	0.13	5.57	0.01	0.05	10	0.01	16.100	0.05	-0.1	0.57	30	0.05	0.79	1.920	1.53	0.05	0.352	0.05	475	0.05	1.640	0.01	878	-0.01	-0.1	10	0.137	-1	3	
	QUL-3	2014 08 13	13.6	-0.1	0.14	5.63	0.01	0.05	10	0.01	16.300	0.05	-0.1	0.53	30	0.05	0.89	1.950	1.31	0.05	0.341	0.05	478	0.05	1.620	0.01	867	-0.01	-0.1	10	0.14	-1	3	
	QUL-3	2014 08 14	14.4	-0.1	0.11	5.24	0.01	0.05	10	0.01	16.400	0.05	-0.1	0.57	30	0.05	0.68	1.870	1.02	-	0.304	0.05	481	0.05	1.540	0.01	855	-0.01	-0.1	10	0.141	-1	3	
	QUL-3	2014 08 15	15	-0.1	0.12	5.14	0.01	0.05	10	0.01	16.400	0.05	-0.1	0.59	30	0.05	0.5	1.860	1.1	-	0.99	0.05	461	0.05	1.580	0.01	813	-0.01	-0.1	10	0.141	-1	3	
QUL-3	2014 08 16	16	-0.1	0.14	5.42	0.01	0.05	10	0.01	16.200	0.05	-0.1	0.6	30	0.05	0.5	1.870	1.33	-	0.294	0.05	468	0.05	1.540	0.01	815	0.013	-0.1	10	0.126	-1	3		
QUL-3X	2014 08 16	18.2	-0.1	0.12	5.51	0.01	0.05	10	0.01	15.900	0.05	-0.1	0.8	30	0.05	0.5	1.860	1.44	-	0.321	0.05	486	0.05	1.530	0.01	842	-0.01	-0.1	10	0.139	-1	3		
QA/QC RPD %		13	-	-	2	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	2	-	-	2	-	-	-	-	-	10	-	-	-	
QUL-4	QUL-3	2014 08 17	20.3	-0.1	0.12	5.36	0.01	0.05	10	0.01	15.900	0.05	-0.1	-1	30	0.05	0.78	1.880	1.43	-	0.305	0.05	487	0.05	1.530	0.01	858	-0.01	-0.1	10	0.141	-1	3	
	QUL-3	2014 08 19	15.2	-0.1	0.13	5.46	0.01	0.05	10	0.01	16.500	0.05	-0.1	0.55	30	0.05	0.92	1.940	1.2	-	0.309	0.05	495	0.05	1.570	0.01	881	-0.01	-0.1	10	0.141	-1	3	
	QUL-3	2014 08 22	28.2	-0.1	0.11	5.52	0.01	0.05	10	0.01	16.500	0.05	-0.1	1.02	30	0.05	0.72	1.940	1.56	-	0.324	0.05	468	0.05	1.570	0.01	838	-0.01	-0.1	10	0.141	-1	3	
	QUL-3-37M	2014 08 22	3.830	0.3	1.84	94.5	0.01	0.05	10	0.021	24.100	1.89	1.54	76.8	2.230	1.34	2.79	3.60	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	-0.1	0.13	6.03	0.01	0.05	10	0.01	16.100	0.05	-0.1	1.25	45	0.05	0.5	1.960	3.05	0.05	0.332	0.05	505	0.05	1.690	0.01	839	-0.01	-0.1	10	0.133	-1	3	
	QUL-5	2014 08 06	49.4	-0.1	0.11	5.96	0.01	0.05	10	0.01	15.700	0.05	-0.1	1.5	44	0.05	0.5	1.920	2.92	0.05	0.332	0.05	492	0.05	1.660	0.01	840	-0.01	-0.1	10	0.129	-1	3	
	QUL-6	2014 08 06	53.9	-0.1	0.13	6.22	0.01	0.05	10	0.01	16.200	0.05	-0.1	1.63	46	0.05	0.5	1.970	2.94	0.05	0.337	0.05	507	0.05	1.710	0.01	898	-0.01	-0.1	10	0.132	-1	3	
	QUL-7	2014 08 06	57.1	-0.1	0.13	6.13	0.01	0.05	10	0.01	16.100	0.05	-0.1	1.72	42	0.05	0.53	1.970	3.31	0.05	0.332	0.05	522	0.05	1.700	0.01	869	-0.01	-0.1	10	0.132	-1	3	
	QUL-8	2014 08 06	101	-0.1	0.15	7.04	0.01	0.05	10	0.01	16.100	0.05	-0.1	2.78	82	0.05	0.5	2.000	4.79	0.05	0.354	0.05	557	0.05	1.820	0.01	887	-0.01	-0.1	10	0.138	-1	3	
	QUL-9	2014 08 06	93.8	-0.1	0.15	6.48	0.01	0.05	10	0.01	16.200	0.05	-0.1	2.38	80	0.05	0.59	1.980	4.3	0.05	0.333	0.05	534	0.05	1.770	0.01	893	-0.01	-0.1	10	0.135	-1	3	
QUL-9	2014 08 09	31.4	-0.1	0.13	5.75	0.01	0.05	10	0.01	16.200	0.05	-0.1	1.09	30	0.05	0.63	1.910	2.59	0.05	0.33	0.05	496	0.05	1.600	0.01	841	-0.01	-0.1	10	0.142	-1	3		
QUL-9	2014 08 10	22.7	-0.1	0.12	5.35	0.01	0.05	10	0.01	15.600	0.05	-0.1	0.78	30	0.05	0.5	1.790	1.84	0.05	0.31	0.05	491	0.05	1.530	0.01	851	-0.01	-0.1	10	0.132	-1	3		
QUL-9	2014 08 12	17.2	-0.1	0.13	5.28	0.01	0.05	10	0.01	16.100	0.05	-0.1	0.73	30	0.05	0.77	1.900	1.61	0.05	0.323	0.05	488	0.05	1.600	0.01	849	-0.01	-0.1	10	0.138	-1	3		
QUL-9	2014 08 13	20.8	-0.1	0.16	6.28	0.01	0.05	10	0.01	16.300	0.05	-0.1	0.93	30	0.05	0.76	1.950	5.69	0.05	0.325	0.05	560	0.05	1.640	0.01	861	-0.01	-0.1	10	0.13	-1	3		
QUL-9X	2014 08 13	28.9	-0.1	0.15	6.52	0.01	0.05	10	0.01	16.700	0.05	-0.1	1.1	38	0.05	0.85	1.990	6.04	0.05	0.332	0.05	579	0.05	1.690	0.01	880	-0.01	-0.1	10	0.131	-1	3		
QA/QC RPD %		33	-	-	4	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	2	-	-	3	-	-	-	-	-	1	-	-	-	
QUL-10	QUL-9	2014 08 14	17.1	-0.1	0.12	5.52	0.01	0.05	10	0.01	16.300	0.05	-0.1	0.7	30	0.05	0.62	1.910	2.2	-	0.33	0.05	489	0.05	1.620	0.01	844	-0.01	-0.1	10	0.139	-1	3	
	QUL-9	2014 08 15	43.1	-0.1	0.17	6.35	0.01	0.05	10	0.01	16.500	0.05	-0.1	1.61	44	0.05	0.5	1.940	4.36	-	0.339	0.05	539	0.05	1.700	0.01	883	-0.01	-0.1	10	0.136	-1	3	
	QUL-9	2014 08 16	15.8	-0.1	0.13	5.48	0.01	0.05	10	0.01	16.300	0.05	-0.1	0.6	30	0.05	0.5	1.900	1.34	-	0.321	0.05	467	0.05	1.560	0.01	814	-0.01	-0.1	10	0.138	-1	3	
	QUL-9	2014 08 17	19.1	-0.1	0.14	5.69	0.01	0.05	10	0.01	16.000	0.05	-0.1	3 <sup>a</sup>	30	0.065	0.69	1.900	2.59	-	0.32	0.05	496	0.05	1.560	0.01	843	-0.01	-0.1	10	0.143	-1	3	
	QUL-9	2014 08 19	14	-0.1	0.12	4.96	0.01	0.05	10	0.01	16.500	0.05	-0.1	0.65	30	0.05	0.99	1.930	1.06	-	0.304	0.05	448	0.05	1.560	0.01	783	-0.01	-0.1	10	0.142	-1	3	
	QUL-9X	2014 08 19	15.2	-0.1	0.12	5.36	0.01	0.05	10	0.01	16.600	0.05	-0.1	0.54	30	0.05	0.8	1.930	1.14	-	0.305	0.05	479	0.05	1.570	0.01	851	-0.01	-0.1	10	0.142	-1	3	
	QA/QC RPD %		8	-	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	2	-	-	3	-	-	-	-	-	1	-	-	-
	QUL-10	2014 08 22	79.5	-0.1	0.15	7.13	0.01	0.05	10	0.01	16.500	0.05	-0.1	3.17	75	0.05	0.77	1.940	5.01	-	0.33	0.05	523	0.05	1.660	0.01	872	-0.01	-0.1	10	0.145	-1	3	
	QUL-10	2014 08 06	26.6	-0.1	0.13	5.44	0.01	0.05	10	0.01	16.200	0.05	-0.1	0.73	30	0.05	0.5	1.980	1.79	0.05	0.326	0.05	501	0.05	1.650	0.01	860	-0.01	-0.1	10	0.136	-1	3	
	QUL-11	2014 08 07	142																															

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, L1499710, L1499926, L1504997, L1505918, L1506551, L1506571, L1506577, L1506586, L1500164, L1502370, L1506989, L1506996,

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.

Concentration greater than SDWA's Drinking Water (DW) guideline.

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

3. **BOLD** Concentration

0

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 E

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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) <sup>a,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a	Under Review by SNC Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	988-2-1207 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a	0.005-0.015
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n.a	n.a	n.a	n.a		n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n.a	128-218 <sup>d</sup>	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		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	n.a	n.a	0.01
Canadian Drinking Water Quality (DW)			n.a	n.a	n.a	n.a	n.a	500	n.a	n.a	n.a	n.a	1	n.a	n.a	n.a	10 000	1 000	n.a	250	1 500	500	n.a	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	5	1	-	5	35	5.55	44.6	-	0.001	0.002 <sup>a</sup>
	QUL-13-10M	2014 08 07	49.8	-	7.93	-	0.87	99.2	70	3	1.94	-	-	-	0.164	5	111	5	1	-	5	35	5.72	46.3	-	0.001	0.002 <sup>a</sup>
	QUL-13-15M	2014 08 07	52.5	-	7.92	-	1.18	104	75	3	1.84	-	-	-	0.174	5	136	5	1	-	5	36	6.02	48.3	-	0.001	0.002 <sup>a</sup>
	QUL-13-20M	2014 08 07	50.2	-	7.94	-	0.61	106	68	3	1.79	-	-	-	0.185	5	141	5	1	-	5	36	6.08	49.2	-	0.001	0.002 <sup>a</sup>
	QUL-13-5M	2014 08 07	48.2	-	7.96	-	0.49	94.5	66	3	2.08	-	-	-	0.176	5	72.8	5	1	-	5	34	5.5	44.5	-	0.001	0.002 <sup>a</sup>
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	5	1	-	5	36	5.84	45.7	-	0.001	0.002 <sup>a</sup>
	QUL-14-3M	2014 08 07	47.9	-	7.94	-	1.25	95.9	66	3	2.05	-	-	-	0.137	5	66.5	5	1	-	5	34	5.56	44.5	-	0.001	0.002 <sup>a</sup>
QUL-15	QUL-15-0M	2014 08 07	48.9	-	7.91	-	2.26	97.5	69	3	2.58	2420	461	-	0.127	5	34.8	5	1	-	5	35	5.78	52.2	-	0.001	0.002 <sup>a</sup>
	QUL-15-4.5M	2014 08 07	48.1	-	7.92	-	1.15	95.6	67	3	2.1	-	-	-	0.131	5	70	5	1	-	5	34	5.54	50	-	0.001	0.002 <sup>a</sup>
QUL-16	QUL-16-0M	2014 08 07	48.3	-	7.93	-	0.97	95	64	3	2.21	-	-	-	0.144	5	56.7	5	1	-	5	34	5.53	44.3	-	0.001	0.002 <sup>a</sup>
	QUL-16-4.5M	2014 08 07	48	-	7.96	-	0.5	95.3	61	3	2.07	-	-	-	0.13	5	68	5	1	-	5	33	5.5	44.3	-	0.001	0.002 <sup>a</sup>
QUL-17	QUL-17	2014 08 08	48.7	8.01	7.97	17.3	1.31	95.5	60	3	2.45	46	2	-	0.122	5	65.1	5	1	-	5	34	5.51	44.2	-	0.001	0.002 <sup>a</sup>
	QUL-17	2014 08 09	48.6	7.86	7.88	18.2	0.44	96.3	66	3	2.31	-	-	-	0.135	5	63	5	1	-	5	34	5.49	42.9	-	0.001	0.002 <sup>a</sup>
	QUL-17	2014 08 11	48	7.97	7.91	20.2	0.41	97.5	64	3	2.36	-	-	-	0.133	5	52.4	5	1	-	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	3	1.91	-	-	-	0.135	5	49.5	5	1	-	5	36	5.65	44	-	0.0013	0.002 <sup>a</sup>
	QUL-17	2014 08 13	47.5	-	7.99	20.6	0.39	97.8	58	3	2.15	-	-	-	0.12	5	42.7	5	1	-	5	33	5.63	44.5	-	0.001	0.002 <sup>a</sup>
	QUL-17	2014 08 14	49.4	7.95	7.95	20.9	0.29	97.5	63	3	2.11	-	-	-	0.107	5	43	5	1	-	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	3	2.15	-	-	-	0.111	5	43	5	1	-	5	36	5.65	44.3	-	0.001	0.002 <sup>a</sup>
	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	3	1.92	-	-	-	0.103	5	41.1	5	1	-	5	36	5.63	43.7	-	0.001	0.002 <sup>a</sup>
	QUL-17	2014 08 16	48.6	8.12	7.95	20.6	0.52	95.6	56	3	2.04	-	-	-	0.117	5	46	5	1	-	5	36	5.62	42.5	-	0.001	0.002 <sup>a</sup>
	QUL-17	2014 08 17	47.9	7.78	7.97	21.1	0.36	96.5	62	3	2.32	-	-	-	0.122	5	40.8	5	1	-	5	34	5.64	43.6	-	0.001	0.002 <sup>a</sup>
	QUL-18-0M	2014 08 08	48.6	8.03	7.95	-	0.38	95.4	64	3	2.07	27	1	-	0.129	5	68.9	5	1	-	5	34	5.5	44	-	0.001	0.002 <sup>a</sup>
	QUL-18-8M	2014 08 08	50.7	-	7.97	-	0.58	98.9	68	3	1.92	-	-	-	0.153	5	99.3	5	1	-	5	35	5.66	46.1	-	0.001	0.002 <sup>a</sup>
	QUL-18-30M	2014 08 08	54.6	-	7.95	-	0.96	107	69	3	1.89	-	-	-	0.185	5	143	5	1	-	5	36	6.11	49.3	-	0.001	0.002 <sup>a</sup>
	QUL-18-0M	2014 08 09	48.6	7.81	7.81	16.6	0.64	94.4	68	3	2.03	-	-	-	0.143	5	64.4	5	1	-	5	35	5.53	42.8	-	0.001	0.002 <sup>a</sup>
	QUL-18-30M	2014 08 09	54.5	-	7.87	-	3.4	106	75	3	1.91	-	-	-	0.186	5	138	5	1	-	5	37	6.15	48	-	0.001	0.002 <sup>a</sup>
	QUL-18-8M	2014 08 09	49.8	-	7.87	-	0.37	97.1	73	3	2.01	-	-	-	0.158	5	87.7	5	1	-	5	34	5.6	43.8	-	0.001	0.002 <sup>a</sup>
	QUL-18	2014 08 10	48.8	7.77	7.91	20.5	0.39	96.2	63	3	2.25	-	-	-	0.136	5	56.3	5	1	-	5	34	5.59	45	-	0.001	0.002 <sup>a</sup>
	QUL-18	2014 08 11	47.8	7.73	7.91	20.2	0.38	97.7	67	3	2.22	-	-	-	0.203	5	53.6	5	1	-	5	34	5.63	44.3	-	0.001	0.0022
	QUL-18	2014 08 12	47.4	7.92	7.94	21.0	0.51	95.6	64	3	1.96	-	-	-	0.126	5	51.1	5	1	-	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	3	2.1	-	-	-	0.12	5	44.8	5	1	-	5	33	5.63	44.7	-	0.001	0.002 <sup>a</sup>
	QUL-18-16M	2014 08 13	50.2	-	7.97	-	0.27	103	70	3	1.95	-	-	-	0.173	5	111	5	1	-	5	34	5.85	46.2	-	0.001	0.002 <sup>a</sup>
	QUL-18-30M	2014 08 13	52.3	-	7.97	-	0.49	109	69	3	1.91	-	-	-	0.188	5	139	5	1	-	5	35	6.21	48.9	-	0.001	0.002 <sup>a</sup>
	QUL-18	2014 08 14	49.2	8.04	7.97	21.2	0.22	97.9	67	3	1.98	-	-	-	0.105	5	46	5	1	-	5	35	5.65	44.1	-	0.001	0.002 <sup>a</sup>
	QUL-18	2014 08 15	48.9	8.09	7.93	21.0	0.28	94.7	66	3	1.86	-	-	-	0.102	5	42.1	5	1	-	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	3	2.02	-	-	-	0.106	5	41	5	1	-	5	36	5.6	43.9	-	0.001	0.002 <sup>a</sup>
	QUL-18-10M	2014 08 16	50	7.82	7.94	13.9	1.4	97.4	64	3	2.06	-	-	-	0.136	5	87.9	5	1	-	5	36	5.82	44.6	-	0.001	0.002 <sup>a</sup>
	QUL-18-30M	2014 08 16	54.6	7.6	7.91	4.7	3.17	106	68	3	1.7	-	-	-	0.173	5	141	5	1	-	5	38	6.37	49.1	-	0.001	0.002 <sup>a</sup>
	QUL-18	2014 08 19	48.6	-	7.93	-	0.35	96.5	63	3	2.07	-	-	-	0.112	5	40.3	5	1	-	5	32	5.54	43.6	-	0.001	0.002 <sup>a</sup>
	QUL-18	2014 08 26	50.6	7.79	8	18.45	0.45	97.8	74	3	2.2	-	-	-	0.143	5	50.7	5	1	-	5	35	5.75	44.8	-	0.001	0.002 <sup>a</sup>
	QUL-18X	2014 08 26	50.9	7.79	7.99	18.45	0.38	97.4	78	3	2.11	-	-	-	0.12	5	50.9	5	1	-	5	35	5.75	42.1	-	0.001	0.002 <sup>a</sup>
	QA/QC RPD %			1	0	1	0	-	1	5	-	-	-	-	-	-	1	-	-	-	-	0	6	-	-	-	
	QUL-18	2014 08 25	49.7	7.94	7.95	17.33	0.66	99.2	66	3	1.81	-	-	-	0.151	5	55.3	5	1	-	5	34	5.8	44.5	-	0.001	0.002 <sup>a</sup>
	QUL-18	2014 08 27	49.6	7.95	7.99	18.7	0.32	98.4	69	3	2.11	-	-	-	0.122	5	46.2	5	1	-	5	34	5.75	44.6	-	0.001	0.0021

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1505951, L1505977, L1505986, L1506164, L1506230, L1506989, L1507001, L1507291, L1507298, L1506992,



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																														
BCWQG Aquatic Life (AW) <sup>a,c</sup>			26.1-100 <sup>d</sup>	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 (30day) (AW) <sup>b,c</sup>			50-1000 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	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	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-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	10	0.01	0.5	0.1	0.79	0.05	0.8	-	0.32	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.89	-	0.273	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.57	0.05	0.87	-	0.273	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.57	0.05	0.8	-	0.269	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.81	-	0.272	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	1.38	0.05	0.65	-	0.386	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.59	0.05	0.65	-	0.299	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	1.33	0.05	0.75	-	0.374	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.51	0.05	0.75	-	0.277	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.64	0.05	0.8	-	0.315	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.58	0.05	0.78	-	0.29	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.66	0.05	0.55	-	0.279	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.56	-	0.296	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	1.04	-	0.286	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.77	-	0.311	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.89	-	0.332	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.63	-	0.298	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.64	-	0.299	0.5	0.5	0.01	0.01	10	0.124	0.1	0.3
	QA/QC RPD %			2		3	5	3	2			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	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.301	0.5	0.5	0.01	0.01	10	0.127	0.1
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	10	0.01	0.5	0.1	0.5	0.05	0.64	-	0.287	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.59	-	0.292	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.57	-	0.301	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.62	-	0.282	0.5	0.5	0.01	0.01	10	0.135	0.1	0.3
QUL-18-30M		2014 08 08	5.9	18.4	30	2.11	1.73	0.462	0.911	0.1	0.1	5.25	0.1	10	0.01	0.5	0.1	0.5	0.05	0.71	-	0.265	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.58	0.05	0.5	-	0.312	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.62	0.05	0.64	-	0.297	0.5	0.5	0.01	0.01	10	0.157	0.1	0.3
QUL-18-8M		2014 08 09	9.4	16.8	30	1.9	0.149	0.469	0.833	0.1	0.1	5.02	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.261	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.54	0.05	0.54	-	0.29	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	1.03	-	0.286	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.53	0.05	0.76	-	0.3	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.93	-	0.315	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.98	-	0.257	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.62	0.05	0.87	-	0.289	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.68	-	0.291	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.305	0.5	0.5	0.01	0.01	10	0.13	0.1	0.3
QUL-18-0M		2014 08 16	10.2	16.2	30	1.89	0.584	0.473	0.808	0.1	0.11	5.53	0.1	10	0.01	0.5	0.1	0.51	0.05	0.62	-	0.306	0.5	0.5	0.01	0.01	10	0.131	0.1	0.3
QUL-18-10M	2014 08 16	10.5	16.9	30	1.87	0.544	0.479	0.83	0.1	0.1	6.38	0.1	10	0.01	0.5	0.1	0.64	0.05	0.63	-	0.282	0.5	0.5	0.01	0.01	10	0.146	0.1	0.3	
QUL-18-30M	2014 08 16	6.1	18.5	30	2.06	4.41	0.497																							

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

		Sample Date (yyyy mm dd)	Total Metals																															
Sample Location	Sample ID		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	5 000	5.3	n/a	1 200	0.02-0.025 <sup>a</sup>	n/a	1 (Cr( 6))	110	6.0-8.8 <sup>d</sup>	1 000	27.3-54.6 <sup>d</sup>	870	n/a	100.6-1.343 <sup>d</sup>	Under review by SNC-Lavalin	2 000	25-65 <sup>d</sup>	373,000-432,000	2	n/a	0.1 <sup>d</sup>	n/a	0.3	n/a	2 000	300	6	33 <sup>d</sup>	
BCWQG Aquatic Life (AW) <sup>b,c</sup>			n/a	n/a	n/a	1 000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>	1 000	n/a	n/a	n/a	n/a	0.05 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5 000	
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	1	250	n/a	n/a	10	n/a	n/a	n/a	2	n/a	n/a	n/a	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	n/a	10	n/a	n/a	200 000	n/a	n/a	n/a	20	n/a	n/a	5 000
QUL-13	QUL-13-0M	2014 08 07	164	0.01	0.19	7.74	0.01	0.05	10	0.01	16 000	0.05	0.11	4.34	125	0.056	0.73	1 960	5.88	0.05	0.339	0.05	544	0.05	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	0.01	0.05	10	0.01	16 300	0.05	0.1	1.09	37	0.005	0.5	1 930	1.77	0.05	0.286	0.05	473	0.05	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	0.01	0.05	10	0.01	17 300	0.05	0.1	1.84	58	0.005	0.77	2 050	2.5	0.05	0.276	0.05	482	0.05	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	0.01	0.05	10	0.01	17 800	0.05	0.1	1.04	36	0.005	0.59	2 070	1.81	0.05	0.278	0.05	488	0.05	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	0.01	0.05	10	0.01	15 900	0.05	0.1	0.71	30	0.005	0.69	1 870	1.16	0.05	0.277	0.05	465	0.05	1 550	0.01	803	0.01	0.1	10	0.142	0.1	0.3	
QUL-14	QUL-14-0M	2014 08 07	449	0.01	0.3	12.6	0.01	0.05	10	0.01	16 400	0.05	0.31	11.8	348	0.134	0.8	2 160	16.2	0.05	0.42	0.67	717	0.05	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	0.01	0.05	10	0.01	15 600	0.05	0.1	1.72	46	0.005	0.55	1 850	2.76	0.05	0.295	0.05	499	0.05	1 600	0.01	814	0.01	0.1	10	0.137	0.1	0.3	
QUL-15	QUL-15-0M	2014 08 07	139	0.01	0.19	8.57	0.01	0.05	10	0.01	16 000	0.05	0.1	4.22	108	0.005	0.6	1 980	9.05	0.05	0.373	0.05	620	0.05	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	0.01	0.05	10	0.01	16 000	0.05	0.1	1.34	53	0.005	0.59	1 910	2.21	0.05	0.303	0.05	483	0.05	1 640	0.01	813	0.01	0.1	10	0.143	0.1	0.3	
QUL-16	QUL-16-0M	2014 08 07	47.3	0.01	0.15	6.18	0.01	0.05	10	0.01	16 200	0.05	0.1	1.84	41	0.07	0.57	1 930	3.31	0.05	0.322	0.05	668	0.05	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	0.01	0.05	10	0.01	15 800	0.05	0.1	0.86	30	0.005	0.67	1 880	1.86	0.05	0.283	0.05	487	0.05	1 570	0.01	825	0.01	0.1	10	0.137	0.1	0.3	
QUL-17	QUL-17	2014 08 08	90.5	0.01	0.15	6.6	0.01	0.05	10	0.01	16 600	0.05	0.1	2.21	73	0.005	0.55	1 970	3.18	0.05	0.291	0.05	511	0.05	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	0.01	0.05	10	0.01	16 400	0.05	0.1	0.8	30	0.005	0.63	1 910	1.36	0.05	0.298	0.05	482	0.05	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	0.01	0.05	10	0.01	15 900	0.05	0.1	0.8	30	0.005	0.9	1 890	2.15	0.05	0.322	0.05	515	0.05	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	0.01	0.05	10	0.01	16 200	0.05	0.1	0.6	30	0.005	0.86	1 910	1.37	0.05	0.325	0.05	473	0.05	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	0.01	0.05	10	0.01	15 500	0.05	0.1	0.64	30	0.005	0.72	1 870	1.63	0.05	0.32	0.05	452	0.05	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	0.01	0.05	10	0.01	16 400	0.05	0.1	0.61	30	0.005	0.62	1 920	1.74	-	0.323	0.05	491	0.05	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	0.01	0.05	10	0.01	16 200	0.05	0.1	0.68	30	0.005	0.62	1 900	1.78	-	0.323	0.05	491	0.05	1 610	0.01	860	0.01	0.1	10	0.139	0.1	0.3	
	QA/QC RPD %		6	0	0	1	0	0	0	0	1	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	0.01	0.05	10	0.01	16 000	0.05	0.1	0.7	30	0.005	0.5	1 860	1.5	-	0.335	0.05	475	0.05	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	0.01	0.05	10	0.01	16 000	0.05	0.1	0.69	30	0.005	0.5	1 880	1.27	-	0.279	0.05	469	0.05	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	0.01	0.05	10	0.01	15 700	0.05	0.1	1	30	0.005	0.7	1 860	1.64	-	0.306	0.05	485	0.05	1 520	0.01	848	0.01	0.1	10	0.144	0.1	0.3	
QUL-18	QUL-18-0M	2014 08 08	24.2	0.01	0.13	5.36	0.01	0.05	10	0.01	15 900	0.05	0.1	0.68	30	0.005	0.52	1 900	1.17	0.05	0.286	0.05	468	0.05	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	0.01	0.05	10	0.01	16 400	0.05	0.1	0.94	30	0.005	0.56	1 930	1.36	0.05	0.279	0.05	464	0.05	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	0.01	0.05	10	0.01	18 100	0.05	0.1	1.42	57	0.005	0.88	2 110	3.61	0.05	0.365	0.05	491	0.05	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	0.01	0.05	10	0.01	16 000	0.05	0.1	1.1	30	0.005	0.5	1 890	1.91	0.05	0.307	0.05	475	0.05	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	0.01	0.05	10	0.01	18 200	0.05	0.13	4.29	183	0.06	0.67	2 180	13.7	0.05	0.293	0.05	541	0.05	2 170	0.01	959	0.01	0.1	12	0.157	0.1	0.3	
	QUL-18-8M	2014 08 09	18.7	0.01	0.11	5.11	0.01	0.05	10	0.01	16 400	0.05	0.1	0.63	30	0.005	0.51	1 880	1.02	0.05	0.274	0.05	455	0.05	1 560	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	0.01	0.05	10	0.01	16 200	0.05	0.1	0.81	30	0.005	0.5	1 900	1.89	0.05	0.302	0.05	500	0.05	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	0.01	0.05	10	0.01	16 200	0.05	0.1	0.78	30	0.005	0.84	1 890	1.74	0.05	0.319	0.05	494	0.05	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	0.01	0.05	10	0.01	16 000	0.05	0.1	0.74	30	0.005	0.89	1 890	1.83	0.05	0.327	0.05	480	0.05	1 570	0.01	839	0.01	0.1	10	0.146	0.1	0.3	
	QUL-18-0M	2014 08 13	13.7	0.01	0.13	5.47	0.01	0.05	10	0.01	15 800	0.05	0.1	0.6	30	0.005	0.77	1 890	1.52	0.05	0.335	0.05	465	0.05	1 580	0.01	843	0.01	0.1	10	0.135			

