Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L8675/2012/1
Licence Holder	Millennium Minerals Pty Ltd
ACN	003 257 556
File Number	DER2014/002927
Premises	Nullagine Gold Operation – Golden Eagle Project Mining Tenements M46/3, M46/47, M46/50, M46/57, M46/98, M46/129, M46/138, M46/146, M46/163, M46/164, M46/166, M46/167, M46/170, M46/182, M46/186, M46/192, M46/198, M46/199, M46/200, M46/225, M46/261, M46/262, M46/264, M46/265, M46/266, M46/267, M46/272, M46/273, M46/275, M46/276, M46/277, M46/278, M46/300, M46/426, M46/432, M46/433, M46/434, M46/436, M46/441, M46/442, M46/443, M46/444, M46/445, M46/527, G46/2, L46/33, L46/45, L46/88, L46/91, L46/98, L46/105, L46/115, P46/1675, P46/1704, P46/1705, P46/1706, P46/1755, P46/1756, P46/1757, P46/1758, P46/1824, P46/1922, and P46/1923. NULLAGINE WA 6758
Date of Report	18 November 2024
Decision	Revised licence granted

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1. Decision summary

Licence L8675/2012/1 is held by Millennium Minerals Pty Ltd (Licence Holder) for the Nullagine Gold Operation – Golden Eagle Project (the premises), located approximately eight kilometres south of Nullagine, Western Australia.

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 establishment and operation of the Premises. As a result of this assessment, Revised Licence L8675/2012/1 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 20 June 2024 the Licence Holder submitted an application to the department to amend Licence L8675/2012/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Category 12 - A new crushing and screening unit is proposed to be installed at the Majuba Crushing Plant.
- Category 73 – Addition of four 100 kL capacity diesel tanks to increase fuel storage capacity from 1,347.8 m^3 to 1,747.8 m^3
- Category 77 – Installation of a trailer mounted concrete batching plant is proposed to be installed at the Golden Eagle Haulage Yard.

This amendment is limited only to changes to Category 73 and the addition of Categories 12 and 77 activities to the Existing Licence. No changes to the aspects of the existing Licence relating to Category 5, 7, 52, 85 and 89 have been requested by the Licence Holder.

Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed design and throughput capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
5	2,000,000 tonnes per annual period	2,000,000 tonnes per annual period	N/A
7	2,000,000 tonnes per annual period	2,000,000 tonnes per annual period	N/A
12	N/A	700,000 tonnes per Annual Period	Addition of new prescribed premises category: Installation of new crushing and screening unit.
52	10 MW	10 MW	N/A

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
73	1,347.8 m^3 of fuel	1,747.8m^3 of fuel	Addition of four 100kL fuel storage tanks.
77	N/A	6,000 tonnes per Annual Period	Addition of new prescribed premises category: Installation of new concrete batching plant.
85	80 cubic metres per day	80 cubic metres per day	N/A
89	500 tonnes per annual period	500 tonnes per annual period	N/A

2.3 Golden Eagle Project background

The Licence Holder is seeking to establish a temporary crushing yard facility at Majuba to reclaim up to 700,000 tonnes from the waste rock dump, crush and screen the material, and haul it by road to Marble Bar Road for use as road base material in the upgrade works.

An extension to the existing Golden Eagle haulage yard and workshop will also be undertaken by the Licence Holder. This will include establishing additional fuel storage tanks, an oil-water separator unit and a temporary concrete batch plant. Together these facilities will support future road haulage operations between McPhee Creek and Roy Hill iron ore mines, as well as supporting the Marble Bar Road Upgrade project.

2.4 Proposed Category 12: Crushing and screening plant

Crushing and screening of waste rock material will occur at the Majuba Crushing Plant for use as road base in the Marble Bar Road upgrade. Stockpiled waste rock material will be fed via front end loader into a feeding hopper, crushed by a jaw crusher and fed via conveyor to an adjacent screening unit. Crushed material will go through a secondary cone crusher before passing through a vibrating screen which will separate the material into various sizes.

Once processed, the screened material will again be stockpiled at the Majuba Crushing Plant and transported as needed to Marble Bar Road for use in the Marble Bar Road upgrade project. Stockpiles will be carefully managed to ensure their stability and integrity with the aim of mitigating potential environmental impacts.

Details of the exact crushing and screening unit to be used are not available yet, however, Figure 1 below illustrates a typical set up for a crusher and screener unit used at the Licence Holder's operations.

An extension to the fuel storage facilities and the installation of a concrete batching plant at the Golden Eagle Haulage Yard are also proposed as part of this application. These are described in further detail in sections 2.5 and 2.6 below.

