

Department Review of Shaw Mines Complex

Background

According to background information received to date a total of approximately 5000 acres of the Pittsburgh Coal seam have been deep mined in the Shaw Mines Complex. Of the 5000 acres deep mined, approximately 2500 acres or half has been reaffected by surface mining down to the Pittsburgh seam. The remaining 2500 acres has a maximum of approximately 240' of overburden at the highest point and an average overburden height of between 120' and 150'. According to information received from Action Mining, there is between 2'-2½' of recoverable coal in the remainder of the Shaw Mines Complex on the Pittsburgh and Redstone seams which have both been heavily deep mined. This estimate is based on Action's records of areas they have previously mined. The 2'-2½' of coal does not include recoverable coal on the Waynesburg (18") and Sewickley (12-18") seams which overlie the Pittsburgh seam and may be available on 20 to 25% of the remaining 2500 acres.

Hydrology

There are over 200 discharges emanating from the Shaw Mines Complex. Nearly all of the discharges flow to either Coal Run or Shaw Mines Run which are generally made up of the sum total of discharges flowing in their respective drainage areas. A large flow discharge referenced as Weir #11 in a previous hydrological study is the remaining source of pollution to the Casselman from the Shaw Mines Complex. Estimates from the same hydrological study indicate that in excess of 90% of the total acid pollution load to the Casselman comes from these three flows.

Early in May, a fish kill and stream bottom staining were observed in sections of the Casselman between Rockwood and Confluence. Higher than normal flows were observed in the three pollution sources from the Shaw Mines Complex and relatively low surface flows were observed during the same time period. It was theorized that the flushing out of the Shaw Mines Complex coupled with the lower than normal surface flows resulted in unusually high concentrations of acid mine drainage into the Casselman. It was also theorized that the extreme dry conditions over the past 5 years allowed the mines to form salts which created the potential for the formation of acid mine drainage and the heavy snow melt and rainfall during the early spring inundated the mine complex and produced the extreme condition that eventually led to this major pollution event. Initially some thought that once flow conditions in the mine and surface runoff returned to normal, the condition would stabilize to what it was before the pollution incident. Based on regular samples collected at Markleton, that has not happened and we are continuing to see depressed ph's and higher than usual metal levels at a location that has supported fish and aquatic life in recent history. It is apparent that the flushing affect is continuing and may continue for a period of 1-2 years according to experts. The current condition of the Casselman also represents a threat to the Youghigheney River and the Army Corps of Engineers has been monitoring water quality in the area and have intentionally released water from the Yough dam to offset the affects of the AMD pollution from the Casselman. Reports have been received that indicate that staining has been observed as far downstream on the Yough as Ohiopyle State Park.

A task force to address this matter was formed by Somerset County Commissioner Dave Mankamyer. Four committees were formed from the task force as follows (1) Information and Investigation (2) Funding (3) Remining and Regulation (4) Treatment Technologies and Water Management.

As a member of the Remining and Regulation Committee chaired by citizens representative Vince Barbera, I offer the following remining options for consideration.

Option #1 Total Remining or Daylighting of Shaw Mines Complex

This option represents the most preferable option environmentally speaking because it represents the lowest risk and highest potential for eliminating or greatly reducing the pollution load coming from the Shaw Mines Complex. Unfortunately it also represents the most costly option under consideration. Following are two sample cost analyses for total remining of the complex. It is likely that actual remining costs would fall somewhere between the total for the sample cost analysis.

	<u>Sample #1</u>	<u>Sample #2</u>
Acreage	2500	2500
Avg Coal Ht.	2.5'	2'
Avg Overburden Ht.	120'	150'
Coal/Overburden Ratio	48 1	75 1
Coal/Acre	3750 tons	3000 tons
Total Coal (2500 ac)	9,375,000	7,500,000
Mining Cost/Ton (15 1 Ratio)	\$15	\$20
Total Mining Cost (2500 ac. (15 1 Ratio)	140,625,000	150,000,000
	x 3.2	x 3.75
Total Mining Cost 48 1 Ratio	450,000,000	75 1 Ratio 562,500,000
Required subsidy	450,000,000 - 140,625,000 309,375,000 range	562,500,000 - 150,000,000 412,500,000

(Note: Samples do not include mining of Sewickley and Waynesburg due to incomplete information on the remaining reserve on these seams.)

