

From: [Forsdick, Doug O ENV:EX](#)
To: [Grbavac, Danielle ENV:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [Airey, David ENV:EX](#); [Canuel, Aaron ENV:EX](#)
Subject: Fwd: Mnt. Polley Incident
Date: Monday, August 4, 2014 12:44:03 PM

FYI

COS was contacted by EP today related to a major incident at Mnt Polley Mine. Appears to be spill / permit non compliance event.

Kelly Dahl is cos lead at this time. I have noticed media attention already this morning on this event.

I will be out of cell range for about three hours this afternoon but will check in with Kelly when I get back and provide another update at that time.

Doug

Sent from my iPhone

Begin forwarded message:

From: "Forsdick, Doug O ENV:EX" <Doug.Forsdick@gov.bc.ca>
Date: August 4, 2014 at 12:11:56 PDT
To: "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>
Cc: "Bunce, Hubert ENV:EX" <Hubert.Bunce@gov.bc.ca>, "Belanger, Marcel ENV:EX" <Marcel.Belanger@gov.bc.ca>, "Dahl, RK ENV:EX" <RK.Dahl@gov.bc.ca>, "Olsen, Rod ENV:EX" <Rod.Olsen@gov.bc.ca>
Subject: Mnt. Polley Incident

Jennifer

I left message for Rod Olsen to notify him.

I could not reach Marcel but did speak to Kelly Dahl and he will be phoning Hubert shortly.

Kelly will co ordinate any local COS response that is required as well as primary MIU response.

Call if you need anything else from me.

D

Sent from my iPhone

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#)
Subject: Fwd: Ministry of Environment - Mt Polley statement
Date: Monday, August 4, 2014 5:39:53 PM

Sent from my iPhone

Begin forwarded message:

From: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Date: August 4, 2014 at 3:27:08 PM PDT
To: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>, "Mills, Shane LASS:EX" <Shane.Mills@leg.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>, "Jabs, Ryan GCPE:EX" <Ryan.Jabs@gov.bc.ca>, "Ritchie, Leanne GCPE:EX" <Leanne.Ritchie@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Subject: Re: Ministry of Environment - Mt Polley statement

Add CP. From my convos reporters seem content that local govt and province are responding appropriately. Imperial would be doing themselves a favour by getting in the story.

Sent from my iPhone

On Aug 4, 2014, at 1:26 PM, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca> wrote:

FYI – final approved blurb that’s gone out to media who’ve contacted me (Global, NW, CBC, Van Sun, 24 Hours, Opinion 250)

From: Crebo, David GCPE:EX

Sent: Monday, August 4, 2014 1:24 PM

Subject: Ministry of Environment - Mt Polley statement

Hello folks – if you like, here’s a statement from the Ministry of Environment re: the tailings pond incident at Mt Polley mine. Attribution to either the ministry or myself (“spokesperson”) pls.

For info or updates on the actual incident, best to be connecting with the lead response agency, the CRD (as I think most outlets are)

“The Ministry of Environment is working with other agencies responding to the incident. Further monitoring and testing of waterways will be required before the full extent of potential environmental impacts can be determined. Steps are being taken to put those processes in place. In the meantime the Cariboo Regional District, in consultation with Interior

Health, has implemented a complete water use ban in that area until further notice.”

Thanks,

Dave Crebo

Communications Director

Ministry of Environment

250 8123-5747 (cell)

David.Crebo@gov.bc.ca

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#)
Subject: Fwd: Mount Polley Mine Update #4 DGIR 141460
Date: Monday, August 4, 2014 5:41:11 PM

Most recent update from earlier this aft. Coordination call happening as we speak so I expect new info shortly.

Sent from my iPhone

Begin forwarded message:

From: "Boyle, Laurie F ENV:EX" <Laurie.Boyle@gov.bc.ca>
Date: August 4, 2014 at 1:59:11 PM PDT
To: ENV Emergency Incident Contacts <ENVEIC@Victoria1.gov.bc.ca>
Subject: Re: Mount Polley Mine Update #4 DGIR 141460

The following information is provided by EMBC RDM at 13:00 Aug 4.

Situation: STABLE

- No injuries or private property damage has been reported.

- No Evac Orders or Alerts are anticipated at this time.

- Technical evaluation of debris flow path and SAR/RCMP public safety reconnaissance ongoing.

- CRD Williams Lake EOC activated and coordinating.

- CRD EOC in consultation with IHA, has initiated the dissemination of DO NOT USE public messaging while technical assessments of water quality are ongoing by IHA staff.

- Integrated mapping between the CRD EOC and the Mine site engineering staff is being done to determine the potential impact area.

- CRD EOC and SME Task Force working together to interpret heli-recce information and support consistency of downstream public alerting:

- 4 MoE ROB staff from Williams Lake are going to the site to begin sampling. Estimated ETA on site 3:00 PM

- IHA - Environmental Officer - Public Health orders and Warnings
- Inspector of Mines - Contents and properties of effluent

Watercourse observation points are being established with SAR assistance to determine the migration of effluent towards the major water bodies while reconnaissance is underway.

Stakeholder conference call at 1700 hrs. today.

Laurie Boyle

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#)
Subject: Fwd: MEM inspectors report
Date: Monday, August 4, 2014 5:42:13 PM

ENV- specific info I'm waiting on.

Sent from my iPhone

Begin forwarded message:

From: "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>
Date: August 4, 2014 at 5:01:31 PM PDT
To: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Subject: RE: MEM inspectors report

Looking into it ...

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: Crebo, David GCPE:EX
Sent: Monday, August 4, 2014 4:56 PM
To: McGuire, Jennifer ENV:EX; English, Heather ENV:EX; Boyle, Laurie F ENV:EX
Cc: Standen, Jim ENV:EX; Zacharias, Mark ENV:EX
Subject: Fwd: MEM inspectors report

This line below lifted from Mines Inspector's report. Do we know the details and status of Imperial's application with ENV?

The company applied to MOE to increase discharge from the site in July 2014.

Sent from my iPhone

Begin forwarded message:

From: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Date: August 4, 2014 at 4:46:44 PM PDT
To: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>, "Mills, Shane LASS:EX" <Shane.Mills@leg.bc.ca>, "Southern, Evan

PREM:EX" <Evan.Southern@gov.bc.ca>, "Chin, Ben PREM:EX" <Ben.Chin@gov.bc.ca>

Cc: "Shotton, Ryan GCPE:EX" <Ryan.Shotton@gov.bc.ca>, "Sandve, Chris MEM:EX" <Chris.Sandve@gov.bc.ca>, "Jacobs, Jake GCPE:EX" <Jake.Jacobs@gov.bc.ca>, "Ritchie, Leanne GCPE:EX" <Leanne.Ritchie@gov.bc.ca>, "Groot, Jeff GCPE:EX" <Jeff.Groot@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>

Subject: RE: MEM inspectors report

All - below from MEM Mines Inspector:

Information Bullets:

- Early in the morning of Aug 4th, a section of the tailings dam at Mount Polley mine was breached.
- This resulted in a release of water and tailings into Hazeltine Creek. A portion of this flowed north into Polley Lake, the majority flowed down the Hazeltine Creek drainage into Quesnel Lake.
- The Hazeltine Creek channel has been scoured by this discharge and the resultant debris flow. Initial estimates are that the debris area is approximately 40-50 m wide and up to 10 m deep.
- The mine has guards posted to prevent access to the site and affected roads.
- MEM's Manager of Geotechnical Engineering attended the site and flew over the area by helicopter on Aug 4th.
- Senior MEM Health and Safety Inspector will be attending site in the late afternoon on Aug 4th.
- Additional MEM geotechnical staff will be arriving on site on Aug 5 to start an investigation.
- There are no known injuries to the public at this time
- At least one Forestry Road has been washed out.
- MOE is looking at the impact to water Quality in Quesnel Lake

History:

- Mount Polley, an open pit copper/gold mine was permitted in August 1995, ceased operation for three years due to low metal prices in October 2001 and recommenced operations in December 2004.
- The Mine is located on a ridge between Bootjack and Polley

lakes, 8 km southwest of Likely, 100 km by road northeast of Williams Lake.

- There are several open pits and one underground area.
- The mine currently has permitted ore reserves to 2016, however the company has been discussing plans to extend the mine life to 2025.
- The site received a discharge permit for limited discharge to Hazeltine Creek in November 2012 and it was recognized that additional discharge capacity was required. The company applied to MOE to increase discharge from the site in July 2014.

General Water Quality of the tailings storage facility (TSF):

- Tailings that are stored in the TSF are not potentially acid rock drainage generating (non-PAG)
- Water in the tailings pond is neutral pH, with elevated concentrations of selenium, nitrate and sulphate.

From: Haslam, David GCPE:EX

Sent: Monday, August 04, 2014 1:43 PM

To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Southern, Evan PREM:EX; Chin, Ben PREM:EX

Cc: Shotton, Ryan GCPE:EX; Sandve, Chris MEM:EX; Jacobs, Jake GCPE:EX; Ritchie, Leanne GCPE:EX; Groot, Jeff GCPE:EX; Crebo, David GCPE:EX

Subject: Re: MEM inspectors

Missed yu on below.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: David.Haslam@gov.bc.ca

Sent: Monday, August 4, 2014 1:42 PM

To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Southern, Evan PREM:EX; Chin, Ben PREM:EX

Cc: Shotton, Ryan GCPE:EX; Sandve, Chris MEM:EX; Jacobs, Jake GCPE:EX; Ritchie, Leanne GCPE:EX; Groot, Jeff GCPE:EX

Subject: Fw: MEM inspectors

Fyi below. Mine inspectors on way. Note cell coverage limits.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Hoffman, Al MEM:EX

Sent: Monday, August 4, 2014 1:37 PM

To: Sandve, Chris MEM:EX; Haslam, David GCPE:EX

Cc: Koncohrada, Karen MEM:EX; Demchuk, Tania MEM:EX; Bellefontaine, Kim MEM:EX; Warnock, George MEM:EX; Rothman, Stephen MEM:EX; Narynski, Heather M MEM:EX

Subject: RE: CBC News: Mount Polley mine tailings pond breach: complete water ban in place

George Warnock and Steve Rothman should be at the site by now or arriving shortly. They will update us when they can. There is no cell service so they will have to find a telephone at the mine office.

Victoria staff are reviewing authorizations and prior inspection reports re the tailings storage facility.

Al Hoffman

From: Sandve, Chris MEM:EX
Sent: Monday, August 4, 2014 1:30 PM
To: Haslam, David GCPE:EX
Cc: Koncohrada, Karen MEM:EX; Hoffman, Al MEM:EX
Subject: Re: CBC News: Mount Polley mine tailings pond breach: complete water ban in place

Thanks David

Karen / Al - anything inspectors or company can share re possible cause would be helpful (whether just for our internal knowledge or something that could be shared publicly). Other than that media focus at this time is all environmental / health impacts and response which environment and embc are handling

Thanks

Chris

Sent from my iPhone

On 2014-08-04, at 1:24 PM, "Haslam, David GCPE:EX"
<David.Haslam@gov.bc.ca> wrote:

Chris and discussed. Right now embc, Env, local gov and first responders are lead. Will share messaging they provided shortly.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Koncohrada, Karen MEM:EX
Sent: Monday, August 4, 2014 1:12 PM
To: Haslam, David GCPE:EX; Sandve, Chris MEM:EX
Subject: CBC News: Mount Polley mine tailings pond breach: complete water ban in place

Hi David
Let's get KMs ready.
Thanks

KK

Mount Polley mine tailings pond breach: complete water ban in place

This story appears on <http://www.cbc.ca> at the following URL:

<http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-pond-breach-complete-water-ban-in-place-1.2727171>

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#)
Subject: Fwd: Mount Polley - EPD and COS involvement
Date: Monday, August 4, 2014 5:43:32 PM

Sent from my iPhone

Begin forwarded message:

From: "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>
Date: August 4, 2014 at 12:11:54 PM PDT
To: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Cc: "Standen, Jim ENV:EX" <Jim.Standen@gov.bc.ca>, "English, Heather ENV:EX" <Heather.English@gov.bc.ca>
Subject: Mount Polley - EPD and COS involvement

Hi Dave,

EP and COS staff are preparing to go to Quesnel lake this afternoon. Staff are preparing to collect samples for the purpose of understanding the extent and degree of impact from the tailing impoundment breach. A sampling plan is under development.

We are awaiting local intel about the condition of the area prior to deploying staff. The debris flow is of high concern, and we will deploy staff when it is safe to do so.

Happy to provide other details – i am available on cell.

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Boyle, Laurie F ENV:EX](#)
Subject: Fwd: MEM inspectors report
Date: Monday, August 4, 2014 6:47:58 PM

FYI

Sent from my iPhone

Begin forwarded message:

From: "Sandve, Chris MEM:EX" <Chris.Sandve@gov.bc.ca>
Date: August 4, 2014 at 6:45:36 PM PDT
To: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>
Cc: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>, "Mills, Shane LASS:EX" <Shane.Mills@leg.bc.ca>, "Southern, Evan PREM:EX" <Evan.Southern@gov.bc.ca>, "Chin, Ben PREM:EX" <Ben.Chin@gov.bc.ca>, "Shotton, Ryan GCPE:EX" <Ryan.Shotton@gov.bc.ca>, "Jacobs, Jake GCPE:EX" <Jake.Jacobs@gov.bc.ca>, "Ritchie, Leanne GCPE:EX" <Leanne.Ritchie@gov.bc.ca>, "Groot, Jeff GCPE:EX" <Jeff.Groot@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Oliphant, Sam PREM:EX" <Sam.Oliphant@gov.bc.ca>
Subject: Re: MEM inspectors report

The flow out of the breach has decreased dramatically but has not completely stopped. Imperial and an MEM Regional Inspector are monitoring it now by helicopter.

This is a large breach and extremely rare - Ministry does not recall anything of this magnitude in at least the last 25 years. Imperial estimates 10 Million cubic metres of water and 4.5 million cubic metres of fine sand.

Imperial has been compliant with respect to recent orders regarding dam safety inspections.

Chris

Sent from my iPhone

On 2014-08-04, at 4:54 PM, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca> wrote:

Perhaps obvious questions: has the breach stopped, is this considered a large breach (historically), has one occurred at this site previously, what is existing environmental record of company?

Sent from my iPhone

On Aug 4, 2014, at 4:47 PM, "Haslam, David GCPE:EX"
<David.Haslam@gov.bc.ca> wrote:

All - below from MEM Mines Inspector:

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- There are no known injuries to the public at this time
- At least one Forestry Road has been washed out.
- MOE is looking at the impact to water Quality in Quesnel Lake

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To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Southern, Evan PREM:EX; Chin, Ben PREM:EX

Cc: Shotton, Ryan GCPE:EX; Sandve, Chris MEM:EX; Jacobs, Jake GCPE:EX; Ritchie, Leanne GCPE:EX; Groot, Jeff GCPE:EX; Crebo, David GCPE:EX

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Cc: Shotton, Ryan GCPE:EX; Sandve, Chris MEM:EX; Jacobs, Jake GCPE:EX; Ritchie, Leanne GCPE:EX; Groot, Jeff GCPE:EX

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To: Sandve, Chris MEM:EX; Haslam, David GCPE:EX
Cc: Koncohrada, Karen MEM:EX; Demchuk, Tania MEM:EX; Bellefontaine, Kim MEM:EX; Warnock, George MEM:EX; Rothman, Stephen MEM:EX; Narynski, Heather M MEM:EX
Subject: RE: CBC News: Mount Polley mine tailings pond breach: complete water ban in place

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Cc: Koncohrada, Karen MEM:EX; Hoffman, Al MEM:EX
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Thanks David

Karen / Al - anything inspectors or company can share re possible cause would be helpful (whether just for our internal knowledge or something that could be shared publicly). Other than that media focus at this time is all environmental / health impacts and response which environment and embc are handling

Thanks

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Chris and I discussed. Right now embc, Env, local gov and first responders are lead. Will share messaging they provided shortly.

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From: Koncohrada, Karen MEM:EX
Sent: Monday, August 4, 2014 1:12 PM
To: Haslam, David GCPE:EX; Sandve, Chris
MEM:EX
Subject: CBC News: Mount Polley mine tailings
pond breach: complete water ban in place

Hi David
Let's get KMs ready.
Thanks
KK

Mount Polley mine tailings pond breach:
complete water ban in place

This story appears on <http://www.cbc.ca> at
the following URL:

<http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-pond-breach-complete-water-ban-in-place-1.2727171>

From: [Zacharias, Mark ENV:EX](#)
To: [Dyble, John C PREM:EX](#)
Cc: [Shoemaker, Wes ENV:EX](#); [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#); [Jackson, Vickie ENV:EX](#)
Subject: RE: Tailings Pond spill cariboo
Date: Monday, August 4, 2014 6:51:37 PM

Hi John:

Yes, MoE is fully engaged and our environmental protection officers (Jim Standen) and conservation officers (Lori Halls) are on site. As of 1700 today, there doesn't appear to be any evidence of chemical contamination that would affect public and environmental health but MoE staff will be sampling until dusk tonight.

I'm sure you already have this but here's the Coles Notes from the 1700 call:

- Breach occurred at 1:10am Aug 4, 2014
- Lost:
 - 10 million cubic meters of water (supernatant) from the dam
 - 4.5 million cubic meters of ground rock
- Breach is 300m in length in the tailings dam
- Polley Lake saw an increased water level – an increase of 1.7 m
- Polley lake outlet is plugged – concern about another flush of materials from Polley Lake
- MEM inspectors have been on scene this morning and more arriving tonight
- Mine stated that there is no cyanide or arsenic in the released materials, and that the tailings are benign
- Mine stated that the fish kill was likely due to physical mortality rather than chemical ... (physical means that the fish got tossed around and battered from the flow)
- Plume is observed in Quesnel Lake at Hazeltine Creek discharge
- A lot of floating debris in Quesnel Lake – boating hazard ...no boat closures just recommendations that boaters stay away
- Closures of forest rec sites and access roads are closed for safety precautions and some roads are washed out
- Both IHA and Northern Health medical health officers were on the call.

The next coordination call is Aug 5 at 1300.

Regards, Mark

250-415-6466

From: Dyble, John C PREM:EX
Sent: Monday, August 4, 2014 6:34 PM
To: Zacharias, Mark ENV:EX
Subject: Fwd: Tailings Pond spill cariboo
Mark? Are you on this?

Sent from my iPad

Begin forwarded message:

From: "Dyble, John C PREM:EX" <John.Dyble@gov.bc.ca>
Date: August 4, 2014 at 6:31:20 PM PDT

To: "Shoemaker, Wes ENV:EX" <Wes.Shoemaker@gov.bc.ca>, "Wanamaker, Lori JAG:EX" <Lori.Wanamaker@gov.bc.ca>
Cc: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>
Subject: Tailings Pond spill cariboo

Not sure how we are reacting to this. Didn't see anything until the news tonight.

Who us out on site, etc.

John

Sent from my iPad

From: [Zacharias, Mark ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: FW: Mount Polley - update
Date: Monday, August 4, 2014 6:59:55 PM

From: McGuire, Jennifer ENV:EX
Sent: Monday, August 4, 2014 6:23 PM
To: Crebo, David GCPE:EX
Cc: Bunce, Hubert ENV:EX; Matscha, Gabriele ENV:EX; Standen, Jim ENV:EX; Zacharias-Homer, Christa ENV:EX; Zacharias, Mark ENV:EX
Subject: Mount Polley - update

The following are the highlights from the 1700 agency coordinating call:

- Breach occurred at 1:10am Aug 4, 2014
- Lost:
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- A lot of floating debris in Quesnel Lake – boating hazard ...no boat closures just recommendations that boaters stay away
- Closures of forest rec sites and access roads are closed for safety precautions and some roads are washed out
- Both IHA and Northern Health medical health officers were on the call.

Our staff are on the lake and will continue with sample collection until dusk.

There is a heightened safety concern for our staff in the field due to the elevated level in Polley Lake.

The next coordination call is Aug 5 at 1300.

Will have an updated report tomorrow morning based upon the evening's field activities.

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection

Ministry of Environment

ph: 250-356-6027

cell: 250-361-5944

From: [Dyble, John C PREM:EX](#)
To: [Zacharias, Mark ENV:EX](#)
Cc: [Shoemaker, Wes ENV:EX](#); [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#); [Jackson, Vickie ENV:EX](#); [Fraser, John Paul GCPE:EX](#)
Subject: Re: Tailings Pond spill cariboo
Date: Monday, August 4, 2014 7:04:01 PM

Thanks Mark,

The news coverage talked about a lot of nasty materials like arsenic and mercury. Implying contamination as far as the Fraser.

I hope GCPE are fully engaged.

Hopefully the testing will help to reassure.

John

Sent from my iPad

On Aug 4, 2014, at 6:51 PM, "Zacharias, Mark ENV:EX" <Mark.Zacharias@gov.bc.ca> wrote:

Hi John:

Yes, MoE is fully engaged and our environmental protection officers (Jim Standen) and conservation officers (Lori Halls) are on site. As of 1700 today, there doesn't appear to be any evidence of chemical contamination that would affect public and environmental health but MoE staff will be sampling until dusk tonight.

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<!--[if !supportLists]-->•<!--[endif]-->Polley lake outlet is plugged – concern about another flush of materials from Polley Lake

<!--[if !supportLists]-->•<!--[endif]-->MEM inspectors have been on scene this morning and more arriving tonight

<!--[if !supportLists]-->•<!--[endif]-->Mine stated that there is no cyanide or arsenic in the released materials, and that the tailings are benign

<!--[if !supportLists]-->•<!--[endif]-->Mine stated that the fish kill was likely due to physical mortality rather than chemical ...(physical means that the fish got tossed around and battered from the flow)

<!--[if !supportLists]-->•<!--[endif]-->Plume is observed in Quesnel Lake at Hazeltine Creek discharge

<!--[if !supportLists]-->•<!--[endif]-->A lot of floating debris in Quesnel Lake – boating hazard ...no boat closures just recommendations that boaters stay away

<!--[if !supportLists]-->•<!--[endif]-->Closures of forest rec sites and access roads are closed for safety precautions and some roads are washed out

<!--[if !supportLists]-->•<!--[endif]-->Both IHA and Northern Health medical health officers were on the call.

The next coordination call is Aug 5 at 1300.

Regards, Mark

250-415-6466

From: Dyble, John C PREM:EX
Sent: Monday, August 4, 2014 6:34 PM
To: Zacharias, Mark ENV:EX
Subject: Fwd: Tailings Pond spill cariboo
Mark? Are you on this?

Sent from my iPad

Begin forwarded message:

From: "Dyble, John C PREM:EX" <John.Dyble@gov.bc.ca>
Date: August 4, 2014 at 6:31:20 PM PDT
To: "Shoemaker, Wes ENV:EX" <Wes.Shoemaker@gov.bc.ca>, "Wanamaker, Lori JAG:EX" <Lori.Wanamaker@gov.bc.ca>
Cc: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>
Subject: Tailings Pond spill cariboo

Not sure how we are reacting to this. Didn't see anything until the news tonight.

Who us out on site, etc.

John

Sent from my iPad

From: [Halls, Lori D ENV:EX](#)
To: [Zacharias, Mark ENV:EX](#)
Subject: Fwd: MEM inspectors report
Date: Monday, August 4, 2014 7:07:09 PM

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

Begin forwarded message:

From: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Date: August 4, 2014 at 6:47:54 PM PDT
To: "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca>, "Standen, Jim ENV:EX" <Jim.Standen@gov.bc.ca>, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>, "Boyle, Laurie F ENV:EX" <Laurie.Boyle@gov.bc.ca>
Subject: Fwd: MEM inspectors report

FYI

Sent from my iPhone

Begin forwarded message:

From: "Sandve, Chris MEM:EX" <Chris.Sandve@gov.bc.ca>
Date: August 4, 2014 at 6:45:36 PM PDT
To: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>
Cc: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>, "Mills, Shane LASS:EX" <Shane.Mills@leg.bc.ca>, "Southern, Evan PREM:EX" <Evan.Southern@gov.bc.ca>, "Chin, Ben PREM:EX" <Ben.Chin@gov.bc.ca>, "Shotton, Ryan GCPE:EX" <Ryan.Shotton@gov.bc.ca>, "Jacobs, Jake GCPE:EX" <Jake.Jacobs@gov.bc.ca>, "Ritchie, Leanne GCPE:EX" <Leanne.Ritchie@gov.bc.ca>, "Groot, Jeff GCPE:EX" <Jeff.Groot@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Oliphant, Sam PREM:EX" <Sam.Oliphant@gov.bc.ca>
Subject: Re: MEM inspectors report

The flow out of the breach has decreased dramatically but has not completely stopped. Imperial and an MEM Regional Inspector are monitoring it now by helicopter.

This is a large breach and extremely rare - Ministry does not recall anything of this magnitude in at least the last 25 years. Imperial estimates 10 Million cubic metres of water and 4.5 million cubic metres of fine sand.

Imperial has been compliant with respect to recent orders regarding dam safety inspections.

Chris

Sent from my iPhone

On 2014-08-04, at 4:54 PM, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca> wrote:

Perhaps obvious questions: has the breach stopped, is this considered a large breach (historically), has one occurred at this site previously, what is existing environmental record of company?

Sent from my iPhone

On Aug 4, 2014, at 4:47 PM, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca> wrote:

All - below from MEM Mines Inspector:

Information Bullets:

- Early in the morning of Aug 4th, a section of the tailings dam at Mount Polley mine was breached.
- This resulted in a release of water and tailings into Hazeltine Creek. A portion of this flowed north into Polley Lake, the majority flowed down the Hazeltine Creek drainage into Quesnel Lake.
- The Hazeltine Creek channel has been scoured by this discharge and the resultant debris flow. Initial estimates are that the debris area is approximately 40-50 m wide and up to 10 m deep.
- The mine has guards posted to prevent access to the site and affected roads.
-

MEM's Manager of Geotechnical

Engineering attended the site and flew over the area by helicopter on Aug 4th.

- Senior MEM Health and Safety Inspector will be attending site in the late afternoon on Aug 4th.
- Additional MEM geotechnical staff will be arriving on site on Aug 5 to start an investigation.
- There are no known injuries to the public at this time
- At least one Forestry Road has been washed out.
- MOE is looking at the impact to water Quality in Quesnel Lake

History:

- Mount Polley, an open pit copper/gold mine was permitted in August 1995, ceased operation for three years due to low metal prices in October 2001 and recommenced operations in December 2004.
- The Mine is located on a ridge between Bootjack and Polley lakes, 8 km southwest of Likely, 100 km by road northeast of Williams Lake.
- There are several open pits and one underground area.
- The mine currently has permitted ore reserves to 2016, however the company has been discussing plans to extend the mine life to 2025.
- The site received a discharge permit for limited discharge to Hazeltine Creek in November 2012 and it was recognized that additional discharge capacity was required. The company applied to MOE to increase discharge from the site in July 2014.

General Water Quality of the tailings storage facility (TSF):

- Tailings that are stored in the TSF are not potentially acid rock drainage generating (non-PAG)

- Water in the tailings pond is neutral pH, with elevated concentrations of selenium, nitrate and sulphate.

From: Haslam, David GCPE:EX
Sent: Monday, August 04, 2014 1:43 PM
To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Southern, Evan PREM:EX; Chin, Ben PREM:EX
Cc: Shotton, Ryan GCPE:EX; Sandve, Chris MEM:EX; Jacobs, Jake GCPE:EX; Ritchie, Leanne GCPE:EX; Groot, Jeff GCPE:EX; Crebo, David GCPE:EX
Subject: Re: MEM inspectors
Missed yu on below.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: David.Haslam@gov.bc.ca
Sent: Monday, August 4, 2014 1:42 PM
To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Southern, Evan PREM:EX; Chin, Ben PREM:EX
Cc: Shotton, Ryan GCPE:EX; Sandve, Chris MEM:EX; Jacobs, Jake GCPE:EX; Ritchie, Leanne GCPE:EX; Groot, Jeff GCPE:EX
Subject: Fw: MEM inspectors

Fyi below. Mine inspectors on way. Note cell coverage limits.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Hoffman, Al MEM:EX
Sent: Monday, August 4, 2014 1:37 PM
To: Sandve, Chris MEM:EX; Haslam, David GCPE:EX
Cc: Koncohrada, Karen MEM:EX; Demchuk, Tania MEM:EX; Bellefontaine, Kim MEM:EX; Warnock, George MEM:EX; Rothman, Stephen MEM:EX; Narynski, Heather M MEM:EX
Subject: RE: CBC News: Mount Polley mine tailings pond breach: complete water ban in place

George Warnock and Steve Rothman should be at the site by now or arriving shortly. They will update us when they can. There is no cell

service so they will have to find a telephone at the mine office.

Victoria staff are reviewing authorizations and prior inspection reports re the tailings storage facility.

Al Hoffman

From: Sandve, Chris MEM:EX

Sent: Monday, August 4, 2014 1:30 PM

To: Haslam, David GCPE:EX

Cc: Koncohrada, Karen MEM:EX; Hoffman, Al MEM:EX

Subject: Re: CBC News: Mount Polley mine tailings pond breach: complete water ban in place

Thanks David

Karen / Al - anything inspectors or company can share re possible cause would be helpful (whether just for our internal knowledge or something that could be shared publicly). Other than that media focus at this time is all environmental / health impacts and response which environment and embc are handling

Thanks

Chris

Sent from my iPhone

On 2014-08-04, at 1:24 PM, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca> wrote:

Chris and discussed. Right now embc, Env, local gov and first responders are lead. Will share messaging they provided shortly.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Koncohrada, Karen MEM:EX

Sent: Monday, August 4, 2014 1:12 PM

To: Haslam, David GCPE:EX; Sandve, Chris MEM:EX

Subject: CBC News: Mount Polley mine tailings pond breach: complete water ban in place

Hi David

Let's get KMs ready.

Thanks
KK

Mount Polley mine tailings
pond breach: complete water
ban in place

This story appears on
<http://www.cbc.ca> at the
following URL:

<http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-pond-breach-complete-water-ban-in-place-1.2727171>

From: [Halls, Lori D ENV:EX](#)
To: [Zacharias, Mark ENV:EX](#)
Subject: Fwd: Imperial statement
Date: Monday, August 4, 2014 7:07:36 PM
Attachments: [08.04.14.mount polley tailings storage facility.pdf](#)
[ATT00001.htm](#)

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

Begin forwarded message:

From: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Date: August 4, 2014 at 6:06:10 PM PDT
To: "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca>, "Dhanowa, Damon ENV:EX" <Damon.Dhanowa@gov.bc.ca>, "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca>, "Standen, Jim ENV:EX" <Jim.Standen@gov.bc.ca>, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>, "Boyle, Laurie F ENV:EX" <Laurie.Boyle@gov.bc.ca>
Subject: Fwd: Imperial statement

FYI

Sent from my iPhone

Begin forwarded message:

From: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Date: August 4, 2014 at 5:57:35 PM PDT
To: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>
Subject: Fw: Imperial statement

Dave. Imperial statement attached.

[Sent from my BlackBerry 10 smartphone on the TELUS network.](#)

From: Sandve, Chris MEM:EX
Sent: Monday, August 4, 2014 5:51 PM
To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Haslam, David GCPE:EX; Chin, Ben PREM:EX; Mills, Shane LASS:EX; Mitschke, Matt ENV:EX; Lalonde, Jarett JAG:EX; Loiacono, Sabrina HLTH:EX; Bell, Jordan CSCD:EX; Southern, Evan PREM:EX; Oliphant, Sam PREM:EX
Subject: Imperial statement

Imperial has sent out the following statement. Brian Kynoch (President of Imperial) is on a flight to Williams Lake now and will call me when he lands. Will provide another update then.

Chris

Imperial Reports on Tailings Storage Facility Breach at Mount Polley Mine

Vancouver – **August 4, 2014** | **Imperial Metals Corporation (III-TSX)** reports the tailings storage facility at its Mount Polley mine was breached, releasing an undetermined amount of water and tailings in the early morning of August 4. The cause of the breach is unknown at this time.

Senior company management are at the mine site and are working with mine operating personnel, local agencies, provincial ministry officials and the engineers of record to assess the extent of the breach and the impact of the released water and tailings on the surrounding area.

The Company will provide further information when confirmed and available.

About Imperial

Imperial is an exploration, mine development and operating company based in Vancouver, British Columbia. The Company operates the Mount Polley copper/gold mine in British Columbia and the Sterling gold mine in Nevada. Imperial has 50% interest in the Huckleberry copper mine and has 50% interest in the Ruddock Creek lead/zinc property, both in British Columbia. Imperial is in development of its wholly owned Red Chris copper/gold property in British Columbia.

Imperial Contact Information

Brian Kynoch | President | 604.669.8959

Gordon Keevil | Vice President Corporate Development | 604.488.2677

Sabine Goetz | Shareholder Communications | 604.488.2657 | investor@imperialmetals.com

Cautionary Note Regarding “Forward-Looking Information”

This press release contains “forward-looking information” or “forward-looking statements” within the meaning of Canadian and United States Securities Laws, which we will refer to as “forward-looking information”. Except for statements of historical fact relating to the Company, certain information contained herein constitutes forward-looking information. If we discuss mine plans; costs and timing of current and proposed exploration, development, production and marketing; capital expenditures; construction of transmission lines; cash flow; working capital requirements and the requirement for additional capital; operations; revenue; margins and earnings; future prices of copper and gold; future foreign currency exchange rates; future accounting changes; future prices for marketable securities; future resolution of contingent liabilities; receipt of permits; or other matters that have not yet occurred, we are making statements considered to be *forward-looking information* or *forward-looking statements* under Canadian and United States Securities Laws.

The forward-looking information in this press release may include words and phrases about the future, such as: *plan, expect, forecast, intend, anticipate, estimate, budget, scheduled, believe, may, could, would, might or will*. We can give no assurance the forward-looking information will prove to be accurate. It is based on a number of assumptions management believes to be reasonable, including but not limited to: the continued operation of the Company’s mining operations, no material adverse change in the market price of commodities or exchange rates, that the mining operations will operate and the mining projects will be completed in accordance with their estimates and achieve stated production outcomes and such other assumptions and factors as set out herein. It is also subject to risks associated with our business, including but not limited to: risks inherent in the mining and metals business; commodity price fluctuations and hedging; competition for mining properties; sale of products and future market access; mineral reserves and recovery estimates; currency fluctuations; interest rate risks; financing risks; regulatory and permitting risks; environmental risks; joint venture risks; foreign activity risks; legal proceedings; and other risks that are set out in the Company’s current Management’s Discussion & Analysis. If our assumptions prove to be incorrect or risks materialize, our actual results and events may vary materially from what we currently expect as provided in this press release. We recommend review of the Company’s current Management’s Discussion & Analysis, which includes discussion of material risks that could cause actual results to differ materially from our current expectations. Forward-looking information is designed to help you understand management’s current views of our near and longer term prospects, and it may not be appropriate for other purposes. We will not necessarily update this information unless we are required to by securities laws.

From: [Fraser, John Paul GCPE:EX](#)
To: [Dyble, John C PREM:EX](#)
Cc: [Zacharias, Mark ENV:EX](#); [Shoemaker, Wes ENV:EX](#); [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#); [Jackson, Vickie ENV:EX](#)
Subject: Re: Tailings Pond spill cariboo
Date: Monday, August 4, 2014 7:16:34 PM

This has just come in from MEM folks at site:

The flow out of the breach has decreased dramatically but has not completely stopped. Imperial and an MEM Regional Inspector are monitoring it now by helicopter.

This is a large breach and extremely rare - Ministry does not recall anything of this magnitude in at least the last 25 years. Imperial estimates 10 Million cubic metres of water and 4.5 million cubic metres of fine sand.

Imperial has been compliant with respect to recent orders regarding dam safety inspections.

Sent from my iPhone

On Aug 4, 2014, at 7:13 PM, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca> wrote:

Yes we are fully engaged. Our folks with program and responders in the field have been active throughout the day. Our ENV shop has stick-handled most of the calls, our EMBC folks have been monitoring Social media and supplying information. Cariboo regional District managing calls and all info related to drinking and weather use bans. EOC has been established and all teams very coordinated. Mining inspectors on site and company CEO is enroute there, landing soon. MBBs MO is in regular contact with home. PO fully engaged and in the loop as well. Have worked channels to ensure company is not invisible, which only drives story. Company has issued release tonight and will on ground to handle media. The breach is large and Global cameras are there, or there soon, to reveal. Won't be pretty. Scale of damage unknown as of now, but very considerable amounts escaped.

Sent from my iPhone

On Aug 4, 2014, at 7:04 PM, "Dyble, John C PREM:EX" <John.Dyble@gov.bc.ca> wrote:

Thanks Mark,

The news coverage talked about a lot of nasty materials like arsenic and mercury. Implying contamination as far as the Fraser.

I hope GCPE are fully engaged.

Hopefully the testing will help to reassure.

John

Sent from my iPad

On Aug 4, 2014, at 6:51 PM, "Zacharias, Mark ENV:EX"
<Mark.Zacharias@gov.bc.ca> wrote:

Hi John:

Yes, MoE is fully engaged and our environmental protection officers (Jim Standen) and conservation officers (Lori Halls) are on site. As of 1700 today, there doesn't appear to be any evidence of chemical contamination that would affect public and environmental health but MoE staff will be sampling until dusk tonight.

I'm sure you already have this but here's the Coles Notes from the 1700 call:

- Breach occurred at 1:10am Aug 4, 2014

- Lost:

- o 10 million cubic meters of water (supernatant) from the dam

- o 4.5 million cubic meters of ground rock

- Breach is 300m in length in the tailings dam

- Polley Lake saw an increased water level – an increase of 1.7 m

- Polley lake outlet is plugged – concern about another flush of materials from Polley Lake

- MEM inspectors have been on scene this morning and more arriving tonight

- Mine stated that there is no cyanide or arsenic in the released materials, and that the tailings are benign

- Mine stated that the fish kill was likely due to physical mortality rather than chemical ...(physical means that the fish got tossed around and battered from the

flow)

<!--[if !supportLists]-->•<!--[endif]-->Plume is
observed in Quesnel Lake at Hazeltine Creek
discharge
<!--[if !supportLists]-->•<!--[endif]-->A lot of floating
debris in Quesnel Lake – boating hazard ...no
boat closures just recommendations that
boaters stay away
<!--[if !supportLists]-->•<!--[endif]-->Closures of forest
rec sites and access roads are closed for safety
precautions and some roads are washed out
<!--[if !supportLists]-->•<!--[endif]-->Both IHA and
Northern Health medical health officers were on
the call.

The next coordination call is Aug 5 at 1300.

Regards, Mark

250-415-6466

From: Dyble, John C PREM:EX
Sent: Monday, August 4, 2014 6:34 PM
To: Zacharias, Mark ENV:EX
Subject: Fwd: Tailings Pond spill cariboo
Mark? Are you on this?

Sent from my iPad

Begin forwarded message:

From: "Dyble, John C PREM:EX"
<John.Dyble@gov.bc.ca>
Date: August 4, 2014 at 6:31:20 PM PDT
To: "Shoemaker, Wes ENV:EX"
<Wes.Shoemaker@gov.bc.ca>,
"Wanamaker, Lori JAG:EX"
<Lori.Wanamaker@gov.bc.ca>
Cc: "Fraser, John Paul GCPE:EX"
<JohnPaul.Fraser@gov.bc.ca>
Subject: Tailings Pond spill cariboo

Not sure how we are reacting to this. Didn't
see anything until the news tonight.

Who us out on site, etc.

John

Sent from my iPad

From: [Crebo, David GCPE:EX](#)
To: [McGuire, Jennifer ENV:EX](#); [English, Heather ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#); [Hancock, Tom ENV:EX](#)
Subject: Fwd: TNO: Mine waste leak forces water-use ban - Denise Ryan - Vancouver Sun
Date: Tuesday, August 5, 2014 6:29:00 AM

Good morning! The Van Sun article references MoE involvement in Mt Polley mine permitting going back a few years. ASAP today can we pls get a timeline of any permit applications from the company and ministry review?

Thx
Dave

Sent from my iPhone

Begin forwarded message:

From: "Today's News Online GCPE:EX" <tno@gov.bc.ca>
Date: August 5, 2014 at 5:30:48 AM PDT
Subject: TNO: Mine waste leak forces water-use ban - Denise Ryan - Vancouver Sun

s.3

Pages 36 through 38 redacted for the following reasons:

s.3

From: [Halls, Lori D ENV:EX](#)
To: [Forsdick, Doug O ENV:EX](#)
Cc: [Grbavac, Danielle ENV:EX](#); [Airey, David ENV:EX](#); [Canuel, Aaron ENV:EX](#)
Subject: RE: Mnt. Polley Incident
Date: Tuesday, August 5, 2014 7:33:00 AM

Thanks Doug. I'm acting for the Deputy
at 250-387-6177

s.22

Can you give me a quick call. I'm

From: Forsdick, Doug O ENV:EX
Sent: Tuesday, August 5, 2014 7:03 AM
To: Halls, Lori D ENV:EX
Cc: Grbavac, Danielle ENV:EX; Airey, David ENV:EX; Canuel, Aaron ENV:EX
Subject: RE: Mnt. Polley Incident

MIU investigation is ongoing. They have been in contact with RCMP who obtained some critical evidence at the early stages of the spill. Also Mines is involved and have conducted an overflight and have met with MIU staff. Yesterday and today, MIU will be working alongside EP staff to collect some further evidence.

I expect to have a briefing with Marcel and Kelly Dahl today and will be in a better position to provide more details then.

Doug

From: Halls, Lori D ENV:EX
Sent: Monday, August 4, 2014 12:50 PM
To: Forsdick, Doug O ENV:EX
Cc: Grbavac, Danielle ENV:EX; Airey, David ENV:EX; Canuel, Aaron ENV:EX
Subject: Re: Mnt. Polley Incident

Thanks Doug. I also saw some of the media coverage.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 4, 2014, at 12:44 PM, "Forsdick, Doug O ENV:EX" <Doug.Forsdick@gov.bc.ca> wrote:

FYI

COS was contacted by EP today related to a major incident at Mnt Polley Mine.

Appears to be spill / permit non compliance event.

Kelly Dahl is cos lead at this time. I have noticed media attention already this morning on this event.

I will be out of cell range for about three hours this afternoon but will check in with Kelly when I get back and provide another update at that time.

Doug

Sent from my iPhone

Begin forwarded message:

From: "Forsdick, Doug O ENV:EX" <Doug.Forsdick@gov.bc.ca>
Date: August 4, 2014 at 12:11:56 PDT
To: "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>
Cc: "Bunce, Hubert ENV:EX" <Hubert.Bunce@gov.bc.ca>,

"Belanger, Marcel ENV:EX" <Marcel.Belanger@gov.bc.ca>, "Dahl, RK ENV:EX" <RK.Dahl@gov.bc.ca>, "Olsen, Rod ENV:EX" <Rod.Olsen@gov.bc.ca>

Subject: Mnt. Polley Incident

Jennifer

I left message for Rod Olsen to notify him.

I could not reach Marcel but did speak to Kelly Dahl and he will be phoning Hubert shortly.

Kelly will co ordinate any local COS response that is required as well as primary MIU response.

Call if you need anything else from me.

D

Sent from my iPhone

From: [Halls, Lori D ENV:EX](#)
To: [Crebo, David GCPE:EX](#); [Hancock, Tom ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#); [Zacharias, Mark ENV:EX](#)
Subject: FW: Imperial Metals Corporation - 2014 - Imperial Update on Tailings Storage Facility Breach at Mount Polley Mine - Tue Aug 5, 2014
Date: Tuesday, August 5, 2014 7:43:00 AM

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 7:42 AM
To: Halls, Lori D ENV:EX
Subject: Imperial Metals Corporation - 2014 - Imperial Update on Tailings Storage Facility Breach at Mount Polley Mine - Tue Aug 5, 2014
www.imperialmetals.com/s/News_2014.asp?ReportID=667967

Download the official Twitter app [here](#)

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

From: [Carr, Michelle EAO:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: Fwd: Tailings pond - quesnel
Date: Tuesday, August 5, 2014 7:50:26 AM

Sent from my iPad

Begin forwarded message:

From: "Cousins, Autumn EAO:EX" <Autumn.Cousins@gov.bc.ca>
Date: August 5, 2014 at 7:41:35 AM PDT
To: "Carr, Michelle EAO:EX" <Michelle.Carr@gov.bc.ca>, "Leake, Greg EAO:EX" <Greg.Leake@gov.bc.ca>
Cc: "Belfry, Elsie EAO:EX" <Elsie.Belfry@gov.bc.ca>, "O'Connor, Lisa EAO:EX" <Lisa.OConnor@gov.bc.ca>
Subject: RE: Tailings pond - quesnel

I am not aware of any history on this project from a compliance perspective. We have never inspected this project.

It is an old transition project and the original Project Approval Certificate is not online, but the following link has some background info in the recitals.

http://a100.gov.bc.ca/appsdata/epic/documents/p56/1037405148531_488314223bf5486bb762c05cfe45142d.pdf

I will locate the original project approval certificate (although it may be off site). As it is an old PAC, I recommend MEM stay as lead on this response.

From: Carr, Michelle EAO:EX
Sent: Tuesday, August 5, 2014 7:37 AM
To: Leake, Greg EAO:EX
Cc: Cousins, Autumn EAO:EX; Belfry, Elsie EAO:EX; O'Connor, Lisa EAO:EX
Subject: Re: Tailings pond - quesnel

I don't think this is one of ours, unless it goes by another name.

Sent from my iPad

On Aug 5, 2014, at 7:20 AM, "Leake, Greg EAO:EX" <Greg.Leake@gov.bc.ca> wrote:

Autumn:
See below. Do we have anything on this?
This is required ASAP, please.
G.

Sent from my iPhone

Begin forwarded message:

From: "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca>
Date: August 4, 2014 at 9:37:18 PM PDT
To: "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>, "Standen, Jim ENV:EX" <Jim.Standen@gov.bc.ca>, "Leake, Greg EAO:EX" <Greg.Leake@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Cc: "Dhanowa, Damon ENV:EX" <Damon.Dhanowa@gov.bc.ca>
Subject: Fwd: Tailings pond - quesnel

See below from Michele. Can we get an update on any concerns that were raised by our people in the last few years.

Thanks,
Tom

From: Cadario, Michele PREM:EX
Sent: Monday, August 4, 2014 7:37 PM
To: Gordon, Matt GCPE:EX
Cc: Fraser, John Paul GCPE:EX; Oliphant, Sam PREM:EX; Chin, Ben PREM:EX; Southern, Evan PREM:EX; Mills, Shane LASS:EX; Sweeney, Neil PREM:EX; Mitschke, Matt ENV:EX; Sandve, Chris MEM:EX; Campbell, Carolyn ABR:EX
Subject: Re: Tailings pond - quesnel

Chris/Matt,
For tomorrow am we need to have an understanding if there have been any issues or concerns raised during inspections or otherwise over the past while -
Do we have their operational record?

Was there anything that could have been done that wasn't to prevent this situation - are there better standards employed elsewhere that we should look at?

s.13

Also - carolyn where are we re FN on this file?

Michele

From: Gordon, Matt GCPE:EX
Sent: Monday, August 4, 2014 7:05 PM
To: Cadario, Michele PREM:EX
Cc: Fraser, John Paul GCPE:EX; Oliphant, Sam PREM:EX; Chin, Ben PREM:EX; Southern, Evan PREM:EX; Mills, Shane LASS:EX; Sweeney, Neil PREM:EX; Mitschke, Matt ENV:EX
Subject: Re: Tailings pond - quesnel

Not as good as company out but I could flip imperial statement to embc and ask that it get fed out via twitter?

Sent from my iPhone

On Aug 4, 2014, at 6:49 PM, "Cadario, Michele PREM:EX" <Michele.Cadario@gov.bc.ca> wrote:

I spoke to the owner Murray Edwards and he said an NR has gone out - twitter traffic seems to still say that they haven't heard from IM - Has that now been rectified?

M

From: Fraser, John Paul GCPE:EX
Sent: Monday, August 4, 2014 4:30 PM
To: Oliphant, Sam PREM:EX
Cc: Chin, Ben PREM:EX; Cadario, Michele PREM:EX; Southern, Evan PREM:EX; Mills, Shane LASS:EX; Sweeney, Neil PREM:EX; Mitschke, Matt ENV:EX; Gordon, Matt GCPE:EX
Subject: Re: Tailings pond - quesnel

MBB has also spoken to CEO.

Sent from my iPhone

On Aug 4, 2014, at 4:20 PM, "Oliphant, Sam
PREM:EX" <Sam.Oliphant@gov.bc.ca>
wrote:

Thanks all.

Sent from my iPhone

On Aug 4, 2014, at 4:19 PM,
"Fraser, John Paul GCPE:EX"
<JohnPaul.Fraser@gov.bc.ca>
wrote:

MEM shop has
confirmed that CEO
Brian Kynock will
arrive there tonight,
they are considering
an NR or statement
this evening.

Sent from my iPhone

On Aug 4, 2014, at
4:15 PM, "Chin, Ben
PREM:EX"
<Ben.Chin@gov.bc.ca>
wrote:

Just
finished
talking to
Jas...it's
just a
heads up,
not an
interview
request.
He tells
me the
pictures at
6 will be
very
graphic.
Imperial
should get
out in
front.

Ben Chin
Executive
Director
Communications
& Issues
Mgmt
Office of
Premier
Christy

Clark
Government
of British
Columbia
250-588-
3113

From:

Cadario,
Michele
PREM:EX

Sent:

Monday,
August 04,
2014 04:13
PM

To: Fraser,
John Paul
GCPE:EX

Cc: Chin,
Ben
PREM:EX;
Southern,
Evan
PREM:EX;
Mills, Shane
LASS:EX;
Sweeney,
Neil
PREM:EX;
Mitschke,
Matt
ENV:EX;
Gordon,
Matt
GCPE:EX

Subject: Re:

Tailings
pond -
quesnel

I know the
owner of
Imperial
Metals -
i'll text
him and
see if he
can stir
up
someone.
Michele

From:

Fraser, John
Paul
GCPE:EX

Sent:

Monday,
August 4,
2014 3:57
PM

To:

Cadario,
Michele

PREM:EX
Cc: Chin,
Ben
PREM:EX;
Southern,
Evan
PREM:EX;
Mills,
Shane
LASS:EX;
Sweeney,
Neil
PREM:EX;
Mitschke,
Matt
ENV:EX;
Gordon,
Matt
GCPE:EX

Subject:

Re:
Tailings
pond -
quesnel

Imperial
Metals
officials
have been
difficult
to reach.
Mine
inspectors
are with
some of
them at
mine site
but cell
coverage
there is
bad.
Looking
to see if
there are
Vancouver
company
officials
that can
be
engaged.
Media
calls
going ok,
aware of
various
levels of
service
and
coordination,
Dave
Crebo
handling

calls from
out ENV
shop in
close
coordination
with out
EMBC
staff, but
company
not
responding
or in the
story is
looking
bad.

Sent from
my
iPhone

On Aug 4,
2014, at
3:08 PM,
"Fraser,
John Paul
GCPE:EX"
<JohnPaul.Fraser@gov.bc.ca>
wrote:

Spoke
with
Shane.
Donna
is
aware,
he
was
checking
re
MCO.
No
report
on
contamination
yet.
A
drinking
and
recreational
us
ban
are
in
effect
for
residents
in
around
Likely

-
-
impacting
about
300
people.
Parks
and
campgrounds
have
been
closed
in
the
vicinity.
MEM
inspectors
enroute
or
at
facility.
IH
fully
engaged
in
case
human
health
issues
present
-
-
none
have
yet.
ENV
inspectors
also
on
site
though
have
yet
to
test
in
some
parts
because
of
moving
water
and
debris
conditions.
EOC
has
been

set
up
and
full
coordination
with
Cariboo
Regional
District.

Sent
from
my
iPhone

On
Aug
4,
2014,
at
2:49
PM,
"Cadario,
Michele
PREM:EX"
<Michele.Cadario@gov.bc.ca>
wrote:

Have
we
got
a
report
about
the
level
of
contamination?

Has
anyone
reached
out
to
MCO
and
Donna
B?
Michele

From: [McGuire, Jennifer ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: Re: Imperial Metals Corporation - 2014 - Imperial Update on Tailings Storage Facility Breach at Mount Polley Mine - Tue Aug 5, 2014
Date: Tuesday, August 5, 2014 7:59:21 AM

Thanks.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 7:44 AM
To: McGuire, Jennifer ENV:EX
Subject: FW: Imperial Metals Corporation - 2014 - Imperial Update on Tailings Storage Facility Breach at Mount Polley Mine - Tue Aug 5, 2014

Jennifer – here's the statement from Imperial.

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 7:42 AM
To: Halls, Lori D ENV:EX
Subject: Imperial Metals Corporation - 2014 - Imperial Update on Tailings Storage Facility Breach at Mount Polley Mine - Tue Aug 5, 2014

www.imperialmetals.com/s/News_2014.asp?ReportID=667967

Download the official Twitter app [here](#)

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#); [ENV Ministerial Assistants](#); [GCPE Communications - Environment](#); [Standen, Jim ENV:EX](#)
Subject: Fwd: statement
Date: Tuesday, August 5, 2014 8:27:35 AM

Bennett on point for media today.

Sent from my iPhone

Begin forwarded message:

From: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Date: August 5, 2014 at 8:24:50 AM PDT
To: "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>, "Sandve, Chris MEM:EX" <Chris.Sandve@gov.bc.ca>
Cc: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Rhodes, Gillian GCPE:EX" <Gillian.Rhodes@gov.bc.ca>, "Jabs, Ryan GCPE:EX" <Ryan.Jabs@gov.bc.ca>, "Jacobs, Jake GCPE:EX" <Jake.Jacobs@gov.bc.ca>
Subject: RE: statement

I'm on call with MBB now. He'll be flying out to Williams Lake shortly – ETA tbd. He's agreed to be the point person for gov.

From: Gordon, Matt GCPE:EX
Sent: Tuesday, August 5, 2014 8:09 AM
To: Haslam, David GCPE:EX; Sandve, Chris MEM:EX
Cc: Crebo, David GCPE:EX; Rhodes, Gillian GCPE:EX; Jabs, Ryan GCPE:EX
Subject: statement

Importance: High

Po wants mbb on point and to release a govt statement – ill draft first cut asap for your review.....if no program person avail – mbb to make calls.

Crebo/gill/ryan/Leanne – please flip any media to Haslam and jake and cc me

Matt Gordon

A/Assistant Deputy Minister

Strategic Planning & Public Engagement

Government of British Columbia

250 356.7398 office

250 896.4923 mobile

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Cc: [Hancock, Tom ENV:EX](#); [Dhanowa, Damon ENV:EX](#)
Subject: Fwd: STATEMENT
Date: Tuesday, August 5, 2014 9:17:40 AM
Attachments: [STATEMENT.docx](#)
[ATT00001.htm](#)

FYI - MBB statement going out references high level ENV involvement

Sent from my iPhone

Begin forwarded message:

From: "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>
Date: August 5, 2014 at 9:11:37 AM PDT
To: "Sandve, Chris MEM:EX" <Chris.Sandve@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Cc: "Jabs, Ryan GCPE:EX" <Ryan.Jabs@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Rhodes, Gillian GCPE:EX" <Gillian.Rhodes@gov.bc.ca>, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>
Subject: STATEMENT

Haslam/chris, work with/edit this one – included all the additions

STATEMENT

Situational update - Mt. Polley Mine Tailings pond breach

Mt Polley - Mt Polley Mine, owned by Imperial Metals, is approximately 30 kms from the community of Likely, BC.

In the early morning of August 4, 2014, the tailings pond dam at the Mt. 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. Hazletine Creek flows out of Polley Lake and the flow may have of contaminated water continued into Quesnel Lake.

RCMP, Mt. Polley Mine executives, Ministry of Environment, Emergency Management BC, Ministry of Transportation, Cariboo Regional District, Search and Rescue and Cariboo Dam Safety, responded to the event. The cause of the breach and any possible environmental impacts of the contaminated water on the local watershed is unknown at this time. This is considered a large breach and extremely rare.

Cariboo Regional District, in consultation with Interior Health, has issued a water ban advisory not to drink or bath in the water and not allow pets or livestock to drink the water. The waterways affected by the ban include Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek, the Quesnel and Cariboo Rivers systems up to the Fraser River. The ban does not apply to people in Williams Lake or other towns along the Fraser River.

The Ministry of Environment is on site conducting water tests to determine the full extent of potential environmental impacts. Water sampling took place the evening of Aug 4th. Samples will be sent for analysis on Aug 5th, with results expected later this week.

The Conservation Officer Service and Ministry of Energy and Mines Inspectors have been sent to the mine to investigate the cause

Emergency Management BC has set up a public information line at 250-398-5581 and updates will be posted to the Cariboo Regional District's emergency operations Facebook page.

As more information becomes available, BC government will provide that information to British Columbians.

From: [Forsdick, Doug O ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: RE: Mnt Polley Briefing - Aug 5/14 0900
Date: Tuesday, August 5, 2014 9:44:51 AM

Not a problem, if there is anything significant that occurs prior to tomorrows briefing I will update you as it happens, if not, will get you some more details after tomorrows 10 am call.

Doug

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 9:43 AM
To: Forsdick, Doug O ENV:EX
Subject: RE: Mnt Polley Briefing - Aug 5/14 0900
[Thanks Doug.](#)

s.15

From: Leahy, Jeff ENV:EX
To: Bell, Tom G ENV:EX; Austad, Bob ENV:EX; Bawtinheimer, Brian ENV:EX; Halls, Lori D ENV:EX
Cc: Grbavac, Danielle ENV:EX
Subject: Mount Polly dam breach
Date: Tuesday, August 5, 2014 10:31:41 AM
Importance: High

Hi Tom as discussed. The only park impacted thus far as result of the Mount Polly dam breach is Cedar Point Park. Uncertain at this time if other parks along Quesnel Lake will be impacted.

- Cedar Point Park is situated on Quesnel Lake, six km from the town of Likely.
- Cedar Point, is a Class "C" park and operated by a board from Likely. This park is occupied year round by a member of the board.
- Park operator closed the park as result of the dam breach and evacuated all campers and visitors
- web site has been updated to reflect the closure

Link to CBC news below

http://www.google.ca/url?url=http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-pond-dam-stable-imperial-metals-1.2727776&rct=j&frm=1&q=&esrc=s&sa=U&ei=pBLhU6feI8KbjAK36YCYAg&ved=0CBMQqQIoADAA&usg=AFQjCNGD2HgcrjMJy4LEF-xO_M6pH1o2Tw

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

From: Gorrell, Heather ENV:EX
Sent: Monday, August 4, 2014 8:16 PM
To: Leahy, Jeff ENV:EX
Cc: Nowotny, Chris ENV:EX
Subject: Mount polly dam breach
Importance: High

Hi Jeff.

Just touching base regarding the Mount Polly tailings pond dam breach.

My understanding based on the news I have read online Cedar point Park which is a class C is currently closed and the park operator evacuated all campers and visitors. This park is located on the quesnel river near the town of Likely. There are also a few goal 2 parks with undeveloped campsites on quesnel lake that is also part of the concern area.

I have tried to reach the park operator in Likely but no doubt he's very busy with looking after the needs of the park and also the Likely residents

s.22

I am in the office tomorrow and will contact HQ Parks to post on the BC Parks website that Cedar point park is closed due to the current situation and also include Quesnel lake area parks.

From what I've read it appears that all local authorities are on scene including SAR to ensure backcountry users are safe and accounted for. If I cannot get in touch with the park operator at Cedar point I may drive up to likely to assess the park situation.

Chris Armstrong who the Quesnel Lake campsites fall under s.22 At this point I feel it would be wise to boat out to those campsites, as all water recreation is currently restricted on that lake and other authorities including the RCMP are on the scene. I will touch base with the appropriate authorities for updates and any needed assistance.

If you have any other thoughts please let me know.
(Perhaps someone else has already made you aware of the situation)

- Heather

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [GCPE Communications - Environment](#); [ENV Ministerial Assistants](#)
Subject: FW: finals w/ serial # for your records: Bill Bennett, Minister of Energy and Mines, responds to Mt. Polley Mine Incident
Date: Tuesday, August 5, 2014 10:51:08 AM
Attachments: [2014MEM0019-001118.pdf](#)

FYI - final version of MBB statement.

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

From: Chant, Jon GCPE:EX
Sent: Tuesday, August 5, 2014 10:48 AM
To: Haslam, David GCPE:EX
Cc: Stagg, Linda R GCPE:EX; Gordon, Matt GCPE:EX; Fraser, John Paul GCPE:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX; Crebo, David GCPE:EX; Jabs, Ryan GCPE:EX; Ritchie, Leanne GCPE:EX; Mills, Shane LASS:EX; Chin, Ben PREM:EX
Subject: finals w/ serial # for your records: Bill Bennett, Minister of Energy and Mines, responds to Mt. Polley Mine Incident

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

From: Chant, Jon GCPE:EX [<mailto:Jon.Chant@gov.bc.ca>]
Sent: Tuesday, August 5, 2014 10:46 AM
To: Chant, Jon GCPE:EX
Subject: DRAFT: Bill Bennett, Minister of Energy and Mines, responds to Mt. Polley Mine Incident

Please refer to the files attached to this email. The following is the summary of the News Release

Document Name: 2014MEM0019-001118.pdf
NR Number: 2014MEM0019-001118
NR Type: Statement
State: Planned
Planned Release Date: August 5, 2014 at 10:50 am Lead Organization: Ministry of Energy and Mines
Headline: Bill Bennett, Minister of Energy and Mines, responds to Mt. Polley Mine Incident

This email was auto-generated.

For Immediate Release
2014MEM0019-001118
August 5, 2014

Ministry of Energy and Mines

STATEMENT

Bill Bennett, Minister of Energy and Mines, responds to Mt. Polley Mine Incident

VICTORIA - Minister of Energy and Mines Bill Bennett made the following statement today in response to the mine tailing pond incident at Mt. Polley Mine:

"In the early morning of August 4, 2014, the tailings pond dam at the Mt. 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. Hazletine Creek flows out of Polley Lake, and the flow may have continued into Quesnel Lake.

"This is a serious incident that should not have happened. We are devoting every appropriate resource working with

local officials to clean up the site, mitigate any impacts to communities and the environment, and investigate the cause of the breach. We will determine the cause of the event and we are determined to prevent an incident like this from happening again.

"RCMP, Mt. Polley Mine executives, Ministry of Energy and Mines, Ministry of Environment, Emergency Management BC, Ministry of Transportation, Cariboo Regional District, Search and Rescue and Cariboo Dam Safety, responded to the event. Any potential environmental impact from the tailings pond water on the local watershed is unknown at this time but all efforts are being made to make a determination as soon as possible.

Cariboo Regional District, in consultation with Interior Health, has issued a precautionary water ban advisory not to drink or bathe in the water and not to allow pets or livestock to drink the water. The waterways affected by the ban include Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek, as well as the Quesnel and Cariboo Rivers systems up to the Fraser River.

The ban does not apply to people in Williams Lake or other towns along the Fraser River.

"The Ministry of Environment is on-site conducting water tests to determine the full extent of potential environmental impacts. Water sampling took place the evening of Aug 4. Samples have been sent for analysis today, with results expected later this week.

"Ministry of Energy and Mines Inspectors are at the mine site investigating the cause.

Cariboo Regional District has set up a public information line at 250-398-5581, and updates will be posted to the Cariboo Regional District's emergency operations Facebook page.

"As more information becomes available, the B.C. government will provide that information to British Columbians."

Media Contact:

Jake Jacobs
Ministry of Energy and Mines
250 952-0628

Connect with the Province of B.C. at: www.gov.bc.ca/connect

STATEMENT

For Immediate Release
2014MEM0019-001118
August 5, 2014

Ministry of Energy and Mines

Bill Bennett, Minister of Energy and Mines, responds to Mt. Polley Mine Incident

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“This is a serious incident that should not have happened. We are devoting every appropriate resource working with local officials to clean up the site, mitigate any impacts to communities and the environment, and investigate the cause of the breach. We will determine the cause of the event and we are determined to prevent an incident like this from happening again.

“RCMP, Mt. Polley Mine executives, Ministry of Energy and Mines, Ministry of Environment, Emergency Management BC, Ministry of Transportation, Cariboo Regional District, Search and Rescue and Cariboo Dam Safety, responded to the event. Any potential environmental impact from the tailings pond water on the local watershed is unknown at this time but all efforts are being made to make a determination as soon as possible.

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“The Ministry of Environment is on-site conducting water tests to determine the full extent of potential environmental impacts. Water sampling took place the evening of Aug 4. Samples have been sent for analysis today, with results expected later this week.

“Ministry of Energy and Mines Inspectors are at the mine site investigating the cause.

Cariboo Regional District has set up a public information line at 250-398-5581, and updates will be posted to the Cariboo Regional District's emergency operations Facebook page.

“As more information becomes available, the B.C. government will provide that information to British Columbians.”

Media Contact:

Jake Jacobs
Ministry of Energy and Mines
250 952-0628

Connect with the Province of B.C. at: www.gov.bc.ca/connect

From: [Crebo, David GCPE:EX](#)
To: [McGuire, Jennifer ENV:EX](#); [English, Heather ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#); [Hancock, Tom ENV:EX](#)
Subject: RE: Mine waste leak forces water-use ban - Denise Ryan - Vancouver Sun
Date: Tuesday, August 5, 2014 10:59:04 AM
Importance: High

Is there an ETA? Several media outlets are asking and we need to ensure Min Bennett has this info. He is provincial spokesperson.

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 6:50 AM
To: Crebo, David GCPE:EX; English, Heather ENV:EX
Cc: Standen, Jim ENV:EX; Halls, Lori D ENV:EX; Hancock, Tom ENV:EX
Subject: Re: Mine waste leak forces water-use ban - Denise Ryan - Vancouver Sun

I have asked staff to provide a summary of compliance history and application history. It should be ready by 1030.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 6:29 AM
To: McGuire, Jennifer ENV:EX; English, Heather ENV:EX
Cc: Standen, Jim ENV:EX; Halls, Lori D ENV:EX; Hancock, Tom ENV:EX
Subject: Fwd: TNO: Mine waste leak forces water-use ban - Denise Ryan - Vancouver Sun

Good morning! The Van Sun article references MoE involvement in Mt Polley mine permitting going back a few years. ASAP today can we pls get a timeline of any permit applications from the company and ministry review?

Thx
Dave

Sent from my iPhone

Begin forwarded message:

From: "Today's News Online GCPE:EX" <tno@gov.bc.ca>
Date: August 5, 2014 at 5:30:48 AM PDT
Subject: TNO: Mine waste leak forces water-use ban - Denise Ryan - Vancouver Sun

Pages 61 through 64 redacted for the following reasons:

s.3

From: [Leake, Greg EAO:EX](#)
To: [Halls, Lori D ENV:EX](#); [Hancock, Tom ENV:EX](#)
Cc: [Crebo, David GCPE:EX](#); [Dhanowa, Damon ENV:EX](#); [Carr, Michelle EAO:EX](#); [Jacobs, Jake GCPE:EX](#)
Subject: Follow-Up Info: Imperial and EA
Date: Tuesday, August 5, 2014 11:17:08 AM
Attachments: [QA ImperialMetals_05Aug14.doc](#)

Lori and Tom:

Some background material on Imperial Metals, including information about Mt. Polley's certification and other Imperial mines with EA connections.

Meanwhile, other metal mining-related items include:

- Ruddock Creek (Imperial Metals) – On July 15/14, the federal government announced that decision to approve the request from BC for the substitution of the EA.
- KSM – EA Certificate issued on July 29/14
- Tulsequah Chief – BC Supreme Court recently ruled that the substantially started decision made by the Executive Director of the EAO was quashed after a failure to meet the duty to consult Taku River Tlingit FN. On July 30/14, EAO sent a letter to TRTFN seeking their written submission on the matter, with a 45-day time period.
- Morrison – certificate decision due around the middle of August.
- Ajax – KGHM announced changes to the design of the proposed project on May 29/14, including the consolidation and re-location of several project components and the development of a wet tailings storage facility. An application for an EA certificate is anticipate in early 2015.

G.

Greg Leake
Director
Client Communications & Engagement
BC Environmental Assessment Office
(250) 387-2470

**Advice to the Minister
Imperial Metals
August 5, 2014**

Q 1. What environmental assessment authorizations does Imperial Metals have for the Mount Polley mine?

The Mount Polley mine project received a Mine Development Certificate on October 6, 1992, under the former *Mine Development Assessment Act*. The certificate was issued by the Minister of Energy, Mines and Petroleum Resources, with the concurrence of the Minister of Environment, Lands and Parks.

With the coming into force of the *Environmental Assessment Act* in June 1995, the Mine Development Certificate was continued in force as a Project Approval Certificate.

Q 2. What other mines does Imperial Metals have environmental assessment certificates for?

Huckleberry Mine – An open-pit copper mine about 90 km southwest of Houston; Huckleberry received a Project Approval Certificate under the *Environmental Assessment Act* on December 22, 1995.

Huckleberry Mines Ltd. submitted a proposal in 1993 for approval under the former *Mine Development Assessment Act*. The company submitted an impact assessment report for public and agency review in spring 1995. Upon proclamation of the provincial *Environmental Assessment Act* on June 30, 1995, the proposal was transferred to the environmental review process at the project report stage.

According to the company website, "Imperial holds a 50% interest in Huckleberry Mines Ltd., owner/operator of the mine. The remaining 50% is held by the Japan Group comprised of Mitsubishi Materials Corporation, Dowa Mining Co. Ltd. and Furukawa Co."

Red Chris – Red Chris Development Co. Ltd. received an Environmental Assessment Certificate on August 24, 2005 to construct and operate an open pit copper-gold mine about 20 km southeast of Iskut and 450 km north of Smithers.

The expiry date of the certificate was extended for five years (to August 24, 2015) in June 2010.

Red Chris is wholly-owned by Imperial Metals, which acquired the project in 2007.

Q 3. Does Imperial Metals have any other projects in the environmental assessment process?

Ruddock Creek – The proposed project is a 1,050,000 tonnes per year underground lead-zinc-silver mine located approximately 75 km east of Clearwater, with an estimated life of 8-12 years.

The proposed project entered the environmental assessment process in 2009. The proponent withdrew from the environmental assessment process in November 2013, citing major design changes. On May 20, 2014, the Environmental Assessment Office received a revised project description from the proponent. The project is in the pre-application stage of the environmental assessment.

On July 15, 2014, the federal government announced the decision to approve the request from BC for the substitution of the environmental assessment process.

According to the company website, “the Ruddock Creek Joint Venture is owned by Imperial (50%), Mitsui Mining and Smelting Co. Ltd. (30%) and Itochu Corporation (20%).”

Assistant DM	Comm. Director
Michelle Carr 387-2307	Greg Leake 387-2470

From: [Zacharias, Mark ENV:EX](#)
To: [Maxwell, Jennifer A ENV:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bunce, Hubert ENV:EX](#); [Austin, Joyce ENV:EX](#); [Hays-Byl, Winn ENV:EX](#)
Subject: Re: Status: Mount Polley water samples
Date: Tuesday, August 5, 2014 11:46:01 AM

Thx Jennifer: Just confirming the MoE analytical chem lab isn't an option to help expedite?

Regards, MZ

On Aug 5, 2014, at 11:42 AM, "Maxwell, Jennifer A ENV:EX"
<Jennifer.Maxwell@gov.bc.ca> wrote:

Hi Lori,

Following up on your phone call earlier this morning, I have spoken with Hubert Bunce (A/Regional Director for Mining in EPD) and Joyce Austin (Sr Provincial Lab Specialist) to gather information and assess options for speeding up the turnaround time on getting water samples from the Mount Polley mine tailings pond spill analyzed.

The legal samples are en route to the two labs that are under contract to do the required sampling in a case like this:

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Staff indicate that there is no faster way to get robust, defensible results than the plan described above. Given the nature of the issue, it is important that the protocols for legal sampling are followed.

Let me know if need anything further.

Jennifer

Jennifer Maxwell
Manager - Environmental Monitoring, Reporting & Economics
Knowledge Management Branch |Ministry of Environment
PO Box 9335 STN PROV GOVT
Victoria, BC V8W 9M1
Tel.: 250-387-9642; Fax: 250-387-8894

From: [Zacharias, Mark ENV:EX](#)
To: [Hays-Byl, Winn ENV:EX](#)
Cc: [Maxwell, Jennifer A ENV:EX](#); [Dawson, Clive R ENV:EX](#); [Halls, Lori D ENV:EX](#)
Subject: Re: Status: Mount Polley water samples
Date: Tuesday, August 5, 2014 11:54:07 AM

OK, thanks Winn.

On Aug 5, 2014, at 11:50 AM, "Hays-Byl, Winn ENV:EX" <Winn.HaysByl@gov.bc.ca> wrote:

Mark,

Our Lab could do the tests as well but since the test protocols are highly controlled and will take the same amount of time to execute regardless of where they're conducted, there won't be any time savings. The time to get the samples to Victoria would take slightly longer than to Vancouver.

From: Zacharias, Mark ENV:EX
Sent: Tuesday, August 5, 2014 11:46 AM
To: Maxwell, Jennifer A ENV:EX
Cc: Halls, Lori D ENV:EX; McGuire, Jennifer ENV:EX; Bunce, Hubert ENV:EX; Austin, Joyce ENV:EX; Hays-Byl, Winn ENV:EX
Subject: Re: Status: Mount Polley water samples

Thx Jennifer: Just confirming the MoE analytical chem lab isn't an option to help expedite?

Regards, MZ

On Aug 5, 2014, at 11:42 AM, "Maxwell, Jennifer A ENV:EX" <Jennifer.Maxwell@gov.bc.ca> wrote:

Hi Lori,

Following up on your phone call earlier this morning, I have spoken with Hubert Bunce (A/Regional Director for Mining in EPD) and Joyce Austin (Sr Provincial Lab Specialist) to gather information and assess options for speeding up the turnaround time on getting water samples from the Mount Polley mine tailings pond spill analyzed.

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Victoria, BC V8W 9M1
Tel.: 250-387-9642; Fax: 250-387-8894

From: [Halls, Lori D ENV:EX](#)
To: [Hancock, Tom ENV:EX](#)
Subject: Park Closure
Date: Tuesday, August 5, 2014 11:54:00 AM

Cedar Point Park is situated on Quesnel Lake, six km from the town of Likely.
Cedar Point, is a Class "C" park and operated by a board from Likely. This park is occupied year round by a member of the board.

Park operator closed the park as result of the breach and evacuated all campers and visitors

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

5th Floor, 2975 Jutland Road, Victoria

Phone (250)387-6177

Fax (250)953-3414

Email: lori.d.halls@gov.bc.ca

From: [Halls, Lori D ENV:EX](#)
To: [McGuire, Jennifer ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: Water Sampling Testing
Date: Tuesday, August 5, 2014 11:56:00 AM

Draft note to John Dyble:

I've looked into the issue of water sampling and whether we can expedite the analytics and/or look at getting preliminary results. Normally this analysis would take 7 – 10 days.

The legal samples are en route to the two labs that are under contract to do the required sampling in a case like this:

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Staff indicate that there is no faster way to get robust, defensible results than the plan described above. Given the nature of the issue, it is important that the protocols for legal sampling are followed. We've confirmed our provincial lab wouldn't be any faster.

Here's what we know today from basic sampling taken yesterday:

pH levels 7.3 – 9.4

turbidity – fluctuating but not off the charts; expected on a plane such as this

connectivity - ?

Imperial has shared its sampling results of the material still in the tailings pond. We will use this going forward as a baseline. Early indications of cadmium, selenium.....

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

5th Floor, 2975 Jutland Road, Victoria

Phone (250)387-6177

Fax (250)953-3414

Email: lori.d.halls@gov.bc.ca

From: [Halls, Lori D ENV:EX](#)
To: [Standen, Jim ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Subject: RE: Water Sampling Testing
Date: Tuesday, August 5, 2014 11:59:00 AM

Jennifer --- can you give me some language on the two highlighted parts?

From: Standen, Jim ENV:EX
Sent: Tuesday, August 5, 2014 11:59 AM
To: Halls, Lori D ENV:EX; McGuire, Jennifer ENV:EX
Subject: RE: Water Sampling Testing
[Looks good Lori.](#)

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 11:57 AM
To: McGuire, Jennifer ENV:EX; Standen, Jim ENV:EX
Subject: Water Sampling Testing
Draft note to John Dyble:

I've looked into the issue of water sampling and whether we can expedite the analytics and/or look at getting preliminary results. Normally this analysis would take 7 – 10 days.

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Lori Halls

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BC Parks and Conservation Officer Service

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Fax (250)953-3414

Email: lori.d.halls@gov.bc.ca

From: [Halls, Lori D ENV:EX](#)
To: [Crebo, David GCPE:EX](#); [Hancock, Tom ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Subject: RE: First Nations concerns - Mount Polley spill
Date: Tuesday, August 5, 2014 12:12:00 PM

My understanding is that the company has reached out to Williams Lake Indian Band. FN also contacted FLNRO who directed them to MEM/ENV.....Jennifer please confirm and if need be ensure this item gets raised at all agency coordination call

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 12:05 PM
To: Hancock, Tom ENV:EX; Halls, Lori D ENV:EX; McGuire, Jennifer ENV:EX
Subject: FW: First Nations concerns - Mount Polley spill
Importance: High
Just clarifying again, what we can confirm about FNs being engaged about the breach? Did MoE staff speak with them?

From: Gordon, Matt GCPE:EX
Sent: Tuesday, August 5, 2014 11:49 AM
To: Jacobs, Jake GCPE:EX; Sandve, Chris MEM:EX; Kalaw, Gabby MEM:EX
Cc: Haslam, David GCPE:EX; Shotton, Ryan GCPE:EX; Hoffman, Al MEM:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX
Subject: RE: First Nations concerns - Mount Polley spill
Importance: High

We have been advised that the FNs have had contact.....David H and David C can you check with program staff to confirm.

Gabby – suggest you contact MARR and CSCD – consider a call to the chief asap if it hasn't already taken place...

Matt Gordon
A/Assistant Deputy Minister
Strategic Planning & Public Engagement
Government of British Columbia
250 356.7398 office
250 896.4923 mobile

From: Jacobs, Jake GCPE:EX
Sent: Tuesday, August 5, 2014 11:45 AM
To: Sandve, Chris MEM:EX; Kalaw, Gabby MEM:EX
Cc: Haslam, David GCPE:EX; Shotton, Ryan GCPE:EX; Gordon, Matt GCPE:EX; Hoffman, Al MEM:EX; Jacobs, Jake GCPE:EX; Fraser, John Paul GCPE:EX
Subject: First Nations concerns - Mount Polley spill
Importance: High

Does anyone know whether First Nations in the area have been contacted and been given updates on the spill? Don Bain, the executive director of the Union of BC Indian Chiefs says no one is contacting local first nations. He says Chief Terry Boucher of the local Lhtako Dene Nation is concerned that members of their band have been fishing in the affected area and they don't know what do with the fish.

Don Bain, the executive director of the Union of BC Indian Chiefs – 604 684-0231 (ext – 226)

From: [Bunce, Hubert ENV:EX](#)
To: [Maxwell, Jennifer A ENV:EX](#); [Halls, Lori D ENV:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [Austin, Joyce ENV:EX](#); [Zacharias, Mark ENV:EX](#); [Hays-Byl, Winn ENV:EX](#); [Riedler, Harold ENV:EX](#)
Subject: RE: Status: Mount Polley water samples
Date: Tuesday, August 5, 2014 12:13:25 PM

Samples will be on Central Mountain Air leaving WL at ~1:30 and Arriving at **S. terminal** flight number to follow, legals and PESC samples are in distinct coolers and must be secure under lock and key throughout transit

Hubert Bunce
A/Mining Director, Environmental Protection
Regional Operations

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

2080A Labieux Road

Nanaimo BC V9T 6J9

Please consider the environment before printing this email
BC Pollution Free

From: Maxwell, Jennifer A ENV:EX
Sent: Tuesday, August 5, 2014 11:43 AM
To: Halls, Lori D ENV:EX
Cc: McGuire, Jennifer ENV:EX; Bunce, Hubert ENV:EX; Austin, Joyce ENV:EX; Zacharias, Mark ENV:EX; Hays-Byl, Winn ENV:EX
Subject: Status: Mount Polley water samples
Importance: High

Hi Lori,

Following up on your phone call earlier this morning, I have spoken with Hubert Bunce (A/Regional Director for Mining in EPD) and Joyce Austin (Sr Provincial Lab Specialist) to gather information and assess options for speeding up the turnaround time on getting water samples from the Mount Polley mine tailings pond spill analyzed.

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Victoria, BC V8W 9M1
Tel.: 250-387-9642; Fax: 250-387-8894

From: [McGuire, Jennifer ENV:EX](#)
To: [Crebo, David GCPE:EX](#); [Dalal, Suntanu GCPE:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [Bunce, Hubert ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#)
Subject: FW: Public Meeting Tonight in Likely - MOE rep requested
Date: Tuesday, August 5, 2014 12:19:42 PM

We have local front line staff who could attend and talk about what they have seen and the samples collected. I can get someone there if needed.

Jennifer McGuire, P.Ag.

Executive Director, Regional Operations

Environmental Protection

Ministry of Environment

ph: 250-356-6027

cell: 250-361-5944

From: Bings, Dan P ENV:EX
Sent: Tuesday, August 5, 2014 12:14 PM
To: McGuire, Jennifer ENV:EX; Bunce, Hubert ENV:EX
Subject: Public Meeting Tonight in Likely - MOE rep requested

Jen/Hubert,

Just took a call in the lab from Dale Bull (spill officer - PG). Apparently there's to be a public meeting (i.e. lynch mob) in Likely tonight (hosted by the CRD) and they're looking for an MOE rep to attend. Doug Hill would be a good candidate if you need someone and he's willing to help out any way he can. Ultimately our primary message is "wait for the sample results, but preliminary indications of water quality in Quesnel Lake look promising." We've just shipped yesterdays samples and are preparing for our trip today.

You can reach me on my cell at 250-302-8112.

Dan Bings

Environmental Protection Officer

Ministry of Environment

Northern Region

PH: (250) 398-4897 FX: (250) 398-4214

BC Pollution Free

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www.gov.bc.ca/env

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From: [McGuire, Jennifer ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#); [Crebo, David GCPE:EX](#); [Fairholm, Mary ENV:EX](#)
Subject: FW: Information Note
Date: Tuesday, August 5, 2014 12:24:04 PM
Attachments: [Info Note - Mt Polley Aug 5 2014.docx](#)

Lori – IN as requested

Mary – pls put into the system.

thx

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: Metcalfe, Shelley ENV:EX
Sent: Tuesday, August 5, 2014 12:13 PM
To: McGuire, Jennifer ENV:EX
Cc: Bunce, Hubert ENV:EX
Subject: Information Note

Sorry for delay – received some last minute corrections. Includes input from Dan, Jack, Gabi, Brian and Christa....

Over to you... let me know if you need anything else.

Shelley Metcalfe

Section Head, Mining Authorizations

BC Ministry of Environment - Regional Operations Branch
200- 10470 152nd St., Surrey BC V3R 0Y3
p. 604-582-5332 | f. 604-930-7119 | e. shelley.metcalfe@gov.bc.ca

From: [Fraser, John Paul GCPE:EX](#)
To: [Hoffman, Al MEM:EX](#); [Halls, Lori D ENV:EX](#)
Cc: [Crebo, David GCPE:EX](#); [Gordon, Matt GCPE:EX](#); [Haslam, David GCPE:EX](#)
Subject: FW: From Olding's website
Date: Tuesday, August 5, 2014 12:27:28 PM

As discussed

Environmental Evaluation

Thorough Environmental Analysis

Environmental Assessment

Preview

One of our recent EA's was carried out through a collaborative process negotiated by two First Nations and a mining corporation.

BOA Ltd. was retained by the T'xelc Williams Lake Indian Band, the Xat'sull Soda Creek First Nations, and Imperial Metal's Mount Polley Mining Corporation, to undertake an independent and objective review of Mount Polley's proposal and permit application with the BC Ministry of Environment to discharge overflow from the mine's tailings lagoon to a creek leading into Quesnel Lake, home to one of British Columbia's most important sockeye populations. This is the first time in British Columbia that a mining corporation and First Nations have undertaken a collaborative review of a single project together.

We brought in LGL Ltd., Sydney, BC for this project due to their comprehensive fisheries expertise. Our review covered over two thousand pages of technical documentation and included a detailed analysis of hydrology data gathering, effluent dilution calculations, pollutant transfer via sediment discharge, fish ecology and traditional use of the fishery, terrestrial biodiversity, the complex development of site-specific water quality objectives, discharge and ambient monitoring plans, contingency plans, First Nation consultation and participation, as well as a series of recommended corporate commitments.

We identified important data gaps and provided specific recommendations on how these gaps would be best addressed. The Final Report was prepared independently by Brian Olding & Associates Ltd. and delivered to all Parties simultaneously so that no third party editing would be able to influence our review and recommendations. The Final report is currently under review by the BC Ministry of Environment.

From: [Crebo, David GCPE:EX](#)
To: [Dalal, Suntanu GCPE:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Subject: FW: Information Note
Date: Tuesday, August 5, 2014 12:29:09 PM
Attachments: [Info Note - Mt Polley Aug 5 2014.docx](#)

Suntanu – need this into bulleted messaged asap!

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 12:24 PM
To: Halls, Lori D ENV:EX
Cc: Standen, Jim ENV:EX; Crebo, David GCPE:EX; Fairholm, Mary ENV:EX
Subject: FW: Information Note

Lori – IN as requested

Mary – pls put into the system.

thx

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: Metcalfe, Shelley ENV:EX
Sent: Tuesday, August 5, 2014 12:13 PM
To: McGuire, Jennifer ENV:EX
Cc: Bunce, Hubert ENV:EX
Subject: Information Note

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p. 604-582-5332 | f. 604-930-7119 | e. shelley.metcalfe@gov.bc.ca

From: [Fraser, John Paul GCPE:EX](#)
To: [Hoffman, Al MEM:EX](#); [Halls, Lori D ENV:EX](#)
Cc: [Crebo, David GCPE:EX](#); [Haslam, David GCPE:EX](#); [Gordon, Matt GCPE:EX](#)
Subject: FW: province
Date: Tuesday, August 5, 2014 12:28:33 PM

As discussed

From: Fraser, John Paul GCPE:EX
Sent: Tuesday, August 5, 2014 12:15 PM
To: Crebo, David GCPE:EX
Cc: Stickney, Matthew EDUC:EX (Matthew.Stickney@gov.bc.ca); Haslam, David GCPE:EX
Subject: FW: province
Need background on this ASAP
Thanks,
JPF

From: Sweeney, Neil PREM:EX
Sent: Tuesday, August 5, 2014 11:45 AM
To: Fraser, John Paul GCPE:EX
Subject: province
<http://www.theprovince.com/news/Polley+Mine+tailings+pond+growing+unsustainable+rate+says/10091105/story.html>

From: [Halls, Lori D ENV:EX](#)
To: [Fraser, John Paul GCPE:EX](#); [Koncohrada, Karen MEM:EX](#); [Hoffman, Al MEM:EX](#); [Crebo, David GCPE:EX](#)
Subject: FW: Public Meeting Tonight in Likely - MOE rep requested
Date: Tuesday, August 5, 2014 12:34:00 PM

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 12:20 PM
To: Crebo, David GCPE:EX; Dalal, Suntanu GCPE:EX
Cc: Halls, Lori D ENV:EX; Bunce, Hubert ENV:EX; Zacharias-Homer, Christa ENV:EX
Subject: FW: Public Meeting Tonight in Likely - MOE rep requested

We have local front line staff who could attend and talk about what they have seen and the samples collected. I can get someone there if needed.

Jennifer McGuire, P.Ag.

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Environmental Protection

Ministry of Environment

ph: 250-356-6027

cell: 250-361-5944

From: Bings, Dan P ENV:EX
Sent: Tuesday, August 5, 2014 12:14 PM
To: McGuire, Jennifer ENV:EX; Bunce, Hubert ENV:EX
Subject: Public Meeting Tonight in Likely - MOE rep requested

Jen/Hubert,

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Environmental Protection Officer

Ministry of Environment
Northern Region
PH: (250) 398-4897 FX: (250) 398-4214

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From: [Halls, Lori D ENV:EX](#)
To: [McGuire, Jennifer ENV:EX](#)
Subject: RE: Public Meeting Tonight in Likely - MOE rep requested
Date: Tuesday, August 5, 2014 12:36:00 PM

Doug Hill title? Do you have a time for public meeting?

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 12:20 PM
To: Crebo, David GCPE:EX; Dalal, Suntanu GCPE:EX
Cc: Halls, Lori D ENV:EX; Bunce, Hubert ENV:EX; Zacharias-Homer, Christa ENV:EX
Subject: FW: Public Meeting Tonight in Likely - MOE rep requested

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Environmental Protection

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From: [Halls, Lori D ENV:EX](#)
To: [Crebo, David GCPE:EX](#); [Hancock, Tom ENV:EX](#)
Subject: FW: Mt. Polley - Water Sampling Test
Date: Tuesday, August 5, 2014 12:46:00 PM

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 12:46 PM
To: Dyble, John C PREM:EX
Cc: Wanamaker, Lori JAG:EX; Fraser, John Paul GCPE:EX
Subject: Mt. Polley - Water Sampling Test

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- Samples for microbiology will go to Maxxam in Burnaby.

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Both PESC and Maxxam labs are ready and waiting for the samples to arrive, and have agreed to process the samples as quickly as their analytical methods allow. Depending on the parameter being analyzed, these tests can take from 12-24 hours.

Given that, if the samples arrive at the labs late this afternoon, it is possible that some results will be available late on Wednesday, and all preliminary results should be available by Thursday morning.

Staff indicate that there is no faster way to get robust, defensible results than the plan described above. Given the nature of the issue, it is important that the protocols for legal sampling are followed. We've confirmed our provincial lab wouldn't be any faster.

Here's what we know today from basic sampling taken yesterday:

dissolved oxygen was good to the bottom of the lake,
the pH was 8.4 at the surface decreasing to 7.9 at the bottom which is normal for this lake,
the turbidity was elevated and fluctuated from 4.1 to 24 with most readings around 4.5 (note: the turbidity was 2 -2.1 downstream which would be typical of this lake).

Imperial has shared its sampling results of the material still in the tailings pond. We will use this going forward as a baseline.

Ministry staff reviewed the tailings supernatant data sent by the company yesterday in more detail and found that there are some drinking water guideline exceedances, particularly in samples taken before May 2014:

- The tailings supernatant concentrations for Selenium consistently exceed the drinking water guideline of 10ug/L.
- While the supernatant concentrations for sulphate did not exceed the drinking water guideline of 500mg/L in May 2014, it frequently exceed this guideline slightly over the last few years.
- While Molybdenum concentrations in the supernatant were well below drinking water guidelines in the last two years, concentrations were approaching the 0.25mg/L drinking water guideline in earlier years.
- Even recent Molybdenum concentrations in the supernatant exceeded livestock watering

and irrigation guidelines.

- Organic carbon concentrations exceed the 4mg/L guidelines for chlorination (water treated with chlorine that contains >4mg/L of organic carbon can result in toxic chlorination by-products)

The concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

5th Floor, 2975 Jutland Road, Victoria

Phone (250)387-6177

Fax (250)953-3414

Email: lori.d.halls@gov.bc.ca

From: [Halls, Lori D ENV:EX](#)
To: [Dyble, John C PREM:EX](#)
Cc: [Wanamaker, Lori JAG:EX](#); [Fraser, John Paul GCPE:EX](#)
Subject: RE: Mt. Polley - Water Sampling Test
Date: Tuesday, August 5, 2014 12:55:00 PM

Yes that's correct.

From: Dyble, John C PREM:EX
Sent: Tuesday, August 5, 2014 12:54 PM
To: Halls, Lori D ENV:EX
Cc: Wanamaker, Lori JAG:EX; Fraser, John Paul GCPE:EX
Subject: Re: Mt. Polley - Water Sampling Test

Thanks Lori,

This is very helpful and appreciate the efforts to get the testing done ASAP.

To be clear, I assume that supernatant refers to samplings taken inside the tailing pond as opposed to the outflow?

John

Sent from my iPad

On Aug 5, 2014, at 12:46 PM, "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca> wrote:

I've looked into the issue of water sampling and whether we can expedite the analytics and/or look at getting preliminary results. Normally this analysis would take 7 – 10 days.

The legal samples are en route to the two labs that are under contract to do the required sampling in a case like this:

- Samples for metals will go to the Pacific Environmental Science Centre (PESC), an Environment Canada lab in North Vancouver.
- Samples for microbiology will go to Maxxam in Burnaby.

These samples are scheduled to fly from Williams Lake to Vancouver on the next available flight (this afternoon). Arrangements are being made to have the samples picked up by Ministry or laboratory staff at YVR and transported directly to the labs. Both PESC and Maxxam labs are ready and waiting for the samples to arrive, and have agreed to process the samples as quickly as their analytical methods allow.

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(note: the turbidity was 2 -2.1 downstream which would be typical of this lake).

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- Organic carbon concentrations exceed the 4mg/L guidelines for chlorination (water treated with chlorine that contains >4mg/L of organic carbon can result in toxic chlorination by-products)

The concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

5th Floor, 2975 Jutland Road, Victoria

Phone (250)387-6177

Fax (250)953-3414

Email: lori.d.halls@gov.bc.ca

From: [Fairholm, Mary ENV:EX](#)
To: [Halls, Lori D ENV:EX](#); [Crebo, David GCPE:EX](#); [Standen, Jim ENV:EX](#)
Subject: FW: Information Note - 208625
Date: Tuesday, August 5, 2014 12:57:44 PM
Attachments: [Info Note - Mt Polley Aug 5 2014.docx](#)

Folks:

Have opened a CLIFF log for this info note. It is CLIFF # 208625. Having problems with eApprovals – will send referral when done.

mary

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 12:24 PM
To: Halls, Lori D ENV:EX
Cc: Standen, Jim ENV:EX; Crebo, David GCPE:EX; Fairholm, Mary ENV:EX
Subject: FW: Information Note

Lori – IN as requested

Mary – pls put into the system.

thx

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: Metcalfe, Shelley ENV:EX
Sent: Tuesday, August 5, 2014 12:13 PM
To: McGuire, Jennifer ENV:EX
Cc: Bunce, Hubert ENV:EX
Subject: Information Note

Sorry for delay – received some last minute corrections. Includes input from Dan, Jack, Gabi, Brian and Christa....

Over to you... let me know if you need anything else.

Shelley Metcalfe

Section Head, Mining Authorizations

BC Ministry of Environment - Regional Operations Branch
200- 10470 152nd St., Surrey BC V3R 0Y3
p. 604-582-5332 | f. 604-930-7119 | e. shelley.metcalfe@gov.bc.ca

From: [Halls, Lori D ENV:EX](#)
To: [Groot, Jeff GCPE:EX](#); [Hoffman, Al MEM:EX](#)
Cc: [Crebo, David GCPE:EX](#); [Koncohrada, Karen MEM:EX](#); [Haslam, David GCPE:EX](#); [Gordon, Matt GCPE:EX](#)
Subject: Office Space - Williams Lake
Date: Tuesday, August 5, 2014 1:00:00 PM

Will get you details but have arranged 2 offices at our Williams Lake office to be available when you arrive.

Address: Suite 400 640 Borland Street

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

5th Floor, 2975 Jutland Road, Victoria

Phone (250)387-6177

Fax (250)953-3414

Email: lori.d.halls@gov.bc.ca

From: [Haslam, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#); [Koncohrada, Karen MEM:EX](#); [Hoffman, Al MEM:EX](#); [Standen, Jim ENV:EX](#)
Cc: [Groot, Jeff GCPE:EX](#); [Fraser, John Paul GCPE:EX](#); [McCaffrey, Julianne GCPE:EX](#); [Ritchie, Leanne GCPE:EX](#); [Crebo, David GCPE:EX](#)
Subject: FW: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 1:09:48 PM
Attachments: [Q&A MtPolleyTailingsPondBreach-Aug2014.docx](#)
[Mt Polley Mine Breach Aug 5 930 am.docx](#)
[2014MEM0019-001118.pdf](#)

Lori/Karen/Al/Jim - I've included everyone on the conference noon call - as well as Jeff Groot and EMBC com staff. Attached are the latest com materials: QA, Sit Report - 930 am today, MBB statement released about 10:30 am. The QA is a live document and will be updated as questions/info evolve. We will update Sit report: Al Hoffman, Chief Inspector is travelling to Williams Lake. Imperial Metals is holding a press conference at 2 pm. CRD is hosting a community meeting at 4 pm today in Likely - provincial gov rep will be attending. MBB arrives 230 pm today and will be doing a media conference at the airport. MoE is working on response point for Province story below:

<http://www.theprovince.com/news/Polley+Mine+tailings+pond+growing+unsustainable+rate+says/10091105/story.html>

Mt. Polley Mine Dam Breach – August 5, 2014 – 9:30 am

Situation

Mt. Polley Mine is owned by Imperial Metals and is approximately 30 kms from the community of Likely. The tailing pond at Mt. Polley Mine is 4 kms by 4 kms. Exact volume is unknown.

Early in the morning of August 4 the tailings pond dam at the Mt. 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. Hazletine Creek flows out of Polley Lake and the flow of contaminated water continued into Quesnel Lake. The flow out of the breach has decreased dramatically, but has not completely stopped. This is a large breach and extremely rare. Ministry of Energy and Mines officials do not recall anything of this magnitude in at least the last 25 years.

RCMP, Mt. Polley Mine executives, Ministry of Environment, Emergency Management BC, Ministry of Transportation, Cariboo Regional District, Search and Rescue and Cariboo Dam Safety, responded to the event.

Cause of the breach is unknown at this time. The environmental impact of the contaminated water on the local watershed is unknown at this time. Effluent from copper-gold mine operations can include such harmful chemicals as arsenic, mercury, and sulphur.

Cariboo Regional District issued a water ban advisory not to drink, bath or feed livestock drawn from the following waterways - including Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek, and the entire Quesnel and Cariboo Rivers systems right up to the Fraser River.

The ban 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.

Initially it was believed the small town of Likely was not directly affected because it was unclear how many people in the town used water from Quesnel Lake. Since then, the Cariboo Regional District has decided to start delivering water to Likely because the main supplier of bottled water in the area, a small grocery store, could not keep up with the demand.

There have been no reports of injuries or people getting sick from drinking water. There have been no reports of property damage. Search and rescue crews notified campers in the immediate area, and it appears they have set up camp elsewhere without any problems.

Emergency Management BC Actions

Emergency Management BC and its Northeast Provincial Regional Emergency Operations Centre in Prince George is assisting the Cariboo Regional District Emergency Operations Centre with the coordination of information and support to decision making. EMBC is also supporting search and rescue crews going door-to-door to recommend evacuation from park sites and notify water users of the water ban. Due to the influx of tourists in to the area over the long weekend, the numbers of people affected is unconfirmed but the Cariboo Regional District estimates range up to 300.

Concerns have been raised about boating safety on Mount Polley Lake and EMBC was advised August 8 a qualified individual is being brought to boom the wood debris on Quesnel Lake at the outlet of Hazeltine Creek. This work should start within the next day or two.

A public information line has been set up by the Cariboo Regional District, 250-398-5581, and updates will be posted to the Cariboo Regional District's emergency operations Facebook page.

Ministry of Environment Actions

The Ministry says it further water testing will be required before the full extent of potential environmental impacts can be known. Water sampling took place the evening of Aug 4th. Samples will be sent for analysis on Aug 5th, with results expected within 3 days. MoE conservation officers are investigating the breach, with MEM mine inspectors.

Ministry of Energy and Mines Actions

The Ministry of Energy and Mines sent two mine inspectors to investigate the cause and monitor the site by helicopter. The first report is expected August 5. Media have reported the Mt. Polley dam breached three months ago and that mine employees warned Imperial Metals executives it could happen again. MEM officials investigated the incident on May 24 and have said internally it was not a breach. It was a problem in how they managed the height of the water behind the dam and in a different area than the dam failure. The height of the water at the time of the breach will form part of the investigation. To date, Imperial Metals has been compliant with respect to recent orders regarding dam safety inspections.

Imperial Metals Actions

Released a statement acknowledging the breach, does not know the cause, and is working with government officials. Imperial Metals CEO is now on site.

Q&A – Mount Polley Tailings Pond Breach

Has it been stopped? If no, when can we expect it to?

- The tailings flow from the dam has slowed considerably
- The ground around the breach, Polley Lake, the Hazeltine Creek is still stabilizing
- The public has been asked to stay away from this area and boaters on Quesnel Lake should stay away from Hazeltine Creek Lake and Quesnel Lake

When was the last time there was a major tailings pond breach like this in BC?

- None that we are aware of in the past 25 years

What is Imperial Metal's track record? Have they had similar incidents?

- In general, Imperial Metals has been compliant with the Health, Safety and Reclamation Code and their Mines Act permit conditions
- BC has some of the highest safety standards when it comes to permitting and operating mines and Imperial Metals would not have received any approvals to operate in BC if they had not measured up to those standards

What are the next steps in the process?

- Inspectors of Mines and other agencies will undertake a comprehensive investigation of the failure to determine root causes if possible
- Lessons learned will apply to other mines in the province

How long will the process take?

- The investigation determining what caused the breach will take several months

Has the mine been shut down? For how long?

- The mine cannot operate without a location to store tailings
- Imperial Metals announced that the mine is now in care and maintenance

Given the incident at Mt. Polley, will you be inspecting all mines with tailings ponds....and when?

- If the investigation shows early on that the breach was a result of a design failure or practise at Mt. Polley then directions will be given to other applicable mine sites and inspections will be undertaken at other applicable mines in BC
- Any and all lessons learned once the investigation is completed will apply to other mines in the province

How does BC compare to other jurisdictions on tailing pond breaches?

- BC has experienced a very positive record. This is the first significant tailings dam failure in recent history.

What are the potential penalties if it has been determined Imperial Metals did not follow regulations?

- It's too early to determine whether Imperial Metals did not follow regulations

- Prosecution is possible pursuant to Section 37 of the BC Mines Act. This can be applied to a person who contravenes a provision of the Act, Code or the regulation or who impedes an investigation
- The decision to prosecute is made by Crown Counsel based on evidence that we collect

How many other mines does Imperial Metals operate in BC?

- Imperial Metals has a half interest in Huckleberry Mine near Houston, BC and Red Chris Mine is under construction and nearing operation status in Northwest BC

How does this impact the economic health of the mining industry?

- This is difficult to assess at this time. It will certainly bring more scrutiny to mine permitting processes
- Having said that, mining has a significant history and a promising future in BC
- Not only has the mining industry helped shape British Columbia over the last 150 years, it will play an important role in creating a strong and stable economic future

How many active metal mines are there in BC?

Ministry of Energy and Mines - Active metal Mines – as of Aug 2014

Mine Name	Company	Commodity	Location	Production Start
Bralorne	Bralorne Gold Mines Ltd	Gold	Near Whistler/Pemberton	May 2011
Copper Mountain	Copper Mtn Mining Corp	Copper, gold, silver	Near Princeton	June 2011
Endako	Thompson Creek Minerals	Molybdenum	Near Fraser Lake	1965
Gibraltar	Taseko Mines Ltd	Copper, molybdenum	Near Williams Lake	Re-opened by Taseko in 2004 (previously operated 1972–1998)
Highland Valley Copper	Teck Resources Ltd	Copper, molybdenum	Near Ashcroft	1986 (this is when the Lornex and Valley Copper mines merged)
Huckleberry	Imperial Metals Corp	Copper, molybdenum	Near Houston	1997
Mount Polley	Imperial Metals Corp	Copper, gold, silver	Near Williams Lake	Re-opened 2005 (previously operated 1997 to 2001)
Mt. Milligan	Thompson Creek Metals Company	Copper, gold, silver	156 km northwest of Prince George	August 2013
Myra Falls	Nyrstar Inc	Copper, gold,	Near Campbell River	circa 1966

		silver, lead, zinc		
New Afton	New Gold Inc	Gold	Near Kamloops	June 2012
Bonanza Ledge	Barkerville Gold	Gold		July 2014

Note* Bonanza Ledge does not have a tailings impoundment

From: [McGuire, Jennifer ENV:EX](#)
To: [Halls, Lori D ENV:EX](#); [Crebo, David GCPE:EX](#); [Dalal, Suntanu GCPE:EX](#)
Cc: [Bunce, Hubert ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Hill, Douglas J FLNR:EX](#)
Subject: RE: Public Meeting Tonight in Likely - MOE rep requested
Date: Tuesday, August 5, 2014 1:09:16 PM

Doug's cell 2503059262

Jennifer McGuire, P.Ag.

Executive Director, Regional Operations

Environmental Protection

Ministry of Environment

ph: 250-356-6027

cell: 250-361-5944

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 1:03 PM
To: McGuire, Jennifer ENV:EX; Crebo, David GCPE:EX; Dalal, Suntanu GCPE:EX
Cc: Bunce, Hubert ENV:EX; Zacharias-Homer, Christa ENV:EX; Hill, Douglas J FLNR:EX
Subject: RE: Public Meeting Tonight in Likely - MOE rep requested

Jennifer we've discussed with GCPE ----- we would like to have Doug Hill attend. Can you ensure we have his cell phone number. Understand the public meeting is scheduled for 4:00pm in Likely

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 12:20 PM
To: Crebo, David GCPE:EX; Dalal, Suntanu GCPE:EX
Cc: Halls, Lori D ENV:EX; Bunce, Hubert ENV:EX; Zacharias-Homer, Christa ENV:EX
Subject: FW: Public Meeting Tonight in Likely - MOE rep requested

We have local front line staff who could attend and talk about what they have seen and the samples collected. I can get someone there if needed.

Jennifer McGuire, P.Ag.

Executive Director, Regional Operations

Environmental Protection

Ministry of Environment

ph: 250-356-6027

cell: 250-361-5944

From: Bings, Dan P ENV:EX
Sent: Tuesday, August 5, 2014 12:14 PM
To: McGuire, Jennifer ENV:EX; Bunce, Hubert ENV:EX
Subject: Public Meeting Tonight in Likely - MOE rep requested

Jen/Hubert,

Just took a call in the lab from Dale Bull (spill officer - PG). Apparently there's to be a public meeting (i.e. lynch mob) in Likely tonight (hosted by the CRD) and they're looking for an MOE rep to attend. Doug Hill would be a good candidate if you need someone and he's willing to help out any way he can. Ultimately our primary message is "wait for the sample results, but preliminary indications of water quality in Quesnel Lake look promising." We've just shipped yesterdays samples and are preparing for our trip today.

You can reach me on my cell at 250-302-8112.

Dan Bings

Environmental Protection Officer

Ministry of Environment
Northern Region
PH: (250) 398-4897 FX: (250) 398-4214

BC Pollution Free

If this is an ongoing environmental emergency, please call the 24-hour Spill/Environmental Emergency Reporting line at 1-800-663-3456.

24-hour RAPP (Report All Poachers and Polluters) tip-line: 1-877-952-7277 (Conservation Officer Service)
www.gov.bc.ca/env

Please be aware that while your inquiries are important to us, due to a high workload volume within the Northern Interior Region a response can be expected in the next five business days. If you do not receive a response in the next five business days, please feel free to resend your message. Inquiries/applications are reviewed on a first in, first out basis.

From: [Halls, Lori D ENV:EX](#)
To: [Haslam, David GCPE:EX](#)
Cc: [Koncohrada, Karen MEM:EX](#); [Hoffman, Al MEM:EX](#); [Standen, Jim ENV:EX](#); [Groot, Jeff GCPE:EX](#); [Fraser, John Paul GCPE:EX](#); [McCaffrey, Julianne GCPE:EX](#); [Ritchie, Leanne GCPE:EX](#); [Crebo, David GCPE:EX](#)
Subject: Re: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 1:16:41 PM

Len Butler from COS will be at Williams Lake Airport with a satellite phone at 2:15pm. Once media subsides he will ensure Minister Bennett knows how to operate.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

> On Aug 5, 2014, at 1:09 PM, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca> wrote:

>

> Lori/Karen/Al/Jim - I've included everyone on the conference noon call - as well as Jeff Groot and EMBC com staff. Attached are the latest com materials: QA, Sit Report - 930 am today, MBB statement released about 10:30 am. The QA is a live document and will be updated as questions/info evolve. We will update Sit report: Al Hoffman, Chief Inspector is travelling to Williams Lake. Imperial Metals is holding a press conference at 2 pm. CRD is hosting a community meeting at 4 pm today in Likely - provincial gov rep will be attending. MBB arrives 230 pm today and will be doing a media conference at the airport. MoE is working on response point for Province story below:

>

>

> <http://www.theprovince.com/news/Polley+Mine+tailings+pond+growing+unsustainable+rate+says/10091105/story.html>

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> <Q&A_MtPolleyTailingsPondBreach-Aug2014.docx>

> <Mt Polley Mine Breach_Aug 5_930 am.docx>

> <2014MEM0019-001118.pdf>

From: [Halls, Lori D ENV:EX](#)
To: [Standen, Jim ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Subject: FW: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 1:41:00 PM

Jennifer we need to discuss at 2:00pm

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

From: Fraser, John Paul GCPE:EX
Sent: Tuesday, August 5, 2014 1:35 PM
To: Halls, Lori D ENV:EX
Subject: FW: Mt. Polley Com materials

Hi Lori, You may wish to alert John D to this issue.

Thanks,
JPF

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

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 1:33 PM
To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

Basically correct. I'm hearing that there may have been an amended permit granted last fall...info not contained in the note you reference. I need to clarify that. But generally speaking it is a lengthy period between receiving an application and granting a permit.

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

From: Chin, Ben PREM:EX
Sent: Tuesday, August 5, 2014 1:26 PM
To: Crebo, David GCPE:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: Re: Mt. Polley Com materials

This is helpful...so it was submitted in 2011 to ENV. MT P received an amendment in 2009. They put in another amendment application last month according to an ENV IN I just read....so is this a case of a three year lag between submitting this report and submitting an amendment application?

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

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

From: Crebo, David GCPE:EX
Sent: Tuesday, August 05, 2014 01:18 PM

To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

This what we know:

Brian Olding and Associates report

- This report was commissioned to provide a review by a third-party of the application submitted by Mount Polley Mining Corp. requesting authority to discharge water from the mine to Hazeltine Creek.
- The amendment application reviewed by Brian Olding was developed by MPMC to facilitate maintenance of the long-term water balance in the tailings storage facility based on the mine footprint at the time.
- The scope of the third-party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit.
- The review and resultant report did not address any matters pertaining to geotechnical stability of the tailings storage facility, as this was not part of the Environmental Management Act discharge application review.

This is what we are still trying to find out:

When did Imperial receive amended permit from ENV?

The news articles talk about a geotechnical study recommended by Olding, but not contained in this report, that was never acted upon...who never acted on it? That wouldn't be in ENV's purview to do geotechnical assessments. David H can you see if this is on MEM's radar?

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

From: Chin, Ben PREM:EX
Sent: Tuesday, August 5, 2014 1:06 PM
To: Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: Re: Mt. Polley Com materials

Do we have an answer yet to the Olding Report?

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

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

From: Haslam, David GCPE:EX
Sent: Tuesday, August 05, 2014 12:58 PM
To: Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Chin, Ben PREM:EX; Mills, Shane LASS:EX; Shotton,

Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

Jeff - attached are the latest com materials: QA, Sit Report - 930 am today, MBB statement released about 10:30 am. The QA is a live document and will be updated as questions/info evolve. We will update Sit report: Al Hoffman, Chief Inspector is travelling to Williams Lake. Imperial Metals is holding a press conference at 2 pm. CRD is hosting a community meeting at 4 pm today in Likely - provincial gov rep will be attending. MBB arrives 230 pm today and will be doing a media conference at the airport. MoE is working on response point for Province story below:

<http://www.theprovince.com/news/Polley+Mine+tailings+pond+growing+unsustainable+rate+says/10091105/story.html>

From: [Koncohrada, Karen MEM:EX](#)
To: [Haslam, David GCPE:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [Hoffman, Al MEM:EX](#); [Standen, Jim ENV:EX](#); [Groot, Jeff GCPE:EX](#); [Fraser, John Paul GCPE:EX](#); [McCaffrey, Julianne GCPE:EX](#); [Ritchie, Leanne GCPE:EX](#); [Crebo, David GCPE:EX](#)
Subject: Re: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 1:42:09 PM

FYI - Imperial Metals' public meeting/press conf in Big Lake at 2 pm has been moved to 3 pm in Likely.

> On Aug 5, 2014, at 1:09 PM, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca> wrote:

>

> Lori/Karen/Al/Jim - I've included everyone on the conference noon call - as well as Jeff Groot and EMBC com staff. Attached are the latest com materials: QA, Sit Report - 930 am today, MBB statement released about 10:30 am. The QA is a live document and will be updated as questions/info evolve. We will update Sit report: Al Hoffman, Chief Inspector is travelling to Williams Lake. Imperial Metals is holding a press conference at 2 pm. CRD is hosting a community meeting at 4 pm today in Likely - provincial gov rep will be attending. MBB arrives 230 pm today and will be doing a media conference at the airport. MoE is working on response point for Province story below:

>

>

> <http://www.theprovince.com/news/Polley+Mine+tailings+pond+growing+unsustainable+rate+says/10091105/story.html>

>

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>

>

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>

>

> <Q&A_MtPolleyTailingsPondBreach-Aug2014.docx>

> <Mt Polley Mine Breach_Aug 5_930 am.docx>

> <2014MEM0019-001118.pdf>

From: [Fraser, John Paul GCPE:EX](#)
To: [Dyble, John C PREM:EX](#)
Cc: [Wanamaker, Lori JAG:EX](#); [Halls, Lori D ENV:EX](#)
Subject: Update -- on-site comms
Date: Tuesday, August 5, 2014 2:09:12 PM

John,

We are deploying a senior GCPE communications expert to Williams Lake. He is Jeff Groot, our Comms Director at JAG (Public Safety) and very familiar with EMBC and emergency comms procedures – and very good at media relations. Jeff will work out of the government offices in Williams Lake. Ideally, we will place Jeff in the EOC @ Williams Lake.

In terms of government spokesperson, we've identified Jennifer McGuire – ENV, Executive Director, Regional Operations – who is fully trained incident commander will fly up as soon as possible. She's been the MOE lead on this and has extensive technical background and has media experience. As you know, we'd initially identified Al Hoffman – MEM, Chief Mines Inspector – but given his SDM role and any potential future charges, this was not ideal.

There has been some hesitation from EOC staff about co-locating with Jeff... but as Lori W points out, with Jennifer as a MOE program person now on the ground, a provincial post in their regional office should make more sense. She is reaching out them now.

Both Jeff and Jennifer will be in WL by tomorrow AM.

Hope this meets with your approval.

Thanks,

John Paul Fraser

A/ Deputy Minister

Government Communications and Public Engagement

250 356-8527 (direct line)

250 580-4149 (cell)

From: [Williams, Bryan ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: First Nations
Date: Tuesday, August 5, 2014 2:29:34 PM
Attachments: [Mount Polley.pdf](#)

FNs affected (Map Attached):

1. Sugar Cane
2. Alexandria
3. Red Bluff
4. Soda Creek (Xatsull)

s.22

Kristy ENV:EX Palmantier 2:16 PM

its affected 300 non-fn locals living around Like....but none of the FN, which includes Sugar cane, Xatsull, Alexandria and Red Bluff. theyre communities are about 1-2 hrs away from the spill site.

Likely

Williams, Bryan ENV:EX 2:17 PM

thanks!

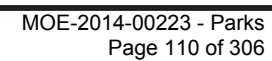
Kristy ENV:EX Palmantier 2:18 PM

went to northern shuswap mtg this morning, all 5 chiefs were there from Xatsull, Sugar cane, Esket, Canim Lake and Dog Creek. Soo many elders were crying...so sad to watch

Bryan Williams
Manager, First Nations Relations
BC Parks and Conservation Officer Service Division
Ministry of Environment
Office: 250-847-7723

Mobile: 250-643-2885

"In theory there is no difference between theory and practice. In practice there is." Yogi Berra



From: [Halls, Lori D ENV:EX](#)
To: [Standen, Jim ENV:EX](#)
Subject: RE: There is a Central Coordination Group call regarding Polley at 5 that I will be attending. No action needed from you, just an FYI for you both.
Date: Tuesday, August 5, 2014 2:52:00 PM

Thanks.

From: Standen, Jim ENV:EX
Sent: Tuesday, August 5, 2014 2:47 PM
To: Halls, Lori D ENV:EX; McGuire, Jennifer ENV:EX
Subject: There is a Central Coordination Group call regarding Polley at 5 that I will be attending. No action needed from you, just an FYI for you both.

From: [Standen, Jim ENV:EX](#)
To: [Dalal, Suntanu GCPE:EX](#); [Halls, Lori D ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Cc: [Crebo, David GCPE:EX](#); [Franklin, Kimberley GCPE:EX](#)
Subject: Revised re: Mount Polley Compliance History/Summary
Date: Tuesday, August 5, 2014 2:58:16 PM

BC Water Quality Guidelines are levels at which the potential exists for impacts on various water uses. Environmental Protection Division staff reviewed the tailings supernatant data sent by Imperial Metals on August 4, 2014 and found that for the impounded tailings supernatant:

- The Selenium drinking water guideline was exceeded the guideline of 10ug/L by a factor 2.8 times
- Sulphate did not exceed the drinking water guideline of 500mg/L in May 2014. There have been frequent small exceedances of this guideline over the last few years.
- Molybdenum concentrations were well below drinking water guidelines in the last two years. Recent Molybdenum concentrations in the supernatant exceeded livestock watering and irrigation guidelines of 0.05mg/L.
- Organic carbon concentrations exceed the 4mg/L guidelines for chlorination (water treated with chlorine that contains >4mg/L of organic carbon can result in toxic chlorination by-products).

In addition, the concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 2:33 PM
To: Standen, Jim ENV:EX; Halls, Lori D ENV:EX; McGuire, Jennifer ENV:EX
Cc: Crebo, David GCPE:EX; Franklin, Kimberley GCPE:EX
Subject: Fw: Mount Polley Compliance History/Summary

From: Zacharias-Homer, Christa ENV:EX
Sent: Tuesday, August 05, 2014 01:26 PM
To: Crebo, David GCPE:EX; Dalal, Suntanu GCPE:EX
Cc: Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX; McGuire, Jennifer ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

David and Suntanu

FYI, below is a summary of the Supernatant Quality...

Summary of Supernatant Quality
Mt. Polley Mine

Environmental Protection Division staff reviewed the tailings supernatant data sent by Imperial Metals on August 4, 2014 and found that averaged over time, there are some BC Water Quality Guideline exceedances. BC Water Quality Guidelines establish safe conditions or levels across the province for a variety of water uses. Specifically concentrations for:

- Selenium consistently exceed the drinking water guideline of 10ug/L. In May 2014, the water quality was not extremely toxic, but the Selenium drinking water guideline was exceeded 2.8 times.
- Sulphate did not exceed the drinking water guideline of 500mg/L in May 2014, it frequently exceeds this guideline slightly over the last few years.
- Molybdenum concentrations were well below drinking water guidelines in the last two years, concentrations were approaching the 0.25mg/L drinking water guideline in earlier years. Recent Molybdenum concentrations in the supernatant exceeded livestock watering and irrigation guidelines of 0.05mg/L.
- Organic carbon concentrations exceed the 4mg/L guidelines for chlorination (water treated with chlorine that contains >4mg/L of organic carbon can result in toxic chlorination by-products).

In addition, the concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

Christa Zacharias-Homer

Deputy Director, Regional Operations Branch

Ph: (250) 356-8174 | Fax: (250) 356-5496 | Cell: (250) 216-2467

Christa.ZachariasHomer@gov.bc.ca

 Please consider the environment before printing this email

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 12:04 PM
To: McGuire, Jennifer ENV:EX; Dalal, Suntanu GCPE:EX
Cc: Zacharias-Homer, Christa ENV:EX; Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Thanks Jennifer...one of things we'll need answer for (and maybe it's coming) is "What did you do with the report submitted to MoE a few years ago by Brian Olding and Associates, that outlined concerns with the tailings pond?"

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 11:52 AM
To: Dalal, Suntanu GCPE:EX
Cc: Crebo, David GCPE:EX; Zacharias-Homer, Christa ENV:EX; Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX
Subject: FW: Mount Polley Compliance History/Summary

Suntanu,

This is the first of a few emails with summary info regarding Mount Polley.

An Info Note will be ready before noon.

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: Zacharias-Homer, Christa ENV:EX
Sent: Tuesday, August 5, 2014 11:44 AM
To: McGuire, Jennifer ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Mount Polley Mine.
Compliance History since 2012

Generally Mount Polley Mine operators have had a reasonable, cooperative and proactive attitude when dealing with non-compliances, from reporting to investigating and remediation following incidents.

Since 2012, ministry staff have conducted 14 inspections (office review and on-site) on Mt. Polley Mine. The following non-compliances were observed by Regional Operations Branch, Environmental Protection Division Staff:

- 24 May 2014. The ministry issued an advisory to Imperial Metals for exceedance of the freeboard within the tailings impoundment. The permitted limit is no less than 1.0m of freeboard. Ministry staff observed only 0.6 m freeboard. Freeboard returned to 1.0 m week commencing 30 June 2014.
- 18 April 2014. The ministry issued an advisory to Imperial Metals for bypass of authorized treatment works. The site experienced high flows due to spring freshet which caused pump system to become blocked and resulted in an overflow of long ditch towards Hazeltine Creek. Flow did not reach creek and was directed into Till Borrow Pit.
- January and April 2012. The ministry issued an advisory to Imperial Metals for non-compliance with submission of monitoring data for one of the groundwater monitoring wells (GW05-1).
- 30 August 2012. The ministry issued a warning to Imperial Metals for failure to report freeboard exceedance for perimeter pond (E7). This perimeter pond overflowed releasing approximately 150m³ effluent over 13 hours to ground.

Christa Zacharias-Homer

Deputy Director, Regional Operations Branch

Ph: (250) 356-8174 | Fax: (250) 356-5496 | Cell: (250) 216-2467

Christa.ZachariasHomer@gov.bc.ca

 Please consider the environment before printing this email

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 10:42 AM
To: Zacharias-Homer, Christa ENV:EX
Subject: Fw: Mount Polley Compliance History/Summary

Can you pls simplify this for prep to send to the MO?

I need this within the next 10 min.

Thx

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Green, Jack E ENV:EX <Jack.Green@gov.bc.ca>
Sent: Tuesday, August 5, 2014 10:03 AM
To: Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX
Subject: Mount Polley Compliance History/Summary

Below is a list of the compliance reports that have occurred at Mount Polley Mine since 2012.

- 24 May 2014. Freeboard exceedance – Freeboard in tailings impoundment reduced to 0.6 m (permitted limit is no less than 1.0m) due to heavy rainfall. Freeboard returned to 1.0 m week commencing 30 June 2014. Ministry response – Advisory.
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- 1st & 2nd quarters 2012 monitoring report. No monitoring data for one of the groundwater monitoring wells (GW05-1). Ministry response – Advisory.
- 30 August 2012. Perimeter pond (E7) overflowed releasing approx 150m3 effluent over 13 hours to ground. Failed to report freeboard exceedance. Ministry response – Warning.
- 12 April 2012. Bypass of authorized treatment works. Long Ditch overflowed to ground.

Generally Mount Polley have had a reasonable, cooperative and proactive attitude when dealing with non-compliances, from reporting to investigating and remediation following incidents.

If you have any further questions, please call.

Regards,

Jack Green

Environmental Protection Officer

Ministry of Environment

Cariboo Region

Phone: 250 398 4544

Fax: 250 398 4214

jack.green@gov.bc.ca

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(Provincial Emergency Program)

24 Hour RAPP (Report All Poachers and Polluters) tip-line: 1-877-952-7277

(Conservation Officer Service)

www.gov.bc.ca/env

From: [Standen, Jim ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: FW: Mount Polley Compliance History/Summary
Date: Tuesday, August 5, 2014 2:58:42 PM
Attachments: [Final Report MPMC Master TA Review Jun21 2011.pdf](#)

FYI

From: Bunce, Hubert ENV:EX
Sent: Tuesday, August 5, 2014 1:49 PM
To: Standen, Jim ENV:EX
Subject: FW: Mount Polley Compliance History/Summary

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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BC Pollution Free

From: Hill, Douglas J FLNR:EX
Sent: Tuesday, August 5, 2014 12:45 PM
To: Dalal, Suntanu GCPE:EX; Crebo, David GCPE:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX; Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX; Bethel, Greig GCPE:EX; Thomas, Vivian P GCPE:EX
Subject: RE: Mount Polley Compliance History/Summary

Folks,

I have been asked to provide some background pertaining to the third party review conducted for the approved effluent discharge at Mount Polley Mine. I've attached the report I understand you are wondering about. This report was commissioned to provide a review by a third party (Brian Olding) of the application submitted by Mount Polley Mining Corp (MPMC) requesting authority to discharge water from the mine to Hazeltine Creek. The amendment application reviewed by Mr Olding was developed by MPMC to facilitate maintenance of the long term water balance in the TSF based on the mine footprint at the time.

The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit.

It was suggested that the report had some relationship to concerns expressed about the geotechnical stability of the TSF. However, the review and resultant report did not address any matters pertaining to geotechnical stability of the TSF, as this was not part of the EMA discharge

application review (MEM has the authority under the Mines Act to address geotechnical stability).

Douglas Hill, P.Eng.
Senior Project Manager
Forests, Lands and Natural Resource Operations
Cariboo Region

ph: 250-398-4475
doug.hill@gov.bc.ca

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 12:22 PM
To: Crebo, David GCPE:EX; Hill, Douglas J FLNR:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX; Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX; Bethel, Greig GCPE:EX; Thomas, Vivian P GCPE:EX
Subject: RE: Mount Polley Compliance History/Summary

Will do.

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 12:20 PM
To: Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX; Dalal, Suntanu GCPE:EX; Hill, Douglas J FLNR:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Suntanu can you pls connect with Doug...we need this info asap.

From: Bunce, Hubert ENV:EX
Sent: Tuesday, August 5, 2014 12:19 PM
To: Crebo, David GCPE:EX; McGuire, Jennifer ENV:EX; Dalal, Suntanu GCPE:EX; Hill, Douglas J FLNR:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Doug Hill has mentioned that he would provide information on this report and he is probably best placed to explain how it was considered in the permitting and administration of the Mt. Polley discharge permit.

David I would suggest you contact Doug directly

Hubert Bunce
A/Mining Director, Environmental Protection
Regional Operations

ph (250) 751-3254 fax (250) 751-3103
2080A Labieux Road

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 12:04 PM
To: McGuire, Jennifer ENV:EX; Dalal, Suntanu GCPE:EX
Cc: Zacharias-Homer, Christa ENV:EX; Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX
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Environmental Protection
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ph: 250-356-6027
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Christa Zacharias-Homer

Deputy Director, Regional Operations Branch

Ph: (250) 356-8174 | Fax: (250) 356-5496 | Cell: (250) 216-2467

Christa.ZachariasHomer@gov.bc.ca

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Sent: Tuesday, August 5, 2014 10:42 AM
To: Zacharias-Homer, Christa ENV:EX
Subject: Fw: Mount Polley Compliance History/Summary

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Regards,

Jack Green

Environmental Protection Officer

Ministry of Environment

Cariboo Region

Phone: 250 398 4544

Fax: 250 398 4214

jack.green@gov.bc.ca

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(Conservation Officer Service)

www.gov.bc.ca/env



Independent Review of the Mount Polley Mine Technical Assessment Report for a Proposed Discharge of Mine Effluent (2009)

Final Report June 2011

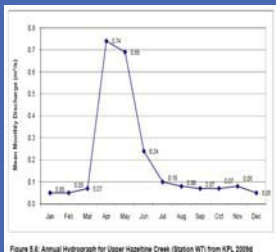


Figure 5.6: Annual Hydrograph for Upper Kootenai Creek (Station W7) from KPI, 2006

Prepared for:

T'exelc Williams Lake Indian Band
Xat'sull Soda Creek First Nations
Mount Polley Mining Corporation

Prepared by:

Brian Olding & Associates Ltd.
in association with LGL Limited



Acknowledgements

We would like to acknowledge all of the many people who helped to fulfill the purpose and goals of this project. Aaron Higginbottom who first contacted BOA Ltd. and led me through this project. Thank you to Chief Ann Louie for her guidance. Warren Fortier for his technological help and ethno botanical lessons. Byron Louie for his technological prowess. Kirk Dressler for his dependable observations. Councillor Robin Gilbert for his understanding of the land. Joanne Ramsay for her quick and thoughtful observations. Chief Bev Sellars for her thoughtful observations and guidance. Sally Sellars for her quick intelligence. Heather Mackenzie and Marg Shelley for their helpful perspectives. Kukwtsétsemc. The great guys at Mount Polley Mining Corporation who accounted very well for themselves in what many would consider a challenging situation, thank you to Tim Fisch for helping to make this project happen, Ron Martel for his inexhaustible expertise, Pierre Stecko from Minnow Environmental who worked collaboratively with BOA and LGL staff. Thank you too, to Byng Giraud, Imperial Metals, who offered thoughtful insights on more than one occasion. We received thoughtful and insightful assistance from Doug Hill, Karen Moore and Chris Swan, all from B.C. Ministry of Environment, from Susan O'Sullivan from the B.C. Ministry of Minister of Forests, Lands and Natural Resource Operations, and from Don Lawrence, Department of Fisheries and Oceans. And I will take this opportunity to personally thank the dedicated staff at LGL Ltd. who worked with BOA Ltd. on this challenging assignment. Thank you Bob Bocking, for calm leadership, Elmar Plate for quick intelligence on multi-faceted observations, Mike Demarchi for opening up the world of riparian wildlife and for caring for it, Marc Gadboury for hydrological expertise, and Jamie Fenneman for his wildlife contributions. Thank you. Kukwtsétsemc

Brian Olding & Associates Ltd.
Office: 604.531.7132
Mobile: 604.790.1948
brian@brianolding.com
www.brianolding.com
12671, 26th Ave | Surrey | BC | Canada | V4A 2K8

Front cover photos show Hazeltine Creek upstream; Hazeltine Creek annual hydrograph, Hazeltine Creek flowing into Quesnel Lake. Photos credit: Elmar Plate

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
Structure And Objectives Of This Report	7
Background to the Independent Review of the MPMC Technical Assessment 2009	8
The Water Balance	8
Permitting	8
Aboriginal Consultation	9
Historical Impacts on Local Watercourses	10
Principal Issues Concerning the MPMC Technical Assessment Report 2009	11
Sources of Hydrological Data for Hazeltine Creek	11
Calculations of Effluent Dilution	12
Sedimentation of Hazeltine Creek.....	12
Fish Ecology and Traditional Use	12
Terrestrial Biodiversity	13
Water Quality Objectives	13
Monitoring and Contingency Plans	14
Consultation with First Nations.....	14
Corporate Commitment	14
Information Gaps	15
Appendix One: Technical Review of the MPMC Technical Assessment Report	16

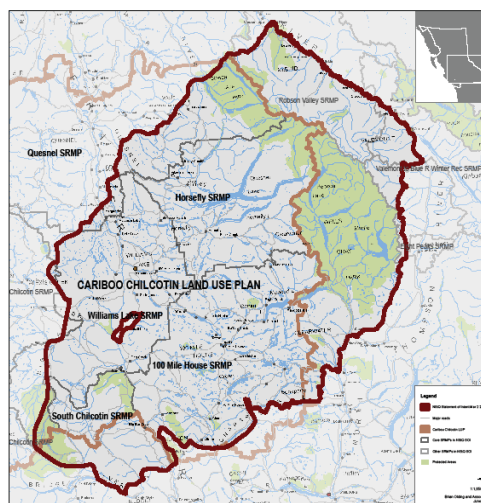
EXECUTIVE SUMMARY

Mount Polley Mining Corporation (MPMC), a division of Imperial Metals Corporation, owns and operates Mount Polley Mine (MPM) – an open pit copper and gold mine located 8 km south-west of Likely, and 56 km north-east of Williams Lake, British Columbia. A Tailings Storage Facility (TSF) is an integral component of this mine. To date, the TSF has been self-contained whereby seepage water from toe drains and surrounding collection ponds is pumped back into the TSF. From there it can be recycled back to the mine for such uses as milling and dust suppression.

The mine site has been characterized as a net precipitation site resulting in MPMC's stated need to release ~1.4 million cubic meters of effluent annually from the TSF. MPMC can continue to raise the banks of the TSF, however, they will soon need to discharge effluent from the TSF. MPMC's preferred option is to discharge effluent to Quesnel Lake via Hazeltine Creek. This will require a discharge permit from the Province. MPMC's permit application was based on the *Mount Polley Mine Technical Assessment [TA] Report for a Proposed Discharge of Mine Effluent, 2009*. The MPMC TA summarized mining operations, environmental studies, and water quality objectives for chemicals such as sulphate, cadmium, copper and selenium. Unlike a proposal to obtain a permit to build a new mine, a formal environmental assessment is not required to obtain a permit to discharge although a number of environmental conditions must be satisfied.

The MPM is located within the northern part of the Secwepemc te Qelmucw (NStQ) traditional territory and is within the traditional territories of T'exelc Williams Lake Indian Band and the Xat'sull Soda Creek First Nations. As part of the Province's requirement to consult, the BC Ministry of Environment, the Williams Lake Indian Band, and the Soda Creek First Nations agreed to an integrated review of the application to discharge TSF effluent. Brian Olding & Associates Ltd. (BOA) was contracted to lead this work and LGL Limited was subcontracted to BOA to assist with aquatic and biodiversity issues. A contract was drawn up whereby BOA committed to work with all Parties to:

1. conduct an independent and objective review of the TA Report on behalf of, and in the mutual interests of the T'exelc Williams Lake Indian Band, Xat'sull Soda Creek First Nations and MPMC
2. summarize any and all environmental omissions and deficiencies with respect to MPMC's proposal to discharge mining effluent to Hazeltine Creek
3. present MPMC's responses to our review comments
4. provide recommendations to remedy the situation wherever possible
5. provide a final report that explains technical issues in clear language



Map of the NStQ Traditional Territory

During the project, meetings were held in Vancouver, Williams Lake and Sidney, B.C., to report out on our findings and to seek clarification of technical issues and confirmation of interests. Representatives at these meetings included Chiefs, Councillors, and members of First Nations Mine Working Groups. Representatives from BC Ministry of Environment and BC Ministry of Forests, Lands and Natural Resource Operations participated in selected meetings. We met separately with the Parties when required and with the environmental consultants who helped

prepare the MPMC TA Report. A site visit of MPM and Hazeltine Creek provided an in-person assessment of the local conditions.

The completion of this review of the MPM TA Report was made possible through the ongoing and constructive collaboration between all Parties involved.

Our report comprises three main sections. The first section contains background information on the project; the second section covers principal issues and recommendations that emerged during our review; the third section is an appendix that presents the detailed results of our review, including principal issues and others of lesser importance, together with recommended solutions. The appendix also includes MPMC's responses to our review comments. The following principal issues were identified:

Sources of Hydrological Data for Hazeltine Creek

There is considerable uncertainty regarding the accuracy of the dilution factors for Hazeltine Creek – the receiving stream. We suggest that the source of the hydrological data be clarified or that flow data for the creek span a range of conditions that includes 2009 (average flow year), 2010 (low flow year) and 2011 (high flow year) be recalculated in order to predict a range of chemical concentrations in Hazeltine Creek following effluent discharge. A commitment by MPMC to real-time adaptive management of their effluent into Hazeltine Creek based on accurate discharge volumes should be a condition of the discharge permit.

Calculations of Effluent Dilution

Throughout the TA Report, predicted chemical concentrations in Hazeltine Creek are based on annual or monthly mean values of effluent discharge to Hazeltine Creek. This approach can mask the potential for short-lived high concentrations of potentially harmful chemicals to exceed water-quality guidelines and potentially be harmful to the aquatic life of Hazeltine Creek. To correct this in a precautionary way, maximum concentrations of chemical parameters such as Sulphate, Selenium, Copper and Cadmium need to be calculated for minimum flow rates in Hazeltine Creek.

Sedimentation in Hazeltine Creek

Sediment or associated contaminants could enter Hazeltine Creek unless there is an effective sedimentation pond between the Tailings Storage Facility (TSF) and Hazeltine Creek. As such the sedimentation/polishing pond that is mentioned in the TA Report should be a condition of the discharge permit. At the same location as the inflow to the sedimentation pond, we also suggest that a Rainbow Trout live-tank be installed to act as a continuous water quality monitoring system.

Fish Ecology and Traditional Use

The picture concerning fish ecology in Hazeltine Creek is incomplete as fish populations have only been characterized during summer. Additionally, no historical First Nation fishery data are presented for the Hazeltine-Edney Creek complex. To correct this, fish populations need to be characterized during the non-summer period and the information gap regarding First Nation fishery uses should be addressed as part of a Traditional Use Study. Finally, the occurrence of Rainbow Trout and Kokanee Salmon rearing and spawning in lower Hazeltine Creek and the still vulnerable state of Coho Salmon that spawn in Hazeltine Creek merit mentioning.

Terrestrial Biodiversity

The TA Report gives no consideration to the potential effects of effluent on terrestrial or riparian biodiversity (wildlife and vegetation adjacent to Hazeltine Creek). Although it appears unlikely that effluent discharge will have adverse effects on wildlife habitat, vegetation monitoring

plots in the riparian area of lower Hazeltine Creek should be established and monitored over time for any adverse effects of erosion and sedimentation on plant life. In light of requested revisions (above) to calculations of contaminant levels in Hazeltine Creek, the toxicological aspects of water should be thoroughly re-examined for potential to harm wildlife (i.e., amphibians, birds, mammals) and to contaminate tissues of those species typically consumed by humans (e.g., moose, black bear, grouse).

Water Quality Objectives

A range of approaches have been undertaken by MPMC to develop *Site Specific Water Quality Objectives* which would replace government guidelines. Although this approach is allowable, government approval is required before a Discharge Permit can be issued. Alternately, MPMC can opt to forgo the site-specific approach and adhere to the generic guidelines through water treatment that would lower concentrations in the TSF effluent. Water treatment suggestions offered by MPMC that could be effectively applied to the TSF effluent include lime treatment and, if it is proven to be successful on a larger scale, the inclusion of anaerobic cells which would use bacteria to break down potential effluent pollutants. This would increase MPMC's application of the precautionary approach, where required, to their environmental management plans.

Monitoring and Contingency Plans

Neither a detailed monitoring plan nor a detailed emergency contingency plan have yet been developed by MPMC. While we acknowledge that MPMC will be required to provide monitoring and contingency plans as a permit condition, it would be ideal if we were able to review such plans in advance of the permitting process. As such, MPMC should provide a detailed monitoring plan, including monitoring schedules, an outline of the involvement of the Williams Lake Indian Band and Soda Creek First Nations into the monitoring process, prior to the permit application. MPMC could also provide a detailed contingency plan in the event that effluent parameters exceed upper limits. As part of the contingency plan, MPMC should include response timelines and communication plans that include the Williams Lake Indian Band and Soda Creek First Nation.

Consultation with First Nations

There are on-going meetings and communication between MPMC and both First Nations. Nowhere in the TA Report, however, was the consultative process with the Williams Lake Indian Band or Soda Creek First Nation described. In the same context, no results of Archaeological or Traditional Use Studies for the areas potentially affected by the discharge from MPM were provided. MPMC should discuss the results of all Archaeological Studies that have been carried out so far with the Williams Lake Indian Band and Soda Creek First Nations. In addition, MPMC should work in a close partnership with these two groups on all future studies on the archaeology and traditional land use of the areas potentially affected by the discharge permit and on the direct and indirect mine footprint in general.

Ideally we would like to see an evolving relationship between MPMC and the First Nations that is collaborative, mutually beneficial, and which leads to shared decision making over those matters that directly affect the two First Nations.

Corporate Commitment

During our review, MPMC provided favourable verbal responses to many of our suggestions. We are confident that MPMC has the capacity and the desire to implement many of the recommendations made in this report. We suggest that the commitment of MPMC to work with First Nations on all aspects and phases of the project form part of the Permit conditions.

Information Gaps

The TA Report does not always present a comprehensive summary of data and information.. The following datasets and information should be made available:

1. groundwater monitoring since the start of MPM operations
2. monitoring results explaining why and how MPM causes changes to groundwater
3. a detailed discharge strategy for effluent from MPM in addition to the general statement that effluent discharge will be supply based
4. the monitoring schedule and the results of the former discharge of effluent from MPM into Edney Creek
5. the application of a modelling exercise that considers potential future changes in Hazeltine Creek discharge based on climate change

Conclusion

If MPMC (i) follows the commitments in the TA Report, (ii) implements the recommendations presented in this review, and (iii) satisfies MoE permit requirements it is highly unlikely that there will be any significant impacts to the ecological health of Hazeltine Creek or Quesnel Lake during the course of routine operations. Potential impacts on the cultural and heritage considerations along with any traditional uses by First Nations cannot be addressed at this time due to the absence of traditional use study information.

STRUCTURE AND OBJECTIVES OF THIS REPORT

This report includes an executive summary, a background section, a section on principal issues and recommendations, and an appendix containing the technical comments and recommendations of Brian Olding & Associates and LGL Limited, together with responses by MPMC.

In completing this report, we sought to satisfy the following objectives:

1. conduct an independent and objective review of the Mount Polley Mining Corporation Technical Assessment Report 2009 (the TA Report), on behalf of, and in the mutual interests of, the T'exelc Williams Lake Indian Band, Xat'sull Soda Creek First Nations and the Mount Polley Mining Corporation (MPMC)
2. summarize any and all environmental omissions and deficiencies with respect to MPMC's proposal to discharge mining effluent to Hazeltine Creek
3. present MPMC's responses to our review comments
4. provide recommendations to remedy the situation wherever possible
5. provide a final report that explains technical issues in clear language

Principal Issues

The Principal Issues focus on the main findings of this review and are presented under the following headings:

1. Sources of Hydrological Data for Hazeltine Creek
2. Calculations of Effluent Dilution
3. Sedimentation of Hazeltine Creek
4. Fish Ecology and Traditional Use
5. Terrestrial Biodiversity
6. Water Quality Objectives
7. Monitoring and Contingency Plans
8. Consultation with First Nations
9. Corporate Commitment
10. Information Gaps

Appendix

The appendix to this report contains our detailed technical comments on the MPMC TA Report. The TA Report served as the initial application for a permit to discharge effluent from the Tailings Storage Facility to Hazeltine Creek. We thoroughly reviewed the TA Report, identified technical issues associated with the proposed effluent discharge, and wherever possible, provided recommendations for remedial actions that would resolve the identified concerns. MPMC's responses, both to our specific concerns, and to the recommended remedial actions, are also provided in the appendix.

BACKGROUND TO THE INDEPENDENT REVIEW OF THE MPMC TECHNICAL ASSESSMENT REPORT (2009)

The Water Balance

Mount Polley Mining Corporation (MPMC) operates Mount Polley Mine (MPM). Hydrological studies funded by MPMC indicate that the MPM site is a net precipitation site. This means that the amount of water (precipitation) falling onto the site is greater than the amount that is (i) consumed by mining operations (i.e., production of mining concentrate, dust suppression), (ii) lost to groundwater seepage, (iii) retained in the voids of the tailings storage facility (TSF), and (iv) lost via evaporation and transpiration. Currently, the mine operates within a closed-loop system and does not have a discharge permit. To store excess water, the capacity of the TSF has been expanded annually. To address this water management situation in the near-, long- and post closure term, MPMC has identified the need to discharge excess water off-site.

MPMC currently holds Permit PE11678, originally issued by the BC Ministry of Environment (BCMOE) in 1997 and amended several times since. PE11678 requires that MPMC maintains at least 1 m of freeboard in the TSF at all times to avoid overflow and to report to BCMOE when the freeboard falls below 2 m, as a precautionary measure. Traditionally, MPMC has raised the TSF dam annually to retain all water on site. Dam-raising activities are presently underway in anticipation of conditions in 2012 and beyond. In looking ahead to a post-closure scenario, a sustainable means of discharging excess water is required because dam building cannot continue indefinitely. The annual excess of water that must be discharged in order to maintain the integrity of the TSF, and to meet TSF freeboard permit conditions, is ~1.4 million cubic meters (1.4 M m^3).

During the MPM closure from 2001–2005, MPMC discharged effluent under provincial permit from the Main Embankment Seepage Collection Pond (which collects seepage from the TSF) to Edney Creek. Resumption of the small permitted discharge to Edney Creek was not a viable option to address the annual 1.4 M m^3 need for discharge, due to the smaller size of Edney Creek, and therefore its increased sensitivity to water quality impacts. The resulting capital costs required to treat and deliver the effluent to Edney Creek were also deemed by MPMC to be prohibitive.

MPMC's proposed solution is to discharge effluent to Quesnel Lake via Hazeltine Creek. The MPM effluent and run-off would originate from a variety of sources, including the TSF, the Main Embankment Seepage Collection Pond, the Perimeter Embankment Seepage Collection Pond, the Wight Pit and the Northeast Rock Disposal Site seepage via the diversion ditch. If approved, water from a combination of these sources would be conveyed to the perimeter embankment seepage collection pond and then to a sediment/polishing pond located downstream of the perimeter embankment.

Permitting

To discharge 1.4 M m^3 of effluent each year into Hazeltine Creek, MPMC requires a sustainable effluent discharge permit, issued under the *BC Environmental Management Act*, by the BCMOE. Guidelines on how a mine is directed to apply for an effluent discharge permit are set out in a series of BCMOE documents, including *Guidance On Applications For Permits* under the *Environmental Management Act – Technical Assessment - recommended content of a technical assessment report for submission by the applicant as part of the application for a permit or a significant amendment*. The MPMC application, *Mount Polley Mine Technical Assessment Report for a Proposed Discharge of Mine Effluent 2009*, and its Table of Contents, closely follows that guidance document.

Aboriginal Consultation

The BCMOE, is responsible for ensuring appropriate and sufficient consultation and accommodations are carried out with those First Nations that may be affected by land-use decisions. The procedures followed by the Province for carrying out this consultation are based on case law as of April, 2010, and are set out in the BC policy document *Updated Procedures for Meeting Legal Obligations When Consulting First Nations Interim 07 May 2010*.

Discussions between BCMOE and the MPMC have resulted in the proposal for an independent third party to advise the affected First Nations, in this case, T'exelc - Williams Lake Indian Band (WLIB) and Xat'sull - Soda Creek First Nation (SCFN), on the nature, implications, and any deficiencies or omissions of MPMC's application to discharge effluent into Hazeltine Creek. These Parties have engaged Brian Olding & Associates Ltd. to carry out the independent review in association with LGL Limited.

Historical Impacts on Local Watercourses

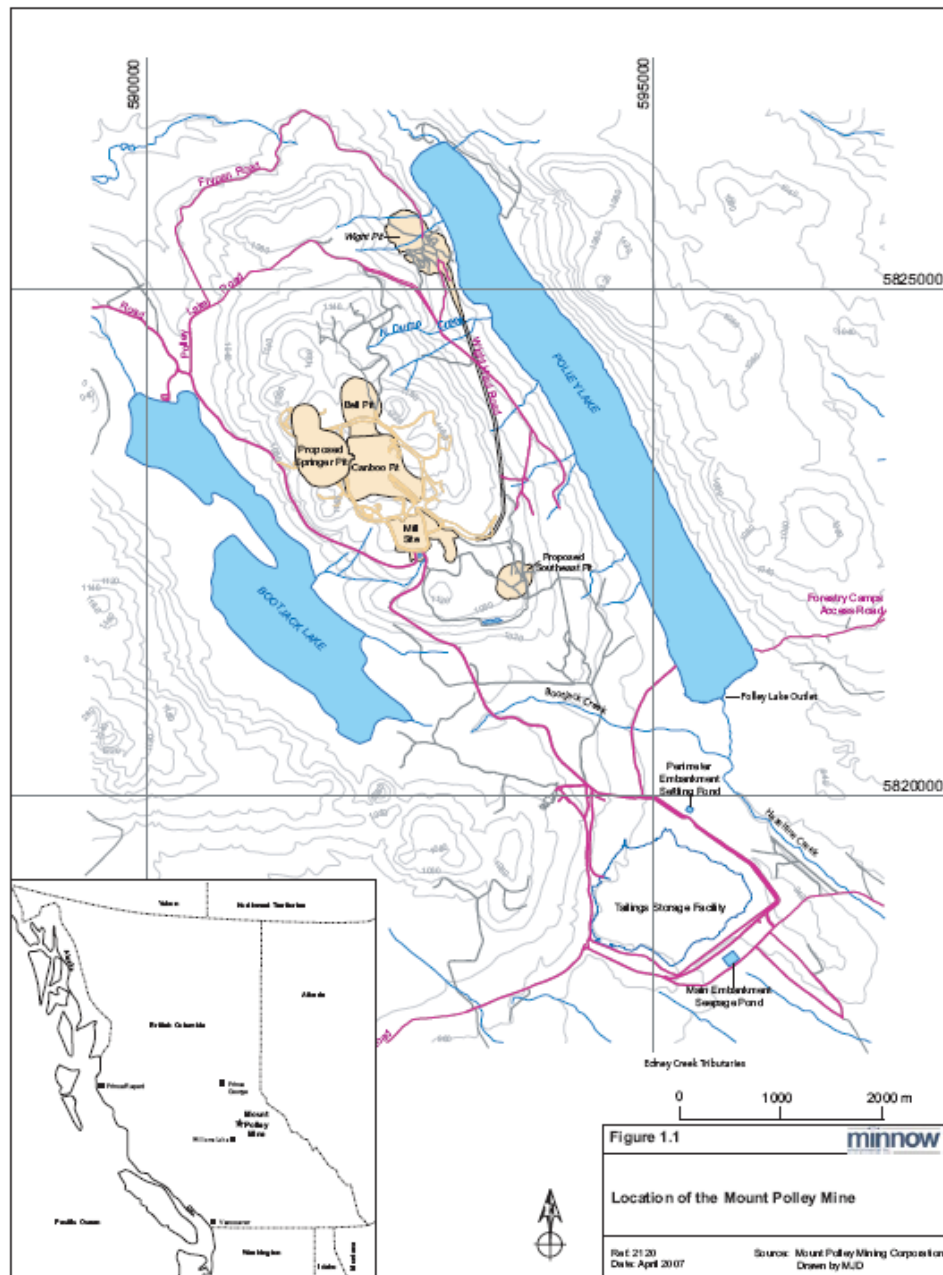
Mining in the Cariboo–Chilcotin region began during the 1861–1864 Gold Rush. Those early days were characterized by massive placer mining operations. Bullion Pit, for example, just 9 km north of MPM, involved the largest water blasting operation in North America up until that time. Numerous creeks, rivers and lakes near the MPM site, including Hazeltine Creek, were altered and re-directed from their natural flows by placer mining operations.

In 1913, flow from Bootjack Lake, which had naturally drained via Bootjack Creek into Hazeltine Creek, was reversed by damming the east end of Bootjack Lake and excavating a new outlet westward to Trio Creek to provide more water for placer operations at the Bullion Pit. This resulted in a loss of ~32% of Hazeltine Creek's natural watershed.

Additional flow to Hazeltine Creek was also blocked in 1913 when a control structure was built at the outlet of Polley Lake. The result was that the flow that naturally drained into Hazeltine Creek was reversed to Bullion Pit (see figure below). The control structure was eventually removed and flow was restored to Hazeltine Creek during WWII when mining at Bullion Pit ended.

The diversion of Bootjack Creek from Hazeltine Creek, however, was never restored. As a result, for the past ~100 years, Hazeltine Creek has continued with ~68% of historic flow levels.

Mount Polley Mine Site Layout



PRINCIPAL ISSUES CONCERNING THE MPMC TECHNICAL ASSESSMENT REPORT (2009)

Principal issues, as summarized from the detailed review presented in Appendix One, are presented below, as are recommended actions to remedy or mitigate each issue. For more detailed information on each issue, and MPMC's response to each listed issue, the reader is directed to Appendix One.

The Principal Issues identified through our technical review consist of the following:

1. Sources of Hydrological Data for Hazeltine Creek
2. Calculations of Effluent Dilution
3. Sedimentation of Hazeltine Creek
4. Fish Ecology and Traditional Use
5. Terrestrial Biodiversity
6. Water Quality Objectives
7. Monitoring and Contingency Plans
8. Consultation with First Nation
9. Corporate Commitment
10. Information Gaps

ISSUE 1: Sources of Hydrological Data for Hazeltine Creek

Hydrological data collected over a number of years are used to characterize the discharge volumes of a stream. Then, at any time of the year and for a given discharge volume, these data can be used to estimate the dilution factor of effluent that is discharged into a stream. In general, high concentrations of potential pollutants in the TSF effluent are most concentrated at low flows in Hazeltine Creek. We wish to ensure that effluent concentrations are at all times sufficiently diluted within the flows of Hazeltine Creek so as to cause no harm to the fish and to the greater ecological system within Hazeltine Creek.

When the concentrations of individual chemicals in the effluent are known (e.g., through laboratory analysis), concentrations of those same chemicals in the creek can be estimated using the dilution factor that we obtained from the hydrological data provided in the TA Report. Of course, the accuracy of this prediction is highly dependent on the accuracy of the hydrological data for the receiving stream.

There is considerable uncertainty regarding the accuracy of the dilution factors for Hazeltine Creek – the receiving stream in this case. This is because of technical difficulties that were experienced during the collection of hydrological data from Hazeltine Creek over the course of a number of years. The technical difficulties were rectified during the past year, however, this is a very short time to build up a revised hydrology database.

As a result, rather than being able to use data from Hazeltine Creek directly, hydrological data from nearby creeks with similar features were used to estimate the discharge values for Hazeltine Creek in a regionalized and comparative approach. This regionalized approach has provided a lower set of low flow estimates for Hazeltine Creek than those reported for the previous years.

Further, there is some confusion as to which data were used and how they were used to predict the concentrations of individual chemicals in Hazeltine Creek after effluent was discharged into the stream. The resulting uncertainty with regard to the flows in Hazeltine Creek must be addressed in order to properly calculate the effluent concentration when discharged to Hazeltine Creek.

Recommendation

Throughout the TA Report it is necessary to clarify which hydrological data (i.e. the earlier years of data collection, which experienced technical difficulties, or the regional study data estimation) are being used to predict the dilution factors for effluent flowing into Hazeltine Creek. If the effluent mixing model is not based on the most recent regionalized flow estimate, then the calculations must be revised accordingly.

Alternatively, the average of the reliable Hazeltine Creek discharge values measured in 2009 (average flow year), 2010 (low flow year) and 2011 (high flow year) could be used to recalculate and predict a range of chemical concentrations in Hazeltine Creek following effluent discharge. An automated and real-time discharge measurement system for Hazeltine Creek and a commitment by MPMC to real-time adaptive management of their effluent into Hazeltine Creek based on accurate discharge volumes should be a condition of the discharge permit.

ISSUE 2: Calculations of TSF Effluent Dilution

Throughout the TA Report, predicted chemical concentrations in Hazeltine Creek are based on annual or monthly mean values of effluent discharge to Hazeltine Creek. This approach is misleading because it can mask the potential for short-lived high concentrations of potentially harmful chemicals to exceed water-quality guidelines and potentially be harmful to the aquatic life of Hazeltine Creek.

Recommendation

Maximum concentrations of chemical parameters, especially Sulphate, Selenium, Copper and Cadmium in Hazeltine Creek need to be calculated for minimum flow rates in Hazeltine Creek. This will provide conservative estimations of the dilution of the effluent within Hazeltine Creek, which in turn, allows for a precautionary approach to be incorporated into the design of the TSF effluent discharge.

ISSUE 3: Sedimentation of Hazeltine Creek

During storm events (i.e., high run-off), the potential for suspended sediments and contaminants associated with those sediments to affect Hazeltine Creek will be high unless there is an effective sedimentation pond between the Tailings Storage Facility (TSF) and Hazeltine Creek.

Recommendation

The sedimentation/polishing pond that is mentioned in the TA Report, as a potential treatment measure, should be a condition of the discharge permit. In addition to reducing suspended sediment discharged into Hazeltine Creek, the sediment/polishing pond will also be an essential part of the MPM Contingency Plan. If, through regular monitoring, TSF effluent at the inflow to the sedimentation pond is found to exceed permitted values, MPMC will have a two-day buffer to shut down discharge into Hazeltine Creek and can instead pump effluent back into the TSF.

At the same location at the inflow to the sedimentation pond, we also suggest that a Rainbow Trout live-tank be installed to act as a continuous water quality monitoring system. Through daily monitoring and maintenance, abnormal mortality would be immediately detected; discharge from MPM into Hazeltine Creek could be stopped and water quality could be tested. This would be an effective response to the uncertainty included in the hydrological database for Hazeltine Creek.

ISSUE 4: Fish Ecology and Traditional Use

Fish populations in Hazeltine Creek have only been characterized during summer periods, and have not been characterized during winter periods. We need to know, for example, whether

salmonid juveniles are present during low winter flows in Hazeltine Creek. Additionally, no historical First Nation fishery data are presented for the Hazeltine–Edney Creek complex.

Recommendation

To complete the annual picture, fish populations need to be characterized during the non-summer period. In addition, the TA Report should acknowledge the occurrence of Rainbow Trout and Kokanee Salmon rearing and spawning in lower Hazeltine Creek and the still vulnerable state of Coho Salmon that are spawning in Hazeltine Creek.

The information gap regarding First Nation fishery uses should be addressed as part of a Traditional Use Study for the area around the MPM lease.

ISSUE 5: Terrestrial Biodiversity

Only impacts to fish are considered in the MPMC TA Report and no consideration is given to the potential effects of effluent on terrestrial or riparian biodiversity (wildlife and vegetation adjacent to Hazeltine Creek).

Recommendation

Although it appears unlikely that effluent discharge will have adverse effects on wildlife habitat (assuming actual discharges are consistent with predicted levels), plant life monitoring plots in the riparian area of lower Hazeltine Creek should be established and monitored over time for any adverse effects of erosion and sedimentation on plant life. It would be useful to pair such plots with plots in the riparian zone of an adjacent stream (e.g., Edney Creek).

In light of requested revisions (above) to calculations of contaminant levels in Hazeltine Creek, the toxicological aspects of water should be thoroughly re-examined for potential to harm wildlife (i.e., amphibians, birds, mammals) and to contaminate tissues of those species typically consumed by humans (e.g., moose, black bear, grouse).

ISSUE 6: Water Quality Objectives

The discharge of effluent into natural systems is regulated through generic British Columbia Water Quality Guidelines (BCWQG) where a maximum discharge concentration or a Water Quality Objective is listed for each parameter. Those Objectives are based on a background conditions that can influence the toxicity of a parameter. For example, Cadmium is more toxic in soft water than in hard water (water hardness is determined primarily by Calcium and Magnesium levels). Accordingly, more Cadmium can be safely discharged into a natural system with harder water than into one with softer water. The BCWQG allow for these Site Specific Water Quality Objectives because the conditions of a natural system are taken into consideration when calculating water quality.

A range of approaches have been undertaken by MPMC to develop *Site Specific Water Quality Objectives* (or discharge concentrations) which would replace both the generic BC Water Quality Guidelines and the Canadian Council of Ministers for the Environment (CCME) Water Quality Guidelines. The development of site specific water quality objectives is a common and acceptable practice. In this case, Site specific Water Quality Guidelines have been developed by MPMC for sulphate, cadmium, copper and selenium, all of which have the potential to exceed the generic BC Water Quality Guidelines. The BC Ministry of Environment and the Department of Fisheries and Oceans must review these methodologies, particularly in view of the uncertainty of the hydrological database used to predict effluent concentrations in Hazeltine Creek. The consent of these agencies is required before a Discharge Permit may be issued.

Recommendation

MPMC can opt to forgo the application of Site Specific Water Quality Guidelines and adhere to the generic BC Water Quality Guidelines through water treatment that would lower concentrations in the TSF effluent by running the effluent through water quality treatment systems before the effluent is discharged to Hazeltine Creek. Water treatment suggestions offered by MPMC that could be effectively applied to the TSF effluent include lime treatment and, if it is proven to be successful on a larger scale, the inclusion of anaerobic cells which would use bacteria to break down potential effluent pollutants. This would increase MPMC's application of the precautionary approach, where required, to their environmental management plans.

ISSUE 7: Monitoring and Contingency Planning

At this point neither a detailed monitoring plan nor a detailed emergency contingency plan have been developed by MPMC. While we acknowledge that MPMC will be required to provide monitoring and contingency plans as a permit condition, it would be ideal if we were able to review such plans in advance of the permitting process.

Recommendation

MPMC should provide a detailed monitoring plan, including monitoring schedules, an outline of the involvement of the Williams Lake Indian Band and Soda Creek First Nations into the monitoring process, prior to the permit application. MPMC could also provide a detailed contingency plan in the event that effluent parameters exceed upper limits. As part of the contingency plan, MPMC should include response timelines and communication plans that include the Williams Lake Indian Band and Soda Creek First Nation.

ISSUE 8: Consultation with First Nations

Nowhere in the TA Report was the consultative process with the Williams Lake Indian Band or Soda Creek First Nation described. In the same context, no results of Archaeological or Traditional Use Studies for the areas potentially affected by the discharge from MPM were provided.

Recommendation

MPMC should discuss the results of all Archaeological Studies that have been carried out so far with the Williams Lake Indian Band and Soda Creek First Nations. In addition, MPMC should work in a close partnership with these two groups on all future studies on the archaeology and traditional land use of the areas potentially affected by the discharge permit and on the direct and indirect mine footprint in general.

Ideally we would like to see an evolving relationship between MPMC and the First Nations that is collaborative, mutually beneficial, and which leads to shared decision making over those matters that most directly affect the two First Nations. We commend both parties for the strong efforts made to date, on both sides, that have enabled a common understanding and resolution to issues associated with the application for discharge

ISSUE 9: Corporate Commitment

During our review, we experienced the verbal commitment of MPMC to respond to reasonable suggestions made for change wherever possible and practical. We have the confidence that MPMC has the capacity, and the desire, to respond effectively to many of the recommendations made in this report.

Recommendation

We suggest that the commitment of MPMC to collaboration with and inclusion of First Nations into all monitoring programs, the application of precautionary principles to the recommendations made in this report, and the commitment to adaptive management in the post-permit environment, should be put into writing as part of the Permit.

ISSUE 10: Information Gaps

The TA Report does not present, in every case, a comprehensive summary of data and information necessary for a complete assessment of adverse effects from the discharge of the TSF effluent to Hazeltine Creek. Additionally required information is listed below.

Mitigation Recommendation

The following datasets and information should be made available in order that a proper evaluation of the TA Report be conducted:

6. groundwater monitoring since the start of MPM operations
7. monitoring results explaining why and how MPM causes changes to groundwater
8. a detailed discharge strategy for effluent from MPM in addition to the general statement that effluent discharge will be supply based
9. the monitoring schedule and the results of the former discharge of effluent from MPM into Edney Creek
10. the application of a modelling exercise that considers potential future changes in Hazeltine Creek discharge based on climate change

APPENDIX

TECHNICAL REVIEW OF THE MPMC TECHNICAL ASSESSMENT REPORT (2009)

TECHNICAL REVIEW OF THE MPMC TECHNICAL ASSESSMENT REPORT (2009)

The following technical review comments on the MPMC Technical Assessment (TA) Report (2009), follow the structure and order of the TA Report. Comments are introduced by subject matter and are referenced by page number from the Report and / or from the Appendices. Comments of particular relevance are highlighted in bold.

The following documents, listed in the Appendices to the TA Report, were found to be particularly useful:

- Minnow Memo, Jan 19 2007 (Baseline database; page 279)
- Minnow Letter, Feb 15, 2007 (Analysis of historical Data; page 1137)
- Knight Piésold Letter, Apr 14, 2009 (Hydrological issues and regionalization study; page 247)
- Knight Piésold Letter, May 15 2009 (Chemical characterization of the effluent; page 368)
- Knight Piésold Letter and Appendices, Jun 25 2009 (Effluent plume delineation; page 458)

Statutory Basis for Permit (TA Report Page 2)

The TA Report states that the Technical Assessment has been submitted to BCMOE to support an application for an amendment of Permit PE-11678 under the Waste Discharge Regulation (WDR) of the BC *Environmental Management Act*.

The WDR identifies those industries that are *subject* to the BC *Environmental Management Act*. The Permit is issued directly under the BC *Environmental Management Act*.

First Nation Consultation (TA Report Page 3)

The TA Report states that First Nation Consultation is required under the WDR. This is incorrect. A Consultation Report is required by BCMOE as explained in its *Guidance on Applications for Authorizations under the Environmental Management Act - consultation - Recommended activities for the applicant to take prior to submitting an application for a permit, significant permit amendment or an approval. 2008*. This is a policy requirement which is related to the BC government wide First Nation consultation policy - *Updated Procedures for Meeting Legal Obligations When Consulting First Nations Interim 07 May 2010*, which in turn is based on First Nation consultation case law as of April 2010.

MPMC response (Ron Martel):

MPMC submitted consultation report as required by BCMOE as explained in its Guidance on Applications for Authorizations under the Environmental Management Act to MOE in August of 2009

End of MPMC comment

Mine Development Certificate (TA Report Page 5)

The TA Report states that in April 1996, Imperial Metals formed the Mount Polley Mining Corporation and then goes on to say that the Mount Polley Mining Corporation received a Mine Development Certificate in October 1992. The chronology is inconsistent. Further, there is no reference in the TA Report to any Mine Review Development Process documents or other environmental assessment works.

MPMC response (Ron Martel):

The Mine Development Certificate was received in 1992, while in 1996 a name change to Mount Polley Mining Corporation occurred.

Record of Mine Development (Appendices Page 298)

In the early days of MPM development, fishery compensation measures were identified by the MPMC. Namely, a dam and a diversion channel to make Edney Creek falls passable to migratory fish was apparently flagged and planned and other measures were suggested. Why were these measures abandoned?

MPMC response (Ron Martel):

The measures were abandoned on the basis that another option was selected including fresh water withdrawal from Polley Lake complete with mitigation measures to maintain fish passage flow, upgrade of Bootjack Dam, annual inspections of such dam, Edney Creek biological monitoring and draining re-routing to the Tailings Storage Facility after 5 year period.

End of MPMC comment

Mount Polley Mine Operations (TA Report Page 6)

The TA Report states that that the mineral resource estimates have been expanded for areas that have not yet been proposed to be mined by MPMC. Will this mine shut down in 2014 or will it be kept open and expanded if copper and gold prices keep increasing? If this is a potential scenario, it should be included into the TA Report. The status of any underground mining currently underway or planned in the future should be identified.

MPMC response (Ron Martel):

Reserves and estimates are a function of market value and exploration results, at the time of the report the expected mine life extended into 2014, currently it is 2015.

End of MPMC comment

Mill Process Concentrate Chemicals (TA Report Page 7)

The following reagents listed below are among those used in the MPM mill concentrating process:

Reagent	Purpose	Approximate Consumption	LC 50 or Biodegradability
Potassium Amyl Xanthate (PAX)	Collector	38 g/tonne	Rainbow Trout 96 h 18-75 mg/l (MSDS Sheet for Substance)
Sodium Diethyl Dithiophosphate	Collector	1 g/tonne	No information found, please provide
Methyl IsoButyl Carbinol (MIBC)	Frother	4 g/tonne	Biodegrades at a rate of 94% in 20 days, acute toxicity only at very high concentrations

The TA Report states that the reagents used in the mill process at MPM are predominantly consumed by the concentrate and shipped to the smelter; residual reagents are transported to the tailings storage facility with the slurry where they biodegrade.

We added applicable LC50 values for Rainbow Trout (*Onchorynchus mykiss*) and biodegradability values to the table above and are asking that technical support be provided to defend the statement that the residual reagents biodegrade in the TSF, to describe the

biodegradable products, and to explain why the reagents are not required to be included in the effluent monitoring discharge conditions.

MPMC response (Ron Martel):

Please have a look at the information below:

PATHWAYS AND PROCESSES

PAX (potassium amyl xanthate): Not as readily biodegradable as other reagents (<70%) but the majority is carried from site with concentrate, and therefore does not remain in the water system.

NaSH (sodium hydrosulphide): With dilution, which occurs in the tailings pond, the sulfide will be readily incorporated into the pre-existing natural sulfur cycle

MIBC (methyl isobutyl carbinol): Readily biodegradable, therefore it can be rapidly and completely removed from water and soil environments. Approximately 70% is readily biodegradable within 28 days. Not likely to accumulate in the food chain (bio-concentration potential is low)

TOXICITY OF REAGENTS USED AT MPMC

PAX (potassium amyl xanthate): The lethal concentration for *Daphnia Magna* ranges from 0.1-1.0mg/L. On an annual bases, based on water use and production, Mount Polley produces a value of approximately 7 mg/L. NOTE! The vast majority of this will actually bind to the concentrate solid and will not be found in the water that is sent to the tailings pond

NaSH (sodium hydrosulphide): The minimum lethal concentration for *Daphnia* has been reported to be 300mg/L. On an annual bases, based on water use and production, Mount Polley produces a value of approximately 13mg/L

MIBC (methyl isobutyl carbinol): Similar to butyl alcohol. The lethal concentration for *Daphnia Magna* is >100mg/L. On an annual bases, based on water use and production, Mount Polley produces a value of approximately 5mg/L

TOXICITY RESULTS AT MPMC: *Daphnia* is a species of freshwater flea that is widely used in toxicity testing. Over 50 acute toxicity tests have been performed at Mount Polley using *Daphnia magna* (LC50/48hr. *Daphnia Magna*). All but one of these tests had a result of zero mortality; the one exception occurred in 1998 when an LC50 of 80% effluent was reported

End of MPMC comment

Status of the TSF (TA Report Page 8 / Appendices Page 366)

The TA Report discusses the ongoing build up of the TSF to accommodate increased runoff and effluent levels, but does not discuss the current status of TSF freeboard, the current integrity of the TSF, or the current potential impact of TSF seepage on groundwater resources. This omission needs to be corrected.

MPMC response (Ron Martel):

Freeboard is a requirement of MOE and MEM; groundwater sampling is conducted annually and is reported in the Annual Report submitted to the above agencies, local libraries and First Nation groups.

End of MPMC comment

Toe-drain flows show that the increase of the level in TSF is mainly based on sediment that has been added at a rate of about a total of 8 m from 2000–2008. If the future trend follows this trajectory, then, presumably, the TSF embankment walls need to be increased by about 6–8 m

before closure to retain the same volume of water. Alternatively, the sediment needs to be dredged from the TSF. Which option will be chosen and is the remaining volume of the TSF at mine closure large enough to contain the increased flow of water once all of the operational water recycling and usage will be terminated?

MPMC response (Ron Martel):

The option selected is the ongoing annual stage dam construction.

End of MPMC comment

It is mentioned that water discharge into Edney Creek was permitted from 2001–2005. Was the aquatic community monitored during this time period and if so, were any significant changes noted?

MPMC response (Ron Martel):

Yes, Morrow 2002 no aquatic community effects were measured.

MPMC response (Pierre Stecko):

Morrow & Azimuth completed an aquatic assessment in 2002 (during care and maintenance) scoped down to focus on the NE tributary of Edney Creek (W8) (Morrow/Azimuth 2003). Conclusions:

Water → no Water Quality Guideline exceedences

Sediment → only manganese was elevated, but at BOTH exposed (W8) and reference (W9)

Benthos → “no evidence of impacts to aquatic biota in the NE tributary of Edney Creek (W8), the nearest station downstream of the TSF.” “Furthermore, the presence of fish and frogs in both habitats also provides assurance that these habitats are relatively healthy.”

End of MPMC comment

Potential Acid Mine Drainage from Waste Rock (TA Report Page 9)

The TA Report barely describes the MPM operational practices with regards to Acid Mine Drainage (AMD). How is MPM testing the AMD potential? Was kinetic testing carried out? The sub-aqueous disposal of Potentially Acid Generating (PAG) rock is a good practice as long as permanent submersion is guaranteed and the necessary volumes of rock can be stored this way. It would be desirable to see the results of “humidity cell” or kinetic exposure tests (if existing) and to identify long-term planning with regards to storage and treatment for all PAG waste rock to properly assess future AMD potential for the MPM.

MPMC response (Ron Martel):

Yes, 11 kinetic test are currently running and the data is summarized and submitted annually to OE and MEM, local libraries and First Nation groups.

End of MPMC comment

Environmental Management Systems (TA Report Page 9-10)

The TA Report states that MPMC follows Environment Canada’s *Environmental Code of Practice for Metal Mining*, however, the Code does not address long term responsibility for mining properties. The Code does recommend that mines develop Environmental Management Plans (EMPs), however the TA Report does not present, at this point, an EMP (objectives, targets, monitoring plans) and does not address here liability for long term management. All of these issues should have been addressed in the Mine Development Review Process and the

Environmental Assessment Certificate Application for the mine. A reference to these legally binding documents should be provided by MPMC.

MPMC response (Ron Martel):

The reports are filed at MPMC environmental department.

End of MPMC comment

The TA Report states that a third party review was carried out for the TSF in 2008. Please provide either the review or a reference for the review.

MPMC response (Ron Martel):

In 2006 Amec performed a third party Dam Safety Review in accordance with the Canadian Dam Safety Association.

End of MPMC comment

Water Quality Sampling Protocols (TA Report Page 11)

The water quality values are reported as annual means, which provides inadequate description of the effluent quality. Values should include means and maximums based on the seasonality of the Hazeltine hydrograph. Note that the federal Metal Mining Effluent Regulations require weekly sampling, average monthly monitoring values, as well as maximum recorded values. Please show monthly values for each parameter for at least the 2005–2011 period graphed with the respective lowest guideline value as a reference line.

MPMC response (Pierre Stecko):

The annual mean data were intended to provide a general picture of water quality. Water quality data can be presented at different time scales to capture high flow / low flow differences and potential seasonal variability.

The reported value for mean concentrations of 0.011mg/L dissolved phosphorus is incorrect in the TA Report, and should read 0.015mg/L, as per Table 2.4

Hazeltine Creek Hydrology (TA Report Page 14-15 / Appendices Page 247-278)

The TA Report describes the MPMC activities involved in monitoring the hydrology of Hazeltine Creek from 1995 to present, and provides, for example, a flow range of 0.05 m³/s in the winter (December through February) to 0.74 m³/s in April, and a greatest observed flow of approximately 3.1 m³/s in April 1996.

The history of attempting to describe the hydrology of Hazeltine Creek, however, has been complex and fraught with methodology issues (see the succession of letters from Knight Piésold Consultants to MPMC and, in particular, the letter dated April 14, 2009, Appendices Page 247-278). Incorrect use of reference datums used to establish river levels, and subsequent river flows, the absence of winter monitoring, weir leakage at the monitoring site, and most significantly, repeated annual movement of fixed staff gauge due to frost jacking, have seriously undermined the historical continuity and defensibility of the Hazeltine Creek hydrological data set.

These errors have now been recognized through documentation by Knight Piésold and discussion with MPMC and apparently have been addressed, **but there remains, nonetheless, an absence of a long-term high quality stream flow dataset for all months of the year for Hazeltine Creek.** In order to address this, Knight Piésold undertook a series of regional analyses studies on streams which had accurate long-term flow measurements. This is the normal fall-back position when stream flows must be estimated in the absence of direct, accurate measurements.

There is a discrepancy in the average monthly flows reported in the Knight Piésold Ltd. memo (2009b in App. E) between the regionalized estimates for Hazeltine Creek (Station H7; 27.6 km²) shown on page 254 and the 'Long-term' estimates shown in Table 5.

Table 5

Month	Regionalized Estimate (m ³ /s)	Table 5 Value (m ³ /s)
January	0.015	0.05
February	0.024	0.05
March	0.070	0.07
August	0.020	0.08
September	0.018	0.07
October	0.022	0.07
November	0.041	0.08
December	0.018	0.05

The Table 5 values were subsequently used in the TA Report. Also, using the regionalized estimates instead of the Table 5 values results in a different estimate for Mean Annual Discharge of 0.17 m³/s rather than the 0.19 m³/s as reported. The origin of the Table 5 values is not described and the rationale for using the Table 5 values in the MPMPC (2009) is not explained. **Of particular concern is why the effluent mixing model is not based on the latest regionalized flow estimates rather than the Table 5 values.** The TA Report should address these discrepancies, their significance to effluent dilution and the steps MPMC has since taken to correct and adjust their proposed discharge to the corrected, estimated hydrological data for Hazeltine Creek.

MPMC response (Ron Martel):

The difference in Mean Annual Discharge translates to a difference of approximately 600,000m³ annual, (this maybe within error of natural variability, however we will check).

End of MPMC comment

In addition, water flow in Upper Hazeltine Creek, in relation to the Lower Hazeltine Creek, is calculated in the TA Report based on watershed size and then compared to measured values. A large difference exists between the calculated and the measured values and the difference is not discussed. This adds more uncertainty about the reliability of discharge values given for Hazeltine Creek. Please explain the discrepancies.

The Fate of the Flow that is currently re-directed from North Dump Creek into the MPM Diversion Ditch

Currently MPMC is re-directing part of the flow of North Dump (and several other smaller creeks that used to run into Polley Lake) into the MPM diversion ditch. The TA Report does not mention any mitigation measures for these diversions (e.g., as part of a closure plan). At this point, it is essential that the current water table and the mine closure plans for all changes made to the natural flow of creeks are disclosed and discussed. This is made even more important by the fact that MPMC is applying for a discharge permit into Hazeltine Creek and Hazeltine Creek

water quantity and quality are directly influenced by changes to water quality or quantity in Polley Lake.

MPMC response (Ron Martel):

This is a closure plan issue.

End of MPMC comment

Groundwater Flow Assessment and Modelling

At this point an assessment of the groundwater flow around Mount Polley Mine has either not been conducted or not been presented. Either way, the assessment of the potential effects of the whole mine on the adjacent aquatic environment needs to be seen in the context of the groundwater flow and the potential added subsurface discharge. We therefore recommend a groundwater flow modeling exercise that delineates the local hydrogeological units and their spatial boundaries and that predicts potential subsurface flow paths direction and magnitude.

MPMC response (Ron Martel):

Reported in Annual report.

End of MPMC comment

Fish Habitat (TA Report Page 17)

The TA Report states that while lower Hazeltine Creek does not currently represent ideal spawning habitat for fish, nonetheless, the site has very good potential to function as salmon spawning habitat (i.e., good substrate characteristics that could be accessed with greater flow and/or the elimination of obstruction). Therefore, increased flow from the proposed effluent discharge would likely be beneficial over the period from July through February. This would augment flow towards historical levels (i.e., pre-diversion of Bootjack Creek), thereby increasing the amount of functional habitat available to fish and their invertebrate food base in addition to improving accessibility to fish. This may be true but the statement should contain the caveat that in order for the effluent discharge to be beneficial, the net impact of the effluent discharge be benign to salmon in Hazeltine Creek.

MPMC response (Ron Martel):

OK, fair comment.

End of MPMC comment

Receiving Water Quality (TA Report Page 18 / Appendices Page 279)

Note that the review of the initial Baseline water quality (see Appendices Page 279 – Minnow Environmental Inc. Memo to R. Martel from P. Stecko, Jan19, 2007) was found to contain errors and this was then corrected by removing suspect data entries. The TA Report states that comprehensive baseline studies were carried out for 'Mount Polley creek' [sic]. Presumably the reference is to Hazeltine Creek.

MPMC response (Pierre Stecko):

This appears to be a misunderstanding as the whole sentence reads "Baseline studies included comprehensive assessment of Mount Polley creek and lake water quality" ... lower case "creek" and "lake" refer to all creek and lake habitat in the vicinity of Mount Polley. There is no Mount Polley Creek and this is not referring only to Hazeltine Creek, rather to the entire baseline dataset.

Although it would be great to have more data over a longer period, the baseline data did include 13 creek stations and 199 water quality samples.

End of MPMC comment

There is no comprehensive baseline database for Hazeltine Creek. The entire baseline database consists of 17 water samples taken over 8 years, is presented below:

Baseline database for Hazeltine Creek

Status	Year	Sampling Dates	# of Samples
Pre-mining	1989	May 2 / Jul / Aug / Sep / Oct /	6
	1990	Mar 1 /	1
	1995	Mar 1 / Apr 3 / May 1 /	5
	1996	Oct 5 /	5
Total			17
Note:	no triplicates, poor hydrographical coverage		

We will simply note here, that the fact that total Copper exceeds the BCWQGs may be due to a watercourse draining an undisturbed mineralized area, as the TA Report states, but the historical disturbance of this region over the past 100 years must also be recognized, so that higher Copper levels may be a relatively recent phenomenon for salmonids who have presumably been present for much longer periods of time.

The memo referred to above (Appendices Page 279) to R. Martel from P. Stecko states:

‘One concentration for zinc (0.006 mg/L on March 17, 1990) was screened in on the basis of being different than all other recorded concentrations (<0.005 mg/L), but is not considered an outlier due to the very small difference and the fact that it was only screened in due to an artificial absence of variability.’

This sentence would benefit from a clarification of ‘the artificial absence of variability.’

MPMC response (Pierre Stecko):

The protocol stipulated that outliers were identified as data points that exceeded 3 Standard Deviations (SD) of the stations mean. For zinc, most data points were <0.005 (used as 0.005 for calculations) and therefore, the SD was very low, but ARTIFICIAL because the SD constrained by the Minimum Detection Limit (no variability below Minimum Detection Limit captured!) Accordingly, it did not make sense to exclude the 0.006 mg/L result.

End of MPMC comment

Further in that memo (Appendices Page 279):

‘In order to determine whether there were meaningful differences among years (e.g., due to site disturbance), baseline data were assessed in two ways. Firstly, mean concentrations from each year were contrasted statistically using Analysis of Variance (ANOVA). Statistical testing could only be performed for parameters that were detectable.’

Why was statistical analysis carried out on mean annual variation on such a limited database, and what would the mean annual values represent? Note that the data are not presented in high flow – low flow analysis.

MPMC response (Pierre Stecko):

Data were being evaluated to assess their acceptability as baseline. That is, the question was being asked “do the concentrations differ among years”, which might suggest a potential influence of site activity (in 1996) on water quality, which in turn would cause rejection of the data as baseline.

End of MPMC comment

Also note in Table 3.4 that the BCWQG aquatic life 30-day for total copper is reported as 0.002 mg/L. This is in contradiction with Knight Piésold Letter to R. Martel from R. Perin, 15 May 2009, where the BCWQG aquatic life 30-day for total copper is reported as 0.004 mg/L. See the discussion under Predicted Effluent Quality P.30-34.

MPMC response (Pierre Stecko):

Response to the approach to the hardness-dependence of the BC Water Quality Guidelines for copper will be provided later in this document.

The TA Report states:

‘Since mine start-up in 1997, Mount Polley Mine has implemented a comprehensive water quality monitoring program that includes source areas (the TSF and settling/seepage ponds), surface drainages (i.e., runoff from the mine-site that does not include mine or mill water) and receiving waters (Figure 3.5; Table 3.2).’

End of MPMC comment

We could not find monthly monitoring results for Hazeltine Creek in the TA Report and therefore we cannot review the low flow and high flow water quality characterization of Hazeltine Creek. Table 3.2 reports that monthly monitoring is carried out for upper Hazeltine Creek W7, and that this is supplemented with 5 weekly samples in both spring and fall. But the data are not available and are instead presented as annual means in the subsequent tables.

MPMC response (Pierre Stecko):

Data are available, but too much to include in the report.

End of MPMC comment

Receiving Water Quality (TA Report Page 19)

The TA Report refers to ‘baseline and routine monitoring’. To what do these terms refer? Table 3.4 does not report the number of samples for the Baseline database. This should be corrected.

MPMC response (Pierre Stecko):

Baseline = before mine operation.

End of MPMC comment

Receiving Water Quality (TA Report Page 20)

Cadmium is reported as non-detectable in Table 3.7. BC laboratories (e.g., ALS Labs in Burnaby) are capable of routinely going down to 0.01 ug/L and can, for an increased charge, go further down to 0.005 ug/L. MPMC should ensure they are detecting all heavy metals in their sampling and analytical protocols.

MPMC response (Ron Martel):

MPMC currently measures Cd at 0.000017 mg/L

The TA Report states that overall MPMC has effectively characterized the water chemistry of Hazeltine Creek. This statement must be tempered with the limited baseline database, the

presentation of parameters by annual means rather than high flow – low flow means and maximums, and, in some cases, overly high detection limits provided by laboratories used by MPMC.

Our main concern with the Hazeltine Creek monitoring program is that it has not been presented in a low flow – high flow format. We are unable, therefore, to compare effluent loadings with average low flow conditions. The design of the post-discharge monitoring program will require the inclusion of effluent loadings at low flow periods for Hazeltine Creek. At this point, we will therefore be able to compare conditions while water will be discharged from the mine with general and site specific water quality objectives, but we will not be able to compare these conditions with pre-discharge low flow conditions.

MPMC response (Ron Martel):

We will follow up.

End of MPMC comment

Receiving Water Quality – Sediments (TA Report Page 22)

The discussion on sediments does not provide a clear picture of the sampling protocols used or of the number of samples taken, either in the TA Report or in the Appendices. The concluding statement in the TA Report on sediments, states that:

‘the monitoring conducted in 2007 provides quantitative data that can be used in the future as a baseline against which potential effluent-associated influence can be determined.’

Why is the reference only to 2007 and not to the previous years? **The fate and deposition of sediments originating in the MPMC effluent discharge, their potential deposition within the Hazeltine Creek watershed, and their potential impact on plant uptake and wildlife consumption, should be considered here.**

MPMC response (Pierre Stecko):

There were some unusual methodologies applied in 1995 (coffee can sampling, sieving using a 230 mesh sieve) AND the 2007 design was based on evaluation of AREAS rather than STATIONS (1995/1999/2002), which is compatible with future Environmental Effects Monitoring needs. Therefore, it is suggested that future evaluation is via a statistically robust Before-After, Control-Impact (BACI) design versus 2007 data. We are not suggesting that previous data should be ignored.

End of MPMC comment

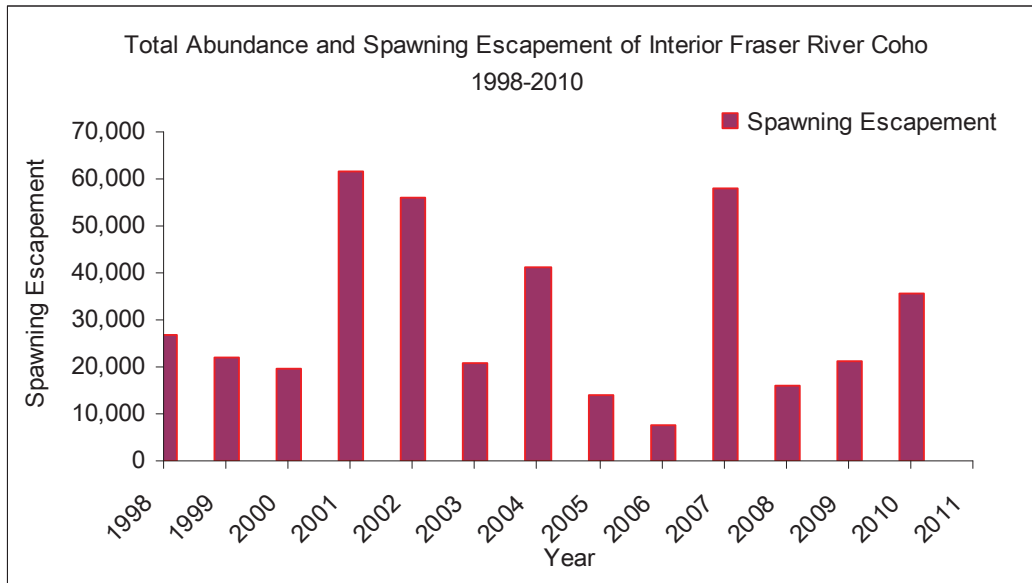
Fisheries (TA Report Page 22-23)

It is advisable to add winter sampling to the fish sampling protocol to assess whether salmonid juveniles also use Hazeltine Creek for overwintering when they are under heavy physiological stress and often show the highest mortalities observed in freshwater (Peterson 1982).

Kokanee Salmon are apparently observed to spawn annually in Hazeltine Creek (Don Lawrence, DFO Williams Lake, pers. comm.) throughout October and should therefore be added to Table 3.11.

Based on the same phone conversation with Mr. Lawrence, Rainbow Trout may not only populate Hazeltine Creek in a downstream direction from Polley Lake but also enter Hazeltine Creek for rearing from Quesnel Lake. Genetic analysis could verify this assumption or the assumption should be considered by MPMC and mentioned in the TA Report.

Escapement of the Interior Fraser Coho Salmon population is described as “stable or potentially increasing” in the TA Report and in the same sentence it is stated that “most recent escapement results for Coho salmon have been positive”. Unfortunately, this is not true. As shown in the graph below (data from DFO Williams Lake), at this point the trend for the last 13 years is not positive, neither is it stable. It has varied by a factor of up to nine, with no clear overall trend.



MPMC response (Pierre Stecko):

The statement was pinched from COSEWIC (2002) ... BUT refers to North and South Thompson → “Spawner numbers in the North and South Thompson watersheds peaked in the mid-1980s, declined rapidly until about 1996, and have been stable or potentially increasing since then”. POINT ACCEPTED.

End of MPMC comment

Options Evaluation / Preferred Option (TA Report Page 26)

Table 4.1 makes no mention or consideration of the impacts on on-going traditional use by First Nations in the area. Reference should be made to side-table discussions currently taking place between the WLIB, SCFN and MPMC.

MPMC response (Ron Martel):

MPMC will perform Traditional use study.

End of MPMC comment

Description of the Preferred Option (TA Report Page 27)

Note that Table 4.1 states, as one of the reasons for selecting the option to discharge to Hazeltine Creek:

‘no compensation - no destruction of fish habitat, mitigation - treatment for sediment only’

which recognizes the necessity to treat the sediment in the proposed effluent discharge. **The sediment/polishing pond is proposed as the solution for the treatment and is described in some detail.** Note that the TA Report states that:

'The elevation of water in the sediment/polishing pond has been designed to match the elevation of the overflow culvert in the PESCP, so that the existing pumping system of the PESCP can be utilized to pump water back from the sediment/polishing pond should the water quality exceed the discharge limits.'

The response to exceeding the BCWQGs, at this point, depends on the functioning of the sediment/polishing pond. Note that we have concerns with the MPMC sediment sampling program as stated above.

MPMC response (Ron Martel):

Please explain your concern in detail, we believe stopping and pumping back is a viable option to mitigate non-compliance.

End of MPMC comment

In addition to the contingency plan suggested in the TA Report, we would like to add a recommendation to the approach that may satisfy remaining environmental and socio-economic concerns.

1. The well designed and thought out sedimentation pond and the option to pump back water into the TSF "should the water quality exceed the discharge limits" have to be part of the passive water treatment system and part of the permit application.
2. To demonstrate best practices and a precautionary approach by MPM, a small holding basin for juvenile Rainbow Trout could be positioned in the flow that is entering the sedimentation pond and would need to be monitored as part of the daily routine. This way, water quality changes that are harmful to Rainbow Trout could be immediately detected and based on the two day water retention time in the sedimentation pond, potentially harmful water would never enter Hazeltine Creek. Instead water from the sedimentation pond could be pumped back into the TSF until water testing would be carried out and the water quality could be improved to excepted discharge limits.

MPMC response (Ron Martel):

Please give us an example for such a system, need a reference, need to talk to MOE.

End of MPMC comment

Technical Assessment of Discharge to Hazeltine Creek (TA Report Page 29)

The TA Report states that after consultation with the mine's consultants, regulators, local communities and First Nations, there are two principal impacts on the receiving environment: the physical impact from increased flow caused by the addition of the effluent discharge to Hazeltine Creek, and the chemical impact on water quality caused by the effluent discharge. Anecdotal evidence, however, suggests that the area in the vicinity of the discharge site may have been traditionally used which may lead to an aboriginal cultural impact. An investigation of traditional uses would clarify this potential issue.

MPMC response (Ron Martel):

MPMC performed an Archeological study at the proposed discharge site, with no evidence of aboriginal pit houses. However the point is acknowledged and MPMC will perform a traditional use study.

End of MPMC comment

Predicted Effluent Quantity (TA Report Page 30)

Will Knight Piésold's recommendation of an Anaerobic Biological Reactor as part of the water treatment system (AR 335) after closure be implemented?

MPMC response (Ron Martel):

Any treatment option would be implemented as a contingency measure should MPMC not meet effluent discharge limits.

End of MPMC comment

Predicted Effluent Quality (TA Report Page 30)

The hydrology for high flows for the last ten years should be reviewed to determine any trending towards extreme precipitation events which may be caused by climate change. It is possible that planning for potential higher discharge flows during high flow periods will be required.

MPMC response (Ron Martel):

Discharge volume requirements are a function and are directly related to annual precipitation events and quantities. Therefore, it is anticipated that higher discharges would occur only at higher flows.

End of MPMC comment

Predicted Effluent Quality (TA Report Page 31 / Appendices Page 378)

The TA Report states:

'Concentrations of the ten parameters of potential concern were evaluated relative to receiving environment quality guidelines (Table 5.2; Figures 1 to 10 in KPL 2009e; Appendix H), which indicated that Sulphate, Cadmium, Copper and Selenium were the only parameters whose predicted "most probable" concentrations exceed British Columbia water quality guidelines for the protection of aquatic life.'

Table 3.4 reports the BCWQG aquatic life 30-day for total Copper as:

0.002 mg/L

Knight Piésold (AP378) reports the BCWQG aquatic life 30-day for total Copper as:

0.004 mg/L

Table 5.2 reports the BCWQG aquatic life 30-day for total Copper as:

0.006 mg/L

These inconsistencies require correction and the methodology for calculating the BCWQG, based on local conditions, explained clearly and explicitly as we move through differing scenarios. It is understood that ambient hardness will limit the uptake of copper in the effluent, but the TA Report is unclear, with respect to these three values for the copper BCWQG, as to which values are being used for hardness.

MPMC response (Ron Martel):

The difference BC Water Quality Guideline values for copper reflect the hardness as the BC Water Quality Guideline is hardness-dependent. The footnotes state the assumptions. The only error is in the Appendix where the 30-day for copper at specified hardness of 165 (footnote 18) is wrong (0.004 and 0.007); it should be 0.007 and 0.018 mg/L (30-d and max).

End of MPMC comment

The TA Report states that there is no expectation that discharged effluent would meet water quality guidelines. This should be explained, particularly in so far as the TA Report repeatedly refers to the sediment/polishing pond treatment system. There are only four outcomes available: either the effluent meets the BCWQG, or the treated effluent from the sediment/polishing pond meets the BCWQG, or a site specific WQO is developed, or some combination of these options is utilized. The TA Report is unclear about how MPMC is proceeding at this particular stage of the TA Report.

MPMC response (Pierre Stecko):

Guidelines apply in the receiving environment, not in effluent! That is, they are intended to apply in Hazeltine Creek after the mixing of effluent. Effluent quality limits will apply to effluent (as in the existing permit).

End of MPMC comment

Predicted Effluent Quality (TA Report Page 32)

The TA Report states:

'During the second operational phase, some high method detection limits for cadmium were reported (up to 0.0008 mg/L in 2007; Figure 5.2), impairing comparison of source concentrations to BCWQG. Method detection limits have since been lowered.'

This statement begs the question on detection limits. What portion of the database has been affected by a change in detection limit protocols?

The TA Report should clarify the water body being referred to when supplying hardness numbers, as in the discussion on Copper. It is unclear when the baseline for Hazeltine Creek is being used or when the predicted hardness of the effluent is being used.

Is it known why TSF copper concentrations have gone down in the second operational phase. Is MPMC confident that copper levels will remain low?

MPMC response (Ron Martel):

Copper concentrations is a function of pH, there is strong evidence from geochemical properties of our waste sources indicating that copper concentrations will remain at its current concentrations or perhaps a little higher.

End of MPMC comment

Predicted Effluent Quality (TA Report Page 33)

We note that the database consists of only two Selenium samples.

And it is stated, once more, that the sediment/polishing pond will improve the effluent discharge concentrations.

MPMC response (Ron Martel):

We have new and more recent water quality data supporting the above statement.

End of MPMC comment

Conceptual Discharge Strategy – Hydrology (TA Report Page 34/App: Page 256)

The understanding of the Hazeltine Creek hydrology, and of the low-flow period in particular, is critical to understanding the chemical effects of the effluent discharge. The TA Report states that:

‘Minimum flow in Hazeltine Creek typically occurs from August through February (0.05 to 0.08 m³/s; Figure 5.6).’

More importantly, there is no reference here to the Knight Piésold letter to R. Martel from C. Butt, 14 April 2009 that review the inadequacies of the MPMC hydrological monitoring program, and which stated that ‘there is an absence of long-term high quality stream flow dataset for all months of the year in Hazeltine Creek’.

Knight Piésold’s regionalization studies compared Hazeltine Creek with other gauged rivers within the region in order to estimate what the Hazeltine hydrological regime might be. The results of the regionalization study produced significantly lower flows that are reported on page 34 of the TA Report. **The revised regionalized flow estimate for August, for example, is 0.020 m³/s, and not 0.08 m³/s,** as is reported in Fig. 5.6, as is described by the Hazeltine hydrograph. The TA Report states that options for discharge are based on the Hazeltine Creek hydrograph, but does not state whether these data are based on the discredited historic baseline hydrology or on the revised regionalized hydrological estimates.

The TA Report should be updated to determine how close these regionalized estimates are when compared to monitoring since April 2009.

MPMC response (Ron Martel):

Agreed

End of MPMC comment

Conceptual Discharge Strategy – Hydrology (TA Report P. 35 / App: P. 254-255 / App: P. 138)

Table 5.4 provides various discharge and resulting effluent mixing scenarios. Under the Constant Discharge scenario, the TA Report states that February is the lowest monthly flow (0.024 m³/s) for Hazeltine Creek. This is in contradiction to the Knight Piésold regionalization estimates which show December as low as September (0.018 m³/s) and January even lower at 0.015 m³/s.

Under the “Proportional to Flow” scenario, the flow regime is subdivided into three discreet time frames; Year-round, April–October, and May–August. These timeframes are suboptimal because they miss isolating the low flow periods; rather, they mix high flow and low flow periods so that we do not know the predicted mixing ratios during the lowest flows of the year (and therefore the highest effluent concentrations) in Hazeltine Creek. For example, during the reported lowest flows (minimum of <0.0001 m³/s, TA Report Page 34) in August and September, the majority of flow in Hazeltine Creek would come from the MPM discharge. At that time, water temperatures are high and the high Phosphorus concentrations alone would likely lead to explosive growth of filamentous algae that could easily smother the eggs of up to 1,600 Sockeye Salmon that are reported to spawn in the lower Hazeltine Creek (Don Lawrence, DFO Williams Lake, pers. comm.) from late August through September.

MPMC response (Pierre Stecko):

These concerns can be addressed in the development of the final discharge strategy from the “conceptual” discharge strategy. It may be warranted not to discharge at all in low flow months.

End of MPMC comment

We have concerns that the hydrological data may not have been used and interpreted correctly, and (ii) the use of a blended flow analysis for effluent discharge is not appropriate. Therefore, we are not confident that the effluent plume has been accurately characterized. The report must address this.

MPMC response (Ron Martel):

Agreed, in very low periods Mount Polley would not discharge effluent, MOE needs to establish a discharge to receiver dilution ratio based on the information provided. We can update the conceptual discharge strategy with updated hydrology information. (look at bottlenecks)

End of MPMC comment

Fish Habitat (TA Report Page 38)

The TA Report predicts that the increase in Hazeltine Creek base flow may increase its suitability as fish habitat. This will be true only if, among other conditions, water quality is suitable for all life stages of fish. **As stated above, the high concentrations of phosphorus alone will be deleterious to fish habitat** – especially during lowest annual flows from August to October. Thus, this prediction is not helpful in characterizing the potential effects of increased discharge during low flow periods and as such, should be omitted or qualified.

Temperature (TA Report Page 40)

It is unclear in the TA Report as to whether the temperature section was based on the revised hydrological analysis of Hazeltine Creek. If not, then the calculations will have to be revised and will also need to account for effluent discharge cooling treatment methods.

MPMC response (Pierre Stecko):

The temperature section was based on old hydrology and would require updating with any refinement of hydrology required.

End of MPMC comment

Temperature (TA Report Page 41)

The TA Report states that:

‘Some natural elevations in temperature to greater than optimal for incubation (and less frequently rearing) have occurred. ...it would be desirable to mitigate any effluent-associated increase in temperature by constructing works such that effluent temperature is as close as possible to that of Hazeltine Creek.’

Given that the low flow conditions in Hazeltine Creek may be less than initially considered (i.e., accounting for revised regionalization studies), the TA Report should speak to this implied recommendation regarding the mitigative benefits of physical works.

Also, the increase of temperatures during low flows in August and September (a daily minimum of 0.0001 m³/s TA Report Page 34), when the majority of flow in Hazeltine Creek would be from discharge from MPM, has not been considered. Further, even a small but consistent increase in winter water temperature will shorten the incubation period for Sockeye and Coho Salmon eggs and early hatching can lead to the temporal mismatch between the need to feed following emergence from the gravel and the availability of food items. This temporal mismatch has been cited as a reason for high initial mortalities in plankton-dependent fish species (Winder and Schindler 2004). For example, a 0.5°C increase in water temperature (from 4°C= incubation period of 250 days to 4.5°C=222 days) over the whole period from spawning to emergence from the gravel for Sockeye Salmon, will shorten the incubation period by ~11% or in the chosen example by ~28 days. Similar changes can be expected for Coho Salmon.

Figure 3.8 in the TA Report shows a constant three-month 0°C period. We speculate that this was a result of the temperature logging device being frozen in ice rather than being in the water where it belonged. This data set should be confirmed.

Assessment of Potential Chemical Impact (TA Report P. 42 / App: P. 458-467+481-491)

The TA Report must present information confirming whether reagents used in the mill concentrating process will subsequently biodegrade within the TSF.

MPMC response (Ron Martel):

Both Acute and Chronic tox testing are requirements of the federal and will be part of the Provincial monitoring requirements

End of MPMC comment

This section may require revision, given that the low flow situation in Hazeltine Creek may be less than initially considered due to the revised regionalization studies. It is unclear as to which set of flow estimates are being utilized here.

Note that in the discussion of the CORMIX model, it is recognized that there may be deposition of sediments along the path of the plume. These potential depositional areas should be delineated.

The report states that the CORMIX model is conservative, in part, because it has not accounted for the withdrawal of sediments in the sediment/polishing pond.

Use of the CORMIX model is intended to model the effluent plume from the discharge location into Hazeltine Creek, to the location of complete mixing with Hazeltine Creek water, and then to determine the dilution of parameter concentrations as the plume moves down Hazeltine Creek and into Quesnel Lake. Models are not, however, the real world. They are useful when used conservatively to estimate ambient conditions but must be verified by *in situ* sampling to test and to calibrate the model. Palmer, for example, in *Water Quality Modeling: A Guide to Effective Practice, 2001*, advises to reduce the estimated in-stream dilution factors by 50%. This would have significant implication for the MPMC's estimates of the concentration of the key parameters at points along each reach of the Hazeltine Creek.

MPMC response (Pierre Stecko):

Mount Polley Mining Corporation intends to apply an adaptive approach that will provide real feedback on performance. However, the modeling results are considered best estimates slanted slightly to the conservative side (most probable concentrations generally selected as greater than average, some attenuation in the sediment/polishing pond and the receiver likely).

End of MPMC comment

A rigorous ambient monitoring program will need to be in place in order to validate and calibrate the CORMIX model.

This assessment has been based on the Year-Round Supply-Driven scenario in Table 5.4. Where in the TA Report is the decision taken, and the rationale explained for making the decision, that the Year-Round Supply-Driven scenario is the preferred effluent discharge strategy?

Tables 5.11 and 5.12 are incorrectly referenced (based on predictions of Knight Piésold 2009f – which refers to a geomorphologic study) and should be referenced to *Knight Piésold 2009e - Chemical Characterization of the Proposed Effluent for Discharge to Hazeltine Creek*.

In the discussion on the development of the copper WQG the TA Report states:

Although this evaluation does not rely on this effect of induced hardness, it is based on real, well-characterized amelioration of metal cation toxicity by hardness.

This statement requires explanation.

MPMC response (Pierre Stecko):

Hardness (reflecting calcium and magnesium concentrations) is known to reduce the bioavailability and toxicity of copper by competition at the site of uptake (e.g., the fish gill). Simply stated, the more Ca, Mg and other competing ions, the more difficult it is for copper to bind to a site of translocation into the cell. The 3 "C"s – Concentration, Complexation and Competition determine copper bioavailability and toxicity, not just Concentration.

End of MPMC comment

Site Specific Water Quality Objectives (TA Report Page 43)

Note in Table 5.11 the BCWQG for Molybdenum is provided only for the protection of aquatic life and does not include the wildlife BCWQG of 0.05 mg/L.

Again, the report does not provide guidance on which hydrological dataset has been used to come up with these effluent parameter mixing ratios.

Nowhere in the report are highest potential concentrations of Sulphate, Cadmium, or Copper given in relation to the lowest observed flows during the August to October period where the flow in Hazeltine Creek can be as low as 0.0001 m³/s (TA Report Page 34). During these low flow periods, the supply driven discharge may not decrease at the same rate as the flow in Hazeltine Creek. Instead monthly average values are used to calculate maximum effluent percentages and all chemical parameter concentrations. High mortalities of fish can be based on a daily increase in concentrations of chemical parameters and monthly averages as shown in Table 5.11 are not suitable to describe the risk of acute toxicity to fish or other organisms.

Sulphate (TA Report Page 43-46 / Appendices Page 481-491)

Site Specific Water Quality Objectives (SSWQO) development approach – hybrid site specific

We would like MPMC to provide the formula and assumptions (including the discharge model and hydrological values for the data provided in Table 5.11), by using, for example, Sulphate concentrations in Hazeltine Creek in March.

Knight Piésold reports that Sulphate values are trending upwards during the second (i.e., current) operational phase, yet this observation is not present under the Sulphate discussion in the TA Report. It appears that the recent mining of the Wight Pit led to increases in Sulphate concentration and it would therefore be helpful to see the most up to date water quality results from 2009 to date.

The graphical representation of the effluent plume (such as utilized by Knight Piésold in Appendices Page 481-491, where it is evident that the BCWQGs are not met until over 4000 meters downstream) is very useful here in order for the reader to grasp the concept of the plume moving downstream. This graphic could be developed for all parameters that exceed BCWQGs after discharge to Hazeltine Creek and should show the BCWQG and the MPMC WQO.

MPMC response (Pierre Stecko):

Example calculations and graphics can be provided.

End of MPMC comment

Note that when the TA Report states:

‘...even if maximum Sulphate concentrations (160 mg/L, Table 5.11) occurred simultaneously with low Chloride concentrations (3.0 mg/L; Table 5.11), effects (be they osmotic stress or toxicity) would not occur.’

The ‘maximum’ concentrations of Sulphate are based on the “Most Probable Concentration” of Sulphate in the effluent, which, as we have seen, is trending upwards.

The toxicity methodology for Sulphate (site water bioassays and whole effluent from the seepage pond bioassays) differs from the discussion for Cadmium below, where Water Effect Ratios (WERs) were calculated to determine the difference between spiked laboratory water and site water from Hazeltine Creek. Why does this discussion differ from the WERs discussed below for cadmium? And why is there no discussion of seasonal testing for Sulphate toxicity?

MPMC response (Pierre Stecko):

The testing for sulphate focused on evaluating the site-relevance of test results supporting the BC guideline (which we believe is flawed; see also Davies et al. in cited in the report and Elphick et al. 2011). The Water Effects Ratio approach for copper evaluates the mitigation of copper bioavailability by site water (which was shown in baseline studies using complexation capacity and is supported by concentrations of dissolved organic carbon).

End of MPMC comment

MPMC mentioned that it is currently undertaking research in the MPM tenure area in collaboration with UBC to study and test a bacterial based sulphate water treatment system. This is a very positive initiative and it would be helpful to find out whether the initiative was successful and whether the MPM discharge water quality could be improved using this treatment option.

All of the stated LC50 values for different organisms stated in Table 5.13 correspond to the commonly accepted LC50 values that can be found in the peer-reviewed literature and reviews published by the BCMOE. The suggested SSWQO of 500 mg/L for Sulphate still appears to be too high since it is based on Chloride being present at known and controlled concentrations additions in the discharge water to reduce Sulphate toxicity. In light of the results shown in Table 5.16 A, Hazeltine Creek Site Specific Water Quality Objectives should be based on the Lowest Observed Effect Concentrations (LOEC) of around 200 mg/L for sulphate if a precautionary approach is used and without precise knowledge of daily Chloride fluctuations. As stated before, monthly average discharge rates are not suitable to calculate maximum expected concentrations of chemical parameters in Hazeltine Creek.

Disagree that all the studies are “accepted”. See references above. The results of 2 studies underlying the guideline cannot be reproduced or were simply measuring something other than sulphate toxicity.

MPMC response (Pierre Stecko):

The model predictions in Table 5.11 (which will be re-run and may change somewhat) show monthly mean receiving water sulphate concentrations of up to 160 mg/L and chloride concentrations as low as 3.0 mg/L. However, as concluded in the report ... even choosing the lowest chloride (which does not co-occur with highest sulphate) and even calculating the No Observed Effects Concentrations (NOEC) (which underestimates an effect concentration) gives 510 mg/L. Note that an MATC is often used to define the effect threshold (Maximum Acceptable Toxicant Concentration = geometric mean [NOEC, LOEC]). At 3.0 mg/L chloride, the MATC is 721 mg/L.

One problem is that the “effect” really seems to be more related to the stress associated with low chloride than with sulphate toxicity per se. The mine is not contributing to the low chloride, rather is projected to increase chloride somewhat. If naturally low chloride causes ionic stress, we would expect sensitive organisms (such as *Hyalella*) not to occur.

Having said all this, another approach that might be useful (and may address the concern expressed above) is to apply what we have learned to propose a chloride-dependent

objective for sulphate using the equations in Figure 5.13. For example, using the MATC as the objective, at chloride of 0.5, 1, 2, 3, 4, and 5 mg/L, the sulphate objective would be 269, 444, 619, 721, 793 and 849 mg/L sulphate, respectively. This would provide better assurance of no “effect” at low chloride.

End of MPMC comment

Cadmium (TA Report Page 46)

SSWQO development approach – WERs plus not yet approved CCME WQG

The TA Report states:

‘At mean hardness of Hazeltine Creek in 2008 (91 mg/L; Table 3.5), the applicable 30-d BCWQG is 0.00003 mg/L, and at the expected hardness range with discharge (122 to 218 mg/L; Table 5.11), the 30-d BCWQG would range from 0.000039 to 0.000065 mg/L (Table 5.11).’

but we wish to know the minimum annual values of hardness for Hazeltine Creek in order to calculate a conservative estimate of the effect of cadmium on the receiving environment. The report, however, presents cadmium as annual average values based on annual ambient hardness.

Cadmium (TA Report Page 47)

The TA Report references the CCME Water Quality Guideline under development for cadmium, which allows for 7 times the concentration of cadmium in receiving waters. BCMOE needs to approve the CCME guideline currently under consideration. It appears that the BC MOE may not adopt the new cadmium water quality guidelines even if they will be adopted by the federal DOE since apparently major flaws were found in the underlying review. To be sure that the permit application will not be rejected based on the described approach to Cadmium discharge, we would recommend an approach that will meet existing WQG for Cadmium such as water treatment with lime.

MPMC response (Ron Martel):

MOE to decide, MPMC will develop a solution.

MPMC response (Pierre Stecko):

This puts the BC MOE in the position of not really having a defensible guideline for cadmium as the OLD one was the OLD CCME guideline which the Environment Canada, CCME and other provinces are saying is outdated. The US Environmental Protection Agency has a cadmium guideline that is consistent with the NEW CCME guideline. At the end of the day, we are making a technical argument and feel that the new CCME guideline is better supported by the state of the science. Application of a 10-fold safety factor may have been a valid approach when toxicological data were sparse, but that is no longer the case and the approach is overly conservative (and this inaccuracy has substantial economic implications).

End of MPMC comment

Copper (TA Report Page 47)

MPMC is suggesting to develop Site Specific Water Quality Objectives through calculations of site specific Water Effect Ratios.

Note that the Water Effects Ratio calculations are based on the most probable concentration for copper in the effluent (Table 5.2) as 0.009 mg/L, while the maximum predicted concentration is 0.020 mg/L. Using the maximum values would put the copper concentrations very close to the Site Specific Water Quality Objectives calculated through Water Effect Ratios. Note also, that as is common practice, the Water Effect Ratios were averaged and do not represent the lowest

case. And further, note that the real low flows in Hazeltine Creek **are** lower than those calculated in the TA Report. As a result the effluent plume could exceed the Site Specific Water Quality Guideline.

And as stated before, the Site Specific Water Quality Objective is based on mean annual hardness values for Hazeltine Creek while monthly fluctuations are not considered.

Selenium (TA Report Page 51)

MPMC is suggesting to develop Site Specific Water Quality Objectives for Selenium and will monitor accumulated Selenium concentrations rainbow trout ovarian tissue.

<http://www.setac.org/sites/default/files/SELSummary.pdf> is a good backgrounder from SETAC, 2009.

The SETAC 2009 referenced in the TA Report states that:

'Se requires site-specific risk assessments, including adequate quality assurance and quality control of chemical and biological analyses, to a much greater extent than many other contaminants.'

The TA Report states that a detailed Selenium monitoring program is provided in Section 8. This is incorrect. A general outline of selenium monitoring program is provided without any detail.

Selenium (TA Report Page 52-53)

Note that the focus for Selenium concentration testing should be on depositional environments where Selenium is most easily taken up into the food chain at the bacterial biofilm interface. Also note that Selenium has the tendency to accumulate in plants and can therefore be readily transferred through grazing into the terrestrial ecosystem.

The report states that:

'Thus, the predominantly erosional (lotic) characteristics of Hazeltine Creek present a lower risk of potential selenium associated effects than would an environment that supports longer residence times and microbial activity.'

This is a liberal characterization of Hazeltine Creek, which has at least three known depositional areas, namely the two beaver dams, and the wetland area at the lower Hazeltine reach.

MPMC response (Pierre Stecko):

Not really, dominant just refers to the fact that erosional habitat is more common than depositional. That is not to say that there is no depositional habitat in Hazeltine Creek. Sediment monitoring (for Selenium) has been included in previous chemical/biological assessments and will likely be in the future.

End of MPMC comment

Beaver dams are typically used by juvenile Coho Salmon and juvenile Rainbow Trout for rearing and associated feeding on benthic organisms (Pollock et al. 2004) which in turn directly feed on the biofilm. Thus the highest degree of bioaccumulation from bacteria to benthic organisms will certainly occur. The benthic organisms will in turn be consumed by juvenile Coho Salmon (Mundie 1969), Chinook Salmon (Herrman 1970) and Rainbow Trout (McPhail 2007). Therefore a precautionary approach is appropriate and adherence to the "broadly protective" BCWQO of 0.002 mg/L appears reasonable. We also feel that ovarian tissue sampling may be added to a monitoring project but is not sufficient in describing the Selenium concentrations in Hazeltine Creek water. Regular testing of the discharge for selenium will be required to adequately describe the up to date adherence to guidelines while testing of ovarian tissue may introduce an unacceptable time delay.

The TA Report states that the current BCWQO of 0.002 mg/L appears to be broadly protective and the report lists five recent studies that support this limit. However, the TA Report then states that it is better to use a tissue-based guideline (20 mg/kg dry ovary weight) derived from unpublished studies, and provides for a multi-compartment monitoring program.

MPMC response (Pierre Stecko):

Note that the results of the Pellston workshop have been published. As clearly articulated in the preliminary SETAC document cited in 2009, there is broad scientific consensus that: 1) ovary concentrations are the only true way to predict the potential for adverse effect and 2) water concentrations do not predict ovary concs. The ovary effect THRESHOLD identified is 17 to 24 mg/kg depending on species

The scientific uncertainty around selenium is explicitly acknowledged in the report and we feel that we are being honest and open about this. Again, our approach has been to make best possible information available to the decision makers, and believe that the uncertainty should not prohibit discharge provided the correct safeguards and feedback mechanisms are put in place.

End of MPMC comment

All that we know at this point is that the predicted Selenium concentrations in Hazeltine Creek will be three times the 'broadly protective' BC Water Quality Objective. This is based on the most probable concentration (0.016 mg/L) in the effluent. The maximum concentration is almost double this concentration (0.028 mg/L). As is the case for Sulphate, it also appears that the recent initiation of mining in the Wight Pit may have increased the discharge concentrations for Selenium. Can you please provide up to date water quality results of the discharge from MPM?

There is an absence of certainty here on how much selenium may be taken up into the food chain prior to MPMC identifying the uptake and what the appropriate response would be once such uptake was identified.

We do not know the partitioning of Selenium between the water column and the associated sediments, which argues for a protective approach to Selenium. This may include the need for sediment removal from the effluent prior to discharge.

Whole Source Water Testing (TA Report Page 53–54)

The TA Report rightfully states that no acute toxicity effects were observed during testing on Rainbow Trout and Coho Salmon embryos in water from the TSF and MESCP. Nevertheless, the report also states on that in chronic testing on Rainbow Trout through the embryo-alevin-fry stages in water from the MESCP resulted in survival drops from 87% in control water to 70% in 50% effluent.

The TA Report states that:

'By comparison, it is anticipated that final effluent will be of better quality than tested due to the ameliorating effect of the sediment/polishing pond.'

Note, that once more, note the reference to the sediment / polishing pond.

Integrated Chemical Assessment Summary (TA Report Page 55)

The intense assessment and development of site specific water quality objectives, as presented in the TA Report, is recognized.

The hydrological database on which the calculations of the parameter concentrations are, in part, based, is not reported (i.e., are the lower regionalized estimates for Hazeltine Creek utilized here?).

The most probable concentration, and not the maximum concentration, is used to characterize the effluent.

The use of Water Effect Ratios for Copper needs to be reviewed by BCMOE, DFO and DOE.
The use of the not yet approved CCME WQG for cadmium needs to be reviewed by BCMOE.
The complete tissue based objective for selenium needs to be reviewed by BCMOE, DFO and DOE.

Summary (TA Report Page 57)

The TA Report refers to 'some' decrease in survival of Rainbow Trout alevin when tested in effluent – the reported data resulted in survival drops from 87% in control water to 70% in 50% effluent.

MPMC response (Pierre Stecko):

Note that effluent concentration in Hazeltine Creek will be lower than 50%

End of MPMC comment

Mitigation (TA Report Page 59-60)

Note that temperature mitigation is suggested by MPMC with reference to withdrawing effluent discharge from the lower (and therefore cooler) portion of the sediment/polishing pond.

What does the TA Report mean by '*In addition to the minimization of effluent volume and optimization of effluent quality*'?

MPMC response (Ron Martel):

If required minimizing effluent volume or concentrations in order to protect the environment are departmental objectives and / or key performance indicators.

End of MPMC comment

There are no chemical impact mitigation measures reported in the TA Report, other than what may be associated with the sediment/polishing pond.

The TA Report states that MPMC will make use of intense receiving environment monitoring by adapting its management of effluent discharge, but no details are provided for how this adaptive management will be executed, other than to refer to contingency measures.

MPMC response (Ron Martel):

Likely a potential permit condition that MPMC will comply with.

End of MPMC comment

Monitoring and Contingency Plans (TA Report Page 63)

The TA Report states that consensus among stakeholders about the appropriateness of the detailed monitoring plan will be sought following the issuance of the discharge permit. Although comments can still be included before the operational start of the permit, we believe that it would be helpful to provide a detailed monitoring plan, as may be feasible at this point, to assess the seriousness of MPMC's claims to apply best practices and a precautionary approach.

MPMC response (Ron Martel):

We need to know what is real, and adapt accordingly. We need to adapt to terms and conditions (given by MOE as permit conditions).

End of MPMC comment

Conceptual Contingency Plan (TA Report Page 64)

The TA Report does provide the outline for a conceptual contingency plan, but does not provide the details of the contingency plan. What is the timeline, for example, of receiving a report on water quality conditions that exceed the Permit conditions, which then requires re-sampling, additional analysis, and then requires an operational response to the situation with the appropriate form of adaptive management? This must be provided prior to a Permit becoming operational.

MPMC response (Ron Martel):

(We) need to measure performance first before real and meaningful contingency plans are formulated

End of MPMC comment

Terrestrial Biodiversity

Only impacts to fish are considered in this report and no consideration is given to the potential effects of effluent on terrestrial or riparian biodiversity (wildlife and vegetation). This is not to say that there will necessarily be adverse effects on those features, but even in such cases where no effects are likely, the TA Report should state this to be the case. Consideration should be given to:

- potential scouring of riparian vegetation due to increased water flows
- potential for direct toxicity to wildlife that use the water for drinking or through biomagnifications in tissues of riparian plants, fish, and invertebrates that are used as food for wildlife and livestock
- potential for alterations to plant community structure, and resulting ecological communities, through changes in the water chemistry, temperature, and concentration of pollutants
- potential for significant alteration or destruction of the beaver ponds that occur downstream along Hazeltine creek, which could impact entire wetland ecosystems
- potential sedimentation into beaver ponds due to increased sediment load, which could impact aquatic organisms (invertebrates, beavers, waterfowl, etc.)

No baseline information has been provided on the existing riparian communities and existing wildlife values on Hazeltine Creek below the mine. In the event that potential effects were identified in an environmental assessment, baseline information should be collected on:

- riparian and wetland vegetation classification
- general wildlife surveys
- Species at Risk surveys

No discussion has been provided on the potential toxicity of the resultant effluent-laden waters on wildlife species that may drink the water, consume fish or aquatic invertebrates, or forage on riparian vegetation

There are a number of chemical contaminants of concern regarding their potential uptake by wildlife. Where MPMC's toxicologist identifies water quality parameters that could exceed the guidelines for wildlife and livestock, suitable mitigation should be put in place.

MPMC response (Pierre Stecko):

The points above are acknowledged. We do note that the Technical Assessment was scoped in many pre-consultation and consultation meetings with regulators and others. Our feeling was that the aquatic environment was the principal and most sensitive receiver, not least due to the clear & continuous route of exposure versus wildlife which are only intermittently exposed and generally have more sophisticated physiological

means of regulating metals. Furthermore, we applied BCWQG to evaluate the potential impacts to water quality. This includes wildlife use of water (for all analytes of interest except molybdenum, the aquatic life BCWQG are lower than those for wildlife).

End of MPMC comment

No discussion has been provided for potentially cumulative effects of multiple contaminants on the ecosystem and wildlife, such as:

- additive impacts, in which several compounds increase the toxicity of the water when present in combination over what any of them would in isolation
- countering impacts, in which one or more compounds negate the negative impacts of another compound when present in combination

No consideration has been provided for the potential effects of bioaccumulation of toxins in wildlife and livestock which may then be consumed by humans (e.g., First Nations, hunters, etc.), potentially resulting in toxicity to humans.

The discussion of proposed ongoing monitoring protocols and options for mitigation/adaptive management if the conditions within the environment are deemed unacceptable is very cursory, and:

- no discussion of what constitutes “unacceptable” conditions, or how these will be determined or measured
- minimal discussion of potential monitoring regimes (i.e., what to monitor, how frequently to monitor, what monitoring methodology to employ, etc.)
- minimal discussion of options for mitigation if conditions are deemed unacceptable (e.g., cessation of discharge, altering the discharge flow, habitat remediation, detoxification of affected ecosystems and organisms, etc.)
- minimal discussion of how the operating regime may be altered through adaptive management over time
- although the document states that a more comprehensive monitoring plan will be developed as a component of the application for effluent discharge, it would be helpful to review the monitoring program along with the rest of the application and prior to full approval

MPMC response (Ron Martel):

MOE to decide

End of MPMC comment

Literature Cited

1. Herrman, R.B. (1970). Food of juvenile Chinook and chum salmon in the lower Chehalis River and Upper Grays Harbour. In: Grays Harbour cooperative water quality study 1964-1966. Washington Department of Fisheries Technical Report 7: 59-82.
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3. Mundie, J.H. (1969). Ecological implications of the diet of juvenile coho in streams. In: T.G. Northcote (ed.) Symposium on salmon and trout in streams. H.R. McMillan Lectures in Fisheries. Institute of Fisheries, University of British Columbia, Vancouver, BC.
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6. Winder, M and D.E. Schindler (2004). Climate change uncouples trophic interactions in an aquatic ecosystem. Ecology 85 (8): 2100-2106.

From: [Halls, Lori D ENV:EX](#)
To: [Fraser, John Paul GCPE:EX](#)
Subject: RE: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 3:02:00 PM

I will . Thanks.

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

From: Fraser, John Paul GCPE:EX
Sent: Tuesday, August 5, 2014 1:35 PM
To: Halls, Lori D ENV:EX
Subject: FW: Mt. Polley Com materials

Hi Lori, You may wish to alert John D to this issue.

Thanks,
JPF

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

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 1:33 PM
To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

Basically correct. I'm hearing that there may have been an amended permit granted last fall...info not contained in the note you reference. I need to clarify that. But generally speaking it is a lengthy period between receiving an application and granting a permit.

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

From: Chin, Ben PREM:EX
Sent: Tuesday, August 5, 2014 1:26 PM
To: Crebo, David GCPE:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: Re: Mt. Polley Com materials

This is helpful...so it was submitted in 2011 to ENV. MT P received an amendment in 2009. They put in another amendment application last month according to an ENV IN I just read....so is this a case of a three year lag between submitting this report and submitting an amendment application?

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

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

From: Crebo, David GCPE:EX
Sent: Tuesday, August 05, 2014 01:18 PM

To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

This what we know:

Brian Olding and Associates report

- This report was commissioned to provide a review by a third-party of the application submitted by Mount Polley Mining Corp. requesting authority to discharge water from the mine to Hazeltine Creek.
- The amendment application reviewed by Brian Olding was developed by MPMC to facilitate maintenance of the long-term water balance in the tailings storage facility based on the mine footprint at the time.
- The scope of the third-party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit.
- The review and resultant report did not address any matters pertaining to geotechnical stability of the tailings storage facility, as this was not part of the Environmental Management Act discharge application review.

This is what we are still trying to find out:

When did Imperial receive amended permit from ENV?

The news articles talk about a geotechnical study recommended by Olding, but not contained in this report, that was never acted upon...who never acted on it? That wouldn't be in ENV's purview to do geotechnical assessments. David H can you see if this is on MEM's radar?

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

From: Chin, Ben PREM:EX
Sent: Tuesday, August 5, 2014 1:06 PM
To: Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: Re: Mt. Polley Com materials

Do we have an answer yet to the Olding Report?

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

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

From: Haslam, David GCPE:EX
Sent: Tuesday, August 05, 2014 12:58 PM
To: Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Chin, Ben PREM:EX; Mills, Shane LASS:EX; Shotton,

Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

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<http://www.theprovince.com/news/Polley+Mine+tailings+pond+growing+unsustainable+rate+says/10091105/story.html>

From: [Fraser, John Paul GCPE:EX](#)
To: [Chin, Ben PREM:EX](#); [Shotton, Ryan GCPE:EX](#); [Haslam, David GCPE:EX](#); [Crebo, David GCPE:EX](#); [Groot, Jeff GCPE:EX](#); [McCaffrey, Julianne GCPE:EX](#)
Cc: [Ritchie, Leanne GCPE:EX](#); [Gordon, Matt GCPE:EX](#); [Mills, Shane LASS:EX](#); [Jacobs, Jake GCPE:EX](#); [Sweeney, Neil PREM:EX](#); [Halls, Lori D ENV:EX](#)
Subject: RE: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 3:08:29 PM

Looping Neil and Lori again.

Thanks,
JPF

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

From: Chin, Ben PREM:EX
Sent: Tuesday, August 5, 2014 3:07 PM
To: Shotton, Ryan GCPE:EX; Haslam, David GCPE:EX; Crebo, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Jacobs, Jake GCPE:EX
Subject: Re: Mt. Polley Com materials

Great

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

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

From: Shotton, Ryan GCPE:EX
Sent: Tuesday, August 05, 2014 03:02 PM
To: Haslam, David GCPE:EX; Crebo, David GCPE:EX; Chin, Ben PREM:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

Re: dam integrity compromised because the company could not discharge water

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Sent: Tuesday, August 5, 2014 2:57 PM
To: Crebo, David GCPE:EX; Chin, Ben PREM:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

Subject: RE: Mt. Polley Com materials

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Sent: Tuesday, August 5, 2014 2:54 PM

To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

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Sent: Tuesday, August 5, 2014 2:52 PM

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Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

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Ben Chin

Executive Director

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250-588-3113

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Sent: Tuesday, August 5, 2014 1:33 PM

To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX
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Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
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250-588-3113

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Subject: RE: Mt. Polley Com materials

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Brian Olding and Associates report

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- The amendment application reviewed by Brian Olding was developed by MPMC to facilitate maintenance of the long-term water balance in the tailings storage facility based on the mine footprint at the time.
- The scope of the third-party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit.
- The review and resultant report did not address any matters pertaining to geotechnical stability of the tailings storage facility, as this was not part of the Environmental Management Act discharge application review.

This is what we are still trying to find out:

When did Imperial receive amended permit from ENV?

The news articles talk about a geotechnical study recommended by Olding, but not contained in this report, that was never acted upon...who never acted on it? That wouldn't be in ENV's purview to do geotechnical assessments. David H can you see if this is on MEM's radar?

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Sent: Tuesday, August 5, 2014 1:06 PM

To: Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

Subject: Re: Mt. Polley Com materials

Do we have an answer yet to the Olding Report?

Ben Chin

Executive Director

Communications & Issues Mgmt

Office of Premier Christy Clark

Government of British Columbia

250-588-3113

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

From: Haslam, David GCPE:EX

Sent: Tuesday, August 05, 2014 12:58 PM

To: Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Chin, Ben PREM:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

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From: [Leake, Greg EAO:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Carr, Michelle EAO:EX](#)
Subject: Mt. Polley -- EAO Bullets
Date: Tuesday, August 5, 2014 3:09:05 PM

Lori:

I understand that you and Michelle spoke about these this morning. Approved by Michelle.

G.

- British Columbia's environmental assessment process involves a rigorous, thorough review that provides for significant opportunities for First Nations, government agencies and the public to provide input on the potential for environmental, economic, social, heritage and health effects from a proposed project.
- The ministers issue an environmental assessment certificates with legally-enforceable conditions that give them the confidence to conclude that a project will be constructed, operated and decommissioned in a way that ensures that no significant adverse effects are likely to occur.
- For example, the recent certificate issued for the KSM mine includes 21 conditions dealing with mine waste management, water management and/or water quality.
- The Environmental Assessment Office is developing compliance management plans for every newly-certified project, including for KSM and other mines that receive an environmental assessment certificate. Compliance management plans identify who is responsible for inspecting and enforcing compliance during the life of the project.
- The environmental assessment certificate and the attached conditions are only the first step in the regulation of mines. A subsequent permitting process by the Ministries of Energy and Mines and Environment also includes conditions and follow up compliance and enforcement activities by those ministries.
- The Environmental Assessment Office's Compliance and Enforcement (EAO C&E) team works closely with other provincial government agencies on the compliance oversight of projects, during routine operations as well as in response to emerging issues such as the Mount Polley tailings pond breach.
- EAO C&E works closely with the Ministry of Energy and Mines and the Ministry of Environment's Environmental Protection Division to ensure coordinated compliance efforts for mine projects.
- EAO C&E inspects projects based on criteria such as project phase, project type, compliance history, amount of oversight by other agencies, etc.
- There have been six EA-related mine inspections since the beginning of 2012. EAO C&E will be conducting additional mine inspections in 2014/15.

From: [Haslam, David GCPE:EX](#)
To: [Sweeney, Neil PREM:EX](#); [Fraser, John Paul GCPE:EX](#); [Shotton, Ryan GCPE:EX](#); [Crebo, David GCPE:EX](#); [Chin, Ben PREM:EX](#); [Groot, Jeff GCPE:EX](#); [McCaffrey, Julianne GCPE:EX](#)
Cc: [Ritchie, Leanne GCPE:EX](#); [Gordon, Matt GCPE:EX](#); [Mills, Shane LASS:EX](#); [Jacobs, Jake GCPE:EX](#); [Halls, Lori D ENV:EX](#)
Subject: RE: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 3:10:42 PM

Will do.

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

From: Sweeney, Neil PREM:EX
Sent: Tuesday, August 5, 2014 3:08 PM
To: Fraser, John Paul GCPE:EX; Shotton, Ryan GCPE:EX; Haslam, David GCPE:EX; Crebo, David GCPE:EX; Chin, Ben PREM:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Jacobs, Jake GCPE:EX; Halls, Lori D ENV:EX
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Can we get a list of permits and/or permit amendments that were applied for by Mt. Polley and whether or not they were granted?

And if there have been similar requests by Gibraltar whether or not they have been granted?

Thanks,

Neil

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To: Shotton, Ryan GCPE:EX; Haslam, David GCPE:EX; Crebo, David GCPE:EX; Chin, Ben PREM:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX
Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Jacobs, Jake GCPE:EX; Halls, Lori D ENV:EX; Sweeney, Neil PREM:EX
Subject: RE: Mt. Polley Com materials

Looping in Lori H and Neil

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JPF

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Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Jacobs, Jake GCPE:EX
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Re: dam integrity compromised because the company could not discharge water

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Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

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From: [Haslam, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#); [Koncohrada, Karen MEM:EX](#); [Standen, Jim ENV:EX](#); [Hoffman, Al MEM:EX](#)
Cc: [Crebo, David GCPE:EX](#); [Shotton, Ryan GCPE:EX](#); [Amann-Blake, Nathaniel MEM:EX](#)
Subject: RE: Mt. Polley Com materials
Date: Tuesday, August 5, 2014 3:16:11 PM

Looping in Ryan Shotton and Nate.

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

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 3:14 PM
To: Koncohrada, Karen MEM:EX; Standen, Jim ENV:EX; Hoffman, Al MEM:EX
Cc: Haslam, David GCPE:EX; Crebo, David GCPE:EX
Subject: FW: Mt. Polley Com materials

Jim/Al

See request from Neil Sweeney. Similar to request from John Dyble. I'd like to be able to provide Dyble and Sweeney a single list of permits. Please coordinate draft chronology.

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Sent: Tuesday, August 5, 2014 3:08 PM
To: Fraser, John Paul GCPE:EX; Shotton, Ryan GCPE:EX; Haslam, David GCPE:EX; Crebo, David GCPE:EX; Chin, Ben PREM:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX
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Sent: Tuesday, August 05, 2014 02:45 PM

To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

Subject: RE: Mt. Polley Com materials

Prior to company receiving its amended permit, FNs had concerns with the proposal.

The consultant was hired (Golding report).

Contents of Golding were factored into decision to amend the permit in 2009.

Final Golding report was received in 2011

Company has now put forward application to further amend the permit. This was received in June 2014, and is under consideration.

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

From: Crebo, David GCPE:EX

Sent: Tuesday, August 5, 2014 1:33 PM

To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

Subject: RE: Mt. Polley Com materials

Basically correct. I'm hearing that there may have been an amended permit granted last fall...info not contained in the note you reference. I need to clarify that. But generally speaking it is a lengthy period between receiving an application and granting a permit.

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

From: Chin, Ben PREM:EX

Sent: Tuesday, August 5, 2014 1:26 PM

To: Crebo, David GCPE:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

Subject: Re: Mt. Polley Com materials

This is helpful...so it was submitted in 2011 to ENV. MT P received an amendment in 2009. They put in another amendment application last month according to an ENV IN I just read....so is this a case of a three year lag between submitting this report and submitting an amendment application?

Ben Chin

Executive Director

Communications & Issues Mgmt

Office of Premier Christy Clark

Government of British Columbia

250-588-3113

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

From: Crebo, David GCPE:EX

Sent: Tuesday, August 05, 2014 01:18 PM

To: Chin, Ben PREM:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX
Subject: RE: Mt. Polley Com materials

This what we know:

Brian Olding and Associates report

- This report was commissioned to provide a review by a third-party of the application submitted by Mount Polley Mining Corp. requesting authority to discharge water from the mine to Hazeltine Creek.
- The amendment application reviewed by Brian Olding was developed by MPMC to facilitate maintenance of the long-term water balance in the tailings storage facility based on the mine footprint at the time.
- The scope of the third-party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit.
- The review and resultant report did not address any matters pertaining to geotechnical stability of the tailings storage facility, as this was not part of the Environmental Management Act discharge application review.

This is what we are still trying to find out:

When did Imperial receive amended permit from ENV?

The news articles talk about a geotechnical study recommended by Olding, but not contained in this report, that was never acted upon...who never acted on it? That wouldn't be in ENV's purview to do geotechnical assessments. David H can you see if this is on MEM's radar?

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

From: Chin, Ben PREM:EX

Sent: Tuesday, August 5, 2014 1:06 PM

To: Haslam, David GCPE:EX; Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

Subject: Re: Mt. Polley Com materials

Do we have an answer yet to the Olding Report?

Ben Chin

Executive Director

Communications & Issues Mgmt

Office of Premier Christy Clark

Government of British Columbia

250-588-3113

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

From: Haslam, David GCPE:EX

Sent: Tuesday, August 05, 2014 12:58 PM

To: Groot, Jeff GCPE:EX; McCaffrey, Julianne GCPE:EX; Fraser, John Paul GCPE:EX; Crebo, David GCPE:EX

Cc: Ritchie, Leanne GCPE:EX; Gordon, Matt GCPE:EX; Chin, Ben PREM:EX; Mills, Shane LASS:EX; Shotton, Ryan GCPE:EX; Jacobs, Jake GCPE:EX

Subject: RE: Mt. Polley Com materials

Jeff - attached are the latest com materials: QA, Sit Report - 930 am today, MBB statement released about 10:30 am. The QA is a live document and will be updated as questions/info evolve. We will update Sit report: Al Hoffman, Chief Inspector is travelling to Williams Lake. Imperial Metals is holding a press conference at 2 pm. CRD is hosting a community meeting at 4 pm today in Likely - provincial gov rep will be attending. MBB arrives 230 pm today and will be doing a media conference at the airport. MoE is working on response point for Province story below:

<http://www.theprovince.com/news/Polley+Mine+tailings+pond+growing+unsustainable+rate+says/10091105/story.html>

From: [Crebo, David GCPE:EX](#)
To: [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [GCPE Communications - Environment](#)
Subject: FOR APPROVAL: Media -Mt Polley permit history
Date: Tuesday, August 5, 2014 3:21:53 PM
Attachments: [Final Report MPMC Master TA Review Jun21 2011.pdf](#)
Importance: High

Jim – trying to lay out permitting story sequentially for media, including Golding report. Can you pls review?

Recent permit history:

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and currently had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- The last significant permit amendment in 2009 authorized Mt Polley to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
 - Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party. (Brian Olding - attached)
 - This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazeltine Creek.
 - The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended 2009 permit.
- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazeltine Creek.
- This application was received by the ministry this summer, and is being considered.

Dave Crebo
Communications Director
Ministry of Environment
(250) 387-9973 (office)
(250) 812-5747 (cell)
David.Crebo@gov.bc.ca

From: [Dyble, John C PREM:EX](#)
To: [Fraser, John Paul GCPE:EX](#)
Cc: [Wanamaker, Lori JAG:EX](#); [Halls, Lori D ENV:EX](#)
Subject: Re: Update -- on-site comms
Date: Tuesday, August 5, 2014 3:27:32 PM

That looks good

Sent from my iPhone

On Aug 5, 2014, at 2:09 PM, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca> wrote:

John,

We are deploying a senior GCPE communications expert to Williams Lake. He is Jeff Groot, our Comms Director at JAG (Public Safety) and very familiar with EMBC and emergency comms procedures – and very good at media relations. Jeff will work out of the government offices in Williams Lake. Ideally, we will place Jeff in the EOC @ Williams Lake.

In terms of government spokesperson, we've identified Jennifer McGuire – ENV, Executive Director, Regional Operations – who is fully trained incident commander will fly up as soon as possible. She's been the MOE lead on this and has extensive technical background and has media experience. As you know, we'd initially identified Al Hoffman – MEM, Chief Mines Inspector – but given his SDM role and any potential future charges, this was not ideal.

There has been some hesitation from EOC staff about co-locating with Jeff... but as Lori W points out, with Jennifer as a MOE program person now on the ground, a provincial post in their regional office should make more sense. She is reaching out them now.

Both Jeff and Jennifer will be in WL by tomorrow AM.

Hope this meets with your approval.

Thanks,

John Paul Fraser

A/ Deputy Minister

Government Communications and Public Engagement

250 356-8527 (direct line)

250 580-4149 (cell)

From: [Williams, Bryan ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: FW: Mt. Polley ECDA Info
Date: Tuesday, August 5, 2014 3:47:15 PM

You probably have this already....

Bryan Williams

Office: 250-847-7723

Mobile:250-643-2885

From: Palmantier, Kristy FLNR:EX
Sent: Tuesday, August 5, 2014 3:36 PM
To: Williams, Bryan ENV:EX
Subject: FW: Mt. Polley ECDA Info

STATEMENT

Bill Bennett, Minister of Energy and Mines, responds to Mt. Polley Mine Incident

VICTORIA - Minister of Energy and Mines Bill Bennett made the following statement today in response to the mine tailing pond incident at Mt. Polley Mine:

"In the early morning of August 4, 2014, the tailings pond dam at the Mt. 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. Hazletine Creek flows out of Polley Lake, and the flow may have continued into Quesnel Lake.

"This is a serious incident that should not have happened. We are devoting every appropriate resource working with local officials to clean up the site, mitigate any impacts to communities and the environment, and investigate the cause of the breach. We will determine the cause of the event and we are determined to prevent an incident like this from happening again.

"RCMP, Mt. Polley Mine executives, Ministry of Energy and Mines, Ministry of Environment, Emergency Management BC, Ministry of Transportation, Cariboo Regional District, Search and Rescue and Cariboo Dam Safety, responded to the event. Any potential environmental impact from the tailings pond water on the local watershed is unknown at this time but all efforts are being made to make a determination as soon as possible.

Cariboo Regional District, in consultation with Interior Health, has issued a precautionary water ban advisory not to drink or bathe in the water and not to allow pets or livestock to drink the water. The waterways affected by the ban include Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek, as well as the Quesnel and Cariboo Rivers systems up to the Fraser River.

The ban does not apply to people in Williams Lake or other towns along the Fraser River.

"The Ministry of Environment is on-site conducting water tests to determine the full extent of potential environmental impacts. Water sampling took place the evening of Aug 4. Samples have been sent for analysis today, with results expected later this week.

"Ministry of Energy and Mines Inspectors are at the mine site investigating the cause.

Cariboo Regional District has set up a public information line at 250-398-5581, and updates will be posted to the Cariboo Regional District's emergency operations Facebook page.

"As more information becomes available, the B.C. government will provide that information to British Columbians."

From: [Standen, Jim ENV:EX](#)
To: [Zacharias-Homer, Christa ENV:EX](#); [Dalal, Suntanu GCPE:EX](#)
Cc: [GCPE Communications - Environment](#); [McGuire, Jennifer ENV:EX](#); [Halls, Lori D ENV:EX](#); [English, Heather ENV:EX](#); [Crebo, David GCPE:EX](#)
Subject: RE: Tailings pond supernatant...
Date: Tuesday, August 5, 2014 4:00:57 PM

Approved with Christa's edits.

From: Zacharias-Homer, Christa ENV:EX
Sent: Tuesday, August 5, 2014 3:36 PM
To: Standen, Jim ENV:EX; Dalal, Suntanu GCPE:EX
Cc: GCPE Communications - Environment; McGuire, Jennifer ENV:EX; Halls, Lori D ENV:EX; English, Heather ENV:EX; Crebo, David GCPE:EX
Subject: RE: Tailings pond supernatant...

Hi Jim,

A couple of minor tweaks...

Christa

Christa Zacharias-Homer

Deputy Director, Regional Operations Branch

Ph: (250) 356-8174 | Fax: (250) 356-5496 | Cell: (250) 216-2467

Christa.ZachariasHomer@gov.bc.ca

 Please consider the environment before printing this email

From: Standen, Jim ENV:EX
Sent: Tuesday, August 5, 2014 3:29 PM
To: Dalal, Suntanu GCPE:EX; Zacharias-Homer, Christa ENV:EX
Cc: GCPE Communications - Environment; McGuire, Jennifer ENV:EX; Halls, Lori D ENV:EX; Zacharias-Homer, Christa ENV:EX; English, Heather ENV:EX; Crebo, David GCPE:EX
Subject: RE: Tailings pond supernatant...

Christa,

Please check accuracy given my edits to your original.

Thanks

Jim

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 3:27 PM
To: Crebo, David GCPE:EX; Standen, Jim ENV:EX
Cc: GCPE Communications - Environment; McGuire, Jennifer ENV:EX; Halls, Lori D ENV:EX; Zacharias-Homer, Christa ENV:EX; English, Heather ENV:EX
Subject: Tailings pond supernatant...

Jim,

I've made a few minor edits to clean up the bullets. I assume you're OK with them.

Suntanu

- B.C. Water Quality Guidelines are levels at which the potential exists for impacts on various water uses. Environmental Protection Division staff reviewed the tailings supernatant (i.e., the liquid in the tailings pond) data sent by **Mount Polley Mining Corporation** on Aug. 4, 2014 and found that for the impounded tailings supernatant:
 - The selenium **concentration** exceeded the **drinking water** guideline of 10ug/L by a factor 2.8 times.
 - Sulphate did not exceed the drinking water guideline of 500 mg/L in May 2014. However, there have been frequent small exceedances of this guideline over the last few years.
 - Molybdenum concentrations were well below drinking water guidelines **over** the last two years. **However**, recent molybdenum concentrations in the supernatant exceeded livestock watering and irrigation guidelines of 0.05 mg/L.
 - Organic carbon concentrations exceed the 4 mg/L guidelines for chlorination (water treated with chlorine that contains >4mg/L of organic carbon can result in toxic chlorination by-products).
- In addition, the concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

From: [Crebo, David GCPE:EX](#)
To: [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [GCPE Communications - Environment](#)
Subject: RE: FOR APPROVAL: Media -Mt Polley permit history
Date: Tuesday, August 5, 2014 4:01:49 PM

Ok...but time is of the essence. Several media enquiries relate to this. Based on our call earlier, this is what was provided to MBB:

- Prior to company receiving its amended permit, FNs had concerns with the proposal.
- The consultant was hired (Golding report).
- Contents of Golding were factored into decision to amend the permit in 2009.
- Final Golding report was received in 2011 Company has now put forward application to further amend the permit. This was received in June 2014, and is under consideration.

From: Standen, Jim ENV:EX
Sent: Tuesday, August 5, 2014 3:33 PM
To: Crebo, David GCPE:EX; Halls, Lori D ENV:EX
Cc: McGuire, Jennifer ENV:EX; GCPE Communications - Environment
Subject: RE: FOR APPROVAL: Media -Mt Polley permit history

Dave, I am trying to get this confirmed. It's still not 100% clear and better to get it right.

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 3:22 PM
To: Standen, Jim ENV:EX; Halls, Lori D ENV:EX
Cc: McGuire, Jennifer ENV:EX; GCPE Communications - Environment
Subject: FOR APPROVAL: Media -Mt Polley permit history
Importance: High

Jim – trying to lay out permitting story sequentially for media, including Golding report. Can you pls review?

Recent permit history:

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and currently had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- The last significant permit amendment in 2009 authorized Mt Polley to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
 - Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party. (Brian Olding - attached)
 - This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazeltine Creek.

- The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended 2009 permit.
- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazeltine Creek.
- This application was received by the ministry this summer, and is being considered.

Dave Crebo
Communications Director
Ministry of Environment
(250) 387-9973 (office)
(250) 812-5747 (cell)
David.Crebo@gov.bc.ca

From: [Standen, Jim ENV:EX](#)
To: [Dalal, Suntanu GCPE:EX](#)
Cc: [GCPE Communications - Environment; Halls, Lori D ENV:EX](#)
Subject: RE: Mount Polley permitting...
Date: Tuesday, August 5, 2014 4:07:49 PM

So we are clear folks, the one guy who knows this stuff for certain is Doug Hill. He is en route to Likely and is not reachable in any way until he gets back tonight. All other regional staff in Williams Lake are out in the field sampling. I have asked one of the mining team to look into the electronic file to see what we can put together but it will not be comprehensive. We need to be sure we get accurate info out, even if it means waiting.

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 4:02 PM
To: Standen, Jim ENV:EX
Cc: GCPE Communications - Environment; Halls, Lori D ENV:EX
Subject: Mount Polley permitting...

The information in the answer to the first question (highlighted below) isn't consistent with the bullets Dave has been working on with you and that has been provided to MBB.

Can you please compare and get back to us.

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and currently had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- The last significant permit amendment in 2009 authorized Mt Polley to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
 - Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party. (Brian Olding - attached)
 - This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazeltine Creek.
 - The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended 2009 permit.
- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazeltine Creek.

- This application was received by the ministry this summer, and is being considered.

From: English, Heather ENV:EX
Sent: Tuesday, August 5, 2014 3:41 PM
To: Dalal, Suntanu GCPE:EX
Cc: Zacharias-Homer, Christa ENV:EX
Subject: RE: Mount Polley questions...

Formatted and prepared for you to take this to Jim for approval. (Christa – the only change I made to this was the one you requested and the removal of my comment on the 4th bullet in the first question(

Note that the last question is also addressed in another e-mail, which said June 2014, but AMS says it was date-stamped for July 9th. Jim may have more information on this.

Question: Reporter says there is a report that this mine applied for a permit to discharge tailings but it was not granted. Is this true?

- In 2011, Mount Polley Mining Corp (MPMC) submitted a permit amendment application to discharge water from the mine to Hazeltine Creek, to facilitate maintenance of the long term water balance in the Tailings Storage Facility (TSF) based on the mine footprint at the time.
- A third party review of the permit amendment application was commissioned . The scope of this review included consideration of the environmental impacts on the receiving environment, monitoring the discharge, and management conditions pertaining to the discharge.
- These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was granted on November 7, 2012.
- The review and the resulting report did not address any matters pertaining to geotechnical stability, as this was not part of the *Environmental Management Act* discharge application review. Geotechnical stability is addressed under the Mines Act, which is administered by the Ministry of Energy and Mines

Question: Doing a follow on the Mount Polley mine tailings pond breach and am looking for inspection records: What is the dam's track records? Have there been any deficiencies noted? etc.

The Ministry of Environment is not responsible for inspecting the geotechnical integrity of the tailings pond structure. The Ministry of Environment is responsible to ensure no unauthorized effluent discharge from the tailings pond structure. With that respect, the MoE completed the

following compliance inspections since 2012.

Since 2012, ministry staff have conducted 14 inspections (office review and on-site) on Mt. Polley Mine. The following non-compliances were observed by Regional Operations Branch, Environmental Protection Division Staff:

- 24 May 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 30 June 2014.
- 18 April 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 long ditch. Flow did not reach 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 (GW05-1).
- 30 August 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 (E7). This perimeter pond overflowed releasing approximately 150m³ effluent over 13 hours to ground.

Question: Also, we got a tip that Imperial had sought permission to discharge spring melt water from the tailings pond this spring but that the province denied the request. Is that accurate?

- On July 9th, 2014, Mount Polley Mining Corporation applied for a permit amendment to increase treated effluent from the tailings pond, and the necessary accompanying reports were submitted July 11th, 2014.
- The permit amendment process was in progress when the August 4th incident occurred.

Heather English | A/Issues Manager
Environmental Protection Division
Ministry of Environment
Telephone | 250.356.5016
Cell | 250.580.1532

From: [Metcalf, Shelley ENV:EX](#)
To: [Standen, Jim ENV:EX](#)
Cc: [Halls, Lori D ENV:EX](#)
Subject: RE: Summary of Amendments under EMA for Mt Polley since 2009
Date: Tuesday, August 5, 2014 4:12:10 PM

The assessment doesn't clearly state it, but it's my understanding from talking with EPOs in Williams Lake that this is [seepage](#).

Also, I found this additional permit history for pre-2009.

Amendments to permit PE-11678:

- October 20th, 1997 amendment to reflect an increased milling rate resulting from a mine plan of 14 years which increased the discharge rate to 45,000 m³/d of slurry along with minor changes to monitoring requirements.
- February 1, 2000 amendment to add an additional ball mill to improve the productivity of the mill to 23,000 tpd which would also increase the rate of slurry deposit to 49,500 m³/d. Minor changes to the monitoring program were also included in this amendment.
- August 17, 2001 letter amendment allowed for processing of metal concentrate contaminated soil from the Pacific Environment Centre site in North Vancouver. This site is adjacent to the shipping facility that handles the concentrate from Mount Polley Mine.
- October 18, 2001 letter amendment allowed discharge of supernatant into the Cariboo Pit for one month, to a maximum of 750,000 m³, commencing October 20, 2001.
- A December 21, 2001 amendment for minor monitoring program changes.
- February 7, 2002 amendment for entering into the care and maintenance phase for transfer of supernatant from the tailings impoundment to the Cariboo Pit, and release of effluent from the perimeter embankment and main

embankment seepage ponds to nearby surface water courses. The perimeter embankment seepage flowed into a tributary of Hazeltine Creek, and the main embankment would flow into the Northeast Edney Creek Tributary to a maximum of 2,000 m³/d. The approach to managing water was requested noting that dam raises would not be feasible during shut down conditions. Reduction of sampling frequency was also requested for some sites where mine activities were curtailed, and the elimination of monitoring associated with the now deferred west dumps was approved.

- May 4, 2005 amendment was issued for restarting the mine, and milling new ore in the northeast Zone called the Wight Pit. The amendment included increasing monitoring frequency for the active phase and included pumping of pit water to the tailings impoundment; removal of the perimeter embankment settling pond discharge as this source was now pumped back to the tailings impoundment; increase in dissolved sulphate from 100mg/l to 200mg/l for discharge from main embankment seepage pond to unnamed tributary of Edney Creek and diversion of upgradient groundwater to be released to Polley Lake. The mine had also requested discharge from the Tailings Impoundment to Polley Lake but this was not included in the amendment.
- April 17, 2009 amendment was issued to allow the supernatant from the tailings impoundment and runoff water to fill the Cariboo and Bell Pits to 1108 meters above sea level with minimum of 0.5 meters of water cover over the PAG material. This was a short term water storage solution to avoid a discharge to the environment.

Shelley

Ministry of Environment | ph: 604-582-5332

From: Standen, Jim ENV:EX
Sent: Tuesday, August 5, 2014 4:05 PM
To: Metcalfe, Shelley ENV:EX; Halls, Lori D ENV:EX
Subject: RE: Summary of Amendments under EMA for Mt Polley since 2009
 Thanks Shelley. The 2013 bit explains a lot. Is 2012 tailings or seepage?

From: Metcalfe, Shelley ENV:EX
Sent: Tuesday, August 5, 2014 4:04 PM
To: Standen, Jim ENV:EX; Halls, Lori D ENV:EX
Subject: Summary of Amendments under EMA for Mt Polley since 2009
 As requested. Will get to info on Brian Olding review to you in a few minutes.

Date Amendment Requested	Date Amendment was Issued by MOE	Nature of Amendment
January 2009	June 2009	to transfer tailings supernatant and runoff water to the Cariboo and Bell Pits.
Sept 2009	Nov 2012	To add an additional effluent discharge point to Hazeltine Creek, max flow rate of 18, 150m ³ /day
June 2013	June 2013	adding section 2.7 back into the permit document, it was

		inadvertently dropped in the last permit amendment
July 2014	No decision yet	Request to discharge up to 3,000,000 Mm3/y of treated effluent to Polley Lake

Shelley Metcalfe

Section Head, Mining Authorizations

BC Ministry of Environment - Regional Operations Branch

200- 10470 152nd St., Surrey BC V3R 0Y3

p. 604-582-5332 | f. 604-930-7119 | e. shelley.metcalfe@gov.bc.ca

From: [Standen, Jim ENV:EX](#)
To: [Crebo, David GCPE:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [Halls, Lori D ENV:EX](#)
Subject: RE: Mount Polley Compliance History/Summary
Date: Tuesday, August 5, 2014 4:15:09 PM

I did but I think I see what the issue is. According to staff, the original application for discharge was received in 2009 but not approved until 2012. We have been hung up on 2009 as the date for the last major amendment.

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 4:10 PM
To: Standen, Jim ENV:EX
Subject: FW: Mount Polley Compliance History/Summary

I see you weren't on this.

From: Hill, Douglas J FLNR:EX
Sent: Tuesday, August 5, 2014 12:45 PM
To: Dalal, Suntanu GCPE:EX; Crebo, David GCPE:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX; Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX; Bethel, Greig GCPE:EX; Thomas, Vivian P GCPE:EX
Subject: RE: Mount Polley Compliance History/Summary

Folks,

I have been asked to provide some background pertaining to the third party review conducted for the approved effluent discharge at Mount Polley Mine. I've attached the report I understand you are wondering about. This report was commissioned to provide a review by a third party (Brian Olding) of the application submitted by Mount Polley Mining Corp (MPMC) requesting authority to discharge water from the mine to Hazeltine Creek. The amendment application reviewed by Mr Olding was developed by MPMC to facilitate maintenance of the long term water balance in the TSF based on the mine footprint at the time.

The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit.

It was suggested that the report had some relationship to concerns expressed about the geotechnical stability of the TSF. However, the review and resultant report did not address any matters pertaining to geotechnical stability of the TSF, as this was not part of the EMA discharge application review (MEM has the authority under the Mines Act to address geotechnical stability).

Douglas Hill, P.Eng.
Senior Project Manager
Forests, Lands and Natural Resource Operations

Cariboo Region

ph: 250-398-4475

doug.hill@gov.bc.ca

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 12:22 PM
To: Crebo, David GCPE:EX; Hill, Douglas J FLNR:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX; Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX; Bethel, Greig GCPE:EX; Thomas, Vivian P GCPE:EX
Subject: RE: Mount Polley Compliance History/Summary

Will do.

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 12:20 PM
To: Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX; Dalal, Suntanu GCPE:EX; Hill, Douglas J FLNR:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Suntanu can you pls connect with Doug...we need this info asap.

From: Bunce, Hubert ENV:EX
Sent: Tuesday, August 5, 2014 12:19 PM
To: Crebo, David GCPE:EX; McGuire, Jennifer ENV:EX; Dalal, Suntanu GCPE:EX; Hill, Douglas J FLNR:EX
Cc: Zacharias-Homer, Christa ENV:EX; Metcalfe, Shelley ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Doug Hill has mentioned that he would provide information on this report and he is probably best placed to explain how it was considered in the permitting and administration of the Mt. Polley discharge permit.

David I would suggest you contact Doug directly

Hubert Bunce

A/Mining Director, Environmental Protection
Regional Operations

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

2080A Labieux Road

Nanaimo BC V9T 6J9

Please consider the environment before printing this email
BC Pollution Free

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 12:04 PM
To: McGuire, Jennifer ENV:EX; Dalal, Suntanu GCPE:EX

Cc: Zacharias-Homer, Christa ENV:EX; Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Thanks Jennifer...one of things we'll need answer for (and maybe it's coming) is "What did you do with the report submitted to MoE a few years ago by Brian Olding and Associates, that outlined concerns with the tailings pond?"

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 11:52 AM
To: Dalal, Suntanu GCPE:EX
Cc: Crebo, David GCPE:EX; Zacharias-Homer, Christa ENV:EX; Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX
Subject: FW: Mount Polley Compliance History/Summary

Suntanu,
This is the first of a few emails with summary info regarding Mount Polley.

An Info Note will be ready before noon.

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: Zacharias-Homer, Christa ENV:EX
Sent: Tuesday, August 5, 2014 11:44 AM
To: McGuire, Jennifer ENV:EX
Subject: RE: Mount Polley Compliance History/Summary

Mount Polley Mine.
Compliance History since 2012

Generally Mount Polley Mine operators have had a reasonable, cooperative and proactive attitude when dealing with non-compliances, from reporting to investigating and remediation following incidents.

Since 2012, ministry staff have conducted 14 inspections (office review and on-site) on Mt. Polley Mine. The following non-compliances were observed by Regional Operations Branch, Environmental Protection Division Staff:

- 24 May 2014. The ministry issued an advisory to Imperial Metals for exceedance of the freeboard within the tailings impoundment. The permitted limit is no less than 1.0m of freeboard. Ministry staff observed only 0.6 m freeboard. Freeboard returned to 1.0 m week commencing 30 June 2014.
- 18 April 2014. The ministry issued an advisory to Imperial Metals for bypass of authorized

treatment works. The site experienced high flows due to spring freshet which caused pump system to become blocked and resulted in an overflow of long ditch towards Hazeltine Creek. Flow did not reach creek and was directed into Till Borrow Pit.

- January and April 2012. The ministry issued an advisory to Imperial Metals for non-compliance with submission of monitoring data for one of the groundwater monitoring wells (GW05-1).
- 30 August 2012. The ministry issued a warning to Imperial Metals for failure to report freeboard exceedance for perimeter pond (E7). This perimeter pond overflowed releasing approximately 150m³ effluent over 13 hours to ground.

Christa Zacharias-Homer

Deputy Director, Regional Operations Branch

Ph: (250) 356-8174 | Fax: (250) 356-5496 | Cell: (250) 216-2467

Christa.ZachariasHomer@gov.bc.ca

 Please consider the environment before printing this email

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 10:42 AM
To: Zacharias-Homer, Christa ENV:EX
Subject: Fw: Mount Polley Compliance History/Summary

Can you pls simplify this for prep to send to the MO?

I need this within the next 10 min.

Thx

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Green, Jack E ENV:EX <Jack.Green@gov.bc.ca>
Sent: Tuesday, August 5, 2014 10:03 AM
To: Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX
Subject: Mount Polley Compliance History/Summary

Below is a list of the compliance reports that have occurred at Mount Polley Mine since 2012.

- 24 May 2014. Freeboard exceedance – Freeboard in tailings impoundment reduced to 0.6 m (permitted limit is no less than 1.0m) due to heavy rainfall. Freeboard returned to 1.0 m week commencing 30 June 2014. Ministry response – Advisory.
- 18 April 2014. Bypass of authorized treatment works – High flow due to freshet and blocked pump system caused overflow of long ditch towards Hazeltine Creek. Flow did not reach creek and was directed into Till Borrow Pit. Ministry response – Advisory.
- 1st & 2nd quarters 2012 monitoring report. No monitoring data for one of the groundwater

monitoring wells (GW05-1). Ministry response – Advisory.

- 30 August 2012. Perimeter pond (E7) overflowed releasing approx 150m3 effluent over 13 hours to ground. Failed to report freeboard exceedance. Ministry response – Warning.
- 12 April 2012. Bypass of authorized treatment works. Long Ditch overflowed to ground.

Generally Mount Polley have had a reasonable, cooperative and proactive attitude when dealing with non-compliances, from reporting to investigating and remediation following incidents.

If you have any further questions, please call.

Regards,

Jack Green

Environmental Protection Officer

Ministry of Environment

Cariboo Region

Phone: 250 398 4544

Fax: 250 398 4214

jack.green@gov.bc.ca

BC Pollution Free

24-hour Spill/Environmental Emergency Reporting: 1-800-663-3456
(Provincial Emergency Program)

24 Hour RAPP (Report All Poachers and Polluters) tip-line: 1-877-952-7277
(Conservation Officer Service)

www.gov.bc.ca/env

From: [Metcalf, Shelley ENV:EX](#)
To: [Standen, Jim ENV:EX](#)
Cc: [Halls, Lori D ENV:EX](#)
Subject: RE: Summary of Amendments under EMA for Mt Polley since 2009
Date: Tuesday, August 5, 2014 4:18:34 PM
Attachments: [RE Mount Polley Compliance HistorySummary.msg](#)

The Brian Olding report was for the permit amendment application highlighted below (2009/2012).

I've attached a summary of how the report was used from Doug Hill (email today).

The report indicates its purpose was to:

1. conduct an independent and objective review of the TA Report on behalf of, and in the mutual interests of the T'exelc Williams Lake Indian Band, Xat'sull Soda Creek First Nations and MPMC
2. summarize any and all environmental omissions and deficiencies with respect to MPMC's proposal to discharge mining effluent to Hazeltine Creek
3. present MPMC's responses to our review comments
4. provide recommendations to remedy the situation wherever possible
5. provide a final report that explains technical issues in clear language

Shelley

Ministry of Environment | ph: 604-582-5332

From: Standen, Jim ENV:EX
Sent: Tuesday, August 5, 2014 4:05 PM
To: Metcalf, Shelley ENV:EX; Halls, Lori D ENV:EX
Subject: RE: Summary of Amendments under EMA for Mt Polley since 2009

Thanks Shelley. The 2013 bit explains a lot. Is 2012 tailings or seepage?

From: Metcalf, Shelley ENV:EX
Sent: Tuesday, August 5, 2014 4:04 PM
To: Standen, Jim ENV:EX; Halls, Lori D ENV:EX
Subject: Summary of Amendments under EMA for Mt Polley since 2009

As requested. Will get to info on Brian Olding review to you in a few minutes.

Date Amendment Requested	Date Amendment was Issued by MOE	Nature of Amendment
January 2009	June 2009	to transfer tailings supernatant and runoff water to the Cariboo and Bell Pits.
Sept 2009	Nov 2012	To add an additional effluent discharge point to Hazeltine Creek, max flow rate of 18,

		150m ³ /day
June 2013	June 2013	adding section 2.7 back into the permit document, it was inadvertently dropped in the last permit amendment
July 2014	No decision yet	Request to discharge up to 3,000,000 Mm ³ /y of treated effluent to Polley Lake

Shelley Metcalfe

Section Head, Mining Authorizations

BC Ministry of Environment - Regional Operations Branch

200- 10470 152nd St., Surrey BC V3R 0Y3

p. 604-582-5332 | f. 604-930-7119 | e. shelley.metcalfe@gov.bc.ca

From: [Crebo, David GCPE:EX](#)
To: [McGuire, Jennifer ENV:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: FN question
Date: Tuesday, August 5, 2014 4:22:37 PM
Importance: High

Aaron Sam, Chief of the Lower Nicola Indian Band, called asking for information around where water testing is taking place for Mt Polley breach. He has concerns about fisheries in his area. I told him someone would give him a call asap to outline our testing.

Not sure who that should be. He was very pleasant about this.

His cell is s.22

Dave Crebo

Communications Director

Ministry of Environment

(250) 387-9973 (office)

(250) 812-5747 (cell)

David.Crebo@gov.bc.ca

From: [Standen, Jim ENV:EX](#)
To: [Dalal, Suntanu GCPE:EX](#)
Cc: [GCPE Communications - Environment; Halls, Lori D ENV:EX](#)
Subject: RE: Mount Polley permitting...
Date: Tuesday, August 5, 2014 4:23:57 PM

Question: Reporter says there is a report that this mine applied for a permit to discharge tailings but it was not granted. Is this true?

- In **2009**, Mount Polley Mining Corp (MPMC) submitted a permit amendment application to discharge water from the mine to Hazeltine Creek, to facilitate maintenance of the long term water balance in the Tailings Storage Facility (TSF) based on the mine footprint at the time.
- A third party review of the permit amendment application was commissioned . The scope of this review included consideration of the environmental impacts on the receiving environment, monitoring the discharge, and management conditions pertaining to the discharge.
- These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was granted on November 7, 2012.
- The review and the resulting report did not address any matters pertaining to geotechnical stability, as this was not part of the *Environmental Management Act* discharge application review. Geotechnical stability is addressed under the Mines Act, which is administered by the Ministry of Energy and Mines

Question: Doing a follow on the Mount Polley mine tailings pond breach and am looking for inspection records: What is the dam's track records? Have there been any deficiencies noted? etc.

The Ministry of Environment is not responsible for inspecting the geotechnical integrity of the tailings pond structure. The Ministry of Environment is responsible to ensure no unauthorized effluent discharge from the tailings pond structure. ~~With that respect, the ministry conducted 14 inspections (office review and on-site) on the Mt. Polley Mine. The following non-compliances were observed:~~

- ~~• 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 (GW05-1).~~

- ~~• 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 (E7). This perimeter pond overflowed, releasing approximately 150 cubic metres of effluent over 13 hours to ground.~~

Question: Also, we got a tip that Imperial had sought permission to discharge spring melt water from the tailings pond this spring but that the province denied the request. Is that accurate?

- On July 9, 2014, Mount Polley Mining Corporation applied for a permit amendment to increase treated effluent from the tailings pond, and the necessary accompanying reports were submitted on July 11, 2014.
- The permit amendment process was in progress when the Aug. 4, 2014 incident occurred.

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 4:16 PM
To: Standen, Jim ENV:EX
Cc: GCPE Communications - Environment; Halls, Lori D ENV:EX
Subject: RE: Mount Polley permitting...

Are you OK with the answers to the second and third questions?

From: Standen, Jim ENV:EX
Sent: Tuesday, August 5, 2014 4:08 PM
To: Dalal, Suntanu GCPE:EX
Cc: GCPE Communications - Environment; Halls, Lori D ENV:EX
Subject: RE: Mount Polley permitting...

So we are clear folks, the one guy who knows this stuff for certain is Doug Hill. He is en route to Likely and is not reachable in any way until he gets back tonight. All other regional staff in Williams Lake are out in the field sampling. I have asked one of the mining team to look into the electronic file to see what we can put together but it will not be comprehensive. We need to be sure we get accurate info out, even if it means waiting.

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 4:02 PM
To: Standen, Jim ENV:EX
Cc: GCPE Communications - Environment; Halls, Lori D ENV:EX
Subject: Mount Polley permitting...

The information in the answer to the first question (highlighted below) isn't consistent with the bullets Dave has been working on with you and that has been provided to MBB.

Can you please compare and get back to us.

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and currently had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- The last significant permit amendment in 2009 authorized Mt Polley to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
 - Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party. (Brian Olding - attached)
 - This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazeltine Creek.
 - The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended 2009 permit.
- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazeltine Creek.
- This application was received by the ministry this summer, and is being considered.

From: English, Heather ENV:EX
Sent: Tuesday, August 5, 2014 3:41 PM
To: Dalal, Suntanu GCPE:EX
Cc: Zacharias-Homer, Christa ENV:EX
Subject: RE: Mount Polley questions...

Formatted and prepared for you to take this to Jim for approval. (Christa – the only change I made to this was the one you requested and the removal of my comment on the 4th bullet in the first question(

Note that the last question is also addressed in another e-mail, which said June 2014, but AMS says it was date-stamped for July 9th. Jim may have more information on this.

Question: Reporter says there is a report that this mine applied for a permit to discharge tailings but it was not granted. Is this true?

- In 2011, Mount Polley Mining Corp (MPMC) submitted a permit amendment application to discharge water from the mine to Hazeltine Creek, to facilitate maintenance of the long term water balance in the Tailings Storage Facility (TSF) based on the mine footprint at the time.
- A third party review of the permit amendment application was commissioned. The scope of this review included consideration of the environmental impacts on the receiving environment, monitoring the discharge, and management conditions pertaining to the discharge.
- These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was granted on November 7, 2012.
- The review and the resulting report did not address any matters pertaining to geotechnical stability, as this was not part of the *Environmental Management Act* discharge application review. Geotechnical stability is addressed under the Mines Act, which is administered by the Ministry of Energy and Mines

Question: Doing a follow on the Mount Polley mine tailings pond breach and am looking for inspection records: What is the dam's track records? Have there been any deficiencies noted? etc.

The Ministry of Environment is not responsible for inspecting the geotechnical integrity of the tailings pond structure. The Ministry of Environment is responsible to ensure no unauthorized effluent discharge from the tailings pond structure. With that respect, the ministry conducted 14 inspections (office review and on-site) on the Mt. Polley Mine. The following non-compliances were observed:

- 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 (GW05-1).
- 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 (E7). This perimeter pond overflowed, releasing approximately 150 cubic metres of effluent over 13 hours to ground.

Question: Also, we got a tip that Imperial had sought permission to discharge spring melt water from the tailings pond this spring but that the province denied the request. Is that accurate?

- On July 9, 2014, Mount Polley Mining Corporation applied for a permit amendment to increase treated effluent from the tailings pond, and the necessary accompanying reports were submitted on July 11, 2014.
- The permit amendment process was in progress when the Aug. 4, 2014 incident occurred.

Heather English | A/Issues Manager
Environmental Protection Division
Ministry of Environment
Telephone | 250.356.5016
Cell | 250.580.1532

From: [Halls, Lori D ENV:EX](#)
To: [Koncohrada, Karen MEM:EX](#)
Subject: RE: Polley Mine tailings pond breach
Date: Tuesday, August 5, 2014 4:32:00 PM

Can we chat in 10 minutes?

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

From: Koncohrada, Karen MEM:EX
Sent: Tuesday, August 5, 2014 4:06 PM
To: Halls, Lori D ENV:EX
Cc: Standen, Jim ENV:EX
Subject: FW: Polley Mine tailings pond breach

Let's discuss.

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

From: Cochrane, Marlene MEM:EX On Behalf Of Nikolejsin, Dave MEM:EX
Sent: Tuesday, August 5, 2014 4:03 PM
To: Koncohrada, Karen MEM:EX
Subject: Polley Mine tailings pond breach

FYI.

Marlene Cochrane
Senior Executive Assistant | Deputy Minister's Office Ministry of Energy and Mines Victoria | British Columbia
Phone (250) 952-0120

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

From: Ed John [<mailto:edjohn@fns.bc.ca>]
Sent: Tuesday, August 5, 2014 2:10 PM
To: Nikolejsin, Dave MEM:EX
Cc: Chief Ann Louie; Chief Ann Louie; 'Chief Bev Sellars'; Munro, Steve C ABR:EX
Subject: Polley Mine tailings pond breach

Dave

I want to strongly recommend that the Ministry of Energy and Mines and the Ministry of Environment directly engage and include the First Nations leaders in the aftermath of the major catastrophe at Polley Mines. I have included the contacts for Chiefs Louie and Sellars in whose traditional territories this mine operates.

From: [McGuire, Jennifer ENV:EX](#)
To: [Crebo, David GCPE:EX](#); [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: Re: medai avail for tomorrow
Date: Tuesday, August 5, 2014 4:42:47 PM

Yes - pls provide details.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 4:41 PM
To: McGuire, Jennifer ENV:EX; Halls, Lori D ENV:EX; Standen, Jim ENV:EX
Subject: FW: medai avail for tomorrow

FYI – we'd like to be doing daily media conference calls, featuring an elected official off the top, followed by ministry reps. Jennifer are you good to take part on behalf of MoE? High level description of testing/remediation processes, rough timelines, that sort of thing. We can flesh out specifics in the morning.

From: Gordon, Matt GCPE:EX
Sent: Tuesday, August 5, 2014 4:26 PM
To: Crebo, David GCPE:EX; Haslam, David GCPE:EX; Groot, Jeff GCPE:EX
Cc: Fraser, John Paul GCPE:EX
Subject: medai avail for tomorrow

Importance: High

Lets start warning folks about this --- ie: Haslam can you ask MBB is he is up for a 1pm (ish) update with program staff.....he does intro and high level then turns over to program staff. In our experience guys Bill tends to speak to everything (just so you know).

At this point:

MBB intro

Jennifer Maguire – status report

Topics to include:

- General state of affairs
- Investigation update.....who is doing what
- New resources on the ground – if applicable....who they are/what they are doing
- Water sample update (may simply be expected timing)
- Clean up process.....not specifics of when but what are next steps and typically what is involved

QAs

We will need someone to review transcript or watch BC1 and summarize comments and anticipate Qs from reporters for tomorrow.....probably best to simply add these to the QA doc Haslam has going.

Any/all suggestions for the avail I'm all ears. Assume we would find a locale in Williams lake – maybe simply the govt office or outside it if nice out ? Or maybe best inside and have a call in number for prov media?

Suggest folks respond to this email and we huddle early am via call to touch base on who is doing what.

Matt Gordon

A/Assistant Deputy Minister

Strategic Planning & Public Engagement
Government of British Columbia
250 356.7398 office
250 896.4923 mobile

From: [Halls, Lori D ENV:EX](#)
To: [Crebo, David GCPE:EX](#); [Franklin, Kimberley GCPE:EX](#)
Subject: RE: FOR APPROVAL: MoE media responses to Mt. Polley
Date: Tuesday, August 5, 2014 5:13:00 PM

Somebody has to approve the stuff that you miss!

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 5:13 PM
To: Halls, Lori D ENV:EX; Franklin, Kimberley GCPE:EX
Subject: RE: FOR APPROVAL: MoE media responses to Mt. Polley
Well done Lori. We all knew that, but were just checking to see if you really do review these things.

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 5:12 PM
To: Franklin, Kimberley GCPE:EX
Cc: Crebo, David GCPE:EX
Subject: RE: FOR APPROVAL: MoE media responses to Mt. Polley
Kim
Its Hazeltine Creek not Hazelton.

From: Franklin, Kimberley GCPE:EX
Sent: Tuesday, August 5, 2014 4:58 PM
To: Chin, Ben PREM:EX; Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Hancock, Tom ENV:EX; Dhanowa, Damon ENV:EX
Cc: Crebo, David GCPE:EX; Halls, Lori D ENV:EX; Standen, Jim ENV:EX; Dalal, Suntanu GCPE:EX
Subject: FOR APPROVAL: MoE media responses to Mt. Polley
Good afternoon,
We have several media requests on the go, either around permitting/timelines or what's was in the tailings.
We are proposing to send all bullets relating to MoE and Mt Polley to the reporters, so everyone will have everything. Messaging approved by Jim Standen.
Is this okay by you all?
Recent permit history:

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- In 2009 Mt Polley applied for an permit amendment to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
 - Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party. (Brian Olding - attached)
 - This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazeltine Creek.

- The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was approved in 2012.
- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazeltine Creek.
- This application was received by the ministry this summer, and is being considered.

Tailings supernatant:

- B.C. Water Quality Guidelines are levels at which the potential exists for impacts on various water uses. Environmental Protection Division staff reviewed the tailings supernatant (i.e., the liquid in the tailings pond) data sent by Mount Polley Mining Corporation on Aug. 4, 2014 and found that for the impounded tailings supernatant:
 - The selenium concentration exceeded the drinking water guideline of 10 ug/L by a factor 2.8 times.
 - Sulphate did not exceed the drinking water guideline of 500 mg/L in May 2014. However, there have been frequent small exceedances of this guideline over the last few years.
 - Molybdenum concentrations were well below drinking water guidelines over the last two years. However, recent molybdenum concentrations in the supernatant exceeded livestock watering and irrigation guidelines of 0.05 mg/L.
 - Organic carbon concentrations exceed the 4 mg/L guidelines for chlorination (water treated with chlorine that contains >4 mg/L of organic carbon can result in toxic chlorination by-products).
- In addition, the concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

Effluent Discharge Compliance:

The Ministry of Environment is not responsible for inspecting the geotechnical integrity of the tailings pond structure. The Ministry of Environment is responsible to ensure no unauthorized effluent discharge from the tailings pond structure. With that respect, the ministry conducted 14 inspections (office review and on-site) on the Mt. Polley Mine since 2012. The following non-compliances were observed:

- 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 (GW05-1).
- 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 (E7). This perimeter pond overflowed, releasing approximately 150 cubic metres of effluent over 13 hours to ground.

Thanks,

Kim

Kim Franklin

Government Communications & Public Engagement

Ministry of Environment

Tel: 250 953.3698 | **Mobile:** 250 886.0830

From: [Dalal, Suntuu GCPE:EX](#)
To: [ENV Ministerial and Admin Assistants](#)
Cc: [GCPE Communications - Environment](#); [Jacobs, Jake GCPE:EX](#); [Haslam, David GCPE:EX](#); [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: Media Request: Globe and Mail on Mount Polley...
Date: Tuesday, August 5, 2014 5:32:25 PM
Attachments: [Final Report MPMC Master TA Review Jun21 2011.pdf](#)

Reporter: Andrea Woo, Globe and Mail

Deadline: ASAP today.

Request: Had some questions about the Mount Polley mine.

Recommendation: Have GCPE provide information by email.

Response:

Question: Reporter says there is a report that this mine applied for a permit to discharge tailings but it was not granted. Is this true?

- Mount Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and had 6.5 million cubic metres of water stored in the tailings storage facility.
- In 2009, Mount Polley applied for an permit amendment to discharge up to 1,400,000 m³/year of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flow rate, with contaminant limits, and requires an annual discharge plan.
 - Prior to this permit being granted, concerns were raised about the proposal, prompting an independent report by a third party. (Brian Olding - attached)
 - This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazelton Creek.
 - The scope of the third-party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was approved in 2012.
- Mount Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/year of treated effluent (ditch water) to Polley Lake, which overflows to Hazelton Creek.
- This application was received by the ministry this summer and is being considered.

Question: Doing a follow on the Mount Polley mine tailings pond breach and am looking for inspection records: What is the dam's track records? Have there been any deficiencies noted? etc.

- The Ministry of Environment is not responsible for inspecting the geotechnical integrity of the tailings pond structure; rather it is responsible for ensuring no unauthorized effluent discharge

from the tailings pond structure.

From the Ministry of Energy and Mines:

- Mount Polley is up-to-date with geotechnical reporting requirements, including the annual dam safety inspection requirements. 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.

-

Question: Also, we got a tip that Imperial had sought permission to discharge spring melt water from the tailings pond this spring but that the province denied the request. Is that accurate?

- On July 9, 2014, Mount Polley Mining Corporation applied for a permit amendment to increase treated effluent from the tailings pond and the necessary accompanying reports were submitted on July 11, 2014.
- The permit amendment process was in progress when the Aug. 4, 2014 incident occurred.

From: [Koncohrada, Karen MEM:EX](#)
To: [Fraser, John Paul GCPE:EX](#); [Dyble, John C PREM:EX](#); [Halls, Lori D ENV:EX](#); [Wanamaker, Lori JAG:EX](#)
Cc: [Hoffman, Al MEM:EX](#)
Subject: Mount Polley Mine Sept. 13, 2013 - Report of Geotechnical Inspector
Date: Tuesday, August 5, 2014 5:34:31 PM
Attachments: [20140805172000.pdf](#)

As mentioned in our call this afternoon, please see the summary on page five of this inspection report. While orders were issued regarding the pits, none were issued for the Tailings Storage Facility. HSCR refers to the Health, Safety and Reclamation code for Mines in B.C.

This report is a public document and posted at the mine site.

Regards
Karen K.



MINISTRY OF ENERGY AND MINES
Mines and Mineral Resources Division

REPORT OF GEOTECHNICAL INSPECTOR
(Issued pursuant to Section 15 of the Mines Act)

Name of Property: Mount Polley Mine **Permit No.:** M-200

Mine Manager: Dale Reimer

Company: Mount Polley Mining Corporation
Address: PO Box 12, Likely BC, V0L 1N0

Persons Contacted: Dale Reimer
Luke Moger
Dave Carpenter
Ryan Brown
Derek Moritz

Copies To: Al Hoffman, Chief Inspector of Mines
Diane Howe, Deputy Chief Inspector of Mines, MEM
Stephen Rothman, Health & Safety Inspector, MEM
George Warnock, Manager, Geotechnical Engineering, MEM
Heather Narynski, Sr. Geotechnical Inspector, MEM

Date of Inspection: September 13, 2013

Introduction

A Geotechnical inspection of the Mount Polley Mine was conducted on September 13, 2013 by Michael Cullen, P.Eng of Michael Cullen Geotechnical Ltd. accompanied by Steve Rothman of MEM. Mr. Cullen completed this inspection on behalf of the Ministry of Energy and Mines. The inspection included a field review, review of technical reports, and technical discussions with Mine staff.

The purpose of this inspection was as follows:

- To assess if the Mine is meeting the intent of the geotechnical requirements of the Health Safety and Reclamation Code for Mines in B.C. (HSRC)
- To assess if the Mine is meeting the intent of geotechnical conditions in Permit M-200.
- To assess if geotechnical practices at the Mine are consistent with generally accepted engineering practices at mines in British Columbia.
- To identify potential ground stability hazards or concerns at the Mine.
- To provide general comment on geotechnical conditions at the mine.

The following technical reports were reviewed:

- "Springer Pit South Wall Rock Fall Assessment" dated February 27 by Golder Associates

- “Springer Pit North East Wall Rock Fall Assessment” dated February 27, by Golder Associates
- “Mount Polley Mine Tailings Storage Facility Operation Maintenance and Surveillance Manual” dated July 2013.

The inspection included the tailings storage facility, waste rock dumps, Springer Pit, Wight Pit, and Boundary Zone Underground.

OBSERVATIONS COMMENTS AND INSPECTION ORDERS

Location: Underground

Observations and Comments:

Preparation for the first blast hole stopes is underway. It is expected that production blasting will commence in a few weeks.

The backs of the drifts are being supported with a combination of 6ft friction bolts and 8ft rebar, 12ft rebar are installed in all intersections. It appears that in most places the friction bolts are being used to supplement the rebar in an effort to pin the screen to the back (we note that the Mine is doing an excellent job getting the screen tight). However, in some instances we noted that the friction bolts are replacing the rebar; e.g. there is no rebar in the area. The Mine's Geotechnical Consultant (P Hughes) recommended that 2.4m long rebar be installed on 1.2m spacing in the backs of drifts less than 5m wide. Furthermore friction bolts are seldom accepted as the sole method of support in backs due to their inherent weaknesses.

Conditions in the underground generally appear good. None the less it is important that rock conditions are reviewed by a qualified geotechnical engineer to assess if the encountered conditions are in agreement with the geotechnical design assumptions. One of the underground Permit conditions is that the Mine shall be inspected by a qualified geotechnical engineer to confirm that ground control is adequate. These inspections are to occur minimum once per year. The last inspection the MEM is aware of occurred in August 2012.

It is understood that the Mine is considering using a backfill method different to the cemented rockfill proposed in the application. One of the underground Permit conditions is that prior to commencing mining the Permittee shall provide a plan to MEM that addresses the stability/safety issues of using a cement backfill. This plan should also provide details of the amendments to the proposed backfill operation.

The portal and other infrastructure are located in the bottom of the Wight Pit. The headcover at the portal consists of steel arches with lagging; used tires have been placed on top of this structure to cushion any rockfall impact. The bench face immediately above the portal has been scaled, bolted, and slope mesh draped. Used tire walls have also been placed in other areas as rockfall barriers. Areas of ongoing rockfall were noted around several areas of the pit although only minor rockfall accumulation was noted on the benches. Large slumps and tension cracks are present around the southwest crest of the pit, see Photo 1 and 2, there are semi detached blocks around the crest in these areas.

Based on our observations and the information reviewed we consider that for the most part the underground is being designed and operated in general conformance with the requirements of the geotechnical components of the HSCR, Permit M-200, and accepted engineering practices. No hazardous, unusual, or areas of immediate geotechnical concern were noted with the exception of the installation of 6ft friction bolts in the back. The stability of the Wight Pit and potential impact on underground infrastructure at the base of the pit is a concern that needs to be properly assessed.

Inspection Orders:

As per Permit M-200 The Mine shall install ground support as per the application and shall only vary in accordance with the written directions of a qualified geotechnical engineer. All areas of the mine where the back is supported with 6ft friction bolts shall be re-supported with 8ft rebar on minimum 1.2m pattern.

As per Permit M-200 The Mine shall be inspected by a qualified geotechnical engineer to confirm that ground control is adequate and that the conditions are in agreement with the geotechnical design assumptions. Inspections are to occur minimum once per year.

As per Permit M-200 prior to commencing mining the Permittee shall provide a plan to MEM that addresses the stability/safety issues of using a cement backfill. The plan shall include a QC/QA program that includes testing procedures to ensure that the backfill support is effectively mixed, installed and secure. This plan should also provide details of the amendments to the proposed backfill operation from those submitted in the permit application.

Prior to commencing production mining the Mine shall complete a detailed assessment of the Wight Pit slope stability and rockfall hazard to the infrastructure located within the pit. The analysis should consider the effects of blast vibrations from production blasts. Details of pit slope monitoring program and trigger levels shall be included in the report.

Location: Springer Pit

Observations and Comments:

The Springer Pit is presently mined down to elevation 976m, it is understood that the ultimate pit bottom in the present Phase will be at about 900m.

A pushback of the Springer Pit is underway. At this time the Mine plans to continue mining in the base of the pit while the pushback is underway. To date MEM has not received any design information on the pushback; it is understood that a Permit Amendment application to cover the expanded pit will be submitted to MEM in the near future.

In 2012 MEM noted that the as built bench width ranges from about 6.5 to 8.5m on the Northeast wall. Much small rockfall was noted, but the benches were not full. Loss of the crest compromises the ability to clean off the benches at a later date as well as reduces the effectiveness of the bench to catch rockfall. Going forward a standard operating procedure is required to ensure that future benches are minimum required width and left in a clean

condition. Methods to achieve this are left to the discretion of the mine. The Code requires that the minimum catchment bench width is 8m to allow for safe equipment operation; depending upon available equipment larger bench widths may be needed for safe equipment operation.

Material from the pushback coupled with rockfall from the bench faces has substantially filled the benches on the northeastern side of the pit, see Photo 3. This is not consistent with accepted practices at Mines in British Columbia. The Mine's consultants (Golder Associates) completed an assessment of rock fall from spillover at the crest; however the analysis and results did not consider that extent of the spillover and bench filling that has now occurred. Rock fall originating from pushback overspill or from deterioration of crests now poses a hazard to those working in the pit bottom.

To protect workers in the pit bottom the Mine is creating a 30m wide catch bench with a berm at the 1000m level along the toe of the northeast wall. This catch bench has been omitted in the southern end on account of the presence of higher grade ore, see Photo 3. To deal with the rockfall hazard in this location at the 988 elevation it is understood that mining was completed during day light hours only with a spotter present. It is not known how the Mine proposes to deal with this area in the next bench down.

In the northwest corner of the pit a triple bench was created from the bench at 1012m to 976m. Rock quality in this area of the pit is reported to be some of the best; during the inspection we noted much geologic structure is present and there were few drill traces on the face, see Photo 3. There is evidence of rock fall on benches and at the toe of the triple bench. We noted that a service vehicle was parked within about 10m of the toe of this 36m high wall. It is understood that the Mine's consultants (Golder Associates) reviewed information provided by the Mine and determined that there was potential for multi-bench wedge failures to develop. It is also understood that Golder assisted in deciding the safest way to mine the blasted rock. It is understood that the triple bench section is now being backfilled and that backfill will extend up to elevation 1012 to buttress the slope. Depending upon how this backfill is placed it is conceivable that it may result in a rockfall run out hazard that may require a berm or bench to control.

Inspection Orders:

Prior to any further pushback occurring the Mine shall submit a pit slope design report to the Chief Inspector for the Springer Pit pushback. The report shall address the following:

- 1. Appropriate stability of the pit at the overall, inter ramp and bench scales.*
- 2. Bench design that ensure that the final width of all catchment benches are minimum of 8m, after crest break back, as per Section 6.23.2 of the code. Note that the 8m requirement is to allow for safe equipment access, depending upon available equipment the width may need to be greater.*
- 3. If proposed, provide details of multiple bench system of mining as per Section 6.23.2 of the code. This should include assessment of impact on bench and pit scale stability, rockfall hazard, mitigative measures to protect workers. Additional conditions may be imposed on multiple bench slopes based in accordance with Section 6.23.5(2) of the Code.*
- 4. Address safety concerns associated with pushback material filling the existing benches of the operating pit as per Section 6.23.2 of the code. The Mine shall re-assess the rockfall hazard on the northeast wall with consideration for present and*

expected future conditions (e.g. additional bench filling due to spillover and progressive deterioration of bench face rock).

Within 15 days the Mine shall develop and implement mitigative measures and safe working procedures where loose rock has accumulated that may endanger persons working on a lower bench and access cannot be gained to clean off the catchment berm as per Section 6.23.2(3). A copy of the Safe Work Procedures shall be submitted to the Geotechnical Inspector.

No further multibench mining shall be completed until such time as a system has been developed by the Mine and authorized by the Chief Inspector as per 6.23.4 and 6.23.5(2). This should include assessment of impact on bench and pit scale stability, rockfall hazard, mitigative measures to protect workers.

No work shall be carried out on, at, or below a face or wall of a surface mine until that face or wall has been examined and declared safe by the shiftboss as per Section 6.5.1.

Location: Tailings Storage Facility

Observations and Comments:

The Stage 9 dam raise to elevation 970m was underway at the time of this inspection. MEM has previously reviewed and accepted the designs for this lift. All construction work appears to be well done. A quality control and quality assurance program is in place and it is understood that there have been no significant issues. The Mine reports that instrumentation has responded as expected during construction.

An inspection around the dams revealed no indicators of instability and no significant seepage on the face or toe of the dams.

We reviewed the revised Operation, Maintenance and Surveillance Manual prepared by Mount Polley in July 2013. This document covers tailings and water managements across the site and is considered well thought out.

Based on our observations and information reviewed we consider that the TSF is being designed, constructed, and operated in general conformance with the requirements of the geotechnical components of the HSCR, Permit M-200, and accepted engineering practices.

Inspection Orders:

None

Location: Waste Rock Dumps

Observations and Comments:

The Temporary PAG Dump, active Southeast Dump and prep area for dump and road expansion towards the Orica Site were reviewed in the field. No immediate hazardous or unusual geotechnical conditions or areas of concern were noted in the areas inspected. It is understood that the PAG dumps had experienced some movement and tension cracks had appeared. Instrumentation installed to monitor the movement indicates no acceleration. Mine technical staff complete regular inspections and instrumentation readings.

Based on our observations and information reviewed we consider that the dumps are being designed, constructed, and operated in general conformance with the requirements of the geotechnical components of the HSCR, Permit M-200, and accepted engineering practices.

Inspection Orders:

None.

CLOSURE

Under Section 15 (6) of the Mines Act, a written response is required from the Mine Manager within 15 days of the receipt of this Inspection Report. Please address response to undersigned with copies to Steve Rothman, George Warnock, and Heather Narynski. In addition, Section 30 (1) of the Mines Act requires this Inspection Report to be posted in a conspicuous location at the mine site for 30 days.

Please feel free to contact the undersigned with any questions or comments.

Michael Cullen, P. Eng.
Ministry of Energy and Mines

Dated: September 27, 2013

Photo 1: Tension Cracks and slump on south west crest of Wight Pit above underground access



Photo 2: Tension Cracks and slump on western crest of Wight Pit above underground infrastructure



Photo 3 Northeastern highwall of Springer Pit. Benches are filling with material from pushback, rock fall can be seen to be reaching the bottom of the pit.



30m wide catch bench being established

No catch bench established.

Photo 4 Northwest corner of Springer Pit. Triple bench



From: [Koncohrada, Karen MEM:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: Mt. Polley
Date: Tuesday, August 5, 2014 5:42:39 PM
Attachments: [20140805172206.pdf](#)

Hi Lori

Good news. My concern has been resolved about whether the attached letter from Mount Polley to MoE was responded to.

Apparently Shelley Metcalf issued an approval letter which granted temporary relief to the company from monitoring certain parameters because ice buildup in the creek prevented the company from installing equipment right away – so the discharge system was allowed to operate regardless.

Regards
Karen



Mount Polley Mining Corporation

IMPERIAL METALS CORPORATION

March 19, 2014

Shelley Metcalfe
 Authorizations Section Head - Mining
 Ministry of Environment
 10470 – 152nd Street
 Surrey, BC
 V3R 0Y3

RE: Urgent request for exemption of permit requirement

Dear Shelley,

Mount Polley Mining Corporation (MPMC) is requesting an immediate and temporary exemption from the Permit 11678 requirement for continuous conductivity, temperature, and flow rate monitoring at Hazeltine Creek (W7) while operating the Hazeltine Discharge System (authorized under section 1.2 of Permit 11678). The details of the requirement are outlined in the MPMC Annual Monitoring Plan (MPMC, 2014) and the 2014 Annual Discharge Plan (MPMC, 2014).

As you are aware, the Tailings Storage Facility (TSF) at MPMC currently contains approximately 6.5 Mm³ of excess water. As shown in Table 1, MPMC also has experienced above average snowfall in 2013/14, adding to the urgent requirement to manage additional water reporting to the TSF from site runoff collection systems. While MPMC is moving forward on an application to treat and discharge excess water, we would like to use our current permit to discharge water to Hazeltine Creek from April through October to the maximum capacity in order to reduce geotechnical risk of the TSF and return water to the natural environment.

Table 1: February 2014 month end water balance summary

Item	Description
TSF Water Volume	6,789,160 m ³ (up 143,184 m ³ from last month)
TSF Water Elevation	964.46 m (up 0.03 m from last month)
Cariboo Pit Water Volume	942,953 m ³ (as of Dec. 15 th – no access)
Cariboo Pit Water Elevation	1081.42 m (as of Dec. 15 th – no access)
TSF + Cariboo Pit Water Volume	7,139,872 m ³ (based on Dec. 15 th Cariboo Pit volume)
TSF + Cariboo Pit Water Volume Change (since last month)	143,184 m ³ (based on Dec. 15 th Cariboo Pit volume)
Weather Statistics Actual	Mean Temperature = -10.3 °C Snowpack (snow water equivalent) = 316 mm
Weather Statistics Average	Average February Mean Temperature = -4.5 °C Average Snowpack (snow water equivalent) = 173 mm

Unfortunately, the volume of ice currently built up at W7 restricts us from installing the continuous monitoring equipment outlined in the aforementioned Plans. MPMC is proposing that we operate the system without this equipment until creek conditions allow installation. This exemption would allow MPMC to initiate the 2014 discharge into Hazeltine Creek without the installation of monitoring equipment at W7.

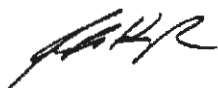
Proposed monitoring until installation of continuous monitoring equipment includes:

- Daily inspections of the discharge location (HD-1) and W7.
- Daily collection of field parameters (pH, temperature, and conductivity) from W7.
- Continuous conductivity and flow monitoring at HD-1.
- All other monitoring and reporting as required by Permit 11678 and the Monitoring Plans.

The MPMC 2014 Annual Discharge Plan provides detailed flow and water quality predictions for HD-1 and W7. We were able to collect a flow measurement in Hazeltine Creek on March 18, 2014, just downstream of the ice blockage. It is important to note that this area was kept open during the winter to allow access to collect water samples, but is not in the area where equipment can be installed. The recorded flow was 0.0874 m³/s. Based on flow measurements taken 2006 through 2014, the average flow rate expected from the toe drain system that feeds HD-1 is 0.010 m³/s, equivalent to 11% of the current W7 flows. Details of the water quality predictions discussed above indicate that discharging this percentage would not result in any exceedences of the BC Water Quality Guidelines. In addition, available historic flow data at W7 indicates that the average flow rate in Hazeltine in April is 0.753 m³/s; this increase due to runoff further reduces the risk of exceeding BC Water Quality Guidelines and Permit 11678 guidelines.

As the requirement to discharge water at MPMC is crucial for long-term water management and the stability of the TSF we are asking for a response to this request by March 31, 2014.

Sincerely,



Colleen Hughes, EP
Environmental Coordinator
Mount Polley Mining Corporation
chughes@mountpolley.com
250-790-2617

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: FW: Mt Polley
Date: Tuesday, August 5, 2014 6:03:23 PM

FYI re: MMP

From: Fraser, John Paul GCPE:EX
Sent: Tuesday, August 5, 2014 6:01 PM
To: Crebo, David GCPE:EX; Gordon, Matt GCPE:EX
Subject: FW: Mt Polley
Thanks,
JPF

From: Hancock, Tom ENV:EX
Sent: Tuesday, August 5, 2014 4:58 PM
To: Cadario, Michele PREM:EX
Cc: Chin, Ben PREM:EX; Fraser, John Paul GCPE:EX
Subject: Re: Mt Polley
I will pass this on to her and let you know as soon as I hear from her.
Thanks,
Tom

On Aug 5, 2014, at 4:56 PM, "Cadario, Michele PREM:EX" <Michele.Cadario@gov.bc.ca> wrote:

Tom,
Given where MMP is we think she needs to go to Mt Polley before coming back to Vancouver- it would be odd if she was in the Cariboo and didn't go to the site. So she can go tomorrow and join MBB - I believe he is doing a newser at 1:30 - or if she can't get there until first thing Thursday that is ok.
Can you let us know once you've connected with her? I'm happy to talk to her if needed.
Michele

From: [Dalal, Suntanu GCPE:EX](#)
To: [English, Heather ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Halls, Lori D ENV:EX](#); [GCPE Communications - Environment](#)
Subject: Media questions - Update - 4:50pm - Mount Polley Media questions...
Date: Tuesday, August 5, 2014 6:03:16 PM

More questions for follow-up tomorrow morning.

The last two questions have already been dealt with.

Thanks everyone.

From: Jacobs, Jake GCPE:EX
Sent: Tuesday, August 5, 2014 5:18 PM
To: Dalal, Suntanu GCPE:EX
Subject: FW: Media questions - Update - 4:50pm - Mount Polley Media questions

Suntanu,

Will need some help with these responses. I hope to get back to these reporters tomorrow morning.

Thanks, Jake

I believe you are responding to this first request. More questions from another Globe & Mail reporter- Andrea Woo - Globe and Mail (National section) – 604 631.6602 - AndreaWoo@globeandmail.com

- **Reporter specifically wondering:**
 - **How many permits has the government granted to companies to release treated water from tailings ponds over the past two years (under the effluent release permit program)?**
 - **How many permits were denied?**
 - **Which companies made the requests?**
 - **What conditions must be met for the permit to be granted?**

-
[Need help with these.](#)

Questions from CKNW Radio - Sean Leslie – CKNW - sleslie@cknw.com - 250-387-6084 (250 385-8622)

- **Has anyone been checking what toxic chemicals in the sediment from the Mount Polley tailings pond have leaked out, where more harmful materials settle? Have these leaked, and what's in them?**

More questions from Vancouver Observer reporter Jenny Uechi – Vancouver Observer -604-346-5227 juechi@gmail.com

- Was there anything in that permit about enforcement of environmental regulations? I was wondering also about the news releases from the late 90s implying that the BC government "saved" Mount Polley and three other mines from closure in operation through the [Jobs Protection Commission \(1999\)](#). It seems a lot of the "concessions" made were financial, but was there any environmental concession or rules relaxed to allow Mount Polley and the other mines?
- BC checks its water regularly. Was there anything found that indicated a leak near Mount Polley in recent months, and if so, what was done about it?

Questions from Globe & Mail reporter

- ~~Reporter says there is a report that this mine applied for a permit to discharge tailings but it was not granted. Is this true?~~

Questions from Globe & Mail reporter. Andrea Woo - Globe and Mail (National section) - 604-631.6602 - AndreaWoo@globeandmail.com

- ~~Also, we got a tip that Imperial had sought permission to discharge spring melt water from the tailings pond this spring but that the province denied the request. Is that accurate?~~

From: [Chin, Ben PREM:EX](#)
To: [Crebo, David GCPE:EX](#); [Franklin, Kimberley GCPE:EX](#); [Fraser, John Paul GCPE:EX](#); [Gordon, Matt GCPE:EX](#); [Hancock, Tom ENV:EX](#); [Dhanowa, Damon ENV:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#); [Dalal, Suntanu GCPE:EX](#)
Subject: Re: FOR APPROVAL: MoE media responses to Mt. Polley
Date: Tuesday, August 5, 2014 6:06:22 PM

Great thank you

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

From: Crebo, David GCPE:EX
Sent: Tuesday, August 05, 2014 05:36 PM
To: Chin, Ben PREM:EX; Franklin, Kimberley GCPE:EX; Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Hancock, Tom ENV:EX; Dhanowa, Damon ENV:EX
Cc: Halls, Lori D ENV:EX; Standen, Jim ENV:EX; Dalal, Suntanu GCPE:EX
Subject: RE: FOR APPROVAL: MoE media responses to Mt. Polley

We'll add this line, and get these responses out. "This is the responsibility of the Ministry of energy and Mines".

From: Crebo, David GCPE:EX
Sent: Tuesday, August 5, 2014 5:19 PM
To: Chin, Ben PREM:EX; Franklin, Kimberley GCPE:EX; Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Hancock, Tom ENV:EX; Dhanowa, Damon ENV:EX
Cc: Halls, Lori D ENV:EX; Standen, Jim ENV:EX; Dalal, Suntanu GCPE:EX
Subject: RE: FOR APPROVAL: MoE media responses to Mt. Polley

Good point. We could just say that MEM does this.
Or add their bullet:

- MEM confirms Mount Polley is up to date with geotechnical reporting requirements, including the annual dam safety inspection requirements. 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.

From: Chin, Ben PREM:EX
Sent: Tuesday, August 5, 2014 5:17 PM
To: Franklin, Kimberley GCPE:EX; Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Hancock, Tom ENV:EX; Dhanowa, Damon ENV:EX
Cc: Crebo, David GCPE:EX; Halls, Lori D ENV:EX; Standen, Jim ENV:EX; Dalal, Suntanu GCPE:EX
Subject: Re: FOR APPROVAL: MoE media responses to Mt. Polley

Looks good from my end. Should we add that MEM does inspections re: integrity of dams?

Saying ENV doesn't raises the question of who does

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

From: Franklin, Kimberley GCPE:EX
Sent: Tuesday, August 05, 2014 04:57 PM
To: Chin, Ben PREM:EX; Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX; Hancock, Tom ENV:EX; Dhanowa, Damon ENV:EX
Cc: Crebo, David GCPE:EX; Halls, Lori D ENV:EX; Standen, Jim ENV:EX; Dalal, Suntanu GCPE:EX
Subject: FOR APPROVAL: MoE media responses to Mt. Polley

Good afternoon,

We have several media requests on the go, either around permitting/timelines or what's was in the tailings.

We are proposing to send all bullets relating to MoE and Mt Polley to the reporters, so everyone will have everything. Messaging approved by Jim Standen.

Is this okay by you all?

Recent permit history:

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- In 2009 Mt Polley applied for an permit amendment to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
 - Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party. (Brian Olding - attached)
 - This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazeltine Creek.
 - The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and

management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was approved in 2012.

- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazeltine Creek.
- This application was received by the ministry this summer, and is being considered.

Tailings supernatant:

- B.C. Water Quality Guidelines are levels at which the potential exists for impacts on various water uses. Environmental Protection Division staff reviewed the tailings supernatant (i.e., the liquid in the tailings pond) data sent by Mount Polley Mining Corporation on Aug. 4, 2014 and found that for the impounded tailings supernatant:
 - The selenium concentration exceeded the drinking water guideline of 10 ug/L by a factor 2.8 times.
 - Sulphate did not exceed the drinking water guideline of 500 mg/L in May 2014. However, there have been frequent small exceedances of this guideline over the last few years.
 - Molybdenum concentrations were well below drinking water guidelines over the last two years. However, recent molybdenum concentrations in the supernatant exceeded livestock watering and irrigation guidelines of 0.05 mg/L.
 - Organic carbon concentrations exceed the 4 mg/L guidelines for chlorination (water treated with chlorine that contains >4 mg/L of organic carbon can result in toxic chlorination by-products).
- In addition, the concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

Effluent Discharge Compliance:

The Ministry of Environment is not responsible for inspecting the geotechnical integrity of the tailings pond structure. The Ministry of Environment is responsible to ensure no unauthorized effluent discharge from the tailings pond structure. With that respect, the ministry conducted 14 inspections (office review and on-site) on the Mt. Polley Mine since 2012. The following non-compliances were observed:

- 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 (GW05-1).
- 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 (E7). This perimeter pond overflowed, releasing approximately 150 cubic metres of effluent over 13 hours to ground.

Thanks,
Kim

Kim Franklin
Government Communications & Public Engagement
Ministry of Environment
Tel: 250 953.3698 | **Mobile:** 250 886.0830

From: [Crebo, David GCPE:EX](#)
To: [Zacharias, Mark ENV:EX](#); [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#)
Cc: [Dalal, Suntanu GCPE:EX](#)
Subject: Fwd: Overview Mt Polley
Date: Tuesday, August 5, 2014 6:28:39 PM

Folks - pls see Ben's feedback re: doc for Jennifer. Can we put a line in that said the company complied with all the orders?

Sent from my iPhone

Begin forwarded message:

From: "Chin, Ben PREM:EX" <Ben.Chin@gov.bc.ca>
Date: August 5, 2014 at 6:16:54 PM PDT
To: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>
Subject: Re: Overview Mt Polley

Looks good...on the orders at the end, we should spell out how Mt Polley responded

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

From: Crebo, David GCPE:EX
Sent: Tuesday, August 05, 2014 06:06 PM
To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX
Cc: Chin, Ben PREM:EX
Subject: Overview Mt Polley

Gentlemen – this doc was put together for our ENV rep enroute to WL (Jennifer McGuire), to hand out to the public. It basically contains the info we’ve just given to several reporters along with other “process” type info. The one edit that will happen is to stick to message that water test results are expected later this week (as opposed to “in 3 days”).

From: [Halls, Lori D ENV:EX](#)
To: [Fraser, John Paul GCPE:EX](#)
Cc: [Dyble, John C PREM:EX](#); [Koncohrada, Karen MEM:EX](#); [Wanamaker, Lori JAG:EX](#); [Sweeney, Neil PREM:EX](#)
Subject: Re: Global News: BC 1: Kynoch - Imperial Metals presser
Date: Tuesday, August 5, 2014 7:10:46 PM

Will confirm what if anything has been said to company re their recent discharge application.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 7:02 PM, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca> wrote:

John, here is most of the transcript from the media event with CEO of Imperial Metals.
As you can see, a difficult exchange.
Of note is comment at bottom. Lori H, can you shed here?

Reporter: What are the potentially toxic things that are in it? You mentioned arsenic, very low levels. What other kinds of things are in it?

Kynoch: There's almost everything in it but at low levels. **I know that we have given the province the details on what's in the water.** Now you're asking me for everything in the tailings. We can get complete breakdown of the minerals left in the rock.

Reporter: You don't believe the tailings are more of a problem than the water is?

Kynoch: It's ground up rock. It's the same material that would be eroded off the site in the eons of time. It's eroded, ground up rock.

Plus confusion about conclusions of environmental consulting report (Olding) and this bit, highlighted.

Reporter: You hired an environmental engineer in [inaudible]. Is that correct? To look at tailings and to look at the operation. It was with a view to expanding the amount of effluent that you could dump from your tailings pond by 15%. Is that correct? It's yes or no.

Kynoch: If exactly what you said is correct the answer is no. You wanted the yes or no answer; you've now got one.

Reporter: Okay, no. So you did apply for an increase in the amount of effluent that you were going to dump...

Kynoch: In conjunction for applying for an effluent permit we did a study on the impacts of discharging that effluent.

Reporter: Did you get that increase?

Kynoch: I think we're about to get the increase.

Thanks,
JPF

s.3

Pages 239 through 243 redacted for the following reasons:

s.3

From: [McGuire, Jennifer ENV:EX](#)
To: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: Fw: Mtg Notes from MEM/MOE call on Aug 5, 2015 at 15:00hr
Date: Tuesday, August 5, 2014 7:21:13 PM

MEM and MOE coordinated.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Demchuk, Tania MEM:EX <Tania.Demchuk@gov.bc.ca>
Sent: Tuesday, August 5, 2014 7:16 PM
To: Metcalfe, Shelley ENV:EX; McGuire, Jennifer ENV:EX; Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX; Bunce, Hubert ENV:EX; Zacharias-Homer, Christa ENV:EX; Thorpe, Rolly MEM:EX; Bourgeois, Jason ENV:EX; Dahl, RK ENV:EX; Amann-Blake, Nathaniel MEM:EX
Subject: RE: Mtg Notes from MEM/MOE call on Aug 5, 2015 at 15:00hr

MEM's Action Item responses:

s.15

- MEM to send MOE the NPRI media comments
Bullets forwarded to Jennifer, Hubert and Shelley
- MEM to update MOE when they know whether their staff have looked at debris plug at Polley Lake
MEM geotechnical engineers indicated the following during an update call at approximately 4:00 August 5, 2014:
 1. Safety is dependent on weather. (area will become more unstable if it rains)
 2. It is not safe to be working in below the breach area right now.
 3. Polley Lake should be okay to access for water sampling purposes provided that the weather does not change and there is a safe access point onto the lake. Mount Polley staff have been requested to continue to monitor the plug at the Polley Lake outlet during flights over the area.
 4. Hazeltine Creek is not a safe place to be sampling at present. Banks of the new channel are likely unstable and have overhanging trees. There is still a small volume of material flowing out of the tailings impoundment area down the channel.
- Shelley (MOE) to provide response to MEM regarding a MOE letter dated March 19, 2014
Received – thanks!

Tania

From: Metcalfe, Shelley ENV:EX
Sent: Tuesday, August 5, 2014 4:25 PM
To: McGuire, Jennifer ENV:EX; Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX; Demchuk, Tania MEM:EX; Bunce, Hubert ENV:EX; Zacharias-Homer, Christa ENV:EX; Thorpe, Rolly MEM:EX; Bourgeois, Jason ENV:EX; Dahl, RK ENV:EX
Subject: Mtg Notes from MEM/MOE call on Aug 5, 2015 at 15:00hr

Purpose of Call: to coordinate and share information between MEM and MOE re: Mt Polley Mine

Next call: Wednesday Aug 5, 2014, Time TBD.

Action Items:

s.15

- Jason (MOE) to provide MEM with copy of the draft pollution abatement order
- Shelley (MOE) to provide response to MEM regarding a MOE letter dated March 19, 2014
- Shelley/Hubert (MOE) put together list of permits applied for by company in anticipation of information request received by MEM
- MEM to send MOE the NPRI media comments
- MEM to update MOE when they know whether their staff have looked at debris plug at Polley Lake
- Jennifer (MOE) to set up next call

I don't have Nathaniel's email – would someone please forward to him?

Shelley Metcalfe

Section Head, Mining Authorizations

BC Ministry of Environment - Regional Operations Branch

200- 10470 152nd St., Surrey BC V3R 0Y3

p. 604-582-5332 | f. 604-930-7119 | e. shelley.metcalfe@gov.bc.ca

From: [Halls, Lori D ENV:EX](#)
To: [Fraser, John Paul GCPE:EX](#)
Cc: [Dyble, John C PREM:EX](#); [Koncohrada, Karen MEM:EX](#); [Wanamaker, Lori JAG:EX](#); [Sweeney, Neil PREM:EX](#)
Subject: Re: Global News: BC 1: Kynoch - Imperial Metals presser
Date: Tuesday, August 5, 2014 7:45:58 PM

We are not sure where this statement is coming from.

MOE's current application process is First In First Out... so an approval to discharge would not be imminent from us. Statutory Decision Maker has confirmed the application was not on his radar.

Timing to process is a factor of the applications in the queue and the complexity - it could be 12 months more or less.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 7:10 PM, "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca> wrote:

Will confirm what if anything has been said to company re their recent discharge application.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 7:02 PM, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca> wrote:

John, here is most of the transcript from the media event with CEO of Imperial Metals. As you can see, a difficult exchange.
Of note is comment at bottom. Lori H, can you shed here?

Reporter: What are the potentially toxic things that are in it?
You mentioned arsenic, very low levels. What other kinds of things are in it?

Kynoch: There's almost everything in it but at low levels. I know that we have given the province the details on what's in the water. Now you're asking me for everything in the

tailings. We can get complete breakdown of the minerals left in the rock.

Reporter: You don't believe the tailings are more of a problem than the water is?

Kynoch: It's ground up rock. It's the same material that would be eroded off the site in the eons of time. It's eroded, ground up rock.

Plus confusion about conclusions of environmental consulting report (Olding) and this bit, highlighted.

Reporter: You hired an environmental engineer in [inaudible]. Is that correct? To look at tailings and to look at the operation. It was with a view to expanding the amount of effluent that you could dump from your tailings pond by 15%. Is that correct? It's yes or no.

Kynoch: If exactly what you said is correct the answer is no. You wanted the yes or no answer; you've now got one.

Reporter: Okay, no. So you did apply for an increase in the amount of effluent that you were going to dump...

