FACT SHEET

Radiation

Who is Cauldron Energy?

Cauldron Energy Ltd (Cauldron) is an Australian mineral exploration and resource development company listed on the Australian Securities Exchange (ASX:CXU). The company focuses on exploring uranium, a resource that is critical to the nuclear power renaissance occurring globally.

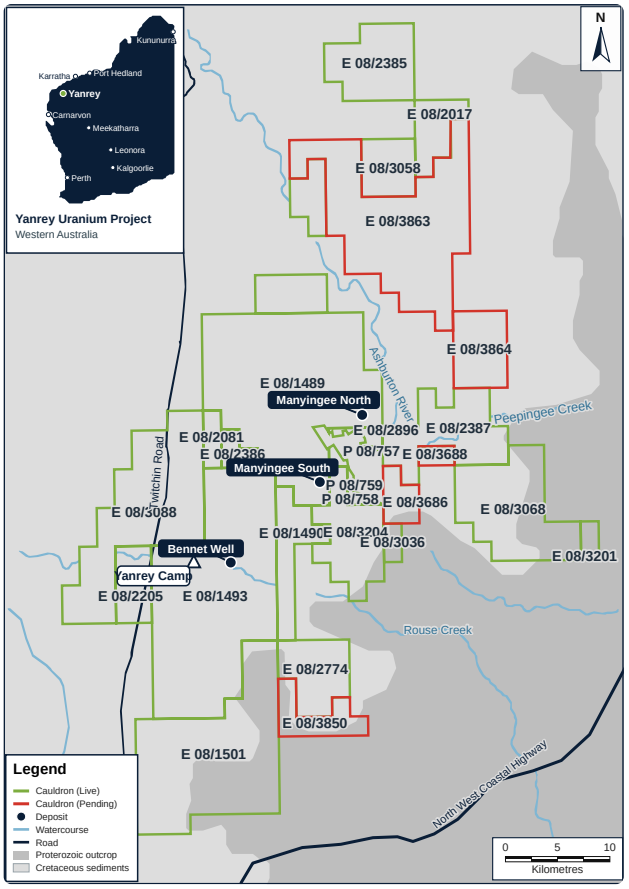
Cauldron's flagship project is the world-class Yanrey Uranium Project located in northern Western Australia (WA), which encompasses three separate uranium deposits – Bennet Well, Manyingee South and Manyingee North. In addition, Cauldron holds several sand tenements in the Onslow region of WA.

The Yanrey Uranium Project

The Yanrey Uranium Project is located around 100 kilometres south of Onslow in northern WA.

The project is situated in a highly prospective, mineral-rich region containing multiple known economic uranium deposits.

The project area comprises a mostly contiguous group of 21 granted exploration tenements and five exploration licenses (ELs) under application, covering a combined area of about 1,490 square kilometres (km²). The exploration licenses cover about 80 kilometres of a highly prospective linear paleo-foreshore, which hosts much of the known uranium mineralisation in the district and is centred on the Bennet Well Uranium Deposit.



Yanrey Uranium Project tenements, Western Australia

Subject to policy change in WA, Cauldron proposes to mine uranium via the in-situ recovery (ISR) mining method at Yanrey.

For further information, see our factsheet: 'In-situ recovery mining of uranium'.

What is radiation?

Radiation is a form of energy that travels as waves or particles. It occurs naturally in our environment and is present all around us every day. Natural sources of radiation include the sun, rocks and soils, the air we breathe, and even the food and water we consume.[1, 2, 3]

There are different types of radiation. Some forms, such as visible light and radio waves, are part of everyday life and do not pose a health risk at normal levels. Other forms, known as ionising radiation, are used in medicine, industry and research and can be harmful if exposure levels are excessively high. As with many natural and industrial substances, the potential risk depends on the amount and duration of exposure.[4, 5]

Modern uranium mining operations are carefully designed, monitored and regulated to protect workers, local communities and the environment. Radiation exposures from mining activities are managed to remain well within strict regulatory limits and are typically comparable to, or only a small fraction of, the natural background radiation that people receive from everyday sources.[6, 7]

1. International Atomic Energy Agency 2026. 'What is Radiation'. Accessed October 2026. **2.** Australian Radiation Protection and Nuclear Safety Agency 2026. 'Ionising radiation and health'. Accessed October 2026. **3.** Australian Radiation Protection and Nuclear Safety Agency 2026. 'What is background radiation?'. Accessed October 2026. **4.** International Atomic Energy Agency 2026. 'What is Radiation'. Accessed October 2026. **5.** World Health Organisation 2026. 'Ionizing radiation and health effects'. Accessed October 2026. **6.** Australian Radiation Protection and Nuclear Safety Agency 2026. 'Ionising radiation and health'. Accessed October 2026. **7.** International Atomic Energy Agency 2018. 'IAEA Safety Standards for Protecting People and the Environment. Occupational Radiation Protection: General Safety Guide No. GSG-7'. Accessed October 2026.

Radioactivity is a natural part of our Earth

Naturally occurring. Responsibly managed.

Radioactivity occurs naturally in many rocks and minerals. Uranium mining, like several other types of mining including mineral sands, rare earth and phosphate mining, manages naturally occurring radioactive materials that are already present in the ground.



URANIUM MINING
In-situ recovery (ISR)

Extracts uranium using a wellfield and carefully managed, low-impact in-situ recovery methods.



MINERAL SANDS MINING

Recovers valuable minerals such as zircon, ilmenite and rutile, which can contain naturally occurring radioactive materials.



RARE EARTH MINING

Extracts rare earth elements, which can also contain naturally occurring radioactive materials.



PHOSPHATE MINING

Extracts phosphate rock, which can contain naturally occurring radioactive materials.

Types of radiation

Radiation can be grouped into two main categories: natural radiation and human-made radiation. We are exposed to both types every day.

Natural radiation

Natural radiation comes from the environment and is present everywhere around us. Common sources include:

- Cosmic radiation from the sun and outer space
- Naturally occurring radioactive materials found in rocks, soil and groundwater
- Radon gas, which forms naturally from the breakdown of uranium and thorium in rock and soil
- Small amounts of naturally occurring radioactive elements found in food, water and even our own bodies.

Natural background radiation accounts for most of the radiation that people are exposed to over their lifetime.[8, 9, 10, 11]

Human-made radiation

Human-made radiation comes from technologies and activities that use radiation or radioactive materials. Common sources include:

- Medical procedures, such as X-rays, CT scans and nuclear medicine
- Industrial and research applications, including equipment used in manufacturing, agriculture and scientific research
- Some consumer products, such as some smoke detectors
- Nuclear power generation.

For most people, medical procedures are the largest source of human-made radiation exposure.[12, 13, 14, 15]

Did you know?

Around **80%** of the average person's radiation exposure comes from **natural sources** such as cosmic rays, rocks, soil, food and radon gas, while most of the remaining exposure comes from **medical procedures** such as X-rays and CT scans.

NATURAL SOURCES (~80%)



Cosmic rays
Radiation from space



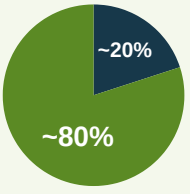
Food
Small amounts of natural radioactivity in what we eat



Rocks and soil
Naturally occurring radioactive materials



Radon gas
A naturally occurring gas from the ground



MEDICAL PROCEDURES (~20%)



X-rays
Used for medical imaging



CT scans
Provide detailed images for diagnosis

Radiation is a natural part of our environment and also plays an important role in modern medicine.

8. Australian Radiation Protection and Nuclear Safety Agency 2026. 'What is background radiation?'. Accessed October 2026. **9.** Australian Radiation Protection and Nuclear Safety Agency 2026. 'Ionising radiation and health'. Accessed October 2026. **10.** World Health Organisation 2026. 'Ionizing radiation and health effects'. Accessed October 2026. **11.** Australian Radiation Protection and Nuclear Safety Agency 2026. 'Ionising radiation and health'. Accessed October 2026. **12.** World Health Organisation 2026. 'Ionizing radiation and health effects'. Accessed October 2026. **13.** South Australia Environment Protection Authority (EPA) 2026. 'Environmental info, radiation, advice and assistance'. Accessed October 2026. **14.** Australian Radiation Protection and Nuclear Safety Agency 2026. 'Ionising radiation and health'. Accessed October 2026. **15.** World Health Organisation 2026. 'Radiation and health'. Accessed October 2026.

Uranium and radiation

Radiation is energy that travels from one place to another. It occurs naturally in our environment and can be divided into two categories: **non-ionising radiation** and **ionising radiation**.

> **Non-ionising radiation** has lower energy and includes visible light, radio waves, microwaves and mobile phone signals. It does not have enough energy to change the structure of atoms.
>
> **Ionising radiation** has higher energy and can remove electrons from atoms, creating charged particles called ions. Natural sources of ionising radiation include cosmic rays from space, naturally occurring radioactive elements in rocks and soil, and small amounts of radioactive materials found in food, water and the human body.

Uranium is a naturally occurring metal found in rocks, soil and groundwater throughout the Earth's crust. Because uranium is radioactive, it naturally releases ionising radiation through a process called radioactive decay. This process has occurred naturally for billions of years and contributes to the background radiation present in our environment.

When uranium and other radioactive materials decay, they release three main types of ionising radiation: **alpha, beta** and **gamma** radiation.

