

From: [McGuire, Jennifer ENV:EX](#)  
To: [Zacharias, Mark ENV:EX](#)  
Cc: [Robb, Peter L. MEM:EX](#)  
Subject: Re: Teck Meeting regarding April 13 letter  
Date: Wednesday, May 3, 2017 7:03:43 AM

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Hi,

I believe the meeting is for the ECCC proposed reg framework for coal mining comments.

FYI - MOE has also sent two non-compliance letters, and a joint signed letter with DEQ responding to Teck's questions about Fish tissue sampling for Lake K.

Let me know if you need more details.

Jennifer

Sent from my iPad

> On May 2, 2017, at 6:29 PM, Zacharias, Mark ENV:EX <Mark.Zacharias@gov.bc.ca> wrote:

>

> **s.22** Jennifer might know. We sent them some compliance letters recently which could be the subject.

>

> Regards, Mark

> 250-415-6466

>

>> On May 2, 2017, at 11:02 AM, Robb, Peter L. MEM:EX <Peter.Robb@gov.bc.ca> wrote:

>>

>> Is this in regards to the coal reg submission or is it EVWQP?

**From:** [Haslam, David GCPE:EX](#)  
**To:** [Hoffman, Al MEM:EX](#)  
**Cc:** [Robb, Peter L. MEM:EX](#); [McKnight, Elaine L MEM:EX](#); [Gilmore, Dan GCPE:EX](#); [Plummer, Glen GCPE:EX](#); [Skwarok, Lindsey GCPE:EX](#)  
**Subject:** FW: Teck sentencing.  
**Date:** Tuesday, May 9, 2017 9:45:54 AM  
**Attachments:** [Teck News Release.docx](#)  
[ATT00001.htm](#)

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Al/Peter - FYI – Teck NR re: fines imposed for a spill 3 years ago that resulted in 5 dead sheep. Sentencing took place yesterday. NR not yet confirmed as final. They'll likely put it out today to the Elk Valley – likely tomorrow. This is their standard process anytime they're fined.

From: [Nikolejsin, Dave MNGD:EX](#)  
To: [Robb, Peter L. MEM:EX](#)  
Subject: Fwd: Teck - site tour follow-up  
Date: Thursday, July 27, 2017 4:12:55 PM

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Dave Nikolejsin  
Deputy Minister  
Energy, Mines and Petroleum Resources

Begin forwarded message:

**From:** "Winstanley, Lori PREM:EX" <[Lori.Winstanley@gov.bc.ca](mailto:Lori.Winstanley@gov.bc.ca)>  
**Date:** July 27, 2017 at 3:25:41 PM PDT  
**To:** "Syer Tom VANM" <[Tom.Syer@teck.com](mailto:Tom.Syer@teck.com)>  
**Cc:** "Nikolejsin, Dave MNGD:EX" <[Dave.Nikolejsin@gov.bc.ca](mailto:Dave.Nikolejsin@gov.bc.ca)>, "Haslam, David GCPE:EX" <[David.Haslam@gov.bc.ca](mailto:David.Haslam@gov.bc.ca)>, "Todd, Melissa L MNGD:EX" <[Melissa.L.Todd@gov.bc.ca](mailto:Melissa.L.Todd@gov.bc.ca)>  
**Subject:** RE: Teck - site tour follow-up

Hi Tom, things have changed in the last hour or so, the Minister is still coming but now has to be in Kaslo that day at 4:30 so she is asking if she could tour the facilities in Trail (which she never done before) and leave Elk Valley for next time? She would arrive in trail by 9:30 Am and have until about 2:30 PM. I am sorry for adding to your work but it will be good information for when we come back.

As far as staff, I will accompany her as her Ministerial Assistant and I will let you know if we are bringing anyone from the Ministry.

We hope this can work, the Minister is very much looking forward to seeing your operations.

