



NEW ZEALAND
PETROLEUM & MINERALS



Producing petroleum and minerals



**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
HĪKINA WHAKATUTUKI

[New Zealand Government](http://www.newzealand.govt.nz)

PRODUCING PETROLEUM AND MINERALS

Mineral resources commercially extracted in New Zealand include oil and gas, gold, silver, iron ore, coal, and rock for construction and roading.

Mining can be undertaken in a number of different ways and on a variety of scales. Small-scale activities include gold panning (undertaken by 'hobby miners'), beach sand gold mining and suction dredging. Large-scale activities range from commercial oil and gas extraction to opencast or underground minerals mining operations and quarrying.

Mining operations use different methods and equipment depending on the resource being mined and its location. While much mining takes place onshore, some is undertaken offshore through dredging and oil and gas production platforms.

Before mining takes place, operators will usually have done prospecting and exploration in the area to accurately delineate the mineral deposit or petroleum field. Sometimes existing records of prospecting and exploration work in an area are used. The Government has invested in acquiring seismic data to encourage further petroleum exploration and aerial data over large parts of New Zealand to support minerals development.

For further information on the kind of activities that might be done before mining takes place, see the Searching for petroleum and minerals information sheet.

CROWN OWNED MINERALS

The Crown owns all petroleum (oil and gas), gold, and silver in New Zealand and has rights to all minerals in the Exclusive Economic Zone (EEZ) and the Continental Shelf. The Government may also own other minerals - for example those found on Crown-owned land.

Many minerals and aggregates are privately owned and do not require mineral permits from the Government – however they would likely require a resource consent from the local council. Numerous quarries and some iron sand projects are in this category.



MINING ACTIVITIES

In order to mine Crown-owned minerals, a person or company requires:

- › A Petroleum Mining Permit (PMP) or Minerals Mining Permit (MMP) from NZP&M.
- › They would likely require a resource consent from the local district and/or regional councils for the extraction activity, or marine consent if in the EEZ.
- › They require permission from the landowner to access the land, known as a Land Access Arrangement.

PETROLEUM AND MINERALS MINING PERMITS

These allocate a resource in a specified area to a permit holder, who will pay royalties to the Crown based on their production. PMPs or MMPs can be granted for up to 40 years.

Before granting permits, NZP&M, in accordance with the Crown Minerals Act 1991 (CMA), assesses an operator's understanding of the petroleum or mineral resource; their technical and financial capability; proposed Work Programme; and compliance history. It also undertakes a preliminary, high level assessment of an operator's capability and systems that are likely to be required to meet applicable health, safety and environmental legislation.

RESOURCE AND MARINE CONSENTS

If the mining activity is onshore or within 12 nautical miles of the coast resource consents from the local district and/or regional council may be required under the Resource Management Act 1991, particularly for large mining operations. Whether resource consents are required depends on the activity taking place and the local councils' District or Regional Plans. The resource consent process weighs potential benefits for the community (eg. jobs, infrastructure development) against potential impacts on the environment and other interests, and the process can include public input. Consents can be declined outright or accepted with certain conditions, including, for example, the monitoring of water discharges, the timing of when underground detonations can occur, and the publication of information relevant to communities. Some activities are listed as being "controlled" in district or regional plans and the council must grant an application for such activity but can still include conditions.

For mining in New Zealand's Exclusive Economic Zone (from 12 nautical miles out to 200 nautical miles) and Continental Shelf (when the shelf extends beyond the EEZ out to a maximum of 350 nautical miles) a marine consent is likely to be required from the Environmental Protection Authority (EPA) under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012. Like resource consents, the marine consent process weighs potential benefits and impacts. They can be declined or granted with conditions.

Even if resource or marine consents are not required the effects of activities may be managed through conditions on permitted activities set in regulations or plans.

For more information on the regulation of petroleum and minerals activities see the [Guide to Government Management of Petroleum](#) and the [Guide to Government Management of Minerals and Coal](#).

LAND ACCESS ARRANGEMENTS

To conduct mining activities an operator requires a Land Access Arrangement with the land owner. In the case of Crown owned land, the majority is held by Land Information New Zealand (LINZ) and the Department of Conservation. See the [Land Access](#) information sheet for more information.

MINING ON CONSERVATION LAND

About a third of New Zealand is conservation land and there has been mining on parts of what is now the Department of Conservation (DoC) estate for more than 100 years.

There are active mining permits over less than half a per cent of the conservation estate. The actual footprint of mining operations is smaller again.

