

FACT SHEET – REHABILITATION

December 2016

Thunderbird Mineral Sands Project

The Thunderbird Mineral Sands Project, located on the Dampier Peninsula between Broome and Derby, is being developed by Western Australian company Sheffield Resources Limited.

Thunderbird is a large-scale, mineral sands mining and processing project with low environmental impacts and long term economic and community benefits. Sheffield proposes to undertake mining of mineral sands for more than 40 years from the Thunderbird deposit.

Sheffield is undertaking a Bankable Feasibility Study (BFS) and Public Environmental Review (PER) of Thunderbird, scheduled for completion in 2017. Start of construction is planned to follow with first exports through the ports of Derby/Broome targeted for 2019.

Sheffield believes that Thunderbird can help transform the community through the creation of 140 permanent and many indirect local jobs. Income would stay in the region supporting families, business, cultural values and lifestyle.

What is the environment like where the mine will be constructed?

The land is part of a pastoral station, and most of the site is covered in low, sparse eucalypt woodlands, with acacia shrubs and grasslands. The topography is flat with a gentle fall to the southeast. Rocky hills occur as outcrops to the north and east of the project area, however these will not be impacted by the project.

How will the environment be restored when mining ceases?

Most of the mine site will be rehabilitated progressively over its 40+ years of operation. The parts of the project that will be rehabilitated at closure comprise infrastructure areas needed for operation of the mine (e.g. roads, processing plant, accommodation village). These areas will be rehabilitated after the infrastructure has been decommissioned and removed.

How does progressive rehabilitation work?

The mineral deposit will be mined progressively over the 40+ year life of mine. Mining occurs as a 'moving pit', with previously mined areas being progressively backfilled, the land form reshaped, topsoil applied and vegetation established as the new void areas are opened up. Progressive backfilling and rehabilitation is therefore an integral part of the mining process and is typical of other mineral sands projects in Western Australia and globally.



“Australia is a major producer of mineral sands. Non-reactive and non-toxic, mineral sands products are used in paints and artificial joints, in toothpaste, crockery and porcelain, medicines, food colouring and sunscreen.”

The backfilling process is completed by returning almost all material mined back into the mined pit. The returned material comprises mixed mine and processed mineral sands deposit (non- (non-mineralised materials), overburden (earth overlying the mineral sands deposit) and topsoil directly back into the mined pit. Less than 5% of the material mined is taken off site as Mineral Sand Products.

Extensive materials characterisation work has been undertaken for each of these components to understand their chemical and physical properties and has demonstrated the materials to be environmentally benign in the short and long term so they are suitable for return to the voids for re-establishment of the landform and native vegetation.



What will the mine site area look like after closure?

Two constructed landforms will remain at closure, comprising the mined mineral deposit area and a tailings storage facility.

Rehabilitation of the mineral deposit area will result in a gently mounded landform, that once vegetated, will be comparable to the surrounding landscape. There will be no voids, as there are with hard rock mining operations such as those in the Pilbara or Goldfields.

The tailings storage facility is used in the first few years of operation until sufficient room has been created to start backfilling. The facility will then be closed and rehabilitated progressively. Due to the extended period between rehabilitation of initial areas mined and ultimate closure of the mine site, it is expected that the surface will contain established, mature vegetation with a final landform that is consistent with its surrounds.

