

# INDUSTRY EXPERIENCE

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## ABBAS TAHERI

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Dr Abbas Taheri has been involved in several mining and civil engineering projects. The projects mainly include geotechnical investigation and design of open pit mines and underground spaces in civil and mining engineering projects. He has extensive experience in soil and rock in-situ and laboratory testing.

### RESEARCH COLLABORATIONS WITH INDUSTRY

- Chief Investigator (CI) of an ARC-Linkage project with total funding of \$244,000 with a partner investigator from OZ Minerals for a research on deep underground mining (2016-2018).
- Leader of a project supported by Deep Drilling Exploration (DEC) CRC to investigate borehole stability in fractured rocks with total funding of \$123,000 (2012-2016). Actively being involved in two other DET-CRC projects on borehole stability in poorly cemented layers and rock characterization for deep drilling performance optimization. Several industry partners were involved in this CRC.
- Lead-CI of two Mining Education Australia (MEA) Collaborative Research projects, with total funding of \$130,000 with collaboration of OZ Mineral (2016-2018). The first project involved optimisation of Cemented Paste Backfill (CBP). In this project Dr. Taheri liaises with the industry partner to make sure that the proposed backfill design meets underground mining requirements. OZ Mineral is also involved in the second project which includes effect of blasting load on stability of backfill placed in underground mine.
- Collaborating with Australian Centre for Geomechanics (ACG) and a group of Participant Australian Mine Sites (PAMS) in WA, SA and QLD on a project about rock characterization to investigate strain burst and stability of deep underground mines. Total budget is over \$2,000,000 (2017-2021).

### EXPERIENCES AS A CONSULTING ENGINEER

- **Mining projects (totally 13 open-pit mines):** Geotechnical investigations and design for 13 open pit mines, including: a) Reviewing of the Geotechnical investigation plan, allocation of borings, logging the cores, sample selection for rock mechanics testing; b) Development of test procedures for rock mechanic testing; c) Analysis of laboratory and field test and joint study results for different geotechnical zones; d) Geotechnical interpretation and analysis; e) Preparation of the Geotechnical reports; f) Slope design study including kinematic and rock mass analysis and propose stable excavation angles for each open pit mine; g) Back analysis and remedial design for slope failures.

- **Tunnel engineering projects (totally 3 long tunnels):** a) Feasibility study for construction methodology; b) Geotechnical investigation and analysis; c) Selection of TBMs and Shield machines and propose machine specifications; d) Design of earth cuts and temporary support for tunnels; e) Design of instrumentation and monitoring system during excavation; f) Design and specification of tunnelling method, preparation of the construction methodology, and excavation and support sequences; g) Analysis of tunnelling machines performance and advance rates.
- **Subway construction projects (totally 2 projects):** a) Geotechnical analysis of the ground conditions, including preparation of profiles and study of soil and rock mass properties; b) Method selection between cut and cover versus mined tunnels; c) Selection of the soft ground machines suitable to the type of soil encountered at the site and sizing of the tunnels (single VS double tube); d) Analysis of machine performance and advance rates as well as support design; e) Geotechnical investigations and designs for two open cut stations.
- **A hydropower construction project:** a) Geotechnical investigations including: review of previous investigations work, coordination of the field investigations and boring program, analysis of laboratory and field test results for soil and rock samples and geotechnical interpretation and analysis; b) Developing geotechnical models to stabilize a landslide and design of earth cuts; c) Reviewing and approval of the detailed designs and sequences of works; d) General control of the excavation works.
- **A railway construction project:** a) Geotechnical investigations; b) Back analysis of a failed slope and design of support system.
- **A freeway construction project:** a) Review and approval of geotechnical investigations; b) Designs of the earth cuts.
- **Building construction projects (totally 4 projects):** a) Field testing and analysing of results; b) Core logging; c) Stability analysis and design of earth cuts.