

A full-page photograph of a worker in a yellow and blue high-visibility safety suit, including a hood and respirator, operating a large industrial machine. The worker is wearing black gloves and is holding a metal rod connected to the machine. The background shows a complex industrial environment with metal railings and pipes. The word "GLENCORE" is overlaid in white serif font at the top right.

# GLENCORE

**LEAD INFORMATION GUIDE**  
Workforce information about lead at  
Mount Isa Mines

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

As modern regulations and accepted science evolve, so does Mount Isa Mines. We believe that all occupational illnesses and diseases are preventable and aim to become a safety leader in our industry.

The health and wellbeing of our people is paramount and we have comprehensive programs in place to manage and minimise occupational exposure to lead and other contaminants for our workforce and the broader community.

Under the Mining and Quarrying Safety and Health Regulations, both Mount Isa Mines and its workforce, including contractors, have obligations to minimise lead exposure.

You can help by following the health and safety requirements specific to your work area and together we can ensure Mount Isa Mines is a safe and rewarding place to work.



Mount Isa Mines requires its workforce to wear respiratory protective equipment, such as respirators, in designated areas. Respirators are used to protect against the inhalation of lead bearing dust.

## Lead and the mining process

**Mount Isa Mines is one of Australia's oldest, largest and most complex mining operations. We operate two separate mining and processing streams, copper and zinc, to deliver natural resources that have enduring roles in society.**

Our zinc-lead-silver assets in and around Mount Isa consist of the George Fisher underground mine and the Lady Loretta underground mine, operated by Redpath Australia.

Our processing stream treats ore from our local mines to produce both zinc and lead concentrate as well as lead bullion. Our products are transported by rail to our port operations in Townsville for export worldwide to markets including Europe, Asia, the United Kingdom and North America.

Like all natural resources, lead plays an important role in modern society. In fact, lead is found in a variety of commonly used products. The majority of all lead produced is used to make lead-acid batteries, which power our everyday industrial and consumer products. They also provide important emergency power supply for hospitals and mobile phone networks.

Lead is also used in televisions and computer screens to protect us from radiation, cable sheathing, solder, lead-based paint and in ceramics.



Mount Isa Mines conducts personal dust monitoring on-site.

## How can lead affect you?

Lead is a naturally occurring mineral with no known use in the human body. However, it is a heavy metal that can accumulate in our bodies.

### HOW IS LEAD ABSORBED INTO THE BODY?

Lead can be absorbed into the body through three pathways:

- **Inhalation (breathing):** Lead may be absorbed through the lungs by breathing fine particles of dust or fumes containing lead. Inhalation is the primary route of exposure for lead to enter the body.
- **Ingestion (eating):** Lead may be absorbed through the stomach and intestine

after it enters the digestive system. This can occur, for example, through eating or smoking with dirty hands, biting nails or eating contaminated food.

- **Absorption:** Lead may be absorbed through the skin.

Smoking increases a person's absorption of lead due to:

- Hand to mouth activity
- Cigarettes and tobacco contain minor amounts of lead.

This is one reason why smoking on-site is restricted to approved, designated areas only. It is strongly advised that hands and face be washed prior to smoking.

### HOW CAN LEAD POTENTIALLY AFFECT YOUR HEALTH?

If there are elevated levels of lead in your body, it can lead to some symptoms including:

- Anxiety
- Depression
- Fatigue
- Apathy
- Insomnia
- Anaemia
- Abdominal / joint pain
- Loss of appetite
- Headaches
- Irritability
- Weight loss
- Jaundice
- Nausea
- Constipation
- Loss of libido
- Memory loss.

The continued uncontrolled exposure to lead also has the potential to cause more serious symptoms such as:

- Kidney damage
- Nerve and brain damage.

Of course, these symptoms can also be the result of reasons other than lead exposure.

Women capable of having children should take special care to follow good work practices and a high standard of personal hygiene.



## Occupational exposure to lead

Mount Isa is one of the most mineral-rich regions in the world. The natural, highly mineralised nature of the region is the reason Mount Isa has enjoyed such a long and rich mining history.

Lead is a naturally occurring mineral and exists in a number of our operation's work areas.

