

ARSG MEETING SUMMARY

July 19, 2012

ATTENDEES: Peter Butler, John Ferguson, Ray Ferguson, David Heinze, Kirstin Brown, Ed Epp, Todd Hennis, Darlene Marcus, Kay Zillich, Linda Figueroa, Jeff Ruppeyut, Lucy Hunter, Pam Deem, Chuck Wanner, Bree McClenning, Zach Gallien, Rob Runkel, Brent Lewis, Mike Holmes, Mike Rudy, Julie Ash, Craig Gander, Kevin Roach, Larry Perino, Marilyn Null, Steve Fearn, Lisa Richardson.

ANNOUNCEMENTS:

- Koehler & Evelyn results: We have some recent water quality data from the Koehler and the Evelyn. We will spend time with that data at our August meeting.
- BHP-Billiton Community Fund: BHP-Billiton gives out around \$300,000 each year for a number of local projects. They have been encouraging ARSG to apply. It would make sense for ARSG to apply under the environmental and/or community development categories. We may be looking at an application of around \$10,000 to \$15,000. While we have couple of ideas, please let Peter know if you think of any small projects for which we might apply for funds. The deadline for an application is the end of August.
- Update Good Samaritan website: The Good Samaritan website is currently not on the web for several reasons. We are updating the site with the help of Pam Deems who is the new administrator for San Juan RCD. Also, we had to change our ARSG website domain to <http://www.animasriverstakeholdersgroup.org/> If you have links to our website on your website, please change them. That will help get the new domain to the top of a web search.
- EPA Maps: EPA has put together maps showing metal concentrations and loading at the sampling locations used in May's sampling. If you want an electronic copy of the map, please let Peter know. We will discuss the map and the sampling results more thoroughly in August.

Updates

Red & Bonita: No further exploration of the Red & Bonita has occurred. Previously, EPA contractors and DRMS staff had stopped exploration after 700 feet because the contractor's filtration system couldn't handle the sludge that was coming out of the portal. At the meeting, EPA wanted to know what were ARSG's priorities with regard to the R&B before taking any more action. The group clearly wanted further exploration of the R&B to find the source of water which will mean that some temporary ponds to handle sludge will need to be constructed. Todd Hennis said that his land below the county road directly below the R&B could be a suitable location for the ponds.

Todd also said that if the R&B goes back 3000 feet as described in an old report, in the same direction as the first 700 feet, it may be under the Gold King mine and above the American Tunnel. If this is the case, he suggested it could make sense to make the R&B a collection point for mine drainage by drilling a borehole from the Gold King 7 level to carry the drainage down and by drilling down to the American Tunnel to relieve some of the pressure and perhaps reduce the drainage from the entrance to the American Tunnel. Then the Gold King drainage would not need to be piped to a treatment plant which would reduce the problems of freezing, clogging, and avalanches. He provided a claims map and part of the old report to people at the meeting.

Investigations for in situ treatment for Mogul: As owner of the Mogul mine, Todd had been unwilling to have any investigations done on his property until he had assurances from EPA and CDPHE that there is no clandestine plan to bulkhead all of the four main mines with large drainages. Todd said he had a good

discussion with Doug Jamison from CDPHE, but he still wanted to have a discussion with someone high up in EPA as well.

Mine Closures in Arrastra Gulch: Kirstin Brown reported that the closing of old adits and open stopes above Silver Lake was going well. About 2/3 of the 50+ openings had been addressed, and she was pleased with the work being done. A helicopter is being used extensively to ferry materials to the various sites.

WQCC Hearing in Durango: There is a Water Quality Control Commission rulemaking in Durango on Sept. 10th at Ft. Lewis College. Peter noted that he is recusing himself from consideration of any changes in use classifications and standards in the upper Animas River Basin. Then he described a few changes that are being proposed. First, the Water Quality Control Division is proposing removal of the current temporary modifications following the Commission's more recent practice of not retaining temporary modifications if no existing discharge permits will be affected by their removal. Second, the Division is proposing a water supply classification for segment 9 – the lower section of Mineral Creek, below South Mineral – because there are wells in this reach permitted for domestic water supply. Third, the Division proposes to separate all lakes and reservoirs from streams in all segments because of different temperature standards used for lakes versus streams. This would separate Silver Lake from Arrastra Gulch. Silver Lake is proposed to be classified as Class 2 Cold Water Aquatic and have Table Value Standards for metals. It is highly unlikely that Silver Lake can meet Table Value Standards. Peter said that a Use Attainability Analysis will most likely need to be developed in the future for Arrastra gulch and Silver Lake to show what uses and accompanying standards for metals are attainable.

