



ENVIRONMENTAL - CASE STUDY

# Ash Pond Dewatering Solutions

## PROJECT BACKGROUND

In the early 1950s a Department of Energy facility began producing materials for national defense and space programs. For decades the plant utilized a coal-fired powerhouse to power much of its production. Coal ash, a by-product of energy production, was pumped into holding basins for collection and control. After decommissioning the powerhouse, 90-acres of contaminated ash needed to be remediated to reduce environmental exposure and the potential risk of ground water leaching. Part of the cleanup required 1.3M yards of ash to be removed from the holding basins and consolidated into onsite landfills. These landfills are then capped with geo-synthetic liners, dirt, top soil and grass to prevent rainwater from infiltrating

## THE CHALLENGE

A leading environmental remediation contractor was tasked with excavating the ash and consolidating it within a landfill and constructing the final landfill cover system. Eighty thousand cubic yards of ash and contaminated dirt were removed from one holding basin, dewatered, stabilized and transported to the on-site landfill. To ensure the treated ash met the landfill spec and to prevent future failures, a 4-foot roll test was performed to test grading and compaction.

The ash was extremely wet when removed from the basin and unique characteristics made it difficult to stabilize per the landfill specification.

## PROJECT OVERVIEW

### ASH POND DEWATERING

→ **Environmental Dewatering  
Dose Rate: 3-5%**

- 1.3M yards of contaminated ash needed to be disposed of by the Dept. of Energy
- An environmental remediation contractor was hired to excavate and consolidate ash into two on-site landfills.
- Calciment® LKD was used as a drying reagent resulting in significant stabilizing and dewatered results within two hours of application.

## THE CHALLENGE CONTINUED

As the program stretched into fall and winter, rain and cold made the material more difficult to dewater and stabilize, ultimately impacting production.

## OUR SOLUTION

The contractor needed to bring production to full capacity, finding a way to quickly and easily dry and stabilize the ash regardless of ambient conditions. The drying agent needed to be easily spread and mixed utilizing equipment readily available. Most importantly, the drying method had to improve workability to prepare for landfill placement.

In their search for a fast and effective dewatering agent the contractor discovered Calciment® LKD, a product that has been used in environmental remediation for decades to dewater contaminated soils and sediments. Calciment contains a mixture of calcium oxide and pozzolans to quickly dewater contaminated waste. In addition, cementitious properties provide strength gains for easier grading and compaction. Calciment LKD is available in a variety of packaging and shipping options to accommodate specific job site requirements.

## IMPLEMENTATION

Calciment LKD packaged in one ton super sacks was selected because the product could easily be applied and mixed with equipment already on site. The use of super sacks also eliminated potential dust on the job site. The super sacks were attached to the bucket of an excavator for placement and mixing directly in the watery ash. By eliminating the need to bring in special equipment, the contractor was able to quickly implement the solution.

## RESULTS

The results were fast and significant – within two hours of applying Calciment LKD, the ash was dry and within 24 hours it met the landfill strength requirements. Accelerating the drying process allowed the contractor to finish the project on time and under budget.

Impressed with the results, the contractor expanded their use of Calciment LKD to additional projects. Because the new jobs are larger projects, the contractor leverages pneumatic and dump trucks as well as on-site storage to ensure constant supply. To increase efficiency and application consistency, injector forks are also used to add and mix Calciment LKD into the ash.



COAL ASH HOLDING BASIN EXCAVATION



CALCIMENT LKD IS APPLIED TO STABILIZE THE UNDERLYING SUB - BASE

**...WITHIN MINUTES,  
CALCIMENT LKD  
BEGAN TO DEWATER  
THE ASH LEAVING  
A SOLID MATERIAL  
THAT WAS MORE  
STABLE AND EASIER  
TO HANDLE**