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Stratigraphy of the pedogenic manganese nodules in the Carletonville area, North West Province of South Africa: A case study of the General Nice Manganese Mine

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## Graphical Abstract

The North West Province Manganese Field hosts chemically precipitated manganese oxide deposits in a weathered crust or soil (Fig. 1). These deposits were however formed from the weathering residues of the underlying Mn-bearing Malmani dolomites of the Transvaal Supergroup. The occurrence of the ores mainly occurred as manganese-bearing nodules, with local thin-bedded ores also present. The profile was mapped and logged to discriminate various Mn-nodules bearing zonations and draw conclusions on highly mineralized zones which forms target during exploitation. Based on the mappable units, the produced stratigraphic profile across the mine area characterizes of the basal stromatolitic dolomites covered by thin band of manganese wad which in turn is overlain by alluvial-fluvial sediments hosting Mn-nodules of various diameter sizes. The whole succession is capped by Quaternary sands.

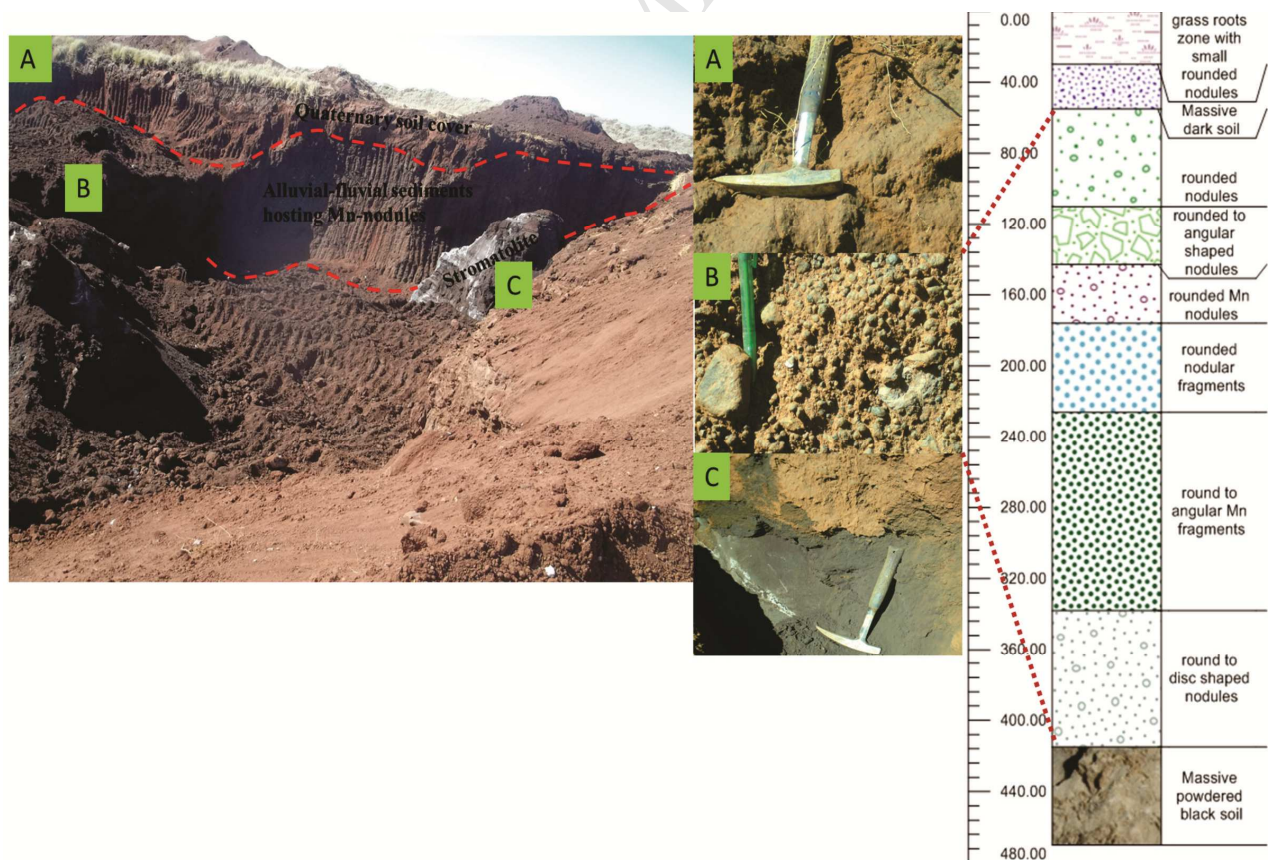


Figure 1: The stratigraphic profile setting across the General Nice Manganese Mine in Carletonville area, North West Province of the Republic of South Africa.

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