



Arizona Rocks 63

Text and photos by Ray Grant

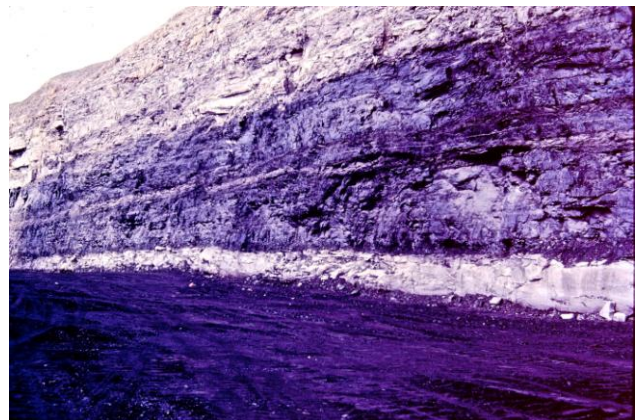
Going north from the dinosaur tracks (last month's AZ Rocks) past Tuba City you come to the conveyor belt that carries coal from the coal mine to the railroad and then by train it goes to the Navajo Power Plant. The plant and mine are in the news these days because of possible closure. Black Mesa, where the coal occurs is about 3,200 square miles in area and is underlain by multiple layers of coal. It is estimated that there are billions of tons of coal under Black Mesa.

The coal and surrounding sedimentary rocks are Cretaceous in age. The rocks in Black Mesa were deposited between 80 and 100 million years ago, and during that time the ocean transgressed across the area two times. So these Cretaceous rocks are both marine and near shore deltas and swamps where the coal formed. The main formation that is being mined for coal is the Wepo Formation. It consists of shale, sandstone and coal and was deposited near the shore of the interior ocean. The climate in the area at that time from the fossils found was warm temperate to tropical with hot wet conditions. Sea level was very high at this time and you can see on the map that much of North America was covered by ocean.



Figure 3. Western Interior Seaway during maximum transgression in Turonian time (modified from Kauffman, 1984).

Map showing the area of North America covered by ocean in the Cretaceous Period



Coal Layer in the Wepo Formation being mined for the Navajo Power Plant



Layer of coal that was burning underground, probably started by lightning.



Coal Mine on Black Mesa