Kynoch: In conjunction for applying for an effluent permit we did a study on the impacts of discharging that effluent.

Reporter: Did you get that increase?

Kynoch: I think we're about to get the increase.

Thanks,
JPF

Pages 248 through 253 redacted for the following reasons:

s.3

From: [Halls, Lori D ENV:EX](#)
To: [McGuire, Jennifer ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#); [Crebo, David GCPE:EX](#)
Subject: Re: Global News: BC 1: Kynoch - Imperial Metals presser
Date: Tuesday, August 5, 2014 7:46:35 PM

Thanks Jennifer.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 7:36 PM, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca> wrote:

I'll need to confirm with staff - however I believe they are following the branch application process where by we process older applications first. And I know we have mining applications which were submitted in 2010.

Timing to process is a factor of the applications in the queue and the complexity - it could be 12 months more or less.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 7:29 PM
To: McGuire, Jennifer ENV:EX
Cc: Standen, Jim ENV:EX; Crebo, David GCPE:EX
Subject: Re: Global News: BC 1: Kynoch - Imperial Metals presser

Thanks Jennifer. Do you know if we have merely received the application or whether staff are in process of assessing it? I assume timeframe to conduct permit application assessment is very much dependent on complexity, what else is in hopper, etc. Do we have an estimated time? Or order of magnitude?

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 7:18 PM, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca> wrote:

If we have just received an application - I am confident staff would be following the current application process - First In First Out... so it would not be imminent
I have also confirmed with Hubert A/RD... and the app was not on

his radar as the SDM

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Halls, Lori D ENV:EX

Sent: Tuesday, August 5, 2014 7:14 PM

To: McGuire, Jennifer ENV:EX; Standen, Jim ENV:EX; Crebo, David GCPE:EX

Subject: Fwd: Global News: BC 1: Kynoch - Imperial Metals presser

Jim/Jennifer

Can you confirm what if anything has been said to company re their recent discharge application and where it stands and expected timing? I didn't think this was "imminent"

See 2nd highlight below.

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

Begin forwarded message:

From: "Halls, Lori D ENV:EX"

[<Lori.D.Halls@gov.bc.ca>](mailto:Lori.D.Halls@gov.bc.ca)

Date: August 5, 2014 at 7:07:37 PM PDT

To: "McGuire, Jennifer ENV:EX"

[<Jennifer.Mcguire@gov.bc.ca>](mailto:Jennifer.Mcguire@gov.bc.ca), "Crebo, David

GCPE:EX" [<David.Crebo@gov.bc.ca>](mailto:David.Crebo@gov.bc.ca), "Standen, Jim

ENV:EX" [<Jim.Standen@gov.bc.ca>](mailto:Jim.Standen@gov.bc.ca)

Subject: Fwd: Global News: BC 1: Kynoch - Imperial Metals presser

See Imperial's press conference transcript. We will need to be ready for similar questions tomorrow and be able to determine where we agree/disagree.

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

Begin forwarded message:

From: "Fraser, John Paul GCPE:EX"

[<JohnPaul.Fraser@gov.bc.ca>](mailto:JohnPaul.Fraser@gov.bc.ca)

Date: August 5, 2014 at 7:02:31 PM PDT

To: "Dyble, John C PREM:EX"

<John.Dyble@gov.bc.ca>
Cc: "Koncohrada, Karen MEM:EX"
<Karen.Koncohrada@gov.bc.ca>,
"Wanamaker, Lori JAG:EX"
<Lori.Wanamaker@gov.bc.ca>, "Halls,
Lori D ENV:EX"
<Lori.D.Halls@gov.bc.ca>, "Sweeney, Neil
PREM:EX" <Neil.Sweeney@gov.bc.ca>
**Subject: FW: Global News: BC 1:
Kynoch - Imperial Metals presser**

John, here is most of the transcript from the media event with CEO of Imperial Metals. As you can see, a difficult exchange. Of note is comment at bottom. Lori H, can you shed here?

Reporter: What are the potentially toxic things that are in it? You mentioned arsenic, very low levels. What other kinds of things are in it?

Kynoch: There's almost everything in it but at low levels. I know that we have given the province the details on what's in the water. Now you're asking me for everything in the tailings. We can get complete breakdown of the minerals left in the rock.

Reporter: You don't believe the tailings are more of a problem than the water is?

Kynoch: It's ground up rock. It's the same material that would be eroded off the site in the eons of time. It's eroded, ground up rock.

Plus confusion about conclusions of environmental consulting report (Olding) and this bit, highlighted.

Reporter: You hired an environmental engineer in [inaudible]. Is that correct? To look at tailings and to look at the operation. It was with a view to expanding the amount of effluent

that you could dump from your tailings pond by 15%. Is that correct? It's yes or no.

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Reporter: Okay, no. So you did apply for an increase in the amount of effluent that you were going to dump...

Kynoch: In conjunction for applying for an effluent permit we did a study on the impacts of discharging that effluent.

Reporter: Did you get that increase?

Kynoch: I think we're about to get the increase.

Thanks,
JPF

Pages 258 through 266 redacted for the following reasons:

s.3

From: [McGuire, Jennifer ENV:EX](#)
To: [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Cc: [Crebo, David GCPE:EX](#)
Subject: Fw: Pollution Abatement Order
Date: Tuesday, August 5, 2014 8:20:38 PM
Attachments: [714463747144644338\[2\].doc](#)

A PAO has been issued by the Ministry to ensure the company takes timely action.

JLM

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Bunce, Hubert ENV:EX <Hubert.Bunce@gov.bc.ca>
Sent: Tuesday, August 5, 2014 8:10 PM
To: 'dreimer@mountpolley.com'; 'chughes@mountpolley.com'
Cc: Hoffman, Al MEM:EX; McGuire, Jennifer ENV:EX; Matscha, Gabriele ENV:EX; Metcalfe, Shelley ENV:EX; Bourgeois, Jason ENV:EX
Subject: Pollution Abatement Order

Hubert Bunce

A/Mining Director, Environmental Protection

Regional Operations

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

2080A Labieux Road

Nanaimo BC V9T 6J9

Please consider the environment before printing this email

BC Pollution Free



Date: August 5, 2014

File: 107461

MOUNT POLLEY MINING
CORPORATION
SUITE 200
580 HORNBY ST
VANCOUVER, BC
V6C 3B6

POLLUTION ABATEMENT ORDER

I have reasonable grounds to believe that pollution is being caused by the discharge of mine tailings from the tailings storage facility at the Mount Polley Mine site into the environment. The discharge is occurring from a property located approximately 5 kilometers southeast of Likely, BC and is legally described as Mineral Claim CB-20, Cariboo Mining Division, Cariboo Land District, owned and/or operated by MOUNT POLLEY MINING CORPORATION.

It has been reported to the Ministry of Environment that on Monday, August 4, 2014 mine tailings escaped an impoundment facility via a dam breach on the above-mentioned property. Further investigation has revealed that a significant volume of materials have left the property and impacted Polley Lake, Hazeltine Creek and Quesnel Lake.

Pursuant to Section 83 of the *Environmental Management Act* [SBC 2003] Chapter 53, MOUNT POLLEY MINING CORPORATION is hereby ordered to comply with the following requirements:

1. Immediately take action, under the direction of a suitably qualified professional, to abate the discharge of mine-affected materials and sediments from the impoundment facility, and specifically into Polley Lake, Hazeltine Creek and Quesnel Lake. A written summary of actions taken must be submitted to the Director on August 13, 2014
2. Immediately retain a suitably qualified professional to initiate a preliminary Environmental Impact Assessment (EIA) and provide the name of the qualified professional to the Director for approval by August 6, 2014.
3. Retain a suitably qualified professional to initiate a comprehensive Environmental Impact Assessment (EIA) and provide the name of the qualified professional to the Director for approval by August 13, 2014.

Ministry of Environment

Mining Operations
Environmental Protection

Mailing Location/Address
2080 Labieux Rd.
Nanaimo, BC V9T 6J9

Telephone: (250) 751-3100
Facsimile: (250) 751-3103
<http://www.gov.bc.ca>

4. Upon completion of the preliminary EIA, immediately implement clean up activities, mitigation measures and management actions as required by the EIA.
5. Upon completion of the comprehensive EIA, immediately implement clean up activities, mitigation measures, site restoration and management actions as required by the comprehensive EIA.
6. Based on the preliminary EIA, develop and submit to the Director by August 6, 2014 for approval, an Action Plan detailing measures relative to the preliminary EIA to be taken to:
 - a. Characterize the materials that were released into the receiving environment (including their expected behaviour in the receiving environment, settling rates, etc.);
 - b. Recover or otherwise manage mine-affected materials and sediments currently in the receiving environment;
 - c. Mitigate residual risks to the environment;
 - d. Assess and monitor the impacts and risks posed by the mine-affected materials and sediments currently in the receiving environment, as well as from the recovery and management efforts themselves; and
 - e. Report on the implementation of Action Plan measures on a weekly basis to regulatory agencies and stakeholders.
7. Based on the comprehensive EIA, develop and submit to the Director by August 15, 2014 for approval, an Action Plan detailing measures relative to the comprehensive EIA to be taken to:
 - a. Fully characterize the materials that were released into the receiving environment (including their expected behaviour in the receiving environment, settling rates, etc.);
 - b. Fully recover or otherwise manage mine-affected materials and sediments currently in the receiving environment;
 - c. Define Site mitigation and/or mitigate residual risks to the environment;
 - d. Assess and monitor the impacts and risks posed by the mine-affected materials and sediments currently in the receiving environment, as well as from the recovery and management efforts themselves; and
 - e. Report on the implementation of Action Plan measures on a weekly basis to regulatory agencies and stakeholders

8. Prepare and submit a formal written update by September 15, 2014. The update report is to include at a minimum:
 - a. A list of all other qualified professionals who contributed to the report, and a summary of their qualifications;
 - b. A summary of the preliminary EIA and results;
 - c. A summary of the comprehensive EIA and results;
 - e. A description of clean up activities, mitigation measures, site restoration and management actions that were implemented as a result of the preliminary and comprehensive EIA;
 - f. Recommendations for additional mitigation and restoration measures, if appropriate; and
 - g. A proposed ongoing monitoring program.

Failure to comply with the requirements of this order is a contravention of the *Environmental Management Act* and may result in legal action. I direct your attention to Section 120(10) of the *Environmental Management Act*, which reads:

“(10) A person who contravenes an order...that is given, made or imposed under this Act by a ...director...commits an offence and is liable on conviction to a fine not exceeding \$300 000 or imprisonment for not more than 6 months, or both.”

Failure to comply with the requirements of this order may also result in an administrative penalty under the *Administrative Penalties Regulation (Environmental Management Act)* (B.C. Reg 133/2014) (Regulation). I direct your attention to Section 12(4) of the *Regulation*, which reads:

“(4) A person who fails to comply with an order under the [Environmental Management] Act is liable to an administrative penalty not exceeding \$40 000.”

This order does not authorize entry upon, crossing over, or use for any purpose of private or crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with you. It is also your responsibility to ensure that all activities are carried out with due regard for the rights of third parties, and comply with other applicable legislation that may be in force, such as municipal bylaws relating to the discharge of waste to municipal storm or sanitary sewers.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date notice is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

If you have any questions, please call the undersigned or Jack Green at (250) 398-4544.

Yours truly,



Hubert Bunce
for Director, Environmental Management Act
Vancouver Island Region

cc: Environment Canada
Al Hoffman, Chief Inspector, Ministry of Energy and Mines
Dale Reimer, Mine Manager
Colleen Hughes, Environmental Coordinator

From: [Halls, Lori D ENV:EX](#)
To: [Fraser, John Paul GCPE:EX](#); [Koncohrada, Karen MEM:EX](#); [Wanamaker, Lori JAG:EX](#); [Dyble, John C PREM:EX](#)
Subject: Fwd: Pollution Abatement Order
Date: Tuesday, August 5, 2014 8:30:49 PM
Attachments: [714463747144644338\[2\].doc](#)
[ATT00001.htm](#)

John

A Pollution Abatement Order has been issued by the Ministry to ensure the company takes timely action.

From: Bunce, Hubert ENV:EX <Hubert.Bunce@gov.bc.ca>
Sent: Tuesday, August 5, 2014 8:10 PM
To: 'dreimer@mountpolley.com'; 'chughes@mountpolley.com'
Cc: Hoffman, Al MEM:EX; McGuire, Jennifer ENV:EX; Matscha, Gabriele ENV:EX; Metcalfe, Shelley ENV:EX; Bourgeois, Jason ENV:EX
Subject: Pollution Abatement Order

Hubert Bunce

A/Mining Director, Environmental Protection

Regional Operations

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

2080A Labieux Road

[Nanaimo BC V9T 6J9](#)

Please consider the environment before printing this email

BC Pollution Free

From: [Halls, Lori D ENV:EX](#)
To: [Crebo, David GCPE:EX](#)
Subject: Re: Overview Mt Polley
Date: Tuesday, August 5, 2014 8:42:29 PM

Dave

Can you send me this document and did you get your answer?

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 6:28 PM, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca> wrote:

Folks - pls see Ben's feedback re: doc for Jennifer. Can we put a line in that said the company complied with all the orders?

Sent from my iPhone

Begin forwarded message:

From: "Chin, Ben PREM:EX" <Ben.Chin@gov.bc.ca>
Date: August 5, 2014 at 6:16:54 PM PDT
To: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>
Subject: Re: Overview Mt Polley

Looks good...on the orders at the end, we should spell out how Mt Polley responded

Ben Chin
Executive Director
Communications & Issues Mgmt
Office of Premier Christy Clark
Government of British Columbia
250-588-3113

From: Crebo, David GCPE:EX
Sent: Tuesday, August 05, 2014 06:06 PM
To: Fraser, John Paul GCPE:EX; Gordon, Matt GCPE:EX
Cc: Chin, Ben PREM:EX
Subject: Overview Mt Polley

Gentlemen – this doc was put together for our ENV rep enroute to WL

(Jennifer McGuire), to hand out to the public. It basically contains the info we've just given to several reporters along with other "process" type info. The one edit that will happen is to stick to message that water test results are expected later this week (as opposed to "in 3 days").

From: [Williams, Bryan ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Subject: Shuswap Nation Tribal Council Condemns Mount Polley Mine Inaction
Date: Tuesday, August 5, 2014 9:04:31 PM

<http://shuswapnation.org/sntc-condemns-mount-polley-mine-inaction/>

Sent from my iPhone

From: [Crebo, David GCPE:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#); [Zacharias, Mark ENV:EX](#)
Subject: Fwd: Approval Please: Overview Mt Polley
Date: Tuesday, August 5, 2014 9:15:09 PM
Attachments: [Overview Mt Polley.docx](#)
[ATT00001.htm](#)

This is the doc. Aside from Ben's request to include the company's response, there is also a request to drop the first part of the first bullet "staff are aware.,." That's a good message for the first few hours of an event, but shouldn't be included by day 3.

Sent from my iPhone

Begin forwarded message:

From: "Dalal, Suntanu GCPE:EX" <Suntanu.Dalal@gov.bc.ca>
Date: August 5, 2014 at 5:36:32 PM PDT
To: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Cc: "Franklin, Kimberley GCPE:EX" <Kimberley.Franklin@gov.bc.ca>
Subject: FW: Approval Please: Overview Mt Polley

From: Zacharias-Homer, Christa ENV:EX
Sent: Tuesday, August 5, 2014 5:31 PM
To: Dalal, Suntanu GCPE:EX
Subject: Fwd: Approval Please: Overview Mt Polley

Suntanu

FYI I received Jim Standen's approval on the attached. Jennifer intends to provide to public in Williams Lake.

Christa Zacharias-Homer
Deputy Director, Regional Operations Branch
Sent from my iPhone

Begin forwarded message:

From: "Standen, Jim ENV:EX" <Jim.Standen@gov.bc.ca>
Date: August 5, 2014 at 5:00:33 PM PDT
To: "Zacharias-Homer, Christa ENV:EX" <Christa.ZachariasHomer@gov.bc.ca>
Cc: "English, Heather ENV:EX" <Heather.English@gov.bc.ca>, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>

Subject: RE: Approval Please: Overview Mt Polley

Thanks Christa, looks good. I have made one small addition related to the third party review. I will be doing a more detailed chronology later this evening based on material I got from Shelley which can be appended to this later.

From: Zacharias-Homer, Christa ENV:EX
Sent: Tuesday, August 5, 2014 4:54 PM
To: Standen, Jim ENV:EX
Cc: English, Heather ENV:EX; McGuire, Jennifer ENV:EX
Subject: Approval Please: Overview Mt Polley

Hi Jim,

The attached is forwarded for your review and approval. The purpose is for Jennifer to provide to the public in Williams Lake. The information was compiled from existing information already submitted to PAB (supernate, WQ sampling, and compliance). The authorizations information is new and has also been reviewed by Shelley Metcalfe.

Please contact me if you have any questions.

Christa

Christa Zacharias-Homer

Deputy Director, Regional Operations Branch

Ph: (250) 356-8174 | Fax: (250) 356-5496 | Cell: (250) 216-2467

Christa.ZachariasHomer@gov.bc.ca

 Please consider the environment before printing this email



Ministry of Environment Overview Mount Polley Mine

- Ministry of Environment staff are aware of the incident and are providing advice and support to local responders.
- Our first priority is to deal with any immediate risks to public health and the environment.

Water Quality Sampling

- Environmental Impact Assessment staff took initial water quality samples on August 4 from the waterways impacted by the tailings pond spill into Quesnel Lake. These samples have been sent to a lab and results from these water quality tests will be available in three days.
- The Ministry of Environment will provide these results to Interior Health officials and the Cariboo Regional District Emergency Operations Centre (public information line at 250-398-5581) when they become available.
- Once the initial incident has passed, the Ministry of Environment shifts its focus to overseeing any long-term remediation and restoration that might be needed, which will include ensuring that long term water quality monitoring is in place.

Tailings Pond Supernatant

- B.C. Water Quality Guidelines are levels at which the potential exists for impacts on various water uses. Environmental Protection Division staff reviewed the tailings supernatant (i.e., the liquid in the tailings pond) data sent by Mount Polley Mining Corporation on Aug. 4, 2014 and found that for the impounded tailings supernatant:
 - The selenium concentration exceeded the drinking water guideline of 10ug/L by a factor 2.8 times.
 - Sulphate did not exceed the drinking water guideline of 500 mg/L in May 2014. However, there have been frequent small exceedances of this guideline over the last few years.
 - Molybdenum concentrations were well below drinking water guidelines over the last two years. However, recent molybdenum concentrations in the supernatant exceeded livestock watering and irrigation guidelines of 0.05 mg/L.
 - Organic carbon concentrations exceed the 4 mg/L guidelines for chlorination (water treated with chlorine that contains >4mg/L of organic carbon can result in toxic chlorination by-products).
- In addition, the concentration of several parameters in the supernatant exceed aquatic life guidelines, such as nitrate, cadmium, copper, iron and selenium; some of these only sporadically in the last few years.

Authorization Information

- The Mount Polley Mine operated from August 1997 to September 2001, was placed into care and maintenance from September 2001 to March 2005, and was re-opened in March 2005. Currently the mine life is expected to extend to 2026.
- Mount Polley Mining Corporation's permit (11678) under the *Environmental Management Act* was last amended in November 2012 to allow a seasonal discharge (April – October, annually) of

August 5, 2014



dam filtered mine water from the tailings pond to Hazeltine Creek. This application was informed by the results of a third party review conducted by Brian Olding and Associates dated June 2011.

- March 2014, the Ministry of Environment approved a temporary variance from permit requirement for continuous monitoring of conductivity, temperature and flow at one monitoring station due to excessive ice accumulation which prevented the installation of the probe.
- In October 2013, Mount Polley Mining Corporation initiated a permit amendment process to get authorization for the discharge of 3,000,000 m³/year of reverse osmosis treated ditch water to Polley Lake. The Ministry of Environment received the final application for the permit amendment on July 9th, 2014 to increase discharge of treated effluent, and the necessary accompanying reports to support the amendment were submitted July 11th, 2014.

Compliance History since 2012

Since 2012, ministry staff have conducted 14 inspections (office review and on-site) on Mt. Polley Mine. The following non-compliances were observed by Regional Operations Branch, Environmental Protection Division Staff:

- 24 May 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 30 June 2014.
- 18 April 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 long ditch. Flow did not reach 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.
- 30 August 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 150m³ effluent over 13 hours to ground.

From: [Halls, Lori D ENV:EX](#)
To: [Koncohrada, Karen MEM:EX](#)
Subject: Re: CCG notes - Aug 5 - Mt Polley incident
Date: Tuesday, August 5, 2014 9:18:33 PM

That will be John's call. Sometimes he will keep calls only to DMs and or those acting for them.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 9:11 PM, "Koncohrada, Karen MEM:EX"
<Karen.Koncohrada@gov.bc.ca> wrote:

I would like Al Hoffman on this call.

On Aug 5, 2014, at 9:00 PM, "Halls, Lori D ENV:EX"
<Lori.D.Halls@gov.bc.ca> wrote:

Looping in Karen who is acting for Dave N.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 8:53 PM, "Wanamaker, Lori JAG:EX"
<Lori.Wanamaker@gov.bc.ca> wrote:

See following notes from Central Coordinating Group (CCG).

John - see Pat's note about SMEs from MEM and MOE.
Do you want them included on the 1pm call tomorrow?

Lori

Begin forwarded message:

From: "Quealey, Pat JAG:EX"
<Pat.Quealey@gov.bc.ca>
Date: August 5, 2014 at 8:18:49 PM PDT
To: "Wanamaker, Lori JAG:EX"
<Lori.Wanamaker@gov.bc.ca>
Cc: "Groot, Jeff GCPE:EX"
<Jeff.Groot@gov.bc.ca>, "Ritchie, Leanne

GCPE:EX" <Leanne.Ritchie@gov.bc.ca>,
"Lalonde, Jarett JAG:EX"
<Jarett.Lalonde@gov.bc.ca>, "Ives,
Andrew JAG:EX"
<Andrew.Ives@gov.bc.ca>, "Tennant,
Laura JAG:EX"
<Laura.Tennant@gov.bc.ca>
**Subject: Fwd: CCG notes - Aug 5 - Mt
Polley incident**

Good evening Lori,

Summary points from our CCG call today as
below.

As discussed, I will be available to support
your Deputy-level call tomorrow at your
discretion.

I recommend your colleagues' consideration
for attendance of Jim Standen, ENV, and Al
Hoffman, MEM, to support more detailed
briefing of their respective areas of
expertise. Both indicate availability.

Pat

Begin forwarded message:

From: "Duffy, Chris D
JAG:EX"
<Chris.Duffy@gov.bc.ca>
Date: August 5, 2014 at 7:27:40
PM PDT
**Subject: CCG notes - Aug 5 -
Mt Polley incident**

Hi all,
Thank-you for your short-notice
participation today.
CCG summary notes as discussed:
Incident synopsis (EMBC):
General:

<!--[if !supportLists]-->•<!--
[endif]-->Mt. Polley Mine

is owned by Imperial Metals and is approximately 30 kms from the community of Likely. The tailing pond at Mt. Polley Mine is 4 kms by 4 kms. Exact volume is unknown.

<!--[if !supportLists]-->•<!--[endif]-->The tailings pond dam breached early August 3 and the company estimated 10 Million cubic metres of water and 4.5 million cubic metres of fine sand into Polley Lake Hazletine creek.

<!--[if !supportLists]-->•<!--[endif]-->Hazletine Creek flows out of Polley Lake and the flow of contaminated water continued into Quesnel Lake.

<!--[if !supportLists]-->•<!--[endif]-->The flow out of the breach has decreased significantly but not completely stopped.

<!--[if !supportLists]-->•<!--[endif]-->It was noted that a large breach of this nature is very rare with nothing of this scale reported going back over several decades

<!--[if !supportLists]-->•<!--[endif]-->The cause of the breach is under investigation – the design engineers will be on site Wednesday

Initial Response:

<!--[if !supportLists]-->•<!--

[endif]-->Initial recon
carried out by the
company and key
ministry reps.

<!--[if !supportLists]-->•<!--
[endif]-->Local authority
supported in initial
checks on residents,
tourists / recreationalists
etc. (by RCMP & Search
and Rescue)

<!--[if !supportLists]-->•<!--
[endif]-->No injuries or
private property damage
reported.

<!--[if !supportLists]-->•<!--
[endif]-->Cariboo
Regional District issued a
water ban advisory - do
not drink or bathe -
advisory extends for the
entire Quesnel and
Cariboo river system to
the Fraser river.

<!--[if !supportLists]-->•<!--
[endif]-->Water testing
initiated by the MOE

EMBC Regional report today:

<!--[if !supportLists]-->•<!--
[endif]-->Imperial Metals
is:

<!--[if !supportLists]--
>o<!--[endif]--
>doing an aerial
drone survey of
the affected area
today and third
party water
analysis

<!--[if !supportLists]--
>o<!--[endif]--
>supporting the
local authority
for the provision
of potable water

in the affected
area by tanker
truck.

<!--[if !supportLists]-->
>o <!--[endif]-->
>arranging for
debris logs from
the failure to be
boomed and
retrieved from
Quesnel Lake by
a local forestry
firm (West Fraser
mills)

<!--[if !supportLists]-->• <!--
[endif]-->MOE is
continuing with daily
water sampling and
arranging a Subject
matter Expert call with
key Provincial and
Federal agencies

<!--[if !supportLists]-->• <!--
[endif]-->A media briefing
occurred at the Likely
community hall @ 15:00
today

<!--[if !supportLists]-->• <!--
[endif]-->Polly Mine
representatives held a
public meeting at 16:00
today at community of
Likely.

<!--[if !supportLists]-->• <!--
[endif]-->There are
currently no outstanding
requests for EMBC
Operations at this time.

CCG notes

Energy and Mines

- There are three MEM inspectors on site.
- FLIGHT reconnaissance TODAY - nothing new to add.

- Meeting set with mine geotechnical design engineers tomorrow.
 - ** Safety note: people should not be working downstream until the geotechnical assessment of the tailings pond is completed. – communicated regionally
- <!--[if !supportLists]-->•<!--[endif]-->Minister Bennett is on-site and the lead Provincial Government media spokesperson.

Environment

- Conducting baseline sampling of Quesnel Lake.
- Relying on Company for technical data on tailing pond contents (liquid / solids)
- Indicated the company has a contract environmental consulting firm developing a short and long-term response / recovery plan

HLTH

- Coordinating water sampling parameters
- Provided direction to Cariboo Regional District Emergency Operations Centre on water distribution points and maintaining equipment hygienically.

Aboriginal Relations and Reconciliation

- Advised that the Williams Lake First Nations and the Soda Creek First Nations were engaged.

JTST

<!--[if !supportLists]-->•<!--
 [endif]-->Noted the Steel
 Workers union had
 contacted them

<!--[if !supportLists]-->•<!--
 [endif]-->It was estimated
 that there are ~ 300
 fulltime employees but
 unclear as to number on-
 site

<!--[if !supportLists]-->•<!--
 [endif]-->The mine is
 considered to be in a
 state of “care &
 maintenance” – not in
 production but
 monitoring &
 maintenance of
 equipment ongoing

EMBC

<!--[if !supportLists]-->•<!--
 [endif]-->General
 supports and
 coordination going well

<!--[if !supportLists]-->•<!--
 [endif]-->No unmet needs
 by local authority or key
 ministries noted at this
 time

<!--[if !supportLists]-->•<!--
 [endif]-->Pressure points
 noted from Regional call
 this afternoon

<!--[if !supportLists]-->
 >o<!--[endif]--
 >First Nations
 inclusion – two
 bands (Williams
 Lk & Soda creek)
 noted they had
 not received
 direct
 engagement
 from the
 company and

ministries until
this point
<!--[if !supportLists]--
>o <!--[endif]--
>Sharing of
scientific data on
tailings content –
information will
be available
going forward
<!--[if !supportLists]--
>o <!--[endif]--
>Debris
containment
(logs) –
containment and
salvage retrieval
plan as noted
above
<!--[if !supportLists]--
>o <!--[endif]--
>Potable water –
immediate needs
met – needs
constant
monitoring and
engagement
<!--[if !supportLists]--
>o <!--[endif]--
>Road restrictions
and signage for
hazard – key road
access to high
hazard areas will
be gated and
signed

<!--[if !supportLists]-->• <!--
[endif]-->***Anticipate next
call for 17:00
Wednesday***

Chris
Christopher Duffy
Executive Director, Operations &
Recovery Transition
EMERGENCY MANAGEMENT

BRITISH COLUMBIA

Block A - Suite 200 2261 Keating X
Road

Saanichton, BC CANADA V8W 2A5

Ph: 250.952.4544 Fax: 250.952.4888

24 hour Emergency Reporting:

1.800.663.3456

www.embc.bc.ca

From: [Crebo, David GCPE:EX](#)
To: [Hancock, Tom ENV:EX](#); [Dhanowa, Damon ENV:EX](#); [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: Fwd: Updated Com Materials for Mt Polley
Date: Tuesday, August 5, 2014 9:25:34 PM
Attachments: [KM_MtPolleyTailingsBreach.docx](#)
[ATT00001.htm](#)
[Q&A_MtPolleyTailingsPondBreach-Aug2014.docx](#)
[ATT00002.htm](#)
[Mt Polley Mine Breach Aug 5 7 pm.docx](#)
[ATT00003.htm](#)
[MA Mount Polley update Aug.6 2014 #1.docx](#)
[ATT00004.htm](#)

FYI

Sent from my iPhone

Begin forwarded message:

From: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Date: August 5, 2014 at 7:42:00 PM PDT
To: GCPE Comm Directors <PABDirectors@Victoria1.gov.bc.ca>, GCPE
Comm Managers <PABCOMM@Victoria1.gov.bc.ca>
Cc: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>, "Gordon, Matt
GCPE:EX" <Matt.Gordon@gov.bc.ca>
Subject: FW: Updated Com Materials for Mt Polley

Attached are updated:

Key Messages

QA

Situation Report as of 7 pm

I will share with all GCPE com directors and managers to forward to their MO's.

Mt Polley Tailings Breach Key Messages

On the breach at Mt. Polley dam:

- We are devoting every appropriate resource to working with local officials to clean up the site, mitigate any impacts to communities and the environment, and investigate the cause of the breach
- We will determine the cause of the event and we are determined to prevent an incident like this from happening again
- Any potential environmental impact from the tailings pond water on the local watershed is unknown at this time but all efforts are being made to make a determination as soon as possible
- There is a precautionary water ban advisory not to drink or bathe in the water and not to allow pets or livestock to drink the water
- Water tests have been sent for analysis and will determine the full extent of potential environmental impacts with results expected later this week
- Mine Inspectors are on-site investigating the cause of the breach and I can't speculate on the findings

On Mt Polley mine and the process moving forward:

- The investigation determining what caused the breach will take several months
- Inspectors of Mines and other agencies will undertake a comprehensive investigation of the failure to determine root causes for the breach
- Lessons learned will be applied to other mines in the province as appropriate
- Imperial Metals announced that the mine is now in care and maintenance and not operating

On previous incidents and mine safety:

- In the last 40 years, there have been no tailings dam breaches of this magnitude in BC
- 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

- 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
- BC has some of the highest safety standards when it comes to permitting and operating mines and Imperial Metals would not have received any approvals to operate in BC if they had not measured up to those standards

Background:

Update

Minister Bennett arrived on-site on August 5th, 2014 with support from other ministry staff and Geotech Engineers are on the ground to determine cause of the breach and will conduct an investigation going forward.

Minister Bennett is in Likely attending meetings where he is engaging local residents and media about the current situation and the steps being taken to mitigate as many impacts as possible for those affected in the coming days.

Incident:

Early in the morning of August 4 the tailings pond dam at the Mt. 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. Hazletine Creek flows out of Polley Lake and the flow of contaminated water continued into Quesnel Lake. The flow out of the breach has decreased dramatically, but has not completely stopped. This is a large breach and extremely rare. Ministry of Energy and Mines officials do not recall anything of this magnitude.

The environmental impact of the contaminated water on the local watershed is unknown at this time. Cariboo Regional District issued a water ban advisory not to drink or bath in the water.

The waterways affected by the ban, which earlier included Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek, now also include the entire Quesnel and Cariboo Rivers systems right up to the Fraser River.

August 6, 2014

Ministry of Energy and Mines

MEDIA ADVISORY

WILLIAMS LAKE – Bill Bennett, Minister of Energy and Mines and Responsible for Core Review will provide an update on the Mount Polley tailings pond breach today in Williams Lake.

Bennett will available to province-wide media via media conference call.

Event Date: August 6, 2014

Time: 1 p.m.

Location:

XXXX

XXXX

Williams Lake, BC

Special Instructions:

Dial in numbers:

1-XXXXXXX toll free from Canada

604-XXXXXXX from Vancouver

Participant Pass Code: s.17

Contact: Jake Jacobs
Media Relations
Ministry of Energy and Mines and
Responsible for Core Review
Ph. 250 952-0628

Mt. Polley Mine Dam Breach – August 5, 2014 – 7 pm

Below is an update on the current status and steps being taken as of August 5, 2014 – 7 pm as reported out by the Ministry of Energy and Mines, Ministry of Environment, Cariboo Regional District, Emergency Management BC and Imperial Metals. Today's 9:30 am update follows. As more information becomes available it will be communicated to the public and the media.

Ministry of Energy and Mines Actions

- Released a statement province-wide at 10:30 am from Minister of Energy and Mines Bill Bennett expressing government concerns and actions to date
- Minister Bennett flew to Williams Lake arriving 2:30 pm and began an extensive media availability and attended the 4 pm community meeting in Likely
- MEM GCPE arranging and confirming potential media availability in Williams Lake Aug 6 at 1 pm. Public Safety communications director will be on site to provide support if it moves forward
- Geotech Engineers are on the ground to determine cause and plans going forward.
- Local West Fraser is sending two tug boats, being deployed to gather log debris and monitor water levels
- The water flows have slowed but not stopped. Efforts are being made to keep water to 1.7m or less to prevent overflow over tails.
- 3rd party water sampling to occur on Quesnel Lake. Should be on the lake tomorrow.
- Drones will be deployed for recon.
- First Nations asked why then fish floating dead. Mine rep said not from chemicals, likely bodily injury from rush of debris -Traditional lands for Williams Lake and Soda Creek FN and said major concerns but no contact from industry. Suggested they send a liaison to the Emergency Operation Center if the Regional District agrees
- Was noted that no breach of this magnitude in 40 years

Ministry Of Environment Actions

- Sent a boat crew for visual recon and collect some samples
- Samples were taken for metals and ions, as well as bacterial
- The lake profile looks doesn't look too unusual, PH levels are ok, while turbidity is slightly elevated. Additional sampling is taking place.
- No dead fish observed for the 12hrs they were on Quesnel Lake
- Northern Health notes MoE asked her what to test, asks for frankness on what is in the tailings, that turbidity is not really relevant
- FN wants Mt Polly wants to do monitoring per their agreements
- Will be collecting upstream samples as well, though priority given to downstream.
- MoE to do daily sampling and noted the company has their own contractor in place to take over.
- It was noted three days is earliest for sample results in part because it is hard to transport out of Williams Lake.
- Some samples were retained as legal samples, but those they can share they will
- -Dr Parker, Hlth, asked if safe for the kids camp on Quesnel Lake (N/E of Hazeltine lake) can swim safely. He's not comfortable saying it's safe until samples returned.
- D. Weir from water stewardship says they will be ordering containment and in absence of an MoE order, will order Polley Lake elevation levels.

Cariboo Regional District Actions

- Held a 4 pm community meeting in Likely attended by about 200 people and media
- Water is being supplied to those that need it.
- There is strong desire to get the message out that the Cariboo is not closed for business/tourism
- They are communicating directly to media and via Facebook
- Parks asking if Cedar Pt Park needs to continue to be closed.
- Those along Quesnel Lake were asked to leave (three campers) due to road impacts.

Emergency Management BC Actions

- Confirmed communications director for Public Safety will arrive in Williams Lake Aug 6 at 9:30 am to provide communications support

Imperial Metals Actions

- Imperial Metals CEO Brian Kynock held a 3 p m press conference where the company he addressed the drinking ban, stating we should err on the side of caution.
- He stated the wastewater is not toxic and almost meets drinking water standards. But the discharge of solids remains a concern
- Kynoch apologized and says he knows it's going to take a long time to earn the community's trust back.

Mt. Polley Mine Dam Breach – August 5, 2014 – 9:30 am

Situation

Mt. Polley Mine is owned by Imperial Metals and is approximately 30 kms from the community of Likely. The tailing pond at Mt. Polley Mine is 4 kms by 4 kms. Exact volume is unknown.

Early in the morning of August 4 the tailings pond dam at the Mt. 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. Hazletine Creek flows out of Polley Lake and the flow of contaminated water continued into Quesnel Lake. The flow out of the breach has decreased dramatically, but has not completely stopped. This is a large breach and extremely rare. Ministry of Energy and Mines officials do not recall anything of this magnitude in at least the last 25 years.

RCMP, Mt. Polley Mine executives, Ministry of Environment, Emergency Management BC, Ministry of Transportation, Cariboo Regional District, Search and Rescue and Cariboo Dam Safety, responded to the event.

Cause of the breach is unknown at this time. The environmental impact of the contaminated water on the local watershed is unknown at this time. Effluent from copper-gold mine operations can include such harmful chemicals as arsenic, mercury, and sulphur.

Cariboo Regional District issued a water ban advisory not to drink, bath or feed livestock drawn from the following waterways - including Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek, and the entire Quesnel and Cariboo Rivers systems right up to the Fraser River.

The ban 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.

Initially it was believed the small town of Likely was not directly affected because it was unclear how many people in the town used water from Quesnel Lake. Since then, the Cariboo Regional District has decided to start delivering water to Likely because the main supplier of bottled water in the area, a small grocery store, could not keep up with the demand.

There have been no reports of injuries or people getting sick from drinking water. There have been no reports of property damage. Search and rescue crews notified campers in the immediate area, and it appears they have set up camp elsewhere without any problems.

Emergency Management BC Actions

Emergency Management BC and its Northeast Provincial Regional Emergency Operations Centre in Prince George is assisting the Cariboo Regional District Emergency Operations Centre with the coordination of information and support to decision making. EMBC is also supporting search and rescue crews going door-to-door to recommend evacuation from park sites and notify water users of the water ban. Due to the influx of tourists in to the area over the long weekend, the numbers of people affected is unconfirmed but the Cariboo Regional District estimates range up to 300.

Concerns have been raised about boating safety on Mount Polley Lake and EMBC was advised August 8 a qualified individual is being brought to boom the wood debris on Quesnel Lake at the outlet of Hazeltine Creek. This work should start within the next day or two.

A public information line has been set up by the Cariboo Regional District, 250-398-5581, and updates will be posted to the Cariboo Regional District's emergency operations Facebook page.

Ministry of Environment Actions

The Ministry says it further water testing will be required before the full extent of potential environmental impacts can be known. Water sampling took place the evening of Aug 4th. Samples will be sent for analysis on Aug 5th, with results expected within 3 days. MoE conservation officers are investigating the breach, with MEM mine inspectors.

Ministry of Energy and Mines Actions

The Ministry of Energy and Mines sent two mine inspectors to investigate the cause and monitor the site by helicopter. The first report is expected August 5. Media have reported the Mt. Polley dam breached three months ago and that mine employees warned Imperial Metals executives it could happen again. MEM officials investigated the incident on May 24 and have said internally it was not a breach. It was a problem in how they managed the height of the water behind the dam and in a different area than the dam failure. The height of the water at the time of the breach will form part of the investigation. To date, Imperial Metals has been compliant with respect to recent orders regarding dam safety inspections.

Imperial Metals Actions

Released a statement acknowledging the breach, does not know the cause, and is working with government officials. Imperial Metals CEO is now on site.

Q&A – Mount Polley Tailings Pond Breach

Has it been stopped? If no, when can we expect it to?

- The tailings flow from the dam has slowed considerably
- The ground around the breach, Polley Lake, the Hazeltine Creek is still stabilizing
- The public has been asked to stay away from this area and boaters on Quesnel Lake should stay away from Hazeltine Creek Lake and Quesnel Lake

When was the last time there was a major tailings pond breach like this in BC?

- In the last 40 years, there have been no major tailings dam breaches of this magnitude in BC

What is Imperial Metal's track record? Have they had similar incidents?

- In general, Imperial Metals has been compliant with the Health, Safety and Reclamation Code and their Mines Act permit conditions
- BC has some of the highest safety standards when it comes to permitting and operating mines and Imperial Metals would not have received any approvals to operate in BC if they had not measured up to those standards

What are the next steps in the process?

- Inspectors of Mines and other agencies will undertake a comprehensive investigation of the failure to determine root causes if possible
- Lessons learned will apply to other mines in the province

How long will the process take?

- The investigation determining what caused the breach will take several months

Has the mine been shut down? For how long?

- The mine cannot operate without a location to store tailings
- Imperial Metals announced that the mine is now in care and maintenance

Given the incident at Mt. Polley, will you be inspecting all mines with tailings ponds....and when?

- If the investigations shows early on that the breach was a result of a design failure or practise at Mt. Polley then directions will be given to other applicable mine sites and inspections will be undertaken at other applicable mines in BC
- Any and all lessons learned once the investigation is completed will apply to other mines in the province

How does BC compare to other jurisdictions on tailing pond breaches?

- BC has experienced a very positive record. This is the first significant tailings dam failure in recent history.

What are the potential penalties if it has been determined Imperial Metals did not follow regulations?

- It's too early to determine whether Imperial Metals did not follow regulations
- Prosecution is possible pursuant to Section 37 of the BC Mines Act. This can be applied to a person who contravenes a provision of the Act, Code or the regulation or who impedes an investigation
- The decision to prosecute is made by Crown Counsel based on evidence that we collect

How many other mines does Imperial Metals operate in BC?

- Imperial Metals has a half interest in Huckleberry Mine near Houston, BC and Red Chris Mine is under construction and nearing operation status in Northwest BC

How does this impact the economic health of the mining industry?

- This is difficult to assess at this time. It will certainly bring more scrutiny to mine permitting processes
- Having said that, mining has a significant history and a promising future in BC
- Not only has the mining industry helped shape British Columbia over the last 150 years, it will play an important role in creating a strong and stable economic future

What is the Mt Polley dam's track record? Have there been any deficiencies noted?

- Mount Polley is up to date with geotechnical reporting requirements, including the annual dam safety inspection requirements. 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.
- The Mount Polley mine has a valid Mines Act permit. The company has been generally compliant with the Health, Safety and Reclamation Code and their Mines Act permit conditions.

How was the dam at Mt Polley being operated?

- Mount Polley Mining Corporation (the Permittee) is currently authorized by the Ministry of Environment to discharge 1.4 million cubic metres of water per year into Hazeltine Creek
- The company recently submitted an application in July 2014 to increase the volume of treated water to be discharged from the site to 3 million cubic metres per year

What follow up actions does the ministry take and does it trigger a review of other province wide mining operations?

- Inspectors of Mines and other agencies will undertake a comprehensive investigation of the failure to determine root causes if possible
- Lessons learned will be applied to other mines in the province as appropriate

Who is responsible for the cleanup? Does the situation change if Imperial Metals goes bankrupt?

- Clean up from this accident is the responsibility of the company
- The ministry holds \$14.5 million in security bonding for the Mt Polley mine in the event that the company defaults on its responsibilities.

The 2011 Gary Olding report implies the dam was overbuilt because a water discharge permit was delayed – is this true?

- The cause of the breach is under investigation and I can't speculate on the findings.
- Mount Polley is up to date with geotechnical reporting requirements, including the annual dam safety inspection requirements.
- 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.

Further background on the Olding Report & Recent permit history:

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- In 2009 Mt Polley applied for an permit amendment to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
- Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party.
- This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazelton Creek.
- The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was approved in 2012.
- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazelton Creek.
- This application was received by the ministry this summer, and is being considered.

How many active metal mines are there in BC?

Ministry of Energy and Mines - Active metal Mines – as of Aug 2014

Mine Name	Company	Commodity	Location	Production Start
Bralorne	Bralorne Gold Mines Ltd	Gold	Near Whistler/Pemberton	May 2011
Copper Mountain	Copper Mtn Mining Corp	Copper, gold, silver	Near Princeton	June 2011
Endako	Thompson Creek Minerals	Molybdenum	Near Fraser Lake	1965
Gibraltar	Taseko Mines Ltd	Copper,	Near Williams Lake	Re-opened by

		molybdenum		Taseko in 2004 (previously operated 1972– 1998)
Highland Valley Copper	Teck Resources Ltd	Copper, molybdenum	Near Ashcroft	1986 (this is when the Lornex and Valley Copper mines merged)
Huckleberry	Imperial Metals Corp	Copper, molybdenum	Near Houston	1997
Mount Polley	Imperial Metals Corp	Copper, gold, silver	Near Williams Lake	Re-opened 2005 (previously operated 1997 to 2001)
Mt. Milligan	Thompson Creek Metals Company	Copper, gold, silver	156 km northwest of Prince George	August 2013
Myra Falls	Nyrstar Inc	Copper, gold, silver, lead, zinc	Near Campbell River	circa 1966
New Afton	New Gold Inc	Gold	Near Kamloops	June 2012
Bonanza Ledge	Barkerville Gold	Gold		July 2014

Note* Bonanza Ledge does not have a tailings impoundment

From: [Hancock, Tom ENV:EX](#)
To: [Halls, Lori D ENV:EX](#); [Crebo, David GCPE:EX](#); [Standen, Jim ENV:EX](#); [Dhanowa, Damon ENV:EX](#)
Cc: [Sawatsky, Kim ENV:EX](#)
Subject: MMP briefing
Date: Tuesday, August 5, 2014 9:24:44 PM

MMP will be going to Mt Polley on Thursday morning. She will need a briefing on the situation. I have only spoken to her briefly via text so I'm not sure if we will have to do the briefing late tomorrow or on Thursday morning. It will have to be by phone.

I will let you know details as soon as I hear.

Thanks,

Tom

From: [Halls, Lori D ENV:EX](#)
To: [McGuire, Jennifer ENV:EX](#); [Standen, Jim ENV:EX](#)
Subject: RE: Pollution Abatement Order
Date: Tuesday, August 5, 2014 9:33:00 PM

Thanks Jennifer.

Heads up....we may need to pull you into a briefing for Minister Polak late tomorrow or early Thursday. She will be arriving in Likely on Thursday and going to Mt Polley.

From: McGuire, Jennifer ENV:EX
Sent: Tuesday, August 5, 2014 9:30 PM
To: Halls, Lori D ENV:EX; Standen, Jim ENV:EX
Subject: RE: Pollution Abatement Order
It has not been made public – it was just issued. It can be made public at the right time tomorrow. I have asked Heather to review the Q&A's to reflect it's issuance and to start to prepare materials for posting on the ministry web site – same as we did for Lemon.

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 9:12 PM
To: McGuire, Jennifer ENV:EX; Standen, Jim ENV:EX
Subject: Re: Pollution Abatement Order
Jennifer is the Order made public ? And if not can it be? I assume we could make it public?

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 8:20 PM, "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca> wrote:

A PAO has been issued by the Ministry to ensure the company takes timely action.

JLM

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Bunce, Hubert ENV:EX <Hubert.Bunce@gov.bc.ca>
Sent: Tuesday, August 5, 2014 8:10 PM
To: 'dreimer@mountpolley.com'; 'chughes@mountpolley.com'
Cc: Hoffman, Al MEM:EX; McGuire, Jennifer ENV:EX; Matscha, Gabriele ENV:EX; Metcalfe, Shelley ENV:EX; Bourgeois, Jason ENV:EX
Subject: Pollution Abatement Order

Hubert Bunce

A/Mining Director, Environmental Protection
Regional Operations

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

2080A Labieux Road
[Nanaimo BC V9T 6J9](#)

Please consider the environment before printing this email
BC Pollution Free

<714463747144644338[2].doc>

From: [Halls, Lori D ENV:EX](#)
To: [Hancock, Tom ENV:EX](#)
Cc: [Crebo, David GCPE:EX](#)
Subject: Fwd: Pollution Abatement Order
Date: Tuesday, August 5, 2014 9:55:45 PM
Attachments: [714463747144644338\[2\].doc](#)
[ATT00001.htm](#)

Tom

This evening we issued a Pollution Abatement Order to the company. We will make it public tomorrow for media availability. Can discuss more on our morning call.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

Begin forwarded message:

From: "McGuire, Jennifer ENV:EX" <Jennifer.Mcguire@gov.bc.ca>
Date: August 5, 2014 at 8:20:36 PM PDT
To: "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca>, "Standen, Jim ENV:EX" <Jim.Standen@gov.bc.ca>
Cc: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>
Subject: Fw: Pollution Abatement Order

A PAO has been issued by the Ministry to ensure the company takes timely action.

JLM

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Bunce, Hubert ENV:EX <Hubert.Bunce@gov.bc.ca>
Sent: Tuesday, August 5, 2014 8:10 PM
To: 'dreimer@mountpolley.com'; 'chughes@mountpolley.com'
Cc: Hoffman, Al MEM:EX; McGuire, Jennifer ENV:EX; Matscha, Gabriele ENV:EX; Metcalfe, Shelley ENV:EX; Bourgeois, Jason ENV:EX
Subject: Pollution Abatement Order

Hubert Bunce
A/Mining Director, Environmental Protection
Regional Operations
ph (250) 751-3254 fax (250) 751-3103
2080A Labieux Road
[Nanaimo BC V9T 6J9](#)

Please consider the environment before printing this email
BC Pollution Free

From: [Halls, Lori D ENV:EX](#)
To: [Hancock, Tom ENV:EX](#)
Cc: [Crebo, David GCPE:EX](#); [Dhanowa, Damon ENV:EX](#)
Subject: Re: Park Closure
Date: Tuesday, August 5, 2014 10:57:36 PM

I will have regional staff look into this. I was advised park was closed.

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

On Aug 5, 2014, at 10:29 PM, "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca> wrote:

FYI see below.

Begin forwarded message:

From: "Oakes, Coralee CSCD:EX" <Coralee.Oakes@gov.bc.ca>
Date: August 5, 2014 at 10:26:44 PM PDT
To: "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca>
Subject: Re: Park Closure

We were there today and there were still a lot of people there

Sent from my iPad

On Aug 5, 2014, at 11:56 AM, "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca> wrote:

Minister,
FYI, the below information is in regards to Cedar Point Park.
Thanks,
Tom

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 5, 2014 11:55 AM
To: Hancock, Tom ENV:EX
Subject: Park Closure

Cedar Point Park is situated on Quesnel Lake, six km from the town of Likely.

Cedar Point, is a Class "C" park and operated by a board from Likely. This park is occupied year round by a member of the board.

Park operator closed the park as result of the breach and evacuated all campers and visitors

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service
5th Floor, 2975 Jutland Road, Victoria
Phone (250)387-6177
Fax (250)953-3414
Email: lori.d.halls@gov.bc.ca

From: [Leahy, Jeff ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Bell, Tom G ENV:EX](#)
Subject: Re: Park Closure
Date: Tuesday, August 5, 2014 11:31:02 PM

Will do ...heading to Williams Lake tomorrow and will confirm

Jeff Leahy
Regional Director Thompson Cariboo
Ministry of Environment, BC Parks
PH: [250-371-6304](tel:250-371-6304)
Cell: [250-371-1085](tel:250-371-1085)



On Aug 5, 2014, at 10:56 PM, "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca> wrote:

Jeff can you follow up....seems as if maybe the park isn't closed?

Lori Halls
Assistant Deputy Minister
BC Parks and Conservation Officer Service

Begin forwarded message:

From: "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca>
Date: August 5, 2014 at 10:29:29 PM PDT
To: "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca>
Cc: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Dhanowa, Damon ENV:EX" <Damon.Dhanowa@gov.bc.ca>
Subject: Fwd: Park Closure

FYI see below.

Begin forwarded message:

From: "Oakes, Coralee CSCD:EX" <Coralee.Oakes@gov.bc.ca>
Date: August 5, 2014 at 10:26:44 PM PDT
To: "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca>
Subject: Re: Park Closure

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Sent from my iPad

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Sent: Tuesday, August 5, 2014 11:55 AM

To: Hancock, Tom ENV:EX

Subject: Park Closure

Cedar Point Park is situated on Quesnel Lake,
six km from the town of Likely.

Cedar Point, is a Class "C" park and operated
by a board from Likely. This park is occupied
year round by a member of the board.

Park operator closed the park as result of the
breach and evacuated all campers and visitors

Lori Halls

Assistant Deputy Minister

BC Parks and Conservation Officer Service

5th Floor, 2975 Jutland Road, Victoria

Phone (250)387-6177

Fax (250)953-3414

Email: lori.d.halls@gov.bc.ca

**MINISTRY OF ENVIRONMENT
INFORMATION NOTE**

August 5, 2014

File: 11678

CLIFF/tracking #: 208625

PREPARED FOR: Premier's Office

ISSUE: Tailings Pond Breach at Mt. Polley Mine on August 4, 2014 and subsequent discharge of tailings supernatant into waterways

BACKGROUND:

Mt Polley is a copper-gold mine-mill complex located near Likely, British Columbia. They have had an effluent permit (#11678) with the Ministry of Environment since 1997. The mine temporarily closed in 2001 and reopened in 2005.

Mount Polley mill tailings and site runoff water are collected in the Tailings Storage Facility. The supernatant from the Tailings Storage Facility is re-cycled through the mill process (no discharge). Mount Polley mine operates with an annual water surplus, and currently had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.

The last significant amendment in 2009 authorized Mt Polley to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek (dam seepage is different than supernatant – it's supernatant that seeps through the dam, see Appendix A for map), limited to 35% of that creek's daily flowrate, with contaminant limits, and requiring an annual discharge plan. The Permit also requires a Communication Plan for sharing environmental data with the Soda Creek Indian Band (Xats'ull) and the Williams Lake Indian Band (T'exelc).

Mt Polley submitted a permit amendment request in July 2014, to request authorization to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazeltine Creek. The treatment technology will be finalized based on the results of the reverse osmosis pilot treatment plant that operated for a short period in December 2013.

Since 2012, Mt Polley has had five non-compliance incidents of mostly a minor nature. In response the Ministry issued three advisory letters and one warning letter. Only one of these incidents involved the tailings storage facility. This incident, on May 24, 2014, found the freeboard level in the tailings storage facility below permitted levels due to heavy rainfall.

Recent tailings impoundment supernatant data show that selenium levels exceed drinking water guideline, particularly in samples taken before May 2014. Sulphate did not exceed the drinking water guideline in May 2014, but there have been slight exceedences over the last few years.

Molybdenum levels are well below drinking water levels in the last two years, but concentrations had been approaching the guideline in earlier years; recent molybdenum concentrations in the supernatant exceeded livestock watering and irrigation guidelines.

Organic carbon concentrations exceed the 4mg/L guidelines for chlorination (water treated with chlorine that contains >4mg/L of organic carbon can result in toxic chlorination by-products).

Furthermore, the data for the tailings impoundment supernatant show that it was not extremely toxic.

DISCUSSION:

Ministry staff continue to work with partner agencies and the company to develop a safe and effective monitoring program in the short and long term and to determine the extent/degree of environmental impact.

NEXT STEPS:

Ministry of Environment staff were on Quesnel Lake and Quesnel River on Monday August 4 and Tuesday August 5 conducting monitoring. Staff will be providing information relative to water and health use restrictions to the Interior Health Authority as sampling results become available.

Attachments: Appendix A

Contact:

Jennifer McGuire
Environmental Protection

250-361-5944

Alternate Contact:

Hubert Bunce
Environmental
Protection

250-713-2711

Prepared by:

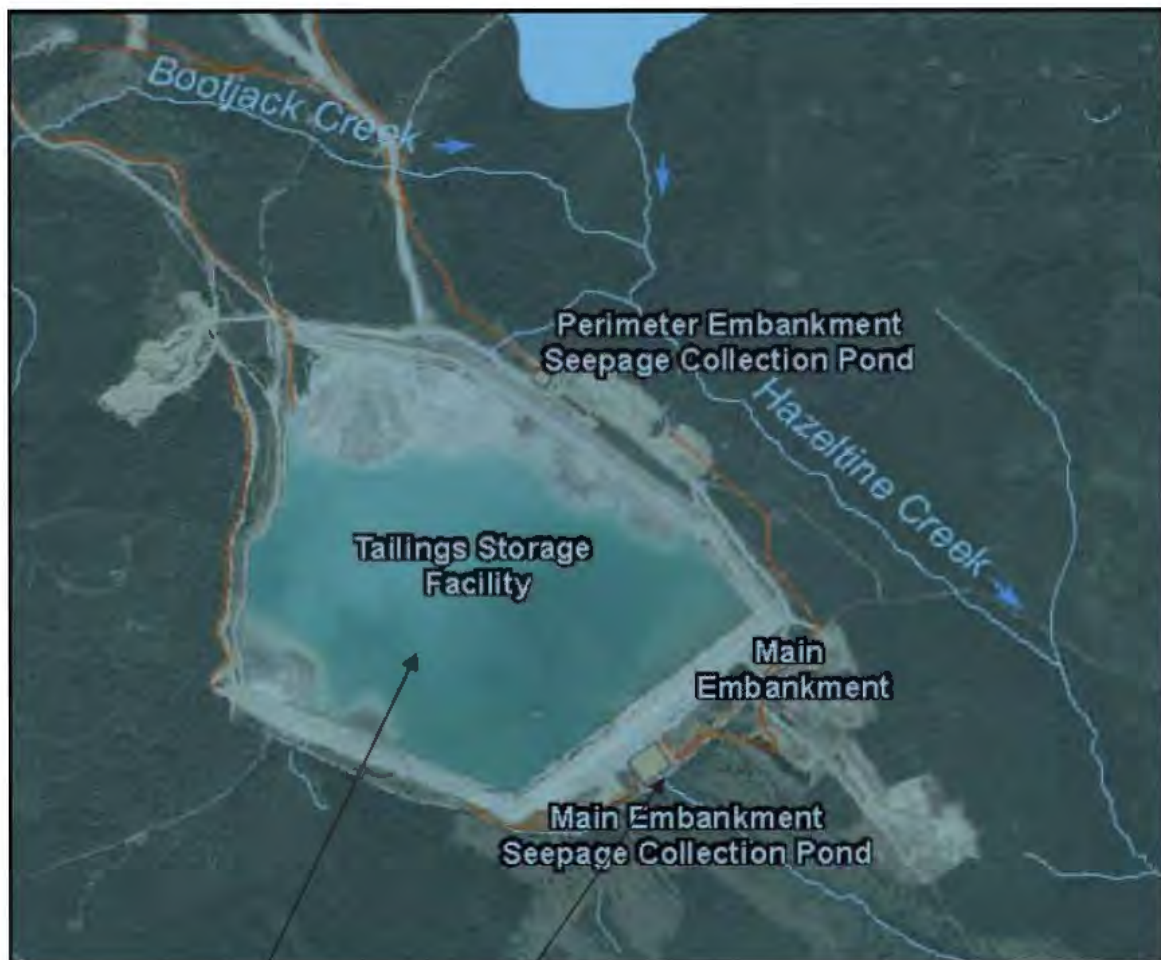
Shelley Metcalfe
Environmental Protection

604-817-9900

[Insert additional rows if needed]

Reviewed by	Initials	Date
DM	LH for WS	Aug 14/14
DMO	VJ	Aug 14/14
ADM		
Dir./Mgr.	JMcGuire	Aug 5/14
Author		

Appendix A – Map of Mt Polley Tailings Storage Facility



Supernatant

Dam seepage (approx)

Quin, Melissa ENV:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 4:53 AM
To: ENV Emergency Incident Contacts
Subject: Executive update - Mount Polley Mine

At 03:45 Aug 4, 2014 MoE was notified of a tailings pond breach at Mount Polley Mine in south-central BC.

- Situation is unclear at this point in time.
- no injuries occurred and staff at being evacuated from areas of impact.
- mine management have been notified and are responding.
- impact to water quality and downstream are unknown.
- Town of likely fire rescue are assessing the situation.

Ministry of Health duty officer and interior health authority have been contacted advised.

- further updates will be made when new information becomes available.

Laurie Boyle

Sent from my iPhone

Quin, Melissa ENV:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 11:56 AM
To: ENV Emergency Incident Contacts
Subject: Mount Polley Mine Update #3 DGIR 141460

The following information is provided by EMBC RDM at 11:00 Aug 4.

Situation: STABLE

- No injuries or private property damage has been reported.
 - No Evac Orders or Alerts are anticipated at this time.
 - Technical evaluation of debris flow path and SAR/RCMP public safety reconnaissance ongoing.
 - CRD EOC activated and coordinating.
 - CRD EOC in consultation with IHA, has initiated the dissemination of DO NOT USE public messaging while technical assessments of water quality are ongoing by IHA staff.
- Integrated mapping between the CRD EOC and the Mine site engineering staff is being done to determine the potential impact area.
- CRD EOC and SME Task Force working together to interpret heli-recce information and support consistency of downstream public alerting:
- MOE Water dispersion modelling support
- IHA - Environmental Officer - Public Health orders and Warnings
- Inspector of Mines - Contents and properties of effluent

Watercourse observation points are being established with SAR assistance to determine the migration of effluent towards the major water bodies while reconnaissance is underway.

Next update anticipated at 1300 hrs. unless the information becomes available.

Laurie Boyle

Quin, Melissa ENV:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 8:25 AM
To: ENV Emergency Incident Contacts
Subject: Mount Polley Mine# 2

Incident update #2

- overflight has been arranged to be completed approximately 930 hours.
- dam contained approximately 5,000,000 m³ of water.
- no evidence of flooding at this point in time but Highstream flows are indicated.
- SAR are notifying residents and immediate area.
- conference call is expected to be initiated upon completion of overflight to update stakeholders.
- further updates to follow as information becomes available.

Sent from my iPhone

> On Aug 4, 2014, at 4:53 AM, "Boyle, Laurie F ENV:EX" <Laurie.Boyle@gov.bc.ca> wrote:

>

> At 03:45 Aug 4, 2014 MoE was notified of a tailings pond breach at Mount Polley Mine in south-central BC.

> - Situation is unclear at this point in time.

> - no injuries occurred and staff at being evacuated from areas of impact.

> - mine management have been notified and are responding.

> - impact to water quality and downstream are unknown.

> - Town of likely fire rescue are assessing the situation.

> Ministry of Health duty officer and interior health authority have been contacted advised.

> - further updates will be made when new information becomes available.

>

> Laurie Boyle

>

>

> Sent from my iPhone

Quin, Melissa ENV:EX

From: Crebo, David GCPE:EX
Sent: Monday, August 4, 2014 7:55 AM
To: Boyle, Laurie F ENV:EX
Cc: ENV Emergency Incident Contacts
Subject: Re: Executive update - Mount Polley Mine

FYI media are aware...Opinion 250 in PG called looking for more info. They've heard the breach has impacted both Polley and Quesnel Lakes.

Sent from my iPhone

> On Aug 4, 2014, at 4:54 AM, "Boyle, Laurie F ENV:EX" <Laurie.Boyle@gov.bc.ca> wrote:
>
> At 03:45 Aug 4, 2014 MoE was notified of a tailings pond breach at Mount Polley Mine in south-central BC.
> - Situation is unclear at this point in time.
> - no injuries occurred and staff at being evacuated from areas of impact.
> - mine management have been notified and are responding.
> - impact to water quality and downstream are unknown.
> - Town of likely fire rescue are assessing the situation.
> Ministry of Health duty officer and interior health authority have been contacted advised.
> - further updates will be made when new information becomes available.
>
> Laurie Boyle
>
>
> Sent from my iPhone

Quin, Melissa ENV:EX

From: Dhanowa, Damon ENV:EX
Sent: Wednesday, August 6, 2014 4:26 PM
To: Jackson, Vickie ENV:EX
Cc: Jonker, Jennifer B ENV:EX
Subject: Re: Local Farmer's concern over Tailings Pond Contamination of Fraser River

Will do

Thanks,

:D

250.884.7656

Sent from my BlackBerry 10 smartphone

From: Jackson, Vickie ENV:EX
Sent: Wednesday, August 6, 2014 4:23 PM
To: Dhanowa, Damon ENV:EX
Cc: Jonker, Jennifer B ENV:EX
Subject: RE: Local Farmer's concern over Tailings Pond Contamination of Fraser River

Damon-

Until we have more information tomorrow when the testing results are coming in for analysis, please use this general information:

- The Interior Health Authority water quality advisory currently includes the entire Quesnel and Cariboo Rivers systems right up to, but not including the Fraser River. See <http://www.cariboord.bc.ca/> for more information.
- The Province, including the Ministry of Energy and Mines and the Ministry of Environment are working closely with local authorities to protect human health and the environment and to ensure that up to date information is available to anyone who might be impacted by this event.
- Assessment of Water Survey of Canada (WSC) River level Stations on the Quesnel and Fraser Rivers appear to indicate elevated flows in the Quesnel River at Likely on the morning of August 4th in the Quesnel River at Quesnel Aug. 4 in the evening. The WSC level Station at Marguerite on the Fraser River downstream of Quesnel shows no change in water level from Aug 4 evening.
- Current flows in the Fraser river are expected to provide high levels of dilution to any water resulting from the Mt. Polley spill.
- Any water resulting from the Mt. Polley spill is not expected to impact fish currently in, or entering, the Fraser River.

*Vickie Jackson
Manager of Executive Operations
Ministry of Environment
Victoria*

250 356-5763

From: Dhanowa, Damon ENV:EX
Sent: Tuesday, August 5, 2014 12:05 PM
To: Jackson, Vickie ENV:EX; Jonker, Jennifer B ENV:EX
Subject: Fw: Local Farmer's concern over Tailings Pond Contamination of Fraser River

Can you ask about risk to the LM. I know time lines for testing.

Thanks,

:D

250.884.7656

Sent from my BlackBerry 10 smartphone

From: Menezes, Penelope <Penelope.Menezes@leg.bc.ca>
Sent: Tuesday, August 5, 2014 12:00 PM
To: Dhanowa, Damon ENV:EX
Cc: Reid.MLA, Linda LASS:EX
Subject: Local Farmer's concern over Tailings Pond Contamination of Fraser River

Hello Damon:

We received a call from one of the big local farmers of Richmond who is very concerned about the tailings pond contamination of the Fraser River. He would like to know what is being done about it and how long will the arsenic take to reach Richmond. Could you please give us an update on this?

Thanks,
Penelope

Penelope Menezes
CA to the Hon. Linda Reid
*MLA for Richmond East &
Speaker of the Legislative Assembly of British Columbia
Vice-Chair of the Canadian Region of CWP
130-8040 Garden City Road
Richmond, BC V6Y 1K3
604.775.0891*

Quin, Melissa ENV:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 1:59 PM
To: ENV Emergency Incident Contacts
Subject: Re: Mount Polley Mine Update #4 DGIR 141460

The following information is provided by EMBC RDM at 13:00 Aug 4.

Situation: STABLE

- No injuries or private property damage has been reported.
 - No Evac Orders or Alerts are anticipated at this time.
 - Technical evaluation of debris flow path and SAR/RCMP public safety reconnaissance ongoing.
 - CRD Williams Lake EOC activated and coordinating.
 - CRD EOC in consultation with IHA, has initiated the dissemination of DO NOT USE public messaging while technical assessments of water quality are ongoing by IHA staff.
- Integrated mapping between the CRD EOC and the Mine site engineering staff is being done to determine the potential impact area.
- CRD EOC and SME Task Force working together to interpret heli-recce information and support consistency of downstream public alerting:
- 4 MoE ROB staff from Williams Lake are going to the site to begin sampling. Estimated ETA on site 3:00 PM
- IHA - Environmental Officer - Public Health orders and Warnings
- Inspector of Mines - Contents and properties of effluent

Watercourse observation points are being established with SAR assistance to determine the migration of effluent towards the major water bodies while reconnaissance is underway.

Stakeholder conference call at 1700 hrs. today.

Laurie Boyle

Quin, Melissa ENV:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 7:11 PM
To: ENV Emergency Incident Contacts
Subject: Re: Mount Polley Mine Update #5 DGIR 141460

The following information is provided update by EMBC 1800 August 4, 2014.

- situation is stable.
- conference call at 1700 hrs. with all stakeholders involved
- MOE ROB sampling team is on Quesnel Lake and will be sampling until dusk.
- preliminary sample results expected within three days.
- COS are investigating with Ministry of Mine investigation team
- approximately 10,000,000 m³ of water was lost from pond and 4 1/2 million cubic meters tailings and fines.
- Polley lake water level has risen 1.7 m.
- there is debris in Quinell Lake but it is stable.
- there is concern regarding further debris flows to Quesnel Lake.
- evacuation of campers and local campsites has occurred.
- cautionary water advisory is in place and will remain until sample results are known.

Next update at 1300 hrs. August 5, 2014.

La

Quin, Melissa ENV:EX

From: Fraser, John Paul GCPE:EX
Sent: Monday, August 4, 2014 7:14 PM
To: Dyble, John C PREM:EX
Cc: Zacharias, Mark ENV:EX; Shoemaker, Wes ENV:EX; Standen, Jim ENV:EX; Halls, Lori D ENV:EX; Jackson, Vickie ENV:EX
Subject: Re: Tailings Pond spill cariboo

Yes we are fully engaged. Our folks with program and responders in the field have been active throughout the day. Our ENV shop has stick-handled most of the calls, our EMBC folks have been monitoring Social media and supplying information. Cariboo regional District managing calls and all info related to drinking and weather use bans. EOC has been established and all teams very coordinated. Mining inspectors on site and company CEO is enroute there, landing soon. MBBs MO is in regular contact with home. PO fully engaged and in the loop as well. Have worked channels to ensure company is not invisible, which only drives story. Company has issued release tonight and will on ground to handle media. The breach is large and Global cameras are there, or there soon, to reveal. Won't be pretty. Scale of damage unknown as of now, but very considerable amounts escaped.

Sent from my iPhone

On Aug 4, 2014, at 7:04 PM, "Dyble, John C PREM:EX" <John.Dyble@gov.bc.ca> wrote:

Thanks Mark,

The news coverage talked about a lot of nasty materials like arsenic and mercury. Implying contamination as far as the Fraser.

I hope GCPE are fully engaged.

Hopefully the testing will help to reassure.

John

Sent from my iPad

On Aug 4, 2014, at 6:51 PM, "Zacharias, Mark ENV:EX" <Mark.Zacharias@gov.bc.ca> wrote:

Hi John:

Yes, MoE is fully engaged and our environmental protection officers (Jim Standen) and conservation officers (Lori Halls) are on site. As of 1700 today, there doesn't appear to be any evidence of chemical contamination that would affect public and environmental health but MoE staff will be sampling until dusk tonight.

I'm sure you already have this but here's the Coles Notes from the 1700 call:

- Breach occurred at 1:10am Aug 4, 2014

- Lost:
 - 10 million cubic meters of water (supernatant) from the dam
 - 4.5 million cubic meters of ground rock
- Breach is 300m in length in the tailings dam
- Polley Lake saw an increased water level – an increase of 1.7 m
- Polley lake outlet is plugged – concern about another flush of materials from Polley Lake
- MEM inspectors have been on scene this morning and more arriving tonight
- Mine stated that there is no cyanide or arsenic in the released materials, and that the tailings are benign
- Mine stated that the fish kill was likely due to physical mortality rather than chemical ...(physical means that the fish got tossed around and battered from the flow)
- Plume is observed in Quesnel Lake at Hazeltine Creek discharge
- A lot of floating debris in Quesnel Lake – boating hazard ...no boat closures just recommendations that boaters stay away
- Closures of forest rec sites and access roads are closed for safety precautions and some roads are washed out
- Both IHA and Northern Health medical health officers were on the call.

The next coordination call is Aug 5 at 1300.

Regards, Mark
250-415-6466

From: Dyble, John C PREM:EX
Sent: Monday, August 4, 2014 6:34 PM
To: Zacharias, Mark ENV:EX
Subject: Fwd: Tailings Pond spill cariboo

Mark? Are you on this?

Sent from my iPad

Begin forwarded message:

From: "Dyble, John C PREM:EX" <John.Dyble@gov.bc.ca>
Date: August 4, 2014 at 6:31:20 PM PDT
To: "Shoemaker, Wes ENV:EX" <Wes.Shoemaker@gov.bc.ca>, "Wanamaker, Lori JAG:EX" <Lori.Wanamaker@gov.bc.ca>
Cc: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>
Subject: Tailings Pond spill cariboo

Not sure how we are reacting to this. Didn't see anything until the news tonight.

Who us out on site, etc.

John

Sent from my iPad

Quin, Melissa ENV:EX

From: Fraser, John Paul GCPE:EX
Sent: Monday, August 4, 2014 7:17 PM
To: Dyble, John C PREM:EX
Cc: Zacharias, Mark ENV:EX; Shoemaker, Wes ENV:EX; Standen, Jim ENV:EX; Halls, Lori D ENV:EX; Jackson, Vickie ENV:EX
Subject: Re: Tailings Pond spill cariboo

This has just come in from MEM folks at site:

The flow out of the breach has decreased dramatically but has not completely stopped. Imperial and an MEM Regional Inspector are monitoring it now by helicopter.

This is a large breach and extremely rare - Ministry does not recall anything of this magnitude in at least the last 25 years. Imperial estimates 10 Million cubic metres of water and 4.5 million cubic metres of fine sand.

Imperial has been compliant with respect to recent orders regarding dam safety inspections.

Sent from my iPhone

On Aug 4, 2014, at 7:13 PM, "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca> wrote:

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 <John.Dyble@gov.bc.ca>
Date: August 4, 2014 at 6:31:20 PM PDT
To: "Shoemaker, Wes ENV:EX"
 <Wes.Shoemaker@gov.bc.ca>, "Wanamaker, Lori
 JAG:EX" <Lori.Wanamaker@gov.bc.ca>
Cc: "Fraser, John Paul GCPE:EX"
 <JohnPaul.Fraser@gov.bc.ca>
Subject: Tailings Pond spill cariboo

Not sure how we are reacting to this. Didn't see anything until the news tonight.

Who us out on site, etc.

John

Sent from my iPad

Quin, Melissa ENV:EX

From: Nicoll, Sara ENV:EX
Sent: Tuesday, August 5, 2014 1:27 PM
To: Dhanowa, Damon ENV:EX
Cc: Ainsworth, Diana ENV:EX
Subject: FYI - correspondence on tailings pond breach Mount Polley Mine

Hi Damon:

FYI, I have confirmed with MOE and MEM staff that Minister Bennett is taking the lead on the tailings pond breach issue generally – so far the half dozen incomings to MMP do not pose any questions, so I'm flagging the issue for redirect to MEM.

Sara Nicoll
Manager, Correspondence Unit
Ministry of Environment
250 387-9874

Quin, Melissa ENV:EX

From: Standen, Jim ENV:EX
Sent: Tuesday, August 19, 2014 3:35 PM
To: Halls, Lori D ENV:EX; Lee, Bonnie NRTS:EX
Cc: Gilmour, Lori ENV:EX; Llewellyn-Thomas, Marnie ENV:EX
Subject: RE: Urgent Request: Mt Polley breach commitments & other concerns- Meeting today?

DMO would like one of us to acknowledge receipt and since you are in a call I am happy to do that.

From: Halls, Lori D ENV:EX
Sent: Tuesday, August 19, 2014 3:29 PM
To: Lee, Bonnie ENV:EX; Standen, Jim ENV:EX
Cc: Gilmour, Lori ENV:EX; Llewellyn-Thomas, Marnie ENV:EX
Subject: RE: Urgent Request: Mt Polley breach commitments & other concerns- Meeting today?

Jennifer spoke with this individual at the Lively Town Hall. I will follow up with her and ensure we have a written response to his specific questions. In the meantime, please send an acknowledge of receipt of the inquiry, recognize that Jennifer McGuire has spoken to him and that we will provide a response in writing shortly.

From: Lee, Bonnie ENV:EX
Sent: Tuesday, August 19, 2014 3:27 PM
To: Standen, Jim ENV:EX; Halls, Lori D ENV:EX
Cc: Gilmour, Lori ENV:EX; Llewellyn-Thomas, Marnie ENV:EX
Subject: Urgent Request: Mt Polley breach commitments & other concerns- Meeting today?
Importance: High

Hi Jim and Lori,

Please see the email at the bottom of the chain from s.22 Wes would like one of you to call contact s.22 today regarding his concerns. If we don't have the answers to his questions at this time, then an email acknowledging receipt of his correspondence today would be sufficient.

Let me know if you have any questions about this.

Thanks,
Bonnie

Bonnie Lee | Senior Executive Assistant | Deputy Minister's Office | Ministry of Environment | Phone 250.387.5429

From: Hancock, Tom ENV:EX
Sent: Tuesday, August 19, 2014 8:43 AM
To: Shoemaker, Wes ENV:EX
Subject: Fwd: Mt Polley breach commitments & other concerns- Meeting today?

Begin forwarded message:

From: "Hancock, Tom ENV:EX" <Tom.Hancock@gov.bc.ca>
Date: August 14, 2014 at 5:03:48 PM PDT
To: "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca>
Subject: FW: Mt Polley breach commitments & other concerns- Meeting today?

Lori,
Donna received the emails below and was hoping that we could find the answers to the highlighted questions. Would you be able to get this to the appropriate people.
Thanks,
Tom

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

From: Mills, Shane [<mailto:Shane.Mills@leg.bc.ca>]
Sent: Thursday, August 14, 2014 10:03 AM
To: Hancock, Tom ENV:EX
Subject: Fw: Mt Polley breach commitments & other concerns- Meeting today?

Give me a call

Sent from my BlackBerry 10 smartphone on the TELUS network.

Original Message

From: Barnett, Donna <D.Barnett@leg.bc.ca>
Sent: Wednesday, August 13, 2014 11:27 AM
To: Mills, Shane
Subject: Fw: Mt Polley breach commitments & other concerns- Meeting today?

I need someone to respond to this fellow. s.22 and is upset. As far as being notified re community meetings etc or announcement that is a local issue I will respond too but need someone asap to contact him with answers to his technical issues

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

From: Barnett.MLA, Donna
Sent: Wednesday, August 13, 2014 11:05 AM Pacific Standard Time
To: Barnett, Donna
Subject: FW: Mt Polley breach commitments & other concerns- Meeting today?

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

From: s.22
Sent: August 13, 2014 11:02 AM
To: Barnett.MLA, Donna
Subject: FW: Mt Polley breach commitments & other concerns- Meeting today?

Hi Donna,
Thanks for calling me back. Below see the thread of my recent emails with the various authorities.

I and others in Likely are getting concerned about information we are receiving being "managed". To quote an email I received from others in

Likely: "I sense a lot of mistrust building up in the community - mistrust because there is a lack of open and full disclosure in a timely manner."

We are troubled by the scenario of yesterday's meeting & announcement.

After I found out about a supposed meeting down town (about 1:10 PM), I called s.22 & spoke to s.22 who obviously VERY reluctantly told me about "an announcement on the beach" at 2 PM. s.22 was obviously already meeting with the invited parties, so I am wondering just what is going on here. Trying to minimize information available to, & input from, locals?