Mining permits are not ordinarily granted on land listed under Schedule 4 of the Crown Minerals Act. This is because there are a limited number of situations where the Minister of Conservation can accept applications for Land Access arrangements over Schedule 4 land – for example for certain 'minimum impact activities'. This means in the vast majority of situations, even if a company were granted a mining permit they could not carry out mining work.

Schedule 4 land includes all National Parks, Marine Reserves, and specified areas of high value conservation land.

Mining is allowed on other public conservation areas, like Forest Parks, but there may be restrictions under the local District Plan.

Any larger-scale mining activity on conservation land would likely require resource consents and would require a Land Access Arrangement with DoC. An arrangement can be declined or granted with stringent conditions to minimise or mitigate any environmental impacts.

MINING METHODS

ALLUVIAL MINING

Alluvial mining is a method of mining where minerals that are mixed with sand or gravels are dug up and the desired mineral physically separated out from other rock, using filtering, magnetic, or gravity separation machines. Alluvial mining can involve recreational gold-panning and suction dredging in streams or, on a larger scale, commercial land-based gold mining in river beds and on river terraces. The Tahoroa iron sand mining project uses similar suction dredging in groundwater to extract the iron sands for separation prior to exporting

OPEN PIT MINING

This method of mining is mainly used for hard rock gold, iron sand, aggregate or coal mining in New Zealand. Open pit mines involve digging back the land to expose the mineral to be mined. The Martha gold mine in Waihi and Stockton opencast coal mine near Westport are examples of open pit mining. The mined material can be taken from the pit by conveyor or truck and may then be screened, crushed and treated to obtain the desired mineral. Roads or access ways need to be created so that trucks can access the pit materials. The waste material removed is generally returned to the mine site once the minerals have been taken out or stored in properly engineered impoundments, such as waste rock stacks or man-made dams (tailings dams) to contain ground waste rock. The mine site will need to be rehabilitated to meet any land use or resource consent requirements once the mining has finished.

UNDERGROUND MINING

Gold, silver and coal are the minerals most commonly extracted by underground mining methods in New Zealand. The Spring Creek coal mine near Greymouth and the Correnso underground gold mine in Waihi are examples of underground mines. To mine underground, a network of access tunnels or shafts may need to be made to reach the minerals that lay sometimes hundreds of metres below the surface of the earth. Such mining typically uses machines with cutting heads or high pressure water “blasting” to extract the mineral laden material from the ground. Once excavated, the minerals are brought to the surface by conveyor, slurry pipeline, or specialised underground trucks, for processing and treatment.

SEABED MINING

Small scale offshore sand mining is an established practice in the Kaipara Harbour and Pākiri beach. This sand is used for construction, concrete and to replenish beaches.

Two major offshore minerals projects have been granted mining permits; one to extract phosphate nodules from the Chatham Rise and the other to mine iron sands in the South Taranaki Bight. Being in the EEZ these require a marine consent before mining activity can take place.

Seabed mining, at the scale and depth of these two projects, is new to New Zealand. The closest equivalent activity to these projects currently taking place in New Zealand, however, would be the extensive dredging of harbours and shipping lanes that takes place on a regular basis to allow for cargo and tourist shipping. These activities are typically regulated by regional councils, some of which have experience in investigating and setting environmental conditions around dredging activities.

For more information see the [Seabed mining](#) information sheet.

PETROLEUM PRODUCTION

The Taranaki region is currently home to all of New Zealand’s oil and gas producing operations. Oil and gas is extracted from the ground or seabed by way of a production bore(s) that is drilled by an oil rig into the reservoir, sometimes kilometres below the surface. A steel pipe (casing) is placed in the hole, to provide structural integrity to the newly drilled wellbore. Holes are made in the base of the well to enable oil and gas to pass into the bore. The flow of oil or gas from the reservoir is controlled at all stages. This includes using a blow-out preventer during drilling and installing a series of valves – known as an xmas tree – on top of the well to regulate pressure and control flows during production.

Production facilities and related infrastructure are built to process the oil and gas, either onshore, as in the case of the Kapuni field gas-condensate production station, or offshore, as in the case of the Tui oil field.

New Zealand’s offshore petroleum operations use permanent platforms, such as the Maui platform where gas is piped onshore for processing, or Floating Production Storage and Offloading (FPSO) vessels, where oil undergoes basic processing onboard the ship and is offloaded to another vessel for transportation overseas.



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