CASE STUDY

AUTOMATED QA/QC DRILLING PROCESS

USING TIMINING DRILLIT

Mine:
Minera Los Pelambres

Owners:
60% Antofagasta Minerals
40% Nippon LP Resources B.V
Mitsubishi Materials
Marubeni
Mitsubishi Corp.

Location:
Coquimbo Region, Chile

Production:
357.800 TMF **COPPER** (2018)

OVERVIEW

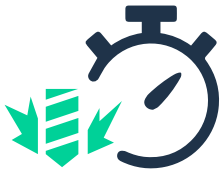
Up until 2019, the Drilling Quality Control (QC) process called for a high level a data processing and analytics but it was not possible to have on-line data for timely decision making when faced with deviations arising during the process.

On-line QC allows users to control over/sub-drilling, deviations from blasthole collar, number of rework tasks, drilling speed, operational parameters (RPM, torque, pulldown, air pressure); contrast geotechnical units; the effective utilization rate on available basis, availability and status of rigs.

SOLUTION

In 2019, the Superintendency of Drilling and Blasting worked with TIMining to develop a system that would automate and integrate drilling process information on line with real-time displays. In July 2019, the Drillit software was implemented and drilling and blasting area supervisors were trained on how to use it. As a result, the following is possible today:

- Viewing drill rig status and position in real time
- Seeing drill plan compliance rate in real time
- Immediately identifying deviations in blasthole collar and length
- Having to on-line information on re-drilled blastholes
- Using smartphone apps to see drilling performance and status info in the filed
- Viewing drill rig tracking



REAL TIME VISUALIZATION

DRILL RIGS LOCATION

PERFORMANCE AND PLAN COMPLIANCE

IMPACT

Customers will obtain many benefits from implementing this software such as, obtaining expected particle size, slopes built as designed, more efficient, safer, and less costly drilling/blasting operations, in addition to the following:

- Potential to drill 4000 meters in a month's time as a result of a better drilling sequence
- You can detect anomalies within a single GU with real-time iso-velocity maps
- Less over/sub-drilling
- Fewer blasthole deviations thanks to on-line identification of zones with a higher or lower density of blastholes
- Real-time control of ranges of operational parameters such as RPM, pulldown, torque and air pressure
- On-line operational and maintenance status of your flee