

**Standard Mine Advisory Group (SMAG) Meeting Notes**  
**Thursday, May 29, 2008**  
**Crested Butte Town Hall**

Attendees: Robert Rozman, Steve Glazer, Anthony Poponi, John Hess, Logan Reese, Harvey Castro, Wendy Brown, Christina Progress, Gina Andrews, and Libby Faulk.

The meeting was convened at 2:00 pm on Thursday, May 29, 2007 at the Crested Butte Town Hall.

**Planned Cleanup Activities for the 2008 Summer**

Gina and Christina snowshoed up to the Standard Mine site on Wednesday, May 28. Photographs were shown of the amount of snow that still remains at the site including the amount of snow that still covers the repository. Based on the amount of snow, it is unclear as to when EPA will be able to get equipment up to the mine to begin work this season. Best guess at this point is after the 4<sup>th</sup> of July.

Things on the task list for the removal program this summer:

1. Waste rock at level 1 and level 3 to remove.
2. Bust stumps from trees we took down.
3. Chip slash.
4. Screening soils for the cap.
5. Cap (soil and riprap cover) the repository and construct perimeter control channels
6. Start the stream and wetlands restoration.
7. Revegetation of the slopes that have been excavated.
8. Repair the access roads

This list will depend on how long of season we end up having.

*Question* – Engineering of the cap considered 11 inches of precipitation and given how much we've received this year are you sure the cap for the repository was engineered correctly? We get a lot more precipitation than 11 inches.

*Response* – When we tested the soil at the staging area, it's a set particle size that we're going to go with which has a finite percolation rate. They take the precipitation and plug it into the model and know that the water is only going to move so fast through the cap because of the rate based on the size of soil particles. The soil cap will get some saturation and once it becomes saturated, precipitation will turn into run-off instead of percolating through the cap. It will depend on the duration of the event and intensity. Even though you have a big snow event, how much water would percolate through the cap versus runoff will depend on how fast the snow melts. When designing and selecting the repository cap, we considered issues in addition to percolation. For example, if had we selected vegetated cap, it could have taken up more moisture but vegetation would take years for it to stabilize as a cap and probably would not survive spring runoff before

it's established. We chose riprap with soil which we think will be more effective for long term stabilization and maintenance of the repository.

We did have the engineer look at the footprint again for the repository since we will need less space. He looked at the perimeter control channels and the watershed and we should be able to down-size those channels. When we calculated having X amount of precipitation, there's always some percentage that will percolate through the cap. Based on the amount of percolation through the cap there will be some leachate produced. The amount of leachate expected from the repository would not alter the water quality Elk Creek. The leachate will have some natural attenuation before it reaches Elk Creek.

*Comment* – There is a Snowtel site near Scofield Pass that EPA could look at plus you should look at summer of 83 and 95 given that these were high snow seasons.

### **Reclamation Plans for the Site**

The reclamation plans is a combination of 3 documents that include:

1. Stream restoration – developed by Clay Speas, Forest Fisheries Biologist, USFS
2. Wetland Design – developed by Andy Herb, Ecologist, AlpineEco
3. Revegetation – developed by Jan Christner, Environmental Engineer, URS Operating Services

We haven't completed excavation in the level 1 area and so the area that Clay has established for the stream restoration could change. We've talked about 3 wetlands but this may depend on the stream restoration.

*Question* – What does the acronym BCR and APC stand for that's shown on the map?

*Response* – BCR stands for Biochemical Reactor and APC stands for Aerobic Polishing Cell.

### ***Stream Restoration* –**

The design you'll see today is the design we're trying to mimic upstream and downstream from the site. There are some significant alterations to the site as a result of the cleanup and more have been done since Clay was up at the site so there may be a need for some minor adjustments to the design plan. In working to reclaim the area they're looking to create 2 to 3 perched wetlands in and around the creek.

The design objective is to reconstruct Elk Creek to approximate stable sections and to establish pond support. Last summer they did cross sections to get profiles of the area and get some idea of the bank flow, flood flow, and low flow channel. For bank flow the area that's flooded once every 1.5 years. For the flood prone area they calculate based on the 100 year flood. They also looked at velocity of the channel.

Clay showed pictures of both down stream and upstream and how the channels are designed by rock or logs. They broke the stream into 6 segments broken out by stream gradient.

Stream Section 1 – upper most reach fairly steep. They're going to do a 4 to 5 feet wetted width and steep rock (15% to 16% gradient) with a bank flow width of 6 to 8 feet. Their plan is to create vortex weirs. They have to construct it so there are gaps between the boulders to allow the bed load to flow through it. They also notice the upstream arch where the water comes off at right angles and reduces pressure on the bank. They plan to do the same design work. The boulders will be 2 ½ to 3 feet in size to create these structures.

Stream Sections 2, 2a and 4 – they're flatter areas, gradient 9% to 11%, same wetted width and bank flow width. Sinuosity will increase slightly. It's a lower gradient channel through here. These will be the design parameters.

Stream Sections 3 and 5 – this is where we're going to try and increase .25-.5 ponds and low gradient 1% to 3%. Combination of vortex structure, large trees pointed upstream with branches attached. They'll seal it up and pond water. Andy will come in and establish wetlands vegetation. They may also bring in fine material to seal it up to create the small pond areas.

Stream Section 6 at the bottom – starts to drop off in the canyon so gradient 9% to 13%, wetted width 4 to 5 feet, bank flow 6 to 8 feet, and floodplain 10 to 12 feet. The idea for the last section is it will tie into the natural channel.

They came up with performance standards located on page 10 of the reclamation plan appendices under the Elk Creek Channel and Wetland Restoration section. Performance standard is based on the restoration channel being successful if the centerline of the new channel stays within 10 feet either way of its installed design and 90% of the installed structures are intact and functioning after two spring runoffs. If after the two years the structures are in place then they're satisfied with the structure.

*Question* – Will there be operation and maintenance on the 10% that fails?

*Response* – Probably not because you're expected to have some amount of failure.

*Question* – Wouldn't there be concerns with the trees rotting?

*Response* – Even if the trees rot over time, plant life will have grown around it and as long as it's wet most of the time, the trees will remain pretty stable.

*Question* – This design is based on the assumption of the existing footprint of the bioreactor and aerobic polishing shell. We don't know if either or both of these footprints will need to be expanded and so we're wondering how wise it is to construct these projects before we know the true footprint?

*Response* – Currently Elk Creek is not in a stable channel and the old impoundment dike that is currently holding the creek to the western side of the site will likely need to be

excavated. In addition it could be 2012 or later before the Remedial Process is complete and a final remedy selected, which may or many not include a full-scale bioreactor. Because of these things, it was decided it was better to fully stabilize the Site and if the final remedy calls for the reclamation work to be altered, then so be it.

*Question* – Didn't you create a dam up there?

*Response* – Yes and we're talking about pumping Elk Creek around as we're working this year but we'd remove the dam when we're done.

We're mainly going to create the physical aspects of the floodplain and then Andy will come in with pre-vegetation

*Question* – If you determine that the footprint is going to expand, can you redesign the wetlands under CERCLA authority?

*Response* – We should be able to.

*Question* – There's a flooded shaft that I thought Steve Renner was going to address?

*Response* – Steve is focusing on closing some but not all are located on the Standard Mine site.

*Question* – Will his closure counteract the revegetation you plan to do this summer if he doesn't close them until later?

*Response* – We don't believe so.

All the stream reconstruction will be done in the dry. We'll then release the water down and see how it behaves. We may then need to do some tweaking.

*Question* – I didn't see anything about non-native vegetative control.

*Response* – It's a concern for the wetlands and upland revegetation which will discuss next.

### ***Wetlands*** –

Andy was not available so Gina's is going to try and cover the general plan. We're looking to design 2 to 3 wetland structures that will total about a ½ acre. Andy did some research to find a local vendor that could grow wetland sod and species for us to use in the wetland construction. In the appendices after the stream design under the Elk Creek Wetland Restoration Plan on pages 5 and 6, tables 1 and 2 there are a list of plants that a company will be growing for us. Will also use willow plugs as part of the wetland vegetation and erosion control blankets. We don't want to go more than 1,000 feet either direction in elevation for the wetland plugs and we'll want to try to stay within the drainage. Figure 5 of this same section shows the fringe channel representing how we'll do revegetation along the entire stream restoration.

Andy developed some performance standards for the wetlands which checks for:

1. Functionality of the channel will be considered successful if the centerline of the new channel remains geographically constant and the vortex weirs are intact and functioning after 2 years.
2. Survival rates for the vegetation over a 2 year period after spring runoff.
3. Increase in vegetative cover by 10% after two growing seasons.
4. Survival of the willow cuttings if at least 40% of the willows installed are alive after two growing seasons.

See the appendices for a more complete description of the performance standards.

*Question* – So no seeds?

*Response* – Not for the wetlands part but we are doing seeds for the upland vegetation. One thing we considered and talked with the FS is transplanting wetland plants from the wetlands in the drainage like near Level 5. Our concern was robbing Peter to pay Paul and not wanting to impact the smaller wetlands that are already in the area.

*Question* – So the area between the wetland footprints you expect to be mostly rock?

*Response* – Not they're going to be wetlands too.

*Question* – They've been talking about starting a mine on Lucky Jack and installing a dam and trucks traffic everywhere. We're wondering whether this will have any impact on this reclamation?

*Response* – We don't know what the Lucky Jack plans are so it's hard to tell at this point?

