

# Case Study

## Maintenance Readiness Project



### Client Background

The new Belfast mine is a high value-add coal project in the Mpumalanga region, with an expected Life of Mine (LOM) of 17 years for the first phase and it presents an excellent opportunity to grow the coal business. The construction of the site began in November 2017, and first coal production is expected - by October 2019. The plant will primarily produce A-Grade, export-quality coal (typical 6000 kcal/kg) at a projected volume of 2.2 million tonnes per annum (MTPA), and a secondary-quality product (typical 21.5 MJ/kg) for local use or export of approximately 0.5 MTPA.

### Key Challenges

The proper management and maintenance of assets on a newly commissioned plant can immediately fall behind if not planned properly. Exxaro, understanding the value of their assets, tasked Pragma to develop and implement the following as part of the operations readiness projects:

- Asset management policy, asset management and digital strategy policy and asset management objective
- Performance measure and Key Performance Indicators (KPI's)
- Physical asset management business processes
- Asset care plans
- SAP EAM implementation
- Defining physical asset management role and responsibilities and training.



### Value Add

The proactive approach ensures that the mine will start operation with the following in place:

- A plant asset hierarchy, set up in an asset register
- All critical assets with a direct effect on the operational reliability are identified and prioritised
- Maintenance plans in place for Critical A assets using the RCM/FMEA methodology
- A site asset management and digital strategy is in place
- Performance measures and recommended KPI's that should be tracked are identified
- SAP EAM is implemented
- Material stores are set up with stores management business processes.



### Pragma Intervention

- Pragma developed the plants asset hierarchy through the analysis of Asset PID diagrams, general arrangement diagrams and OEM manual.
- Conducted plant criticality analysis to identify plant critical assets and prioritise maintenance effort according to criticality.
- Developed maintenance plans for critical A assets using the RCM/ FMEA methodology.
- Conducted site asset management maturity assessment using Pragma's Asset Management Improvement Planning framework. The result from the assessment were used to develop the site asset management policy, strategy and objectives.
- Pragma recommended a set of asset management KPIs to effectively manage and track the performance of the asset and asset management initiatives.

"Operations readiness is the process of preparing the custodians of an asset under construction, and their supporting organisation, such that, at the point of delivery/handover, they are fully ready to assume ownership of the asset", Wikipedia

### Tools and Technology

- RCM/FMEA methodology
- Criticality Analysis
- SAP EAM
- Asset Management in Planning software
- Cause and effect analysis
- PI&D, GA diagrams, data sheets, OEM Manuals
- Brainstorming and Interviews