My cell is s.22

Regards

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**From:** Syer Tom VANM [<mailto:Tom.Syer@teck.com>]

**Sent:** Thursday, July 27, 2017 2:53 PM

**To:** Winstanley, Lori PREM:EX

**Cc:** Nikolejsin, Dave MNGD:EX; Haslam, David GCPE:EX; Todd, Melissa L MNGD:EX

**Subject:** RE: Teck - site tour follow-up

Thanks Lori – we are looking forward to meeting the minister and touring some of the Elk Valley operations. Would you be joining the minister as well or another staff member in addition to the Deputy Minister? Our current proposal would be to have some of our team meet you in Cranbrook, drive together to the Valley for an introductory discussion and presentation in our Sparwood office, tour our Line Creek Operation with site staff, travel to the West Line Creek Active Water Treatment Facility for a tour, then return back to Cranbrook by late afternoon. We can discuss and finalize this agenda over the next couple of days and then provide all the logistical information your staff requires. Dave – if you have other suggestions based on your

past tours, just let us know and we will do our best to accommodate.

Regards,

tom

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**Tom Syer**

Director, Government Affairs

Teck Resources Limited

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Cell: +1 604.880.0128

eMail: [Tom.Syer@teck.com](mailto:Tom.Syer@teck.com)

[www.teck.com](http://www.teck.com)

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**From:** Winstanley, Lori PREM:EX [<mailto:Lori.Winstanley@gov.bc.ca>]

**Sent:** Thursday, July 27, 2017 9:07 AM

**To:** Syer Tom VANM

**Cc:** Nikolejsin, Dave MNGD:EX; Haslam, David GCPE:EX; Todd, Melissa L MNGD:EX

**Subject:** RE: Teck - site tour follow-up

Hi Tom, as far as I know she would arrive in Castlegar on Friday AM at 8:30 and you could have her for a good piece of the day as long as she gets s.22 on Friday night. There may be some changes next week as to where she would like to go on Friday and what she would like to see connected to your operations but we are fine with you setting up your suggested schedule and giving you the green light for Friday August 4<sup>th</sup>. Best to reach me on my cell phone s.22. I have copied our Deputy Minister, Communications Director and Melissa Todd will get information in the calendar.

Kind regards;

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**From:** Syer Tom VANM [<mailto:Tom.Syer@teck.com>]

**Sent:** Thursday, July 27, 2017 8:55 AM

**To:** Winstanley, Lori PREM:EX; Nikolejsin, Dave MNGD:EX

**Subject:** RE: Teck - site tour follow-up

Lori – I'm just confirming with site now, but we should be able to make this work. A couple of initial questions, what time could the minister arrive in Cranbrook for the drive into the Elk Valley and when would we need to be back? And would we be able to confirm today or tomorrow? Thanks Lori.

tom

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**Tom Syer**

Director, Government Affairs

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[www.teck.com](http://www.teck.com)



**From:** Winstanley, Lori PREM:EX [<mailto:Lori.Winstanley@gov.bc.ca>]

**Sent:** Wednesday, July 26, 2017 6:33 PM

**To:** Syer Tom VANM; Nikolejsin, Dave MNGD:EX

**Subject:** RE: Teck - site tour follow-up

Hi Tom, the Minister may be able to come on August 4<sup>th</sup> , does that work?

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**From:** Syer Tom VANM [<mailto:Tom.Syer@teck.com>]

**Sent:** Monday, July 24, 2017 10:49 AM

**To:** Winstanley, Lori PREM:EX; Nikolejsin, Dave MNGD:EX

**Subject:** Teck - site tour follow-up

Lori and Dave,

As briefly discussed in email and on phone with both of you, we would be very pleased to spend some time with minister Mungall touring any of our operations and also providing some further background on Teck and the mining sector in BC. Based on this, we've checked with sites and have the following suggestion for a day tour on either August 2<sup>nd</sup> or 3<sup>rd</sup> (with considerable flexibility to accommodate minister's schedule). We would go to the Elk Valley and visit our Fording River Operation and then also tour the West line Creek Active Water Treatment Facility (selenium/nitrate treatment). I have also checked with our Trail smelter operation and if the minister would also like to tour the smelter as part of this trip we could arrange for that as well. This would require 1.5 days however.

Lori – I definitely appreciate how busy things are during transition and we will do our best to accommodate the minister's schedule. For internal planning purposes, if we could have an indication that this will work from a scheduling perspective by mid-week, or suggestion for another date, that would be great.

Look forward to catching up with you both in person soon, as well as Minister Mungall.

