

Abstract

The study assesses the drilling, loading and trucking stages of the mining cycle of an iron ore mine situated in the Northern Cape province of South Africa for the period of 1 January to 30 June 2011. The purpose of this study is to investigate the effect of increasing reliability and maintainability of mining equipment in an effort to increase throughput of iron ore. The data processing indicated that both availability and utilisation are contributing to the sub-optimal performance of the mine. Data regarding reliability (MTBF), maintainability (MTTR), planned and unplanned maintenance was analysed, and this provided input for the simulation model. The intention of the simulation model is to simulate scenarios of proposed improvement in MTBF and MTTR through increasing planned maintenance activities. A simulation model provides insight regarding where to invest in interventions. It is determined that the drilling equipment is the problem area.