Potential sources of lead exposure in your occupational settings include:

- Working at the George Fisher underground mine, Lady Loretta underground mine and the Zinc-Lead Concentrator, Zinc-Lead Filter Plant and Lead Smelter
- Some areas of copper processing
- Some laboratory work when dealing with lead samples and fire assay
- Maintenance activities on equipment that has operated in lead process areas.

There are two main sources of lead ore, Galena is lead sulphide and Cerussite a lead carbonate, which are both found at our mines. While on-site you may also encounter lead oxide in the form of fumes or dust. Other forms of lead such as lead acetate, lead carbonate and lead sulphide are most common when crushing, blasting or when experiencing windy conditions.

Your exposure to lead will vary depending on your work area.

### MINIMISING LEAD EXPOSURE AT WORK

Mount Isa Mines employs the hierarchy of controls, which is a systematic approach to managing safety in our workplaces. It provides a structure to select the most effective control measures to eliminate or reduce the risk of hazards like lead exposure in our operations.

To help minimise your lead exposure while working on-site, you are required to adhere to the following rules:

- All personnel working in lead risk areas are required to follow the strict clean-in, clean-out policy. That is, no dirty work clothes are to leave the site and everyone working in these areas must shower before going home



Mount Isa Mines workers have blood tests at varying frequencies to provide accurate blood lead levels.

- Wear a respirator in areas as instructed
- Adhere to crib room procedures in your department
- Use over-shoe covers in areas as instructed
- Only smoke in approved and designated smoking areas
- Do not eat or chew in lead risk areas, and only drink from protected sources (e.g. designated water coolers)
- Do not use compressed air or dry sweeping for cleaning in lead risk areas
- Do not tamper with engineering controls (e.g. fans, ducts etc.). These have been designed to lower your lead exposure.

Other ways of minimising lead exposure include:

- Not biting your fingernails
- Practicing good personal hygiene, including washing your hands and face before eating or smoking, and showering at the end of your shift
- Maintaining a balanced diet.

#### MANAGING LEAD EXPOSURE

All members of the Mount Isa Mines workforce are required to have regular blood tests for lead.

The frequency of this testing will depend on the area you work in, the tasks you perform, your gender, and the results from your last blood test.

We have established blood lead level limits at which workers will be removed from a lead exposure job and set appropriate levels at which they can return to normal duties. These blood lead level limits, in micrograms per decilitre ( $\mu\text{g}/\text{dL}$ ), and other medically relevant factors are outlined in PRO-100400 Lead Management.

For your health and safety we apply stricter blood lead removal limits than the Australian national standard of  $30 \mu\text{g}/\text{dL}$ . The health effects of elevated blood lead levels are considered more serious for young children so the blood lead limits set for females of reproductive capacity, and

for pregnant and breast feeding females are lower than for males and females not of reproductive capacity.

#### LEAD IN BLOOD TESTING

We have several blood lead clinics on-site that conduct regular blood testing, which are run by our medical provider. Nurses conduct the blood lead testing and report your results through BSafe, our on-site management system.

Safety advisors from your department or the on-site occupational hygienists are available to explain your blood lead result and any related health concerns. If you have an elevated blood lead result, you will be placed on a Lead Management program that will identify actions to be taken to reduce potential exposure in the future. The effectiveness of this Lead Management program will be measured by periodic blood lead tests.

## Minimising lead exposure at home and in the community

We operate on the doorstep of a thriving city of more than 22,000 people and we work hard to minimise any impact to our local community.

The minerals mined at Mount Isa Mines are the same as those that can be found outcropping throughout the city. As such, there are both natural and industrial sources of mineralisation intermixed throughout Mount Isa.

Our people and their families live locally and call Mount Isa home so the wellbeing of the community and operating responsibly will always be our priority.

#### MINIMISING LEAD EXPOSURE AT HOME

While lead is present in the region naturally as well as from industrial activities, there are some simple measures we can all take to reduce our exposure.

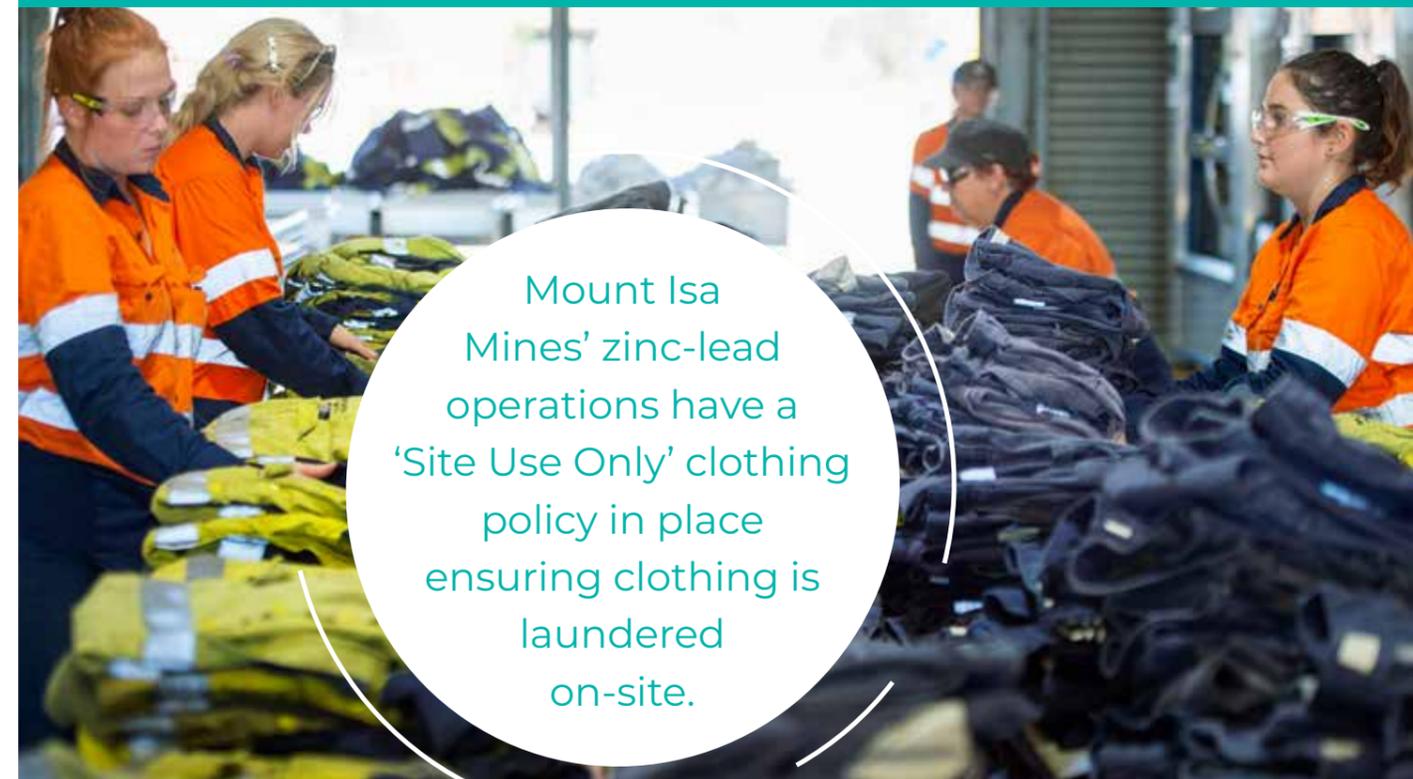
Families living in Mount Isa should ensure their children maintain a balanced diet with sufficient amounts of calcium, iron and zinc, while children's hands and faces should be washed before eating or sleeping.

Consider moving children's play areas away from bare soil and put grass, plants or artificial turf over exposed areas of dirt. It is important to keep children's dummies and toys clean as well as to wash pets regularly. A wet cloth should be used for dusting and it is recommended you mop the house rather than sweeping.

If you are living in an older home, it is recommended you check for peeling or deteriorating paint as it may contain higher levels of lead. Also, take care if you are renovating an older house for similar reasons.

Mount Isa Mines offers a free, independent and confidential blood lead monitoring program for all Mount Isa residents through Queensland Medical Laboratory (QML) Pathology.

If you or any member of your family have any concerns about blood lead levels we encourage you to take advantage of this service available daily from 7.30am–2.00pm, Monday to Friday, at QML Pathology located at 13 Isa Street, Mount Isa. They can be contacted on telephone (07) 4743 4299.



Mount Isa Mines' zinc-lead operations have a 'Site Use Only' clothing policy in place ensuring clothing is laundered on-site.

Mount Isa has one of the most intensive air quality monitoring systems of any city in Australia.



## MANAGING LEAD IN THE COMMUNITY

We take the issue of lead in the Mount Isa community very seriously. Since 2003, we have invested in excess of \$500 million in environmental initiatives to significantly improve our environmental performance and make Mount Isa a better place to live.

As part of this commitment, Mount Isa has the most intensive air quality monitoring system of any city in Australia, which is tracked rigorously so our operations stay well within regulatory limits.

Established in 1975, our Air Quality Control (AQC) Centre uses real-time air quality data to proactively monitor emissions, like dust and other particulates generated by our operations, across 13 monitoring stations in Mount Isa.

The way we do business evolves as new technologies and scientific research becomes available, and

these advancements allow us to review engineering approaches, operating procedures and monitoring programs to continually reduce emissions.

In 2006, we commissioned an independent Lead Pathways Study to track the potential movement of lead in the Mount Isa community through land, air and water sources. It is the most comprehensive study of its kind in Australia, investigating the natural and industrial pathways of lead and other heavy metals into the local community and assessing the potential risks to human and environmental health.

The health and wellbeing of our people and community is paramount and studies like this are helping us identify further opportunities to improve our environmental performance.

Some key improvement initiatives include:

- Establishing a lead concentrate containment facility
- Relocating over 40 per cent of

ore crushing activities out of town to our George Fisher Mine operation

- Sealing eight kilometres of roads and establishing a road cleaning program
- Ongoing enforcement of strict clean-in, clean-out procedures to ensure no dirty work clothes leave site
- An on-site fuelling station and servicing facility to reduce vehicle movement and dedicated wheel washes to stop material leaving on equipment
- Installation of two continuous metal monitors in the community, in addition to the Queensland Government Department of Environment and Science monitor which measure metals in the air 24/7
- Implementing an innovative dust forecast and alert system via atmospheric modelling
- Significant improvements in emissions capture and better identification of emission sources and procedures to control them

We are one of the founding members of the Lead Alliance, a group established to develop and deliver extensive and ongoing public education campaigns to ensure the health of Mount Isa residents.

We are committed to informing the community about how to live safely in an environment where lead exists from natural and industrial sources and will always support initiatives that improve the health and well-being of the Mount Isa community.

**The Lead Alliance provides useful advice and a range of helpful resources on reducing your exposure to lead. For more information on the Lead Alliance initiatives and activities please contact 1800 457 547, or visit [www.leadalliance.com.au](http://www.leadalliance.com.au)**

## We take the issue of lead levels in the Mount Isa community seriously

Since 1993, Mount Isa Mines has offered a free, independent and confidential, intravenous blood lead monitoring program for all Mount Isa residents. If you, or any other Mount Isa resident, would like to use this service please contact:

### Queensland Medical Laboratory

Address: 13 Isa Street, Mount Isa

Telephone: (07) 4743 4299

Opening hours: Monday–Friday: 7.30am–2.00pm

For children five years and younger, free capillary testing (finger prick test) is also available at primary health care providers and the North West Hospital and Health Service. Testing is offered at the same time as giving immunizations – at age six months, 12 months, 18 months and three and a half years. Testing outside of immunizations is also available up to five years in age.

### North West Hospital and Health Services:

*Child Health Services and Paediatric Outpatients*

30 Camooweal Street, Mount Isa

(07) 4744 4444

### Gidgee Healing

8 Burke Street, Mount Isa

(07) 4744 0400

### Child Youth Health Centre

3 Lucy Street, Mount Isa

(07) 4743 2168

### Ngukuthati Children and Family Centre

70 Short Street, Mount Isa