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) <sup>b,c</sup>			n/a	6.5-9.0	6.5-9.0	n/a	Under Review by SNC Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	988.2-1207 <sup>d</sup>	128-218 <sup>d</sup>	n/a	n/a	n/a	0.005-0.015
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n/a	128-218 <sup>d</sup>	n/a	n/a	n/a	n/a
BCWQG Drinking Water (DW)			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	n/a	10,000	1,000	10,000	250	1,500	500	n/a	n/a	n/a	0.01
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	n/a	250	1 500	500	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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	0.0025	
	QA/QC RPD %		0.1	0	0	0	0	0.1	8	0	0	-	-	-	0.12	0.5	4	0	-	0.5	35	5.72	44.4	-	0.001	0.002 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	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 <sup>a</sup>	
	QA/QC RPD %		0.1	0	0.1	0	0	0.1	8	0	0	-	-	-	0.12	0.5	4	0	-	0.5	35	5.72	44.4	-	0.001	0.002 <sup>a</sup>	
	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	0.0024	
	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 <sup>a</sup>	
	QUL-19-0M	2014 08 27	49.8	7.96	7.9	18.96	0.27	97.6	70	0.3	1.91	-	-	-	0.172	0.5	45.9	0.1	-	0.5	33	5.78	44.1	-	0.001	0.002 <sup>a</sup>	
	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	-	0.001	0.002 <sup>a</sup>	
	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	-	0.0015	0.0021	
	QUL-20	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 <sup>a</sup>
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 <sup>a</sup>	
QA/QC RPD %		0.1	0	0.1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	-	0.5	35	5.72	44.4	-	0.001	0.002 <sup>a</sup>	
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 <sup>a</sup>	
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	0.0023	
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 <sup>a</sup>	
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 <sup>a</sup>	
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 <sup>a</sup>	
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 <sup>a</sup>	
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 <sup>a</sup>	
QA/QC RPD %		0.1	0	0.1	0	0	0	5	0	0	-	-	-	0.12	0.5	4	0	-	0.5	35	5.64	43.6	-	0.001	0.002 <sup>a</sup>		
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 <sup>a</sup>	
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 <sup>a</sup>	
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 <sup>a</sup>	
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 <sup>a</sup>	
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	0.0024	
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	0.0021	
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	55.6	0.1	-	0.5	34	5.8	44.1	-	0.001	0.0022	
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	0.0023	

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, L1505951, L1505971, L1505977, L1505986, L1506164, L1502370, L1506989, L1506998, L1507001, L1507291, L1507298, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509057, L1508649, L1509097, 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.

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

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.

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Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509507, L1508649, L1509597, L1510231, L1510268, L1510289.

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

n/a Denotes no applicable standard.

**SHADED** Concentration

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

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

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>d</sup> Guideline varies with pH and/or Temperature or Hardness

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Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, L1499710, L1499926, L1499947, L1500619, L1501501, L1501518, L1502349, L1502364, L1502370, L1502388, L1503057, L1503061, L1503079, L1503091, L1503093, L1503098, L1503092, L1503093, L1503093, L1503094, L1504180, L1504213, L1504220, L1504251, L1504261, L1504997, L1505651, L1505671, L1506577, L1506586, L1506164, L1506989, L1506989, L1506996, L1507001, L1507291, L1507298, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509607, L1508649, L1509597, 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.

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

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												Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)	
			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)									
BC Standards																															
BCWQG Aquatic Life (AW) <sup>b,c</sup>			n/a	6.5-9.0	6.5-9.0	n/a	Under Review by SNC Lavalin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	988.2-1207 <sup>d</sup>	128-218 <sup>d</sup>	n/a	n/a	n/a	n/a	0.005-0.015			
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n/a	128-218 <sup>d</sup>	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		n/a	n/a	n/a	n/a	n/a	1	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	0.01			
Canadian Drinking Water Quality (DW)			n/a	n/a	n/a	n/a	n/a	500	n/a	n/a	n/a	n/a	1	n/a	n/a	n/a	10 000	1 000	n/a	250	1 500	500	n/a	n/a	n/a	n/a	n/a				
QUL-21	QUL-21-0M	2014 08 08	49.5	7.9	7.91	-	0.29	97.6	72	0.3	2.51	-	-	-	0.139	0.5	85.6	0.1	-	0.5	34	5.57	43.6	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-7M	2014 08 08	50.7	-	7.91	-	0.25	99.5	72	0.3	2.11	-	-	-	0.174	0.5	100	0.1	-	0.5	35	5.66	44.5	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-30M	2014 08 08	54.3	-	7.9	-	0.78	108	77	0.3	2.16	-	-	-	0.193	0.5	141	0.1	-	0.5	36	6.12	48	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21	2014 08 09	49.3	7.81	7.88	16.1	0.36	96.7	68	0.3	2.33	-	-	-	0.137	0.5	73.9	0.1	-	0.5	34	5.52	43.2	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21	2014 08 11	47.8	7.9	7.92	19.7	0.77	97.8	65	0.3	2.27	-	-	-	0.132	0.5	57.3	0.1	-	0.5	33	5.64	44	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-0M	2014 08 12	48.1	7.98	7.96	-	0.4	95.9	65	0.3	1.97	-	-	-	0.13	0.5	55.1	0.1	-	0.5	36	5.66	43.8	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21X	2014 08 12	48.9	7.98	7.95	-	0.49	96.3	65	0.3	1.95	-	-	-	0.126	0.5	54.1	0.1	-	0.5	36	5.64	44.3	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QA/QC RPD %		2	0	0.1	-	0	0.1	0	0	0	-	-	-	0	0	2	0	-	0	0.1	0.1	1	-	-	-	-	-	-		
	QUL-21-12M	2014 08 12	48.2	8.15	7.94	12.90	0.55	98.7	68	0.3	1.87	-	-	-	0.171	0.5	88.2	0.1	-	0.5	36	5.77	44.6	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-30M	2014 08 12	54.3	7.57	7.96	4.59	0.39	107	72	0.3	1.74	-	-	-	0.191	0.5	139	0.1	-	0.5	38	6.19	49.6	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21	2014 08 13	47.6	-	8	-	0.29	98.2	59	0.3	2.09	-	-	-	0.135	0.5	44.2	0.1	-	0.5	32	5.62	44.4	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21	2014 08 14	49.6	8.15	7.96	21.34	0.22	97.2	65	0.3	2.11	-	-	-	0.106	0.5	41.5	0.1	-	0.5	35	5.62	43.4	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-0M	2014 08 15	48.7	8.12	7.98	-	0.22	95.4	66	0.3	1.96	-	-	-	0.102	0.5	39.7	0.1	-	0.5	36	5.64	43.1	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-10M	2014 08 15	50.3	7.82	7.94	13.14	0.3	98.3	67	0.3	1.73	-	-	-	0.138	0.5	89.9	0.1	-	0.5	35	5.76	44.6	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-30M	2014 08 15	53.5	7.65	7.9	4.64	0.35	106	71	0.3	1.65	-	-	-	0.175	0.5	140	0.1	-	0.5	38	6.17	48	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21	2014 08 16	48.2	8.21	7.97	20.41	0.24	95.1	75	0.3	1.81	-	-	-	0.108	0.5	42	0.1	-	0.5	36	5.58	43.6	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21	2014 08 17	48	7.78	7.97	20.89	0.3	96.3	61	0.3	2.4	-	-	-	0.128	0.5	40.8	0.1	-	0.5	34	5.63	43.9	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-0M	2014 08 23	50.3	7.77	7.87	16.78	0.55	99.4	61	0.3	2.37	-	-	-	0.133	0.5	63.4	0.1	-	0.5	36	5.68	44	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-20M	2014 08 23	54	7.39	7.84	5.18	0.84	107	69	0.3	2.11	-	-	-	0.189	0.5	136	0.1	-	0.5	37	6.05	48.2	-	0.0016	0.002 <sup>a</sup>	-	-	-		
	QUL-21-46M	2014 08 23	74	7.63	7.95	6.03	85.1	156	104	42.4	2.19	-	-	-	0.397	53.9	237	1.8	-	0.55	75	16.8	80.3	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-0M	2014 08 25	50	7.37	7.96	5.47	0.62	98.3	66	0.3	1.82	-	-	-	0.137	0.5	62.8	0.1	-	0.5	34	5.81	44.4	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-45M	2014 08 25	70.3	7.53	8	6.4	72	153	107	16.6	1.76	-	-	-	0.389	45.8	235	2	-	0.54	80	16.7	55.6	-	0.0031	0.0069	-	-	-		
	QUL-21-9M	2014 08 25	50.7	7.85	7.95	14.22	1.11	99.6	67	0.3	1.87	-	-	-	0.164	0.5	75.9	0.1	-	0.5	34	5.95	44.5	-	0.0133	0.0183	-	-	-		
	QUL-21-0M	2014 08 26	49.8	7.83	7.99	17.53	0.53	97.9	69	0.3	2.11	-	-	-	0.12	0.5	57.2	0.1	-	0.5	35	5.77	44.7	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-21M	2014 08 26	50.9	7.43	7.99	5.69	1.3	99.3	69	0.3	2.21	-	-	-	0.226	0.5	75.9	0.1	-	0.5	35	6	44.9	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-21-47M	2014 08 26	70.1	7.59	8.01	6.02	61.9	153	113	17.5	2.15	-	-	-	0.396	49.2	237	2.7	-	0.54	66	17	59.8	-	0.0024	0.0059	-	-	-		
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	0.5	95.5	0.1	-	0.5	34	5.62	44.2	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 09	49.5	7.77	7.87	16.84	0.4	97.1	69	0.3	2.26	-	-	-	0.148	0.5	78.6	0.1	-	0.5	35	5.6	43	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 10	48.7	7.9	7.92	18.40	0.35	96.3	64	0.3	2.26	-	-	-	0.135	0.5	67.4	0.1	-	0.5	35	5.59	45.4	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 11	47.3	7.81	7.94	19.95	0.51	98.5	67	0.3	2.23	-	-	-	0.144	0.5	60.1	0.1	-	0.5	34	5.64	44.3	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 12	47.3	8.01	7.97	20.41	0.51	95.3	64	0.3	1.94	-	-	-	0.132	0.5	58.2	0.1	-	0.5	34	5.69	44.3	-	0.0014	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 13	47.4	-	7.98	20.59	0.32	98.1	60	0.3	2.2	-	-	-	0.123	0.5	44.8	0.1	-	0.5	32	5.63	44.5	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 14	49.6	7.84	7.91	21.14	0.31	97.2	65	0.3	2.1	-	-	-	0.108	0.5	41.2	0.1	-	0.5	36	5.62	43.3	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 15	45.2	8.11	7.99	20.74	0.21	95.9	70	0.3	1.89	-	-	-	0.101	0.5	40.1	0.1	-	0.5	35	5.61	43.7	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 16	47.9	8.19	7.91	20.69	0.29	94.2	63	0.3	2.09	-	-	-	0.106	0.5	40.6	0.1	-	0.5	36	5.59	43.4	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 17	47.4	7.88	7.98	21.05	0.29	96.6	63	0.3	2.4	-	-	-	0.123	0.5	41.3	0.1	-	0.5	34	5.61	44.2	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 19	48.5	-	7.92	-	0.44	96.7	64	0.3	2.1	-	-	-	0.111	0.5	39	0.1	-	0.5	32	5.53	44.3	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 21	49.5	8.25	7.76	17.39	0.65	96.6	63	0.3	1.95	-	-	-	0.131	0.5	60.7	0.1	-	0.5	35	5.67	43	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22	2014 08 22	49.9	7.98	7.92	17.27	0.54	96.9	66	0.3	2.41	-	-	-	0.138	0.5	64.5	0.1	-	0.5	34	5.71	51.2	-	0.001	0.0051	-	-	-		
	QUL-22	2014 08 23	49.8	7.85	7.86	17.1	0.55	99.2	62	0.3	2.2	-	-	-	0.132	0.5	69	0.1	-	0.5	32	5.69	44.7	-	0.001	0.002 <sup>a</sup>	-	-	-		
	QUL-22-0M	2014 08 26	49.6	7.78	7.98	17.27	0.62	98.9	68	0.3	2.16	-	-	-	0.124	0.5	55.8	0.1	-	0.5	36	5.77	44	-	0.001	0.002 <sup>a</sup>	-	-	-		
QUL-22-4M	2014 08 26	50.1	7.75	8	17.17	0.67	97.4	67	0.3	2.2	-	-	-	0.13	0.5	57.7	0.1	-	0.5	36	5.79	44.7	-	0.002	0.003	-	-	-			
QUL-22-9M	2014 08 26	50.5	7.73	8.01	16.09	0.7	97.8	67	0.3	2.1	-	-	-	0.139	0.5	61.4	0.1	-	0.5	35	5.8	44.7	-	0.001	0.0023	-	-	-			
QUL-23	2014 08 25	49.9	7.95	7.97	17.38	0.325	99	67	0.3	1.86	-	-	-	0.145	0.5	54.7	0.1	-	0.5	34	5.81	44.4	-	0.001	0.						



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Associated ALS files: L1498519, L149853, L1499166, L1499203, L1499703, L1499707, 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, L1506586, L1506164, L1506689, L1506696, L15067001, L1507291, L1507298, L1506692, L1507259, L1507347, L1507948, L1507972, L1507977, L1507983, 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 no applicable standard.
- RPDs are not normally calculated where one or more concentrations are less than five times MDL.

<b>SHADED</b>	Concentration greater than BCWQG Aquatic Life (AW) guideline.
<b>BOLD</b>	Concentration greater than BCWQG Drinking Water (DW) guideline.
<b>SHADED</b>	Concentration greater than BCWQG Aquatic Life (30day) (AW) guideline.
<b>BOLD</b>	Concentration greater than or equal to Canadian Drinking Water Quality (DW) guideline.

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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												Total Alkalinity (as CaCO3) (mg/L)	Bromide (mg/L)	Ortho phosphate (mg/L)	Total Phosphorus (mg/L)
			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)										
BC Standards																																
BCWQG Aquatic Life (AW) <sup>b,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a	Under Review by SNC Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32 800	60 (Cl: 2)	32 800	600	988.2-1207 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a	n.a	0.005-0.015			
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n.a	n.a	n.a	n.a		n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3 000	20 (Cl: 2)	3 000	150	n.a	128-218 <sup>d</sup>	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		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	n.a	n.a	n.a	n.a	0.01			
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	n.a	250	1,500	500	n.a	n.a	n.a	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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	7.07	103	73	12.5	1.9	-	-	-	0.134	0.5	93.3	0.1	-	0.5	37	6.19	46.2	-	0.001	0.002 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	QUL-26-12M	2014 08 17	51.6	-	7.95	-	4.85	103	60	9.7	2.1	-	-	-	0.179	0.5	111	0.1	-	0.5	35	5.96	46.4	-	0.001	0.002 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-			
	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	45.9	0.1	-	0.5	37	5.68	44.6	-	0.001	0.002 <sup>a</sup>	-	-	-		
		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 <sup>a</sup>	-	-	-		
		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 <sup>a</sup>	-	-	-		
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 <sup>a</sup>	-	-	-				
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 <sup>a</sup>	-	-	-				
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 <sup>a</sup>	-	-	-				
QUL-34	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 <sup>a</sup>	-	-	-				
QUL-35	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 <sup>a</sup>	-	-	-				
QUL-36	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 <sup>a</sup>	-	-	-				
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 <sup>a</sup>	-	-	-			
	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	43.6	-	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 <sup>a</sup>	-	-	-				
	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 <sup>a</sup>	-	-	-				
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 <sup>a</sup>	-	-	-					
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 <sup>a</sup>	-	-	-				
	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 <sup>a</sup>	-	-	-				
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 <sup>a</sup>	-	-	-				
	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 <sup>a</sup>	-	-	-				
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 <sup>a</sup>	-	-	-					
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 <sup>a</sup>	-	-	-					
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 <sup>a</sup>	-	-	-				
	QUL-64-2M	2014 08 27	49.7	8.03	7.99	17.71	0.78	99	71	0.3	2.14	-	-	0.122	5.4	53.9	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	2.14	-	-	0.486	34	53.9	24.3	1.9	-	0.62	70	18.3	58.5	-	0.001	0.002 <sup>a</sup>	-	-	-			
	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 <sup>a</sup>	-	-	-				
QUL-66	QUL-66-40M	2014 08 19	72.5	7.81	8	5.4	122	159	113																							

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																														
BCWQG Aquatic Life (AW) <sup>a,b,c</sup>			26.1-100 <sup>d</sup>	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 (30day) (AW) <sup>b,c</sup>			50-1000 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	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	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	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	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	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	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	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	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	30	1.93	5.07	0.483	0.878	0.1	0.11	8.11	0.1	0.10	0.01	0.5	0.1	2.62	0.05	0.67	-	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	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	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	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	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	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	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	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	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	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	30	1.91	1.47	0.467	0.83	0.1	0.12	5.59	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	QUL-28-0M	2014 08 11	11.4	16.6	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	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	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	QUL-30	2014 08 07	11.5	16.6	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	QUL-31	2014 08 07	11.4	15.9	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	QUL-32	2014 08 06	10.9	16.4	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	QUL-33	2014 08 06	10.9	16.6	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	QUL-34-6M	2014 08 13	10.8	15.9	30	1.84	0.13	0.456	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	QUL-35-3M	2014 08 14	11.1	16.4	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	QUL-36-6M	2014 08 14	11.4	16.3	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	0.65	-	0.288	0.5	0.5	0.01	0.01	0.10	0.126	0.1	0.3
QUL-37	QUL-37-0M	2014 08 15	10.3	16.6	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	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	QUL-37-TAP	2014 08 15	10.7	16.7	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	4
QUL-38	QUL-38	2014 08 18	9.8	16.2	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	QUL-38-2M	2014 08 26	9.6	16.9	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	QUL-39	2014 08 18	9.9	16.8	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	QUL-60	2014 08 18	10.7	16.6	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	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	QUL-61	2014 08 18	10	16.6	30	1.89	0.412	0.456	0.818	0.1	0.1	5.22	0.1	0.10	0.01	0.5	0.1	0.57	0.05	0.84	-	0.269	0.5	0.5	0.01	0.01	0			

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

			Total Metals																															
Sample Location	Sample ID	Sample Date (yyyy mm dd)	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																																		
BCWQG Aquatic Life (AW) <sup>a,c</sup>			n.a	20	5	5,000	53	n.a	1,200	0.02-0.025 <sup>d</sup>	n.a	1 Cr( 6)	110	6.0-8.8 <sup>d</sup>	1,000	27.3-54.6 <sup>d</sup>	870	n.a	100.6-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2,000	25-65 <sup>d</sup>	373,000-432,000	2	n.a	0.1 <sup>d</sup>	n.a	0.3	n.a	2,000	300	6	33 <sup>d</sup>	
BCWQG Aquatic Life (30day) (AW) <sup>a,c</sup>			n.a	n.a	n.a	1,000	n.a	n.a	n.a	n.a	n.a	n.a	4	2-2.9	n.a	3.3-5.4 <sup>d</sup>	14	n.a	607.2-925.8 <sup>d</sup>	1	1,000	n.a	n.a	n.a	n.a	0.05 <sup>d</sup>	n.a	n.a	n.a	n.a	n.a	n.a	7.5 <sup>d</sup>	
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	n.a	n.a	n.a	n.a	1	250	n.a	n.a	n.a	10	n.a	n.a	2	n.a	n.a	n.a	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	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-26	QUL-26-0M	2014 08 11	29.1	0.1	0.14	5.87	0.1	0.5	10	0.01	16,400	0.5	0.1	1	30	0.05	0.91	1,910	4.27	0.05	0.332	0.5	536	0.5	1,570	0.01	861	0.01	0.1	10	0.132	0.1	3	
	QUL-26-13M	2014 08 11	30.9	0.1	0.11	5.48	0.1	0.5	10	0.01	17,600	0.5	0.1	1	30	0.05	0.89	2,000	1.41	0.05	0.301	0.5	492	0.5	1,670	0.01	871	0.014	0.1	10	0.151	0.1	3	
	QUL-26-24M	2014 08 11	41.7	0.1	0.14	5.7	0.1	0.5	10	0.01	18,100	0.5	0.1	1.2	38	0.05	0.97	2,080	2.31	0.05	0.286	0.5	502	0.5	1,740	0.01	923	0.001	0.1	10	0.154	0.1	3	
	QUL-26	2014 08 12	20.4	0.1	0.14	5.63	0.1	0.5	10	0.01	16,400	0.5	0.1	0.89	30	0.05	0.76	1,930	2.32	0.05	0.339	0.5	515	0.5	1,620	0.01	886	0.001	0.1	10	0.139	0.1	3	
	QUL-26	2014 08 13	20.2	0.1	0.17	7.19	0.1	0.5	10	0.01	16,600	0.5	0.1	0.95	46	0.05	0.94	1,980	11.1	0.05	0.349	0.5	616	0.5	1,650	0.01	888	0.001	0.1	10	0.123	0.1	3	
	QUL-26-0M	2014 08 14	16.9	0.1	0.12	5.72	0.1	0.5	10	0.01	16,200	0.5	0.1	0.67	30	0.05	0.75	1,900	3.2	0.05	0.329	0.5	509	0.5	1,610	0.01	854	0.001	0.1	10	0.132	0.1	3	
	QUL-26-12M	2014 08 14	363	0.1	0.17	6.6	0.1	0.5	10	0.01	17,300	0.5	0.1	0.92	42	0.05	1.16	2,250	21.5	0.05	0.462	0.58	697	0.5	1,710	0.01	969	0.01	0.77	43	0.171	1.9	3.6	
	QUL-26-27M	2014 08 14	362	0.1	0.24	11.2	0.1	0.5	10	0.01	18,800	0.5	0.19	7.7	288	0.148	2.98	2,220	17.1	0.05	0.406	0.51	601	0.5	2,470	0.01	1,030	0.01	1.18	0.181	0.1	3		
	QUL-26	2014 08 15	19.8	0.1	0.13	6.42	0.1	0.5	10	0.01	16,100	0.5	0.	0.75	30	0.05	0.5	1,900	2.02	-	0.325	0.5	489	0.5	1,610	0.01	852	0.001	0.1	10	0.136	0.1	3	
	QUL-26	2014 08 16	16.3	0.1	0.12	5.52	0.1	0.5	10	0.01	16,100	0.5	0.1	0.64	30	0.05	0.5	1,880	1.56	0.05	0.313	0.5	470	0.5	1,540	0.01	811	0.001	0.1	10	0.137	0.1	3	
	QUL-26-0M	2014 08 17	20.1	0.1	0.13	5.79	0.1	0.5	10	0.01	15,900	0.5	0.1	1	30	0.05	0.73	1,860	3.46	0.05	0.303	0.5	518	0.5	1,540	0.01	830	0.001	0.1	10	0.131	0.1	3	
	QUL-26-12M	2014 08 17	317	0.1	0.25	10.4	0.1	0.5	10	0.01	17,300	0.5	0.18	9.16	252	0.142	1	2,090	9.72	0.05	0.304	0.54	574	0.5	2,280	0.01	899	0.001	0.1	20	0.16	1.1	3	
	QUL-26-26M	2014 08 17	211	0.1	0.2	8.49	0.1	0.5	10	0.01	18,300	0.5	0.12	5.2	170	0.084	1.01	2,180	9.41	0.05	0.355	0.5	562	0.5	2,160	0.01	985	0.001	0.1	13	0.173	0.1	3	
	QUL-26-0M	2014 08 19	15	0.1	0.13	5.47	0.1	0.5	10	0.01	16,400	0.5	0.1	0.58	30	0.05	0.86	1,900	1.07	-	0.318	0.5	483	0.5	1,540	0.01	860	0.001	0.1	10	0.133	0.1	3	
	QUL-26-10M	2014 08 19	245	0.1	0.23	10.3	0.1	0.5	10	0.01	17,000	0.5	0.17	10	213	0.161	1.05	2,010	9.39	-	0.394	0.53	565	0.5	2,040	0.01	935	0.001	0.1	14	0.155	0.1	3	
	QUL-26-20M	2014 08 19	365	0.1	0.29	11.5	0.1	0.5	10	0.01	18,300	0.5	0.25	10.7	339	0.179	1.23	2,240	12.5	0.05	0.325	0.6	600	0.5	2,470	0.01	982	0.001	0.1	26	0.162	1.2	3	
	QUL-26-0M	2014 08 21	79.7	0.1	0.17	6.44	0.1	0.5	10	0.01	16,600	0.5	0.1	2.41	65	0.05	0.77	1,970	3.69	-	0.327	1.01	495	0.5	1,700	0.01	865	0.001	0.1	10	0.143	0.1	3	
	QUL-28-0M	2014 08 11	28.2	0.1	0.15	6.41	0.1	0.5	10	0.01	16,200	0.5	0.1	1.03	30	0.05	0.58	1,910	9.7	0.05	0.305	0.52	542	0.5	1,560	0.01	863	0.001	0.1	10	0.131	0.1	3	
	QUL-28	2014 08 12	51.3	0.1	0.14	6.32	0.1	0.5	10	0.01	16,500	0.5	0.1	1.68	44	0.05	0.84	1,900	4.5	0.05	0.33	0.5	507	0.5	1,660	0.01	874	0.001	0.1	10	0.139	0.1	3	
	QUL-28	2014 08 13	22.2	0.1	0.15	6.18	0.1	0.5	10	0.013	16,400	0.5	0.1	0.86	30	0.05	0.88	1,950	4.82	0.05	0.358	0.5	536	0.5	1,640	0.01	888	0.001	0.1	10	0.132	0.1	3	
QUL-30	QUL-30	2014 08 07	45.4	0.1	0.12	5.08	0.1	0.5	10	0.01	17,200	0.5	0.1	0.5	65	0.05	0.77	1,940	2.32	0.05	0.246	0.5	476	0.5	1,550	0.01	807	0.001	0.1	10	0.15	0.1	3	
	QUL-31	2014 08 07	28.8	0.1	0.14	5.52	0.1	0.5	10	0.01	16,200	0.5	0.1	0.66	40	0.05	0.61	1,970	2.77	0.05	0.326	0.5	491	0.5	1,660	0.01	867	0.001	0.1	10	0.135	0.1	3	
	QUL-32	2014 08 06	61	0.1	0.12	5.57	0.1	0.5	10	0.01	17,400	0.5	0.1	0.68	87	0.05	0.83	2,010	2.8	0.05	0.256	0.5	512	0.5	1,660	0.01	1,000	0.001	0.1	10	0.155	0.1	3	
	QUL-33	2014 08 06	15.2	0.1	0.1	4.81	0.1	0.5	10	0.01	17,000	0.5	0.1	0.5	30	0.05	0.65	1,930	0.875	0.05	0.238	0.5	444	0.5	1,500	0.01	799	0.001	0.1	10	0.147	0.1	3	
	QUL-34	2014-08-13	15.5	0.1	0.14	5.33	0.1	0.5	10	0.01	15,800	0.5	0.1	0.67	30	0.05	0.5	1,830	1.22	0.05	0.292	0.5	458	0.5	1,530	0.01	851	0.001	0.1	10	0.13	0.1	3	
	QUL-35	2014 08 14	17.2	0.1	0.14	5.53	0.1	0.5	10	0.01	16,300	0.5	0.1	0.62	30	0.05	0.68	1,910	1.55	-	0.371	0.5	489	0.5	1,640	0.01	876	0.001	0.1	10	0.137	0.1	3	
	QUL-36	2014-08-14	15.5	0.1	0.12	5.2	0.1	0.5	10	0.01	16,100	0.5	0.1	0.58	30	0.05	0.69	1,860	1.24	-	0.312	0.5	461	0.5	1,570	0.01	811	0.001	0.1	10	0.132	0.1	3	
	QUL-37-0M	2014 08 15	15	0.1	0.11	5.01	0.1	0.5	10	0.01	16,400	0.5	0.1	0.5	30	0.05	0.5	1,850	1.08	-	0.298	0.5	458	0.5	1,530	0.01	810	0.001	0.1	10	0.143	0.1	3	
	QUL-37-7M	2014 08 15	17.7	0.1	0.12	4.97	0.1	0.5	10	0.01	16,200	0.5	0.1	0.5	30	0.05	0.5	1,840	1.19	-	0.306	0.5	455	0.5	1,530	0.01	795	0.001	0.1	10	0.141	0.1	3	
	QUL-37-TAP	2014 08 15	18	0.1	0.13	5.43	0.1	0.5	10	0.01	16,700	0.5	0.1	2.5	30	0.05	0.5	1,870	0.786	-	0.309	0.5	472	0.5	1,550	0.01	815	0.001	0.1	10	0.14	0.1	5.4	
	QUL-38	2014 08 18	17.7	0.1	0.12	5.32	0.1	0.5	10	0.01	16,200	0.5	0.1	2	30	0.05	0.76	1,930	1.22	-	0.302	0.5	480	0.5	1,560	0.01	854	0.001	0.1	10	0.142	0.1	3	
	QUL-38-2M	2014 08 26	43.5	0.1	0.13	5.99	0.1	0.5	10	0.01	16,800	0.5	0.1	1.72	32	0.05	0.51	1,930	2.02	0.01	0.319	0.5	473	0.5	1,580	0.01	859	0.001	0.1	10	0.141	0.1	3	
	QUL-39	2014 08 18	23.4	0.1	0.11	5.28	0.1	0.5	10	0.01	16,300	0.5	0.1	1	30	0.05	0.72	1,870	1.14	-	0.265	0.5	461	0.5	1,540	0.01	832	0.001	0.1	10	0.147	0.1	3	
	QUL-60	2014 08 18	34.6	0.1	0.12	5.57	0.1	0.5	10	0.01	16,400	0.5	0.1	1.5	30	0.05	0.76	1,900	1.76	-	0.299	0.5	473	0.5	1,590	0.01	848	0.001	0.1	10	0.148	0.1	3	
	QUL-61	QUL-60-3M	2014 08 26	44	0.1	0.12	5.96	0.1	0.5	10	0.01	16,600	0.5	0.1	1.93	34	0.05	0.5	1,900	2.15	0.01	0.324	0.5	473	0.5	1,560	0.01	850	0.001	0.1	10	0.136	0.1	3
		QUL-61	2014 08 18	33.6	0.1	0.12	5.31	0.1	0.5	10	0.01	16,300	0.5	0.1	2.5 <sup>d</sup>	30	0.05	0.78	1,880	1.52	-	0.289	0.5	468	0.5	1,570	0.01	832	0.001	0.1	10	0.141	0.1	3
	QUL-62	QUL-61-2M	2014 08 26	40.3	0.1	0.14	5.91	0.1	0.5	10	0.01	17,100	0.5	0.1	1.83	33	0																	