*Question* – Do these become official wetlands and would US Energy have to go through the Army Corp of Engineers for their building?

*Response* – They'll have to get a 404 permit for all the work they have planned.

### ***Vegetation*** –

Information on the vegetation is also included in the reclamation plan. On the map, the vegetation will be in the “B” area and the “D” area.

The basic approach is one, we have areas where we have large bedrock outcropping that we're not going to revegetate. We excavated waste rock at level 2 where you see these bedrock shelves and we've determined that to try and add lime and compost would not be effective because every spring it will get washed away by the runoff. We will take some measures to reduce the amount of erosion that's occurring on the bedrock but we do not plan to revegetate the rock area.

Second, areas where we've excavated we conducted acid base accounting analysis that tell us how much lime we'll need to have to neutralize any acid and avoid killing the plants. We'll add lime and fertilizer and then apply seeds to try and control erosion as well as crimping straw to hold the seeds in place.

There's one area in particular where we are leaving some waste rock in place. This is near the bioreactor and APC that, had we excavated it more, we risked undercutting the slope area. For areas where we're leaving waste rock we'll either amend the area with lime, compost, etc. or we'll cap it in place and revegetate it. We have a limited amount of borrow soil so it will depend on how much is needed. Part of this will also have to include erosion controls to avoid seed erosion. We plan to have Western Native Seed out of Salida assist us as they did last year. 60% will be native seeds and 40% will be the seeds from NRCS. Last year we applied some lime from the quarry over on Monarch pass. We plan to get our compost from the Gunnison waste water treatment plant.

A lot of what's talked about in the reclamation report is how much of what you use, how they're applied, and what equipment you need to mix them. Towards the back of the reclamation plan in Table 1 just past the map, there are the performance standards. They plan to do some tests to make sure our mixture is fine. It will take a few weeks to get the results of the tests but we can use the results for fixing trouble spots in 2009. The performance standards talk about bare areas and erosion. After a year we shouldn't see any bare areas larger than 10 square meters. The weed part will be assessed through visual observations. We expect to see less than 5% weeds in a year. If we see more than 5% we would plant more plants to out compete the weeds and/or work with the USFS to implement some/all of their weed control programs.

**EPA Action – Check to see if it should be 10 square feet and not square meters.**

*Comment* – Table 4 in the reclamation plan – the Kentucky bluegrass is non-native and being introduced into the area?

*Response* – We talked with Gay, the Ecologist with the USFS in Gunnison who was actually fine with this because she didn't think at this elevation that it would be a problem. They're going to do some additional research and reconnaissance this year to locate additional areas from which we could harvest seed.

*Question* – There's nothing in here about how you would treat aggressive invaders?

*Response* – We would be working on Gay and Andy to address the concern of treating aggressive invaders and working within the USFS weed control programs.

*Comment* – Steve would like to see some description in the plan of how the aggressive weeds would be addressed.

*Question* – It's still unclear as to who will be responsible for the operation and maintenance for the reclamation?

*Response* – EPA is still having some discussion on who would handle operation and maintenance so we're not sure at this point. There could be some mix of responsibilities.

*Comment* – Once EPA knows who will be responsible, the SMAG would like to know.

*Question* – You're going to purchase all of this?

*Response* – 60% we're collecting and harvesting and 40% of what we plan to use we're going to purchase through the FS – NRCS.

*Question* – The list for the Peanut Mine was much larger and here we’re only talking grass here. Why is that?

*Response* – The USFS had some focus on using only native genotypes in the reclamation but to get natives means to harvest, which can become very expensive if trying to reach prescribed ratios of different species and types of plants. It’s also expected that over time, other native species will move into the area.

*Question* – Does the report talk about how much coverage you expect to see.

*Response* – In Table 1 by the fold out map we talk about it.

*Comment* – For water coming out of Peanut Mine, we were able to trap some of the water and route it through a hose to create a sprinkler type system which seem to help.

#### **Future SMAG meeting/site tour –**

*Question* – Is there any interest in a site tour once we’re able to mobilize to the site?

*Response* – We would like a site tour after they are able to get up to the site in July, one after there’s been a chance to determine whether the reclamation plan will need to be significantly changed, and possibly an end of season tour.

**EPA Action** – EPA will send out an email in late June proposing dates depending on when it looks like we’ll be able to get up to the site.

*Comment* – The SMAG would like to hear more about the possible changes to the reclamation once we have a better idea of what the site might be. We will look to arrange a field tour sometime after they’re able to get up to the site.

\*Note: EPA does not expect significant changes to the reclamation plan. What is most expected to change is the location of some of the items. For example, the location of the perched wetlands could change dependent upon depth to bedrock, etc. but the construction and design of these will not differ from what is described in the Reclamation Plan.

**Meeting Adjourned at 4:00 pm.**