NI 43-101 Technical Report

Waihi District Pre-feasibility Study, New Zealand

Effective Date: June 30, 2024

Report Date: December 11, 2024

Report Prepared by:

OceanaGold Corporation

Suite 1020, 400 Burrard Street

Vancouver, BC V6C 3A6

Canada

Signed by Qualified Persons:

David Townsend, Assoc Deg (Surveying), GDip (Mining), MAusIMM CP (Min) (OceanaGold Mining Manager)

Leroy Crawford-Flett, BCA/BSc. (Management/Geology), MPM, MAusIMM CP (Geo), (OceanaGold Exploration and Geology Manager)

Kirsty Hollis, BEng Mineral Processing, FAusIMM CP (Met) (OceanaGold Principal Metallurgist)

Euan Leslie, BEng Mining, BCom Economics, MAusIMM CP (Min) (OceanaGold Group Mining Engineer)

Trevor Maton, ARSM, BSc. (Eng) Mining (Hons), MSc. Economics, MAusIMM CP (Min) (OceanaGold Study Director)

Cautionary Note Regarding Forward-Looking Statements

This report contains certain “forward-looking statements” and “forward-looking information” (collectively, “forward-looking statements”) within the meaning of applicable Canadian securities laws. All statements, other than statements of historical fact regarding OceanaGold Corporation (OceanaGold) or the Waihi District (including Martha Underground (MUG), Martha Open Pit (MOP), Gladstone Open Pit (GOP) and Wharekirauponga Underground (WUG)), are forward-looking statements. The words “believe”, “expect”, “anticipate”, “contemplate”, “target”, “plan”, “intend”, “project”, “continue”, “budget”, “estimate”, “potential”, “may”, “will”, “can”, “could” and similar expressions identify forward-looking statements. In particular, this report contains forward-looking statements with respect to cash flow forecasts, projected capital, operating and exploration expenditures, targeted cost reductions, mine life and production rates, potential mineralization and metal or mineral recoveries, and information pertaining to potential improvements to financial and operating performance and mine life at the Waihi District. All forward-looking statements in this report are necessarily based on opinions and estimates made as of the date such statements are made and are subject to important risk factors and uncertainties, many of which cannot be controlled or predicted. Material assumptions regarding forward-looking statements are discussed in this report, where applicable. In addition to such assumptions, the forward-looking statements are inherently subject to significant business, economic and competitive uncertainties and contingencies. Known and unknown factors could cause actual results to differ materially from those projected in the forward-looking statements. Such factors include, but are not limited to: fluctuations in the spot and forward price of metals and commodities (including gold, diesel fuel, natural gas and electricity); the speculative nature of mineral exploration and development; changes in mineral production performance, exploitation and exploration successes; diminishing quantities or grades of reserves; increased costs, delays, suspensions, and technical challenges associated with the construction of capital projects; operating or technical difficulties in connection with mining or development activities, including disruptions in the maintenance or provision of required infrastructure and information technology systems; damage to OceanaGold’s or the Waihi District’s reputation due to the actual or perceived occurrence of any number of events, including negative publicity with respect to the handling of environmental matters or dealings with community groups, whether true or not; risk of loss due to acts of war, terrorism, sabotage and civil disturbances; uncertainty whether the Waihi District will meet OceanaGold’s capital allocation objectives; the impact of global liquidity and credit availability on the timing of cash flows and the values of assets and liabilities based on projected future cash flows; the impact of inflation; fluctuations in the currency markets; changes in interest rates; changes in national and local government legislation, taxation, controls or regulations and/or changes in the administration of laws, policies and practices; expropriation or nationalization of property and political or economic developments; failure to comply with environmental and health and safety laws and regulations; timing of receipt of, or failure to comply with, necessary permits and approvals; litigation; contests over title to properties or over access to water, power and other required infrastructure; increased costs and physical risks including extreme weather events and resource shortages, related to climate change; and availability and increased costs associated with mining inputs and labour. In addition, there are risks and hazards associated with the business of mineral exploration, development, and mining, including environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins, flooding and gold bullion, copper cathode or gold or copper concentrate losses (and the risk of inadequate insurance, or inability to obtain insurance, to cover these risks).

Many of these uncertainties and contingencies can affect OceanaGold’s actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, OceanaGold. All of the forward-looking statements made in this report are qualified by these cautionary statements and OceanaGold and the qualified persons who authored this report undertake no obligation to update publicly or otherwise revise any forward-looking statements whether as a result of new information or future events or otherwise, except as may be required by law.

Table of Contents

Appendices

Tables

Figures

1 SUMMARY

This Technical Report has been prepared in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects (NI 43-101). The purpose of this report is to disclose the results of the Waihi Mineral Resource and Mineral Reserve estimates and the completed Pre-Feasibility Study on Wharekirauponga Underground (WUG). This report will be available on OceanaGold Corporation's (OceanaGold or the Company) website at oceanagold.com and under the Company's profile on SEDAR+ at sedarplus.com.

The previous NI 43-101 technical report for the Waihi operation was filed in March 2021.

This technical report prepared in accordance with NI 43-101 for the Waihi operation (Technical Report) summarises work completed that covers the conversion of Mineral Resources to Mineral Reserves for the Martha and Wharekirauponga deposits. This report supports Mineral Resources and Mineral Reserves estimates as of the June 30, 2024.

1.1 Property Description, Location and Ownership

The Waihi operation is located within the Hauraki District on the North Island of New Zealand. The Waihi operation is owned and managed by Oceana Gold (New Zealand) Limited and Waihi Gold Company Limited, both 100 % owned subsidiaries of OceanaGold. The general location of the Waihi operation is illustrated in Figure 1-1.

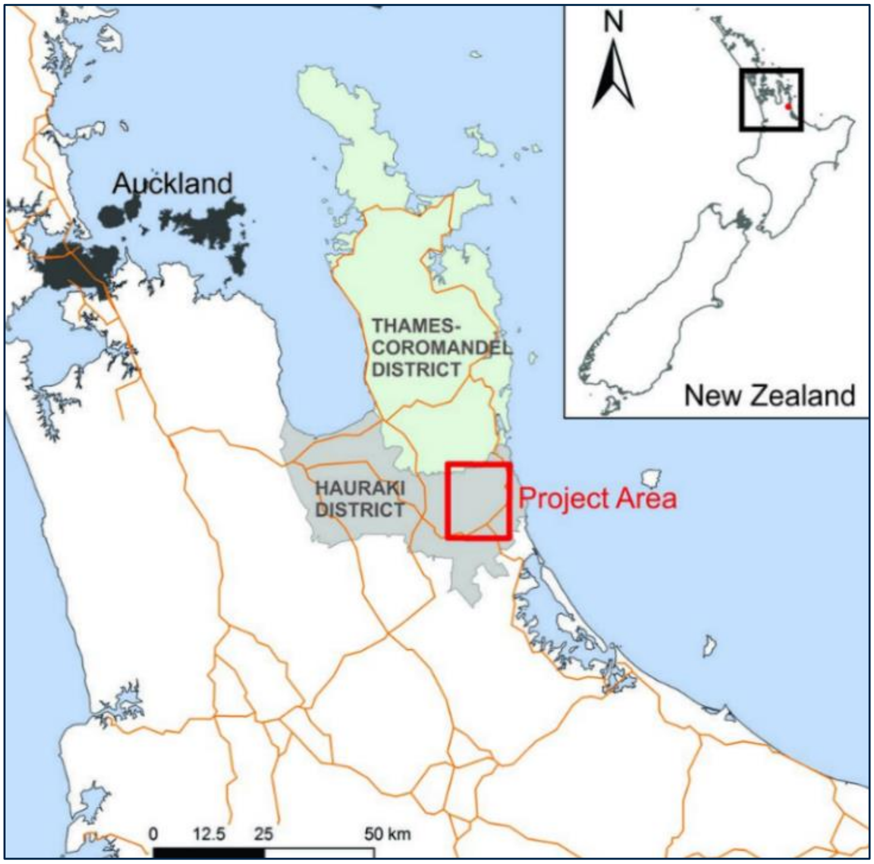


Figure 1-1: General Location Map of the Waihi Operation

Prospecting, Exploration and Mining Permits issued under the Crown Minerals Act 1991 (CMA) provide exclusive rights to minerals owned by the Crown, including gold and silver, and confer rights to access those minerals underground, but not at surface without landowner access approval. All existing gold mining activities in Waihi including the current Martha Underground (MUG), the ore processing plant, existing tailings facilities and the inactive Martha open pit are within the existing Favona Mining Permit 41808 (MP 41808) and are on land owned by OceanaGold or for which requisite surface land access rights are in place.

Wharekirauponga is located approximately 10 km to the north of Waihi and is held under the Wharekirauponga Mining Permit 60541 (MP 60541). WUG and the related access tunnels and surface infrastructure are within land owned and administered by government agencies including the Department of Conservation (DOC), are within OceanaGold owned land, or have no surface expression for which land access rights are required. Approvals processes are underway or planned to secure the surface access rights over government land as required for exploration, environmental management and monitoring activities, vent rise structures and utilities connecting the proposed new surface facilities site at Willows to the existing Waihi operations.

An access arrangement between DOC and OceanaGold has been granted to allow for exploration activities (including surface drilling) to take place within MP 60541. Approvals processes are underway or planned to secure land access for additional exploration sites and environmental management and monitoring activities.

1.1.1 Current Waihi Operations

MP 41808 extends across an area of 1573 hectares characterized by urban and rural land use. Land ownership is variable including parcels owned by OceanaGold, private landowners and government agencies. As noted above, all requisite landowner approvals are in place as required for surface land access to support the existing operations. In addition to land access and mineral rights, OceanaGold holds a suite of resource consents from the Hauraki District Council (HDC) and Waikato Regional Council (WRC) authorising mining within the MP 41808 area.

1.1.2 Wharekirauponga Underground (WUG)

MP 60541 extends across an area of 3,272 hectares. The proposed WUG mine, vent stacks, dual access tunnel and surface exploration activities are located within MP 60541 on land primarily owned by the Crown and administered by DOC as a conservation/forest park. Portal access to the mine together with other associated surface infrastructure and the proposed Processing Plant to Willows access tunnel are located on land owned by OceanaGold, private landowners or government agencies.

The Waihi North Project (WNP) includes WUG, access tunnels from a box cut portal at Willows to WUG, Processing Plant to Willows access tunnel, surface facilities and infrastructure at Willows, high voltage (HV) power upgrade, processing and water treatment plant upgrades, Martha Open Pit Stage 4 infrastructure upgrade and a new tailings storage facility (TSF3).

Requirements for third party surface access rights, including access arrangements issued under the CMA or licences and easements, are confined to government agencies, with processes underway or planned to secure these as part of the WNP permitting and consenting work plan. Figure 1-2 outlines the WNP, Martha Open Pit (MOP), MUG, and the existing Waihi surface facilities at the processing plant.

OceanaGold will require a suite of resource consents authorising mining of WUG and the construction and operation of associated infrastructure within the MP 60541 and MP 41808 areas. Processes are underway or planned to secure these as part of the permitting and consenting work plan. It is anticipated these consents will be secured in 2025, enabling surface works to commence in 2025 and underground tunnelling to commence in mid-late 2026. First stope ore at WUG is planned for 2033.

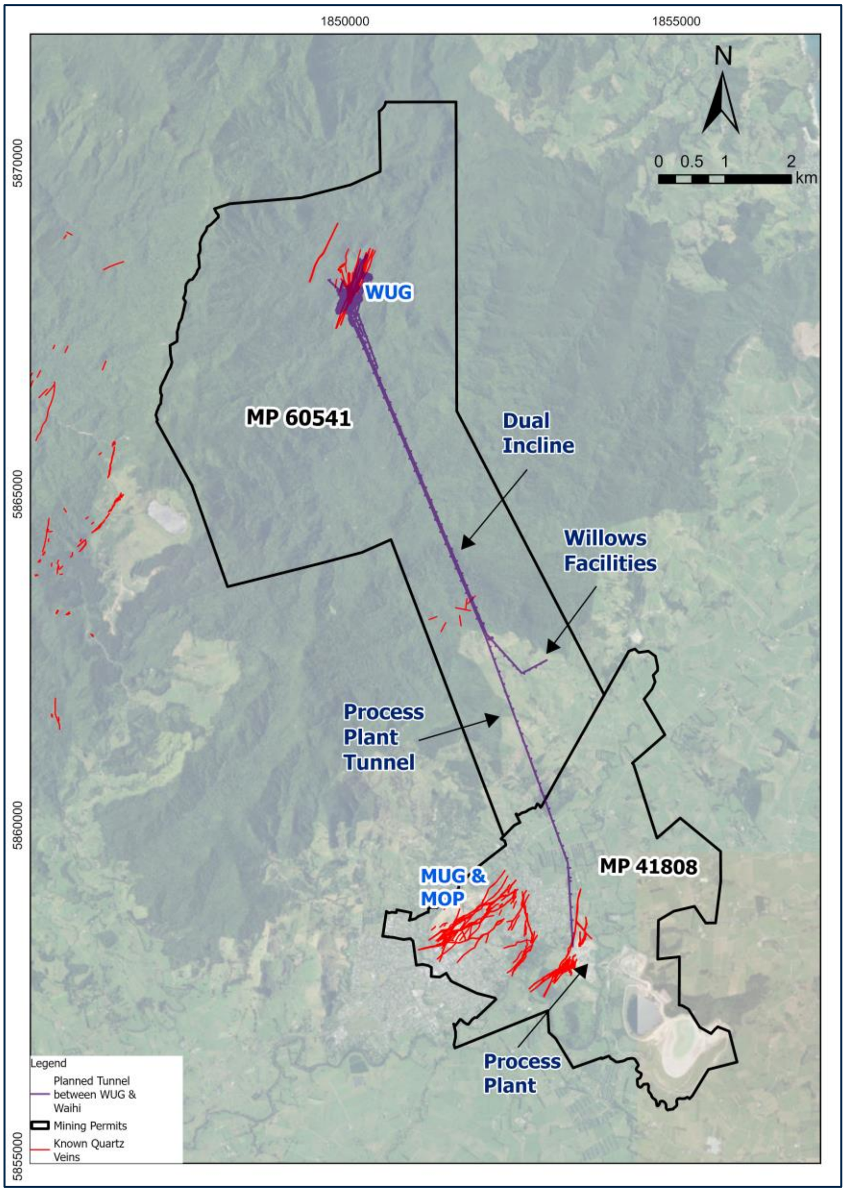


Figure 1-2: Map Showing Location of WUG and the Waihi Operations

1.2 Geology and Mineralization

WUG and MUG are located within the Coromandel Peninsula which hosts over 50 known gold and silver deposits that make up the Hauraki Goldfield. The peninsula is built up of Miocene to Quaternary volcanic rocks (the Coromandel Volcanic Zone) overlying a Mesozoic basement. It is bound to the west by the Hauraki Rift, a large graben filled with Quaternary and Tertiary sediments, and to the south by volcanics deposited by the presently active Taupo Volcanic Zone (TVZ).

The gold and silver mineralization occurs within low-sulphidation, epithermal quartz vein systems occupying large, north to northeast trending, normal faults and their subsidiary extensional structures. The vein systems comprise a 3D network of multiple vein sets that collectively strike >1000 m, with a current vertical range of 300 m (Wharekirauponga) and >500 m (Waihi) and include veins typically between 0.5 and 5 m in width (but up to 30 m locally). The main gold bearing minerals are electrum and silver sulphides developed within quartz veins.

The geological controls on mineralization are well understood and is sufficient to support the estimation of Mineral Resources and Mineral Reserves.

1.3 Status of Exploration, Development and Operation

Historical underground mining took place in Waihi from 1879 to 1952 on the Martha vein system producing approximately 5.0 Moz Au. The Martha vein system was then mined in an open pit from 1988 to 2015 and produced 2 Moz Au. Underground mining recommenced in 2004, and various vein systems have since been mined around Waihi to date. Minor historical underground mining took place at Wharekirauponga between 1893 to 1897 producing 19 oz of gold.

Exploration completed in Waihi has included underground and open pit mapping, geochemical sampling, spectral analysis, airborne geophysical surveys, ground resistivity geophysics, extensive diamond drilling and engineering studies. Exploration conducted around Wharekirauponga since 1986 has consisted of geological and structural mapping, geochemical sampling, airborne, ground and downhole geophysical surveys, surface drilling, engineering studies and mining operations.

Approximately 370 km of diamond core has been drilled within the Martha and Gladstone areas since 1980 (as of June 2024) and Wharekirauponga has had ~64 km of diamond drilling since 1980 (as of June 2024). Additionally, 86 km has been drilled in approximately 4,000 reverse circulation grade control holes during the open pit operation. Recent diamond drilling has largely focused on the Wharekirauponga, Martha and Gladstone deposits. The exploration programs completed to date are appropriate to the style of the deposit and prospects.

1.4 Mineral Processing and Metallurgical Test Work

With more than 35 years of proven operating performance, there is a high level of confidence that the Waihi process flowsheet is well suited to regional geology. Significant operating experience and metallurgical testwork data have been accumulated over the life-of-mine informing the development and selection of processing options for future orebodies.

Metallurgical testwork on Wharekirauponga mineralization has been used to generate recovery and throughput estimates for inclusion in the WUG technical and financial models. To support the test work program, a geometallurgical matrix was developed identifying the main gold bearing domains and composites targeted for metallurgical analysis. The basis was that the existing grind/leach process would be suitable for treatment of the WUG orebody.

Testwork results support ongoing use of the existing Waihi plant flowsheet, with plant expansions to enable higher WUG throughput rates. Metallurgical analysis also confirmed that the existing P80 targets of 75 µm for open-pit ores and 53 µm for underground ores will continue to deliver gold recoveries of greater than 90 %.

1.5 Mineral Resources Estimate

The Mineral Resources at Waihi comprise both open pit and underground resources. Separate block models were generated for the respective open pit and underground areas. Mineral Resources were classified in accordance with the 2014 CIM Definition standards. The Mineral Resource statement, as of June 30 2024, for Waihi District is presented in Table 1-1.

Table 1-1: Summary of Mineral Resources Estimate as of June 30, 2024

Area	Indicated					Inferred				
	Tonnes (Mt)	Grade (g/t Au)	Grade (g/t Ag)	Au (Moz)	Ag (Moz)	Tonnes (Mt)	Grade (g/t Au)	Grade (g/t Ag)	Au (Moz)	Ag (Moz)
MOP	6.50	1.95	13.4	0.41	2.81	2.3	2.1	12.1	0.2	0.9
GOP	3.22	1.44	3.76	0.15	0.39	0.8	1.0	2.6	0.03	0.1
MUG	6.42	5.29	25.5	1.09	5.27	2.7	4.7	27.1	0.4	2.4
WUG	2.39	17.9	28.0	1.37	2.15	1.3	9.6	17.1	0.4	0.7
Total Mineral Resources	18.5	5.07	17.8	3.02	10.6	7.1	4.3	17.6	1.0	4.0

Notes:

- Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- Mineral Resources estimate was reviewed and approved by, or is based on information prepared by or under the supervision of, Leroy Crawford-Flett, BSc Geology, MAusIMM CP (Geology), the Company's Exploration and Geology Manager and a qualified person under NI 43-101.
- Mineral Resources are reported at a gold price of $1,950/oz.
- Mineral Resources estimate for MUG is reported below the MOP design and constrained to within a conceptual underground design based upon the incremental cut-off grade of 2.15 g/t Au.
- Mineral Resources estimate for Wharekirauponga WUG is reported within a conceptual underground design at a 2.10 g/t Au cut-off grade.
- Mineral Resources estimates for MOP and GOP are reported within conceptual pit designs and incremental cut-off grades of 0.50 g/t and 0.56 g/t, respectively. The MOP conceptual pit design is limited by infrastructural considerations.
- Tonnage and grade measurements are in metric units. Gold ounces are reported as troy ounces and "g/t" represents grams per tonne.
- No dilution is included in the reported figures and no allowances for processing or mining recoveries have been made.
- All figures have been rounded; totals may therefore not sum exactly.
- OceanaGold is not aware of any environmental, permitting, legal, socio-economic, marketing, political, or other factors that might materially affect the Mineral Resource estimates. The QPs acknowledge that the consenting timeline is a risk, however, are satisfied with the Company's risk mitigation plans.
- MUG and WUG Resources are reported within conceptual stopes, only for material above the nominated cut-off grade. This constrains the tonnes and grade reporting to the mineralized or vein interpretation as shown in Figure 1-3.

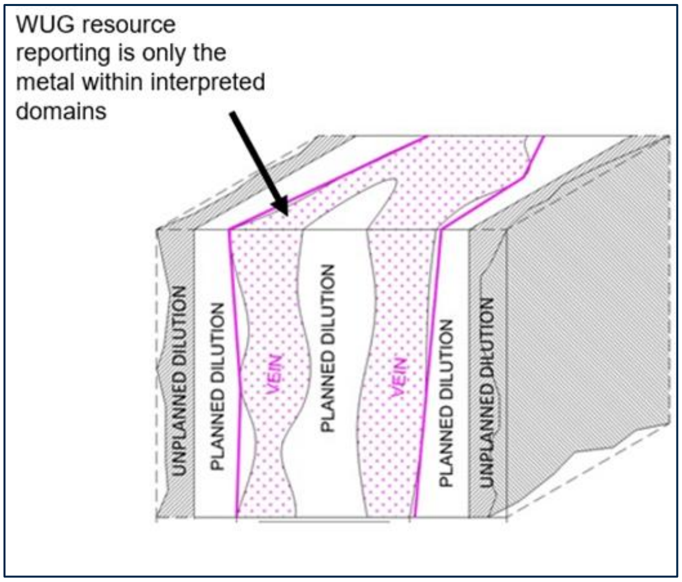


Figure 1-3: Resource Versus Reserve Example Schematic

1.5.1 MUG Resource Estimate

Data available in June 2024 were included in the MUG Resource estimate. Estimations were performed in individual geological domains using 1 m and 2 m length-weighted downhole composites. Estimation was undertaken via Ordinary Kriging for Au and Ag, and inverse distance squared for As. Grades were estimated into parent 10 mE x 10 mN x 10 mRL blocks with sub-blocking to 1 mE x 1 mN x 1 mRL.

Mineral Resources were reported within conceptual stope designs which were created using the Deswik® Stope Optimiser (SO). Stope widths vary, depending on the thickness of the mineralization with a minimum economic mining width of 1.3 m used. A maximum stope width of 15 m was used with a minimum pillar width between stopes of 5 m. The Mineral Resource is reported within the SO shapes above a 2.15 g/t cut-off grade, excluding dilution within SO shapes from the reporting of the resources. No unclassified material contained within the SO shapes is reported. No mining recovery or dilution factors were applied to the Mineral Resource estimate.

The Mineral Resources are classified as Indicated and Inferred Mineral Resources, based primarily on drillhole spacing. Manual interpretations of Indicated and Inferred boundaries were applied to domains material to Life of Mine (LoM) Plan.

1.5.2 Martha Open Pit Resource Estimate

Drillhole data available in April 2024 was included in the MOP Resource estimate. The assay coverage for gold and silver covers all core and RC drilling. However, for open pit channel sampling pertaining to the mined volume, silver assay data is significantly sparser than for gold. Silver grade estimates are provided for metallurgical considerations (carbon stripping and electro-winning) as well as for revenue estimation, albeit silver is a minor contributor to revenue.

Grades were estimated into parent 10 mE x 10 mN x 10 mRL blocks with sub-blocking to 1.25 mE x 1.25 mN x 1.25 mRL, using 2 m and 3 m run-length composites. Grade estimation was completed in Leapfrog EDGE® software, using Ordinary Kriging to produce estimates for gold. Resources are reported at a cut-off grade of 0.50 g/t within an open pit design that is limited by infrastructural considerations. The Mineral Resources are classified as Indicated and Inferred Mineral Resources, based primarily on drillhole spacing.

1.5.3 Gladstone Pit Resource Estimate

Drillhole data available in June 2024 were included in the GOP Resource estimate. The assay coverage for gold, silver and arsenic covers all core drilling. Grades were estimated into parent 5 mE x 10 mN x 10 mRL blocks with sub-blocking to 2.5 mE x 2.5 mN x 2.5 mRL, using 3 m run-length composites. Grade estimation was done in Vulcan software, using Ordinary Kriging to produce estimates for gold. Resources are reported at a cut-off grade of 0.56 g/t within an open pit design. The Mineral Resources are classified as Indicated and Inferred Mineral Resources, based primarily on drillhole spacing.

1.5.4 Wharekirauponga Underground Resource

Drillhole data available in June 2024 was included in the WUG Resource estimate. The estimations were performed in individual geological domains using 1 m length weighted downhole composites, via Ordinary Kriging for Au and Ag, and inverse distance squared for other elements. Grades were estimated into parent 4 mE x 16 mN x 16 mRL blocks with sub-blocking to 1 mE x 1 mN x 1 mRL.

Mineral Resources were reported within conceptual stope designs which were created using the Deswik® Stope Optimiser. Stope widths vary, depending on the thickness of the mineralization with a minimum mining width of 2 m used. A maximum stope width of 15 m was used, where no cemented rock fill of stopes are proposed a minimum pillar width between stopes of 8 m was applied. The Mineral Resource is reported within the Stope Optimiser shapes above a 2.10 g/t cut-off grade, excluding dilution within SO shapes from the reporting of the resources. No unclassified material contained within the Stope Optimiser shapes is reported. No mining recovery or dilution factors were applied to the Mineral Resource estimate.

The Mineral Resources are classified as Indicated and Inferred Mineral Resources, based primarily on drillhole spacing and then manual interpretation of Indicated and Inferred boundaries are applied to domains that comprise >90 % of system endowment within economic optimized stopes.

1.6 Mineral Reserves Estimate

Mineral Reserves at Waihi comprise underground Resources. Permits are in place to extract the Martha Mineral Reserve. Permits are required to extract the Wharekirauponga Mineral Reserves and OceanaGold assumes these permits authorising the commencement of works to be issued at the end of 2025.

Mineral Reserves were classified in accordance with the 2014 CIM Definition standards. The Mineral Reserve Statement, as of June 30, 2024, is presented in Table 1-2 . There are no Mineral Reserves for MOP. Note the inclusion of modifying factors (dilution and recovery) to the Mineral Resources results in a net increase in tonnes (due to the inclusion of dilution factors), a reduction in ounces (due to the inclusion of recovery factors) and a reduction in grade (due to a combination of dilution and recovery factors).

Table 1-2: MUG and WUG Combined Mineral Reserves Estimate as of June 30, 2024

Reserve Area	Class	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Au (Moz)	Ag (Moz)
MUG	Proven	-	-	-	-	-
	Probable	4.4	3.8	16.1	0.5	2.3
Total MUG		4.4	3.8	16.1	0.5	2.3
WUG	Proven	-	-	-	-	-
	Probable	4.1	9.2	16.1	1.2	2.1
Total WUG		4.1	9.2	16.1	1.2	2.1
Total Mineral Reserve		8.5	6.4	16.1	1.7	4.4

Note:

- The WUG Mineral Reserves estimate was reviewed and approved by, or is based on information prepared by or under the supervision of, Euan Leslie, MAusIMM (CP), the Company's Group Mining Engineer and a qualified person under NI 43-101.
- The MUG Mineral Reserves estimate was reviewed and approved by, or is based on information prepared by or under the supervision of, David Townsend, MAusIMM (CP), the Company's Mining Manager and a qualified person under NI 43-101.
- Mineral Reserves are reported based on OceanaGold's mine design, mine plan, mine schedule and cash flow model at a gold price of $1,750 /oz.
- Tonnages include allowances for losses resulting from mining methods. Tonnages are rounded to the nearest 100,000 tonnes.
- Ounces are estimates of metal contained in the Mineral Reserves and do not include allowances for processing losses. Ounces are rounded to the nearest hundred thousand ounces.
- All figures have been rounded; totals may therefore not sum exactly.
- Tonnage and grade measurements are in metric units. Gold ounces are reported as troy ounces and "g/t" represents grams per tonne.

1.6.1 Martha Underground (MUG)

MUG has been in development and production since 2020 using a predominantly Avoca bottom-up mining method. Mineral Reserves are based on similar mining methods, mining productivities employed to date and with five main production areas delineated. A spacing of generally 18 m between levels is used. Cemented rock fill (CRF) is used to backfill selected historical stopes.

The underground mine design process resulted in underground Mineral Reserves of 4.4 Mt (diluted) with an average grade of 3.8 g/t Au. This estimate is based on a mine design cut-off grade of 3.0 g/t Au. The modifying factors include a 50 % to 90 % mining recovery based on type of opening (stope, development, etc.) to the designed wireframes in addition to a 0 % to 13 % unplanned dilution using zero grade for dilution.

1.6.2 Wharekirauponga Underground (WUG)

Based on the orientation, depth, and geotechnical characteristics of mineralization, transverse sublevel open stoping (longhole) and modified Avoca methods are planned for WUG. Transverse open stopes will be 15 m along strike and stope width will vary based on mineralization grade and geotechnical considerations. A spacing of 20 m between levels is used. CRF will be used to backfill the primary stopes. There will be an opportunity for some non-cemented waste rock to be used in selected stopes based on the mining sequence. The CRF will have sufficient strength to allow for mining adjacent to backfilled stopes.

The deposit has been divided into three production areas. One northern and two southern blocks separated by a crown pillar at -60 mRL. The underground mine design process resulted in underground mining Reserves of 4.1 Mt (diluted) with an average grade of 9.2 g/t Au.

This estimate is based on a mine design cut-off of 2.4 g/t Au. The numbers include an 80 % to 100 % mining recovery based on type of opening (transverse, Avoca, development, etc.) to the designed wireframes in addition to a 0 % to 20 % unplanned dilution using zero grade for dilution.

1.7 Mining Method

1.7.1 Geotechnical WUG

A geotechnical field characterization program has been undertaken to assess the expected rock quality. This program included logging core, laboratory strength testing, in situ stress measurements and oriented core logging of jointing. The results of this program have provided adequate quantity and quality of data for prefeasibility-level design of the underground workings.

A geotechnical assessment of the orebody shape and ground conditions has determined that a combination of longhole open stoping in wide areas and modified Avoca stoping in narrow areas are appropriate mining methods. Stopes have been sized to maintain stability once mucked empty. Within the wider areas, a primary/secondary extraction sequence with tight backfilling allows optimization of ore recovery while maintaining ground stability. Primary stopes and selected secondary stopes will be backfilled with cemented rockfill.

The design has been laid out using empirical design methods based on similar case histories. The modelling results confirm that stopes and access drifts are predicted to remain stable during active mining.

1.7.2 Mining WUG

Stope optimization was completed on the resource model based on a level interval of 20 m high. In the wider transverse stoping areas, the stope length was set to 15 m along strike and the maximum width limited to 20 m, whereas in the narrower Avoca areas, stope length was based on geotechnical considerations.

Within the transverse mining area, each stope has a 5 m x 5 m access located at the bottom of the stope. Top accesses (also 5 m x 5 m) are designed to give access to stopes on the next level and to allow for backfilling. The stopes are drilled from the top and rings are blasted from the end of a stope toward the footwall access. The blasted material is mucked using tele-remote equipment. A primary/secondary stoping sequence will be used. The stopes are connected to a level access located in waste material and to the main ramp which located in the footwall. Each level access is connected to the ventilation system. Ore will be mucked from the bottom stope access using 15 t loaders and loaded into 50 t trucks for haulage to surface.

The underground mine production schedule is based on the productivity rates developed from a combination of existing MUG benchmarking, first principles and benchmarking against similar projects where applicable. The schedule was completed based on mining operations occurring 365 days/year, 7 days/week, with two 12 hour shifts each day. A production rate of approximately 2,200 tonnes per day is targeted, with ramp-up to full production in mid to late 2033.

The commencement of surface works is planned for 2025, assuming all consents are received from authorities. Underground portal development is scheduled to begin in late 2026. Portal development is required before the decline access can begin. Material development ore is achieved in 2032 with first production from the stopes scheduled to occur in 2033 and will last through to 2038 based on the current Mineral Reserves (Table 1-3).

Table 1-3: WUG Mine Production Annual Mining Schedule

Year	Mineralized Tonnes (kt)	Au (g/t)	Ounces (koz)
2031	3	5.5	1
2032	139	11.4	51
2033	620	10.1	201
2034	798	9.6	245
2035	799	10.7	276
2036	795	8.2	209
2037	662	7.8	165
2038	240	7.4	57
Total	**4,057**	**9.2**	**1,205**

1.7.3 Mining MUG

MUG is accessed via the existing Favona portal through the existing Trio and Correnso workings and shares the ventilation development and shafts as well as the underground workshop, crib room and dewatering systems.

Exploration drives were completed on 800 mRL and 920 mRL in 2018. Development of MUG commenced in mid-2019. Development has focussed on ramp access for Edward, Empire, Rex and Royal mine areas, footwall, fill, and ore drive development, ventilation and secondary egress connections, and drilling platforms. Two portal breakthroughs have been completed in the southwestern corner of the Martha open pit and are being used for ventilation and secondary egress purposes and dumping of underground waste into the bottom of the pit.

The development strategy involves mining of declines for access to five main stoping blocks. Access drives are mined to develop drilling and loading levels, generally intersecting the orebodies centrally. Access drives are spaced generally at 14 m to 18 m vertically over the height of the mine. Ore drives will be developed in both directions along strike from the access drives. Stockpiles are mined off the decline and in levels for truck loading.

The key differences with recent operating practices involve the development of footwall drives, crosscuts and pass systems in selected locations mainly confined to Edward, Empire east and west to backfill the historical workings. Crosscut spacing is generally at 15 m spacing. Historical stopes are backfilled to provide both regional and local stability.

Mining options available for MUG are limited because of the permit conditions, blasting and backfill constraints. Modified Avoca mining was selected as the preferred mining method. MUG has been designed with a 14 m to 18 m level spacing, floor to floor primarily to limit blast vibration but this also assists hanging wall and footwall stability.

Approximately 50 % of the Mineral Reserves will involve the extraction of remnant skins in the footwall or hanging wall of previously mined (historical) stopes, or the extraction of both remnant skins. Historical backfill may also be mined as this material may be above the cut-off grade. However, as it is currently classified as Inferred Resource it is not included as Mineral Reserve.

Following operating practices and detailed studies over the last nine years, the following methods are applied for the extraction of remnant areas, adjacent to historic workings:

- Modified Avoca method whereby the historic stope is backfilled with cemented fill prior to stoping and the remnant skin is extracted by conventional modified Avoca using rockfill in a bottom-up sequence that exposes the cemented fill
- Modified Avoca method adjacent to the collapsed historic stope where backfill with CRF is not feasible and a stand off from the historic wall of 3.0 m is maintained with lower estimated recoveries, higher dilution
- Remote, side ring method where the historic backfill is extracted together with remnant wall rock in a top-down sequence with cemented backfill
- Transverse stoping method where the historic backfill is extracted together with remnant wall rock in a top down or bottom-up sequence with cemented or rock backfill.

The side ring and transverse mining method for the extraction of remnant skins and historic backfill use conventional drilling and remote loading methods. This method involves additional waste development adjacent to the remnant stopes, which increases overall development quantities and mining costs. Permit conditions and the mining method require all stopes and selected developments to be backfilled. The current Mineral Reserves are shown in Table 1-4.

Table 1-4: MUG Mine Production Annual Mining Schedule

Year	Mineralized Tonnes (kt)	Au (g/t)	Ounces (koz)
2024 (H2)	275	2.98	26[1]
2025	453	3.42	50
2026	493	3.48	55
2027	516	3.61	60
2028	503	3.71	60
2029	485	3.85	60
2030	472	3.96	60
2031	492	3.79	60
2032	356	5.20	60
2033	365	4.04	47
Total	**4,410**	**3.80**	**538**

[1] The effective reporting date is 30 June 2024, therefore H1 has been removed from Table 1-4. The full year's Au production for MUG in 2024 is 48-52koz.

1.8 Recovery Methods

The Waihi process flowsheet is illustrated in Figure 1-4, with a conventional process being used for gold recovery. The processing plant has been operational since 1988, undergoing one major upgrade in 1999 to increase throughput capacity of open-pit mill feed, and one minor upgrade in 2006 to introduce campaign treatment of underground ore. Its current throughput capacity is 1.25 million tonnes per annum on open-pit mill feed and 0.66 million tonnes per annum on underground ore.

Considerable operating experience and metallurgical testwork data have been accumulated over the life-of-mine, and this informs the development and selection of processing options for future orebodies. Metallurgical testwork on MUG and WUG orebodies supports ongoing use of the existing flowsheet with plant expansions to enable higher throughput rates. These expansions will be timed to align with the development of WUG. Key elements of the expansions include, installation of an upstream jaw crusher, replacement of the 1.2 MW ball mill with a 1.8 MW tower mill; refurbishment of the adsorption circuit; and new pumps and pipework for delivery of tailings to TSF3. This will increase throughput capacity to 0.8 million tonnes per annum on underground ore.

Open-pit and underground ores would be treated on a campaign basis as required. This is due to differences in ore hardness and gold liberation size, with open-pit ores softer than underground ores and gold liberation occurring at a coarser grind size. This means that open-pit ores are treated at higher throughput rates than underground ores and their target grind size is coarser. Further to this, metallurgical testwork has confirmed that the existing P80 targets of 75 µm for open-pit ores and 53 µm for underground ores will continue to deliver gold recoveries of +90 %.

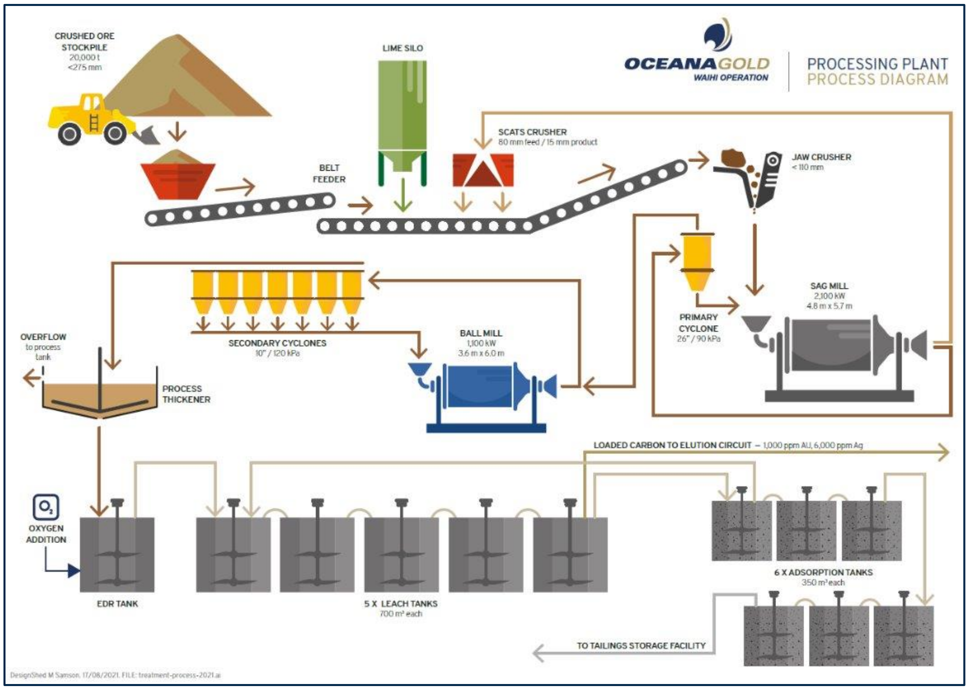


Figure 1-4: Waihi Process Flowsheet

1.9 Project Infrastructure

The modern Waihi Operation has been in production since 1988 with site infrastructure developed to support the MOP and MUG operations. MUG uses the existing process facilities, tailings storage, water treatment facilities and other site infrastructure. The power supply is provided from the national grid and supplied to the site substation at the processing plant area. The location of the existing and planned infrastructure at Waihi is shown below in Figure 1-5.

Figure 1-5: Waihi Existing and Planned Infrastructure

New surface facilities and infrastructure will be required for WUG, including tailings and waste rock disposal, stockpiling, water treatment, and power supply, which are described below. The Willows, adjacent to the Coromandel Forest Park, was purchased in 2021. This area will form the initial access to WUG and service the mine. The area will include the following infrastructure:

- Temporary waste rock stack to accommodate development waste rock, all of which will be returned underground as backfill
- Boxcut portal façade excavation
- Access road to portal
- Bulk earthworks and drainage
- Collection/silt ponds and associated pumping requirements
- Surface Facilities Area (SFA):
  - Maintenance workshop
  - Small general warehouse facility

  - Electricity supply and substations
  - Temporary/backup generators
  - Air compressor
  - Administration offices, security hut, crib room, clean/dirty room (change house), breezeway, muster room and ablution facilities. (including sanitary system, potable and raw water tanks and pumping system)
  - Light vehicle car parking
  - Tyre change facility
  - Fuel facility
  - Heavy vehicle and light vehicle washbay facility (including oily water separator).
- Explosives storage magazine
- Services Trench between the process plant and Willows (approximately 5 km) for water treatment, potable water, mine dewatering, electrical supply, communications (fibre optic cables)
- Sealed road from the Willows Road to the mine plant area to minimise dust
- An upgrade of the existing SH 25 and Willows Road intersection
- Improvements to Willows Road (Signage and road markings)
- Noise bunding.

A new tailings storage facility, TSF3, is to be constructed adjacent to existing tailings facilities at Baxter Road for the Waihi Operations, featuring downstream construction and associated stockpiles, containment ponds and diversion drains.

A high voltage (HV) power upgrade is required from the Transpower Waikino grid exit point (GXP) in Hauraki District Council (HDC) Road Reserve to a new 33 kV / 11 kV substation at the Waihi Baxter Road operations.

1.10 Environment Studies, Permitting and Social or Community Impact

1.10.1 Permitting

Prospecting, Exploration and Mining Permits issued under the CMA provide exclusive rights to minerals owned by the Crown, including gold and silver, and confer land access rights to those minerals underground, but not at surface. All existing gold mining activities in Waihi including the current MUG, the ore processing plant, existing tailings facilities and the inactive Martha open pit are within the existing MP 41808, which extends across an area of 1573 hectares, and are on land owned by OceanaGold or for which requisite surface land access rights are in place.

WUG is held under MP 60541, which extends across an area of 3,272 hectares. WUG and the related access tunnels and surface infrastructure are within land owned and administered by government agencies including DOC, are within OceanaGold owned land, or have no surface expression for which land access rights are required. Approvals processes are underway or planned to secure surface access rights over government land as required for exploration, environmental management and monitoring activities, ventilation rise structures, the proposed surface facilities site at Willows, the services trench connecting Willows to the existing Waihi operations and the new tailings storage facility.

An access arrangement between DOC and OceanaGold has been granted to allow for existing exploration activities (including surface drilling) to take place within MP 60541. Approvals processes are underway or planned to secure land access for additional exploration sites and environmental management and monitoring activities.

1.10.2 Resource Consents

MP 41808 is within land characterized by urban and rural land use. In addition to land access and mineral rights, OceanaGold holds a suite of resource consents from HDC and WRC authorising mining within the MP 41808 area.

WUG, including ventilation stacks, the dual access tunnel and surface exploration activities are located on land primarily owned by the Crown and administered by DOC as a conservation/forest park and zoned, for resource consenting purposes, as conservation land. An area of council-owned unformed road reserve (“paper road”), located within the forest park, is effectively zoned as conservation land.

Portal access to the mine together with other associated surface infrastructure and the Processing Plant to Willows access tunnel are located on land variously owned by OceanaGold, private landowners and various government agencies and characterized by urban and rural land use. Requirements for third party surface access rights, in the form of access arrangements issued under the CMA or licences and easements, are confined to government agencies, with processes underway or planned to secure these as part of the WNP permitting and consenting work plan.

OceanaGold will require a suite of resource consents authorising mining of WUG and the construction and operation of associated WNP infrastructure within the MP 60541 and MP 41808 areas. Processes are underway or planned to secure these as part of the WNP permitting and consenting work plan.

Using the New Zealand government’s proposed Fast-track Approvals Bill, together with existing permitting and consenting processes, OceanaGold assumes resource consent approval, and the other approvals as required for the development of the WNP to commence, by the end of 2025.

1.10.3 Environmental and Social Impact Studies

As part of existing consenting processes OceanaGold has commissioned independent experts to provide a range of specialist environmental technical reports on the actual and potential effects on the environment of allowing the activities associated with developing and operating the WNP. These effects include:

- Biodiversity
- Water
- Landscape and Visual
- Transport
- Amenity
- Air Quality
- Rehabilitation and Closure.

The technical assessments conclude that the WNP's effects are all able to be managed through the application of the effects management hierarchy, to produce environmental, social and cultural outcomes that are appropriate within the context of regulatory requirements, having regard to the scale and location of the WNP activities. The WNP will manage the majority of its potential adverse effects through prevention and mitigation, including the use of offsetting and compensation for residual effects on terrestrial and aquatic biodiversity and habitat values, such that residual effects are minor. The WNP is targeting a biodiversity net gain, as it incorporates measures proposed for the sole purpose of providing benefits to the environment in recognition of the conservation purpose of the land above the proposed WUG operations.

Community engagement commenced in 2020 and less formal engagement with iwi and regulators began much earlier, around 2017. OceanaGold has well-established positive working relationships with key stakeholders, and this has provided a solid platform for understanding and respecting diverse viewpoints. Understanding the relationship between the business and the external context is crucial to effective stakeholder engagement. Building trust through the sharing of information and perspectives helps streamline decision making, based on mutual trust and shared values.

In 2022, an independent Social Impact Assessment (SIA) was completed for the WNP which follows the International Association of Impact Assessment's guidance for preparing an SIA. The WNP will have positive social impacts in so far as it will contribute to:

- Job security and sustained livelihoods
- Social uplift from reduced local unemployment
- Social uplift from increased business activity and indirect employment opportunities.

The assessment identified the following effects that were assessed as having moderate to high negative significance:

- Increased demand for accommodation.
- Change in sense of place for residents around the Willows area (location of the SFA for the WUG)
- Reduced amenity, as a result of increased traffic movements along Willows Road.

The Company recognises the special relationship that iwi have with land and water, and that this relationship is important to spiritual and cultural wellbeing. The Company has had a consultation program in place with iwi for many years covering the operating mine, the mineral exploration program and new projects, and this is ongoing.

Of the nine groups that claim cultural interests and associations with the proposed WNP area, five have agreed that they will provide a Cultural Impact Assessment for the WNP. The remaining four iwi groups have either chosen not to complete an assessment, to defer to another iwi group they have recognized as having authority over specific matters, or to not engage with the Company further.

1.11 Capital and Operating Costs

All costs, unit costs and prices are in United States dollars unless otherwise noted.

1.11.1 Capital Cost

Non-Sustaining (growth) capital is $556 million, including underground capitalized development linked mainly to the development of WUG. The sustaining capital cost is $342 million, which is primarily for mine development, surface infrastructure, underground mine equipment replacements associated with MUG and site rehabilitation works. The total LoM capital cost is $897 million as summarized in Table 1-5.

Capital costs have been estimated with reference to actual experience in undertaking the same or similar works at Waihi, quotations from suppliers and estimates provided by consultants with appropriate expertise. The capital cost estimation is consistent with proposed development programs and ongoing requirements and were undertaken to an appropriate level of estimation accuracy. It is likely that over the life of the mine actual expenditures will vary, due to modifications, upgrades, introduction of new technology and other unforeseen factors.

Table 1-5: Total Capital Cost Summary ($M)

Description	Non-Sustaining Capex	Sustaining Capex	Total
WUG	357.9	62.9	420.9
MUG	-	102.1	102.1
Processing and Water Treatment	92.8	8.4	101.2
TSF's	44.4	80.5	124.9
Other Capital	60.6	16.0	76.7
Rehabilitation	-	71.6	71.6
Total	**555.8**	**341.6**	**897.4**

1.11.2 Operating Cost

The total life of mine operating cost (excluding capitalized operating cost) is $1,200 million. Operating costs have been estimated with reference to actual operating experience at Waihi, supplier quotations, estimates from consultants with appropriate expertise and otherwise estimated internally by appropriately credentialled OceanaGold people. The operating cost estimates include allowance for performance related improvement opportunities that have been identified.

The total operating cost unit rate of $141.8 /t processed are summarized in Table 1-6. A notional carbon cost for a diesel equipped mine has been included in the operating cost estimate based on the New Zealand climate change commission research report recommendations.

Table 1-6: LoM Operating Cost Summary ($M and $/t)

Description	$M	$/t Ore Mined
UG Mining – MUG	488.8	110.8
UG Mining – WUG	264.4	65.2
Subtotal Mining	753.2	89.0
	$M	$/t Ore Processed
Processing	222.7	26.3
G&A Costs	191.0	22.6
Refining / Freight Costs	5.6	0.7
Other - Carbon Costs and stockpile movements	28.2	3.3
Total Operating Costs	**1,200.8**	**141.8**

1.12 Economic Analysis

All revenues, costs, prices and economic indices are in United States dollars unless otherwise noted. Economic analysis is undertaken in real terms, i.e. constant 2024 dollars. No inflation or escalation included.

The economic analysis covers the operating MUG, the planned WUG, and a mill processing 0.8 Mtpa of underground ore. MUG and WUG are expected to produce 1.6 million ounces of payable gold over a 15 year mine life at a maximum rate of 253 koz Au per year during full WUG production years with a LoM all-in sustaining cost (AISC) of $994 /oz.

The underground mines are expected to require sustaining capital of $342 million (including closure and rehabilitation costs of $72 million) and a non-sustaining (growth) capital spend of $556 million over the modelled life, for total capital expenditure of $897 million. At a constant $1,750 /oz gold price assumption, the WNP generates pre-tax and after-tax $NPV_{5.0\%}$ values of $259 million and $138 million, respectively.

OceanaGold has also estimated WNPs value using an alternative price assumption (refer to section 22.4.2) of a flat $2,400 /oz gold price over the life of the operation. At these prices and a 5 % discount rate the project is estimated to produce a pre-tax and after-tax NPV value of $902 million and $621 million respectively.

A summary of the model results for both the reserve case and the OceanaGold price case is presented in Table 1-7. The project's NPV is most sensitive to gold grade and price, followed by operating costs and capital costs.

Figure 1-6 shows the annual AISC trend over the life of mine. The improvement in AISC is due to the commencement of WUG and is primarily due to the improvement in grade. Over the WUG production life (2033-2038) the AISC is $634 /oz.

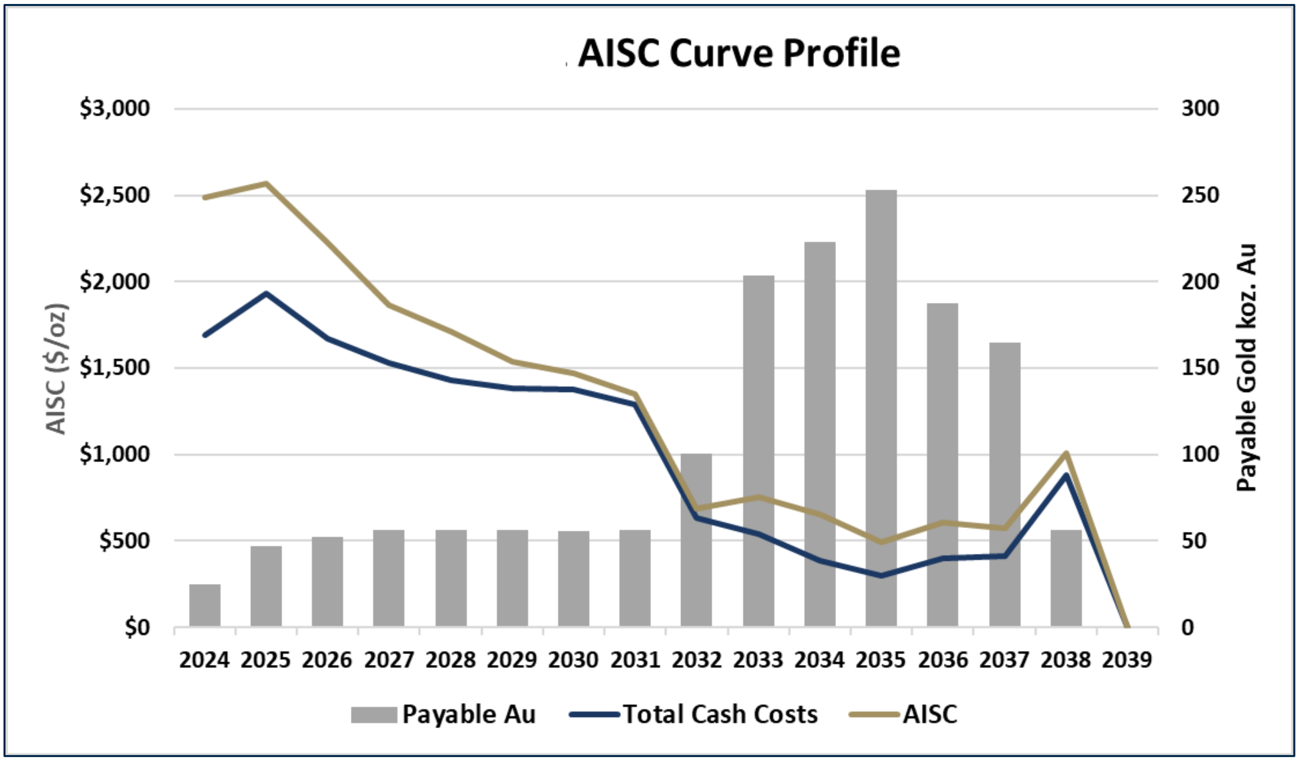


Figure 1-6. Annual AISC and Total Cost Curve Profile

Table 1-7: Indicative Economic Results

Description	Reserve Case Price	Alternative Price
Market Prices		
Gold ($/oz)	1,750	2,400
Payable Gold (koz)	1,593	1,593
Revenue ($ 000's)		
Gross Gold Revenue	2,788,394	3,824,083
Silver By-Product Credit (at $20 /oz Ag)	54,598	54,598
Total Gross Revenue	2,842,992	3,878,682
Direct Operating Costs ($ 000's)		
Mining	753,223	753,223
Processing	222,717	222,717
Site G&A	191,026	191,026
Selling/Refining	5,584	5,584
Other - Carbon Costs and stockpile movements	28,232	28,232
Total Direct Operating Costs	**1,200,783**	**1,200,783**
Non-Direct Operating Costs ($ 000's)		
Royalties payable to Government	58,213	98,343
Other Royalties	38,582	52,742
Total Non-Direct Operating Costs	**96,795**	**151,085**
Operating Cash Flow	1,545,414	2,526,815
Taxes ($ 000's)		
Income Tax	217,309	482,089
Capital ($ 000's)		
Sustaining Capital	341,590	341,590
Non-Sustaining Capital	555,807	555,807
Total Capital	**897,397**	**897,397**
Metrics ($ 000's)		
Pre-Tax Free Cash Flow	648,017	1,629,418
After-Tax Free Cash Flow	430,709	1,147,329
Pre-Tax NPV at 5%	258,543	902,338
After-Tax NPV at 5%	137,726	620,707
IRR	9.2%	24.0%

1.12.1 Sensitivity Analysis

Additional gold price sensitivity analyses were conducted with $NPV_{5\%}$, and IRR summarized in Table 1-8.

Table 1-8: Gold Price Sensitivity Analysis

	NI 43-101 Sensitivity to Gold price	
	After tax $NPV_{5\%}$ ($M)	IRR (%)
Gold $1,100	-387	N/A
Gold $1,500	-52	N/A
Gold $1,750	138	9.2 %
Gold $2,000	326	14.8 %
Gold $2,400	621	24.0 %

1.13 Conclusions and Recommendations

1.13.1 Geology and Mineral Resources

Resource growth and conversion at Wharekirauponga have achieved outstanding success since the initial resource was announced at in February 2019. Indicated Resource endowment has grown from 0.41 Mt at an average Au grade of 18 g/t containing 0.23 Moz of gold to 2.39 Mt at an average Au grade of 17.88 g/t containing 1.37 Moz of gold. Inferred Resource growth has also replaced conversion over the same period.

Forward budgeted work programmes continue to allocate resources to both resource conversion and growth. This includes 5,000 meters of conversion drilling and 3,600 m of growth drilling planned and budgeted in 2025. A broad development and drilling strategy is planned to extend WUG resources in a south-westward direction from Drill Site 9, where consented drilling platforms enable testing of 500 m extension to the EG vein corridor. Infill drilling in the northern and central area of WUG will target the conversion of 400,000 oz of Inferred Au Resources to Indicated in 2025 and 2026.

In accordance with Wharekirauponga Mining Permit conditions OceanaGold will undertake resource definition drilling to further delineate the extent of the resource which remains open in several aspects along strike, in vertical extent, and with potential for identification of additional veins. Exploration will also be conducted along the decline route to identify opportunity for incidental ore discovery and prevent sterilisation. Given the potential of WUG, the Company expects to be investing in exploration for a number of years.

Waihi 3D geological models are supported by diamond core drilling, logging, analytical testing and mine mapping to reflect controls to mineralization. Geologic domains are used to guide gold grade interpolation. Exploration drilling has been accompanied by an industry standard QA/QC program showing good quality analytical results in terms of precision and accuracy. The results of the drilling, sampling, analytical testing, core logging and geologic interpretation provide good support for an industry standard resource estimation. Models are updated at least biannually, internally peer reviewed and integrated into mine and exploration planning. Models have also been reviewed by independent, external experts in 2024 in respect of WUG, MUG and MOP and in 2022 in respect of GOP.

Planning is advanced to increase drilling programme capabilities through available regulatory channels including the government's Fast-track Approvals Bill in which the WNP is a listed project. Grade control drilling is scheduled ahead of production by means of fanned holes from underground drill stations.

1.13.2 Mining and Reserves

Longhole stoping and modified Avoca are seen as the appropriate mining methods for the WUG deposit geometry. The large stope sizes minimize cost and grades are not overly diluted. Mine planning work considered revenue for Au and a cut-off grade (CoG) of 2.4 g/t Au was used. A detailed 3D mine design was completed around economically minable areas above cutoff grade.

Tonnage and grades presented in the Reserve include dilution and recovery that are benchmarked to similar operations. Productivities were generated from a combination of existing MUG benchmarking, first principles and benchmarking against similar projects where applicable. Equipment used in this study is standard equipment used worldwide with only standard package/automation features.

The underground access and ventilation system are appropriate for the extraction of the Reserve. A production schedule was generated using Deswik® software targeting 2,200 tonnes per day.

Planned future work includes:

- Extensional and infill drilling to further optimise capital infrastructure requirements
- Continued geotechnical investigations for WUG including data collection for crown pillar area, footwall development and EG Vein areas, investigative drillholes for each ventilation shaft and numerical modelling for both crown and pillar stability
- Material balance analysis for TSF construction methodology and options
- Detailed mine equipment fleet and material handling optioneering
- Staged ventilation modelling and optimisation.

