

5.5 Project Prioritization

There are many old mines located throughout the Snake River watershed that would benefit from remedial action. Not all can be done in a reasonable period of time. Therefore, some form of prioritization is needed. There are also two distinct types of problems that need to be addressed. One is the water from draining adits and the other is the problems associated with waste rock and tailings and water running across and through these piles. One is a point source and the other is a non-point source.

There is another distinct difference. Under current federal law, anyone cleaning up a draining adit may become liable for the pollution problems associated with that adit forever. There is no clear and easy way for a “Good Samaritan,” one who voluntarily cleans up draining adit, to escape liability under all circumstances. A draining adit is a point source and requires a discharge permit under the Clean Water Act. This is currently not being enforced by USEPA or the state of Colorado. However, if someone were to put in a form of treatment plant, the requirement for a discharge permit could be enforced. Further, any citizen is allowed under the Clean Water Act to sue the USEPA to require enforcement of the Act. So, even if USEPA and the state of Colorado were to not enforce the requirement for a discharge permit, any citizen could sue to require enforcement and the party responsible for the treatment plant would most likely be liable for bringing the treatment plant to a condition that any discharge would meet water quality standards in the receiving water body. Considerable time and effort has gone into finding a way to circumvent this problem. Although the ultimate solution is a legislative change, it is possible that under certain circumstances, a workable solution might be found that would reduce the residual liability to a point that some individuals or organization might be willing to be a Good Samaritan and clean up certain problems.

Non-point source discharges do not have this problem. Grants are available under a variety of funding sources to fund cleanup of problems associated with the waste rock and tailings from past mining activity. This Watershed Plan is being developed under §319 of the CWA. This CWA section can also provide funding for actual clean up on non-point source mining related problems. However, funding from this source is limited. Further, in mine clean-up projects, the capital cost to implement a project is only one cost. The ongoing operation and maintenance costs are sometimes bigger issues to deal with when funding a project.

This distinction is important in the prioritization because most of the large sources of metal pollution into the streams in the Snake River watershed are point source discharges. The largest source and the one most intensively studied is the Pennsylvania Mine. It has been known to be the largest point source anthropogenic water pollution problem in the basin since the 1970's. This watershed-planning effort has confirmed that this is clearly the largest source of heavy metal pollution to the Snake River. However, there are other large point sources as well.

In the prioritization of the projects, the largest contribution of metals contamination is used as the principal variable in selection among projects. This means that the highest priority projects usually have a draining adit. A draining adit with a significant metals load is

not the case in 100 percent of the top priority projects, but it is clearly the case in most of them.

Ranking projects beyond the main variable of metals contribution to the stream is more difficult. In general, tailings were viewed as a more serious issue than waste rock. Proximity to a stream was viewed as worse than a similar pile further from a stream. Physical hazards such as an open shaft or adit raised the priority of a project. Visible erosion of a waste rock pile raised the priority over waste rock not visibly eroding. Waste rock in a drainage channel was viewed worse than waste rock not on a steep slope or in a drainage area. The following table shows the projects ranked in three categories. Priority one is those projects with the highest contribution of metals to the stream. Priority two projects are contributing less pollution to the Snake River, but are still viewed as significant contributors. Priority three projects are generally smaller, more difficult to access, further from a waterway and most likely a smaller contributor. Table 18 shows the types of BMPs needed at each site. Detailed recommendations for Priority One sites are presented in Section 6.

Table 18. Snake River Watershed Prioritized Mine-Related Remediation Projects

Priority One

Pennsylvania Mine

- Waste rock/tailings consolidation, removal and stabilization
- Vegetation
- Chemical amendment
- Sulfate reducing wetland
- Possible underground seal or plug

Jumbo Mine

- Waste rock/tailings consolidation, removal and stabilization
- Vegetation
- Sulfate reducing wetland

Saints John Mine

- Waste rock/tailings consolidation, removal and stabilization
- Vegetation
- Chemical amendment
- Sulfate reducing wetland
- Hydrologic controls
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Blanche Mine

- Waste rock consolidation and stabilization
- Vegetation

- Sulfate reducing wetland

Warden Gulch Mine

- Waste rock consolidation, removal and stabilization
- Vegetation
- Sulfate reducing wetland

Delaware Mine

- Waste rock removal or consolidation and stabilization
- Vegetation
- Sulfate reducing wetland

Brittle Silver Mine

- Waste rock/tailings consolidation, removal and stabilization
- Vegetation
- Sulfate reducing wetland

