



# CASE STUDY:

## Volumetric Survey of Tarong Power Station Ash Storage Facility

### OVERVIEW

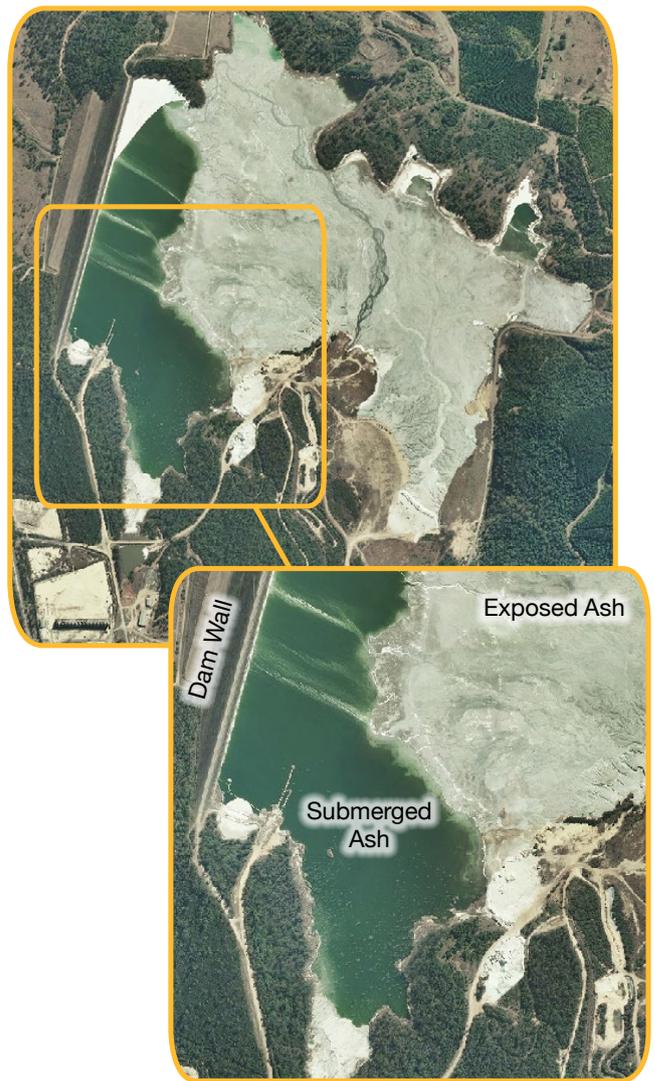
The importance of understanding and managing risk is well recognised in the power generation and mineral extraction industries. Risk management and mitigation underpins safe practice and forms a key part of short and long term planning for production, operations, waste management and rehabilitation. The stringent benchmarks and high standards required by legislation and enforced by the industry demand high quality spatial information and innovative, timely solutions in support of effective risk management and planning.

### SITUATION

Stanwell Corporation have an on-going requirement to assess the remaining capacity of its Ash Storage Facility at Tarong Power Station in Queensland, Australia. This is required to:-

- monitor the storage capacity of the dam with respect to Design Storage Capacity;
- report to regulatory authorities the quantity of water the dam can hold in the lead up to each wet season; and
- assist with planning and designing rehabilitation strategies.

The Ash Storage Facility is made up of an “exposed” layer of ash with a major water body between the ash bank and the dam wall. In order to estimate the remaining storage capacity of the dam, Stanwell engaged AAM to survey the submerged and exposed areas of the facility.



## ACTION

To acquire the survey data for this project safely, accurately and quickly, AAM employed a combination of bathymetric and airborne LiDAR survey techniques.

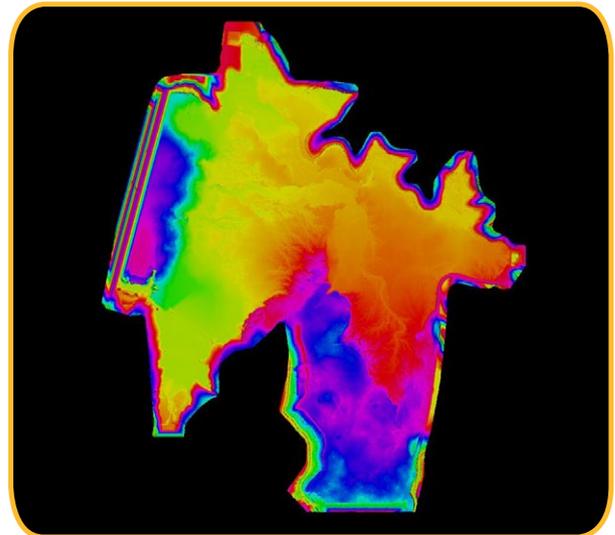
The bathymetric survey was completed using an unmanned shallow-water vessel to measure the submerged area of the dam. The benefits of this system include:

- elimination of safety concerns with having people on the water in a boat;
- accurate data collected in areas of dam which would be difficult or impossible to reach with a conventional dingy/outboard motor setup;
- the system could be mobilised to site quickly allowing rapid data acquisition; and
- Complete measurement up to the water/ash interface



The exposed area of the ash surface was surveyed utilising airborne LiDAR, to yield a highly detailed definition of the ash surface.

The bathymetric survey data was merged with the airborne LiDAR data to create a seamless surface of the exposed and submerged area of the dam. Volumetric calculations and storage curves were derived from the combined surface to determine the current volume of ash and water stored in the facility as well as assessing the remaining capacity.



## RESULT

The operation was conducted safely and with reduced risk due in part to not needing people on the water to gather the bathymetric survey data. Combining airborne LiDAR with the bathymetric survey produced an accurate and seamless definition of the entire ash storage facility.

The fully integrated dataset provided a complete picture of the ash surface to help visualise and assess ash build-up. Volumes were calculated with confidence knowing that the entire storage facility was accurately surveyed.

