



Licence Number L5425/1989/11

Licence Holder Iluka Resources Ltd
ACN 008 675 018

File Number: DER2016/001500

Premises Narngulu Mineral Separation Plant
249 Goulds Road
NARNGULU WA 6532

Legal description –
Lot 2 on Plan 11238 and Lot 202 on Plan 59617

Date of Amendment Monday, 19 March 2018

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986*, as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Date signed: 19 March 2018

Tim Gentle

Manager Licensing – Resource Industries

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA).

Definitions and interpretation

Definitions

In this Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

| Term | Definition |
|----------------------|--|
| ACM | Asbestos-containing material |
| ACN | Australian Company Number |
| CEO | Chief Executive Officer CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au |
| City | City of Greater Geraldton |
| CS Act | <i>Contaminated Sites Act 2003 (WA)</i> |
| Delegated Officer | an officer under section 20 of the EP Act |
| Department | refers to the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act. |
| DWER | Department of Water and Environmental Regulation |
| EP Act | <i>Environmental Protection Act 1986 (WA)</i> |
| EP Regulations | <i>Environmental Protection Regulations 1987 (WA)</i> |
| Existing Licence | refers to the Licence issued under Part V, Division 3 of the EP Act and in force prior to this amendment |
| Landfill Definitions | Landfill Waste Classification and Waste Definitions 1996 (as amended) |
| Licence Holder | as specified at the front of this Notice |
| MSP | Mineral Separation Plant |
| Notice | refers to this document |
| NORM | Naturally Occurring Radioactive Material |
| Prescribed Premises | has the same meaning given to that term under the EP Act |
| Premises | refers to the premises to which this Notice applies, as specified at the front of this Notice |

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Existing Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles (July 2015);*
- *Guidance Statement: Setting Conditions (October 2015;)*

- *Guidance Statement: Decision Making (February 2017)*;
- *Guidance Statement: Risk Assessment (February 2017)*.

Amendment description

This notice is the result of a written request by Iluka Resources Ltd (the Licence Holder) to include provision in the licence for disposing soil contaminated with asbestos fibres and/or Naturally Occurring Radioactive Material (NORM) within an historic landfill area on the Premises.

Background

Location and site history

The Licence Holder operates the Narngulu Mineral Separation Plant (MSP) on the outskirts of Geraldton, approximately 420 km north of Perth.

The MSP is situated on 146 ha of land which, in recent years, has been split into two separate titles (Lots 2 & 202). Lot 2 comprises the current MSP area and a number of legacy tailings dumps that are currently being reprocessed, whilst Lot 202 comprises the original minerals processing plant site that was constructed by Jennings Mining Ltd and operated from 1972 – 1990 (colloquially known as the ‘Jennings’ site).

Infrastructure on the original ‘Jennings’ site was decommissioned during 1991 – 1995; however this area remains part of the current prescribed premises due to legacy contamination issues. The site was classified in 2010 as *possibly contaminated – investigation required* under the *Contaminated Sites Act 2003* (CS Act), due to its past use for processing mineral sands and associated waste management practices of that time period.

Historical desktop assessments by the Licence Holder indicate that an area on the ‘Jennings’ site was used for disposing maintenance and construction-type wastes during active operations. There are no formal records of the landfill activity – the area remains unrehabilitated and has been identified by the Licence Holder as an area of potential environmental concern that requires further investigation.

Proposal

The Licence Holder has recently removed old asbestos sheeting from redundant areas within the active MSP for disposal at the nearby City of Greater Geraldton landfill facility. The underlying soil beneath these areas may contain asbestos fibres and has therefore been deemed to be contaminated. In addition, the soil also contains low levels of NORM from processing operations, with radiation levels determined to be above 1 Bq/g, which cannot be accepted for disposal at the City’s landfill in accordance with the Landfill Waste Classification and Waste Definitions 1996 (Landfill Definitions).