Silver Spoon Mine

- Waste rock consolidation or removal and stabilization
- Vegetation
- Sulfate reducing wetland

Channelize Cinnamon Gulch near confluence with Peru Creek

- Channelize lower portion of stream into single channel

Unnamed mine east of Montezuma

- Waste rock consolidation and stabilization
- Vegetation
- Sulfate reducing wetland

Priority Two

Burke-Martin Mine

- Waste rock/tailings consolidation or removal and stabilization
- Waste rock/tailings regrading and capping
- Vegetation
- Hydrologic controls

Unnamed mine just north of Burke-Martin

- Waste rock consolidation or removal and stabilization
- Waste rock regrading
- Vegetation

Mine north of Montezuma

- Waste rock consolidation and stabilization
- Adit flow channelization away from waste rock

Rich Ore Group

- Adit closure
- Waste rock consolidation and stabilization
- Vegetation

Peruvian Mines

- Waste rock consolidation and stabilization
- Waste rock regrading/capping
- Vegetation
- Sulfate reducing wetland (lower mine)

Little Nell Mine

- Adit closure
- Waste rock consolidation and stabilization
- Vegetation
- Possible sulfate reducing wetland

Morgan Mine waste rock/adit flow

- Vegetation
- Sulfate reducing wetland

Shoe Basin Mine adit flow

- Sulfate reducing wetland
- Vegetation

Priority Three

Allen Emory Mine

- Waste rock consolidation and stabilization (non steep areas)
- Vegetation
- Diversion ditches

Cashier Mine

- Waste rock stabilization
- Vegetation
- Diversion ditches
- Possible sulfate reducing wetland

Unnamed mine just south of Webster Pass upper road crossing

- Waste rock removal consolidation
- Vegetation

Horseshoe Basin leaking adit/waste rock

- Diversion ditch of adit flow around waste rock

Horseshoe Basin flow past waste rock

- Waste rock consolidation and stabilization
- Vegetation
- Diversion ditch (stream flow removed from waste rock erosion)

Lower Chatauqua Mine

- Hydrologic controls
 - Waste rock consolidation and stabilization
 - Waste rock regrading
 - Vegetation
- Sulfate reducing wetland

Paymaster Mine waste rock

- Waste rock consolidation and stabilization
- Vegetation

Wild Irishman Mine

- Waste rock consolidation and stabilization
- Waste rock regrading
- Sulfate reducing wetland

Unnamed mine ¼ mile due north of Wild Irishman

- Waste rock consolidation and stabilization
- Waste rock regrading
- Vegetation
- Sulfate reducing wetland

Marlin Mine waste rock

- Waste rock consolidation and stabilization
- Vegetation
- Channelization of adit flow

Hunki Dori waste rock(upper area)

- Waste rock consolidation and stabilization
- Waste rock regrading
- Vegetation

Leaking adit/waste rock north wall above Cinnamon Gulch confluence

- Waste rock consolidation and stabilization
- Waste rock regrading
- Vegetation
- Channelization of adit flow

Tailings just north of Montezuma

- Tailings removal and stabilization
- Vegetation

Tailings in Sts. John Creek in meadow

- Tailings removal and stabilization
- Vegetation

Superior Mine waste rock

- Waste rock consolidation and stabilization
- Channelization of adit flow (hydrologic controls)

Flowing adit ¼ mile up Deer Creek

- Sulfate reducing wetland

Denuded areas in upper Snake River basin

- Diversion ditches or hydrological control
- Waste rock stabilization
- Vegetation

Waste rock below Climax mine in early upper Snake River basin

- Diversion of flow around waste rock

New York Mine waste pile/adit flow

- Hydrologic controls
- Waste rock consolidation and stabilization
- Waste rock regrading
- Possible sulfate reducing wetland

Waste rock in Quail Mine area/waste rock slightly lower off same road

- Waste rock consolidation and stabilization
- Waste rock regrading
- Diversion of flow channel from waste rock
- Vegetation

Waste rock/open shaft just west of road crossing of Peru Creek near east trib.

- Waste rock consolidation and stabilization
- Vegetation
- Close shaft

Waste rock adjacent to avalanche chute above Decatur building

- Vegetation

Only Priority-1 projects are discussed in detail below in this current version of the plan. When viewing a Priority-1 or Priority-2 project, the water-quality improvements are

judged to be more important than the historical values of the sites. For Priority-3 projects, there is more likelihood for differing opinions regarding the value of the historical site versus the benefits of the associated water quality improvement.