



Appendix C

Updated project description



C.1 Updated description of the modified project

Table C.1 includes a consolidated description of the modified project.

Table C.1 Updated project description for modified project

Project element	Approved project – open cut mining and <i>bulk sampling</i> activity	Approved Project incorporating Modification
Mining method	Open cut mining of West Balranald and Nepean deposits and bulk sampling extraction of up to 100,000 t of mineral ore by non-conventional methods (ie underground mining).	No change with continuation of underground mining trial at West Balranald deposit.
Project footprint	Up to 5,346 hectares (ha) comprising native vegetation, non-native vegetation and disturbed areas.	Minor change to the project footprint to accommodate the relocation of processing plant and associated surface infrastructure (Revised Balranald Project Area) with no net change in biodiversity impacts.
Mining production (predicted)	Open cut mining of ore of approximately 1,100,000 tonnes per annum (tpa) and Bulk sampling activity of 100,000 t total.	No greater than approved for open cut mining.
Processing method	Dry mining with the mining unit plant (MUP) screening extracted ore to remove oversize material. The ore is then slurried with water and pumped via pipeline to the processing plant. Oversize material is returned directly into the mine pit. The processing plant concentrates the ore to generate two primary product streams; HMC and ilmenite. The processing plant has a number of components, including the Primary Concentrate Plant (PCP), Wet Concentrate Plant (WCP), Wet High-Intensity Magnetic Separation (WHIMS) plant and Ilmenite Separation Plant (ISP). HMC would be stockpiled on site and transported to an off-site location for downstream processing. A Bulk sampling activity with mineral ore extracted via a process of underground mining and pumping slurried ore to the surface for primary separation and stockpiling. Mining by-product injected underground. HMC stockpiled on site and not transported off-site, without consent from the Secretary of DPE.	Addition of a flotation plant

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Processing rate	Ore processing rate of 475 tonnes per hour (tph) and a rougher head feed of 440 tph. Bulk sampling activity and processing rate of approximately 50 and 200 tph.	No change.
Duration of Mining	Operations may be carried out for 16 years from the date of commencement of the West Balranald Mine.	No change to duration of open cut mining. Continuation of underground mining trial at West Balranald deposit for up to 6 years.
Operating hours	24 hours per day, 7 days per week for construction, mining and processing.	No change.
Tailings and mining by-products	Tailings generated at the MUP and processing plant returned to the pit. A portion of sand tailings generated at the processing plant would be disposed using a process known as modified co-disposal with slurried sand tails and slimes placement in the tailings storage facility (TSF). A Bulk sampling activity with tailings injected underground.	Sand tailings from underground mining trial would be placed on surface directly above the mining panels ahead of mining. Topsoil and overburden would be pre-stripped from these emplacement areas to allow successful rehabilitation. Slimes and flotation tails would be reinjected underground.
Power source	Electricity supplied to the mine by connection to the existing electricity supply network. The construction and operation of a transmission line would form part of a separate approval process, if required.	Initial electricity may be supplied by diesel generators.
Raw water sources	During construction and operation, brackish water abstracted from the Olney Formation. During operation, water sources would include: • Surface runoff – generated by direct rainfall within the surface water catchment areas in the Project area. • Groundwater: – minor inflows to the pit; and – groundwater extracted from the Loxton-Parilla Sands (LPS) during dewatering. • Fresh water – supplied from the Murrumbidgee River by the water supply pipeline.	Groundwater reinjected during mining operations. Alternative fresh water supplies including a reverse osmosis plant and/or trucked in from Balranald.
Accommodation	Accommodation facility would provide up to approximately 550 single rooms/quarters to accommodate peak construction and operational workforces. The facility itself would be operated by a staff of about 10 to 20, including administration, cleaning, food preparation, maintenance and security staff.	No change.

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Access roads	There are two primary access; the West Balranald access road and Nepean access road. Internal roads within the Project area would also be constructed to minimise interaction between mining equipment and haul trucks, and general light vehicle traffic on-site. A car park would be established at the processing area at the West Balranald mine. Internal roads would be constructed using suitable overburden and gravel sourced from within the Project area, and external sources.	Minor change in alignment of northern section of West Balranald access road outside of project footprint with no net change in biodiversity impacts.