Regards,

tom

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**Tom Syer**

Director, Government Affairs

Teck Resources Limited

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eMail: [Tom.Syer@teck.com](mailto:Tom.Syer@teck.com)

[www.teck.com](http://www.teck.com)

From: [Cochrane, Marlene EMPR:EX](#)  
To: [Avila, Amy EMPR:EX](#)  
Cc: [Robb, Peter L. EMPR:EX](#); [Hunt, Melanie EMPR:EX](#)  
Subject: 102074 IBN Elk Valley Water Plan  
Date: Friday, October 20, 2017 3:50:20 PM  
Attachments: [102074 IBN Elk Valley Water Plan.docx](#)  
Importance: High

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Hi Amy. Can we send this note to the Premier's Office for information? They are asking for more information regarding Elk Valley Permitting-water licences, for their Teck meeting on Monday. I need to send material over within 10-15 minutes. Thanks.

**Marlene Cochrane**

Executive Coordinator | Deputy Minister's Office  
Ministry of Energy, Mines and Petroleum Resources  
Victoria | British Columbia  
Phone (778) 698 7254

From: [Avila, Amy EMPR:EX](#)  
To: [Robb, Peter L. EMPR:EX](#)  
Cc: [Hunt, Melanie EMPR:EX](#)  
Subject: Re: 102074 IBN Elk Valley Water Plan  
Date: Friday, October 20, 2017 4:02:42 PM

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Talked to Marlene...we are all good.. in conversation with Christian it's not water licenses they are likely looking to talk about..water discharges and the plan is the issue

Sent from my iPhone

On Oct 20, 2017, at 3:50 PM, Cochrane, Marlene EMPR:EX <[Marlene.Cochrane@gov.bc.ca](mailto:Marlene.Cochrane@gov.bc.ca)> wrote:

Hi Amy. Can we send this note to the Premier's Office for information? They are asking for more information regarding Elk Valley Permitting-water licences, for their Teck meeting on Monday. I need to send material over within 10-15 minutes. Thanks.

**Marlene Cochrane**  
Executive Coordinator | Deputy Minister's Office  
Ministry of Energy, Mines and Petroleum Resources  
Victoria | British Columbia  
Phone (778) 698 7254

<102074 IBN Elk Valley Water Plan.docx>

From: [Robb, Peter L. EMPR:EX](#)  
To: [Avila, Amy EMPR:EX](#)  
Cc: [Hunt, Melanie EMPR:EX](#)  
Subject: Re: 102074 IBN Elk Valley Water Plan  
Date: Friday, October 20, 2017 4:03:31 PM

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The meeting is only 15 minutes what ever is provided is good

On Oct 20, 2017, at 4:02 PM, Avila, Amy EMPR:EX <[Amy.Avila@gov.bc.ca](mailto:Amy.Avila@gov.bc.ca)> wrote:

Talked to Marlene...we are all good.. in conversation with Christian it's not water licenses they are likely looking to talk about..water discharges and the plan is the issue

Sent from my iPhone

On Oct 20, 2017, at 3:50 PM, Cochrane, Marlene EMPR:EX <[Marlene.Cochrane@gov.bc.ca](mailto:Marlene.Cochrane@gov.bc.ca)> wrote:

Hi Amy. Can we send this note to the Premier's Office for information? They are asking for more information regarding Elk Valley Permitting-water licences, for their Teck meeting on Monday. I need to send material over within 10-15 minutes. Thanks.

**Marlene Cochrane**  
Executive Coordinator | Deputy Minister's Office  
Ministry of Energy, Mines and Petroleum Resources  
Victoria | British Columbia  
Phone (778) 698 7254

<102074 IBN Elk Valley Water Plan.docx>

From: [Haslam, David GCPE:EX](#)  
To: [Robb, Peter L. EMPR:EX](#)  
Cc: [Piccinino, Ines MNGD:EX](#); [Beaupre, Darren GCPE:EX](#); [Plummer, Glen GCPE:EX](#)  
Subject: Re: Teck update - shutdown of West Line Creek Active Water Treatment Plant  
Date: Tuesday, October 24, 2017 5:48:45 PM

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Noted.

Sent from my iPhone

On Oct 24, 2017, at 5:46 PM, Robb, Peter L. EMPR:EX <[Peter.Robb@gov.bc.ca](mailto:Peter.Robb@gov.bc.ca)> wrote:

Not great news... I am talking with Teck reps tonight and will send a not to you and the minster as there will be an announcement on this tomorrow.

