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Dear Troy,

Targeted Flora Survey for *Roycea pycnophylloides* T
Katanning Gold Project

1. Background and Scope

Jenny Borger Botanical Consulting (JBBC) is pleased to provide the results of the targeted flora survey for Ausgold's Katanning Gold Project (KGP) for *Roycea pycnophylloides* – Saltmat – a threatened species from the Avon Wheatbelt IBRA region. Ausgold requested surveys of four areas – adjoining land to KGP bore near Dataline Rd (L70/253), KGP bore west of Nagel Rd, south of Nyabing Road (Harris Bore) (L70/252), Dingo bore, adjacent to the Rifle Range Reserve on the south side; and areas of Coblinine Nature Reserve, 15 km west of KGP.

Jenny Borger (botanist) from JBBC conducted a survey with John Cooper, Senior Environmental Advisor (Ausgold) on the 14th and 15th of April 2025. The locations and maps of the survey areas are presented in Appendices 1 and 2. The three bores are located on private land.

Roycea pycnophylloides

Roycea pycnophylloides (Saltmat) is a threatened species in the Chenopodiaceae Family recorded from the Avon Wheatbelt and Mallee IBRA regions in the south west of Western Australia. It was known from 18 populations as of 2010, with 13 of those within lands managed for conservation. The closest populations (2a, 2b and 2c) are located within the Chinocup Nature Reserve approximately 44 km east of KGP. A total of 1,481,250 plants were recorded in 2000 which were in a healthy to moderate condition with the main threat being hydrological changes (DEC 2010).

Populations of *R. pycnophylloides* are found in the Avon, Yilgarn and Lockhart catchments of the central and southern Wheatbelt region of south-west Western Australia, growing along shorelines or on open saline flats of major drainage channels from just below the low watermark to around the highwater mark of lake shorelines where populations occur in white to pale brown sand over sandy clay both independently of or within nearby fringing vegetation. Associated plants include *Frankenia* spp. *Tecticornia* spp. *Atriplex hymenotheca, Melaleuca halmaturorum, M. thyoides* and ephemeral species (A. Harris 2004).

Climate

The climate of the Avon Wheatbelt is described as warm, dry Mediterranean with highest rainfall during the winter period, with 300 – 650 mm and 7 – 8 months of dry conditions. The closest Bureau of

Meteorology (BoM) recording stations are located at Katanning (BoM Station 010916, 1999 -) 35 km west of KPG with an annual average of 429 mm and Dumbleyung (BoM 10546, 1910 -) 32 km north. Rainfall recorded during 2024 and up to the time of survey with the long term monthly means is presented in Figure 1. Annual falls have been below average from 2022 – 2024 (Katanning 353.4 mm, 309.2 mm and 291.4 mm; Dumbleyung 366.9 mm, 276.9 mm and 254.3 mm)), with the last above average year being 2021 with 532.6 mm at Katanning and 488.4 mm at Dumbleyung. The area received well below average falls from September 2024 to February 2025, followed by above average rainfall in March and April (up to the time of survey). The dry conditions since 2022 may have impacted the vegetation.

Mean maximum temperatures at Katanning were 1° C higher than average and mean minimum temperatures 0.6° C higher than average in 2024.

