



# Case Study South Deep



## Client Background

South Deep Gold Mine operates one gold plant and is accessed from the surface through two shaft systems. The Twin Shaft complex of which the main shaft comprises a single drop to a depth of 2995 metres, and the original mine's South Shaft complex. This makes it one of the deepest mines in South Africa and also gives it the accolade of having the deepest single drop lift system globally..

South Deep is undertaking massive development with the new Twin Shaft making use of TM3 (Trackless Mobile Mechanised Mining) technology. This is extremely asset intensive and requires that maintenance practices be implemented to ensure the availability and effective utilisation of the underground machines.

” *“By contracting Pragma to assist with the implementation of a well-designed Asset Management system, we are in the process of enabling improved control of our assets and improved equipment reliability.”*  
Mr Trevor Nkambule, Continuous Improvement Engineer

## Pragma Intervention

Pragma implemented the ACC service by setting up two on-site offices, managing the asset register and associated maintenance plans as well as running the day-to-day work planning and control.

Pragma participates in the Asset Management governance structures at South Deep and provides expert advice to the Asset Management team. As part of its strategic inputs, Pragma conducts an annual AMIP assessment and leads the development of an annual revision of the Asset Management Strategy.

## Key Challenges

Challenges were associated with communication in deep level mining and in the high security gold plant.

- Implementation challenges included:
  - Implement tactical maintenance for more than 5000 assets
  - Plan, issue and control work orders for approximately 400 artisans
  - Maintain the operational asset register and tracking all equipment movement
  - Improve the system to manage safety compliance.
- Development of an optimal maintenance mix for the trackless machines.
- Development of suitable business processes to plan and control maintenance performed in underground workshops.
- Develop a method to measure machine availability, utilisation and overall productivity by customising the Overall Equipment Efficiency methodology.



## Performance Improvement

- Single point of control for all maintenance work, from A to Z
- Standardised work planning and control processes across the whole operation
- Accurate and complete asset register with history of work done
- Improved maintenance tactics
- Powerful analytical capability on work history
- Increased focus and compliance to HSE standards and legislation.
- Best practice asset care processes
- Steady improvement of equipment downtime and reliability
- Improved engineering workforce engagement
- Better control and information on the TM3 fleet.

## Tools and Technology

South Deep has installed On Key which they host locally on site.

Business processes were implemented:

- Asset Care Foundations
- Asset Management Improvement Process (AMIP)
- Asset Register Administration
- Maintenance Plan Development
- Work Planning and Control
- Continuous Improvement
- Equipment Performance Measurement.