SHEET 3 – WATER, CATCHMENT VALUES AND HYDROLOGY

The objective of this information sheet is to:

- summarise the status and the key findings of the water investigations to date; and
- invite feedback on the draft environment effects statement (EES) scoping requirements relating to water.

Status of study program

Study	Consultant	Status
Groundwater modelling and impact assessment	Jacobs	Ongoing
Surface water flow modelling and impact assessment	Golder	Ongoing

Key findings to date

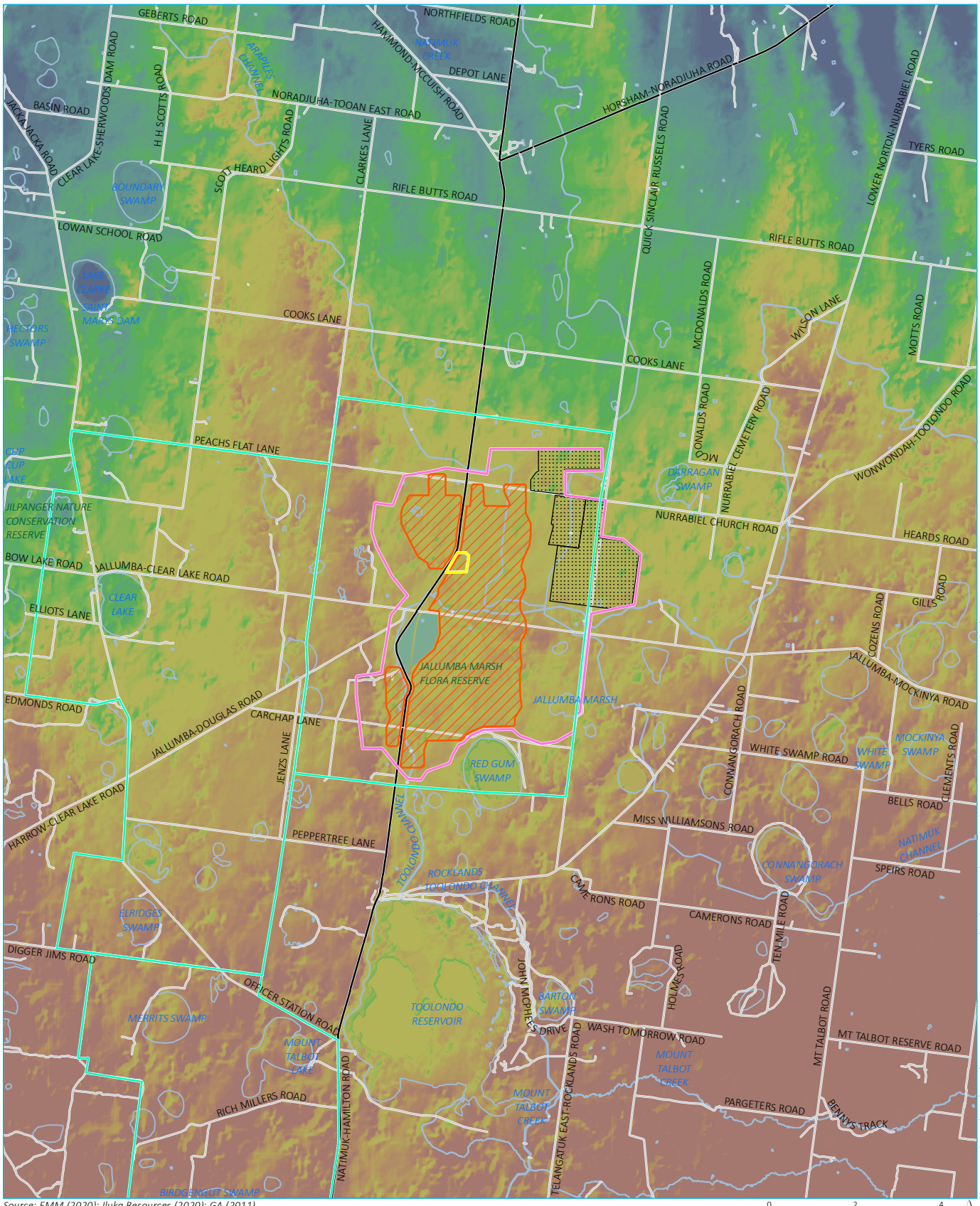
Surface water

A baseline surface water assessment was undertaken in November 2018 to identify the surface hydrology features of the mine layout development envelope and surrounding area, including identification of site sub-catchments, flow paths, and onsite and offsite receptors.

Surface water in the mine layout development envelope and surrounds can be characterised as follows:

- The mine layout development envelope and surrounding area is generally flat, open farmland. There are no obvious natural water channels, however there is a network of unlined channels in and around the mine layout development envelope (Figure 1).
- There is very little surface runoff; the major barriers to overland water flow include the ridge that runs along the western portion of the surface water study area, the road network and the network of channels network (Figure 1).
- Following prolonged or heavy rainfall, surface water typically flows toward the north and east of the site. Surface water flows into the mine layout development envelope and toward Red Gum Swamp from the south.
- Due to the relatively flat topography, there is a low risk that flooding will adversely impact people, buildings and vehicles within the majority of the mine layout development envelope.
- Monitoring data for Red Gum Swamp and the Jallumba Marsh Flora Reserve indicates that water quality varies widely and many parameters can exceed water quality guidelines.

The Project will impact surface water flows across the mine layout development envelope and has the potential to impact downstream hydrological regimes. The level and location of impact will be dependent on the final site design and layout.



Source: EMM (2020); Iluka Resources (2020); GA (2011)

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GDA 1994 MGA Zone 54

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KEY

- Surface water study area
- Mine layout development envelope
- Plant area development envelope
- Indicative mine extent
- Test pit site
- Major road
- Minor road
- Water channel
- Waterbody
- Nature conservation reserve

Ground surface level

185 m

135 m

Surface topography

Iluka Resources Limited
Technical information sheet 3
Water, catchment values and hydrology
Figure 1

EMM
creating opportunities

A surface water impact assessment is underway to assess potential Project-related impacts on surface water quality, flow paths, flow rates, surface water users, receptors and aquatic ecosystems within the mine layout development envelope and the surrounding area, including downstream water bodies.

Groundwater

Groundwater monitoring has been undertaken across the mine layout development envelope and surrounds since November 2017. A baseline groundwater assessment was undertaken in May 2018 to identify the hydrogeological features of the mine layout development envelope and surrounding area. The assessment included a characterisation of the regional and local hydrogeological units and thicknesses, groundwater quality, levels, flow directions and a review of groundwater users and the existing groundwater monitoring network.

Additional groundwater monitoring wells were installed within the Project area in October 2018 and July 2019.

Groundwater in the mine layout development envelope and surrounds can be characterised as follows:

- The regional water table is approximately 15–18 metres (m) below ground level.
- The mineral sands ore is hosted within the lower portion of the Loxton Parilla Sand unit and is almost entirely beneath the regional water table. While the mining method is yet to be defined, dewatering of the mine pit may be required in advance of mining.
- Groundwater within the mine layout development envelope generally flows in a north to north-westerly direction.
- Due to the depth below ground surface, and the hard-indurated layer identified at the upper surface of the Loxton Parilla Sands (Karoonda surface, approximately 7–8 m below ground level) tree roots are unlikely to be present in or rely on the regional water table. The Karoonda surface may support the development of localised perched water tables more likely to be accessed by deep rooted vegetation.
- Regionally, the salinity of groundwater in Murray Basin sediments varies from brackish to saline.
- Based on drill cutting samples takenfrom water bore drilling programs,there is no evidence of the Murray Group Limestone unit being present within, or immediately to the west of the mine development envelope.
- No active groundwater users have been identified within 5 kilometres (km) of the centre of the mine layout development layout envelope.

A detailed groundwater impact assessment is underway to assess potential Project-related impacts on local and regional groundwater levels, flow, quality, groundwater dependent ecosystems, receptors and beneficial uses.

HAVE YOUR SAY

Public comments are invited on the draft scoping requirements in relation to matters that should be investigated and documented in the environment effects statement (EES) process for the proposed Wimmera Project.

The draft scoping requirements are open for public comment until midnight on 31 March 2020.

Any comments received will be considered by DELWP during the finalisation of the scoping requirements and will be treated as public documents. Your comments also will be considered by the proponent in the preparation of the EES. Personal details and identifying features (eg names, addresses and contact details) will be removed before your submission is shared with Iluka Resources Limited. You must provide written consent for DELWP to provide your name and address to Iluka Resources Limited.

Comments should be emailed to: environment.assessment@delwp.vic.gov.au

Written comments can also be posted to:

Impact Assessment Unit, Planning
Department of Environment, Land, Water and Planning
PO Box 500, EAST MELBOURNE, VIC 8002

To discuss the draft EES scoping requirements with Iluka or for more information please contact Iluka:

Phone: 1800 305 993

Visit: www.iluka.com/engage/wimmera

Email: wimmeraproject@iluka.com

Drop in: Wimmera community drop-in centre at Horsham Real Estate office Tuesdays and Fridays 9.30 am–2.30 pm or by appointment

Water supply

Water is imported into the Wimmera basin from other catchments [1]. The largest water use in the Wimmera basin is for 'stock and domestic use, as well as some for urban supply at approximately 13,000 gigalitres per annum (GL/pa).

The mine will use about 5.5 GL/pa of water during operations (by way of comparison, the Toolondo Reservoir typically holds approximately 16 GL) (Victorian Water Accounts 2017/18).

To ensure 95% security in all years, and allowing for climate change impacts, water will be sourced from Iluka's existing water allocations for the Douglas and Echo mines (5 GL from Rocklands Reservoir and 3 GL from the Strathlynn borefield), and an additional Rocklands Reservoir allocation of between 800 ML and 3,000 ML.

The water will be delivered to the mine via a new pipeline connected into the existing Rocklands-Douglas pipeline close to the Douglas mine.

Currently, Rocklands Reservoir would still be under-allocated if the development proceeds.

[1] https://www.mdba.gov.au/discover-basin/catchments/wimmera

Draft EES scoping requirements

The Victorian Department of Environment, Land, Water and Planning (DELWP) has released the draft EES scoping requirements for the Wimmera Project and is seeking public comment. These scoping requirements will guide the technical assessments that will be undertaken as part of the preparation of the EES for the Wimmera Project.

The draft EES scoping requirements are available here: www.planning.vic.gov.au/environment-assessment/browse-projects/projects/wimmera-mineral-sands