



Environmental Services

Decommissioning,
Decontamination,
Demolition and Disposal

Client

Confidential Mining Client

Location

Remote South East Asian Location

CH2M HILL received commendation for the whole decommissioning, decontamination, and disposal project from the regulators and from the Client. One of the most significant aspects from our Client's perspective was our rigorous adherence to international environment, health, and safety standards. The complete scope of work was undertaken in an 18-week period, including mobilization and demobilization. Over 61,000 hours were worked on site without any reportable or first aid injuries.

Mercury Contaminated Process Plant

CH2M HILL led an international multidisciplinary project team to remove and decontaminate a process plant that had been impacted with mercury. The Client required a company that could deliver a project that was beyond reproach with regard to its systems and procedures of controlling the cleaning, recycling and disposal of decontaminated material and waste.

The four to five-storey plant consisted of process equipment and piping covering a 900m² footprint. The plant was filled with high concentration mercury solutions (up to 8,000 mg/L).

The original process plant was reconfigured to allow the plant to treat liquids. In a batching process, pH was adjusted and metals were precipitated. Sludges were settled and filtered. The treated water achieved a mercury concentration of 0-2 µg/L which was then re-used for plant cleaning. 180,000 litres of mercuric chloride solutions were treated.

Treatment of process waters including chemical dosing, filter press removal of precipitates and fines and evaporation of waste water solutions was conducted using diesel-fired evaporators imported to site. Independent stack emission monitoring was carried out and reported to the EPA.

Recycling and on-site re-use of materials were applied as much as possible. Recycled cleaning water was continuously treated to remove particulate and dissolved mercury concentrations. All steel structures were progressively removed, cleaned and validated for steel recycling. In addition, 8.5 kilometres of tailings pipeline was removed. Approximately 600 tonnes of steel was recycled.

The plant equipment was cleaned either in-situ or at cleaning bays.

All generated scales and sludges (approximately 130 tonnes) were stabilised for disposal to an appropriately licensed landfill. Porous material not sent to the smelter was transported to a hazardous waste landfill. All material was managed under manifest and chain of custody control.

All cleaned material was sampled and validated under a full chain of custody control. To ensure quick sample turnaround in this remote location in a fast track project, an analytical laboratory was imported and established on site.

As local "cleanliness" standards for recycled material were not available, cleaning targets were established based on human health risk, disposal and recycling criteria.