Data Validation: Data validation is continuing. We don't expect to see hardly any differences in the data analyses already shown to the group as a result of the data validation with the exception of dissolved lead. Larry, Bill, and Peter have spent a lot of time researching and analyzing dissolved lead data from the River Watch program collected in 2007 through 2009. The values in the data set are slightly above the reporting limit of the lab (3 ug/l) which is higher than other labs used by other agencies (1 ug/l or less). Use of the data shows that dissolved lead standards are exceeded at A72 and Bakers Bridge. Without these data points, aquatic life standards are met. At this juncture, Larry, Bill and Peter believe that the data should not be used and will present a rationale at the next meeting. In addition, Peter noted that the data in question showed a high percentage of lead in the dissolved fraction at Bakers Bridge which has a pH of about 8.0; this is highly unlikely. Rob Runkel, with USGS, said he could look at that data and see if those results were reasonable given the high pH.

BLM technology testing project: Waste Water Management, Inc. will be testing its electro-coagulation technology at the American Tunnel, probably in early September. BLM is about to execute the contract.

Progress on BLM risk assessment: BLM is working on a risk assessment associated with the major drainages in upper Cement Creek. This is part of the process BLM must go through to utilize Dept. of Interior CERCLA funds. We will hear more about the risk assessment at our September meeting.

USGS sampling for transport model: Water quality samples for the USGS transport model for Cement Creek should be taken in early October.

Main Topics

Sunnyside Report on treatment technologies: Larry Perino gave a presentation on two reports that were just completed by its contractors. One was an initial analysis regarding different conventional treatment options for upper Cement Creek. Overall the report gives us a baseline with which to evaluate any unconventional treatments that the group wants to explore. Under the report's criteria, the best treatment is a mechanical plant capable of 1000 gallons per minute which would treat the American Tunnel, Gold King, and Red & Bonita plus

partial treatment of Cement Creek. The capital costs and annual operating costs were estimated at a little more than \$6.5 million and \$900,000 respectively.

The other report is an analysis of zinc loading using recent EPA data. It shows the four main upper Cement Creek adits have a major impact in zinc loading in both Cement Creek and at A72. The report also demonstrates how the adits play a much larger role in zinc loading at median and low flows as opposed to high flows. This result indicates that selective seasonal treatment might be beneficial. Larry's powerpoint presentation follows the reports fairly closely. If you have not seen either of the Sunnyside reports or the presentation and would like a copy, please contact either Peter or Larry.

Prof. Linda Figueroa Treatment tech. discussion: We also had a presentation and discussion with Prof. Linda Figueroa from Colo. School of Mines who specializes in treatment of acid mine drainage. One of the main points she made is conservation of mass. Metals and water have to go somewhere. There is no magic solution in making them disappear. They will either accumulate or find other pathways to migrate. A number of people took the opportunity to ask Prof. Figueroa some technical questions. If you want a copy of her presentation, please contact Peter

Innocentive website proposal: Bill Simon has contacted the InnoCentive website representatives. InnoCentive was initiated by drug giant Eli Lilly in their need to find a way of overcoming increasing research and development costs to find new marketable drugs. Since 2005 InnoCentive spun out of Eli Lilly to provide problem definition and legal help in formulating challenges for innovative solutions by crowdsourcing to over 200,000 individual participating "solvers" in a broad variety of fields. InnoCentive also develops agreements for patenting/leasing solutions that are generated through this process. The fee to put a proposal on the website is quite substantial; cash awards for solving challenge problems typically are in the \$10,000 to \$100,000 range. To date, over \$28 million has been awarded to solvers. Bill will continue the dialogue, and we hope to talk more about this approach to solving some of our treatment problems in August.