The Licence Holder has considered alternative options for disposal of this material, including:

- Off-site disposal at the Eneabba Mineral Sands Mine – co-disposal with other similar material generated from demolition activity at the mine; however this will involve large cartage distances (~150 km);
- Off-site disposal within an existing tailings dam (SD7) at the adjacent synthetic rutile plant site; however there is potential risk of exposure during rehabilitation works, and there is an inability to maintain 2 m cover until the dam is rehabilitated and capped; and
- On-site disposal within the historic landfill at the ‘Jennings’ site.

The Licence Holder therefore proposes to backfill this material into the historic landfill on the Premises, as part of rehabilitation works to return the land to its original contours. The waste would be managed in accordance with current requirements for asbestos disposal, i.e. separation from other wastes, material will be wrapped or otherwise contained in a manner that prevents asbestos fibres entering the atmosphere during transit; immediate covering with clean fill to ensure material does not become windblown, marked and sign-posted, records kept of volumes

disposed, etc., and to ensure that existing buried waste will not be disturbed.

The Licence Holder expects there to be an ongoing requirement for disposal of soil contaminated with both asbestos fibres and NORM, as further remediation works are undertaken across the MSP and Jennings areas. Expected volumes will typically be around 50 tonnes per year (no more than 200 tonnes per year).

Amendment history

Table 2 provides the amendment history for L5425/1989/11.

Table 2: Licence amendments

| Instrument | Issued | Amendment |
|---------------|------------|---|
| L5425/1989/11 | 20/06/2017 | Amendment Notice 1 – extend expiry date by 12 months |
| L5425/1989/11 | 19/03/2018 | Amendment Notice 2 – approval to dispose asbestos-contaminated material and NORM in the historic Jennings landfill area (this Notice) |

Risk assessment

Table 2 below applies a risk assessment for the potential emissions which may arise from the application. The table identifies whether these emissions present a material risk requiring regulatory controls.

Decision

The Delegated Officer has considered the requested amendment and has determined the following:

- On-site disposal of minor amounts of soil contaminated with asbestos fibres and NORMs from site clean ups and remediation works is considered to be part of the Category 8 activity and is consistent with regulation of similar activities at Iluka's Yoganup Extended mine site;
- Off-site disposal of this material in this instance is not practicable, while on-site disposal will minimise the transport and handling risk (of asbestos-contaminated material and NORMs. The Licence Holder advises the Radiation Management Plan (Iluka, 2017) for the site will also require revising to include provision for this activity;
- The volume of material requiring disposal is not considered to be significant and is unlikely to result in a material change to the overall risk of groundwater and/or soil contamination (with regards to historical contamination of the historic landfill area); and
- Lot 202 has been classified as *possibly contaminated – investigation required* under the CS Act due to the presence of a contaminated groundwater plume beneath the MSP and observations of copper sulfate/asbestos-containing fence sheeting disposed on the Premises (DEC, 2008). The site classification requires that further investigations, including groundwater investigations, be undertaken to determine the status of groundwater beneath the site and to assess the risks associated with ACM. Groundwater is routinely monitored as part of ongoing contaminated site investigations.

Given the above, the Delegated Officer has determined to grant the amendment, with additional conditions based on Licence Holder controls to manage fugitive dust and impacts to groundwater.

Table 3: Risk assessment for proposed amendments during operation

| Risk Events | | | | | Consequence rating | Likelihood rating | Risk | Reasoning |
|--|---|---|-----------------------|------------------------------------|--------------------|-------------------|---|---|
| Sources/ Activities | Potential emissions | Potential receptors | Potential pathway | Potential adverse impacts | | | | |
| Disposal of ACM and/or NORM in historic landfill | Fugitive emissions (dust) | No residential receptors in close proximity Several industrial premises within 450 m of proposed disposal location | Air / wind dispersion | Human health impacts | Moderate | Rare | Low | The risk of ACM/NORM causing off-site health impacts is considered to be Low, based on the low amount of material to be disposed and the implementation of dust control methods proposed by the Licence Holder (as listed above in 'proposal' section), which will be conditioned in the licence. |
| | | | | Soil and groundwater contamination | Minor | Rare | Low | The Premises has been classified <i>potentially contaminated – investigation required</i> under the CS Act due to historic burial of ACM. The site classification requires further investigations to determine the status of groundwater beneath the site and to assess the risks associated with ACM and NORMs. |
| | | | | Amenity impacts | Slight | Rare | Low | ACM and NORMs do not contain odorous compounds. |
| | Odour | | | | | | | |
| | Leachate from unlined trenches/ disturbance of historic waste | Groundwater | Vertical seepage | Groundwater contamination | Minor | Rare | Low | ACM is inert and will not generate leachates. |
| | | | | | Minor | Unlikely | Medium | The leaching of radioactive constituents within the material is Unlikely due to the low concentrations of Th and U, and disposal occurring above the water table. A network of monitoring bores is maintained on the Premises and monitored on a quarterly basis, in order to detect changes in groundwater quality. Investigations into contamination from historic waste disposal are ongoing under CS Act obligations. |
| Noise from machinery movements | Industrial receptors (see above) | Air / wind dispersion | Amenity impacts | Slight | Rare | Low | The Premises is an existing 24/7 operating processing plant, with routine heavy vehicle movements. One-off movements for disposal are unlikely to significantly increase noise emissions. | |