A couple other people found out accidentally by similar methods, and it is unsettling to us. Other people just happened to be getting their mail or stopping at the store as the news conference commenced.

It is also a bit galling that people that don't live here in Likely (i.e. The natives) appear to be getting priority inclusion in the process, when there are qualified people in Likely & area that could also be included.

Thanks,

s.22

On 14-08-12 12:41 PM, "Al Richmond" <arichmond@cariboord.bc.ca> wrote:

>Hi s.22 It's my understanding Min Oakes is meeting with the Chamber in
>Likely today. We haven't yet scheduled another community meeting as of
>now. We are waiting for the announcement on water test results

>

>Al Richmond

>

>

>

>> On Aug 12, 2014, at 12:36 PM, s.22

> s.22

>>wrote:

>>

>> Hello Al, Minister Bennett & other Government Ministers, et al,

>>

>> I have been s.22 and have spent the morning

>>catching up on the news. I see there is some good news, but still a

>>lot of unknowns.

>>

>> Some concerns:

>> 1) At the meeting on August 7, a commitment was made by the Enviro

>>Ministry Rep to provide the background WQ info (i.e. BEFORE the spill)

>>for Quesnel Lake. I have not been able to locate this in the data

>>posted to date.

>>

>> 2) What is going on with the TSS readings in the WQ data provided? I

>> see that the RDL has gone from 1 mg/L to as high as 12 mg/L. Why? 1

>> mg/L is considered a normal RDL for TSS in WQ analysis, and certainly

>> raising it to 12 results in meaningless results that will not allow

>> for the determination of a possible plume location.

>>

>> 3) In addition, I can find no data for the extent of the suspended solids plume in the Quesnel Lake, another commitment (Mines Minister Bennett) not yet kept.

>>

>> 4) What is the estimated time to pump down Polley Lake at the estimated pumping rate ($8,000 + 800 = 8,800$ GPM)?

>>

>> 5) I notice the commitments to include the 1st Nations, Interior Health, CRD, etc, in consultations with short to long term monitoring and remediation programs, but am concerned if real local (i.e LIVE in Likely) people will be included. There are knowledgeable local people with technical qualifications & experience in mining and environmental management who may be able to provide appropriate local representation.

>>

>> 6) Good to see that something is developing to support displaced Mt Polley unionized employees, but what will be done to assist those people who also worked at the site, but not for Mt Polley directly, but through various contractors and other companies?

>>

>> 7) I noticed in Coralee Oakes email just received, that there is another meeting in Likely this afternoon? I can see no information or posting about this on any of the websites!

>>

>> Thanks,

>>

>> s.22

>>

>>> On 14-08-07 9:42 AM, s.22 wrote:

>>>

>>> Hi Al,

>>> Thanks for the response. s.22 also called me and assured me that cleanup of the small debris will be included in any discussions regarding the Mt Polley remediation plan.

>>>

>>> I do note this morning that there appears to be some turbidity in the water s.22 now, in that it is less clear than normal. I am assuming that that is the suspended solids (TSS) starting to show up.

>>>

>>> At the previous meeting (Aug 5, 2014) I had asked Minister Bennett to provide immediate daily information on the TSS readings, & not wait until

>>> 3 or 4 days later, but of course that has not occurred. That information should be available daily (a simple field instrument reading) as it will allow for almost real-time tracking of the suspended solids plume. As Brian Kynoch mentioned, the Conductivity readings should also be read in the field as well, and normally field water temperature and DO (dissolved oxygen) will also be recorded.

>>> Thanks,

>>> s.22

>>>

>>>> On 14-08-06 10:35 PM, "Al Richmond" <arichmond@cariboord.bc.ca> wrote:

>>>>

>>>> Thanks for your emails s.22 I will request our staff look into

>>>> matter and get back to you.

>>>>

>>>>

>>>>

>>>>

>>>> Al Richmond

>>>>

>>>>

>>>>

>>>>> On Aug 6, 2014, at 10:20 PM, s.22

>>>>> s.22

>>>>> wrote:

>>>>>

>>>>> Hi All,

>>>>> A couple of pictures showing the SMALL debris that is building up

>>>>> on the shores of Quesnel Lake. I had forwarded this to the CRD

>>>>> earlier today asking for clarification on responsibility, but did

>>>>> not receive anything back except an acknowledgement (see thread

>>>>> below).

>>>>>

>>>>> I tried to forward to the BC Energy & Mines & Environment

>>>>> Ministries, but they do not list an email address.

>>>>>

>>>>> Hopefully cleanup of this material is included in the cleanup

>>>>> action plan that Mt Polley is required to submit by Aug 15, 2014

>>>>> (as per newsroom.gov.bc.ca). As noted below: "This debris material

>>>>> has been deposited on beaches all the way from Hazletine Creek,

>>>>> and will be redistributed for years to come, particularly at

>>>>> spring high water."

>>>>>

>>>>> Thanks,

>>>>> s.22

>>>>>

>>>>>> On 14-08-06 2:38 PM, s.22 wrote:

>>>>>>

>>>>>> s.22

>>>>>>> See the picture s.22 taken this morning. There is even more

>>>>>>> debris there now, and lots more out in the water.

>>>>>>>

>>>>>>>

>>>>>>> s.22

>>>>>>>

>>>>>>> So, who pays to protect & cleanup this material?

>>>>>>>

>>>>>>> Also note below a photo of the beach s.22 further up the

>>>>>>> lake.

>>>>>>>

>>>>> This debris material has been deposited on beaches all the way
>>>>> from Hazletine creek, and will be redistributed for years to
>>>>> come, particularly at spring high water.

>>>>>

>>>>> Thanks,

>>>>> s.22

>>>>>

>>>>>

>>>>>

>>>>>

>>>>>

>>>>> Sent from my iPhone

>>>>>

>>>>>

>>>>>

>>>>>

>>>>> _____

>>>>>

>>>> *****DISCLAIMER*****

>>>> This e-mail and any files transmitted with it are confidential and
>>>>intended solely for the use of the individual or entity to whom they
>>>>are addressed. If you are not the named addressee, please notify
>>>>the sender immediately by e-mail. If you have received this e-mail
>>>>by mistake, delete this e-mail from your system. If you are not the
>>>>intended recipient you are hereby notified that using, disclosing,
>>>>copying or distributing the contents of this information is
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>>>> *****DISCLAIMER*****

>>

>>

From: [Swan, Chris L ENV:EX](#)
To: [Austin, Joyce ENV:EX](#)
Cc: ["Morgan Melnychuk"](#)
Subject: FW: Client Service Request Forms
Date: Tuesday, August 5, 2014 1:08:59 PM
Attachments: [20140805125539.pdf](#)

Hi Joyce,

I'm not sure I did these right. One is for Maxxam and one is for PESC (not sure who the contact is).

Can you pass them along.

I am heading to the field now...any problems – send me an e-mail which I will see later.

Thanks,

Chris

From: Bings, Dan P ENV:EX
Sent: Tuesday, August 5, 2014 12:58 PM
To: Swan, Chris L ENV:EX
Subject: Client Service Request Forms



**MINISTRY OF ENVIRONMENT
CLIENT SERVICE REQUEST**

8992

CONTACT: CHRIS SWAN

DATE REQUESTED: 2014, AUG, 05

LOCATION: WILLIAMS LAKE

PROGRAM: MOE/EPD ^{YY} ^{MM} ^{DD} RegOps

CLIENT CODE: STUDY CODE:

SERVICE REQUEST ID: _____

SERVICE DESCRIPTION: LEGAL SAMPLE

DETAILS: 4 depths (3 bottles each depth) at location: Quesnel Lake @ Hazelhine Creek Confluence.

ESTIMATED

COST: \$

ESTIMATED

COMPLETION DATE: / /
 YY MM DD

MINISTRY

APPROVAL: _____ DATE: ____/____/____
YY MM DD

[illegible]

EXPENSES (\$) .

LABOUR (\$) .

LABOUR (\$)

TOTAL COST (\$) .

DATE COMPLETED: / /
 YY MM DD

APPROVED BY:

MOE-2014-00223 - ESSP
Page 3 of 51

LABORATORY

From: [vanAggelen,Graham \[PYR\]](#)
To: [Austin, Joyce ENV:EX](#)
Subject: FW: Mine Legals on their way
Date: Tuesday, August 5, 2014 10:21:15 AM
Attachments: [RE samples from the tailing dam break PESC question .msg](#)
Importance: High

Joyce: As noted below Craig will be the contact for samples from Hubert

From: Buday,Craig [PYR]
Sent: August 5, 2014 10:19 AM
To: Bunce, Hubert ENV:EX
Cc: vanAggelen,Graham [PYR]
Subject: FW: Mine Legals on their way
Importance: High

Hi Bruce,

I will be the contact at PESC for the mine legal samples. Could you please provide me with the shipping details such as the courier waybill number & the estimated time of arrival for the samples? Also which toxicology & chemistry parameters are the samples to be analyzed for?

Thanks

Craig Buday

Regulatory Toxicologist, Pacific & Yukon Laboratory for Environmental Testing / Centre des sciences environnementales du Pacifique

Emergencies Operational Analytical Laboratories and Research Support Division /
Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche
Water S&T Directorate | Direction des sciences et de la technologie, Eau
Science & Technology Branch | Direction générale des sciences et de la technologie
Environment Canada | Environnement Canada
2645 Dollarton Highway | 2645 autoroute Dollarton
North Vancouver, B.C. V7H1B1

From: vanAggelen,Graham [PYR]
Sent: August 5, 2014 10:05 AM
To: Buday,Craig [PYR]; Saffari,Mark [PYR]; Soo,Andrew [PYR]; Strub,Richard [PYR]
Subject: Mine Legals on their way
Importance: High

Legal toxicity and supporting chem samples being flow out today.

Craig: please respond to Bruce and let him know you will be the contact for the lab. Get flt arrival details

Graham C. van Aggelen

Manager/Gestionnaire Pacific Environmental Science Centre

Pacific & Yukon Laboratory for Environmental Testing | Centre des sciences environnementales du Pacifique
Emergencies Operational Analytical Laboratories and Research Support Division |
Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche
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Science & Technology Branch | Direction générale des sciences et de la technologie
Environment Canada | Environnement Canada
2645 Dollarton Highway | 2645 autoroute Dollarton
North Vancouver, B.C. V7H1B1
email: Graham.vanaggelen@ec.gc.ca
Telephone | Téléphone (604) 903-4444
Facsimile | Télécopieur (604) 903-4408
Government of Canada Gouvernement du Canada
Website | Site Web www.ec.gc.ca

From: [Bunce, Hubert ENV:EX](#)
To: [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#); [vanAggelen, Graham \[PYR\]](#); [Swan, Chris L ENV:EX](#)
Cc: [Metcalf, Shelley ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#)
Subject: RE: samples from the tailing dam break?? PESC question
Date: Tuesday, August 5, 2014 9:59:43 AM

Expect Legal samples including RBT Bioassay being shipped out of WL by plane this pm. quickest possible turn around appreciated

Hubert Bunce
A/Mining Director, Environmental Protection
Regional Operations

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

2080A Labieux Road

Nanaimo BC V9T 6J9

Please consider the environment before printing this email
BC Pollution Free

From: Downie, AJ ENV:EX
Sent: Tuesday, August 5, 2014 9:55 AM
To: Austin, Joyce ENV:EX
Cc: Bunce, Hubert ENV:EX; Metcalf, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Hi Joyce,

Please see the cc: list of this email for the section heads (and Regional Director) who are likely involved with this file.

Thanks,

AJ

A.J. Downie

Section Head, Impact Assessment - Mining

Ministry of Environment

Environmental Protection Division, Regional Mining Operations

phone: (250) 354-6750

email: AJ.Downie@gov.bc.ca

 Eco-Tip: Printing e-mails is usually a waste.

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 5, 2014 9:47 AM
To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Riedler, Harold ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Can you please let PESC know if they will be receiving an increase in the number of samples for legal analysis as soon as possible? Please copy me on the e-mail as well.

Thank you,

Joyce

From: vanAggelen,Graham [PYR] [<mailto:Graham.VanAggelen@ec.gc.ca>]

Sent: Tuesday, August 5, 2014 9:32 AM

To: Austin, Joyce ENV:EX

Subject: samples from the tailing dam break??

Joyce: Are aware if the lab will be receiving any legal samples from the tailing dam break that happened? Just wanting to ensure if there is we can turn results around ASAP. graham

Graham C. van Aggelen

Manager/Gestionnaire Pacific Environmental Science Centre

Pacific & Yukon Laboratory for Environmental Testing | Centre des sciences environnementales du Pacifique

Emergencies Operational Analytical Laboratories and Research Support Division |

Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche

Water S&T Directorate | Direction des sciences et de la technologie, Eau

Science & Technology Branch | Direction générale des sciences et de la technologie

Environment Canada | Environnement Canada

2645 Dollarton Highway | 2645 autoroute Dollarton

North Vancouver, B.C. V7H1B1

email: Graham.vanaggelen@ec.gc.ca

Telephone | Téléphone (604) 903-4444

Facsimile | Télécopieur (604) 903-4408

Government of Canada Gouvernement du Canada

Website | Site Web www.ec.gc.ca

From: [Swan, Chris L ENV:EX](#)
To: [Austin, Joyce ENV:EX](#)
Subject: FW: samples from the tailing dam break?? PESC question
Date: Wednesday, August 6, 2014 12:24:20 PM

Can you forward one of those CSRs to Andrew at PESC.

Also, do I send you two more for the legal samples we are shipping today? Or do I send them directly to Maxxam and PESC?

Thanks,
Chris

From: Soo,Andrew [PYR] [mailto:Andrew.Soo@ec.gc.ca]
Sent: Wednesday, August 6, 2014 10:18 AM
To: Swan, Chris L ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Chris,

Received the 15 samples, have started analysis.
Please forward a copy of the CSR or the office billing code.

Thanks

Andrew Soo

Chemist/Chemiste,
Pacific & Yukon Laboratory for Environmental Testing/Centre des sciences environnementales du Pacifique
Emergencies Operational Analytical Laboratories and Research Support Division/
Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche
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Andrew.Soo@ec.gc.ca
Telephone | Téléphone (604) 903-4455
Facsimile Télécopieur (604) 903-4408
Government of Canada Gouvernement du Canada
Website | Site Web www.ec.gc.ca

From: Buday,Craig [PYR]
Sent: August 6, 2014 9:13 AM
To: Chris.Swan@gov.bc.ca
Cc: vanAggelen,Graham [PYR]; Soo,Andrew [PYR]; Saffari,Mark [PYR]
Subject: FW: samples from the tailing dam break?? PESC question

Hi Chris,

I received the cooler of samples from Harold Reidler yesterday at 5:30pm. We are currently processing the samples right now.

Andrew Soo (Andrew.Soo@ec.gc.ca) is the lead analyst for the file.

Craig Buday

Regulatory Toxicologist, Pacific & Yukon Laboratory for Environmental Testing / Centre des sciences environnementales du Pacifique

Emergencies Operational Analytical Laboratories and Research Support Division /
Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche
Water S&T Directorate | Direction des sciences et de la technologie, Eau
Science & Technology Branch | Direction générale des sciences et de la technologie
Environment Canada | Environnement Canada
2645 Dollarton Highway | 2645 autoroute Dollarton
North Vancouver, B.C. V7H1B1

From: vanAggelen,Graham [PYR]
Sent: August 5, 2014 1:19 PM
To: Buday,Craig [PYR]; Saffari,Mark [PYR]
Subject: FW: samples from the tailing dam break?? PESC question

Appears there is no tox... ; chemistry only

From: Swan, Chris L ENV:EX [<mailto:Chris.Swan@gov.bc.ca>]
Sent: August 5, 2014 1:14 PM
To: Bunce, Hubert ENV:EX; Downie, AJ ENV:EX; Austin, Joyce ENV:EX; vanAggelen,Graham [PYR]
Cc: Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX; McGuire, Jennifer ENV:EX; Zacharias-Homer, Christa ENV:EX; Epps, Brian FLNR:EX; Epps, Deb ENV:EX
Subject: RE: samples from the tailing dam break?? PESC question

FYI: I did not take RBT bioassays. The lake profile was good at the mouth of Hazeltine Ck– close to background. Given the lack of a change in conductivity, pH etc, and the good D.O. levels (see attached). The tailings water was passing the RBT bioassays already so it didn't seem reasonable to take a RBT tox test.

From: Bunce, Hubert ENV:EX
Sent: Tuesday, August 5, 2014 10:00 AM
To: Downie, AJ ENV:EX; Austin, Joyce ENV:EX; 'Graham.vanaggelen@ec.gc.ca'; Swan, Chris L ENV:EX
Cc: Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX; McGuire, Jennifer ENV:EX; Zacharias-Homer, Christa ENV:EX
Subject: RE: samples from the tailing dam break?? PESC question

Expect Legal samples including RBT Bioassay being shipped out of WL by plane this pm. quickest possible turn around appreciated

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: Downie, AJ ENV:EX
Sent: Tuesday, August 5, 2014 9:55 AM
To: Austin, Joyce ENV:EX
Cc: Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Hi Joyce,
Please see the cc: list of this email for the section heads (and Regional Director) who are likely involved with this file.
Thanks,
AJ

A.J. Downie
Section Head, Impact Assessment - Mining
Ministry of Environment
Environmental Protection Division, Regional Mining Operations
phone: (250) 354-6750
email: AJ.Downie@gov.bc.ca

 Eco-Tip: Printing e-mails is usually a waste.

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 5, 2014 9:47 AM
To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Riedler, Harold ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Can you please let PESC know if they will be receiving an increase in the number of samples for legal analysis as soon as possible? Please copy me on the e-mail as well.

Thank you,

Joyce

From: vanAggelen,Graham [PYR] [<mailto:Graham.VanAggelen@ec.gc.ca>]

Sent: Tuesday, August 5, 2014 9:32 AM

To: Austin, Joyce ENV:EX

Subject: samples from the tailing dam break??

Joyce: Are aware if the lab will be receiving any legal samples from the tailing dam break that happened? Just wanting to ensure if there is we can turn results around ASAP. graham

Graham C. van Aggelen

Manager/Gestionnaire Pacific Environmental Science Centre

Pacific & Yukon Laboratory for Environmental Testing | Centre des sciences environnementales du Pacifique

Emergencies Operational Analytical Laboratories and Research Support Division |

Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche

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Science & Technology Branch | Direction générale des sciences et de la technologie

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email: Graham.vanaggelen@ec.gc.ca

Telephone | Téléphone (604) 903-4444

Facsimile | Télécopieur (604) 903-4408

Government of Canada Gouvernement du Canada

Website | Site Web www.ec.gc.ca

From: [Swan, Chris L ENV:EX](#)
To: [Bunce, Hubert ENV:EX](#); [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#)
Cc: [Metcalf, Shelley ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Epps, Deb ENV:EX](#); [Bings, Dan P ENV:EX](#); [Green, Jack E ENV:EX](#); [Prediger, Yvonne ENV:EX](#); [Keogh, Kym A ENV:EX](#)
Subject: Quesnel Lake sampling update from Tues Aug 5/14
Date: Wednesday, August 6, 2014 7:50:00 AM

Tues, Aug 5/14 update:

- we took legal samples at the mouth of Hazeltine Creek again - this time closer in as a good portion of the debris has moved out into the lake; RBT tox, metals, gen ions (pH, turbidity etc.), nutrients, TOC, mercury and bacteria

- we also took the same parameters (non-legal) at 5 sampling sites spread out upstream from the town of Likely where the concentration of residences is located. We were in this area following the public meeting and many people came out on their docks to ask what we were doing. They were all glad to see us.

- I will be sending the coolers by air again today; non-legals to Maxxam as well as the bacteria legals, and the rest of the legals to PESC.

- there was no apparent flow of water down Hazeltine Creek and the turbidity and other parameters were very similar to what I recall of the background levels in Quesnel lake.

- the lighter debris (bark, twigs) reached the bridge yesterday. The larger tree islands were within site of Cedar Pt. park. The volume of woody debris is massive. When we came home yesterday there were big flood lights and an excavator at the Likely bridge site....looking very small compared to the volume of wood we've been seeing in the lake which is moving downstream fairly quickly.

Thanks to my field crews the past few days, Dan Bings, Jack Green and Russ Bobrowski (FLNRO, fisheries). Also to all of you who've been taking care of getting the samples picked up at the airport and expedited for analysis.

Next sites to sample:

1. Wed - Quesnel Lk east of Hazeltine Ck (Mitchell Bay)
2. Polley Lake? current danger with water held high by debris; samples form shore?
3. resample townsite and u/s? I am expecting access problems due to massive piles of debris movign toward the bridge. Too dangerous now to access via water (we got their just in time).
4. Quesnel River downstream
5. Fraser at Marguerite?
6. other?

I could use help with:

- plotting GPS coordinates and making a map to go with the water samples
- figuring out the speed of the Quesnel River (there is a WSC flow station at the Gravelle Ferry bridge, and possibly at Likely as well) and how fast the plume would be moving downstream...to guide downstream sampling since I am not picking up the plume with my probes I can't really tell where the water went (i.e both east and west in the lake as it hit the far shore initially or ??????)

Cheers,
Chris

From: [Berke, Norman \[PYR\]](#)
To: [Austin, Joyce ENV:EX](#)
Subject: RE: CSR
Date: Thursday, August 7, 2014 6:55:16 AM

Hi Joyce,
Which Client Code and Study Code would you like us to charge this too?
Thanks

Norm Berke

Planning & Systems Technician/Technicien de planification et de systemes
Pacific & Yukon Laboratory for Environmental Testing/Centre des sciences environnementales du
Pacifique
Emergencies Operational Analytical Laboratories and Research Support Division/
Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche
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Norman.Berke@ec.gc.ca
Telephone | Téléphone (604) 903-4407
Facsimile Télécopieur (604) 903-4408
Government of Canada Gouvernement du Canada
Website | Site Web www.ec.gc.ca

From: Soo, Andrew [PYR]
Sent: August 6, 2014 4:00 PM
To: Berke, Norman [PYR]
Subject: FW: CSR

From: Austin, Joyce ENV:EX [<mailto:Joyce.Austin@gov.bc.ca>]
Sent: August 6, 2014 3:46 PM
To: Soo, Andrew [PYR]
Cc: Swan, Chris L ENV:EX
Subject: CSR

Hi Andrew,

Please find attached the CRS for the amount you request of \$2047. The number on this CSR is 11536. I'm mailing it to you today please expect the original by tomorrow.

Regards,

Joyce

From: [vanAggelen,Graham \[PYR\]](#)
To: [Austin, Joyce ENV:EX](#)
Subject: RE: legal bands - we need more asap
Date: Wednesday, August 6, 2014 1:51:35 PM

Joyce: s.22 Norm is going to contact Chris. Failing not having the bands. An acceptable practice is for Samplers to tape the cooler's lid opening and initial the tap cross sections.

From: Austin, Joyce ENV:EX [<mailto:Joyce.Austin@gov.bc.ca>]
Sent: August 6, 2014 1:39 PM
To: vanAggelen,Graham [PYR]; PESC Sample Manager [PYR]
Cc: Riedler, Harold ENV:EX; Swan, Chris L ENV:EX
Subject: RE: legal bands - we need more asap
Importance: High

Hi Nick and Graham,

Can you please ship the legal bands ASAP to Chris Swan? Please find her address below.

Thank you,

Joyce

From: Morgan Melnychuk [<mailto:MMelnychuk@maxxam.ca>]
Sent: Wednesday, August 6, 2014 12:25 PM
To: Swan, Chris L ENV:EX; Austin, Joyce ENV:EX
Cc: Riedler, Harold ENV:EX
Subject: RE: legal bands - we need more asap

We don't have them.

Harold, do you have the bands?

MORGAN MELNYCHUK
Project Manager
mmelnychuk@maxxam.ca

Direct 604 638-8034

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maxxam.ca

From: Swan, Chris L ENV:EX [<mailto:Chris.Swan@gov.bc.ca>]
Sent: August-06-14 12:22 PM
To: Morgan Melnychuk; Austin, Joyce ENV:EX
Subject: legal bands - we need more asap

I'm not sure who sends the legal bands to us but we need more asap.

Thanks,
Chris

Chris Swan B. Sc.
Impact Assessment Biologist
Ministry of Environment
Environmental Protection
Ste. 400 - 640 Borland St.
Williams Lake, BC V2G 4T1
ph (250) 398-4567: fax (250) 398-4214
Chris.Swan@gov.bc.ca

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From: [Berke,Norman \[PYR\]](#)
To: [Swan, Chris L ENV:EX](#)
Cc: [PESC Sample Manager \[PYR\]](#); [vanAggelen,Graham \[PYR\]](#); [Austin, Joyce ENV:EX](#)
Subject: RE: legal bands - we need more asap
Date: Wednesday, August 6, 2014 2:00:32 PM

Hi Chirs,

We can send some up tomorrow, how many do you need? And are these samples for Environment Canada to analyze?

In the meantime.

Wrap duck tape around the cooler and initial the tape at the seam of the lid and at the end piece of the tape. Also ensure that all your containers are sealed with initialled taped and as well.

Norm Berke

Planning & Systems Technician/Technicien de planification et de systemes
Pacific & Yukon Laboratory for Environmental Testing/Centre des sciences environnementales du Pacifique
Emergencies Operational Analytical Laboratoires and Research Support Division/
Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche
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Telephone | Téléphone (604) 903-4407
Facsimile Télécopieur (604) 903-4408
Government of Canada Gouvernement du Canada
Website | Site Web www.ec.gc.ca

From: PESC Sample Manager [PYR]
Sent: August 6, 2014 1:39 PM
To: Leung,Benjamin [PYR]; Berke,Norman [PYR]
Subject: FW: legal bands - we need more asap
Importance: High

From: Austin, Joyce ENV:EX[SMTP:JOYCE.AUSTIN@GOV.BC.CA]
Sent: Wednesday, August 06, 2014 1:38:56 PM
To: vanAggelen,Graham [PYR]; PESC Sample Manager [PYR]
Cc: Riedler, Harold ENV:EX; Swan, Chris L ENV:EX
Subject: RE: legal bands - we need more asap
Importance: High
Auto forwarded by a Rule

Hi Nick and Graham,

Can you please ship the legal bands ASAP to Chris Swan? Please find her address below.

Thank you,

Joyce

From: Morgan Melnychuk [<mailto:MMelnychuk@maxxam.ca>]
Sent: Wednesday, August 6, 2014 12:25 PM
To: Swan, Chris L ENV:EX; Austin, Joyce ENV:EX
Cc: Riedler, Harold ENV:EX
Subject: RE: legal bands - we need more asap

We don't have them.

Harold, do you have the bands?

MORGAN MELNYCHUK
Project Manager
mmelnychuk@maxxam.ca

Direct 604 638-8034

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maxxam.ca

From: Swan, Chris L ENV:EX [<mailto:Chris.Swan@gov.bc.ca>]
Sent: August-06-14 12:22 PM
To: Morgan Melnychuk; Austin, Joyce ENV:EX
Subject: legal bands - we need more asap

I'm not sure who sends the legal bands to us but we need more asap.

Thanks,
Chris

Chris Swan B. Sc.
Impact Assessment Biologist
Ministry of Environment
Environmental Protection
Ste. 400 - 640 Borland St.
Williams Lake, BC V2G 4T1
ph (250) 398-4567: fax (250) 398-4214
Chris.Swan@gov.bc.ca

 Please consider the environment before printing this e-mail.

From: [Epps, Deb ENV:EX](#)
To: [Austin, Joyce ENV:EX](#)
Subject: Re: Mount Polley - need lab supplies?
Date: Tuesday, August 5, 2014 11:53:56 AM

Hi joyce, can you please try and call chris at her desk. I am not in office and don't have her phone number. Hopefully she sees the email. Thanks Deb

Sent from my BlackBerry Wireless Handheld

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 05, 2014 11:46 AM
To: Epps, Deb ENV:EX; Bourgeois, Jason ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Maxwell, Jennifer A ENV:EX
Cc: Swan, Chris L ENV:EX
Subject: RE: Mount Polley - need lab supplies?

Already done, Maxxam is going to pick up the samples at the airport (they need the flight info please). They are going to try to get the samples analysed the same day (depending on when they get there). For micro legal analysis there is a protocol problem that they need to let the samples grow for anything between 12-48hrs (total coliforms, fecal – others respectively). So, depending on the test, the minimum time is 12hrs. PESC has also said that they will try their best for give us results in 12hrs but their protocols are a little different than a lab such as Maxxam. I will be coordinating things with them as soon as the samples get to Vancouver.

Morgan has agreed to pick up all the samples at the airport so we need someone in Surrey to go to Maxxam either later on today or early tomorrow morning to take samples over to PESC. Please let me know who that person will be.

Thank you,

Joyce

From: Epps, Deb ENV:EX
Sent: Tuesday, August 5, 2014 11:07 AM
To: Austin, Joyce ENV:EX; Bourgeois, Jason ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX
Cc: Swan, Chris L ENV:EX
Subject: Re: Mount Polley - need lab supplies?

Hi joyce,

Chris swan sent samples to maxxam and is hoping for rush analysis. As well legal samples have been sent to PESC. If you make sure they get processed quickly that would be very helpful.

Thanks for the offer,

Deb

Sent from my BlackBerry Wireless Handheld

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 05, 2014 09:17 AM
To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX
Subject: Mount Polley - need lab supplies?

Hi there,

I saw on the news this morning out the tailings pond at Mount Polley. If there is anything I can do to help with lab supplies or lab analysis (rush analysis), if needed, please let me know.

Regards,

Joyce

Joyce Austin, Ph.D.

Senior Provincial Laboratory Specialist
Environmental Monitoring, Reporting & Economics
Knowledge Management Branch | Ministry of Environment
PO Box [9335 STN PROV GOVT](#)
[Victoria, BC V8W 9M1](#)
Tel.: [250-953-3405](#);
Cell: [250-818 7146](#);
Fax: [250-387-5757](#)

From: [Epps, Deb ENV:EX](#)
To: [Austin, Joyce ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Downie, AJ ENV:EX](#)
Cc: [Swan, Chris L ENV:EX](#)
Subject: Re: Mount Polley - need lab supplies?
Date: Tuesday, August 5, 2014 11:06:36 AM

Hi joyce,

Chris swan sent samples to maxxam and is hoping for rush analysis. As well legal samples have been sent to PESC. If you make sure they get processed quickly that would be very helpful.

Thanks for the offer,

Deb

Sent from my BlackBerry Wireless Handheld

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 05, 2014 09:17 AM
To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX
Subject: Mount Polley - need lab supplies?

Hi there,

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Regards,

Joyce

Joyce Austin, Ph.D.

Senior Provincial Laboratory Specialist
Environmental Monitoring, Reporting & Economics
Knowledge Management Branch | Ministry of Environment
PO Box [9335 STN PROV GOVT](#)
[Victoria, BC V8W 9M1](#)
Tel.: [250-953-3405](#);
Cell: [250-818 7146](#);
Fax: [250-387-5757](#)

From: [Morgan Melnychuk](#)
To: [Austin, Joyce ENV:EX](#)
Subject: Re: Mount Polley
Date: Wednesday, August 6, 2014 10:35:05 AM

Hi Joyce,

Sorry, in a training meeting.

Yes, we did get the samples at 4 pm. I handed the PESC legal cooler to Harold Riedler at that time as well.

We will have results for most today. One micro (non legal) will not be done until tomorrow as it froze in flight. The TDS never got to the lab in time for the to start yesterday, so the results won't be ready until tomorrow at noon.

Per Hubert's instructions I will be sending a partial report for those. As for the legal samples, they will be completed tonight around 6.

Regards,

Morgan

Sent from my iPhone

On Aug 6, 2014, at 10:25 AM, "Austin, Joyce ENV:EX" <Joyce.Austin@gov.bc.ca> wrote:

Hi Morgan,

I called you couple times but didn't want to leave a message, Can you tell me what the status are with the samples? Did you guys get them yesterday?

Thank you,

Joyce

From: Morgan Melnychuk [<mailto:MMelnynchuk@maxxam.ca>]
Sent: Tuesday, August 5, 2014 7:48 AM
To: Austin, Joyce ENV:EX
Cc: Rob Gilbert
Subject: Mount Polley

Hi Joyce,

I saw on the news this morning out the tailings pond at Mount Polley. If there is anything we can do to help with supplies, if needed, please let me know. I don't know who I would contact in the Williams Lake region for sampling. If you have any questions, please let me know.

Regards,

REMINDER: Our new **customer portal** is now accessible directly from our [home page](#).
For more information on how to register, please [click here](#).

MORGAN MELNYCHUK

Project Manager

mmelnychuk@maxxam.ca

Direct 604 638 8034

Toll free 800 655 8566 / Fax 604 630-0110

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From: [Morgan Melnychuk](#)
To: [Austin, Joyce ENV:EX](#)
Cc: [Rob Gilbert](#)
Subject: Re: Mount Polley
Date: Wednesday, August 6, 2014 10:46:37 AM

No worries. Did you want copies of all reports or only the legal ones? Chris informed me more are coming today.

Sent from my iPhone

On Aug 6, 2014, at 10:40 AM, "Austin, Joyce ENV:EX" <Joyce.Austin@gov.bc.ca> wrote:

Thank you Morgan,

I guess I end up sending the e-mail twice by mistake. Please forward the results to me as well once you have them. I have to write a report once they are ready.

I really appreciate that Maxxam went to airport to get the samples yesterday and all the support you have given to this case!

Cheers,

Joyce

From: Morgan Melnychuk [<mailto:MMelnichuk@maxxam.ca>]
Sent: Wednesday, August 6, 2014 10:35 AM
To: Austin, Joyce ENV:EX
Subject: Re: Mount Polley

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Joyce

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Sent: Tuesday, August 5, 2014 7:48 AM
To: Austin, Joyce ENV:EX
Cc: Rob Gilbert
Subject: Mount Polley

Hi Joyce,

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Regards,

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Toll free 800 655 8566 / Fax 604 630-0110

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From: [Epps, Deb ENV:EX](#)
To: [Maxwell, Jennifer A ENV:EX](#); [Dessouki, Tarik ENV:EX](#)
Cc: [Austin, Joyce ENV:EX](#); [Bunce, Hubert ENV:EX](#)
Subject: RE: Mt. Polley Mine Tailings Pond
Date: Tuesday, August 5, 2014 4:01:14 PM

Chris has already contacted the samplers and asked them to collect extra samples. Great timing for the new site.

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*

From: Maxwell, Jennifer A ENV:EX
Sent: Tuesday, August 5, 2014 3:59 PM
To: Dessouki, Tarik ENV:EX
Cc: Austin, Joyce ENV:EX; Bunce, Hubert ENV:EX; Epps, Deb ENV:EX
Subject: RE: Mt. Polley Mine Tailings Pond

Thanks Tarik. This has been a hot topic today! Chris Swan has taken legal samples which are now en route to the labs. We got involved because John Dyble is pushing for fast results from the labs. Please do connect with Chris and keep me in the loop on how the fed-prov station can support the investigation.

Cheers,
Jennifer

From: Dessouki, Tarik ENV:EX
Sent: Tuesday, August 5, 2014 3:49 PM
To: Maxwell, Jennifer A ENV:EX
Subject: Mt. Polley Mine Tailings Pond

FYI: we established a station along the Quesnel River earlier this year. We have some baseline data and are currently sampling at a higher rate to catch the tailings plume. Andrea and I hope to chat with Chris Swan (Cariboo office) about enhanced sampling frequency at this site and at the Fraser River at Marguerite in the short-term. Thought I'd pass that info along in case anyone asks.

td

From: [Maxwell, Jennifer A ENV:EX](#)
To: [Dessouki, Tarik ENV:EX](#)
Cc: [Austin, Joyce ENV:EX](#); [Bunce, Hubert ENV:EX](#); [Epps, Deb ENV:EX](#)
Subject: RE: Mt. Polley Mine Tailings Pond
Date: Tuesday, August 5, 2014 3:59:20 PM

Thanks Tarik. This has been a hot topic today! Chris Swan has taken legal samples which are now en route to the labs. We got involved because John Dyble is pushing for fast results from the labs. Please do connect with Chris and keep me in the loop on how the fed-prov station can support the investigation.

Cheers,
Jennifer

From: Dessouki, Tarik ENV:EX
Sent: Tuesday, August 5, 2014 3:49 PM
To: Maxwell, Jennifer A ENV:EX
Subject: Mt. Polley Mine Tailings Pond

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td

From: [Bunce, Hubert ENV:EX](#)
To: [Maxwell, Jennifer A ENV:EX](#); [Dessouki, Tarik ENV:EX](#)
Cc: [Austin, Joyce ENV:EX](#); [Epps, Deb ENV:EX](#); [Swan, Chris L ENV:EX](#)
Subject: RE: Mt. Polley Mine Tailings Pond
Date: Tuesday, August 5, 2014 4:01:43 PM

Chris mentioned this new Quesnel River site earlier and she plans to make use of it as her time allows

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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BC Pollution Free

From: Maxwell, Jennifer A ENV:EX
Sent: Tuesday, August 5, 2014 3:59 PM
To: Dessouki, Tarik ENV:EX
Cc: Austin, Joyce ENV:EX; Bunce, Hubert ENV:EX; Epps, Deb ENV:EX
Subject: RE: Mt. Polley Mine Tailings Pond

Thanks Tarik. This has been a hot topic today! Chris Swan has taken legal samples which are now en route to the labs. We got involved because John Dyble is pushing for fast results from the labs. Please do connect with Chris and keep me in the loop on how the fed-prov station can support the investigation.

Cheers,
Jennifer

From: Dessouki, Tarik ENV:EX
Sent: Tuesday, August 5, 2014 3:49 PM
To: Maxwell, Jennifer A ENV:EX
Subject: Mt. Polley Mine Tailings Pond

FYI: we established a station along the Quesnel River earlier this year. We have some baseline data and are currently sampling at a higher rate to catch the tailings plume. Andrea and I hope to chat with Chris Swan (Cariboo office) about enhanced sampling frequency at this site and at the Fraser River at Marguerite in the short-term. Thought I'd pass that info along in case anyone asks.

td

From: [Bunce, Hubert ENV:EX](#)
To: [Swan, Chris L ENV:EX](#); [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#)
Cc: [Metcalf, Shelley ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Epps, Deb ENV:EX](#); [Bings, Dan P ENV:EX](#); [Green, Jack E ENV:EX](#); [Prediger, Yvonne ENV:EX](#); [Keogh, Kym A ENV:EX](#)
Subject: RE: Quesnel Lake sampling update from Tues Aug 5/14
Date: Wednesday, August 6, 2014 7:58:32 AM

Thanks for this Chris. If you have time Gabi Shelley and I are doing a call at 8 am to do an update

I issued an Order to the Mine last night requiring MPMC to complete env assessment and monitoring

I made an enquiry of Water stewardship on travel times in the Quesnel and Fraser Rivers but didn't get an answer yet so will push them for that info relative to the plume movement

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: Swan, Chris L ENV:EX
Sent: Wednesday, August 6, 2014 7:50 AM
To: Bunce, Hubert ENV:EX; Downie, AJ ENV:EX; Austin, Joyce ENV:EX
Cc: Metcalf, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX; McGuire, Jennifer ENV:EX; Zacharias-Homer, Christa ENV:EX; Epps, Deb ENV:EX; Bings, Dan P ENV:EX; Green, Jack E ENV:EX; Prediger, Yvonne ENV:EX; Keogh, Kym A ENV:EX
Subject: Quesnel Lake sampling update from Tues Aug 5/14

Tues, Aug 5/14 update:

- we took legal samples at the mouth of Hazeltine Creek again - this time closer in as a good portion of the debris has moved out into the lake; RBT tox, metals, gen ions (pH, turbidity etc.), nutrients, TOC, mercury and bacteria
- we also took the same parameters (non-legal) at 5 sampling sites spread out upstream from the town of Likely where the concentration of residences is located. We were in this area following the public meeting and many people came out on their docks to ask what we were doing. They were all glad to see us.
- I will be sending the coolers by air again today; non-legals to Maxxam as well as the bacteria legals, and the rest of the legals to PESC.
- there was no apparent flow of water down Hazeltine Creek and the turbidity and other parameters were very similar to what I recall of the background levels in Quesnel lake.
- the lighter debris (bark, twigs) reached the bridge yesterday. The larger tree islands were within site of Cedar Pt. park. The volume of woody debris is massive. When we came home yesterday there were big flood lights and an excavator at the Likely bridge site....looking very small compared to the volume of wood we've been seeing in the lake which is moving downstream fairly quickly.

Thanks to my field crews the past few days, Dan Bings, Jack Green and Russ Bobrowski (FLNRO, fisheries). Also to all of you who've been taking care of getting the samples picked up at the airport and expedited for analysis.

Next sites to sample:

1. Wed - Quesnel Lk east of Hazeltine Ck (Mitchell Bay)
2. Polley Lake? current danger with water held high by debris; samples form shore?
3. resample townsite and u/s? I am expecting access problems due to massive piles of debris movign toward the bridge. Too dangerous now to access via water (we got their just in time).
4. Quesnel River downstream
5. Fraser at Marguerite?
6. other?

I could use help with:

- plotting GPS coordinates and making a map to go with the water samples
- figuring out the speed of the Quesnel River (there is a WSC flow station at the Gravelle Ferry bridge, and possibly at Likely as well) and how fast the plume would be moving downstream...to guide downstream sampling since I am not picking up the plume with my probes I can't really tell where the water went (i.e both east and west in the lake as it hit the far shore initially or ??????)

Cheers,
Chris

From: [Matscha, Gabriele ENV:EX](#)
To: [Swan, Chris L ENV:EX](#); [Bunce, Hubert ENV:EX](#); [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#)
Cc: [Metcalf, Shelley ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Epps, Deb ENV:EX](#); [Bings, Dan P ENV:EX](#); [Green, Jack E ENV:EX](#); [Prediger, Yvonne ENV:EX](#); [Keogh, Kym A ENV:EX](#)
Subject: RE: Quesnel Lake sampling update from Tues Aug 5/14
Date: Wednesday, August 6, 2014 8:45:41 AM

Thank you for the update, Chris,

Samantha can deal with the GPS and mapping of sampling sites today. Kym, Hubert and I can deal with the flow speeds.

Gabi

From: Swan, Chris L ENV:EX
Sent: Wednesday, August 6, 2014 7:50 AM
To: Bunce, Hubert ENV:EX; Downie, AJ ENV:EX; Austin, Joyce ENV:EX
Cc: Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX; McGuire, Jennifer ENV:EX; Zacharias-Homer, Christa ENV:EX; Epps, Deb ENV:EX; Bings, Dan P ENV:EX; Green, Jack E ENV:EX; Prediger, Yvonne ENV:EX; Keogh, Kym A ENV:EX
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Cheers,
Chris

From: [Swan, Chris L ENV:EX](#)
To: [Swan, Chris L ENV:EX](#); [Bunce, Hubert ENV:EX](#); [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#); ["Graham.vanaggelen@ec.gc.ca"](#)
Cc: [Metcalf, Shelley ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Epps, Deb ENV:EX](#)
Subject: RE: samples from the tailing dam break?? PESC question
Date: Tuesday, August 5, 2014 1:27:31 PM
Attachments: [20140805130437.pdf](#)

Sorry forgot attachment..

As per Jennifer's e-mail I will take tox tests today.

From: Swan, Chris L ENV:EX
Sent: Tuesday, August 5, 2014 1:14 PM
To: Bunce, Hubert ENV:EX; Downie, AJ ENV:EX; Austin, Joyce ENV:EX; 'Graham.vanaggelen@ec.gc.ca'
Cc: Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX; McGuire, Jennifer ENV:EX; Zacharias-Homer, Christa ENV:EX; Epps, Brian FLNR:EX; Epps, Deb ENV:EX
Subject: RE: samples from the tailing dam break?? PESC question

FYI: I did not take RBT bioassays. The lake profile was good at the mouth of Hazeltine Ck– close to background. Given the lack of a change in conductivity, pH etc, and the good D.O. levels (see attached). The tailings water was passing the RBT bioassays already so it didn't seem reasonable to take a RBT tox test.

From: Bunce, Hubert ENV:EX
Sent: Tuesday, August 5, 2014 10:00 AM
To: Downie, AJ ENV:EX; Austin, Joyce ENV:EX; 'Graham.vanaggelen@ec.gc.ca'; Swan, Chris L ENV:EX
Cc: Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX; McGuire, Jennifer ENV:EX; Zacharias-Homer, Christa ENV:EX
Subject: RE: samples from the tailing dam break?? PESC question

Expect Legal samples including RBT Bioassay being shipped out of WL by plane this pm. quickest possible turn around appreciated

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: Downie, AJ ENV:EX
Sent: Tuesday, August 5, 2014 9:55 AM
To: Austin, Joyce ENV:EX
Cc: Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Hi Joyce,

Please see the cc: list of this email for the section heads (and Regional Director) who are likely involved with this file.

Thanks,

AJ

A.J. Downie

Section Head, Impact Assessment - Mining

Ministry of Environment

Environmental Protection Division, Regional Mining Operations

phone: (250) 354-6750

email: AJ.Downie@gov.bc.ca

 **Eco-Tip:** Printing e-mails is usually a waste.

From: Austin, Joyce ENV:EX

Sent: Tuesday, August 5, 2014 9:47 AM

To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Riedler, Harold ENV:EX

Subject: FW: samples from the tailing dam break?? PESC question

Can you please let PESC know if they will be receiving an increase in the number of samples for legal analysis as soon as possible? Please copy me on the e-mail as well.

Thank you,

Joyce

From: vanAggelen, Graham [PYR] [<mailto:Graham.VanAggelen@ec.gc.ca>]

Sent: Tuesday, August 5, 2014 9:32 AM

To: Austin, Joyce ENV:EX

Subject: samples from the tailing dam break??

Joyce: Are aware if the lab will be receiving any legal samples from the tailing dam break that happened? Just wanting to ensure if there is we can turn results around ASAP. graham

Graham C. van Aggelen

Manager/Gestionnaire Pacific Environmental Science Centre

Pacific & Yukon Laboratory for Environmental Testing | Centre des sciences environnementales du Pacifique

Emergencies Operational Analytical Laboratories and Research Support Division |

Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche

Water S&T Directorate | Direction des sciences et de la technologie, Eau

Science & Technology Branch | Direction générale des sciences et de la technologie

Environment Canada | Environnement Canada

2645 Dollarton Highway | 2645 autoroute Dollarton

North Vancouver, B.C. V7H1B1

email: Graham.vanaggelen@ec.gc.ca

Telephone | Téléphone (604) 903-4444

Facsimile | Télécopieur (604) 903-4408

LAKE PROFILE

Lake Quesnel Lk @ Hazelton
 EMS Site Creek Confluence

GPS 52°30.114, 121°30.120'

Secchi Depth (m) _____

Crew: Chris Swan, Jack Green, Dan Bing
 Water Conditions _____

Weather _____

Date 2014/Aug/14
 yy/mm/dd

Time 18:00
 24hr

Equipment (Name / Model)

YSI 6600

14:00 BKE - Metals Total, Metals Diss + Gen L.

Depth (m)	Temp (Celsius)	D.O (mg/L)		Spec Cond.	Cond.	pH	Turbidity
		mg/L	%				
18:45 SURFACE	21.45	9.21	104	102	95	8.44	7.7
1	20.85	9.41	105	100	92	8.45	7.7
2	20.79	9.34	104	100	92	8.44	8.3
3	20.24	9.48	105	99	90	8.43	6.2
4	20.09	9.52	105	97	88	8.44	5.2
5	19.53	9.59	105	97	87	8.42	5.0
6	18.95	9.36	101	99	88	8.32	23.9
7	16.19	10.07	102	96	80	8.31	9.2
* 19:00 8	15.83	10.17	103	96	79	8.26	7.6
9	14.10	10.40	102	97	77	8.18	6.8
10	12.11	10.8	100	98	74	8.14	4.1
11	11.88	10.7	100	98	74	8.10	4.7
12	10.44	10.9	98	101	73	8.09	13.6
13	9.64	11.1	97	100	71	8.05	4.6
14	8.52	11.3	96	104	70	8.04	20.0
* 19:15 15	6.94	11.5	93	105	67	7.99	5.1
16	5.74	11.6	93	104	66	7.98	8.1
17	5.45	11.6	93	105	66	7.96	3.9
18	5.34	11.7	93	105	65	7.94	4.0
19	5.29	11.7	93	105	65	7.94	3.6
20	5.23	11.7	93	105	65	7.94	4.0
21	5.23	11.7	93	105	65	7.93	4.0
22	4.92	11.8	92	105	65	7.92	4.3
23	4.86	11.8	92	105	65	7.91	4.4
24	4.85	11.8	92	105	65	7.91	4.6
* 19:20 25	4.92	11.8	92	105	65	7.92	4.7
26, 5	4.89	11.8	92	105	65	7.92	4.4
27 26.5							
28							
29							
30							
31	Legal sampling for turbidity, pH, metals & nutrients &						
32	Bacteria samples XXXXXX						
33							
34							
35							
36							
37							
38							
39							
40							

Sample Requisition No.	Sample No.	Sample Class	Sample Depth	Sample Time:

Comments :

20:20 52° 32.126' 0.5m: 21.65°C, 96 μ S/cm, 90 μ S/cm, 9.38mg/L D.O.
121° 31.51' D.O. 106%, 8.35 pH, 2.1 NTU

20:30 52° 33.358' 0.5 m Metal, Cen / L., bacteria
121° 32.266' Quesnel Lt S. Shore, ~~5~~ 4 cabins.
West of
20.78°C, 9.35mg/L D.O., 104% D.O., 96 μ S/cm,
88 μ S/cm, 8.40 pH, turbidity 2.1 NTU

20:56 52° 34.401' Quesnel Lt N. Shore East of Cedar Ct
121° 32.377 21.87°C, 96 μ S/cm, 90 μ S/cm, 9.10mg/L D.O.
103% D.O., 8.39 pH, 2.1 NTU.

21:20 52° 36.910' Quesnel Rte at likely townsite
121° 34.159' 17.75°C, 9.87mg/L D.O., 104%,
96 μ S/cm, 83 μ S/cm, 8.31 pH,
2.2 NTU

From: [Swan, Chris L ENV:EX](#)
To: [Bunce, Hubert ENV:EX](#); [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#); "[Graham.vanaggelen@ec.gc.ca](#)"
Cc: [Metcalf, Shelley ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Epps, Brian FLNR:EX](#); [Epps, Deb ENV:EX](#)
Subject: RE: samples from the tailing dam break?? PESC question
Date: Tuesday, August 5, 2014 1:13:51 PM

FYI: I did not take RBT bioassays. The lake profile was good at the mouth of Hazeltine Ck– close to background. Given the lack of a change in conductivity, pH etc, and the good D.O. levels (see attached). The tailings water was passing the RBT bioassays already so it didn't seem reasonable to take a RBT tox test.

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Sent: Tuesday, August 5, 2014 10:00 AM
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Cc: Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX; McGuire, Jennifer ENV:EX; Zacharias-Homer, Christa ENV:EX
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Expect Legal samples including RBT Bioassay being shipped out of WL by plane this pm. quickest possible turn around appreciated

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: Downie, AJ ENV:EX
Sent: Tuesday, August 5, 2014 9:55 AM
To: Austin, Joyce ENV:EX
Cc: Bunce, Hubert ENV:EX; Metcalfe, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Hi Joyce,
Please see the cc: list of this email for the section heads (and Regional Director) who are likely involved with this file.

Thanks,
AJ

A.J. Downie
Section Head, Impact Assessment - Mining
Ministry of Environment
Environmental Protection Division, Regional Mining Operations
phone: (250) 354-6750
email: AJ.Downie@gov.bc.ca

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 5, 2014 9:47 AM
To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Riedler, Harold ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

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Thank you,

Joyce

From: vanAggelen,Graham [PYR] [<mailto:Graham.VanAggelen@ec.gc.ca>]
Sent: Tuesday, August 5, 2014 9:32 AM
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Subject: samples from the tailing dam break??

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Science & Technology Branch | Direction générale des sciences et de la technologie
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Telephone | Téléphone (604) 903-4444
Facsimile | Télécopieur (604) 903-4408
Government of Canada Gouvernement du Canada
Website | Site Web www.ec.gc.ca

From: [Bourgeois, Jason ENV:EX](#)
To: [Bunce, Hubert ENV:EX](#); [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#); ["Graham.vanaggelen@ec.gc.ca"; Swan, Chris L ENV:EX](#)
Cc: [Metcalf, Shelley ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#)
Subject: RE: samples from the tailing dam break?? PESC question
Date: Tuesday, August 5, 2014 12:26:02 PM

I just spoke with Kelly Dahl regarding MIU input into upcoming sampling performed by EP. Based on his earlier discussions with Environment Canada, he requested a Bioassay sample to be taken as near as possible to point of discharge into Quesnel Lake. EC looking for evidence of deleterious substance.

Sounds like that was already considered below, so MIU/EC should be OK.

Regards,
Jason

From: Bunce, Hubert ENV:EX
Sent: Tuesday, August 5, 2014 10:00 AM
To: Downie, AJ ENV:EX; Austin, Joyce ENV:EX; 'Graham.vanaggelen@ec.gc.ca'; Swan, Chris L ENV:EX
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Section Head, Impact Assessment - Mining

Ministry of Environment

Environmental Protection Division, Regional Mining Operations

phone: (250) 354-6750

email: AJ.Downie@gov.bc.ca

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To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Riedler, Harold ENV:EX

Subject: FW: samples from the tailing dam break?? PESC question

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Joyce

From: vanAggelen, Graham [PYR] [<mailto:Graham.VanAggelen@ec.gc.ca>]

Sent: Tuesday, August 5, 2014 9:32 AM

To: Austin, Joyce ENV:EX

Subject: samples from the tailing dam break??

Joyce: Are aware if the lab will be receiving any legal samples from the tailing dam break that happened? Just wanting to ensure if there is we can turn results around ASAP. graham

Graham C. van Aggelen

Manager/Gestionnaire Pacific Environmental Science Centre

Pacific & Yukon Laboratory for Environmental Testing | Centre des sciences environnementales du Pacifique

Emergencies Operational Analytical Laboratories and Research Support Division |

Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche

Water S&T Directorate | Direction des sciences et de la technologie, Eau

Science & Technology Branch | Direction générale des sciences et de la technologie

Environment Canada | Environnement Canada

2645 Dollarton Highway | 2645 autoroute Dollarton

North Vancouver, B.C. V7H1B1

email: Graham.vanaggelen@ec.gc.ca

Telephone | Téléphone (604) 903-4444

Facsimile | Télécopieur (604) 903-4408

Government of Canada Gouvernement du Canada

Website | Site Web www.ec.gc.ca

From: [Bunce, Hubert ENV:EX](#)
To: [Downie, AJ ENV:EX](#); [Austin, Joyce ENV:EX](#); ["Graham.vanaggelen@ec.gc.ca"](#); [Swan, Chris L ENV:EX](#)
Cc: [Metcalf, Shelley ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#)
Subject: RE: samples from the tailing dam break?? PESC question
Date: Tuesday, August 5, 2014 9:59:36 AM

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Hubert Bunce
A/Mining Director, Environmental Protection
Regional Operations

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

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Nanaimo BC V9T 6J9

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Sent: Tuesday, August 5, 2014 9:55 AM
To: Austin, Joyce ENV:EX
Cc: Bunce, Hubert ENV:EX; Metcalf, Shelley ENV:EX; Matscha, Gabriele ENV:EX; Bourgeois, Jason ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Hi Joyce,
Please see the cc: list of this email for the section heads (and Regional Director) who are likely involved with this file.

Thanks,
AJ

A.J. Downie
Section Head, Impact Assessment - Mining
Ministry of Environment
Environmental Protection Division, Regional Mining Operations
phone: (250) 354-6750
email: AJ.Downie@gov.bc.ca

 Eco-Tip: Printing e-mails is usually a waste.

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 5, 2014 9:47 AM
To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Riedler, Harold ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

Can you please let PESC know if they will be receiving an increase in the number of samples for legal analysis as soon as possible? Please copy me on the e-mail as well.

Thank you,

Joyce

From: vanAggelen,Graham [PYR] [<mailto:Graham.VanAggelen@ec.gc.ca>]

Sent: Tuesday, August 5, 2014 9:32 AM

To: Austin, Joyce ENV:EX

Subject: samples from the tailing dam break??

Joyce: Are aware if the lab will be receiving any legal samples from the tailing dam break that happened? Just wanting to ensure if there is we can turn results around ASAP. graham

Graham C. van Aggelen

Manager/Gestionnaire Pacific Environmental Science Centre

Pacific & Yukon Laboratory for Environmental Testing | Centre des sciences environnementales du Pacifique

Emergencies Operational Analytical Laboratories and Research Support Division |

Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche

Water S&T Directorate | Direction des sciences et de la technologie, Eau

Science & Technology Branch | Direction générale des sciences et de la technologie

Environment Canada | Environnement Canada

2645 Dollarton Highway | 2645 autoroute Dollarton

North Vancouver, B.C. V7H1B1

email: Graham.vanaggelen@ec.gc.ca

Telephone | Téléphone (604) 903-4444

Facsimile | Télécopieur (604) 903-4408

Government of Canada Gouvernement du Canada

Website | Site Web www.ec.gc.ca

From: [Epps, Deb ENV:EX](#)
To: [Austin, Joyce ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [Matscha, Gabriele ENV:EX](#); [Downie, AJ ENV:EX](#); [Riedler, Harold ENV:EX](#)
Subject: Re: samples from the tailing dam break?? PESC question
Date: Tuesday, August 5, 2014 11:07:26 AM

Samples were sent by chris swan this am

Sent from my BlackBerry Wireless Handheld

From: Austin, Joyce ENV:EX
Sent: Tuesday, August 05, 2014 09:47 AM
To: Bourgeois, Jason ENV:EX; Epps, Deb ENV:EX; Matscha, Gabriele ENV:EX; Downie, AJ ENV:EX; Riedler, Harold ENV:EX
Subject: FW: samples from the tailing dam break?? PESC question

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Thank you,

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Sent: Tuesday, August 5, 2014 9:32 AM
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Subject: samples from the tailing dam break??

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Telephone | Téléphone (604) 903-4444
Facsimile | Télécopieur (604) 903-4408
Government of Canada Gouvernement du Canada
Website | Site Web www.ec.gc.ca

From: [Bunce, Hubert ENV:EX](#)
To: [Maxwell, Jennifer A ENV:EX](#); [Halls, Lori D ENV:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [Austin, Joyce ENV:EX](#); [Zacharias, Mark ENV:EX](#); [Hays-Byl, Winn ENV:EX](#); [Riedler, Harold ENV:EX](#)
Subject: RE: Status: Mount Polley water samples
Date: Tuesday, August 5, 2014 12:13:25 PM

Samples will be on Central Mountain Air leaving WL at ~1:30 and Arriving at **S. terminal** flight number to follow, legals and PESC samples are in distinct coolers and must be secure under lock and key throughout transit

Hubert Bunce
A/Mining Director, Environmental Protection
Regional Operations

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

2080A Labieux Road

Nanaimo BC V9T 6J9

Please consider the environment before printing this email
BC Pollution Free

From: Maxwell, Jennifer A ENV:EX
Sent: Tuesday, August 5, 2014 11:43 AM
To: Halls, Lori D ENV:EX
Cc: McGuire, Jennifer ENV:EX; Bunce, Hubert ENV:EX; Austin, Joyce ENV:EX; Zacharias, Mark ENV:EX; Hays-Byl, Winn ENV:EX
Subject: Status: Mount Polley water samples
Importance: High

Hi Lori,

Following up on your phone call earlier this morning, I have spoken with Hubert Bunce (A/Regional Director for Mining in EPD) and Joyce Austin (Sr Provincial Lab Specialist) to gather information and assess options for speeding up the turnaround time on getting water samples from the Mount Polley mine tailings pond spill analyzed.

The legal samples are en route to the two labs that are under contract to do the required sampling in a case like this:

- Samples for metals will go to the Pacific Environmental Science Centre (PESC), an Environment Canada lab in North Vancouver.
- Samples for microbiology will go to Maxxam in Burnaby.

These samples are scheduled to fly from Williams Lake to Vancouver on the next available flight (this afternoon sometime). Arrangements are being made to have the samples picked up by Ministry or laboratory staff at YVR and transported directly to the labs.

Both PESC and Maxxam labs are ready and waiting for the samples to arrive, and have agreed to process the samples as quickly as their analytical methods allow. Depending on the parameter being analyzed, these tests can take from 12-24 hours.

Given that, if the samples arrive at the labs late this afternoon, it is possible that some results will be available late on Wednesday, and all preliminary results should be available by Thursday morning.

Staff indicate that there is no faster way to get robust, defensible results than the plan described above. Given the nature of the issue, it is important that the protocols for legal sampling are followed.

Let me know if need anything further.

Jennifer

Jennifer Maxwell
Manager - Environmental Monitoring, Reporting & Economics
Knowledge Management Branch | Ministry of Environment
PO Box 9335 STN PROV GOVT
Victoria, BC V8W 9M1
Tel.: 250-387-9642; Fax: 250-387-8894

From: [Zacharias, Mark ENV:EX](#)
To: [Maxwell, Jennifer A ENV:EX](#)
Cc: [Halls, Lori D ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Bunce, Hubert ENV:EX](#); [Austin, Joyce ENV:EX](#); [Hays-Byl, Winn ENV:EX](#)
Subject: Re: Status: Mount Polley water samples
Date: Tuesday, August 5, 2014 11:46:01 AM

Thx Jennifer: Just confirming the MoE analytical chem lab isn't an option to help expedite?

Regards, MZ

On Aug 5, 2014, at 11:42 AM, "Maxwell, Jennifer A ENV:EX" <Jennifer.Maxwell@gov.bc.ca> wrote:

Hi Lori,

Following up on your phone call earlier this morning, I have spoken with Hubert Bunce (A/Regional Director for Mining in EPD) and Joyce Austin (Sr Provincial Lab Specialist) to gather information and assess options for speeding up the turnaround time on getting water samples from the Mount Polley mine tailings pond spill analyzed.

The legal samples are en route to the two labs that are under contract to do the required sampling in a case like this:

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- <!--[if !supportLists]-->• <!--[endif]-->Samples for microbiology will go to Maxxam in Burnaby.

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Let me know if need anything further.

Jennifer

Jennifer Maxwell
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Knowledge Management Branch | Ministry of Environment
PO Box 9335 STN PROV GOVT
Victoria, BC V8W 9M1
Tel.: 250-387-9642; Fax: 250-387-8894

From: [vanAggelen,Graham \[PYR\]](#)
To: [Austin, Joyce ENV:EX](#)
Subject: samples from the tailing dam break??
Date: Tuesday, August 5, 2014 9:31:51 AM

Joyce: Are aware if the lab will be receiving any legal samples from the tailing dam break that happened? Just wanting to ensure if there is we can turn results around ASAP. graham

Graham C. van Aggelen

Manager/Gestionnaire Pacific Environmental Science Centre
Pacific & Yukon Laboratory for Environmental Testing | Centre des sciences environnementales du Pacifique
Emergencies Operational Analytical Laboratories and Research Support Division |
Division d'urgences, laboratoires d'analyses opérationnelles et soutien à la recherche
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Facsimile | Télécopieur (604) 903-4408
Government of Canada Gouvernement du Canada
Website | Site Web www.ec.gc.ca

From: [Maxwell, Jennifer A ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [Bunce, Hubert ENV:EX](#); [Austin, Joyce ENV:EX](#); [Zacharias, Mark ENV:EX](#); [Hays-Byl, Winn ENV:EX](#)
Subject: Status: Mount Polley water samples
Date: Tuesday, August 5, 2014 11:42:45 AM
Importance: High

Hi Lori,

Following up on your phone call earlier this morning, I have spoken with Hubert Bunce (A/Regional Director for Mining in EPD) and Joyce Austin (Sr Provincial Lab Specialist) to gather information and assess options for speeding up the turnaround time on getting water samples from the Mount Polley mine tailings pond spill analyzed.

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Staff indicate that there is no faster way to get robust, defensible results than the plan described above. Given the nature of the issue, it is important that the protocols for legal sampling are followed.

Let me know if need anything further.

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Knowledge Management Branch | Ministry of Environment
PO Box 9335 STN PROV GOVT

Victoria, BC V8W 9M1
Tel.: 250-387-9642; Fax: 250-387-8894

Adams, Nicole CSNR:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 7:11 PM
To: ENV Emergency Incident Contacts
Subject: Re: Mount Polley Mine Update #5 DGIR 141460

The following information is provided update by EMBC 1800 August 4, 2014.

- situation is stable.
- conference call at 1700 hrs. with all stakeholders involved
- MOE ROB sampling team is on Quesnel Lake and will be sampling until dusk.
- preliminary sample results expected within three days.
- COS are investigating with Ministry of Mine investigation team
- approximately 10,000,000 m³ of water was lost from pond and 4 1/2 million cubic meters tailings and fines.
- Polley lake water level has risen 1.7 m.
- there is debris in Quinell Lake but it is stable.
- there is concern regarding further debris flows to Quesnel Lake.
- evacuation of campers and local campsites has occurred.
- cautionary water advisory is in place and will remain until sample results are known.

Next update at 1300 hrs. August 5, 2014.

La

Adams, Nicole CSNR:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 1:59 PM
To: ENV Emergency Incident Contacts
Subject: Re: Mount Polley Mine Update #4 DGIR 141460

The following information is provided by EMBC RDM at 13:00 Aug 4.

Situation: STABLE

- No injuries or private property damage has been reported.
 - No Evac Orders or Alerts are anticipated at this time.
 - Technical evaluation of debris flow path and SAR/RCMP public safety reconnaissance ongoing.
 - CRD Williams Lake EOC activated and coordinating.
 - CRD EOC in consultation with IHA, has initiated the dissemination of DO NOT USE public messaging while technical assessments of water quality are ongoing by IHA staff.
- Integrated mapping between the CRD EOC and the Mine site engineering staff is being done to determine the potential impact area.
- CRD EOC and SME Task Force working together to interpret heli-recce information and support consistency of downstream public alerting:
- 4 MoE ROB staff from Williams Lake are going to the site to begin sampling. Estimated ETA on site 3:00 PM
- IHA - Environmental Officer - Public Health orders and Warnings
- Inspector of Mines - Contents and properties of effluent

Watercourse observation points are being established with SAR assistance to determine the migration of effluent towards the major water bodies while reconnaissance is underway.

Stakeholder conference call at 1700 hrs. today.

Laurie Boyle

Adams, Nicole CSNR:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 11:56 AM
To: ENV Emergency Incident Contacts
Subject: Mount Polley Mine Update #3 DGIR 141460

The following information is provided by EMBC RDM at 11:00 Aug 4.

Situation: STABLE

- No injuries or private property damage has been reported.
 - No Evac Orders or Alerts are anticipated at this time.
 - Technical evaluation of debris flow path and SAR/RCMP public safety reconnaissance ongoing.
 - CRD EOC activated and coordinating.
 - CRD EOC in consultation with IHA, has initiated the dissemination of DO NOT USE public messaging while technical assessments of water quality are ongoing by IHA staff.
- Integrated mapping between the CRD EOC and the Mine site engineering staff is being done to determine the potential impact area.
- CRD EOC and SME Task Force working together to interpret heli-recce information and support consistency of downstream public alerting:
- MOE Water dispersion modelling support
- IHA - Environmental Officer - Public Health orders and Warnings
- Inspector of Mines - Contents and properties of effluent

Watercourse observation points are being established with SAR assistance to determine the migration of effluent towards the major water bodies while reconnaissance is underway.

Next update anticipated at 1300 hrs. unless the information becomes available.

Laurie Boyle

Adams, Nicole CSNR:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 8:25 AM
To: ENV Emergency Incident Contacts
Subject: Mount Polley Mine# 2

Incident update #2

- overflight has been arranged to be completed approximately 930 hours.
- dam contained approximately 5,000,000 m³ of water.
- no evidence of flooding at this point in time but Highstream flows are indicated.
- SAR are notifying residents and immediate area.
- conference call is expected to be initiated upon completion of overflight to update stakeholders.
- further updates to follow as information becomes available.

Sent from my iPhone

> On Aug 4, 2014, at 4:53 AM, "Boyle, Laurie F ENV:EX" <Laurie.Boyle@gov.bc.ca> wrote:

>

> At 03:45 Aug 4, 2014 MoE was notified of a tailings pond breach at Mount Polley Mine in south-central BC.

> - Situation is unclear at this point in time.

> - no injuries occurred and staff at being evacuated from areas of impact.

> - mine management have been notified and are responding.

> - impact to water quality and downstream are unknown.

> - Town of likely fire rescue are assessing the situation.

> Ministry of Health duty officer and interior health authority have been contacted advised.

> - further updates will be made when new information becomes available.

>

> Laurie Boyle

>

>

> Sent from my iPhone

Adams, Nicole CSNR:EX

From: Boyle, Laurie F ENV:EX
Sent: Monday, August 4, 2014 4:53 AM
To: ENV Emergency Incident Contacts
Subject: Executive update - Mount Polley Mine

At 03:45 Aug 4, 2014 MoE was notified of a tailings pond breach at Mount Polley Mine in south-central BC.

- Situation is unclear at this point in time.
- no injuries occurred and staff at being evacuated from areas of impact.
- mine management have been notified and are responding.
- impact to water quality and downstream are unknown.
- Town of likely fire rescue are assessing the situation.

Ministry of Health duty officer and interior health authority have been contacted advised.

- further updates will be made when new information becomes available.

Laurie Boyle

Sent from my iPhone

From: [Hill, Douglas J FLNR:EX](#)
To: [Vanderburgh, Ken FLNR:EX](#); [MacDougall, Gerry L FLNR:EX](#); [Stewart, Rodger W FLNR:EX](#); [Gash, Michael ABR:EX](#); [Pedersen, Mike FLNR:EX](#)
Subject: 2014-08-04 0910 FLNR - Mount Polley TSF breach Aug 4 EOC briefing notes
Date: Monday, August 4, 2014 9:09:51 PM
Attachments: [Mount Polley TSF breach briefing Aug 4.docx](#)

Here are my notes from the briefing at the CRD emergency ops centre on the TSF breach at Mt Polley Mine.

The CRD has set up an EOC at its WL office. PEP task # is 150248. A briefing was held 5 pm on Aug 4.

Situation (Provided by Don Parsons, Imperial Metals):

- TSF breach at 1:10 am on August 4th at perimeter embankment at north side of TSF
- 300 metres of perimeter embankment lost
- Lost about 10 million cubic metres of water and 4.5 million cubic metres of sand
- Flowed overland to Polley lake, thence down Hazeltine Creek and reached Quesnel Lake
- Tailings sand deposited in Polley lake, along Hazeltine Cr and in estuary in Quesnel Lake
- Polley Lake water level is about 1.7 m higher due to blockage of lake outlet, concern that this is unstable and a further debris torrent could flow down Hazeltine Creek
- Potential rise of 3 cm on Quesnel Lake
- Tailings are not acid generating, and tailings water is not acutely toxic
- Hazeltine Creek scoured out, any aquatic life was washed out or inundated with debris
- Access along FSR (ditch road) is blocked
- Raft Cr forest recreation campsite near mouth of Hazeltine Creek is evacuated
- Debris hazard in Quesnel Lake
- further assessment required to determine mode of failure and means of mitigation
- no equipment accessing breach area, more water must drain before access into failure area allowed
- Mine staff monitoring Polley lake water levels for signs that it is dropping
- MOE on lake conducting initial water quality monitoring, but earliest results not going to be available until Wednesday

Communications:

- CRD/IHA issued water advisory for people with surface wells or surface water extraction to not drink or otherwise use the water from spill site downstream to Quesnel
- CRD/PEP have contacted relevant agencies who are connected to EOC via daily briefings (next briefing 1 pm, Aug 5)
- Al Richmond, CRD chair, in contact with WLIB and SCIB, and with Minister Bennett
- Quesnel mayor Sjostrom and Cariboo North MLA Oakes have been contacted by CRD
- MEM Health and Safety and geotech inspectors are on site and in contact with mine staff
- SAR volunteers going to Likely, Mitchell Bay and Winkley Creek area to deliver notices, notices out on radio and provincial/local media websites
- MPMC in touch with WLIB council rep (Willie Sellars)
- MPMC has spoken to local paper, and has corporation staff coming to site on Tuesday
- Global news has sent a crew to the mine site, MPMC has staff at access road to greet anyone arriving at the site
- CRD communications officer is Shelley Burich (305-8151)
- MPMC on site contact is GM Dale Reimer (790-2215)

Consequence Management:

- Access to Raft Cr forest rec site and Polley lake forest rec site as well as road access to Polley Lake, and along ditch road need to be limited to emergency responders due to ongoing risk of further debris flow (Kurtis Ofstie, FLNR participated on call)
- Warning of boating hazard from existing debris and potential additional debris flow in Polley Lake and near mouth of Hazeltine on Quesnel Lake is required
- Drift of large woody debris on Quesnel Lake needs to be tracked so that it doesn't imperil the bridge at Likely
- Health authorities require information about tailings characteristics in order to assess public health risks
- CRD/MPMC is setting up water distribution to Likely, Mitchell Bay and Abbott Cr.
- Need to advise agriculture producers regarding water advisory
- MOE will be working with mine to organize/plan monitoring

Next briefing at 1 pm Aug 5

From: [Bunce, Hubert ENV:EX](#)
To: [Matscha, Gabriele ENV:EX](#)
Cc: [McGuire, Jennifer ENV:EX](#); [Bourgeois, Jason ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#)
Subject: 2014-08-04 1641 MOE GMatscha to HBunce re sampling communication to MPMC
Date: Monday, August 4, 2014 4:41:25 PM

I be left a voicemail with Colleen noting that Chris plans to launch from likely at 5 so not sure if logistically she'd be able to join them but am waiting to hear back from Colleen

I will relay this info to Chris when she checks in at 5

Hubert
Sent from my iPhone

On Aug 4, 2014, at 4:30 PM, "Matscha, Gabriele ENV:EX"
<Gabriele.Matscha@gov.bc.ca> wrote:

I indicated to her that the company should take samples asap and send them off to the lab with rush results.
She indicated that they will send data to us asap. They seem to have tailings quality and quantity data. They were going to send the data that are available today to us within the next hour or so.
However, it seems that it is not yet safe to collect samples from Hazeltine and Polley Creeks.
They do not yet have a boat on site to collect samples from a boat on Quesnel Lake. They also would like to meet with Chris in the field.
I conveyed latter to Hubert to convey to Chris with the appropriate number.
I will talk to Colleen again to let her know to get an RP Bio consultant in asap, with a boat as well.
Gabi

From: McGuire, Jennifer ENV:EX
Sent: August 4, 2014 4:20 PM
To: Matscha, Gabriele ENV:EX
Cc: Bunce, Hubert ENV:EX; Bourgeois, Jason ENV:EX; Zacharias-Homer, Christa ENV:EX
Subject: RE: Tailings impoundment breach

Good to hear. Pls ensure that the mine has retained a consultant who is enroute to commence sample collection ASAP.

We will need results from today's samples on a RUSH – so as to inform health decisions.

Should the mine not be immediately responsive an Order may be necessary. Delays are not acceptable from the company.

The Order issued to Coalmont last summer may be of interest. The RD should make the decision on the Order – if it is needed.

Jennifer McGuire, P.Ag.
Executive Director, Regional Operations
Environmental Protection
Ministry of Environment
ph: 250-356-6027
cell: 250-361-5944

From: Matscha, Gabriele ENV:EX
Sent: Monday, August 4, 2014 4:08 PM
To: chughes@mountpolley.com
Cc: afrye@mountpolley.com; Bunce, Hubert ENV:EX; Bunce, Hubert ENV:EX; McGuire, Jennifer ENV:EX
Subject: Tailings impoundment breach

Hi Colleen,

Thank you for calling me back so quickly.

As discussed on over the phone, the Environmental Protection Division of the Ministry of Environment is interested in the results of your current site assessment and would like to discuss with you your proposed impact assessment monitoring plan.

We are particularly interested in tailings quality, tailings quantity that has been released into the environment, the areas that are likely affected and what has been done to minimize the impact.

As discussed during our call, I will send you an invite shortly to a phone meeting tomorrow to discuss your proposed monitoring plan in more detail, including sampling media, sampling sites, sampling frequencies, parameters to be analyzed, methods used and duration of the program and to assess the impacts now and over time.

We are looking forward to the company's update this afternoon,

Gabi Matscha, R.P. Bio

Impact Assessment Section Head - Mining

Ministry of Environment

Ph: 250-371-6296

Cell: 250-851-6692

From: [Demchuk, Tania MEM:EX](#)
To: [Metcalf, Shelley ENV:EX](#); [McGuire, Jennifer ENV:EX](#); [Hoffman, Al MEM:EX](#); [Bellefontaine, Kim MEM:EX](#); [Bunce, Hubert ENV:EX](#); [Zacharias-Homer, Christa ENV:EX](#); [Thorpe, Rolly MEM:EX](#); [Bourgeois, Jason ENV:EX](#); [Dahl, RK ENV:EX](#); [Amann-Blake, Nathaniel MEM:EX](#)
Subject: 2014-08-05 0716 MEM to MOE & MEM Mtg Notes from MEM/MOE call on Aug 5, 2015 at 15:00hr
Date: Tuesday, August 5, 2014 7:16:28 PM

MEM's Action Item responses:

s.15

- MEM to send MOE the NPRI media comments
Bullets forwarded to Jennifer, Hubert and Shelley
- MEM to update MOE when they know whether their staff have looked at debris plug at Polley Lake
MEM geotechnical engineers indicated the following during an update call at approximately 4:00 August 5, 2014:
 1. Safety is dependent on weather. (area will become more unstable if it rains)
 2. It is not safe to be working in below the breach area right now.
 3. Polley Lake should be okay to access for water sampling purposes provided that the weather does not change and there is a safe access point onto the lake. Mount Polley staff have been requested to continue to monitor the plug at the Polley Lake outlet during flights over the area.
 4. Hazeltine Creek is not a safe place to be sampling at present. Banks of the new channel are likely unstable and have overhanging trees. There is still a small volume of material flowing out of the tailings impoundment area down the channel.
- Shelley (MOE) to provide response to MEM regarding a MOE letter dated March 19, 2014
Received – thanks!

Tania

From: Metcalf, Shelley ENV:EX
Sent: Tuesday, August 5, 2014 4:25 PM
To: McGuire, Jennifer ENV:EX; Hoffman, Al MEM:EX; Bellefontaine, Kim MEM:EX; Demchuk, Tania MEM:EX; Bunce, Hubert ENV:EX; Zacharias-Homer, Christa ENV:EX; Thorpe, Rolly MEM:EX; Bourgeois, Jason ENV:EX; Dahl, RK ENV:EX
Subject: Mtg Notes from MEM/MOE call on Aug 5, 2015 at 15:00hr

Purpose of Call: to coordinate and share information between MEM and MOE re: Mt Polley Mine

Next call: Wednesday Aug 5, 2014, Time TBD.

Action Items:

s.15

- Jason (MOE) to provide MEM with copy of the draft pollution abatement order
- Shelley (MOE) to provide response to MEM regarding a MOE letter dated March 19, 2014

- Shelley/Hubert (MOE) put together list of permits applied for by company in anticipation of information request received by MEM
- MEM to send MOE the NPRI media comments
- MEM to update MOE when they know whether their staff have looked at debris plug at Polley Lake
- Jennifer (MOE) to set up next call

I don't have Nathaniel's email – would someone please forward to him?

