

# Century Mine



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### Century Mine Process Flowchart

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## Zinifex Century Mine

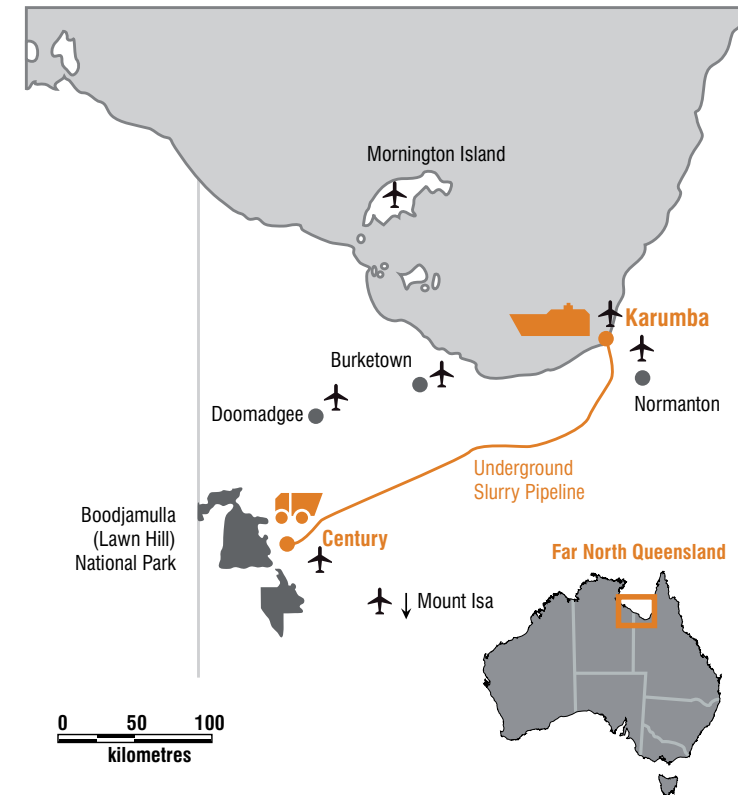
**Century Mine, located in the remote lower Gulf region of north west Queensland, is Australia's largest producer of zinc concentrate.**

The Century operations comprise two sites - the mine at Lawn Hill, and associated concentrate dewatering and ship-loading facilities at Karumba, on the Gulf of Carpentaria.

Mining zinc, lead and silver, the mine is an open cut operation project to operate until approximately 2015. The mineral concentrate produced from the ore is transported in slurry form via a 304 kilometre underground pipeline to Karumba, located on the Gulf of Carpentaria, where it is dewatered before shipment to Australian and overseas markets.

Base metals were first discovered in the Lawn Hill region in 1869, and the first mining lease in this area was pegged in 1887 over what is now known as the Silver King vein deposit. The area encompassing these veins, which includes the Century deposit, was proclaimed the Burketown Mining Field in 1899.

Exploration titles were granted to CRA in 1987, precisely 100 years after the initial discovery at Silver King: hence the name Century. Century zinc concentrate is highly valued by zinc smelters because of its low iron content, which enables smelters to produce minimal amounts of iron-containing by-products that can pose re-treatment and disposal problems.





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Conveyor

Grinding in the ball mill

Thickener Tanks

Pump Station

Underground slurry pipeline  
(from the mine to the port)

Slurry arrives at the port

## Century Mine Operations

### Key statistics

Location	Queensland, Australia
Mine type	Open pit
Ore body	Sediment hosted zinc-lead mineralisation
Primary product	Zinc concentrate
Secondary product	Lead concentrate and silver
Mining method	Drill, blast, load, haul
Commissioned	2000
Expected mine life	2015+
Employees*	218
Contractors*	752

\* as at 31 June 2007

### Key production statistics 2006/07

Ore treated	5,593,510 tonnes
Waste stripped	41.2 million bank cubic meters
Zinc concentrate produced	887,090 tonnes
Contained zinc	502,038 tonnes
Lead concentrate produced	58,622 tonnes
Contained lead	37,845 tonnes

The Century deposit was discovered in 1990 with full commercial production being reached in 2003.

## Mining Operations

**Conventional open pit mining methods are utilised at Century. The ore body is flat-lying and covers an area of 1.4 kilometres by 1.2 kilometres with a final depth of 344 metres.**

The Century mining fleet consists of Liebherr shovels and 170 tonne and 240 tonne haul trucks plus ancillary equipment. The fleet moves more than 100 million tonnes of material a year including approximately 5 million tonnes of ore.