DWER intends to commence within the next six months a detailed risk review of the Licence to align the Licence with the risk based Regulatory Framework. The full risk based review will incorporate these amendments into the Revised Licence.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 7 March 2018 and provided no additional comments.

Amendment

- The Existing Licence is amended by the insertion of the following Condition:

W5(a) The Licence Holder must only dispose waste on the Premises if:

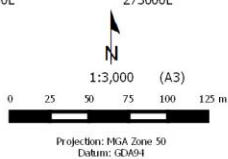
- it is of a type listed in Table 1;*
- the quantity is below any quantity limit listed in Table 1; and*
- it meets any specification listed in Table 1.*

| Table 1: Authorised waste types | | |
|---|------------------------------|--|
| Column 1 | Column 2 | Column 3 |
| Waste type | Quantity limit (t/yr) | Specification |
| <i>Soil contaminated with ACM and/or NORM only, generated from decommissioning and/or remediation works on the Premises</i> | <i>500 (combined)</i> | <ul style="list-style-type: none"> <i>Disposal of ACM must be separate to, and not disturb, any previously disposed waste;</i> <i>ACM must be wrapped or otherwise contained in a manner that prevents asbestos fibres entering the atmosphere during transportation;</i> <i>Disposal must be by burial within the "Jennings landfill area", as depicted by the yellow circled area on the Waste Disposal Map in Schedule 1;</i> <i>ACM must be immediately covered with a minimum 2 m of clean fill following disposal;</i> <i>Must not be disposed within 2 m of the final landform surface;</i> <i>Permanent records must be kept of all disposed material, including the nature and amount of material disposed.</i> |

- The Existing Licence is amended by the insertion of the "Waste Disposal" map in Schedule 1 of this Notice.

Schedule 1: Maps

Waste disposal map



NARGULU MINERAL SEPARATION PLANT

Waste disposal map



Government of Western Australia
Department of Water and Environmental Regulation

The Department of Water and Environmental Regulation does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

Appendix 1: Key documents

| | Document title | In text ref | Availability |
|---|--|---------------|--|
| 1 | Licence L5425/1994/10 – Iluka Narngulu Mineral Separation Plant. | L5646/1989/11 | accessed at www.dwer.wa.gov.au |
| 2 | DER, July 2015. <i>Guidance Statement: Regulatory Principles</i> . Department of Environment Regulation, Perth. | DER 2015a | |
| 3 | DER, October 2015. <i>Guidance Statement: Setting Conditions</i> . Department of Environment Regulation, Perth. | DER 2015b | |
| 3 | DER, February 2017. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth. | DER 2017a | |
| 4 | DER, February 2017. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth. | DER 2017b | |
| 5 | DEC, 2008. Notice of a classification of a known or suspected contaminated site given under section 15 of the <i>Contaminated Sites Act 2003</i> . | DEC, 2008 | DWER records (DMO2907) |
| 6 | Iluka, 2017. <i>Narngulu Operations – Radiation Management Plan</i> . Prepared by Iluka Resources Ltd (April 2017). | Iluka, 2017 | DWER records (A1431305) |