

Ramaco Brook Mine Permit Review, April 1, 2016  
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I finally made it through the revised Ramaco permit document that has been ruled technically complete by the DEQ Land Quality Division. In the meeting on the 21<sup>st</sup> of March, we discussed several questions that people had regarding the mining operation. The following summarizes what I found in the current permit document:

1. Adjudication File

The adjudication file is still incomplete. Several of my outbuildings and water rights that are located within ½ mile of the permit boundary are not listed and presumably would not be covered if they were damaged by mining operations. I also see other residences and outbuildings in this immediate area that are not listed. I'm not familiar enough with the rest of the area to determine if the same is true for other landowners, so each potentially affected landowner should check the list in Volume 1 of the permit document to see if their list is also incomplete.

2. Mining Quantities

We had discussed that Ramaco had been issued an air quality permit for only two million tons/year. The revised permit document shows production ramping up to 2 million tons/year in years 1 through 5 of mining, then production of 10 million tons/year for years 6 through 10. Years 11 and 12 will drop back to 2 million tons/year.

3. Location of Truck Hauling

The Mine Plan shows that most of the mining on the south side of the Tongue River will be done in the first year. Coal leaving the mine site by truck in the first year will go out the existing Big Horn Coal access road off the Decker highway, past the old Country Nite Club location.

During the remaining years, haul roads will connect the pits to the road accessing the frontage road along Interstate 90 at Taylor Quarry and all coal leaving the site will go out the Taylor Quarry access road and along the frontage road to the Interstate. By my calculations, at two million tons/year there will be a semi with a full sized trailer and a pup traveling the frontage road approximately every 9 minutes, 24 hours a day, 365 days a year. At ten million tons/year, the interval between trucks drops to about 1 minute and 50 seconds.

4. Replacement of Roads Removed by Mining

Ramaco commits to replacing county roads removed by mining. The permit document states that design of replacement roads will be done in consultation with Sheridan County and affected landowners and that the replacement road will be completed and approved by the County and landowners before the existing road is removed.

5. Water Use During Mining

The Mine Plan states that the mining operation will use about 328,200 gallons of water per day. It also states that this quantity is projected to be available from dewatering of

the coal seams prior to and during mining and from surface water captured in sediment control and flood control structures. They say that they are aware of the Yellowstone Compact issues and will act in accordance with the Compact by obtaining State Engineer's Office permits for all wells and structures. Water from dewatering activities is expected to range from 1 to 75 gallons per minute over the mining period.

#### 6. Surface Water Pollution from Mining Activities

The mine plan states that no discharge of surface or groundwater water from the mining area is anticipated. All inflow from runoff, rainfall, and coal seam dewatering will be used for dust control or routed to sediment control ponds for evaporation.

#### 7. Alluvial Valley Floor Impacts

The permit document states that Ramaco does not currently plan to underground mine in alluvial valley floors, but they may do so in the future with additional permitting and performance standards. The Mine Plan states that impacts to the alluvial valley floors along Big Goose Creek and the Tongue River adjacent to the mining area will be assessed using monitor wells in the alluvium to measure changes in groundwater levels and color infrared aerial photos to estimate changes in vegetation. The monitor well locations as shown are totally inadequate to measure changes in water levels due to mining. The monitor wells on Big Goose are upgradient and upstream of the mining area and cannot show any changes due to mining. The monitor wells on the Tongue River are located next to the river and will only show changes due to the changes in river flows. If the monitor wells are to show changes due to mining they should be located between the river or creek and the area to be mined, preferably close to the edge of the alluvial area.

#### 8. Impacts to Existing Surface Water Rights

The Mine Plan indicates that impacts to existing surface water rights will be extremely small. It also states that any surface water right affected by mining will be replaced with a water source of similar quantity and quality.

#### 9. Impacts to Existing Groundwater Rights

The groundwater model used to estimate potential impacts shows impacts to some existing wells. I haven't yet cross-referenced the permit numbers of the wells shown to be impacted with the water right list in the adjudication file, so I don't know the owners of the impacted wells. The drawdown maps shown in the Mine Plan, Addendum MP-3, however, appear to show maximum impacts near the Bocek's property north of the old town of Monarch and at the Padlock Ranch wells near the north edge of the permit area.

The Mine Plan in Section MP.6.3.2 also says that adjudicated wells impacted by mining will be replaced. The interesting part of this is that Ramaco has only committed to replacing adjudicated wells. Adjudication of a well requires specialized equipment and a significant amount of time so the State Engineer's Office has typically not had adequate staff to adjudicate groundwater rights. Of the hundreds of wells within three miles of the mining permit area, only a handful are adjudicated. In other words, most of us will be responsible for replacing our own wells if mining causes us to lose our groundwater supply.

#### 10. Subsidence Control

Ramaco has changed the mining plan slightly to leave more coal to support the land surface. They are still basing their mining design on only two overburden samples that were tested to determine strength. They are still only committing to monitor for subsidence for six months following mining in an area and are only committing to mitigate any subsidence through bond release.

#### 11. Pre-Blast Survey

The Mine Plan, Section MP.14.6, says that the blasting schedule will notify all residents or owners of a man-made structure within ½ mile of the permit boundary. The resident or owner can request a pre-blast survey from the DEQ. If a survey is requested, a qualified person from Ramaco will do the survey. It says that pre-blast surveys of all pipes, cables, transmission lines, wells and water systems will be limited to surface condition and other readily available data. A written copy of the survey will be submitted to the Land Quality Division administrator and the person requesting the survey.

#### 12. Impacts on Existing Underground Mines

The Mine Plan states that blast monitoring will occur if blasting is within 500 feet of an existing abandoned underground mine. It also states that highwall mining will not affect underground mines. I can't find any discussion on what will be done if blasting causes subsidence at the abandoned underground mines.

#### 13. Padlock Pipelines, Tanks, and Livestock Watering Systems

As far as I can tell, there is still no discussion of the existence of any of the Padlock facilities. Therefore, there is no commitment to replace any of the facilities removed by mining. As discussed under point 9, they also do not commit to replacing the well or spring if damaged by mining.