



**OCEANAGOLD**  
WAIHI OPERATION

# WHAREKIRAUPONGA EXPLORATION TUNNEL

## PROJECT OVERVIEW

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## ABOUT THE PROJECT

When it acquired the Waihi Mining operations in 2015, OceanaGold made a commitment to the New Zealand Government to invest in extending the life of mining in Waihi. We have undertaken an extensive exploration programme in the region, and in February 2019 announced an initial resource deposit in Wharekirauponga.

Feasibility studies for accessing this resource at Wharekirauponga are ongoing. As part of these studies, OceanaGold Waihi is now proposing to construct an exploration tunnel from land near Willows Road Waihi, to the Wharekirauponga resource.

The Wharekirauponga Exploration Tunnel Project would enable further investigation of the Wharekirauponga deposit through underground drilling. Before we construct any

infrastructure, we first need to obtain resource consents from the Hauraki District Council and Waikato Regional Council. The resource consents will provide for exploration activities only, as mining of the Wharekirauponga resource is not intended as part of this project.

OceanaGold is committed to a long-term partnership with our communities and it is important to us that you have reliable information

about what we are proposing and what it means to you. This booklet has been designed to provide a brief overview of the Wharekirauponga Tunnel Project.

Further details will be available once we finalise our studies and we will keep you informed as to the status of these, making sure information is readily accessible as it becomes available.

## ABOUT US

OceanaGold Corporation is a gold and copper producer with over 30 years of operating sustainably in New Zealand.

At Waihi, we operate successful open pit and underground mining operations and are currently completing the technical studies for an exciting new project called Project Quattro. We are also continuing to actively explore the region for further mineral resources.

We also operate mines at Macraes Flat in the South Island, in the Philippines and in the United States.

Sustainability is fundamental to the way we do business. We recognise the significance and sensitivity of the Wharekirauponga area and its ecology, which is an important recreational area for walkers and campers, and home to the critically endangered native Archey's Frogs. That's why any potential mining operation we may undertake in the future would only be underground – not at the surface level. We are committed to mining responsibly, managing our effects and, more broadly, contributing to our host communities and society.





# WORKING TOGETHER

Before we can start any project, we must often obtain resource consents. Following a period of further investigation into the effects of the proposed project, and dependent on the results, we will lodge Resource Management Act applications with the Hauraki District Council and Waikato Regional Council.

We believe that understanding and respecting diverse viewpoints is a vital step toward finding common ground and achieving sustainable outcomes.

We will share details of the project with affected and interested stakeholders and provide them opportunities to give feedback that will contribute to the final project design.

Ultimately, we want the project to proactively contribute to the goals and aspirations of the communities with an interest in the area.







# WHAREKIRAUPONGA EXPLORATION TUNNEL PROJECT OVERVIEW

Gold was first discovered at Wharekirauponga in the 1890s. Modern exploration for gold began at Wharekirauponga in the 1970s, with several mining companies conducting significant exploration campaigns in the area throughout the 1980s and 1990s. Newmont continued this exploration through the 2000s until OceanaGold purchased the interest at Wharekirauponga in 2016, incorporating it into its Waihi operations and ongoing exploration programme.

Since acquiring the Wharekirauponga interest, OceanaGold has undertaken further technical studies at Wharekirauponga, including approximately 18,000 m of exploration drilling.

As part of these studies, OceanaGold Waihi is now proposing to develop an exploration tunnel from land in the Willows Road area near Waihi. The Wharekirauponga Exploration Tunnel Project would enable OceanaGold Waihi to further investigate the resource we have identified in Wharekirauponga. This project is for exploration purposes only; we will not be applying for a consent to mine the

Wharekirauponga resource as part of this project.

The Wharekirauponga Exploration Tunnel Project contains three main components:

- **A 6.8 km Tunnel** – We are investigating a number of tunnel options. The option we are currently proposing is a single tunnel that extends from a portal on farmland at the end of Willows Road Waihi, to the base of the Wharekirauponga resource.
- **Ventilation Raises** – These are required for air circulation and to provide an emergency exit from

the tunnel. The current tunnel proposal would require a total of five ventilation raises. Suitable locations are currently being investigated.

- **Willows Road Surface Infrastructure** – To facilitate the construction and maintenance of the exploration tunnel, some surface infrastructure would need to be constructed at the Willows Road property.