We will craft responses with staff In the AM...David please reach out to you MOR colleagues on getting started.

Cheers,

Begin forwarded message:

**From:** "Bellefontaine, Kim EMPR:EX" <[Kim.Bellefontaine@gov.bc.ca](mailto:Kim.Bellefontaine@gov.bc.ca)>  
**Date:** October 24, 2017 at 5:40:34 PM PDT  
**To:** "Robb, Peter L. EMPR:EX" <[Peter.Robb@gov.bc.ca](mailto:Peter.Robb@gov.bc.ca)>  
**Cc:** "Howe, Diane J EMPR:EX" <[Diane.Howe@gov.bc.ca](mailto:Diane.Howe@gov.bc.ca)>, "Hoffman, Al EMPR:EX" <[Al.Hoffman@gov.bc.ca](mailto:Al.Hoffman@gov.bc.ca)>  
**Subject:** Teck update - shutdown of West Line Creek Active Water Treatment Plant

Here is a synopsis of the shutdown:

<!--[if !supportLists]-->•<!--[endif]-->Teck has made the decision to shut down the West Line Creek water treatment plant until the Advance Oxidation Process (AOP) add-on is fully operational.

<!--[if !supportLists]-->•<!--[endif]-->The AOP will convert remaining selenium in the effluent from selenite to selenate, a less bioavailable form of selenium.

<!--[if !supportLists]-->•<!--[endif]-->Teck's decision was based on recent fish tissue data which showed continuing accumulation of selenium in bull trout tissue within 2km downstream of the treatment plant.

<!--[if !supportLists]-->•<!--[endif]-->The hope is that selenium concentrations in fish will come down before spawning in the spring of 2018 –young fish are more susceptible to selenium



effects.

<!--[if !supportLists]-->•<!--[endif]-->The shutdown will also result in increased non-compliance with nitrate concentrations, which are anticipated to exceed Level 2 effects benchmarks for benthic invertebrates.

<!--[if !supportLists]-->•<!--[endif]-->Teck is completing detailed design of AOP add-on to the treatment plant and anticipates the plant will be permitted, constructed and operational by the end of August 2018.

<!--[if !supportLists]-->•<!--[endif]-->There may be additional permit amendment requirements to dealing with residues and non-hazardous waste from the treatment plant.

***Kim Bellefontaine, M.Sc., P.Geo.***

Manager Environmental Geoscience & Permitting

B.C. Ministry of Energy, Mines and Petroleum Resources

Phone: (250) 952-0489

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

**MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

**BRIEFING NOTE FOR INFORMATION**

**I PREPARED FOR:** Dave Nikolejsin, Deputy Minister, Ministry of Energy, Mines and Petroleum Resources

**II ISSUE:** Teck compliance with permits supporting the Elk Valley Water Quality Plan

**III BACKGROUND:**

On April 15, 2013 the Ministry of Environment (MOE) issued a Ministerial Order to Teck Coal Ltd. to develop an Area Based Management Plan to stabilize and reverse increasing concentrations of Selenium, Nitrate, Cadmium and Sulphate. The Elk Valley Water Quality Plan (EVWQP) was approved by the Minister of Environment on November 8, 2014 and has become part of the regulatory framework for consideration by decision makers on applications related to mining in the Elk Valley. On November 19, 2014 the Ministry of Environment (MOE) authorized discharge of EVWQP constituents under Permit 107517.

The EVWQP and supporting permits rely heavily on the success of active water treatment technology to achieve short, medium and long term water quality objectives (Order Stations) and authorized discharged levels (Compliance Points). *Environmental Management Act* and *Mines Act* permits require Teck to commission active water treatment facilities with the following implementation schedule (all dates are end of calendar year) to meet the objectives of the EVWQP:

2014: West Line Creek	2022: Fording River North	2028: Line Creek Dry Ck.
2018 Fording River South	2024: Elkview II	2030: Fording River North II
2020: Elkview I	2026: Greenhills	2032: West Line Creek II

The West Line Creek treatment facility reached full operations in February 2016. In fall 2016 Teck identified that the facility was discharging selenite (a more bioavailable form of selenium) from the facility. Teck has piloted technologies to address this issue and will be seeking authorizations in fall 2017 and Q1 2018 to add an Advanced Oxidation Process to the facility's operations.

