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2AM-MEL1631 Water Management Working Group

Date/Time: July 2nd, 2020 3:30 pm – 5:00 pm EST

Attendees	
Name	**Organization**
Sergey Kuflevskiy	NWB
Luis Manzo	KivIA
Richard Nesbitt	KivIA
Michel Groleau	AEM
Jessica Huza	AEM
Matt Gillman	AEM
John Faithful	AEM (consultant)
David Zhong	CIRNAC
Atuat Shouldice	CIRNAC
Anne Wilson	ECCC
Eva Walker	ECCC

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Meeting Agenda

Teleconference Water Management Working Group Monitoring Program Preliminary Data Review

Type “A” Licence No: 2AM-MEL1631

July 2nd, 2020 3:30 pm – 5:00 pm EST

Teleconference Call-In Information: Phone: 1-877-668-4493; Meeting Number: 160 823 6690

1. NWB Opening Remarks
2. Presentation of the Preliminary Results of First Monthly Sampling Event by Agnico Eagle and questioning of Agnico Eagle by the Parties and the NWB
3. Closing Remarks

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1. NWB Opening Remarks

Sergey Kuflevskiy stated that this teleconference is intended to discuss the monitoring results received to date since discharge began. He went on to state that as the discharge was delayed, we could not have had the meeting earlier.

Sergey stated that AEM has provided monitoring results a couple of days ago and asked if everyone received results – everyone confirmed they did receive them.

Sergey gave the floor to Jessica Huza to present results, first stating that those on Webex will follow along over Webex. Jessica proceeded to send out the presentation via email for those not on Webex. Jessica then passed the floor to John Faithful to present the data slide set.

2. Presentation of the Preliminary Results of First Monthly Sampling Event by Agnico Eagle and questioning of Agnico Eagle by the Parties and the NWB

Slide 2 *- WQ-MOP COMMITMENTS*

John began the slide set by overviewing the commitments around the water quality monitoring program and toxicity monitoring program (as shown in the slide). He then reviewed the number of samples and frequency for effluent, mixing zone, mid-field and reference stations. It was stated that this is consistent with what was reviewed and discussed in the past.

Richard Nesbitt then asked if mixing zone samples were collected at the depth of highest specific conductivity as determined by water column profile – John responded with yes and explained that MEL-13-10 could not be collected due to health and safety concerns with ice conditions.

Side 3 – SAMPLING STATIONS

John stated the purpose of the slide and reviewed the map being shown, indicating mine site, mixing zone sample points and discharge location. He highlighted the importance of having three Edge of Mixing Zone (EoMZ) sample points equidistance from diffuser.

John then stated that next couple of slides are to provide graphical summary of some of the discharge and water quality data already sent out.

Slide 4 – DISCHARGE AND WATER CHEMISTRY

John started these slides by reviewing the set-up of the figures and states that we are tracking between 14,000 – 18,000 m^3/day. Specific conductivity was then reviewed, with John stating

that AEM has consistently been tracking at around 5,000 uS/cm. He then stated that around 350,000 m^3 cumulative discharge has occurred in June, which is identified to be below the planned monthly discharge volume of 450,000 m^3/month.

John then explained key indicators for effluent in the lower plot on the slide and states consistency in these indicators. John stated that the majority of chemistry data is final; aside from the most recent sample set for which we are awaiting a portion of the tests. It was then stated by John that all regulated concentrations are within limits.

Jessica added that the graph on the right is the total cumulative volume, showing that we are quite a bit lower than what was originally planned for June.

Slide 5 – WATER CHEMISTRY

John explained the key parameters and figures showing results for EoMZ, mid-field and reference stations. John stated that we see a bit of variability between EoMZ stations and gradient and attenuation through the mid-field and into the reference stations. John stated that what we do see is the successful assimilation of effluent in mixing zone.

Anne Wilson then stated that in reviewing AEM annual report, mid-field stations show some spatial variability of parameters. Therefore, having one station is a bit of a "gamble". She then asked if we would be bringing in AEMP results to supplement the single mid-field station in the WQ-MOP. John replied with yes, intent is to include the data from (AEMP) stations where applicable to supplement data. Anne then asked if it would make sense to do multiple mid-field stations in the monthly sampling of this program. Jessica stated that we do have multiple stations in monthly AEMP and explained that we do therefore have multiple stations in that area. It was further added by Jessica that when sampling all of the chronic toxicity in the reference and mid-field stations there is a lot of back and forth in a day with the helicopter and therefore to collect even more and attempt to meet hold times would be difficult. She went on to state that we are already close to the limit for logistics, QAQC checks and hold times. Jessica then stated if there were suggestions in the data that we need to increase sampling, then we would have to be creative to make it work, but unless there is indication that we need to increase sampling efforts, then AEM would prefer to apply AEMP sampling to supplement rather than additional WQ-MOP sampling. Lastly, Jessica mentioned that if we see in data that we should focus on mid-field then we could drop a reference station to increase sampling at mid-field if it is decided it is a critical area.

David Zhong then stated that discharge started June 5th and the sample was collected on June 7th, when only 10,000 – 20,000 m^3 of effluent was discharged, and asked if this one data point means much at all. Michel Groleau stated that the reason we sampled on the date we did was

in order to collect the sample while ice conditions allowed and we were not able to go back afterwards. David followed up with asking if we are reading too much into the data. John responded that we are presenting information to provide overview of what we do currently have and added that the effort will be to get back on the lake as soon as it is safe. John then mentioned that we have remote monitoring equipment measuring specific conductivity and EoMZ stations. He then stated that this would provide supplemental data for how discharge is behaving in mixing zone with lake was inaccessible due to ice.

Richard then asked if the monitoring equipment is a single point or a string. Jessica responded by stating that the original plan was to have a probe at two depths, however, once the second set of probes were received on site ice conditions prevented install of the second round of loggers.

John finally added that the other point to consider is that these data do represent under-ice conditions when we have limited mixing potential that you would expect with open water conditions.

Slides 6 - *SELECTED TESTS*

John stated that this group of slides provides review of toxicity testing to date and stated that majority of data we have are preliminary, however are positive. John then reiterated what tests are focused on as explained in the slides.

Slides 7 - *ACUTE TOXICITY TEST RESULTS*

John stated that first three acute toxicity samples have pass for both species, as shown in the slide.

Slide 8 - *CHRONIC TOXICITY TESTING - challenges*

John stated that this slide provides information in follow-up to IRs and challenges identified by interveners. John then stated that two main challenges to be noted and evaluated in path forward is i) hardness of water in Meliadine Lake compared to water that tests would be conducted with, and ii) dilution water to be used in testing may potentially increase TDS in samples being tested. John then explained the challenges further as discussed on the slide.

Slide 9 - *CHRONIC TOXICITY TESTING – solutions*

John then explained specific test designs as outlined in points on slide.

Slide 10 - *CHRONIC TOXICITY TESTING – test specific laboratory controls*

John started by stating that a lot of the control design has been in consultation with the lab to ensure they understand the concerns and that they can support AEM with respect to making sure that there is a valid control response to provide assurances testing is representative. John then explained the three different controls outlined on the slide; laboratory, soft water and site controls.

Slide 11 - *CHRONIC TOXICITY TESTING – evaluation criteria*

The staged approach was then explained by John, as it is shown on the slide.

It was then stated that the next series of slides reviews the chronic data that has been provided to working group.

Slide 12 - *CHRONIC TOXICITY TESTING – fathead minnow preliminary results – receiving environment*

John reviewed the chronic toxicity data shown on the slide concerning the fathead minnow, providing reference around survival and growth tests. John described the setup of the figures. John highlighted that for these samples we see similarity in terms of variance between reference stations and receiving environment samples.