1.13.3 Mineral Processing and Metallurgical Testing

Metallurgical testwork on WUG mineralization has been used to generate recovery and throughput estimates for inclusion in the WNP's technical and financial models. To support the testwork program, a series of geometallurgical matrices were developed in conjunction with the geology team. These geometallurgical matrices identified the main gold bearing domains and the minimum number of composites to be targeted for metallurgical testwork.

Testwork results support ongoing use of the existing plant flowsheet with plant expansions to enable higher throughput rates. Metallurgical testwork also confirmed that the existing P80 targets of 75 µm for open-pit ores and 53 µm for underground ores will continue to deliver gold recoveries of +90 %.

Infill drilling presents the opportunity to continue test work on core samples to confirm metallurgical assumptions for any new Reserves that are defined.

1.13.4 Recovery Methods

Gold recovery at Waihi is achieved via a conventional process flowsheet. Current plant capacity is 1.25 million tonnes per annum on open-pit ore, and 0.66 million tonnes per annum on underground ore. Capacity on underground ore needs to increase to 0.8 million tonnes per annum when WUG comes on stream.

Metallurgical testwork supports ongoing use of the existing flowsheet with minor plant expansions to enable the higher throughput rates. These expansions will be timed to align with the development of new orebodies.

1.13.5 Infrastructure

Detailed design and execution works is planned for the services trench to join existing processing plant to Willows, the water treatment plant upgrade and bulk earthworks for the Willows area. Geotechnical investigations will continue to enable portal boxcut and waste rock stack detailed design, and the first 1.5 km of decline to Ventilation Shaft No.1.

Supporting infrastructure is included in the capital estimates, including:

- Supporting surface infrastructure for the new WNP portals
- Building of a new tailings storage facility, TSF3
- The capacity of the water treatment plant (WTP) will be doubled to allow treatment of mine dewatering from WUG and decant water off TSF3. This aligns with expected dewatering flows and the newly consented discharge regime (Regime E).

A geotechnical borehole investigation will be conducted around the ridges to the east of the proposed TSF3 and borrow pits to identify suitable materials for construction of the embankment and extent of earthworks required. Additional infrastructure design works includes:

- Undertake drilling with man portable drill rig that does not require vegetation clearance to identify near surface conditions favourable for construction of the ventilation shafts within the Coromandel Forest Park
- Confirming the methodology for construction of ventilation shafts with specialist contractors
- Confirming the suitability of the proposed plant upgrade as metallurgical testwork and mine schedule plans are updated
- Completion of detailed design for the 33 kV buried powerline upgrade from Waikino and the Processing Plant and Willows substations.

1.13.6 Economic Analysis

The current metal price environment is attractive. If the gold price remains above the $1,750 /oz assumption for a long period, at a 5 % discounted rate there is the potential for WUG and MUG Reserves and Resources estimates to be updated via an economic model applying a higher gold price assumption. At $1,750 /oz the after tax $NPV_{5\%}$ is $138 M. At $2,400 /oz the after tax $NPV_{5\%}$ is $621 M.

Over the WUG production period (2033 to 2038) AISC is $634 /oz providing a robust economic outlook for the project.

2 INTRODUCTION

2.1 Terms of Reference

This report provides Mineral Resource and Mineral Reserve Estimates, and a classification of Mineral Resources and Reserves prepared in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves: Definitions and Guidelines 10 May 2014 (CIM, 2014). References in this report to “OceanaGold” include OceanaGold Corporation, Oceana Gold (New Zealand) Limited, Waihi Gold Company Limited and their subsidiaries and associates, as the context requires. This report has been prepared to satisfy OceanaGold obligations as a reporting issuer in Canada.

2.2 Qualified Persons

The Qualified Persons (QP) for the report are OceanaGold employees engaged for the preparation of this Technical Report, as listed in Table 2-1.

Table 2-1: Qualified Persons Responsible for Preparing this Technical Report

QPs	Employer	Position	Technical Report Item(s) Contributed
David Townsend (not Independent) Assoc. De.g (Surveying), GDip. (Mining), MAusIMM CP (Min),	OceanaGold	Mining Manager	Sections: 1.6 - 1.7, 1.13, 15.1, 15.3, 16.1 - 16.2, 16.4, 25.4, and 26
Leroy Crawford-Flett (not Independent) BCA/BSc. (Management/Geology), MPM, MAusIMM CP (Geo)	OceanaGold	Exploration and Geology Manager	Sections: 1.1 - 1.3, 1.5, 1.13, 2 – 4, 6 – 12, 14, 23 -24, 25.1 - 25.3, and 26
Kirsty Hollis (not Independent) BEng (Mineral Processing), FAusIMM CP (Met)	OceanaGold	Principal Metallurgist	Sections: 1.4, 1.8, 1.13, 2, 13, 17, 18.4, 18.5, 25.5, 25.6, and 26
Euan Leslie (not Independent) BEng. Mining (Hons), BCom. Economics, MAusIMM CP (Min),	OceanaGold	Group Mining Engineer	Sections: 1.6 - 1.7, 1.13, 2 - 3, 15.2 - 15.3, 16.3 - 16.4, 25.4, and 26
Trevor Maton (not Independent) ARSM, BSc. (Eng) Mining (Hons), MSc. Economics, MAusIMM CP (Min),	OceanaGold	Study Manager	Sections: 1.9 – 1.13, 2 - 3, 5, 18 – 22, 24, 25.6 - 25.8 and 26

2.3 Details of Inspections

All the QPs are based permanently on-site in Waihi.

2.4 Information Sources and References

This report is based in part on internal and external technical reports, previous studies, maps, published government reports, company letters and memoranda, and public information as cited throughout this report and listed in the References Section 27.

2.5 Effective Dates

The effective date of this Technical Report is 30 June 2024.

2.6 Units of Measure

The metric system has been used throughout this report except for contained metal which is expressed in troy ounces. Tonnes are metric of 1,000 kg, or 2,204.6 lb. All currency is in United States dollars ($) unless otherwise stated.

3 RELIANCE ON OTHER EXPERTS

The Authors used their experience to determine if the information from previous reports was suitable for inclusion in this technical report and adjusted information that required amending. This report includes technical information, which required subsequent calculations to derive subtotals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the Authors do not consider them to be material.

The Authors have relied upon memos from:

- Alison Paul, Senior Vice President Legal and Public Affairs, OceanaGold, issued on 29 November 2024, for information regarding the legal, political, social and tax matters, permitting process, surface land ownership/agreements, as well as the mineral titles for the Waihi District
- Mark Burroughs, Superintendent Environment, OceanaGold, issued on 21 November 2024, for information on the Favona Mining Permit and the Wharekirauponga Resource Consent, including environmental impacts and controls covering biodiversity, landscape and visual, transport, amenity, air quality, rehabilitation, closure and bonds.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Location

The Waihi Operation is located within the small township of Waihi, 142 km southeast of Auckland, in the North Island of New Zealand (Figure 4-1). The geographic centre of the mine is at 37° 22' 49" S latitude and 175° 54' 08" E longitude. Waihi is located at the foot of the Coromandel Peninsula and is accessed by the State Highway 2 dual carriageway. Martha Underground (MUG), Martha Open Pit (MOP) and Gladstone Open Pit (GOP) Resources are within the Waihi town and within Mining Permit MP 41808 (Figure 4-2). The Wharekirauponga Underground (WUG) is located approximately 10 km north of Waihi within Mining Permit MP 60541 (Figure 4-2).

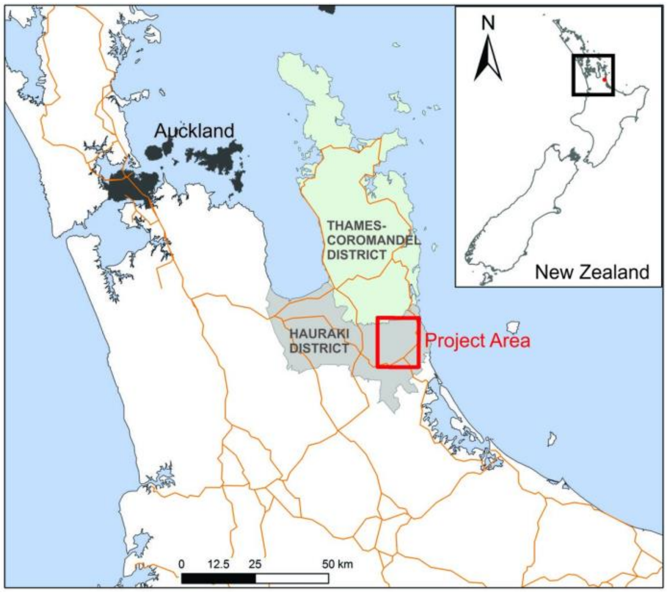
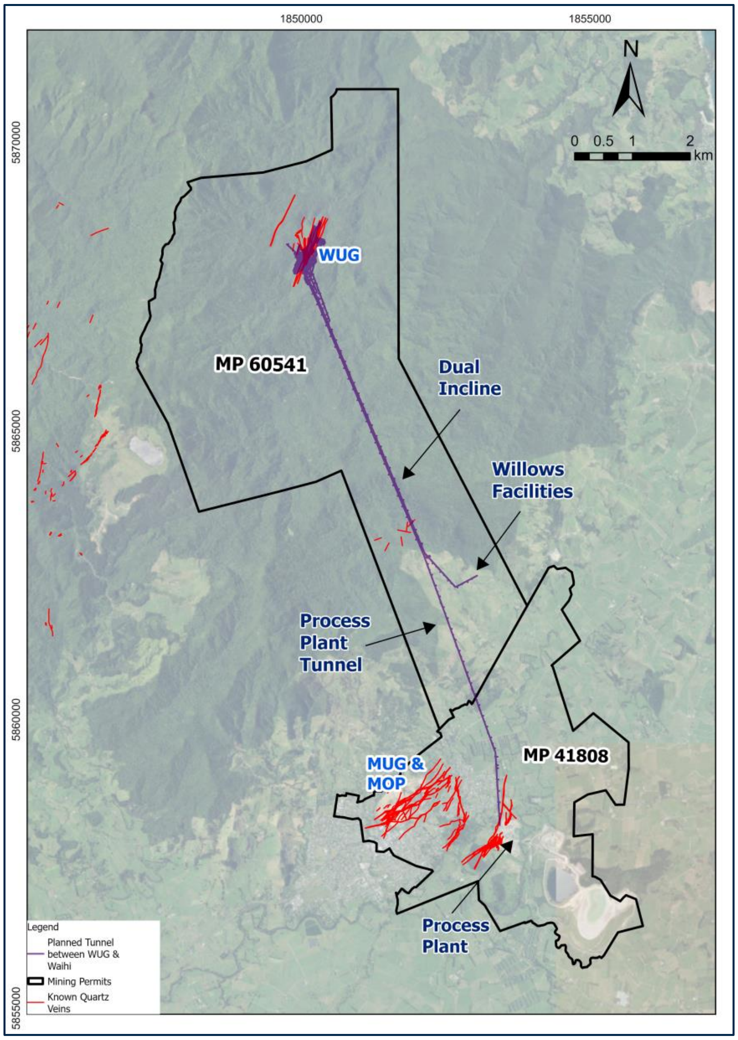


Figure 4-1: Map Showing the Location of the Waihi Operation



Source: OceanaGold GIS database, LINZ online GIS data service and New Zealand Petroleum and Minerals Data Service

Figure 4-2: Location of the Waihi Operations and WUG Area, Declines and Tunnels, Willows Facilities, and Mining Permits

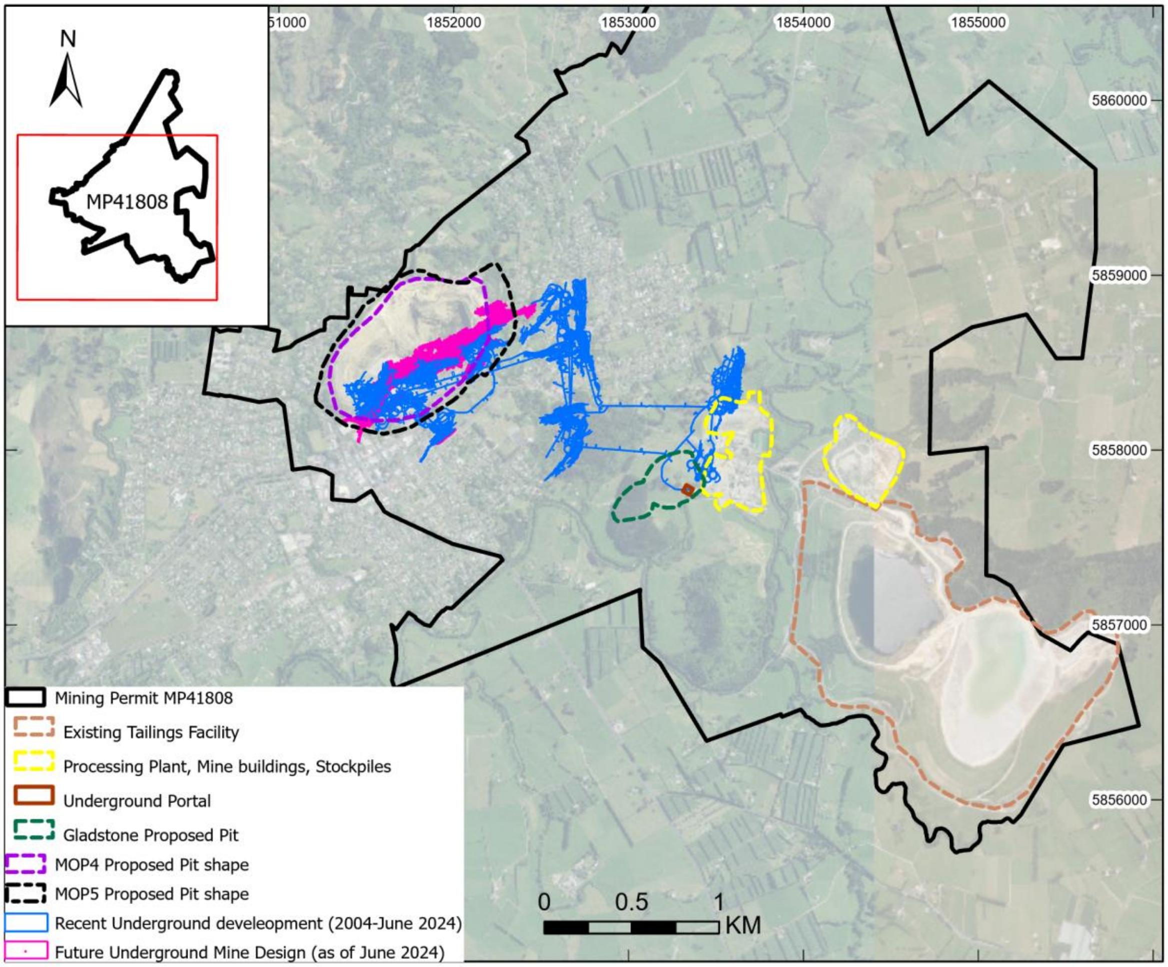
4.2 Property Ownership and Access Arrangements

4.2.1 Martha Open Pit (MOP), Martha Underground (MUG) and Gladstone Open Pit (GOP)

The Waihi Operation is owned and administered by Oceana Gold (New Zealand) Limited and Waihi Gold Company Limited, which are wholly owned subsidiaries of OceanaGold Corporation (OceanaGold). References in this document to OceanaGold refer to the parent company together with its subsidiaries. The locations of MUG, MOP and GOP are illustrated in Figure 4-3.

All gold mining activities in Waihi including the current underground mining operation, the processing plant, tailings facility and the inactive MOP are within the existing MP 41808. The land on which these activities take place is owned by various stakeholders including OceanaGold. In accordance with the requirements of the CMA, where mining activities involve surface disturbance on land not owned by OceanaGold an access arrangement with the landowner is required.

The MUG Project underlies land owned by various proprietors including the Crown (administered by Land Information New Zealand (LINZ)), DOC, the HDC and various private landowners. The portal to MUG is on land owned by OceanaGold which is accessed adjacent to the processing plant and water treatment plant.



Source: OceanaGold GIS database and LINZ online GIS database

Figure 4-3: Location of the Projects within the Favona Mining Permit (NZTM grid)

Majority of the land covering MOP is owned by the Crown and administered by LINZ. There are two parcels adjacent to the MOP that are administered for the Crown by DOC. OceanaGold has entered into an access arrangement with LINZ and a separate access arrangement with DOC providing for ongoing formal entry on the various publicly owned land parcels for CMA purposes.

Land within the mining permit that hosts the conveyor belt corridor, the water treatment plant (and an associated pipeline for the discharge of the treated water into the Ohinemuri River), the process plant and the tailings storage facilities, is all owned by OceanaGold except for one parcel where the conveyor belt corridor runs through land adjoining the Union Hill area, which is in the name of the Commissioner of Crown Lands administered by LINZ, and portions of public roads, road reserve and river reserve. OceanaGold has entered into an access arrangement with LINZ providing for ongoing formal entry on the conveyor belt corridor for CMA purposes. GOP and MOP occur on land owned by OceanaGold and government agencies. Additional access arrangements will be required for the Martha Open Pit Phase 5 (MOP5).

The MUG Project requires mining beneath privately owned land, for which no access arrangements are required but resource consents remain a requirement. Resource consents currently in place set out a process (including arbitration) for addressing certain impacts on owners of land above stopes and development drives. For MUG, public road access is provided to the OceanaGold underground amenities and processing plant site via Baxter Road and to the open pit mine by Seddon Street.

4.2.2 WUG and WNP

WUG is located within Mining Permit (MP 60541), on land owned by the Crown and administered by DOC as a conservation/forest park. An access arrangement between DOC and OceanaGold has been made to allow for exploration activities (including surface drilling) to take place within MP 60541. Known environmental liabilities are managed through stipulated conditions in the DOC access arrangement and Regional and District Council Consents including conditions that protect the conservation (biodiversity, heritage and amenity) values of the land.

An area of council-owned unformed road reserve, located within the forest park, is subject to an existing access arrangement authorising surface exploration activities, field studies and the location of ventilation stacks (subject to conditions).

Portal access to WUG together with other associated surface infrastructure, including the services trench and the proposed Processing Plant to Willows access tunnel are located on land variously owned by OceanaGold, private landowners and various government agencies. Identified requirements for third party surface access rights are confined to government agencies and are expected to take the form of access arrangements, licences and/or easements already in place or for which processes are planned or underway.

The Waihi North Project (WNP) includes WUG, access tunnels from a box cut portal at Willows to WUG, Processing Plant to Willows access tunnel, surface facilities and infrastructure at Willows, high voltage (HV) power upgrade, processing and water treatment plant upgrades, Martha Open Pit Stage 4 (MOP4) infrastructure upgrade and new tailings storage facility (TSF3).

5 ACCESSIBILITY, CLIMATE, PHYSIOGRAPHY, LOCAL RESOURCES, AND INFRASTRUCTURE

5.1 Accessibility

The Waihi property is easily accessible on paved roads and highways from State Highway 2 to the mine entrance on Baxter Road, located 1 km south of Waihi, New Zealand. The major international airport at Auckland, is a 90-minute drive from the mine.

5.2 Climate and Physiography

The climate is temperate. Mean temperatures range from 8 °C in the South Island to 16 °C in the North Island. January and February are the warmest months, July the coldest. New Zealand does not have a large temperature range, but the weather can change rapidly and unexpectedly. Winds in New Zealand are predominantly from the West and South-West, in winter, when the climate is dominated by regular depressions. In summer, winds are more variable with a northerly predominance associated with the regular large anti cyclones which cover all the country.

5.3 Local Resources and Infrastructure

Local resources (labour force, manufacturing, supplies, housing, utilities, emergency services, etc.) and infrastructure are in place and are widely utilized at Waihi. Numerous small communities exist around the Waihi operations with populations ranging from 700 to 10,000 people. Power is available in the area via an existing 33 kV transmission grid. Surrounding nearby land use is dominantly for agriculture, horticulture, and timber.

5.4 Physiography

The Waihi township is at the foot of the Coromandel Peninsula, to the west are the hills of the Kaimai Ranges. In the Waihi region:

- Earthquakes are common, though usually not severe, averaging 3,000 per year. Mostly less than three on the Richter scale
- Volcanic activity is most common on the central North Island Volcanic Plateau approximately 200 km to 300 km from Waihi
- Tsunamis would not have any direct impact on Waihi
- Droughts are not regular and occur less frequently over much of the North Island between January and April
- Flooding is the most regular natural hazard.

5.5 Mining Area Infrastructure

There are large industrial centres near the mine. Equipment and sources of logistical and professional expertise can be obtained from the major cities of Hamilton, Tauranga, and Auckland which are within two-hour travel of the mine. Multiple contractors provide skilled workers for the operation. There is adequate labour for operations.

6 HISTORY

6.1 Waihi

The town of Waihi became established when the original Martha Mine opened as an underground operation in 1879. The mine was productive, producing approximately 1,056 tonnes of gold-silver bullion from about 12 million tonnes of ore by 1952. The historic mine extracted five main sub-parallel lodes together with numerous branch and cross lodes. Early stoping employed the cut and fill method, but this was phased out and largely replaced after 1914 by the shrink stoping method. Stopes were generally not backfilled after 1914 but left open. The workings reached a total depth of 600 m from surface on 16 levels. Seven main shafts were used to access miners and supplies underground, and numerous other shafts were developed for ventilation and exploration. In 1894, the Waihi Gold Mining Company adopted the cyanide process for gold extraction, which was first trialled in the world at a nearby mine in Karangahake.

Exploration drilling between 1979 and 1984 by Waihi Mining and Development Ltd. and AMAX Exploration Ltd. identified large open pit mineralization within the confines of the historic mining area. Following the granting of permits, MOP began operation in 1988 as an unincorporated joint venture between subsidiaries of Normandy Mining Limited Group and Otter Gold Mines Ltd. The Otter Gold holding was acquired by Normandy in 2002 and the Newmont Mining Corporation acquired full ownership of the Waihi operations in 2002 through the acquisition of the Normandy Mining Group.

MOP produced 22 Mt for 2.2 Moz. Au when a localized failure of the north wall undercut the main access ramp suspending open pit mining operations.

MP 41808 was granted in March 2004 for a duration of 25 years to mine the Favona vein system. Underground mining resumed at Waihi in 2004 with the development of the Favona mine located approximately 2 km east of MOP. Mining of the Favona vein system led to further extensions of underground development towards the nearby Moonlight, Trio and Correnso deposits. The Mining License, ML 322388 expired in July 2017 and was amalgamated into the existing Favona MP 41808.

OceanaGold obtained full ownership of the Waihi property in October 2015. Resource consent for underground mining of the remnant mineralization around the Martha vein system and the MOP4 was granted on the 12 December 2018. Table 6-1 summarizes the annual production from Waihi since 1988.

Wharekirauponga

Early prospecting and mining at Wharekirauponga were attempted between 1893-1897, but only 19 oz of gold bullion was recovered from a 14-ton test parcel and mining was soon abandoned. Modern prospecting and exploration recommenced between 1978 and 1993 by Amoco, BP and others which included 5,500 m of drilling in 23 drill holes. Newmont acquired a controlling interest in the property in 2005 and started a reconnaissance geological mapping, sampling, CSAMT geophysics and drilling campaigns targeting high-grade underground minable veins.

In 2010, drilling intersected the main T-Stream Vein containing 156 m at 1.6 g/t Au. Wide spaced follow up drilling confirmed the presence of three prospective vein zones each striking more than one km in length, namely the Western Vein, the T-Stream Vein and the EG Vein. Newmont completed 7 km of diamond drilling in 15 holes intersecting locally high-grade gold mineralization in each hole. Newmont ceased exploration in 2013 and the prospect remained idle until 2015 when OceanaGold acquired Newmont's New Zealand assets. Exploration then continued in 2017 in the form of diamond drilling along the EG target where quartz veining and Au mineralization were intersected along the EG trend. Since the initial discovery, 97 diamond drill holes have been drilled into the EG vein system from which a geological model has been produced and a resource estimate calculated.

6.2 Previous Studies and Resource Estimates

Resource estimates and exploration results have previously been publicly reported for MUG, MOP, WUG and GOP. These reports are available through the OceanaGold company website.

6.3 Historical Data

It is estimated that the historical Martha Underground produced approximately 5.0 Moz gold between 1879 and 1952. The underground workings extended over 15 vertical levels, 600 m deep and 1.6 km along strike. The Martha vein system was subsequently mined from an open pit, between 1988 and 2015 which produced approximately 2 Moz of gold.

Underground mine production recommenced in 2006 at the Favona vein system situated approximately two km southeast of the Martha deposit followed by the Union-Trio-Amaranth vein system and Correnso Vein System. Mining produced 470 koz of gold from the Favona deposit between 2006 and 2013, 230 koz of gold from the Trio deposit between 2013 and 2015 and 583 koz from the Correnso deposit between 2015 and 2023. Mine production from Waihi since 1988 is presented in Table 6-1.

Large scale mechanized underground mining has continued uninterrupted since 2008. Current mining is focused on MUG. No significant gold production is recorded from WUG, apart from 19 oz Au recovered from a 14-ton test parcel in the late 1890's.

Table 6-1: Mine Production Since 1988 - 2023

	Martha Open Pit				Favona				Trio				Correnso				MUG			
			Mined	Recovered			Mined	Recovered			Mined	Recovered			Mined	Recovered			Mined	Recovered
Year End	Tonnes	Au (g/t)	Au (koz)	Au (koz)	Tonnes	Au (g/t)	Au (koz)	Au (koz)	Tonnes	Au (g/t)	Au (koz)	Au (koz)	Tonnes	Au (g/t)	Au (koz)	Au (koz)	Tonnes	Au (g/t)	Au (koz)	Au (koz)
30/06/1988	68,179	2.4	5.3	3.6																
30/06/1989	775,240	2.8	69.8	63.1																
30/06/1990	879,294	3.1	87.6	78.9																
30/06/1991	858,173	3.4	93.8	84.2																
30/06/1992	834,472	3.1	83.2	74.5																
30/06/1993	817,003	3.2	84.1	75.7																
30/06/1994	800,203	3.3	84.9	77.8																
30/06/1995	880,580	2.5	70.8	66.4																
30/06/1996	892,859	2.9	83.3	79.2																
30/06/1997	915,135	3.0	88.3	82.7																
30/06/1998	917,346	3.1	91.4	85.6																
30/06/1999	907,790	3.6	105.1	95.5																
30/06/2000	1,030,062	3.3	109.3	102.0																
30/06/2001	1,202,938	2.7	104.4	95.1																
30/06/2002	1,343,925	3.3	142.6	129.9																
31/12/2002	638,210	3.5	71.6	64.4																
31/12/2003	1,231,521	3.1	120.8	109.7																
31/12/2004	1,274,790	3.4	141.0	127.6																
31/12/2005	1,158,385	4.8	180.2	167.7																
31/12/2006	794,231	4.0	102.9	97.0	135,304	7.9	34.2	30.0												
31/12/2007	273,414	1.7	15.2	13.3	225,276	11.1	80.1	72.2												
31/12/2008	536,360	1.9	32.6	29.7	330,619	11.1	118	101.5												
31/12/2009	951,481	2.0	62.4	57.7	333,103	8.2	87.8	79.4												
31/12/2010	564,031	2.4	44.1	39.7	367,577	6.2	73.8	66.1												
31/12/2011	691,763	2.5	54.5	48.9	304,609	6	58.4	51.6												
31/12/2012	15,972	4.8	2.5	2.2	51,580	5.6	9.3	8.6	340,391	5.4	59.1	54.6								
31/12/2013	165,569	2.8	14.8	12.8	52,200	4.3	7.2	6.5	463,854	6.4	95.7	88.0								
31/12/2014	684,473	3.1	68.0	61.7	6,820	7.4	1.7	1.6	301,694	7.7	75.1	69.1	7,912	2.8	0.7	0.6				
31/12/2015	234,935	3.3	25.2	24.3									474,036	8.8	133.7	119.5				
31/12/2016													489,300	8.1	126.1	116				
31/12/2017													472,450	8.6	130.4	119.1				
31/12/2018													433,593	6.77	94.4	83.5				
31/12/2019													433,389	5.6	78	68.1				
31/12/2020													100,880	6.09	19.7	17.6	36,527	2.1	2.5	2.2
31/12/2021													43,492	4.97	6.9	6.3	243,936	2.94	23.1	21.1
31/12/2022													2,586	3.55	0.3	0.27	355,624	3.66	41.9	39
31/12/2023																	472,642	3.48	52.9	48.9
Total	22,338,334	3.1	2,240	2,050.9	1,807,088	8.1	470.48	417.4	1,105,939	6.49	229.9	211.7	2,455,052	7.39	583.1	524.4	1,108,729	3.38	120.3	111.2

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

Both the Waihi operations and WUG are located within the Coromandel Peninsula which hosts over fifty gold and silver deposits that make up the Hauraki Goldfield. The peninsula is built up of Miocene to Quaternary volcanic rocks, the Coromandel Volcanic Zone (CVZ) overlying a Mesozoic basement. It is bound to the west by the Hauraki Rift, a large graben filled with Quaternary and Tertiary sediments, and to the south by volcanics deposited by the presently active Taupo Volcanic Zone (TVZ).

A schematic geological map of the Coromandel Peninsula is illustrated in Figure 7-1. Jurassic greywacke basement and intruded granitic stocks and dykes of the Mania Hill Group are exposed in the northern part of Coromandel, becoming progressively down faulted to the south and covered by younger volcanics. Coromandel geology is dominated by the CVZ, Miocene to Pliocene aged volcanics formed during three main phases of volcanism (Christie et al. 2007). The first phase constitutes the widespread andesites and dacites of the Coromandel group (18 to 3 Ma). The second phase encompasses the predominantly rhyolitic units of the Whitianga Group (9.1 to 6 Ma) and the third phase is dominated by Strombolian volcanoes and dykes of the Mercury Bay Basalts (6.0 to 4.2 Ma) (Skinner 1986). Epithermal veins and hydrothermal alteration are observed within the Mania Hill Group, the Coromandel Group and Whitianga Groups.

Coromandel Group can be subdivided into the Kuaotunu Subgroup andesites and dacites, occurring in the northern region of the goldfield (18 to 11 Ma), the Waiwawa Subgroup andesites, dacites and rhyodacites in the southern and eastern parts of the goldfield (10 to 5.6 Ma), as well as the Omahine (8.1 to 6.6 Ma) and Kaimai (5.6 to 3.8 Ma) andesite and dacite Subgroups in the southern parts of the goldfield.

Mineralized sequences are overlain in places by post-mineral andesitic to dacitic flows of the Kaimai Subgroup, rhyolitic ignimbrites of the Ohinemuri Subgroup and more recent, Pleistocene age sediments and ash units. Although these post-mineral units do not blanket the mineralized units, they can be extensive and reach hundreds of meters in thickness.

The CVZ hosts low- to medium-sulphidation epithermal Au-Ag and minor Cu porphyry deposits along its length (Christie et al. 2007). The porphyry Cu-Mo-Au deposits are associated with diorite-granodiorite composition intrusions and volcanic rocks and dated between 18.1 and 16.4 Ma. Epithermal deposits in the CVZ appear younger in age and formed between 14 and 5 Ma.

The Au-Ag deposits of the Waihi District and Wharekirauponga are classical low-sulphidation, epithermal quartz vein systems associated with north to northeast trending faults. The main ore minerals are electrum and silver sulphides developed within quartz veins. Other minerals present within the veins include ubiquitous pyrite and more localized adularia, calcite, illite, smectite, sphalerite, galena, chalcopyrite and rhodochrosite. Base metal sulphide content is low but generally increases with depth.

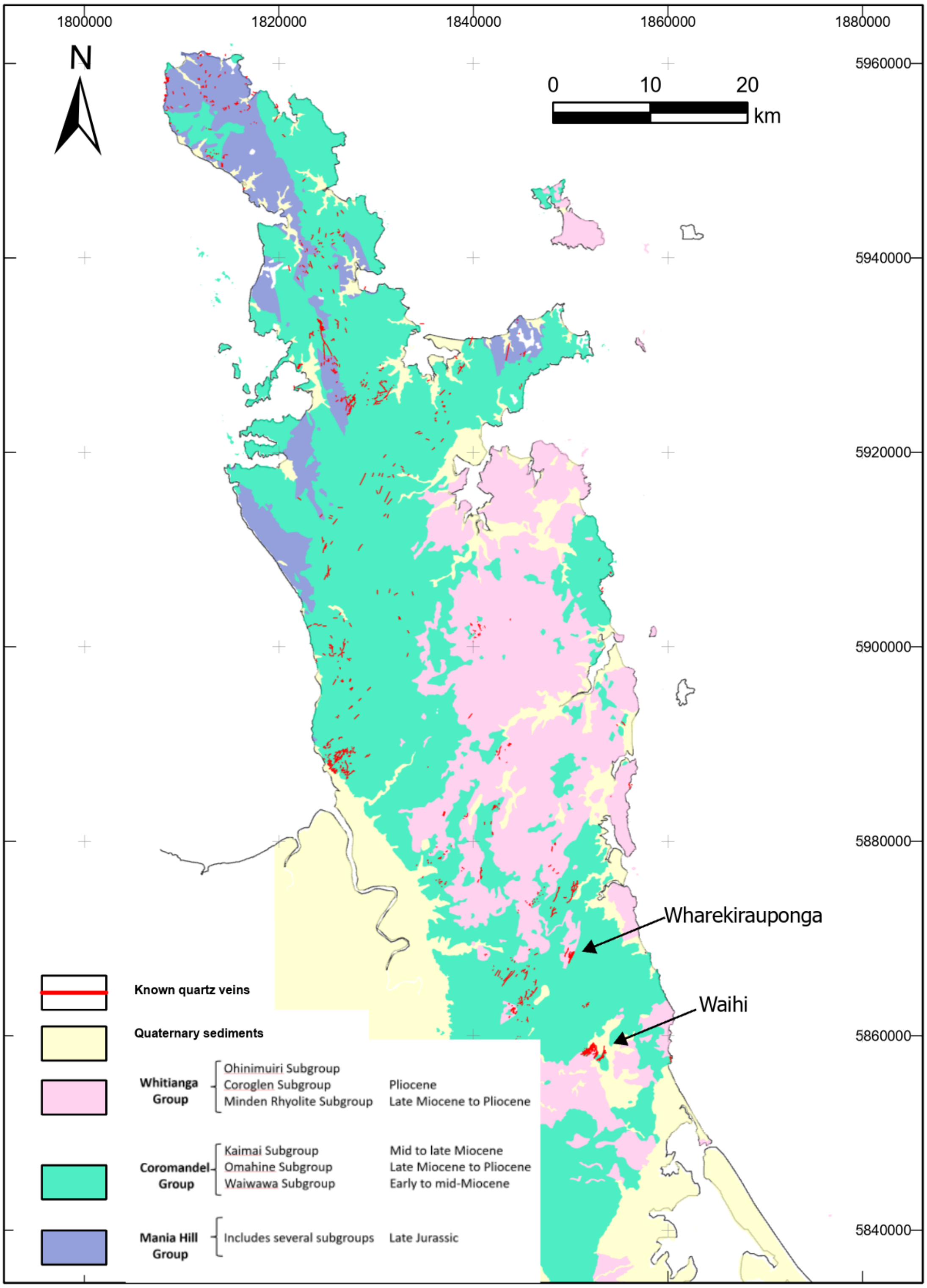
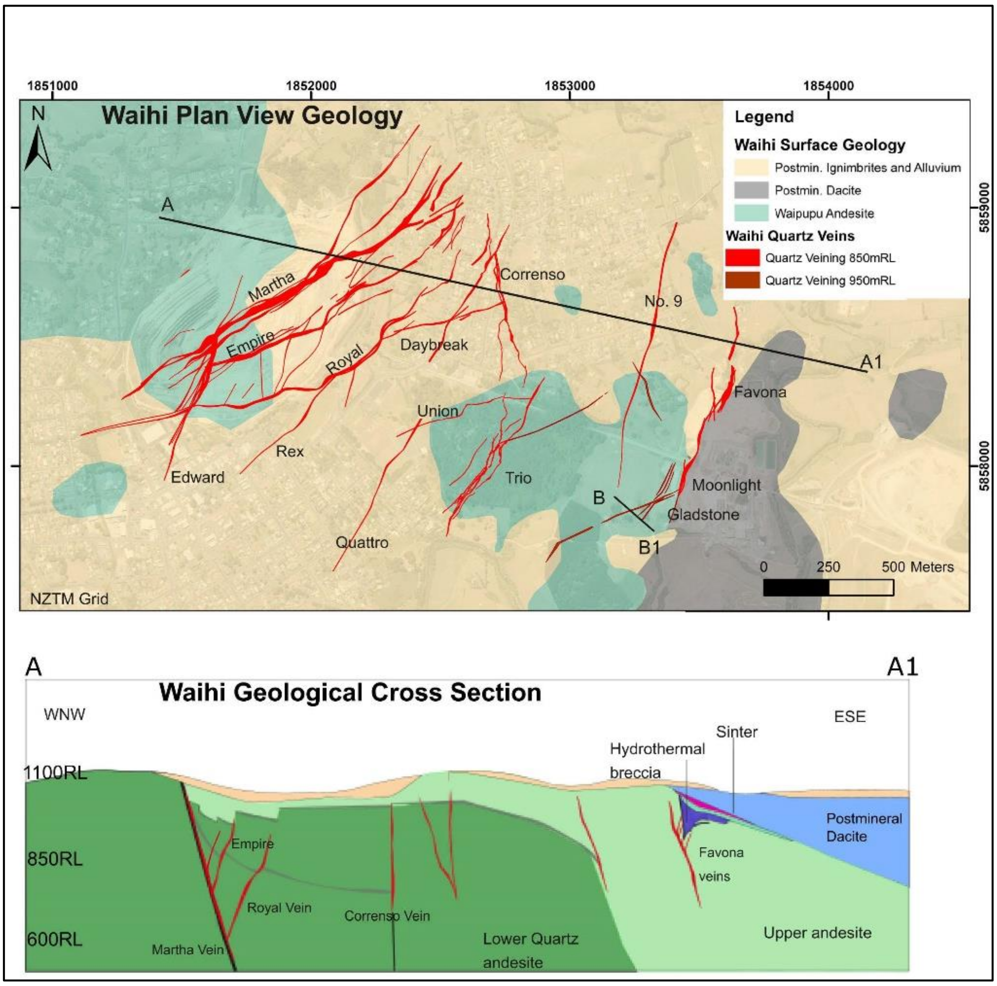


Figure 7-1: Regional Geological Map of the Coromandel Peninsula (NZTM grid)

7.2 Waihi Geology

The Waihi vein system is hosted within andesitic flows, intrusives and volcaniclastic units of late Miocene age (7.36 to 6.76 Ma) Waipupu Formation. The Waipupu Formation in Waihi can be subdivided into an upper quartz-phenocryst poor unit and a lower quartz-phenocryst rich unit which dip shallowly towards the SE. Some of the veining and gold mineralization in Waihi appears to be better developed within the lower quartz-rich andesite flows, with the exception of the Favona, Moonlight and Gladstone vein systems which are solely hosted within the upper andesite unit. Much of the mineralized andesites in Waihi are overlain by post-mineral rocks including dacite flows of the Uretara Formation (5.23 Ma), Pleistocene ignimbrites and recent ash deposits. Where veining is exposed close to the surface, the quartz-adularia altered andesite appears to have formed resistant paleo-topo 'highs' that project through the post-mineral cover sequences.

A generalized map of the surface geology of Waihi and the location of veining at depth is illustrated in Figure 7-2. All known Au and Ag mineralization in Waihi is confined to veining or vein fragment within hydrothermal eruption breccia. The major mineralized veins are typically coincident with dip-slip, normal faults believed to have formed in an extensional setting related to early, back-arc rifting of the TVZ dated at ca 6.1 Ma (Mauk et al 2011). Some of the main mineralized veins within the Waihi area include the Martha Vein System (which incorporates the Martha, Empire, Welcome, Royal, Edward, Rex and Albert veins among many others) in the NW and the Correnso, Daybreak, Union, Trio, Amaranth, Favona, Moonlight and GOP veins progressively southeast (Figure 7-2).



Modified from 1:50 000 scale IGNS Waihi Geological map using OceanaGold drilling data, mapping data and internal reports (as of Feb 2021).

Figure 7-2: Geological Map and Section Across the Waihi Area

7.2.1 Martha Vein System

The Martha Vein System is the largest and most documented of the vein networks in Waihi. The veins are numerous and form a large network that extends for more than 1600 m along strike and 600 m below the surface. The vein network although complex in detail, simply comprises the dominant southeast-dipping Martha vein and several northwest-dipping hanging wall splays including the Empire, Welcome, Royal and Rex veins. The Martha vein is the largest vein structure reaching up to 30 m in thickness in places but averages 6-15 m wide. Increased vein widths are closely associated with the steepening of vein dips from an average of 65 to 70° to approximately 85° to the southeast. Steeper portions of the vein tend to contain higher concentrations of Au and Ag. The vein itself comprises mainly intact brecciated quartz vein material evidence for vein emplacement during the late stages of dip-slip faulting. The quartz is characterized by multiphase brecciation, and banding (colloform and crustiform) and quartz textures are highly variable from a fine, microcrystalline, and chalcedonic character to more coarsely crystalline particularly at depth. Apart from the main Martha vein, the hanging wall splay veins are also significant mineralized structures reaching 18 m width. The hanging wall splays closest to Martha link up with the Martha vein at depth often forming a higher-grade lode at the intersection. The hanging wall splays further away from Martha either thin out at depth or are not drilled deep enough to make out their relationship with Martha at depth. Additional, smaller-scale splay veins are present linking the larger vein structures and form a valuable contribution to the mineralization particularly in MOP. These splays typically comprise smaller veins between 5 and 50 cm in width infilling extensional structures with no fault displacement, dipping moderately towards the northwest. Two steeply dipping, NNE-trending and well mineralized vein structures and form an important part of the overall Martha vein network.

The andesitic host rocks within proximity to veining have often undergone pervasive hydrothermal alteration, sometimes with complete replacement of the primary mineralogy. Characteristic alteration assemblages of the host rocks are dominated by argillic alteration closest to veining and propylitic alteration extending over tens of metres laterally from major veins. The degree of alteration within the Waihi District is variable and often dependent on the host rock lithology and the nearby veining. On rare occasions, some host rocks at or near the contact of large veins appears only weakly altered, for example the “hard bars” identified during the early historical mining of the Martha vein. Volcaniclastic units tend to have increased clay alteration compared to the flow units.

Gold occurs mostly as small inclusions of electrum (averaging 38 % silver) occurring as both free grains in the quartz and as inclusions in sulphides such as pyrite, galena, sphalerite and less commonly chalcopyrite. Free gold is rarely observed. Acanthite associated with pyrite and galena is the main silver mineral. Martha ore has silver to gold ratios of > 10:1, The Favona and Trio ores had silver to gold ratios of ~ 4:1, and Correnso ore had a silver to gold ratio of less than 2:1.

The base metal sulphide content is low but is observed to increase in concentration with depth within all the Waihi veins. Sphalerite and galena are the most abundant base metal sulphides while chalcopyrite is less common and pyrrhotite is rare. Correnso ore has higher base metal content than other Waihi veins. Oxidation extends down the vein margins to over 250 m below surface however, the andesite host rocks can appear only weakly weathered at or near the surface.

Much of the Martha Vein System has been mined from underground historically between 1883 and 1952. However, significant mineralized veined material remains intact adjacent to the historical workings that was not recoverable historically.

7.2.2 Gladstone Vein System

The Gladstone deposit is part of the greater Waihi epithermal vein system located approximately 2 km to the east of MOP. It is situated along the southern strike extent of the Favona and Moonlight deposits. Veining at GOP occurs within the upper 250 m below the surface, hosted within the upper andesite unit (devoid of quartz phenocrysts) (Figure 7-3). The mineralization is characterized by shallow-level, hydrothermal breccias and associated banded quartz veins interpreted to represent the top of the epithermal system. The uppermost mineralized quartz veins flare up into hydrothermal explosion breccias. The Gladstone veins are predominantly steeply dipping veins developed within the hanging wall of the Favona Fault that dips moderately towards the southeast. Gladstone veining trends ENE to NNE between 010° and 070° and dips steeply towards the southeast.

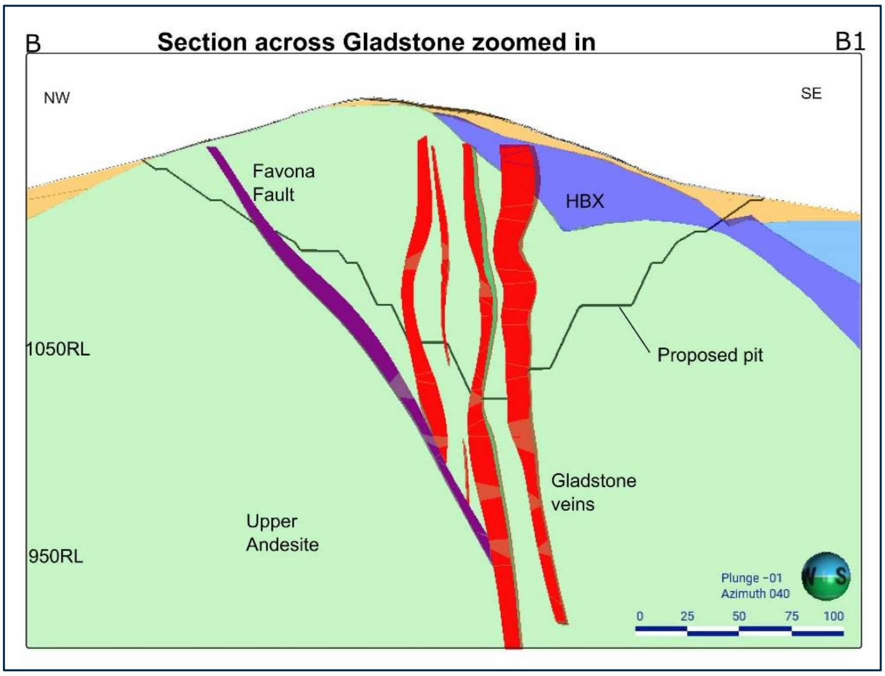


Figure 7-3: Geological Cross Section Through the Gladstone Vein System. The Location of this Section Line is Shown as B-B1 in Plan View in Figure 7-2

7.3 Wharekirauponga

Low-sulphidation epithermal quartz veins at Wharekirauponga are hosted in Whitianga Group rhyolites, typically rhyolite flow domes to sub-volcanic intrusions within polymict lapilli tuffs. The geology observed in outcrop mapping and diamond drilling indicates the rhyolitic host rocks are partially overlain by strongly magnetic, fresh, andesitic flows, rhyolitic tuffs and recent ash deposits (Figure 7-4). Deep drilling to the west suggests the rhyolites are underlain by Coromandel Group andesites.

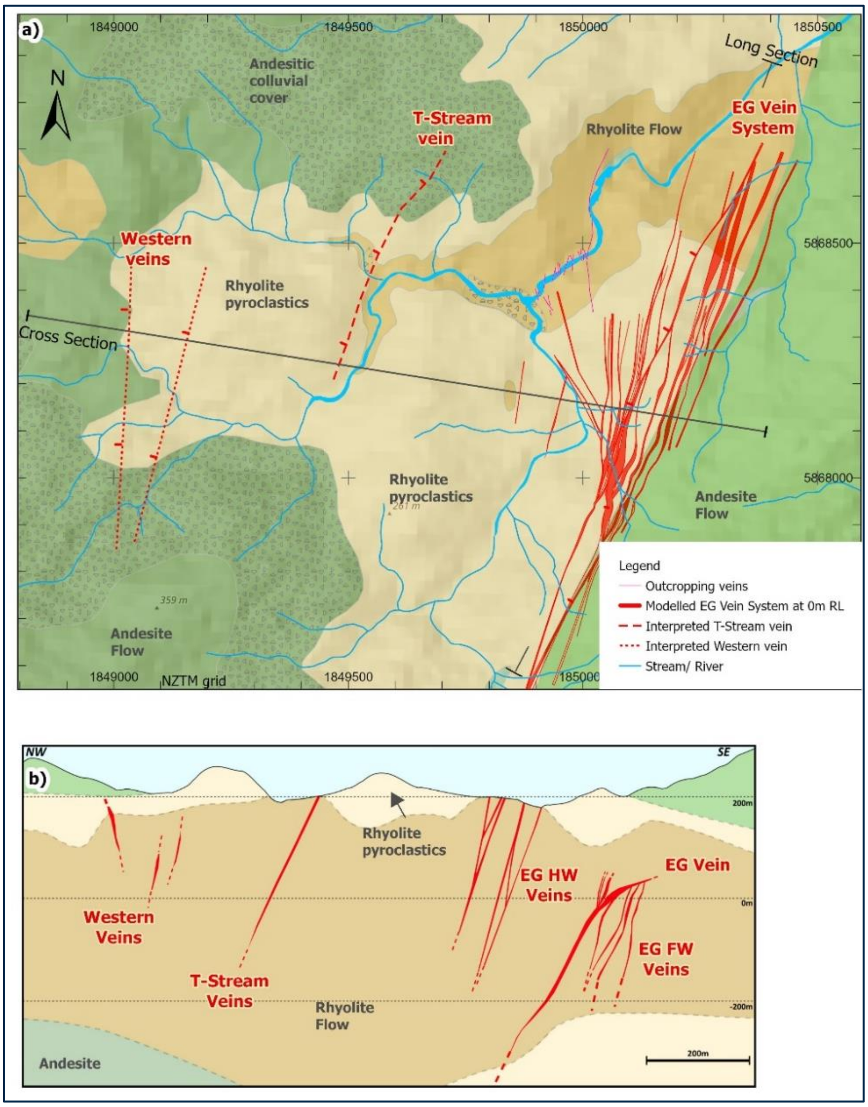
Gold mineralization occurs in association with quartz veining developed along two types of structurally controlled vein arrays. The principal veins, namely the EG, T-Stream and Western Veins occupy laterally continuous, NE trending (025-47°), moderately dipping (60-65°) fault structures reaching up to 10 m in width. More subsidiary, extensional veins (1-100 cm wide) are developed between or adjacent to the principal fault hosted veins. These veins often form significant arrays that are moderate to steeply dipping with a more northerly to NNE strike and appear to lack lateral and vertical continuity compared to the principal veins.

The rhyolites have undergone pervasive hydrothermal alteration, often with complete replacement of primary mineralogy by quartz and adularia with minor illite and/or smectite clay alteration. Figure 7-4 illustrates in plan the dominant veins at the Wharekirauponga deposit.

The EG Vein is the largest and most continuous mineralized structure drilled at Wharekirauponga to date. The vein strikes approximately NE (020°) for over ~1000 m although the extent of veining to the north and south remains open due to limited drill data.

Within the footwall of the EG Vein are a series of veins referred to as the East Graben footwall veins. These veins show unique characteristics to other Wharekirauponga veins in that they appear more as sulphide-rich (pyrite-marcasite) vein breccias with slightly elevated As, Hg and Sb. The brecciated nature of these veins indicate they may be more fault controlled than extensional.

There are a series of sheeted hanging wall veins along the EG structure containing significant Au grade in places. These veins appear to have a more northerly strike with sub-vertical dips. These veins outcrop at surface and were the focus of minor historical workings (pre-1950's) and early diamond drilling in the 1980's.



Modified from previous geological interpretation maps using mapping data, and internal OceanaGold reports (as at June 2024).

Figure 7-4: a) Geological Map Across the Wharekirauponga Vein Systems and b) A Cross Section Facing NNE Showing the Architecture of Veining at Depth. Majority of the Au Mineralization Occurs Along the EG Vein at the Intersection with the EG HW Veins

8 DEPOSIT TYPES

All the gold deposits outlined by OceanaGold to date in this report are considered to be typical of epithermal vein gold-silver deposits. The Waihi and Wharekirauponga deposits display the following features that are typical of epithermal gold deposits elsewhere in the world:

- Gold-silver mineralization is predominantly confined to localized bands within multiphase quartz veins
- Host lithologies for veins are volcanic units of andesitic and/or rhyolitic composition
- Sphalerite, galena, and chalcopyrite commonly occur with gold-silver Mineralization within the MUG deposit. This base metal content increases at depth
- Host rock volcanics have undergone pervasive hydrothermal alteration, often with complete replacement of primary mineralogy. Characteristic alteration minerals include quartz, adularia, albite, carbonate, pyrite, illite, chlorite, interlayered illite-smectite and chlorite-smectite clays extending over tens of metres laterally from major veins
- Mineralization is structurally controlled.

9 EXPLORATION

Exploration work completed since the 1970's in the Waihi District has been extensive and includes geological mapping, geochemical sampling, airborne, ground and down-hole geophysical surveys, surface and underground drilling, engineering studies and mine development.

9.1 Pre-OceanaGold

Exploration drilling in Waihi between 1979 and 1984 by Waihi Mining and Development Ltd. and AMAX Exploration Ltd. identified large open pit mineralization within the confines of the historic Martha mining area. Following the granting of permits, the MOP operation commenced operation in 1988 as an unincorporated joint venture between subsidiaries of Normandy Mining Limited Group and Otter Gold Mines Ltd. The Otter Gold holding was acquired by Normandy in 2002 and the Newmont Mining Corporation acquired full ownership of the Waihi operations in 2002 through the acquisition of the Normandy Mining Group.

Early prospecting and mining took place at Wharekirauponga between 1893 and 1897, but only 19 oz of gold bullion was recovered from a 14-ton test parcel and mining was soon abandoned. Modern prospecting and exploration recommenced from 1978 to 1993 by Amoco, BP and others which included 5,500 m of drilling in 23 drill holes. Newmont acquired a controlling interest in the exploration permit in 2005 and started an exploration campaign that included reconnaissance geological mapping, rock, soil and stream sediment sampling, geophysics including CSAMT, ground gravity and airborne EM, followed by diamond drilling of targets with the potential to deliver a high-grade, underground minable gold deposit. In 2010, drilling intersected a broad zone of anomalous gold in the vicinity of the T-Stream, including 156 m at 1.6 g/t Au. Wide spaced follow up drilling confirmed the presence of three prospective vein zones each potentially striking more than 1 km in length, namely the Western Vein, the T-Stream Vein and the EG Vein. Newmont completed 7 km of diamond drilling in 15 holes intersecting locally high-grade gold Mineralization in each hole. Newmont ceased exploration in 2013.

9.2 OceanaGold

Since 2015, OceanaGold has continued exploration activity within the Waihi and Wharekirauponga areas. Work has included geological mapping and rock sampling for spectral and geochemical analysis, soil surveys, structural analysis and ground resistivity in the form of CSAMT and magnetics. OceanaGold has drilled 272 km of diamond core in Waihi (permit MP 41808) and 57 km at Wharekirauponga (permit MP 60541) since it acquired the operations and tenements from Newmont in 2015. Resource conversion drilling is continuing with further drilling planned for Waihi and Wharekirauponga in 2025.

10 DRILLING

Approximately 370 km of diamond core has been drilled within the MOP, MUG, and GOP since 1980. WUG includes 64 km of diamond drilling.

Additionally, 86 km has been drilled in 4,500 Reverse Circulation Grade Control (RC) grade control holes during the MOP operation between May 2007 and May 2015, using a 114 mm hole diameter and rig-mounted cyclone sampler.

10.1 Drill Methods

All surface exploration drill holes were drilled using triple tube wireline diamond methods. Surface holes are collared using large-diameter PQ core, both as a means of improving core recovery and to provide greater opportunity to case off and reduce diameter when drilling through broken ground and historic stopes. Hole diameter is usually reduced to HQ which is the most common core diameter and preference for target zones. Sometimes NQ core diameter is drilled, particularly where ground conditions have required a reduction in core diameter prior to reaching the target zone. Drill core is routinely oriented to allow for the calculation of downhole structural measurements in areas of interest such as veins.

10.2 Geological Logging

Since October 2015, when OceanaGold took ownership of Waihi Gold all drill core has been logged into Excel spreadsheets using validated templates. Log intervals are based on geological boundaries or assigned a nominal length of 1 or 2 m. The geological log incorporates geotechnical parameters, lithology, weathering, alteration and veining. A dropdown menu for each field allows the logging geologist to enter data by selecting from the available codes. Once logging is complete, the log is validated and then uploaded into an AcQuire database. A complete digital photographic record is maintained for all drill core.

10.2.1 Lithology Fields

Primary lithological fields include rock composition, rock type and grain size. Other fields include textural features and intensity and clast types.

Holes drilled around historic mine workings have logging codes to sufficiently characterise the material associated with the workings for example stope fill, open stope, collapsed stope and open holes.

10.2.2 Weathering Fields

Weathering is logged on a scale of one to five where five represents fresh rock and one represents intensely weathered material.

10.2.3 Alterations Fields

Logging of hydrothermal alteration uses a 1-5 scale to record the intensity of hydrothermal alteration minerals within the host rock. This includes the intensity of adularia, silicification, clay, chlorite, carbonate and hematite. A secondary field of "alteration style" is also inferred from the mineral assemblages and associated temperature-pH charts from Corbett and Leach, 1998.

10.2.4 Structural Fields

Structural fields are used to record information on veins and secondary breccias such as faults and hydrothermal breccias. Veining is described using fields such as vein percentage, vein mineralogy, vein texture, vein style and sulphide content. Fields describing secondary breccias include breccia percentage, breccia type, matrix composition and clast composition.

Downhole orientation data in the form of alpha and beta angles are recorded to estimate the dip and dip direction of geological structures of interest on the core. The calculations consider a ‘top of core’ reference line drawn on the core by the drillers along with the drilling direction and angle of the drillhole.

Structural data is validated during logging and uploaded into the AcQuire database.

10.2.5 Geotechnical Logging

Logging geologists record standard geotechnical parameters including rock quality designation, fractures per meter and hardness for most drill core. Geotechnical geologists may then select specific core to undergo more detailed geotechnical logging and analysis.

10.3 Drill Core Recovery

Diamond drill core ‘recovery’ is estimated by comparing the measured (recovered) core length against the drilled length (obtained from the drilling rig). Recovery data has been captured for all sample intervals for all diamond drill holes and there is no observed relationship between core recovery and grade. Core from MUG is monitored for recovery daily to rationalise actual core loss against the intersection of historic mining voids with re-drilling actioned if necessary.

Core recovery within veined material (>40 % vein in sample interval) varies and is summarized as follows:

- 92.5 % within MUG
- 92.5 % within MOP
- 89-90 % for GOP
- 96.2 % for WUG.

At MUG, core recovery from areas with historic mine workings is relatively low and therefore methodologies have been trialled and adopted to best record recovery in these zones. Areas of core loss are broken out where possible to avoid any smear of Au grade over disproportionate areas.

10.4 Collar Surveys

All historic (pre-1952) underground mine data in Waihi was recorded using the local Mt Eden Old (MEO) grid. This grid has continued to be utilized for all underground and exploration activity within 3 km of the Waihi operations. The MEO grid is offset from New Zealand Transverse Mercator (NZTM) Grid by 5215389.166 (shift mN) and 1456198.997 (shift mE). Any work more than 3 km from the Martha mine uses the national New Zealand Transverse Mercator (NZTM) Grid.

