

**SAN JUAN COUNTY/TOWN OF SILVERTON
BPMD LOCAL PLANNING GROUP
1557 Greene Street
PO BOX 466
Silverton, CO 81433
1(970) 387-5766**

December 17, 2019

EPA BPMD Superfund Project Manager and Staff
Attn: Ms. Christina Prograss
Superfund Project Manager, EPA, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

Re: BPMD Adaptive Management Priority Approach

Dear Ms. Prograss:

We appreciate the Environmental Protection Agency (EPA) organizing our work session on November 7th for the Bonita Peak Community Advisory Group (CAG) and the Bonita Peak Mining District (BPMD) Local Planning Group to introduce and discuss the EPA's proposed site strategy options for Adaptive Management. This decision-making approach, which invited input into the formation of the approaches, is representative of the level of engagement and transparency that our local community imagined and expected when originally submitting the BPMD Superfund Request to the Colorado Governor and, by extension, to the EPA. We look forward to this type of collaboration between the BPMD Planning Group and EPA as we move forward in applying and administering the Adaptive Management Process within the Bonita Peak Mining District Superfund site. In this correspondence, we have included: 1) the group's preferred Adaptive Management Approach, 2) the local BPMD Planning Group's input and priorities, and 3) an attachment of a list of items of local concern (Ex. A).

In considering the site strategy options presented, the BPMD Local Planning Group now advises the EPA to focus on reducing metal contributions in the Gladstone area, and to prioritize mitigating the impacts of the Gold King, Red & Bonita, American Tunnel, and Mogul drainages. We generally support Site Strategy Option #4, reestablishing a groundwater equilibrium through installing and managing bulkheads at various portals with the following stipulations:

- 1.) the bulkheads and portals remain accessible;
- 2.) the bulkheads are monitored regularly for safety purposes;
- 3.) the hydrologic conditions are monitored; and

- 4.) water treatment of residual mine drainage and instream flow remains available unless and until it can be determined with certainty that water treatment is no longer necessary to meet the current and future anticipated goals in the watershed.

The BPMD Local Planning Group recognizes that implementing the bulkheading process will be incremental over time. More specifically, as a bulkhead is installed a monitoring period will be necessary to determine the effects on groundwater and surface water chemistry and hydrology. Therefore, the BPMD local planning group advises the EPA to assess the efficacy of mine remediation for Site Strategy Option #1a concurrently with the bulkheading assessment. Option #1a targets improving water quality in Reach 2 - the Upper Animas River from Eureka to the confluence of Cement Creek.

Addressing Uncertainties through Adaptive Management

Consistent with the definition of Adaptive Management, the BMPD Local Planning Group is encouraged by the use of this approach to target management and resource decisions to incrementally reduce site uncertainties while supporting continued site progress and continuous learning. The BPMD Local Planning Group offers the following recommendations to streamline decision making, reduce uncertainty, facilitate site progress, and control costs. In addition, the BPMD Local Planning Group has identified general thoughts and concerns that we recognize as important considerations as we move forward with the adaptive management strategy, which include the following:

- Each individual site needs to be surveyed and site boundaries need to be identified;
- The EPA needs to create and identify the process for delisting and removing sites from the BPMD;
- The EPA needs to present the approach being taken with a conceptual site model to assess and address natural background;
- The Gladstone Water Treatment Plant needs to be maintained in a sound, safe and functional operating condition, which includes the capacity to treat all of the primary draining portals in Upper Cement Creek drainage;
- A rigorous Adaptive Management Project Plan needs to be developed and implemented with stakeholders that includes: conceptual site model(s), monitoring and assessment plan, data sharing protocol, and adaptive management decision points (AMDPs) where the EPA, BPMD Local Planning Group, CAG, State of Colorado, U.S. land management agencies, and watershed stakeholders can be properly included and engaged throughout the Adaptive Management decision-making process; and
- A pilot study area above the treatment plant needs to be established so innovative water treatment technologies can be evaluated as part of the AM goal of continuous learning and improvement.