Slide 13 - *CHRONIC TOXICITY TESTING - fathead minnow – EoMZ – MEL-13-01 dilution series*

John explained the set of dilution series figures as seen on this slide for MEL-13-01. John then stated that we see some variance within edge of mixing zone sample, but what we do not see is a marked gradient in terms of survival and biomass as concentration of discharge in test water increases. He stated that therefore there is nothing to indicate that there is a discharge proportional effect through these results.

Slide 14 - *CHRONIC TOXICITY TESTING - fathead minnow – EoMZ – MEL-13-07 dilution series*

John stated that we see some similar results to previous slide with respect to dilution series data. He stated that variability in mixing zone tests is also seen in controls and that lack of gradient in dilution series suggests that variance is due to testing and not proportion of discharge in testing sample.

Slides 15 - *CHRONIC TOXICITY TESTING – duckweed preliminary results – receiving environment*

John proceeded to state that the next few slides focus on Lemna, with the same series of graphs that above slides provided. He went on to state that the reference stations and receiving environment stations show similar variance. However, it was stated by John, an anomaly is shown in EoMZ station MEL-13-07 frond count, which falls below range of rest of frond count

results. He went on to state this is believed to be anomalous due to the trends observed in the corresponding dilution series (dose response relationship).

Slide 16 - *CHRONIC TOXICITY TESTING - duckweed – EoMZ – MEL-13-01 dilution series*

Dilution series for frond count and growth for MEL-13-01 was then explained by John. He stated that as we had seen with previous testing species, we see no effect with increasing discharge proportion in test water and similar variability between control and the EoMZ station.

Slide 17 - *CHRONIC TOXICITY TESTING - duckweed – EoMZ – MEL-13-07 dilution series*

Dilution series for frond count and growth for MEL-13-07 was then explained by John. John stated that these results show that anomalous value on Slide 15 is unlikely driven by discharge as no response shown with increasing discharge proportion in dilution series.

Richard then stated that based on WQ-MOP and AEMP we would expect higher concentration and response to the west (MEL-13-01). Therefore, this is encouraging that we have the greater response upstream (east). Further suggesting variability around test rather than response to effluent.

Slide 18 - *CHRONIC TOXICITY TESTING – summary findings*

John then reviewed the summary findings on chronic toxicity testing stating the understanding we are still to receive Daphnia and Hyalella. John reviewed points on slide, stating that we don't see anything to suggest that the discharge is having an effect at the mid-field or EoMZ relative to the reference stations, and that we do see variability and will continue to evaluate data as results come in.

John then passed it over to Michel for the remainder of the presentation.

Slide 19 *– KEY MESSAGES – summary*

Michel started by stating the intent of the slide is to capture key messages as a means to communicate key results to public in plain language. Michel stated that the goal is to discuss with the group and get feedback on both the three points on this slide and the table on the following slide.

Michel then read out the first bullet point stating that it relates to water quality of effluent.

Michel then read out the second point, stating after that the aim was to capture the chemistry and receiving environment testing that has been completed.

Michel then read the third point and paused to do roundtable and get feedback.

Sergey asked KivIA to start. Richard stated that it is a little broad to state there are no harmful chemicals, as we do not have a complete suite (referencing cyanide). He then stated he would feel more comfortable stating “water being discharged is not harmful”. Jessica then stated cyanide should be there and Richard agreed saying yes it is there, however stated he would still like to push for tighter language. Jessica agreed with the point and stated that the attempt put it in plain language has removed some of the black and white nature that would be present in technical language.

Richard then brought up the point that some community concerns have been that sewage has been added to CP1. He stated he is not concerned from technical perspective but that it might help to add fecal coliforms to end of pipe sampling. Michel stated it is a good suggestion and that we can certainly look at that.

