

Client Reference

Mining | Coal

Conversion of TMM Maintenance Plans from a frequency based to a usage based strategy



Client Background

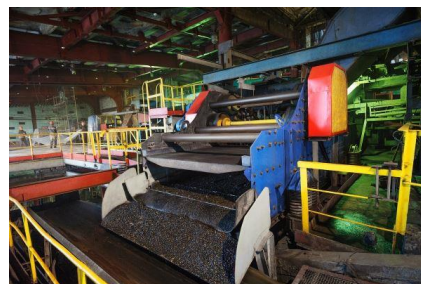
Our client is a respected open cast coal mining and processing plant situated in the Mpumalanga region, and it is designed to beneficiate approximately 3.8 million tons of thermal and metallurgical coal per annum.

The coal is beneficiated through two dense medium separation circuits and product streams and supplies coal for the domestic and export market.



Key Challenges

- Machines were serviced on fixed frequencies, i.e. 250 hours after two weeks, 400 after four weeks, etc., causing machines to be over maintained and wasting valuable resources.
- The original SAP system was configured to kick off services of the machines on the above mentioned fixed frequencies.
- New maintenance plans had to be developed, utilising measuring points to capture real-time machine hours.



“By allowing machines to be over maintained on fixed intervals, valuable time and money was wasted. By highlighting this shortcoming to the client and assisting them to rectify the fault, artisans could be utilized on other tasks – while also saving the client’s money.”

Reliability Engineer

Pragma Intervention

- Ensure that all function locations for the mining fleet is correct and conforms to the required standard.
- Create measuring points for each machine, in order to capture machine hours in real-time.
- Create a maintenance plan per service type, i.e. 250 hour, 500 hour, 1000 hour, etc.
- Link the measuring points to each of the maintenance plans.
- Create a maintenance item per machine, per service type, and link it to the corresponding maintenance item.
- This will thus allow maintenance plans to kick off based on the amount of hours accumulated by the machine, instead of on a fixed frequency basis.



Value Add

- A total of 315 man-hours are saved through this initiative (the time only relates to Dump Trucks and Excavators).
- This equates 36 extra working days available for artisans to focus additional work.
- The number of spares replaced prematurely equates on average to R370 000.00 per annum for the Trucks and Excavators.
- In total, the spares and man-hours unnecessarily spent services equates to R480 000.00 per annum.
- Another benefit of this is the removal of the manual interventions done by the planning office, where services were scheduled manually as per a pre-determined schedule.

Tools and Technology

- Pareto Analysis
- EAM Software
- Brainstorming sessions
- Focused Improvement
- DMAIC process
- Why-Why analysis to identify the root causes and possible contributing factors
- Mind-Map building software for Why-Why analysis.