Figure 1: Typical crusher and screener setup used by the Licence Holder

2.5 Proposed change to Category 73: Bulk storage of chemicals

Four diesel tanks and an oil-water separator (to treat hydrocarbons) will be installed at the Golden Eagle Haulage Yard. Spills or leaks from refuelling will be collected in grated catchment sumps, which will then be removed from the site. The oily water separator, which is part of the truck wash system, will also be maintained and removed from the site. The separator is a two chamber, gravity operated device that allows full retention of all liquid which is treated, and the total suspended solids are transferred to a containment chamber for safe disposal. The separator is equipped with an automatic closure device which allows it to be shut down to prevent discharge of pollutants.

2.6 Proposed Category 77: Concrete batching plant

The concrete batching plant is also proposed to be installed at the Golden Eagle Haulage Yard and will be trailer mounted, consisting of a cement silo, cement weight hopper and twin aggregate bins. Aggregate and sand required for concrete production will be transported from a local quarry within the Pilbara region to the project location. The layout for the batching plant is included in Figure 2.

The above-mentioned crushing and screening, concrete batching and fuel storage operations will support the Marble Bar Road upgrade and facilitate future road haulage operations between McPhee Creek and Roy Hill iron ore mines.

The location of the Majuba Crushing Plant and the Golden Eagle Haulage Yard are provided in Figure 3.

Figure 2: Concrete batching plant layout

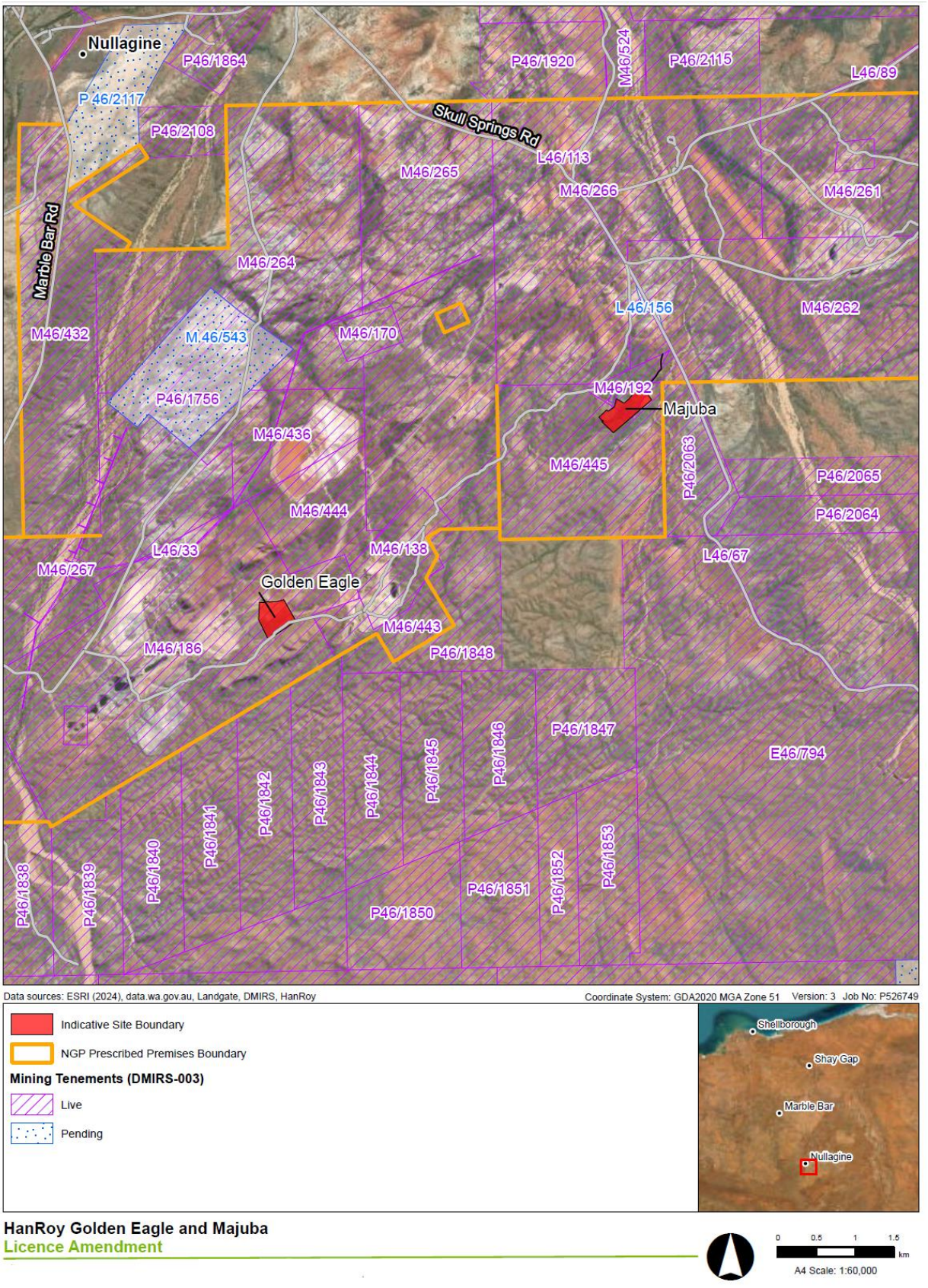

Figure 3: Location of the Golden Eagle haulage yard and Majuba crushing plant

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/installation 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 Licence Holder has proposed to assist in controlling these emissions, where necessary.

Noise emissions are also likely to be generated from premises construction and operations however as there are no noise sensitive receptors (see Table 3), these emissions have not been considered in this assessment.

Table 2: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Placement of screen, construction of concrete batching plant and associated equipment including vehicle movements Screening, crushing, unloading, and loading Vehicle movements Operation of the Concrete Batching Plant	Air/windborne pathway	Operation of a water cart for dust suppression Use of covers on material transfer points and conveyors Use of sprinklers for dust suppression on and around equipment
Sediment laden stormwater	Screening, crushing, unloading, and loading Vehicle movements Concrete Batching Plant	Overland runoff potentially causing disturbance to surface water, groundwater	Sedimentation Dam consisting of: • One sedimentation basin located downstream of concrete batching location within Golden Eagle area, and 1 x sedimentation basin located downstream of crushing/stockpiling area within Majuba area (refer Figure 12). • Golden Eagle sedimentation basin sized to capture 5 m^3, and

Emission	Sources	Potential pathways	Proposed controls
			Majuba sedimentation basin sized to capture a 10% Annual Exceedance Probability (AEP) 6-hour rainfall event. • Freeboard of 300 mm. • Gravel construction. • Maintenance (e.g. removal of accumulated sediment) as required. Oil-water separator Surface water runoff controls around the haulage yard and stockpile areas
Hydrocarbon discharge	Fuel Storage Refueling of crushing and screening plant Refueling of concrete batching plant	Overland discharge into surface water during seasonal rainfall events, seepage into groundwater, direct discharge to vegetation	Self-bunded tanks and grated sumps that are pumped out when full
Concrete slurry	Spills, leaks, breakages associated with the concrete batch plant	Overland discharge into surface water during seasonal rainfall events, direct discharge to vegetation	None proposed by the Licence Holder.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence 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

Human receptors	Distance from prescribed activity
Residential Premises	8 km northwest of the Golden Eagle Haulage Yard and 9 km northwest of the Majuba Crusher Plant. Dust and noise are unlikely to reach the residences, however they are mentioned here as a receptor due to potential

	indirect impacts created through vehicle movement which may be brought to the attention of the Shire. **The Delegated Officer does not consider the residential premises in Nullagine to be situated close enough to the proposed activities to be of significance with regards to amenity and environmental impacts.**
Nullagine Town Reserve	The Nullagine Town Reserve is an Aboriginal town-based community located approximately 7.5 km from the Golden Eagle Haulage Yard and 8.7 km from the Majuba Crushing Plant. **Due to the substantial distance from the proposed activities, the Delegated Officer does not consider there to be a significant risk to the Town.**
Five Mile Aboriginal Community	The Five Mile Community is a seasonally occupied, remote Aboriginal Community located approximately 7.5 km from the Golden Eagle Haulage Yard and 2.7 km from the Majuba Crusher Plant. **The Delegated Officer considers that impacts on either of the Aboriginal communities from the proposed activities is unlikely due to their distance.**
Environmental receptors	**Distance from prescribed activity**
Aboriginal Cultural Heritage Sites	There are several sites within 4km of the Golden Eagle Haulage Yard. Two sites are as close as 200 m and 500 m of the Haulage Yard respectively. The Crusher plant also has another two sites located within 5 km. The sites include engraving locations, artifact scatter sites, dreaming sites, and ceremonial areas. None of the sites within 5 km of either the Haulage Yard or the Crusher Plant have been identified as being culturally sensitive.
Environmental receptors	**Distance from prescribed activity**
Adjacent Vegetation	Both the haulage yard and the crushing plant are located adjacent to areas of remnant native vegetation.
Nullagine River Catchment	Both the Golden Eagle Haulage Yard and the Majuba Crusher Plant are located within the Nullagine River Catchment with multiple tributaries running through the premises. Cajuput Creek is located approximately 2.5 km to the West of the Haulage Yard and 6 km West of the Crusher Plant. Five Mile Creek is located approximately 1.5 km to the East of the Crusher Plant and 7 km East of the Haulage Yard. Surface water in the catchment is seasonal and is primarily a response to cyclonic and monsoonal rainfall events. **The Delegated Officer considers impacts to surface water quality from the proposed activities to be unlikely.**
Nullagine Water Reserve	The Nullagine Water Reserve is a Priority 3 Public Drinking Water Source Area located 6 km from the Golden Eagle