Sergey then passed it over to CIRNA. Before CIRNA added comments to this point, Louis Manzo added the statement that it would be good to have mention of sewage in key messages, and Richard seconded this. Jessica stated that we closely monitor sewage treatment plant (STP) data and that the plants are working very well. Richard agreed and stated that the main purpose would be to address community concerns of sewage and exemplify that concentrations leaving CP1 do not contain sewage or contain minimal amounts of sewage. Sergey then stated that it would be best not to use the word “sewage”, but it would be beneficial to include STP effluent data in information to alleviate community concerns. CIRNA did not add any comments to the topic of “sewage” before the discussion point shifted.

Moving on, David stated reservations reading too much into one sample that was taken two days into discharge, and stated he would like to qualify the point by rewording as “based on sample taken on June 7th (as most of discharge happened after this)”. Richard proposed that we remove the second bullet point regarding the mixing zone results due to concerns identified, and focus on first point that there water being discharge is not harmful and on third point that discharge is occurring as planned. Michel stated that the mixing zone data does show that TDS is dropping and diffuser is occurring as planned. Michel then stated that we need to find a way to communicate information on concerns from community on water quality in Meliadine Lake. David reiterated his concern about the sample on June 7th being only 2 days of discharge. Richard then stated concerns regarding from vertical positioning concerns due to higher TDS of effluent than what was provided in plume delineation study. John responded by stating that a purpose of the water column profile is to identify vertical conductivity gradients and base sample depth on this. Richard then summarized that yes, but with multiple concerns as stated prior, we should be conservative in the statements being made.

Anne then added ECCC comments, agreeing with the wording suggested by Richard on point #1, which should be reworded to "water being discharged is not harmful". She also stated that she agreed with David's comments on point #2 in that stating "initial" and including sampling date is good. On the third point, Anne stated concerns that with the timing of the sample it is too broad of wording to say "there are no" at this point and suggests qualifying by saying "testing suggests that there should be no harmful effects".

Sergey then stated in summary that Richard made good points that wording can be modified on first point and second point can be modified to include date of sample. He also agreed with Anne's suggestion for third point.

Anne then asked when we will be incorporating end of pipe chronic toxicity testing into monthly toxicity sampling. Michel and Jessica responded saying it will be done with the next round of sampling next week. Sergey then asked when we expect to get next results. Michel responds with 3 – 4 weeks and Jessica adds that we should be getting final results for chronic in next week for June event, highlighting that it is a quite a long turnaround. Jessica then provided a rough timeline for when we would get the next round of results for water quality in mixing zone if we sample and ship July 13th (suggesting we would get partial results around 1 week after shipping). She then stated that this would represent receiving environment water quality after around six weeks of discharge into the mixing zone.

David then asked if AEM started daily monitoring of temperature, conductivity and pH of effluent? Jessica responded saying yes and that this will be sent out, and asks what sort of frequency we would like the data to be sent out. The group consensus was to have the data sent out a few days before each meeting. For now, the June data will be sent and then before the next meeting the updated data will be sent.

Anne then asked if we could sample chronic from end of pipe right away since it is not dependent on ice in Meliadine Lake. Michel stated that the intent is to have all samples at the same time for comparison purposes, and John agreed. Anne then stated that the idea being to have more data earlier. Michel stated that AEM would prefer to have it all done on the same day. John then mentioned the planning with the labs that has been done as well to have them all done together.

Michel then summarized the revised bullet points from Slide 19:

1. Initial monitoring data indicate that water being discharged is not harmful
2. Removed from list
3. The discharge of the water is going as planned and testing suggest there should be no harmful effects on the environment

Slide 20

Michel began this slide by explaining the purpose of the table being to communicate data to public. He went on to explain that the table would have a map with locations identified. He then explained that he would like to have green or red to flag when results are within license limit. Michel stated that "toxicity" is not terminology used here here as when it is translated to Inuktitut it translates to "poison". Therefore, we are looking for alternative communicate methods such as "fish survival".

Michel then went through the columns and explained logic/thinking behind set-up. He stated that colour-coding would be applied where possible, and that pass or fail will be used for toxicity data.