In conclusion, we want to thank the EPA for your continuing efforts to collaborate with the State of Colorado, the BPMD Planning Group members, and the CAG. As we move forward, we believe it is essential we remain cognizant of our decisions and how they not only

impact those within the boundaries of the BPMD but how our approach addresses the needs and concerns of all those downstream within the watershed. Finally, we look forward to our next meeting where we can begin planning our next steps.



Anthony D. Edwards
Bonita Peak Mining District Communications Liaison
on behalf of the Bonita Peak Mining District Local Planning Group

Cc:

Senator Michael Bennet

Senator Cory Gardner

Representative Scott Tipton

Navajo Nation

Southern Ute

Ute Mountain Ute

State of Colorado Governor *John Hickenlooper*

State of New Mexico

State of Utah

La Plata County Commissioner Julie Westendorff

San Juan County Commissioner Ernie Kuhlman

Silverton Mayor Chris Tookey

Durango Mayor Melissa Youssef

EPA Headquarters and Region 8

EXHIBIT A

SAN JUAN COUNTY/TOWN OF SILVERTON GENERAL CONCERNS, CONSIDERATIONS AND REQUESTS

- Goals: What do we want to see happen? What is the measurement of success?
- Science: What is the science to justify each reclamation project? Where are the data gaps?
- Preservation: All projects need to comply with the National Historic Preservation Act.
- Repository: A permanent repository needs to be developed on a site that has already been environmentally impacted.
- Innovation: Develop innovative solutions to site remediation.
- Retaining a seat at the table, including maintaining a collaborative working relationship with EPA, BLM, Forest Service, CDPHE, DRMS and other state and federal agencies.
- What is background? How is it determined? Would this be the appropriate subject for a TAG grant to provide professional expertise to review how background is being determined?
- Engage with private property owners and limit the impacts to private property.
- Mitigate the impacts on San Juan County/Town of Silverton roads and trails.
- Projects should be designed and implemented in a manner compliant with County regulations.
- Minimize adverse impact on tourism and recreation.
- Integrate education, information and signage into the BPMD Superfund Project.
- Minimize and/or eliminate impacts to:
 - Town's water treatment plant;
 - Town and County water rights;
 - Federal land management agencies; and
 - Impact on residential and commercial development, future mining.

Bonita Peak CAG

Ms. Christina Prograss
Superfund Project Manager, EPA, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

Dec. 15, 2019

Dear Ms. Prograss:

Thank you for organizing the work session in November in Silverton for the Bonita Peak Community Advisory Group (CAG) and the Silverton-San Juan County Planning Group. It is this type of meaningful engagement that our local community desires as EPA moves forward with activities in the Bonita Peak Mining District Superfund site (BPMD). We believe that EPA's Adaptive Management approach will lead to more robust and timely progress at the BPMD Superfund site.

After the November meeting, the CAG held its own internal work session to further discuss site strategy options for the BPMD. As you are aware, the CAG has seventeen members with significant water quality and mining experience in the Animas River basin. Some members have worked on water quality in the basin for twenty-five years. Four of the members were appointed by the towns of Silverton and Durango and San Juan and La Plata counties. Our thoughts are described below.

The CAG believes EPA's initial main focus should be on the four big sources of metals in the Gladstone area – the mine drainages of the Gold King, Red & Bonita, American Tunnel, and Mogul. To address these sources, we support the presumptive remedy for Upper Cement Creek found within Site Strategy Option #4, reestablishing the groundwater table by installing bulkheads at various portals provided that: 1.) the tunnels to the bulkheads are maintained for access, 2.) the bulkheads are inspected regularly to monitor their integrity and the water pressures behind them, 3.) hydrologic monitoring and analysis continues to ensure long-term efficacy of remedial actions at Gladstone, and 4.) an option remains for some type of water treatment of residual mine drainage or instream flow if the bulkheads don't improve water quality to the degree that water treatment of drainage could.

These mine sites will be the most expensive to address. While currently the BPMD enjoys high priority status as a Superfund site, the CAG is quite concerned its priority could change in the future. We want to see major investigatory and remedial projects funded first while we have this elevated status. We also note that bulkheads can be funded with manageable, annual budgeting, unlike a large water treatment facility which may need a big financial infusion all at once.

The CAG recognizes that the bulkheading process will take a significant amount of time. As each bulkhead is closed, there needs to be a waiting period to monitor the effects on groundwater and surface hydrology. Therefore, for the reasons listed below, the CAG recommends that EPA concurrently assess the mine remediation potential and develop specific water quality and fishery goals as described in Site Strategy Option #1a. Option #1a targets improving water quality in Reach 2 - the Upper Animas River from Eureka to the confluence of Cement Creek.

First, improvements in water quality in Cement Creek through addressing the main, mining-related metal sources can be reasonably estimated. For example, the effects of running the four major drainages near Gladstone through a treatment plant are well understood. There is a much higher level of uncertainty in what potential water quality improvements are attainable with remediation of mine sites in the Upper Animas River above Cement Creek. If significant metal reductions can be attained, substantial improvements in Reach 1 - the Animas Canyon below Silverton - may also be realized. Without understanding what improvements can be made in the Upper Animas, it is difficult to estimate what improvements are possible in Reach 1.

Second, the majority of the 48 sites identified when the Superfund site was initiated affect Reach 2. It is not clear that remediation of some of these sites will result in measureable improvements to this stream reach. Three of the priorities for local community members are for EPA to: delineate the boundaries of the initially listed sites so that claim holders and property owners know whether or not they have cleanup liabilities, determine localized background water quality conditions around sites, and remove less significant sites from this list as quickly as possible. By focusing on this reach, EPA should address these community priorities for many sites relatively quickly.

Detailed Discussion

Cement Creek

According to data from the Animas River Stakeholders Group (ARSG), almost half of all metal loading from 120 draining mines sampled around Silverton comes from the four mines around Gladstone listed above. Clearly these sites are a high priority.

It appears that neither EPA nor CDPHE is interested in piping the four main drainages to a treatment plant at Gladstone as a long-term solution because of maintenance issues related to keeping the pipes operable. Their preference is to either drain the mountain and treat the American Tunnel discharge, or reestablish the groundwater table by bulkheading all the draining mines.

Over the years, various stakeholders have discussed removing bulkheads #2 and #3 in the American Tunnel and treating the discharge as was done by Sunnyside Gold Corp. from 1996 to 2002. This would mostly dry up the drainages from the Gold King and Red & Bonita. However, EPA's position's appears to be that draining the mountain would be accomplished by drilling behind the bulkheads and pumping out water (including the Sunnyside mine pool behind bulkhead #1). We suspect EPA is unwilling to remove bulkheads for liability issues associated with the Sunnyside mine pool. Drilling behind the bulkheads would add more piping to the system than piping the four drainages to a treatment plant described above and would add wells and pumps. It is a much more costly proposition than the current configuration with piping from the Gold King and Red & Bonita going to the existing treatment plant. This alternative of draining the mountain is described in EPA's Site Strategy Option #3. That leaves reestablishing the groundwater table through bulkheading, continuing a process that was started many years ago with existing bulkheads.

Currently, EPA is gathering data on the groundwater hydrology in the area. While developing a hydrologic model of the mountain would be useful, the CAG is concerned the additional resources needed for studying the very complex hydrologic state may lead to diminishing marginal returns in terms

of knowledge and utility. We prefer adopting an adaptive management approach where hydrologic data and analysis would continue as bulkheads are installed. We also understand that there are inherent risks with this strategy, and if issues arise, there must be a mechanism in place to release and treat water backed up by the bulkheads such as that which currently exists at the Red & Bonita. The Gladstone treatment plant should remain in operation until all bulkheading is complete, hydrologic conditions have stabilized, and site goals have been achieved.

