

Notice

Environmental Protection Act 1994

Environmental Evaluation

Notice to conduct or commission an environmental evaluation

This notice to conduct or commission an environmental evaluation is issued by the administering authority pursuant to section 326B of the Environmental Protection Act 1994.

Mount Isa Mines Limited
Level 38, 1 Macquarie Place
SYDNEY NSW 2000

Your reference: EPML00977513

Our reference: STAT1185; EPML00977513

20 December 2017

Take notice: that under the *Environmental Protection Act 1994* (the Act) a notice to conduct or commission an environmental investigation is issued to Mount Isa Mines Limited by the administering authority. The administering authority is the Chief Executive of the Department of Environment and Science (the department).

The notice to conduct or commission an environmental investigation is issued in respect of the activities of Mount Isa Mines Limited (MIM) at Mount Isa Mines, on land described as mining lease (ML) 8058 situated adjacent to the town of Mount Isa.

A. Grounds

The notice to conduct or commission an environmental investigation is issued on the following grounds:

1. On 23 December 2016, MIM submitted groundwater monitoring data as supporting information for an amendment application. The monitoring data indicated elevated levels of several contaminants and adverse trending concentrations in several groundwater monitoring bores across the site.
2. Contaminants detected at elevated and/or increasing levels in the groundwater monitoring network are potentially associated with mining activities.
3. On 2 - 4 November 2016, the department observed a surface expression of water close to the toe of a tailings embankment dam, referred to as TD5. The seepage was expressing in a shallow excavation and had similar characteristics to water contained in the nearby TD5 Seepage Pond. The concentration of some contaminants in the water were elevated above water quality objectives for relevant environmental values.

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4. The department has previously observed surface expressions of seepages from the Black Star Open Cut Waste Rock Dump representing releases of contaminated water.
5. Contaminant species identified at elevated or increasing concentrations in the groundwater monitoring to date are the same as chemical species associated with the mining activities. The department has determined that contaminants are likely being released as a result of MIM mining activities conducted on ML8058, and are causing or are likely to cause environmental harm.
6. The department is therefore satisfied on reasonable grounds that an activity is causing, or is likely to cause, environmental harm (as per section 326B(1)(b) of the *Environmental Protection Act 1994* (EP Act)).

B. Requirements

The report on the environmental investigation must address the following relevant matters:

1. Identify the dominant **hydrogeological features** likely impacted by mining activities at **Mount Isa Mines**, with reference to **groundwater** monitoring bores identified in **environmental authority EPML00977513**, and describe:
 - a) the characteristics of the **hydrogeological features**, including, but not limited to; soil and rock types, porosity, permeability, hydraulic conductivity, transmissivity, stratigraphy and fault and fracture propensity
 - b) any geological barriers which are overlaying or underlying the **hydrogeological features**; and
 - c) the waters contained in the **hydrogeological features**, including its ionic composition; and
 - d) the movement of **groundwater** in the **hydrogeological features** (direction and flow rate, at a minimum); and
 - e) the interaction of **groundwater** contained in each **hydrogeological features** with any other **hydrogeological features**; and
 - f) the interaction of any contaminated waters, with the naturally occurring water in the **hydrogeological features**, including a comparison of the ionic compositions of the waters; and
 - g) the locations where water contained within the **hydrogeological features** does or may potentially express at the surface; and
 - h) the spatial locations of environmental values within or dependant on the **hydrogeological features**; and
 - i) a conceptual model integrating items (a) – (h).
2. Identify the sources of all contaminants that are being, or have been released from **Mount Isa Mines** to **groundwater**, which are likely currently impacting on **environmental values**.
3. Determine the types, concentrations and volumes of contaminants that are being or have been released from **Mount Isa Mines** to **groundwater**, which are likely currently impacting on **environmental values**, due to activities conducted at **Mount Isa Mines**.
4. Identify and describe the pathways and mechanisms for the release and transport of contaminants to **groundwater**, due to activities conducted at **Mount Isa Mines**.
5. Determine the current lateral and vertical geographical extents of contaminants released to **groundwater**, due to activities conducted at **Mount Isa Mines**, as well as rates and directions of

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movement of contaminants in **groundwater**. Undertake solute transport modelling to predict likely patterns of contaminant migration and impact.

