

COMMUNITY UPDATE

FEBRUARY 2017

*How we manage air and water quality
at Mount Isa Mines*



**MOUNT ISA
MINES**

A GLENCORE COMPANY

INSIDE

- Lead Pathways Study Air Report released
- Air quality improvement initiatives
- Water quality improvement initiatives
- Supporting community health

Foreword

LEAD PATHWAYS STUDY AIR REPORT RELEASED

In 2006, we commissioned internationally respected researchers at The University of Queensland to conduct a series of studies to better understand the pathways and potential health impacts of lead in the Mount Isa community.

The *Lead Pathways Study* represents extensive research and is unique to the Mount Isa region.

Building upon the findings of the earlier land and water studies, the Air Report found that the potential exposure risk of children from inhalation was limited (less than 5%) and mostly from ingestion via hand to mouth activity.

The study also reinforced the importance of Mount Isa residents taking active steps to minimise their exposure to lead and participate in regular blood lead level testing, particularly for parents with young children. It supports the Lead Alliance's work in raising awareness of the importance of maintaining a clean home, good personal hygiene and a nutritious diet.

We will act on all report recommendations relating to our operations and have already made substantial progress with most of them. This includes considerable improvements over the past five years in minimising emissions and dust on site and managing air quality in the community.

Importantly, we will continue to improve our environmental performance and enhance what is already the most sophisticated air quality monitoring system of any Australian city.

With around 98% of our workforce living locally, we call Mount Isa home. The wellbeing of our people and the community, and the responsible operation of our mine will always be our priority.

We will continue to engage openly about our operations and urge the community to join us in being informed and proactive about managing lead exposure.

Please visit www.mountisamines.com.au to access our dedicated multimedia portal for more information about the *Lead Pathways Study* and the Air Report.

OUR CONTINUOUS IMPROVEMENT IN ENVIRONMENTAL PERFORMANCE

As modern regulations and accepted science evolve, so does Mount Isa Mines.

Since acquiring Mount Isa Mines in 2003, we have invested in excess of \$500 million in environmental expenditure and significantly improved our environmental performance.

During this time we have worked to address a number of legacy issues inherent in managing one of Australia's largest and oldest mining facilities.

In 2011 Mount Isa Mines transitioned to a new Environmental Authority in line with modern regulations, with further improvements acknowledged in an amendment in September 2015.

Today, our 32,000 hectare mining lease is governed by over 80 separate permits and authorities, with stringent and transparent reporting of our environmental performance.

This community update provides you with an overview of just some of the industry-leading projects we have implemented over the years targeting air and water quality.



Mike Westerman
Chief Operating Officer
Copper Assets Australia



Greg Ashe
Chief Operating Officer
Zinc Assets Australia

Air Report overview

- Extensive research, unique to the Mount Isa region
- Work of five researchers and two PhD studies (*Lead Pathways Study* series)
- Looked at pathways and health impacts of lead in the Mount Isa community
- Determined most effective measures to minimise lead exposure

The Air Report concluded that the potential exposure risk of children from inhalation was limited (<5%) and mostly from ingestion via hand to mouth activity.



Air Quality

As part of our Environmental Authority, Mount Isa Mines employs four management plans:

MANAGEMENT PLAN	FOCUS AREA	KEY CONTROLS
Process Emissions Management Plan	Process generated dust and the ongoing review and implementation of controls	Ventilation and dust capture systems, enclosure of operations such as conveyors or sheds, wetting of materials, and mist or fog sprays to capture dust as it is emitted
Open Areas Management Plan	Wind driven dust from open areas on the Mount Isa Mines site	Dust suppression of stockpiles through watering and use of agents to bind surfaces. Onsite materials are contained in sheds and regular cleaning, wind breaks, stockpile covers and surface roughening is also employed
Road Hygiene Management Plan	Managing dust generated from vehicle movement	Vehicle wash down and tyre cleaning facilities, road cleaning equipment, on-road dust sampling, established containment zones to reduce silt trackage, covering vehicle loads, sealing of previously unsealed roads and vehicle speed restrictions
Air Quality Management Plan	Overarching plan to ensure compliance with the air quality requirements of our Environmental Authority	This plan promotes a continuous improvement process aimed at identifying significant dust hazards and establishing site specific best practice dust controls

Environmental Performance: emissions

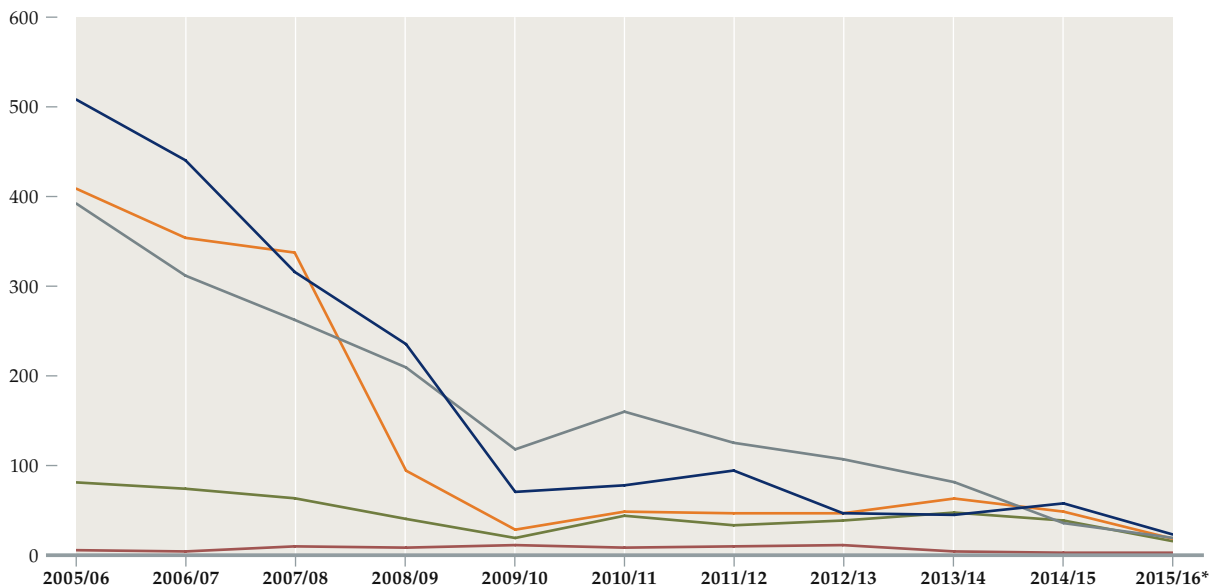
Over the past decade Mount Isa Mines has achieved substantial reductions in the total emissions generated from our site, particularly across a number of metals and metalloids.



KEY INITIATIVES:

- Significant improvements in emissions capture
- Better identification of emission sources and procedures to control them
- Major advancements in how we respond to the release of emissions and their measured impacts, aligned with tighter environmental limits

METALS AND METALLOIDS IN AIR (KG '000s)



SOURCE: NATIONAL POLLUTANT INVENTORY 2006–2016; * PUBLISHED IN MARCH 2017



Air quality monitors in the community

Key environmental initiatives

MANAGING DUST

- Established lead concentrate containment facility
- Relocated over 40% of ore crushing activities out of town to the George Fisher Mine operation
- Sealed eight kilometres of roads and established a road cleaning program
- Ongoing enforcement of strict clean-in clean-out procedures and dedicated wash bays for vehicles, to stop material leaving the site on people and equipment
- Established the ApportionIsa system to pinpoint sources of contaminants on site
- Installed 24/7 camera monitoring

IMPROVED MONITORING AND MANAGEMENT

- Between 2012–16, we invested \$5 million on air quality system initiatives
- Major upgrade of air quality monitoring network on site and within community
- Installed continuous metals monitor in the community, in addition to the Queensland Government Department of Science, Information Technology and Innovation monitor
- Implemented innovative dust forecast and alert system via atmospheric modelling

ENGAGING WITH OUR COMMUNITY

Mount Isa is one of Australia's most successful mining towns, with a demonstrated coexistence between industry and community.

We are a residential mine, focusing on local employment opportunities, supporting local businesses and investing in our community. Our people and their families are part of the community.

Commissioning research such as the *Lead Pathways Study* series is just one of the ways that we deliver on our commitment to continuous improvement across our operations.

Mount Isa Mines will continue to engage openly about our operations, including sharing the outcomes of the Air Report widely – both for academic discussion and public information.

In 2017, Mount Isa Mines will introduce a monthly Air Quality Dashboard. The dashboard will provide details about the operation's performance against key environmental indicators and limits.



Network of real-time air quality monitors

We have expanded our air quality monitoring network to improve coverage of Mount Isa and the surrounding district.

Legend

● SO₂ Monitors

High Volume Air Sampling monitors:

▲ PM₁₀*

△ Total Suspended Particulates

Dust monitors:

■ PM₁₀*

□ PM_{2.5}**

◆ Xact metals monitor

— Roads

— Railway

* Measures particulate matter 10 micrometres or less in diameter.

** Measures particulate matter 2.5 micrometres or less in diameter.

Mount Isa Mines operates the most comprehensive air quality monitoring system of any Australian city. Each resident is within 1,200 metres of a monitor, connected to a network that operates 24 hours a day, seven days a week.

STAYING INFORMED

- Bi-annual Community Information Sessions
- 1800 Community Feedback Hotline
- Air Quality in Mount Isa and *Lead Pathways Study* online portals, hosting a range of multimedia content
- Annual air quality presentations to key stakeholders
- AQMI smartphone app – industry-leading tool launched in 2016 to provide open and transparent information about sulphur dioxide management

DEDICATED AIR QUALITY CONTROL CENTRE (AQC)

AQC uses extensive air quality data to monitor emissions and ground-level concentrations, and observe emerging weather patterns.

AQC works predictively and reactively to minimise the impact of emissions and ensure compliance with our regulatory limits.

Trained AQC personnel operate independently to our smelter teams, maintaining direct contact with our operations as well as the Acid Plant.

An internal alert system advises of any potential requirements to reduce or stop production.

Water Quality

In November 2016, Mount Isa Mines completed an almost \$40 million water management improvement program, marking the completion of five years of intensive environmental upgrades across air and water quality.

WATER QUALITY IMPROVEMENT ACTION PLAN

Develop a new Water Balance Model for an integrated containment system capable of estimating the probability, volume and water quality in discharge events	✓
Develop site-specific water quality guidelines	✓
Improve our site-based capture of mine affected water and sediments, further minimising the risk of releasing water from site	✓
Upgrade storage, pumping and monitoring systems	✓
Implement new drainage and pipeline systems	✓

PROJECT SPEND

 ~\$40 m

157,000 PERSON-HOURS OVER FIVE YEARS

NEW STRUCTURES

 49

ON-SITE CONTAINMENT STRUCTURES BUILT

CAPACITY INCREASE

 991 ML

FOR STORM WATER STORAGE – EQUIVALENT TO 396 OLYMPIC-SIZED SWIMMING POOLS

NEW PUMPS

 21

TO PROTECT AGAINST OVERFLOW

PIPELINE INSTALLED

 26 km

ENOUGH TO STRETCH FROM DIAMANTINA POWER STATION TO LAKE MOONDARRA

WATER RECYCLED

 83%

ANNUAL AVERAGE OF PROCESS WATER RECYCLED IN 2015

Storm water captured onsite is leveraged for reuse within our operations, reducing our reliance on fresh water from local water supplies. At our operations in town, storm water is diverted to Kennedy Siltstone Open Cut for reuse within our processing network and at George Fisher Mine, it's pumped to the Tailings Dam for reuse within our underground operations. These projects were designed to reduce the risk of offsite water discharge to an annual exceedance probability of just 1%.

Environmental initiative highlights

AQMI smartphone app

In 2016 we launched our Air Quality Mount Isa (AQMI) smartphone app and web portal to better inform the community about sulphur dioxide management and air quality in Mount Isa.

It includes real-time data from our monitoring stations and a 24 hour forecast of westerly wind conditions.

Download the app on iTunes or Google Play



The most comprehensive air quality monitoring system of any Australian city

- **13** monitoring stations
- **>50** individual units
- **24/7** monitoring
- Each resident is within

1,200m
of an air quality monitoring unit

Independent *AQC staff*

Our specially trained staff at the Air Quality Control Centre monitor emissions and ground-level concentrations, and observe emerging weather patterns.

They operate independently and manage an internal alert system to reduce or stop production at Mount Isa Mines if required.



Clean-in *clean-out*

We have strict clean-in clean-out procedures to ensure no dirty work clothes leave site and everyone working in lead-exposed areas must shower before going home.



Over 40% *of ore crushing facilities relocated*

In 2015 we relocated our zinc-lead ore crushing activities out of town to the George Fisher Mine operation.



Prevent *the transfer of dusts* *from site to the* *community*

All vehicles and equipment leaving site are washed down either manually with high pressure hoses, or automatically via a drive-through vehicle wash to remove any dust or mine sediment.





Nearly **100%**
water capture on site

The completion of our almost \$40 million water management improvement program was designed to reduce the risk of offsite water discharge to an annual exceedance probability of just 1%.



Over **8 km**
of roads sealed

Road cleaning program established to minimise the dust generated from vehicle movements on site.

Supporting community health

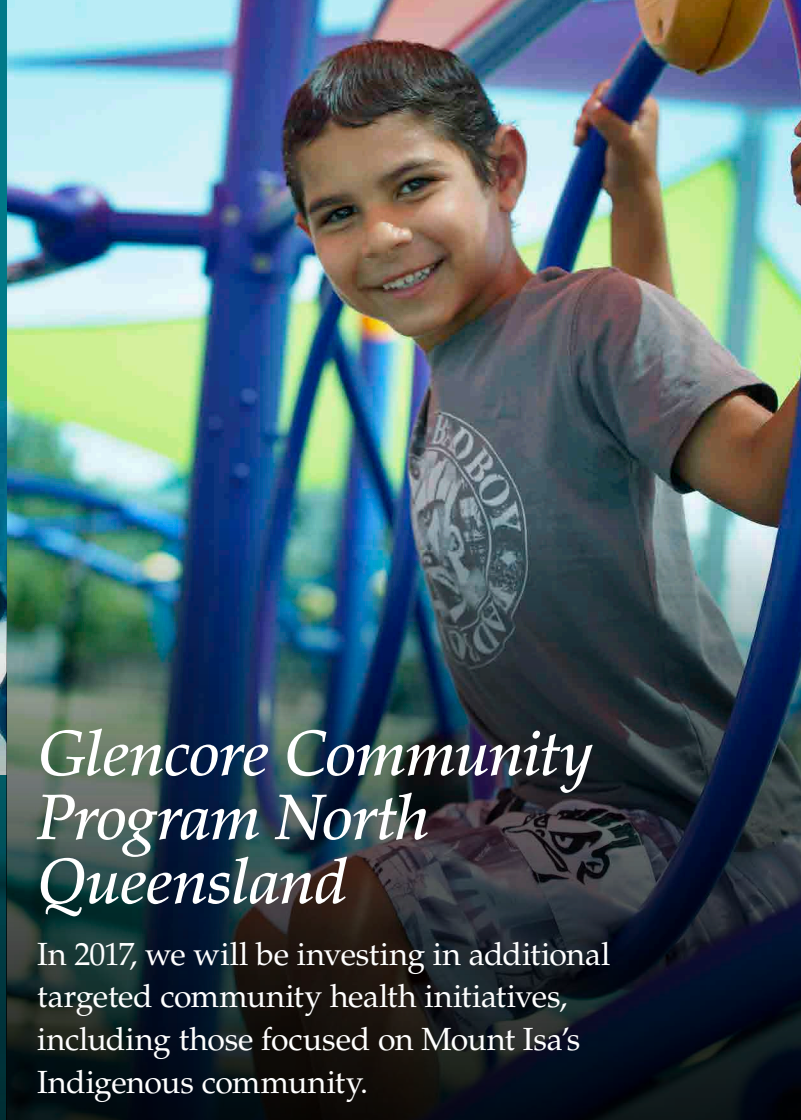


Free blood lead testing

We have been offering free and confidential blood lead testing via QML since 1994. We encourage all residents, particularly those with young children, to access this service regularly.

Glencore Community Program North Queensland

In 2017, we will be investing in additional targeted community health initiatives, including those focused on Mount Isa's Indigenous community.



Working collaboratively for community health

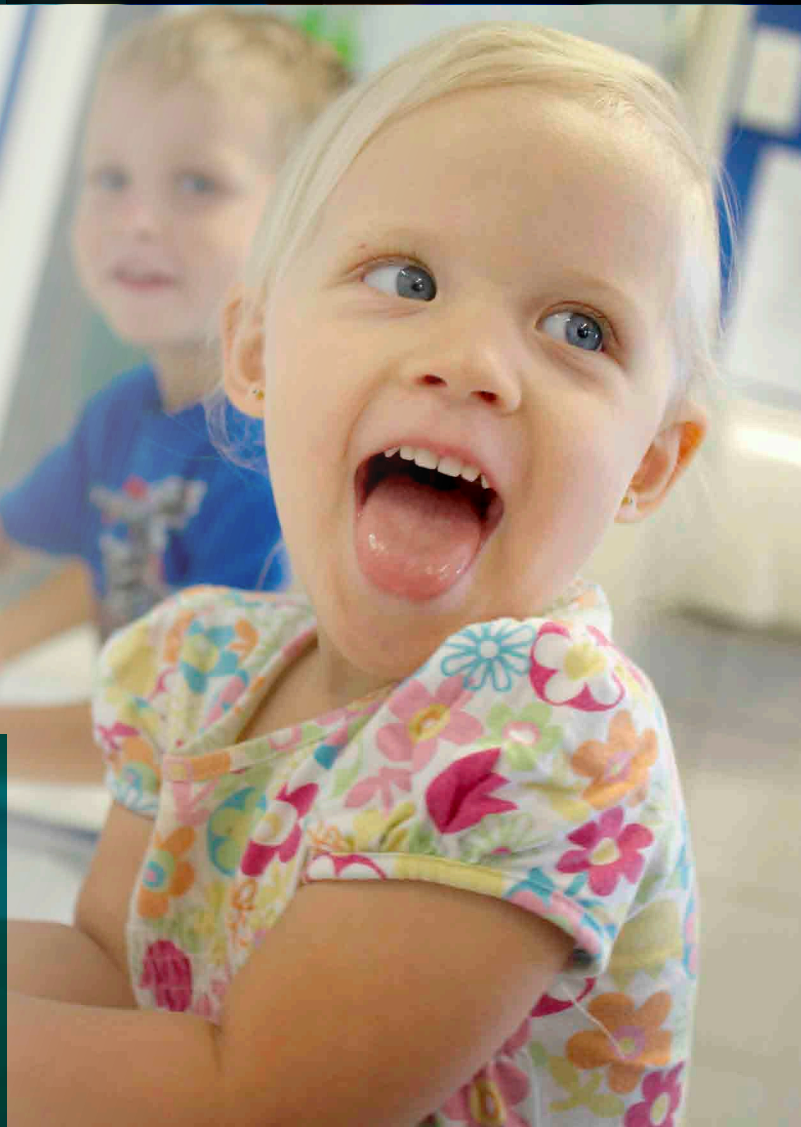
We are a founding member of the Lead Alliance and part of the Queensland Government-led Mount Isa Lead Health Management Committee.

The Alliance works collaboratively to raise awareness of the risks of lead, encourage behaviours to minimise exposure and build on existing health management programs across Mount Isa.



New smartphone app

In 2017 we'll be providing additional funding to the Lead Alliance to develop a dynamic smartphone app. It will focus on driving positive behavioural changes with tips, reminders and blood lead level tracking.



FEBRUARY 2017

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www.mountisamines.com.au

Community Feedback Hotline
1800 982 982

Mount Isa Mines Limited ABN: 87 009 661 447

Write to us at
Mount Isa Mines, Central Office
Community Relations Team
Private Mail Bag 6, Mount Isa Qld 4825

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