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1508507, L1508649, L1509597, 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 L fe (AW) guideline

**BOLD** Concentration greater than RCWQG Drinking Water (DW) guideline

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

**BOLD** Concentration

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia

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) <sup>a,c</sup>			n.a	6.5-9.0	6.5-9.0	n.a	Under Review by SNC Lavalin	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	5,680-28,700 <sup>d</sup>	32,800	60 (Cl: 2)	32,800	600	988.2-1207 <sup>d</sup>	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a	
BCWQG Aquatic Life (30day) (AW) <sup>b,c</sup>			n.a	n.a	n.a	n.a		n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	1,090-2,080 <sup>d</sup>	3,000	20 (Cl: 2)	3,000	150	n.a	128-218 <sup>d</sup>	n.a	n.a	n.a	n.a	
BCWQG Drinking Water (DW)			n.a	6.5-8.5	6.5-8.5	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	n.a	n.a	0.01	
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	10,000	1,000	n.a	250	1,500	500	n.a	n.a	n.a	n.a	n.a	
QUL-67	QUL-67-34M	2014 08 20	64.6	7.74	7.9	5.7		136	91	10	1.91	-	-	-	0.324	32.1	195	□1	-	□0.5	52	12.4	55.5	-	□0.001	□0.002 <sup>a</sup>	
QUL-68	QUL-68-40M	2014 08 21	68.9	8.04	7.85	17.22		70.6	146	100	28.7	2	-	-	0.384	42.2	225	1.5	-	□0.5	65	15.3	57.2	-	0.008	<b>0.0108</b>	
QUL-69	QUL-69-32M	2014 08 21	58.8	7.72	7.84	5.11		26.5	119	77	13.9	2.03	-	-	0.254	14.3	169	□1	-	□0.5	48	8.97	51.9	-	0.0093	<b>0.0143</b>	
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	-	□0.5	50	10.5	52.4	-	0.0188	<b>0.0413</b>	
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	-	□0.5	53	11.3	53.9	-	0.017	<b>0.0276</b>	
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	-	□0.5	34	5.77	45	-	□0.001	□0.002 <sup>a</sup>	
QUL-79	QUL-79-0M	2014 08 25	42.3	7.99	7.89	18.26		0.26	97.2	68	□3	1.91	-	-	0.127	□5	44.4	□1	-	□0.5	35	5.76	43.6	-	□0.001	□0.002 <sup>a</sup>	
	QUL-79-27M	2014 08 25	54.7	7.19	7.9	5.28		4.87	110	63	3.5	1.64	-	-	0.213	□5	147	□1	-	□0.5	38	6.85	49.6	-	0.0223	<b>0.134</b>	
	QUL-79-79M	2014 08 25	56	7.35	7.9	4.8		10.4	113	76	3.7	1.64	-	-	0.217	5.5	153	□1	-	□0.5	40	7.56	50.4	-	0.0158	<b>0.138</b>	
	QUL-79-0M	2014 08 27	49.4	7.95	7.99	19		0.23	98.5	62	□3	1.99	-	-	0.112	□5	43.6	□1	-	□0.5	34	5.75	44	-	□0.001	□0.002 <sup>a</sup>	
	QUL-79-55M	2014 08 27	54.7	-	7.93	-		0.69	108	66	□3	1.9	-	-	0.195	□5	145	□1	-	□0.5	36	6.35	48.9	-	0.0019	<b>0.0027</b>	
QUL-82	QUL-82-2M	2014 08 25	49.7	8.11	7.95	18.11		0.33	99.4	70	□3	2.27	-	-	0.133	□5	47.8	□1	-	□0.5	34	5.73	44.4	-	0.0213	<b>0.0264</b>	
	QUL-82-TAP	2014 08 25	49.6	-	7.94	-		0.24	99.5	67	□3	2.27	-	-	0.141	□5	62.1	□1	-	□0.5	34	5.78	44.6	-	□0.001	□0.002 <sup>a</sup>	
QUL-83	QUL-83-2M	2014 08 25	49.6	7.94	7.94	18.31		0.25	98.8	65	□3	2.33	-	-	0.122	□5	46.9	□1	-	□0.5	34	5.71	44.1	-	□0.001	□0.002 <sup>a</sup>	
QUL-84	QUL-84-1M	2014 08 25	50.2	7.91	7.93	18.33		0.3	98.3	66	□3	2.2	-	-	0.126	□5	47.7	□1	-	□0.5	36	5.71	44.2	-	□0.001	□0.002 <sup>a</sup>	
QUL-85	QUL-85-1M	2014 08 25	49.6	7.93	7.96	18.4		0.4	99.3	67	□3	2.15	-	-	0.128	□5	47.4	□1	-	□0.5	34	5.76	44.6	-	□0.001	<b>0.0023</b>	
QUL-86	QUL-86-1M	2014 08 25	50.4	7.96	7.99	18.51		0.27	99.9	68	□3	2.02	-	-	0.121	□5	47.2	□1	-	□0.5	34	5.76	45.3	-	□0.001	□0.002 <sup>a</sup>	
QUL-87	QUL-87-0M	2014 08 25	48.8	8.02	7.98	19.37		0.26	97.3	71	□3	1.96	-	-	0.132	□5	42.6	□1	-	□0.5	34	5.69	44.1	-	□0.001	□0.002 <sup>a</sup>	
	QUL-87-13M	2014 08 25	51.2	7.79	7.91	11.48		0.5	103	69	□3	1.68	-	-	0.209	□5	121	□1	-	□0.5	35	6.01	46.4	-	0.0221	<b>0.025</b>	
	QUL-87-55M	2014 08 25	53.6	7.29	7.85	5.07		0.28	107	75	□3	1.76	-	-	0.207	□5	144	1.4	-	□0.5	36	6.14	48	-	0.0072	<b>0.0436</b>	
QUL-88	QUL-88-2M	2014 08 26	50.5	7.83	7.98	18.95		0.27	100	62	□3	2.19	-	-	0.114	□5	41	□1	-	□0.5	35	5.7	44.6	-	□0.001	□0.002 <sup>a</sup>	
QUL-89	QUL-89-1M	2014 08 27	49.5	8	7.9	17.78		0.85	98.2	67	□3	2.21	-	-	0.12	□5	52.8	□1	-	□0.5	34	5.79	44.5	-	0.0011	□0.002 <sup>a</sup>	
QUL-90	QUL-90	2014 08 27	49.8	<b>8.54</b>	8.01	19.04		0.76	99.7	68	□3	2.21	-	-	0.133	□5	40.1	□1	-	□0.5	35	5.73	45.1	-	□0.001	<b>0.0023</b>	
	QUL-90-TAP	2014 08 27	76.1	-	7.71	-		0.3	148	99	□3	3.46	-	-	0.119	8.7	21.2	□1	-	□0.5	57	3.9	73.2	-	0.0017	<b>0.0029</b>	
SPANISH DW	SPANISH DW	2014 08 23	271	-	-	-		0.22	-	306	3.4	0.84	-	-	-	□0.05	□5	39.9	□1	-	2.53	67	46.3	255	-	0.0025	<b>0.0038</b>

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1506586, L1506164, L1502370, L1506989, L1506996, L1507001, L1507291, L1507298, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509507, L1508649, L1509597, 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.

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

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2005.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.



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																														
BCWQG Aquatic Life (AW) <sup>b,c</sup>			26.1-100 <sup>d</sup>	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 (30day) (AW) <sup>b,c</sup>			50-1000 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	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	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	30	2.47	79.9	0.78	2.37	0.15	0.52	15.6	0.1	10	0.01	0.5	0.1	3.97	0.05	0.53	-	3.14	0.5	0.5	0.01	0.01	10	0.466	0.1	0.3
QUL-68	QUL-68-40M	2014 08 21	11.7	23.3	30	2.62	106	0.889	3.46	0.2	0.67	17.3	0.1	10	0.01	0.5	0.1	4.2	0.05	1.08	-	4.45	0.5	0.51	0.01	0.01	10	0.593	0.1	0.3
QUL-69	QUL-69-32M	2014 08 21	10.1	19.8	30	2.26	47.4	0.597	1.72	0.1	0.31	10.3	0.1	10	0.01	0.5	0.1	2.53	0.05	0.99	-	1.49	0.5	0.5	0.01	0.01	10	0.287	0.1	0.3
QUL-74	QUL-74-46M	2014 08 21	11.4	20.6	30	2.29	42.8	0.652	2.11	0.11	0.38	11.4	0.1	10	0.01	0.5	0.1	3.33	0.05	0.95	-	2.09	0.5	0.5	0.01	0.01	10	0.362	0.1	0.3
QUL-75	QUL-75-40M	2014 08 21	10.5	21	30	2.35	46.1	0.685	2.08	0.12	0.42	12	0.1	10	0.01	0.5	0.1	3.29	0.05	1	-	2.51	0.5	0.5	0.01	0.01	10	0.408	0.1	0.3
QUL-77	QUL-77	2014 08 22	10.2	17	30	1.93	0.945	0.458	0.829	0.1	0.1	5.56	0.1	10	0.01	0.5	0.1	1.06	0.05	0.85	-	0.272	0.5	0.5	0.01	0.01	10	0.137	0.1	0.3
QUL-79	QUL-79-0M	2014 08 25	8.1	14.2	30	1.66	0.269	0.382	0.689	0.1	0.1	4.43	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.229	0.5	0.5	0.01	0.01	10	0.111	0.1	0.3
	QUL-79-27M	2014 08 25	6.8	18.5	30	2.08	5.6	0.491	1.74	0.1	0.12	6.1	0.1	10	0.01	0.5	0.1	1.62	0.05	0.5	-	0.528	0.5	0.5	0.01	0.01	10	0.177	0.1	0.3
	QUL-79-79M	2014 08 25	6.3	19	30	2.11	8.68	0.517	1.32	0.1	0.17	6.65	0.1	10	0.01	0.5	0.1	1.4	0.05	0.59	-	0.741	0.5	0.5	0.01	0.01	10	0.203	0.1	0.3
	QUL-79-0M	2014 08 27	10.2	16.7	30	1.91	0.304	0.44	0.818	0.1	0.1	4.91	0.1	10	0.01	0.5	0.1	0.5	0.05	0.74	-	0.254	0.5	0.5	0.01	0.01	10	0.136	0.1	0.3
	QUL-79-55M	2014 08 27	4.9	18.5	30	2.08	0.562	0.46	0.923	0.1	0.1	5.16	0.1	10	0.01	0.5	0.1	0.51	0.05	0.8	-	0.27	0.5	0.5	0.01	0.01	10	0.152	0.1	0.3
QUL-82	QUL-82-2M	2014 08 25	9	16.7	30	1.93	0.499	0.465	1.01	0.1	0.11	5.29	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.279	0.5	0.5	0.01	0.01	10	0.131	0.1	0.3
	QUL-82-TAP	2014 08 25	9	16.7	30	1.91	0.149	0.45	0.806	0.1	0.1	5.29	0.1	10	0.01	0.5	0.1	17.6	0.085	0.5	-	0.273	0.5	0.5	0.01	0.01	10	0.13	0.1	4.4
QUL-83	QUL-83-2M	2014 08 25	9.1	16.7	30	1.92	0.368	0.468	0.831	0.1	0.11	5.33	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.268	0.5	0.5	0.01	0.01	10	0.125	0.1	0.3
QUL-84	QUL-84-1M	2014 08 25	9.8	16.9	30	1.95	0.406	0.467	0.824	0.1	0.1	5.36	0.1	10	0.01	0.5	0.1	0.5	0.05	0.51	-	0.269	0.5	0.5	0.01	0.01	10	0.126	0.1	0.3
QUL-85	QUL-85-1M	2014 08 25	8.8	16.7	30	1.92	0.416	0.46	0.822	0.1	0.13	5.34	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.277	0.5	0.5	0.01	0.01	10	0.136	0.1	0.3
QUL-86	QUL-86-1M	2014 08 25	9.8	17	30	1.95	0.467	0.459	0.827	0.1	0.16	5.34	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.295	0.5	0.5	0.01	0.01	10	0.14	0.1	0.3
QUL-87	QUL-87-0M	2014 08 25	10.3	16.4	30	1.89	0.41	0.465	0.807	0.1	0.1	5.07	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.273	0.5	0.5	0.01	0.01	10	0.13	0.1	0.3
	QUL-87-13M	2014 08 25	8.1	17.3	30	1.93	0.271	0.455	1.04	0.1	0.1	4.98	0.1	10	0.01	0.5	0.1	0.53	0.05	0.5	-	0.248	0.5	0.5	0.01	0.01	10	0.143	0.1	0.3
	QUL-87-55M	2014 08 25	5.5	18.1	30	2.06	0.142	0.468	0.965	0.1	0.1	4.91	0.1	10	0.01	0.5	0.1	0.51	0.05	0.5	-	0.235	0.5	0.5	0.01	0.01	10	0.141	0.1	0.3
QUL-88	QUL88-2M	2014 08 26	9.6	17	30	1.97	0.622	0.459	0.809	0.1	0.11	5.01	0.1	10	0.01	0.5	0.1	0.5	0.05	0.5	-	0.286	0.5	0.5	0.01	0.01	10	0.13	0.1	0.3
QUL-89	QUL-89-1M	2014 08 27	10.3	16.7	30	1.91	0.781	0.474	0.871	0.1	0.12	5.56	0.1	10	0.013	0.5	0.1	1.02	0.05	0.5	-	0.295	0.5	0.5	0.01	0.01	10	0.134	0.1	0.3
QUL-90	QUL-90	2014 08 27	10	16.7	30	1.95	3.63	0.431	0.872	0.1	0.39	5.46	0.1	10	0.01	0.5	0.1	0.93	0.05	0.68	-	0.289	0.5	0.5	0.01	0.01	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	10	0.01	0.5	0.1	1.85	0.05	0.5	-	0.273	0.5	0.5	0.01	0.01	10	0.022	0.1	4.2
SPANISH DW	SPANISH DW	2014 08 23	0.3	41.4	30	40.8	0.15	0.734	14.4	8.37	46.7	25.8	0.1	10	0.015	0.5	0.41	56.2	2.05	5.99	-	6.82	14.4	0.5	0.016	0.01	10	0.283	0.1	65.9

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1506577, L1506586, L1506164, 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.

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> Guideline varies with pH, and/or Temperature or Hardness.

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

		Sample Date (yyyy mm dd)	Total Metals																															
Sample Location	Sample ID		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																																		
BCWQG Aquatic Life (AW) <sup>1,c</sup>			n/a	20	5	5 000	5.3	n/a	1 200	0.02-0.025 <sup>d</sup>	n/a	1 (Cr( 6))	110	6.0-8.8 <sup>d</sup>	1 000	27.3-54.6 <sup>d</sup>	870	n/a	100.6-1,343 <sup>d</sup>	Under review by SNC-Lavalin	2 000	25-65 <sup>d</sup>	373,000-432,000	2	n/a	0.1 <sup>d</sup>	n/a	0.3	n/a	2 000	300	6	33 <sup>d</sup>	
BCWQG Aquatic Life (30day) (AW) <sup>1,c</sup>			n/a	n/a	n/a	1 000	n/a	n/a	n/a	n/a	n/a	n/a	4	2-2.9	n/a	3.3-5.4 <sup>d</sup>	14	n/a	607.2-925.8 <sup>d</sup>	1 000	n/a	n/a	n/a	n/a	0.05 <sup>d</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5 <sup>d</sup>	
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	1	250	n/a	n/a	10	n/a	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	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	n/a	200 000	n/a	n/a	n/a	20	n/a	n/a	n/a	5 000
QUL-67	QUL-67-34M	2014 08 20	2,510	0.21	1.44	60.8	0.1	0.5	0.019	22 100	1.69	1.29	59.1	1,820	1.03	1.89	3 320	143	-	3.68	1.85	1 690	0.5	6 780	0.025	2 900	0.01	0.1	108	0.56	5.6	6.4		
QUL-68	QUL-68-40M	2014 08 21	4,060	0.27	1.9	86.9	0.11	0.5	0.024	23 700	2.51	1.81	75.9	2,650	1.55	3.04	3 800	187	-	4.67	2.51	2 370	0.57	10 500	0.038	3 540	0.018	0.13	164	0.706	8.1	9.2		
QUL-69	QUL-69-32M	2014 08 21	1,940	0.11	0.87	39.4	0.1	0.5	0.013	20 400	1.4	0.81	31.1	1,290	0.653	1.91	2 930	89.1	-	1.71	1.34	1 270	0.5	6 580	0.015	1 880	0.01	0.1	84	0.362	3.9	4.6		
QUL-74	QUL-74-46M	2014 08 21	2,080	0.15	1.03	45.7	0.1	0.5	0.015	20 500	1.38	0.98	40.3	1,480	0.78	2.13	2 930	89	-	2.32	1.51	1 360	0.5	6 000	0.018	2 110	0.01	0.1	90	0.421	4.4	5.4		
QUL-75	QUL-75-40M	2014 08 21	2,570	0.16	1.16	56.1	0.1	0.5	0.021	21 400	1.56	1.14	49.8	1,690	1.01	2.2	3 170	102	-	2.92	1.58	1 640	0.5	7 160	0.021	2 580	0.011	0.1	108	0.504	5.1	7.3		
QUL-77	QUL-77	2014 08 22	84.3	0.1	0.14	6.08	0.1	0.5	0.01	16 200	0.5	0.1	2.48	98	0.05	0.87	1 900	3.67	-	0.3	0.51	466	0.5	1 600	0.01	838	0.01	0.1	10	0.146	0.1	0.3		
QUL-79	QUL-79-0M	2014 08 25	12.9	0.1	0.12	5.35	0.1	0.5	0.01	16 400	0.5	0.1	0.53	0.30	0.05	0.5	1 920	1.22	-	0.296	0.5	469	0.5	1 560	0.01	829	0.01	0.1	10	0.138	0.1	0.3		
	QUL-79-27M	2014 08 25	246	0.1	0.21	10.2	0.1	0.5	0.01	18 000	0.5	0.11	5.91	167	0.119	0.68	2 100	12.4	0.05	0.581	0.5	573	0.5	2 170	0.01	1 370	0.01	0.1	10	0.19	0.1	0.3		
	QUL-79-79M	2014 08 25	515	0.1	0.3	16.4	0.1	0.5	0.01	18 800	0.5	0.19	10.4	308	0.192	0.83	2 240	19.7	0.05	0.857	0.59	720	0.5	2 810	0.01	1 420	0.01	0.1	20	0.227	1.1	0.3		
	QUL-79-0M	2014 08 27	13.3	0.1	0.1	5.04	0.1	0.5	0.01	16 400	0.5	0.1	0.51	0.30	0.05	0.72	1 920	0.888	0.01	0.27	0.5	448	0.5	1 480	0.01	841	0.01	0.1	10	0.142	0.1	0.3		
	QUL-79-55M	2014 08 27	38	0.1	0.1	5.74	0.1	0.5	0.01	0.024	18 200	0.5	0.1	1.06	0.30	0.05	0.81	2 080	1.9	0.01	0.273	0.5	487	0.5	1 720	0.01	960	0.01	0.1	10	0.168	0.1	0.3	
QUL-82	QUL-82-2M	2014 08 25	17.8	0.1	0.13	5.43	0.1	0.5	0.01	16 400	0.5	0.1	0.56	0.30	0.05	0.5	1 890	1.35	-	0.298	0.5	468	0.5	1 540	0.01	864	0.01	0.1	10	0.142	0.1	0.3		
	QUL-82-TAP	2014 08 25	13.8	0.1	0.14	5.28	0.1	0.5	0.01	16 600	0.5	0.1	18.7	0.30	0.127	0.5	1 910	0.589	-	0.293	0.5	456	0.5	1 550	0.01	818	0.01	0.1	10	0.137	0.1	5.3		
QUL-83	QUL-83-2M	2014 08 25	18.4	0.1	0.14	5.43	0.1	0.5	0.01	16 500	0.5	0.1	0.61	0.30	0.05	0.5	1 890	1.26	-	0.292	0.5	466	0.5	1 540	0.01	823	0.01	0.1	10	0.142	0.1	0.3		
QUL-84	QUL-84-1M	2014 08 25	15.3	0.1	0.15	5.38	0.1	0.5	0.01	16 800	0.5	0.1	0.53	0.30	0.05	0.5	1 900	1.19	-	0.285	0.5	466	0.5	1 540	0.01	823	0.01	0.1	10	0.14	0.1	0.3		
QUL-85	QUL-85-1M	2014 08 25	15.2	0.1	0.13	5.25	0.1	0.5	0.01	16 300	0.5	0.1	0.5	0.30	0.05	0.5	1 880	1.15	-	0.292	0.5	453	0.5	1 510	0.01	810	0.01	0.1	10	0.142	0.1	0.3		
QUL-86	QUL-86-1M	2014 08 25	14.9	0.1	0.19	5.47	0.1	0.5	0.01	16 800	0.5	0.1	0.5	0.30	0.05	0.5	1 940	1.15	-	0.298	0.5	462	0.5	1 570	0.01	826	0.01	0.1	10	0.141	0.1	0.3		
QUL-87	QUL-87-0M	2014 08 25	13.1	0.1	0.14	5.26	0.1	0.5	0.01	16 300	0.5	0.1	0.52	0.30	0.05	0.5	1 880	1.17	-	0.287	0.5	452	0.5	1 530	0.01	819	0.01	0.1	10	0.142	0.1	0.3		
	QUL-87-13M	2014 08 25	24.6	0.1	0.11	5.36	0.1	0.5	0.01	17 600	0.5	0.1	0.8	0.30	0.05	0.5	1 950	1.42	-	0.265	0.5	471	0.5	1 650	0.01	1 180	0.01	0.1	10	0.151	0.1	0.3		
	QUL-87-55M	2014 08 25	16.1	0.1	0.11	5.19	0.1	0.5	0.01	18 100	0.5	0.1	0.6	0.30	0.05	0.51	2 080	1.09	-	0.283	0.5	475	0.5	1 800	0.01	1 060	0.01	0.1	10	0.151	0.1	0.3		
QUL-88	QUL-88-2M	2014 08 26	16.5	0.1	0.13	5.24	0.1	0.5	0.01	16 700	0.5	0.1	0.53	0.30	0.05	0.52	1 950	1.45	0.01	0.308	0.5	461	0.5	1 560	0.01	834	0.01	0.1	10	0.139	0.1	0.3		
QUL-89	QUL-89-1M	2014 08 27	36.4	0.1	0.13	5.72	0.1	0.5	0.01	16 000	0.5	0.1	1.73	31	0.05	0.52	1 860	1.99	0.01	0.298	0.5	457	0.5	1 510	0.01	849	0.01	0.1	10	0.142	0.1	0.3		
QUL-90	QUL-90	2014 08 27	38.4	0.1	0.56	5.84	0.1	0.5	0.01	16 400	0.5	0.1	1.55	71	0.05	0.63	1 950	6.3	0.01	0.316	0.5	440	0.5	1 560	0.01	884	0.01	0.1	10	0.134	0.1	0.3		
	QUL-90-TAP	2014 08 27	10.4	0.17	0.72	4.86	0.1	0.5	0.01	22 400	0.5	0.1	2.23	74	0.05	0.5	4 580	3.74	0.01	0.287	0.5	369	0.5	4 460	0.01	2 220	0.01	0.1	10	0.024	0.1	4.8		
SPANISH DW	SPANISH DW	2014 08 23	0.3	8.67	46.4	24.9	0.1	0.5	11	0.014	42 100	0.5	0.57	60.1	0.30	2.34	5.86	41 500	1.03	-	7.09	14.7	728	0.5	6 030	0.018	14 700	0.01	0.1	10	0.293	0.1	60.7	

Associated ALS files L1498519, L1498533, L1499166, L1499203, L1499703, L1499707, 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, L1506577, L1506586, L1500164, L1502370, L1506989, L1506996, L1507001, L1507291, L1507298, L1506992, L1507259, L1507347, L1507948, L1507972, L1507977, L1508637, L1508673, L1509507, L1508649, L1509597, L1510231, L1510268, L1510289.

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

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- Denotes analysis not conducted.

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**SHADED** Concentration greater than BCWOG Aquatic Life (AW) guideline.

**BOLD** Concentration greater than BCWOG Drinking Water (DW) guideline.

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

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

<sup>a</sup> Laboratory detection limit out of range.

<sup>b</sup> British Columbia Approved Water Quality Guidelines 2006 Edition, updated 2014.

<sup>c</sup> A Compendium of Working Water Quality Guidelines for British Columbia, updated August 2006.

<sup>d</sup> 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

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.

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<sup>a</sup> No CSR Sediment Criteria. BCWQG guideline shown.

**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).

□ 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 2d: Summary of Analytical Results for Mount Polley, Quesnel Lake - Sediment Leachate

Sample Location	Sample ID	Sample Date (yyyy mm dd)	pH (pH)	Leachate Metals																														
				Aluminum Leachable (µg/L)	Antimony Leachable (µg/L)	Arsenic Leachable (µg/L)	Barium Leachable (µg/L)	Beryllium Leachable (µg/L)	Bismuth Leachable (µg/L)	Cadmium Leachable (µg/L)	Calcium Leachable (µg/L)	Chromium Leachable (µg/L)	Cobalt Leachable (µg/L)	Copper Leachable (µg/L)	Iron Leachable (µg/L)	Lead Leachable (µg/L)	Magnesium Leachable (µg/L)	Manganese Leachable (µg/L)	Mercury Leachable (µg/L)	Molybdenum Leachable (µg/L)	Nickel Leachable (µg/L)	Phosphorus Leachable (µg/L)	Potassium Leachable (µg/L)	Selenium Leachable (µg/L)	Silicon Leachable (µg/L)	Silver Leachable (µg/L)	Sodium Leachable (µg/L)	Strontium Leachable (µg/L)	Thallium Leachable (µg/L)	Tin Leachable (µg/L)	Titanium Leachable (µg/L)	Uranium Leachable (µg/L)	Vanadium Leachable (µg/L)	Zinc Leachable (µg/L)
BC Standards																																		
HWR Leachate Quality (HWLQ)			n/a	n/a	n/a	2,500	100,000	n/a	n/a	500	n/a	5,000	n/a	100,000	n/a	5,000	n/a	n/a	100	n/a	n/a	n/a	n/a	1,000	n/a	5,000	n/a	n/a	n/a	n/a	n/a	10,000	n/a	500,000
QUL-45-01	QUL-45-01	2014 08 13	8.47	270	≤50	≤50	27	≤5	≤100	≤10	20,100	≤10	≤10	25	167	≤50	2,860	38	≤0.05	44	≤50	≤300	3,500	≤50	4,920	≤10	14,400	225	≤200	≤30	11	≤500	≤30	≤20
QUL-45-02	QUL-45-02	2014 08 13	8.46	270	≤50	≤50	31	≤5	≤100	≤10	23,900	≤10	≤10	14	189	≤50	3,470	37.7	≤0.05	51	≤50	≤300	4,500	≤50	5,670	≤10	20,800	269	≤200	≤30	11	≤500	≤30	≤20

Associated ALS file: L1503198.  
All terms defined within the body of SNC-Lavalin's report (available upon request).  
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- Denotes analysis not conducted.  
n/a Denotes no applicable standard.  
RPD Denotes relative percent difference.

