10-27. GROUNDWATER FLOW DIRECTION

Concern:
The baseline groundwater flow direction is not well understood. This raises a concern regarding the prediction of impacts from groundwater contamination during and after mining.

This concern responds to the following SEARs for SSD 5765:

- A description of the existing environment likely to be affected by the development, using sufficient baseline data;
- Part 3: impacts to significant water resources or threatened species are minimised to the greatest extent practicable
- Assessment of likely impacts to aquifers; detailed site water balance, management of excess water and reliability
- DRG, Attachment 2A requires rehabilitation methods including
  e) monitoring for rehabilitation
  l) ii) assessment of potential acid mine drainage
  m) iii) groundwater assessment for final water level in any tailing storage facility void
  o) consideration of controls
- DRE/DPE requires a Water Management Strategy that considers
  - the existing surface and groundwater qualities
  - a robust baseline
  - a description of how groundwater and aquatic ecosystems will be monitored, Trigger Action Response Plan and trend identification

DISCUSSION

Figure 1 shows the groundwater contours presented in the EIS. Groundwater flow directions can be inferred from these contours as marked as blue arrows.

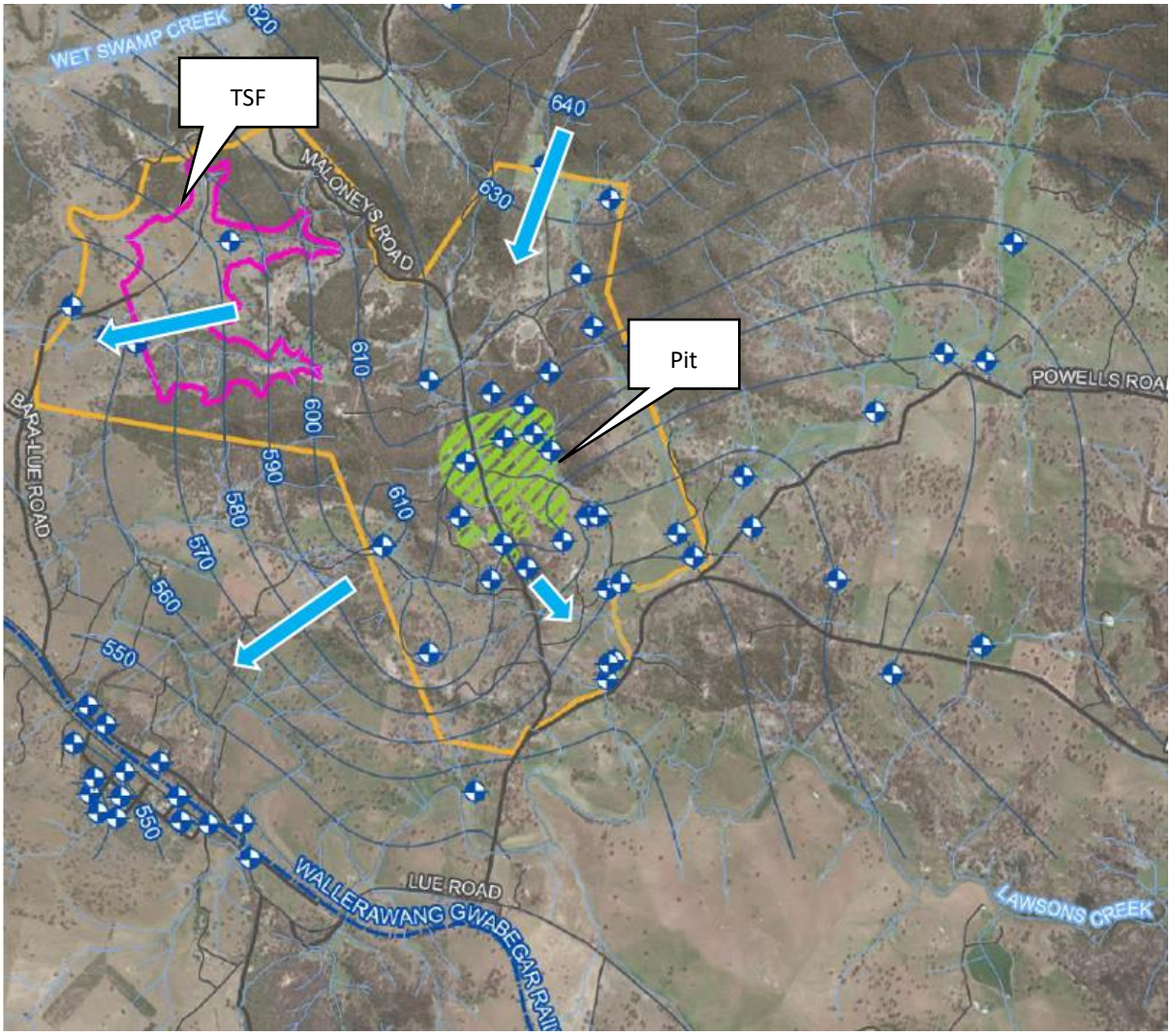

Figure 1: Groundwater contour map – adapted from Figure 18 (Jacobs (Australia), 2020, pp. 5-97)

Section 4.5.11.2 (Jacobs (Australia), 2020, pp. 5-96) reports a general south-easterly flow from the TSF (and pit), however, with reference to Figure 1 an inferred direction to the west-southwest from the TSF and the southwest from the pit is evident (towards Lue village). This would appear to be either an error in the reporting or an issue with the hydrogeological conceptualisation which may have impacts on the hydrogeological modelling and impact assessment.

REFERENCES

Jacobs (Australia), 2020. *Part 5 - Groundwater Assessment,* Sydney: Silver Mines Pty. Limited.