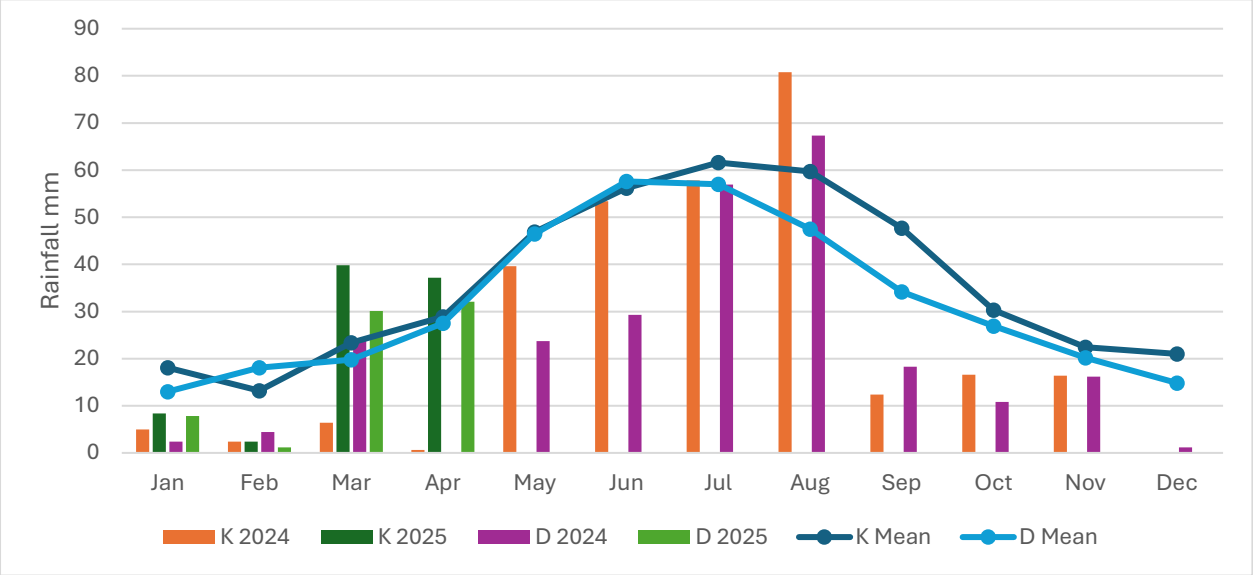


Figure 1 Monthly rainfall recorded at Katanning (K) and Dumbleyung (D) with long term means

2. Methodology

2.1 Field Survey

Targeted surveys of the three bore areas and parts of Coblinine Nature Reserve were undertaken by two people in mid-April and traversed by foot. One GPS track is recorded for each site (Appendices 1 & 2). Notes were taken on the landforms, vegetation and condition. The target species is described as a perennial herb and a mat-like sub-shrub. Its longevity is not described. Images, descriptions and a diagram were sourced from various publications (WA Herbarium 1998 -; Wilson 1984, Harris 2004; DEC 2010) to aid in field identification.

2.2 Limitations

The drier conditions experienced from 2022 – 2024 with very low falls from September 2024 to March 14th 2025 may have had some impact on the survival of plants in the survey areas. Above average falls in March and April 2025 may have resulted in germination, but this would not likely occur by the time of survey or the seedlings would be very small and not recognisable.

The habitat surrounding the three bore areas was determined to be unsuitable for the presence of Saltmat and intensive surveys of the areas was not undertaken. The northern bore site on Dataline Road and southern bore (Harris Bore) south of Nyabing Road were saline landscapes created by secondary salinity with the presence of mostly dead woodland areas in valley floors with an understorey of salt tolerant species such as Tecticornia and Atriplex. Dingo Bore is located much higher in the landscape with a minor saline drainage line on the north side – also a product of secondary salinity.

3. Results

The habitats present at the bore sites are likely to be unsuitable based on the description in the Interim Recovery Plan (DEC 2010). No plants or signs of dead Saltmat were identified at the bore sites.

*denotes alien (weed) species (grasses were mostly dried off with residual dried seed heads)

3.1 Northern Bore - Dataline Rd and Fairclough Rd

Condition: Degraded; unsuitable habitat

Impacts: Secondary salinity, fenced but grazed (sheep); small areas of tree planting along higher edges on the east and south; changes to drainage from road construction; drains and old dam (saline); weeds – *Mesembryanthemum nodiflorum* (Iceplant)

The vegetation was dominated by *Tecticornia undulata* low shrubland with occasional *Maireana brevifolia, Chenopodium curvispicatum, Atriplex bunburyana, Tecticornia halocnemoides* and dried, grazed grasses. A few *Melaleuca ?scalena* were present on the edges on better drained areas.

Table 1: Northern Bore area, Dataline Rd (L70/253)

	
Bore area – planted trees along higher edges; ground cover mostly absent; signs of recent grazing. GPS: 581657 E/ 6296205 N	*Tecticornia* low shrubland area – *Tecticornia undulata, Maireana brevifolia, Chenopodium curvispicatum, dried off grasses*

3.2 Central Bore – Dingo Domain; adjacent to Rifle Range reserve

Condition: degraded; heavily modified; unsuitable habitat

Impacts: Historic mining, old pit (filled with water, relatively fresh) and waste rock dumps; saline creek on north side; adjacent to farmland on north, west and south sides

Drainage line: drainage from woodland areas to the east; *Acacia acuminata* isolated low trees over *Maireana brevifolia, Chenopodium curvispicatum, Hordeum leporinum*, Avena barbata*, Salicornia quinqueflora* (1 plant), *Hordeum hystrix**

Table 2: Dingo Bore

	
Disused pit – several water birds present including Black Swans	Drainage line on north side with farmland on RHS with established revegetation

3.3 Southern Bore (Harris Bore); south of Nyabing Road (L70/252)

The bore is located within agricultural land. The area surveyed is remnant bushland on the western side. GPS: 587494 E/ 6277229 N

Condition: degraded to good; many deaths of mature trees, trees with epicormic growth; replacement of shrubby understory with chenopod low shrublands with the exception of low rises; unsuitable habitat

Impacts: secondary salinity, grazing, farming impacts (tracks, clearing), weeds; drought impacts

Eucalyptus wandoo, E. longicornis open woodland to isolated trees over *Melaleuca brophyi* sparse shrubland over *Tecticornia undulata, Heliotropium curassavicum, Maireana brevifolia, Lepidosperma* sp., germinating forbs low chenopod shrubland. Other species included *Mesembryanthemum nodiflorum*, Hordeum hystrix*, Disphyma crassifolium* (sterile), other dried grasses not able to be identified.

Table 3: Harris Bore

	
Bore location – cropping land in background	The area once supported Eucalypt woodlands which are now mostly dead, with occasional live trees on higher areas. Many trees had drought impacts – crown death. Epicormic growth was present on some trees.

3.4 Coblinine Nature Reserve – 14 km west of the mine site

Ausgold requested a survey of areas adjacent to Warren Road for *Roycea pycnophylloides*. Coblinine NR is located along the Coblinine River with its headwaters east of Katanning and draining into Dumbleyung Lake. There are no records along the drainage line; however there is potential habitat present. The areas adjacent to Warren Road had significant areas of samphire shrublands with dead timber near the watercourse, with areas of *Melaleuca* shrubland on higher ground. The areas appear to be the result of secondary salinity with significant areas of dead woodlands present. A few species of *Tecticornia* were present; however not all had fruiting structures present so the identifications are tentative. The areas south of Ranford Road looked more promising and parts of this area was also surveyed. No plants resembling *Roycea* were found. Some of the smaller shrubs had likely died from drought impacts and were identified as a *Frankenia* sp.

Table 4: Coblinine NR – Warren Road

Warren Road 14/4/2025 GPS: 570028 E/ 6282891 N Low sandy rise; drought impacts, weeds Not likely to be suitable habitat *Melaleuca lateriflora* shrubland over *Tecticornia spp., Disphyma crassifolium, Frankenia sp.*, dried grasses, *Mesembryanthemum nodiflorum**	

Warren Road 14/4/2025 GPS: 570940 E/ 6283416 N North side of road near old bridge Drainage channel with low sandy clay banks *Tecticornia* low shrubland (*T. moniliformis*?)	
Warren Road 15/4/25 GPS: 570772 E/ 6283247 N South side of road, main channel Secondary salinity; remains of old trees; flooded; some deaths of low shrubs along the sandier areas *Tecticornia* low open shrubland	
Warren Road 15/4/25 GPS: 570649E/ 6283023 N South side of road; west of main channel Sandy rise; the *Melaleuca* is recorded as an associated species of *Roycea*. *Melaleuca halmaturorum* tall shrubland over *Tecticornia spp., Disphyma crassifolium* low chenopod shrubland	

Table 5: Coblinine Reserve – Ranford Road

Ranford Road 15/4/25 GPS: 569025 E/ 6277355 N Clay pan with surrounding banks; remnants of woodland; secondary salinity; unlikely to be suitable habitat Banks – Tecticornia spp. low shrubland	
Ranford Road 15/4/25 GPS: 569000 E/ 6277341 N Sand bank with tall shrubland on mid to upper slopes *Melaleuca halmaturorum, Casuarina obesa, Melaleuca lateriflora tall shrubland over Disphyma crassifolium low isolated shrubs* Other species: *Melaleuca brophyi* on lower slopes	
Ranford Road 15/4/25 GPS: 568997 E/ 6277186 N Sand bank; lower slopes adjacent to lake area. This area had *Frankenia* present and there is possibly suitable habitat present in the area. The banks were sandier than the first site and better drained. *Tecticornia halocnemoides, T. syncarpa, T. pergranulata subsp. elongata, T. moniliformis, Disphyma crassifolium, Frankenia sp. (sterile) low open shrubland*	

The aerial image (Appendix 2) of the Ranford Road area, shows a system of sandy banks 1 – 4 km south of the road which may be better potential habitat. The area closer to the road has been impacted by secondary salinity with the remnants of woodlands still present. This is also likely to be the case further south; however the presence of better drained sandy areas may provide suitable sites. As mentioned earlier, there are no records of *Roycea* from this drainage line.

4. Conclusions

No *Roycea pycnophylloides* were found at the three bore sites and it was determined that the habitat was very unlikely to be suitable. No plants were found adjacent to roads in Coblinine Reserve; however there is potential for suitable habitat to be present 1 – 4 km south of Ranford Road where the aerial imagery indicates significant areas of sandy banks. Vegetation and flora surveys of Ausgold tenements for the Katanning Gold Project by Mattiske Consulting (2025) also found no *Roycea pycnophylloides*.

5. References

Bureau of Meteorology (2025) Rainfall records for Katanning (BoM Station 010916, 1999 -) and Dumbleyung (BoM Station10546, 1910 -). Accessed April 2025

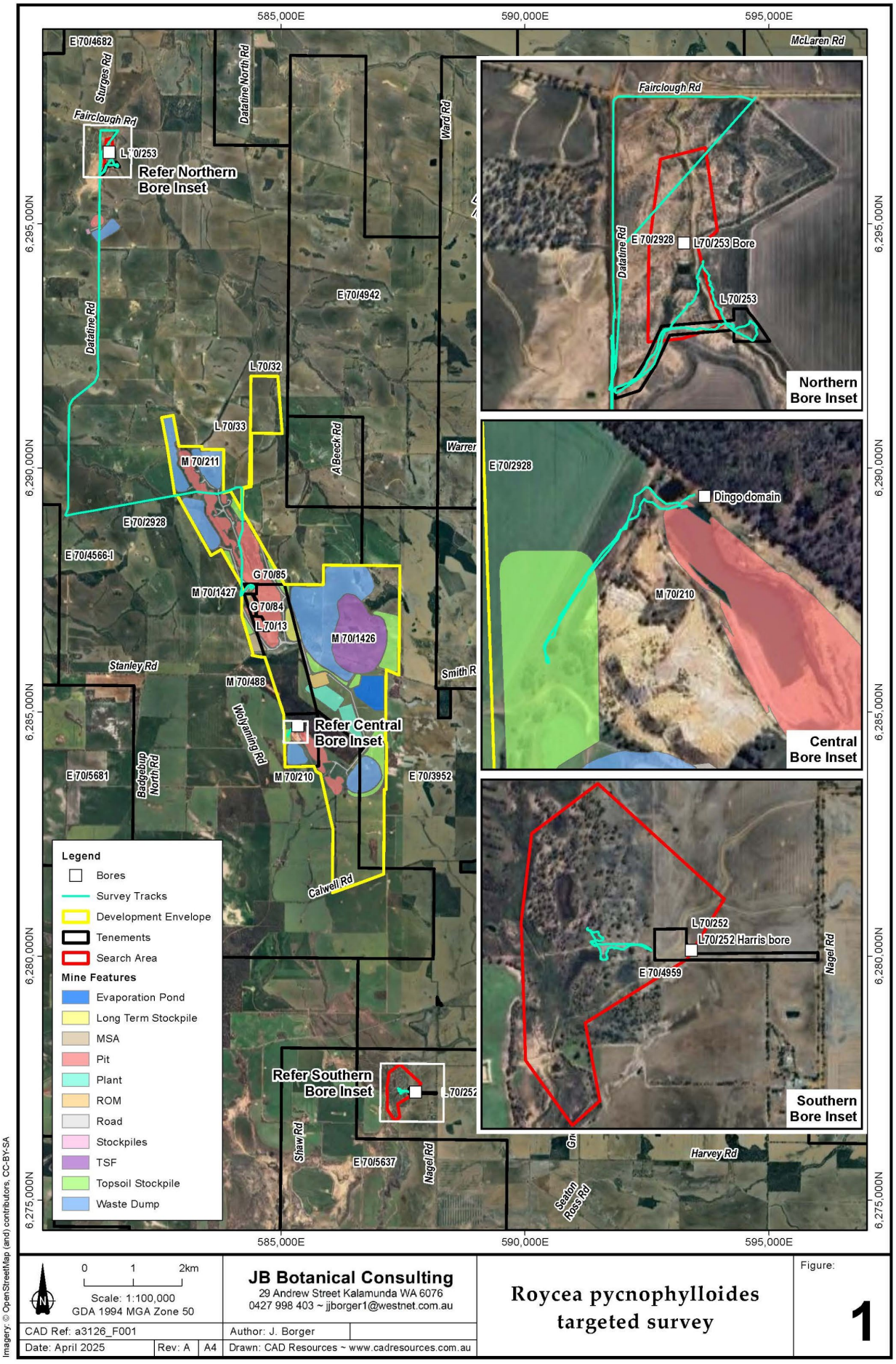
Department of Environment and Conservation (2010) WA Interim Recovery Plan No. 231. Saltmat (*Roycea pycnophylloides*) Recovery Plan.

Harris A (2004) Population Characteristics of Roycea pycnophylloides (Saltmat), a framework for monitoring change. Unpublished report to the Western Australian Threatened Species and Communities Unit (WATSCU).

Mattiske Consulting Ltd (2025) Flora and vegetation assessment for Ausgold Exploration Pty Ltd, Katanning Gold Project, Katanning

Wilson P G (1984) Chenopodiaceae. *In* Flora of Australia Volume 4 Phytolaccaceae to Chenopodiaceae. Australian Government Publishing Service Canberra. pp 216 – 217

Appendix 1 Location of Ausgold bore survey areas with GPS tracks



Appendix 2 Coblinine Nature Reserve areas surveyed – Warren Road and Ranford Road