Option #2

It is extremely unlikely that any agency would be capable of providing this magnitude of funding to subsidize a single mining - abatement project. Therefore it appears at this time that a plan to remine those reserves which can profitably be mined in combination with a plan to fill as much mine void as possible may be something that is economically feasible in this situation. Any plan for remining should include special handling of toxic material and placement of large amounts of alkaline material on the floor of the Pittsburgh seam. It may also need to include the construction of seals, waterways and underground dams at locations that would result in inhibiting the production of acid mine drainage. The designing of a remining proposal would certainly represent a challenge to a wide range of technical minds - something which appears to be available on the task force. Assuming this option is determined to be the best solution available, the remining of areas up to 90' of cover would eliminate another estimated 1000 acres of the Shaw Mines Complex leaving 1500 acres of the original 5000 acres unaffected by remining.

The remining 1500 acres represents the risk in this option that is not present in Option #1. There has been some discussion regarding pumping fly ash or some other alkaline agent into the deep mine void to eliminate the production of AMD and to assist in treating the AMD that is currently present in the deep mine void. There are some similar projects that are underway but the technology is relatively new and would require further research before any final recommendations are made for suitability in this situation.

Role of Bureau of Mining and Reclamation

I have requested a preliminary remining proposal from Dan Parisi representing Action Mining, Inc. I understand that this proposal will be available shortly after the week of June 14 at the conclusion of some exploratory drilling by Action to assist with the proposed remining plan.

I have discussed this entire matter with senior level management and our legal counsel in Harrisburg. At present, the Department is receptive to consideration of any remining proposal that would reduce the polluttional loading from the Shaw Mines Complex to the Casselman River.

As a result of the recent enactment of Act 173 there are remining incentives available that may be applicable to this situation including the possibility of declaring this area suitable for remining, which could lead to significantly reduced permitting costs, and the possibility of securing bond credits for areas previously mined and reclaimed by Action.

A main factor to be addressed is that most if not all of the area being considered by Action for remining is already situated within a valid surface mine permit and is therefore eligible to be mined without the need for additional permitting other than securing a bonding increment for the area proposed for remining. At the present time the Department is withholding bond releases for completion of reclamation on the Action permit because of the numerous pre-existing discharges within the permit boundaries. According to Department records no degradation of existing discharges has occurred to date, but under current policy no release of bond can be approved

as long as sub-effluent discharges exist within permit boundaries. One of the reasons Action has been reluctant to conduct additional re-mining on this permit is because of its inability to have bonds released upon completion of reclamation, something that has also limited Action's ability to secure new bonding for additional mining on other sites. The second deterrent to Action's continued mining on this permit is the additional liability that may be assigned to Action for mining any areas that could result in a change in the hydrology that would cause a post-mining discharge at a new location even though overall water quality may be improved. Therefore, the two main reservations to mining under the existing SMP are bonding and liability for additional discharges. I believe that both of these problems can be dealt with effectively by the Department if Action's re-mining proposal represents a strong likelihood of restoring the Casselman to its condition prior to the pollution incident. I also believe that unnecessary delays can be avoided in the approval process if Action is advised properly in the initial stages of its planning. The Department will promptly arrange a meeting between the appropriate Bureau officials and Action representatives upon receipt of the preliminary proposal.

Any proposal to fill the remaining mine void with a suitable alkaline material would likely be done under some type of Reclamation Contract by the Agency funding the project. I recommend that the Treatment Technologies and Water Management Committee explore the suitability of this procedure for this case and evaluate the cost of filling the mine void versus the cost of total re-mining and the environmental consequences of filling the mine void versus total mining.