

# THE PROPOSED WAIHI NORTH PROJECT OVERVIEW

- Wharekirauponga Underground Mine
- Gladstone Open Pit
- Tailings Storage Facility 3
- Northern Rock Stack
- Processing Plant Upgrade

This document has been produced for New Zealand consenting purposes only. Information contained herein must not be relied on for investment purposes.

# ABOUT THE WAIHI NORTH PROJECT

When we 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 obtained consents for, and have since begun, operation of our Martha Underground Mine at Waihi. We also undertook extensive exploration in the area, as laid out in our Waihi District Study released July, 2020. This exploration programme included our announcement, in February 2019, of a gold and silver resource deposit beneath Wharekirauponga and at the location of the proposed Gladstone Open Pit.

Since then we have undertaken further technical and exploration studies, which have confirmed the viability of an underground mine at Wharekirauponga. As a result, we can now share our intentions with respect to applying for consents to develop an underground mine at Wharekirauponga and construct the related infrastructure to support this.

We have named this the Waihi North Project.

The Waihi North Project will integrate with the already consented mining activities at Waihi and has five main components:

1. Wharekirauponga Underground Mine – A new underground mine at Wharekirauponga, just north of Waihi, and associated infrastructure at a portal entrance on private land at the end of Willows Road, Waihi.
2. Gladstone Open Pit – A pit directly to the west of the OceanaGold Waihi Processing Plant.
3. Tailings Storage – Increasing tailings storage capacity by constructing a third tailings storage facility (TSF3) immediately east of the current facilities and adding tailings storage within the Gladstone open pit on completion of mining.
4. Northern Rock Stack (NRS) – A rock storage facility to the north of the current tailings storage facilities.
5. Processing Plant Upgrade – Increasing throughput capacity at our existing Processing Plant.

Formal applications for consents have been made, and we will continue to work closely with stakeholders and conduct further studies.

These proposed projects stand to create several hundred additional jobs in the region and produce billions of dollars of exports over the coming years. This will continue to support Waihi and the region's development, as gold and silver mining has done for over 100 years.





## ABOUT US

OceanaGold Corporation is a gold producer with over 30 years of operating sustainably in New Zealand. The company was founded in New Zealand, at Otago's Macraes operation (which it continues to operate), and has built an international portfolio as one of the most progressive gold miners in the world.

OceanaGold's acquisition of Waihi Gold in 2015 deepened the company's Kiwi roots, enabling it to share decades of mining innovation and leadership to advance the development of Waihi's gold and silver resources.

At Waihi, we currently operate a successful underground mining operation and are actively exploring in the region.

We also have underground and surface mines at the Macraes operation in the South Island, plus mines in the Philippines and the United States.

We are also actively closing a mine at Reefton in the South Island, having successfully and

sustainably operated that mine on Department of Conservation administered Forest Park.

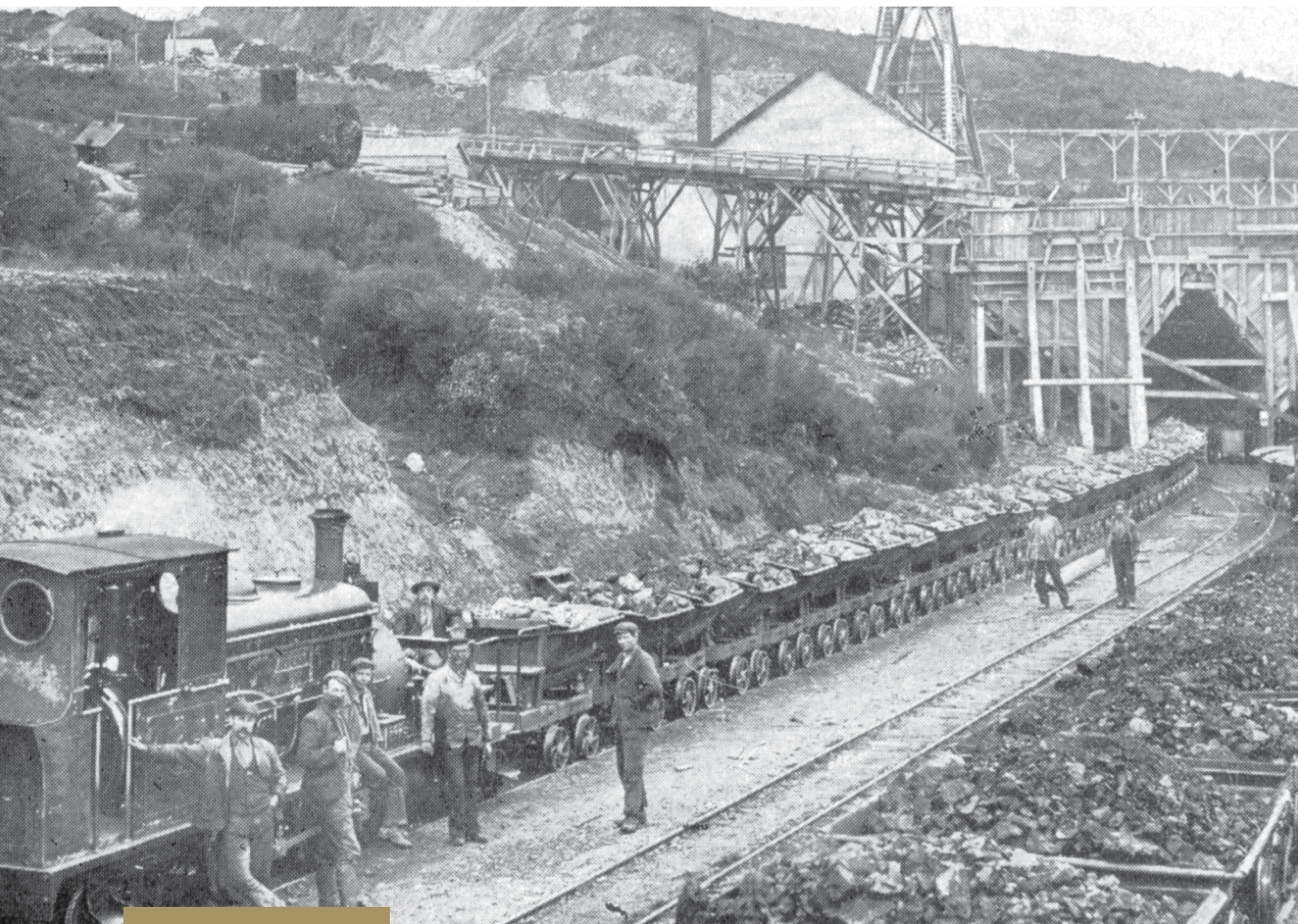
Sustainability is fundamental to the way we do business. OceanaGold has a proven track record of working within a tight regulatory framework including key conditions relating to vibration, noise, dust, ground surface stability, flora and fauna, and water management.

We are committed to mining responsibly, managing our effects and, more broadly, ensuring this project makes a positive contribution to our host communities and society, and to the natural values of the area.



# WAIHI'S GOLD MINING HISTORY

Waihi has long been a leading producer of gold and silver, supporting regional economies, contributing to New Zealand's exports, and driving innovation in mining technology and practices. The historic Martha Mine (1878 – 1952) was one of the most important gold and silver mines in the world, and the current mining operations remain vital to Waihi and the region. If consented, the Waihi North Project will see Waihi embark upon a new era in gold and silver production that will help sustain it well into the future.



# WORKING TOGETHER

We believe that understanding and respecting diverse viewpoints is a vital step toward finding common ground and achieving sustainable outcomes. Ultimately, we want the project to proactively contribute to the goals and aspirations of the communities with an interest in the area.

OceanaGold Waihi is committed to a long-term partnership with the community and it is important to us that you have reliable information about what we are proposing and what it means to you.

## YOUR INPUT

Before we can start any project, we must often obtain approvals such as resource consents. As part of that process, and before we formally apply for consents, we want to get the community's input on any proposed project.

## SOCIAL IMPACT ASSESSMENT

As part of this project development, we will be conducting a Social Impact Assessment – this is an independent study that is designed to identify and help us manage the effects of the proposed project on the wider communities' lifestyles, cultures, health, environments, and quality of life. The Social Impact Assessment process will involve working with wider communities to gather information using surveys, interviews, focus groups, and one-on-one meetings.

We welcome inquiries from anyone looking to learn more about the project.

## OUR COMMITMENT

OceanaGold Waihi is committed to making positive contributions to the sustainable development of the region. Consultation will help inform us of the wider communities' values and aspirations. From this, we will develop and partner in sustainable community development initiatives.

## THE CONSENTING PATHWAY

The Waihi North Project is an

important project that will bring major employment and economic benefits to the district through 2037 and beyond. OceanaGold Waihi are investigating the appropriateness of different consenting pathways.

Regardless of the consenting pathway, prior to applying for consent, we will share more in-depth details of the project with affected and interested stakeholders and provide them opportunities to give input towards the final project design.





# THE WAIHI NORTH PROJECT

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 Waihi operations and ongoing exploration programme in 2015, before finalising ownership of the interest at Wharekirauponga in 2016.

Since acquiring the Wharekirauponga interest, OceanaGold Waihi has undertaken further technical studies, including approximately 32 km of exploration drilling.

As a result of an extensive exploration programme, we have identified additional ore deposits that we are looking to mine through the proposed Waihi North Project.

The project will integrate with already consented mining activities and has five main components:

1. Wharekirauponga Underground Mine – A new underground mine at Wharekirauponga, just north of Waihi, and associated infrastructure at a portal entrance on private land at the end of Willows Road, Waihi.
2. Gladstone Open Pit – A pit directly to the west of the OceanaGold Waihi Processing Plant.
3. Tailings Storage – Increasing tailings storage capacity by constructing a third tailings storage facility (TSF3) immediately east of the current facilities and adding tailings storage within the Gladstone open pit on completion of mining.
4. Northern Rock Stack (NRS) – A rock storage facility to the north of the current tailings storage facilities.
5. Processing Plant Upgrade – Increasing throughput capacity at our existing Processing Plant.

The Waihi North Project has the potential to produce over 1.6 million

ounces of gold and over 2.2 million ounces of silver over a 13-year period, complementing the already consented Project Martha and extending the life of mining in Waihi to 2037\*.

## INTEGRATION

All elements of the Waihi North Project are linked and interact with each other. Integration with our existing mining activities and infrastructure is a critical aspect of the proposal. Much of our existing mining infrastructure will be used to process, store, and dispose of material extracted as part of the Waihi North Project.

Additional technical studies for the proposed Waihi North Project are ongoing. We will share more in-depth details of the project as they become available.

## POSSIBLE TIMELINE

Any final timeline for the development of the project is conditional on obtaining regulatory approvals, subject to final project

design. However, our proposed project anticipates development along the following lines:

1. The Waihi North Project will commence with site preparation for the TSF3, NRS, and the Gladstone Open Pit and include repositioning of the current underground access portal. Construction of the Wharekirauponga Underground Mine surface infrastructure also begins, to be followed by initial tunnelling works.
2. Once full mining activities are underway in the Gladstone Pit, the NRS and TSF3 will begin operation.
3. Once the orebody under Wharekirauponga is reached, mine development and stoping will begin.
4. When mining of the Gladstone Pit is complete, it will be lined and used for tailings storage before final rehabilitation.
5. The Wharekirauponga Underground Mine will be progressively backfilled during operation, similar to our existing underground mines, and once completed the mine will be sealed and rehabilitated.



\* For New Zealand consenting purposes only. Forward looking information must not be relied on for investment purposes.



# REHABILITATION

We acknowledge that the proposed Waihi North Project, if approved, will result in localised impacts on the environment; these will be mitigated in the long term through rehabilitation and remediation activities.

Rehabilitation is a major part of OceanaGold's approach to modern mine planning. The Waihi North Project will be designed to ensure adequate resources for rehabilitation and mine closure are included. Rehabilitation of disturbed areas will progress as areas become available and will be ongoing throughout the life of the Waihi North Project.

## THE POST MINING ERA

As part of the Waihi North Project we are making a commitment to work collaboratively with our local communities to create opportunities, build resilience, and leave a positive, long-lasting legacy well beyond the mining life cycle.

All mining undertaken by OceanaGold in New Zealand is supported by bank guarantees (bonds) covering the full estimated cost of rehabilitation, which are also adjusted annually. These operate under the independent oversight of the relevant District and Regional Councils.

All OceanaGold Waihi operations have closure plans in place that are reviewed annually, and the Waihi North Project will be incorporated into these plans. In preparing these plans we will consult with our stakeholders in relation to economic impact, employment, post-closure environmental impacts, and public health and safety to ensure that what we propose will leave a positive legacy for the community.

## LOOKING TO THE FUTURE

The Waihi North Project has the potential to play a meaningful role in supporting the regional economy in the coming years, providing economic benefits and job security. The project will require a larger workforce, creating several hundred new, high-quality jobs, whilst continuing to engage a range of local and regional suppliers.

More than just economic considerations however, this project also represents an opportunity for OceanaGold Waihi to incorporate social, cultural, and environmental benefits within the project design itself – creating improvements over and above what would occur in absence of the project and resulting in a net gain to the Waihi area.

The Waihi North Project signifies a long-term commitment to, and investment in, the wider region. If consented, the project will extend operations to 2037 and beyond, longer than any single previous outlook.

## BIODIVERSITY

The Wharekirauponga area is home to several native and endemic species. Measures to improve future outcomes for biodiversity, including the Archey's Frogs, will be integral to the project.

We understand that native bush and its biodiversity is precious to all of us. Our extensive ecological studies, including work we have done during our exploration phase, are already providing the scientific and ecological community with a greater insight into the species that inhabit this area.





# THE WHAREKIRAUPONGA UNDERGROUND MINE

The proposed Wharekirauponga Underground Mine is located north of Waihi, beneath Forest Park administered by the Department of Conservation (DOC).

This mine would be accessed via an underground tunnel from private land on Willows Road, outside the Forest Park, allowing us to minimise our surface impacts.

An interconnecting ore transport tunnel back to our existing Processing Plant allows us to transport materials in and out of the Wharekirauponga area without vehicles on public surface roads.

We recognise the significance and sensitivity of the Wharekirauponga area and its ecology, which is an important recreational area, and home to several native and endemic species. That's why any potential mining operation we may undertake within the Forest Park would **only be underground - not at the surface level.**

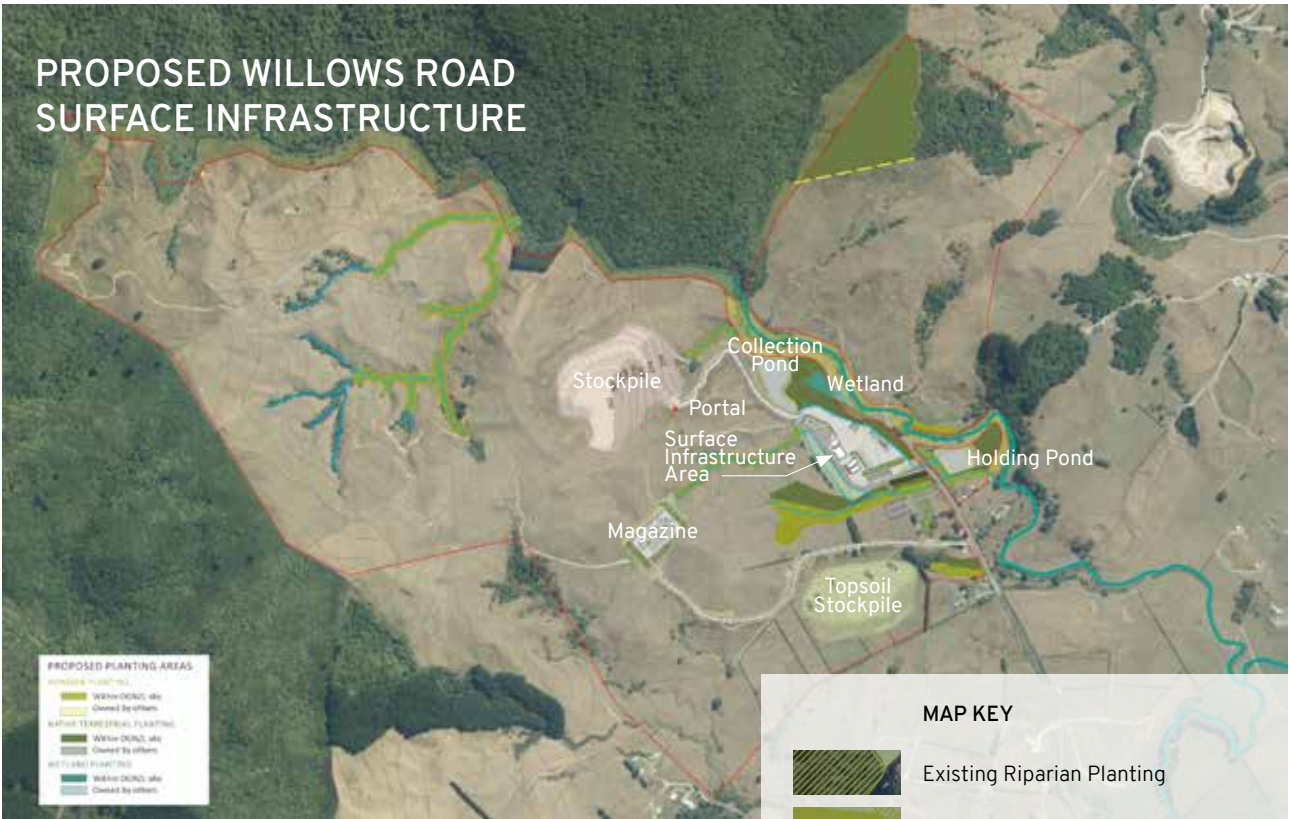
The Wharekirauponga Underground Mine consists of four sub-components:

- **A Dual Tunnel to the orebody** – We are proposing a 6.8 km dual decline tunnel system that extends from a portal on private land 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 orebody tunnel. The current tunnel proposal would require a total of four ventilation raises close to the mining area. Suitable locations are currently being investigated.
- **Willows Road Surface Infrastructure** – To facilitate the construction and maintenance of the tunnels, some surface infrastructure will need to be constructed at the Willows Road property.
- **A 4.7 km Tunnel to the Waihi Processing Plant** – To return material from the Willows Road Portal to our processing facilities in Waihi.





# PROPOSED WILLOWS ROAD SURFACE INFRASTRUCTURE



# PROPOSED EXPANDED WAIHI OPERATIONS





# ACCESS TUNNELS

## DUAL DECLINE OREBODY ACCESS TUNNEL

We are proposing a 6.8 km dual decline tunnel that extends from a portal on private land at the end of Willows Road, Waihi, to the base of the Wharekirauponga resource.

A dual decline tunnel consists of two tunnels running in parallel, with short connections between the two created every few hundred metres. Bulkheads are also installed on these connections, providing the ability to seal one tunnel from another as needed for standard air flow and water egress considerations, or in the unlikely event of an emergency situation. This design provides a high level of airflow throughout the mine and minimises the number of ventilation raises that are required at the surface.

Tunnelling would continue until the orebody at Wharekirauponga is reached. Upon reaching the orebody, development drives would be undertaken to allow mining to commence. These development drives would be similar to the drives that have been successfully constructed for the existing underground operations in Waihi.

### INTERCONNECTING ORE TRANSPORT TUNNEL

A single 4.7 km long tunnel would be constructed from the Willows Road farm to the Waihi Processing Plant, linking to the dual decline tunnel system. This will primarily be utilised for the transportation of ore from the underground mine back to the Waihi Processing Plant once mining begins.

The tunnel could also provide general operational access between the Wharekirauponga Underground Mine and the Waihi Processing Plant.

### ABOUT THE TUNNELS

These tunnels would be 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. Other tunnelling equipment including loaders, haul trucks, and service vehicles would be battery operated where possible.

Rock extracted through the tunnelling process would be loaded into trucks

and then hauled to a temporary surface stockpile at Willows Road. The stockpile would be lined with a low permeability base and would have a maximum height of 19 m above the existing topography. As mining progresses, this rock would be returned into the Wharekirauponga Underground Mine for backfilling purposes.

Technical studies and consultation around final tunnel alignments is ongoing.

### HOURS OF OPERATION

OceanaGold Waihi is proposing that the Wharekirauponga Underground Mine would operate 24 hours a day, seven days a week.





## EFFECTS

### NOISE

If the Waihi North Project is approved, we will be required to manage our activities so that we comply with strict noise limits set through the regulatory approvals process.

There are a range of noise management measures that may be implemented to meet these requirements, including:

- Equipment selection and maintenance.
- Cladding to reduce noise.
- Limiting the height of stockpiles.
- Acoustic cladding around potentially noisy machinery.

### BLASTING AND VIBRATION

A key consideration for OceanaGold Waihi in developing the proposed Waihi North Project is any potential amenity effects our operations may have on residents.

#### Willows Road Portal

Due to the location and direction of the dual decline tunnel system to the orebody, residents close to the Willows Road portal are unlikely to experience any reduction in amenity due to vibration from its development.

### Interconnecting Transport Tunnel

We are still finalising the technical studies for the tunnel alignment back to the Waihi Processing Plant. Any associated amenity effects on property in relation to the tunnel would only be temporary and localised during the development stage. Once the tunnel is completed there would be no appreciable ongoing effects to amenity.

### AIR QUALITY

If the Waihi North Project is approved, we will be required to comply with consent conditions for air quality set through the regulatory approvals process. This will require OceanaGold Waihi to produce an Air Quality Management Plan.

There are a range of air quality management measures that may be implemented to meet these requirements, including:

- Applying dust suppression methods.
- Keeping stockpiles low so wind is less likely to spread dust.
- Planting pasture, shrubs, and trees as soon as rehabilitation areas are available.
- Washing vehicles before leaving site to travel on public roads.

### GROUND SETTLEMENT

By utilising proven mining techniques, we will protect from the negative impacts of surface settlement both at the mine and along the tunnel route.

Mining of the orebody will occur entirely from the underground tunnel utilising the same proven methods we currently employ for our Correnso and Martha underground projects. Mining voids will be backfilled with rock as we progress.

### DEWATERING

OceanaGold Waihi expects to encounter some water inflows during the operation of the mine. Water inflows, together with any water used in the mining process, would be pumped to surface holding ponds at the Willow's Road Portal. We are proposing that this water would then be pumped to the existing OceanaGold Waihi Water Treatment Plant for treatment if not suitable for onsite discharge. Boreholes would be drilled ahead of workings to detect water bearing structures and appropriate mitigation applied to avoid significant water inflows.



Wharekirauponga  
Ore Body



# PROPOSED WAIHI NORTH PROJECT

Conceptual Tunnel  
Alignments

Proposed Dual Decline Orebody Access Tunnel

Proposed Willows  
Road Portal

Proposed Ore Transport Tunnel

Proposed Ore  
Transport Portal

MARTHA  
MINE

WAIHI

PROCESSING  
PLANT





# VENTILATION RAISES

Ventilation raises, providing fresh air supply to the Wharekirauponga Underground Mine, would be required to supply sufficient air for a safe working environment and to provide emergency exits.

Based on the current design, we are proposing to construct five ventilation raises. Four of these would be within the Forest Park area, either on Forest Park administered by the Department of Conservation (DOC) or on unformed Hauraki District Council road reserve. The fifth would be located on private land off Willows Road near the tunnel portal.

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

We will ensure minimal disruption and carry out detailed technical studies before we embark on any tunnelling. Studies are ongoing to ensure that the vent locations have minimal effect on the environment and are placed to avoid areas of high value habitat.

A drilling platform would be established on the preferred site and exploration, 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.

These raises would be temporary structures in place for the life of the mine and would be fully rehabilitated

upon completion of mining. The construction of the ventilation raises would occur from the underground, with the final surface footprint being up to 12 m x 12 m.

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 tunnels, some surface infrastructure would need to be constructed at the Willows Road farm property.

## **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 the rock stockpiles, with a connection to a workshop and a wash pad.

## **SITE SERVICES**

Site services, such as power, fibre optic cable, and potable water would be brought to the site from the existing OceanaGold Waihi Processing Plant via a buried trench. Where required, this trench would also be used to transport water back to the existing OceanaGold Waihi Water Treatment Plant. 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 m<sup>2</sup>. Power and water connections would also need to be arranged, and a sewage system installed.

## **SERVICE WORKSHOP AND REFUELLING**

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 m<sup>2</sup>. 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**

Rock extracted through the tunnelling process would be stockpiled in the tunnel, loaded into trucks, and then hauled to a surface stockpile at the end of Willows Road. A single stockpile of approximately 5 ha would be required to temporarily store the rock. The stockpile would be lined with a low permeability base to minimise any seepage and would be built to a maximum height of approximately 19 m above the natural topography.

Stockpile contact water would be collected in a holding pond and pumped back to the existing Waihi Water Treatment Plant for treatment if not suitable for discharge on site.

All rock from the tunnelling stockpile will be progressively returned underground to backfill mined voids in the first four years from commencement of mining, approximately nine years after commencement of first site works.

Once the Willows Road rock stockpile is exhausted, the site will be rehabilitated and further rock for backfilling voids will be obtained from the NRS, and transported using the interconnecting tunnel from the existing Processing Plant.

## **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 existing structures.

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

## **PORTAL**

A 6.5 m x 5.5 m portal on private land at the end of Willows Road in Waihi would form the entrance to the access tunnel. A second portal would also need to be established at the existing Waihi Processing Plant to provide access to the interconnecting ore transport tunnel.

Following geotechnical investigations to confirm the suitability of a portal location, earthworks would be undertaken to form these portals. Appropriate earthmoving equipment would be utilised and, if necessary, blasting would be used.

Once the face of the portals have been established they would be supported by steel arches, rock bolts, steel mesh, and concrete. Other service infrastructure would then be installed at each of the portals including temporary ventilation fans, water storage tanks, transformers, lighting, and safety tag boards.





### LIGHTING

To allow us to operate outside of daylight hours, lighting will need to be established around the proposed portals.

The lighting will be designed and located so that the amount of light is protective of the amenity of nearby residents.

### NOISE

If the Waihi North Project is approved, we will be required to manage our activities so that we comply with strict noise limits set through the regulatory approvals process.

There are a range of noise management measures that may be implemented to meet these requirements, including:

- Equipment selection and maintenance.
- Construction and vegetation of noise bunds.
- Cladding to reduce conveyor noise.
- Limiting the height of stockpiles.
- Acoustic cladding around potentially noisy machinery.
- Closed board fencing.
- Acoustic noise wall on some sections of perimeter noise bund.

### AIR QUALITY

If the Waihi North Project is approved, we will be required to comply with consent conditions for air quality set through the regulatory approvals process. This will require OceanaGold Waihi to produce an Air Quality Management Plan.

There are a range of air quality

management measures that may be implemented to meet these requirements, including:

- Watering haul roads and using sprinkler systems and water sprays where required.
- Dust collectors and filters on machinery.
- Applying dust suppression methods.
- Keeping stockpiles low, so the wind is less likely to spread dust.
- Planting grass to cover long-term stockpiles.
- Planting pasture, shrubs, and trees as soon as rehabilitation areas are available.
- Washing vehicles before leaving the site to travel on public roads.

### PROPERTY DAMAGE

Consent conditions for vibration from the development of the ore transport tunnel will be set well below the level where property damage could occur. We know from the community, that there can be concern around what we would do if mine-related activity caused property damage. In recognition of this, we have a procedure in place to assist owners if they believe their property may have been damaged. If it is determined that property damage is attributable to our activities, OceanaGold Waihi will remedy the damage at our cost. Our experience in Waihi with our Correnso and Martha Underground mines shows that this approach works well and provides assurance to property owners on land above any underground infrastructure.

### ENVIRONMENTAL NET GAIN AND BIODIVERSITY

A key project commitment is to initiate and sustain an environmental net gain throughout the life of the project, such that the immediate area and environment is left in an improved state from an ecological perspective than had the project not taken place.

At the Willows Road infrastructure area, we plan to:

- Protect natural environmental and ecological assets identified on the land as part of the independent ecological surveys and assessments undertaken.
- Develop alternate and enhanced water courses where diversions are necessary to establish site infrastructure. This will include riparian zone establishment and stock exclusion measures.
- Undertake early screen planting to enhance visual aspects of the development for neighbours and the community.
- Fence unaffected tributaries, streams, identified natural wetland, and remnant bush areas to exclude stock and establish a programme of riparian zone improvement in these areas. This would include removal of perched culverts and similar structures which currently form a barrier to appropriate native fish migration in the tributaries.
- Re-establish and enhance water courses once stockpiles are removed.





# CLOSURE AND REHABILITATION

At closure of the Wharekirauponga Underground Mine, all vent stacks would be removed, and the ventilation raise shafts would be closed. The shaft collars would be covered over and prepared to encourage natural revegetation.

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 portals will be securely sealed, and the entrances backfilled

with rock prior to the placement of topsoil.

A minimal amount of rock may not be returned underground as backfill. This rock would be sealed with a capping layer and rehabilitated with topsoil and planting.

All surface infrastructure at Willows Road will be removed, and footprint areas fully rehabilitated.







# GLADSTONE OPEN PIT

Recent exploration work has identified a new open pit mining opportunity in the Waihi area. As part of the Waihi North Project, OceanaGold Waihi will seek regulatory approvals for this pit on Company-owned land near our Processing Plant. The Gladstone Open Pit will be much smaller than the Martha Open Pit and will mine out parts of Gladstone Hill and Winner Hill.

Once the Gladstone Pit is no longer being mined, it will be lined, backfilled with tailings, then capped.

## OVERVIEW

The pit will have a depth of around 140 m below the top of Gladstone Hill, and about half that below the foot of Gladstone Hill. The length of the pit will be around 600 m. At its widest point, the pit will measure a little over 300 m.

To accommodate the new pit, the following preliminary works will need to be conducted:

- An area planted in pine will need to be cleared.
- Topsoil will be removed and stockpiled for use in rehabilitation upon completion of the project.
- The construction of noise bunds, screens, and clean water diversion drains.
- The relocation of the existing underground mine portal and its infrastructure.
- Re-establishing the portal and portal infrastructure within the Gladstone Pit.
- A crusher will be established on the northern side of the existing conveyor. This will allow for rock material to be conveyed across the Ohinemuri River to the TSFs and NRS.
- Re-align the gravel road from the end of Clark Street to access the motocross track.
- Relocation of a section of the mountain bike track.





### HOURS OF OPERATION

OceanaGold Waihi is proposing that the Gladstone pit operate 24-hours a-day, seven days a week.

### EFFECTS

#### NOISE

If the Waihi North Project is approved, we will be required to manage our activities at the Gladstone Open Pit so that we comply with strict noise limits set through the regulatory approvals process.

There are a range of noise management measures that may be implemented to meet these requirements, including:

- Equipment selection and maintenance.
- Construction and vegetation of noise bunds.
- Limiting the height of stockpiles
- Acoustic cladding around potentially noisy machinery.
- Closed board fencing.
- Acoustic noise wall on sections of perimeter noise bunds.

#### BLASTING AND VIBRATION

Drilling and blasting in the pit will be required for the removal of ore and rock, although some of the upper areas may be excavated without blasting.

It is proposed that blasting will occur daily between Monday and Saturday; 7:00 am - 6:00 pm as required.

OceanaGold Waihi will propose a compliance level of 5 mm/s for 95% of the monitored events. This is set to be protective of amenity and

well below levels capable of causing property damage.

We recognise that some residents close to the Gladstone pit may, from time to time, experience a perceived reduction in amenity due to mining activities. As a result, we will extend the Amenity Effect Programme to the Gladstone pit area. Payments will be made to qualifying residents in accordance with the criteria of the existing programme.

#### AIR QUALITY

If the Waihi North Project is approved, we will be required to comply with consent conditions for air quality set through the regulatory approvals process. This will require OceanaGold Waihi to produce an Air Quality Management Plan.

There are a range of air quality management measures we can take at the Gladstone Open Pit that may be implemented to meet these requirements, including:

- Watering haul roads and using sprinkler systems and water sprays where required.
- Dust collectors and filters on drill rigs and crushers.
- Applying dust suppression product.
- Keeping stockpiles low, so the wind is less likely to spread dust.
- Planting grass to cover long-term stockpiles.
- Planting pasture, shrubs and trees as soon as rehabilitation areas are available.
- Washing vehicles before leaving the site to travel on public roads.

### LIGHTING

To provide for mining outside of daylight hours, lighting will need to be established in the Gladstone pit, around the new explosives magazine and in the laydown areas.

All lighting within the pit will be relocated as required, and as mining activities progress. The lighting will be designed and located so that the amount of light is protective of the amenity of nearby residents.

#### DEWATERING

Some dewatering will be required to lower localised groundwater and manage pit wall runoff from rainfall events.

Diesel or electric powered pumps will be located in the pit, and all pumped water will be directed to the Water Treatment Plant before discharging to the Ohinemuri River.

Small settling ponds, silt fences and diversion drains will also be built around the pit in order to contain the discharge of sediment to watercourses.

#### GROUND SETTLEMENT

The settlement effects associated with the Gladstone pit are expected to be very small and pose little risk of damage to buildings or infrastructure.

In the very unlikely event that property damage does occur due to settlement, OceanaGold Waihi will mitigate any adverse outcome by applying its 'We Break, We Pay' management measure.

## HERITAGE

There are some historic gold mining remains over much of the Gladstone Hill and Winner Hill area, that includes drives, shafts, terraces, and tailings. These remains have been assessed as having only modest value. The area has been heavily modified by the planting of pine trees and prospecting from the 1970s to 1999.

Whilst the effects have been identified as minimal, OceanaGold Waihi will undertake positive actions to address these effects as part of the broader Waihi North Project archaeological and heritage management measures.

## PROPERTY DAMAGE

Consent conditions for vibration will be set well below the level where property damage could occur. We know from the community, that there can be concern around what we would do if mine-related activity caused property damage. In recognition of this, we have a procedure in place to assist owners if they believe their property may have been damaged. If it is determined that property damage is attributable to our activities, OceanaGold Waihi will remedy the damage at our cost.

## PROPERTY VALUES

The extension of the mine life to 2037, if approved, will continue the positive impact on property values that has been experienced in Waihi since modern mining commenced.

Our property value assessment has identified the potential for the proposed Waihi North Project to have a minor impact on the values of a small number of properties near the Gladstone pit. This is not expected to be long lasting.

The properties identified in the assessment would be eligible for our Top Up management measure in accordance with the criteria of our property programme.

For full details go to [waihigold.co.nz](http://waihigold.co.nz) or contact OceanaGold Waihi directly.

## REHABILITATION

Once the Gladstone pit is no longer being mined, it will be backfilled with tailings.

OceanaGold Waihi is currently proposing in-pit tailings storage using Gladstone open pit. In-pit tailings storage, as the name suggests, is the process of backfilling an open pit mine with tailings. After mining of

Gladstone is complete, the pit will be backfilled with tailings.

The management of tailings is critical to environmental protection. In light of this, the pit would be lined before tailings are stored within. This is to reduce the potential for seepage to enter the ground water system.

Although in-pit tailings storage is different to Waihi's existing tailings storage facilities, the approach to tailings storage management remains the same:

- Robust design and site management including consenting, operational management, monitoring and reporting.
- Regular auditing of conformance with standards and consents requirements at a site and corporate level.
- Independent reviews by third-party experts.

After mining of Gladstone is complete, the pit will be backfilled with tailings, capped with a layer of rock, and topsoil would be re-laid.





# TAILINGS STORAGE

Tailings are the finely ground rock left over after the gold and silver have been extracted. A tailings storage facility (TSF) is a structure built for the purposes of storing these tailings and other by-products from the gold and silver extraction process.

The tailings from the Waihi mines are currently stored in tailings impoundments. Waihi's tailings impoundments are carefully engineered rock structures that are designed to withstand significant seismic and weather events. They are made up of several separate layers and are designed to the same specifications as a water-retaining structure.

The current TSF1A, TSF2, and the proposed Gladstone Open Pit tailings storage have insufficient capacity for the tailings volume from processing ore from the proposed Wharekirauponga Underground Mine and Gladstone Pit.

As part of the Waihi North Project, OceanaGold Waihi is proposing to construct a new tailings storage facility (TSF3) immediately east of the current facilities and adding tailings storage within the Gladstone Open Pit.





# TAILINGS STORAGE FACILITY 3

TSF3 is proposed to be constructed immediately east of the current facilities.

## PREPARATION

Geotechnical investigations have identified that TSF3 construction will firstly require material to be stripped from its footprint. This area is about 60 Ha, and the material will be stockpiled on OceanaGold Waihi land close to Trig Road North. It is likely that this material will be used for future rehabilitation work or for use later in the project.

## CONSTRUCTION

To provide for a structure of similar geotechnical integrity as the existing embankments, rock from the Gladstone Open Pit and the already consented Martha Open Pit north wall layback will be required to construct TSF3.

During the initial foundation works, silt control will be provided to avoid dirty water discharging to waterways.

There will also be an option to pump this water to the existing Water Treatment Plant. At a minimum, erosion and sediment control will follow Waikato Regional Council guidelines.

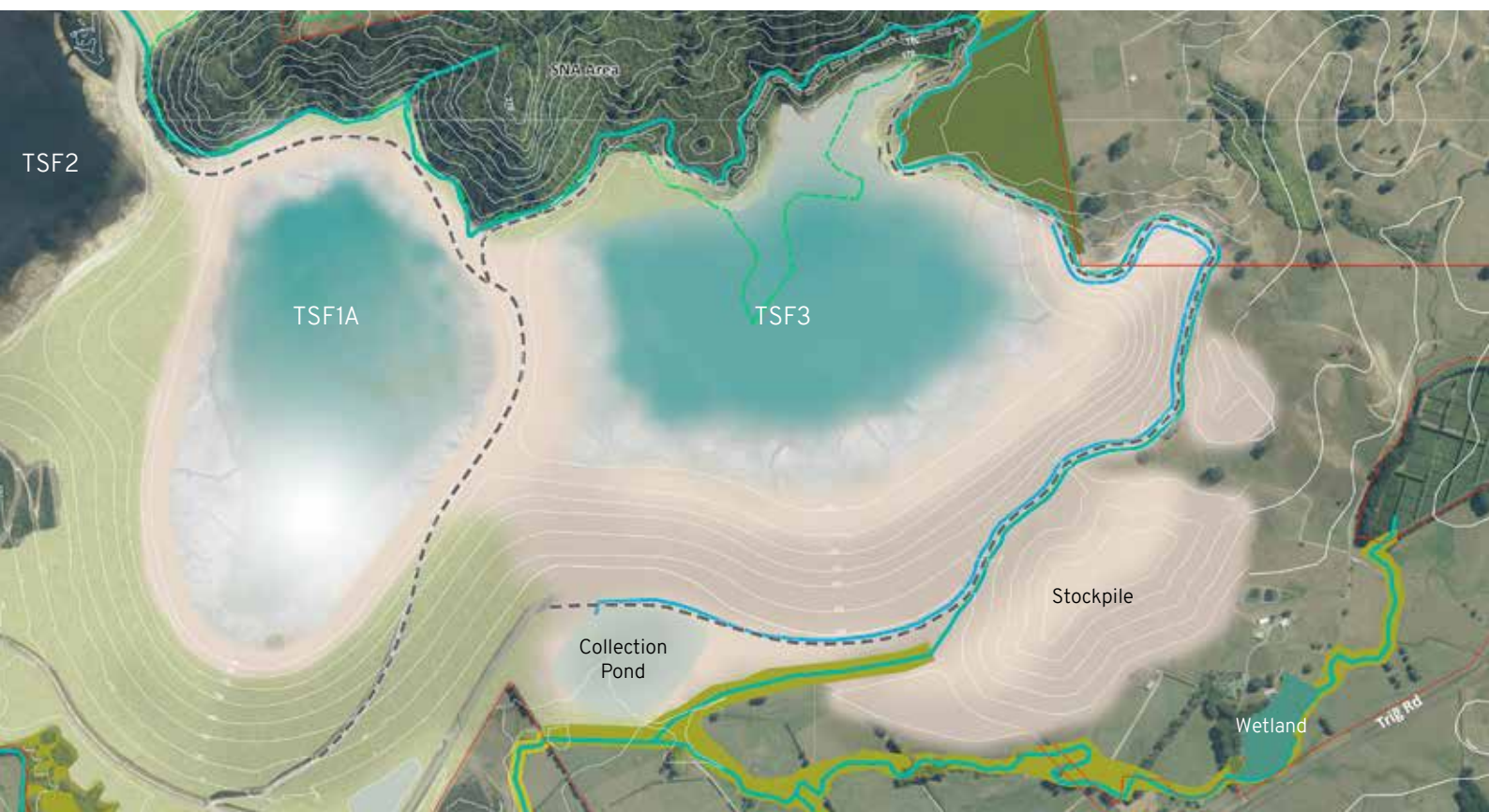
TSF3 construction will also involve building an uphill diversion drain, perimeter drains to capture stormwater runoff, and a perimeter road to provide access for operation and maintenance.

For operations, a fully lined silt collection pond will be constructed in the lowest area of the TSF3 site. All runoff collected in the pond will be pumped to the Water Treatment Plant. The new collection pond will also include an overflow spillway to the Ruahorehore Stream.

TSF3 will be lined to reduce the potential for any seepage to enter

the groundwater system. At the lower levels TSF3 will be lined with a 1.5 mm thick liner, while at higher levels, a layer of low-permeability, compacted clay is proposed, as is used in the existing TSFs.

All designs and plans are put through a rigorous review process and will need to adhere to all regulatory requirements. If the required consents are granted, the structure will be extensively monitored throughout and beyond its construction phase, and all monitoring data will be annually collated and reported on. The data and reports will be independently reviewed to ensure the ongoing structural integrity and safety of the structure. The independent review findings will be reported to the Council after each review.





# TAILINGS STORAGE FACILITY 3 REHABILITATION

The outer walls of the TSF3 embankment will be progressively rehabilitated to pasture during construction. This involves applying a layer of subsoil material, followed by a layer of topsoil and then agricultural seed mix. The land will then be grazed by young dry-cattle.

Native trees and shrubs have been planted on various areas of TSF1A and TSF2. These plantings provide a food source and nesting sites for birds.

Similar planting is planned for TSF3.

Once the deposit of tailings ceases, it will continue to consolidate, and after a relatively short period of time, water quality in the tailings storage pond will reach a level suitable for direct discharge to the Ohinemuri River.

When the tailings impoundments are later closed, they will be partially capped, leaving a wetland and small

pond on the top. The pond outlet structures will allow fish passage from nearby waterways. The ponds will be able to support the range of aquatic organisms typically found in such pond-like environments and wetlands. The riparian planting adjacent to the pond edge will trap sediment and nutrients in the runoff waters and assist in maintaining water quality.





# NORTHERN ROCK STACK

Although much of the rock from the Gladstone open pit can be used to construct TSF3, and provide backfill for the Wharekirauponga underground operations, at times during the mine life there will still be a surplus of rock that requires storage in a separate stack; the proposed NRS.

The NRS will need to be consented to accommodate the life of mine production of surplus rock. It will sit directly north of TSF2 and will have a footprint of approximately 35 Ha depending on mine sequencing. It will be constructed to an approximate height of up to 85 m above the natural topography.

## PREPARATORY WORKS

Construction of the NRS will require about 18.2 Ha of topsoil to be stripped and stockpiled, to a height of around 10m, adjacent to Golden Valley Road. An OceanaGold Waihi owned house will need to be relocated.

## NRS DESIGN FEATURES

The NRS would incorporate similar design features as the existing TSFs. These features would include a low permeability liner beneath the stack, subsurface seepage drains, leachate collection drains, and capping.

## HOURS OF OPERATION

OceanaGold Waihi is proposing that the NRS operates from 7:00 am to 9:00 pm, Mon. to Fri. and 7:00 am to 12:00 pm Sat.

## NOISE

If the Waihi North Project is approved, we will be required to manage our activities so that we comply with strict noise limits set through the regulatory approvals process.

There are a range of noise management measures that may be implemented at the NRS to meet these requirements, including:

- Equipment selection and maintenance.
- Construction of noise bunds.
- Cladding to reduce conveyor noise.
- Limiting the height of stockpiles.
- Acoustic cladding around potentially noisy machinery.
- Closed board fencing.
- Acoustic noise wall on sections of perimeter noise bunds.

## LIGHTING

To allow us to operate outside of daylight hours, lighting will need to be established around the proposed NRS.

The lighting will be designed and located so that the amount of light is protective of the amenity of nearby residents.

## PROPERTY VALUES

The extension of mine life to 2037, if approved, will continue to positively impact Waihi property values.

Our property value assessment has identified the potential for the proposed Waihi North Project to have a minor impact on the values of a small number of properties near the NRS. This is not expected to be long-lasting.

The properties identified in the assessment would be eligible for our Top Up management measure in accordance with the criteria of our property programme.

For full details go to [waihigold.co.nz](http://waihigold.co.nz) or contact OceanaGold Waihi directly.

## REHABILITATION

The NRS would be progressively rehabilitated in accordance with the surrounding area. On completion, it would be grass-covered and function as part of the surrounding farmland.



Northern  
Rock Stack



# PROCESSING PLANT UPGRADE

Our existing grinding mill is over 50 years old and has been in operation at Waihi since 1987. The Waihi North Project requires the mill to operate for a further 14 years, and at an increased capacity. In order to meet this increased demand, the current mill would be upgraded.

The main components of the process plant upgrade are:

- Replacing the existing mobile and jaw crushers with a modular primary crusher.
- Increasing current milling capacity by installing the mill from the Reefton mine.

Temporary project facilities, such as offices, parking and equipment laydown yards will be required during

the upgrades. These facilities will be built within the current footprint of the Process Plant and will be removed once the upgrade work is complete.

These works would increase ore processing throughput from its current capacity of 1.25 million tonnes a year, up to 2.25 million tonnes a year. A further benefit of these works is that they begin early in

the project's timeframe and provide additional jobs.

Under this proposed project, the Process Plant would continue to operate 24-hours-a-day, seven days a week.

As part of these works, we are currently investigating opportunities to upgrade our Water Treatment Plant.





# MANAGING OUR EFFECTS

At OceanaGold Waihi, sustainability is fundamental to the way we do business. We are actively closing a mine at Reefton in the South Island, having successfully and sustainably operated that mine on Forest Park land. The Waihi North Project will demonstrate that it is possible to operate responsibly under conservation land, deliver economic development, and leave a positive legacy.

We will be applying the 'effects management regime' under the Resource Management Act to ensure that any adverse impacts associated with the Waihi North Project are avoided, remedied, or mitigated.

By applying these principles, the effects associated with the Waihi North Project will be appropriately managed. Through this project OceanaGold Waihi will look to identify and implement additional actions that go beyond mitigating effects.

OceanaGold Waihi also operates in close proximity to a number of residential properties and therefore must monitor and meet very stringent limits on the mine's environmental effects.

Technical studies for the Waihi North Project are ongoing. Over the next few months, we will share more in-depth details of the proposed project and how we plan to manage any effects. Community input will contribute to the final project design.

## GET IN TOUCH

More information on how we plan to manage our effects can be found on our website.

We welcome your input into developing the Waihi North Project. If you have an idea, concern, question, or opinion, please get in touch.



# HOW TO FIND MORE INFORMATION

OceanaGold Waihi is committed to a long-term partnership with the community 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 Waihi North Project. Much more detail is available on each topic by visiting our website or contacting us directly. We welcome your input and will ensure that the community is kept up-to-date on how this input is informing the technical studies and final design of the project.

## PROJECT INFORMATION OFFICE

Our Project Information Office in Seddon Street will have staff available to answer questions and listen to your views and ideas.

You can also get copies of all our more detailed information brochures, and other project information at the information office.

The opening hours are 10:00 am to 2:00 pm, Mon. to Fri.

## PUBLIC INFORMATION SESSIONS

We will be holding open public information sessions and also hope that community groups will invite us to their meetings, so we have a further opportunity to share and discuss the information we have available.

## NEWSPAPER UPDATES


We will also keep you updated through the Hauraki-Coromandel Post.

## FREEPHONE 0800 924 444

As always, our free community engagement line is available seven days a week.

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





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

We are committed to mining responsibly, managing our effects and, more broadly, contributing to our host communities and society.



## OceanaGold Waihi

43 Moresby Avenue, Waihi.

FREEPHONE 0800 924 444

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

JUNE 2022