6. Undertake sensitive analysis of the solute transport model.
7. Provide recommendations for the installation of additional monitoring bores with sufficient geographical coverage to assist in detecting and quantifying the magnitude and extent of existing groundwater contamination caused by mining activities at **Mount Isa Mines**. In providing recommendations, consideration should also be given to potential future impact areas.
8. Assess impacts and potential impacts to **environmental values**, through the release of contaminants to **groundwater**. The assessment must include:
 - a) A table of descriptive statistics for each groundwater monitoring bore at **Mount Isa Mines** including; date range, count, mean, minimum, median and 80th and 95th percentiles; and
 - b) Box plots for all groundwater monitoring bores at **Mount Isa Mines** for each groundwater contaminant showing, the minimum, the median, 20th and 80th percentiles and maximum as well as the relevant water quality objectives for each **environmental value**; and
 - c) Spatial trends in groundwater contaminants at **Mount Isa Mines**; and
 - d) Temporal trends in groundwater contaminants, including time series plots for all groundwater monitoring bores at **Mount Isa Mines**, for all relevant contaminants; and
 - e) An assessment of **groundwater** quality against water quality objectives for all relevant contaminants and all **environmental values** with reference to graphical summaries which include water quality objectives for each **environmental value**.

Note: the method for assessing groundwater quality must be consistent with the guideline DSITI (2017). *Using monitoring data to assess groundwater quality and potential environmental impacts. Version 1*. Department of Science, Information Technology and Innovation (DSITI), Queensland Government, Brisbane or a later version.

9. Identify **key indicators** which are detectable in contaminated water that is being, or has been released from **Mount Isa Mines** to **groundwater**. Different **key indicators** may be nominated for different sources.
10. To the extent necessary to ensure all **environmental values** are protected, identify and prioritise all potential options and estimate corresponding implementation timeframes and costs for:
 - a) The prevention of further contaminant releases from **Mount Isa Mines** to **groundwater**; and
 - b) Remedial measures to reduce contaminant concentrations in **groundwater**.
11. By 31 May 2018, provide a design document for the investigation, including an implementation schedule with milestones.
12. From 20 June 2018, provide reports on the progress of the investigation with reference to the milestones identified in the design document, at a frequency of once every six months.
13. The final report on the environmental investigation must include:

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- a) The methodology applied in conducting this investigation, including any assumptions relied upon and their justification; and
 - b) A description of the conceptual model required by item 1; and
 - c) The results of any studies, assessments or analyses that were carried out during this investigation; and
 - d) The outcomes and findings of the investigation, including justification for any conclusions; and
 - e) The raw data for all graphical summaries with a clear indication of which data applies to each graph.
14. The requirements of this investigation must be completed by, or in accordance with advice from, a **suitably qualified person**.
15. The final report on the environmental investigation must be submitted to the department on or before 20 December 2020.
16. The following definitions apply to the requirements of the EE:

Environmental authority EPML00977513 means the most recently approved environmental authority EPML00977513.

Environmental value(s) in the context of water, means environmental values defined in the *Environmental Protection (Water) Policy 2009* and are applied to surface water and groundwater, being:

- for slightly disturbed waters—the biological integrity of an aquatic ecosystem that has effectively unmodified biological indicators, but slightly modified physical, chemical or other indicators;
- for moderately disturbed waters—the biological integrity of an aquatic ecosystem that is adversely affected by human activity to a relatively small but measurable degree;
- for waters that may be used for producing aquatic foods for human consumption—the suitability of the water for producing the foods for human consumption;
- for waters that may be used for agricultural purposes—the suitability of the water for agricultural purposes;
- for waters that may be used for recreation or aesthetic purposes, the suitability of the water for—
 - primary recreational use; or
 - secondary recreational use; or
- for waters that may be used for drinking water—the suitability of the water for supply as drinking water;
- for waters that may be used for industrial purposes—the suitability of the water for industrial use;
- the cultural and spiritual values of the water.