	Haulage Yard and 7 km from the Majuba Crushing Plant. **Due to the distance, the Delegated Officer does not consider the proposed activities to present any significant risk to water reserves.**
Groundwater	Groundwater data for the area is not available through the groundwater atlas or the department's mapping data, however, previous reports on the nearby tailings storage facility indicate groundwater depths between 6 metres and 11 metres.

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 in-complete they have not been considered further in the risk assessment.

Where the Licence 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 licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence 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 Licence L8675/2012/1 that accompanies this Amendment Report authorises emissions associated with the construction and operation of the Premises i.e. Category 12: Crushing and screening, Category 73: Bulk storage of materials, and Category 77: Concrete batching or cement products manufacturing activities. The Revised Licence also includes existing controls related to Categories 5, 7, 52, 85 and 89 which have not been amended or re-assessed as part of this assessment.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

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

Risk Event					**Risk rating[1]** **C = consequence** **L = likelihood**	**Licence Holder's controls sufficient?**	**Conditions[2] of licence**	**Justification for additional regulatory controls**
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Construction								
Placement of crushing and screening plant, concrete batching plant and associated equipment including vehicle movements	Dust	Air/ windborne pathway causing impacts to health and amenity	Adjacent Vegetation Aboriginal Heritage Sites	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	Condition 3	N/A

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation								
Screening, crushing, unloading, loading and storage of material Vehicle movements Concrete Batching Plant	Dust	Air/windborne pathway causing impacts to health and amenity	Adjacent Vegetation Aboriginal Heritage Sites	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	Condition 3	N/A
	Sediment laden stormwater	Overland runoff causing impacts to ecosystem health	Adjacent Vegetation Aboriginal Heritage Sites	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	Condition 3	N/A
	Concrete slurry	Overland discharge causing impacts to ecosystem health	Adjacent Vegetation Aboriginal Heritage Sites	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	N	Condition 3	Additional controls have been added to the instrument as no specific controls were present in the application for the management of concrete batching processes including concrete slurry management and silo infrastructure.
Fuel Storage Refueling of crushing and screening plant Refueling of concrete batching plant	Hydrocarbon discharge	Overland runoff causing impacts to ecosystem health	Adjacent Vegetation Aboriginal Heritage Sites	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	Condition 3	N/A
		Seepage to groundwater causing decreased water quality	Groundwater	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 3	N/A

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

Note 2: Proposed Licence 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
Palyku-Jartayi Aboriginal Corporation advised of the application on 2 September 2024	None	N/A
Licence Holder was provided with draft amendment on 21 October 2024.	The Licence Holder provided a response to the draft amendment on 1 November 2024. The department had requested that the Licence Holder provide details on the sedimentation dams that would be constructed as part of the crushing and screening, and concrete batching operations. In response, the Licence Holder provided design and construction details of the sedimentation dams. No other comments were provided by the Licence Holder on the proposed amendment.	The construction details provided by the Licence Holder have been added to Condition 3, Table 2 of the revised instrument.

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence 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 Licence as part of the amendment process.

Table 6: Summary of licence amendments

Condition no.	Proposed amendments
2 (Table 1)	Inclusion of categories 12 and 77 and corresponding assessed premises production or design capacity limit.
3 (Table 2)	Addition of infrastructure design and construction requirements for the sedimentation dams and categories 12 and 77.
4 & 5	Inclusion of compliance reporting requirements for infrastructure related to category 12 and 77 activities.
14 (Table 9)	Addition of new infrastructure.

Schedule 1 (Figure 12)	Inclusion of figure showing location of the Golden Eagle Haulage Yard and Majuba Crushing Plant.
All	Renumbered conditions as appropriate.

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.

DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia