APPENDIX 27 – AQUATIC GROUNDWATER DEPENDENT ECOSYSTEM FIELD ASSESSMENT

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Attention: Richard Oldham

New Lenton Project – Aquatic GDE field assessment

AARC Environmental Solutions Pty Ltd (AARC) was commissioned by New Lenton Coal Pty Ltd (NLC) to undertake an Aquatic Groundwater Dependent Ecosystems (GDE) field assessment to respond to the following IESC adequacy review comment on the Public Environment Report (PER) for the New Lenton Project (the Project):

> *No field assessment of aquatic GDEs within the project area was undertaken, despite the Isaac River and the unnamed tributary being identified as 'High Potential' aquatic GDEs in the desktop assessment (3D Environmental 2023, p. 29). Field surveys are required to determine whether aquatic GDEs occur in the project area, especially in the region of predicted drawdown. If aquatic GDEs are found, baseline surveys will be required to characterise the ecological condition and groundwater- dependence of these GDEs and what impacts are likely to occur from the predicted drawdown.*

The Project is located within the Northern Bowen Basin, approximately 65 km north of Moranbah and 120 km south-west of Mackay, and is situated within the Isaac Regional Council local government area. The Project is located on Mining Lease (ML) 70337, ML 700053 and ML 700054 (Figure 1) (referred to as the New Lenton MLs), held by Lenton Joint Venture (LJV). LJV is an unincorporated joint venture between New Lenton Coal Pty Ltd (NLC) and MPC Lenton Pty Ltd. NLC is a wholly owned subsidiary of Bowen Coking Coal Ltd (BCC), as of July 2022. The proposed disturbance area for the project is shown in Figure 1).

Aquatic GDEs are defined as aquatic ecosystems that rely on the surface expression of groundwater, this includes surface water ecosystems that may have a groundwater component, such as rivers, wetlands and springs (Bureau of Meteorology - Groundwater Dependent Ecosystems Atlas).

The Commonwealth Bureau of Meteorology (BoM) has developed the National Groundwater Dependent Ecosystems Atlas (GDE Atlas) as an interactive tool, to assist in the identification of potential groundwater dependent ecosystems (GDEs). The GDE Atlas provides ecological and hydrogeological information on potential GDEs and ecosystems that could potentially use groundwater.

The BOM GDE Atlas identified areas as 'High potential Aquatic GDE – from national assessment' within and adjacent the proposed disturbance area as a result of a national-scale analysis based on a set of rules that describe potential for groundwater/ecosystem interaction and available GIS data. These 'High potential aquatic GDEs' identified within and adjacent the proposed disturbance area are associated with the Isaac River and two unnamed tributaries of the Isaac River; one located along the northern boundary of the proposed disturbance area, and the second one located to the south of the proposed disturbance area (Figure 1).

Scope of work

The purpose of the field assessment was to determine if there are any aquatic Groundwater Dependent Ecosystems (GDEs) within and adjacent the proposed disturbance area, particularly in the region of predicted drawdown (Figure 1).

The scope included a field assessment to identify surface expressions of water or any permanent or semi-permanent water in a creek or river system that supports an aquatic GDE in the following:

- Isaac River (between the northern boundary of the New Lenton MLs and the backwater of the Burton Gorge Dam);
- Ti-tree Creek (between the border of New Lenton MLs and the Isaac River);
- An unnamed tributary located along the northern boundary of the proposed footprint (between the Isaac River and the border of New Lenton MLs); and
- An unnamed tributary south of the boundary of the proposed Project footprint (between the Isaac River and the Ellensfield Road).

Field assessment methodology

The field assessment was conducted between the 11th and 13th of September 2024 by AARC Principal Ecologist Lucia Lopez, accompanied by a Burton Coal Mine site environment and community officer. Burton Coal Mine is owned by BCC and is located adjacent to the New Lenton Project.

The assessment methodology involved thoroughly exploring, on foot, the pre-designated survey area, comprising the creek and river systems mentioned above and shown in Figure 1 as the survey area. A comprehensive examination was undertaken along the riparian zones of the Isaac River, and the tributaries listed above, with the objective of recording visual observations, if any, of the following:

- standing water (if water present, samples would be collected);
- saturated sediments; and
- changes in vegetation condition or vegetation type (e.g. aquatic plants or wetland plant species).

The assessment was conducted along the main channel of the creek and river systems within the survey area. For the Isaac River, this included the low-flow channel and the terraces where backwater might accumulate during flow events. Topographic low points along the survey area were specifically targeted as they have the potential to hold water.

Field assessment results

No surface expressions of permanent or semi-permanent water or aquatic ecosystems were identified in any of the creeks or river systems assessed. No signs of vegetation indicating regularly inundated areas were observed during the survey.

Given that the watercourses show no evidence of relying on the surface expression of groundwater, it is considered that none of these watercourses are groundwater-dependent aquatic ecosystems.

Representative images of the creeks and the Isaac River are shown in A1.

Yours sincerely

Lucia Lopez
Principal Ecologist

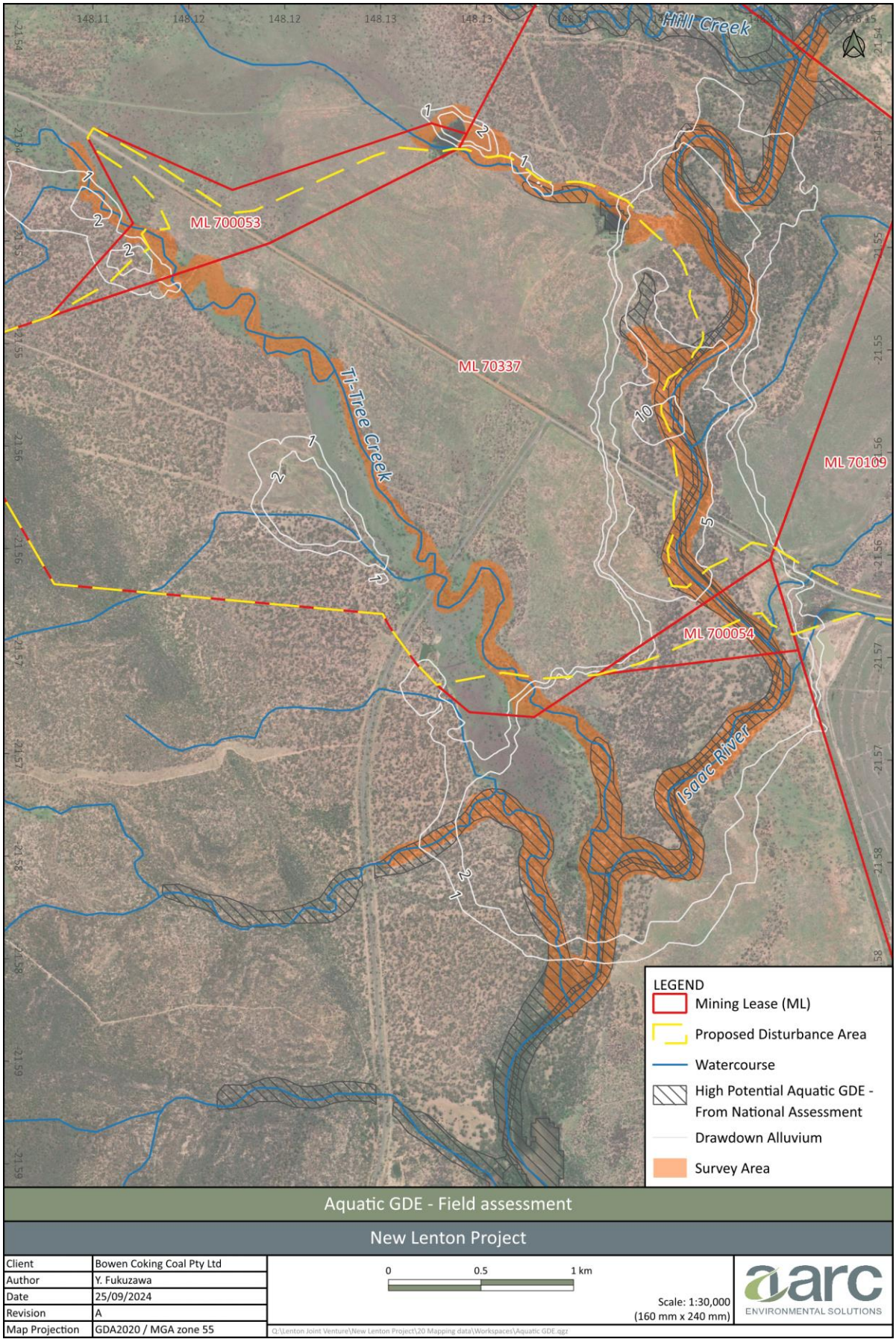

Figure 1: Aquatic GDE field assessment - New Lenton Project

A1 Survey photos

Representative photos of Isaac River:


Representative photos of Ti-tree Creek:


Representative photos of the unnamed tributary along the northern boundary of the proposed footprint:


Representative photos of the unnamed tributary south of the proposed Project footprint: