

NOTICE TO CARRY OUT ENVIRONMENTAL AUDIT PROGRAM

Issued pursuant to section 48 of the *Waste Management and Pollution Control Act*

Issued to: McArthur River Mining Pty. Ltd.
ACN 008 167 815
34A Bishop Street
STUART PARK NT 0820

Relating to the Premises at: McArthur River Mine,
Carpentaria Highway,
Borrooloola,
Northern Territory.

TAKE NOTICE THAT I, William John Freeland, Chairperson and authorised delegate of the Northern Territory Environment Protection Authority (NT EPA) for the purposes of section 48 of the *Waste Management and Pollution Control Act* (the Act), have reason to believe that:

1. McArthur River Mining Pty Ltd (MRM), are the mine operators of McArthur River Mine on Mineral Leases MLN 1121, MLN1122, MLN 1123, MLN 1124, MLN1125 and MLN 582 (the premises);
2. The NT EPA has received pollution reports of potential off-site environmental impacts related to fumes, odours and smoke emanating from the waste rock dump within the premises known as the North Overburden Emplacement Facility (NOEF) from:
 - (a) members of the public on the Carpentaria Highway;
 - (b) residential properties to the North West, North and North East of the premises including the town of Borrooloola;
 - (c) the Department of Mines and Energy; and
 - (d) NT Worksafe.
3. Authorised officers of the NT EPA inspected the premises on 8 and 9 July 2014 and:
 - (a) observed, on the morning of the 8 July 2014, a significant smoke like plume from the top section of the waste rock dump/NOEF towards the North West;
 - (b) observed grey smoke like discharges from numerous points along the top of the North West and South East faces of the waste rock dump/NOEF on 8 and 9 July 2014;
 - (c) observed heavy earthmoving machinery working on the waste rock dump/NOEF at and near the sources of smoke like discharges on 8 and 9 July 2014; and

- (d) detected strong odours at several points within the premises and along the Carpentaria highway.
4. MRM have provided sulfur dioxide monitoring data to the NT EPA which indicates sulfur dioxide levels recorded at several locations outside of the premises may be exceeding National Environment Protection Measure (NEPM) standards.
5. Notwithstanding section 6 of the Waste Management and Pollution Control Act, the Act applies to contaminants or waste namely, sulfur dioxide airborne pollutants from the premises that have been detected beyond the premises' boundary.

AND I HEREBY REQUIRE, for the reasons specified above and pursuant to section 48 of the Act, McArthur River Mining Pty Ltd to conduct the environmental audit program specified below:

Environmental Audit Program

1. To determine the extent, nature and sources of sulfur dioxide and other airborne pollutants generated from the waste rock dump/NOEF area within the premises;
2. To undertake an ambient air monitoring and atmospheric dispersion modelling program to determine whether sensitive receptors are being impacted by sulfur dioxide emissions emanating from the premises;
3. To undertake a quantitative and qualitative evaluation and assessment of the emissions of sulfur dioxide and other airborne pollutants beyond the boundary of the premises as a result of air emissions from the waste rock dump/NOEF;
4. To conduct an environmental risk assessment should it be determined that sulfur dioxide emissions and other airborne pollutants from the premises are impacting on sensitive receptors;
5. To identify proposed approaches to address and remediate sources of sulfur dioxide emissions and other airborne pollutants should it be determined that the premises are a source of emissions of sulfur dioxide and other airborne pollutants; and
6. To develop and implement a reporting regime for ambient air monitoring and atmospheric dispersion modelling to the NT EPA and for the communities that may have an interest in the reporting.

Notice Conditions

The Plan

1. MRM must develop a detailed plan (the Plan) to address the requirements of the environmental audit program;
2. All requirements of the environmental audit program included in the Plan must be completed by 30 September 2015;
3. The Plan must contain time frames for two ambient monitoring campaigns which is to include the 2014/15 Wet season and the 2015 Dry season;
4. The Plan must be developed by a suitably qualified expert in ambient air monitoring and atmospheric dispersion modelling;
5. The Plan must be endorsed by an approved auditor appointed to perform the environmental audit program;

