



## Application for Works Approval Amendment

### Part V Division 3 of the *Environmental Protection Act 1986*

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<b>Works Approval Number</b>	W6717/2022/1
<b>Works Approval Holder</b>	Paddington Gold Pty Ltd
<b>ACN</b>	008 585 886
<b>File Number</b>	APP-0026374
<b>Premises</b>	Golden Cities  Part of mining tenements: L24/228, M24/188, M24/251, M24/876, M24/557, M24/425, M24/564 and M24/565 As depicted in Schedule 1  As defined by the Premises map attached Schedule 1 and by the coordinates in Schedule 2 of to the Revised Works Approval
<b>Date of Report</b>	13 February 2025
<b>Decision</b>	Revised works approval granted

**MANAGER, RESOURCE INDUSTRIES  
INDUSTRY REGULATION (STATEWIDE DELIVERY)**  
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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## 1. Decision summary

Works Approval W6717/2022/1 is held by Paddington Gold Pty Ltd (Works Approval Holder) for Golden Cities (the Premises), located as part of mining tenements L24/228, M24/188, M24/251, M24/876, M24/557, M24/425, M24/564 and M24/565, Kanowna.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction W6717/2022/1 operation of the Premises. As a result of this assessment, Revised Works Approval W6717/2022/1 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary

On 12 November 2024, the Works Approval Holder submitted an application to the department to amend Works Approval W6717/2022/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendment being sought is approval to construct the Jakarta Turkey's Nest. This will be installed near the Jakarta Open Pit and proposed Jakarta Pump Station (JPS) site. Four pipelines will link into the existing Jakarta to Golden Arrow pipeline, including to Jakarta Pit.

The Jakarta Turkey's Nest and pump is proposed to divert water and hold water from the Golden Cities network to reduce the load on existing pumps sending water large distances between authorised operational pits across the premises (under licence L9242/2020/1 or under time limited operations under W6717/2022/1). Currently, pumps operate as per mining requirements which may require pumps to be turned on and off intermittently. The Jakarta Turkey's Nest pump will operate under constant pressure (instead of intermittently) which may increase pump efficiency and limit the potential damage to existing pump equipment across the Premises.

The Works Approval Holder expects that 800,000 to 3,600,000 kilolitres (kL) of water will be discharged into the turkeys nest, while maintaining the allocated freeboard of 0.5 m during dewatering operations (the existing 7,000,000 kL design capacity of the Works Approval will be maintained). The JPS will run simultaneously with the dewatering rate as required to move mine water. The Jakarta Turkey's Nest will be HDPE lined, with dimensions of approximately 85 m x 70 m x 4 m (depth), and an approximate capacity of 10,000 cubic meters (m<sup>3</sup>).

The existing Jakarta to Golden Arrow pipeline has six catchpits installed. Which including the pipeline and v-drain and have a combined capacity of 13,476 m<sup>3</sup>. Pipelines and dewatering infrastructure at the premises will be constructed in accordance with the relevant Australian Standards. Construction of V-drains will occur in accordance with Paddington Standard designs (Figure 1).

The existing Golden Arrow to Jakarta pipeline is fitted with a 400 m Mag flow meter with solar power at either end. These are connected to a telemetry system which uses comparison of a 5 minute averaging period to determine if there are any leaks in the line. Should a flow difference of greater than 2.5% be detected the system will alert the operators to notify the system fault. This will result in the temporary discharge of overflow waters to Jakarta pit via the overflow channel.

The Jakarta Open pit is on licence L9242/2020/1 as a disposal location and will be prioritised

for backup and spill storage rather than as an active discharge location. Though the Works Approval Holder advises operational requirements may require periodic dewatering to and from the Jakarta Pit.

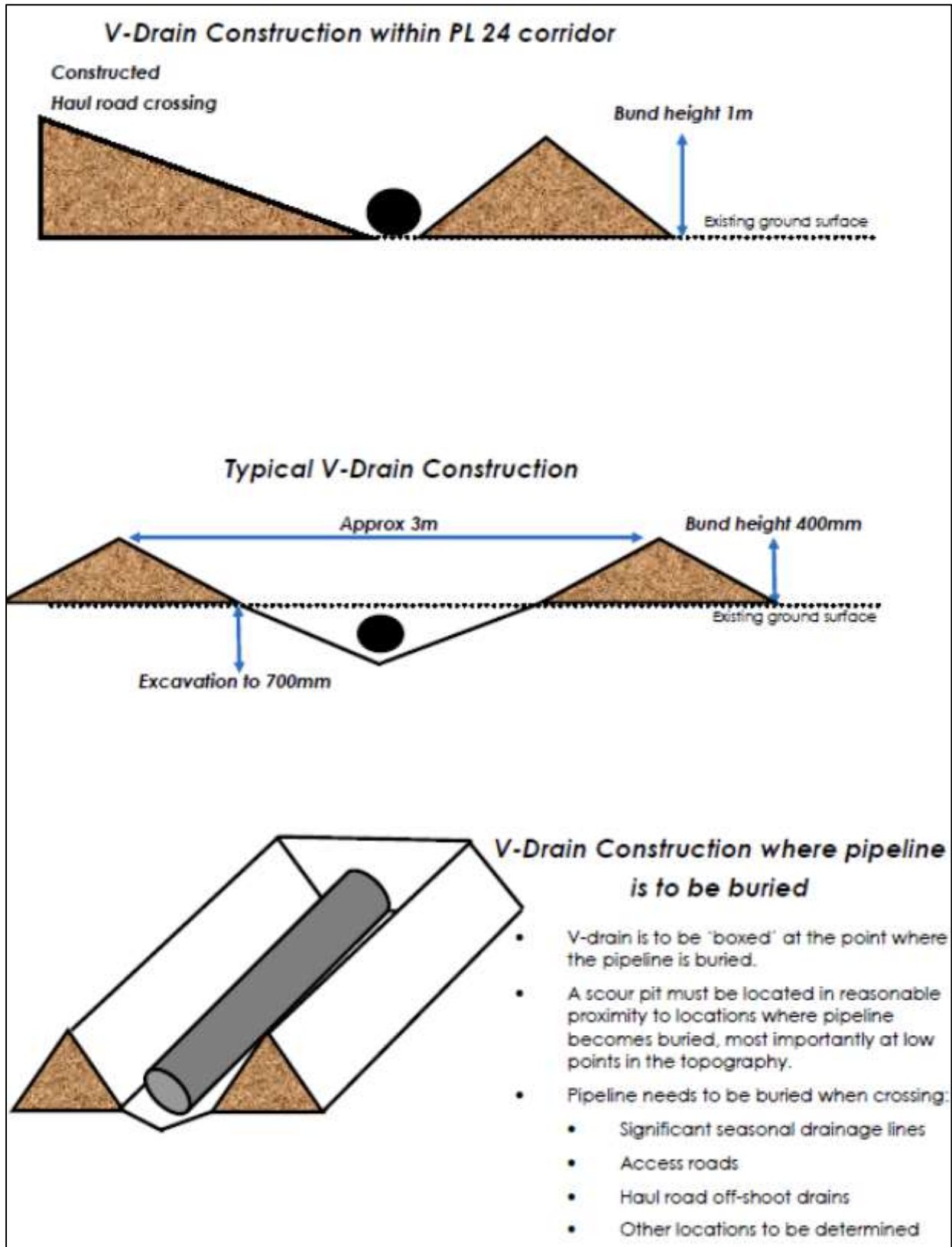


Figure 1: Paddington Standard designs for V-drain parameters

## Water quality

Water quality across the premises is hypersaline, with the average total dissolved solids (TDS) of 80,601 mg/L and near neutral pH (Table 1).

**Table 1: Water quality at the premises (Yearly Averages – Dec 23-Nov 24)**

Sampling location	pH	TDS (mg/L)
Federal Pit	7.5	80,168
Havana Pit	7.51	80,508
Mulgarrie Pit	7.55	80,179
Jakarta Pit	7.48	78,227
Golden Arrow Pit <sup>1</sup>	7.48	83,923

Note 1: Golden Arrow Pit has only recently become an active discharge point. Average taken over a 3-month period.

## 3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

### 3.1 Source-pathways and receptors

#### 3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Works Approval Holder has proposed to assist in controlling these emissions, where necessary.