**BOLD** Concentration greater than HWR Leachate Quality (HWLQ) standard.





**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	<i>Single Sample</i>	No additional sample locations added to program
		<i>Repeated Sites</i>	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	<i>Repeated Sites</i>	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.	<i>Sampling Sites</i>	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	<i>Repeated Sites</i>	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	<i>Single Sample</i>	QUL-ST-FFF-1, QUL-ST-REF-1, QUL-96
		<i>Repeated Sites</i>	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	<i>Single Sample</i>	QUL-91, QUL-92, QUL-93, QUL-94, QUL-95, QUL-100, QUL-101
		<i>Repeated Sites</i>	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 <sup>1</sup>	Acute (48-h) Daphnia magna <sup>2</sup>	Sublethal (7-d) fish survival and growth <sup>3</sup>	Sublethal (7-d) invertebrate survival and reproduction <sup>4</sup>	Sublethal (72-h) algal growth <sup>5</sup>	Sublethal (7-d) plant growth <sup>6</sup>	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

<sup>1</sup>Rainbow trout acute lethality (96-hours)<sup>2</sup>Daphnia magna acute lethality (48-hours)<sup>3</sup>Fathead minnow survival and growth (7-days)<sup>4</sup>Ceriodaphnia dubia survival and reproduction (up to 8-d)<sup>5</sup>Algal growth (Pseudokirchneriella subcapitata - 72-hours)<sup>6</sup>Plant 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 to 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](mailto: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](mailto: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](mailto: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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**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.  
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Branch Coordinator

Health, Safety and Permitting Branch

Ministry of Energy and Mines

[250 952 0793](tel:2509520793)

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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

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**

## Presentation Outline



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

## Objectives



- ☐ 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?

newgold™

- ❑ 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.

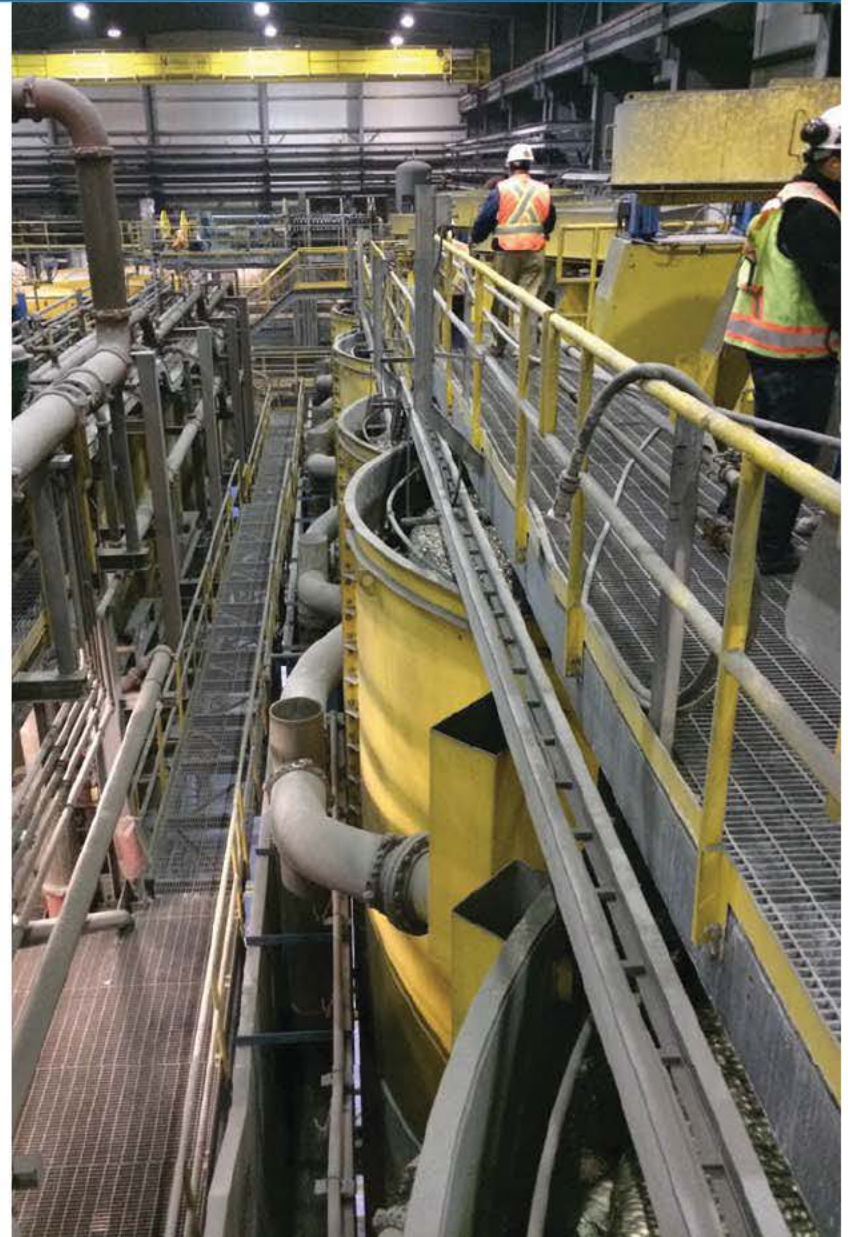




## Tailings - Processing

newgold™

- ☐ 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

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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 – Deposition and Storage