MOP has historically used a local mine grid, referred to as ‘Martha Mine Grid’, derived from MEO grid but oriented perpendicular to the main veins. The grid origin is based at No.7 Shaft (1700 mE, 1600 mN) and rotated 23.98° west of MEO North. All open pit channel and drilling data has been converted to MEO for the Resource estimation of the MUG Resource. Relative level (mRL) is calculated as sea level + 1000 m.

The position of drill collars at WUG are located using a total station in NZGD2000 Mt Eden. These coordinates are converted to New Zealand Transverse Mercator (NZTM) grid using an online Land Information New Zealand (LINZ) coordinate convertor.

All underground and surface drill collars used in Resource and Reserve estimates are surveyed using a total station by a registered professional land surveyor.

10.5 Downhole Surveys

The method for lining up drill rigs and collecting downhole survey data to monitor down hole deviation has improved over time as new techniques and technologies have developed.

To line up a drilling rig when commencing a drillhole, prior to 2023 surface holes used a sighting compass and underground holes used a surveyed point painted on the ribs. Since 2023, all diamond drill rigs are lined up prior to drilling using a Devi Azimuth Aligner.

Prior to 2023, downhole surveys were taken on all drillholes at approximately 20 to 30 m intervals using a digital single shot camera. The azimuth recorded from these surveys was sometimes influenced by the inherent magnetism in the country rock and/or underground infrastructure in proximity to the drillhole. Downhole magnetic readings were therefore taken and recorded along with the azimuth and dip survey data. Where surveys were deemed inaccurate or not able to be taken, they were replaced with an estimated value. Where drillholes pass through old workings within the Martha vein system, surveys were estimated and inserted on either side of the workings to improve the accuracy of the drill trace curvature. All downhole surveys in the AcQuire database are validated by a geologist.

Since 2023 all downhole surveys have been taken using a Devi-gyroscope. This instrument is a true north seeking gyroscope that is not influenced by magnetic surroundings and provides a more accurate, continuous trace of drillholes with depth.

10.6 Geotechnical Drilling

Geotechnical drilling has been carried out for GOP, MUG and WUG for the purposes of collecting samples for triaxial, uniaxial strength testing and other laboratory test work. All Resource drilling has some geotechnical components logged and are analysed by a site-based geotechnical engineer.

10.7 Drill Spacings and Orientations

Mineral Resources have been adequately drilled to achieve an Indicated or Inferred Resource classification (Table 10-1). Classification considers average spacing to the three closest drill holes. The extensive mining history of MOP and MUG have developed significant experience in assessing the continuity of Mineralization and mining the Martha vein system and the adjacent deposits. The vein style Mineralization has a strong visual control, is well understood, and has demonstrated continuity over significant ranges.

Table 10-1: Current Project Drill Spacings

Project	Drill Spacing	Drill Spacing
	Indicated Resource	Inferred Resource
MOP	30-36 metres	<60 metres
GOP	22.5-35 metres	<60 metres
MUG	36 metres	<60 metres
WUG	36-42 metres	<67.5 metres

WUG includes ~150 diamond drill holes (excluding re-drills and piezo holes) drilled up to April 2024. Much of the recent drilling has targeted the EG Vein zone. The EG Vein zone has been intersected in drilling over a strike length of ~1 km. This structure is larger than those typically encountered in the Waihi Project area and on this basis the average drill hole spacing required for classification as an Inferred Resource has been increased to 70 m average distance to the three closest drill holes.

Drill holes are designed to intersect known mineralized features in a nominally perpendicular orientation as much as practicable given the length of drillholes (often 250 m+) and availability of drill platforms.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sampling Methods and Preparation

Once the core is logged, photographed and sample intervals allocated, it is cut in half length ways. If a vein is present, the cut line is preferentially aligned to intercept the downhole apex of the structure. Within each sample interval, one half of the core is bagged for sampling and the other is kept in storage. Whole core is sampled under the following conditions:

- Underground grade control drilling
- Exploration drilling on occasion where there was significant core loss coupled with visible electrum
- Exploration drilling on all BQ core is whole core sampled due to reduced sample volumes. BQ diameter core is only rarely drilled.

Labelled calico bags containing the cut core samples are routinely transported to the local Waihi SGS Laboratory for crushing and sample preparation. Refer to the sample preparation flow sheet illustrated in Figure 11-1.

Sample preparation has been carried out at the SGS Waihi laboratory since 2006. Prior to then the sample preparation facility was located at the Martha Mine site and operated by trained site employees. Some of the early WUG core (holes WKP40-45) were sent to the Westport SGS laboratory for crushing and sample preparation.

RC drill chips were sampled as part of the grade control process during the MOP operation but also on a minor scale for exploration purposes (approximately 4309 m used in MUG estimate). At the RC rig site, samples were collected in a bag attached to the cyclone at 1.5 m intervals from which a 3 to 5 kg sample was split using a cone splitter. Bags were then transported to the secure sample preparation facility. Sample preparation of RC chips is the same as drill core.

Channel sampling in MOP was conducted as part of the grade control process prior to its transition to RC drilling in 2007. Channel sampling was undertaken using 1 m long channel samples on 2.5 m benches along North-South lines, spaced 7.5 m apart. A 3.6 kg sample was collected per interval with a maximum of 50 mm dimension in longest direction. Similar to RC drill chips, samples were sent and prepared in the onsite sample preparation facility and despatched to the SGS laboratory in Waihi for analysis.

11.2 Quality Assurance and Quality Control

11.2.1 Exploration Drilling Samples

Analyses of drill sample pulps from exploration core was undertaken predominantly at the SGS Laboratory in Waihi but also at the ALS laboratory in Brisbane and Townsville. The quality of exploration assay results has been monitored by:

- Sieving of the jaw crush and pulp products at the laboratory
- Monitoring of assay precision through routine generation of duplicate samples (one (1) every batch of 17 samples) from a second split of the jaw crush and calculation of the fundamental error
- Monitoring of accuracy of the results through insertion of Certified Reference Material (CRM) and blanks into each batch of 17 samples

- Blank, duplicate and CRM results are reviewed prior to uploading assay results in the AcQuire database and again on a weekly basis. The Waihi protocol requires CRMs to be reported to within two (2) standard deviations of the certified value. The criterion for preparation duplicates is that they have a relative difference (R-R1/mean RR1) of no greater than 10 %. Blanks should not exceed more than four times the lower detection method of the assay method. Failure in any of these thresholds triggers an investigation and re-assay.

11.2.2 Underground Face Samples

Routine grade control underground face channel sampling protocols ensure a CRM standard, a blank, a crush and field duplicate were submitted within the sample sequence of every face. A blank sample was entered into the sample sequence preferably after what appears to be the highest-grade sample in the face. A field and crush duplicate of the sample preceding the blank, was entered at the end of the sample sequence, followed by the CRM standard.

11.2.3 RC Grade Control Data

Assay quality control procedures for grade control RC data are set out in the MOP grade control procedures updated in 2015 (Table 11-1). These procedures were designed to detect any poor sampling and sample preparation practices and ensure that results are within acceptable ranges of accuracy and precision. The QAQC protocols implemented for RC grade control sampling in MOP are summarized in Figure 11-1.

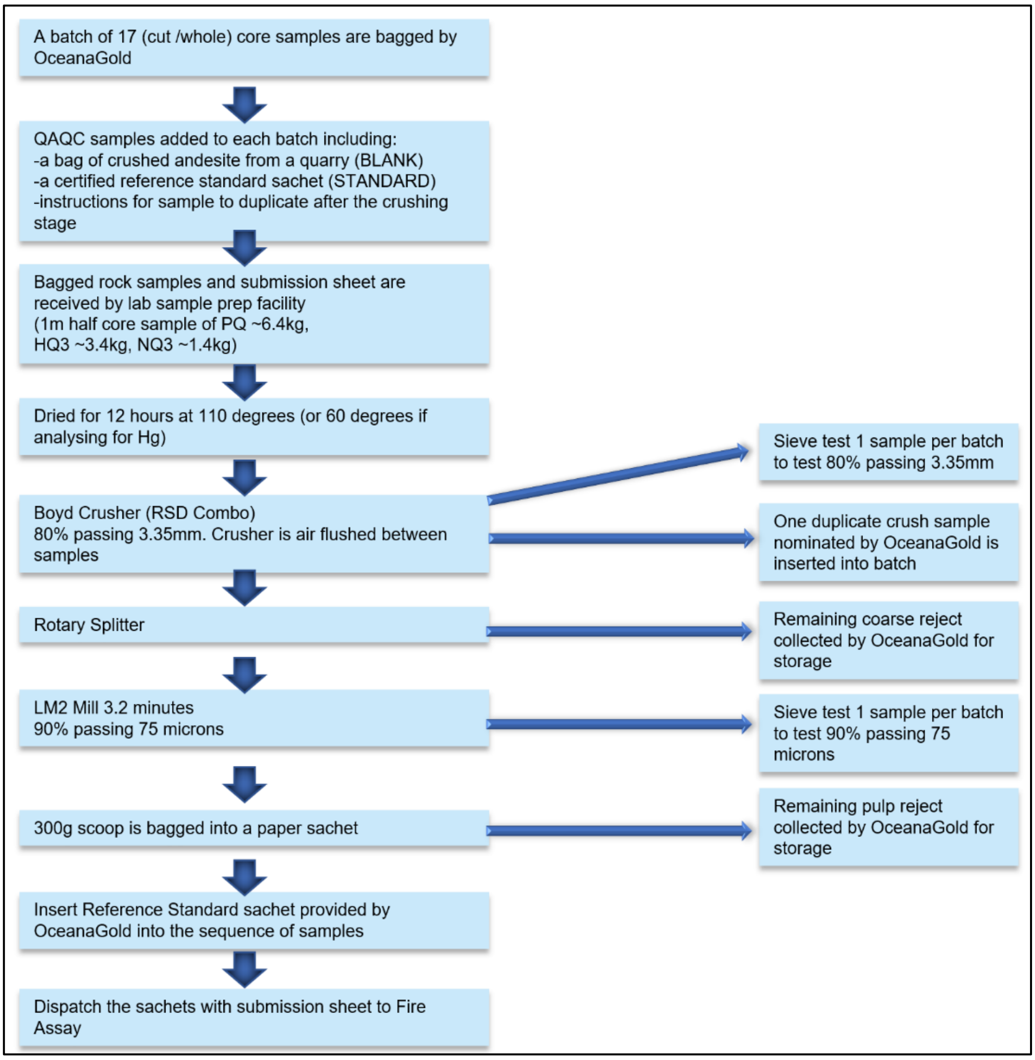


Figure 11-1: Sample Preparation Flow Sheet for SGS laboratory in Waihi

Table 11-1: Grade Control QAQC Samples for RC Sampling

Check	Description	Frequency
Blanks	Coarse Post-Mineral Andesite (Tirohia Quarry); submitted blind to the lab	1 per drillhole
Standards	Currently using Rocklabs standards; submitted as pulp to the lab	1 per drillhole
Field Duplicates	Additional RC sample taken from reject material from drill rig split	1 every fifth drillhole
Crush Duplicates	Split of crush residue repeat assayed by 50 g Aqua Regia Assay	1 every 50 samples
Fire Assay	Repeat assay of pulp by 30 g Fire Assay	30 per month

11.2.4 Open Pit Channel Samples

Assay quality control procedures for grade control data used in MOP were set out in the MOP grade control procedure. All QC data were imported into AcQuire database and analysed. QAQC protocols implemented are summarized in Table 11-2.

Table 11-2: Grade Control QAQC Samples for Open Pit Channels

Check	Description	Frequency
Standards	Rocklabs standards; submitted as pulp to the lab	1 per 30 samples
Pulp Replicates	Sample pulps resubmitted blind to the lab	30 per month
Internal Lab Checks	Sample randomly selected by lab, per despatch, for repeat analysis	1 per despatch

11.3 Laboratory Analyses

The standard suite of elements analysed at SGS in Waihi for all exploration drill and RC samples are gold and silver, although a significant proportion of core is also analysed for copper, arsenic, lead, zinc, and antimony. Gold is assayed using a 30 g charge for fire assay with AAS finish. Between May 2007 and September 2014 pulps were assayed by SGS for gold and silver by 30g Aqua Regia digest. From September 2014 fire assay analyses were conducted on gold only. Over range gold results of >100 g/t are re-assayed using an increase in dilution for the acid digest prior to instrument finish. Silver is analysed using a 0.3 g charge and AAS or ICP-MS instrument finish. For all other elements, the samples undergo a 0.3 g Aqua Regia digest followed by an ICP-MS instrument finish.

Generally, elements including mercury, arsenic, selenium, and antimony increase at shallow levels within epithermal deposits. The presence of sinter and high-level quartz vein textures in the GOP area indicate that the Resource is at the top of an epithermal system. As a result, multielement data with an extended suite of elements has been undertaken at ALS Laboratories in Brisbane. Sample preparation was conducted at SGS Waihi following standardized procedures with a variation to sample drying temperature. A reduced temperature of 60 °C has been used to limit mercury volatilisation.

A selection of WUG and MUG holes have undergone additional 42 element ICP-MS geochemical analyses at the ALS laboratory in Brisbane.

Comparison of the Ultratrace data with routine multielement data produced by SGS Laboratory in Waihi showed good correlation between the parent (SGS) and umpire (Ultratrace) data sets for silver, lead, zinc, and arsenic, which gives confidence in the accuracy of SGS data for these elements. For samples with over range silver and lead, these elements are found to be extracted more efficiently by using a more dilute Aqua Regia digest (one (1)g sample weight rather than the standard 10 g per 50 ml).

11.4 Database

All QAQC data is managed in an AcQuire database. Blanks and CRM standards are reviewed on a weekly basis using AcQuire QAQC objects. Any patterns or concerns regarding sample preparation or assay quality are discussed directly with the laboratory.

11.5 Sample Security

All drill core is logged at a facility owned by OceanaGold and access onto site is strictly controlled. Core boxes consist of plastic which provides good protection to the core provided it is stored under cover. All core is stored in secure designated core sheds in Waihi. OceanaGold employees transport sample bags containing core samples to the Waihi SGS Laboratory on a daily basis. This laboratory is a secure facility.

11.6 Density Determinations

11.6.1 MUG

Weight measurements are routinely collected for representative core samples in air and in water during the logging process. The AcQuire database is set-up to automatically calculate the density from the measured weights using the formula:

$$\frac{Weight\ in\ Air}{Weight\ in\ Air - Weight\ in\ Water}$$

The density of the host rocks and vein structures in MUG are slightly variable (Table 11-3). The andesitic host rocks average 2.55 g/cm^3 with the maximum recorded at 2.8 g/cm^3. Weathering and hydrothermal clay alteration generally decreases the density while pyrite alteration increases the density. The density of 'vein' material in the MUG model is mostly influenced by weathering proximal to historical workings rather than surface weathering. Minerals present in large percentages within veins are the main factors contributing to variations in density of vein material, particularly base metals, calcite, and clay content. A factor of -2 %, was applied to the vein's density to factor the under calling of vugs and fractures in the samples.

Table 11-3: Density Values Used in MUG

Domain	Sample Count	Mean Density
Andesite	2,321	2.43
Quartz Andesite	18,348	2.53
Vein	4,024	2.50

‘Stope fill’ is assigned a density of 1.8 within the Resource estimate. Collapse zones associated with the ‘Milking Cow’ subsidence zone and the MOP wall failure have been assigned a density of 1.9. Fill is captured in the model via the ‘mined’ variable summarized in Table 11-4.

Table 11-4: Mined Variable Values Used Around Historical Workings

Mean Variable Value	Material Type	Modifying Factor
0	In-situ	As estimated
1	Backfilled Stopes	Density of 1.8 and grade modified
2	Subsidence or Collapsed Stopes	Density of 1.6 and grade modified
5	Open Stope	Density set to zero, grade removed
6	Open Development	Density set to zero, grade removed
7	Rill Stoping Fill	Density of 1.8 and grade modified

11.6.2 GOP

Applying the same density method from MUG, density samples were collected while being logged and imported into an AcQuire database (Table 11-5).

Table 11-5: Density values Used in GOP

Domain	Sample Count	Mean SG
Regolith	26	1.7
Dacite	38	1.8
Intercalated Volcaniclastics	17	1.9
Rhyolitic Tuff	97	1.7
Mineralized Domains	355	2.47

11.6.3 MOP

Dry bulk density testing is carried out in accordance with Water Displacement Method 4 as outlined by Lipton and Horton in Monograph 30 - Mineral Resource and Ore Reserve Estimation - The AusIMM Guide to Good Practice (2013). Density data suggests that while there is a relationship between weathering and density, a stronger relationship is seen between density and relative elevation where density increases at deeper elevation. Table 11-6 summarises the average of the density values by lithology and elevation.

Table 11-6: Bulk Density Values in MOP

Domain	Sample Count	Mean Bulk Density (g/cm^3)
Quartz Andesite	332	2.45
Quartz Vein	377	2.47

11.6.4 WUG

Dry bulk density testing was completed on 156 samples. Samples were selected using the optimized stopes shapes to focus on potential mill feed and designed to ensure reasonable geographic coverage of potential ore domains. Sampled vein density has a minor survivorship bias with intact core being preferentially sampled, and recovery in vein zones occasionally challenging. A factor of -0.4 % was applied to the vein's density to factor the under calling of vugs in the samples as determined by comparison of total logged recovery vs. that of samples selected for analysis. Density data collected are summarized in Table 11-7.

Table 11-7: Bulk Density Values Used in WUG

Domain	Sample Count	Mean Bulk Density (g/cm^3)
Rhyolitic intrusive/flow	69	2.47
Hanging wall Veins	68	2.47
Footwall Veins	19	2.56

11.7 Opinion on Adequacy (Security, Sample Preparation, Analysis)

Sample collection, preparation and analysis are according to industry standards. All labs used by OceanaGold are certified to ISO-9001 standard or 17025 accredited for gold and silver through the Standards Council of New Zealand. The primary external lab used for check assays at SGS, Waihi is both ISO-9001 certified and 17025 accredited.

Core, pulp, and RC sample storage are considered secure. Sample transport is by company personnel between secure facilities and by approved couriers to external labs. No significant risks have been identified for sample contamination or sample exchange. No samples have been reported as missing during transport or as tampered with upon receipt at the lab.

All Waihi drillhole data (assays, logs, surveys) are stored in the secure AcQuire database, which is managed by the senior database specialist in New Zealand. The AcQuire database is an industry certified database. Database changes are tracked and verified. Strict data importing and verification protocols must be followed to avoid, for example, overlapping or missing intervals, mismatched hole depths in different fields, duplicate hole IDs or sample numbers, and invalid logging codes.

In the opinion of the qualified person, the sample security, sample preparation and analyses are adequate for the purposes of Resource estimation.

12 DATA VERIFICATION

Drill hole data is entered into an AcQuire database interface which includes protocols for validation. All drill collars, traces and surveys are checked for accuracy in 3D using Vulcan® and Leapfrog® while holes are being drilled. Once the hole has completed drilling, the collar position is picked up by a qualified surveyor and updated in AcQuire.

All geological logging is checked and validated by a second geologist on the core bench prior to core cutting. Logging data is entered into AcQuire by a geologist and then checked for completeness and errors once it is loaded into AcQuire. Laboratory results are uploaded into an AcQuire database using the files emailed directly from the laboratory.

Assay results are only successfully uploaded to AcQuire if they pass the QAQC verification. If any of the QAQC fail the verification, then further investigation is required by the geologist before the results can be uploaded to the database. Each drillhole has a checklist that needs to be completed before the hole can be classified as 'closed out' in the database.

Geology personnel are well trained and regularly monitored for consistency. Below level detection limit assay results are stored in the database as (negative) half the detection limit. No other modification of the assay results is undertaken. Monthly QAQC reporting and review is undertaken on all laboratory assay results. CRMs performance is regularly scrutinized, and the database QAQC function thresholds are reviewed bi-annually. CRMs are currently assigned to batches on a rotational roster in a 'pigeon pair' system.

A limited number of twinned holes were completed during the initial investigations for Correnso. These indicated that there is some short-range variability in gold Mineralization. No twinned holes have been drilled for the other projects. Geologists can recognise strong visual indicators for high-grade Mineralization observed both in drill core and in underground development.

All intercepts are reviewed during the construction of the geological wireframes prior to grade estimation, this review involves visual comparison of core photography, assay and logging data and spatial relationships to adjacent data. Significant intercepts are reported internally on a weekly basis for peer review purposes.

Data quality verification including check assay programs have been undertaken under the supervision of the Qualified Person for all exploration and Resource development projects for the last 9 years. Data quality is routinely assessed during Resource estimation workflows with external review conducted during milestones such as feasibility level studies.

12.1 Internal and External Reviews

A number of internal reviews have taken place to verify data collected for Mineral Resource purposes. A list of some of these reviews are provided below:

12.1.1 Geology and Wireframing

Rhys, DA. 2009 Observations, and exploration recommendations at Newmont exploration properties Hauraki Goldfield. Unpublished Memo to Newmont Waihi Gold.

Rhys, DA. 2010 WKP prospect: review of exploration results with recommendations. Unpublished Memo to Newmont Waihi Gold.

Rhys, DA. 2011 Observations of selected drill core from the WKP prospect (with WKP-30 information added). Unpublished Memo to Newmont Waihi Gold.

Rhys, DA. 2011. Review of the Structural Setting of the Correnso Vein System, Waihi, New Zealand. Unpublished Report to Newmont Waihi Gold.

Rhys, DA. 2017. Waihi District geology: continuing contributions to understanding structural setting and zonation as applied to exploration and mining. Unpublished Memo to OceanaGold.

Rhys, DA. 2020. Review of the structural controls of the WKP prospect. Unpublished Memo to OceanaGold.

Rhys, DA. 2020. Review of the core logging template for the Martha Underground Project. Unpublished correspondence to OceanaGold.

Richards, SD. 2019. Review of the WKP vein model using orientation data. Unpublished internal validation.

Richards, SD. 2023. Review of the WKP vein model. Unpublished internal review.

12.1.2 Density

White, T. 2012 Correnso Dry Bulk Density Study. Unpublished Internal Report, Newmont Waihi Gold.

McArthur, F. 2019 WKP SG Data Memo. Unpublished Internal Report. OceanaGold.

Vigour-Brown, W. 2019 Martha Underground SG Memo, Unpublished Internal Report. OceanaGold.

Meyer, N. 2024 Dry Bulk Density Testing MOP5, Unpublished Internal Report, OceanaGold.

Meyer, N 2024 Dry Bulk Density Testing WKP, Unpublished Internal Report, OceanaGold.

12.1.3 Assay QAQC and Multielement Geochemistry

Inglis R. 2013. Heterogeneity Study. Unpublished Internal Report, Newmont Waihi Gold.

Barker, S., Hood, S., Hughes, R., Richards, S. 2019. The Lithogeochemical signatures of hydrothermal alteration in the Waihi epithermal District, New Zealand. New Zealand Journal of Geology and Geophysics, Vol 62, Issue 4.

Biggalow, J. 2015. Review of multielement geochemistry of Waihi drill data. Unpublished Internal Review. Newmont.

12.1.4 Static and Kinetic Test work

Kirk, A. 2012. Geochemistry of Ore, Tailings and Waste Rock Assessment by URS New Zealand for the Correnso Underground Mine (Newmont Waihi Gold).

12.1.5 Mineralogy

Mauk J. 2009. Petrographic Examination of Samples from the Reptile North and Number Nine Veins, Waihi. Unpublished Report to Newmont Waihi Gold.

Mauk, J.L., Hall, C.M., Barra, F., and Chesley, J.T., 2011, Punctuated evolution of a large epithermal province: The Hauraki goldfield, New Zealand. Economic Geology, v. 106, p. 921‑943.

Ross, KV. and Rhys, DA. 2011. Petrographic Study of Representative Samples from the Correnso Vein System, Waihi District, New Zealand. Unpublished Report to Newmont Waihi Gold.

Menzies A. 2013 QEMSCAN Analysis of Samples from the Waihi District, New Zealand: Correnso. Unpublished report. Universidad Catolica del Norte, Antofagasta, Chile.

Coote, A. 2011 Petrological Studies of Diamond Core from WKP029 and WKP030, of the WKP South Project, Coromandel, New Zealand. Unpublished Report to Newmont Waihi Gold

Coote, A. 2012 Petrological Studies of Diamond Core from WKP024 and WKP031, of the WKP Epithermal Deposit, Coromandel, New Zealand. Unpublished Report to Newmont Waihi Gold.

Simpson, M. 2012 SWIR report for drill holes WKP-24, WKP-27, and WKP-30, Wharekirauponga, Southern Hauraki Goldfield. Unpublished Report to Newmont Waihi Gold.

12.1.6 Hydrology

GWS Limited 2012. Proposed Underground Mining Extensions ‑ Waihi. Assessment of Groundwater Inflows and Throughflows. Prepared for Newmont Waihi Gold.

12.1.7 Mineral Resource Estimation

Allwood, K. Geomodelling Limited 2024. Waihi MUG Resource Estimation Review. Unpublished Memo to OceanaGold.

De Veth, A. AMC Limited 2022. Report Waihi North – Mining Pre-Feasibility Study (GOP Block Model Review Final Report). Unpublished Memo to OceanaGold.

De Veth, A. AMC Limited 2022. Report Waihi North – Mining Pre-Feasibility Study (MOP Block Model Review Final Report). Unpublished Memo to OceanaGold.

Van de Ven, M. and Sterk R. RSC Limited 2020. Data Quality Review: Waihi Martha Underground Project. Unpublished Memo to OceanaGold.

Van de Ven, M. and Sterk R. RSC Limited 2024. Draft Independent Technical Review of Mineral Resources, WNP, NZ. Unpublished Memo to OceanaGold.

12.2 Opinion on Adequacy (Data Verification)

The QP has reviewed the appropriate reports and is of the opinion that the data verification programs undertaken on the data collected from the Waihi operations and WNP adequately support the geological interpretations, the analytical and database quality, and therefore support the use of the data in Mineral Resource and Mineral Reserve estimation.

Database audits confirm the data are acceptable for use in estimation with no significant database errors identified.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

The Waihi mill has treated ore sourced from the Martha open pit as well as several nearby underground ore bodies over the last 35 years. Considerable data and operating experience have been accumulated over this time and this information has been used to support the design of metallurgical testwork and process flowsheets for new orebodies.

With the discovery of new orebodies, geometallurgical characterisation has been used to generate recovery and throughput estimates for inclusion in technical and financial models. To support the geometallurgical program, a geometallurgical matrix was developed in conjunction with the geology team. This geometallurgical matrix identified the main gold bearing domains and the minimum number of composites to be targeted for metallurgical testwork. The starting basis for the metallurgical testwork was that the existing grind/leach process would be suitable for treatment of the new orebodies.

13.1 MUG

The testwork programs completed in 2018, 2019 and 2020 are listed in Table 13-1, Table 13-2, and Table 13-3.

Table 13-1: Testwork Program 2018

Project	Testwork Program
MUG	Metallurgical composites
Flotation and Ultra-Fine Grind (FUFG)	Process Engineering Pre-feasibility Study

Table 13-2: Testwork Program 2019

Project	Testwork Program
MUG	Metallurgical variability Comminution and water treatment plant (WTP) testing
Flotation and Ultra-Fine Grind	Variability Locked cycle Diagnostic leach testwork Signature plot testwork

Table 13-3: Testwork Program 2020

Project	Testwork Program
MUG	Metallurgical variability Comminution testing

13.1.1 Leach and Flotation Testwork

Prior to 2018, metallurgical test work was completed on 30 composite samples of intercepts from the various vein structures in the MUG Resource. Twenty-four samples were submitted to the Newmont Inverness testing facility. Six samples representing the Edward vein were submitted to Ammtec Laboratory in Perth. Samples were mostly submitted both as quarter core and as jaw crush reject material (95 % <7 mm), if both were available.

In 2019, 18 composites from intercepts were submitted to AMML Laboratories in Australia for testing direct leach performance and 6 composites samples were sent to JKTech for comminution testing.

In 2020, 25 composites samples from intercepts were sent to the OceanaGold Macraes Metallurgical Laboratory for testing direct leach performance, and 22 composites samples were sent to JKTech for comminution testing.

Table 13-4 provides an overview of the composite samples used in the three rounds of metallurgical testwork. Samples were selected to ensure spatial and geological representativeness and, as appropriate, chemical representativeness.

Table 13-4: Summary of MUG Composite Samples Tested

Vein Structure	Historical (2011)	2019	2020	Total
Edward	18	3	9	30
Empire East	2	4	10	16
Martha	9	7	-	16
Grace	1	-	-	1
Royal	-	4	5	9
Rex	-	4*	1	5
Total	30	22	25	77

*4 Rex samples tested at 75 µm

A review of the composite sample locations relative to the defined Resource and preliminary stope design identified 50 of the total 77 composites lay in or within 20 m of expected mined areas. These samples were used in the development of the recovery models for MUG and are summarized in Table 13-5. A total of 13 historical samples and 16 samples selected in 2019, and 21 samples selected in 2021 have been located based on the stopes (within a 20 m halo) to be mined over the LoM for the MUG deposit. Bottle roll tests were completed at three different grinds (38 µm, 53 µm and 75 µm).

Table 13-5: Metallurgical Samples Contained within MUG Stopes

Vein Structure	Historical	2019	2020	Total
Edward	13	2	9	24
Empire	-	4	8	12
Martha	-	4	-	4
Grace	-	-	-	-
Royal	-	2	3	5
Rex		4*	1	5
Total	13	16	21	50

* 4 Rex samples tested at 75 µm

Bottle roll CIL test results for the historical samples are summarized in Table 13-6.

Table 13-6: Gold Extraction Results for Historical Composites

Domain	Hole ID	Calculated gold Grade, Au g/t	As, ppm	Au Extraction (%)		
				38 µm	53 µm	75 µm
Edward	UW388-1000	3.75	42	96.50	95.57	94.98
Edward	UW388-1000 (Dup)	4.14	50	96.52	96.20	95.17
Edward	UW388-1001	4.64	34	97.57	96.87	96.06
Edward	UW388-1001 (Dup)	4.78	33	97.34	97.02	95.83
Edward	UW395-1000	20.47	112	97.73	97.46	96.26
Edward	UW395 1000/1001	14.83	95	97.05	96.49	95.37
Edward	UW395-1001	10.39	67	96.58	95.78	93.88
Edward	UW407-1000	5.54	30	97.20	95.60	94.70
Edward	UW407-1001	3.34	20	98.40	99.00	93.10
Edward	UW409-1000	12.30	60	98.00	95.50	93.40
Edward	UW409-1001	7.72	60	97.90	94.80	93.50
Edward	UW411-1001	4.95	40	97.90	97.70	97.80
Edward	UW412-1000	1.76	30	89.06	88.08	84.83

Table 13-7 summarizes gold recovery data at the grind sizes tested for the 2019 samples. The metallurgical samples tested in 2019 were processed at AMML Laboratories in Australia. The Rex samples were tested at 75 µm as part of the Variability Leach and Flotation and Ultra fined grind (FUFG) testwork program.

Table 13-7: Gold Extraction Results for 2019 Composites

Domain	Hole ID	Assay Head Grade Au g/t	As ppm	Au Extraction (%)		
				38 µm	53 µm	75 µm
Edward	920SP9MR1318	6.54	11.9	98.9	98.5	-
Edward	920SP9MR1264 920SP9MR1320	5.89	36.1	96.1	95.8	-
Empire	920SP7MN1303	6.82	189	87.4	89.0	-
Empire	920SP7MN1290	4.66	111.5	92.5	91.1	-
Empire	800SP1MR1224	5.75	48.5	97.4	96.0	-
Empire	800SP1MN1095	5.73	185	86.4	84.0	-
Martha	800SP3MR1227 800SP3MN1188 800SP3MR1300	5.00	301	86.2	79.4	-
Martha	800SP1MN1100 800SP1MN1109 800SP1MN1118 800SP1MN1100 800SP1MR1224	6.13	45.6	94.0	95.4	-
Martha	800SP1MN1127 800SP1MR1214	5.09	139.5	83.9	80.5	-
Martha	800SP1MR1317 800SP1MR1280 800SP2MN1191 800SP1MR1317	5.76	259	82.60	78.9	-
Royal	920SP9MN1281 920SP9MN1297 920SP9MN1301 920SP9MN1276	5.45	178	91.9	89.5	-
Royal	800DC1RN1246 800DC1RN1240 800DC1RN1255	4.35	79.2	91.3	88.5	
Rex	UW715 UW725 UW721 920RCCRN1256 920RCCRN1259 920RCCRN1266 UW671	3.18	10.5			93.5
Rex	UW718 UW712 UW706	3.13	14.9			92.7
Rex	UW719 UW717 UW679	4.79	15.9			93.6
Rex	UW667 UW708 UW711	4.84	46.3			91.6

Table 13-8 summarises gold recovery data at the grind sizes tested for the 2020 samples. The metallurgical samples tested in 2020 were processed in-house at Macraes metallurgical laboratory in New Zealand.

Table 13-8 Gold Extraction Results for 2020 Composites

Domain	Hole ID	Assay Head grade, Au g/t	As, ppm	Au Extraction (%)		
				38 µm	53 µm	75 µm
Edward	800DC8MR1476	2.09	62	93.8	92.7	91.7
Edward	920SP8MR1363	3.48	75	96.1	95.8	95.4
Edward	800PC2MR1453	3.41	33	96.3	95.9	94.2
Edward	800DC8MR1436	4.34	35	93.8	93.8	93.7
Edward	920SP9MR1366	4.35	70	93.0	92.2	91.0
Empire	800DC7MN1337	3.50	39	95.6	93.3	90.3
Empire	800DC5MN1345	3.80	79	90.1	89.4	86.8
Empire	920SP6MN1432	3.38	51	94.6	92.2	88.7
Empire	920SP4MR1413	3.79	76	91.0	90.9	92.3
Empire	920SP2MR1326	5.55	176	86.2	86.2	83.3
Empire	800DC2MR1477	3.93	95	92.8	92.8	90.2
Empire	920SP7MN1396	2.74	76	91.4	91.7	87.1
Empire	920SP6MN1446	4.61	201	88.2	87.2	84.2
Royal	800DC3RN1375	3.68	91	87.1	88.3	86.5
Rex	UW722	4.06	8	97.1	96.2	95.1
Edward	800RC3MR1442	3.6	19	99.4	99.3	99.1
Edward	800DC8MR1503	3.71	22	97.4	96.9	95.6
Edward HW	920SP8MR1315	4.51	31	95.2	95.6	93.3
Edward HW	920SP9MR1358	3.53	16	96.5	95.8	94.0
Empire	800DC4MN1540	6.19	140	93.9	92.2	89.8
Royal	14EMPRN1576	4.52	223	91.7	85.3	79.7
Royal	800RC3RN1438	4.18	125	89.7	88.2	83.2

Gold extraction results for historical, 2019 and 2020 samples at different grind sizes indicate that a 38 µm grind size provides the best gold extraction in the laboratory. On average for all metallurgical samples, gold recovery improvement between 38 µm and 53 µm is 0.70 % for Edward, 0.90 % for Empire, 3.10 % for Martha, 2.4 % for Royal and 0.90 % for Rex. Plant operating experience has shown that an equivalent laboratory gold recovery at a P_{80} of 38 µm is equivalent to a grind size P_{80} of 53 µm in the plant. This relationship is due to the laboratory grind testwork being in open circuit, whereas in the plant the grinding circuit is in closed-circuit. This results in the higher density sulphides being preferentially ground finer and hence liberating more gold particles that are disseminated within the sulphides.

Figure 13-1 shows gold extraction (recovery) for the historical, 2019 and 2020 samples tested at a grind size of 38 µm against calculated gold feed grades indicate a range of recoveries from 89 % to 99 % for the Edward samples, 83 % to 94 % for Martha samples, 86 % to 97 % for Empire, 87 % to 92 % for Royal, and 92 % to 94 % for Rex samples. Arsenic grades in the composites ranged from 11 ppm to 301 ppm whilst the grades in the mine schedule are generally in the 30 to 50 ppm range. The chart highlights the composites tested above and below an 80 ppm grade. In general, gold recovery decreases with increasing Arsenic grade, a product of fine gold locked in arsenopyrite grains.

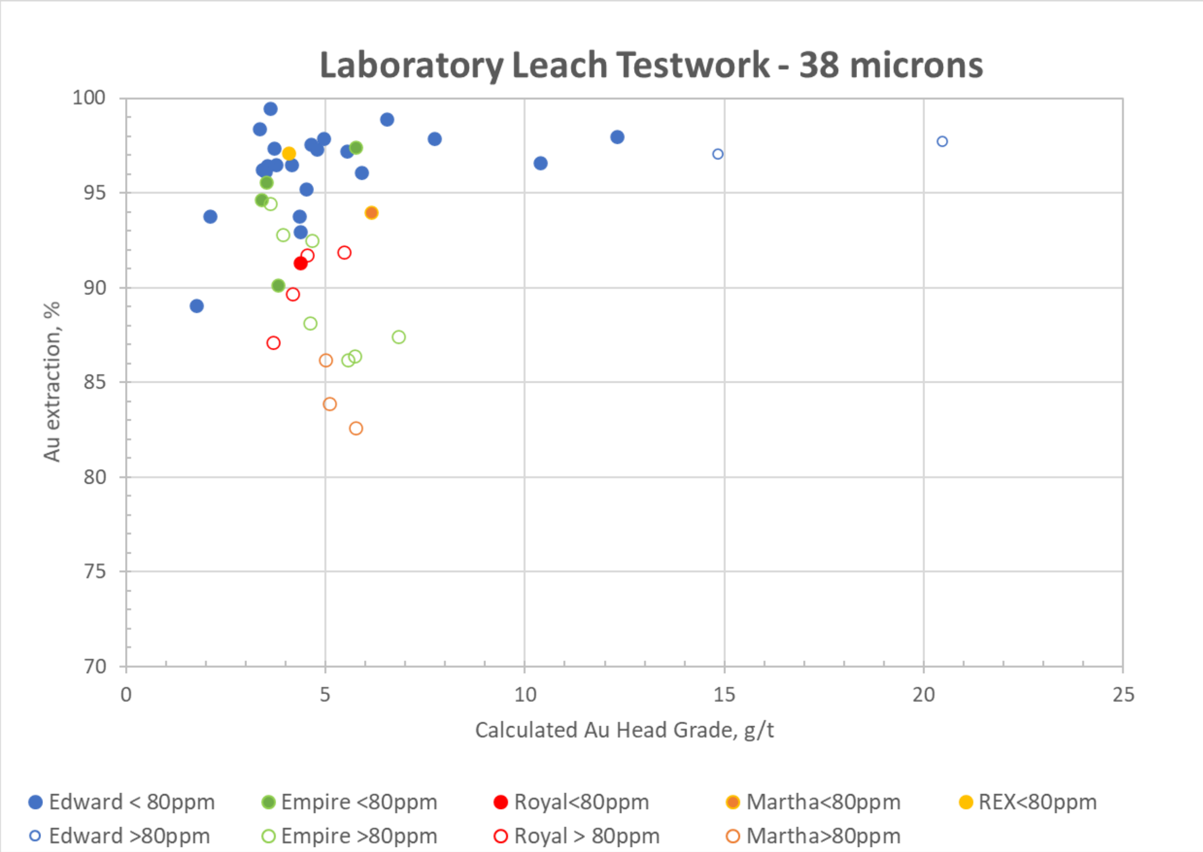


Figure 13-1: Gold Extraction as a Function of Feed Grade

In addition to the leach testwork, flotation testwork was done on 27 samples (Phase 1 - 9 samples, Phase 2 - 18 samples) at a grind size of 75 µm. Results from this testwork indicated that there is little to no recovery benefit at 1 % sulphur grade. At an overall grade of 1.11 % sulphur recovery benefits is less than 1 %. Sensitivity analysis on the incremental financial model shows a 3.4 % improvement benefit is needed to generate an economic return. At this recovery benefit the net present value (NPV) is neutral. To generate an overall benefit of 3.4 % recovery the sulphur model indicates that the overall grade should be 1.7 % total sulphur. For MUG there is insufficient material from underground to make FUFG economically beneficial as the overall average sulphur grade is only 1.1 %.

13.1.2 Comminution Testwork

Ore characterisation on historical samples from MUG in 2011 indicated that the MUG ore is considered medium competency for SAG milling with Axb of 41.9, and a high Bond Ball Work Index (BBWI) of 19.2 kWh/t. Table 13-9 shows historical results from testwork conducted in 2011.

Table 13-9: Historical Comminution Results on Ore from MUG -2011

Sample	Sample ID	DWI	Axb	SG	BBWI (kWh/t)
Edward	UW240-1003	6.29	40.8	2.55	17.3
Edward	UW367-1000	5.35	48.4	2.60	17.0
Edward	UW407-1000	5.83	42.8	2.48	18.7
Edward	UW407-1001	5.31	47.1	2.49	19.5
Edward	UW409-1000	5.87	42.9	2.50	17.7
Edward	UW409-1001	5.66	44.3	2.50	19.2
Edward	UW411-1001	4.81	53.7	2.57	19.7
Edward	UW412-1000	7.36	33.9	2.46	18.8
Empire East	UW240	4.39	60.7	2.67	14.8
MUG	WHD188	6.03	41.9	2.54	17.7
Grace	UW210	4.81	55.8	2.67	16.4
75th percentile		6.03	41.9	2.60	19.2

Six samples from MUG were submitted in 2019 for comminution testing to the JKTech testing facilities in Brisbane, Australia. Comminution testing consisted of SMC, Bond Rod Mill and Bond Ball Mill work indices, and bond abrasion index. The selected samples represent Mineralization to be mined from four vein structures at MUG. Samples were submitted as quarter core (1/2 HQ).

The comminution test results are summarized in Table 13-10. The characterisation conducted on the Waihi mill feed sources has indicated that MUG Mineralization is very competent for SAG milling (75th percentile Axb 33.2) and hard to grind in ball mill (BBWI 21.0 - 25.2 kWh/t).

Table 13-10: Summary of Comminution Testing of 2019 MUG Mineralization Samples

Sample	DWI	Axb	SG	BBWI	BRWI	BAI
Edward	7.67	34.1	2.58	22.5	15.4	0.3966
Empire	8.55	30.7	2.61	21.0	16.1	0.3458
Martha 1	6.70	37.1	2.51	23.5		
Martha 2	6.75	38.2	2.59	25.2	14.0	0.3537
Royal 1	6.60	36.9	2.43	22.2		
Royal 2	6.66	37.9	2.53	23.4	15.7	0.2418
75th percentile	7.89	33.2	2.60	23.9	16.0	0.3859

Twenty-two samples were selected in 2020 from MUG for comminution variability testing. Samples comprised of quartered HQ drill core from various domains of the MUG deposit. Samples were selected based on the geometallurgical matrix in conjunction with the geology team to identify the main gold bearing domains and to indicate the minimum number of composites to be targeted for metallurgical testing. Sample selection was based on core availability for the MUG ore, spatial distribution within each of the MUG vein structures, and representativeness of average gold grades over the LoM.

Table 13-11 presents ore characteristics for the 2020 comminution samples. The comminution results from 2020 indicate that the MUG Mineralization is moderately competent for SAG milling (Axb 39.4 - 75th percentile) and that the ore is hard with a BBWI of 17.2 kWh/t.

Table 13-11: Summary of Comminution Testing of 2020 MUG Mineralization Samples

Sample	DWI	Axb	SG	BBWI	BRWI	BAI
Edward 1	4.45	57.5	2.56	16.6	12.9	0.5856
Edward 2	5.58	46.0	2.57	16.5	14.6	0.5353
Edward 3	5.51	46.6	2.58	15.7	14.0	0.7033
Edward 4	5.97	43.4	2.58	17.0	14.5	0.6846
Edward 5	6.17	41.7	2.57	15.6	15.3	0.6923
Edward 6	6.24	41.0	2.57	16.8	14.4	0.428
Edward 7	6.34	40.7	2.59	17.2	14.9	0.5585
Edward 8	4.99	51.2	2.55	16.4	12.7	0.6122
Edward 9	7.74	33.0	2.59	20.0	15.2	0.5234
Empire 1	5.69	45.1	2.55	17.1	14.2	0.6829
Empire 2	5.18	49.7	2.59	16.0	13.9	0.4983
Empire 3	6.63	39.1	2.6	17.0	14.4	0.5865
Empire 4	6.95	36.2	2.53	17.4	15.5	0.4159
Empire 5	5.81	44.3	2.59	17.5	14.3	0.5225
Empire 6	5.55	46.3	2.56	16.6	14.4	0.4056
Empire 7	7.29	35.7	2.6	16.2	14.8	0.626
Empire 8	8.40	34.9	2.92	16.7	15.3	0.6562
Empire 9	6.08	42.1	2.58	18.4	14.0	0.4833
Empire 10	6.30	41.4	2.6	20.3	14.6	0.3723
Empire 11	5.93	42.3	2.5	17.1	15.5	0.715
Rex 1	6.55	39.6	2.58	16.2	14.6	0.6149
Royal 1	6.38	39.7	2.52	17.2	13.3	0.5993
75th percentile	6.57	39.4	2.59	17.2	15.0	0.6629

Table 13-12 shows the combined results from the 2019 and 2020 comminution testwork programs. These results indicate that the MUG Mineralization is moderately competent (Axb 36.9) and hard for ball milling with a bond ball work index of 20.2kWh/t. The tested samples also showed to be highly abrasive with a Bond Abrasion index of 0.63.

Table 13-12: Combined Comminution Testing results 2019 and 2020

Sample	DWI	Axb	SG	BBWI	BRWI	BAI
75th percentile	6.74	36.9	2.59	20.2	15.3	0.6336

The SMC test results can be used to estimate specific power requirements for the MUG ore using the comminution parameters derived from these tests. Based on the power-based model developed by Morrell, the SAG mill specific power is estimated at 10.4 kWh/t (75th percentile) and the ball mill specific power is 22.1 kWh/t (75th percentile).

The 75th percentile comminution results from 2019 and 2020 were used in the Waihi comminution circuit, a primary grind size of 80 % passing 53 µm was utilized for the primary grind for the MUG feed. The existing grinding circuit is capable of processing MUG ores over the LoM.

13.1.3 Recovery Estimates and Assumptions

The recovery models developed for each of the vein structures provided below are based on the leach testwork results conducted on the historical, 2019 and 2020 samples. Multiple Linear Regression (MLR) was used to predict gold recovery with the explanatory variables being gold head grade and arsenic content in the feed. Table 13-13 provides the recovery models developed for Edward, Empire, Martha, Royal and Rex domains.

Table 13-13: MUG Recovery Models

Domain	Recovery
Edward[2]	Recovery (%) = 97.14 + (0.40 * Au ppm) – (0.068 * As ppm), r^2=0.38
Empire	Recovery (%) = 93.74 + (1.33 * Au ppm) – (0.081 * As ppm), r^2=0.90
Martha	Recovery (%) = 76.41 + (2.68 * Au ppm) – (0.024 * As ppm), r^2=0.55
Royal	Recovery (%) = 80.25 + (1.41 * Au ppm) + (0.023 * As ppm), r^2=0.96
Rex[3]	Recovery (%) = 91.92 + (0.78 * Au ppm) - (0.092 * As ppm), r^2=0.87

The gold recovery models developed for MUG deposit are used to forecast gold recovery in the mine schedule on a yearly basis. Applying the recovery models to the mine schedule indicates the gold recovery for MUG Mineral Reserve is 95 %.

[2] The Au recovery model developed for Edward did not include results for samples with gold grades >7 g/t.

[3] The Au recovery model developed for Rex was based on leach testwork data at a grind size P80 75 µm as there were no tests conducted at 38 µm.

Recovery is correlated to both gold and arsenic head grades with gold present in arsenopyrite identified previously as being finer grain size than the majority present in ore. High arsenic levels yield a lower recovery in the tested composites over the range from 8 to 301 ppm and highlighted in Figure 13-2.

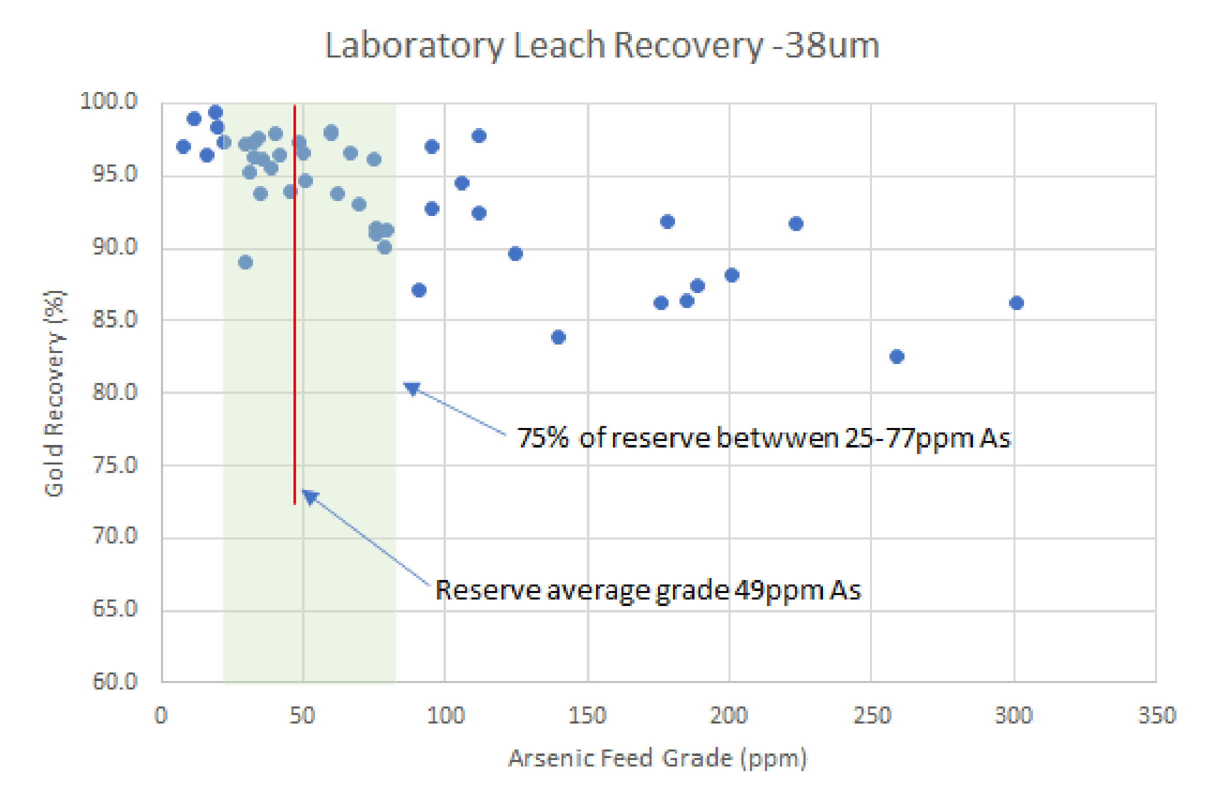


Figure 13-2: Arsenic Grade / Recovery Relationship

A review of the methodology used to estimate the metallurgical recoveries and testwork was undertaken by G Butcher Consulting Pty Ltd which endorsed the laboratory testing and mathematical modelling methods used to develop the recovery algorithms and that the selection of sampling locations and the representivity of the ore domains appears to have been undertaken with diligence, although additional sampling and testing of the Rex and Royal domains is recommended to improve the confidence of the models developed to date.

13.2 MOP

MOP metallurgical recovery of gold is estimated at 90% and silver recovery is estimated at 63 % based on the process plant performance and reconciliations over the last 35 years of operation. Throughput and gold recovery data from the last open pit campaign through the Martha mill in 2013-14 is shown below in Figure 13-3 with the monthly reconciled recovery of 90% achieved or exceeded. The proposed cutback will expose mineralization at similar or higher levels during the first five (5) years of open pit operation.

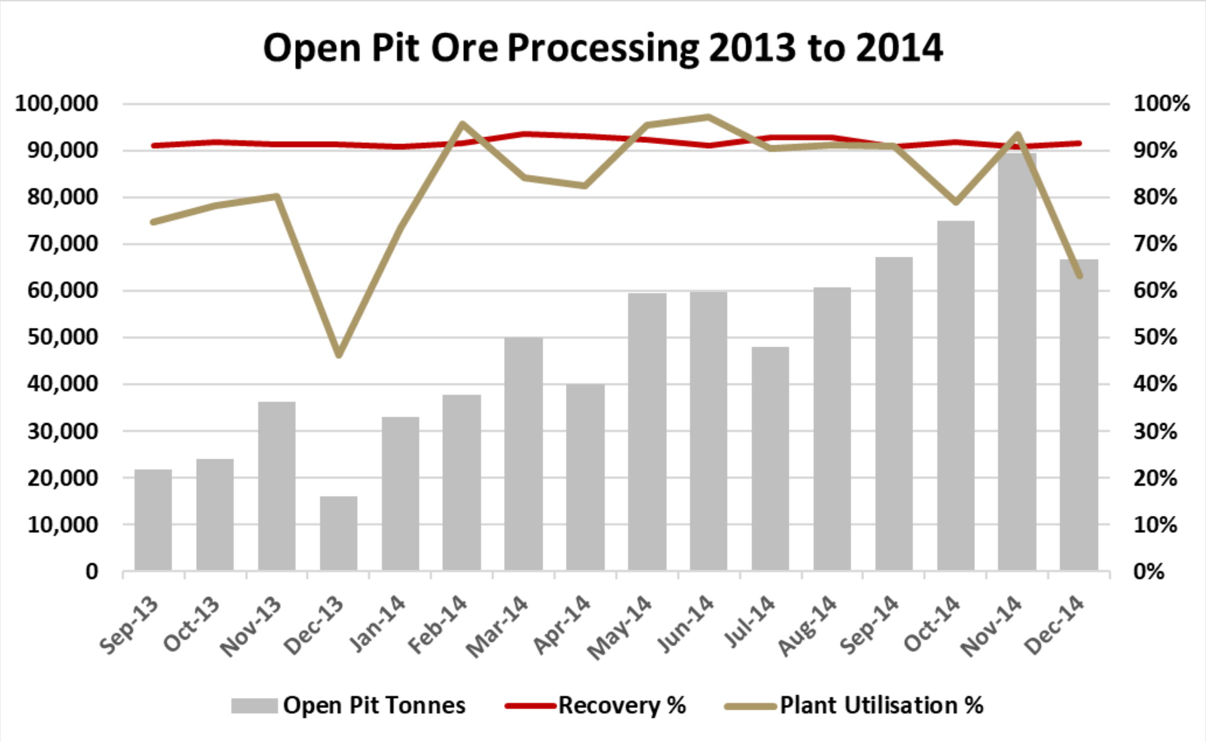


Figure 13-3: Historical Open Pit Performance

13.3 GOP

Laboratory scale test work has been conducted on the drill hole samples obtained for the GOP Mineral Resource. The key focus of the metallurgical work has been to derive gold recovery, throughput rates, reagent consumption and to confirm the suitability of current plant configuration. This test work has shown the GOP mineralization to be amenable for processing via the existing Waihi treatment plant flowsheet.

Recovery is shown to vary with the weathering extent of the GOP mineralization. The weathered domain achieves higher recoveries than the primary un-weathered domain. Separate recovery relationships have been defined for the weathered and un-weathered domains. A small separate metallurgical domain characterized by the hydrothermal breccia host rock was also identified.

A grind size of P80 of 90 µm has been selected, as plant operating experience has shown that this is equivalent to a laboratory gold recovery at a P80 of 75 µm. The gold and arsenic relationship identified in Correnso Resource is not observed in the GOP Resource. The statistically significant drivers of recovery within the GOP Resource are weathering and gold head grade. The recovery estimate from the testwork is calculated at a P80 of 75 µm (see Table 13-14).

Table 13-14: Recovery Estimate

Testwork	Recovery
Weathered	Recovery % = 100 * (0.902 – (0.049 / Head grade Au))
Un-weathered	Recovery % = 100 * (0.85 – (0.452 / Head grade Au))
Hydrothermal Breccia	Recovery % = 74%

This relationship predicts an average recovery for the GOP Resource of 71 % based on the average Mineral Resource grade of 1.49 g/t Au. An average process recovery of 71 % has been used for GOP based on leaching testwork.

Four samples were submitted for comminution testing to the JKTech facilities in Brisbane, Australia. Comminution testing consisted of SMC and Bond ball mill work index. The selected samples represent mineralization to be mined from four domains in GOP. Samples were submitted as quarter core (1/2 HQ).

The comminution test results are summarized in Table 13-15. The characterisation conducted on the GOP mineralization has indicated that the material is classified as ‘moderately soft' to “medium” in terms of SAG mill competency (average Axb 47.1). The weathered material had the softest BBWI of 17.2 kWh/t and it is categorized as ‘hard', the three remaining samples are considered very hard (BBWI 20.9 – 22.6 kWh/t).

Table 13-15: Comminution Testing of GOP Mineralization Samples

Parameter	HBX	Un-weathered A	Un-weathered B	Weathered	Average
Axb	56.6	47.8	41.2	42.9	47.1
SG	2.49	2.69	2.58	2.54	2.58
DWI	4.39	5.62	6.26	5.93	5.55
BBWI	20.9	22.6	21.3	17.2	20.5

The comminution results provided in Table 13-15 were applied to a comminution circuit similar to the current Waihi circuit, and for mill sizing. A primary grind size of 80 % passing 75 µm was utilized for the primary grind design for GOP Mineralization.

The GOP orebody contains significant levels of mercury at levels higher than currently experienced in the mill (up to 4 g/t Hg). Deportment surveys on laboratory leach tests and plant surveys on MUG feed have been conducted to estimate the portion of mercury that is likely to report to the elution and gold room circuits. Data from these surveys has been used to design a retort system to capture mercury in the gold room and minimise occupational and environmental exposure.

13.4 WUG

Economic gold Mineralization at WUG is hosted within quartz vein structures as either silica associated free gold or with minor occurrences of sulphide minerals, notably pyrite and arsenopyrite. It is similar in nature to that observed with other underground deposits at Waihi such as Favona, Correnso and MUG, the main difference being hosted in Rhyolite rather than Andesite.

The silica associated gold is readily leached via conventional grinding and cyanide leaching flowsheets. The sulphide associated gold appears to be leachable via similar flowsheets, but recovery is dependent on grind size as the inclusion size of gold within the sulphides appears to be significantly finer than that in silica based on response to the various flowsheet options and grind sizes tested. Higher levels of arsenopyrite will lead to higher residue grades due to unliberated gold inclusions at economic grind sizes.

The geological interpretation of the Wharekirauponga deposit has developed over time as the drilling program had progressed. Overall, the metallurgical program has classified the deposit into three main geometallurgical domains mainly the main EG vein, the footwall veins, and the hanging wall veins. Classification of metallurgical composites has identified the domain it resides in and in some cases the domain has changed with reinterpretation.

13.4.1 Leach Testwork

A total of 6 testwork programs have been undertaken on samples from the Wharekirauponga deposit since 2017. The first three programs investigation various flowsheet options considering direct leach at several grind sizes, production of a sulphide flotation concentrates for further processing, flotation and ultrafine grinding followed by cyanide leach. A total of 10 composites were prepared in the 2018 programs and a further 6 in the 2019 program with the source holes and domain structures (Table 13-16 and Table 13-17).

