



Cloudbreak Tank 239 Replacement

PROJECT DETAILS

The Tank 239 Replacement Project was located at FMG's Cloudbreak Mine Site, near the Chichester Ranges in the Pilbara region of Western Australia, approximately 130km north of Newman.

The Project involved the demolition of an existing 1.4ML process water tank located within the scrubbing and de-sanding facility which had structurally deteriorated beyond repair, the remediation and reinstatement of the internal earthworks required to enable the installation of a new replacement tank in the same location, the prefabrication of a replacement process water tank, and the installation and commissioning of the replacement tank.

Pre-shutdown Works

The following scope of works was performed prior to the planned shutdown of the OPH Processing Plant in order to minimise the time and risk required during the planned shutdown:

- Preliminary civil temporary works including the construction of a false concrete ring beam to provide a suitable foundation for the pre-assembly of the new tank
- Pre-assembly of a new 1.4ML process water tank (bolted steel panel construction) and the pre-installation of the tank liner, using a progressive build and jacking method chosen to reduce the need and risks associated with working at height
- Cutting in of all penetrations and installation of nozzles and fittings including suction spool outlet, overflow outlet, drain outlet, and level / pressure instrumentation
- Removal of redundant pipework from the existing tank
- Temporary earthworks to provide suitable access for demolition equipment

Shutdown Works:

The following scope of works was performed within the planned shutdown:

- Disconnecting and removal of all pipework associated with the existing tank to allow demolition and installation of the new tank
- Staged progressive demolition of the existing tank using a demolition excavator with a shear and grab attachment
- Removal and disposal of cumulated sludge sediment material from the base of the existing tank
- Removal of the existing internal suction spool vortex table
- Remediation / concrete repairs to the existing ring beam footing
- Reinstatement of the earthworks to the underside of tank level, including sub-base preparation, a sand topping layer, and installation of geo-fabric
- Design, fabrication, supply and assembly of a custom lifting frame for the new pre-assembled tank
- Lifting and placement of the new pre-assembled tank into the same position of the existing tank using a 400T Crawler Crane
- Reinstallation of all pipework (including, suction spool outlet, drain outlet, thickener launder) and connection to tie in point of the exiting pipework
- Installation of a new HDPE internal suction spool vortex table;
- Installation of new hold down clamps to the new tank
- Assistance with commissioning of the new tank back into operating service

Client: Fortescue Metals Group Ltd (FMG)

Location: Cloudbreak Mine, WA

Duration: 1 month

Completion: August 2017

Value: \$0.75M



PROJECT HIGHLIGHTS

Personnel on Site: 25

Manhours: 3,500