newgold™

Tailings deposited into storage facility





## Tailings – Water reclaim

newgold™

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



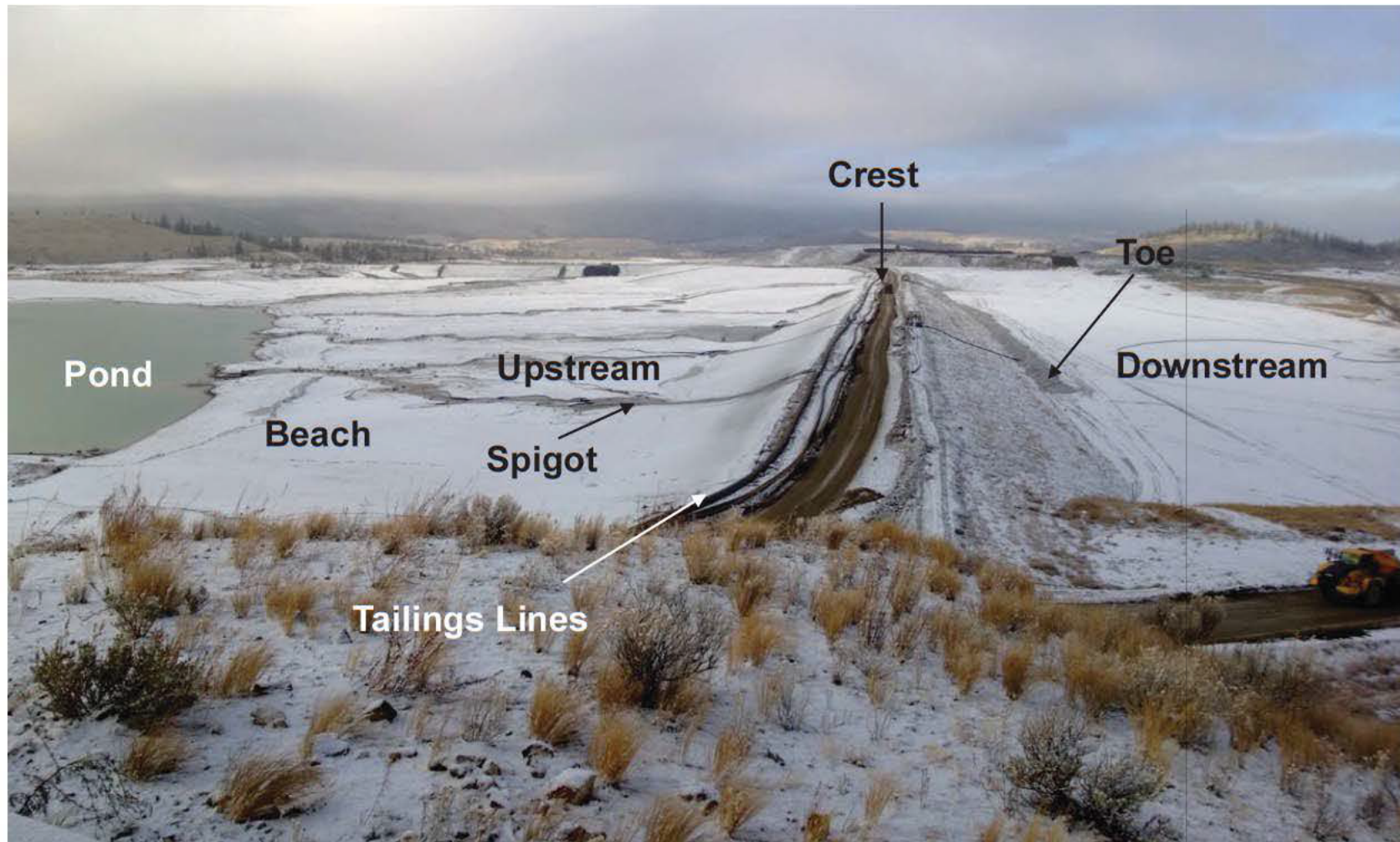


## Tailings Storage Facility – Layout at New Afton

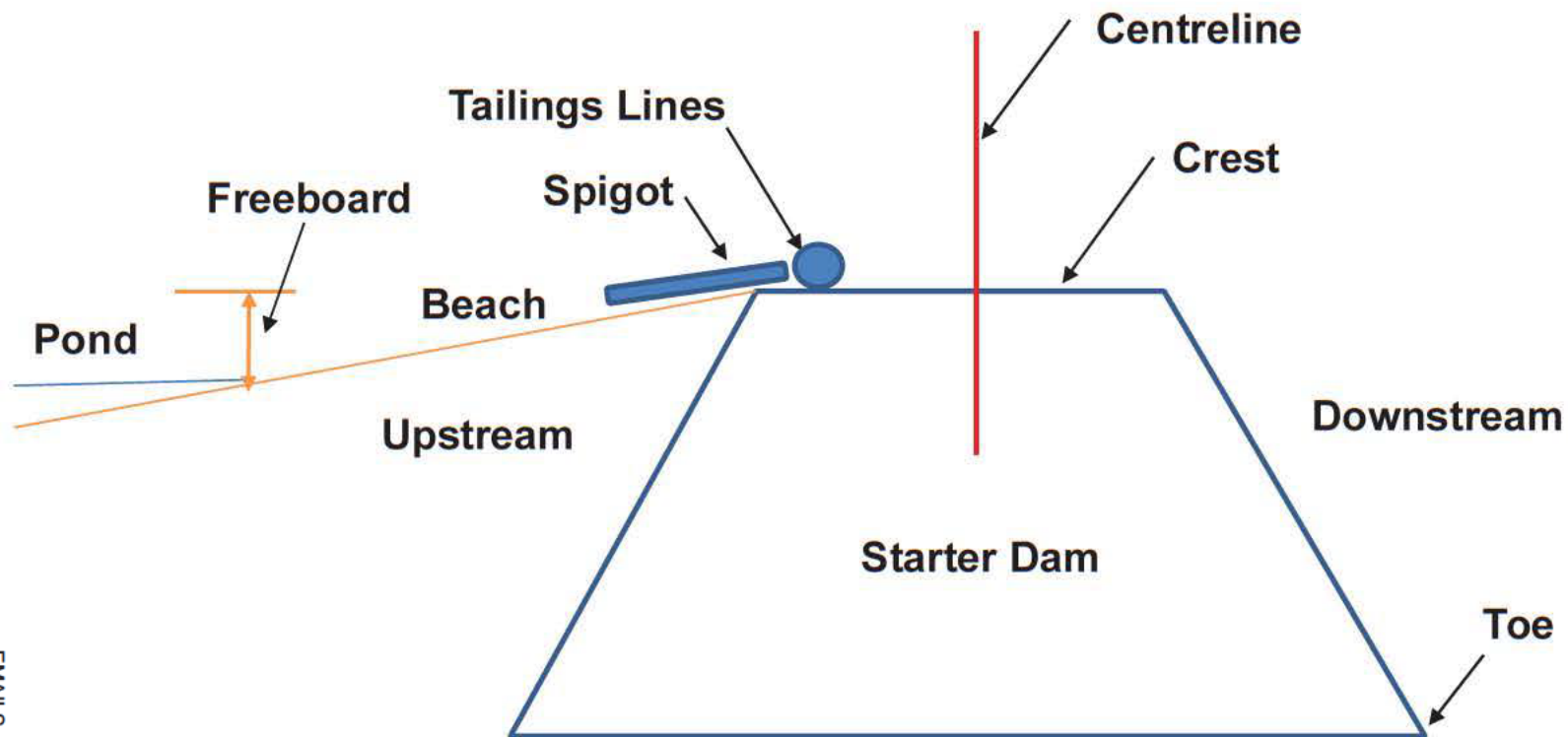


## Tailings Storage Facility - Terminology

newgold™



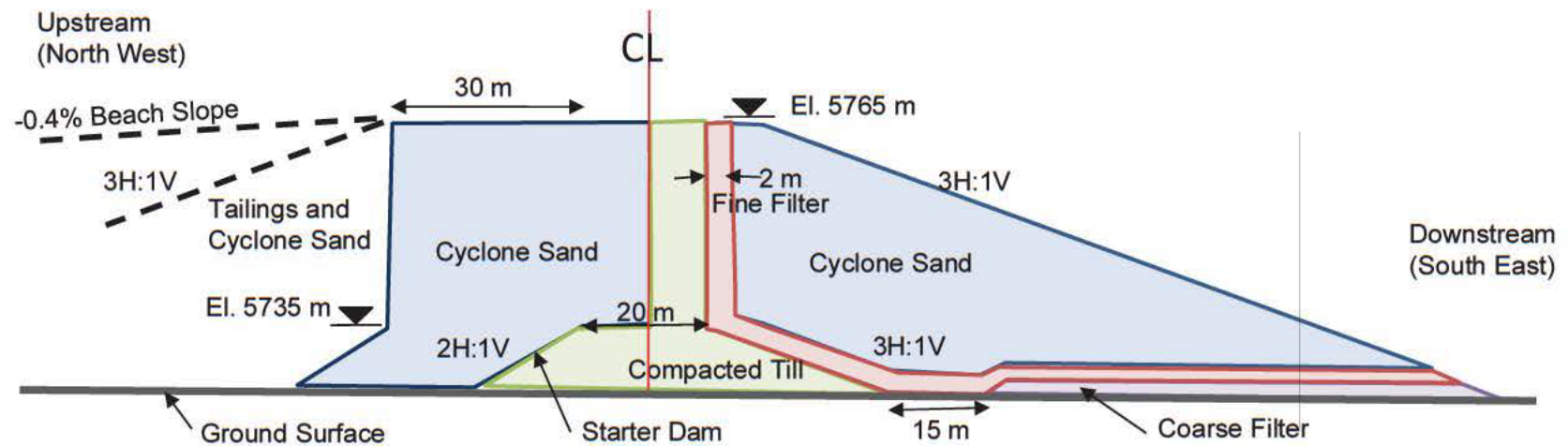






## Tailings Dam - Components

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



## Tailings Dam – Construction Materials

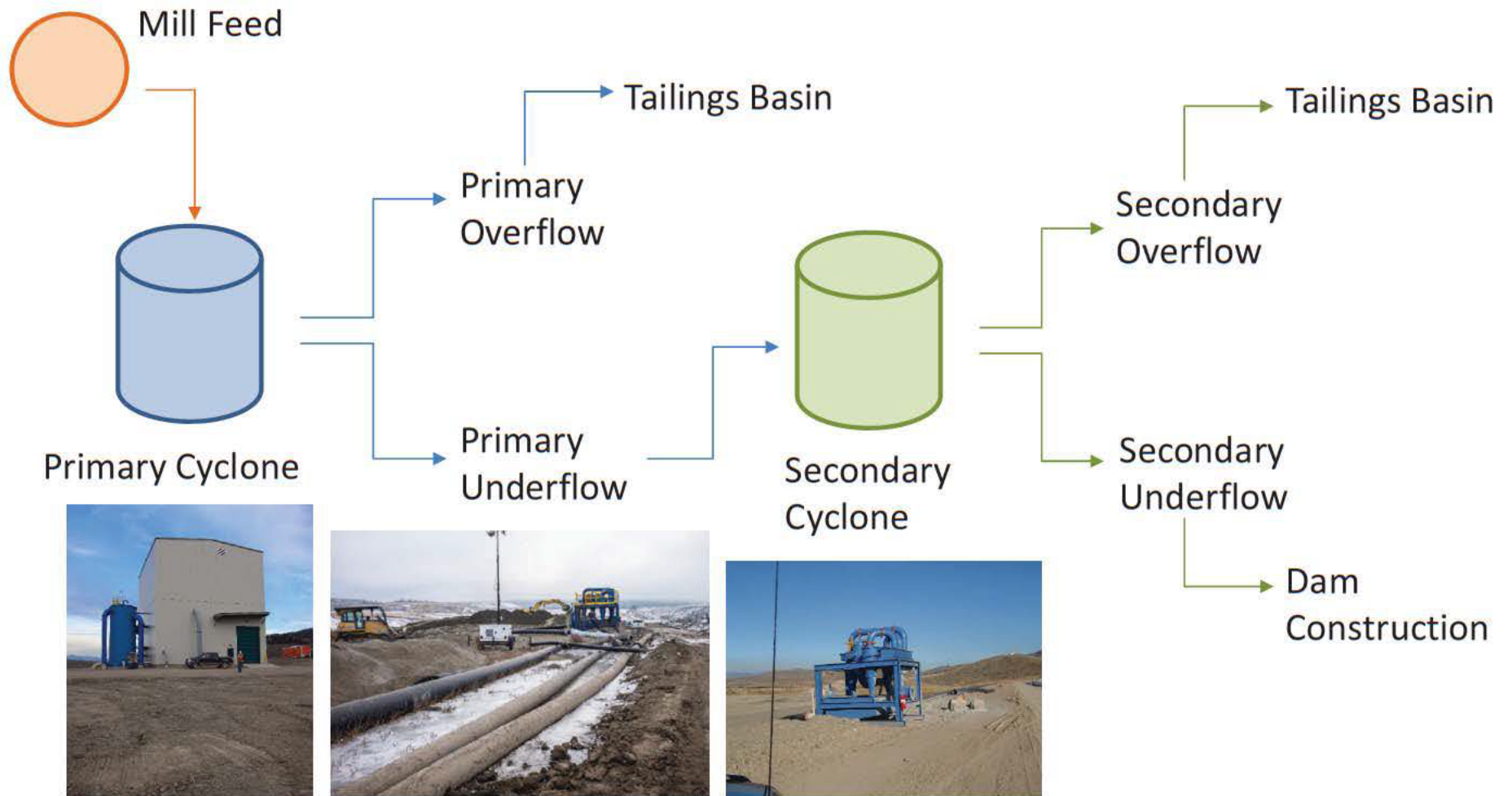


- The tailings dams are constructed of locally available materials:
  - **Till:** Compacted glacial till comprising a mixture of gravel, sand, and fines. This is the water retaining element of the dam.
  - **Cyclone Sand:** Obtained from primary and secondary cycloning of whole tailings.
  - **Filters:** 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

newgold™





## Tailings Dam – Sand Cell Construction (upstream)

newgold™





## Tailings Dam – Sand Cell Construction (downstream)

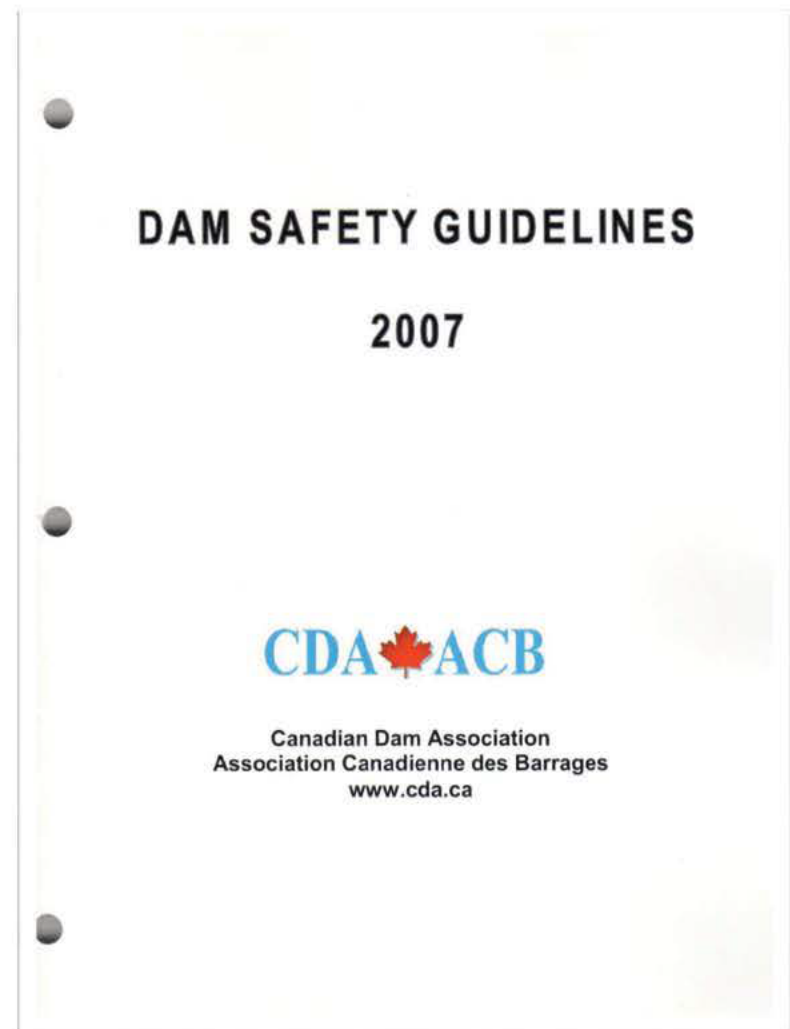
newgold™



- 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, 3<sup>rd</sup> 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?

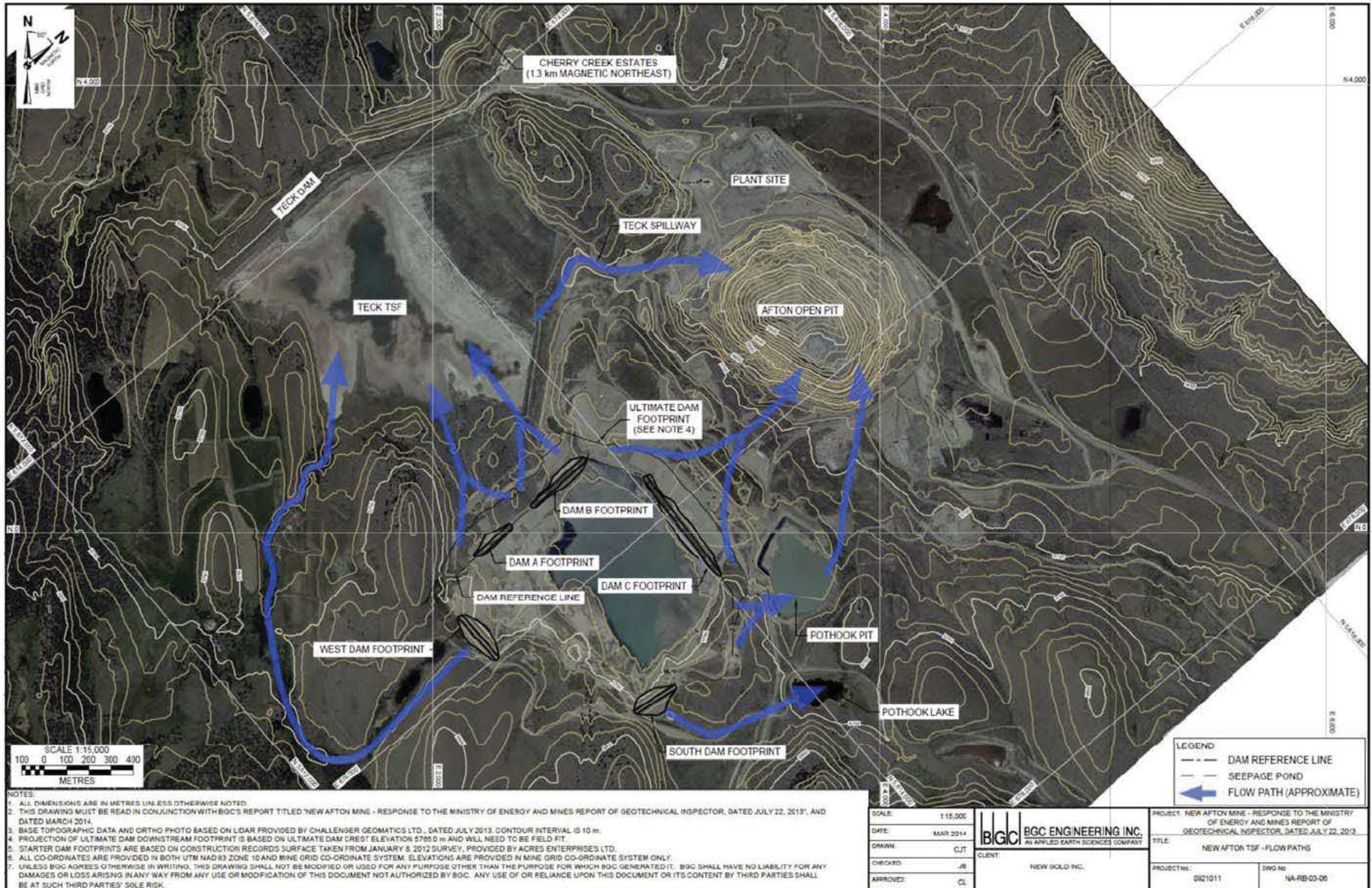
newgold™





# Tailings Dam – What if?

newgold™





## Tailings Dam – Monitoring and Inspections



- 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 <sup>1,2</sup>	Monthly <sup>1</sup>	Annual <sup>3</sup>	Five Years <sup>4</sup>
Dam	X		X	X
Liner	X		X	X
Diverson 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.



## Tailings Dam - Monitoring and Inspections



**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



## Tailings Dam - Monitoring and Inspections



- 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](mailto: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](mailto: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](mailto:Kim.Bellefontaine@gov.bc.ca)

Begin forwarded message:

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

<[Kim.Bellefontaine@gov.bc.ca](mailto:Kim.Bellefontaine@gov.bc.ca)>

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

**Reply-To: I THINK MINING**

<[comment+lydpboxtqjta09wcua\\_58k@comment.wordpress.com](mailto:comment+lydpboxtqjta09wcua_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](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  
FYI.. need to discuss briefing upwards and messaging to the Panel.  
Haley

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**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

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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](mailto:Kim.Bellefontaine@gov.bc.ca)

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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:** ["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](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](mailto: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](mailto:Michelle.Hynes@gov.bc.ca)

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**To:** Hynes, Michelle MEM:EX; Hemphill, Naomi MEM:EX  
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On Oct 6, 2014, at 9:30 PM, "Narynski, Heather M MEM:EX" <[Heather.Narynski@gov.bc.ca](mailto: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](mailto: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](mailto:Kim.Bellefontaine@gov.bc.ca)

Begin forwarded message:

**From:** I THINK MINING <[comment-reply@wordpress.com](mailto:comment-reply@wordpress.com)>  
**Date:** October 6, 2014 at 7:03:55 PM PDT  
**To:** "Bellefontaine, Kim MEM:EX"  
<[Kim.Bellefontaine@gov.bc.ca](mailto:Kim.Bellefontaine@gov.bc.ca)>  
**Subject:** [New post] Tailings and Mine Waste 2014: Mt Polley in Focus  
**Reply-To:** I THINK MINING  
<[comment+lydphoxtqjta09wcua\\_58k@comment.wordpress.com](mailto:comment+lydphoxtqjta09wcua_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](#)

2



























## 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]: ?

**TARGET AUDIENCES:**

**Internal**

- **ADM**
- Staff
- GCPE

**External**

- The Public
- Media
- The Minister
- Senior Officials Committee ????
- First Nations
- Mining Industry
- Municipal, provincial and federal governments
- APEG ??
- Key regulatory agencies in B.C.

??



## **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

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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