VNI West

Groundwater

Groundwater refers to subsurface water resources stored within aquifers and geological formations, which interact with surface water systems and can support ecosystems, water supplies, and broader catchment functions.

All EES documents, chapters, technical appendices, and attachments are available to view and download on the VNI West website at **vniwproject.com.au/EES**

EES Chapter 10 and ***Technical Appendix C*** outline groundwater resources, their role in sustaining ecosystems and supporting agriculture, and potential interactions with the Project.

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Chapter 10: Groundwater ↗

Technical Appendix C: Groundwater ↗

The Project area lies within the Murray Basin and is characterised by generally shallow groundwater, typically less than 5 m below ground level, within the Quaternary Aquifer, Shepparton Formation, and Loxton-Parilla Sand.

Potential interactions with groundwater may occur during both construction and operation, primarily through piling activities, potential aquifer interaction, works near existing groundwater bores/wells, and the use and storage of fuels and hazardous materials.

During construction, piles are expected to be installed to depths of up to approximately 24.5–34 m, which may intersect groundwater. Plant and equipment using hazardous materials would also be present, increasing the potential for spills or leaks. To manage these impacts, prior to construction, a site-specific groundwater assessment will be undertaken for any transmission towers located within 10 m of a potential groundwater dependent ecosystem. Any required mitigation or monitoring measures will be documented in a Groundwater Management Plan and incorporated into the Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan.

In addition, to help avoid any aquifer interconnection during piling, the construction methodology will be reviewed by a suitably qualified specialist. Existing groundwater wells will be identified, surveyed, and recorded in the CEMP. Refueling and maintenance activities will be undertaken at least 20 m from waterways (or as far as reasonably practicable), with spill containment measures in place.

In the event of a significant spill, groundwater monitoring will be triggered in accordance with a Trigger Action Response Plan.

With these mitigations in place, residual construction impacts to groundwater are low, except for the risk of a spill, which remains at a residual impact of medium.

During operation, installed piles may locally impede groundwater flow, and sealed surfaces at the Tragowel Terminal Station and Bulgana Reactor Station may marginally reduce groundwater recharge. However, these effects are expected to be negligible at a catchment scale. Maintenance activities would continue to involve hazardous materials, with spills managed through the same controls applied during construction.

No specific mitigation is proposed for changes in groundwater recharge, as any reduction is expected to be negligible.

Overall, with the implementation of the proposed management measures, potential impacts to groundwater values, functions, and users are expected to be low. The primary residual impact relates to potential spills of hazardous materials, which is assessed as medium in consequence but able to be effectively managed through established controls and response procedures.