

JINCHANG CITY, CHINA

Containment for Hazardous Waste Disposal



Industry:	Mining
Application:	Hazardous Waste
Location:	Jinchang, China
Product:	GSE® HD

Overview

Jinchang is a city of some 470,000 inhabitants in China's Gansu province. It is also known as the 'Nickel Capital' of China and has an abundance of other mineral resources too, including quartz, iron, manganese, copper, cobalt, and zinc. It almost goes without saying that mining is a very significant economic activity in the region.

By far the largest mining operator in the area is Jinchuan Group, which produces 90% of China's nickel output and is also the largest nickel producer in Asia.

When it decided to build a new landfill site to contain significant amounts of hazardous-waste byproducts, Jinchuan

Group turned to Solmax to supply the geomembrane materials that would be used to line the site and safely contain the waste.

Located in an abandoned sand pit, the new landfill was to be constructed in three phases. The facility was specifically designed to be used for the disposal of hazardous waste from the mining of arsenic, copper, lead, nickel, and other heavy metals.

With an annual handling capacity of 14,000 tons, it was a major environmental-protection project in Gansu province.

Asia's largest nickel producer had a serious challenge: how to safely contain hazardous-waste byproducts from its mining operations in China.

CASE STUDY

Containment for Hazardous Waste Disposal

Challenge

Since the waste that needs to be contained comprises large amounts of heavy metals, any leakage could potentially lead to extremely serious pollution of the local water and soil environments. Therefore, the design, materials, and containment construction of the facility would be critical to the project's success.

After careful consideration, the client and its local contractors decided that conductive geomembrane materials would provide a more effective solution than the more common non-conductive geomembranes frequently deployed in similar scenarios. And this is where Solmax came in.

Solution

Solmax was chosen to supply a high-grade, multi-layer solution comprised of 1.00mm HDPE geomembrane and 2.00 mm **GSE** HD conductive geomembrane, each spanning an area of 25,700 m² (276,600 f²).

Key to the client's choice was the co-extrusion qualities of our conductive geomembrane, which can detect the exact position of any leakage in the lining system. It also substantially improves the precision of electrical leak-location efforts (e.g. spark testing and dipole method) without impacting the electrical conductivity of the subgrade beneath the geomembrane.

From the initial feasibility study in early 2017 to the first trial run and final construction in mid 2019, Solmax worked closely with Jinchuan Group and its contractors to ensure the facility was constructed on time, on budget, and to the required standards.



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