Table 13-16: 2018 Wharekirauponga Composite Locations

Composite #	Metallurgical Samples		
	Hole ID	Sample No	Vein Structure
WKP-MET-001	WKP40	WKP40-0492-0500.8	EG Vein
WKP-MET-002	WKP42	WKP42-0430.5-0440	EG Vein
WKP-MET-003	WKP50	WKP50-0403-0406	EG Vein
		WKP50-0413-0415	
WKP-MET-004	WKP52	WKP52-0550	FW Vein
	WKP55	WKP55-0363-0364	FW Vein
	WKP55	WKP55-0307	FW Vein
WKP-MET-005	WKP50	WKP0087, WKP50-0093,0094	HW Vein
WKP-MET-006	WKP35	WKP35-576.4-587.2	EG Vein
WKP-MET-0077	WKP44	WKP44-0410-0422	EG Vein
WKP-MET-008	WKP53	WKP53-0677-0689	EG Vein
WKP-MET-009	WKP56	WKP56-0348-0356	EG Vein
WKP-MET-010	WKP57	WKP57-0341-0349	EG Vein

Table 13-17: 2019 Wharekirauponga Composite Locations

Composite #	Metallurgical Samples		
	Hole ID	Sample No	Vein Structure
WKP-MET-010	WKP54	WKP054-0582-0596	EG Vein
WKP-MET-010	WKP60-1	WKP60-0465-0475	EG Vein
WKP-MET-010	WKP60-2	WKP60-0570-0577	FW Vein
WKP-MET-010	WKP61	WKP61-0387-0394	EG Vein
WKP-MET-010	WKP63	WKP63-0527-0545	FW Vein
WKP-MET-010	WKP65	WKP65-0491-0505	EG Vein

Testing on the 2018 composites was completed by ALS Metallurgy in Perth, Australia and included:

- Head assay and screen fire assay
- Gravity gold recovery at 106 µm grind size
- Cyanide leach of both gravity concentrate and gravity tails
- Sulphide flotation and leaching of flotation products.

Head Grade analysis is outlined in Table 13-18 below and indicate a gold head grade ranging from 4.2 g/t to 50.6 g/t for the main EG Vein samples. Total sulphur head grades range up to 1.82 % sulphur and arsenic grades range up to 580 ppm, similar ranges to the Correnso north deposit processed at Waihi.

Table 13-18: Wharekirauponga Composite Head Assay Results

Composite #	Au g/t FA	Ag g/t	As ppm	Hg ppm	SiO2, %	S Total, %
WKP-MET-001	7.53	10	15	<0.1	-	-
WKP-MET-002	26.0	35	325	0.8	-	-
WKP-MET-003	9.47	8	100	<0.1	88.4	0.42
WKP-MET-004	4.83	4	270	2.9	82.0	1.34
WKP-MET-005	4.54	16	30	0.1	89.2	<0.02
WKP-MET-006	4.20	11.4	580	0.4	80.8	1.82
WKP-MET-007	4.60	5.4	350	0.1	84.6	0.52
WKP-MET-008	7.00	4.5	80	<0.1	89.0	0.26
WKP-MET-009	5.21	6.9	390	0.5	80.4	1.74
WKP-MET-010	7.67	12.9	110	0.2	81.6	0.86
WKP-MET-011	50.6	98	230	<0.1	82.0	0.36
WKP-MET-012	19.4	26	80	<0.1	90.2	0.28
WKP-MET-013	13.1	24	540	1	86.4	2.06
WKP-MET-014	17.7	62	140	0	82.8	0.74
WKP-MET-015	62.8	88	30	<0.1	87.6	0.04
WKP-MET-016	22.6	24	170	<0.1	84.8	0.62

Gravity concentrates were produced using a laboratory gravity concentrate with the concentrate subject to intensive cyanide leach conditions and the gravity tail subject to standard leach conditions. The combined leach recoveries are indicative of that expected from a conventional gold processing flowsheet.

Table 13-19 shows results from the 2018 composites indicating that gravity gold recovery ranged from 8.1 % to 41 % averaging 18.4 % for the EG Vein samples at either 53 µm or 106 µm grind size. The relatively low gravity recovery results and screen fire assay results suggest the majority of the gold is present as fine particles.

The average gold recovery from leaching on the main EG Vein samples (composites 1, 2, 3, 7, 8, 9, and 10) averages 90.7 % and suggests the majority of the EG Vein material can be regarded as free milling. The lower recovery experienced in composites 4 and 6 may be attributable to the higher sulphur feed grade and likely partially refractory locked in sulphides.

Table 13-19: 2018 Composite Gold Recovery Results

Composite #	Calculated Au Grade, g/t	Au/Ag ratio	P80, µm	Gravity Au Recovery, %	Total Au Recovery (%)	
					53 µm	106 µm
WKP-MET-001	7.96	1.0/1.2	106	35.1		95.5
WKP-MET-002	28.7	1.0/1.2	53	15.1	89.5	
WKP-MET-003	9.78	1.0/1.4	53	25.0	89.3	
WKP-MET-004	5.08	1.0/1.6	53	8.1	66.4	
WKP-MET-005	4.46	1.0/1.4	53	12.5	80.9	
WKP-MET-006	3.78	1.0/2.7	106	11.5		68.8
WKP-MET-007	5.35	1.0/1.2	106	10.9		91.2
WKP-MET-008	6.65	1.0/0.6	106	41.0		95.8
WKP-MET-009	5.72	1.0/1.3	106	9.7		84.3
WKP-MET-010	7.58	1.0/1.7	106	15.5		89.1
Average					90.7	

The 2019 composites examined the effect of grind size on overall recovery with average recovery increasing to 94.3 % at a 38 µm grind in the laboratory. In Waihi ores typically higher recoveries are achieved with decreasing grind size from liberation of fine gold present in sulphide particles. The recovery results for these composites are shown below in Table 13-20 indicating a 1.4 % improvement in overall gold recovery from grinding from 53 µm down to 38 µm.

Table 13-20: 2019 Composite Gold Recovery Results

Composite #	Calculated Au Grade, g/t	Au/Ag ratio	Total Au Recovery (%)				
			38 µm	53 µm	75 µm	90 µm	106 µm
WKP-MET-011	50.7	1.0/1.9	95.3	92.6	91.1		
WKP-MET-012	19.1	1.0/1.3	96.6	94.7	93.6	91.8	90.6
WKP-MET-013	13.2	1.0/1.8	85.9	86.1			
WKP-MET-014	18.9	1.0/2.8	96.1	96.2	96.5	95.0	
WKP-MET-015	59.7	1.0/1.5	95.5	93.4	93.4	91.6	
WKP-MET-016	23.1	1.0/1.0	96.2	94.6	92.3	91.0	

Process Plant operating experience has shown that an equivalent laboratory gold recovery at a P_{80} of 38 µm is equivalent to a grind size P80 of 53 µm in the plant. This relationship is due to the laboratory grind test work being in open circuit, whereas in the plant the grinding circuit is in closed circuit. This results in the higher density sulphides being preferentially ground finer from the cyclone classification and hence liberating more gold particles that are disseminated within the sulphides.

Diagnostic leach tests were completed on direct leach tailings samples for 10 of the composites from the EG Vein. The results show there is little free milling gold remaining in the tails (6 %) that would be recoverable with longer leach residence time. Up to 32 % of the gold in tailings appears to be silica locked and given the high silica head grade is unlikely to be recoverable via leaching or flotation without further grinding to liberate the locked gold. Unleached gold locked with sulphide minerals represents 61 % of the total gold lost to tailings. The sulphide minerals may be recovered through sulphide flotation. Preliminary flotation testwork conducted at 75 µm on the EG Vein has indicated no significant recovery benefits when compared to direct cyanidation at a grind size of 38 µm (i.e., 92 % (flotation) vs 96 % (direct cyanidation)).

A geometallurgical matrix was prepared based on the three main structures (the EG Vein, hanging wall and footwall) and for low, medium, and high-grade bins to allow selection of 16 composites for the fourth program in 2020 focusing on direct leach performance from 38 to 75 µm (Table 13-21, Table 13-22, and Table 13-23). This program was undertaken in house by OceanaGold utilising the Macraes metallurgical laboratory facilities and Waihi metallurgical resources.

Table 13-21: 2020 WUG Au Geometallurgical Matrix – Mass Balance

MASS BALANCE							
Grade x Ore Type x Mine Tonnage + Existing Met Sampling Data Entry.							
Section #2. Definition Entry of Grade Bins or other (left columns), Ore Types (top row) and In-mine Tonnage (table)							
		Expected Mine Ore Tonnage Distribution					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total***
LG	**1.00**	214,090	385,981	19,832	41,719	37,316	698,938
MG	**4.00**	808,626	484,153	45,161	115,117	85,908	1,538,966
HG	**9.00**	467,268	214,475	10,064	63,510	27,263	782,580
VHG	**15.00**	656,499	144,018	0	47,526	16,030	864,072
							0
							0
Total Tonnage:		2,146,484	1,228,626	75,058	267,872	166,517	3,884,556
Distribution Analysis by Tonnage (left) + Ounces (right) x Existing Met Samples							
Section #5. Prioritization Anaylsis by Tonnage							
		Expected Mine Ore Distribution Percentage by Tonnage					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total***
LG	**1.000**	5.5%	9.9%	0.5%	1.1%	1.0%	18.0%
MG	**4.000**	20.8%	12.5%	1.2%	3.0%	2.2%	39.6%
HG	**9.000**	12.0%	5.5%	0.3%	1.6%	0.7%	20.1%
VHG	**15.000**	16.9%	3.7%	0.0%	1.2%	0.4%	22.2%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tonnage Distribution:		55.3%	31.6%	1.9%	6.9%	4.3%	100.0%

Table 13-22: 2020 WUG Au Geometallurgical Matrix – Gold Balance

OUNCE/METALS BALANCE

Section #4. Prioritization of Ore Types by Bin Average Grade

		Expected Average Grade Distribution *GeoMet Ore classification*					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Wt Avg Grade***
LG	**1.000**	3.11	2.76	3.06	3.11	3.41	2.93
MG	**4.000**	6.20	6.04	5.95	6.16	5.50	6.10
HG	**9.000**	11.83	11.60	9.79	11.40	11.27	11.69
VHG	**15.000**	24.73	21.48	**0.00**	24.10	20.63	24.08
0	**0.000**						0.00
0	**0.000**						0.00
		12.79	7.79	5.70	10.11	7.43	10.65

Section #7. Prioritization Analysis by Total Ounces

		Expected Ounce Distribution & Priority Analysis by Contained Ounces *GeoMet Ore classification*					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total Oz***
LG	**1.000**	1.6%	2.6%	0.1%	0.3%	0.3%	4.9%
MG	**4.000**	12.1%	7.1%	0.6%	1.7%	1.1%	22.7%
HG	**9.000**	13.4%	6.0%	0.2%	1.7%	0.7%	22.1%
VHG	**15.000**	39.2%	7.5%	0.0%	2.8%	0.8%	50.3%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ounce Distribution:		66.3%	23.1%	1.0%	6.5%	3.0%	100.0%

Table 13-23: 2020 WUG Au Geometallurgical Matrix

BALANCE + CURRENT SAMPLING + NEEDED

Section #3. Enter Existing # Samples (Composites) already Tested In-Stage and Copy to Section #9 **BEFORE** Balancing

		Met Sample Mass (or #) Distribution Dynamic Balancing Table (DO ALL BALANCING HERE!)					
		GeoMet Ore classification		*(Pre-filled with Tonnage Balance - overwrite as needed!)*			
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Balance***
LG	**1.000**	**2**	**3**	*0*	*0*	*0*	5
MG	**4.000**	**6**	**4**	*0*	**1**	**1**	12
HG	**9.000**	**4**	**2**	*0*	*0*	*0*	6
VHG	**15.000**	**5**	**1**	*0*	*0*	*0*	6
0	**0.000**	*0*	*0*	*0*	*0*	*0*	0
0	**0.000**	*0*	*0*	*0*	*0*	*0*	0
Actual/Tested Total:		17	10	0	1	1	29
						Suggested Minimum Total:	*31*

Section #6. Prioritization Anaylsis by Existing Sampling (Compare to Sect #5 or Sect #7).

		Met Sample Mass (or #) Percentage					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total***
LG	**1.000**	6.9%	10.3%	0.0%	0.0%	0.0%	17.2%
MG	**4.000**	20.7%	13.8%	0.0%	3.4%	3.4%	41.4%
HG	**9.000**	13.8%	6.9%	0.0%	0.0%	0.0%	20.7%
VHG	**15.000**	17.2%	3.4%	0.0%	0.0%	0.0%	20.7%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sample Distribution:		58.6%	34.5%	0.0%	3.4%	3.4%	100.0%

Section #9. Copy of Existing Sample Balance (from Section #3 **BEFORE** Balancing)

		Prior Stage or Existing Met Samples Tested (STATIC SHEET!)					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total Start***
LG	**1.000**	1	1		1		3
MG	**4.000**	6	3		1		10
HG	**9.000**						0
VHG	**15.000**	1	1				2
0	**0.000**						0
0	**0.000**						0
Prior/Existing Tested Total:		8	5	0	2	0	15

Section #12. Samples/Tests NEEDED - (Difference Between Starting # in Section #9 and Balanced Representivity in Section #3)

		Difference between Prior Stage and Balanced Next Stage Table (GO COLLECT THESE!)					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total Needed***
LG	**1.000**	1	2	0	-1	0	2
MG	**4.000**	0	1	0	0	1	2
HG	**9.000**	4	2	0	0	0	6
VHG	**15.000**	4	0	0	0	0	4
0	**0.000**	0	0	0	0	0	0
0	**0.000**	0	0	0	0	0	0
NEW Samples/Tests Needed		9	5	0	-1	1	14

The results of the 2020 direct leach testwork are shown below in Table 13-24 for the 38 µm grind which provided the highest leach recovery relative to the 53 and 75 µm grind sizes.

Table 13-24: 2020 Composite Gold Recovery Results

Composite ID	Structure	Au	Ag	As	Au Recovery	Au Residue	Ag Recovery
ID		g/t	g/t	g/t	%	g/t	%
WKP-MET-032	EG Vein	6.7	5.8	69	93.2	0.42	85.2
WKP-MET-033	EG Vein	7.6	31	59	92.9	0.48	79.3
WKP-MET-034	EG Vein	3.1	10.2	252	73.8	0.73	59.4
WKP-MET-035	EG Vein	4.1	7.7	245	93.6	0.26	83.4
WKP-MET-036	EG Vein	6.4	31.8	96	92.4	0.46	69.5
WKP-MET-037	EG Vein	5.7	24.3	594	85.6	0.75	59
WKP-MET-038	EG Vein	16.2	25.1	146	95.3	0.69	80.3
WKP-MET-039	EG Vein	16.6	33	287	91.8	1.12	77.7
WKP-MET-040	EG Vein	5.5	12.8	7	98	0.11	82.5
WKP-MET-041	EG Vein	3.3	8.2	272	81	0.66	60.7
WKP-MET-042	FW Vein	5.1	18	752	68.1	1.62	34.7
WKP-MET-043	FW Vein	8.3	14.3	204	91	0.87	71.1
WKP-MET-044	FW Vein	8.3	27.2	1010	66.4	2.79	32
WKP-MET-045	T Stream	1.7	3.5	73	97.1	0.06	88.3
WKP-MET-046	HW Vein	3.4	4.3	370	98.2	0.06	89.4
WKP-MET-047	HW vein	4.5	21.7	1970	51	2.26	39.5

In 2022 the fifth round of testing continued with 16 additional composites from the infill drilling program focusing on the higher grade EG vein structure to improve confidence and meet the requirements of the geometallurgical matrix for a prefeasibility level of study,(Table 13-25, Table 13-26, and Table 13-27). These samples were submitted to AMML in Australia for testing to the Round 4 flowsheet.

Table 13-25: 2022 WUG Au Geometallurgical Matrix – Mass Balance

MASS BALANCE

Grade x Ore Type x Mine Tonnage + Existing Met Sampling Data Entry.

Section #2. Definition Entry of Grade Bins or other (left columns), Ore Types (top row) and In-mine Tonnage (table)

		Expected Mine Ore Tonnage Distribution					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	*EG*	*FW1*	*FW2*	*HW*	*HW2*	*Total*
LG	1.00	214,090	385,981	19,832	41,719	37,316	698,938
MG	4.00	808,626	484,153	45,161	115,117	85,908	1,538,966
HG	9.00	467,268	214,475	10,064	63,510	27,263	782,580
VHG	15.00	656,499	144,018	0	47,526	16,030	864,072
							0
							0
Total Tonnage:		2,146,484	1,228,626	75,058	267,872	166,517	3,884,556

Distribution Analysis by Tonnage (left) + Ounces (right) x Existing Met Samples

Section #5. Prioritization Anaylsis by Tonnage

		Expected Mine Ore Distribution Percentage by Tonnage					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	*EG*	*FW1*	*FW2*	*HW*	*HW2*	*Total*
LG	1.000	5.5%	9.9%	0.5%	1.1%	1.0%	18.0%
MG	4.000	20.8%	12.5%	1.2%	3.0%	2.2%	39.6%
HG	9.000	12.0%	5.5%	0.3%	1.6%	0.7%	20.1%
VHG	15.000	16.9%	3.7%	0.0%	1.2%	0.4%	22.2%
0	0.000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	0.000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tonnage Distribution:		55.3%	31.6%	1.9%	6.9%	4.3%	100.0%

Table 13-26: 2022 WUG Au Geometallurgical Matrix – Gold Balance

OUNCE/METALS BALANCE

Section #4. Prioritization of Ore Types by Bin Average Grade

		Expected Average Grade Distribution					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Wt Avg Grade***
LG	**1.000**	3.11	2.76	3.06	3.11	3.41	2.93
MG	**4.000**	6.20	6.04	5.95	6.16	5.50	6.10
HG	**9.000**	11.83	11.60	9.79	11.40	11.27	11.69
VHG	**15.000**	24.73	21.48	0.00	24.10	20.63	24.08
0	**0.000**						0.00
0	**0.000**						0.00
		12.79	7.79	5.70	10.11	7.43	10.65

Section #7. Prioritization Analysis by Total Ounces

		Expected Ounce Distribution & Priority Analysis by Contained Ounces					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total Oz***
LG	**1.000**	1.6%	2.6%	0.1%	0.3%	0.3%	4.9%
MG	**4.000**	12.1%	7.1%	0.6%	1.7%	1.1%	22.7%
HG	**9.000**	13.4%	6.0%	0.2%	1.7%	0.7%	22.1%
VHG	**15.000**	39.2%	7.5%	0.0%	2.8%	0.8%	50.3%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ounce Distribution:		66.3%	23.1%	1.0%	6.5%	3.0%	100.0%

Table 13-27: 2022 WUG Au Geometallurgical Matrix

BALANCE + CURRENT SAMPLING + NEEDED							
Section #3. Enter Existing # Samples (Composites) already Tested In-Stage and Copy to Section #9 **BEFORE** Balancing							
		Met Sample Mass (or #) Distribution Dynamic Balancing Table (DO ALL BALANCING HERE!)					
		GeoMet Ore classification		*(Pre-filled with Tonnage Balance - overwrite as needed!)*			
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Balance***
LG	**1.000**	**2**	**3**	*0*	*0*	*0*	5
MG	**4.000**	**6**	**4**	*0*	**1**	**1**	12
HG	**9.000**	**4**	**2**	*0*	*0*	*0*	6
VHG	**15.000**	**5**	**1**	*0*	*0*	*0*	6
0	**0.000**	*0*	*0*	*0*	*0*	*0*	0
0	**0.000**	*0*	*0*	*0*	*0*	*0*	0
Actual/Tested Total:		17	10	0	1	1	29
					Suggested Minimum Total:		*31*
Section #6. Prioritization Anaylsis by Existing Sampling (Compare to Sect #5 or Sect #7).							
		Met Sample Mass (or #) Percentage					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total***
LG	**1.000**	6.9%	10.3%	0.0%	0.0%	0.0%	17.2%
MG	**4.000**	20.7%	13.8%	0.0%	3.4%	3.4%	41.4%
HG	**9.000**	13.8%	6.9%	0.0%	0.0%	0.0%	20.7%
VHG	**15.000**	17.2%	3.4%	0.0%	0.0%	0.0%	20.7%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sample Distribution:		58.6%	34.5%	0.0%	3.4%	3.4%	100.0%
Section #9. Copy of Existing Sample Balance (from Section #3 **BEFORE** Balancing)							
		Prior Stage or Existing Met Samples Tested (STATIC SHEET!)					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total Start***
LG	**1.000**	1	3		1		5
MG	**4.000**	7	5		2		14
HG	**9.000**	4					4
VHG	**15.000**	5	3		1		9
0	**0.000**						0
0	**0.000**						0
Prior/Existing Tested Total:		17	11	0	4	0	32
Section #12. Samples/Tests NEEDED - (Difference Between Starting # in Section #9 and Balanced Representivity in Section #3)							
		Difference between Prior Stage and Balanced Next Stage Table (GO COLLECT THESE!)					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***EG***	***FW1***	***FW2***	***HW***	***HW2***	***Total Needed***
LG	**1.000**	1	0	0	-1	0	0
MG	**4.000**	-1	-1	0	-1	1	-2
HG	**9.000**	0	2	0	0	0	2
VHG	**15.000**	0	-2	0	-1	0	-3
0	**0.000**	0	0	0	0	0	0
0	**0.000**	0	0	0	0	0	0
NEW Samples/Tests Needed		0	-1	0	-3	1	-3

The results of the 2022 direct leach testwork is shown below in Table 13-28 for the 38 µm grind which provided the highest leach recovery relative to the 53 and 75 µm grind sizes.

Table 13-28: 2022 Composite Gold Recovery Results

Composite ID	Structure	Au	Ag	As	Au Recovery	Au Residue	Ag Recovery
ID		g/t	g/t	g/t	%	g/t	%
WKP-MET-048	FW Vein	2.4	9.8	280	83.1	0.49	47.6
WKP-MET-049	FW Vein	1.2	6.2	857	43.3	0.73	41.1
WKP-MET-050	HW Vein	15.9	42.2	118	93.2	1.01	53.3
WKP-MET-051	HW Vein	3.9	7.5	116	93.6	0.29	62
WKP-MET-052	EG Vein	9.6	15.8	241	93	0.6	67.2
WKP-MET-053	EG Vein	29	49.7	70	92.2	1.91	53.9
WKP-MET-054	EG Vein	2.3	13	279	76.9	0.72	41.1
WKP-MET-055	EG Vein	18.9	29.9	165	95.5	0.52	73.6
WKP-MET-056	EG Vein	6.5	11.8	303	90.8	0.36	58.3
WKP-MET-057	EG Vein	22.5	91.9	38	98.5	0.73	40.5
WKP-MET-058	FW Vein	34.4	73.2	442	95.5	2.39	57
WKP-MET-059	FW Vein	23.9	44.6	156	94.6	1.06	56.9
WKP-MET-060	EG Vein	11.7	14.7	170	97.4	0.66	73.3
WKP-MET-061	EG Vein	9.9	18.6	61	92	0.35	56.4
WKP-MET-062	FW Vein	4.6	5.7	347	90.4	0.48	61.2
WKP-MET-063	FW Vein	6.3	21.7	402	78.1	1.4	60.2

Generally good recoveries were recorded for the EG Vein samples however in the footwall and hanging wall veins lower recoveries were encountered, particularly with lower gold head grades and elevated arsenic head grades. This has been observed in both Correnso and MUG test programs and milling practice with gold present in arsenopyrite being much finer than in other forms. In the 2020 program a whole of ore leach was conducted at 10 µm to check the effect of potential finer grinding of the sulphides but generally lead to recovery improvements of less than 2 % and would not pay for the power required.

A recovery modelling process based on the 31 composites related to the three main vein structures showed a significant correlation in gold recovery and residue to both gold and arsenic grades.

The geological block model in 2022 was updated with an independent arsenic model allowing such a regression model for recovery to be used to forecast recovery in the mine planning phase. The distribution of arsenic grades across the structures was reviewed and an updated geometallurgical matrix prepared that focused on grade bins of arsenic (<150 ppm, 150-300 ppm, 300-500 ppm and >500 ppm) and against the gold grade bins (1-4 g/t, 4-9g /t, 9-15 g/t and >15 g/t). The mass balance portion of the matrix is shown below in Table 13-29 showing 59 % of the tonnage is below 300 ppm arsenic and 84 % below 500 ppm.

Table 13-29: 2022 WUG As Geometallurgical Matrix – Mass Balance

MASS BALANCE							
Grade x Ore Type x Mine Tonnage + Existing Met Sampling Data Entry.							
Section #2. Definition Entry of Grade Bins or other (left columns), Ore Types (top row) and In-mine Tonnage (table)							
		Expected Mine Ore Tonnage Distribution					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***As <150***	***As 150-300***	***As 300-500***	***As > 500***		***Total***
LG	**1.00**	66,670	146,523	258,309	236,251		707,753
MG	**4.00**	284,314	616,799	455,596	351,863		1,708,572
HG	**9.00**	314,768	330,634	159,999	35,994		841,395
VHG	**15.00**	289,071	288,583	116,954	4,451		699,059
							0
							0
Total Tonnage:		954,823	1,382,539	990,858	628,559	0	3,956,779
							4,048,332
							-91,553
Distribution Analysis by Tonnage (left) + Ounces (right) x Existing Met Samples							
Section #5. Prioritization Anaylsis by Tonnage							
		Expected Mine Ore Distribution Percentage by Tonnage					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***As <150***	***As 150-300***	***As 300-500***	***As > 500***	***0***	***Total***
LG	**1.000**	1.7%	3.7%	6.5%	6.0%	0.0%	17.9%
MG	**4.000**	7.2%	15.6%	11.5%	8.9%	0.0%	43.2%
HG	**9.000**	8.0%	8.4%	4.0%	0.9%	0.0%	21.3%
VHG	**15.000**	7.3%	7.3%	3.0%	0.1%	0.0%	17.7%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tonnage Distribution:		24.1%	34.9%	25.0%	15.9%	0.0%	100.0%

The gold balance portion of the matrix is shown below in Table 13-30 and the gold distribution is more skewed to the lower arsenic domains with 70 % of gold below 300 ppm arsenic and 92 % below 500 ppm. Arsenic grades above 300 ppm As and below 9 g/t Au are expected to show recoveries below 88 % and represent 16.5 % of the metal.

Table 13-30: 2022 WUG As Geometallurgical Matrix – Gold Balance

OUNCE/METALS BALANCE							
Section #4. Prioritization of Ore Types by Bin Average Grade							
		Expected Average Grade Distribution					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***As <150***	***As 150-300***	***As 300-500***	***As > 500***	***0***	***Wt Avg Grade***
LG	**1.000**	3.37	3.30	3.30	3.32		3.31
MG	**4.000**	6.25	6.17	6.06	5.71		6.06
HG	**9.000**	11.91	11.63	10.99	10.61		11.57
VHG	**15.000**	22.16	23.29	26.55	24.95		23.38
0	**0.000**						0.00
0	**0.000**						0.00
		12.73	10.74	8.55	5.23	0.00	9.80
Section #7. Prioritization Analysis by Total Ounces							
		Expected Ounce Distribution & Priority Analysis by Contained Ounces					
		GeoMet Ore classification					
Ore Class	*>g/t Au*	***As <150***	***As 150-300***	***As 300-500***	***As > 500***	***0***	***Total Oz***
LG	**1.000**	0.6%	1.2%	2.2%	2.0%	0.0%	6.1%
MG	**4.000**	4.6%	9.8%	7.1%	5.2%	0.0%	26.7%
HG	**9.000**	9.7%	9.9%	4.5%	1.0%	0.0%	25.1%
VHG	**15.000**	16.5%	17.3%	8.0%	0.3%	0.0%	42.1%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0	**0.000**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ounce Distribution:		31.4%	38.3%	21.9%	8.5%	0.0%	100.0%

An additional 6 composites were identified to increase the sample count in the 4-9 g/t gold grade and 150-500 ppm arsenic grade bins. These samples were submitted to AMML in Australia for testing to the previous laboratory flowsheet. Results for these 6 composites are presented below in Table 13-31.

Table 13-31: 2022 Composite Results (Geomet Domain 4-9 g/t Au and 150-500 ppm As)

Composite ID	Structure	Au	Ag	As	Au Recovery	Au Residue	Ag Recovery
ID		g/t	g/t	g/t	%	g/t	%
WKP-MET-064	HW Vein	8.5	15.4	242	92.5	0.57	67.7
WKP-MET-065	HW Vein	5.3	7.6	344	93.7	0.34	77
WKP-MET-066	FW Vein	12.7	36	168	93.5	0.83	55.1
WKP-MET-067	FW Vein	9.5	12.4	293	91.6	0.88	56.6
WKP-MET-068	EG Vein	8.8	20.1	681	78.9	1.74	44.3
WKP-MET-069	EG Vein	4.7	9	350	81.5	0.79	53.4

A cross-section of all geometallurgical samples is illustrated in Figure 13-4. This indicates good sample coverage in the south-west of the orebody where the bulk of the ore tonnes are located and where there is an abundance of drill core. Additional geometallurgical samples from the north-east of the orebody will be collected for testwork as drilling in the north-east of the orebody progresses.

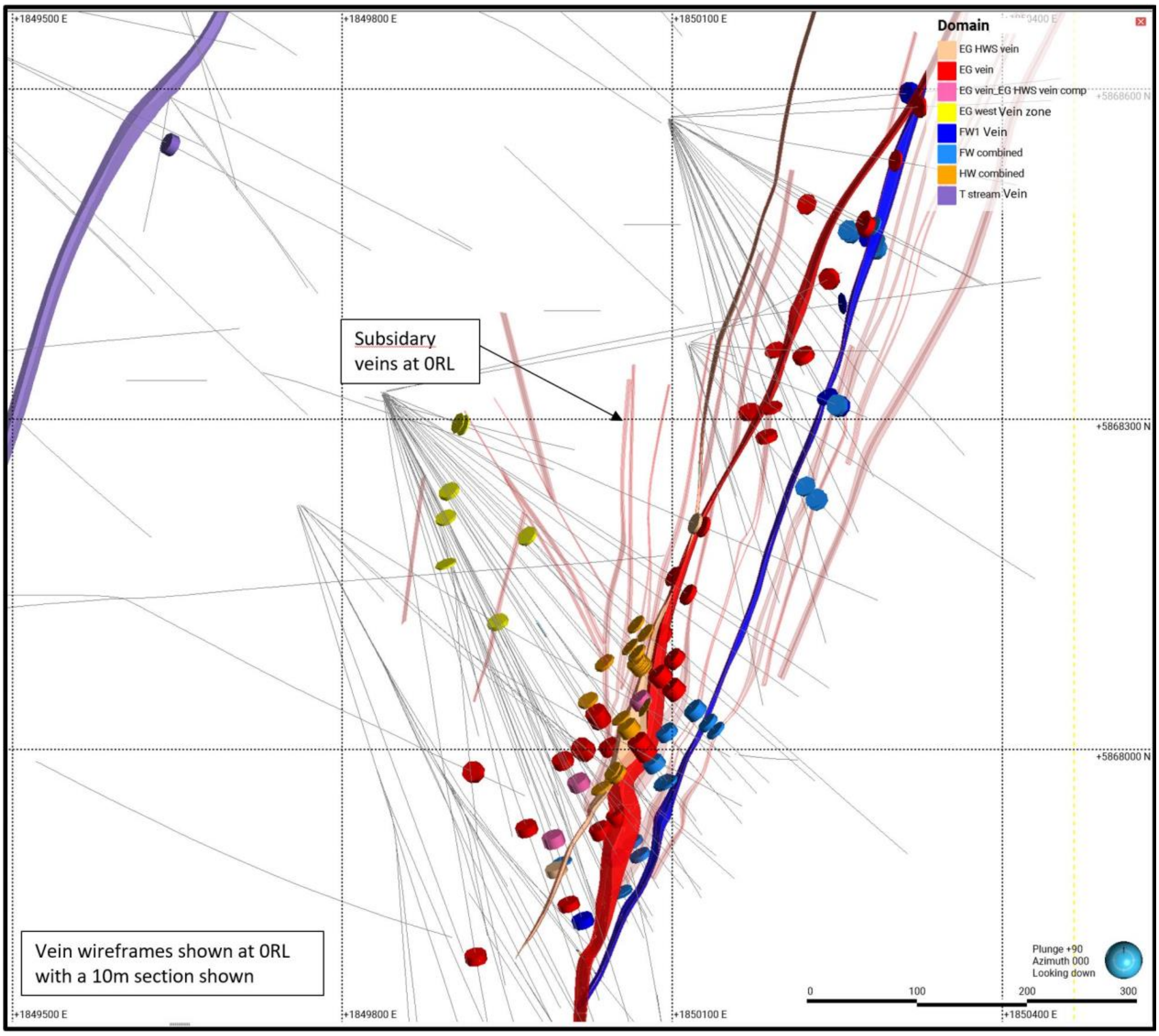


Figure 13-4: Cross-Section of WUG Geometallurgical Samples

13.4.2 Comminution Testwork

Due to the quartz vein nature of the gold host rock, it generally is regarded as competent and hard from a milling perspective. Ore hardness characterisation has been undertaken on composites by JKTech with SMC and Bond hardness tests to allow for prediction of anticipated milling rates. In 2019 a total of 6 composites were submitted for comminution characterisation and results are summarized in Table 13-32.

Table 13-32: 2019 WUG Comminution Testwork

Composite ID	Structure	Axb	SG t/m^3	DWI	BRWI kwh/t	BBWI kwh/t	BAi
WKP-MET-017	EG	38.8	2.49	6.43	16.1	18.7	0.7016
WKP-MET-018	EG	34	2.53	7.51		22.1	
WKP-MET-019	EG	39.2	2.53	6.45		19.1	
WKP-MET-020	FW	39.4	2.59	6.55	16	19.3	0.7053
WKP-MET-021	FW	36.8	2.62	7.07		20	
WKP-MET-022	FW	34.7	2.59	7.38		20.3	

In 2020 a follow-up program tested a further 9 composites across the deposit. The Axb values obtained in both programs were consistent and in line with that observed with other Waihi deposits. The Bond ball mill work index measured in the 2020 program was about 10 % higher than the 2019 program. A summary of the results from the 2020 program is shown in Table 13-33.

Table 13-33: 2020 WUG Comminution Testwork

Composite ID	Structure	Axb	SG t/m^3	DWI	BRWI kwh/t	BBWI kwh/t	BAi
WKP-MET-023	EG	35.8	2.54	7.19	16.5	24.8	0.7682
WKP-MET-024	EG	37.5	2.53	6.75	15.9	23.5	0.8225
WKP-MET-025	EG	39.6	2.56	6.52	17.4	24.1	0.9219
WKP-MET-026	EG	37	2.58	6.94	16.6	20.6	0.8873
WKP-MET-027	EG	39.6	2.57	6.54	16.4	21.7	0.7608
WKP-MET-028	EG	37	2.5	6.76	17.5	21.1	1.0086
WKP-MET-029	HW Vein	38.4	2.54	6.68	15.6	21.6	0.7657
WKP-MET-030	FW Vein	33	2.53	7.7	17.6	23.1	0.8634
WKP-MET-031	FW Vein	33	2.57	7.72	18.9	26.1	0.7827

Given the consistent results between the programs over the 15 composites the values were used in establishing specific energy requirements and milling rate predictions. A primary grind size of 80 % passing 53 µm was utilized for the primary grind design for the WUG feed.

13.4.3 Recovery Estimates and Assumptions

With the completion of the 2023 samples the recovery analysis was updated and considered the individual structures and all samples for the combined structures. For the Wharekirauponga deposit for the prefeasibility study based on the sample ground to 38 µm in the lab the following regressions are provided:

- Gold Recovery (%) = 93.835 + (0.2312 * Au ppm) – (0.02313 * As ppm), $r^2 = 0.85$
- Gold residue grade (g/t) = -0.06849 + (0.049631 * Au ppm) + 0.001356 * As ppm), $r^2 = 0.69$
- Silver Recovery (%) = 79.283 – (0.27413 * Ag ppm) – (0.03932 * As ppm), $r^2 = 0.48$

These models should be suitable for use over the gold grade range over 2.8 g/t Au and for a plant flowsheet targeting a 53 µm cyclone overflow grind size target.

13.5 Comments on Adequacy (Processing and Metallurgy)

In the opinion of the QP, the following conclusions are appropriate:

- Metallurgical test work and associated analytical procedures were performed by recognized testing facilities, and inhouse facilities and the tests performed were appropriate to the Mineralization type
- Samples selected for testing were representative of the various types and styles of Mineralization within the Waihi and Wharekirauponga areas. Samples were selected from a range of depths within the deposit. Sufficient samples were taken so that tests were performed on adequate sample mass
- Average weighted recoveries have been assumed based on test work completed and source proportion in the inventory. These recoveries are appropriate to be used in support of Mineral Resource and Mineral Reserve estimation, based on the drill hole spacing and sample selection
- Metallurgical testwork conducted on the composites from the MUG deposit supports an expected gold recovery assumption of 95 % for treatment through the existing process plant flowsheet based on targeting a primary grind size of 53 µm used in the mine optimization
- Historical metallurgical results on the MOP deposit supports an expected gold recovery assumption of 90 % for treatment through the existing process plant flowsheet based on a 90 µm grind size
- Metallurgical testwork on the GOP deposit supports an expected gold recovery assumption of 71 % for treatment through the existing process plant flowsheet based on a 75 µm grind size
- Metallurgical testwork on the WUG deposit supports an expected gold recovery assumption of 90 % for treatment through the existing process plant flowsheet based on a 53 µm grind size.

13.6 Future Work Program

Infill drilling presents the opportunity to continue test work on available core samples to confirm metallurgical estimates for any new Reserves that are defined. This should occur as material becomes available to de-risk the use of existing forecasting inputs.

As the Resource size grows, the geometallurgical matrix should be updated with the increased inventory and parameters. This will support the feasibility study and ensure coverage of the extended Resource area and range of grades expected. Increased sample count should provide improved confidence in the recovery relationship as a function of gold and arsenic head grades, and test if a global recovery for all the deposit continues to be valid or if separate models for the hanging wall and footwall structures is warranted.

14 MINERAL RESOURCE ESTIMATES

Mineral Resource Estimates for four areas have been prepared with close out dates for the databases used in estimation as shown in Table 14-1. Data used to support the estimates include surface and underground diamond drill core, RC chips and underground grade control channel sample chips.

Table 14-1: Model Closeout Dates

Project	Closeout Date
MUG	11 June 2024
MOP	01 February 2024
WUG	24 April 2024
GOP	01 September 2022

All geological models and geological concepts have been routinely reviewed by internal and external reviewers. Open pit and underground mining since 1988 have provided a large database of mapping and grade control sampling, which has confirmed the geological interpretations to date.

The modelling process employed in the grade estimation for all the Waihi projects is performed using numerous Vulcan® and Leapfrog® processes and summarized in the steps outlined below:

- Validation of input data
- Update geologic models including lithological, mineralized, structural, and oxide domains
- Data selection – drill hole data selection from the site AcQuire database, RC, and channel data from the AcQuire production databases
- Exclusion of unwanted drill holes by data type
- Flag data files by domains
- Composite drill holes using length weighting
- Exploratory data analysis by domain and data type
- Assign top cuts by domain to input data files
- Review of variography and variogram modelling
- Block Model construction based upon modelled domains and surfaces
- Run estimation for all domains for gold, silver, and arsenic
- Run estimation for confidence classification and apply ringfencing
- Assign density, mining depletions, back fill grade, stripping of negative values from non-estimated blocks, assignment of grade to dilution domains, and assignment of recovery to all domains
- Resource classification.

Estimations were performed in individual geological domains using length weighted downhole composites. Estimation is undertaken via Ordinary Kriging for Au and Ag, and inverse distance squared for other elements.

Models are rotated in bearing to align with the dominant strike of the veins. Sub-blocking is used to define narrow veins and to maintain volume integrity with the geology solids. The grade estimation for all models is controlled by hard domain boundaries, with both sample selection and estimation of blocks limited to domains defined by the interpretation solids. Multi-pass estimation is used to control sample selection criteria at a local and long-range scales.

14.1 MUG

14.1.1 Geological Model

The comprehensive MUG dataset includes diamond drilling, modern face sampling and backs mapping, in-pit mapping, grade control channel and RC data, historic crosscuts, historic mapping, digitized historic mining wireframes. Wireframe inputs to contributing models include:

- 125 Vein domains
- 10 Dilution domains
- 17 Lithology units
- 5 Oxide surfaces.

MUG models are built with underground mining economics in mind, and delineation of consistently narrow or low-grade structures not deemed necessary for estimation. 58 veins feature in production planning.

Wireframes were created using Leapfrog Geo® software. Geological logging fields of drilling data such vein textures, vein mineralogy, vein percentage, breccia type and historical voids were initially used to create representative wireframes of vein structures. These initial wireframes were then modified on a vein-by-vein basis and compared to gold and silver grade, core photography and structural measurements to establish geological consistency between veins. Veins defined by pit grade control data but without supporting drilling information to substantiate vein extrapolation beyond the pit boundary were not included in the wireframes.

Individual veins were validated at various stages throughout the modelling process. Upon completion of the modelling process, additional validation includes:

- A visual review in three axis sliced planes viewing gold grade, historical voids, and logged geology
- Drill hole review following domain flagging and filtering for gold immediately outside of vein boundaries
- Peer review within the Waihi geology team
- Review against historic mining. Note that in instances where mined voids had no drill data, relative position of stoping panels was determined using vein wireframes. This ensures a conservative approach was taken to depletion.

The accurate treatment of historic mine workings is recognized as being of high importance to both the MUG and MOP mines.

A 3D model of historic workings is maintained for Resource depletion, mine engineering and geotechnical and safety consideration. This 3D model was initially digitized from linen plans and captures the extent of known stopes, drives, passes, and shafts within historic mine. It is considered largely complete and is updated and manipulated to adhere to modern points of observation including diamond drilling, probes, void scans, and mining breakthroughs.

All the workings are separated into individual wireframes and regularly assessed for position, orientation, and width against all available data.

Stope shapes and levels are validated for closure, consistency and crossing triangles to ensure they could be evaluated for volume, then re-merged into a complete set of development levels, filled stopes and open stopes. All remodelled historical workings are peer reviewed and validated against previous models. All updates are recorded in a 'stope adjustment register'. The updated model contains wireframes for development levels, open stopes, filled stopes, shafts, passes and the Milking Cow caved zone.

14.1.2 Exploratory Data Analysis

Exploratory data analysis (EDA) was completed on gold grades by logged drillhole features to identify mineralization controls. EDA was performed using Isatis Neo and Vulcan data analysis tools. Weighted statistics of raw and composited Au values were reviewed using Isatis Neo. Tabulated in Table 14-2 is the statistics for major domains comprising >70 % of MUG metal content.

Table 14-2: Summary Statistics of Composite Au Values for MUG

	Count	Mean	Variance	Std Dev	CV	Minimum	Maximum
1100	43154	4.19	57.18	7.56	1.804	0.01	507
1220	7370	3.85	58.99	7.68	1.997	0	190.68
1304	1877	2.57	29.26	5.41	2.104	0.01	114.06
1400	4792	4.05	73.02	8.55	2.111	0	209.48
1500	2208	4.16	42.91	6.55	1.576	0	108.81

14.1.3 Compositing, Grade Capping and Outlier Restrictions

Statistical assessment of the input data is undertaken by domain. Typical top-cut selection is based on the assessment of the population distribution characteristics.

Domain specific assessment of Au capping strategy was conducted from spatial review of data, its distribution on raw histograms, lognormal probability plots, review of uncut vs cut percentiles, coefficient of variance, and metal loss. Top-cut assessment for Au for each domain is undertaken independently for exploration drill holes and grade control channels. A global top-cut values were assigned to Silver and Arsenic. Values of 400 ppm for Silver and 1300 ppm for Arsenic were assigned to each element. Table 14-3 below shows is the top-cut statistics for the major domains.

Table 14-3: Summary Statistics of Cut Au Values for MUG

	Count	Mean	Variance	Std Dev	CV	Minimum	Maximum
1100	43154	4.11	38.46	6.2	1.507	0.01	66
1220	7370	3.68	37.88	6.15	1.673	0	50
1304	1877	2.45	18	4.24	1.729	0.01	40
1400	4792	3.87	42.66	6.53	1.689	0	50
1500	2208	4.07	33.02	5.75	1.411	0	48

Reconciliation history for the Waihi Project has demonstrated that some level of high-grade restriction is necessary to limit the influence of outliers on grade estimates for the epithermal veins that have been mined during the operations history. This was applied on a by-domain basis following the spatial assessment high-grade sample distribution and observation of local short-range variance.

14.1.4 Variography

Variograms were modelled using Vulcan and Leapfrog EDGE's® data analysis tools. In domains where there are significant number of grade control (GC) channel samples, variograms analysed by mine production using Leapfrog EDGE® are used. Variograms for the rest of the domains were analysed using Vulcan and Isatis. For domains that do not have sufficient data to produce reasonable variograms, a general variogram is applied. Orientations of the omni direction variogram are defined by the orientation of each vein.

Spherical variogram models were fit for most of the domains with few domains where exponential models were used. The variograms are characterized by moderate to high nuggets (25-60 % of the sill), with ranges of 15 – 120 m in the primary direction.

14.1.5 Block Modelling and Validation

The MUG block model dimensions, origin and cell size are provided in Table 14-4. Gold (Au) grade was estimated in Vulcan using Ordinary Kriging (OK) and Nearest Neighbour (NN) with Mineral Resources reported from OK. Silver (Ag) grade was also estimated using OK and because correlation between Au and Ag was evident, the Au variograms were applied to the Ag estimate. Arsenic was estimated using Inverse Distance squared (ID2) with orientations being informed by a local varying anisotropy (LVA).

Estimations were performed in individual mineralized domains using length weighted down hole composites; 1 m in narrow (<10 m width) veins, 2 m composites in the broader veins. Gold grade is estimated into parent cells of 10 m x 10 m x 10 m, with minimum sub-block dimensions of 1 m in each direction. All estimates utilized LVA to address complex local geometries and appropriate sample selection strategies.

Generally, Au grade was estimated using a 2-pass grade estimation scheme. First pass will include all input data with higher number of sample requirement and shorter search distance. Un-estimated blocks are then reprocessed with diamond drillholes only in the input data set. A 3-pass estimation scheme was used where there is sufficient GC UG channel data. A factor of 93 % was applied to cut Au values of all GC UG channel samples to address potential bias in channel sampling. Table 14-4 shows the search neighbourhood parameters.

Table 14-4: MUG Block Model Dimensions

Variable	X	Y	Z
Origin	395200	642200	450
Extents (m)	1600	1200	700
Block Size (Parent)	10	10	10
No. of Blocks (Parent)	340	190	140
Sub-Block Size	1.0	1.0	1.0
Orientation	+65 degrees	X-axis around Z	

For this model, the vein domains were estimated using OK, and variable search orientation was employed for all domains to improve estimation locally in areas with complex vein geometries and to aid in the resolution of the sample selection for the estimation.

Models are created using a standard block variable schema to enable the capture of all relevant grade fields, Resource Classification evaluation data and geologic information. Parent block model variables captured are presented in Table 14-5. Mining evaluations are performed on a stripped-down version of the parent model, with all non-essential variables removed from the engineering model edition to assist in processing requirements.

Dilution domains were created based on a 7.5 m halo around the veins and grade locally estimated using short ranges. An octant search was applied to all domains. Example estimation parameters used for the major domains are presented Table 14-6.

Table 14-5: Fields in the MUG Model

Model Field	Type	Default Value	Description
ag	float	-99	Ag estimate
as	float	-99	As estimate
au_lva	float	-99	Au estimate; Kriged LVA
au_nn_c1	float	-99	Au nearest neighbour estimate cut
au_ok_ke	float	-99	kriging efficiency
au_ok_kvar	float	-99	kriging variance
au_ok_nholes	float	-99	Au OK no of holes
au_ok_nsamples	float	-99	Au OK no of samples
au_ok_sor	float	-99	kriging slope of regression
au_pref	float	-99	preferred Au
bearing	float	-99	bearing LVA
code	short	-99	vein code
dip	float	-99	dip LVA
est_id_lva	float	-99	estimation ID LVA kriged
geol	name	none	lithology
met_rec	float	-99	estimated recovery
mined	byte	0	0= Insitu,1=STF, 2 =STC and MC, 5=STO, 6=Lvls and Passes, 7=STR
oxide	byte	2	1=totally ox; 2=>50 % ox; 3=<50 % ox; 4=along fractures; 5=fresh
pit	byte	-99	1=air, 2=MOP Ph4, 3=MOP Ph5, 4=below MOP Ph5
plunge	float	-99	plunge LVA

Model Field	Type	Default Value	Description
rescat	byte	6	6=unestimated unclassified; 4=estimated unclassified and dilution; 3=inferred; 2=indicated; 1=measured
rescat_avedist	float	-99	resource classification average distance
rescat_avedist_drl	float	-99	average distance from OK
rescat_id	float	4	rescat pass
rescat_nholes	short	-99	resource classification no of holes
rescat_nsamps	short	0	resource classification no of samples
risk	float	-99	risk rating final
risk_dq	float	-99	data quality risk
risk_ecn	float	-99	economic risk: 1=STC_MC 3 m buffer
risk_est	float	-99	1 = veins in LOMP
risk_geo	float	-99	1= GC dvt, 2=GC IND, 3=RES IND, 4=RES 16 m, 6=AQF, 7=LOMP vns, 9=INF vns
sg	float	2.5	density
sg_pre	float	-99	density pre-mine

Table 14-6: MUG Summary of Search Neighbourhood Parameters for Au Estimate

Pass Number	Orientation (VULCAN)	Search Directions	Maximum Samples per Drillhole	Minimum Samples per Estimate	Maximum Samples per Estimate
1 (with GC UG channel)	LVA	60/40/15	4	5	18
2	LVA	120/100/40	4	5	18
3	LVA	120/100/40	4	1	18

14.1.6 Reconciliation

Table 14-7 summarises the annual reconciliation for the MUG Resource estimate vs mill reconciled stope and development. 2024 year-to-date includes mining up to and including October 2024. Since 2021 MUG has been the predominant ore source, replacing the Correnso vein. Mining during 2022 and 2023 has resulted in significantly more contained gold than estimated, albeit at lower grade. Whilst the MUG Resource estimates have over-stated grade by approximately 10 %, mining dilution has been the major cause of poor grade reconciliation. More recently, in areas of remnant mining, where higher grades commonly occur along the margins of stopes, under-break has also contributed to lower than expected grades.

Table 14-7. MUG Resource Estimate vs Mill-Reconciled Stope and Development

	Resource Model			Mine (Mill-Reconciled)			Mine / Model Factor (%)		
	Mt	Au g/t	Moz	Mt	Au g/t	Moz	Mt	Au g/t	Moz
2024 YTD*	0.23	4.23	0.03	0.45	3.01	0.04	199%	71%	141%
2023	0.26	4.55	0.04	0.47	3.49	0.05	184%	77%	141%
2022	0.30	4.88	0.05	0.36	3.67	0.04	121%	75%	91%
2021	0.22	4.19	0.03	0.29	3.24	0.03	132%	77%	100%
2020	0.13	5.80	0.02	0.13	5.30	0.02	100%	91%	92%
2019	0.43	5.52	0.08	0.43	5.60	0.08	100%	101%	101%
2018	0.40	6.20	0.08	0.43	6.80	0.09	108%	110%	119%
TOTAL	1.96	5.15	0.33	2.56	4.40	0.36	131%	85%	112%

*YTD Oct (Planning model within GC Design)

14.2 MOP

14.2.1 Geological Model

The MOP model shares a common architecture and inputs with the MUG model. Open pit mining selectivity and cut-off grade is considered in estimation domaining, with smaller veins grouped into "bulk domains" of common characteristic and orientation, intersected by major vein domains. A 0.1 g/t grade shell is applied to constrain the grades within these bulk domains. The 0.1 g/t grade shell was constructed using an indicator interpolant in Leapfrog Geo® with structural trend following the major vein trends.

Lithological and oxide modelling is common to both the MOP and MUG mines.

- 20 veins
- 7 bulk domains.

14.2.2 Exploratory data Analysis

Summary statistics for the major MOP5 domains and the bulk domains are presented in Table 14-8. The open pit channel and RC data has been utilized in the construction of the Martha model, these datasets are spatially distinct from each other and cover those portions of the deposit that have already been mined or are immediately adjacent to the mined portion of the deposit whereas the exploration drilling data covers the full extent of the area being modelled. Data analysis is completed for each domain and each data type as a routine process in the construction of the Martha grade estimates. Differing composite lengths are utilized for differing styles of Mineralization within the Martha deposit. To this end data analysis is also conducted on 2 m for veins and 3 m composites for bulk domains.

Table 14-8: Summary Statistics of Composite Au Values for MOP

Comp Length	Domain	Count	Length	Mean	Std Dev	CV	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
2m	1100	7985	15,534.54	3.61	6.76	1.88	45.71	0.00	0.47	1.40	3.88	186.55
2m	1110	113	202.85	2.59	6.37	2.46	40.54	0.00	0.09	0.52	2.69	48.70
2m	1120	141	269.50	1.92	3.53	1.84	12.46	0.01	0.04	0.63	2.10	30.80
2m	1131	424	751.40	3.21	4.56	1.42	20.8	0.01	0.42	1.62	4.15	44.00
2m	1140	69	116.40	1.77	2.97	1.68	8.82	0.00	0.15	0.49	2.31	14.82
2m	1141	74	103.35	1.85	3.28	1.77	10.75	0.02	0.18	0.51	1.98	13.56
2m	1201	634	1,202.70	3.04	5.57	1.83	31.03	0.00	0.17	0.91	3.32	48.96
2m	1220	2210	4,286.48	5.02	9.95	1.98	99.07	0.00	0.5	2.04	5.69	243.20
2m	1221	89	152.20	5.24	5.42	1.03	29.37	0.01	1.11	3.91	7.71	21.96
2m	1302	940	1,754.58	3.19	4.82	1.51	23.2	0.00	0.63	1.60	4.10	80.01
2m	1304	769	1,500.90	2.74	6.53	2.38	42.59	0.01	0.32	1.03	3.09	139.73
2m	1305	3375	6,484.89	4.14	5.79	1.4	33.47	0.00	0.73	2.08	5.13	88.66
2m	1306	133	205.75	3.46	4.21	1.22	17.71	0.00	0.26	2.03	4.94	22.00
2m	1307	104	155.20	1.73	2.71	1.56	7.35	0.00	0.17	0.65	2.25	13.97
2m	1308	811	1,521.00	4.48	7.54	1.68	56.82	0.00	0.52	1.91	5.34	98.80
2m	1309	145	272.23	4.18	9.34	2.23	87.15	0.01	0.26	1.07	3.35	82.10
2m	1400	2160	4,227.91	5.23	10.83	2.07	117.39	0.00	0.60	2.00	5.81	209.50
2m	1500	935	1,811.67	4.16	6.78	1.63	46	0.01	0.55	2.01	5.11	101.58
2m	1510	83	166.51	8.95	12.17	1.36	148.05	0.02	0.55	2.85	12.82	49.80
2m	1511	30	58.50	1.51	2.41	1.6	5.83	0.01	0.07	0.61	1.98	9.03
3m	1900	163	485.79	4.58	10.62	2.32	112.87	0.01	0.23	0.80	4.15	70.81
3m	1901	3859	11,396.14	1.36	3.33	2.44	11.06	0.00	0.15	0.38	1.21	87.13
3m	1902	5550	16,197.67	1.29	2.8	2.18	7.84	0.00	0.15	0.40	1.24	60.50
3m	1903	10400	30,230.31	1.66	4.42	2.66	19.5	0.00	0.17	0.47	1.48	173.84
3m	1904	6752	19,997.63	1.28	3.06	2.4	9.36	0.00	0.20	0.47	1.27	106.42
3m	1905	13230	39,622.25	1.44	2.78	1.93	7.75	0.00	0.26	0.63	1.58	123.08
3m	1906	465	1,371.06	1.72	4.23	2.47	17.9	0.01	0.14	0.35	1.14	49.52

14.2.3 Compositing, Grade Capping and Outlier Restrictions

Domain specific assessment of Au capping strategy was conducted from spatial review of data, its distribution on raw histograms, lognormal probability plots, review of uncut vs cut percentiles, coefficient of variance, and metal loss. Top-cut assessment for Au for each domain is undertaken independently for exploration drill holes and grade control channels. A global top-cut values were assigned to silver and arsenic. Values of 400 ppm for silver and 1300 ppm for arsenic were assigned to each element. Table 14-9 shows the top cut statistics for Au for all domains.

Table 14-9: Summary Statistics of Cut Au for MOP

Domain	Count	Length	Mean	Std Dev	CV	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
1100	7985	15534.54	3.54	5.92	1.67	35.04	0.00	0.47	1.40	3.88	56
1110	113	202.85	1.93	2.72	1.41	7.39	0.00	0.09	0.52	2.69	10
1120	141	269.50	1.69	2.46	1.45	6.05	0.01	0.04	0.63	2.00	11
1131	424	751.40	3.04	3.72	1.22	13.85	0.01	0.42	1.62	4.15	20
1140	69	116.40	1.77	2.97	1.68	8.82	0.00	0.15	0.49	2.31	14.82
1141	74	103.35	1.27	1.59	1.25	2.52	0.02	0.18	0.51	1.98	5
1201	634	1202.70	2.82	4.70	1.67	22.06	0.00	0.17	0.91	3.32	32.5
1220	2210	4286.48	4.76	7.36	1.55	54.11	0.00	0.5	2.04	5.69	50
1221	89	152.20	4.97	5.10	1.03	26.03	0.01	1.11	3.91	7.71	21.96
1302	940	1754.58	3.10	3.91	1.26	15.28	0.00	0.63	1.60	4.10	26
1304	769	1500.90	2.49	3.73	1.49	13.88	0.01	0.32	1.03	3.09	23
1305	3375	6484.89	4.06	5.31	1.31	28.15	0.00	0.73	2.08	5.13	32
1306	133	205.75	3.36	3.88	1.15	15.08	0.00	0.26	2.03	4.94	16
1307	104	155.20	1.50	1.91	1.28	3.67	0.00	0.17	0.65	2.25	6.5
1308	811	1521.00	4.30	6.36	1.48	40.47	0.00	0.52	1.91	5.34	42
1309	145	272.23	3.11	4.59	1.47	21.04	0.01	0.26	1.07	3.35	16
1400	2160	4227.91	4.88	7.78	1.59	60.45	0.00	0.6	2.00	5.81	50
1500	935	1811.67	4.06	5.80	1.43	33.63	0.01	0.55	2.01	5.11	42
1510	83	166.51	8.50	10.96	1.29	120.18	0.02	0.55	2.85	12.82	32.5
1511	30	58.50	1.17	1.46	1.25	2.13	0.01	0.07	0.61	1.98	4.5
1900	163	485.79	3.06	4.45	1.45	19.79	0.01	0.23	0.80	4.15	15
1901	3859	11396.14	1.31	2.57	1.97	6.61	0.00	0.15	0.38	1.21	28.5
1902	5550	16197.67	1.25	2.41	1.92	5.79	0.00	0.15	0.40	1.24	29.88
1903	10400	30230.31	1.59	3.36	2.12	11.31	0.00	0.17	0.47	1.48	47
1904	6752	19997.63	1.24	2.49	2.01	6.18	0.00	0.2	0.47	1.27	55
1905	13230	39622.25	1.43	2.48	1.74	6.16	0.00	0.26	0.63	1.58	55
1906	465	1371.06	1.45	2.64	1.82	6.99	0.01	0.14	0.35	1.14	12

14.2.4 Variography

Variograms are modelled using Leapfrog EDGE's® data analysis tools. For domains that don't have sufficient data to produce reasonable variograms, a general variogram is applied. Orientations of the omni direction variogram are defined by the orientation of each vein. While vein orientations of all major and minor veins were used for bulk domains.