Shelley Metcalfe

Section Head, Mining Authorizations

BC Ministry of Environment - Regional Operations Branch

200- 10470 152nd St., Surrey BC V3R 0Y3

p. 604-582-5332 | f. 604-930-7119 | e. shelley.metcalfe@gov.bc.ca

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 0802 To Minister - Mining
Date: Wednesday, August 13, 2014 9:19:14 AM

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

From: s.22
Sent: Tuesday, August 5, 2014 8:02 AM
To: Minister, ENV ENV:EX
Subject: Mining

Dear Leader

If this is not enough to show you the consequences of mining nothing will. Please for the sake of our fish, waters land and future generations COME TO YOUR SENSES. I am not a protestor but the time has come to stand up for our land.

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 0823 To Minister - Mount Polley Mine
Date: Wednesday, August 13, 2014 9:05:16 AM

From: s.22
Sent: Tuesday, August 5, 2014 8:23 AM
To: Minister, ENV ENV:EX
Subject: Mount Polley Mine

Good morning,

I am extremely disappointed to learn of the Mount Polley Mine tailings pond breach this morning and not to see one representative from your ministry address the disaster on television.

British Columbians are extremely opposed to any possible threat to the environment and wildlife, but the provincial government continues to approve new mines, pipe lines and forestry operations which are destroying the province.

I hope the concerns we have in regards to environmental threats, in particular the Northern Gateway Project and the Seabridge mine approved this month, are realized through the unfortunate breach of the tailings pond today.

Kind regards,

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 0837 To Ministers - Tailings Pond Spill, Likely
Date: Wednesday, August 13, 2014 9:18:54 AM

From: s.22
Sent: Tuesday, August 5, 2014 8:37 AM
To: Minister, ENV ENV:EX
Cc: OfficeofthePremier, Office PREM:EX
Subject: Tailings Pond Spill, Likely

WHEN WILL YOU USELESS IDIOTS DO YOUR JOB AND PROTECT THE ENVIRONMENT FROM DISASTERS LIKE THIS RECENT CHEMICAL SPILL, INSTEAD OF SUCKING UP TO THESE IRRESPONSIBLE, GREEDY CORPORATE BASTARDS! WHEN, OH **WHEN** WILL YOU **LEARN**?

These are not rhetorical questions. Christ, you people make me sick.

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 0910 To Premier and Ministers - Mining disaster
Date: Wednesday, August 13, 2014 9:19:03 AM

From: s.22
Sent: Tuesday, August 5, 2014 9:10 AM
To: OfficeofthePremier, Office PREM:EX; Minister, ENV ENV:EX
Subject: mining disaster

What is our Government going to do about this mining disaster? LOOK into it? REVIEW the situation? EXPLORE options? The definition of incompetent is: lacking qualification or ability; incapable: an incompetent candidate. This is our Government.

I am sick on how our environmental issues have been down played by our Government and their ability to manager our Province. YOU SHOULD BE FIRED!!!! You should hang your heads down in disgrace. Christy Clark you are the biggest LIAR!!!! What are you going to do for the families that are now displaced, because you know no one will be living in that area again. The animals, the people and the forest will die. If I could move from this Province I would, but I know that any Government in Canada is corrupted (absolute).

Sincerely,

s.22

Nicoll, Sara ENV:EX

From: Minister, ENV ENV:EX
Sent: Wednesday, August 13, 2014 9:02 AM
To: Correspondence Unit ENV:EX
Subject: FW: Central BC, Quesnel toxic tailing ponds disaster unfolding...can the Govt speak to this?

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Ally, Unprinted

FYI – EPD-Mining

From: s.22
Sent: Tuesday, August 5, 2014 9:23 AM
To: Minister, ENV ENV:EX
Subject: Central BC, Quesnel toxic tailing ponds disaster unfolding...can the Govt speak to this?

Honorable Mary Polak, Environment Minister

It is heartwrenching to watch the 30 minute flyover of the huge toxic metals tailings pond release into our BC Quesnel Rivers, streams and will forever affect the Fraser as well. Will you be making a public statement of this environmental disaster on TV, to address this and British Columbians who are sickened by this, knowing our environmental protections legislation, and Fisheries Act legislation have been changed to favor industry regulating itself, and easing the company responsible liability? We hope so.

<http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-pond-breach-helicopter-flyover-1.2727531>

thank you,

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 1118 To Ministers - Tailings pond breach.
Date: Wednesday, August 13, 2014 9:18:48 AM

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

From: s.22
Sent: Tuesday, August 5, 2014 11:18 AM
To: Minister, ENV ENV:EX
Subject: Tailings pond breach.

In 2011 Brian Olding informed you of the environmental disaster possible. He requested an EMERGENCY CONTINGENCY PLAN.

God Bless Mr. Olding and the Native Band who requested his assessment.

I grieve for the wildlife and fish who are now dying from the contamination.

s.22

Nicoll, Sara ENV:EX

From: Minister, ENV ENV:EX
Sent: Wednesday, August 13, 2014 9:03 AM
To: Correspondence Unit ENV:EX
Subject: FW: Disaster in Likely

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Ally, Unprinted

FYI – EPD-Mining

From: s.22
Sent: Tuesday, August 5, 2014 2:15 PM
To: Minister, ENV ENV:EX
Subject: Disaster in Likely

Ms Polak,

When are you going to publicly address the disaster that has happened in Likely? The Mt Polley tailings pond has emptied into one of the most pristine natural lakes and river systems on the planet. If this does not warrant an immediate response to the public, what does?!

Sincerely,

s.22

From: [Crebo, David GCPE:EX](#)
To: [English, Heather ENV:EX](#); [Dalal, Suntanu GCPE:EX](#); [Zacharias-Homer, Christa ENV:EX](#)
Cc: [Franklin, Kimberley GCPE:EX](#)
Subject: 2014-08-05 1500 GCPE DCREBO to CZH - Mount Polley questions
Date: Tuesday, August 5, 2014 2:59:49 PM

From a call we had just with Jenn and Jim, this info was put forward to Min Bennett:

- Prior to company receiving its amended permit, FNs had concerns with the proposal.
- The consultant was hired (Golding report).
- Contents of Golding were factored into decision to amend the permit in 2009.
- Final Golding report was received in 2011
- Company has now put forward application to further amend the permit. This was received in June 2014, and is under consideration.

From: English, Heather ENV:EX
Sent: Tuesday, August 5, 2014 2:57 PM
To: Dalal, Suntanu GCPE:EX; Zacharias-Homer, Christa ENV:EX
Cc: Crebo, David GCPE:EX; Franklin, Kimberley GCPE:EX
Subject: RE: Mount Polley questions...

Hi Suntanu,

Christa has not yet approved this so please don't use it until she has a chance to do so. I was Ccing you so you saw that we were working on it. I should have specified – sorry.

H.

Heather English | A/Issues Manager
Environmental Protection Division
Ministry of Environment
Telephone | 250.356.5016
Cell | 250.580.1532

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 2:56 PM
To: English, Heather ENV:EX; Zacharias-Homer, Christa ENV:EX
Cc: Crebo, David GCPE:EX; Franklin, Kimberley GCPE:EX
Subject: RE: Mount Polley questions...

Jim will need to see this as well. We were just on a conference call with Jim, Lori Halls and Jennifer McGuire.

From: English, Heather ENV:EX
Sent: Tuesday, August 5, 2014 2:45 PM
To: Zacharias-Homer, Christa ENV:EX; Dalal, Suntanu GCPE:EX

Subject: FW: Mount Polley questions...

Hi Christa,

For Approval – I have not run this back past staff, but it comes directly from the information Doug provided, and that you provided.

GCPE also requested more information on the permit as I noted in red below.

Thoughts?

Thanks, Heather

Heather English | A/Issues Manager
Environmental Protection Division
Ministry of Environment
Telephone | 250.356.5016
Cell | 250.580.1532

From: English, Heather ENV:EX
Sent: Tuesday, August 5, 2014 2:18 PM
To: Zacharias-Homer, Christa ENV:EX
Subject: FW: Mount Polley questions...

Questions from Globe & Mail reporter

- **Reporter says there is a report that this mine applied for a permit to discharge tailings but it was not granted. Is this true?**

- In 2011, Mount Polley Mining Corp (MPMC) submitted a permit amendment application to discharge water from the mine to Hazeltine Creek, to facilitate maintenance of the long term water balance in the Tailings Storage Facility (TSF) based on the mine footprint at the time.
- A third party review of the permit application was commissioned . The scope of this review included consideration of the environmental impacts on the receiving environment, monitoring the discharge, and management conditions pertaining to the discharge.
- These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was granted on [date]. Note: we were asked for more details on what the amendment was.
- The review and the resulting report did not address any matters pertaining to geotechnical stability, as this was not part of the *Environmental Management Act* discharge application review. Geotechnical stability is addressed under the Mines Act, which is administered by the Ministry of Energy and Mines. [Suntanu may want to discuss with our colleagues at MEM on how to approach this bullet, or if we want to leave it out until the information is

requested by the reporter].

Two more questions from Globe & Mail reporter.

- **Doing a follow on the Mount Polley mine tailings pond breach and am looking for inspection records: What is the dam's track records? Have there been any deficiencies noted? etc.**

Mount Polley Mine.
Compliance History since 2012

Generally Mount Polley Mine operators have had a reasonable, cooperative and proactive attitude when dealing with non-compliances, from reporting to investigating and remediation following incidents.

Since 2012, ministry staff have conducted 14 inspections (office review and on-site) on Mt. Polley Mine. The following non-compliances were observed by Regional Operations Branch, Environmental Protection Division Staff:

- 24 May 2014. The ministry issued an advisory to Imperial Metals for exceedance of the freeboard within the tailings impoundment. The permitted limit is no less than 1.0m of freeboard. Ministry staff observed only 0.6 m freeboard. Freeboard returned to 1.0 m week commencing 30 June 2014.
- 18 April 2014. The ministry issued an advisory to Imperial Metals for bypass of authorized treatment works. The site experienced high flows due to spring freshet which caused pump system to become blocked and resulted in an overflow of long ditch towards Hazeltine Creek. Flow did not reach creek and was directed into Till Borrow Pit.
- January and April 2012. The ministry issued an advisory to Imperial Metals for non-compliance with submission of monitoring data for one of the groundwater monitoring wells (GW05-1).
- 30 August 2012. The ministry issued a warning to Imperial Metals for failure to report freeboard exceedance for perimeter pond (E7). This perimeter pond overflowed releasing approximately 150m³ effluent over 13 hours to ground.

- **Also, we got a tip that Imperial had sought permission to discharge spring melt water from the tailings pond this spring but that the province denied the request. Is that accurate?**

- On July 9th, 2014, Imperial Metals applied for a permit amendment to increase treated effluent from the tailings pond, and the necessary accompanying reports were submitted July 11th, 2014.
- Nothing in the application for the permit amendment indicated that the issue was emergent.
- The permit amendment process was in progress when the August 4th incident occurred.

Heather English | A/Issues Manager
Environmental Protection Division
Ministry of Environment
Telephone |250.356.5016
Cell | 250.580.1532

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 1:58 PM
To: English, Heather ENV:EX
Cc: Franklin, Kimberley GCPE:EX; Crebo, David GCPE:EX
Subject: RE: Mount Polley questions...

Christa provided it, but it came from Jack Green. I will work on simplifying the info shortly and may run by EPD to make sure you're OK with it.

From: English, Heather ENV:EX
Sent: Tuesday, August 5, 2014 1:55 PM
To: Dalal, Suntanu GCPE:EX
Cc: Franklin, Kimberley GCPE:EX; Crebo, David GCPE:EX
Subject: RE: Mount Polley questions...

Hi Suntanu,

Who provided you with the information below? I can follow up with that individual.

Thanks, Heather

Heather English | A/Issues Manager
Environmental Protection Division
Ministry of Environment
Telephone |250.356.5016
Cell | 250.580.1532

From: Dalal, Suntanu GCPE:EX
Sent: Tuesday, August 5, 2014 1:45 PM
To: English, Heather ENV:EX
Cc: Franklin, Kimberley GCPE:EX; Crebo, David GCPE:EX
Subject: Mount Polley questions...

We are still being asked for answers to the highlighted questions below.

I believe we already have the answer to the following questions below, I just need to simplify it a bit:

- **Doing a follow on the Mount Polley mine tailings pond breach and am looking for inspection records: What is the dam's track records? Have there been any deficiencies noted? etc.**

Mount Polley Mine. Compliance History since 2012

Generally Mount Polley Mine operators have had a reasonable, cooperative and proactive attitude when dealing with non-compliances, from reporting to investigating and remediation following incidents.

Since 2012, ministry staff have conducted 14 inspections (office review and on-site) on Mt. Polley Mine. The following non-compliances were observed by Regional Operations Branch, Environmental Protection Division Staff:

- 24 May 2014. The ministry issued an advisory to Imperial Metals for exceedance of the freeboard within the tailings impoundment. The permitted limit is no less than 1.0m of freeboard. Ministry staff observed only 0.6 m freeboard. Freeboard returned to 1.0 m week commencing 30 June 2014.
- 18 April 2014. The ministry issued an advisory to Imperial Metals for bypass of authorized treatment works. The site experienced high flows due to spring freshet which caused pump system to become blocked and resulted in an overflow of long ditch towards Hazeltine Creek. Flow did not reach creek and was directed into Till Borrow Pit.
- January and April 2012. The ministry issued an advisory to Imperial Metals for non-compliance with submission of monitoring data for one of the groundwater monitoring wells (GW05-1).
- 30 August 2012. The ministry issued a warning to Imperial Metals for failure to report freeboard exceedance for perimeter pond (E7). This perimeter pond overflowed releasing approximately 150m³ effluent over 13 hours to ground.

From: Shotton, Ryan GCPE:EX

Sent: Tuesday, August 5, 2014 1:35 PM

To: Dalal, Suntanu GCPE:EX; Jacobs, Jake GCPE:EX; Bethel, Greig GCPE:EX

Subject: RE: Mount Polley Compliance History/Summary

Suntanu - further to our phone call these are the questions we need to answer

Questions from Globe & Mail reporter

- **Reporter says there is a report that this mine applied for a permit to discharge tailings but it was not granted. Is this true?**

Two more questions from Globe & Mail reporter.

- Doing a follow on the Mount Polley mine tailings pond breach and am looking for inspection records: What is the dam's track records? Have there been any deficiencies noted? etc.
- Also, we got a tip that Imperial had sought permission to discharge spring melt water from the tailings pond this spring but that the province denied the request. Is that accurate?

Jacobsen, Jaclyn ENV:EX

From: Minister, ENV ENV:EX
Sent: Monday, August 11, 2014 1:28 PM
To: Correspondence Unit ENV:EX
Subject: FW: Imperial Metals disaster

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Unprinted, Adriana

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

From s.22
Sent: Tuesday, August 5, 2014 3:27 PM
To: Minister, ENV ENV:EX
Subject: Imperial Metals disaster

I am outraged by the failure of the bc government. Your department as well as the Ministry of Mines and Resources and Imperial Metals failed to make sure that this catastrophe be averted. Newspaper articles say the government spokesman commented this should never have happened. We can all agree on that but a little late and a really infuriating comment at that. The First Nations people as well as other members of the surrounding community in the disaster zone came to government and the mine some time ago with concerns about the tailings pond. Consultants submitted concerned reports. What were the recommendations and "actions" taken by YOU and your department as it related to concerns for the environment and peoples living in that area?? As a taxpayer and voter I would like to know.

This is a tragedy so immense it deserves more than typical response from govt which we are all so used to receiving. If government thinks that this scenario is going to help with the pipeline and other resource business ops in BC - GOOD LUCK and unfortunately, too bad and another tragedy for our employed AND unemployed.

The people in the area deserve IMMEDIATE information regarding the extent of the poison now surrounding them. You have that information so make it available now.

Please respond.

s.22

Jacobsen, Jaclyn ENV:EX

From: WWW ENVMail ENV:EX
Sent: Monday, August 11, 2014 12:07 PM
To: Correspondence Unit ENV:EX
Subject: FW: Mt. Polley tailing s pond breach

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Adriana

From: s.22
Sent: Tuesday, August 5, 2014 3:31 PM
To: WWW ENVMail ENV:EX; OfficeofthePremier, Office PREM:EX
Cc: Sultan.MLA, Ralph LASS:EX
Subject: Mt. Polley tailing s pond breach

You and your government truly disgust me. The ministry was informed about potentially devastating issues with this dam 3 years ago, and deliberately chose to do nothing at all. Imperial Metals is so far beyond negligent that it should immediately lose all future chances at running anything more than a city garbage truck, but given your record on any kind of environmental issues, they'll just get a slap on the wrist and be back in business poisoning more of our air and water. I hope all BC residents affected by this criminal negligence start a class action suit and sue this company into oblivion, with all damages going to the cleanup and restoration of the damage they have done. For sure your government won't bother to do anything beyond window dressing...after all, the company probably contributes to the Liberal Party and needs to get their money's worth in friendly kickbacks.

Why are toxic contaminants even allowed to accumulate in an open tailings pond where it's constantly leaching into the groundwater? Would you be willing to risk drinking lead, mercury or arsenic if that pond was in YOUR area and your drinking water was drawn from that watershed? Why isn't the mine being forced to treat ALL effluent before discharging it, at their own expense? Too expensive for the poor dears to make a profit? What happened to "the free market"? After all, in Liberal land, if a business isn't cost-effective, it doesn't deserve to exist, right? Or is that only applicable to businesses who aren't destroying the water we drink, the air we breathe, and irreplaceable resources such as our wild sockeye salmon run.

Well done. If you continue on in this fashion, BC will look just like China before you know it polluted beyond all recognition through greed and short sightedness.

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 1650 To Minister Bennett
Date: Wednesday, August 13, 2014 9:13:24 AM

From: Polak.MLA, Mary [<mailto:Mary.Polak.MLA@leg.bc.ca>]
Sent: Wednesday, August 6, 2014 9:50 AM
To: Minister, ENV ENV:EX
Subject: FW: Bennett

From: s.22
Sent: August 5, 2014 4:50 PM
To: Polak.MLA, Mary
Subject: Bennett

Good day Minister,
Why aren't you at the tailings disaster site? Bennett being there is akin to a fox guarding the hen house. Resources are near and dear to Bill. How can he be objective?

s.22

Jacobsen, Jaclyn ENV:EX

From: Minister, ENV ENV:EX
Sent: Wednesday, August 13, 2014 8:51 AM
To: Correspondence Unit ENV:EX
Subject: FW: Quesnel incident of today

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Ally

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

From: s.22
Sent: Tuesday, August 5, 2014 5:46 PM
To: WWW ENVMail ENV:EX
Cc: Polak, Mary ENV:EX
Subject: Quesnel incident of today

Minister of Environment

Does the Honorable Minister for the Environment Mary Polak have an official position on the Quesnel river flooding and potential water system contamination from mine tailings as a result of the incident earlier today?

Regards

s.22

If you have received this message in error please delete it immediately.

It is an offence under data protection laws to disclose any content without authorisation of the sender.

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 2107 To Premier CLARK and POLAK - Red flags raised years before B.C. mine-tailings spill, consultant says - The Globe and Mail
Date: Wednesday, August 13, 2014 9:18:14 AM

FYI – EPD-Mining

From: s.22
Sent: Tuesday, August 5, 2014 9:07 PM
To: Minister, ENV ENV:EX
Cc: OfficeofthePremier, Office PREM:EX
Subject: Red flags raised years before B.C. mine-tailings spill, consultant says - The Globe and Mail

Dear Christy & Mary,

I've already written you both about other issues this summer but I guess you were too busy to get back to me. I did want to point out this issue, brought to my attention by the CBC and the Globe. You can perhaps see why I didn't vote for your government. I just wonder what it is you do well because it isn't govern.

Try harder you represent BC.

Sincerely,

s.22

From The Globe and Mail:
[Red flags raised years before B.C. mine-tailings spill, consultant says](#)

Via The Globe and Mail's [iPad app](#)

Sent from my iPad

Nicoll, Sara ENV:EX

From: Minister, ENV ENV:EX
Sent: Wednesday, August 13, 2014 9:04 AM
To: Correspondence Unit ENV:EX
Subject: FW: Mount Polley - Declare Provincial State of Emergency - Request military assistance to contain and clean up.

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Ally, Unprinted

FYI – EPD-Mining

From: s.22
Sent: Tuesday, August 5, 2014 9:43 PM
To: OfficeofthePremier, Office PREM:EX
Cc: Minister, MNGD MNGD:EX; Minister, MEM MEM:EX; Minister, ENV ENV:EX; Minister, FLNR FLNR:EX
Subject: Mount Polley - Declare Provincial State of Emergency - Request military assistance to contain and clean up.

Hello Honorable Christy Clark,

Please declare a provincial state of emergency and request the military be brought in to assist with the Mount Polley Tailings Disaster. We need to block the river discharge of Quesnel Lake and have them assist with clean up efforts.

As a concerned s.22 BC resident in relation to this incident, my opinion is that the provincial government needs to take serious action related to this matter. This is Canada's "BP Gulf spill" equivalent disaster.

As a chemical process engineer who works in the mining industry, I am deeply concerned how this event may impact the mining industry in BC and Canada for generations to come. We need to act swiftly with adequate resources to take control of the situation.

Best regards,

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-05 2210 To Ministers - Environmental Spill
Date: Wednesday, August 13, 2014 9:18:20 AM

From: s.22
Sent: Tuesday, August 5, 2014 10:10 PM
To: Minister, ENV ENV:EX
Subject: Environmental Spill

I was borderline on the pipeline project believing our government would put the controls in place to ensure an environmental disaster did NOT take place.

I am now **100% opposed** to pipelines and future mining projects that put our waterways in jeopardy. I get the balance between environment and economics but this is absolutely intolerable.

s.22

Jacobsen, Jaclyn ENV:EX

From: Minister, ENV ENV:EX
Sent: Monday, August 11, 2014 1:29 PM
To: Correspondence Unit ENV:EX
Subject: FW: Water Filtration

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Unprinted, Adriana

From: Jason Blank [<mailto:jblank@filtramax.com>]
Sent: Wednesday, August 6, 2014 8:57 AM
To: Minister, ENV ENV:EX
Cc: George@pureworld.ca; adam.scheuer@watertiger.net
Subject: Water Filtration

To the office of the Honourable Mary Polak,

I am contacting you on behalf of Filtramax as well as a number of other Lower Mainland based water treatment companies.

We have technology that might be able to help with this incident, either on the local level – RO systems for potable water, the municipal level – larger treatment systems or on a more large scale level as needed.

I was wondering if and how we can be of assistance and would be happy to respect any and all confidentiality that is needed due to the public nature of this incident.

Jason Blank
Technical Sales Representative
Filtramax Inc
2231 Vauxhall Place
Richmond, BC
V6V 1Z5
Cell 604-314-6330
Office 604-278-4288 X 3265
Email jblank@filtramax.com

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From: [WWW ENVMail ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 0857 To Minister - Water Filtration
Date: Wednesday, August 27, 2014 1:37:17 PM

Add to log 208949 as REPLY to FINAL SENT

From: Jason Blank [mailto:jblank@filtramax.com]
Sent: Friday, August 22, 2014 3:27 PM
To: WWW ENVMail ENV:EX
Subject: RE: Water Filtration

Dear Mr. Standen,

Thank you for your follow through in this regards!

I hope we might be able to help Imperial Metals put this right!

Have a great day,

Jason Blank
Technical Sales Representative
Filtramax Inc
2231 Vauxhall Place
Richmond, BC
V6V 1Z5
Cell 604-314-6330
Office 604-278-4288 X 3265
Email jblank@filtramax.com

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From: WWW ENVMail ENV:EX [<mailto:env.mail@gov.bc.ca>]
Sent: Friday, August 22, 2014 3:03 PM
To: Jason Blank
Subject: RE: Water Filtration

Reference: 208949

August 22, 2014

Jason Blank, Technical Sales Representative
Filtramax Inc.
Email: jblank@filtramax.com

Dear Mr. Blank:

Thank you for your email of August 6, 2014, addressed to the Honourable Mary Polak, Minister of Environment, regarding the incident at Mount Polley Mine in which a tailings pond breach occurred. Minister Polak has asked that I respond on her behalf.

The retention of contractors falls under the jurisdiction of the responsible party, as they have purview over clean-up and remediation costs of the tailings pond spill as outlined in the polluter-pay model under British Columbia's *Environmental Management Act*.

I encourage you to contact Imperial Metals directly to obtain further information on how contractors are retained and contracts awarded via email at inquiries@imperialmetals.com, by telephone at 604 669-8959 or by mail at:

Imperial Metals Corporation
580 Hornby Street, Suite 200
Vancouver BC V6C 3B6

Thank you again for writing.

Sincerely,

Jim Standen
Assistant Deputy Minister
Environmental Protection Division

From: Jason Blank [<mailto:jblank@filtramax.com>]
Sent: Wednesday, August 6, 2014 8:57 AM
To: Minister, ENV ENV:EX
Cc: George@pureworld.ca; adam.scheuer@watertiger.net
Subject: Water Filtration

To the office of the Honourable Mary Polak,

I am contacting you on behalf of Filtramax as well as a number of other Lower Mainland based water treatment companies.

We have technology that might be able to help with this incident, either on the local level – RO systems for potable water, the municipal level – larger treatment systems or on a more large scale level as needed.

I was wondering if and how we can be of assistance and would be happy to respect any and all confidentiality that is needed due to the public nature of this incident.

Jason Blank
Technical Sales Representative
Filtramax Inc
2231 Vauxhall Place
Richmond, BC
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[Spam](#)
[Not spam](#)
[Forget previous vote](#)

Jacobsen, Jaclyn ENV:EX

From: Minister, ENV ENV:EX
Sent: Monday, August 11, 2014 1:15 PM
To: Correspondence Unit ENV:EX
Subject: FW: Questions about Government of B.C. programs and services

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Unprinted, Adriana

ADM for MO; EPD-Mining; CU draft - reference Olding report content; eApprovals

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

From: ServiceBC PostMaster [<mailto:servicebc@gov.bc.ca>]
Sent: Wednesday, August 6, 2014 9:41 AM
To: OfficeofthePremier, Office PREM:EX
Cc: Minister, ENV ENV:EX
Subject: FW: Questions about Government of B.C. programs and services

We are forwarding the following e-mail for your attention. Please respond to the original sender at: s.22
Thank you.

SERVICE BC CALL CENTRE

Hours of Operation: 7:30am to 5pm, Monday through Friday, except on statutory holidays.
In Vancouver (604) 660-2421
In Victoria (250) 387-6121
Elsewhere in BC 1-(800) 663-7867 (toll free)

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

From: Form.Handler.Application@gov.bc.ca
[mailto:Form.Handler.Application@gov.bc.ca] On Behalf Of s.22
Sent: Wednesday, August 06, 2014 7:24 AM
To: EnquiryBC@gov.bc.ca; s.22
Subject: Questions about Government of B.C. programs and services

Thank you for your submission to our 'Contact us' page. We will be contacting you as soon as possible to address the question or comment you have raised. Below this message you will see a copy of the information submitted by you via our webpage.

It was submitted by s.22 on Wednesday, August 6, 2014 at 07:24:03

questionAbout: question

message: Good morning,

Could you please explain why Christy Clark has not made an appearance in regards to the devastation in the Caribou? It is unacceptable that neither she nor environment minister Mary Polak has made a comment. It is time for our leaders to actually lead and think of British Columbians first!

Could you also let me know why three years ago concerns were expressed regarding the mine's tailing pond, but nothing was done?

I hope this environmental devastation is a warning to you regarding the Northern Gateway Project and any future mine approvals, including Seabridge, that could affect the environment.

Thank you,

s.22

reply: yes

email2: s.22

email_address_confirm: s.22

pageReferer:

<http://www.bing.com/search?q=bc+premieres+office&form=HPNTDF&pc=HPNTDF&src=IE-SearchBox>

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 1101 To Minister - Mount Polley
Date: Wednesday, August 13, 2014 9:11:25 AM

FYI – EPD-Mining

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

From: s.22
Sent: Wednesday, August 6, 2014 11:01 AM
To: Minister, ENV ENV:EX
Subject: Resign Immediately

Mount Polley is a disgrace and absolutely unacceptable. You should resign immediately.

Sincerely,

s.22

Nicoll, Sara ENV:EX

From: Minister, ENV ENV:EX
Sent: Wednesday, August 13, 2014 9:17 AM
To: Correspondence Unit ENV:EX
Subject: FW: Imperial Metals Mine disaster

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Ally, Unprinted

FYI – EPD-Mining

From: s.22
Sent: Wednesday, August 6, 2014 11:03 PM
To: Bennett.MLA, Bill LASS:EX; Minister, ENV ENV:EX; OfficeofthePremier, Office PREM:EX; alex.atamanenko@parl.gc.ca
Subject: Imperial Metals Mine disaster

Dear Ministers and Premier Clark,

I am furious and outraged at the mining disaster that has befallen the Quesnel Lake and affected areas.

Imperial Metals been criminally negligent in knowingly not addressing noted deficiencies in their operations. As my government, you have have failed miserably in enforcing the repair of deficiencies noted by your own inspectors.

Stop being toothless tigers and hold all Corporations accountable and protect my birthright - British Colombia Lands! You may do business in this province only if you operate in a responsible manner.

I don't want a penny of my hard-earned tax dollars going to the clean-up of this mess. Imperial Metals needs to completely foot the bill for ALL CLEAN-UP COSTS! They made the profits, they made the mess, they clean it up.

Sincerely,

s.22

From: [Lee, Ally ENV:EX](#) on behalf of [WWW ENVMail ENV:EX](#)
To: ["bpequin@swat-ab.ca"](mailto:bpequin@swat-ab.ca)
Subject: 2014-08-06 1144 To Minister Polak - Mount Polly Mine Tailings Release
Date: Friday, August 22, 2014 2:51:00 PM
Attachments: [CA14062E-7C89-45AC-ACD2-57CD9E8B06A3\[133\].png](#)
Importance: High

Reference: 208928

August 22, 2014

Brett Pequin

SWAT Consulting Inc.

Email: bpequin@swat-ab.ca

Dear Mr. Pequin:

Thank you for your email of August 6, 2014, addressed to the Honourable Mary Polak, Minister of Environment, regarding the incident at Mount Polley Mine in which a tailings pond breach occurred. Minister Polak has asked that I respond on her behalf.

The retention of contractors falls under the jurisdiction of the responsible party, as they have purview over clean-up and remediation costs of the tailings pond spill as outlined in the polluter-pay model under British Columbia's *Environmental Management Act*.

I encourage you to contact Imperial Metals directly to obtain further information on how contractors are retained and contracts awarded via email at inquiries@imperialmetals.com, by telephone at 604 669-8959 or by mail at:

Imperial Metals Corporation

580 Hornby Street, Suite 200

Vancouver BC V6C 3B6

Thank you again for writing.

Sincerely,

Jim Standen

Assistant Deputy Minister

Environmental Protection Division

From: Brett Pequin [<mailto:bpequin@swat-ab.ca>]

Sent: Wednesday, August 6, 2014 11:44 AM

To: Minister, ENV ENV:EX

Cc: Trevor Miller

Subject: Mount Polly Mine Tailings Release

Importance: High

Honourable Minister Polak;

I contact you with regards to the recent news of the Mount Polley tailings release, to offer to the Province of British Columbia our company's resources in an effort to help mitigate and contain any further impact to the environment. Our company specializes in Emergency Response Management and is fully equipped with specialized personnel, boats, booms and resources to assist the Province in any manner you or your team deem appropriate. We have a long history of responding to these types of situations and working together with government and industry to minimize the impact to our environment. If we can be of service please contact me directly or our 24hr emergency response number 1-866-610-7928.....Thank You for your time and consideration during this unfortunate event....Best Regards....Brett Pequin

Brett Pequin

SWAT Consulting Inc.



Mobile: 1-780-621-2178

bpequin@swat-ab.ca

www.swat-ab.ca

From: [Haslam, David GCPE:EX](#)
To: [McGuire, Jennifer ENV:EX](#); [Crebo, David GCPE:EX](#)
Cc: [Groot, Jeff GCPE:EX](#); [Standen, Jim ENV:EX](#); [Halls, Lori D ENV:EX](#); [Sandve, Chris MEM:EX](#); [Shotton, Ryan GCPE:EX](#)
Subject: 2014-08-06 1319 GCPE DHASLAM to MOE JLM Briefing for MBB following 1 pm meeting with Imperial
Date: Wednesday, August 6, 2014 1:18:51 PM

Hi all – there's a bit of confusion on the 1 pm meeting with Imperial on the pollution abatement order. Our understanding is a MoE representative is doing it via conference call. We'll need MoE to report the results of the for MBB and Jennifer McGuire (particularly MBB) so they're prepped for the 3 pm conference call. Can you clarify for us that I'm correct on the details and that it's possible for either a call or email be sent around on the meeting outcomes. Thanks so much - David

From: [Sego, D'Arcy ENV:EX](#)
To: [McGuire, Jennifer ENV:EX](#)
Subject: 2014-08-06 1353 MOE to JLM - Communication with Dale done
Date: Wednesday, August 6, 2014 1:53:28 PM

I am looking to aggressively steer the EEP off this and this is what I am looking to do:

Update the EEC with:

- MoE Regional Operations Branch - Mining Operations division will continue to be involved with the environmental impacts and water sampling as needed. Mr. Hubert Bunce, Mining Operations Director will be the lead MoE point of contact.
- MoE EEP will continue to support the incident where requested and is down grading their response involvement to a Code 1.
- EMBC will continue to provide general support and coordination to this incident
- EEMBC will continue to provide MoE daily situational updates as they are available.
- MEM will be the lead Provincial Government media spokesperson for this incident

Are you okay with this? I will also send out a MoE Executive notification to advise the same thing and add - additional MoE executive notifications will come from the Regional Operations Branch as needed

D'Arcy

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

From: McGuire, Jennifer ENV:EX
Sent: Wednesday, August 6, 2014 10:58 AM
To: Sego, D'Arcy ENV:EX
Subject: Re: Communication with Dale done

Thx

Sent from my BlackBerry 10 smartphone on the TELUS network.

Original Message

From: Sego, D'Arcy ENV:EX
Sent: Wednesday, August 6, 2014 10:53 AM
To: McGuire, Jennifer ENV:EX
Subject: Communication with Dale done

Nicoll, Sara ENV:EX

From: Minister, ENV ENV:EX
Sent: Wednesday, August 13, 2014 9:02 AM
To: Correspondence Unit ENV:EX
Subject: FW: Attn: Mary Polak, Minister of the Environment

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Ally, Unprinted

FYI – EPD-Mining

From: s.22
Sent: Wednesday, August 6, 2014 2:05 PM
To: Minister, ENV ENV:EX
Cc: Horgan.MLA, John LASS:EX
Subject: Attn: Mary Polak, Minister of the Environment
Importance: High

Where the heck is your statement on the huge disaster in the Cariboo ? Not a word on your own web site or the Ministry's on the breach of the tailings pond.

You have sufficient personal staff and a good communications department. You don't have to put your own pen to paper ever to write a statement, press release or a letter in your capacity as B.C.'s Minister of the Environment.

You & your Government are truly failing the people of this Province Ms. Polack. There has not been proper oversight and there has been a lack of properly trained inspectors because of your Governments cutbacks. You likely don't even have engineers with the right kind of education/training to oversee tailing ponds in this province.

B.C. residents & the **Native Communities** are **very** disturbed about the toxic spill in the Cariboo. Many are worried about the Quenelle river system salmon run which are nearing migration right now into the Fraser River. And what about all the wildlife in the very large area that may die **painful deaths** from drinking the water in streams and lakes etc.

Copper which is in the slurryeven in small amounts, affects the ability for fish and all animals to smell. This isn't even considering all **disolved** lead and arsinic in the **water and sand**. It is this contaminated sand as well as the disoved toxins in the water which poses the greatest **danger** to these waterways in the Cariboo. Much of the damage will be long term.

Believe it or not, all the people in this Province care about the people living and earning a living from tourism in the Cariboo.

You don't ???

A engineering program needs to be developed especially with tailing pond training. This does not exist in our universities. Knowledge in this area is gained only from experience.....years of experience and this may not include **real knowledge on the structures** of these tailing ponds within our Province.

You must address **ALL** issues Ms. Polak. The public is better informed than you & your Government seem to think.

This disaster has woken up the people of B.C. **We truly care about this disaster.** I think your days are numbered as a sitting Member of the BC Legislature.

Please note it did not take the Leader of the Opposition, John Horgan, long to comment on this disaster.

Mount Polley Mine tailings breach: 'The devastation up the lake is unbelievable' - British Columbia - CBC News

<http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-breach-the-devastation-up-the-lake-is-unbelievable-1.2728005>

Statement from New Democrat leader on Mount Polley Mine ...

bcndpcaucus.ca/news/statement-new-democrat-leader-mount-polley-min...

1 day ago - VICTORIA – *New Democrat Leader* John Horgan released the following *statement* following the Mount Polley Mine tailings pond breach:.

Your silence is disgraceful Mary Polak and I am **grieving**.
Sincerely,

s.22

Nicoll, Sara ENV:EX

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To: Correspondence Unit ENV:EX
Subject: FW: Attn: Mary Polak, Minister of the Environment

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Ally, Unprinted

FYI – EPD-Mining (add to s.22 log – additional author)

From: s.22
Sent: Wednesday, August 6, 2014 2:41 PM
To: Stephanie Mc Dowall; Minister, ENV ENV:EX
Cc: Horgan.MLA, John LASS:EX
Subject: Re: Attn: Mary Polak, Minister of the Environment

Keep re-electing the good ol' BC Fib-erals...turning BC into a true investors' paradise - and to hell with the rest.

s.22

'Israeli soldiers are dying so that innocent Palestinians can live.' Ron Dermer, Israel's UN Ambassador. This has to be the epitome of insult to our intelligence. s.22

From: s.22
Sent: Wednesday, August 06, 2014 11:05 PM
To: [mailto: ENV.Minister@gov.bc.ca](mailto:ENV.Minister@gov.bc.ca)
Cc: John.Horgan.MLA@leg.bc.ca
Subject: Attn: Mary Polak, Minister of the Environment

Where the heck is your statement on the huge disaster in the Cariboo ? Not a word on your own web site or the Ministry's on the breach of the tailings pond.

You have sufficient personal staff and a good communications department. You don't have to put your own pen to paper ever to write a statement, press release or a letter in your capacity as B.C.'s Minister of the Environment.

You & your Government are truly failing the people of this Province Ms. Polack. There has not been proper oversight and there has been a lack of properly trained inspectors because of your Government's cutbacks. You likely don't even have engineers with the right kind of education/training to oversee tailing ponds in this province.

B.C. residents & the **Native Communities** are **very** disturbed about the toxic spill in the Cariboo. Many are worried about the Quenelle river system salmon run which are nearing migration right now into the Fraser River. And what about all the wildlife in the very large area that may die **painful deaths** from drinking the water in streams and lakes etc.

Copper which is in the slurryeven in small amounts, affects the ability for fish and all animals to smell. This isn't even considering all **disolved** lead and arsenic in the **water and sand**. It is this contaminated sand as well as the disolved toxins in the water which poses the greatest **danger** to these waterways in the Cariboo. Much of the damage will be long term.

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You don't ???

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<http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-breach-the-devastation-up-the-lake-is-unbelievable-1.2728005>

Statement from New Democrat leader on Mount Polley Mine ...

bcndpcaucus.ca/news/statement-new-democrat-leader-mount-polley-min...

1 day ago - VICTORIA New Democrat Leader John Horgan released the following *statement* following the Mount Polley Mine tailings pond breach:.

Your silence is disgraceful Mary Polak and I am **grieving**.
Sincerely,

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 1441 To Premier and Ministers - Act immediately on containing the chemicals from Mount Polley mine breach
Date: Wednesday, August 13, 2014 9:01:44 AM

From: s.22
Sent: Wednesday, August 6, 2014 2:21 PM
To: OfficeofthePremier, Office PREM:EX; Minister, ENV ENV:EX; Minister, MEM MEM:EX; Minister@ec.gc.ca
Cc: Nikolejsin, Dave MEM:EX; Morel, David P MEM:EX; Amann-Blake, Nathaniel MEM:EX; Smith, Chris MEM:EX; Anslow, Martha MEM:EX; Hoffman, Al MEM:EX; Howe, Diane J MEM:EX; Thorpe, Rolly MEM:EX; Pocklington, Cheryl M MEM:EX; Anne.Moody@gov.bc.ca; Bellefontaine, Kim MEM:EX; Warnock, George MEM:EX; Britton, Jim MEM:EX
Subject: Act immediately on containing the chemicals from Mount Polley mine breach

The Honourable Leona Aglukkaq, Minister of the Environment, Canada

The Honourable Christy Clark, Premier, B.C.
Honourable Mary Polak , B.C. Minister of the Environment

Honourable Bill Bennett, B.C. Minister of Energy and Mines

Re: The Mount Polley Mine Tailings Disaster

Dear Minister Aglukkaq, Premier Clark, Minister Polak, Minister Bennett
and Ministry of Energy, Mines and Responsible for Core Review:

A friend from s.22 wrote me the following:

"There are several ways of containing the sludge, especially now while the majority of it is behind a series of large log jams, but they are dragging their feet, saying that these "assessments" will take a week, or so. **In the meantime, professional people have moved in and suggested proven ways of containing the chemicals and are being ignored** (because it will cost money, I'm sure).

....

Waiting a week for these so called assessments will eliminate any chances of containing the damage. I personally know a mining consultant who has a ton of degrees, and has worked on a lot of mine start ups. He was at the meeting and told them of his credentials, describing **a simple procedure that would give them results in hours rather than days, and they ignored him.** Another woman, also an expert mining consultant, told them of **a proven method of containing the chemicals and they ignored her** too, just giving her the party line that they would complete their assessments before making any decisions. **In a week, of course, it will be too late."**

I ask that you act together to **intervene immediately to contain the toxic metals** released from the Mount Polley mine breach.

It is not prudent to our people, rivers and lakes, land, fish, fowl and animals to wait for the mine to take responsibility for any containment or clean-up.

Executives from Imperial Metals will be in psychological denial for some time. *As a province and country, we cannot wait for them to take appropriate actions.*

This *deepest fjord in North America* is our heritage, and with possibly *one of the largest salmon return runs* up the Fraser River is about to happen any day, we cannot afford to vacillate about acting to protect our valuable natural resources.

I believe it is in our best interests to pursue the mining consultants she mentions who were at the Likely community meeting yesterday, as well as others, to *determine what needs to be done NOW to contain and avoid the worst damage possible*.

To avoid consulting widely and acting immediately on such expert recommendations is only to cause more environmental, commercial, and health damage to our beautiful province.

Please, THIS IS AN EMERGENCY. Take PROACTIVE MEASURES IMMEDIATELY. Don't wait for Imperial Metals to take responsibility sometime in the vague and distant future (or even a week from now). Fine them later for the damages, especially given that the townsfolk, aboriginal communities, and experts apparently know they have violated previous recommendations and fired employees who complained that recommendations were not being followed.

Sincerely s.22

CC: **Ministry of Energy, Mines and Responsible for Core Review**

Dave Nikolejsin, Deputy Minister, [Ministry of Energy, Mines and Responsible for Core Review](#)

David Morel, Assistant Deputy Minister, Mines and Mineral Resources Division

Nathaniel Amann-Blake, Executive Director, Policy, Legislation and Issues Resolution

Chris Smith, Director, Policy and Regulatory Reform

Martha Anslow, Project Director

Al Hoffman, Chief Inspector of Mines/Executive Director of Health and Safety & Permitting

Diane Howe, Deputy Chief Inspector of Mines, Permitting
Rolly Thorpe, Deputy Chief Inspector of Mines, Health and Safety
Cheryl Pocklington, Inspector of Mines, Ergonomics

Anne Moody, Senior Reclamation Scientist, Reclamation

Kim Bellefontaine, Senior Reclamation Geoscientist, Acid Rock Drainage

George Warnock, Manager, Geotechnical Engineering

Jim Britton, Regional Geologist, South Central (Kamloops)

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 1745 To Minister - Benefits from mining, eh?
Date: Wednesday, August 13, 2014 9:13:15 AM

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

From: s.22
Sent: Wednesday, August 6, 2014 5:45 PM
To: Minister, ENV ENV:EX
Subject: benefits from mining, eh?

So how many jobs are lost now because the Mt. Pullen mine not just ignored, but was allowed to ignore, the recommendations from the Ministry? I think the devastation is disgusting. And for anyone to say they'd drink the water from that tailing pond is showing a severe lack of common sense and disrespect for all the people who are now being told not to drink/bathe/wash etc in that water. The slurry may settle and the water may look clean again, but with all the arsenic and who knows what else sitting beneath, who can say when that area will ever be clean again? You can't give away the resources at the expense of everything else. You want to know why people don't trust government? Look at your own ministry. I don't live in that area and I'm watching, as are many more. You have a lot of work to do to regain any sense of trust that I might have in your ministry or anything that you claim to protect.

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 1821 To Minister Polak - Minister of the Environment
Date: Monday, August 11, 2014 4:11:19 PM

From: s.22
Sent: Wednesday, August 6, 2014 6:21 PM
To: s.22
Cc: Minister, ENV ENV:EX; Horgan.MLA, John LASS:EX
Subject: Re: Attn: Mary Polak, Minister of the Environment

Good letter!

Another aspect to consider in any future letters is to determine what changes should be made to legislation and standards for constructing and maintaining tailing ponds.

The impacts of the release of such large amounts of toxic minerals into the River means that these toxic minerals will flow into the ocean and continue to cause devastation for years.

How far (geographically) and for how long these impacts on the ocean will be should be monitored to increase our scientific knowledge of the impacts of tailing ponds on the larger environment. To achieve this, specific steps have to be taken to set up and maintain a study team.

Some very important and expensive changes will have to be made. The mining company involved should suffer significant expenses to ensure that adequate corrective action is taken.

If there is no significant cost to the company, we could expect further incidents in future.

The construction and maintenance of tailing ponds is expensive, the cost of any failure should cost the company in order to avoid companies cost cutting in the design, construction and maintenance of trailing ponds.

s.22

On Wed, Aug 6, 2014 at 2:05 PM, s.22 wrote:
Where the heck is your statement on the huge disaster in the Cariboo ?
Not a word on your own web site or the Ministry's on the breach of the tailings pond.

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<http://www.cbc.ca/news/canada/british-columbia/mount-polley-mine-tailings-breach-the-devastation-up-the-lake-is-unbelievable-1.2728005>

[Statement from New Democrat leader on Mount Polley Mine ...](#)

bcndpcaucus.ca/news/statement-new-democrat-leader-mount-polley-min...

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Your silence is disgraceful Mary Polak and I am **grieving**.

Sincerely,

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 1853 To Minister - Mount Polley Mine Disaster
Date: Wednesday, August 13, 2014 9:05:40 AM

From: s.22
Sent: Wednesday, August 6, 2014 6:53 PM
To: Minister, ENV ENV:EX
Subject: Mount Polley Mine Disaster

This environmental disaster is what comes from a failure of your Ministries to listen to environmental consultants, workers in the field and on the job.

The biggest crime is your failure to regularly and adequately inspect AND ENFORCE warnings in all of these projects in B.C.

After this Mount Polley Mine disaster will you even inspect all of the the other Imperial Mines projects in BC that your Government has approved and welcomed?.....we wonder!

s.22

Sent to:
Minister of Mines (Bill Bennett)
MEM.Minister@gov.bc.ca
Minister of Environment (Mary Polak)
ENV.Minister@gov.bc.ca
Premier Clark: premier@gov.bc.ca

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 1905 To Premier CLARK - Mount Polley - Disaster Mitigation Suggestions
Date: Wednesday, August 13, 2014 9:05:01 AM

From: s.22
Sent: Wednesday, August 6, 2014 7:05 PM
To: OfficeofthePremier, Office PREM:EX
Cc: Minister, FLNR FLNR:EX; Minister, MNGD MNGD:EX; Minister, MEM MEM:EX; Minister, ENV ENV:EX
Subject: Mount Polley - Disaster Mitigation Suggestions

Hello Honorable Christy Clark,

The purpose of this email is to contribute to the brain storming of the province related to the Mount Polley Disaster and is not expert recommendation. We need to work together to move forward in this and mitigate the worsts of this disaster.

Great work to declare a state of emergency in the region and outline of requirements for Imperial Metals, which includes immediate tailings dam berm reconstruction and pumping out Polley Lake to the legacy mine pit.

To add to the strategies currently being considered, please embrace the following suggestions:

- This event sets the “bar-level” for emergency response ability of the province for any future resource development projects (Mining, LNG, pipelines, etc). So don’t screw it up.
- Public information is key, especially with the new age of the Internet. Set up an expected daily update from the government to inform the public. This may include a special public website or daily news release. For better or worse, at least it does not allow the radical environmentalists to take control of the message. An expected agenda of the releases would be beneficial.
- Ignore the “touchy-feely/emotional” response to Imperial Metals. The government has nothing to lose and everything to gain by taking appropriate control of the situation. Their help is required for the benefit of everyone, but in an state of emergency the province owns the situation.
- Open the chequebook to deal with this issue. BC is the most progressively minded province in Canada and expects the most from our government. Cheaping out will hurt the BC Liberals. Expect to push the cost onto the company or creditors in the end anyways. Get a legal and accounting team together.
- Coordinate mining experts from UBC Mining Engineering Dept, CMP (Canadian Mineral Processors), CIM (Canadian Institute of Mining and Metallurgy), and Queens University Mining Department on recommendations to deal with this. They have everything to gain and nothing to lose. Consider a provincially sponsored week/weekend “sandbox” retreat. Canada is a global expert in mining and has the expert resources to guide the province on best path forward.
- Set up an emergency operations station in Williams Lake or Prince George as a rally point for the disaster. Expect this disaster to take a minimum of 1-2 years to resolve. (consider Hurrican Katrina, BP Gulf Oil Spill, Christchurch earthquake disaster, etc

for examples of longevity).

- Consider the current pits “fair game” for contamination disposal since they are unlikely to start up soon anyways.
- Include Dr. David Schindler at the University of Alberta in the war room discussions to recreate his “curtain” isolation experiment on Quesnel Lake (previously used for ground breaking phosphate contamination research). Expedite the creation and delivery of one. The rain will eventually fall and further contaminate the lake.
- Request the military to assist with humanitarian operations and clean up.
- Consider the option to blast and block the discharge of Quesnel Lake, so the salmon go somewhere else to spawn (in 2 weeks!) and the contaminated water does not discharge from the lake into the river system (which would result in serious water basin contamination issues).

Our province is the most beautiful and progressively minded in Canada. Please take the appropriate actions to mitigate the worst of this disaster.

Best regards,

s.22

From: [Crebo, David GCPE:EX](#)
To: [Hancock, Tom ENV:EX](#); [Dhanowa, Damon ENV:EX](#); [Halls, Lori D ENV:EX](#); [Standen, Jim ENV:EX](#); [McGuire, Jennifer ENV:EX](#)
Cc: [GCPE Communications - Environment](#)
Subject: 2014-08-06 1923 GCPE DCREBO to MOE - Mt Polley Update and Communications Materials
Date: Wednesday, August 6, 2014 7:22:48 PM
Attachments: [Q&A MtPolleyTailingsPondBreach-Aug2014.docx](#)
[ATT00001.htm](#)
[KM MtPolleyTailingsBreach.docx](#)
[ATT00002.htm](#)
[2014MEM0020-001140.pdf](#)
[ATT00003.htm](#)
[2014ENV0055-001137.pdf](#)
[ATT00004.htm](#)

FYI - up to date materials.

Sent from my iPhone

Begin forwarded message:

From: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
To: "Fraser, John Paul GCPE:EX" <JohnPaul.Fraser@gov.bc.ca>, "Gordon, Matt GCPE:EX" <Matt.Gordon@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Groot, Jeff GCPE:EX" <Jeff.Groot@gov.bc.ca>
Cc: "Chin, Ben PREM:EX" <Ben.Chin@gov.bc.ca>, "Mills, Shane LASS:EX" <Shane.Mills@leg.bc.ca>, "Sandve, Chris MEM:EX" <Chris.Sandve@gov.bc.ca>, "Shotton, Ryan GCPE:EX" <Ryan.Shotton@gov.bc.ca>, "Jacobs, Jake GCPE:EX" <Jake.Jacobs@gov.bc.ca>
Subject: Mt Polley Update and Communications Materials

All – below is the EMBC CCG update and attached are the updated QA/KM and today's Factsheet and MoE IB that was released today. I will circulate to all GCPE directors and managers and the CCG. Thanks - David

Central Coordination Group summary notes:

Energy and Mines

- Reviewing options to reduce water levels in Polley lake to reduce the chance of the debris plug blowing out
 - Pump water in to Hazletine creek , or
 - Siphon water to "white pit" containment pond > pump from there to "springer pit"
- Exploring options to berm the failure point on the original pit to hold back any existing residual flow or chance of secondary flows
- Two additional investigators on site tomorrow to carry forward with interviews of employees (challenge with some no longer being at work site)

Environment

- Issued pollution abatement orders to the company
 - Defines expectations on assessment, planning, mitigation, monitoring
- Continuing with water sampling (3rd day – multiple sites – Quesnel lake & river) until the company has a confirmed process in place to take over this activity
 - Anticipate preliminary sampling results this evening and will try to share information as quickly as possible
- Participated in briefing to the four area First nations chiefs this afternoon
 - The chiefs emphasized their need for direct and ongoing involvement and engagement

Public Safety Canada

- **DFO** has taken a precautionary approach consistent with the CRD's public advisory and has issued a precautionary closure for a Chinook salmon directed recreational fishery
 - **** Action Item** > forward information on this asap
 - **** Action item** > forward any summary DFO information
- **Env. Can.** has deployed environmental enforcement officers to work with MoE to conduct joint investigation and are coordinating daily weather briefings
- Discussion - Questions for DFO can be routed through Wayne Hirlehey (PSC) if desired

HLTH

- Liaised with BC Ministry of Environment on water sampling protocols.
- <!--[if !supportLists]-->• <!--[endif]-->Collaborating with First Nations Health Authority.

Aboriginal Relations and Reconciliation

- Have been fielding questions from the four First Nations affected / engaged: Williams lake, Soda creek, Canoe creek, Canim lake
- Ministry has been engaging the First Nations Leadership Council (via Deputy Min Steve Munro)
- Direct discussions with Grand Chief to dispel any misinformation
- Discussion – (Lori H - MOE) mention of First Nations ceremony scheduled on Likely bridge tomorrow at noon to acknowledge impacts of this event
 - RCMP confirmed awareness

EMBC

- <!--[if !supportLists]-->• <!--[endif]-->Report debris on Quesnel lake is ~ 80% contained in Mitchell bay (to be forwarded to Fraser Mills haul-out site) and the Likely bridge is no longer considered at risk
- <!--[if !supportLists]-->◦ <!--[endif]-->Corroborated - MOTI (Dirk)
- <!--[if !supportLists]-->• <!--[endif]-->ADM Quealey has scheduled early a.m. calls with Cariboo Regional District CAO
- <!--[if !supportLists]-->• <!--[endif]-->Passed on acknowledgement of

coordinated efforts by all in support of this incident from Ministers and Cariboo Regional District staff

- <!--[if !supportLists]-->• <!--[endif]-->**** Action Item** > (for John Dyble) please send refined estimates of staff on site / staff in support for this event > Thursday > to Ralph Mohrmann
- <!--[if !supportLists]-->• <!--[endif]-->Discussion on proposed Integrated Task Force – **** Action Item** > information / draft structure to be shared for comment by Ralph M.

JTST

- Continued contact with Steel Workers Union and discussion on impact to workers
- ~ 300 Union / 85 non-union workers form this work site
- Union will set up a small office in Williams lake for point of contact for affected workers to share information and services
- Reported that some workers (~ 60 + %) may be called back to work to assist with mitigation and rehab efforts
- There has been outreach direct with the Cariboo Regional District

Misc.

- <!--[if !supportLists]-->• <!--[endif]-->Aerial photos are being compiled (**FLNRO – Jerry MacDougall**) / discussion / requests can be directed/coordinated through EMBC (Ralph Mohrmann)
- <!--[if !supportLists]-->• <!--[endif]-->Question – is HLTH carrying out independent water sampling? > HLTH > “No” – relying on MOE sampling / **** Action item** - to be verified

- ***Anticipate next call for 17:00 Thursday***

Q&A – Mount Polley Tailings Pond Breach

General:

Has it been stopped? If no, when can we expect it to?

- The tailings flow from the dam has slowed considerably
- The ground around the breach, Polley Lake, the Hazeltine Creek is still stabilizing
- The public has been asked to stay away from this area and boaters on Quesnel Lake should stay away from Hazeltine Creek Lake and Quesnel Lake

What are the next steps in the process?

- Inspectors of Mines and other agencies will undertake a comprehensive investigation of the failure to determine root causes if possible
- Lessons learned will apply to other mines in the province

How long will the process take?

- The investigation determining what caused the breach will take several months

Has the mine been shut down? For how long?

- The mine cannot operate without a location to store tailings
- Imperial Metals announced that the mine is now in care and maintenance

When was the last time there was a major tailings pond breach like this in BC?

- In the last 40 years, there have been no major tailings dam breaches of this magnitude in BC

How does BC compare to other jurisdictions on tailing pond breaches?

- BC has experienced a very positive record. This is the first significant tailings dam failure in recent history.

Mt. Polley Mine & Imperial Metals

What is the Mt Polley dam's track record? Have there been any deficiencies noted?

- Mount Polley is up to date with geotechnical reporting requirements, including the annual dam safety inspection requirements. 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.
- The Mount Polley mine has a valid Mines Act permit. The company has been generally compliant with the Health, Safety and Reclamation Code and their Mines Act permit conditions.

What is Imperial Metal's track record? Have they had similar incidents?

- In general, Imperial Metals has been compliant with the Health, Safety and Reclamation Code and their Mines Act permit conditions
- BC has some of the highest safety standards when it comes to permitting and operating mines and Imperial Metals would not have received any approvals to operate in BC if they had not measured up to those standards

How was the dam at Mt Polley being operated?

- Mount Polley Mining Corporation (the Permittee) is currently authorized by the Ministry of Environment to discharge 1.4 million cubic metres of water per year into Hazeltine Creek
- The company recently submitted an application in July 2014 to increase the volume of treated water to be discharged from the site to 3 million cubic metres per year

Is imperial required to ensure contents of pond within these guidelines at all times, how is this monitored / ensured, what action is taken when guidelines not met?

- Wastewater stored in a Tailings Storage Facility (commonly referred to as a tailings pond) is not required to meet drinking water standard of water quality guidelines
- The purpose of including the drinking water standard of Water Quality Guidelines was to describe the relative toxicity of the effluent released from the Mount Polley Tailings pond during this weekend's breach.
- The water quality guidelines are also considered when Environmental Management Act statutory decision makers determine the authorized effluent discharge quality from a Tailings Storage Facility into a water body.
- The authorized limit is situation specific and allows for an initial dilution zone in the water body. The authorized effluent discharge may not be the same as the drinking water standard of respective water quality guideline.
- If the company discharges effluent that does not meet the requirements of the permit or discharges without a permit, compliance measures will be taken as per the Environmental Management Act.

How many other mines does Imperial Metals operate in BC?

- Imperial Metals has a half interest in Huckleberry Mine near Houston, BC and Red Chris Mine is under construction and nearing operation status in Northwest BC

Cleanup and Environmental Impacts

Who is responsible for the cleanup? Does the situation change if Imperial Metals goes bankrupt?

- Clean up from this accident is the responsibility of the company
- The ministry holds \$14.5 million in security bonding for the Mt Polley mine in the event that the company defaults on its responsibilities

What actions does the Pollution Abatement Order instruct Mt Polley to carry out?

- The Ministry of Environment has issued a Pollution Abatement Order to Mount Polley Mining Corp. This order requires 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 requires 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 by today. The company must also submit a detailed action plan by Aug 15, and it is required to report weekly on the implementation of action plan measures.

The 2011 Gary Olding report implies the dam was overbuilt because a water discharge permit was delayed – is this true?

- The cause of the breach is under investigation and I can't speculate on the findings.
- Mount Polley is up to date with geotechnical reporting requirements, including the annual dam safety inspection requirements.
- 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.

Further background on the Olding Report & Recent permit history:

- Mt Polley has had an effluent permit (#11678) with the Ministry of Environment since 1997.
- Mount Polley mine operates with an annual water surplus, and had 6.5 Mm³ (million cubic metres) of water stored in the Tailings Storage Facility.
- In 2009 Mt Polley applied for an permit amendment to discharge up to 1,400,000 m³/y of dam seepage effluent from the tailings storage facility to nearby Hazelton Creek. The amended permit limits discharge to 35% of that creek's daily flowrate, with contaminant limits, and requires an annual discharge plan.
- Prior to this permit being granted concerns were raised about the proposal, prompting an independent report by a third party.
- This report was commissioned to provide a review of the application submitted, requesting authority to discharge water from the mine to Hazelton Creek.
- The scope of the third party review included consideration of the environmental impacts on the receiving environment, monitoring of the discharge, and management conditions pertaining to the discharge. These recommendations were considered carefully in the amendment process and provided a basis for some of the conditions in the amended permit, which was approved in 2012.
- Mt Polley has since submitted a further permit amendment request to discharge up to 3,000,000 m³/y of treated effluent (ditch water) to Polley Lake, which overflows to Hazelton Creek.
- This application was received by the ministry this summer, and is being considered.

Regional Issues

The Cariboo Regional District has declared a State of Emergency – what does that mean/involve?

- The Cariboo Regional District (CRD) declared a state of local emergency (SOLE) allowing it the exceptional powers to suspend certain rights and freedoms in the interest of ensuring public safety.
- In this case, the CRD required the ability to gain access to private property in order to provide heavy equipment support to the West Fraser Mills forest company that is deploying tub boats for collection/control of woody debris from Lake Quesnel.

- Additionally, the declaration allows the CRD better enable a fair distribution of potable water to the residents of Likely.

Is the Likely Bridge in danger with all the floating debris?

- At this point, there is no imminent threat to the structure
- Good progress is being made by West Fraser to boom the debris in Quesnel Lake and prevent it from reaching the bridge
- The Ministry of Transportation has two excavators stationed at the Likely Bridge to respond should any significant accumulations of debris threaten the bridge

Broader Mining in BC Issues

How does this impact the economic health of the mining industry?

- This is difficult to assess at this time. It will certainly bring more scrutiny to mine permitting processes
- Having said that, mining has a significant history and a promising future in BC
- Not only has the mining industry helped shape British Columbia over the last 150 years, it will play an important role in creating a strong and stable economic future

What are the potential penalties if it has been determined regulations were not followed?

- It's too early to determine whether Imperial Metals did not follow regulations
- Prosecution is possible pursuant to Section 37 of the BC Mines Act. This can be applied to a person who contravenes a provision of the Act, Code or the regulation or who impedes an investigation
- The decision to prosecute is made by Crown Counsel based on evidence that we collect

Given the incident at Mt. Polley, will you be inspecting all mines with tailings ponds....and when?

- If the investigations shows early on that the breach was a result of a design failure or practise at Mt. Polley then directions will be given to other applicable mine sites and inspections will be undertaken at other applicable mines in BC
- Any and all lessons learned once the investigation is completed will apply to other mines in the province

What follow up actions does the ministry take and does it trigger a review of other province wide mining operations?

- Inspectors of Mines and other agencies will undertake a comprehensive investigation of the failure to determine root causes if possible
- Lessons learned will applied to other mines in the province as appropriate

How many active metal mines are there in BC?

Active metal Mines – as of Aug 2014

Mine Name	Company	Commodity	Location	Production Start
Bralorne	Bralorne Gold Mines Ltd	Gold	Near Whistler/Pemberton	May 2011
Copper Mountain	Copper Mtn Mining Corp	Copper, gold, silver	Near Princeton	June 2011
Endako	Thompson Creek Minerals	Molybdenum	Near Fraser Lake	1965
Gibraltar	Taseko Mines Ltd	Copper, molybdenum	Near Williams Lake	Re-opened by Taseko in 2004 (previously operated 1972–1998)
Highland Valley Copper	Teck Resources Ltd	Copper, molybdenum	Near Ashcroft	1986 (this is when the Lornex and Valley Copper mines merged)
Huckleberry	Imperial Metals Corp	Copper, molybdenum	Near Houston	1997
Mount Polley	Imperial Metals Corp	Copper, gold, silver	Near Williams Lake	Re-opened 2005 (previously operated 1997 to 2001)
Mt. Milligan	Thompson Creek Metals Company	Copper, gold, silver	156 km northwest of Prince George	August 2013
Myra Falls	Nyrstar Inc	Copper, gold, silver, lead, zinc	Near Campbell River	circa 1966
New Afton	New Gold Inc	Gold	Near Kamloops	June 2012
Bonanza Ledge	Barkerville Gold	Gold		July 2014

Note* Bonanza Ledge does not have a tailings impoundment

Mt Polley Tailings Breach Key Messages

On the breach at Mt. Polley dam:

- We are devoting every appropriate resource to working with local officials to clean up the site, mitigate any impacts to communities and the environment, and investigate the cause of the breach
- We will determine the cause of the event and we are determined to prevent an incident like this from happening again
- Any potential environmental impact from the tailings pond water on the local watershed is unknown at this time but all efforts are being made to make a determination as soon as possible
- There is a precautionary water ban advisory not to drink or bathe in the water and not to allow pets or livestock to drink the water
- Water tests have been sent for analysis and will determine the full extent of potential environmental impacts with results expected this week
- Mine Inspectors are on-site investigating the cause of the breach and I can't speculate on the findings

On Mt Polley mine and the process moving forward:

- Energy and Mines Inspectors are starting the interview process in conjunction with the Conservation Service
- This will involve interviewing mine staff and the review of all applicable documentation on the mine site
- 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
- Imperial Metals announced that the mine is now in care and maintenance and not operating

On previous incidents and mine safety:

- In the last 40 years, there have been no tailings dam breaches of this magnitude in BC

- 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
- 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
- BC has some of the highest safety standards when it comes to permitting and operating mines and Imperial Metals would not have received any approvals to operate in BC if they had not measured up to those standards

On water quality and sampling:

- The current water ban is necessary as we err on the side of caution
- Environment Ministry staff took initial water quality samples on August 4 and we have directed officials to obtain results as quickly as possible
- Given the nature of the issue, it is important that the protocols for legal sampling are followed so we get accurate results
- The Ministry of Environment will provide results to Interior Health officials and the Cariboo Regional District Emergency Operations Centre when they become available
- The Ministry will continue to conduct water sampling tests daily to determine the impacts on water quality
- The Ministry is also working with Imperial Metals to develop both short-term and long-term plans for further water quality testing
- The Ministry intends to post results on our website, including a map of the sampling locations

On the Pollution Abatement Order:

- The Pollution Abatement Order issued to Mount Polley Mining Corp. requires immediate action to stop the further release of mine tailings into nearby waterways
- It also requires the company to submit environmental impact assessments and clean-up action plans to the ministry

- 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 must also be submitted
- The company must also submit a detailed action plan and it is required to report weekly on the implementation of action plan measures

Background:

Update

Aug 6: Minister Bennett held a province-wide media availability where he and ENV support staff gave an overview of the situation and an update on the status of particular issues, followed by an open Q&A by media.

Aug 5: Minister Bennett arrived on-site on August 5th, 2014 with support from other ministry staff and Geotech Engineers are on the ground to determine cause of the breach and will conduct an investigation going forward.

Minister Bennett is in Likely attending meetings where he is engaging local residents and media about the current situation and the steps being taken to mitigate as many impacts as possible for those affected in the coming days.

Incident:

Early in the morning of August 4 the tailings pond dam at the Mt. 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. Hazletine Creek flows out of Polley Lake and the flow of contaminated water continued into Quesnel Lake. The flow out of the breach has decreased dramatically, but has not completely stopped. This is a large breach and extremely rare. Ministry of Energy and Mines officials do not recall anything of this magnitude.

The environmental impact of the contaminated water on the local watershed is unknown at this time. Cariboo Regional District issued a water ban advisory not to drink or bath in the water.

The waterways affected by the ban, which earlier included Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek, now also include the entire Quesnel and Cariboo Rivers systems right up to the Fraser River.

FACTSHEET

For Immediate Release
2014MEM0020-001140
August 6, 2014

Ministry of Energy and Mines
Ministry of Environment

Mount Polley tailings pond situation update

WILLIAMS LAKE – Government and Cariboo Regional District 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. The Ministry of Environment has issued a Pollution Abatement Order to Mount Polley Mining Corp. This order requires 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 requires 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 by today. The company must also submit a detailed action plan by Aug 15, and it is required to report weekly on the implementation of action plan measures.

1. The Cariboo Regional District (CRD) declared a state of local emergency (SOLE) allowing it the exceptional powers to suspend certain rights and freedoms in the interest of ensuring public safety. In this case, the CRD required the ability to gain access to private property in order to provide heavy equipment support to the West Fraser Mills forest company that is deploying tub boats for collection/control of woody debris from Lake Quesnel.

Additionally, the declaration allows the CRD better enable a fair distribution of potable water to the residents of Likely.

1. Tug boats have been working 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.
2. Polley Lake: the mine's management, in consultation with Geotech consultants and government geotechnical engineers, are reviewing alternatives to lower the water level in Polley Lake. These may include pumping the water into a historic empty pit on the site or pumping or diverting the water to the Hazeltine Creek.
3. Tailings Pond: the mine's management in consultation with Geotech consultants and government experts are reviewing a plan to build a berm to prevent further tailings from flowing into Hazeltine Creek.
4. Ministry of Energy and Mines inspectors continue their investigation. They have now

begun the interview process in conjunction with the Conservation Service. This will involve interviewing mine staff and a review of all applicable documentation on the mine site.

5. Quesnel Lake & Likely Bridge: Good progress is being made by West Fraser to boom the debris in Quesnel Lake and prevent it from reaching the bridge. The Ministry of Transportation has two excavators stationed at the Likely Bridge to respond should any significant accumulations of debris threaten the bridge. At this point, there is no imminent threat to the structure.

Current situation:

- The flow out of the breach has decreased dramatically, but has not completely stopped. Imperial Metals continues to work to stop flow out of the pond.
- A small amount of tailings backed into the mouth Polley Lake and the main slurry flow went down Hazeltine Creek where it meets Quesnel Lake. The slurry and a large debris pile appear to be stationary at this point. Hazeltine Creek was originally about four feet wide and is now up to 150 feet wide.
- The cause of the breach is still unknown at this time. Ministry of Environment conservation officers are investigating the breach along with Ministry of Energy and Mines mine inspectors, two of whom have been monitoring the site by helicopter.
- Water sampling took place the evening of Aug. 4 and samples were sent for testing early yesterday morning. Drinking water testing continues and results are expected tomorrow or Friday morning at the latest. Until that point, the environmental impact of the contaminated water on the local watershed remains unknown.
- In the meantime, the CRD has issued a water ban advisory not to drink, bath or feed livestock drawn from the following waterways: Quesnel Lake, Polley Lake, Hazeltine Creek and Cariboo Creek. The entire Quesnel River system right up to the Fraser River is under a do not drink advisory. ****Note: boiling will not help****
- There have been no reports of injuries or people getting sick from drinking water. There have been no reports of property damage.
- The cost of the cleanup of the breach is the responsibility of Imperial Metals, and is not a cost borne by B.C. taxpayers.

Water Ban:

The ban 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.

Initially, it was believed the small town of Likely was not directly affected because it was unclear how many people in the town used water from Quesnel Lake. Since then, the Cariboo Regional District has decided to start delivering water to Likely because the main supplier of bottled water in the area, a small grocery store, could not keep up with the demand.

Search-and-rescue volunteers continue going door to door to recommend evacuation from park sites and notify water users of the water ban. They are also supporting water delivery efforts.

Due to the influx of tourists in to the area over the long weekend, the numbers of people affected is unconfirmed but the CRD estimates it could range up to 300.

Regional infrastructure and waterways:

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 Likely Bridge is **not affected** at this time.

Previous site inspections:

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. It was a one-day period where the height of the effluent within tailings pond was above regulation.

To date, Imperial Metals has been compliant with respect to recent orders regarding dam safety inspections. The last inspection by government mining officials took place in September 2013.

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.

Additional background:

Early in the morning of Aug. 4, 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.

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

The tailing pond at Mount Polley Mine is 4 kms by 4 kms. 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.

Media Contacts:

Jake Jacobs

Media Relations

Ministry of Energy and Mines and Responsible
for Core Review

250 952-0628

Cariboo Regional District

Communications

250 305-8151

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Connect with the Province of B.C. at: www.gov.bc.ca/connect

INFORMATION BULLETIN

For Immediate Release
2014ENV0055-001137
August 6, 2014

Ministry of Environment

Mount Polley mine ordered to clean up

VICTORIA – The operator of the Mount Polley mine has been ordered by the Ministry of Environment to take immediate action to stop the further release of mine tailings into nearby waterways from the Aug. 4, 2014, impoundment facility dam breach, and to submit environmental impact assessments and clean-up action plans to the ministry.

Mount Polley Mining Corporation must submit a written summary of actions taken to stop the release of mine tailings by Aug. 13, 2014.

The order also requires the company to undertake a preliminary environmental impact assessment and submit an action plan by Aug. 6, 2014, and to then undertake a comprehensive environmental impact assessment and submit a detailed action plan by Aug. 15, 2014.

The company is required to report on the implementation of action plan measures on a weekly basis to regulatory agencies and stakeholders.

The full pollution abatement order and other information regarding response to the Mount Polley mine incident can be viewed here:

<http://www.env.gov.bc.ca/eemp/incidents/2014/mount-polley.htm>

Media Contact:

Media Relations
Ministry of Environment
250 953-3834

Connect with the Province of B.C. at: www.gov.bc.ca/connect

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 1955 To Premier - Mount Polley Mine Tailings Pond Breach
Date: Wednesday, August 13, 2014 9:06:02 AM

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

From: [s.22](#)
Sent: Wednesday, August 6, 2014 7:55 PM
To: OfficeofthePremier, Office PREM:EX
Cc: Minister, MEM MEM:EX; Minister, ENV ENV:EX
Subject: Mount Polley Mine Tailings Pond Breach

Dear Premier

I am shocked that as of today you have not publicly commented on nor visited the catastrophe that has taken place at Mount Polley Mine. You should be asking for the immediate resignations of the Minister of Energy and Mines and of the Minister of Environment. This is without a doubt the worst "man made" disaster to occur in the history of British Columbia.

[s.22](#)

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 2008 To Premier & Ministers - Mount Polley Mine disaster
Date: Wednesday, August 13, 2014 9:05:40 AM

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

From: s.22
Sent: Wednesday, August 6, 2014 8:08 PM
To: OfficeofthePremier, Office PREM:EX; Minister, ENV ENV:EX; Minister, MEM MEM:EX
Subject: Mount Polley Mine disaster

Dear Honorable members:

The Mount Polley Mine disaster that wrecked havoc on the Quesnel and Cariboo river systems was so preventable, especially when previously expressed concerns about the unstable structure of the tailing pond were ignored. When are you who are in a position of authority and have the power to take action on this kind of environmental threat going to do something? We hear so much news about oil spills; leaking or ruptured pipelines; oil tanker-car accidents; fracking; the proposed Northern Gateway pipeline... all for the purpose of producing and selling fossil fuel products at the highest profit margins and lowest costs. I do what I can on a personal level to reduce climate change, but it seems governments fear taking action for political and financial reasons, even though the cost of doing nothing will eventually be worse. When are the voiced concerns of everyday citizens going to be listened to and action taken? Please do what is necessary to protect our natural habitat. It is the only home we will ever have, let us leave it in a better condition for our children and grandchildren.

Thank you for your attention,

s.22

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 2043 To Premier, Minister Polak & Bennett - The Mount Polley tailings pond breach
Date: Wednesday, August 13, 2014 9:11:36 AM

FYI – EPD-Mining

From: s.22
Sent: Wednesday, August 6, 2014 8:43 PM
To: OfficeofthePremier, Office PREM:EX; Minister, ENV ENV:EX; Minister, MEM MEM:EX
Subject: The Mount Polley tailings pond breach

To: Christy Clark, Premier of British Columbia
Mary Polak, Minister of Environment
Bill Bennett, Minister of Energy and Mines

No matter what is done, we cannot get that clean water back! Think about all the people who can no longer drink that water. Think of the fish who have no way to avoid it and will be poisoned. Think of the birds and animals who will innocently drink it and be poisoned. Have you no conscience? Is this still all about the money?

This breach is a disaster. And it could have been prevented if the BC Gov't and mining company had given a hoot beyond tax income and profits. That is the bottom line. All the "sincere" speeches and declarations in the world won't change that fact. The stories are all coming out so quit playing the innocent and concerned ones. You have taken chances and it has backfired.

You've been hanging your hat and your hopes on mining for economic development, as well as pipelines, fracking, tankers in sensitive waters, and other projects. There have been too many disasters for you to legitimately pursue this plan with the hope that there won't be too many disasters. UNACCEPTABLE.

There is no fine steep enough, no punishment strict enough to make up for what has happened. The only lesson here has to be: QUIT DOING THIS.

Turn away and begin sustainable resource development! It creates as many or even more jobs.

s.22

Jacobsen, Jaclyn ENV:EX

From: Crebo, David GCPE:EX
Sent: Wednesday, August 6, 2014 9:04 PM
To: Hancock, Tom ENV:EX
Cc: Halls, Lori D ENV:EX; Standen, Jim ENV:EX; Cotton, Brian GCPE:EX; McGuire, Jennifer ENV:EX
Subject: Fwd: Scrum: Bennett - press conference

Tom - transcript of Bennett newser.

