

Johnson, Bill H (DNR)

From: David Blaha <[REDACTED]>
Sent: Monday, December 12, 2011 1:33 PM
To: Carlson, Erik (DNR)
Cc: Al Trippel
Subject: RE: meetings notes

Hi Erik

Just got my internet access back, so here are my comments

I did miss a little of the call, but here is what I heard

- Based on initial water quality modelling using the existing IAP/Work Plan guidance, water quality in the West Pit is predicted to exceed standards for nickel, copper, selenium, thallium, magnesium or manganese (not sure which one it was) and cobalt. (Jim did not mention any other problems so I assume they are meeting the other GW and SW standards at the evaluation points at the Mine Site - still waiting for the initial TB results)
- Fairly extreme mitigation measures are required to show compliance with the standards under the current modelling assumptions. In fact, Jim says that using the current model assumptions and applying it to the Dunka Pit would result in predicted concentrations far above what are actually being measured during monitoring
- Further culpability analysis has indicated several key parameters that are causing the exceedances.
- PolyMet has uncovered some new information/suggesting new approaches that they would like the co-Leads to consider as the part of the model refinements/calibration process, these measures include the following:
 - Revisit the concentration caps established for selenium, thallium, silver, antimony, and lead - the concentration caps that were established for these solutes were derived from another mine and simply used the detection limits for that data (all samples were non-detects). PolyMet has found some data from the Dunka Pit for these solutes, which were again all non-detects, but the detection limit was lower than at the other surrogate mine. they would like to use this lower detection limit data for these 5 solutes
 - Infiltration rate at the Category 1 stockpile - the model assumed that 20% of rainfall would infiltrate (whereas Jim Scott said the HELP model predicted only 2.5% infiltration). Barr is proposing that the model start with 20% infiltration but then as the ET cover becomes established, the rate of infiltration would decrease to 5%.
 - Passive Reactive Barrier (PRB) effectiveness - PolyMet is looking at including a PRB between the Cat 1 stockpile and the West Pit to remove some of the solute mass before it gets to the West Pit. There is a need for agreement on the assumed effectiveness of the PRB
 - Pit Water chemistry model - current modelling is suggesting (at the 90% probability threshold) that the pH in the West Pit may drop below 7.5, which results in increased solubility of several metals but especially copper. PolyMet believes the current model is too simplistic to capture the pit dynamics and would like to propose use of a more complex model

Next Steps

- DNR to propose a process for discussing and reaching decisions on these refinements.
- I would suggest the following:

- o PolyMet provides in a memo their proposed modifications and the rationale/new information supporting any changes.
- o DNR would convene the small team to quickly review this memo (e.g., LAM, Erik, corps, USFS, ERM), first internally and then with Barr
- o Assume some hopefully simple follow up questions, and then one final meeting of the small group
- o Small group would provide a recommendation to the co-lead managers for their approval
- o PolyMet would incorporate any changes into their modelling

Hopefully agreement can be reached via consensus, if not the small group should clearly identify what assumptions they are willing to agree to for the SDEIS and what assumptions they will need to see evidence that PolyMet can achieve for purposes of permitting

Hope this helps - let me know if you have any questions

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

From: Carlson, Erik (DNR) [mailto:]
Sent: Monday, December 12, 2011 1:28 PM
To: David Blaha
Cc: Al Trippel
Subject: meetings notes

Dave,

I appreciated you calling in. Could you please send me your notes from today's call? Your knowledge gives you greater precision in your understanding of what was said. Thank you.
-Erik

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

From: David Blaha [mailto:]
Sent: Monday, December 12, 2011 10:36 AM
To: Al Trippel; Carlson, Erik (DNR)
Subject: I can't call in

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