The technical studies for the Wharekirauponga Tunnel Project are ongoing. More in-depth details of what is proposed will be made available as these are finalised.







# THE EXPLORATION TUNNEL

The exploration tunnel would extend 6.8 km from a portal on farmland at the western end of Willows Road Waihi, to the base of the Wharekirauponga resource.

A number of options are being investigated for the tunnel and its development, including a twin tunnel option. At this stage, the most likely option is a single tunnel developed using a drilling and blasting method.

This method would use modern drilling jumbos, rock loading units and supporting equipment – This is similar to how we currently develop drives in our underground mining operations at Waihi. The drilling jumbo would be electric, with power supplied via a connecting cable. Other tunnelling equipment including loaders, haul trucks and service vehicles would be battery operated where fit for purpose and commercially viable options are available. The feasibility of using a tunnel boring machine is also being investigated.

Rock extracted through the tunnelling process would be stockpiled in the tunnel, loaded into trucks and then hauled to a surface stockpile. The stockpile would be lined with a low permeability base and would have a maximum height of 15 m above the existing topography.

OceanaGold Waihi expects to encounter some water inflows during the construction of the exploration tunnel. Water inflows, together with any water used in the tunnelling process, would be drained and pumped from the tunnel to surface holding ponds. We are currently proposing that this water would then be pumped to the existing OceanaGold Waihi water treatment plant for treatment. Boreholes

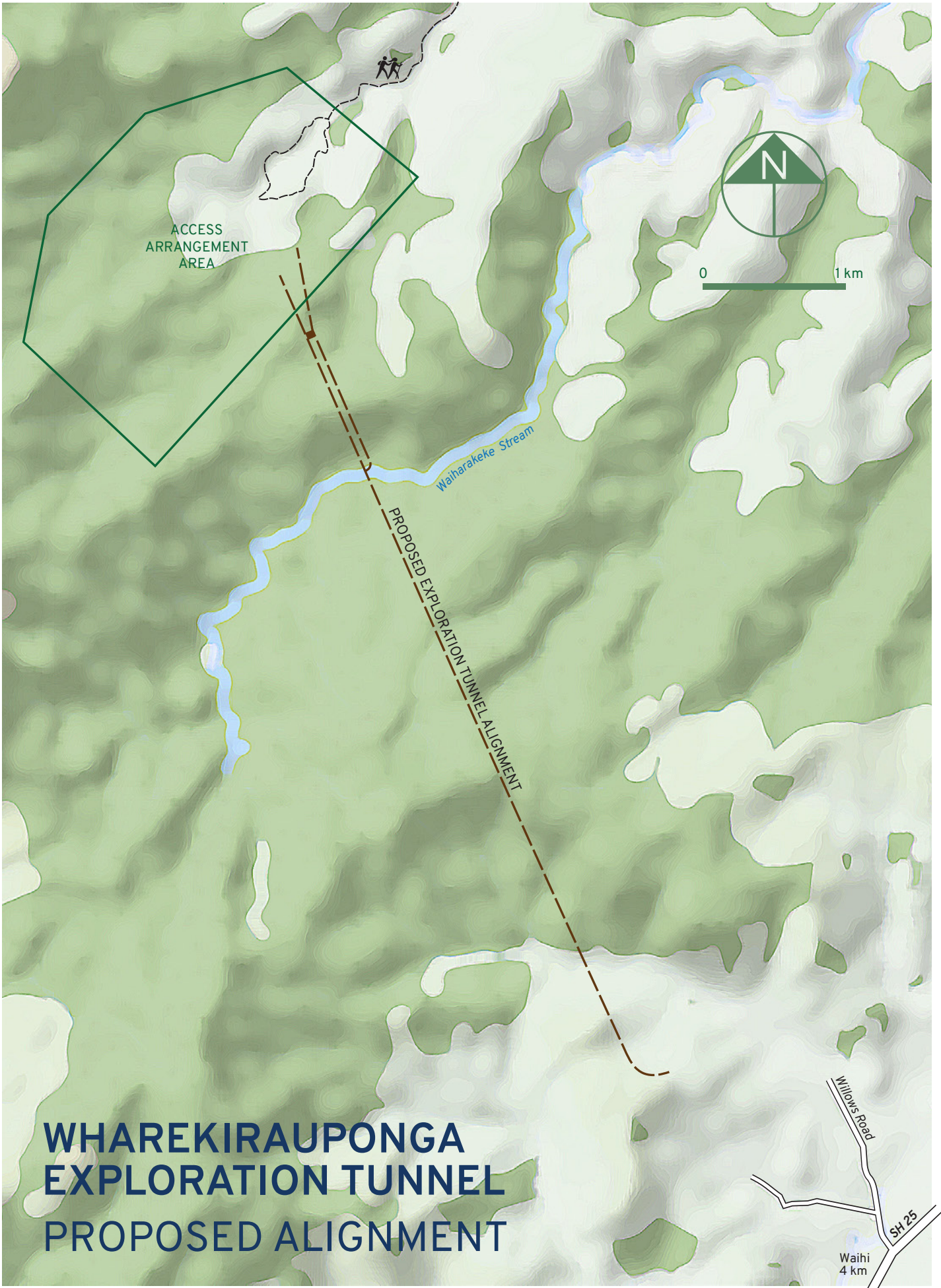
would be drilled ahead of the tunnel workings to detect water bearing structures and appropriate mitigation applied to avoid significant water inflows. Alternatively, that section of the tunnel could be fully sealed with shotcrete.

Development of the tunnel would progress on a 24 hours per day, 7 days per week basis, with work on the surface likely to be restricted to a day shift only.

Tunnelling would continue until the orebody at Wharekirauponga is reached. Upon reaching the orebody, development exploration drives would be undertaken to allow exploration drilling to commence.







**WHAREKIRAUPONGA  
EXPLORATION TUNNEL  
PROPOSED ALIGNMENT**





# VENTILATION RAISES

As part of the Wharekairauponga Exploration Tunnel Project, ventilation raises would be required along the tunnel alignment to supply sufficient air for a safe working environment and to provide emergency exits. We are still completing the detailed designs for the project. At this stage, based on the current tunnel design, we are proposing to construct five ventilation raises. Four of these these ventilation raises would be the only surface expression associated with the project within the Department of Conservation (DOC) estate. They would be temporary and only exist for the life of the project.

The first of the five ventilation raises would be along the tunnel alignment nearing the boundary of the Willows Rd farm and the DOC estate. No clearance of vegetation is envisaged to establish this ventilation raise.

We are currently investigating the practicality of the four remaining ventilation raises being situated on legal road reserves that traverse the DOC estate – One at the mid-way point of the tunnel alignment and three at the Wharekairauponga end. The construction of the ventilation raises would likely occur from the underground, with the final surface footprint being approximately 5 m x 5 m.

The location of the ventilation raises on the road reserves are yet to be determined, and would be subject to agreement with Hauraki District Council and receiving a wildlife permit from DOC.

OceanaGold Waihi is proposing that stringent ecological conditions be applied, to ensure that sites are appropriately selected to avoid having adverse effects on wildlife, habitat values and to minimise landscape disturbance.

A drilling platform would be established on the preferred site and investigative geotechnical and

hydrogeological drilling and analysis would be undertaken. Should the location be declared unsuitable, an alternative drill site would need to be established and the process repeated. The tunnel design will be finalised upon identification of suitable ventilation shaft locations.

A vent stack would be established at the top of each ventilation raise. These would be installed by helicopter and remain in place for the duration of the project. The surrounding disturbed area would be rehabilitated.







# WILLOWS ROAD

## SURFACE INFRASTRUCTURE

To facilitate the construction and maintenance of the exploration tunnel, some surface infrastructure would need to be constructed at the western end of Willows Road.

### SITE ACCESS ROADS

A sealed private road from the western end of Willows Road onto the site would need to be constructed. A haul road constructed of rock would be established from the portal to a rock storage pad, with a connection to a workshop and a wash pad.

### POWER AND COMMUNICATIONS

Power would be brought to the site from the existing OceanaGold Processing Plant via a buried trench. This trench could also house fibre optic cable for information technology and several other services. The proposed trench route is still being investigated.

### OFFICE AND CHANGE HOUSE

At the site of the portal, an office and changing rooms would be established. These would be comprised of modular, temporary style buildings with an approximate footprint of 250 square metres. Power and water connections would also need to be arranged, and a sewage system installed.

### SERVICE WORKSHOP AND RE-FUELLING

OceanaGold Waihi is proposing to

build a temporary service workshop constructed from shipping containers. The workshop would include a sealed undercover area of approximately 400 square meters.

Re-fuelling would be undertaken via a dedicated fuelling truck until the tunnel had progressed, at which point an appropriately certified tank would be installed underground.

### ROCK STORAGE PAD

Rock extracted through the tunnelling process would be stockpiled in the tunnel, loaded into trucks and then hauled to a surface stockpile. A rock storage pad of approximately 4 Ha would be required to store this rock. The pad would be lined with a low permeability base and would be built to a maximum height of approximately 15 m above the natural topography. Contact water would be collected in a sediment pond and pumped back to the existing Waihi Water Treatment Plant for treatment.

### EXPLOSIVES MAGAZINES

Explosives magazines that conform to New Zealand hazardous substances regulations would be located on site. The locations are yet to be

determined, but would be selected to ensure there are adequate offsets between publicly accessible land and structures.

The explosives magazines would be locked and securely fenced, and access strictly controlled.

### PORTAL

A 6.5 m x 5.5 m portal would form the entrance to the tunnel. Following geotechnical investigations to confirm the suitability of a portal location, earthworks would be undertaken to form this portal. Appropriate earthmoving equipment would be utilised and, if necessary, blasting would be used.

Once the face of the portal has been established it would be supported by steel arches, rock bolts, steel plates and concrete. Other service infrastructure would then be installed at the portal including a temporary ventilation fan, water storage tank, transformers, lighting and a safety tag board.







# CLOSURE AND REHABILITATION

At closure, the vent stacks would be removed, and the ventilation raise shafts would be filled in. The shaft on the Willows Rd farmland would be filled from the surface, whilst the shafts in DOC land would be filled from the underground. The shaft collars would be covered over and planted with native vegetation.

The effectiveness of this rehabilitation would be monitored and managed for a period of no less than five years following closure to ensure the success of the remediation.

The tunnel portal will be securely sealed, and the entrance backfilled with rock prior to the placement of topsoil.

Stored rock would likely be used for mine infrastructure construction at Waihi and as backfill in the tunnel. All rock not returned underground would be sealed with a capping layer and rehabilitated with topsoil and planting, returning the area to its original use as arable farmland.

All surface infrastructure at Willows Road will be removed, and footprint areas fully rehabilitated to return them to their pre-tunnelling condition as being suitable for farming.





# MANAGING OUR EFFECTS

At OceanaGold, sustainability is fundamental to the way we do business. We believe it is possible to operate responsibly under conservation land and deliver economic development without compromising environmental, social and cultural values.

We recognise the significance and sensitivity of the Wharekirauponga area and its ecology, which is an important recreational area for walkers and campers, and home to the critically endangered native Archey's Frogs. That's why any potential operations we may undertake will only be underground – not at the surface level.

We will be applying an 'effects management hierarchy' to ensure that any impacts associated with the

Wharekirauponga Exploration Tunnel Project will be as small as practicable.

These are the principles OceanaGold Waihi commits to for managing the potential impacts of the project:

1. Where practicable, adverse effects will be avoided.
2. Where adverse effects cannot be avoided, actions will be taken to reduce or mitigate the scale or significance of adverse effects.

By applying these principles, the effects associated with the Wharekirauponga Tunnel Project will be as small as practicable. Where adverse effects remain, OceanaGold Waihi will undertake additional actions to offset or compensate for those effects.







# HOW TO FIND MORE INFORMATION

We believe that understanding and respecting diverse viewpoints is a vital step toward finding common ground and achieving sustainable outcomes. Beginning with this document, OceanaGold intends to share details of the project with the communities and iwi with an interest in the area such that their feedback can contribute to the final project design. Ultimately, we want the project to proactively contribute to the goals and aspirations of the communities with an interest in the area.

## PROJECT INFORMATION OFFICE

In the meantime, our Project Information Office on Seddon Street, Waihi will have staff available to listen to your views and ideas.

The opening hours are: 10 am to 2 pm, Mon. to Fri.

## FREEPHONE 0800 924 444

As always, our community engagement line is available during business hours.

[www.waihigold.co.nz](http://www.waihigold.co.nz)







## OceanaGold Waihi

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