Design of the Fording River South water treatment facility was intended to be similar to West Line Creek. On September 29, 2017 Teck notified the Ministry of Energy, Mines and Petroleum Resources (EMPR) and MOE that commissioning of the Fording River South facility would be delayed by 2 years to December 2020. As part of the *Mines Act* permit (C-3) for Fording River Operations, Teck is required to post \$100M in additional Reclamation Security if the Fording River South water treatment facility is not operational by December 31, 2018.

Teck is currently seeking authorizations to construct and operate a Saturated Rock Fill (flooded pit that has been backfilled with waste) full scale trial at Elkview Operations to demonstrate and quantify the potential for selenium and nitrate removal over a 2-year period (2018-2020). Early research has shown saturated rock fills have some potential to reduce selenium and nitrate concentrations, but there are a number of scientific and engineering uncertainties that currently limit adoption as a replacement for active water treatment.

#### **IV DISCUSSION:**

Operational challenges with the West Line Creek water treatment facility caused Teck to re-evaluate whether the FBR (Fluidized Bed Reactor) treatment technology was the most appropriate for use at Fording River South. The re-evaluation has been completed and Teck has decided a similar FBR system will be utilized. The re-evaluation process has caused a 2-year commissioning delay to the Fording River South water treatment facility. This will result in non-compliance with Permits 107517 (MOE) and C-3 (EMPR) which require construction and operation of the treatment plant by December 31, 2018.

A change to the timing of the water treatment plant would require permit amendments by MOE and EMPR. It is not currently known whether the commissioning delay will result in non-compliance with EVWQP Order Station and Compliance Point exceedances. Teck is required to update the water quality model and submit a water quality prediction report for the Elk Valley by October 31, 2017. Updated prediction results will provide an improved understanding of when and where water quality exceedances may occur. Permit 107517 includes a process for reassessment of Order Station limits and changing a Compliance Point limit would trigger a permit amendment.

Teck requires an average of 60 authorizations per year to maintain operations. The next mine expansion planned by Teck is the Fording River Operations Turnbull West project, with a review period from May to September 2018.

#### **V CONCLUSION:**

A delay in commissioning the Fording River South Water Treatment Facility could result in non-compliance with MOE and EMPR permits and involve substantive bond payments. Meetings are scheduled in October 2017 between EMPR, MOE and Teck to begin to address these issues. Further engagement will be required between MOE, EMPR and the Ktunaxa Nation Council.

#### **DRAFTED BY:**

Colin Squirrell, MMPO

#### **APPROVED BY:**

Sean LeRoy, Project Director

Amy Avila, Executive Director

From: [Morel, David P ENV:EX](#)  
To: [Zacharias, Mark ENV:EX](#); [Robb, Peter L. EMPR:EX](#)  
Subject: Points 11:30 meet Ministers Teck  
Date: Wednesday, October 25, 2017 10:47:33 AM  
Attachments: [Slides Teck Line Creek.docx](#)

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See draft points for Ministers meeting about Teck at 11:30 appreciate any comments but will need them in next 15 minutes or so.

David



**From:** [Morel, David P ENV:EX](#)  
**To:** [Robb, Peter L. EMPR:EX](#)  
**Subject:** FW: Final AMP for Teck Coal Line Creek Operations  
**Date:** Monday, October 30, 2017 4:24:38 PM  
**Attachments:** [2017-10-26 Determination of Administrative Penalty.pdf](#)

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FYI

David

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**From:** Laughland, Gwenda J ENV:EX  
**Sent:** Monday, October 30, 2017 12:34 PM  
**To:** Morel, David P ENV:EX  
**Subject:** FW: Final AMP for Teck Coal Line Creek Operations  
[David – the final administrative penalty in case you need/want it.](#)

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**From:** Laughland, Gwenda J ENV:EX  
**Sent:** Wednesday, October 25, 2017 5:46 PM  
**To:** Zacharias, Mark ENV:EX; Morel, David P ENV:EX  
**Cc:** McGuire, Jennifer ENV:EX; Danks, Anthony ENV:EX; Richardson, Sheila ENV:EX; Hoffman, Edward A ENV:EX; Nelless, Brady ENV:EX; Hill, Douglas J ENV:EX  
**Subject:** Final AMP for Teck Coal Line Creek Operations

