Feasibility Study of Maandagshoek 245KT Farm Chrome Mine Project

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Abstract

ABC Mining Corporation has requested Liu Consulting to conduct a research report on the mineral potential and to give an estimation of the costs associated with a proposed exploration programme and a mining project on the farm Maandagshoek 254KT. Three aspects will be covered including geology, mining design and mineral economics. The data of the existing borehole core will be examed, and the material from the adjacent mining field will be referenced in order to construct a geological model. Liu Consulting will present a research report that fulfill the application requirement of the South Africa Department of Mineral Resources and the Hong Kong Stock Exchange. The research report will be assembled within six months upon signing a formal contract and receiving an initial payment.

Project Justification

The farm Maandagshoek 245KT is located at the middle of the eastern limb of the Bushveld Complex in Limpopo province of South Africa. The Bushveld Complex consists of the world's largest ore reserves of platinum group elements (majorly platinum and chromium), with one of the highest grades in the world. The ongoing mining activities carrying around the adjacent mining field have proved the continuity and stability of LG6 mineralisation layer (Gain 1986).

Judging by the current industry and market, the outcome of prospecting and researching on the material resource beneath the farm Maandagshoek 245KT could unveil a significant mining business opportunity, especially attracting the potential investment from Asia (Metalbulletin 2019).

Notwithstanding the information from the current operating project nearby and borehole core can be employed, the majority of the west and south part of the farm is yet to be investigated. Therefore, more geological work (borehole drilling) need to be carried, and more data need to be obtained (Connor 2011).

Project Aim

To conduct a research report on the mineral potential and to give an estimation of the costs associated with a proposed exploration programme and a mining project on the farm Maandagshoek 254KT.

Project Objective

● To model the Chrome deposit on the farm Maandagshoek 254 KT and calculate the chrome reserves of the LG6 Chromitite Layer. (Geology)

● To present a comprehensive mining design for the following stage of the mining project. (Geology+ Engineering)

● To conclude the technical and bankable feasibility study which fulfil the application requirement of the South Africa Department of Mineral Resources(SADMR), as well as the requirement of initial public offer (IPO) in Hong Kong Stock Exchange (HKEX). (Geology+ Engineering + Financial)

Project Milestones and Tasks

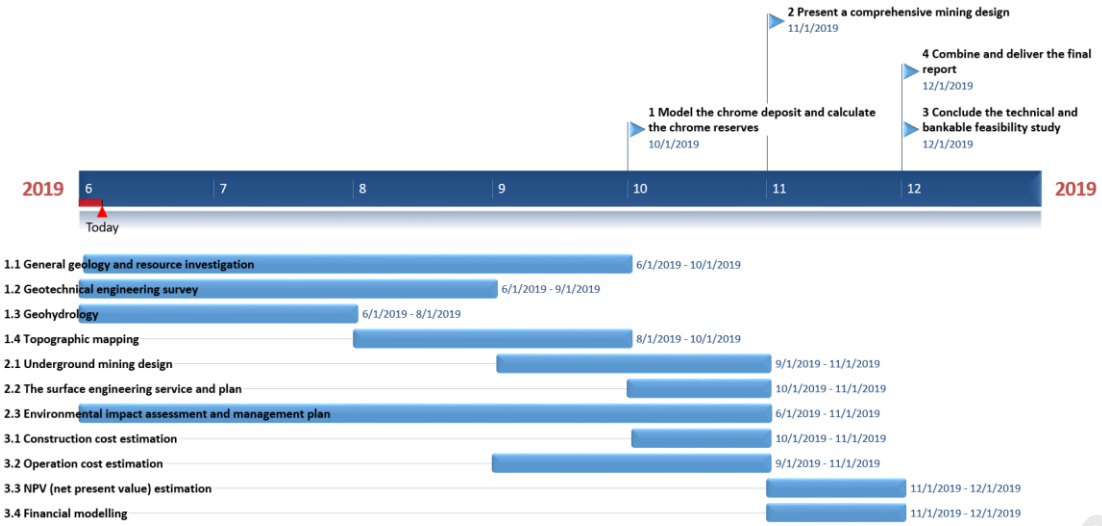
1 Model the chrome deposit and calculate the chrome reserves
  1.1 General geology and resource investigation
  1.2 Geotechnical engineering survey
  1.3 Geohydrology
  1.4 Topographic mapping

2 Present a comprehensive mining design
  2.1 Underground mining design
  2.2 The surface engineering service and plan
  2.3 Environmental impact assessment and management plan

3 Conclude the technical and bankable feasibility study
  3.1 Construction cost estimation
  3.2 Operation cost estimation
  3.3 NPV (net present value) estimation
  3.4 Financial modelling

4 Combine and deliver the final report

Project Timeline



Experimental Strategy and Approach

●There are currently nine boreholes on the farm. The rock core extracted from those boreholes as well as the boreholes from neighbouring farms will be examed. The boreholes information combined with historical geological reports will be applied to construct the geological model. The geological modelling and ore reserve calculations will be carried using MICROMINE V2017 Software.

● Given the depth of chromitite layer, the single operational decision required for this project would be the choice between vertical shaft system and inclined system to access the ore body. Experienced geologists and mining engineers will be involved to design the mining system including the shaft, hauling, understand excavation, ventilation and ore beneficiation etc,. Some technical documents could be arranged to acquire from the similar ongoing mining project.

● To pass the IPO in HKSX and obtain the mining approval from SADMR, a feasibility study reviewed and signed by a South African Mineral Reporting Codes (SAMREC) /Australasian Joint Ore Reserves Committee Codes (JORC) recognized Competent Person is essential. Mr S.B.Gain, the chef geologist of Liu Consulting will be appointed to conduct a peer review and draw a final conclusion, as well as sign the report. Mr S.B.Gain is eminently positioned to fill the role of a Competent Person as defined by the SAMREC /JORC Codes. Hong Kong and South Africa law firm will be employed to finalize the legal issue. PwC accounting firm will carry the job of auditing the bankable feasibility study. (Hong Kong Stock Exchange, 2019)

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