Alpha radiation

- Alpha particles are relatively heavy and carry a positive charge
- They are released during the radioactive decay of certain radioactive elements, including uranium
- They travel only a short distance and can be stopped by a sheet of paper or the outer layer of human skin
- They generally pose little risk outside the body but may be harmful if radioactive material is inhaled, swallowed or enters the body through a wound.

> Examples of alpha radiation – radon gas in homes and smoke detectors.

Beta radiation

- Beta particles are fast-moving, high-energy electrons released during radioactive decay
- They are smaller and lighter than alpha particles
- They can travel further than alpha particles and penetrate paper but are generally stopped by a thin sheet of aluminium, plastic or similar materials
- Exposure to high levels of beta radiation can affect skin and underlying tissue.

> Examples of beta radiation – potassium-40 naturally found in foods such as bananas and potatoes, and some medical tracers used in healthcare.

Gamma radiation

- Gamma rays are high-energy electromagnetic waves released during radioactive decay
- They have no mass and no electrical charge
- They can travel long distances through air and penetrate the human body
- Dense materials such as lead, steel or concrete are used to reduce or block gamma radiation.

> Examples of gamma radiation – cosmic radiation from space and some medical imaging and cancer treatment equipment.

Radiation and its effects on people

Decades of scientific research have improved our understanding of how radiation affects human health.

> - Radiation workers can safely perform their jobs when exposure is maintained within strict regulatory limits.
> - Exposure to low levels of radiation has not been shown to cause measurable health effects in most population studies.
> - Adverse health effects are generally associated with high doses of radiation, well above those encountered in everyday life or regulated workplaces.[16, 17, 18]

16. Australian Radiation Protection and Nuclear Safety Agency 2026. 'Health effects of ionising radiation'. Accessed October 2026. **17.** World Health Organisation 2026. 'Ionizing radiation and health effects'. Accessed October 2026. **18.** International Atomic Energy Agency 2026. 'Radiation protection for workers'. Accessed October 2026.

Radiation safety and regulation

Australia has a comprehensive regulatory framework to ensure radiation exposures are kept as low as reasonably achievable and within established safety limits. Radiation-related activities are regulated by the relevant State and Australian Government authorities, including the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), which develops national radiation protection standards and guidance. These standards are implemented through legislation, licensing requirements, and regulatory oversight.[19]

The potential for radiation exposure from an ISR uranium mine is low due to the nature of the mining process and the strict controls applied to its operation. In-situ recovery mining occurs underground, with uranium-bearing solutions contained within a controlled wellfield and closed pipework system, reducing the potential for radiation exposure and environmental release.

In-situ recovery mining operations are subject to ongoing monitoring, inspection, and regulatory oversight by the relevant State and Australian Government authorities. Radiation protection programs typically include worker monitoring, environmental monitoring, operational controls, training, and regular auditing to verify compliance with regulatory requirements and ensure the protection of workers, the public, and the environment. International radiation protection principles also emphasise the use of monitoring, protective measures, and safety systems to maintain exposures at safe levels.[20, 21, 22]

WORKER MONITORING



- Personal dosimeters
- Track radiation exposure
- Ensure doses remain within limits

ENVIRONMENTAL MONITORING



- Monitor air, water, soil and other media
- Detect and evaluate releases
- Verify minimal impact to the environment

OPERATIONAL CONTROLS



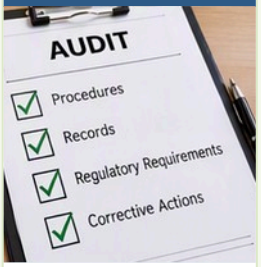
- Use time, distance and shielding
- Implement procedures and engineered controls
- Control access and radiation sources

TRAINING



- Educate workers on radiation risks
- Provide job-specific training
- Reinforce safe work practices

AUDITING & COMPLIANCE



- Conduct regular audits
- Verify compliance with regulatory requirements
- Identify and correct deficiencies
- Drive continuous improvement

Contact us

Cauldron Energy Ltd (Cauldron) is an Australian mineral exploration and resource development company listed on the Australian Securities Exchange (ASX:CXU).

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19. Australian Radiation Protection and Nuclear Safety Agency 2026. 'Radiation Protection Series F-1. Fundamentals for Protection Against Ionising Radiation (2014)'. Site accessed October 2026. **20.** International Atomic Energy Agency 2026. 'Radiation protection for workers'. Accessed October 2026. **21.** International Atomic Energy Agency 2018. 'Occupational Radiation Protection'. Accessed October 2026. **22.** Australian Radiation Protection and Nuclear Safety Agency 2026. 'Radiation Protection Series F-1. Fundamentals for Protection Against Ionising Radiation (2014)'. Site accessed October 2026.