Sent from my iPhone

Begin forwarded message:

From: "Today's News Online GCPE:EX" <tno@gov.bc.ca>
Date: August 6, 2014 at 8:52:04 PM PDT
Subject: Scrum: Bennett - press conference

s.3

Pages 78 through 90 redacted for the following reasons:

s.3

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 2059 To Minister - Mount Polley Mine
Date: Wednesday, August 13, 2014 9:05:10 AM

From: s.22
Sent: Wednesday, August 6, 2014 8:59 PM
To: Minister, ENV ENV:EX
Subject: Mount Polley Mine

Dear Minister:

I find this disaster at Mount Polley Mine to be a total disaster. BC's reputation as a clean and fun place to visit is now damaged. Hopefully not beyond repair. But I find that the policy this government is following of having a mad rush to dig up our natural resources to be the biggest folly. They are cutting corners and destroying our way of life while reaping millions and we are left with the clean up. This company was warned and warned but ignored the obvious about the tilings. If this government can't make and fine a company for violating then maybe the companies license should have been pulled. It's awfully convenient that the mine had to lower the amount of water in the tailing just as the tailing breached it's damn. This mindless rush to dig up and destroy is beyond me and my friends and family. We totally disagree with your policy in this regard. We cannot afford to destroy our children's legacy. This is their land and we are destroying it. I understand the desire for jobs. But jobs at any cost? Is this what your government is standing behind? In most places of the world there is a drought. And your government is highlighting fracking (LNG) as the way to go for jobs. Fracking takes up a small lake in fresh water just to bring 3 wells into production. LNG and mining will not save this province. It will only destroy the jobs that we already have in the tourism industry and then where will this province be. 10 jobs in destroying the environment vs. 10 jobs for the environment. Your policies are a little lop sided. Come next election I will not be voting for your party.

s.22

Your choice of action may be limited, but your choice of thought are not...
Abraham Hicks

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 2156 To Ministers - Mount Polley Mine's tailings pond breach of five million cubic metres of contaminated waste called 'massive environmental disaster'
Date: Wednesday, August 13, 2014 9:01:26 AM
Attachments: [FBimage.png](#)
[Twitterimage.png](#)
[~WRD000.jpg](#)
[image001.png](#)

From: s.22
Sent: Wednesday, August 6, 2014 9:56 AM
To: Minister, HLTH HLTH:EX; Todd Stone; CITY COUNCIL; cathy.mcleod.c1@parl.gc.ca; Minister, ENV ENV:EX
Cc: s.22
Subject: Fw: [wman] CP: Mount Polley Mine's tailings pond breach of five million cubic metres of contaminated waste called 'massive environmental disaster'

An environmental disaster is what we now have and the Ajax people make light of it by saying that their pond (facility) will be made and built better. What guarantee do we have of that? We don't and the lying continues. The fact that they strip mine our land of all its wealth is one super sore spot with me and should be with everyone, but now this environmental disaster. These disasters are continually happening with the global corporations in their mining and oil and gas extraction with no respect for the environment. It's a constant battle and they don't care. All they care about is their greed for all of our wealth. Globalism is destroying the planet at every level and needs to be stopped before its too late, and I believe it is becoming too late. Kudos to all of you for asking them all the hard questions and caring. Lets keep their feet to the fire and we'll find out if it matters. Its interesting what our representatives are NOT saying.

From: s.22
Sent: Tuesday, August 5, 2014 10:10 AM
To:
Cc: s.22
Subject: Re: [wman] CP: Mount Polley Mine's tailings pond breach of five million cubic metres of contaminated waste called 'massive environmental disaster'

Remember building castles at the beach or dams to keep the incoming tide out.
They had to be very wide to hold water and these were not.
How did these engineers play when they were kids?
Our current over-protected helicopter-parented kids may have no common sense on which to build their future. s.22

On Tue, Aug 5, 2014 at 9:01 AM, s.22 wrote:
The most recent up-date from Mining Watch about the Mount Polley Mine

----- Forwarded message -----

From: **Jamie Kneen** <jamie@miningwatch.ca>

Date: Tue, Aug 5, 2014 at 8:31 AM

Subject: [wman] CP: Mount Polley Mine's tailings pond breach of five million cubic metres of contaminated waste called 'massive environmental disaster'

To: WMAN List <wman@npogroups.org>, Mine News list <mining-news@googlegroups.com>, Mines and Communities list <miningcomm@lists.riseup.net>

Do watch the helicopter video footage. It's pretty astonishing. At least no-one was in the way when it happened! There's a shorter but equally scary video at <http://globalnews.ca/news/1490361/tailings-pond-breach-at-mount-polley-mine-near-likely-bc/> .

<http://news.nationalpost.com/2014/08/05/mount-polley-mines-tailings-pond-breach-of-five-million-cubic-metres-of-contaminated-waste-called-massive-environmental-disaster/>

Mount Polley Mine's tailings pond breach of five million cubic metres of contaminated waste called 'massive environmental disaster'

Denise Ryan, Postmedia News | August 5, 2014 10:40 AM ET

The tailings pond of the Mount Polley mine, southeast of Quesnel, was breached, discharging waste water into Hazeltine Creek (shown) on Monday, Aug. 4, 2014.

THE CANADIAN PRESS/HO, Cariboo Regional District
The tailings pond of the Mount Polley mine, southeast of Quesnel, was breached, discharging waste water into Hazeltine Creek (shown) on Monday, Aug. 4, 2014.

As far back as 2011, concerns were raised about the tailings pond at the Mount Polley Mine. Brian Olding and Associates, an environmental consulting firm, prepared a detailed report that was submitted to the provincial Ministry of the Environment.

"We looked at the pond and we thought there was monitoring required. We wanted an emergency contingency plan in place."

Olding was hired jointly by the Williams Lake Indian Band, the Soda Creek Indian Band and mine owner Imperial Metals to conduct an independent review of the Mount Polley Mine 75 kilometres southeast of Quesnel and prepare a technical assessment report on the proposed discharge of water from a tailings pond.

At about 3:45 a.m. on Monday the very pond he reported on was breached, sending over five million cubic metres of contaminated water and toxic slurry into Hazeltine Creek, uprooting trees with its force, and making its way toward Quesnel Lake.

By late Monday on the advice of provincial authorities, the Cariboo Regional District had issued a complete ban on drinking, swimming and bathing in the waterways surrounding the mine and extended it to include Polley Lake and all the waterways near the Mount Polley Mine, including Quesnel Lake, Cariboo Creek, Hazeltine Creek and "the entire Quesnel and Cariboo Rivers systems right to the Fraser River."

Residents have been told not to allow pets or livestock to drink the water.

Chief Anne Louie of the Williams Lake Indian band said this is a “massive environmental disaster.” Louie, who was in meetings all day dealing with the crisis said “We held discussions with the mine staff related to the potential of this situation occurring. We have a report that we worked on a couple of years ago.” Louie said she will be having community meetings to address the issues in the coming days.

The ban will cover at least 300 people in the region, especially in the town of Likely, said Al Richmond, chairman of the Cariboo Regional District. The ban will stay in place until water samples have been analyzed.

“It’s an emergency situation. We haven’t yet declared a state of emergency, but the province and Interior health authorities and emergency services are working together to make an assessment,” said Richmond.

The escaping wall of water and slurry created a massive debris field that backed into Polley Lake and tumbled down Hazeltine Creek and into Quesnel Lake.

“What we know so far is that debris from the tailings pond backed up a little into Polley Lake, which absorbed some of the flow, but the majority of it went down into the Hazeltine Creek,” Richmond said.

“The creek (used to be) four feet wide. Now it’s 150 feet wide.

“At this time, the debris stopped where it intersects with the Quesnel River and there has been no significant flow into Quesnel Lake.”

Richmond said residents have expressed concerned about the debris taking out the Likely bridge, but that so far the bridge is holding.

In the meantime, Richmond said tanker trucks are being prepared to deliver water to local residents. But manpower is slight, and cellphone coverage in the area is patchy.

“There are only four people available from the volunteer fire department as first responders,” said Richmond.

The service road that connects Likely and the town of Horsefly was washed out by the spill, said Richmond, but the communities can be reached by other roads.

As of press time, Richmond said he didn’t know if the spill had been contained, or if it is still moving down the creek.

“The potential long-term impact to waterways, the watershed and roads is huge,” said Richmond.

The creek (used to be) four feet wide. Now it’s 150 feet wide
Officials from Imperial Metals, which operates the Mount Polley Mine, did not return phone calls or emails from The Vancouver Sun on Monday, but according to a 2011 article in the Williams Lake Tribune, the capacity of the tailing pond has been a concern as far back as 2009.

At that time, the Mount Polley Mine applied for a permit from the Ministry of the Environment to discharge effluent into Hazeltine Creek.

The paper reported then how Mount Polley general manager Tim Fisch explained that the “closed system” of containing the toxic effluent in the pond was “difficult as the mine accumulates more water than it can use in a year due to its location in a ‘net positive’ precipitation zone ... the amount of run-off requires dam raises and prohibits the formation of proper tailings beaches which could increase seepage and cause conditions that are ‘geotechnically unstable.’”

In 2011, Likely Matters reported the Williams Lake Indian Band opposed any permit to discharge effluent into Quesnel Lake due to environmental sensitivities.

“The tailings pond was filling out and they needed to get rid of the water,” said Olding of the dam, which he described as “earthen.” “The walls were getting too high and the water was getting too high.

“I’m not a structural engineer,” said Olding, “but it appeared from a common sense point of view that you could not continue to build that up higher and higher.”

One of the conditions of receiving the permit to discharge the effluent into the Hazeltine Creek was a review by the Environmental Minister of Olding’s report.

Olding said he last spoke with the minister a year ago about the matter. At that time, he said no permit had been issued for effluent discharge from the pond.

“We took 1,200 pages of data and (the proposal of effluent discharge) was problematic. You have to estimate what the impact of the contaminant is going to be on every organism down below. It gets complex very quickly.”

So complex that Olding said, “while the ministry was reviewing our report, the mine was reluctant to go through with the permit.”

Olding said Monday’s breach is a “very serious environmental situation. Hazeltine Creek runs into Quesnel Lake and that lake has, I believe, about a quarter of the Sockeye production in the province. The Quesnel River hits the Fraser River and the impact on the communities is going to be very high. No one knows what was in that tailings pond.”

Craig Ritson, owner of the Quesnel Lakeshore Room and Board, said concerns were raised about effluent at community meetings with the mine about a year ago when the company sought a gradual release of tailings down Hazeltine Creek.

“The concern at the time was exactly what we are facing now because so many people draw their water from that lake and nobody wanted to take a chance that it would affect the water quality here.

The Mount Polley Mine, operated by Imperial Metals, is an open-pit copper and gold mine with a four-km wide tailings pond built with an earthen dam. Tailings from operations like the Mount Polley Mine contain chemical contaminants and effluent.

According to their website, Imperial Metals employs about 1,000 people in B.C.

Quesnel Lake feeds into Quesnel River, which feeds into the Fraser River.

Phone calls to Imperial Metals went unreturned on Monday, and no one from the Ministry of the Environment was available for comment, although they confirmed the breach on Twitter.

--

Jamie Kneen, Communications & Outreach Coordinator, MiningWatch Canada
[Celebrating 15 Years! 1999-2014](#)



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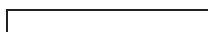
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From: [Jack Love](#)
To: [Bunce, Hubert ENV:EX](#)
Cc: [Matscha, Gabriele ENV:EX](#); [Yamelst, Brian H ENV:EX](#); [Steve Robertson](#); [Don Parsons](#); [dreimer@mountpolley.com](#); [Colleen Hughes](#); [Art Frye \(afrye@mountpolley.com\)](#); [Norm Zirnhelt](#); ["Pierre Stecko \(pstecko@minnow-environmental.com\)"](#); [Brian Kynoch](#); [Metcalf, Shelley ENV:EX](#); [Jack Love](#)
Subject: 2014-08-06 2235 IMETALS to MOE HBUNCE - Action Plan Version 1
Date: Wednesday, August 6, 2014 10:36:12 PM
Attachments: [Preliminary Response to Pollution Abatement Order V2.pdf](#)
[MPMC Tailings Dam Failure Monitoring Program Rev3.xlsx](#)

Hello Hubert,

Attached is a draft action plan for review and discussion. Thanks for your feedback on the monitoring programs we will work towards addressing the deficiencies in the morning. I will send out call in details for 3:00 tomorrow to continue our communications.

Regards,
Jack



**MOUNT POLLEY MINING
CORPORATION**
IMPERIAL METALS CORPORATION

Date August 6, 2014

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

Attention: Hubert Bunce., Director Environmental Management Act

Re: Preliminary Response to Pollution Abatement Order File: 107461

In the early morning of August 4th, 2014 the Tailings Storage Facility (TSF) was breached at Mount Polley Mine, releasing an undetermined amount of water and tailings. The cause of the breach remains unknown at this time. On August 5th, 2014 the Ministry of Environment issues a Pollution Abatement Order on the grounds that pollution is being caused by the discharge from the TSF. The Pollution Abatement Order outlined a series orders pursuant to section 83 of the Environmental Management Act (EMA). This memorandum is intended to provide the initial deliverables due August 6th, 2014 outlined in the memo and listed below:

- A) *Immediately retain a suitably qualified professional to initiate a preliminary Environmental Impact Assessment (EIA) and provide the name of the qualified professional to the Director for approval by August 6, 2014.*
- B) *Based on the preliminary EIA, develop and submit to the Director by August 6, 2014 for approval, an Action Plan detailing measures relative to the preliminary EIA to be taken to:*
 - a. *Characterize the materials that were released into the receiving environment (including their expected behaviour in the receiving environment, settling rates, etc.);*
 - b. *Recover or otherwise manage mine-affected materials and sediments currently in the receiving environment;*
 - c. *Mitigate residual risks to the environment;*
 - d. *Assess and monitor the impacts and risks posed by the mine-affected materials and sediments currently in the receiving environment, as well as from the recovery and management efforts themselves; and*
 - e. *Report on the implementation of Action Plan measures on a weekly basis to regulatory agencies and stakeholders.*

The remaining portion of the memorandum presents the point by point actions to the order as well as the preliminary Environmental Impact Assessment (EIA) and monitoring programs.

Qualified Professionals

Mount Polley Mining Corporation has assembled the following team of qualified persons with more than 60 years' experience in Environmental Impact Assessments:

- Jack Love B.Sc., R.P.Bio Imperial Metals (resume attached to memo)
- Pierre Stecko, M.Sc., EP, R.P.Bio Minnow Environnemental Inc. (resume attached to memo)
- Norm Zirnhelt, Environmental Quality Inc. (resume forthcoming)

Mount Polley is also in discussions with additional Qualified Professional to support the EIA and will provide additional qualifications, roles and responsibilities as the team develops.

Characterize the materials

Following the memo are a series of tables that characterize the tailings supernatant and the tailings sands that migrated through the breach. Mount Polley mining will work toward fully characterizing the materials including fate and effects in the receiving environment.

Recover or otherwise manage mine-affected materials and sediments

The

Recovery and management of the materials is currently unsafe due to the potential instabilities associated with the tailings dam, the exposed tailings, and the plug of debris and tails in Polley Lake. This information and safety concerns were provided to MoE on a conference call on August 6th, 2014.

Mitigation Plan

The flowing plan was presented to make the area safe for access to initiate monitoring of the impacts and initiate additional mitigation and restoration activities (see Figure 1: Preliminary Mitigation and Stabilization Plan)

The plan includes two key aspects:

- 1) Stabilization of the breach area exposed tailings to additional slumping and migration. This includes construction of an upstream tailings dyke to hold back the tails and filter any effluent discharging from the TMF. Photo 1 below shows the breach of the dam and the proposed dyke would be in the foreground.
- 2) A clean water diversion (Yellow Line in Figure 1) to reduce the water impounded in Polley Lake (see photo 2). There is a safety and environmental risk should the water pressures behind this material not be reduced and an uncontrolled release occur.

Figure 1: Preliminary Mitigation and Stabilization Plan

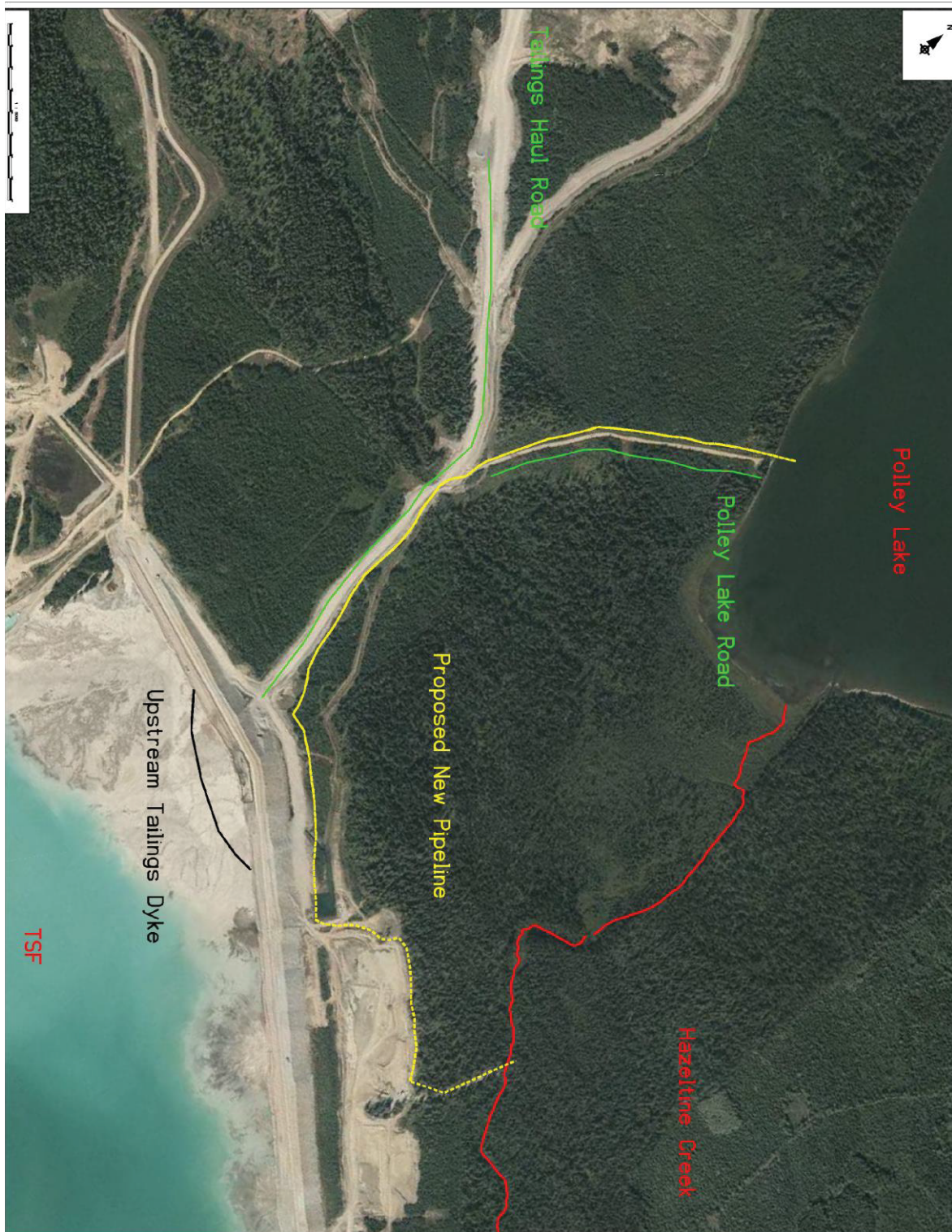




Photo 1: Dam breach looking downstream



Photo 2: Tails plug impounding Polley Lake

Assess and monitor the impacts

A preliminary Aquatic Environmental Impact Assessment Monitoring Program is included in this memo for review. We have also prepared table of contents (TOC) for further defining the higher level concepts for the EIA. Implementation of the initial EIA commenced on August 6th, 2014. The EIA and monitoring approaches are presented in draft format for further refinement as information is gathered

TOC for the Preliminary EIA

- 1) Introduction
- 2) Monitoring Approach
 - a. Weight of Evidence Approach
 - b. Before After Control Impact (BACI) design
 - c. Consultation with scientists experienced with research that has been conducted on Quesnel Lake
 - d. Short term & long term monitoring consideration
 - e. Stratification of the various eco-types downstream of the mine
- 3) Initial Results & Revision of Program
- 4) Study Design
 - a. Develop detailed study designs to ensure adequate sampling intensities and consistent methodologies
- 5) Statistical analysis
- 6) Action Plan:
 - Characterization of released materials and refinement of predicted impacts
 - Recovery & management of mine-affected materials in the receiving environment
 - Identification of risks to the Receiving Environment
 - Mitigation of residual risks
 - Monitoring Program
 - Prospects for restoration of affected aquatic ecosystems e.g., Hazeltine Cr.
 - Reporting to regulatory agencies & stakeholders will be weekly via a one page summary of major activities undertaken by Mt. Polley over the past week. Key stakeholders need to be identified: reports, businesses, residents , First Nations, MOE
- 7) Adaptive Management Plan
 - a. Preliminary findings will allow the evolution and adaption of monitoring tools to characterize the potential effects to the receiving environment
 - b. This may also allow feedback to operational activities mitigate additional environmental risks

Report on the implementation of Action Plan Measures

Based on the conference call on August 6th, 2014 it was decided that daily conference calls with MoE agencies and other stakeholders at 15:00 each day until the group decides mutually to reduce frequency.

Sincerely,

MOUNT POLLEY MINING CORPORATION

Via email

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

Table 1: Tailings Supernatant Water Quality

Sample Point	Date	Cond (in situ) (µs/cm)	pH (in situ) (pH)	Temp (in situ) (Deg Celsius)	Hardness (as CaCO3) (mg/L)	Total Suspended Solids (mg/L)	Chloride (Cl) (mg/L)	Sulphate (mg/L)	Ammonia (as N) (mg/L)	Nitrate (as N) (mg/L)	Nitrite and Nitrite (as N) (mg/L)	Nitrite (as N) (mg/L)	Total Nitrogen (mg/L)	Phosphorus (P) Total (mg/L)	Aluminum (Al)- Dissolved (mg/L)	Iron (Fe)- Dissolved (mg/L)	Cadmium (Cd)- Total (mg/L)	Copper (Cu)- Total (mg/L)	Iron (Fe)-Total (mg/L)	Molybdenum (Mo)-Total (mg/L)	Selenium (Se)- Total (mg/L)	Dissolved Organic Carbon (mg/L)
E1 - Tailings Impoundment	5-Aug-09	995	8.26	20.1	313	7.3	22.5	397	0.0506	3.58		0.0813	5.39	0.0082	0.0547	<0.03	0.000189	0.0162	0.101	0.21	0.0166	2.67
E1 - Tailings Impoundment	19-Aug-09	1070	8.47	19.6	340	4.7	23.4	442	0.0465	3.62		0.0016	4.37	0.0036	0.0397	<0.03	<0.00061	0.00774	0.084	0.216	0.0182	2.45
E1 - Tailings Impoundment	2-Sep-09	1104	8.38	19	360	9.3	27.6	481	0.0348	3.74		0.0065	3.62	0.0093	0.0199	<0.03	0.000159	0.0117	0.199	0.243	0.0192	2.66
E1 - Tailings Impoundment	6-Oct-09	1642	8.75	8.1	698	6.4	29.6	810	0.107	3.58		0.106	4.79	0.0325	0.0284	<0.03	<0.001	0.0193	0.192	0.258	0.02	2.52
E1 - Tailings Impoundment	29-Oct-09	765	8.64	1.2	760	18.9	29.8	877	0.146	3.42		0.111	3.95		0.0118	<0.03	0.000246	0.0325	0.403	0.24		3.16
E1 - Tailings Impoundment	19-Nov-09	1689	8.98	1.5	741	32	30.4	839	0.226	3.68		0.117	4.6	0.0748	0.0105	<0.03	<0.000085	0.0183	0.69	0.235	0.0197	4.36
E1 - Tailings Impoundment	9-Dec-09				680	3.6	33	870	0.297	3.97		0.149	5.45		0.0129	<0.03	<0.000085	0.00517	0.035	0.233		5.53
E1 - Tailings Impoundment	13-Jan-10	1699	9.43	2.6	647	<3.0	33.5	809	0.4	4.05		0.169	6.42	0.085	0.0105	<0.03	<0.001	0.00506	0.057	0.23		7.97
E1 - Tailings Impoundment	10-Feb-10	1636	9.94	3.8	616	3.8	36	790	0.565	4.02		0.917	4.52	0.0778	0.0167	<0.03	0.000093	0.00548	0.068	0.24	0.0236	8.89
E1 - Tailings Impoundment	3-Mar-10	1470	9.71	4.6	544	<5.0	33.3	689	0.715	4.1		0.309	5.97	0.0622	0.015	<0.03	<0.000085	0.00602	0.069	0.203	0.0232	6.98
E1 - Tailings Impoundment	7-Apr-10	1273	9.35	4.4	490	11	30.8	566	0.479	3.88		0.248	4.82	0.043	0.017	<0.03	<0.00051	0.0265	0.42	0.191	0.024	8
E1 - Tailings Impoundment	12-May-10	1368	8.24	13.1	517	22	36	613	0.207	4.46	4.65	0.189	6.62	0.0414	0.0123	<0.03	<0.00061	0.04	0.627	0.22	0.0241	7.12
E1 - Tailings Impoundment	3-Jun-10		7.3	13.7	552	8	35.3	674	0.073	4.91	5.04	0.131	7.36	0.0218	0.0123	<0.03	<0.00099	0.0123	0.179	0.233	0.0269	7.52
E1 - Tailings Impoundment	8-Jul-10	1642	7.87	21.3	740	<3	38	835	0.143	5.67	5.76	0.097	6.26	0.0071	0.0197	<0.03	<0.000085	0.0189	0.057	0.25	0.0276	6.19
E1 - Tailings Impoundment	5-Aug-10	1787	7.94	20.9	781	<3	28.8	616	0.083	4.36	4.44	0.08	7.62	0.0059	0.0095	<0.03	0.000093	<0.015	0.078	0.273	0.0303	5.77
E1 - Tailings Impoundment	1-Sep-10	1848		13.8	773	5.5	44	915	0.172	6.99	7.08	0.098	10.1	0.0108	0.0109	<0.03	<0.00007	0.0125	0.195	0.287	0.0334	6.73
E1 - Tailings Impoundment	7-Oct-10	2001	7.78	10.5	908	14.2	38	1030	0.286	6.93	7.1	0.175	7.42	0.0424	0.0166	<0.03	<0.00007	0.0411	0.42	0.228	0.0297	5.67
E1 - Tailings Impoundment	4-Nov-10	1889	8.08	5.2	868	21.1	33.2	945	0.353	7.29	7.42	0.134	7.38	0.0278	0.012	<0.03	0.000035	0.0641	0.547	0.243	0.0284	6.82
E1 - Tailings Impoundment	1-Dec-10	1992	8.25	1.8	970	3.3	38.8	1100	0.408	8.15	8.33	0.178	9.15	0.0139	0.0083	<0.03	<0.0001	0.0067	0.033	0.261	0.0273	8.26
E1 - Tailings Impoundment	10-Jan-11	1902	8.42	2.8	879	<3	37.6	994	0.46	7.9	8.05	0.15	8.5	0.0162	0.0082	<0.03	<0.00006	0.00681	0.043	0.274	0.025	9.58
E1 - Tailings Impoundment	3-Feb-11				769	13.3	35.5	899	0.654	7.7	7.85	0.151	10.1	0.0185	0.0093	<0.03	<0.00002	0.0158	0.318	0.233	0.0249	10.7
E1 - Tailings Impoundment	7-Mar-11	1671	9.45	3.7	681	6.8	33	829	0.612	7.33	7.48	0.155	7.97	0.0142	0.0109	<0.03	0.000023	0.0052	0.08	0.174	0.0221	10.6
E1 - Tailings Impoundment	6-Apr-11	1439	8.35	3.3	565	9.6	28.2	657	0.719	5.94	6.13	0.185	6.51	0.0288	0.0132	<0.03	0.000027	0.0139	0.504	0.178	0.0187	9.4
E1 - Tailings Impoundment	12-May-11	1055	7.94	11.6	409	13.8	19.7	474	0.407	4.59	4.68	0.092	6.33	0.0382	0.015	<0.03	<0.00002	0.0175	0.462	0.125	0.0158	5.82
E1 - Tailings Impoundment	9-Jun-11	1076	8.31	12.2	433	8.7	17.7	525	0.196	4.95	4.99	0.04	7.12	0.0094	0.0229	<0.03	<0.00002	0.00627	0.075	0.152	0.0186	5.8
E1 - Tailings Impoundment	14-Jul-11	1105	8.32	17	456	3.5	17.7	508	0.0619	5.21	5.31	0.093	7.52	0.0071	0.0203	<0.03	<0.00002	0.0102	0.119	0.167	0.0221	4.67
E1 - Tailings Impoundment	4-Aug-11	1174	8.12	18	474	<3	20.3	547	0.125	5.68	5.76	0.073	7.14	0.0035	0.0428	<0.03	<0.00002	0.00572	0.066	0.176	0.0203	4.76
E1 - Tailings Impoundment	8-Sep-11	1215	8.56	17.3	470	3.7	21	573	0.0869	5.38	5.47	0.087	8.16	0.0042	0.0255	<0.030	0.000031	0.00554	0.041	0.186	0.0219	4.1
E1 - Tailings Impoundment	5-Oct-11	1280	8.43	9.4	472	24.2	22.3	575	0.126	5.4	5.5	0.1	6.79	0.0281	0.0154	<0.030	0.000023	0.0224	0.331	0.188	0.0223	4.03
E1 - Tailings Impoundment	31-Oct-11	1311	8.9	4.4																		
E1 - Tailings Impoundment	1-Nov-11	1337	8.35	2.5	479	16.9	23.3	596	0.179	6.02	6.12	0.097	8.6	0.0512	0.0145	<0.030	0.00005	0.0275	1.69	0.204	0.0216	4.98
E1 - Tailings Impoundment	5-Dec-11	1337	9.47	3.3	452	5.3	24.5	587	0.348	5.69	5.81	0.126	8.77	0.0114	0.0155	<0.030	0.000027	0.00462	0.069	0.202	0.0201	6.16
E1 - Tailings Impoundment	4-Jan-12	1337	9.16	3.5	449	<3.0	28	596	0.323	5.76	5.9	0.145	9.08	0.008	0.0148	<0.030	<0.000020	0.0024	0.061	0.213	0.0206	6.02
E1 - Tailings Impoundment	8-Feb-12	1338	9.33	3.7	442	<3.0	28	596	0.484	5.89	6.09	0.201	10.5	0.0056	0.0117	<0.030	<0.000020	0.00272	0.04	0.204	0.021	6.77
E1 - Tailings Impoundment	14-Mar-12	1331	7.36	3.5	419	3.3	27.9	580	0.478	6.27	6.48	0.215	8.69	0.009	0.0175	<0.030	<0.000070	0.00326	0.073	0.194	0.0208	7.76
E1 - Tailings Impoundment	3-Apr-12	1297		2.8	434	7.7	27.3	560	0.497	5.75	5.92	0.122	7.21	0.0187	0.02	<0.030		0.00766	0.224	0.199	0.0201	7.94
E1 - Tailings Impoundment	2-May-12	1084	8.471	9.6	371	19.9	20.7	465	0.401	4.93	5.06	0.127	6.52	0.0349	0.0163	<0.030		0.0252	0.655	0.159	0.0205	7.7
E1 - Tailings Impoundment	7-Jun-12	1126	8.2	12.9	406	15.2	21.2	456	0.126	4.96	5.03	0.075	6.59	0.0197	0.0521	<0.030		0.0143	0.662	0.177	0.0219	5.78
E1 - Tailings Impoundment	5-Jul-12	1131	8.08	16.5	402	<3.0	22.2	497	0.105	5.6	5.68	0.075	6.36	0.0069	0.0271	<0.030	<0.000050	0.0067	0.059	0.141	0.0222	5.16
E1 - Tailings Impoundment	1-Aug-12	1191	8.23	20.1	424	3.6	21.9	521	0.106	5.85	5.92	0.063	7.26	0.0047	0.0264	<0.030	<0.00010	0.00548	0.082	0.188	0.0262	4.52
E1 - Tailings Impoundment	6-Sep-12	1225	8.545	14.7	411	3.1	23.7	545	0.182	6.2	6.27	0.075	7.45	0.0053	0.0203	<0.030	<0.000070	0.0055	0.11	0.185	0.0274	4.08
E1 - Tailings Impoundment	3-Oct-12	1271	8	1.2	465	8.3	28	562	0.129	6.32	6.4	0.079	7.7	0.01	0.0391	<0.030	<0.000050	0.006	0.115	0.188	0.0274	4.71
E1 - Tailings Impoundment	15-Nov-12	1284	8.606	1.3	500	7.9	25	574	0.278	6.66	6.76	0.094	7.56	0.0073	0.012	<0.030	<0.000050	0.0111	0.19	0.182	0.0268	4.88
E1 - Tailings Impoundment	6-Dec-12	1283	8.247	2.6	458	3.8	24	579	0.327	6.81	6.9	0.097	7.1	0.0097	0.0113	<0.030	<0.000050	0.00411	0.083	0.195	0.0308	7.16
E1 - Tailings Impoundment	2-Jan-13	1273	8.903	3.4	460	5.6	23.4	563	0.353	7.42	7.55	0.125	7.23	0.0079	0.0108	<0.030	<0.000050	0.00476	0.096	0.189	0.0293	5.43
E1 - Tailings Impoundment	6-Feb-13	1273	8.884	3.5	489	<3.0	24.1	575	0.395	7.66		0.138	7.22	0.0067		<0.030	<0.000050	0.00307	0.047	0.197	0.0278	5.97
E1 - Tailings Impoundment	1-May-13	1072	9.663	8.4	403	11.3	19.5	477	0.25	6.26	6.38	0.125	6.62	0.0148		<0.000050	0.00828	0.327	0.159	0.0272	7.31	
E1 - Tailings Impoundment	8-Aug-13	1193	8.051	21.8	440	19.6	21.4	540	0.219	7.32	7.41	0.091	7.76	0.015		<0.000060	0.01489	0.462	0.181	0.03	4.15	
E1 - Tailings Impoundment	5-Nov-13	1281	8.391	1.2	474	54.9	25.6	576	0.168	7.48	7.57	0.088	7.53	0.0602		<0.00010	0.0409	1.47	0.2	0.0313	3.57	
E1 - Tailings Impoundment	11-Feb-14	1287	8.777	2.9	475	<3.0	26.3	583	0.303	7.76	7.9	0.142	7.74	0.0077		<0.000050	0.00195	0.046	0.198	0.0346	5.34	
E1 - Tailings Impoundment	1-May-14	1099	8.64	5.4	393	18.6	22.8	463	0.327	6.75	6.88	0.134	7.06	0.0307		<0.00023	0.0155	0.357	0.153	0.0284	4.98	
		Conductivity (in situ) (µs/cm)	pH (in situ) (pH)	Temperature (in situ) (Degrees Celsius)	Hardness (as CaCO3) (mg/L)	Total Suspended Solids (mg/L)	Chloride (Cl) (mg/L)	Sulphate (mg/L)	Ammonia (as N) (mg/L)	Nitrate (as N) (mg/L)	Nitrite and Nitrite (as N) (mg/L)	Nitrite (as N) (mg/L)	Total Nitrogen (mg/L)	Phosphorus (P) Total (mg/L)	Aluminum (Al)- Dissolved (mg/L)	Iron (Fe)- Dissolved (mg/L)	Cadmium (Cd)- Total (mg/L)	Copper (Cu)- Total (mg/L)	Iron (Fe)-Total (mg/L)	Molybdenum (Mo)-Total (mg/L)	Selenium (Se)- Total (mg/L)	Dissolved Organic Carbon (mg/L)
	Average	1357.271	8.543	8.871428571	543.04	11.7872	27.676	647.4	0.2844	5.677	6.2913	0.1396	7.05	0.022408	0.01912	<0.030						

Table 2 Tailings Impoundment Supernatant (Sampling Point E1) Water Quality (August 2009 - May 2014) Compared to BC Aquatic Life and Drinking Water Guideline

Date/Time	Summary Statistics			BCWQG		Drinking Water Quality Guidelines (BC/Canada)
	Mean	Maximum	Minimum	acute	30 day/chronic	
Comment						
Physical Parameters						
Conductivity (in situ) (µs/cm)	1352	2001	766			
pH (in situ) (pH)	8.54	9.94	7.30			
Temperature (in situ) (Degrees Celcius)	9.0	21.8	1.2			
Hardness (as CaCO3) (mg/L)	543	970	313			
Total Suspended Solids (mg/L)	9.5	54.9	1.5			
Total Dissolved Solids (mg/L)	1080	2450	730			500
Anions and Nutrients						
Chloride (Cl) (mg/L)	27.7	44.0	17.7	600	150	250
Sulphate (mg/L)	647	1100	397		218	500 (aesthetic)
Ammonia (as N) (mg/L)	0.284	0.719	0.0348	Temperature dependent		
Nitrate (as N) (mg/L)	5.68	8.15	3.42	31.3	3	10
Nitrate and Nitrite (as N) (mg/L)	6.29	8.33	4.44			
Nitrite (as N) (mg/L)	0.140	0.917	0.016	0.06	0.02	1
Total Nitrogen (mg/L)	7.05	10.50	3.62			
Phosphorus (P) Total (mg/L)	0.0236	0.0850	0.0035	0.0005 - 0.015 (lakes)		
Dissolved Metals						
Aluminum (Al)-Dissolved (mg/L)	0.0191	0.0547	0.0082	0.1	0.05	0.2
Iron (Fe)-Dissolved (mg/L)	0.015	0.015	0.015	0.35		
Total Metals						
Antimony (SB) - Total (mg/L)	0.00222	0.00516	0.00087	0.02		0.006
Arsenic (As) - Total (mg/L)	0.00223	0.00377	0.00125	0.005		0.01
Barium (B) - Total (mg/L)	0.0780	0.108	0.0392	5	1	1
Cadmium (Cd)-Total (mg/L)	8.970E-05	0.0005	0.00001	0.00002526		0.005
Copper (Cu)-Total (mg/L)	0.0137	0.0641	0.0020	0.008862	0.00292	0.5
Chromium (Cr)-Total (mg/L)	0.0005386	0.00209	0.0003	0.001 Cr(VI), 0.0089 Cr(III)		0.05
Iron (Fe)-Total (mg/L)	0.266	1.69	0.033	1		3 (aesthetic)
Lead (Pb)-Total (mg/L)	0.00018	0.00115	0.000025	54	5.4	0.01
Mercury (Hg)-Total (mg/L)	1.7857E-05	0.000025	0.000005			0.001
Manganese (Mn)-Total (mg/L)	0.0350	0.1160	0.0063	1.344	0.9262	0.05 (aesthetic)
Molybdenum (Mo)-Total (mg/L)	0.205	0.287	0.125	2	1	0.25
Nickel (Ni)-Total (mg/L)	0.00062	0.00165	0.00025	0.065		
Silver (Ag)-Total (mg/L)	0.0000126	0.000049	0.000005	0.0001	0.00005	
Selenium (Se)-Total (mg/L)	0.0241	0.0346	0.0158	0.002		0.01
Sodium (Na)-Total (mg/L)	89.8	119.0	55.9			200 (aesthetic)
Zinc (Zn)-Total (mg/L)	0.0024	0.0062	0.001	0.033	0.0075	5 (aesthetic)
Organics						
Dissolved Organic Carbon (mg/L)	5.98	10.70	2.45			

Notes:

1) Results below MDL are represented as 0.5*MDL

2) Parameters exceeding water quality guidelines (on average) are shown in red

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

Tailings Composite Metals Analysis January 2010 - May 2014

Date Sampled	31-JAN-10	28-FEB-10	31-MAR-10	31-MAR-10	30-APR-10	30-MAY-10	30-MAY-10	31-JUL-10	31-AUG-10	30-SEP-10	31-OCT-10	30-NOV-10	30-DEC-10	30-JAN-11	28-FEB-11
Physical Tests															
Moisture														1.02	
pH	8.81	8.93	8.80	8.80	8.90	8.81	8.85	8.63	8.74	8.35	8.68	8.82	8.85	8.84	
Metals															
Aluminum (Al)	19700	19600	19200	20400	20200	22100	20600	22900	22400	20100	19000	20900	20800	18100	19800
Antimony (Sb)	0.37	0.38	0.35	0.40	0.50	0.37	0.42	0.51	0.43	0.52	0.58	0.50	0.64	0.48	0.33
Arsenic (As)	18.0	18.4	14.5	16.3	19.7	16.0	19.1	14.5	16.2	16.9	19.7	18.0	19.0	14.0	11.8
Barium (Ba)	153	143	184	186	212	228	201	233	263	204	204	206	201	289	223
Beryllium (Be)	0.25	0.25	0.25	0.25	0.25	0.86	0.82	0.88	0.87	0.67	0.66	0.69	0.79	0.71	0.73
Bismuth (Bi)	10	10	10	10	10	10	10	10	10	0.1	0.1	0.1	0.1	0.1	0.1
Cadmium (Cd)	0.30	0.17	0.29	0.23	0.34	0.27	0.37	0.23	0.29	0.33	0.42	0.39	0.30	0.16	0.099
Calcium (Ca)	26100	24200	28900	28200	32700	28300	34600	30200	31100	35800	38400	36000	37300	26000	26000
Chromium (Cr)	14.8	10.4	14.0	13.6	14.0	23.7	24.1	20.5	22.6	43.0	16.0	27.3	19.7	31.2	9.97
Cobalt (Co)	20.0	20.2	15.6	15.8	16.9	17.7	17.8	17.3	17.5	18.6	18.1	15.9	16.8	19.6	18.4
Copper (Cu)	1130	991	1150	1070	1220	1100	972	1410	1150	1070	1300	1240	1090	1100	1060
Iron (Fe)	59500	55200	48700	51100	53000	52100	54800	52400	55200	56200	50600	46500	50300	74300	49500
Lead (Pb)	4.7	6.4	7.2	7.9	10.3	10.8	7.9	8.3	4.7	14.3	5.11	5.38	4.17	4.00	3.47
Lithium (Li)	21.6	18.9	18.7	19.2	19.9	19.5	20.3	20.4	19.7	17.9	18.1	17.3	19.0	15.2	19.8
Magnesium (Mg)	14900	13500	11700	12300	12200	13200	13200	13300	13100	11800	10600	11100	11100	10800	11100
Manganese (Mn)	774	640	765	749	959	729	1060	845	947	1200	1330	1110	1150	828	540
Mercury (Hg)	0.0844	0.105	0.0922	0.0947	0.0941	0.090	0.080	0.088	0.074	0.063	0.086	0.092	0.068	0.0983	0.0616
Molybdenum (Mo)	2.99	5.54	6.53	5.27	4.43	5.8	6.1	5.55	4.47	4.00	5.03	3.87	3.67	2.79	2.52
Nickel (Ni)	5.8	2.5	2.5	2.5	2.5	9.3	10.8	10.5	9.8	12.0	7.37	10.6	7.04	13.6	7.66
Phosphorus (P)	1360	1560	1430	1500	1390	1440	1440	1490	1390	1410	1370	1500	1450	1240	1360
Potassium (K)	1480	1470	2090	2130	1760	3050	2340	3080	2750	1580	1570	1920	2710	2190	1970
Selenium (Se)	1.22	2.06	1.88	1.63	1.47	1	1	1.43	1.18	1.03	1.44	1.02	0.93	0.71	0.74
Silver (Ag)	0.45	0.53	0.45	0.37	0.44	0.52	0.55	0.48	0.51	0.48	0.60	0.50	0.48	0.33	0.27
Sodium (Na)	1480	1900	1470	1640	1020	1710	1390	1600	1610	980	780	1370	1460	1100	1620
Strontium (Sr)	93.1	136	171	166	150	194	116	197	188	140	133	208	114	114	163
Thallium (Tl)	0.05	0.05	0.05	0.05	0.05	0.25	0.25	0.25	0.25	0.025	0.025	0.025	0.025	0.025	0.025
Tin (Sn)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1	1	1	1	2.0	1
Titanium (Ti)	1520	1490	1330	1550	1540	1560	1560	1660	1670	1560	1430	1500	1710	1760	1510
Uranium (U)										1.93	1.99	1.86	2.17	1.29	0.956
Vanadium (V)	196	179	169	178	172	187	198	197	200	200	186	177	188	279	172
Zinc (Zn)	88.8	63.0	85.3	72.1	92.2	68.8	89.3	71.9	79.1	95.2	118	118	113	74.4	48.6

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

Date Sampled	31-JAN-10	28-FEB-10	31-MAR-10	31-MAR-10	30-APR-10	30-MAY-10	30-MAY-10	31-JUL-10	31-AUG-10	30-SEP-10	31-OCT-10	30-NOV-10	30-DEC-10	30-JAN-11	28-FEB-11
Leachable Metals															
Aluminum (Al)-Leachable														0.276	
Antimony (Sb)-Leachable														0.00103	
Arsenic (As)-Leachable														0.0054	
Barium (Ba)-Leachable														0.0396	
Beryllium (Be)-Leachable														0.00025	
Bismuth (Bi)-Leachable														0.00025	
Boron (B)-Leachable														0.054	
Cadmium (Cd)-Leachable														0.000025	
Calcium (Ca)-Leachable														17.4	
Chromium (Cr)-Leachable														0.00025	
Cobalt (Co)-Leachable														0.00030	
Copper (Cu)-Leachable														0.0134	
Lead (Pb)-Leachable														0.00005	
Lithium (Li)-Leachable														0.0099	
Magnesium (Mg)-Leachable														3.40	
Manganese (Mn)-Leachable														0.00849	
Mercury (Hg)-Leachable														0.000025	
Molybdenum (Mo)-Leachable														0.0317	
Nickel (Ni)-Leachable														0.00025	
Potassium (K)-Leachable														13.7	
Selenium (Se)-Leachable														0.00295	
Silver (Ag)-Leachable														0.000025	
Sodium (Na)-Leachable														30.3	
Strontium (Sr)-Leachable														0.193	
Thallium (Tl)-Leachable														0.00005	
Tin (Sn)-Leachable														0.00098	
Uranium (U)-Leachable														0.000343	
Vanadium (V)-Leachable														0.0086	
Zinc (Zn)-Leachable														0.005	

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

Date Sampled	31-JAN-10	28-FEB-10	31-MAR-10	31-MAR-10	30-APR-10	30-MAY-10	30-MAY-10	31-JUL-10	31-AUG-10	30-SEP-10	31-OCT-10	30-NOV-10	30-DEC-10	30-JAN-11	28-FEB-11
TCPLP Metals															
1st Preliminary PH	9.73	9.80	9.74	9.74	9.74	9.74	9.80	9.67	9.65	9.51	9.68	9.70	9.52	9.70	9.75
2nd Preliminary PH	1.92	1.91	2.60	2.50	2.35	2.52	2.30	2.65	2.66	2.26	2.24	2.23	2.10	2.55	1.97
Final pH	5.52	5.38	5.58	5.50	5.49	5.61	5.66	5.38	5.47	5.50	5.61	5.50	5.48	5.45	5.44
Extraction Solution Initial pH	4.90	4.90	4.90	4.90	4.90	4.92	4.92	4.92	4.92	4.93	4.93	4.93	4.92	4.91	4.92
Antimony (Sb)-Leachable	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Arsenic (As)-Leachable	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Barium (Ba)-Leachable	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Beryllium (Be)-Leachable	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Boron (B)-Leachable	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.5	0.71	0.25
Cadmium (Cd)-Leachable	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Calcium (Ca)-Leachable	523	435	538	496	466	507	510	483	535	491	527	462	538	467	443
Chromium (Cr)-Leachable	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Cobalt (Co)-Leachable	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Copper (Cu)-Leachable	4.69	5.86	4.55	4.50	5.75	2.17	1.69	3.47	3.34	2.82	4.16	3.60	3.60	2.98	3.49
Iron (Fe)-Leachable	0.055	0.055	0.055	0.055	0.055	0.055	0.19	0.23	0.27	0.35	0.055	0.34	0.45	0.50	0.35
Lead (Pb)-Leachable	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Magnesium (Mg)-Leachable	6.87	5.99	10.1	10.7	12.1	11.6	11.1	15.1	15.3	12.2	11.5	14.7	13.3	14.4	10.1
Mercury (Hg)-Leachable	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Nickel (Ni)-Leachable	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Selenium (Se)-Leachable	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Silver (Ag)-Leachable	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Thallium (Tl)-Leachable	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vanadium (V)-Leachable	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
Zinc (Zn)-Leachable	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.5	0.67	0.25

Notes:

1) <MDL represented as 0.5*MDL

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

31-MAR-11	30-APR-11	30-JUN-11	30-JUL-11	30-AUG-11	30-SEP-11	30-OCT-11	30-NOV-11	31-DEC-11	30-JAN-12	29-FEB-12	31-MAR-12	30-APR-12	03-SEP-13	30-SEP-13	01-NOV-13	01-DEC-13
								0.125								
	8.83															
17300	18900	17000	16600	18700	15200	14300	15300	18000	16300	19200	17200	16600	19100	21800	20100	21100
0.38	0.33	0.42	0.30	0.43	0.34	0.25	0.40	0.32	0.35	0.50	0.38	0.56	0.40	0.49	0.54	0.92
11.7	10.7	11.4	9.34	12.1	9.30	8.70	11.8	10.1	10.6	11.8	8.57	10.9	10.5	11.4	11.8	12.0
234	269	263	228	220	247	253	230	235	326	250	263	297	182	192	202	169
0.73	0.65	0.63	0.52	0.56	0.53	0.46	0.56	0.59	0.56	0.63	0.54	0.65	0.71	0.76	0.73	0.73
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.125	0.081	0.138	0.131	0.158	0.109	0.121	0.155	0.128	0.101	0.115	0.077	0.135	0.083	0.114	0.278	0.259
25100	26300	27000	25000	31800	28400	26800	32000	29500	28900	27900	28100	25100	24100	28300	30200	25200
13.1	15.2	21.1	16.3	16.4	13.6	13.4	15.5	20.4	25.7	21.1	15.8	32.4	12.7	19.4	15.4	23.2
17.7	17.7	17.6	16.0	16.3	16.3	14.9	14.3	15.7	17.9	18.0	19.0	16.5	16.5	16.6	16.8	18.9
1050	1180	1110	895	757	1030	1050	730	885	790	849	881	787	638	802	769	1380
47300	46500	47500	43300	42700	42300	30000	32000	40000	53400	51800	52000	46700	49200	49700	48200	51900
3.82	3.16	5.19	5.24	10.1	6.47	5.93	4.72	4.51	4.87	4.79	3.96	6.17	2.93	5.90	11.8	6.53
16.9	15.6	18.3	18.8	20.8	16.7	14.8	18.4	19.7	17.6	16.4	16.3	15.9	14.6	17.3	14.3	15.7
10800	10200	10400	9390	10600	10600	9450	10800	9370	11200	10300	9420	11000	10800	10900	9510	10400
572	524	607	573	721	621	518	694	584	618	570	474	591	489	564	569	473
0.0613	0.058	0.0480	0.0563	0.0660	0.0508	0.0520	0.0583	6.43	0.0411	0.0528	0.0542	0.157	0.0471	0.0696	0.0625	0.112
2.32	2.87	4.72	7.43	8.68	5.26	4.79	6.17	5.07	3.41	4.60	5.69	5.71	3.65	5.87	7.88	9.18
6.27	8.03	7.38	7.61	6.91	6.15	6.27	5.27	1210	11.5	6.38	5.71	11.8	12.1	7.20	6.59	8.47
1380	1280	1300	1230	1260	1260	1160	1270	1950	1180	1270	1150	1200	1180	1350	1310	1490
1990	2180	2970	1850	2370	2230	2070	2320	0.97	1920	3500	2780	2040	2030	2600	2340	2540
0.72	0.86	0.94	0.93	1.14	1.02	0.92	0.82	0.28	0.76	0.88	0.88	1.12	0.79	1.09	1.37	2.29
0.31	0.29	0.37	0.29	0.33	0.30	0.29	0.30	1820	0.24	0.29	0.25	0.34	0.24	0.29	0.41	0.50
900	1660	1550	1830	1760	1300	1580	1350	128	1200	2030	2110	1320	1650	1770	1530	1770
112	131	95.7	119	154	114	106	131	1300	113	116	119	121	213	318	265	282
0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
1	1	1	1	1	1	1	1	1	1	2.3	2.2	1	1	2.3	2.3	2.2
1570	1320	1680	1510	1760	1390	1160	1520	1510	1530	1950	1590	1490	1770	2010	1740	1760
0.946	0.757	0.662	0.639	0.849	0.617	0.552	0.717	0.706	0.745	0.705	0.687	0.812	1.12	1.08	1.26	1.19
173	166	192	152	184	198	109	173	147	209	243	186	185	193	203	188	190
58.9	46.0	61.8	56.7	71.2	54.1	54.0	63.5	59.6	56.1	62.1	45.8	58.0	43.8	50.2	72.9	57.2

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

31-MAR-11	30-APR-11	30-JUN-11	30-JUL-11	30-AUG-11	30-SEP-11	30-OCT-11	30-NOV-11	31-DEC-11	30-JAN-12	29-FEB-12	31-MAR-12	30-APR-12	03-SEP-13	30-SEP-13	01-NOV-13	01-DEC-13
								0.23								
								0.025								
								0.025								
								0.042								
								0.0025								
								0.05								
								0.005								
								12.6								
								0.005								
								0.005								
								0.018								
								0.053								
								0.025								
								2.09								
								0.0090								
								0.046								
								0.025								
								0.15								
								15.2								
								0.025								
								6.43								
								0.005								
								31.0								
								0.191								
								0.1								
								0.015								
								0.005								
								0.25								
								0.015								

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

31-MAR-11	30-APR-11	30-JUN-11	30-JUL-11	30-AUG-11	30-SEP-11	30-OCT-11	30-NOV-11	31-DEC-11	30-JAN-12	29-FEB-12	31-MAR-12	30-APR-12	03-SEP-13	30-SEP-13	01-NOV-13	01-DEC-13
9.80	9.78	9.82	9.77	9.72	9.79	9.82	9.79	9.84	9.87	9.79	9.85	9.83	9.81	9.70	9.71	9.65
2.02	2.59	3.27	2.73	3.77	3.90	3.09	4.37	2.87	3.39	3.16	2.48	3.40	3.24	3.36	5.44	3.25
5.53	5.46	5.59	5.65	5.84	5.82	5.64	6.01	5.54	5.88	5.60	5.60	5.98	5.70	5.72	4.37	5.58
4.92	4.92	4.95	4.97	4.88	4.92	4.92	4.92	4.94	4.93	4.91	4.92	4.95	4.93	4.93	2.88	4.92
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
0.82	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
512	495	504	492	636	514	456	580	531	623	491	603	555	522	525	593	471
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
2.03	3.77	2.28	1.37	0.803	1.06	1.12	0.326	0.906	0.513	0.876	0.702	0.788	0.396	0.820	4.70	0.643
0.49	0.30	0.24	0.19	0.15	0.26	0.055	0.055	0.26	0.055	0.49	0.38	0.20	0.31	0.29	9.18	0.34
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
10.3	11.3	10.8	8.71	8.52	9.58	8.52	9.87	9.53	12.0	13.2	13.9	12.5	13.3	14.1	18.3	15.1
0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.025	0.025	0.025
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
0.88	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

31-DEC-13	31-JAN-14	28-FEB-14	31-MAR-14	30-APR-14	31-MAY-14	AVERAGE
20500	19900	21300	23600	19900	20000	19139
0.35	0.36	0.43	0.40	0.37	0.45	0.43
10.8	9.65	10.0	10.1	9.22	9.77	12.32
154	207	177	165	175	185	222
0.75	0.72	0.72	0.77	0.74	0.69	0.63
0.1	0.1	0.1	0.1	0.1	0.1	1.85
0.094	0.066	0.083	0.102	0.113	0.074	0.16
24000	26900	28000	26500	25400	27400	28122
20.4	19.0	26.8	22.6	32.2	22.4	20.3
19.3	17.1	17.6	16.0	17.1	19.6	17.4
896	711	642	788	841	677	931
56300	49300	44900	44000	45100	47900	49651
3.10	2.89	3.02	4.50	3.57	2.92	5.35
16.6	14.8	14.5	16.1	14.3	13.1	17.0
12800	9760	9870	10900	11000	9980	10969
505	489	495	556	469	486	652
0.0836	0.0696	0.0618	0.0645	0.0746	0.0704	0.49
4.33	5.00	4.74	6.26	7.52	4.37	5.37
13.8	6.59	5.65	6.99	10.3	5.48	104.61
1340	1250	1340	1380	1300	1260	1405
2000	2620	2580	2550	2420	2290	2121
1.23	1.00	0.99	1.11	0.92	1.03	1.04
0.32	0.25	0.29	0.30	0.29	0.25	116.01
1300	1990	2030	1830	1360	1480	1438.16
251	270	299	327	274	223	192.12
0.025	0.025	0.025	0.025	0.025	0.025	0.025
1	2.0	2.7	1	2.2	2.5	
1860	1630	1900	1930	1660	1980	1525
1.06	1.16	1.43	1.24	1.07	1.47	15.61
216	190	176	175	173	175	180.54
53.6	37.6	40.8	52.7	46.7	39.1	59.44

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

31-DEC-13	31-JAN-14	28-FEB-14	31-MAR-14	30-APR-14	31-MAY-14	AVERAGE
						0.25
						0.013
						0.015
						0.0408
						0.0014
						0.025
						0.030
						6.3
						8.703
						0.003
						0.009
						0.033
						0.013
						1.05
						1.7045
						0.027
						0.013
						0.09
						7.6
						6.863
						3.22
						0.003
						30.7
						0.192
						0.05
						0.01
						0.003
						0.13
						0.010

Table 3: Tailings Composite Metals Analysis January 2010 - May 2014

31-DEC-13	31-JAN-14	28-FEB-14	31-MAR-14	30-APR-14	31-MAY-14	AVERAGE
9.81	9.67	9.75	9.70	9.74	9.65	9.75
2.48	2.97	2.98	3.11	3.12	3.39	2.95
5.54	5.58	5.75	5.55	6.90	5.79	5.59
4.92	4.92	4.93	4.92	4.96	4.90	4.84
0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.5	0.5	0.5	0.5	0.5	0.5	0.5
1.25	1.25	1.25	1.25	1.25	1.25	1.25
0.015	0.015	0.015	0.015	0.015	0.015	0.015
0.25	0.25	0.25	0.25	0.25	0.25	0.28
0.025	0.025	0.025	0.025	0.025	0.025	0.025
502	520	527	490	748	551	521
0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.025	0.025	0.025	0.025	0.025	0.025	0.025
0.544	0.447	0.362	1.30	0.025	0.137	1.905
0.51	0.39	0.24	0.22	0.055	0.20	0.64
0.125	0.125	0.125	0.125	0.125	0.125	0.125
12.1	11.4	13.1	13.8	32.5	12.2	12.5
0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.025	0.025	0.025	0.025	0.025	0.025	0.11
0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.055	0.055	0.055	0.055	0.055	0.055	0.055
0.25	0.25	0.25	0.25	0.25	0.25	0.28

Table 4: Tailings NPR Analysis

Year	Month	Tailings Composite NPR	NP	C %	AP %	S %
2012	January	-				
	February	14.2	25.418	0.305	1.791	0.057
	March	17.87	28.085	0.337	1.572	0.05
	April	8.69	26.335	0.316	3.031	0.097
	May	8.69	26.335	0.316	3.031	0.097
	June	9.74	25.502	0.306	2.619	0.084
	July	8.66	27.335	0.328	3.156	0.101
	August	15.36	27.502	0.33	1.791	0.057
	September	14.86	27.585	0.331	1.856	0.059
	October	10.88	27.168	0.326	2.497	0.08
	November	15.39	22.752	0.273	1.478	0.047
	December	9.17	22.918	0.275	2.5	0.08
2013	January	10.52	25.502	0.306	2.425	0.078
	February	19.31	31.919	0.383	1.653	0.053
	March	13.44	25.418	0.305	1.891	0.06
	April	12.8	25.168	0.302	1.966	0.063
	May	14.1	27.002	0.324	1.916	0.061
	June	8.84	25.918	0.311	2.931	0.094
	July	12.54	25.002	0.3	1.994	0.064
	August	19.5	26.752	0.321	1.372	0.44
	September	8.03	26.335	0.316	3.281	0.105
	October	7.42	27.585	0.331	3.719	0.119
	November	3.48	22.335	0.268	6.438	0.206
	December	7.53	23.418	0.281	3.109	0.1
2014	January	9.84	26.418	0.317	2.684	0.086
	February	13.47	25.085	0.301	1.862	0.06
	March	10.7	25.168	0.302	2.353	0.075
	April	11.25	24.252	0.291	2.156	0.069
	May	13.33	29.169	0.35	2.188	0.07
AVERAGE		11.77	26.049	0.31	2.474	0.09

Note: NPR > 2 is conserved to be PAG material

Pages 116 through 118 redacted for the following reasons:

s.22

- 1 short term = immediate response phase until direct water use impairment is no longer observed
- 2 medium term = period when water use is not directly impaired but some event influence may be detectable
- 3 longer term = period when limited event influence is detectable, but stability monitoring may be required

Aquatic Environmental Impact Assessment Monitoring Program - Monitoring Strategy for Quesnel Lake

Program Components	Near Term ¹	Medium Term ²	Longer Term ³
Meter Measures and Water Quality	Daily at reference location(s) spaced between Hazeltine Creek and the Quesnel Lake outlet; every second day use the meter to characterize the TSS or specific conductance plume within Quesnel Lake from upstream of Hazeltine to the Quesnel Lake outlet and use to inform the location of water samples	As "near-term", modify frequency following examination of the data (e.g., bi-weekly at reference location(s); weekly to characterize TSS or specific conductance plume)	establish long-term monitoring station(s); frequency to be determined based on previously-collected data.
Drinking Water	Determine locations and frequency based on community consultation	As "near-term", modify frequency following examination of the data	As "near-term", modify frequency following examination of the data
Sediment / Substrate Quality	5 unimpacted (upstream of impacted area) and 10-15 impacted areas (3-grab composites)	15 impacted areas (3-grab composites)	coring with vertical sectioning at the 5 impacted and 10-15 unimpacted areas (3-core composites)
Benthic Invertebrate Community and Tissue Quality	5 unimpacted (upstream of impacted area) and 10-15 impacted areas (3-grab composites)	15 impacted areas (3-grab composites)	to be determined
Fish Tissue	Collect tissue quality (muscle and liver) from two sentinel fish species - at least one a sportfish (e.g., rainbow trout) from area well upstream of input.	-	Collect tissue quality (muscle and liver) from two sentinel fish species - at least one a sportfish (e.g., rainbow trout) from area well upstream of input AND impacted area.
Water Toxicity Testing (MMER fish and invertebrate)	impacted water, as soon as possible	repeat if required at frequency to be determined based on findings of first test	to be determined
Sediment Toxicity Testing (Hyalella & Chironomus)	from impacted area when safe to sample	repeat if required at frequency to be determined based on findings of first test	to be determined
Geochemical Characterization of spilled tailings	from impacted area when safe to sample	repeat if required at frequency to be determined based on findings of first evaluation	to be determined

Description of Monitoring

Meter Measures - Spot
 Water Quality Samples - Spot
 Sediment / Substrate Quality
 Benthic Invertebrate Community and Tissue Quality
 Fish Tissue
 Water Toxicity Testing
 Sediment Toxicity Testing
 Geochemical Characterization

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities
 full suite of analytes in accordance with MPC permit
 particle size, TOC, metals scan
 community to lowest possible level; moisture + high resolution ICP-MS scan
 moisture, high resolution ICP-MS scan (verify appropriate Hg MDL < 0.1 mg/kg)
 MMER fish and invertebrate tests - both acute tests and sublethals
 Hyalella azteca and Chironomus tentans (riparius)
 Leaching characteristics of representative deposited tailings (procedure to be confirmed by QP)

Aquatic Environmental Impact Assessment Monitoring Program - Monitoring Strategy for Quesnel River at Research Center

Program Components	Near Term	Medium Term	Longer Term
Meter Measures and Water Quality Samples - Spot	daily until data loggers and automated samplers can be installed	-	-
Meter Measures - Continuous Dataloggers	install as soon as possible	keep in place; upload weekly	keep in place; upload weekly
Water Quality Samples - Automated	install as soon as possible; frequency four hours	keep in place; reduce frequency	keep in place; reduce frequency
Drinking Water	Determine locations and frequency based on community consultation	As "near-term", modify frequency following examination of the data	As "near-term", modify frequency following examination of the data
Benthic Invertebrate Community and Tissue Quality	5 areas (3-grab Hess or 3-minute kick-and-sweep)	to be determined	to be determined
Water Toxicity Testing (MMER fish and invertebrate)	immediate and every 2 days thereafter	frequency to be determined based on results	frequency to be determined based on results

Description of Monitoring

Meter Measures - Spot

Meter Measures - Dataloggers

Water Quality Samples - Spot

Water Quality Samples - Automated

Water Toxicity Testing

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities; log at 5 minute intervals

full suite of analytes in accordance with MPC permit

full suite of analytes in accordance with MPC permit; 4 samples per day

MMER fish and invertebrate tests - both acute tests and sublethals

Aquatic Environmental Impact Assessment Monitoring Program - Monitoring Strategy for Quesnel River near Quesnel (location TBD)

Program Components	Near Term	Medium Term	Longer Term
Meter Measures and Water Quality Samples - Spot	until data logger can be installed	-	-
Meter Measures - Continuous Dataloggers	install as soon as possible	keep in place; upload weekly	to be determined
Water Quality Samples - Spot	-	to be determined based on initial results and availability from alternate data sources	to be determined
Water Toxicity Testing (MMER fish and invertebrate)	-	If effect observed at Quesnel River - upstream	-

Description of Monitoring

Meter Measures - Spot

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities

Meter Measures - Dataloggers

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities; log at 5 minute intervals

Water Quality Samples - Spot

full suite of analytes in accordance with MPC permit

Aquatic Environmental Impact Assessment Monitoring Program - Monitoring Strategy for Upper Hazeltine Creek (location to be determined)

*** Hazeltine Creek is currently not stable and sampling is not safe. Sampling will be initiated when safety is established.

Program Components	Near Term	Medium Term	Longer Term
Meter Measures - Spot	when safe to sample; to support water quality samples	to support water quality samples	to support water quality samples
Meter Measures - Continuous Dataloggers	install as soon as safe	leave in place; upload weekly	leave in place; upload weekly
Water Quality Samples - Spot	when safe to sample; daily	frequency to be determined based on initial findings	frequency to be determined based on initial findings
Sediment / Substrate Quality	n = 5 when safe to sample	-	repeat as bed movement changes substrate characteristics
Water Toxicity Testing (MMER fish and invertebrate)	when safe to sample; weekly	weekly	monthly
Sediment Toxicity Testing (Hyaella & Chironomus)	when safe to sample; once, then evaluate medium term requirements	to be determined based on initial findings	to be determined based on initial findings
Geochemical Characterization of spilled tailings	when safe to sample; same locations as sediment/substrate above	-	repeat as bed movement changes substrate characteristics

Description of Monitoring

Meter Measures - Spot

Meter Measures - Dataloggers

Water Quality Samples - Spot

Water Quality Samples - Automated

Sediment / Substrate Quality

Water Toxicity Testing

Sediment Toxicity Testing

Geochemical Characterization

Other

Aquatic Environmental Impact Assessment Monitoring Program - Monitoring Strategy for Upper Hazeltine Creek (location to be determined)

*** Hazeltine Creek is currently not stable and sampling is not safe. Sampling will be initiated when safety is established.

Program Components	Near Term	Medium Term	Longer Term
Meter Measures - Spot	when safe to sample; to support water quality samples	to support water quality samples	to support water quality samples
Meter Measures - Continuous Dataloggers	install as soon as safe	leave in place; upload weekly	leave in place; upload weekly
Water Quality Samples - Spot	when safe to sample; daily	frequency to be determined based on initial findings	frequency to be determined based on initial findings
Water Quality Samples - Automated	install as soon as possible; frequency four hours	keep in place; reduce frequency	keep in place; reduce frequency, consider switch to spot
Sediment / Substrate Quality	n = 5 when safe to sample	-	repeat as bed movement changes substrate characteristics
Water Toxicity Testing (MMER fish and invertebrate)	when safe to sample; weekly	weekly	monthly
Sediment Toxicity Testing (Hyaella & Chironomus)	when safe to sample; once, then evaluate medium term requirements	to be determined based on initial findings	to be determined based on initial findings
Geochemical Characterization of spilled tailings	when safe to sample; same locations as sediment/substrate above	-	repeat as bed movement changes substrate characteristics

Description of Monitoring

Meter Measures - Spot

Meter Measures - Dataloggers

Water Quality Samples - Spot

Water Quality Samples - Automated

Sediment / Substrate Quality

Water Toxicity Testing

Sediment Toxicity Testing

Geochemical Characterization

Other

Aquatic Environmental Impact Assessment Monitoring Program - Monitoring Strategy for Polley Lake

*** Polley Lake is currently not stable and sampling is not safe. Sampling will be initiated when safety is established.

Program Components	Near Term	Medium Term	Longer Term
Meter Measures and Water Quality	Initiate when safe; daily at reference location(s) spaced between Hazeltine Creek and the Quesnel Lake outlet; every second day use the meter to characterize TSS or specific conductance plume within Quesnel Lake from upstream of Hazeltine to the Quesnel Lake outlet	As "near-term", modify frequency following examination of the data (e.g., bi-weekly at reference location(s); weekly to characterize TSS or specific conductance plume)	establish long-term monitoring station(s); frequency to be determined based on previously-collected data.
Sediment / Substrate Quality	Initiate when safe; 5 unimpacted (upstream of impacted area) and 10 impacted areas (3-grab composites)	15 impacted areas (3-grab composites)	coring with vertical sectioning at the 5 impacted and 10-15 unimpacted areas (3-core composites)
Benthic Invertebrate Community and Tissue Quality	Initiate when safe; 5 unimpacted (upstream of impacted area) and 10-15 impacted areas (3-grab composites)	15 impacted areas (3-grab composites)	to be determined
Fish Tissue	-	-	Collect tissue quality (muscle and liver) from two sentinel fish species (e.g., rainbow trout) from area well upstream of input AND impacted area..
Water Toxicity Testing (MMER fish and invertebrate)	Initiate when safe; impacted water	repeat if required at frequency to be determined based on findings of first test	to be determined
Sediment Toxicity Testing (Hyaella & Chironomus)	Initiate when safe; from impacted area	repeat if required at frequency to be determined based on findings of first test	to be determined
Geochemical Characterization of spilled tailings	Initiate when safe; from impacted area	-	to be determined

Description of Monitoring

Meter Measures - Spot

Water Quality Samples - Spot

Sediment / Substrate Quality

Benthic Invertebrate Community and Tissue Quality

Fish Tissue

Water Toxicity Testing

Sediment Toxicity Testing

Geochemical Characterization

Other

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities

full suite of analytes in accordance with MPC permit

particle size, TOC, metals scan

community to lowest possible level; moisture + high resolution ICP-MS scan

moisture, high resolution ICP-MS scan (verify appropriate Hg MDL < 0.1 mg/kg)

MMER fish and invertebrate tests - both acute tests and sublethals

Hyaella azteca and Chironomus tentans (riparius)

Leaching characteristics of representative deposited tailings (procedure to be confirmed by QP)

if available, muscle and liver tissue

Environmental Damage Assessment Monitoring Program - Short Term (as soon as possible for one week)

Program Components	Polley Lake	Upper Hazeltine Creek	Lower Hazeltine Creek	Quesnel Lake - near Hazeltine mouth	Quesnel River - at QR Research Centre	Quesnel River - downstream (near Quesnel?)
Meter Measures - Spot	daily at reference location (P2) every second day to characterize TSS or specific conductance plume	-	-	daily at reference location every second day to characterize TSS or specific conductance plume	-	-
Meter Measures - Continuous Dataloggers	-	install as soon as safe	install as soon as safe	-	install as soon as possible	install as soon as possible
Water Quality Samples - Spot	daily at reference location (P2) every second day to characterize WQ within affected area (locations to be informed by meter measures)	when safe to sample	when safe to sample	daily at reference location every second day to characterize WQ within affected area (locations to be informed by meter measures)	-	-
Water Quality Samples - Automated	-	-	install as soon as safe	-	install as soon as possible	-
Sediment / Substrate Quality	n= 5 impacted n = 5 unimpacted	n = 5 when safe to sample	n = 5 when safe to sample	n= 5 impacted n = 5 unimpacted	-	-
Water Toxicity Testing (MMER fish and invertebrate)	impacted water	when safe to sample	when safe to sample	impacted water	??	-
Sediment Toxicity Testing (Hyalella & Chironomus)	from impacted area when safe to sample	when safe to sample	when safe to sample	from impacted area when safe to sample	-	-
***Geochemical Characterization of spilled tailings (one time)	from impacted area when safe to sample	when safe to sample	when safe to sample	from impacted area when safe to sample	-	-
Other	collect any dead fish for analysis	-	-	collect any dead fish for analysis	-	-

Description of Monitoring

Meter Measures - Spot

Meter Measures - Dataloggers

Water Quality Samples - Spot

Water Quality Samples - Automated

Sediment / Substrate Quality

Water Toxicity Testing

Sediment Toxicity Testing

Geochemical Characterization

Other

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities; log at 5 minute intervals

full suite of analytes in accordance with MPC permit

full suite of analytes in accordance with MPC permit; 4 samples per day

particle size, TOC, metals scan

MMER fish and invertebrate tests - both acute tests and sublethals

Hyalella azteca and *Chironomus tentans* (riparius)

Leaching characteristics of representative deposited tailings (procedure to be confirmed by QP)

if available, muscle and liver tissue

Environmental Damage Assessment Monitoring Program - Mid Term (week 2 to one month)

Program Components	Polley Lake	Upper Hazeltine Creek	Lower Hazeltine Creek	Quesnel Lake - near Hazeltine mouth	Quesnel River - at QR Research Centre	Quesnel River - downstream (near Quesnel?)
Meter Measures - Spot	bi-weekly at reference location (P2); weekly to characterize TSS or specific conductance plume	-	-	bi-weekly at reference location; weekly to characterize TSS or specific conductance plume	-	-
Meter Measures - Continuous Dataloggers	-	install as soon as safe	install as soon as safe	-	keep in place; upload weekly	keep in place; upload weekly
Water Quality Samples - Spot	bi-weekly at reference location (P2) weekly to characterize WQ within affected area (locations to be informed by meter measures)	when safe to sample	-	bi-weekly at reference location weekly to characterize WQ within affected area (locations to be informed by meter measures)	-	-
Water Quality Samples - Automated	-	-	install as soon as safe	-	keep in place; reduce frequency	-
Sediment / Substrate Quality	-	-	-	-	-	-
Fish Tissue (muscle and liver)	5 RT & 5 LNS	-	-	5 of 2 spp.	-	-
Water Toxicity Testing (MMER fish and invertebrate)	-	-	when safe to sample	to be determined based on first sample results	-	-
Sediment Toxicity Testing (Hyalella & Chironomus)	-	-	-	-	-	-
***Geochemical Characterization of spilled tailings (one time)	-		-	-	-	-
Other	-	-	-	-	-	-

Description of Monitoring

Meter Measures - Spot

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities

Meter Measures - Dataloggers

hand-held meter(s) --> **TDS, specific conductance, turbidity**, pH, T, DO ... bold = priorities; log at 5 minute intervals

Water Quality Samples - Spot

full suite of analytes in accordance with MPC permit

Water Quality Samples - Automated

full suite of analytes in accordance with MPC permit; 4 samples per day

Sediment / Substrate Quality

particle size, TOC, metals scan

Water Toxicity Testing

MMER fish and invertebrate tests - both acute tests and sublethals

Sediment Toxicity Testing

Hyalella azteca and Chironomus tentans (riparius)

Geochemical Characterization

Leaching characteristics of representative deposited tailings (procedure to be confirmed by QP)

Other

if available, muscle and liver tissue

From: [Minister, ENV ENV:EX](#)
To: [Correspondence Unit ENV:EX](#)
Subject: 2014-08-06 2238 To Premier, Minister Polak & Bennett - Toxic Mining spill near Likely, BC
Date: Wednesday, August 13, 2014 9:12:08 AM

FYI – EPD-Mining

From: s.22
Sent: Wednesday, August 6, 2014 10:38 PM
To: OfficeofthePremier, Office PREM:EX
Cc: Minister, ENV ENV:EX; Minister, MEM MEM:EX
Subject: Toxic Mining spill near Likely, BC

Dear Premier Clarke and Ministers Polak and Bennett,

I wanted to write and express to you my deep outrage and true anguish over the recent collapse of the Mount Polley Tailings pond. I cannot even fully express the sorrow I feel every time I think of the devastation that has occurred in this most pristine part of our province. It is truly heartbreaking. The lives and livelihoods this preventable accident has destroyed is unacceptable, and I hope our Government will hold Imperial Metal fully accountable for all of the destruction and for all of the clean up that must occur in the coming days, months and years and for as many years as it takes to restore the land and waters - I wonder if that "restoration" is even possible.

This spill has to be a massive wake up call to all of us to demand that our mining industry be held to much stricter regulations and inspections. The rate at which mining is growing in this province is alarming to me and to many of my friends. It seems like a given that Tourism should be our number 1 priority, but if we let poor mining practices (and any other resource based industry for that matter) destroy more and more of our environment we'll have nothing left for tourists to come and visit and "Beautiful BC" will be a thing of the past. The environment should be our number one priority above and beyond economic growth. If we lose our precious land and water systems little else will matter. I'm hoping very much that this entire situation will also steer us away from the pipeline proposals, which as you know, if approved, would run through more pristine and sacred areas of this province. We just cannot take the risk of losing anymore beauty.

s.22 I'm asking you to PLEASE implement immediate, province-wide mandatory and regular inspections of all tailing ponds for every mine in this province. I ask that you delay the approval any new mining projects until the existing mines are assessed to have the highest level of safety and demonstrate that they are using the best available technology to assure that we have the safest mining operations in the world. I hope all three of you and all of the people who work with you will make this disaster your number one priority. This cannot happen ever again, and you have the power to hold those people accountable for ruining so much of this beautiful land, and to ensure that our Government has the proper resources needed to hold our resource industries to the highest standards and practices.

Sincerely,

s.22

From: [McGuire, Jennifer ENV:EX](#)
To: [Halls, Lori D ENV:EX](#)
Cc: [Standen, Jim ENV:EX](#)
Subject: 2014-08-06 2300 POLACK TO MOE - 745 AM Briefing Mt. Polley
Date: Wednesday, August 6, 2014 11:00:00 PM

There is 15 to 20 min for 'coffee' when the charter plane lands in WLK before they board the heli to Likely. I will be at the airport and will try to have a few minutes with MMP to brief before heading to Likely. I will then try to provide additional support once in Likely.

From: Hancock, Tom ENV:EX
Sent: Wednesday, August 6, 2014 10:57 PM
To: Halls, Lori D ENV:EX
Cc: Polak, Mary ENV:EX; Crebo, David GCPE:EX; Mitschke, Matt ENV:EX; Standen, Jim ENV:EX; Dhanowa, Damon ENV:EX; McGuire, Jennifer ENV:EX
Subject: Re: 7:45 AM Briefing re: Mt. Polley

Minister has a 7:30 call with premiers office and MBB and MCO. It will be a daily call so I'm not sure how long it will go. If it goes late, I will let everyone know. Our flight doesn't leave until 9 so we should have until then to brief.

Thanks,
Tom

On Aug 6, 2014, at 9:07 PM, "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca> wrote:

I'm moderating. Please use passcode.

From: Polak, Mary ENV:EX
Sent: Wednesday, August 6, 2014 9:07 PM
To: Halls, Lori D ENV:EX
Cc: Hancock, Tom ENV:EX; Crebo, David GCPE:EX; Mitschke, Matt ENV:EX; Standen, Jim ENV:EX; Dhanowa, Damon ENV:EX; McGuire, Jennifer ENV:EX
Subject: Re: 7:45 AM Briefing re: Mt. Polley

am I moderating? or, using the passcode?

Sent from my iPad

On Aug 6, 2014, at 9:05 PM, "Halls, Lori D ENV:EX" <Lori.D.Halls@gov.bc.ca> wrote:

Minister

We will brief you at 7:45 am prior to your flight to Williams Lake.

Conference Call Instructions:

s.17