

Snake River Watershed Task Force Core Team Meeting
USFS Region 2, 740 Simms St, Golden, CO 80401
May 11, 2015
Meeting Summary

Participants

Ryan Dunham (Environmental Protection Agency, Region 8), Peach Keller (U.S. Forest Service), Brian Lloyd (U.S. Forest Service), Brian Lorch (Summit County Open Space & Trails), Paul Peronard (Environmental Protection Agency), Bob Prucha (Integrated Hydro Systems, LLC), Mark Rudolph (Environmental Protection, Colorado Department of Public Health & Environment), Rob Runkel (U.S. Geological Survey), Elizabeth Russell (Trout Unlimited), Tim Steele (TDS Consulting, Inc), Lane Wyatt (Northwest Colorado Council of Governments), Julie Shapiro (Keystone), Jonathan Geurts (Keystone)

Action Items and Next Steps

- The next Core Team meeting will take place in October (to be scheduled by Jonathan Geurts). Team members should prepare for the strategic focus of the meeting by familiarizing themselves with the watershed plan.
- Task Force members should prepare to issue a joint press release after the second bulkhead is poured this August. They are welcome to visit the site to witness the construction at any point.
- Jonathan Geurts will schedule and facilitate a Task Force/publicsite tour this summer.
- The old website is currently being updated to a new platform. Core Team members should let Keystone know if they would like to see any additional functions added to the new site.
- Lane Wyatt and Tim Steele will work on a strategy for how best to use potential EPA funding for long-term monitoring of Peru Creek water quality.
- The EPA is planning to look at Cinnamon Gulch, the wetlands below Peru Creek, and Jumbo Mine as priorities for another project in the near term.

Discussion Notes

Julie Shapiro led a brief round of introductions and reviewed the meeting agenda.

Pennsylvania Mine Update

Paul Peronard introduced and played an EPA-produced video about the work conducted through the end of 2014 on the Pennsylvania mine (video link: <https://www.youtube.com/watch?v=QbxTOEFN4bQ>). The video features Jeff Graves, Brian Lorch, and the Snake River Task Force.

Paul reviewed the current status of the mine mitigation actions.

- The first of the two planned bulkheads was installed last fall. Over-winter pressure monitoring has demonstrated that the bulkhead has been holding with no leaks.
- Beginning in July, grouting work will finish this first bulkhead.
- The second bulkhead will likely be poured in mid-August. Group members are welcome to visit and view the operation.
- While the first bulkhead lies behind the ore body, or drift, cutting off more than half of the flow, the second will lie in front of it, closing off the remainder of the flow closer to the opening of the mine.
- The three existing catchment ponds will remain in place. Additionally, a fourth pond will be built in case of blow-outs and filled in after the construction of the second bulkhead is complete.
- The project schedule includes revegetation work on the tailings pile in September.

- The construction project will finish with the final grouting of the second bulkhead, after a winter of monitoring, in early 2016.

Paul presented a PowerPoint on the monitoring done by the EPA in the watershed. During the summer of 2015, monitoring will be done upstream and downstream of the mine on Peru Creek to evaluate the efficacy of the treatment. This monitoring will be done both at peak runoff and at low flow in the fall. Monitoring will also be done up and downstream of both Jumbo Mine and Cinnamon Gulch.

Group members discussed the monitoring approach. Comments included the following.

- Winter sampling can be difficult and is the shortcoming of this effort.
- For long-term sampling, the team may want to consider installing mini-sippers or simple conductance equipment to monitor metal loads. Reestablishing the continuous stream gauge near the mouth of Peru Creek might be a cost effective way to monitor loads.
 - o USGS gauge 82, just downstream, might be sufficient to measure improvement.
 - o Adding a conductance and pH monitor to the existing Keystone gauge might be a solution.

Paul pointed out that there is bias associated with the kind of monitoring aimed at pinpointing loads. In recognition of the need to establish a long-term monitoring plan, the EPA is willing to offer \$50,000 as seed money.

- Lane Wyatt and Tim Steele will work together on how best to use the EPA funding.

Research Updates

Rob Runkel presented monitoring results from before (2009) and after (2014) the installation of the first bulkhead. So far about a third of the load from the Pennsylvania Mine has been blocked by the first bulkhead. With the second bulkhead, more of the flow might be directed through the wetlands below the confluence of Peru Creek into the Snake River, so monitoring locations were added to monitor this effect. The wetlands are also influenced by Cinnamon Gulch.

- In 2009, the influence of Peru Creek lowered the pH of the Snake River to 4.5 from nearly neutral values. The inflow from the F-level adit at the Pennsylvania Mine caused a rise in zinc, which did not dissipate in the wetlands.
- In 2014, the pH past Peru Creek drops more slowly but reaches similar levels as in 2009 after passing the wetlands. A similar result can be seen for zinc, which rises more slowly after the F-level adit but is supplemented by wetland inflows. Given these results, it is reasonable to expect that the pH will still be lowered due to Cinnamon Gulch and wetland inflows even with an effective second bulkhead in place.

Bob Prucha introduced an integrated surface and groundwater model that he had produced with the Danish Hydrological Institute, which can be used at no cost for educational purposes by students and some government agencies. The tool takes into account soils, vegetation, geology, stream networks, diversions and wells, and other variables. It has been used for flow assessments at Rocky Flats outside Denver and at Pebble Mine in Alaska. Bob has used the tool to model the Snake River from Dillon Reservoir on up, the output from which might be helpful in identifying gaps in existing data sources.

Upcoming Discussion Priorities

The group raised priority next steps for the Snake River Task Force.

Jumbo Mine

Group members discussed Jumbo Mine as a lesser known but important problem spot. Comments follow.

- The owner of the land around the mine opening would like to see a clean-up provided it is possible to maintain a cabin site nearby.
- Jumbo ended up on the priority list from professional judgment. It may have been overlooked because the local monitoring stations do not differentiate it from Chihuahua Gulch, which is naturally alkaline and therefore a moderating influence.
- The EPA needs cost-benefit estimates to outline it as a potential project, after which it can go into a budget request for next year.

Intended Uses

Group members discussed if there is a need to review and evaluate the Snake River stream standards and intended uses. Comments follow.

- This group has to this point focused on a fishery downstream from Peru Creek rather than on any uses for the creek itself.
- It is best to be cautious about identifying an intended target of a clean-up effort. Targets can potentially be both motivating and divisive.
- It might benefit the whole effort to update the watershed plan. For example, it would be good to know if Warden Creek (naturally acidic) might nullify the benefits gained from upstream improvements.

Next Steps

Group members offered next steps, including the following.

- The EPA has been looking at Cinnamon Gulch, the wetlands, and Jumbo Mine as priorities for this summer.
- The Task Force might want to do another strategic planning session utilizing the watershed plan.

Organizational Updates

Snake River Foundation

Lane Wyatt presented an update on establishing a Snake River Foundation. The non-profit documentation has been drafted but not yet finalized nor filed. The best strategy might be to wait for a key event to raise the profile of the group's work before trying to find board members and complete the process.

- A group member recommended that 2016 might be the best year to file, coincident with the EPA funding post-project site control and monitoring.

Website Upgrade

The old website is now obsolete, and a new one is being set up with the same functionality on the Wordpress platform.

- Group members should let Keystone know if they want any functions added to the new site.

Next Steps and Upcoming Meetings

- Group members are welcome to visit the Pennsylvania Mine site for the pouring of the second bulkhead in mid-August.
 - o Task Force agencies should be prepared to issue a joint press release at that time.
- Jonathan will schedule and facilitate a Task Force/public site tour this summer.
- The next Core Team meeting will take place in October. It will be scheduled by Jonathan and facilitated by Julie.

- Team members should prepare for the meeting by familiarizing themselves with the watershed plan.