Spherical variogram models were fit for the domains. The variograms are characterized by moderately high nuggets (20-40 % of the sill), with ranges of 35 – 80 m in the primary direction.

14.2.5 Block Modelling and Validation

MOP5 deposit is estimated in Leapfrog EDGE®, the model is constructed using a sub-blocked model of 1.25 m dimensions in all directions. The model is however, regularized into a 5 m cell size prior to pit optimisation assessment. Octant search is applied to all domains. The grade is estimated in a 10 m x 10 m x 10 m parent cell using OK with LVA applied to address complex geometries. Tabulation of dimensions, parameters, and field codes used in the model are presented in Table 14-10, Table 14-11, and Table 14-12.

Estimations were performed in individual domains using 2 m length weighted downhole composites for all vein-based domains and 3 m length weighted composites for the lithological (bulk) domains. Domain boundaries are treated as hard contacts in compositing, model construction and in grade estimation.

Table 14-10: MOP5 Block Model Dimensions

Variable	X	Y	Z
Origin	395150	642330	750
Extents (m)	1500	1050	450
Block Size (Parent)	10	10	10
Sub-Block Size	1.25	1.25	1.25
Orientation	+65 degrees	X-axis around Z	

Table 14-11: MOP Estimation Parameters used in Estimate

Pass Number	Orientation (EDGE®)	Search Directions	Maximum Samples per Drillhole	Minimum Samples per Estimate	Maximum Samples per Estimate
1	LVA	35-80/15-70/5-30	4	6	20
2	LVA	120/100/30	4	6	20

Table 14-12: List of Fields in MOP Model

Model Field	Type	Default Value	Description
ag_pref	float	-99	preferred Ag
au_ok	float	-99	Au estimate; Ordinary kriged LVA
au_id2	float	-99	Au estimate; inverse distance
au_pref	float	-99	preferred Au
code	short	-99	domain code
pass	float	-99	estimation pass number
geol	name	none	lithology
mined	byte	0	0= Insitu,1=STF, 2 =STC and MC, 5=STO, 6=Lvls and Passes, 7=STR
oxide	byte	2	1=totally ox; 2=>50% ox; 3=<50% ox; 4=along fractures; 5=fresh
pit	byte	-99	1=air, 2=MOP Ph4, 3=MOP Ph5, 4=below MOP Ph5
rescat	byte	6	6=unestimated unclassified; 4=estimated unclassified and dilution; 3=inferred; 2=indicated; 1=measured
rescat_prelim	byte	-99	resource classification prior to post-processing
sg	float	2.5	density
sg_pre	float	-99	density pre-mine

14.3 Gladstone Pit

14.3.1 Geological Model

Gladstone Open Pit is based on Mineralization around the Gladstone Hill and Winner Hill area. The Resource model describes the Mineralization within Gladstone and Winner Hills and includes part of the Moonlight orebody, depleted for underground mining.

GOP mineralization is characterized by shallow-level, hydrothermal breccias and associated banded quartz veins interpreted to represent the top of the epithermal system. The uppermost mineralized quartz veins flare up into hydrothermal explosion breccias. The GOP veins are predominantly steeply dipping veins developed within the hanging wall of the Favona Fault that dips moderately towards the SE. The vein trend ENE to NE between 035° and 075° and dips steeply towards the SE.

Relatively high vein density at GOP is amenable to grouping of non-primary veins of similar structural and geochemical characteristic, for open pit modelling. Estimation domains consist of:

- 6 veins
- 8 grouped minor vein/splay domains
- 5 lithology units.

14.3.2 Exploratory data Analysis

Weighted statistics of raw and cut Au values were reviewed using Isatis and Leapfrog®. Tabulated below in Table 14-13.

Table 14-13: Summary Statistics for Composite Au Values for GOP

Domain	Total Count	Defined Count	Minimum	Maximum	Mean	Standard Deviation	Variance	Coefficient of Variation
N/A	884	884	0.01	22.8	0.25	1.52	2.3160	6.004
6000	557	557	0.01	6.4	0.44	0.77	0.5971	1.747
6101	324	324	0.04	66.2	3.29	5.88	34.6000	1.785
6102	183	183	0.02	9.88	1.64	1.67	2.7900	1.017
6109	124	124	0.04	10.7	1.51	1.55	2.3920	1.022
6115	83	83	0.07	5.82	1.12	1.05	1.0950	0.9319
6116	108	108	0.14	13.83	1.56	1.85	3.4270	1.185
6200	127	127	0.01	0.37	0.07	0.08	6.012E-03	1.08
6201	1039	1039	0.01	10.64	0.41	0.65	0.4166	1.585
6203	95	95	0.02	0.47	0.05	0.06	3.908E-03	1.187
6205	47	47	0.01	2.18	0.06	0.27	0.07358	4.254
6206	154	154	0.01	1.61	0.19	0.28	0.07939	1.469
6901	580	580	0.01	7.26	0.15	0.41	0.1649	2.635
6902	1051	1051	0.01	2.97	0.12	0.23	0.05371	1.923
6903	3169	3169	0.00	52.9	0.10	0.97	0.9397	9.256
6904	2986	2986	0.01	27.42	0.51	1.07	1.1400	2.081
6905	2176	2176	0.01	11.11	0.30	0.6	0.3600	1.997
6906	955	955	0.00	13.29	0.63	1.09	1.1800	1.735
6907	3128	3128	0.01	80.81	1.42	3.7	13.72	2.606
6908	1387	1387	0.01	15.44	0.15	0.59	0.3426	3.895

14.3.3 Compositing, Grade Capping and Outlier Restrictions

Domain specific assessment of Au capping strategy was conducted in Isatis Neo from spatial review of data, its distribution on raw histograms, lognormal probability plots, review of uncut vs cut percentiles, coefficient of variance, and metal loss.

14.3.4 Variography

Variogram modelling was undertaken for five representative domains – three structural domains and two bulk domains. Domain search characteristics and statistics were compared in determining the application of these variograms to neighbouring domains.

The nugget effect was obtained from the down hole variograms of the 3 m composites. The nuggets were in the range 20-60 %.

14.3.5 Block Modelling and Validation

The GOP Resource model is constructed in Vulcan 2022.2.1 using input wireframes created in Leapfrog Geo® 2021.2.5. The estimation uses domain-constrained ordinary kriging and 3 m length weighted downhole composites with equal residual distribution. Estimation domains consist of major veins, grouped splay veins and hydrothermal breccia.

Gold and silver are estimated using Ordinary Kriging and underlying search strategy. For vein domains, bearing plunge and dip are assigned to block variables using the anisotropy workflow and hanging wall surfaces. These LVA orientations are then used to inform search orientation. Estimation is for the parent block with assignment to the sub-block. Table 14-14 shows the GOP estimation parameters.

Table 14-14: GOP Estimation Parameters

Domain	Orientation (VULCAN)	Search Dimensions	Min Samples	Max samples	Octant search	Discretisation	Max No of Samples per hole
6000	LVA	150/140/26	6	9	No	4/8/8	3
6101	LVA	130/80/25	6	9	No	4/8/8	3
6102	LVA	130/80/25	6	9	No	4/8/8	3
6109	LVA	130/80/25	6	9	No	4/8/8	3
6115	LVA	130/80/25	6	9	No	4/8/8	3
6116	LVA	130/80/25	6	9	No	4/8/8	3
6201	110/0/-24	100/90/20	6	12	No	4/8/8	3
6901	145/-60/0	160/130/60	6	12	No	4/8/8	3
6902	50/0/-50	140/60/40	6	12	No	4/8/8	3
6903	45/0/-70	140/60/40	6	12	No	4/8/8	3
6904	37/0/-85	160/130/60	6	12	No	4/8/8	3
6905	45/0/85	140/90/20	6	12	No	4/8/8	3
6906	65/0/-80	140/90/20	6	12	No	4/8/8	3
6907	30/0/75	160/130/60	6	12	No	4/8/8	3
6908	30/0/75	140/90/20	6	12	No	4/8/8	3

The block model dimensions, origin and cell size have been selected based on global change of support assessment. The model was extended to the NW relative to previous versions to populate slackened wall designs associated with a TSF concept. Block rotation was chosen as the mean of the two dominant structural orientations, with cross-strike width set at 5 m to reflect reduced geological continuity in this orientation. Sub-blocking to 2.5 m was enabled to honour anastomosing vein geometries. Table 14-15 shows the GOP block model dimensions and Figure 14-1 shows a list of fields used in the GOP model.

Table 14-15: GOP Block Model Dimensions

Variable	X	Y	Z
Origin	396600	642250	900
Extents (m)	450	800	300
Block Size (Parent)	5	10	10
Sub-Block Size	2.5	2.5	2.5
Orientation	+135 degrees	X axis around Z	

Variable	Data Type	Default Value	Description
code	Short (Integer * 2)	-99	vein code
sg	Float (Real * 4)	2.3	SG - assigned by script PP
pit	Short (Integer * 2)	-99.0	pit design
geol	Short (Integer * 2)	-99.0	1 = andesite; 2 = dacite; 3 = breccia
mined	Float (Real * 4)	-99.0	1 = mined
au	Float (Real * 4)	-99.0	Au best estimate
ag	Float (Real * 4)	-99.0	Ag best estimate
class	Byte (Integer * 1)	4	classification 2= Ind; 3 = Inf, 4=mineral inventory
rescat	Byte (Integer * 1)	4	flag for class assignment
au_nn	Float (Real * 4)	-99.0	au NN estimated value uncut
au_id2	Float (Real * 4)	-99.0	au ID2 estimated value cut
au_ok	Float (Real * 4)	-99.0	au OK estimated value cut
nn_dist	Float (Real * 4)	-99.0	Wtd ave distance of samp for ID
as	Integer (Integer * 4)	-99.0	as estimate
cu	Integer (Integer * 4)	-99.0	cu estimate
pb	Integer (Integer * 4)	-99.0	pb estimate
sb	Integer (Integer * 4)	-99.0	sb estimate
zn	Integer (Integer * 4)	-99.0	zn estimate
rescat_avedist	Integer (Integer * 4)	-99.0	
rescat_nsamps	Integer (Integer * 4)	-99.0	
rescat_nholes	Integer (Integer * 4)	-99.0	
rescat_id	Integer (Integer * 4)	-99.0	
hg	Integer (Integer * 4)	-99.0	Hg estimate
oxide	Integer (Integer * 4)	-99.0	
dig_int	Integer (Integer * 4)	-99.0	
hg_flag	Double (Real * 8)	-99.0	
amd_int	Integer (Integer * 4)	-99.0	
bearing	Float (Real * 4)	-99.0	LVA bearing
plunge	Float (Real * 4)	-99.0	LVA plunge
dip	Float (Real * 4)	-99.0	LVA dip
est_id	Short (Integer * 2)	-99	

Figure 14-1: List of Fields in GOP Model

14.4 Wharekirauponga

14.4.1 Geological Model

Veins were modelled using Leapfrog Geo® 2023.2.1. Geological logging of drill core such as vein textures, vein mineralogy, vein percentage and breccia type were initially used to create representative wireframes of vein structures. These initial wireframes were then modified on a vein-by-vein basis and compared to Au and Ag grade, core photography and structural measurements to establish geological consistency between veins. Some narrow, discontinuous high-gold grade intercepts that cannot be corelated with neighbouring drillholes have been excluded from the vein modelling.

14.4.2 Exploratory Data Analysis

Outputs from the analysis are presented in Table 14-16.

Table 14-16: Summary Statistics of Composite Au Values for WUG

Domain	Count	Length	Mean	Std Dev	CV	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
410	297	293.85	20.19	54.17	2.68	2934.12	0.01	1.22	6.57	20.38	805.34
425	622	622.6	22.88	36.10	1.58	1,303.45	0.09	2.38	8.58	28.07	361.40
430	319	311.05	6.39	20.36	3.18	414.48	0.10	0.81	1.49	4.65	285.00
431	198	192.6	2.14	3.61	1.69	13.04	0.16	0.67	1.17	2.13	38.70
432	112	105.7	2.96	4.58	1.55	21.01	0.15	0.63	1.25	2.92	25.32
433	147	142.9	2.04	5.52	2.71	30.45	0.01	0.44	0.81	1.47	70.70
434	58	57.25	0.84	1.07	1.26	1.14	0.01	0.18	0.48	1.03	5.22
435	47	46	3.19	9.75	3.06	94.98	0.01	0.24	0.88	2.09	58.20
436	129	126.7	7.24	12.02	1.66	144.52	0.22	0.79	2.56	7.93	81.66
510	38	36.3	6.98	8.92	1.28	79.54	0.36	1.46	2.75	7.54	37.50
511	122	117.42	13.32	24.39	183	595.07	0.02	1.11	3.42	18.44	206.00
512	48	49.1	7.48	9.00	1.20	81.09	0.01	1.02	4.84	10.55	46.45
513	37	33.9	2.27	5.11	2.25	26.09	0.01	0.32	0.87	2.02	41.80
514	41	38.93	2.57	5.21	2.03	27.20	0.16	0.62	1.42	3.19	44.14
515	33	32.35	3.75	4.11	1.09	16.86	0.29	0.95	2.50	4.27	19.83
516	7	7	6.79	8.11	1.19	65.70	0.82	2.00	3.18	8.92	24.02
560	51	49.18	3.26	3.18	0.98	10.11	0.13	0.75	2.45	4.76	17.70
561	33	30.2	6.30	8.94	1.42	79.91	0.20	1.05	2.92	6.46	44.60
562	50	46.45	5.62	8.51	1.51	72.45	0.17	0.78	2.22	7.19	50.60
563	58	58.3	3.56	4.18	1.17	17.45	0.18	1.07	2.06	5.06	23.70
564	52	51.16	2.14	1.61	0.75	2.60	0.15	0.74	1.85	2.94	7.43
565	37	32.52	3.15	4.77	1.52	22.80	0.18	0.60	1.23	3.08	20.40
566	52	51.1	6.09	9.21	1.51	84.76	0.10	2.06	3.34	6.61	58.40
567	21	18	20.68	34.36	1.66	1,180.73	0.25	2.26	11.60	21.60	157.00
590	17	16.18	8.37	15.19	1.81	230.85	0.02	0.07	3.50	6.02	55.10
591	17	17.45	11.17	20.10	1.80	403.96	0.03	0.50	2.49	10.86	75.62
592	7	6.7	2.87	3.54	1.24	12.54	0.13	0.20	1.67	4.63	9.70
593	11	10.6	4.57	5.13	1.12	26.34	1.03	1.07	2.43	6.21	17.50
600	162	160.59	2.63	6.49	2.47	42.18	0.03	0.34	0.60	1.65	52.20
700	12098	12,068.40	0.56	1.23	2.19	1.51	0.01	0.17	0.31	0.58	40.08

14.4.3 Compositing, Grade Capping and Outlier Restrictions

One-metre composites using codes backflagged from the geological model as a control. Residual lengths are added to previous interval and minimum coverage is at 30 %, allowing a sample at the minimum sample length of 30 cm to create a composite in single-sample width intersects. The composite length was based on the mean sampling length used in core sampling. Two-meter composites were examined, as part of geostatistical review, to test sensitivity.

Domain specific assessment of Au capping strategy was conducted from spatial review of data, its distribution on raw histograms, lognormal probability plots, review of uncut vs cut percentiles, coefficient of variance, and metal loss using Isatis Neo.

Clamping is applied to domains 425 and 410, whereby a secondary cap is applied beyond a percentage of the search distance, limiting the influence of the observed localized high-grade populations.

The clamping values of 72 g/t for 425 and 58 g/t for 410 were determined by grade vs x/y/z cross-plots, and visual assessment of grade distribution within the domains' histogram and normal-probability breaks.

Subdomaining the high-grade population was undertaken as part of sensitivity analysis. Hard boundaries were investigated but not introduced, with review of geological and geochemical data failing to determine physical characteristics distinguishing high-grade samples from the rest of the domain population.

Variable statistics

	Total Count	Defined Count	Mean	Variance	Standard Deviation	Coefficient of Variation	Minimum	Maximum
Au_ppm_BEST	591	591	23.20	1338	36.57	1.577	0.09	361.40
Au_ppm_BEST≤150.00	591	591	22.37	1016	31.87	1.425	0.09	150.00

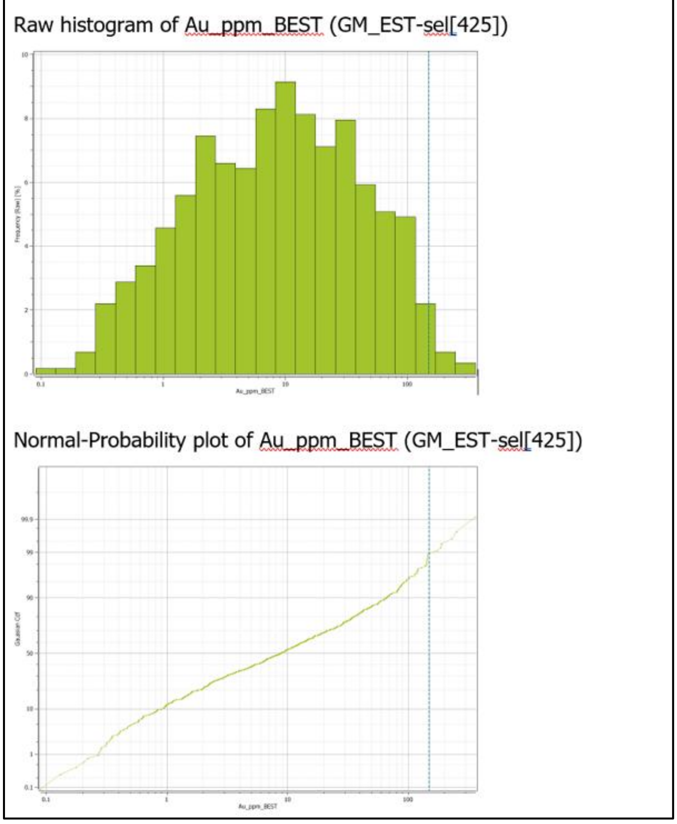


Figure 14-2: Vein 425 uncapped – (top) plot of Au ppm in histogram / (bottom) probability plot of Au

14.4.4 Variography

Variograms for the veins 410 and 425 of the estimated Au variable were constructed from the 1 m topcut composite data within each of the respective estimation domains, using Isatis™ (Geovariances) software.

The traditional semi-variograms did not exhibit robust structures and to improve the variogram, the data was transformed into Normal Score in Leapfrog EDGE® and back transformed.

Initially, down hole experimental variograms were calculated to establish the nugget for modelling the directional variograms for grade. The geology and geometry of Mineralization controls were also considered in selecting the orientations. Two-structured spherical models were fitted to the variograms produced. Variogram orientations reflected obvious trends in the data. Variography results for vein 410 and 425 for Au ppm is summarized Figure 14-3 and Figure 14-4 respectively.

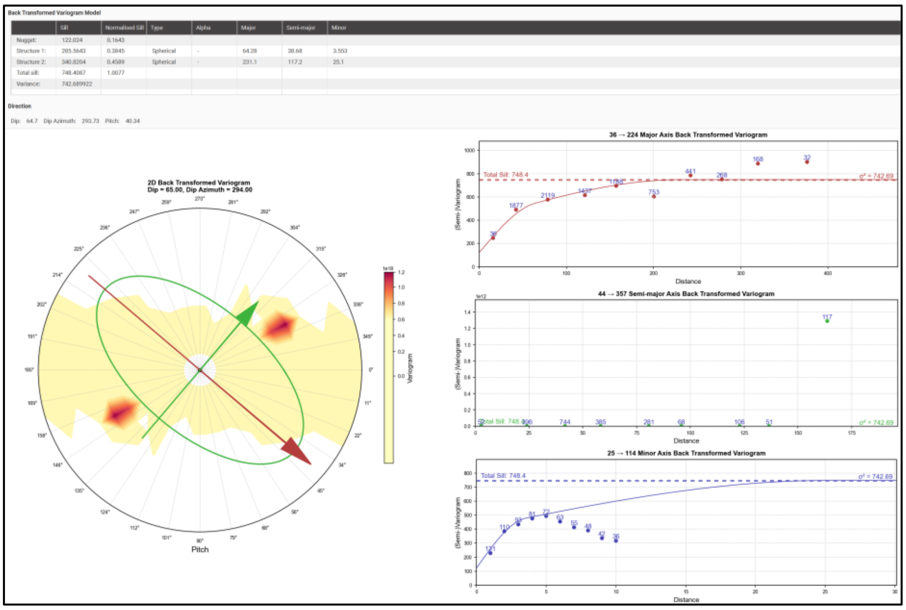


Figure 14-3: Summary of Back-Transformed Variogram Parameters (Vein = 410)

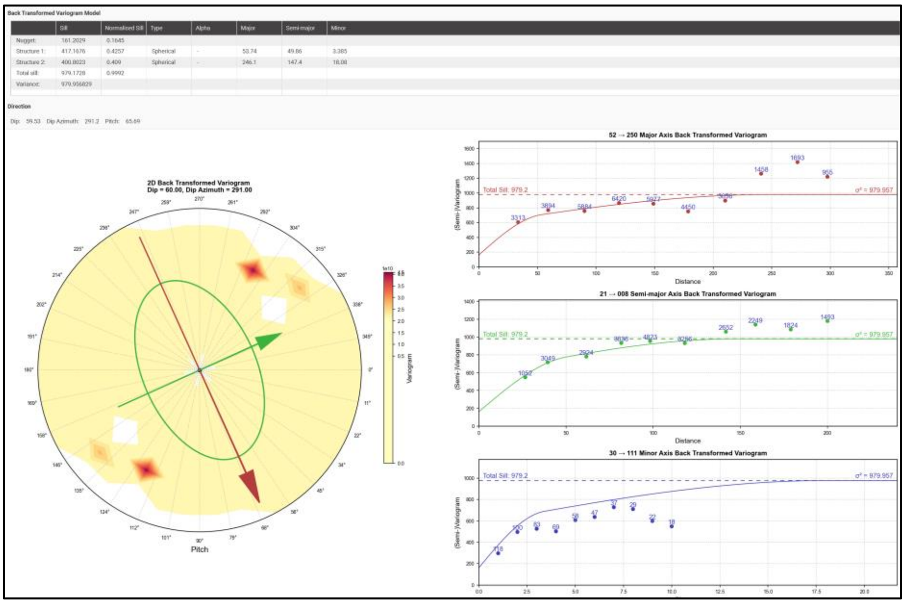


Figure 14-4: Summary of Back-Transformed Variogram Parameters (Vein = 425)

14.4.5 Block Modelling and Validation

Gold and silver grades for all domains are estimated using Ordinary Kriging (OK) while all other elements (As, Hg, S, and Sb) are estimated using Inverse Distance Squared (ID2) methodology. A local varying anisotropy (LVA) rotation was applied for all estimations. No octant-based search strategy was employed.

A two-pass search strategy was established to interpolate grade for each of the estimation domains within the mineralized domains.

The relevant veins were estimated using OK on the 1 m composite, grade capped samples. Domain control (hard boundaries for Mineralization) were used for both composite and block selection. Grade estimates were interpolated into parent cells and all sub-cells were assigned the parent cell grades. A block discretisation of 2 (X points) x 5 (Y points) x 5 (Z points) was used.

The WUG block model is rotated in bearing to align with the dominant strike of the veins. Sub-blocking is used to define narrow veins and to maintain volume integrity with the geology solids. A second estimation was run for the classification, where the distance to the closest 3 drillholes is recorded. The estimation parameters for WUG are summarized Table 14-17. A 7.5 m buffer surrounding the vein is estimated using a local 50 m search and kriged estimate with a 2 g/t topcut. Table 14-18: shows the WUG block model dimensions and Table 14-9 lists the fields in the WUG model.

Table 14-17: WUG Estimation Parameters

Pass Number	Orientation (EDGE®)	Maximum Search Directions	Intermediate Search Directions	Minimum Search Directions	Maximum Samples per Drillhole	Minimum Samples per Estimate	Maximum Samples per Estimate
1	Variable Orientation	200 / 110	150 / 80	40 / 30	6 / 4	8 / 6	22 / 18
2	Variable Orientation	400 / 220	300 / 160	100 / 80	6 / 4	4	22 / 18

*Major Domain / Minor Domain parameter

Table 14-18: WUG Block Model Dimensions

Description	Data
Number of parent blocks:	235 × 99 × 41 = 953,865
Base point:	1849150.00, 5867740.00, 345
Parent block size:	4, 16, 16
Minimum sub-block size:	1, 1, 1
Leapfrog Rotation:	
Azimuth:	25°
Dip:	0°
Pitch:	0°
Boundary size:	940, 1584, 656

Table 14-19: List of Fields in WUG Model

Model Field	Sub-field	Description
Au_OK		Combined estimator using OK. Hierarchy P1> P2> Dilution
	NS	Number of samples
	AvgD	Average Euclidean distance to sample
	KM	Kriging mean
	KV	Kriging variance
	SoR	Slope of regression
	KE	Kriging efficiency
	Dom	Domain code
	Est	Estimator used to inform block
RESCAT		Resource Category Estimator
	NS	Number of samples
	AveD	Average Euclidean distance to sample
	Dom	Domain code
	Est	Estimator used to inform block
RES_CAT		Final Resource Category
Au_ID2		Inverse distance Au estimate
Au_NN		Nearest Neighbour Au estimate
Ag_OK		Ordinary kriged Ag estimate
As_ID		Inverse distance As estimate
Hg_ID		Inverse distance Hg estimate
Sb_ID		Inverse distance Sb estimate
DENSITY		Density assigned by lithology
GM_EST		Estimation domain flagged from geology model
Manual_RESCAT		Classification domain flagged during classification workflow
GM_LITHOLOGY		Lithology flagged from geology model

14.5 Classification of Mineral Resources

The Resource Classification is based on an assessment of average drilling density. An estimation run is undertaken utilising the three closest drill holes intersecting the domain of interest, the average distance to the three closest drill holes used to estimate the block is then stored to form the basis for classification.

MUG uses an average spacing to three drill holes of 60 m for Inferred and 40 m for Indicated Resources. Any mineralized backfill is not classified or inclusion within the Mineral Resource due to uncertainty in both the continuity and the distribution of grade within the back filled stopes. The Measured material is classified based on proximity to drilling and sill drive development. Blocks are classified as Measured if they are within an average distance of 10 m of three separate sampled locations, either drill holes or lateral ore drive development channel sample locations.

The EG vein of WUG has been intersected in drilling over a strike length of 1 km, this structure is larger than those typically encountered in the Waihi area and on this basis the average drill hole spacing required for classification as an Inferred Resource on the EG vein structure has been increased to 67.5 m average distance to the three closest drill holes. An average drill spacing of three holes within 42 m was used as the basis for classification as Indicated Resource for the EG structure. All other WUG Mineralization has been classified using a distance threshold of 36 m to the three closest drill holes for classification as Indicated.

For MOP, an average drill hole spacing of 60 m to the three closest drillholes on the major mineralized veins for classification as Inferred and a spacing of 36 m for classification as Indicated Resource. A tighter spacing of 30 m has been implemented for classification as Indicated Resource and 40 m for Inferred Resource for the bulk domains, usually are more complicated zones of strong brecciation and/or stockwork veining. As with MUG any mineralized backfill is not classified or inclusion within the Mineral Resource due to uncertainty.

The Gladstone deposit is classified using an average drill hole spacing of 60 m to the three closest drillholes on the major mineralized veins for classification as Inferred Resource and a spacing of 35 m for classification as Indicated Resource. A tighter spacing of 22.5 m has been implemented for classification as Indicated Resource for the non-vein-based domains, typically these are more complicated zones exhibiting strong brecciation and/or stockwork veining.

The classification criteria are summarized in Table 14-20.

Table 14-20: Classification Criteria

Project	Drill Spacing for Measured Resource	Drill Spacing for Indicated Resource	Drill Spacing for Inferred Resource
MOP	-	30 - 36 metres	<60 metres
GOP	15 metres	22.5 - 35 metres	<60 metres
MUG	10 metres	36 metres	< 60 metres
WUG	-	36 – 42 metres	<67.5 metres

14.6 Cut–off Grade Estimates

Mineral Resource cut-off grades have been estimated using a long-term gold price of $1,950 and silver price of $20 /oz at an exchange rate of $0.61: NZ$. Estimated cut-off grades for the various Mineral Resources are shown below in Table 14-21.

Table 14-21: Resource Cut-off Grade Estimates

	Price $/oz	Metal Recovery	Process Cost $/t	G&A $/t	Sustaining Capex $/t	Mining $/t	Royalty %	Cut-off Grade g/t
MOP	1,950	90 %	20	7	0	-3	2 %	0.50
MUG	1,950	94 %	24	15	7	66	2 %	2.15
GOP	1,950	74 %	18	7	0	-3	2 %	0.56
WUG	1,950	90 %	24	7	6	79	4 %	2.10

14.7 Mining Factors or Assumptions

The classification of open pit Mineral Resources considers geologic, mining, processing, and economic considerations, and have been confined within appropriate LG pit shells, and therefore are classified in accordance with the 2014 CIM Definition Standards for Mineral Resources.

MUG and WUG Resource reporting is constrained by conceptual stopes however reporting is only on material above cut-off. This constrains the tonnes and grade reporting to the mineralized or vein interpretation as shown in Figure 14-5.

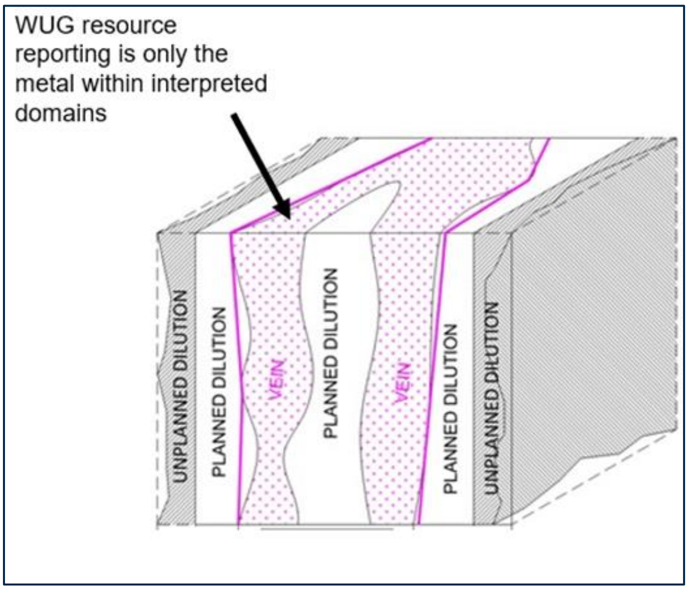


Figure 14-5: Resource Versus Reserve Conceptual Schematic for Martha Pit

The MOP5 cutback was developed by OceanaGold from a Whittle optimisation carried out in 2016 and further validated in 2017. Inputs comprised a maximum 7 Mt per annum operation and 1.5 Mt per annum processing throughput. Open pit slopes were generated for separate rectangular sub-regions based on different rock units calibrated with existing pit slopes and with allowance for haul roads. Mining costs were based on actual mining costs from 2006 to 2007 when the Martha pit was operating at moderate production rates escalated by the Consumer Price Index, recent contractor quotes, and confirmed under the current pricing guidance.

The Whittle optimisation and the optimum pit selected considered the proximity of the pit to the Waihi township, social and environmental constraints, and the need for high geotechnical factors of safety and limits on encroachment.

The design slopes for the MOP5 cutback are based on current pit slopes and berm intervals are generally 20 m below 1090 mRL and 15 m above 1090 mRL. Pit slopes to the south and south-west have been conservative due to effect of historic workings on the rock mass quality, the proximity of the town and presence of argillic andesite and slopes to the east are the shallowest slopes due to presence of the post-mineral sediments comprising tuffs and alluvial layers as well as a weaker andesite unit. The pit configuration is shown in Figure 14-6.

The pit encroaches towards the town centre, residential and low-density residential zones, and for this reason a plan change to the Hauraki District Plan will be required to provide for this component of the WNP, for allowing Resource consents to be sought for this element of WNP. The plan change goes to a hearing before Council-appointed Commissioners in December 2024.

Key points of note are:

- A constraint has been placed on the cutback of the western pit wall so as not to encroach into the Moresby Avenue reserve and the Central School grounds
- The pit requires relocation of the existing crusher and belt conveyors from the existing crusher slot to a new crusher slot, 70 m to the east and installation of a new crushing facility
- Relocation and enlargement of the noise bund beyond Grey Street into Slevin Park, construction of a noise bund along the remaining MOP5 pit rim, relocation of the historical Cornish pumphouse and partial realignment of the Eastern Stream is required
- Relocation and re-establishment of the open pit office block, fuel bowser, substation, workshop, wheel wash and magazine are required.

The final dimensions of MOP5 are:

- Pit area - approximately 66 Ha
- Pit depth - approximately 316 m
- Pit floor level - approximately 840 mRL
- Pit length x breadth - approximately 1,115 x 830 m
- Total volume - approximately 59 Mm^3.

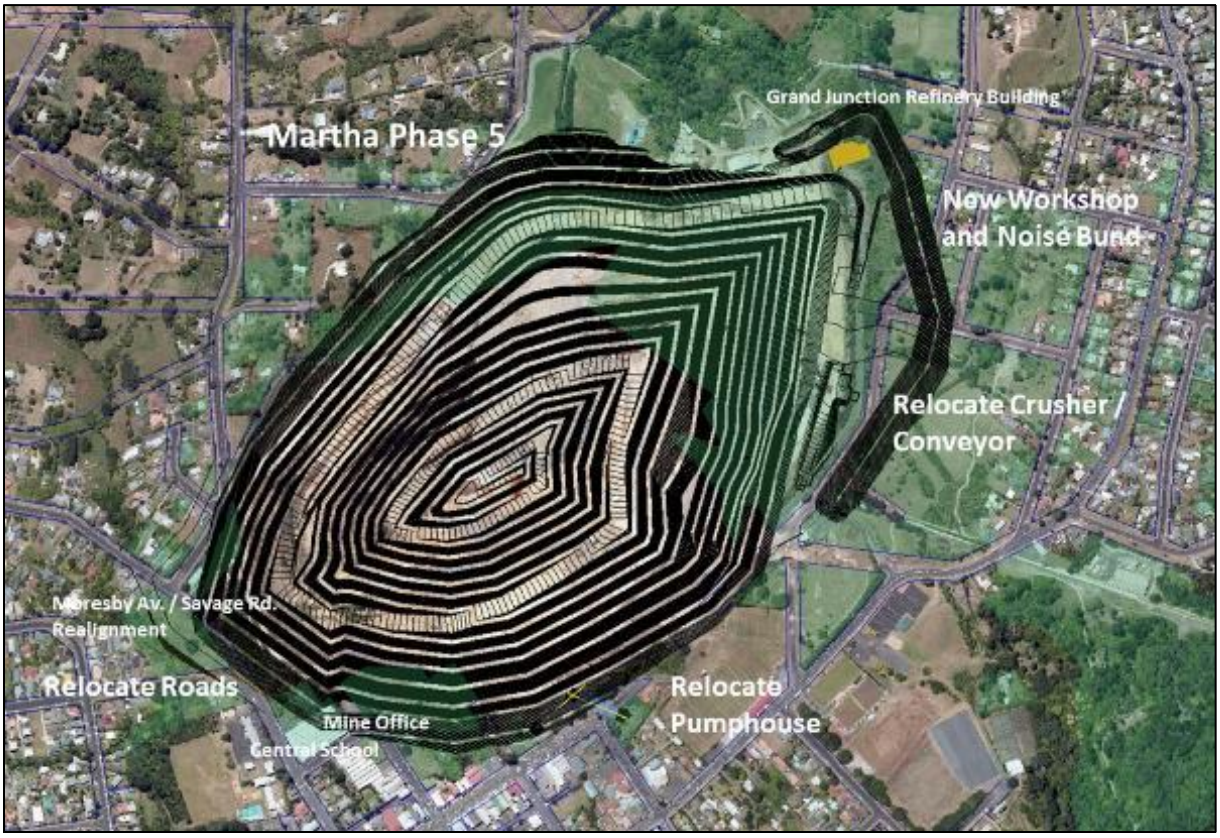


Figure 14-6: Plan of Martha Phase 5 Pit

14.7.1 MUG

The Mineral Resource is reported within conceptual designs, created using Deswik.SO®. Stope widths vary, depending on the thickness of the Mineralization. A minimum mining width of 1.3 m was used, and 0.3 m of dilution was applied to both the footwall and hanging wall. A maximum stope width of 15 m was used with a minimum pillar width between stopes of 8 m. Nominal stope dimensions of 15 m high by 10 m in length. The method of specifying the strike and dip angles for the initial stope-seed-shapes in SO was to apply a stope control surface wireframe over the full extent of the orebody where stope shapes are to be generated. The following stope shapes were manually excluded from the Mineral Resource estimate:

- Isolated stope shapes either showing lack of continuity or distant from the main concentrations of shapes
- Stopes closer than 50 m from the surface
- Within a solid created as an exclusion solid around the historical “Milking Cow” zone by projecting the cave zone outwards by 20 m
- All stopes intersecting the base of the Martha Phase 5 pit.

The Mineral Resource is reported within the SO shapes above a 2.15 g/t cut-off grade. No unclassified material contained within the SO shapes is reported. Figure 14-7 presents the SO shapes after exclusion based on geotechnical and economic assessment.

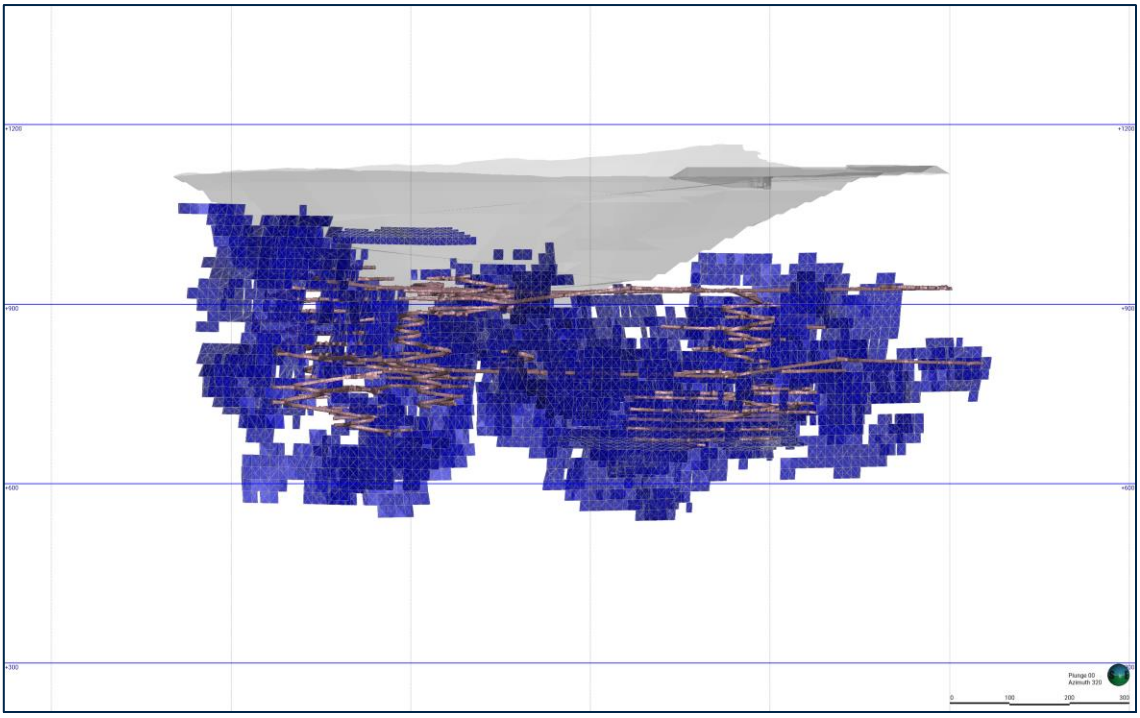


Figure 14-7: MUG Mineral Resource Long Section

14.7.2 Gladstone Pit

Geotechnical studies during 2017 and 2023 on preliminary design concepts including geotechnical drilling, rock/ soil testing and detailed core logging showed that the slopes in the Winner Hill pit and the northern slopes in Gladstone Hill were generally satisfactory under unsaturated or partially drained conditions. However, the southern and eastern upper slopes were shown to be marginally stable under fully or partially saturated conditions particularly where there was a significant depth of the surficial deposits.

Design pit slopes were modified based on a geotechnical study completed by PSM in early 2018 including three additional geotechnical holes and geotechnical modelling to achieve satisfactory factors of safety. Geotechnical domains were re-defined based on drilling. The geotechnical domains are presented in Figure 14-8.

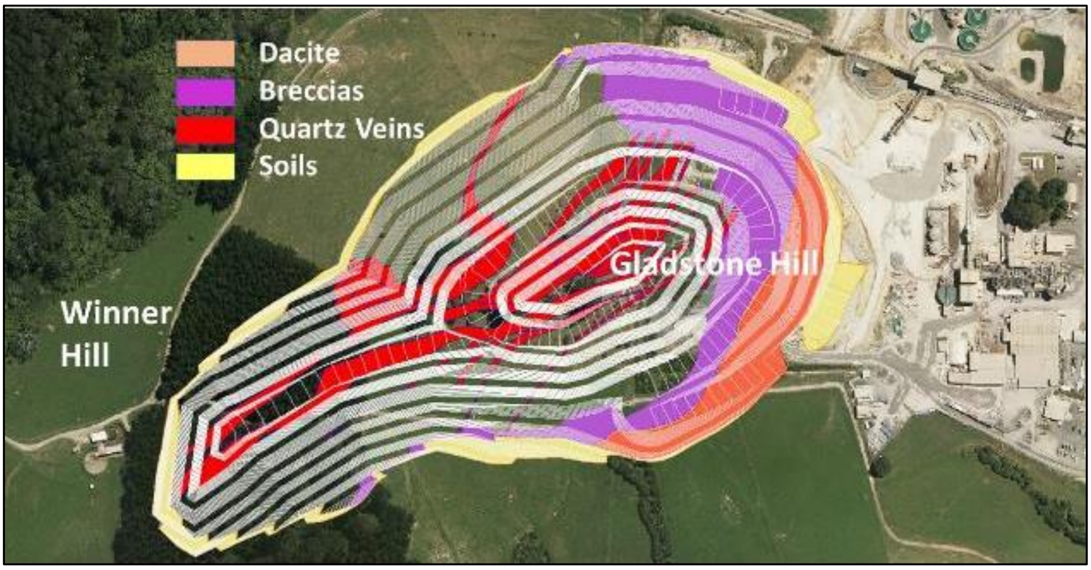


Figure 14-8: Gladstone Pit Geotechnical Domains

14.7.3 WUG

OceanaGold has reported the Mineral Resource within conceptual designs which were created using the Deswik.SO®. Stope widths vary, depending on the thickness of the Mineralization. A minimum economic mining width of 2.0 m was used. A maximum stope width of 15 m was used with a minimum pillar width between stopes of 8 m. Nominal stope dimensions of 15 m high by 15 m in length. The method of specifying the strike and dip angles for the initial stope-seed-shapes in SO was to apply a stope control surface wireframe over the full extent of the orebody where stope shapes are to be generated. All shapes within 50 m of the surface topography were excluded from the estimate.

The Mineral Resource is reported within the SO shapes above a 2.10 g/t cut-off grade. No unclassified material contained within the SO shapes is reported. Figure 14-9 and Figure 14-10 present the SO shapes. No mining recovery or dilution were applied to the Mineral Resource estimate.

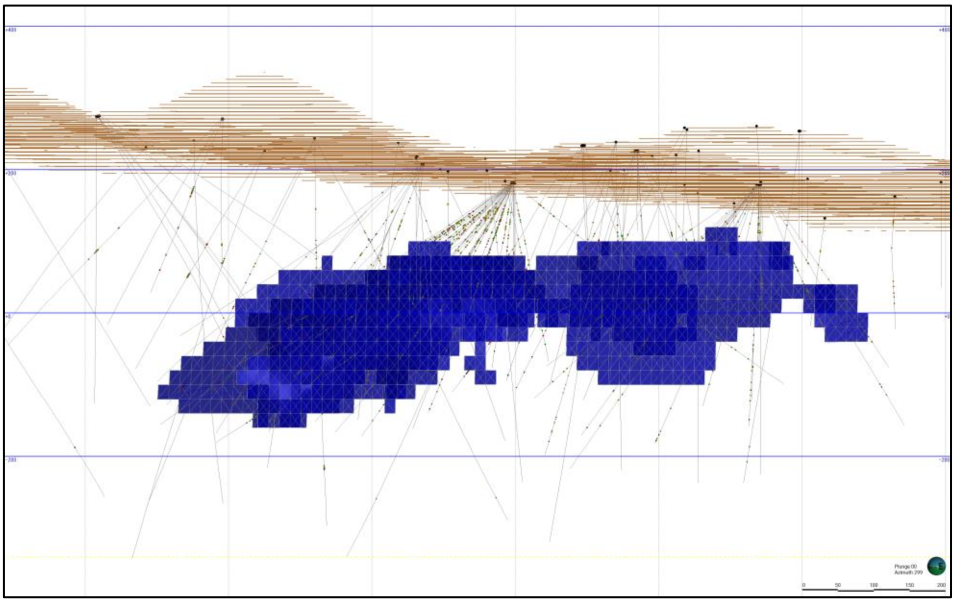


Figure 14-9: WUG Mineral Resource Long Section

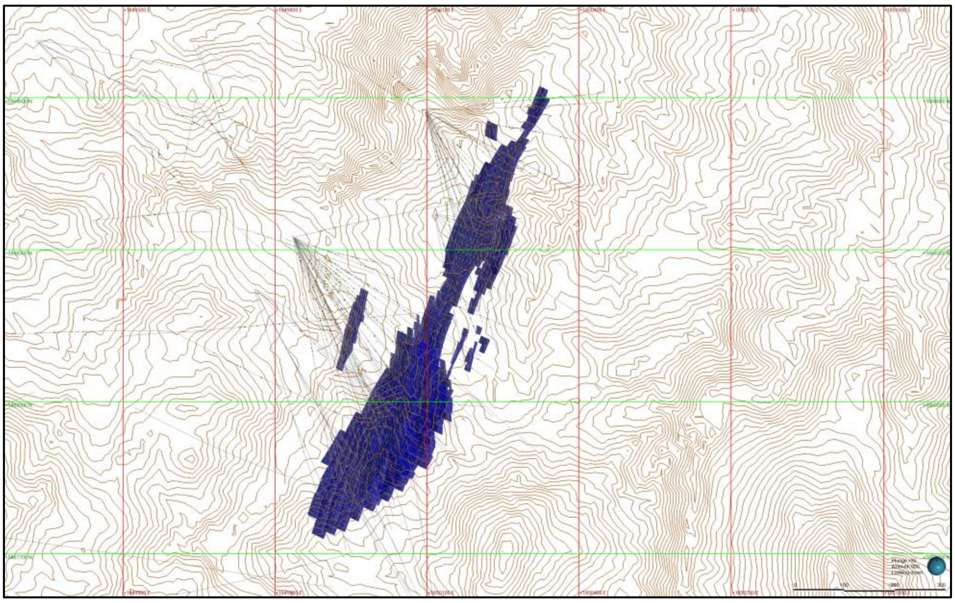


Figure 14-10: WUG Mineral Resource Plan View

14.8 Risks

The Mineral Resource Estimates that form the basis of this report are based on assumptions that are subject to a variety of risks and uncertainties which could cause actual results to differ from those reflected in this report. Potential geologic risks include unusual or unexpected geological complexities, variation in estimation and modelling of grade, tonnes, geologic continuity of mineral deposits, the possibility that future exploration, development, or mining results will not be consistent with expectations and the potential for historic mine workings to be materially different to that assumed in these studies. Many of these risks are reflected in the classification of the resources.

Indicated and Inferred Mineral Resources both have inherent risk, The term "Inferred Mineral Resource" refers to that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity.

The term "Indicated Mineral Resource" refers to that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The geological and grade continuity to be reasonably assumed.

The vein systems within the project areas are geologically complex and in some instances are difficult to fully drill test. WUG has limited consented drill platforms, deeper portions of the MUG system are at challenging drill intersection angles and the town infrastructure and pit highwalls overlying the Martha pit, placed limitations upon the ability to fully drill test the deposit. Notwithstanding this, Waihi has a strong operational history and the risks are considered to be in line with those dealt with throughout the operations past history, these risks are thought to be well understood and actively managed.

14.9 Mineral Resource Statement

Mineral Resource estimates, as of 30 June 2024, are presented in Table 14-22 and are classified in accordance with CIM. Mineral Resources are inclusive of Mineral Reserves and are reported at a commodity price of $1,950 /oz gold.

Information relating to geology, sampling, data verification and Mineral Resources in this document was prepared by or under the supervision of Leroy Crawford-Flett. Mr. Crawford-Flett is a Chartered Professional Member of the Australasian Institute of Mining and Metallurgy and is the Qualified Person for those topics. Mr Crawford-Flett is a full-time employee of OceanaGold Limited and has sufficient experience that is relevant to the style of Mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Qualified Person. A summary of the Mineral Resource estimate is provided in Table 14-22.

Table 14-22: Summary of Mineral Resources Estimate as of June 30, 2024

Area	Indicated					Inferred				
	Tonnes (Mt)	Grade (g/t Au)	Grade (g/t Ag)	Au (Moz)	Ag (Moz)	Tonnes (Mt)	Grade (g/t Au)	Grade (g/t Ag)	Au (Moz)	Ag (Moz)
MOP	6.50	1.95	13.44	0.41	2.81	2.3	2.1	12.1	0.2	0.9
GOP	3.22	1.44	3.76	0.15	0.39	0.8	1.0	2.6	0.03	0.1
MUG	6.42	5.29	25.51	1.09	5.27	2.7	4.7	27.1	0.4	2.4
WUG	2.39	17.88	28.02	1.37	2.15	1.3	9.6	17.1	0.4	0.7
Total Mineral Resources	18.53	5.07	17.82	3.02	10.62	7.1	4.3	17.6	1.0	4.0

Notes:

- Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- Mineral Resources estimate was reviewed and approved by, or is based on information prepared by or under the supervision of, Leroy Crawford-Flett, MAusIMM CP (Geology), the Company's Exploration and Geology Manager and a qualified person under NI 43-101.
- Mineral Resources are reported at a gold price of $1,950/oz.
- Mineral Resources estimate for MUG is reported below the MOP5 design and are constrained to within a conceptual underground design based upon the incremental cut-off grade of 2.15 g/t Au.
- Mineral Resources estimate for WUG is reported within a conceptual underground design at a 2.10 g/t Au cut-off grade.
- Mineral Resources estimates for MOP and GOP are reported within conceptual pit designs and incremental cut-off grades of 0.50 g/t Au and 0.56g/t Au, respectively. The MOP conceptual pit design is limited by infrastructural considerations.
- Tonnage and grade measurements are in metric units. Gold ounces are reported as troy ounces and "g/t" represents grams per tonne.
- No dilution is included in the reported figures and no allowances for processing or mining recoveries have been made.
- All figures have been rounded; totals may therefore not sum exactly.

15 MINERAL RESERVE ESTIMATES

There are no open pit Mineral Reserve estimates. Mineral Reserves were generated for the MUG and WUG. The underground mining areas are located on land owned by Crown and OceanaGold. Royalties are applicable to both mines. MUG design is completed using the site coordinate system using Mt Eden Old Cadastral mine grid plus 1,000 m. WUG design is completed using NZTM grid.

Note the inclusion of modifying factors (dilution and recovery) to the Mineral Resources results in a net increase in tonnes (due to the inclusion of dilution factors), a reduction in ounces (due to the inclusion of recovery factors) and a reduction in grade (due to a combination of dilution and recovery factors).

15.1 MUG

MUG is in operation and mining Mineral Resources extending below and outside of the existing MOP. The Martha Mineral Reserves are excluded from the MOP Mineral Resource.

15.1.1 Conversion Assumptions, Parameters and Methods

Measured and Indicated Mineral Resources were converted to Proven and Probable Mineral Reserves by applying the appropriate modifying factors, as described herein, to potential mining block shapes created during the mine design process.

Based on the orientation, depth, and geotechnical characteristics of the mineralization, a combination of Avoca and transverse sublevel open stoping method (longhole) with ramp access is used. The stopes are of variable dimensions and stope length will vary based on mineralization grade and geotechnical considerations. A spacing of 18 m between levels is used. Cemented rock fill (CRF) will be used to backfill selected stopes. The CRF will have sufficient strength to allow for mining adjacent to backfilled stopes.

A detailed design was completed including re-mucks, passing bays, etc. All Mineral Reserve tonnages are expressed as "dry” tonnes (i.e., no moisture) and are based on the density values stored in the block model. Inferred Mineral Resources are not included in the mine plan. Mining dilution and recovery have been applied to the Reserves using the methodologies described below.

Dilution

The mining dilution estimate is based on the Equivalent Linear Overbreak Slough (ELOS) methodology (Clark, 1997) and summarized in Table 15-1. ELOS is an empirical design method used to estimate the amount of overbreak / slough that will occur in an underground opening based on rock quality and the HR of the opening. A 0.5 % additional dilution allowance was used to account for other potential sources of dilution (e.g., dilution from the floor when mucking a stope).

Table 15-1: Underground Mining Dilution Factors

Activity	ELOS m
Sidewalls (rock)	0.3 m
Bottom (backfill)	0.05 m

Recovery

A development recovery factor of 100 % was used for all horizontal development. A development overbreak factor of 15 % is applied to capital and operating lateral waste development dimensions. A development overbreak factor of 10 % is assumed for operating lateral ore development.

The mining recovery factors applied for MUG are summarized in Table 15-2. The stope recovery factor was varied as a function of mining method and considered wall and rill dilutions, and underbreak from stope firings.

Table 15-2: MUG Underground Mining Dilution and Recovery Factors

Mining Method - Modifying Factors	Wall / Rill Dilution	Under-break	Bogging Recovery	Modifying factors	Comments
Intact Avoca					
Tonnes	9 %		96 %	1.05	Based on MUG
oz Au		6 %	96 %	0.90	
Mining against Cemented Fill					
Tonnes	7 %		93 %	1.0	Based on MUG
oz Au		13 %	93 %	0.8	
Proximal to Collapse (+3 m pillar)					
Tonnes	20 %		93 %	1.13	Increase – shorter panels
oz Au		3 %	93 %	0.83	Allow some panel failure
Adjacent to Collapse or Historic Fill					
Tonnes	25 %		70 %	1.10	Corners cannot be bogged out
oz Au		20 %	70 %	0.50	High dilution in historic fill

15.2 WUG

15.2.1 Conversion Assumptions, Parameters and Methods

A development overbreak of 12 % is applied for waste development and 0 % for ore development.

Minable stopes are developed using Deswik.SO® which include a 0.5 m applied to both footwall and hanging wall. These SO shapes are then applied further modifying factors as summarized in Table 15-3. The stope recovery and dilution are applied as a function of mining method and stope width.

Table 15-3: WUG Mining Dilution and Recovery Factors

			Width		
			<8 m	10	12 - 15+
Transverse	Primary	Dilution	15 %	5 %	0 %
		Recovery	90 %	90 %	85 %
	Secondary/Avoca	Dilution	15 %	10 %	20 %
		Recovery	90 %	90 %	85 %
Longitudinal	Primary	Dilution	5 %	5 %	10 %
		Recovery	93 %	90 %	85 %
	Avoca	Dilution	5 %	5 %	20 %
		Recovery	93 %	90 %	85 %
	Secondary	Dilution	5 %	10 %	20 %
		Recovery	93 %	90 %	80 %

15.3 Mineral Reserve Statement

Mineral Reserves were classified using the 2014 CIM Definition standards. Measured Mineral Resources were converted to Proven Mineral Reserves, and Indicated Mineral Resources were converted to Probable Mineral Reserves by applying the appropriate modifying factors, as described herein, to potential mining shapes created during the mine design process. MUG Mineral Reserves of 4.4 Mt (diluted) with an average grade of 3.8 g/t Au and WUG Mineral Reserves of are 4.1 Mt (diluted) with an average grade of 9.2 g/t Au presented in Table 15-4.

Table 15-4: MUG and WUG Reserve Estimate as of 30 June 2024

Reserve Area	Class	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Au (Moz)	Ag (Moz)
MUG	Proven	-	-	-	-	-
	Probable	4.4	3.8	16.1	0.5	2.3
Total MUG		4.4	3.8	16.1	0.5	2.3
WUG	Proven	-	-	-	-	-
	Probable	4.1	9.2	16.1	1.2	2.1
Total WUG		4.1	9.2	16.1	1.2	2.1
Total Mineral Reserve		8.5	6.4	16.1	1.7	4.4

Notes:

- The WUG Mineral Reserves estimate was reviewed and approved by, or is based on information prepared by or under the supervision of, Euan Leslie, MAusIMM (CP), the Company's Group Mining Engineer and a qualified person under NI 43-101.
- The MUG Mineral Reserves estimate was reviewed and approved by, or is based on information prepared by or under the supervision of, David Townsend, MAusIMM (CP), the Company's Mining Manager and a qualified person under NI 43-101.
- Mineral Reserves are reported based on OceanaGold's mine design, mine plan, mine schedule and cash flow model at a gold price of US$1,750/oz Au.
- Tonnages include allowances for losses resulting from mining methods. Tonnages are rounded to the nearest 100,000 tonnes.
- Ounces are estimates of metal contained in the Mineral Reserves and do not include allowances for processing losses. Ounces are rounded to the nearest hundred thousand ounces.
- All figures have been rounded; totals may therefore not sum exactly.
- Tonnage and grade measurements are in metric units. Gold ounces are reported as troy ounces and "g/t" represents grams per tonne.

16 MINING METHODS

16.1 Status of Current Mine Development

MUG mining consent was granted in 2019 with mine development commencing 2020. The feasibility study for MUG was completed in March 2021 with initial mine development targeted in-situ hosted material in REX, Edward and Royal West to deliver a base load run of mine ore while the method and technique for extraction of remnant material was trialled and refined. Current mine development and extraction continues from Edward, Empire West, Empire, Royal East and Rex mine areas. Figure 16-1 below shows a cross section of the MUG's LoM Plan.