Feedback from the group members follows:

- Richard agreed with the challenge of communicating in plain language and stated it looks good to him, reiterating that clear colour-coding would be useful.
- David pointed out that chronic tests are incomplete, and John responded to say the data we do have all passed and we are confident with results. David had no further comments.
- Anne had no comments aside from grammatical correction of "in the effluent" rather than "to the effluent".
- Sergey suggested that we could add sample dates into the headers and potentially state how many samples are included in table.

Richard raised a couple follow-up questions:

- Has AEM been recording traffic to Facebook and their website based on location to see if people are actually using it?
- Have AEM been receiving any questions?

Michel stated AEM would validate with Communications group. Jessica suggested sending AEM specific questions and AEM would have their Communications group respond. Richard agreed.

Sergey asked if we have considered posting in a Rankin specific group rather than the AEM page, as it would be more logical since people may not be aware of the AEM Facebook page. Michel stated he would forward this to communication group. Jessica then stated that we also have weekly radio presentations. Richard stated he will add "cross posting" to the IR being sent to the Communication group. Michel closed this section by saying that if anyone has any further questions on communication please let us know and we will forward to Communication group.

3. Closing Remarks

David stated that any information should be sent a few days in advance so team can react, as some do not have daily access to email system. Jessica responded by saying that data is required to be sent out 2 days before meeting as per the DRAFT TOR and so this will be respected by AEM.

David followed up with the request to have presentation sent out beforehand as well. Jessica stated it would be difficult, since we are getting the data to our fingertips 2 days before, sending it out and then working to build the presentation over those 2 days. Therefore, we could send something but it would not be complete. Michel suggested we could delay the meeting by 2 days so that we have 2 extra days to build the presentation and send it out 2 days beforehand. Sergey suggests the alternative that David could use his personal email, however, David says it should go through his work email due to confidentiality. Sergey then concluded that we would need to delay the meeting in order to ensure accessibility of the slide set to everyone.

Sergey then pointed out that we need to decide the date of next meeting. John suggested that we wait until the next sampling event is confirmed by AEM and then decide the date via email. Sergey agreed with this.

Sergey then raised the question to Richard regarding previously raised concerns (by KivIA) of taste profile and whether this is a point that we want to include in communication to public. Richard stated that based on information AEM has shown so far, we can confidently say everywhere outside of mixing zone is unlikely to be affected in terms of look, feel or taste of water and if AEM wants to include in communication it is in agreement with what KivIA has found so far.

Anne then echoed what Richard said and had no further comments.

Jessica asked if there is any interest for anyone to come on site for side-by-side sampling. Richard responded saying that the KivIA has expressed interest in sampling within mixing zone and at edge of mixing zone. He went on to state that they are also interested in conducting sampling downstream of Little Meliadine Lake. This would be in addition to standard sampling conducted through memorandum of agreement with CRINA around site.

Jessica responded by saying that the wording we are stuck on is wanting to make sure that data is not released prior to being sure of validity (i.e., accredited lab, QAQC, etc.). Richard agreed with Jessica's point and stated the rough goal is to have free reign to share supplemental data as long as it meets QAQC standards in opinion of most of working group. Michel suggested that

we continue with having the working group to be the platform to interpret the data, including QAQC data. Therefore, Michel suggested that the working group platform would be followed with both WQMOP and supplemental data.

Richard then reiterated his hesitation that unanimous agreement may be a challenge, indicating that once all QAQC info has been provided and a majority decision was reached in the group then the data could be disseminated. Michel responded to this saying that what AEM expects is for KivIA to follow same structure in data interpretation and communication that AEM follows with the working group (i.e., discussions around wording and interpretation within the working group with everyone having input).

Sergey then made a final statement (unrelated to the discussion on KivIA sampling) suggesting that for the further monitoring data provided to working group, if it is useful to consider providing AEMP data if it is available.

Sergey thanked all for joining and called meeting to an end.

The meeting concluded at 5:40 EST.