In order to adaptively manage Upper Cement Creek, the CAG recommends first shutting the valve on the Red & Bonita bulkhead. The second priority is to pressure grout around the existing bulkheads in the Mogul and American Tunnel (#3) to minimize leakage while monitoring the open stope above the Mogul bulkhead for possible Mogul mine pool overflow. There are also two other mines above the Red & Bonita that may need to be sealed. Finally, the Gold King 7 level should be bulkheaded. Monitoring of hydrologic conditions at each step would provide EPA valuable information about additional studies or actions needed to meet site goals.

Although not a preferred option, it is clearly feasible to pipe the four major mine drainages to a treatment plant. The expected water quality in Cement Creek if this were done should be used as a yardstick for improvements in Cement Creek. If water quality resulting from bulkheading falls short of expectations when compared to this yardstick, treatment of residual mine drainage or instream flow needs to remain as an option.

Upper Animas above Cement Creek

For the reasons described above, the CAG is also interested in EPA prioritizing assessment of possible mine remediation and developing water quality and fishery goals under Site Strategy Option #1a. Zinc concentrations in the Animas River above Cement Creek are much lower than the zinc concentrations in Cement Creek because of higher flows. However, the zinc load (pounds/day) at the bottom of this segment is quite similar to the zinc load coming from Cement Creek when Sunnyside Gold Corp. operated its treatment plant at Gladstone. This load is significant and impacts the river downstream in the canyon. Unfortunately, there is much uncertainty as to how much of this load can be reduced through mine remediation. At this point, the actual remediation of mines affecting this reach is a lower priority than the bulkheading in Cement Creek. Our initial interest is to know what can be done in terms of metal reductions so that goals can be developed, boundaries of mine sites can be delineated, and inconsequential mining sources can be removed from the initial priority list.

We recognize that Interim Records of Decision (IROD) are not easily changed once adopted. Therefore we like designating realistic goals for a stream segment and having flexibility to prioritize actions taken at certain mine sites and potentially not at others that may not be big metal loaders.

At this point, Mineral Creek is a lower priority for the CAG. Significant reductions in zinc, copper, and cadmium have already been accomplished by ARSG and its partners, and these metals concentrations essentially meet aquatic life water quality standards. The toxic levels of aluminum and iron in lower Mineral Creek, which also affect the Animas River below Silverton, are mostly from natural sources. We are also concerned that development of an IROD including Mineral Creek will be significantly slowed by the involvement of the U.S. Forest Service.

Overall, we understand the BPMD is a large and challenging site, and we applaud EPA for wanting to manage the site adaptively. While Cement Creek should be the priority, reestablishing the groundwater table will be a long process with potential waiting periods. Therefore, we believe assessing metal load reductions from mine sites and developing stream reach goals in the Upper Animas Reach needs to be pursued early on as well.

We very much want to be kept abreast of next steps EPA takes in making its decisions on site strategy, including a resource allocation analysis of the CAG's recommended strategy and any others the EPA chooses to analyze. We think this Adaptive Management approach is most likely to lead to better water quality and public acceptance of EPA's efforts in the Animas River basin. Please let us know if you have any questions.

Regards,



Peter Butler, Ph.D.
Chair, Bonita Peak CAG

CAG Members:

Peter Butler	Chara Ragland
Ty Churchwell	John Ott
Marcel Gaztambide	Melissa May
Anthony Edwards	Larry Perino
Paul Montoia	Jenna Emerick
Russ Anderson	Trevor Downing
Parker Newby	Terry Morris
Charlie Smith	Levi Lloyd
Brian Devine	

Cc:

Senator Michael Bennet	CDPHE-John Putnam
Senator Cory Gardner	SWCD – Bob Wolff
Rep. Scott Tipton	EPA-Brigid Lowery
La Plata County Commissioner Julie Westendorff	EPA- Doug Ammon
San Juan County Commissioner Ernie Kuhlman	EPA-Shahid Mahmud
Silverton Mayor Chris Tookey	EPA-Schatzi Fitz-James
Durango Mayor Melissa Youssef	EPA- Helen Duteau
USFS – Kara Chadwick	EPA-Greg Sopkin
BLM- Kris Doebbler	EPA-Patrick Davis
DNR– Tim Mauck	