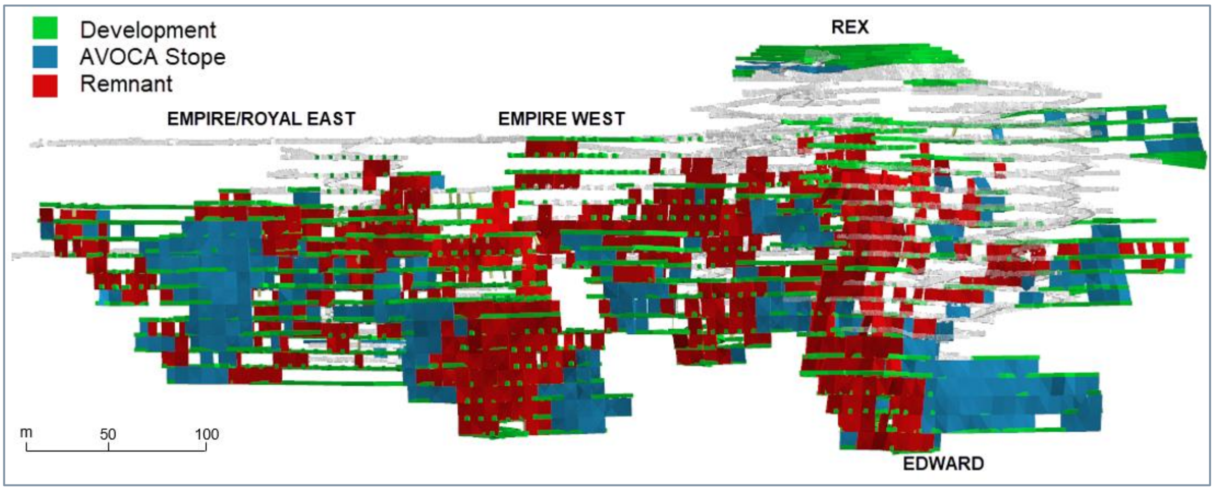


Figure 16-1: MUG Mining Cross Section Looking South East from Hanging Wall

16.2 MUG

16.2.1 Cut-off Grade Calculations

Previous mining costs for the Favona, Trio Correnso and MUG mines have been reviewed from 2009 to 2023. Operating costs per tonne of ore mined is shown in Figure 16-2 as the CPI adjusted unit costs (NZ$ / tonne ore mined) and the mined ore tonnes over time. Costs vary depending on:

- the ore tonnage mined
- the proportion of lateral development to stoping
- the average width of stoping
- any floor benching or overhand cut and fill, and
- the operating development in waste.

At an FX of $0.61 / NZ$, MUG mine operating costs range from $61 to $91.5 / tonne ore mined.

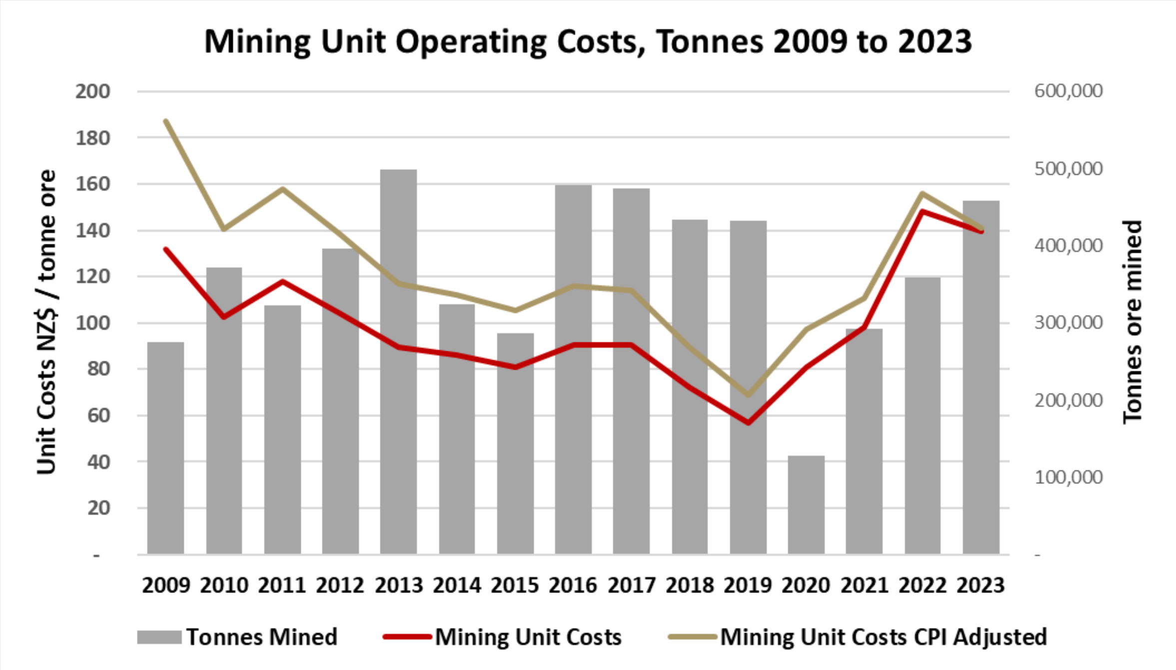


Figure 16-2: Underground Mining Operating Costs 2009 to 2023

Current estimated costs and the calculated Au cut-off grades (CoG) are shown in Table 16-1. Incremental material is included in the Reserves based on an incremental stope cut-off grade of 2.6 g/t Au and an incremental development cut-off grade of 0.9 g/t Au.

Table 16-1: MUG Cut-off Grade Calculation

Parameter	Unit	Operating CoG	Incremental Stoping CoG	Marginal Development CoG
Mining cost	$/t	110.8	87.6	0.0
Process cost	$/t	26.3	26.3	26.3
G&A	$/t	22.6	22.6	22.6
Total Cost	$/t	160	137	49
Gold price	$/oz	1,750	1,750	1,750
Average Au mill Recovery		94 %	94 %	94 %
CoG	g/t	3.0	2.6	0.9

16.2.2 Geotechnical

A total of 84 km of drill core was geotechnically assessed in MUG during initial studies (Figure 16-3). No structural data was collected directly from core for joints, geologists only record structural measurements for veining and faults.

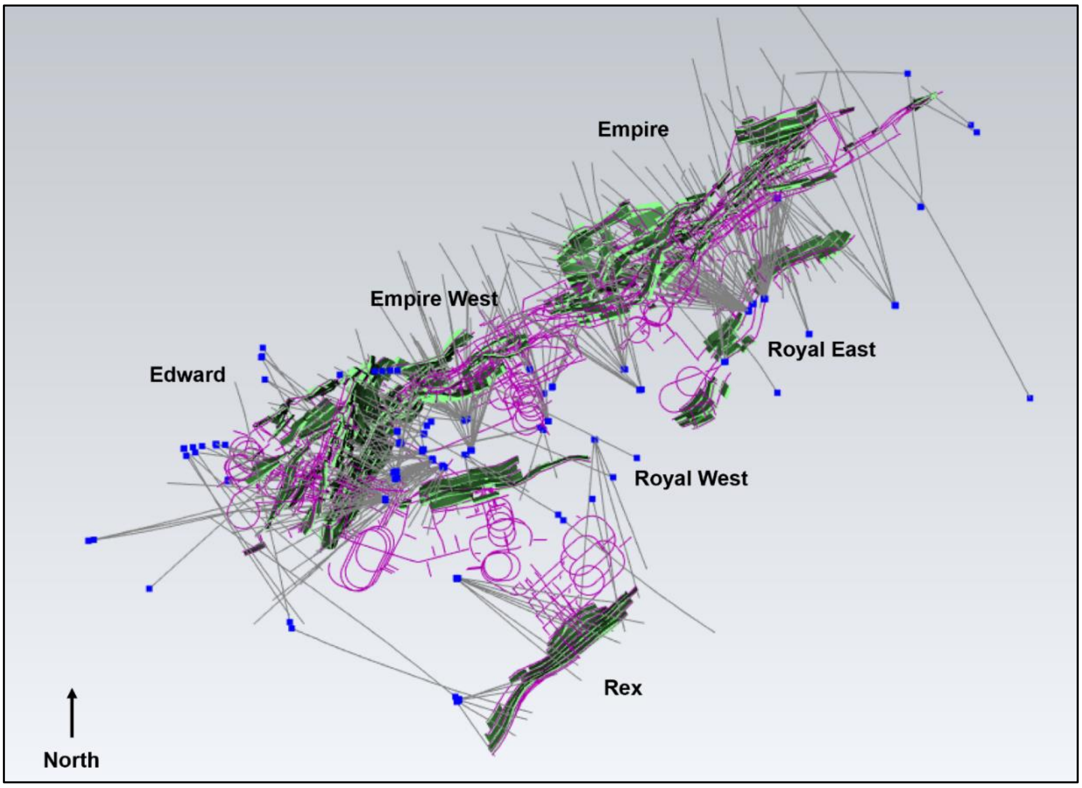


Figure 16-3: Plan and Long Section of Geotechnically Logged Drill Holes

A total of 807 orientation measurements were recorded during the underground data collection campaign from scanline mapping. Mapping of development headings and key structures within MUG is also recorded by the site geotechnical engineers. Key structures are steeply dipping oriented, predominantly north-east-east. A stereonet plot of the structures recorded is given in Figure 16-4.

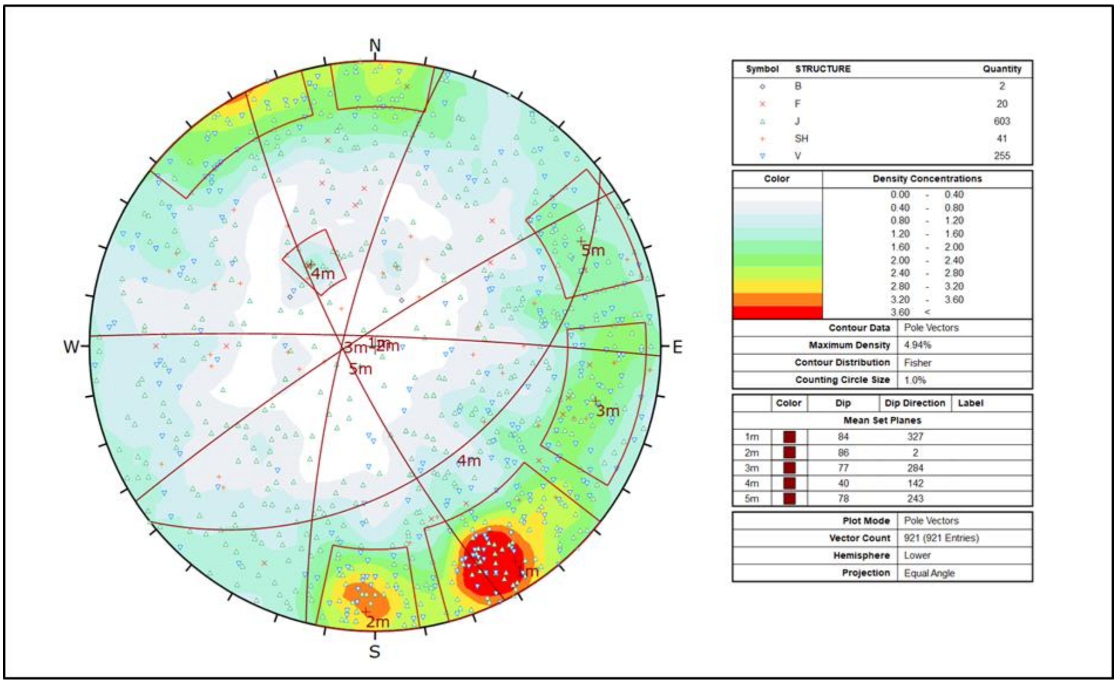


Figure 16-4: Plot of Structure Data for MUG

A number of rock properties testing has been undertaken since 2006 with a specific testing program from MUG undertaken in 2020. The types and number of tests conducted are shown in Table 16-2 and a summary of results.

Table 16-2. Summary of Laboratory Tests

	UCS (MPa)	UTS (MPa)	Modulus (Gpa)	Poisons Ratio
Mean	106	8	36	106
Max	255	20.6	47	255
Min	9	1.9	19	9
Sample Size	36	45	24	36

Historical mining took place at Martha over a period of almost 70 years from the 1880's and the issue of void interaction is considered the single biggest challenge to the current mine. Historical stopes (unfilled and filled), development and raises / shafts are present throughout the mines and need to be carefully monitored and managed.

Operations presently maintain a void management document specific to the MUG area which is based upon set rules, standoff distances, and guidelines around managing the interaction with historical voids. The approach is risk-based, data driven and controlled by collaboration between operations, survey, mining and geotechnical engineers.

Rock mass characterisation has used the Q system, and shows:

- Edward is expected to be poor in most areas and very poor around the historic fill and collapsed stopes
- Empire is expected to be poor in most areas
- Empire West is a mix of good and poor ground conditions.

Stress measurement tests were conducted at Waihi for the Trio Underground Mine Project by the West Australian School of Mines in 2010 using the Acoustic Emission (AE) method which indicated:

- Horizontal: vertical stress ratio ranges from 2.1 – 2.4
- The major principal stress orientation (sigma 1 = 02/019°) is shallow dipping and near horizontal in nature so will have differing effects on each of the orebodies at MUG.

Empirical methods of stope design have been employed to evaluate stability conditions and was separated by orebody (i.e., Martha, Empire, Edward, Rex) and then by domains (immediate hanging wall, immediate footwall, and ore zones) for each of the mining areas. The hydraulic radius (HR) was then determined for each mining area, based on 18 m height (Table 16-3).

- Allowable spans around the historic collapsed and filled stopes are slightly less than the virgin areas as expected
- Poor ground conditions resulting from features such as closely spaced fractures, oxidized quartz calcite, and faulting and clay filled structures around the veins dominate stope wall and crown behaviour, with these zones being a main source of any overbreak/unravelling issues
- The rock mass conditions in the Rex stoping areas are expected to be very poor and this is currently restricting the allowable strike length
- There is variation within the rock mass across the domains which needs to be given consideration when planning stoping on a level-by-level basis.

Table 16-3. Summary of Allowable Strike Lengths

Mining Area	Hanging wall	Ore Zone	Footwall
Edward - All	11 m	9 m	11 m
Edward - Upper	13 m	8 m	13 m
Edward - Lower	11 m	9 m	11 m
Empire - All	11 m	9 m	11 m
Empire	14 m	13 m	21 m
Martha	26 m	18 m	23 m
Empire West	9 m	5 m	8 m
Royal East	13 m	8 m	16 m
Royal West	13 m	11 m	18 m
Rex	9 m	2 m	16 m

16.2.3 Hydrogeology and Mine Dewatering

Dewatering of the veins and workings will be required to reach the targeted depth. Inflows will be from storage within the workings, veins, and the rock mass. In addition, rainfall infiltrating the base of the pit will report to MUG during mining. Small pockets of perched groundwater may also be encountered in the historical workings. Below 550 mRL previously unmined veins are expected, so only water from the veins, rock mass and MOP will be removed.

Modelled groundwater inflows to MUG used an analytical model that is based on the historical dewatering data set for the historical MOP. Discharge from the historical mine was sourced from storage in interconnected vein systems and groundwater inflow from the surrounding rock mass. Vein water storage was greatest where the veins were widest. These were also the areas of maximum gold yield. Groundwater sourced from the rock mass was considered to be a minor contributor to the historical discharge. Previous mining took place to a depth of approximately 541 mRL. Backfilling of stopes was variable, and collapse and compression of stopes will have modified the void space following historical mining. It is assumed that the sum of these void increases and decreases has not substantially altered the original groundwater storage capacity.

Groundwater recharge from the open pit is significant during high rainfall events. The current average daily dewatering rate is approximately 14,000 m^3/d which is satisfactory for lowering the ground water table within the mining schedule.

16.2.4 Geochemical

Waste rock excavated from the MUG comprises similar geologies to that mined from the MOP over the previous three decades. Where possible, waste rock remains underground and is used to backfill excavated voids. During the initial stages of mining, waste rock was stored temporarily in the vicinity of the Favona portal or in the Polishing Pond Stockpile which are designed to collect and manage seepage and runoff before being returned later as underground backfill. Ore is stored at the existing Run of Mine (ROM) stockpile to await processing.

Waste rock used as backfill will be permanently stored within the underground workings, limiting the potential for oxidation of the overburden prior to future flooding of the workings The potential for ongoing oxidation of waste rock once the materials are at their final destinations is considered to be negligible. The current oversaturation of groundwater in respect to sulphate and a likely high degree of attenuation on trace elements via the sorption to ion-hydroxide minerals will ensure that any impacts of groundwater quality within the vicinity of the workings as a result of oxidized overburden should be minimal.

Within temporary stockpiles, appropriate mitigation measures in the form of limestone amendment will be required to limit oxidation and/or limit the effects of already oxidized material. The limestone amendment required for waste rock placed within the temporary stockpiles is dependent upon the exposure period and the calculated sulphate oxidation rate. Waste rock placed in temporary storage structures and left exposed for a period of no more than 30 weeks is blended with crushed limestone at a rate 12 kg $CaCO^3$ per tonne of waste rock or at an amendment rate of approximately 1.2 %. Monitoring of placed rock ensures these dosing rates are appropriate and enable refinement as part of ongoing operations.

16.2.5 Mine Design

MUG is accessed via the existing Favona portal through the existing Trio and Correnso workings and shares the ventilation development and shafts as well as the underground workshop, crib room and dewatering systems.

Exploration drives were completed on 800 mRL and 920 mRL in 2018. Development of MUG commenced in mid-2019 and 2,169 m of lateral development and a 120 m ventilation raise were completed by the end of 2019 and a further 35,125 m of lateral development completed up to the end of 2023. Development has focussed on ramp access for Edward, Empire, Rex and Royal mine areas, footwall, fill and ore drive development, ventilation and secondary egress connections, and drilling platforms.

Two portal breakthroughs have been completed in the southwestern corner of the MOP and are being used for ventilation and secondary egress purposes and dumping of underground waste into the bottom of the pit.

Based on the proposed mining method and equipment, historical experience and orebody geometries, the development strategy for MUG operations involves mining of declines for access to five main stoping blocks. Access drives will be mined to develop drilling and loading levels, generally intersecting the orebodies centrally. Access drives will be spaced generally at 14 m to 18 m vertically over the height of the mine. Ore drives will be developed in both directions along strike from the access drives. Stockpiles will be mined off the decline and in levels for truck loading.

Key differences with recent operating practices involve the development of footwall drives and crosscuts in selected locations mainly confined to Edward, Empire east and west to backfill the historical workings with cemented rock fill (CRF) or rockfill (RF). Crosscut spacing is generally at 15 m spacing. Historical stopes are backfilled to provide both regional and local stability.
Mining method selection work for MUG was undertaken by SRK in 2011, 2016 and 2017 and confirmed by Entech in 2018 and 2020 and by OceanaGold in 2020. Backfill studies were conducted by Outotec and AMC in 2019 and 2020. Five mining methods are proposed for the mine:

- Modified Avoca with RF in virgin (previously unmined) areas
- Modified Avoca with RF in remnant areas adjacent to collapsed stopes separated by an intermediate pillar
- Modified Avoca with RF in remnant areas adjacent historical stopes filled with engineered fill, CRF

- Bottom up, side ring method with CRF/RF where skins adjacent to historical backfill are extracted
- Bottom up or top down, transverse stoping with CRF/RF where skins adjacent to historical backfill, open or collapsed stopes are extracted.

Mining options available for MUG are limited because of the blasting and backfill constraints and modified Avoca and transverse mining was selected as the preferred mining methods. MUG has been designed with a 14 m to 18 m level spacing, floor to floor primarily to limit blast vibration but this also assists hanging wall and footwall stability.

A reasonable proportion of the Mineral Reserves will involve the extraction of remnant skins in the footwall or hanging wall of previously mined (historical) stopes, or the extraction of both remnant skins. Historical backfill may also be mined and experience with open pit mining shows this material may be above the cut-off. However, as it is currently classified as Inferred Mineral Resource it is not included as Mineral Reserve.

Following detailed studies over the last nine years, the following methods are proposed for the extraction of remnant areas, adjacent to historic workings:

- Modified Avoca method whereby the historic stope is backfilled with CRF prior to stoping and the remnant skin is extracted by conventional modified Avoca using RF in a bottom-up sequence that exposes the CRF
- Modified Avoca method adjacent the collapsed historic stope where backfill with CRF is not feasible and a stand off from the historic wall of 3.0 m maintained with lower estimated recoveries, higher dilutions
- Remote, side ring method where the historic backfill is extracted together with remnant wall rock in a top-down sequence with CRF backfill. The side ring method is described in detail below
- Transverse stoping method where the historic backfill is extracted together with remnant wall rock in a top down or bottom-up sequence with CRF/RF backfill.

The side ring and transverse mining method for the extraction of remnant skins and historic backfill will use conventional drilling and remote loading methods. This method involves additional waste development adjacent to the remnant stopes, which increases overall development quantities and mining costs. The permit and mining method requires all stopes and selected development to be backfilled.

Mine design was prepared using Deswik® software, that allows for mine physicals to be scheduled. The design software incorporates functionality to export all design and block model interrogation data to the scheduler, including volumes, tonnes, grades, and segment lengths. Furthermore, graphical sequencing is exported for the critical links between all development and production activities.

16.2.6 Productivities and Mine Production Schedule

MUG mine production criteria were calculated from benchmarked rates. Table 16-4 lists the productivity rates and activity durations used in the mine development and production schedule.

Table 16-4: Underground Mining Rates

Activity	MUG Rate
Critical access and ventilation development	18 m/week max
General rate level waste development	9-12 m/week
High priority ore drive development	15 m/week
General rate ore drive development	9 m/week
Stope production – peak individual stope	650 t/day - 800 t/day
Stope production – total mine peak	2,000 t/day
Standard backfilling rate	850 t/day
Long hole drilling rate per rig	120 m/day

Checks were made to ensure development and stopes were sequenced correctly, development completed on the level prior to stoping commencing and adequate separation between the stoping fronts on the various levels. Checks were also made to ensure stoping, drilling, and backfilling activities on a single level could be carried out independently of each other.

The MUG schedule allows for a dewatering rate of 40 vertical metres per year. Crown pillars have been located at strategic horizons to enable production targets to be met and to ensure that a tail of low production towards the end of the mine schedule could be minimized. The mining schedule was split into the following working areas:

- Rex
- Edward upper levels
- Empire east and Martha
- Empire west
- Royal east
- Royal west.

Each working area had independent decline access and independent escape and ventilation development.

The mine is planned to produce at a rate of 500,000 tpa. To ensure overall mine production rates are achievable, activities associated with the mining works were scheduled in a logical sequence using the rates discussed above.

The major constraints on the underground scheduling were as follows:

- Minimize variations in development rates and production to avoid additional costs due to under-utilisation of the mobile equipment
- Maintain capital development approximately one full stope block ahead of production to enable capital infrastructure to be established
- Stope production can only commence once the main return airway and second egress is established.

The schedule comprises six independent ramp accesses each with separate escape and return air systems which are gathered at the key 800 L and 920 L haulage drives. From each decline a crosscut is developed into the orebody and sill dives developed along the orebody, each level also includes minor infrastructure for stockpiling, loading, electrical and pumping. On some levels additional development including footwall drives, crosscuts and passes are developed for backfilling the historical stopes.

16.2.7 Ventilation

MUG primary ventilation plan is shown in Figure 16-5. Fresh air enters MUG's south western district via the northern haulage portal and the pit intake above the Edward lode area and also from the Correnso mine via the 920 mRL and 800 mRL drives. Return air exits the mine via the pit exhaust drive and the existing 4.5 m diameter 920 to 800 mRL raisebored shaft. The existing Trio primary fans only need run when accessing remnant areas in the north otherwise they can be switched off. The secondary means of egress is via the pit intake.

The current primary fan arrangement for south-west MUG is comprised of two 700 kW MTV axial flow fans in parallel located underground in the pit exhaust airway.

Having a complex system of connecting airways between ventilation districts, with multiple mining fronts running concurrently, requires a good understanding of the ventilation circuit. Opening and closing louvred regulators as well as ventilation gates in strategic places assists in managing airflow distribution.

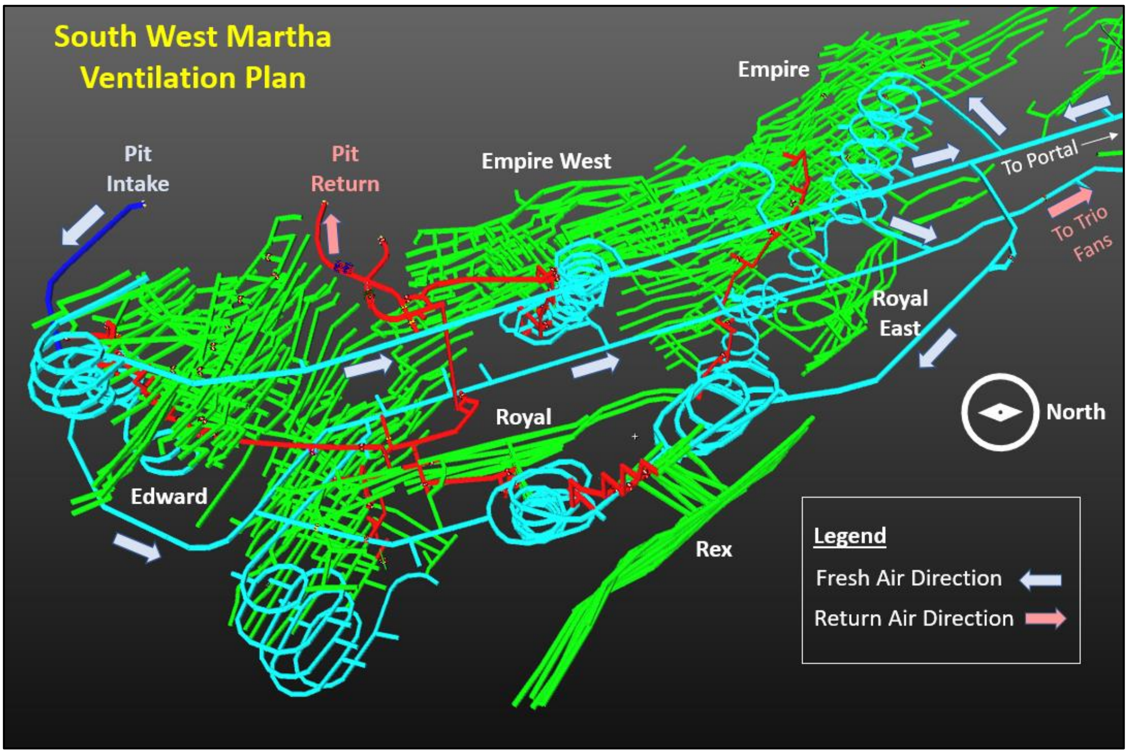


Figure 16-5: MUG Primary Ventilation Layout

Table 16-5 lists the mobile equipment and shows the number of vehicles along with their subsequent airflow requirements for dilution of diesel exhaust.

Table 16-5: Mobile Diesel Fleet Ventilation Requirements

Full Diesel Fleet	Model	Engine power rating (kW)	Airflow requirement	Qty	Total Airflow (m³/s)
Truck	Sandvik TH551	515	26	6	156
Loader	Sandvik LH517i	310	16	4	64
Loader	R2900G	320	16	2	32
Grader	Cat 12H	120	6	1	6
Charge-up	Charmec 1610B	110	6	2	12
Agitator	LF700	170	9	2	18
Development Drill	Sandvik DL421-7C	120	6	5	30
Production Drill	Solo DD330, Sandvik DL421-7C	55 110	3 6	3 2	9 12
IT	L120G	200	10	4	40
LV	Toyota Landcruiser	110	6	5	30
Total (m³/s)					410

16.2.8 Mine Services

The mine primary pump station is installed in the lower levels of Correnso at 794 mRL and consists of two trains of four Wier 6/4 AHPP-08 centrifugal multi-flow pumps, horizontal shaft type, and mounted on a 2.4 x 6 m skid. The pumps are each powered by Teco 132 kW motors with independent variable speed drives. The pump chamber includes two modified sea containers equipped with level float switches and sparging for temporary storage of water. The general layout is shown in Figure 16-6.

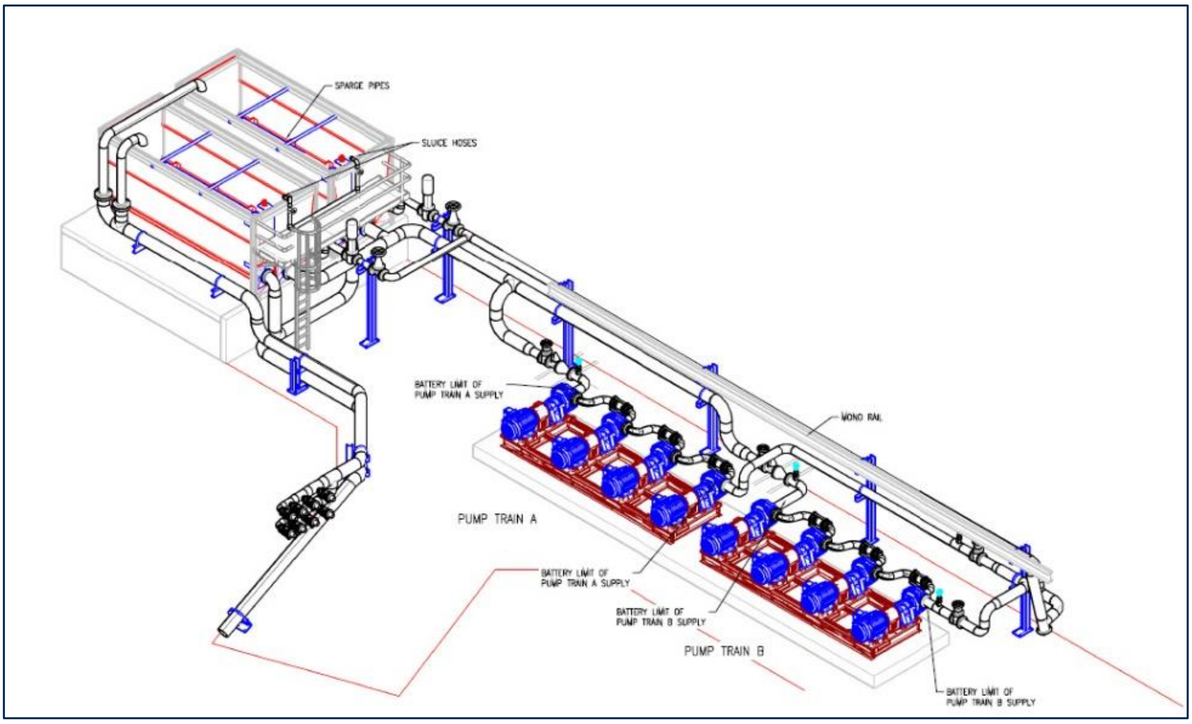


Figure 16-6: Martha Primary Pumping Station Layout

Four dewatering bores were commissioned in 2020, targeting old mine workings and were drilled from 2 access cuddies along the 800 m drill drive which dewatered the groundwater levels from the original 730 mRL down to 620 mRL (110 m head).

The preferred approach to dewater levels from 620 to 560 mRL, will be a combination of active and passive dewatering. When high inflows are intersected, diamond drilled holes are drilled into the area to dewatering the area faster and allow dryer working conditions in developments going forward. The water from the drill holes is dropped onto the floor, directed through drains to dedicated sumps and pump stations.

The secondary pumping strategy for will be to pump or gravity flow to sumps located in the level access development. This water is then gravity fed through drain holes linking level sumps and pumped or directed to the primary pumping station.

16.3 WUG

16.3.1 Cut-off Grade Calculations

Stopes are assessed individually to determine if they meet the relevant cut-off grade. In addition, the profitability of stoping areas is assessed to ensure profits cover the costs of any additional development requirements.

Two cut-off grades are used at WUG:

- minimum grade to warrant stoping including new ore drive development
- minimum grade to warrant processing of any development material including haulage to mill.

These cut-off grade scenarios are shown in Table 16-6.

Table 16-6: WUG Cut-off Calculation

Parameter	Unit	Operating CoG	Development CoG
Mining cost	$/t	65.2	19.2
Process cost	$/t	26.3	26.3
G&A	$/t	22.6	22.6
Total Cost	$/t	114.6	68.7
Gold price	$/oz	1,750	1,750
Average Au mill Recovery		90 %	
Royalty[4]		4 %	
Cut-off grade	g/t	2.4	1.4

[4] MUG and WUG royalties are payable to the NZ government at the greater of a 1 % royalty on net sales revenue from gold and silver or 5 % of accounting profits. Parts of the Wharekirauponga Mining Permit, MP 60541, are subject to an additional 2 % of sales royalty payable to Osisko (acquired from Geoinformatics)

16.3.2 Geotechnical

Geotechnical studies were undertaken by several external consultants and the OceanaGold studies team and has entailed the establishment of the geotechnical characterization and geotechnical design elements for the relevant areas. Key investigation and independent review have centred around:

- Drill hole logging, sampling and geotechnical testwork on samples
- Willows area and portal
- WUG access tunnel, process plant to Willows access tunnel
- WUG.

The drilling program was highly limited by restricted access conditions (within the DOC boundary). More than 130 diamond drillholes have been completed at WUG. Of this drilling 102 holes have had geotechnical logging for RQD and 44 for Q.

Rock property testing was conducted for the major rock types in WUG. A total of 54 uniaxial compressive strength (UCS) tests and a total of 7 Brazilian tests were completed to infer strength and elastic properties of the rock mass.

Stress measurements are not available for WUG. However, tests have been conducted for the Trio underground mine (some 10 km to the south), as reported by Golder (2021).

The rock mass quality estimates combined with the laboratory testwork show a wide range. The results indicate that there is significant variance in the rock mass quality of the region ranging between ‘very poor’ to ‘good’ averaging ‘fair’ in the main stoping regions. Rock quality can impact on the stability of workings and in terms of the Avoca mining method is managed by the sublevel interval and the maximum length of hanging wall exposed prior to backfilling. Because of the variability in estimates this would need to be managed on an operational basis once conditions are confirmed in the sill drive.

The orebody is narrow in most regions and the driving property limiting stope strike is the hanging wall span. Consequently, back widths are not expected to exceed 15 m in most areas of the mine. However, in localized areas of the EG Veins there is opportunity for large sized stope widths up to 15 mL x 20 mW in span. Empirical assessment suggests that approximately 50 % of these stopes will require ground support.

Although empirical methods have gained wide acceptance in estimating preliminary design spans, it is important to consider their limitations where the effects of large-scale persistent structures are generally not adequately represented and it is quite possible that the hanging wall will fail back to a structural feature such as a contact, fault, or fault splay as the stope span is increased and the zone of the hanging wall relaxation or de-stressing extends. These issues could be overcome or better managed with the installation of support, strategic placement of pillars, or changes in stope design so that the stope boundaries coincide with structures.

The extraction sequence can be broken into two different types:

- Avoca: bottom-up longitudinal access retreat along strike using modified Avoca
- Transverse: within the wider EG sections this is bottom-up transverse primary/secondary extraction with consolidated fill (CRF). Transverse access is from the footwall.

Figure 16-7 illustrates a typical sequence within the wider southern decline section.

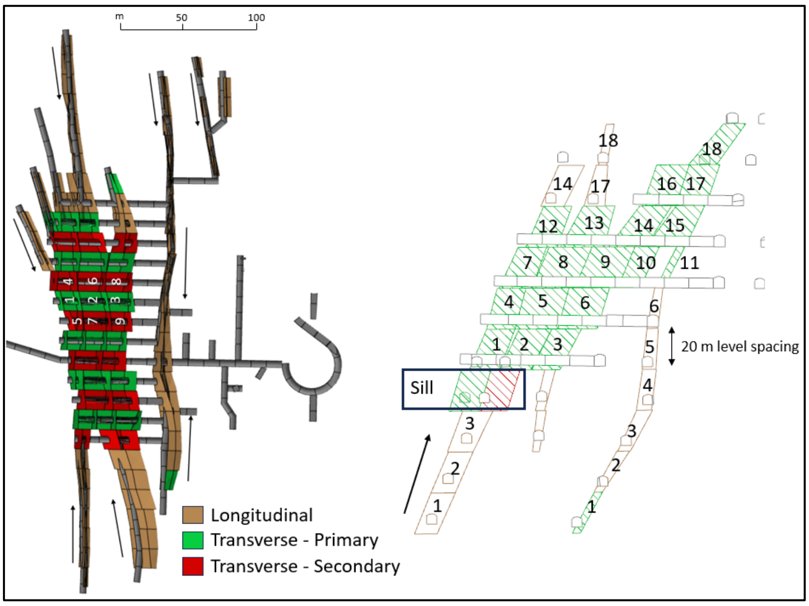


Figure 16-7: WUG Mining Method and Extraction Sequence

16.3.3 Hydrogeology and Mine Dewatering

The catchment area for the Wharekirauponga Stream is approximately 15 km^2 and with 2.17 m/year rainfall, the average daily rainfall volume reporting to the catchment is in the order of 89,200 m^3/d, with most rainfall in winter although sub-tropical storms can produce heavy events in summer. The general site location is interpreted to be within a groundwater discharge zone within the headwaters of the Wharekirauponga Stream that flows to the north-east and ultimately joins the Otahu River. Surface water flow rates have been monitored since 2019. Figure 16-8 shows WUG mine and access tunnels in relation to the Wharekirauponga catchment.

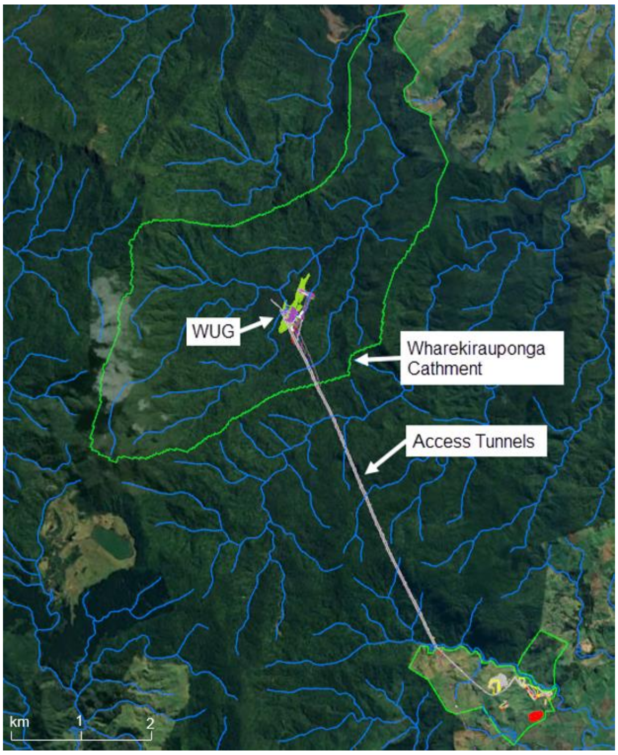


Figure 16-8: Wharekirauponga Catchment Drainage

WUG is located in a sensitive region in relation to groundwater with several minor streams in the area as illustrated in Figure 16-8. Hydrogeological investigations to date have been made by a number of consultants including a three-dimensional hydrogeological model (3D Model) of the Wharekirauponga catchment with uncertainty analysis. Flow monitoring, radon testing and 3D modelling has indicated the Wharekirauponga catchment streams have potential for a portion of their baseflow to be attributable to discharge from the EG ore vein system.

Studies to date have shown that unlike MUG there is potential for some connection between the deeper and shallow aquifer units. The degree of the connectivity is key to understanding any risk of impacts to the streams above the mine and will be controlled by permeable structures and the stream bed characteristics. A three-dimensional groundwater model was built that has had reasonable calibration to field data to replicate some but not all characteristics of the sub-catchment.

The area of potential effect from mine dewatering is expected to be constrained to (Figure 16-9):

1. Downstream drainage point: Studies have shown a drainage point lower in the catchment corresponding with the strike of the EG vein is likely
2. Rhyolite exposure: Although modelling is indicating impact outside of the outcrop, expert opinion is that this is due to the lack of information (due to limited drill sites and ability to test) on the post-colluvium units. Any impacts from dewatering are expected to be concentrated on any structures that intersect through where the rhyolite outcrop area
3. Warm spring reduction/cessation: This is a unique feature which was unable to be re-created in the modelling. The suspected mechanism is a pipe-type structure and expected to cease during dewatering. Impacts are minor and water quality is poor with no unique ecological characteristics.

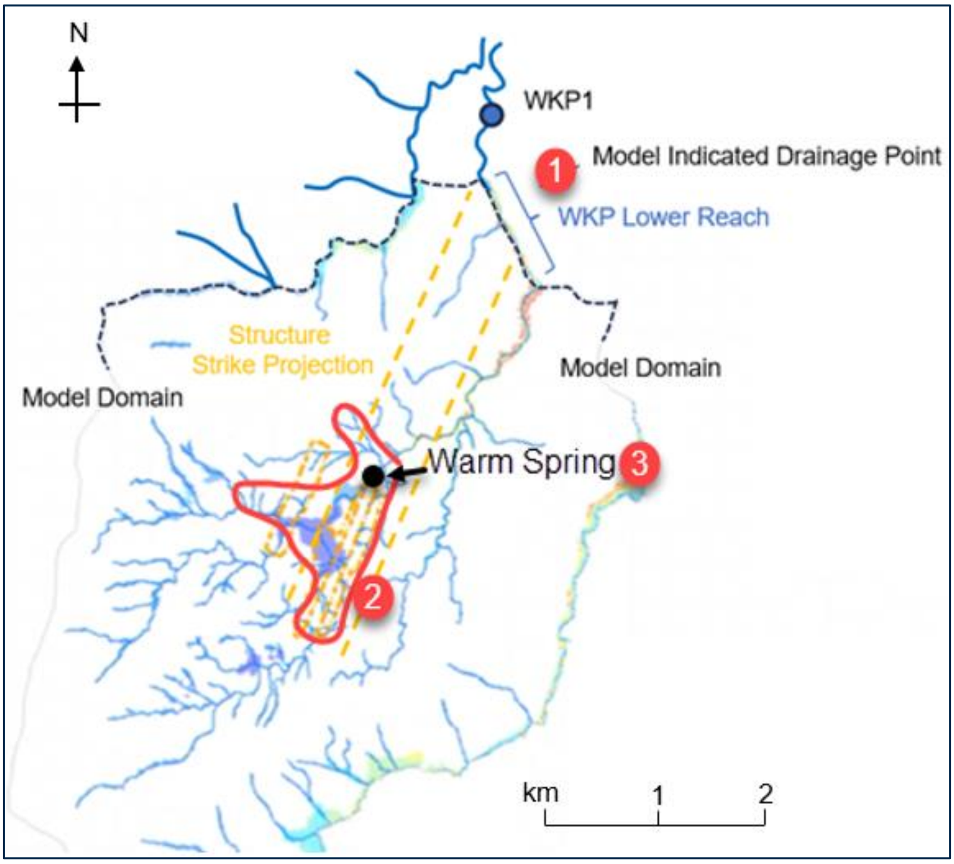


Figure 16-9: WUG Potential Groundwater Impact Areas

Uncertainty analysis has been conducted on the model results with a conservative combination (lowest flow of streams with hydrogeological characteristics of the highest impact) showing that minimal impacts are expected on both the streams and the ecology. The modelling construction and results have been independently peer reviewed by reputable industry experts.

The bulk of the formation through which the WUG access tunnels is constructed consists of low-permeability, low-storativity andesite with any groundwater being stored and transmitted in fractures. Dewatering is therefore largely limited to management of the groundwater contained in fault and vein systems. Control of underground groundwater inflow through an appropriate grouting or resin injection method may be employed in these structures to ensure minimal impacts to surface bodies are maintained. Estimates for the total ground water inflows have been made and are illustrated in Table 16-7.

Table 16-7: Dewatering Estimates for WUG

Area	Go Forward Case (m^3/d)
Access Tunnel Processing Plant to Willows	2,400
Dual Tunnels Willows to WUG	7,000
WUG (Intera results)	2,600
Total mine dewatering	**12,000**

16.3.4 Geochemical

Column leach tests have been conducted with a representative sample of the expected WUG material. Results have shown similar potential for acid forming material (PAF) as the existing MUG operation. Waste rock stored on surface is expected to require lime amendment to limit oxidation and/or limit the effects of already oxidized material. Any contact water with this PAF material is contained and transported to the upgraded water treatment facility for treatment (see sections 0 and 18.5).

An assessment for WUG closure was conducted including particle tracking to understand potential impacts on streams. Results have shown that with lime amendment, trace elements are unlikely to be measurably different to existing conditions.

16.3.5 Mine Design

The proposed access to WUG is via a 6.5 km underground tunnel from OceanaGold owned land at the end of Willow Road just north of Waihi. Access to surface installations within the Forest Park is limited. Surface infrastructure will be located at Willows to support the mining operation, including ventilation raises and fans, with additional life-of-mine ventilation installations near the orebody within the Forest Park.

A 4.7 km tunnel is also proposed from the Willows to the process plant at Waihi to complete the transport route from the mine to the plant (Figure 16-10). This tunnel will be developed from both ends meeting in the middle and is timed to provide access as late as possible to the processing plant end.

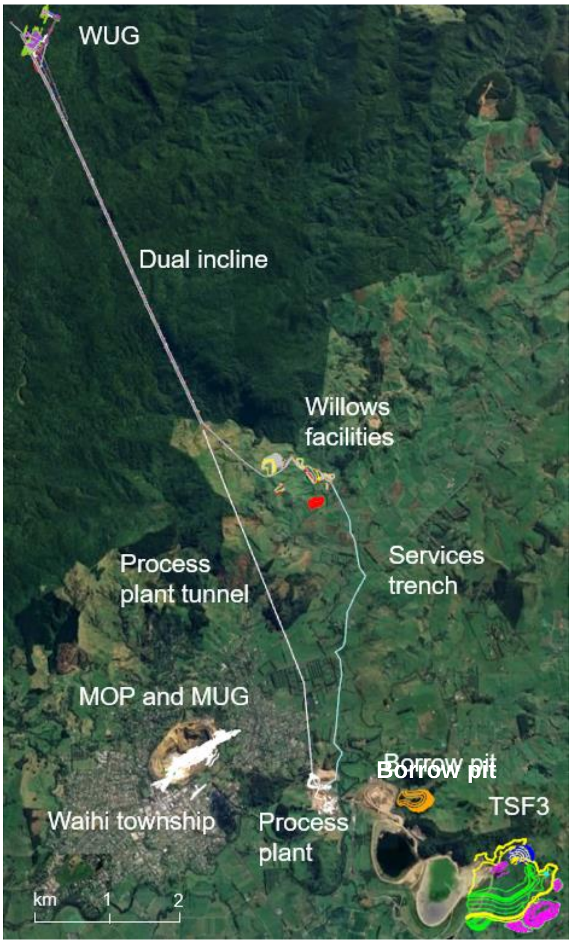


Figure 16-10: Waihi North Project Configuration

Studies showed that a dual access option provided an economic advantage over a single decline access when the risk of production delays is considered, while also assisting with primary ventilation management. The dual access option negates the need for an additional ventilation raise within the Forest Park.

The development of the access tunnels from the Willows portal will be ventilated by a primary return air raise close to the portal within the Willows boundary. The dual tunnel design allows for the second tunnel to be used as a primary return airway to the return air raise, thus negating the need for long secondary ventilation circuits over the 6.7 km tunnel distance.

The dual incline to the top of the orebody, allowing early access for construction of the primary ventilation raises to the surface. The portal raise then becomes a fresh air raise, providing a fresh air intake for each access decline.

Two other declines split from the main access decline (Figure 16-11), one of which accesses -40 mRL, which is the base of the upper mining area, above the sill pillar. The second decline accesses the bottom of the orebody. This system of three decline accesses allows for production from both the upper and lower mining areas at the same time, as well as providing for multiple contingent faces for development into the orebody, effectively decreasing the production ramp-up time. They also facilitate air flow through the mine.

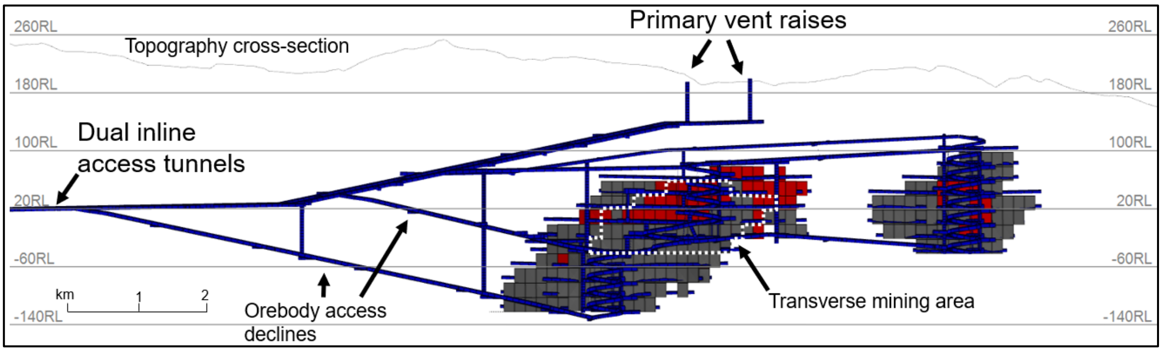


Figure 16-11: WUG Long Section looking NW from Footwall

A second fresh air intake will be mined to the surface near the orebody to assist with ventilation flows to the extremities of the orebody. An emergency egress raise will be incorporated within this air intake. Due to air speeds and pressures a control system will need to be in place to turn fans off for use of this emergency egress. The ventilation raise locations will be restricted by the need to minimise impacts on the surface.

A large portion of the orebody is steeply dipping and amenable to Avoca style selective mining. A portion of the orebody is massive where ore veins coalesce, and this zone is amenable to a transverse long hole open stoping with engineered backfill.

The interpretation and definition of the geological model has been improving due to successful conversion drilling. Over a certain region (highlighted in dashed white in Figure 16-11), the EG vein is variably dipping, and the footwall veins coalesce. Low-grade mineralization has been identified between the numerous footwall veins, therefore suggesting selective mining in this region is not the preferred approach, as it could leave significant high-grade pillars behind. 80 % of the deposit is in the southern zone, and approximately 50 % of the total WUG value is from the area highlighted by the dashed polygon.

An optimized transverse bulk mining method has been applied to this region to recover more mineralization and provide flexibility in the event of geological interpretation and geotechnical changes. Where the veins coalesce into a more massive (bulk) zone with narrow spacing between veins, a benching method with cemented rock fill (CRF) will be employed. Stope widths will be limited to 15 to 20 m wide to address the crown stability risk.

Bulk mining will provide higher ore tonnes and contained gold ounces (at the cost of reduced grades). Figure 16-12 compares the bulk mine design (left) to the Avoca only mining (right). Bulk mining requires additional development for crosscuts and footwall drives. Where the veins are narrow and spread further apart, Avoca and modified Avoca methods will continue to be the predominant methods employed.

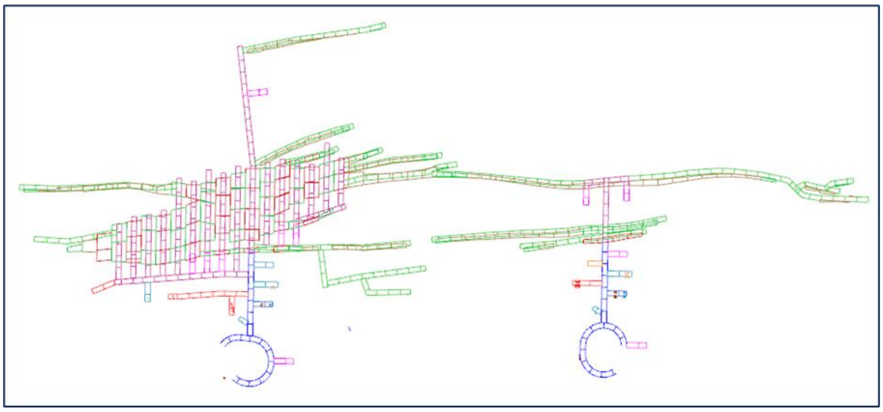


Figure 16-12: Bulk Mining (left) vs Avoca Only Mining (Right)

Vertical stoping limits are 20 m floor to floor, and mining is scheduled in an overhand style, retreating horizontally from strike extremity towards two accesses per level, and centre outward towards the accesses. The production rate is scheduled at 800 kt ore per annum.

A decline system was designed to connect to the level accesses, and other infrastructure required for the life of the mine was designed from these openings. Two level access locations per level are provided in the PFS design. These locations satisfy the following criteria:

- Secondary ventilation – Accesses are located to ensure that secondary ventilation circuits for development and stoping on levels are reasonable, without pressure losses that would result in inadequate airflow. This requires limiting strike distances between primary ventilation access points
- Production efficiency – The orebody geometry is narrow with a long strike distance. This limits the options for sequencing of multiple mining fronts, as each level must retreat to the access from either direction, limiting the level to two production fronts at a time. The provision of twin accesses allows for up to four mining fronts per level, providing greater flexibility in production scheduling to decrease production risk over the life of the mine.

A sill pillar is located at -60 mRL, splitting the mine into two areas allowing for multiple mining fronts. Stopes above the sill bench will be bench mined and backfilled with cemented rock fill to allow for recovery of the pillar towards the end of the mine life.

Mine waste will be stockpiled at Willows and the polishing pond during the development phase of WUG and then returned underground as stope backfill. Mining rates assume major access capital development will be mined by a specialized mining contractor.

16.3.6 Productivities and Mine Production Schedule

Mining of the WUG orebody consists of the following phases:

1. Construction of the portal and surface infrastructure, which includes the waste rock stack foundation, crib rooms and offices, electrical substation, water management facilities, fuel storage, explosive magazines, compressed air supply, workshops, stores, parking areas, and other ancillary facilities required for the mining operation. The facility area and portal will be located at the Willows
2. Preparation for the portal at the Polishing Pond near the processing plant for the additional haulage tunnel will also be required
3. Development of the Willows decline from surface to the initial primary ventilation raise (VS1). This is a single heading development using secondary ventilation from the portal
4. Mining of the primary return air shaft and installation of primary fans, and establishment of an underground pumping station
5. Development of dual inclines to the WUG orebody. This development will utilize primary ventilation airflows between the portal and the return air raise
6. Concurrent development of an incline from the Willows return air raise location and decline from the Polishing Pond
7. Develop declines (off the dual incline) to access the orebody, initially using secondary ventilation. Develop surface air raises, then transfer the primary ventilation fans to the WUG orebody return air raise
8. Develop the orebody infrastructure and production accesses, including ore drives
9. Commence stope production upon completion and commissioning critical path capital development and associated infrastructure
10. Production ramp-up to steady-state production to closure
11. Mine rehabilitation.

The rate at which nameplate production is achieved is determined by access to the WUG from the Willows box cut portal, and then by the rate of vertical advance possible once primary ventilation is established.

The orebody is divided into three production zones 'A', 'B' and 'C (Figure 16-13). There are also separate production zones above and below the sill pillar at -60 mRL in zones 'A'. Zone 'Z' is the main access capital development.

Zone 'A' is the most significant production zone and the first to commence production due to its proximity to the main access tunnels.

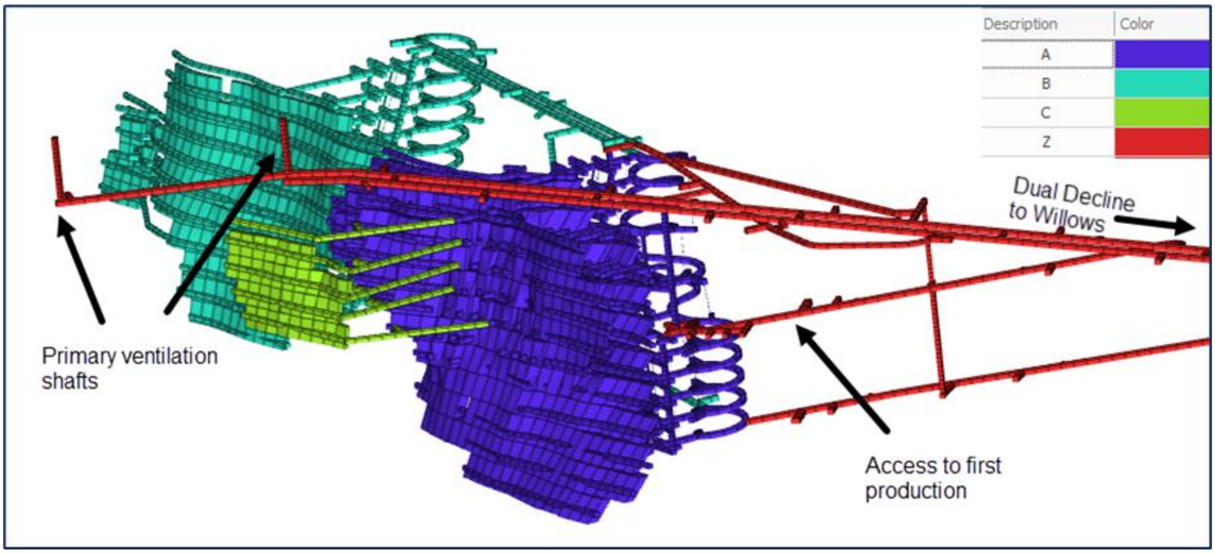


Figure 16-13: Isometric View of WUG Underground Layout (Looking from Hanging Wall)

Underground mine scheduling is undertaken with Deswik® Interactive Scheduler and Deswik® Sched software. After establishing task dependencies, mining priorities, task rates, and capacity constraints the schedule is generated using the software's auto-scheduler. Equipment productivity rates are built from a combination of existing MUG benchmarking, first principles and benchmarking to similar projects.

Key schedule assumptions are noted in Table 16-8.

Table 16-8: WUG Mining Rates

Activity	Resource	Rate
Production Loader	LHD	450 -1,000 t/day depending on width of stope
Backfill Loader	LHD	850 t/day for Rack fill, 600 t/day for CRF
Surface Fresh/Return Air Raise	Strip and Line	4 m/d
Stope Drilling	LH Drill	180 m/d
Decline - Single heading	Jumbo	28 m/week per heading
Incline - Dual	Jumbo	36 m/week per heading
Decline - orebody access	Jumbo	28 m/week per heading
Access Drive	Jumbo	28 m/week per heading
All other remaining development	Jumbo	9 m/week

The mine mobile equipment requirements summarized in Table 16-9 are based on the production schedule.

Table 16-9: WUG Mobile Equipment Fleet

Category	Make and Model (Indicative)	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Development Drills	Sandvik DD422i	1	1	3	2	2	2	2	3	3	1	1	1	1
Production Drills	Sandvik DL431	1	1	1	1	1	2	2	3	4	4	3	3	2
Loaders	Sandvik LH517	1	1	2	2	2	2	2	6	8	7	7	5	2
Trucks	Sandvik TH551	1	1	2	2	2	4	4	9	11	8	8	7	3
Charge-up	Charmec MF 605D	-	-	-	-	-	-	1	1	2	2	2	1	1
Shotcreter	Spraymec SF 050	1	1	1	1	1	1	1	1	1	-	-	-	-
Transmixer	Agi LF700	1	1	1	1	1	1	1	1	2	2	2	2	1
Service Truck	MacLean BT3	1	1	1	1	1	1	1	1	1	1	1	1	1
Water Truck	Elphinstone WF810	1	1	1	1	1	1	1	1	1	1	1	1	1
Grader	Cat 12H	1	1	1	1	1	1	1	1	1	1	1	1	1
Light Vehicle	Landcruiser	2	3	10	10	10	9	9	12	12	12	12	11	5
IT	Volvo L120	1	1	2	2	2	2	2	3	3	1	1	1	1

16.3.7 Ventilation

The development phase of the mine during the building of access tunnels from the Willows portal will be ventilated by a primary return air raise close to the portal within the Willows. The dual tunnel design allows for the second tunnel to be used as a primary return airway to the return air raise, thus negating the need for extensive secondary ventilation circuits over the 6.7 km tunnel distance.

At the orebody two additional return air raises will be mined to surface, one for return air and one as a fresh air intake. An emergency egress system is included within the fresh air intake shaft.

It is assumed that consents will enable ventilation shafts to be located in favourable geotechnical ground and give the ability to conduct the required investigative drilling and testing to find suitable ground prior to construction. In addition, the surface expression will be increased to up to 900 m^2, to allow for the construction requirements.

Due to access restriction to finalise a ventilation construction methodology a conservative approach has been made by shortening the shaft lengths to 60 m and increasing the lateral development. Final methodology will be dependent on ground conditions encountered and is part of the forward work program when access is given to investigate. Figure 16-4 illustrates the potential construction methodology.

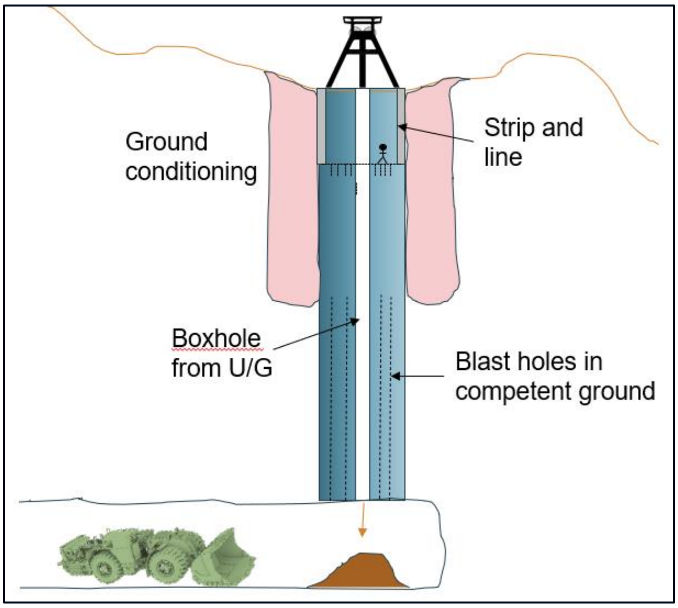


Figure 16-14: WUG Ventilation Shaft Construction Methodology

Ventilation requirements are determined from the diesel fleet requirements of the mining schedule. 460 m^3/s is required at maximum demand which includes leakage. A 2 MW fan is required to provide this quantity and is to be constructed underground.

16.3.8 Mine Services

Mine dewatering from WUG is estimated to be 12,000 m^3/day. Due to some uncertainty, especially with the dual tunnel section, infrastructure has been sized for 350 L/s or 30,240 m^3/day. This size is considered appropriate and allows for potential higher permeabilities in sections of the tunnel.

The main primary dewatering infrastructure will be staged as the mine progresses. Costs and development are included to accommodate the following pump stations:

- PS1: 2 x Warman 12/10 AHPP Centrifugal Pumps (2 duty)
- PS2: 2 x Warman 12/10 AHPP Centrifugal Pumps (2 duty)
- PS3: 2 x Warman 12/10 AHPP Centrifugal Pumps (2 duty)
- PS4: 3 x Warman 12/10 AHPP Centrifugal Pumps (3 duty)
- Interim PS1: 3 x Flygt BS2640 90kW
- Interim PS2: 3 x Flygt BS2640 37kW

Mine designs have appropriate drainage and drain lines included in the design to facilitate all water to the main pump stations.

16.4 Production Schedule

Figure 16-15 and Figure 16-16 show the annual mine and mill production schedule respectfully for MUG and WUG. Table 16-10 shows the combined production schedules. Note figures show H2 only for 2024 with full year production expected to be 48-52 koz.

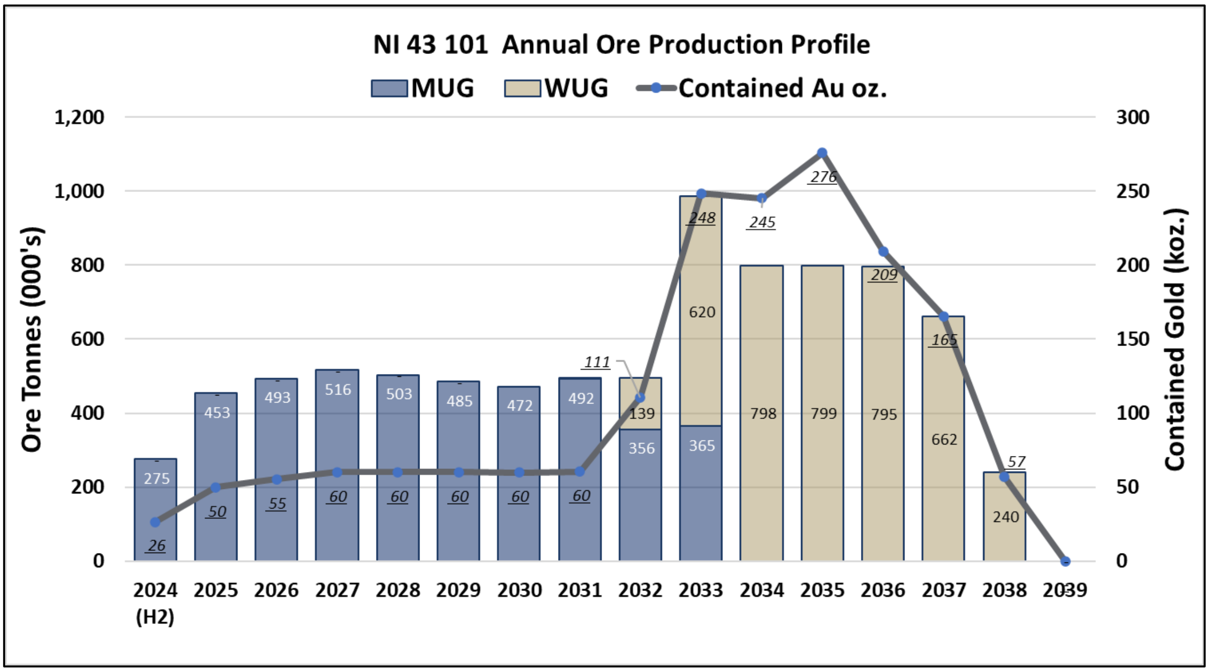


Figure 16-15. Annual Mine Production

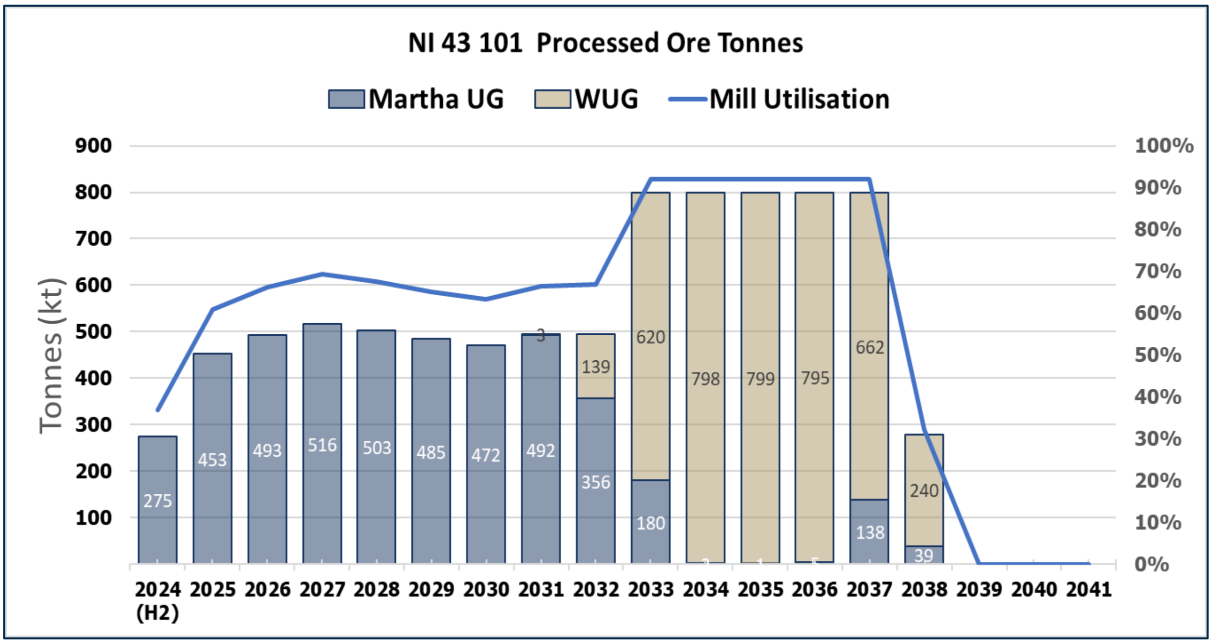


Figure 16-16: Annual Processing Profile

Table 16-10: Annual Production Profile

Description	Units	2024 (H2)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
MUG Production Schedule																
Ore Tonnes	000's t	275	453	493	516	503	485	472	492	356	365	-	-	-	-	-
Gold Grade g/t	g/t	3.0	3.4	3.5	3.6	3.7	3.8	4.0	3.8	5.2	4.0	-	-	-	-	-
Silver Grade g/t	g/t	13	16	18	13	13	14	13	9	39	18	-	-	-	-	-
Contained Au oz	000's oz	26	50	55	60	60	60	60	60	60	47	-	-	-	-	-
Contained Ag oz	000's oz	118	233	290	215	206	216	194	143	451	216	-	-	-	-	-
Waste Mined Tonnes	000's t	227	520	436	361	328	129	44	44	4	1	-	-	-	-	-
WUG Production Schedule																
Ore Tonnes	000's t	-	-	-	-	-	-	-	3	139	620	798	799	795	662	240
Gold Grade g/t	g/t	-	-	-	-	-	-	-	5.5	11.4	10.1	9.6	10.7	8.2	7.8	7.4
Silver Grade g/t	g/t	-	-	-	-	-	-	-	6	18	18	17	18	14	13	16
Contained Au oz	000's oz	-	-	-	-	-	-	-	1	51	201	245	276	209	165	57
Contained Ag oz	000's oz	-	-	-	-	-	-	-	1	79	356	428	463	368	277	123
Waste Mined Tonnes	000's t	-	-	50	176	477	477	469	428	317	357	416	57	31	5	3
Combined Underground Production Schedule																
Ore Tonnes	000's t	275	453	493	516	503	485	472	495	496	985	798	799	795	662	240
Gold Grade g/t	g/t	3.0	3.4	3.5	3.6	3.7	3.8	4.0	3.8	6.9	7.8	9.6	10.7	8.2	7.8	7.4
Silver Grade g/t	g/t	13	16	18	13	13	14	13	9	33	18	17	18	14	13	16
Contained Au oz	000's oz	26	50	55	60	60	60	60	60	111	248	245	276	209	165	57
Contained Ag oz	000's oz	118	233	290	215	206	216	194	144	530	572	428	463	368	277	123
Waste Mined Tonnes	000's t	227	520	486	537	805	606	513	473	321	357	416	57	31	5	3
Combined Processing Production Schedule																
Ore Tonnes	000's t	275	453	493	516	503	485	472	495	496	800	800	800	800	800	279
Gold Grade g/t	g/t	3.0	3.4	3.5	3.6	3.7	3.8	4.0	3.8	6.9	8.7	9.5	10.7	8.2	7.1	6.9
Silver Grade g/t	g/t	13	16	18	13	13	14	13	9	33	18	17	18	15	18	19
Recovered Au oz	000's oz	25	47	52	57	57	57	56	56	101	204	223	253	188	165	57
Recovered Ag oz	000's oz	80	147	183	135	130	136	122	91	334	293	271	293	235	287	110

17 RECOVERY METHODS

The metallurgical process at Waihi is proven technology and well suited to regional geo-metallurgy, having been in continuous operation for 35 years. Metallurgical testwork on WNP orebodies supports ongoing use of the existing flowsheet with plant expansions to enable higher throughput rates. These expansions will be timed to align with the development of new orebodies. Open-pit and underground ores will continue to be treated on a campaign basis to meet their respective grind size and recovery targets.

17.1 Ore Processing

The existing process flowsheet consists of five stages: comminution, leaching/adsorption, elution, electro-winning and smelting as shown in Figure 17-1. It has the capacity to treat either 1.25 Mt of open pit or 0.66 Mt of underground ore per annum.

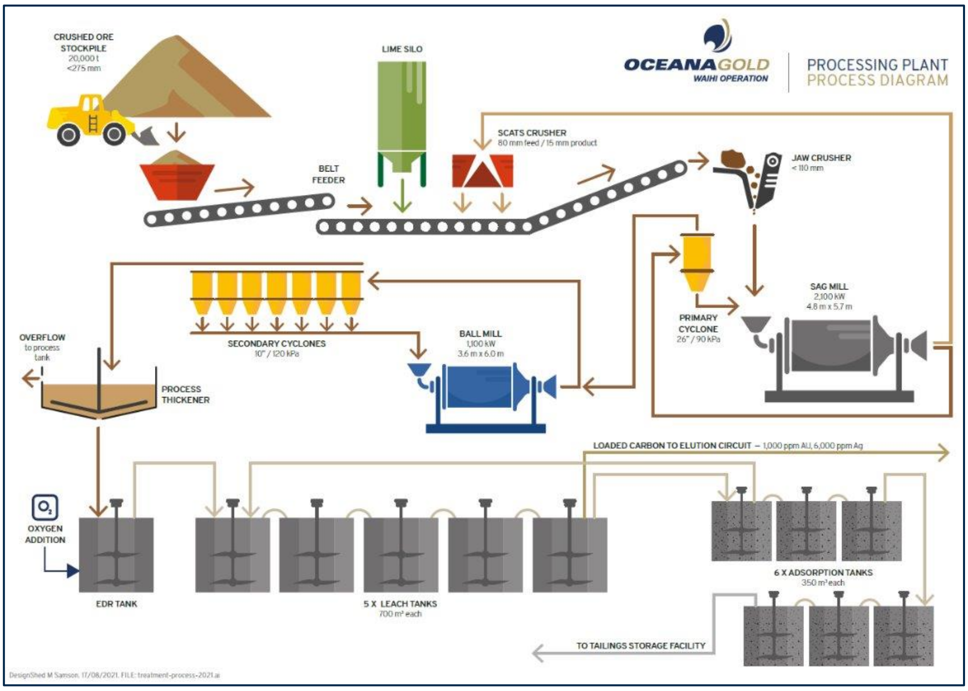


Figure 17-1: Process Flow Sheet

17.1.1 Comminution

The existing circuit is designed to treat open-pit ore at 150 tph to produce a target grind size (P80) of 75 µm or treat underground ore at 80 tph to produce a target grind size (P80) of 53 µm. Normally, the SAG mil is set-up as a closed-circuit, but it can be operated in open circuit if required. The ball mill is always operated in closed circuit.

Stockpiled ore is reclaimed by front end loader and fed onto a static grizzly with an aperture of 150 mm. The final conveyor from the ore handling circuit transports the ore into the grinding circuit.

Prior to entry into the feed chute of the semi-autogenous (SAG) mill, the ore is further reduced in feed size via a jaw crusher to a P_{80} of 110 – 130 mm. The SAG mill-ball size is 125 mm, and the mill will operate typically with a 10 % ball load. The SAG mill draws between 2.1 and 2.5 MW of power.

The SAG mill discharge is sized using a trommel attached to the SAG. The +12 mm oversize material is conveyed to a 30 kW cone crusher and is recycled back to the SAG mill. The undersize slurry from the SAG trommel is pumped to two 500 mm diameter inclined Weir Warman Cavex cyclones. The cyclone underflow reports to the SAG mill feed chute. The cyclone overflow gravitates to the ball mill discharge hopper, whereby the slurry is pumped to a cyclone distributor, which consists of fourteen 250 mm diameter Weir Warman Cavex cyclones. The cyclone underflow reports back to the ball mill for further grinding and the cyclone overflow reports to the pre-leach thickener.

17.1.2 Leaching and Adsorption

The pre-leach thickener increases slurry density from approximately 15 % solids to approximately 37 to 40 % solids prior to the leach/adsorption circuit, which comprises five leach and seven carbon in pulp (CIP) adsorption tanks. The leaching tanks capacity are 700 m^3 and the adsorption tanks have 300 m^3, providing a total residence leach/adsorption time of 24 hours for open-pit ore and 48 hours for underground ore. Wedge wire cylindrical inter-stage screens with mechanical wipers are installed in each adsorption tank. The inter-stage screens retain carbon in the tank but let the slurry pass through to the next stage. A bleed stream is pumped from an adsorption tank to the previous tank in the circuit, the carbon contained in the bleed stream is retained in the previous adsorption tank in the circuit, this provides counter current flow whereby the slurry flows from adsorption tank 1 to 7 while the carbon flows from adsorption tank 7 to 1. This allows for maximum carbon loading in adsorption tank 1 and maximum scavenging of gold solution in adsorption tank 7. From adsorption tank 7 the slurry passes over a carbon safety screen to collect any carbon that may have leaked from the adsorption circuit, the barren tailings slurry is then pumped to the tailing’s storage facility.

Cyanide is delivered and mixed on-site, via a sparging system to a concentration of 21 % wt./vol. The cyanide is dosed into the first leach tank and the concentration is maintained at 250-280 ppm. Oxygen is added to the first leach tank by a shear reactor to enhance the leach kinetics and reduce cyanide consumption.

17.1.3 Elution, Electrowinning and Smelting

Loaded carbon from the adsorption circuit is fed into an elution column where the carbon is washed at high temperature and pressure to remove the gold and silver from the carbon and into a pregnant eluate using the AARL process. The pregnant eluant is then passed through electrowinning cells where gold and silver are electroplated onto stainless steel cathodes. Following elution, the barren carbon is reactivated and recycled to the adsorption tanks.

The cathodes are periodically harvested and rinsed to yield a gold and silver bearing sludge which is dried, mixed with fluxes and put into a furnace at 1200 °C. Once the sludge is molten it is poured as bars of doré ready for shipment to the Mint.

17.1.4 Metallurgical Accounting

Metallurgical accounting at Waihi is primarily based on the tonnage of wet ore processed through the comminution circuit, as totalized on a conveyor weightometer and gold receipts from the Mint. Wet tonnes are converted to dry tonnes by using a moisture factor, the moisture factor is derived from samples taken from the conveyor. Gold production is based on gold receipts from the Mint and the changes to the gold stocks in circuit. Gold stock takes are taken monthly.

Samples are taken at strategic points in the processing stream to measure gold concentrations in those streams to determine plant efficiencies on a day-to-day basis. All information is entered into a data base which then performs the metallurgical accounting.

17.1.5 Other

The Waihi processing plant has a SCADA control system. Equipment protection and control loops to optimise the control of the major streams/processing parameters within each process circuit are actively in use within the process plant.

17.1.6 Process Plant Upgrade

The processing plant currently has the capacity to treat either 1.25 Mt of open pit or 0.66 Mt of underground mill feed per annum at a feed rate of 150 tph and 80 tph respectively. To align with the proposed mine schedule for the new WUG orebody, throughput capacity on underground ore will need to increase to 0.8 Mt per annum or 100 tph.

Ausenco were engaged to design and cost the expansion option(s) to pre-feasibility study level accuracy. OceanaGold provided the major inputs to the process design criteria and specified the major equipment to be included in the study. Ausenco developed mass balances, process flow diagrams, mechanical equipment lists, electrical load lists, material take-offs and plant layout designs showing new, relocated, and upgraded equipment.

Key elements for the proposed plant upgrade include:

- Installation of the primary crusher salvaged from OceanaGold's Reefton process plant
- Relocation of process water and elution water tanks that currently sit in the proposed crusher site
- Installation of 1.8 MW tower mill for secondary grinding (to replace existing conventional 1.2 MW ball mill) and associated feed pumps and hopper
- New classification circuit to operate with the new tower mill, including cyclones, feed pump and associated hopper
- Replacement of the 6 current adsorption tank interstage screens with larger capacity Derrick units
- Replacement of the 6 current adsorption circuit air lifts with centrifugal recessed impeller carbon advance pumps
- Upgrade of the tailings pumping system to pump to the new TSF3
- Containerized MCC to provide power to the Primary Crusher Area
- Upgrades to the existing switchroom(s) to support the installation and the associated new equipment
- HV/LV Switchroom and stepdown transformers
- A general layout of the proposed plant upgrade, and the crusher and tower mill installations are shown in the figures below- Figure 17-2; Figure 17-3; Figure 17-4.

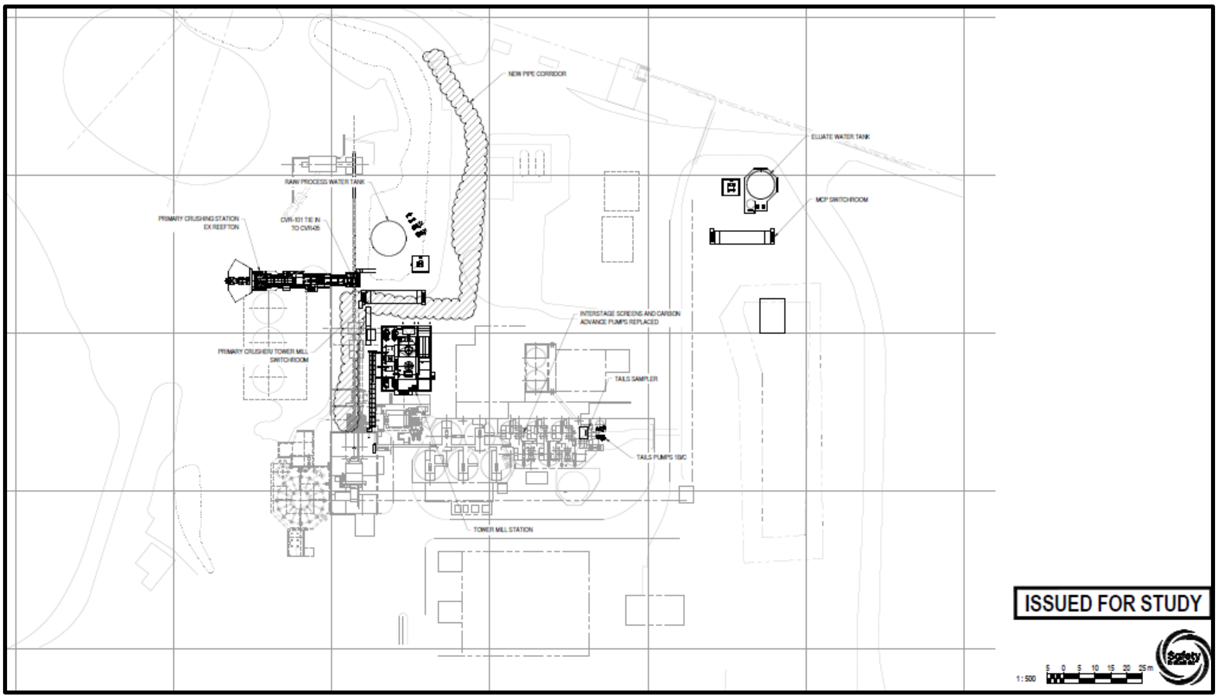


Figure 17-2: General Arrangement for Proposed Process Plant Upgrade

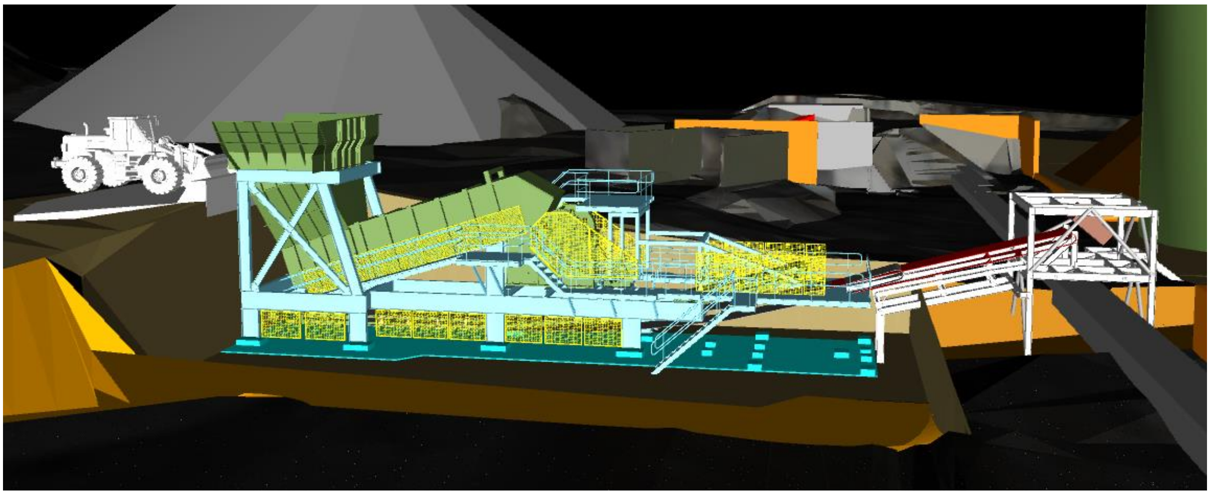


Figure 17-3: Proposed Reefton Crusher Installation

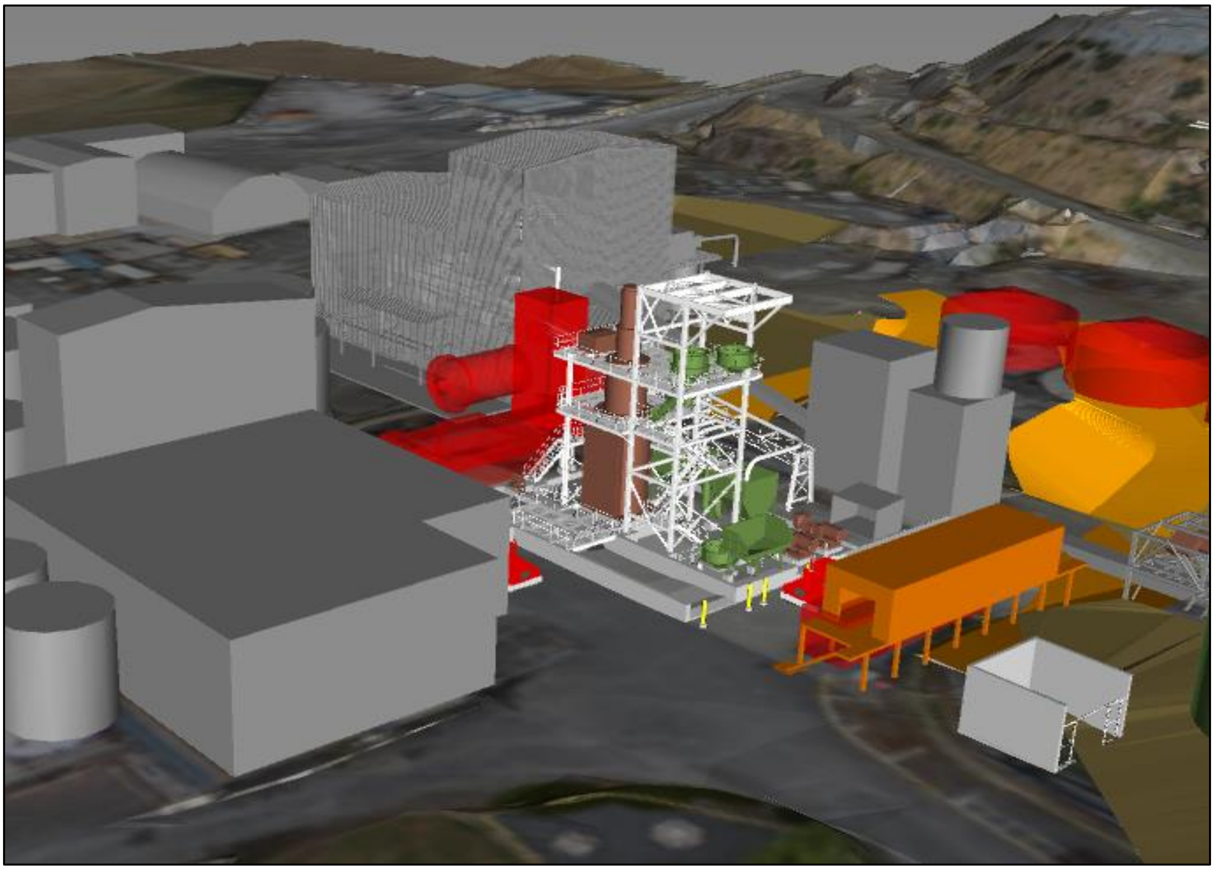
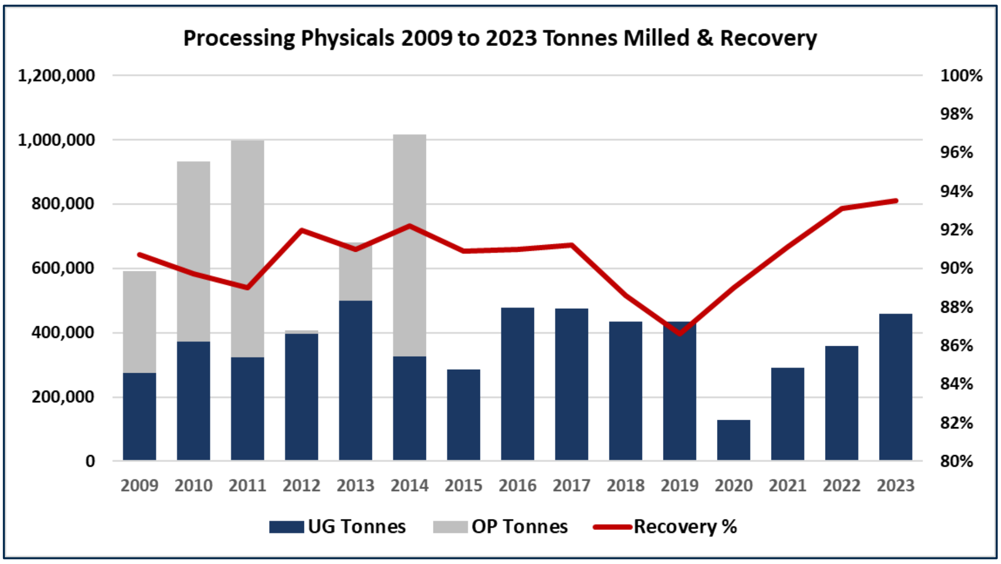


Figure 17-4: Proposed Tower Mill Installation

17.2 Operational Results

Mill production tonnes processed by source and plant recovery for the 2009 -2023 years are shown in Figure 17-5. Mill throughput has been mine constrained since 2015 with all ore being sourced from a single underground mine. Reduced recoveries in 2018 and 2019 are a product of high arsenic levels in the lower levels of the Correnso mine and in line with budget recovery models incorporating gold and arsenic head grades.

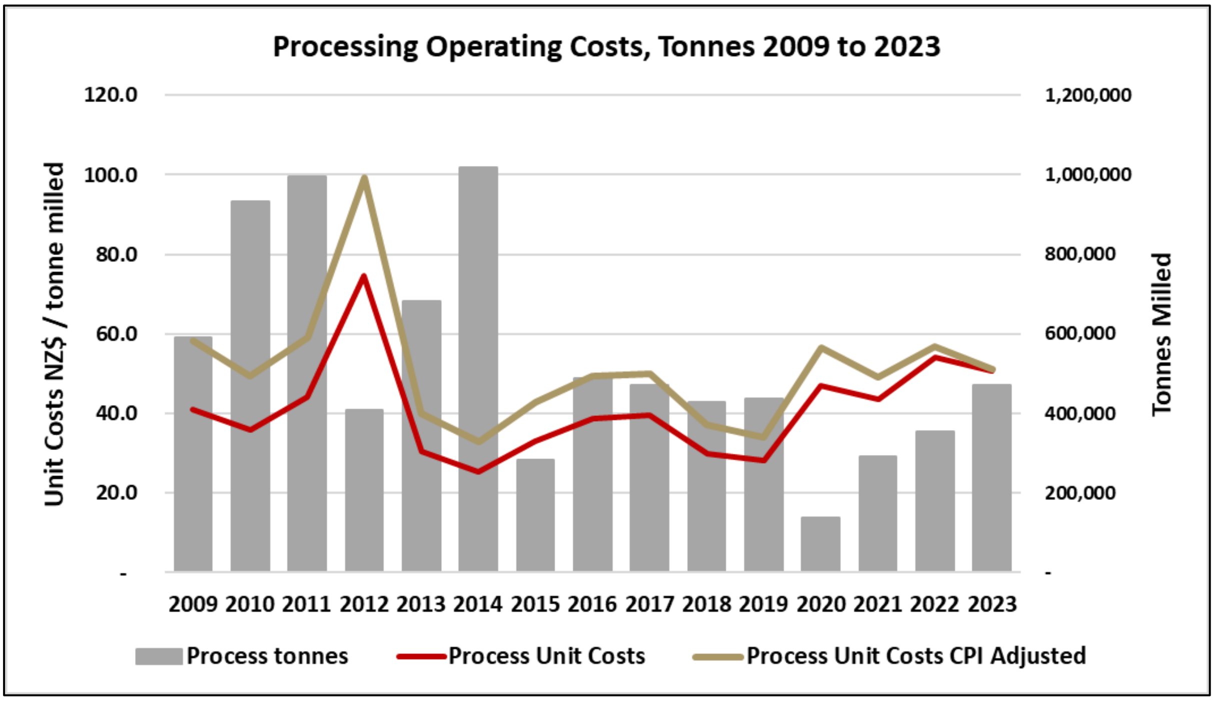


Source: Newmont and OceanaGold Monthly Reports

Figure 17-5: Underground Mill Feed Tonnes and Recovery 2009-2023

17.3 Process Unit Costs

Process unit costs are dependent to a large degree on ore availability with initiatives implemented since 2015 to reduce costs in the mill given the limited supply of ore. Processing costs have ranged from NZ$34 – 50 /tonne milled (CPI adjusted) when more than 40,000 tonnes per month of ore was available. The unit cost history for the Waihi mill is shown in Figure 17-6 below.



Source: Newmont and OceanaGold Monthly Reports

Figure 17-6: Actual Process Unit Costs 2009-2023

17.4 Water Treatment Plant

As the Waihi processing plant operates with a positive water balance, a water treatment plant (WTP) and a reverse osmosis (RO) plant treat various water sources before discharging into the local Ohinemuri River. The WTP flowsheet is illustrated in Figure 17-7.

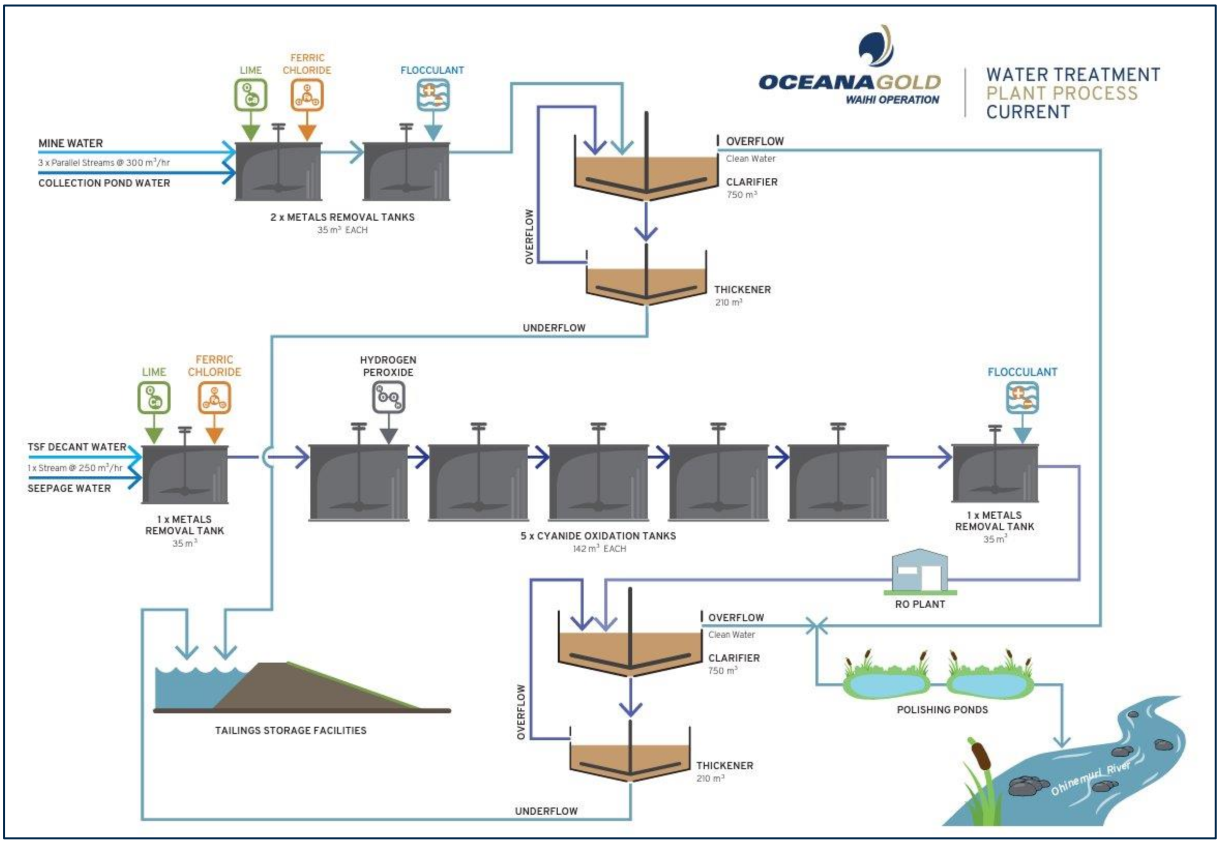


Figure 17-7: Water Treatment Plant Flowsheet

The WTP has been in operation since 1988 and has been subject to upgrades in 1999 and 2011. A reverse osmosis plant was built and commissioned in 2008 to provide an additional treatment option for metals removal but has not been used since 2012. The WTP has performed consistently well with no recorded non compliances with consent conditions.

The WTP incorporates four parallel streams with three of these dedicated to soluble metals removal only. The fourth stream has two phases of treatment; oxidation of cyanide to destroy the cyanide complexes followed by metals precipitation and removal.

Lime and ferric chloride are added to all four water streams to facilitate metals precipitation and removal. Metals tend to occur in a soluble form when the pH of water is low and raising the pH with lime in the presence of ferric chloride creates insoluble hydroxides and carbonates to form. Following mixing and retention a polyelectrolyte (flocculant) is added along with more lime to form flocs that can be settled out.

Cyanide oxidation is achieved using a combination of hydrogen peroxide, copper sulphate and lime. A series of tanks are used for reagent mixing followed by retention to provide time for chemical reaction. Hydrogen peroxide in the presence of copper destroys all free cyanide through chemical oxidation. Weak acid dissociable (WAD) cyanide is also oxidized during the process. On oxidation, cyanide yields simple carbon and nitrogen compounds.

Clarifiers at the end of the treatment process allow the suspended solids and metals to be removed from the water. The suspended solids and metals fall to the bottom of the clarifiers forming a slurry. The slurry is pumped to the tailings pond via a thickener. Carbon dioxide is added to the clean water overflow from the clarifier to reduce the pH of the water to meet the compliance limits.

There are two polishing ponds that hold the treated water for approximately 16 hours prior to discharge to the river. This provides time for the treated water to be tested, and the results to be received and interpreted prior to the water discharging to the Ohinemuri River.

Water that meets the discharge criteria is discharged to the Ohinemuri River. If the water does not meet the discharge criteria, it is recycled back through the plant, used in processing, or pumped to the tailings storage facility.

There are five operating regimes, and each provides for a different combination of water requiring cyanide destruction versus metals removal only. These operating regimes recognise that the proportion of water being treated for cyanide destruction impacts the treated water quality.

17.4.1 Water Treatment Plant Upgrade

GHD were engaged to design and cost an upgrade of the water treatment plant (WTP) to meet the predicted demands of the WNP.

The design capacity of the expanded WTP is double that of the existing infrastructure – 1,800 m^3/hr for metals removal and 500 m^3/hr for cyanide destruction and metals removal. This aligns with expected dewatering flows and the newly consented discharge regime (Regime E).

Datasets of WTP influent and treated waters formed the basis of design. Influent analysis was used to calculate predicted loads to the upgraded plant and the Resource Consent (AUTH971318.01.13) was used as the basis for treatment targets.

The upgrade study identified the preferred treatment options as follows:

- Metals Removal: Two additional streams, replicating the current metals precipitation treatment method
- Cyanide Destruction: One additional stream, replicating the current hydrogen peroxide oxidation process.

These treatment options were progressed to further engineering design and costing.

- Metals Streams Upgrade: Involves adding two additional parallel metals treatment streams, as per the current method of treatment. A new blend tank would be added to maintain the residence of upfront mixing of incoming water. The two new streams would both have:
  - mixing tanks with agitators for dosing of ferric chloride, calcium hydroxide and polyelectrolyte
  - clarifiers with motorized rake and platforms, each equipped with duty-standby underflow pumps
  - a thickener to receive pumped clarifier underflow, each sized to accommodate clarifier underflow from the new cyanide stream and each with duty-standby underflow pumps
  - in-pipe CO2 dosing of effluent on passage to the polishing ponds.
- *Cyanide Stream Upgrade:* This upgrade involves the addition of a 250m^3/h treatment stream, mimicking the current stream, thus including:
  - mixing tanks with agitators for the mixing of ferric chloride and calcium hydroxide
  - chemical oxidation tanks (5 of) with introduction of hydrogen peroxide and copper sulphate in the first tank
  - final mixing tank to add polyelectrolyte

- a clarifier with motorized rake and platforms, each equipped with duty-standby underflow pumps
- in-pipe CO2 dosing of effluent, on passage to the polishing ponds.

- Preliminary assessment of required footprint indicates that all options can fit within the designated expansion area
- Assessment of all dosing chemical storage capacity versus proposed upgrades was carried out, indicating that lime storage would need to be doubled. No other current chemical storage tanks require upgrade based on projected use
- The river discharge infrastructure also needs upsizing to accommodate the higher outflow rates. This will duplicate the existing discharge pumping and pipework system.

A general arrangement of the proposed water treatment plant upgrade is illustrated in Figure 17-8.

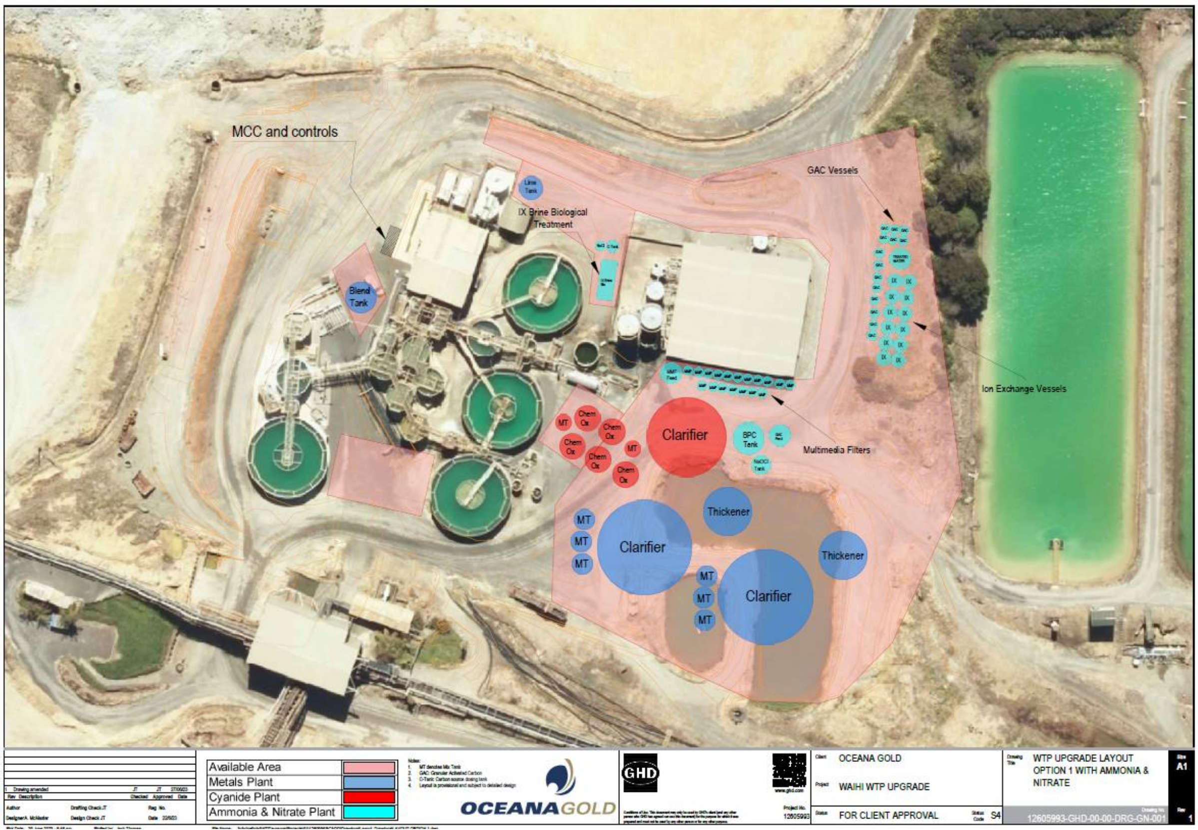


Figure 17-8: General Arrangement of Water Treatment Plant Upgrade

18 PROJECT INFRASTRUCTURE

18.1 Existing Mine Site Surface Infrastructure

MUG is an active mine with much of the infrastructure required for its ongoing operation already in place. New facilities will be required at the Willows portal for WUG. The location of the existing infrastructure is shown in Figure 18-1.

Figure 18-1: Waihi Existing Infrastructure

Existing facilities comprise:

- Two separate tailings storage facilities (TSF1A and TSF2)
- Numerous silt and collection ponds
- Stockpile facilities
- Mine access roads
- Water treatment facilities
- Underground administration, workshop, and change house
- MOP surface conveying and loadout facilities
- Surface explosives magazines
- Process plant
- Cement batch plant adjacent to the existing polishing pond stockpile.

18.2 Tailings Storage Facility

18.2.1 Existing Tailings Storage Facilities

Waihi has two tailings storage facilities (TSFs) known as TSF2 and TSF1A. Both are located southeast of the process plant and MOP as shown in Figure 18-1. The TSF's are formed by downstream constructed embankments that abut elevated ground to the east of TSF2 and north of TSF1A. TSF 2 ceased operation in 2001, and TSF1A is the current active TSF. TSF2 has a planned finished crest elevation of 159.5 mRL and the planned finished crest of 182 mRL for TSF1A. The embankments have both been constructed from overburden material obtained from mining MOP. TSF2 was constructed first and provided tailings storage from 1989 to 2000. TSF1A has since provided tailings storage to date. TSF1A and TSF2 were originally permitted under a former mining licence and now operate under the provisions of the RMA, TSF1A has a Building Consent allowing it to be constructed to 182 mRL, while TSF2 has a Building Consent allowing it to be raised to 160.7 mRL (approved internally by OceanaGold to 159 mRL).

The TSFs are designed as a zero-discharge facility during its use[5]. In addition to the anticipated tailings storage and operating pool requirements, the facility is designed to always contain the probable maximum precipitation storm event and still maintain an additional one metre of freeboard.

18.2.2 Planned Tailings Storage Facility 3 (TSF3)

TSF3 provides 6.3 Mm^3 of tailings storage capacity for WUG (Table 18-1). TSF3 will be constructed in accordance with the recommendations and guidelines of the New Zealand Society on Large Dams (NZSOLD) 'New Zealand Dam Safety Guidelines' (NZDSG) along with the International Commission on Large Dams (ICOLD) and the Global Industry Standard on Tailings Management (GISTM) standard and guideline. TSF3 is designed and when operated will be classed as a High Potential Impact Classification (PIC) dam.

The TSF3 design considers:

- Downstream construction techniques
- Availability of different rock types to meet construction, stability and closure requirements
- Compliance with the Building Act, NZSOLD Dam Safety Guidelines, ICOLD and GISTM
- Geotechnical conditions
- The need to restrict seepage from the tailings
- Surface water diversion works to divert clean run-off to collection ponds.

The footprint of the TSF3 will require approximately 60 Ha of topsoil and subsoil to be progressively stripped. Areas of compressible soils will be removed from the footprint of both the TSF3 impoundment area and the embankment footprint. This material will be replaced with suitable structural fill material sourced locally. A water collection pond is to be constructed in the lowest area of the site and lined with a geomembrane over its full height with an overflow spillway into the Ruahorehore Stream.

[5] Note that TSF 2 currently discharges directly to the Ohinemuri River and its tributaries via a pump pontoon system without water treatment. Water quality meets conditions and has been satisfactory since 2007. Some collection ponds are permitted to directly overflow into the Ohinemuri River subject to water quality being met.

TSF3 will also include an uphill diversion drain to divert clean run-off from higher ground, perimeter drains collect surface water run-off from the embankment and to direct it to a collection pond, and a perimeter road to provide access for operation and maintenance. Run-off collected in the collection pond will be pumped to the existing WTP. The clean water diversion/ stream diversion drains, and the collection pond / silt pond are shown in Figure 18-2.

The embankment would be raised in two stages to provide the required storage. The proposed construction would commence with a starter embankment raised to 135 mRL. Followed by a single lift to 142 mRL. All construction material will be sourced locally from existing stockpiles, within the impoundment and embankment footprint and excavation of the three borrow areas within the Waihi site boundary.

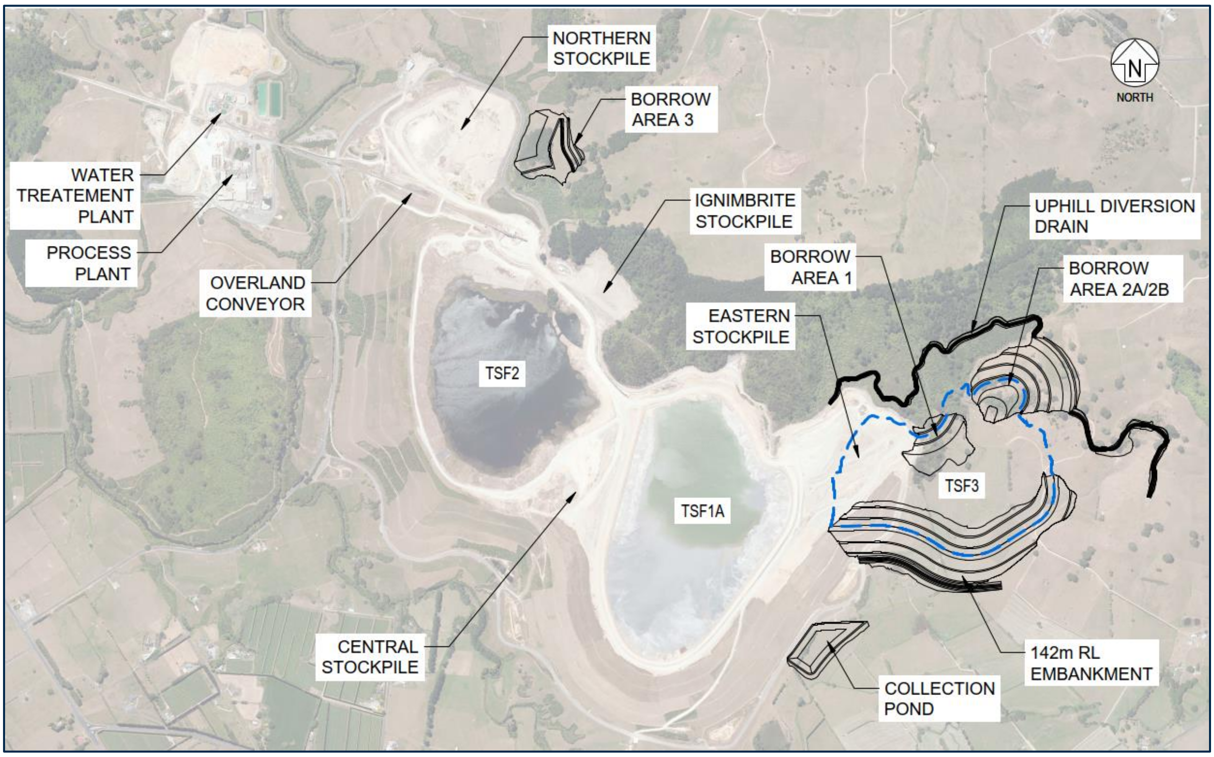


Figure 18-2: Plan View of TSF3 to 142 mRL

For the prefeasibility study an insitu tailings dry density of 1.15 t/m^3 is estimated.

Table 18-1: Tailings Storage Plan

Area	Tailings Storage			Embankment Fill required		
	Storage Mm^3	Cumulative storage Mm3	Cumulative storage Mt	Fill required Mm3	Cumulative fill Mm3	Cumulative fill Mt
TSF1A (182mRL)	2.36	2.36	2.71	0.98	0.98	1.96
TSF2 (159.5mRL)	1.58	3.94	4.53	0.46	1.44	2.88
TSF3 (142mRL)	3.12	7.06	8.12	3.31	4.75	9.5

Construction of the tailings facilities has been scheduled to ensure the TSF's meet the minimum freeboard conditions and provides adequate tailings capacity throughout the LoM Figure 18-3 below.

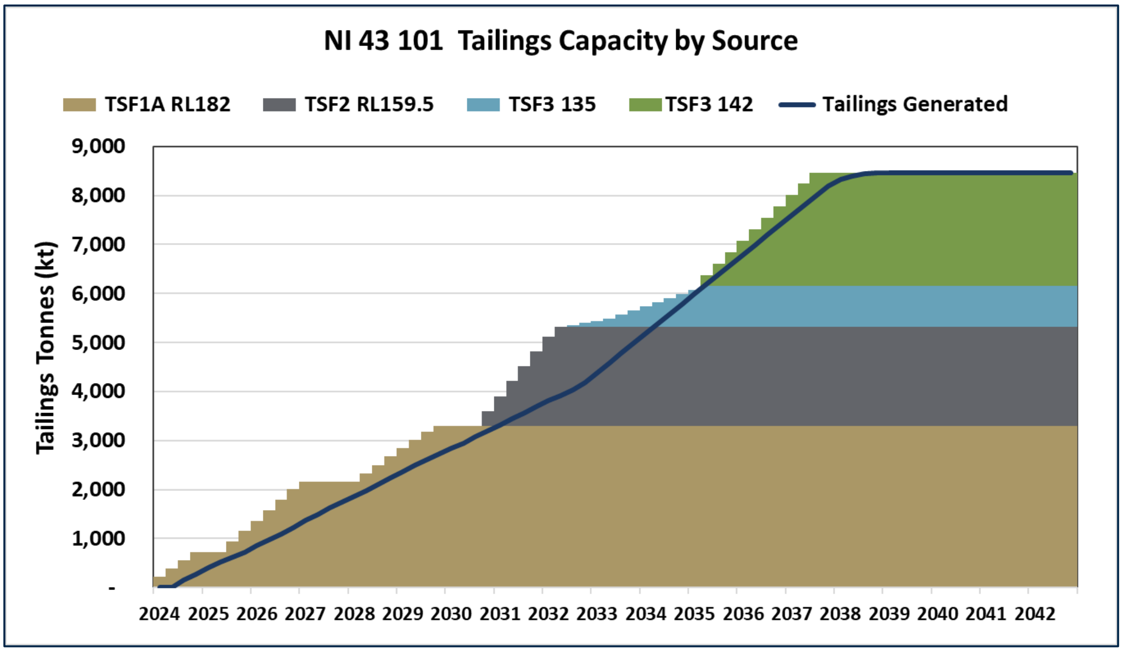


Figure 18-3: Tailings Storage and TSF Construction Chart

The deposition of tailings into the TSF will be via high-density polyethylene tailings pipeline located around the perimeter of embankment crest. Deposition will occur from multiple spigots inserted along the tailing's distribution line. The deposition locations will be moved progressively along the distribution line, as required, to maintain a beach with a slightly graded deposition of tailings towards the decant pond that is located in the southeast corner of the facility. Water from the decant pond will be recycled back to the mill for makeup water and will be reclaimed by utilising either vertical turbine pumps mounted on a floating barge above the decant pond or skid mounted pumps to be located on the ramp within the southern end of the decant pond.

18.3 Waste Rock Storage and Usage

18.3.1 MUG

Waste rock is required to backfill MUG and selected historical workings. Waste rock sufficient for the remaining raises on the TSF1A and 2 is located close to the TSF's in the northern, central and eastern stockpile areas.

All waste rock produced from the underground mine is classified as potentially acid forming and is returned to the underground as stope backfill.

Some stockpiling of waste rock from the underground will be required to enable waste production to be scheduled in accordance with backfill requirements. The stockpile area is already established near the Favona portal and will be used for the temporary storage of waste rock. A surge stockpile is available at the polishing pond stockpile up to 1 Mt capacity.

There is a 1.5 Mt deficit of waste rock for backfilling the MUG voids and 1.7 Mt deficit of waste rock for closure. The additional waste rock is planned to be sourced from the existing polishing pond stockpile and from waste sourced from within the existing MOP.

18.3.2 WUG

Approximately 3.2 Mt of waste rock will be generated during the development of the WUG tunnels and shafts network. 0.8 Mt is hauled internally to provide backfill during production leaving 2.4 Mt that will require to be hauled by truck for temporary storage at either the Waste Rock Stack (WRS), located at the Willows or at the polishing pond stockpile near the Processing Plant to Willows access tunnel. Following a multiple technical discipline assessment, a design for the WRS with a capacity of approximately 1.6 Mt was selected for WUG and the design further developed. The WRS is situated in a valley formed by an unnamed northeast flowing tributary of Mataura Stream.