Further to my email below, I am issuing a final penalty determination later this week against Teck's Line Creek Operations. The preliminary penalty amount of \$90,400 has been reduced to \$78,100 upon my receipt and consideration of Teck's written response. This penalty is for non-compliances that occurred at various times over a two-year period from 2014 to 2016, comprising the following components (as adjusted): \$52 500 for the five permit limit exceedances; \$13 000 for the failure to maintain works; and \$12 600 for the six non-compliance reporting contraventions.

Essentially, LCO did not install proper works (an oil water separator) to treat effluent from the heavy duty wash bays discharged to a pond. Because they didn't have the proper works, they had a number of permit limit exceedances over a period of several years. They also did not report the permit limit exceedances in a timely way to the ministry hence the reporting contraventions.

LCO will receive an email with the information, followed by a letter via registered mail. They will have 30 days to appeal the decision with the EAB.

I understand that you will brief upwards and loop in the folks from Mines.

[Please let me know if you would like additional briefing materials.](#)

Regards

Gwenda

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**From:** Laughland, Gwenda J ENV:EX  
**Sent:** Tuesday, June 20, 2017 3:30 PM  
**To:** Zacharias, Mark ENV:EX  
**Cc:** McGuire, Jennifer ENV:EX; Danks, Anthony ENV:EX; Richardson, Sheila ENV:EX  
**Subject:** AMP for Teck Coal LCO

Mark – I am sending out an administrative penalty this week to Teck Coal Ltd., Line Creek Operations. The penalty is for five EPH permit limit exceedances (\$60 000), failure to maintain authorized works (\$16 000) and six non-compliance reporting contraventions (\$14 400). The overall penalty equals \$90 400. A sizable penalty with so many contraventions in one package.

Essentially, LCO did not install proper works (an oil water separator) to treat effluent from the heavy duty wash bays discharged to a pond. Because they didn't have the proper works, they had a number of permit limit exceedances over a period of several years. They also did not report the permit limit exceedances in a timely way to the ministry hence the reporting contraventions.

LCO will receive an email with the information, followed by a package via registered mail.



I am out of the office the rest of this week at meetings, <sup>s.22</sup> . I will monitor emails and phone and respond to LCO should they wish to have an Opportunity to be Heard (formal meeting to discuss the penalty). They have 30 days to notify me should they wish to avail themselves of that opportunity.

Also, as discussed, I understand that you will brief upwards and loop in the folks from Mines.

Thanks

Gwenda

**From:** [Morel, David P ENV:EX](#)  
**To:** [Robb, Peter L. EMPR:EX](#)  
**Subject:** FW: Final AMP for Teck Coal Line Creek Operations  
**Date:** Thursday, October 26, 2017 8:41:55 AM

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FYI

David

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**From:** Laughland, Gwenda J ENV:EX  
**Sent:** Wednesday, October 25, 2017 5:46 PM  
**To:** Zacharias, Mark ENV:EX; Morel, David P ENV:EX  
**Cc:** McGuire, Jennifer ENV:EX; Danks, Anthony ENV:EX; Richardson, Sheila ENV:EX; Hoffman, Edward A ENV:EX; Nelless, Brady ENV:EX; Hill, Douglas J ENV:EX  
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Gwenda

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**Subject:** AMP for Teck Coal LCO

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Also, as discussed, I understand that you will brief upwards and loop in the folks from Mines.

Thanks  
Gwenda

**MINISTRY OF ENVIRONMENT AND  
CLIMATE CHANGE STRATEGY  
INFORMATION NOTE  
Elk Valley Area Based Management Plan**

Date: November 2, 2107  
CLIFF/tracking #:312352

**PREPARED FOR:** The Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**ISSUE:** Status update on implementation of the Area Based Management Plan for the Elk Valley

