**Questions for Treatment Technologies Lesson**

1. What does SMCRA stand for?
-The Surface Mining Control and Reclamation Act
2. What year was SMACRA passed, and what do we call mines prior to that time?

 - 1977 was the year it was passed and mines prior to that time are called abandoned or historic mines

1. Explain what the two main programs operating under SMCRA were created for?
- The **regulation** of active coal mines, and the **reclamation** of abandoned mines.
2. Summarize the process of re-mining
-Re-mining is the process of surface and underground mining previously mined lands.
3. What are the two types of treatment systems?
-Active
-Passive
4. Treatment systems work by raising the \_\_\_\_\_ of the water in order to drop out harmful metals.
5. Sulfur
6. **pH**
7. Acidity
8. Flow Rate
9. You are the consulting engineer for a mine treatment project. The group that is funding the system has already determined the best financial bet is a passive treatment facility. The water has high iron and aluminum content as well as a very low pH, but as it exits the mine there is very little oxygen. What type of passive treatment system would you design for this discharge?

 - An Anoxic Limestone drain would work well to raise the pH. This should be followed with a settling pond and/ or a wetland to allow the metals to settle and further treat the water.

1. Name one of the two types of active treatment we discussed and give one advantage and one disadvantage for that form of treatment?
-Water driven dosing systems they are inexpensive to install and take up very little room, but have high operation costs and require a lot of monitoring and maintenance. Or pump driven water treatment plants can treat large volumes of highly polluted water, but they require a large area and have high installation and operation and maintenance costs.

9. Where is the largest passive treatment system in the world which has been successful at treating its streams effected by abandoned mine drainage?

-Babb Creek