## Concentrator Operations

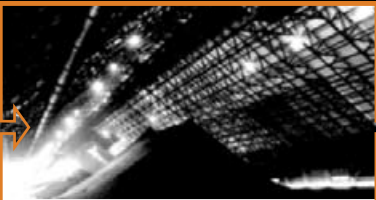
**The Century concentrator is primarily a conventional grinding and froth flotation circuit.**

Due to the particularly fine nature of the zinc sulphide in the ore and its association with silicates, the Century ore requires ultra fine grinding in order to maximise recovery of zinc sulphides and achieve acceptable in concentrate levels for sale.

## Port Dewatering Facility

**Concentrates at the mine site are transported via a 304 kilometre underground slurry pipeline to a dewatering and transport facility in Karumba on the Gulf of Carpentaria.**

From here it is transported via our transfer vessel the MV Wunma to export ships anchored offshore.



Thickener Tanks (at the port)

Filter Presses

Rotary Dryer

Concentrates storage shed

Transfer Vessel - MV Wunma

Transfer to export ships

## Transfer Vessel

**The MV Wunma, a 5,000 tonne covered transfer vessel, transports the mineral concentrate from Karumba to export ships anchored in a designated area 45 kilometres offshore in the Gulf of Carpentaria.**

Century exported its first 10,000 tonnes of zinc concentrate on 21 December 1999. Today, approximately one shipload per week leaves the Gulf waters destined for customers in Europe, Asia and Australia.

## Infrastructure

**The remoteness of the Century Mine site required the establishment of key infrastructure for mining operations. Supply of power to the mine site is by a 220kV overhead transmission line from Mica Creek Power Station at Mount Isa.**

Existing public roads were upgraded and a new mine access road capable of carrying heavy loads was built for the supply of goods and services to the mine site.

Telecommunication services in the region were significantly upgraded and an all weather airstrip was constructed at the mine site to cater for Century's commute workforce.

Employees are accommodated in private, motel style accommodation at the mine's Darimah Village. Recreation facilities include a swimming pool, recreation room, oval, gym and a multi-purpose outdoor facility catering for tennis, basketball and indoor cricket.

## Safety, Health and Environment

**At Century, we value safe operation, the health of our employees and the protection of the Gulf environment. We are also committed to the long-term and meaningful relationships with the communities in which we operate.**

The medically referred injury frequency rate at Century Mine has trended down for some years - an excellent result flowing from a dedication to improving safety procedures and safe-work methods. While this result is a source of pride, Century Mine management sees the next breakthrough in improving safety performance will come through cultural change and fostering a workplace that embraces behavioural safety as well as excellent safety systems.

We are pursuing opportunities to support the health and wellbeing of our employees and contractors - both at work and at home.

We have identified key health risks such as dehydration and workplace exposure to the metals in the ore we process at the site and implemented programs to manage them. Healthy eating programs, exercise challenges and health checks are other healthy lifestyle initiatives on site.



For more information about Century Mine contact the Stakeholder Relations Officer on (07) 4769 5589.

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## Gulf Communities Agreement

**The Gulf Communities Agreement (GCA) is unique in that it is a tripartite agreement between the Native Title Parties (Waanyi, Mingginda, Gkuthaarn and Kukatj people), Zinifex and the Queensland Government.**

Historic in its size and scope, the agreement is a living document continuing to provide ongoing compensation, employment, training and business opportunities to the Native Title parties to the agreement.

The agreement is Century Mine's 'licence to operate' and a focal point for Indigenous people of the Gulf many of whom have sought employment or been employed at Century over the ten years since signing.

Key aspects of the GCA include:

- Employment and training of local Aboriginal people.
- Identifying business opportunities for local Aboriginal people and assisting in the establishment of those businesses.

- Ensuring the environment and cultural heritage issues are protected.
- Transfer of five pastoral properties to local Aboriginal interest.
- Continued open and honest consultation and communication with the local Aboriginal communities.

## Exploration

**Zinifex holds interests and manages exploration over 4,603km<sup>2</sup> of the Lawn Hill Platform.**

Joint venture partners include Smarttrans Holdings Limited at Wangunda, and Icon Resources at Constance Range. These tenements located in the vicinity of the operating Century Mine have potential to contain repetitions of the shale hosted, stratiform style Century deposit. Numerous vein style zinc, lead and silver deposits that exist in the region are also under investigation.

## Geology

**The Century deposit is hosted by mid-Proterozoic rocks of the Mount Isa Inlier, which along with the adjacent McArthur Basin hosts major zinc-lead-silver deposits at Mount Isa, Hilton, George Fisher, Cannington, Dugald River, Lady Loretta, Century and McArthur River.**

The mineralisation at Century occurs within an 850 metre thick sequence of siltstone, shale, carbonaceous shale and sandstone that is overlain by limestone.

The mineralised interval is around 45 metres thick and is well defined. The ore body is flat lying and covers an area of 1.4 kilometres by 1.2 kilometres and is closed off in all directions either by the limestone unconformity or by faulting.

The mineralisation dips at between 5 and 25 degrees over most of the area steepening to 70 degrees at the margins.