

PROJECT PROFILE

DESIGN/CONSTRUCTION MONITORING OF COAL REFUSE DISPOSAL FACILITY

D'Appolonia provided engineering and construction monitoring for development of a slurry impounding coal refuse disposal facility, including:

- Geotechnical and environmental exploration and associated field and laboratory testing,
- Preparation of designs for erosion and sediment control, starter dam and disposal construction staging, appurtenant drainage and haul roads,
- Permit preparation and technical liaison with regulatory agencies, and
- Construction monitoring and documentation during site preparation and initial construction.

The coal refuse disposal facility was designed for 15.9 million tons of disposal capacity and a 19-year service life. Upstream construction was employed for the staged raising of the impounding embankment. The coarse coal refuse embankment stages were designed with internal drains for seepage control and sized for projected refuse generation rates. The facility was designed to accommodate storage of watershed runoff from the Probable Maximum Precipitation (PMP) storm event.



Soil starter dam and initial construction of downstream coarse coal refuse embankment.

D'Appolonia designed an impoundment drain to hasten consolidation of impounded fine coal refuse and to address concerns relative to potential liquefaction prompted by the substantial size of the upstream stages incorporated in the design. The impoundment drain was an innovation to coal refuse disposal practices and has performed effectively, resulting in noticeable improvements in foundation conditions for upstream embankment stages.

Construction activities monitored by D'Appolonia included development of a sediment pond and outlet works, the impoundment drain, the starter dam and dam foundation, cutoff and internal drains, the impoundment decant system and lining of drainage ditches.

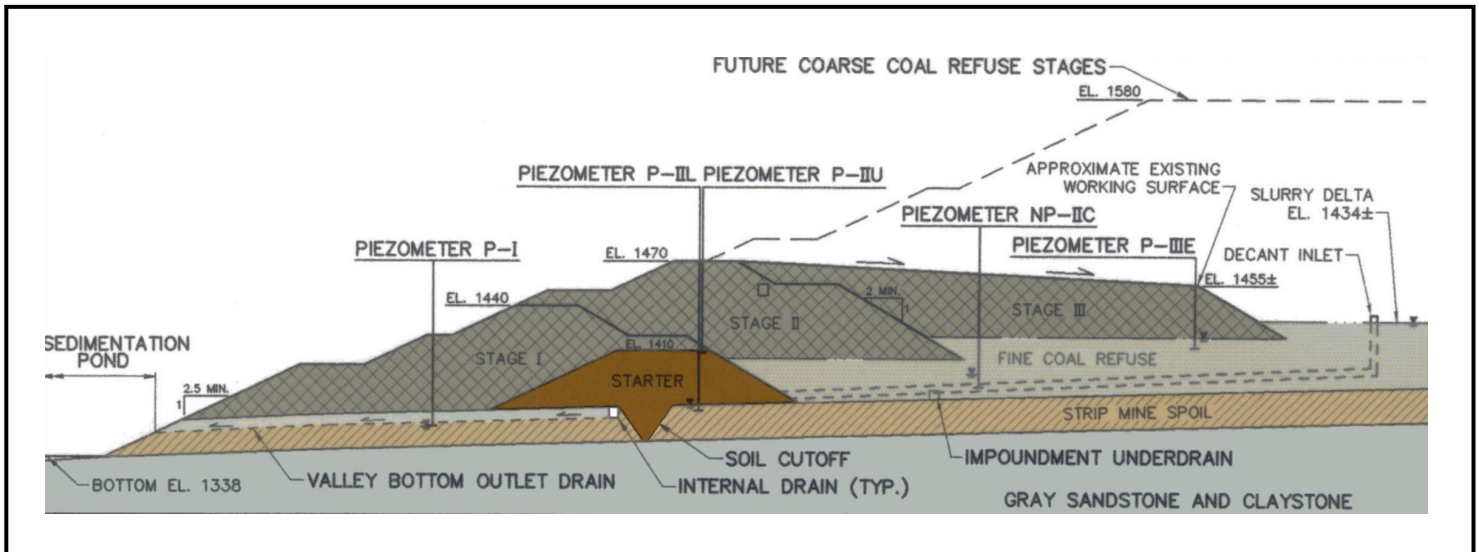
A "vuggie" (extensively solutioned) water-bearing limestone and permeable

shale strata were encountered within the dam abutments, requiring extension of the dam foundation cutoff drain up the valley slopes and construction of spring



Sediment pond and lined emergency spillway channel and decant tower.

collectors in active seepage zones. During site preparation, D'Appolonia was responsible for reviewing construction progress with regulatory agencies.



Slurry impounding coal refuse disposal facility showing embankment construction staging.