



Board Meeting Minutes 12/18/2018

Attendees

Chris Smith
Jessie Olson
Sean Cronin
Jessie Olson
Sue Schaufler
Ken Lenarcic
Monica Bortolini
Jason Whitmore, left after presentation
Mark Schueneman (with proxy for Chris Wiorek)
Kathy Peterson
Yana Sorokin
Julie Trumpler
Joe Ryan, left after presentation
Mary Boardman, left after presentation
Erica Crosby
Colleen Williams
Dana Flett, left after presentation
Gabe Tuerk
Glenn Patterson, left after presentation
Sean Cronin

Welcome and Introductions

Chris S called the meeting to order at 2:04 and went through introductions.

Public comments on items not on the agenda

Chris S asked for items not on the agenda. No one had any to add.

Water Quality & Captain Jack Mine Releases

- Glenn's Presentation
 - Big Five Tunnel overview (part of Captain Jack Superfund Site, 2003)



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- Focus in the last six years is to clean up surface and subsurface. In 2016 crushed limestone was installed. In 2018 bulkhead valve was closed to allow water to build up – less oxygen and limestone will raise pH, without acid less dissolved metals. Sept 6, 2018, tunnel filled with water and valve was opened to allow water to discharge once it filled up behind the bulkhead.
- Mid-Oct
 - Residents report dead fish
 - Testing by EPA shows tunnel is acidic and laden with metals
 - EPA brought sodium hydroxide treatment at the settling ponds
- Mid Nov
 - EPA continues sodium hydroxide treatment with some additional crushed limestone
 - Settling pond looks more green than orange with metals settling out
- Early Dec till Now
 - EPA and others set up temporary treatment facility outside of the tunnel to provide better treatment which is working better
- Mary Boardman's Sub-Presentation
 - Provided remedy overview to submerge the source areas as a preventative remedy (see equation)
 - Objectives – Plug the tunnel, get away from costly active treatment plant, reduce monitoring and long term operations costs
 - Provided overview of remedy components and what ideal world situation would look like
 - Provided overview of bulkhead design features and borehole design
 - Showed ERT imaging after closing the valve. Uses geophysical arrays to look for changes in water quality and extent.
 - Progression
 - Showed good water quality after closing the valves in the Fall 2017 but noted some issues with instrumentation.
 - Showed increased water level monitoring after closing the valve.
 - Decided to open the valve because water level was going up and not slowing down, so opening the valve was a planned event.
 - Gabe asked: What was unexpected about the increase? Mary responded: Expectation that there would be more horizontal distribution but instead it filled up. Estimate of volume to fill was uncertain.
 - 9/6/2018 – valve was opened. 10/22/2018 – first reported fish kill. But residents started seeing it in the first part of October.
 - Other contributors: Discharge was going through the settling ponds. There were releases from the reservoir upstream (Left Hand Park).



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- Expected that opening the valve would cause a return to previous or better conditions but due to data delays they didn't see the very rapid increase.
 - Collected samples of 10/23 and got rush analysis which showed copper and zinc hazard quotient was exceeded for fish.
 - Joe Ryan asked: Why wasn't copper measured right away? Mary responded: They were generally seeing good pH in previous data so they weren't concerned and they weren't expecting the pH to come up so quickly. In hindsight they would do this differently.
- Provided overview of lessons learned – equipment can be unreliable, ERT imaging needs interpretation, ensure data accuracy, and must get real time data.
- Emergency Responses included surface water sampling, caustic (NaOH) addition at the portal, caustic addition to mine pool, and temporary lime (CaOH) treatment system.
- Path forward is the temporary lime treatment system through winter and river data to determine how to get back to selected remedy.
- Questions
 - Kathy: Can you elaborate on how do state and tax payers own this problem because EPA and state didn't cause this.
 - Glenn: Federal law of the land is to get the metals and get out. Mary: Many mines are 100+ years old. EPA and State Funds pay for dealing with this problem. State pays 100% of the cost for long term maintenance and monitoring.
 - Chris S: We were unaware that the valve is being open. In the future state could take advantage of eyes on the ground. What is being changed so that if work is going on someone here is getting a call?
 - Mary agreed. Jessie added that more e-mail updates to just LWOG about each step in the process would be very helpful for public relations.
 - Sue asked about current pH coming out of the tunnel.
 - Mary said 2.5.
 - Sean noted that watershed groups could be a way for CDPHE could be more cost effective – e.g. timely water quality sampling – and this would be in line with the Water Plan Group. Glenn followed up to ask is there's anything LWOG could do to help respond. Chris S added that public-private partnerships could be an option too.
- Glenn concluded with water quality impacts summary.
 - Showed map of fish kill locations
 - Data same from six sources including LWOG, EPA, CU, and others
 - Sites include: Background (behind tunnel), tunnel, California gulch, Rowena, and Haldi Intake. Data shows aquatic dissolved copper, cadmium, and zinc concentration relative to aquatic life standards before/after valve opening in September. Generally, by the time you get to Rowena and Haldi metals have



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generally settling out but some elevations are still evident compared to prior spills.

- Chris S and Jason noted that aquatic life standards are much more stringent than drinking water standards.
- Showed pH at the similar sites, pH generally initial response of lower pH and improving trend after that
- Showed BMI at similar sites, generally these took a big hit and remain very low even at Rowena, Confluence, and Haldi.

Approval of Minutes (Chris S)

Sue moved, Mark seconded to approve the minutes. Motion carried unanimously.

2019 Budget (Jessie)

Chris S made motion to adopt 2019 budget. Ken seconded. Motion carried unanimously.

Fire Station Update/Fundraising (Jessie/Sue)

Sue provided update that Left Hand Fire Protection District is planning to build a new fire station that may have space for LWOOG and LWOOG would help with fundraising. Sue provided update that she is looking into it more and will discuss with the Fire District. Chris S added that the water district will need the office space currently being used by LWOOG eventually because the water district is growing.

Jessie noted concern about fundraising and the need to raise money for staff time. Chris S noted future discussion about potential board participation in fundraising.

New Board Member Elections (Chris S)

Chris S. noted that we have one opening for a voting non-agency board member. Jessie will put out an e-mail with the form asking for interest from ex-officio board members and others. Chris S and Jessie will revisit bylaws to understand the opening before the notice goes out.

Adjournment

The regular meeting was adjourned at 4:20 PM and went into executive session.