6. The Plan must include but not be limited to the provision of specific details of methodologies for:
- (a) determining the nature, concentrations and rates of air emissions from the waste rock Dump/NOEF;
 - (b) atmospheric dispersion modelling of emissions from the waste rock dump/NOEF;
 - (c) ambient air monitoring campaign of sulfur dioxide at locations beyond the boundary of the premises;
 - (d) ambient air monitoring of any other airborne pollutants of concern following an assessment of the waste rock dump/NOEF;
 - (e) details of the locations of the sites chosen for ambient air monitoring of sulfur dioxide and any other airborne pollutants;
 - (f) incorporation of meteorological monitoring requirements as part of the agreed ambient air monitoring station locations;
 - (g) the form of reporting and communicating the results of the ambient monitoring and atmospheric dispersion modelling on a regular basis to the NT EPA and the community that must include an investigation of making available on line real time ambient air monitoring data on the MRM web site;
 - (h) reporting and investigating exceedances of sulfur dioxide ground level criteria at any of the ambient monitoring station locations; and
 - (i) undertaking an environmental risk assessment and providing recommendations for actions to address the source(s) of off- site sulfur dioxide emissions.

Ambient air monitoring

7. The Plan's methodologies must be developed to include but not be limited to the following specific ambient air monitoring requirements:

Priority installation requirements

- (a) in consultation with the NT EPA, the priority installation of two ambient air monitoring stations one of which is to be located at Devils Springs outstation and one at Borroloola Township which are to commence monitoring for sulfur dioxide as soon as possible;
- (b) a reporting and follow up investigation regime for the two ambient air monitoring stations mentioned in 7(a) above which will inform the NT EPA on a daily basis whenever levels of sulfur dioxide monitored at the two ambient monitoring stations exceed the 10th percentile of any of the National Environment Protection Measure (NEPM) standards;

Additional requirements

- (c) additional and sufficient number of ambient air monitoring stations to provide adequate spatial coverage for exposure and criteria assessment to be agreed in consultation with the NT EPA, the suitably qualified expert and the auditor;

- (d) in consultation with the NT EPA, the suitably qualified expert and the auditor agree to an ambient air monitoring campaign for the 2014-15 Wet season and 2015 Dry season;
- (e) all ambient air monitoring stations must be installed for a term or terms that are agreed upon in consultation with the NT EPA, the suitably qualified expert and the auditor;
- (f) all ambient air monitoring stations are to be compliant with AS3580.4.1-1990 and AS2922 and operated, calibrated and maintained in accordance with approved quality assurance procedures so as to provide reliable data;
- (g) siting for the meteorological sensors for the facilitation of atmospheric air dispersion modelling must be in compliance with AS2923 and USEPA (2000) EPA454/R-99-005;
- (h) continuous meteorological measurements are to be taken at all ambient air monitoring stations to facilitate atmospheric dispersion modelling validation requirements;
- (i) continuous meteorological measurements at all ambient air monitoring stations must include but not be limited to :
 - i. wind speed;
 - ii. wind direction; and
 - iii. air temperature.

Atmospheric dispersion modelling

8. All atmospheric modelling, assessment and reporting must be in accordance with the New South Wales document titled: *Approved methods for the Modelling and Assessment of Air Pollutants in New South Wales, DEC 2005* and must include but not limited to the following:
- (a) atmospheric dispersion modelling using an atmospheric dispersion model such as the CSIRO TAPM Version 4 or similar to model the air emissions from the premises and include detailed air quality input assessment of air emissions from the premises;
 - (b) specifically, airborne pollutant emissions from the waste rock dump/NOEF are to be assessed and initial atmospheric dispersion modelling be undertaken within 28 days of this notice;
 - (c) the results of the modelling referred to in 8(b) above are to be made available in the form of a report to the NT EPA within 14 days of the modelling being finalised;
 - (d) in addition to 8(b) above provision of a minimum of two additional air dispersion model runs during the operation of the ambient air monitoring stations which must align with the agreed campaigns referred to in 7(d);
 - (e) ongoing validation of the atmospheric dispersion model is to be conducted during the operation of the ambient air monitoring stations; and
 - (f) the results of the additional atmospheric dispersion modelling are to be included in a report to be made available to the NT EPA within 14 days of the modelling being finalised;

Reports

9. The reports mentioned in 8(c) and 8(f) above must assess any exceedances of ground level criteria and compare the maximum 1 hour and 24 hour levels recorded at each ambient air monitoring location with relevant ground level criteria and make an assessment as to the relative contribution of the premises to those maximum ground level concentrations;
10. The reports mentioned in 8(c) and 8(f) above must also include the modelling and mapped contours of the ground level concentrations for sulfur dioxide and a comparison of the concentrations to the relevant air quality criteria;
11. The Plan which incorporates requirements 6 to 8 above must be submitted within 28 days from the date of this notice accompanied with the suitably qualified expert's and auditor's written endorsements;
12. MRM can commence conducting the program of works described in requirements 6 to 8 above provided any works is consistent with the Plan;
13. Any proposed amendments to the Plan must be submitted to, and approved by the NT EPA prior to the amendment being implemented, noting that the NT EPA may require MRM to revise, amend and or resubmit the proposed amendment or the Plan;

Web site

14. Results or reports of the atmospheric dispersion model, meteorological and air quality data submitted to the NT EPA as part of requirements 7 to 10 must be fully reported on the MRM publically accessible website within 5 business days after being submitted to the NT EPA;

Environmental Audit Report

15. The results of the program of works detailed in the Plan must be submitted to the NT EPA within 28 days of the conclusion of each campaign in the form of an Environmental Audit Report ("the Report").

The Report must include but not be limited to:

- (a) summary coverage of the instrumentation, sampling and analysis methodology, compliance with siting requirements, instrument standards, data handling procedures and quality assurance used for ambient air monitoring;
- (b) all ambient monitoring results to be in graphical time series form expressed as 3 minutes, 1 hour and 1 day averages;
- (c) a table providing statistical analyses of all ambient air monitoring results for each of the above averaging times;
- (d) each table must provide at least the following parameters: the number of exceedances of the relevant standards, the maximum, 99.9th percentile, 99th percentile, 90th percentile, median, mean, percentage data recovery for each day, and minimum measured levels;
- (e) assess any exceedances of ground level criteria and compare the maximum 1 hour and 24 hour levels recorded at each monitoring location with relevant ground level criteria and make an assessment as to the level of contribution of the premises to the maximum ground level concentrations;
- (f) an evaluation, discussion, comparison with criteria and other Australian sites and quality assessment of the ambient sulfur dioxide monitoring data;

- (g) a summary and discussion of the atmospheric air dispersion modelling undertaken;
 - (h) where atmospheric dispersion modelling or actual monitoring results exceed the relevant criteria undertake a risk assessment that is to be developed in consultation with the NT EPA;
 - (i) in conducting the risk assessment identify environmental risks, as a result of sulfur dioxide or other airborne pollutants being emitted from the premises;
 - (j) identify and present all of the details of the environmental risk assessment that will be conducted for potential off site receptors and follow accepted environmental health risk assessment principles and guidelines and include hazard identification and dose response, exposure assessment and risk characterisation, and likely sensitive receptor health assessment;
 - (k) where it is determined that levels indicate potential environmental risks, include conclusions and recommendations to prevent, rectify, rehabilitate or minimise potential environmental harm; and
 - (l) any other actions that are planned at the premises so that there are no exceedances of the relevant criteria of sulfur dioxide or other airborne pollutants at the offsite receptors;
16. The Environmental Audit Report produced under requirement 15 must be made available on the MRM publically accessible website within 10 business days after being submitted to the NT EPA;

Submissions

17. All submissions to the NT EPA required by this notice are to be provided in both electronic and hard copy form, all other submissions required are to be provided in electronic form only to the following address:

Northern Territory Environment Protection Authority

Street address: Darwin Plaza Level 2, 41 Smith Street Mall, Darwin NT 0800.

Postal address: GPO Box 3675, Darwin NT 0801

Email: Pollution@nt.gov.au

END OF CONDITIONS


William John Freeland

8 / 10 / 14
Date

Chairperson of the NT EPA
Delegate of the Northern Territory Environment Protection Authority

Important Notice

1. Failure to comply with a notice to conduct an environmental audit is an offence under section

51(1) of the Act and may incur significant penalties and/or other statutory action.

2. You will not be taken to have submitted the results of the environmental audit program required by this Notice until the requirements of section 51(2) of the Act have been satisfied.
3. Additional offences specific to the conduct of an environmental audit are established under section 52 of the Act.
4. Pursuant to section 67 of the Act, a person must not perform an environmental audit for the purposes of an environmental audit program unless the person is registered in a register established under section 68 of the Act or is specifically exempted from that requirement by Regulation. A current register of qualified persons is available from:
http://www.ntepa.nt.gov.au/waste-pollution/compliance/audits/qualified_persons or by contacting the NT EPA on telephone (08) 8924 4218.
5. The NT EPA is as defined in the Act or it's authorised Delegate.
6. This notice takes effect on the date on which it is served upon you.