**Table 2: Works Approval Holder controls**

Emission	Sources	Potential pathways	Proposed controls
Dust	Construction of Pipelines with bunding or v-drains and Turkeys Nest	Air/windborne pathway	Dust Suppression around active operational area.
Hypersaline mine water	Operation of Pipelines with bunding or v-drains and Turkeys Nest	Spills and bursts, overland runoff	<ul style="list-style-type: none"> <li>• Pipeline/s will be buried or placed within an earthen v-drain;</li> <li>• Construction of v-drains and scour pits in accordance with Paddington Standard designs, unless site specific requirements dictate otherwise;</li> <li>• Pipelines and associated dewatering infrastructure will be inspected twice per 24-hour period when in operation;</li> <li>• The existing Jakarta to Golden Arrow pipeline has six catchpits installed allow for pipeline maintenance and spill containment;</li> <li>• The existing Golden Arrow to Jakarta pipeline is fitted a flow meter connected to a telemetry system. Should a flow difference of greater than 2.5% be detected the system will alert the operators to notify the system fault. Temporary discharge of overflow waters to Jakarta pit via the overflow channel;</li> <li>• Spill containment capacity will be sufficient to contain the volume of water that may be released until detection and telemetry flow control is activated;</li> <li>• Spill containment will be facilitated by the collective capacity of the v-drain and scour pit network;</li> <li>• The Jakarta Open pit will be prioritised for backup/spill storage rather than as an active discharge location, however operational requirements may require periodic dewatering to and from this location.</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
	Operation of Turkeys Nest	Overtopping	<ul style="list-style-type: none"> <li>• A freeboard of 0.5 m will be kept during dewatering operations; and</li> <li>• The Jakarta Open pit will be prioritised for backup/spill storage rather than as an active discharge location, however operational requirements may require periodic dewatering to and from this location.</li> </ul>
		Seepage	<ul style="list-style-type: none"> <li>• The Jakarta Turkey’s Nest will be HDPE lined;</li> <li>• Automatic shut off will occur at the JPS and Turkey’s nest when a leak is detected;</li> <li>• In the event of automatic shut off at the JPS and Turkey’s nest, pumping at the pits actively dewatering via JPS will be stopped until the source of the leak is rectified; and</li> <li>• The Jakarta Open pit will be prioritised for backup/spill storage rather than as an active discharge location, however operational requirements may require periodic dewatering to and from this location.</li> </ul>

### 3.1.2 Receptors

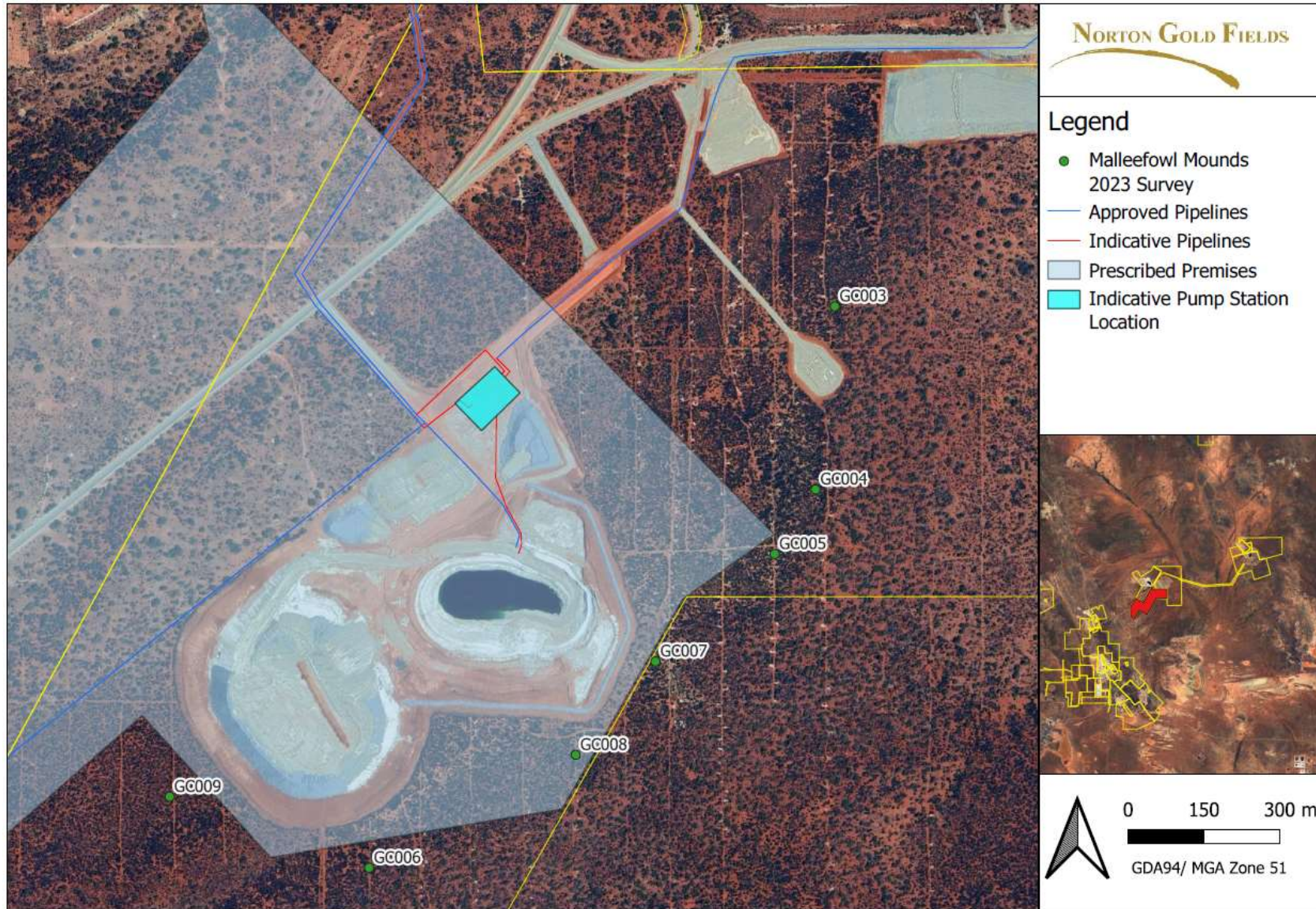
In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Works Approval Holder’s from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020))

**Table 3: Sensitive human and environmental receptors and distance from prescribed activity**

<b>Human receptors</b>	<b>Distance from prescribed activity</b>
Goldfields Highway	7.14 km west of the proposed Turkeys nest. <b>Ruled out due to distance.</b>
Broad Arrow Tavern and residence	7.4 km west of the proposed Turkeys Nest. <b>Ruled out due to distance.</b>
<b>Environmental receptors</b>	<b>Distance from prescribed activity</b>
Native vegetation	About 40 m north and east of the Turkeys Nest and the pipeline corridor.
Fauna	Seven (7) Malleefowl mounds (GC003-GC009) are between 630 m and 1014 m east, south and south west of the turkey's nest. GC007 is about 315m south east of the pipeline discharge point at the Jakarta Open Pit.
Underlying groundwater (non-potable purposes)	Goldfields Groundwater area is about 25 mbgl* beneath the entire proposed premises area. (Note *Taken from Licence amendment to L9242 Golden Cities, Golden Arrow Pit located about 900 m north east of Victory Pit). <b>Ruled out due to depth and similarity of water quality between pits/groundwater.</b>
<b>Cultural receptors</b>	<b>Distance from activity / prescribed premises</b>
Registered Aboriginal heritage site PADDINGTON 5	1.8 km south west of the Turkeys Nest. Topography of the land slopes east. Spills are expected to flow away from the registered site. <b>Ruled out due to distance.</b>





**Figure 2: Distance to sensitive receptors**

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IR-T15 Amendment report template v3.0 (May 2021)

## 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete they have not been considered further in the risk assessment.

Where the Works Approval Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Works Approval Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the Works Approval Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The Revised Works Approval W6717/2022/1 that accompanies this Amendment Report authorises construction and time-limited operations. The conditions in the Revised Works Approval have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the Premises i.e. mine dewatering activities. A risk assessment for the operational phase has been included in this Amendment Report, however licence conditions will not be finalised until the department assesses the licence application.

**Table 4: Risk assessment of potential emissions and discharges from the Premises during construction and operation**

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Works Approval Holder's controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Works Approval Holder's controls				
<b>Construction</b>								
Construction of pipelines with bunding or v-drains and construction of Turkey Nest	Dust	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Native vegetation Malleefowl	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	N/A	N/A
<b>Operation (including time-limited-operations operations)</b>								
Operation of pipelines	Hypersaline mine water	<b>Pathway:</b> Spills and bursts, overland runoff <b>Impact:</b> Saline infiltration to soil	Native vegetation Malleefowl mounds	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1	Existing condition 1 adequately manages this risk event.
Operation of turkeys nest		<b>Pathway:</b> Overtopping <b>Impact:</b> Saline infiltration to soil		Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 8	Works approval holder's controls have been conditioned within the works approval (freeboard)
		<b>Pathway:</b> Seepage <b>Impact:</b> Saline infiltration to soil	Native vegetation	Refer to Section 3.1	C = Minor L = Rare <b>Low Risk</b>	N	Condition 1, <b>8</b>	<b><u>Condition 8: The Delegated Officer has determined that ongoing liner maintenance is suitable to manage seepage risks after installation under</u></b>

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Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Works Approval Holder's controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Works Approval Holder's controls				
								<b><u>condition 1.</u></b>

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed Works Approval Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

## 4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

**Table 5: Consultation**

Consultation method	Comments received	Department response
Works Approval Holder was provided with draft amendment on 17 February 2025.	On 11 February 2025, the works approval holder waived the comment period.	Noted. Documents have been finalised with no alterations to conditions made.

## 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Works Approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### 5.1 Summary of amendments

Table 6 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Works Approval as part of the amendment process.

**Table 6: Summary of works approval amendments**

Condition no.	Proposed amendments
Cover	Inclusion of the Town of Kanowa as part of the premises details.
Condition 1, Table 1	Item 1, Dewatering pipelines, new infrastructure location added with the inclusion of figure 4. Item 4, Jakarta Turkey's Nest construction and installation requirements and location added.
Condition 9, Table 2	Jakarta Turkey's Nest included to the time limited operations table.
Schedule 1: Maps Premises map	Figure 1 updated to a map of the premises boundary with coordinates listed in Schedule 2. Figure 4 included to show the location of the turkeys nest and subsequent dewatering pipeline connections.

## References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.