Groundwater means water that occurs naturally in, or is introduced artificially into, hydrogeological features.

Hydrogeological feature means a discrete, connected geological unit or structure that has the potential to store, distribute or convey water.

Key indicators means parameters, geochemical compositions/signatures, or other identifiable characteristics of a body of water which are not present in the receiving environment, and which can be used to identify the origin of a body of water, regardless of dilution or mixing with other waters.

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Mount Isa Mines means any mine feature, or mining activity, on, or conducted on, Mining Lease (ML) 8058. In the context of groundwater monitoring bores, this also includes bores outside of ML8058, where they have been placed for the purpose of detecting potential impacts to groundwater as a result of mining activities.

Suitably qualified person means a person who has demonstrable professional qualifications, training, skills and/or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

As the recipient of this notice, Mount Isa Mines Limited is also required to provide a statutory declaration in the form attached, to accompany the environmental report submitted to the department. The suitably qualified person who prepares the environmental report must also provide a statutory declaration in the form attached to accompany the environmental report submitted to the department.

Mount Isa Mines Limited can view an electronic version of the statutory declaration for a recipient using the following search term ([ESR/2016/1997](#)).¹

An electronic version of the statutory declaration for a suitably qualified person form is available using the search term ([ESR/2016/2266](#)).

Take notice:

- the requirements of the notice to conduct or commission an environmental investigation take effect immediately upon service of this notice;
- this notice remains in force until further notice from the department; and
- Mount Isa Mines Limited is responsible for meeting the costs of conducting or commissioning the environmental evaluation, preparing the environmental report and providing any further information as requested by the department.

C. Reviews and appeals

The provisions regarding reviews of decisions and appeals are found in sections 519 to 539 of the Act.

A person who is dissatisfied with certain decisions of the department may be able to apply to have the department review that original decision.

Generally, a request to have a decision reviewed must be made:

- within 10 business days of the decision being notified to the person;
- be supported by enough information to enable the department to decide the application for review; and
- be made using the application for review of an original decision form ([ESR/2015/1573](#)).

Where an application has been made for a decision to be reviewed, the applicant may also apply to the relevant court for a stay of the decision to secure the effectiveness of the review.

¹ This is the publication number. The publication number can be used as a search term to find the latest version of a publication at <www.ehp.qld.gov.au>.

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Once the original decision has been reviewed, a person who is dissatisfied with the review decision may be able to appeal against that decision to the relevant court within 22 business days after receiving notice of the review decision.

A person whose interests are or would be adversely affected by a decision of the department may also be able to request a statement of reasons for a decision or a statutory order review under the *Judicial Review Act 1991*.

For further information about reviews and appeals see the:

- Information sheet - internal review and appeal to the Planning and Environment Court ([ESR/2015/1572](#)).
- Information sheet - internal review and appeal to the Land Court ([ESR/2015/1742](#)).

Mount Isa Mines Limited may have other legal rights or obligations and should seek legal advice.

D. Penalty

Failure to comply with a notice to conduct or commission an environmental evaluation is an offence.

- The maximum penalty for an individual is 300 penalty units, totalling \$37 845.
- The maximum penalty for a corporation is 1500 penalty units, totalling \$189 225.

Should Mount Isa Mines Limited have any queries in relation to this notice, please contact Teale Gibbs of the department on telephone number 07 4222 5385.



Signature



Date

Rebecca Booker

Manager Compliance

Delegate of the Chief Executive

Department of Environment and Science

Environmental Protection Act 1994

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