

## **Otway Street**

### **Setting**

This site covers an area of approximately 10.4Ha bounded by Larter St to the west, residential and light industrial properties to the north, Lal Lal St to the northeast, mixed residential and light industrial to the east and southeast. The property titles show the site is split, in a north-south orientation, by a road alignment, the continuation of Otway Street. This road has not been constructed. The key features of the site are shown in Figure 1.

Lal Lal Drain crosses the site in a roughly east to west direction. It is a heavily modified stream and sections in the eastern half of the site appear to have been channelized at some time in the past.

An area of about 0.8 Ha was levelled in the northeast corner along the Larter Street frontage with the excavated material pushed immediately to the east to create a second levelled area used for equipment laydown and the working area for the second B2A shaft. Much of the site to the east of the Otway Street alignment was stripped in preparation for construction of tailings and water dams, although neither was completed, and the area has revegetated.

A small sludge dam (approx. 0.3 Ha and 1 m deep) is in the eastern portion of the site near the eastern and southern boundaries. This pond appears to have been constructed as a 'cut & fill' structure from the slope of the land with the embankment constructed from material cut from the rear of the dam. The embankment ranges from ground level to approx. 2 m high at the maximum point, and about 8 m from centreline to toe of the embankment, also at the greatest height. Next to the B2 shaft is a smaller pond that was used as a cuttings or sediment trap during the shaft development. This smaller pond is approx. 900 m<sup>2</sup>. This pond has an embankment about 0.5 m high surrounding the pond.

A lake (a former clay pit) occupies the southern portion of the site with light industrial adjoining the southern boundary.

### **Brief History**

Three historic shafts were sunk on the property, the largest being that of the Exchange Co in the north and two others in the south, near the clay pit lake.

A larger water body that was a clay pit was excavated between 1957 and 1986 prior to use of the site as part of the Ballarat Gold Mine works. The clay removal works stripped vegetation, soil and clays from the western half of the site from the southern boundary to the edge of Lal Lal Drain and from Larter Street to Otway Street.

This site was the proposed location for a mine access, process plant and tailings dam as described in the 1987 EES for the Ballarat Goldfields proposal. Shaft B2 was commenced at this location in 1989-1990 but was abandoned at a depth of about 32 m due to geotechnical issues. A second shaft, B2A was started about 100m to the east of B2, however it also failed. Other site works included partial stripping of much of the site in preparation for water storage and tailings dams, reshaping to create level work platforms and the construction of noise barriers.

The shafts have been closed and backfilled or covered and the stripped areas revegetated.

The small sludge dam contains approx. 1000 m<sup>3</sup> of As/Fe sludge from the original Llanberris water treatment plant. The site was then used for storage of core, miscellaneous equipment

and mullock from the nearby Golden Point shaft



Figure 1 Site Layout

Figures 2 and 3 show the transition over the period from 1975 to 1990, that is prior to the construction of the shafts and when construction was underway.

### **Rehabilitation Plan**

The rehabilitation for Otway Street is part of the whole mine Rehabilitation Plan, however as this site is no longer used in the routine mining functions it is to be rehabilitated and returned to the Crown Land Manager.

The rehabilitation plan addresses:

- Knowledge gaps in:
  - community engagement with an emphasis on understanding potential post-mining landforms.
  - geochemical status of the soils, mullock heap, cuttings pond, and sludge pond.
  - groundwater quality, and connections with Lal Lal Drain and the clay pit lake.
  - updated site survey to re-establish boundaries, map contours and locate key features for detailed planning purposes.
- Making the site safe for general access by:
  - Removing remnant structures and recontouring steep slopes to safe, stable forms.
  - Permanently backfilling and sealing B2A shaft.
  - Remnant infrastructure removal including noise bund, concrete pads, and the cover on B2A shaft.
  - No utility infrastructure or services remain on the site.
- Characterising, removing, remediating or re-using remnant mining related materials (e.g. sludge pond, cuttings pond and mullock heap) that are potential sources of contamination to soil, surface water or groundwater.
- Characterising any contamination of soil and waters and developing a risk profile for the site against regulatory criteria.
  - A detailed site investigation commenced on 2 September 2021 with a screening survey using XRF conducted to inform a detailed soil survey and subsequent groundwater investigations.
- Developing and implementing remediation plans to meet land use objectives agreed with the Land Manager and following regulatory requirements.
- Remove retaining wall for noise bund and remove bund.
- Rip compacted areas to a minimum 0.5 m and topsoil to 0.3 m.
- Reshape steeper slopes to approx. 1 in 5 to match existing topography of the site.
- Refining and implementing a vegetation plan focused on weed management and reintroducing native species, particularly along Lal Lal Drain.
  - Resow ripped and reshaped areas with species that are found in Valley Grassy Floor (EVC Code 0047) and Heathy Dry Forest (EVC Code 0020) communities.
  - Plant species from the relevant EVC including the generic wetland EVC if appropriate in the clay lake fringe and Lal Lal Drain areas.

- The pre-existing clay pit lake will be unaltered apart from weed control and planting additional vegetation around the fringes to further stabilise the banks with species listed in generic wetland EVC.
- Reshaping and removal of the noise bund will consider the visual amenity, including retaining the existing trees along boundaries to maintain a similar visual look as currently exists.
- The fencing around the site will be maintained until the site is handed back to Crown Land. This is to minimise uncontrolled dumping of rubbish and ensure the rehabilitation activities are protected.
- Establishing monitoring and maintenance plans to assess the effectiveness of the rehabilitation activities and address any aspects that do not meet criteria.



Figure 2 Image 1975



Figure 3 Image 1990