**BACKGROUND:**

- On April 15, 2013, a ministerial order was issued to Teck to prepare an Area Based Management Plan (ABMP) under section 89 of the *Environmental Management Act*, to manage water quality and stabilize and reverse increasing trends in water contaminants in the Elk River watershed. The Elk Valley Water Quality Plan (EVWQP) was submitted by Teck, and subsequently was approved on November 18, 2014.
- The ABMP also sets out short, medium and long-term water quality targets for selenium, nitrate, cadmium and sulphate, as well as targets to address calcite formation. The ABMP is official ministry policy that must be considered in any decision made under of the *Environmental Management Act* within the designated area.
- The long-term targets consider: 1) current contaminant concentrations, 2) current and emerging economically achievable treatment technologies, 3) sustained balance of environmental, economic and social costs and benefits, and 4) current and emerging science regarding the fate and effects of contaminants.
- EMA authorization 107517 “Valley Permit” was issued on November 19, 2014 and sets out legal requirements for Teck for the implementation of the ABMP.
- All new proponents in the area are subject to the commitments in the EVWQP and future decisions affecting water quality will be made within the context of the entire watershed and not just individual sites. Two new mines are being proposed with in the area of the ABMP (Bingay and Crown Mountain). Work is ongoing with the companies, EAO, EMPR and First Nations to ensure they understand the application of the ABMP to their proposed projects.
- Current stakeholders include local government, the State of Montana, the USEPA, and the Ktunaxa Nation Council (KNC). KNC and Teck have continued to support the EVWQP in a constructive and collaborative manner.

**Compliance:**

- ENV has a dedicated compliance project supported by one technical officer and one technician to oversee Teck permits in the Elk Valley for the five Teck mines.
- Non-compliances ranging from administrative requirements to effluent discharge exceedances have been reported and responded to.



- ENV, EMPR and Teck are working together to ensure non-compliances are addressed in a timely manner.
- Short-term Site Performance Objectives in the mainstem Elk and Fording Rivers have been met.
- Exceedances of selenium compliance limits in the Upper Fording River have occurred during the winter.
- Exceedances of nitrate compliance limits in the Upper Fording River and Line Creek have also occurred. Nitrate concentrations may continue to increase and require mitigation.

ABMP milestones in the next year:

- Regional Aquatic Environment Monitoring Program 3 year Report and an update to the Selenium Bioaccumulation Model - submitted and under review
- Updates to Water Quality Model and Implementation Plan – submitted and under review
- Calcite Treatment Implementation – Oct 31, 2017
- Third Party Audit Report – Oct 31, 2017
- Application to move FRO compliance Point – expected Nov 2017
- Final Tributary Management Plan - due December 31, 2017
- Saturated Fill Full Scale Demonstration – Permitting to be completed this fall
- Fording South Water Treatment Plant Permitting Application – expect submission early 2018
- Updated Adaptive Management Plan – by the end of 2018

### **Water Treatment Plants:**

- Teck has constructed one treatment plant in the Elk Valley. The West Line Creek Treatment Plant is removing selenium and nitrate, and meeting permit requirements. However, due to residual selenite, increased selenium bioaccumulation downstream of the plant was observed in 2017. Teck will be implementing an additional treatment step, expected to be online in 2018.
- Teck has suggested they need to shut down the West Line Creek Treatment Plant for 10 months, ENV and EMPR staff are in discussions with Teck on this and no final decision has been made.
- Teck undertook pilot testing in 2017 of advanced oxidation to address residual selenite in the effluent. This technology has been identified for addition to the West Line Creek Treatment Plant, and future plants to improve the operation of the treatment process by reducing selenites, a specific form of total selenium known to be most bio-available.
- Eight additional treatment plants are planned for various locations in the Elk Valley over the next fifteen years. The West Line Creek Plant will be taken off line until the advanced oxidation process is constructed and commissioned in the summer of 2018.

### **CONCLUSION:**

- Is very early in the implementation of the Area Based Management Plan for the Elk Valley, but Teck is making good progress.



- Teck has comprehensive monitoring programs in place to understand impacts to aquatic health, groundwater and human health. Through the adaptive management process is moving towards the protection of these uses.
- There is a positive cooperative relationship currently among the Ktunaxa Nation Council, Teck and ENV that is contributing to the success of implementation.
- Outstanding challenges include nitrate management, the location of the Fording River compliance point, and toxicity test failures.
- Bingay and Crown Mountain are two new mines in the Elk Valley that have entered into EA process. ENV will need to consider how to include these proponents in the ABMP.
- Future decisions affecting water quality will be made within the context of the entire watershed and are subject to the commitments of the plan.
- Teck has constructed one treatment plant, achieving limits for reduction of total selenium. Eight additional plants are proposed in the Elk Valley in next 15 years. Government is working with tech to update the implementation plan for the ABMP now that Teck has determined a path forward to address selenite in their effluent.

**Attachments:** Status of current issues regarding PE-107517 requirements

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Reviewed by	Initials	Date
DM		
DMO	CS	Nov 16/17
ADM	DM	Nov 15/17
Dir./Mgr.	EH	Nov 15/17
Author	DH	Nov 14/17

**Attachment:** Status of current issues regarding PE-107517 requirements

PERMIT REQUIREMENT	STATUS
Compliance Points downstream of mines	Fording River Compliance Point exceedances for nitrate and selenium during winter. Teck is proposing to move compliance point downstream to account for all loadings.
Re-evaluation of Harmer Compliance Pt	Teck, KNC and MOE are in a structured decision making process
SPOs at Order Stations	All current SPOs are being met at this time.
Water Treatment	Line Creek plant is to be shut down this fall, and idle until advanced oxidation plant is constructed and commissioned to reduce selenite in effluent. Fording South plant is experiencing design delays. Required to come on line Dec. 31, 2018 will not be met.
Tributary Evaluation and Management	Interim plan has been submitted and being reviewed at EMC. Final plan development is on schedule.
Calcite	Calcite monitoring and impact studies continue. Calcite Treatment at Greenhills is on track for implementation by October 31, 2018
Toxicity Testing	Experiencing some acute toxicity failures at some locations in the valley, most likely due to calcite formation on organisms.
Research and Development	Ongoing research on saturated fills for water treatment and nitrate management.
Groundwater	Updated regional program expected Sept 30. Additional studies planned for the Sparwood area and in the upper Fording.
Local Aquatic Effects Monitoring	Observed increased selenium bioaccumulation immediately downstream of WLC treatment plant. Changes in benthic community observed in areas with high nitrate concentrations near FRO. Monitoring continues at Line Creek, Fording River, and Greenhills.
Regional Aquatic Effects Monitoring	Three year interpretative report submitted in September. Includes update to Selenium Bioaccumulation Model.
Koocanusa Reservoir	Teck continues to monitor Lake Koocanusa and is participating in the monitoring and research working group. LKMRWG met in October.
Water Quality Modelling	Next model update due October 31, 2018. Will include updates to Teck's implementation plan.
Human Health Risk Assessment	The HHRA has been submitted and reviewed by the EMC. Teck is working with KNC to fill identified data gaps. IHA has raised concerns that assessment did not address preferred country food consumption rates in a manner they expected.
Adaptive Management	The AMP has been submitted and reviewed by the EMC. Teck and KNC are working together to address outstanding concerns prior to re-submission in 2018. ENV is monitoring this process closely.
Environmental Monitoring Committee (EMC)	Is functioning well. Meets face-to-face 4x per year to review monitoring submissions. Is holding the Annual Public Meeting and releasing the Annual EMC Public Report October 25 <sup>th</sup> .

**For Immediate Release**

Date: May 9, 2017

## Update on 2014 Sheep Mortality Incident at Greenhills Operations

Teck will pay \$195,000 to the non-profit Habitat Conservation Trust Foundation and pay a \$5,000 fine and Maxam Explosives Inc (Maxam) will pay \$145,000 to Habit Conservation Trust Foundation and pay a \$5,000 fine due to one Environmental Management Act charge each related to a 2014 sheep mortality incident at Greenhills Operations (GHO).

In July 2014, five deceased bighorn sheep were found in an area at Greenhills Operations where materials used for blasting are kept. It is believed the sheep ingested materials stored in the area.

Authorities were immediately notified when the sheep were found. There was no human health risk associated with the incident, and no indication of any long-term impacts to wildlife or the environment. Following the incident, GHO and supplier Maxam implemented additional safeguards and procedures, including increased materials storage and handling measures, video surveillance, and enhanced training for employees.

"We take our environmental responsibilities seriously and a thorough investigation was undertaken following this incident, resulting in a number of measures to prevent a reoccurrence," said Nic Milligan, Manager, Community & Government Affairs, Teck.

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