

Impoundment Design - Mingo County, West Virginia



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The Delbarton Coal Company required an impoundment design that over its life would hold an estimated 23,359,541 Cubic Yards of Slurry. CBC Engineers & Associates, Ltd. submitted an impoundment design that would be built in 7 stages (including the starter dam) over the estimated impoundment life of 26 years. This design required staged construction to raise the impoundment some 460 vertical feet to meet the storage requirement. This impoundment continues to be built to this day.



This project encompassed the design of an impoundment for disposal of coarse refuse and slurry near Bias in Mingo County, West Virginia. The site can be found on the Delbarton and Myrtle West Virginia 7.5 minute quadrangle maps of the Geological Survey series. The design includes a structure to be constructed on atop the existing refuse disposal area with a final crest elevation of 1520 feet, providing 26 years of slurry and coarse refuse disposal. Slurry will be disposed in the reservoir created by the embankment.

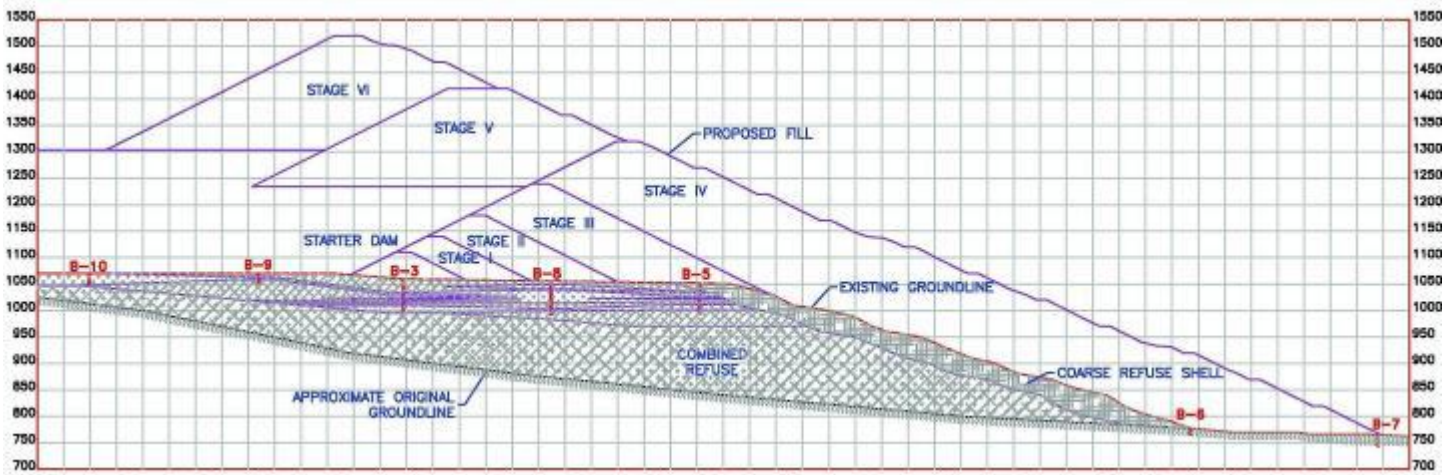


Figure 1-2

The overall concept for this project called for the construction of a starter dam and then six (6) subsequent stages to follow. See figure 1-2 above for the complete layout. The starter dam and four (4) stages are to be constructed in a downstream manner above the existing refuse disposal embankment by extending that embankment up to elevation 1320 feet, and the two (2) following upstream stages will be constructed to extend the crest to a final elevation of 1520 feet. The main portion of the embankment for this project is to be constructed in a downstream manner, with two (2) upstream stages being provided to maximize the disposal volume for both coarse and fine refuse. The embankment will have a decant pipe which will provide storm water passage and decant the pool for each stage. The pipe will pass the design storm with three (3) feet of freeboard or greater for each stage. The decant pipe will evacuate 90% of the stored storm water in less than seven days.

The embankment will be constructed with an initial starter dam embankment being constructed of coarse refuse excavated from within the impoundment, overburden, or plant refuse. The remainder of the embankment will be constructed from coarse refuse once the plant begins operation. The embankment has a total of seven (7) stages including the starter dam. See Figure 1-2 for the complete layout.

CBC Continues to Provide Engineering Oversight on 26 year Project

Today the impoundment is only partially built. The pictures shown in this Case Study are upstream and downstream shots of post stage III construction. Stage IV construction is actively under construction on the downstream side such that the needed elevation is reached in another 4 to 6 years as required by the coal processing operation. CBC Engineers & Associates, Ltd. did the original design and had it permitted in the early 2000's. CBC is active in the 7 day, quarterly and annual reports required by MSHA. CBC also provides decant pipe inspection as the height of the pipe changes as the impoundment height rises in accordance with MSHA regulations. CBC and Delbarton Coal Company are less than half way through their 26 year project together. We would like to thank Delbarton Coal Company for their continued Client loyalty.

For more details about this particular project, please contact our **Director of Marketing - [Joe Dennis](#)** at 937-428-6150.