The WRS is situated in a relatively steep gully to the north of the surface facilities area (SFA) and although feasible to build a facility in this location there will be challenges due to the steep slopes. Bottom-up construction techniques will be used to place material in compacted layers allowing for stripping of topsoil and weaker materials within the footprint, and establishment of drainage control from a flat bench surface as each layer is placed.

Based on the test pit data, topsoil depth varies but averages a depth of 0.3 m. On the northern side of the WRS, where the natural slope angle is unfavourable to stability, weak materials will require removal to an estimated depth of 1.0 m prior to fill material placement.

The development plan is to access and place the first WRS layers from the lower access road, formed along the existing farm track, using smaller 30 tonne class trucks until enough bench width is developed. The track requires upgrading during the initial development phase to a width of 5.5 m, including a lined side drainage channel and engineered bunded edge. Once material is placed up to approximately the 205 mRL, the remaining lifts are placed from the main portal access ramp. A dual lane haul road, formed in the WRS to access upper benches, is advanced with each rock layer placed up to the final planned bench height at 265 mRL.

Tunnel development waste is placed in the WRS over the first five years and then reclaimed as backfill material for the underground is planned to start in approximately year 10 with complete removal of the WRS by year 13.

WRS water management elements include a network of diversion and stormwater collection drains, culverts, and collection ponds. Drainage elements are incorporated within the WRS design to direct contaminated water runoff and seepage flows for ultimate pumped transfer to the Waihi water treatment plant. Willows also includes a diversion and stormwater drainage around other surface facilities and sewerage disposal facilities.

18.4 Site Wide Water Management

A schematic of the site wide water management system is shown in Figure 18-4.

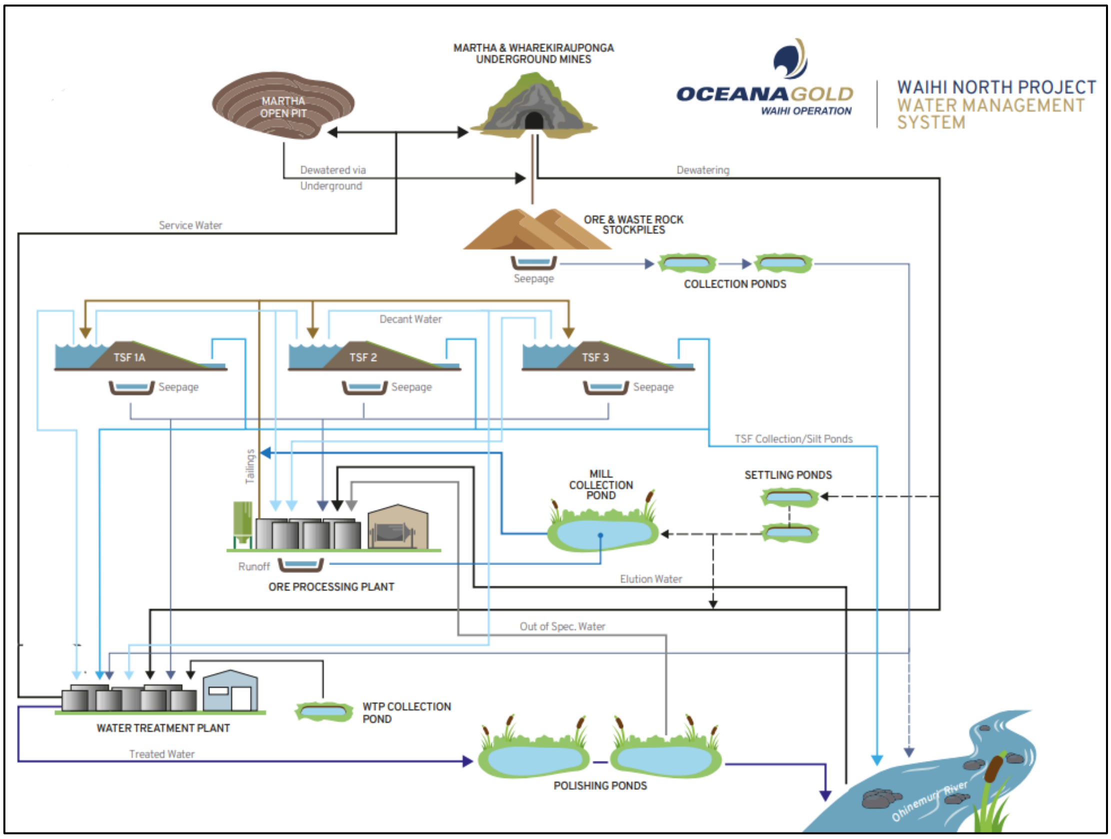


Figure 18-4: Site Wide Water Management

Waihi requires approximately 1.75 ML of water to process a nominal 1 MT of ore annually. Most of this water is sourced from water contained within TSF1A.

The high rainfall in the area means there is a net surplus of water on site, with water from mine dewatering, the tailings impoundments, and collection ponds being directed to a water treatment plant (WTP) prior to discharge to the Ohinemuri River. TSF2 is a retired tailings impoundment and the decant water overflows directly to the Ohinemuri River. The volume of water treated in 2023 was 6.6 Mm^3 and water discharged from site was 5.6 Mm^3.

The current water management system is designed to capture and treat all water impacted by mining activity; and divert clean water where practicable. While some water is re-used as process water there is always a net gain of water on-site due to the high rainfall experienced in Waihi. The basic rules applied to site water management that have been effective in 35 years of operation to date include:

- natural water is diverted away from areas disturbed by mining activities wherever practicable in order to reduce the volumes of water affected by the mining activities
- all water from areas disturbed by mining activities is directed to appropriate collection and treatment facilities prior to discharge off-site
- where practicable, OceanaGold endeavours to reduce the volumes of water requiring treatment. An extensive program of water quality monitoring is key to checking what water sources do require treatment

- disturbed areas are progressively rehabilitated at the earliest practicable time to minimise silt losses and improve runoff water quality.

The volume of water that can be discharged from the WTP on any given day is limited to an allowable discharge, which forms part of a suite of resource consents and is related to both the flow in the river and the treatment regime in operation.

The site WTP operators manage the system such that sufficient freeboard is maintained in collection ponds and the active TSF to provide buffer storage over periods where the allowable discharge is less than the volume of water requiring treatment.

18.5 Site Wide Water Balance

Hydrology data for the WNP was uploaded to the site water balance model (WBM) to (i) assess how water volumes change over the life of the mine; and (ii) check that proposed infrastructure for conveyance, storage and treatment will be adequate. This was carried out using the GoldSim software package which is designed to run Monte Carlo simulations for probabilistic analysis of dynamic systems.

The WBM has been in use since 2012 and as a result there is confidence it represents the quantities of water generated from the different water sources that require treatment for both current and future operations. Additional inputs into the model are considered conservative and therefore the predictions outlined (in terms of both water volume and quality) are considered a conservative estimate based on the WNP projections.

The water balance model, encompassing the Waihi operations and proposed WUG Project have includes the following assumptions and considerations:

- Mine dewatering rates are a critical driver of the site water balance
- TSF deposition schedule is also important, with optimal scheduling reducing the need to treat water from multiple TSFs at any one time
- The existing WTP has insufficient capacity when Waihi North comes on-stream, with a need to double capacity when dewatering of WUG commences
- Under the current consent conditions (Regime E), there is a risk of insufficient discharge capacity during summer months, but excess flows can be temporarily stored underground or on the TSF(s)
- Water balance modelling also included a review of the impact of climate change. This is currently considered as a minor risk given the dominant impact of mine dewatering on the site water balance, including the likely recharge.

Based on the water balance analysis completed, it is predicted that the WNP can be implemented using the existing and upgraded WTP functionality and within the current consented discharge and receiving environment conditions subject to renewal of those consents for an appropriate term. The capacity of the current WTP facilities will require upgrading throughout the WNP's lifetime to cope with the expected volume of water requiring treatment.

A contaminant mass balance has been conducted in parallel with the WBM. The purpose of this analysis is to identify where variations in volume and composition of waters received by the WTP could result in discharge consent breaches. Water quality predictions for the LoM are compliant with discharge and receiving environment consent conditions. The utilisation of the reverse osmosis (RO) plant to further reduce concentrations of elevated trace elements is a contingency that could be utilized if predicted discharge concentrations are higher than that predicted.

In summary, the results presented are considered conservative and the modelling undertaken supports the viability of the WNP in terms of both water balance and water quality.

18.6 Water Supply

Process water is sourced from the TSF, via a pump on a pontoon collecting decant water, which is conveyed to the mill via a pipeline. Water to supply the buildings, as well as for the fire suppression distribution system will be provided by the town water supply.

Mine water is supplied from the WTP. Used water and sewage are handled by a septic tank system.

18.7 Power and Electrical

The current Waihi operations site power is supplied from the Waihi town substation via dual 11 kV powerlines that feed into the main site 11 kV switchroom/switchgear. Normally the maximum site load is limited to 11.2 MW but during public holidays the site is restricted to 6.2 MW during the morning and afternoon peak periods and the process plant is usually shutdown during these times. The current load for surface and underground is between 9.1 MW and 10.6 MW but the process plant is not fully loaded due to low feed tonnages from the underground. Project power demands average and peak are shown below in Table 18-2.

Table 18-2: Waihi Power Demands

Activity	Peak Power (MW)	Average Power (MW)
Ball and SAG mill	3	2.7
Other processing and water treatment	0.9	0.9
MUG	7.3	7.0
OP crushing and conveying (not currently in operation)	2.5	2.5
Total Power Draw	14.1	13.1

The power capacity required for the WNP, which includes future upgrades could range between 19.2 MW and 22 MW. To cater for the additional power capacity, a new 33 kV powerline (buried cables) is planned to be installed from the Transpower Waikino grid exit point (GXP) in Hauraki District Council (HDC) Road Reserve to a new 33 kV/11 kV substation at the Baxter Road Waihi operations (~12 km).

The powerline will be installed and owned by PowerCo but fully funded by OceanaGold. The 33 kV power supply will be brought to the Willows via an underground cable located in the services trench, teeing off the new 33 kV / 11 kV substation. On site at Willows, another 33 kV / 11 kV substation will be established to provide 11 kV distribution to the surface workshop, office/change house, the site lighting network and other infrastructure requiring power. An 11 kV supply will also be installed to the underground where 11 kV / 1 kV skid substations will be provided to supply power to fixed and mobile equipment. The substation is incorporated within a preliminary design and located in the southeast corner of the surface facilities area (SFA).

18.8 Willows Facilities (for WUG)

The Willows, adjacent to the Coromandel Forest Park was purchased by OceanaGold in 2021, following approval from the Government's Overseas Investment Office. This area will form the initial access to WUG and servicing the development of the mine. The PFS level design is shown in Figure 18-5. The area will require the following infrastructure in close proximity to the Willows portal:

- Waste rock stack to accommodate development waste rock, all of which will be returned underground as backfill
- Mobile maintenance workshop
- Explosives storage magazine
- Water and containment ponds and associated pumping stations
- Small general warehouse
- Services trench to process plant for water treatment, potable water, initial mine water and electrical supply
- Sealed road from the Willows Road to the mine plant area to minimise dust nuisance
- An upgrade of the existing SH 25 and Willows Road intersection
- Noise bunding
- Electricity supply and sub stations
- Mine offices, crib room and ablution facilities
- Car parking
- Access road to portal
- Portal façade excavation.

Figure 18-5: Willows Infrastructure and Buildings

The SFA comprises a 2 Ha earthworks formation that facilitates the location of mine support infrastructure. The SFA is located 0.3 km east of the WUG mine portal and 4 km north northeast of the township of Waihi.

Ground water and surface runoff will be pumped from Willows to the existing Waihi water treatment plant by 450 mm nominal diameter pipe located within the service trench. Sizing to be confirmed during the detailed design phase.

Potable water will be pumped within the service trench to the SFA from the existing Waihi operations. Water will be delivered to tanks which will provide up to 24 hours potable water storage capacity for the site.

A membrane bioreactor package treatment plant with disinfection will be provided to treat effluent from SFA facilities. A storage tank will be required upstream and downstream of the sewage treatment plant. Treated water will be discharged via a disposal field located within the Willows area.

Fuel is supplied directly to the mine, by local venders who contract supply from Tauranga, 60 km south of Waihi.

19 MARKET STUDIES AND CONTRACTS

19.1 General

Waihi Gold Mine has been in commercial operation since 1988 and has contracts and purchase arrangements in place for doré refining and other goods and services required for the operation. The market for gold doré is well established. Market predictions and discussions on gold price are beyond the scope of this document although sensitivities around gold price have been produced in the financial analysis section.

19.2 Bullion Production and Sales

Gold dore is produced and sold to a single refinery under a contract. Dore is stored on site and transport is arranged with the refinery as required in accordance with company and refinery procedures. The refining contract specifies limits for deleterious elements, material supplied exceeding those limits can be refused however this has not occurred to date.

A contract is in place ABC Refinery in Sydney, New South Wales through until Q1 2025. Refining costs are not material, with refined gold sold on arms-length terms at market prices prevailing at the time of sale. Waihi currently has no forward sales, gold loans, offtake or similar type hedging or derivative agreements in place.

19.3 Contracts and Forward Sales Contracts

OceanaGold has agreements at typical industry benchmark terms for metal payables and refining charges for doré produced from the Waihi operations. Gold and silver bearing doré is shipped to an Australian refinery for further processing under a toll refining agreement.

Contracts are in place covering underground mining, transportation and refining of bullion, and the purchase and delivery of fuel, electricity supply, explosives, and other commodities. These agreements conform to industry norms.

Waihi currently has no forward sales, hedge, gold loans, offtake, or similar type agreements.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

20.1 Mineral Rights and land access

All naturally occurring gold and silver minerals in New Zealand are owned by the Crown. Rights to prospect, explore or mine for these minerals are granted by permits issued under the CMA. Exploration permits provide a permit holder the exclusive rights to explore for the specified minerals in an area. Mining permits grant the holder exclusive rights to mine for the specified minerals.

Martha Underground (MUG), Martha Open Pit Phase 4 (MOP4), Gladstone Open Pit (GOP), the processing plant, existing tailings facilities and associated infrastructure are located in and around the township of Waihi, within the existing MP 41808 and, with very limited exceptions, on land which OceanaGold owns or over which OceanaGold holds the land access rights it requires for the WNP.

The Wharekirauponga Underground Mine (WUG) is located approximately 10 km to the north of Waihi and is held under the Wharekirauponga Mining Permit 60541 (MP 60541). The mine, decline corridor, surface boxcut portal at Willows and associated tunnel and infrastructure connecting WUG to the processing plant are located on land owned variously by the Crown and administered by DOC as a conservation/forest park or as marginal strip, land (including “paper” road) owned by HDC, and land owned by OceanaGold.

Approvals are in place, or approvals processes are underway or planned to secure land access rights over DOC and HDC land, to provide for surface exploration, environmental management and monitoring activities, ventilation rise structures and parts of the Services Trench connecting the Willows surface facilities area to the existing Waihi operations.

An access arrangement between DOC and OceanaGold has been granted to allow for exploration activities (including surface drilling) to take place within MP 60541 (Wharekirauponga). An area of council-owned unformed road reserve, also located within the forest park, is also subject to an existing access arrangement authorising surface exploration activities, field studies and the location of ventilation stacks to service a future underground mine (subject to conditions). Known environmental liabilities are managed through stipulated conditions in the access arrangements and Regional and District Council Consents including conditions that protect the conservation (biodiversity, heritage and amenity) values of the land.

20.2 Land Access Status

WUG and associated exploration, geotechnical drilling, environmental fieldwork and monitoring, mitigation and biodiversity management activities, including proposed pest and predator control within the conservation park, will require landowner access to be granted by DOC, HDC, and also Thames Coromandel District Council (TCDC) for biodiversity net gain activities. Access is partially secured under existing permissions.

Access for the balance of the WNP from Willows to the Waihi operations is mostly secured as OceanaGold is landowner for the majority of the project footprint but will need to arrange road and river reserve land access to route services and for other operational and mitigation purposes (such as riparian planting within council and government-owned river reserve as part of proposed ecological mitigation measures).

20.3 Required Permits and Status

The Waihi operation holds the permits, water rights, certificates, licences, and agreements required to conduct its current operations and to extract the Martha Mineral Reserve.

The WNP, including WUG, the access tunnels and associated surface infrastructure site and services trench, required biodiversity mitigation plantings and other measures, TSF3, rock storage, quarrying of rock required for construction purposes, process plant and water treatment plant upgrades, and increased exploration activity will require various regulatory approvals and permits for the WNP to proceed.

20.4 Permitting Process and Schedule

The Fast-track Approvals Bill was formally introduced into parliament on 7 March 2024. It has completed the process of parliamentary sub-committee review and is expected to be enacted by parliament and become operational by the end quarter one in 2025. The government has announced its intention to name WNP within a range of projects, to be listed in the legislation, for which fast-track approval processes will become available once the proposed legislation becomes operational.

The key assumptions in terms of the permitting process and schedule include:

- the Fast-track Approvals Bill will be passed and become operational by March 2025
- the WNP Fast-track Assessment of Environmental Effects (AEE) will be submitted in March 2025
- Fast-track approvals in a form sufficient to commence construction (with or without appeals) will be granted by November 2025.

Willows bulk civils, water treatment plant and Service trench construction in late 2025 enables the decline to commence in late 2026. It has been assumed that construction would start in parallel to any appeals process in the absence of a court order staying the works.

20.5 Environmental Studies

As part of existing consenting processes OceanaGold has commissioned independent experts to provide a range of specialist environmental technical reports on the actual and potential effects on the environment of allowing the activities associated with developing and operating the WNP. These effects include:

- Biodiversity
- Water
- Landscape and Visual
- Transport
- Amenity
- Air Quality
- Rehabilitation and Closure.

In summary, the technical assessments conclude that the WNP's effects are all able to be managed through the application of the effects management hierarchy, to produce environmental, social and cultural outcomes that are appropriate within the context of regulatory requirements, having regard to the scale and location of the WNP activities. The WNP will manage the majority of its potential adverse effects through avoidance and mitigation and it is also able to appropriately address the residual unavoidable adverse effects of mining and related activities, including through the use of offsetting and compensation for residual effects on terrestrial and aquatic biodiversity and habitat values, such that residual effects are minor. With the targeting of a biodiversity net gain, it also incorporates measures proposed for the sole purpose of providing benefits to the environment in recognition of the conservation purpose of the land beneath which the WNP proposes to mine.

Some of the potential or actual effects and proposed management measures identified in the technical assessments are outlined below.

Streams and wetlands (Wharekirauponga)

Engineering studies and technical modelling identify a limited range of sub-catchments, where the design and operation of the underground mine will need to adaptively manage risks (which are low according to recent models) with potential minor to moderate (before mitigation) impacts on natural values of streams and spring-fed wetlands. The classification of larger streams and tributaries as "natural state" in the Regional Plan makes this a key area of focus for OceanaGold.

Biodiversity

A key element of the WNP will be managing its effect on biodiversity values. In short, OceanaGold has sought to design the WNP such that overall, it will have a biodiversity net gain in the region.

Central to achieving that outcome has been the inclusion of:

- Designing WUG to substantially remain at depth underground, thereby avoiding direct impacts on Indigenous biodiversity within the Coromandel Forest Park
- Measures to ensure all non-trivial adverse effects (including potential effects) on terrestrial and aquatic ecology are managed following a strict avoid, reduce [impact], remedy, mitigate, offset hierarchy, such that a no net loss, and preferably a net gain outcome is achieved. These management measures have been carefully designed to align with regulatory requirements
- An $8.4 million predator control and ecological enhancement project, focused within an 18,870 ha area of the southern Coromandel Forest Park will aim to achieve long-term (inter-generational) positive ecological outcomes for the area.

Freshwater

Water management is currently undertaken in an integrated and effective manner at OceanaGold's existing Waihi facilities, and the same concept will be extended to include the WNP elements. In assessing that the current water management approach remains suitable for extension to incorporate water associated with the WNP elements, two important matters have been considered:

- Confirming the existing water quality limits that apply to the discharge from the water treatment plant and the Ohinemuri River receiving environment (after mixing) remain appropriate to ensure the discharge's effects on instream values are acceptable
- Confirming that the water treatment plant will be able to manage all affected mine water from the WNP and existing mine activities in a manner that will meet those discharge requirements.

Landscape Effects

Landscape effects associated with the WNP overall are not considered to be significant. Primarily this is due to the underground nature of WUG and the sympathetic siting of surface elements in response to sensitive views. For most people living in and around Waihi, the WNP will remain visually well contained, resulting in no substantial change or adverse landscape effects in the context of existing mining activity. Landscape mitigation will ensure the WNP remains well integrated within its local landscape setting. The mitigation will facilitate positive landscape, natural character and ecological outcomes in the long-term including greater connectivity between inherent values within the Coromandel Forest Park across the wider surrounding rural landscape.

The Transport Network

The WNP contains a number of geographically discrete but interlinked components, and because of that, effects on the transport network were a key consideration when it was being designed. A key output of this was OceanaGold's decision to include the Processing Plant to Willows access tunnel as a part of the WNP. It provides a means of transporting material between WUG and Waihi without having to use the road network. The effects of development traffic on the local roads and their points of access to the arterial state highway network have been examined and recommendations have been made to mitigate any potential adverse effects. With the implementation of those measures the potential adverse transportation-related effects of vehicular access and traffic movement associated with the WNP, during construction and over the longer term, will be avoided or mitigated.

Amenity Values

OceanaGold (and its predecessors) have been operating in and around Waihi for over 30 years and understands the importance of managing the effects of activities on the amenity values of people in the local community. For this reason, proposed conditions have been informed by appropriate expert assessment and based on the application of recognized standards for achieving good practice in order to protect a reasonable degree of amenity. They include controls on dust and other airborne emissions, and limits on the noise, vibration and overpressure received by neighbours which align with best practice guideline documents. In many cases these limits align or are more stringent than those which apply to OceanaGold's existing activities in this area and which have been proven effective in protecting amenity.

The visual effects associated with the WNP overall are not considered to be significant. For most people living in and around Waihi, the WNP will remain visually well contained, resulting in no substantial change or adverse visual effects in the context of existing mining activity.

Air Quality

The proposed activities are very similar in nature to those associated with OceanaGold's existing mining operations and similar measures for avoiding, remedying, or mitigating air quality effects will be implemented.

To manage the potential effects of proposed activities on air quality, a range of management measures are proposed, including:

- Keeping exposed surface areas to a minimum and revegetate exposed areas as soon as possible
- Using water sprays to keep surfaces damp
- Limiting speeds on haul roads and minimising haul distances
- Sealing access roads
- A real-time monitoring program of total suspended particulate in key areas with actions, should a trigger level be exceeded.

These methods adequately avoid and mitigate effects on air quality, and the risk that discharges to air from the proposed activities will result in noxious, dangerous, offensive or objectionable effects is low.

Rehabilitation and Closure

A comprehensive and integrated rehabilitation and closure concept is proposed which ties in with the existing rehabilitation and closure obligations that apply to OceanaGold's existing mining activities. The details of the proposed rehabilitation and closure plan have been informed by the various technical assessments. It requires OceanaGold to rehabilitate and close all mine areas such that in the long term:

- The Mine site, and any structures on it, will remain in a stable, self- sustaining, rehabilitated state
- Removal of infrastructure not compatible with post mining land use at Willows and rehabilitate impacted areas
- The soils on the site are such that it is highly unlikely that there will be a risk to human health considering the post closure use of that land
- Any water discharging from the mine site, and any groundwater under the mine site, will be of a quality such that it will not adversely affect aquatic life, or other users of the water resource.

On closure it is proposed to transfer areas requiring ongoing monitoring and management such as TSF3 and the Northern Rock to the existing Martha Trust to be managed in perpetuity in the same manner as the existing TSFs and open pit.

20.6 Stakeholder Engagement

WNP commenced community engagement in 2020 and formal engagement with iwi and regulators began in 2017. OGC has well established positive working relationships with key stakeholders and this has provided a solid platform for understanding and respecting diverse viewpoints. A Stakeholder Engagement Plan, which includes stakeholder identification and analysis, is in place and being implemented for the proposed Project, this plan has been iteratively updated and implemented as the Project has progressed, and this will continue to be the case.

Key methods of engagement that have been undertaken to-date include:

- Community Engagement Line – OceanaGold Waihi operates a free call Community Engagement Line, that is available seven days a week
- Community Group Presentations - - OceanaGold has presented on the proposed Project to over 20 local community groups and organisations. During these presentations a high-level explanation of the proposed project was provided, and stakeholders had the opportunity to ask questions or seek clarity on any aspect of the proposal
- 'Expert Days' - During these events the external consultants preparing the relevant technical reports for the Project are available at the Company's Project Information Office to speak directly with interested Stakeholders
- Local Communications Collateral - OceanaGold 'Update', the 'Mining Matters', and OceanaGold Waihi Facebook Page
- Meetings and Individual Consultation

- Open Days - Targeting the broader Waihi Community, providing an opportunity for the general public to obtain information and share views and opinions regarding the project. Open day events have included 'Underground Simulator'
- Project Tours - These tours allowed stakeholders to get close to the site of proposed operations, as well as develop an understanding of how OceanaGold Waihi currently operates
- Project Information Office - It is important to OceanaGold that reliable information about what the Company is proposing and what it means for stakeholders is readily available directly from the Company. Since July 2020 OceanaGold has had a Project Information Office open in the main street of the Waihi Township
- Waihi Community Forum - act as a conduit between the Community, Council and OceanaGold
- Street Events: Small neighbourhood events with groups of residents identified as being close proximity residents
- Surveys: Online and 'Maptionnaire' Surveys of people that live or work in Waihi, as well as local suppliers and providers
- Interviews and Focus Groups: With Community, facilities and service representatives, regulatory authorities, housing and accommodation entities, education, training and labour organisations
- Cultural Values Training of the OGC workforce, and the Completion of Cultural Impacts Assessments by Tangata Whenua.

20.7 Social and Cultural Impacts

The assessment of the social and cultural impacts is an important requirement of the permitting process and a requirement of the Company's External Affairs and Social Performance (EA and SP) Standard. An independent Social Impact Assessment (SIA) was undertaken in 2022 for the WNP and is being updated in 2024 to reflect the current project scope and potential social impacts. The SIA follows the International Association of Impact Assessment's guidance for preparing an SIA.

The WNP SIA (2022) indicates positive outcomes related to:

- Job security and sustained livelihoods
- Reduced local unemployment
- Increased business activity and indirect employment opportunities.

The assessment identified the following effects that were assessed as having moderate to high negative significance:

- Increased demand for accommodation, potentially impacting housing availability and affordability
- Change in sense of place for residents around the Willows area (location of the SFA for the WUG)
- Reduced amenity as a result of increased traffic movements along the Willows area.

Mitigation measures have been identified in the SIA for the effective management of the potential negative impacts.

The Company recognises the special relationship that iwi have with land and water, and that this relationship is important to spiritual and cultural wellbeing. The Company has had a consultation program in place with iwi for many years covering the operating mine, the mineral exploration program and new projects, and this is ongoing. Through this consultation, nine iwi have expressed to OceanaGold that they have interests in the proposed project areas.

Engagement with these groups is ongoing, providing iwi the opportunity to express their unique relationship with the affected area, and to identify any potential impacts on their cultural values, and discuss the socio-economic opportunities the WNP provides.

Of the nine iwi the Company has engaged with, five groups have agreed to provide a Cultural Impact Assessment for the WNP. The remaining four iwi groups have either chosen not to complete an assessment, to defer to another iwi group they have recognized as having authority over specific matters, or to not engage with the Company further.

20.8 Rehabilitation and Bonds

Rehabilitation proposals and concept plans were developed well before the commencement of construction for open pit mining in 1987, and those plans are revised annually. In preparing these plans, the advice and skill of a broad range of experts, including soil scientists, hydrologists, engineers, aquatic biology, and water quality specialists has been sought. Where possible, OceanaGold progressively rehabilitates areas of disturbed land.

The Company posts both cash and bank bonds for various purposes. The most significant of these, which are held by the Hauraki District Council and Waikato Regional Council, cover the costs of closure works. The purpose of the rehabilitation bond is to provide the Councils with unencumbered access to a source of funds to close and rehabilitate the current mine site in the unlikely event that OceanaGold fails to meet its closure obligations. The quantum of this bond is assessed annually, calculated on the basis of the cost to close the site at the end of each 12-month bond period.

Each year, a Rehabilitation and Closure Plan is submitted to the Councils to describe the proposed method of rehabilitation and closure of the site. The overall objective of this plan is to ensure rehabilitation and closure of the site in such a manner that in the long-term the site, and any structures on it, will remain stable; and any water discharging from the site, and any groundwater under the site, will be of a quality such that it will not adversely affect aquatic life, or other users of the water resource.

The current rehabilitation bond in place is $39.1 million and is expected to rise to $45.4 for the 2024 to 2025 period. The current capitalisation bond sits at $6.3 M.

Both bonds will need to be reviewed should consents be granted for new projects, to provide for the full closure costs and the post closure site management costs that include the new project components. That review would need to be completed after the grant of consent so that the revised bond quanta can take account of the closure obligations in the new conditions, and before works starts on the new projects.

21 CAPITAL AND OPERATING COSTS

All costs, unit costs and prices in Section 21 are in United States dollars unless otherwise noted.

21.1 Capital Expenditure Estimates

A summary of the total capital expenditure is provided in Table 22-5. The capital expenditure items have been separated into sustaining and non-sustaining (growth) categories as per guidance from OceanaGold. The life of mine capital cost is shown in Table 21-1.

Table 21-1: Life of Mine Capital Costs ($ 000's)

Summary Capital Expenditure Schedule	Growth Estimate $ 000's	Sustaining Estimate $ 000's	Total Estimate $ 000's
WUG	357,944	62,942	420,887
MUG	0	102,075	102,075
Processing	92,815	8,395	101,210
TSF's	44,424	80,498	124,922
Other Capital	60,623	16,032	76,655
Rehabilitation	0	71,648	71,648
Total	**555,807**	**341,590**	**897,397**

21.1.1 Basis for Capital Expenditure Estimates

The base date of the WNP Capital Cost estimate is 30 June 2024. All values are in United States dollars ($), based on foreign currency exchange rate of $ 0.61: NZ$. Contingencies vary according to the level of accuracy of design and estimate, and the average WUG contingency is 16 % and is considered appropriate. The breakdown of the WUG contingency is shown in Table 21-2.

Table 21-2. WUG Contingency Breakdown

Item	Area	Rate
1	Contingency General	20 %
2	Contingency Mobile Plant	20 %
3	Contingency Capitalized UG development	20 %
4	Infrastructure – Underground	20 %
5	Infrastructure – Surface	20 %
6	Process plant	20 %
7	Water Treatment Plant (WTP)	15 %
8	TSF3	20 %
9	Quarry/MOP4 Capitalized Prestrip	10 %
10	General and Administration	10 %
11	Rehabilitation	10 %

Underground Mines

All major mining equipment is supplied under operating lease arrangements. Projected capital costs for underground mining are summarized for MUG and WUG in Table 21-3. The underground capital estimate includes capitalized development, mine infrastructure and equipment not sourced under capital leasing arrangements.

Table 21-3: Underground Capital Cost Summary (Growth and Sustaining)

Item	Units	LoM Total
WUG		
Capital Development (Growth)	$ 000's	203,747
Capital Development (Sustaining)	$ 000's	14,949
UG Capital Equipment Purchases (Growth)	$ 000's	88,316
UG Capital Infrastructure (Growth)	$ 000's	12,259
Willows Infrastructure (Growth)	$ 000's	50,392
WUG Project Management (Growth)	$ 000's	26,994
WUG Studies (Growth)	$ 000's	16,665
Resource Drilling (Growth)	$ 000's	4,896
Polishing Pond Portal Works (Growth)	$ 000's	2,670
Sub-total	**$ 000's**	**420,887**
MUG		
Capital Development (Sustaining)	$ 000's	65,346
UG Capital Purchases (Growth)	$ 000's	34,327
Resource Drilling (Growth)	$ 000's	2,402
Sub-total	**$ 000's**	**102,075**
Total	$ 000's	**522,962**

Process Plant

Process plant capital over the remaining LoM totalling $101.2 million is shown in Table 21-4 and is principally related to:

- Upgrade of the crushing and grinding circuit
- Debottlenecking and minor pumping upgrades within the plant to maintain milling rates
- Other sustaining capital spend to mitigate wear and tear
- Water treatment plant upgrade

Table 21-4: Processing Capital Cost Summary

Item	Units	LoM Total
Process (Growth)	$ 000's	47,919
Process (Sustaining)	$ 000's	8,395
Water Treatment (Growth)	$ 000's	44,896
Water Treatments (Sustaining)	$ 000's	0
Total	**$ 000's**	**101,210**

Infrastructure -Tailings

Infrastructure capital associated with tailings is estimated to be $124.9 million as summarized in Table 21-5 for the LoM. Infrastructure capital has been estimated internally by OceanaGold and provided by experienced contractors and external consultants. The major capital items are tailings storage facility expansion and construction, containment ponds, diversion drains, tailings pipelines, and expansion of the existing water management facilities.

Table 21-5: Tailings Storage Capital Cost Summary

Item	Units	LoM Total
TSF1A and 2 (Sustaining)	$ 000's	10,766
TSF3 Construction (Growth)	$ 000's	34,717
TSF3 Construction (Sustaining)	$ 000's	23,259
TSF3 Borrow (Growth)	$ 000's	9,708
TSF3 Borrow (Sustaining)	$ 000's	46,472
Total	**$ 000's**	**124,922**

Other Capital

Other capital required for the LoM plan is as shown in Table 21-6. Key costs relate to permitting, consent compliance (fencing, riparian planting, pest control, biodiversity programs and social, iwi engagement), new power line and substation upgrade and site rehabilitation works.

Table 21-6: Other Capital Cost Summary

Item	Units	LoM Total
G&A (Sustaining)	$ 000's	2,339
Permitting (Growth)	$ 000's	10,042
Consent compliance (Growth)	$ 000's	22,224
Consent compliance (Sustaining)	$ 000's	13,693
Power Line Upgrade and Substation (Growth)	$ 000's	28,357
Rehabilitation (Sustaining)	$ 000's	71,648
Total	**$ 000's**	**148,303**

21.2 Operating Cost Estimates

The total operating cost unit rate of $141.8 /t processed is summarized in Table 21-7. Carbon costs for a fully equipped diesel mine have been included in the operating cost estimate based on recent New Zealand guidance. Carbon costs commence in 2026 and progressively increase through the life of mine calculated on the equivalent tonne of CO_2 produced.

Table 21-7: LoM Operating Cost Summary

Description	**$ 000's**	$/t Mined
UG Mining – MUG	488,812	110.8
UG Mining – WUG	264,410	65.2
Subtotal Mining	**753,223**	89.0
Description	$ 000's	$/t Ore Processed
Processing	222,717	26.3
G&A Costs	191,026	22.6
Refining / Freight Costs	5,584	0.7
Other - Carbon Costs and stockpile movements	28,232	3.3
Total Operating Costs	**1,200,783**	**141.8**

21.2.1 Basis of Operating Costs

The operating cost estimates throughout this section has a base or effective date of June 30, 2024. All values are in United States dollars ($), based on foreign currency exchange rate of $ 0.61: NZ$. No contingency has been applied to operating cost estimates for mining, processing, or G&A. A notional carbon cost for a diesel equipped mine has been included in the operating cost estimate based on the New Zealand Climate Change Commission research report recommendations.

21.2.2 Underground Mining

Projected operating costs for underground mining have been developed from the LoM production schedule. The average cost of underground mining is $88.9 /t and the cost by activity for MUG is presented in Table 21-8 and for WUG is presented in Table 21-9.

The difference in unit costs between MUG and WUG mines can be largely attributed to the higher annual production rate at WUG, and the backfilling of historical stoping areas with cemented fill, remnant mining practices and extensive working areas at MUG.

Table 21-8: MUG Cost Summary

Description	$ 000's	$/t Mined
Labour	180,592	40.95
Fuel	13,507	3.06
Power	50,883	11.54
Equipment Operating	45,111	10.23
Equipment Maintenance	75,935	17.22
Explosives	27,159	6.16
Ground Support	42,181	9.56
Grout/Shotcrete	11,598	2.63
Services	10,462	2.37
Contracts	7,205	1.63
Finance Lease Interest	12,251	2.78
Supply rockfill to UG	11,929	2.70
Total	**488,812**	**110.84**

Table 21-9: WUG Cost Summary

Description	$ 000's	$/t Mined
Labour	87,160	21.48
Fuel	17,585	4.33
Power	23,047	5.68
Equipment Operating	70,853	17.46
Explosives	3,925	0.97
Ground Support	17,233	4.25
Grout/Shotcrete	16,085	3.96
Services	4,648	1.15
Other	10,064	2.48
Contracts	11,038	2.72
Finance Lease Interest	1,966	0.48
Surface Loader - Willows Stockpile	806	0.20
Total	**264,410**	**65.17**

Note: preproduction finance lease interest included in underground capital equipment purchases.

21.2.3 Process Plant

The power cost component of the estimate is based on current power consumption for each area of the plant with allowance for increased loads from planned equipment upgrades. The current unit energy cost rates in the existing power supply agreement with the power supplier to the current operation (Genesis Energy) were used.

Labour costs were developed based on the current staffing plan for the plant reflecting the four-panel operations roster and maintenance support roles with a total head count of 52 people, using the current labour rate schedules.

The reagent and grinding media consumption estimates are based on forecasts used in the current Waihi LoM plan, adjusted for metallurgical testwork forecasts.

Crusher and mill liner replacement costs are based on vendor pricing for current supply of components and a long-term reline schedule for the LoM based on life predicted on tonnage treated developed over the last several years of operation.

Maintenance costs are based on forecast consumable rates for each area of the plant from operating experience since startup. Contractor costs are based on expected usage based on recent experience to support shutdown and rebuild activities.

Miscellaneous costs cover assay laboratory charges assigned to the process plant and other minor ad-hoc expenses such as software license and lease fees, technical consultancy services, development test work and advisors fees, etc.

The breakdown of the processing operating cost estimate is summarized in Table 21-10.

Table 21-10: Processing Cost Summary

Description	$ 000's	$/t Milled
Processing Labour	42,986	5.08
Maintenance Labour	19,531	2.31
Variable Costs	41,592	4.91
Water Treatment Costs	17,985	2.12
Assaying	7,596	0.90
Mill Loader	6,126	0.72
Fixed Costs - Processing	6,794	0.80
Driver Costs -Power	49,852	5.89
Driver Costs -Maintenance	12,499	1.48
Fixed costs - Maintenance	17,756	2.10
Total Processing Costs	**222,717**	**26.30**

21.2.4 Selling and Refining

Sales refining charges are charges incurred in the sale and transport of material to the refiner and are listed below. These total $5.6 million over the LoM or $0.66 /t processed.

Gold

- 99.90 % payable Au
- $1.28 /troy oz Au treatment and shipment charge.

Silver

- 99.0 % payable Ag
- $1.28 /troy oz Au treatment and shipment charge.

21.2.5 General and Administration

The G&A operating cost is time based and was estimated by OceanaGold at a total LoM of $191 M or an equivalent of $22.6 /t of mill feed processed. The G&A operating cost is time based and was estimated by OceanaGold at a total LoM of $191 M or an equivalent of $22.6 /t of mill feed processed. These are based on the current site budget estimates adjusted for future growth as outlined in Table 21-11.

Table 21-11: General and Administration Operating Costs

General and Administration Operating Cost	$ 000's	$/t Milled
Administration Costs	80,561	9.51
Miscellaneous Departmental Costs	36,392	4.30
Labour	74,073	8.75
Total General and Administration Costs	**191,026**	**22.56**

22 ECONOMIC ANALYSIS

All costs, unit costs revenues, prices and financial indices in Section 22 are in United States dollars unless otherwise noted. Economic analysis is undertaken in real terms, i.e. constant 2024 dollars. No inflation or escalation included.

22.1 Principal Assumptions and Input Parameters

The indicative economic results summarized in this section are based upon work performed by OceanaGold in 2024. The metrics reported in this volume are based on the annual cash flow model results. The metrics are on both a pre-tax and after-tax basis, no Project financing inputs and are in Q2, 2024 U.S. constant dollars. Non-site costs have been excluded from this analysis.

Key criteria used in the analysis are discussed in detail throughout this section. Principal Project assumptions used are summarized in Table 22-1.

Table 22-1: Basic Model Parameters

Description	Value
Technical Economic Model (TEM) Time Zero Start Date	30th June 2024
MUG Life	9 years
WUG Life	6 years
Mill Operations	15 years
Discount Rate	5.0 %
Exchange Rate $: NZ$	0.61

All costs incurred prior to July 2024 are considered sunk with respect to this analysis. The selected Project discount rate is 5 %, gold price $1,750 /oz and foreign exchange rate of $0.61 / NZ$ as directed by OceanaGold. A sensitivity analysis of the gold price is discussed later in this section. All costs and revenues are denominated in US dollars.

22.2 Cashflow Forecasts and Annual Production Forecasts

22.2.1 Mine Production

Figure 22-1 and Table 22-2 shows LoM production by year. A more detailed production schedule is shown in section 16.4. Note figures and tables show H2 only for 2024 with full year production expected to be 48-52 koz.

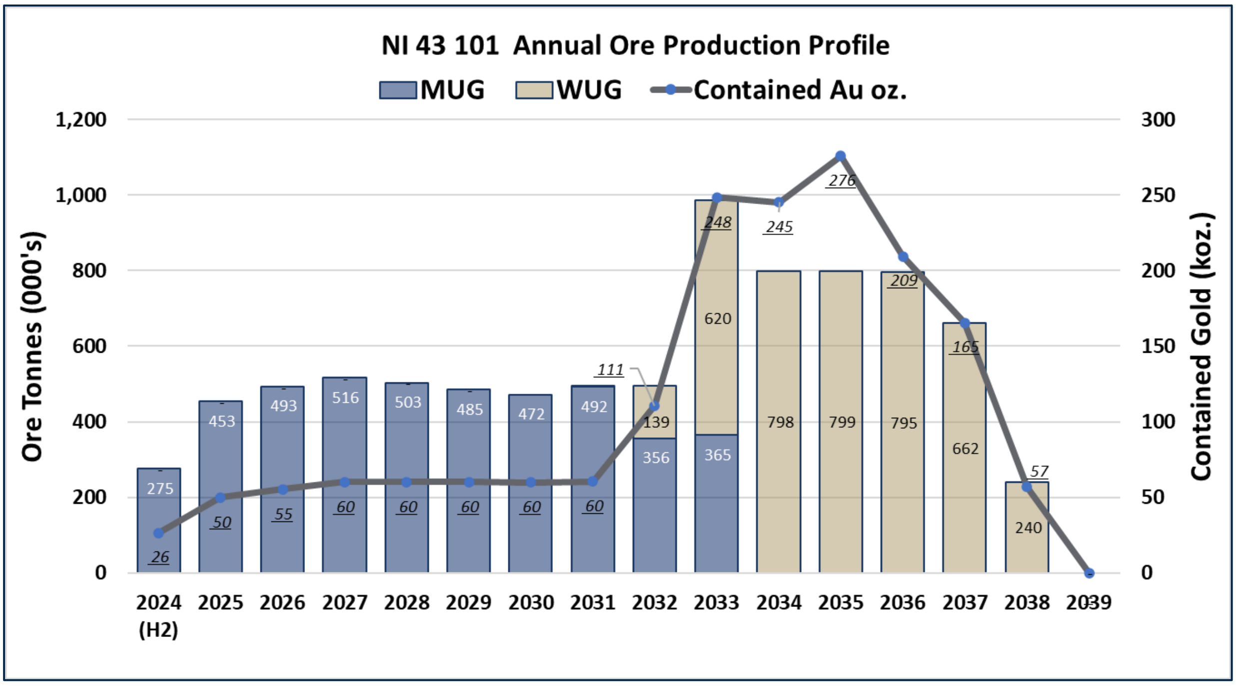


Figure 22-1: Annual Mine Production

Table 22-2: Annual Mine Production

		2024 (H2)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
MUG	Ore Tonnes (000's)	275	973	929	878	831	614	516	536	360	365	-	-	-	-	-
	Grade Au (g/t)	3.0	3.4	3.5	3.6	3.7	3.8	4.0	3.8	5.2	4.0	-	-	-	-	-
	Contained Gold (koz.)	26	107	104	102	99	76	66	65	60	47	-	-	-	-	-
WUG	Ore Tonnes (000's)	-	-	-	-	-	-	-	3	139	620	798	799	795	662	240
	Grade Au (g/t)	-	-	-	-	-	-	-	5.5	11.4	10.1	9.6	10.7	8.2	7.8	7.4
	Contained Gold (koz.)	-	-	-	-	-	-	-	1	51	201	245	276	209	165	57

22.2.2 Mill Production

A summary of the estimated process plant production is shown in Figure 22-3. Differences in mined ore and ounces compared to processed ore and ounces are due to stockpile strategies and management. A more detailed production schedule is shown in section 16.4. Note figures and tables show H2 only for 2024 with full year production expected to be 48-52 koz.

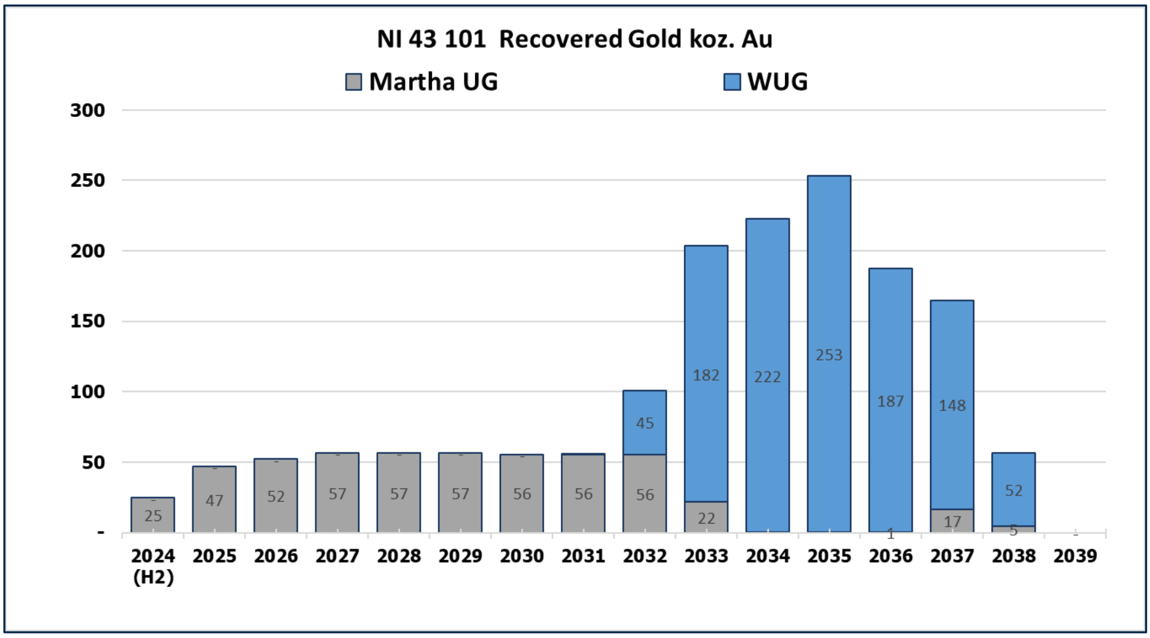


Figure 22-2: Annual Process Plant Production

Table 22-3: Annual Process Plant Production

	2024 (H2)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
MUG (koz)	25	47	52	57	57	57	56	56	56	22	-	-	1	17	5
WUG (koz)	-	-	-	-	-	-	-	-	45	182	222	253	187	148	52

22.2.3 Revenue

Gold pricing assumptions used in the economic analysis include a constant LoM gold price of $1,750 /troy oz and a LoM silver price of $20 /troy oz. Doré refining/freight costs are modelled as follows:

- 99.90 % payable Au
- $1.28 /troy oz Au treatment and shipment charge.

Silver is also included in the current Mineral Resource or Reserve estimates.

The silver by-product credit in the TEM is calculated by using a constant silver price of $20 /troy oz and an average recovery of 60 %. The additional silver related doré refining costs are as follows:

- 99.0 % payable Ag
- $1.28 /troy oz Au treatment and shipment charge.

The silver by-product credit of $55 million over LoM represents 1.9 % of revenue over LoM.

Metallurgical recovery varies as a function of gold and arsenic grades and by lode but averages 93.7 % for MUG and 90.4 % for WUG.

22.2.4 Operating and Capital Costs

No contingency was applied to the operating costs within the economic model. The total operating cost unit rate of $142 /t processed is summarized in Table 22-4.

Table 22-4: LoM Operating Cost Summary

Description	**$ 000's**	$/t Mined
UG Mining – MUG	488,812	110.8
UG Mining – WUG	264,410	65.2
Subtotal Mining	**753,223**	**89.0**
Description	$ 000's	$/t Ore Processed
Processing	222,717	**26.3**
G&A Costs	191,026	**22.6**
Refining / Freight Costs	5,584	**0.7**
Other - Carbon Costs and stockpile movements	28,232	**3.3**
Total Operating Costs	**1,200,783**	**141.8**

Total LoM capital costs totalling $897 million including rehabilitation costs are summarized in Table 22-5. The capital expenditure items have been separated into sustaining and non-sustaining categories per guidance from OceanaGold. Non-Sustaining (Growth) capital is primarily related to the development of WUG and associated infrastructure and totals $556 million over the LoM. Sustaining capital includes $72 million rehabilitation costs.

Table 22-5: Life of Mine Capital Costs ($ 000's)

Summary Capital Expenditure Schedule	Growth Estimate $ 000's	Sustaining Estimate $ 000's	Total Estimate $ 000's
WUG	357,944	62,942	420,887
MUG	0	102,075	102,075
Processing	92,815	8,395	101,210
TSF's	44,424	80,498	124,922
Other Capital	60,623	16,032	76,655
Rehabilitation (non-sustaining)	0	71,648	71,648
Total	**555,807**	**341,590**	**897,397**

The assumptions used for working capital for this estimate are as follows:

- Accounts Receivable (A/R): 3-day delay
- Accounts Payable (A/P): 20-day delay
- Zero opening balance for A/P and A/R.

Annual adjustments to working capital levels are made in the TEM with all working capital recaptured by the end of the mine life resulting in a LoM net free cash flow (FCF) impact of $0.

22.2.5 Economic Results

The TEM metrics are prepared on an annual after-tax basis, the results of which are summarized in Table 22-6. A full LoM annual cash flow forecast is presented in. Table 22-12. The results indicate that at a flat $1,750 /oz gold price and a 5 % discount rate, an after-tax NPV of $138 million is returned.

OceanaGold has provided an alternative price profile which consists of a flat $2,400 /oz gold price over the life of the operation. At this price and a 5 % discount rate, and after-tax NPV of $621 million is returned.

Table 22-6: Indicative Economic Results

Description	Reserve Case Price	Alternative Price
Market Prices		
Gold ($/oz)	1,750	2,400
Payable Gold (koz)	1,593	1,593
Revenue ($ 000's)		
Gross Gold Revenue	2,788,394	3,824,083
Silver By-Product Credit (@$20 / oz Ag)	54,598	54,598
Total Gross Revenue	2,842,992	3,878,682
Direct Operating Costs ($ 000's)		
Mining	753,223	753,223
Processing	222,717	222,717
Site G&A	191,026	191,026
Selling/Refining	5,584	5,584
Other - Carbon Costs and stockpile movements	28,232	28,232
Total Direct Operating Costs	**1,200,783**	**1,200,783**
Non-Operating Costs ($ 000's)		
Royalties payable to Government	58,213	98,343
Other Royalties	38,582	52,742
Total Non-Direct Operating Costs	**96,795**	**151,085**
Operating Cash Flow	**1,545,414**	**2,526,815**
Taxes ($ 000's)		
Income Tax	217,309	482,089
Capital ($ 000's)		
Sustaining Capital	341,590	341,590
Non-Sustaining Capital	555,807	555,807
Total Capital	**897,397**	**897,397**
Metrics ($ 000's)		
Pre-Tax Free Cash Flow	648,017	1,629,418
After-Tax Free Cash Flow	430,709	1,147,329
Pre-Tax NPV @ 5%	258,543	902,338
After-Tax NPV @ 5%	137,726	620,707
IRR	9.2%	24.0%

Figure 22-3 and Figure 22-4 presents annual cash flow metrics vs. recovered gold production for both pricing scenario’s.

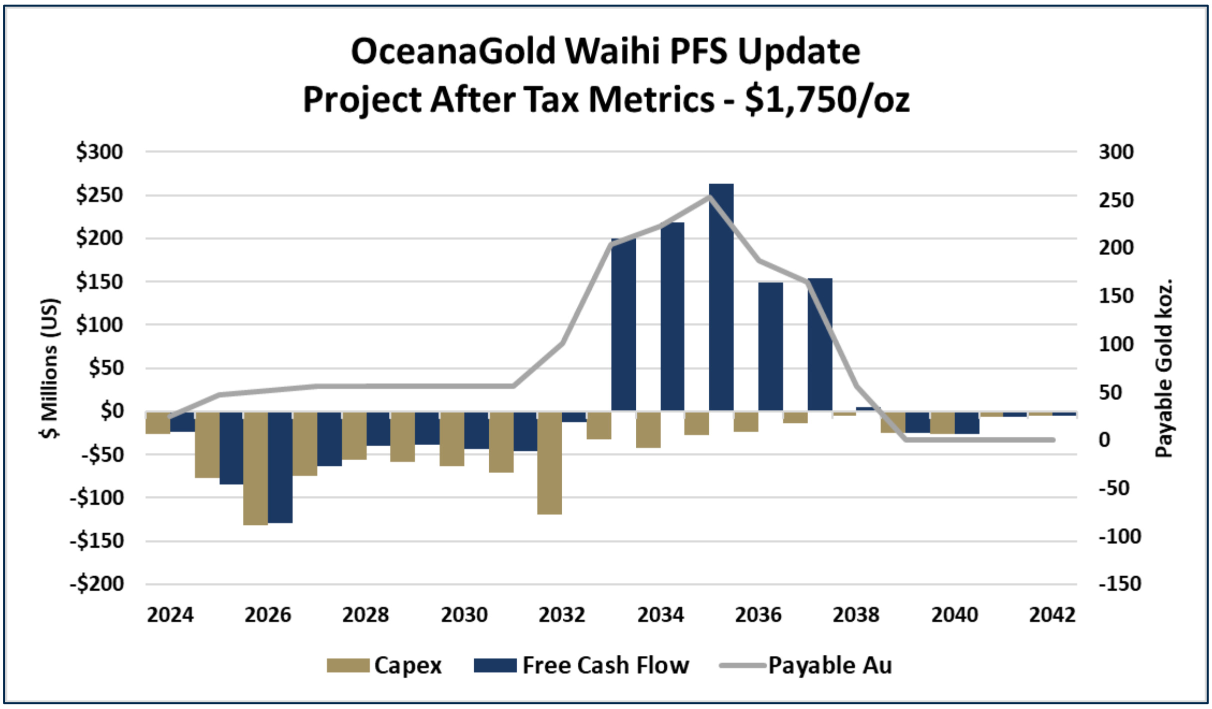


Figure 22-3: Project After-Tax Metrics Summary at $1,750 /oz Au

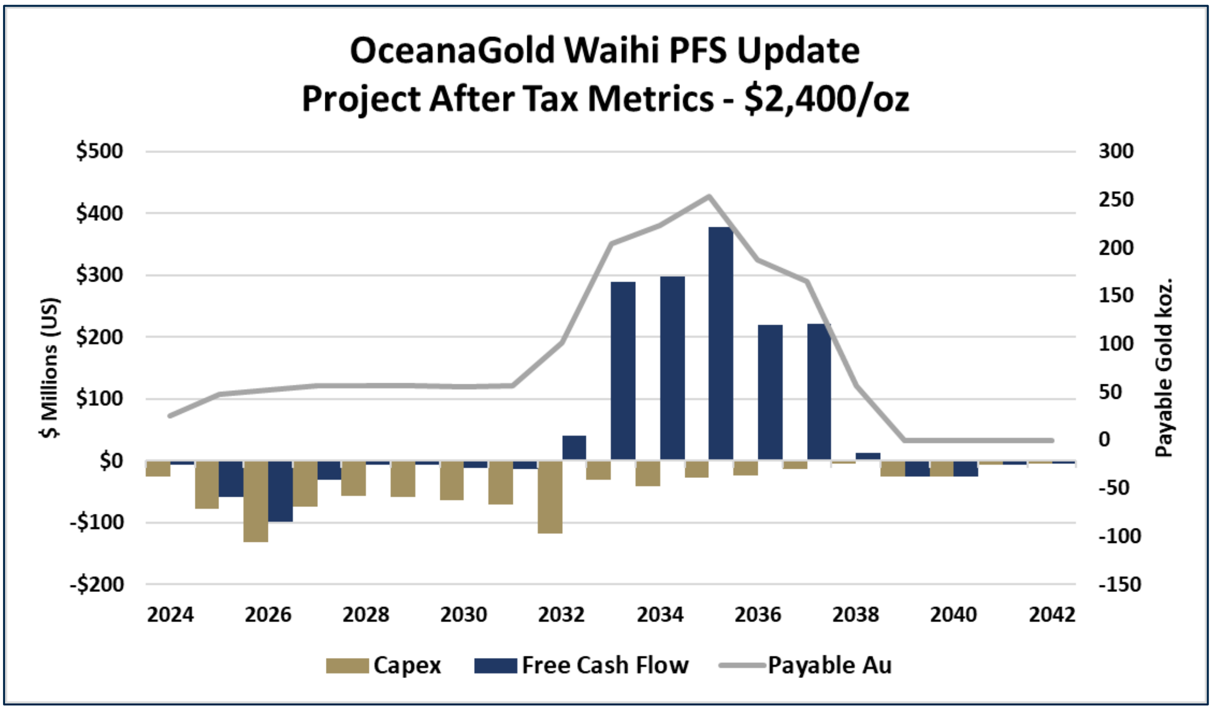


Figure 22-4: Project After-Tax Metrics Summary at $2,400 /oz Au

Table 22-7 shows the build-up of a AISC of $994 /oz Au, net of a $20 /oz silver by-product credit, over the life of mine. Total payable gold sales is 1,593 koz as of 30th June 2024.

Table 22-7: LoM AISC Contribution

Description	$ 000's	$/oz
Mining	753,223	473
Processing	222,717	140
Site G&A	191,026	120
Selling/Refining/Freight	5,584	4
Carbon Costs / Other Costs	28,232	18
Direct Cash Costs Before By-Product Credit	**1,200,783**	**754**
Silver By-Product Credit	54,598	34
Direct Cash Costs After By-Product Credit	**1,146,184**	**719**
Royalties	96,795	61
Non-Operating Cash Costs	**96,795**	**61**
Sustaining Capex	341,590	214
Total AISC	**1,584,570**	**994**

Figure 22-5 shows the annual AISC trend over the life of mine. The improvement in AISC is due to the commencement of WUG and is primarily due to the improvement in grade. Over the WUG production life (2033-2038) the AISC is $634 /oz.

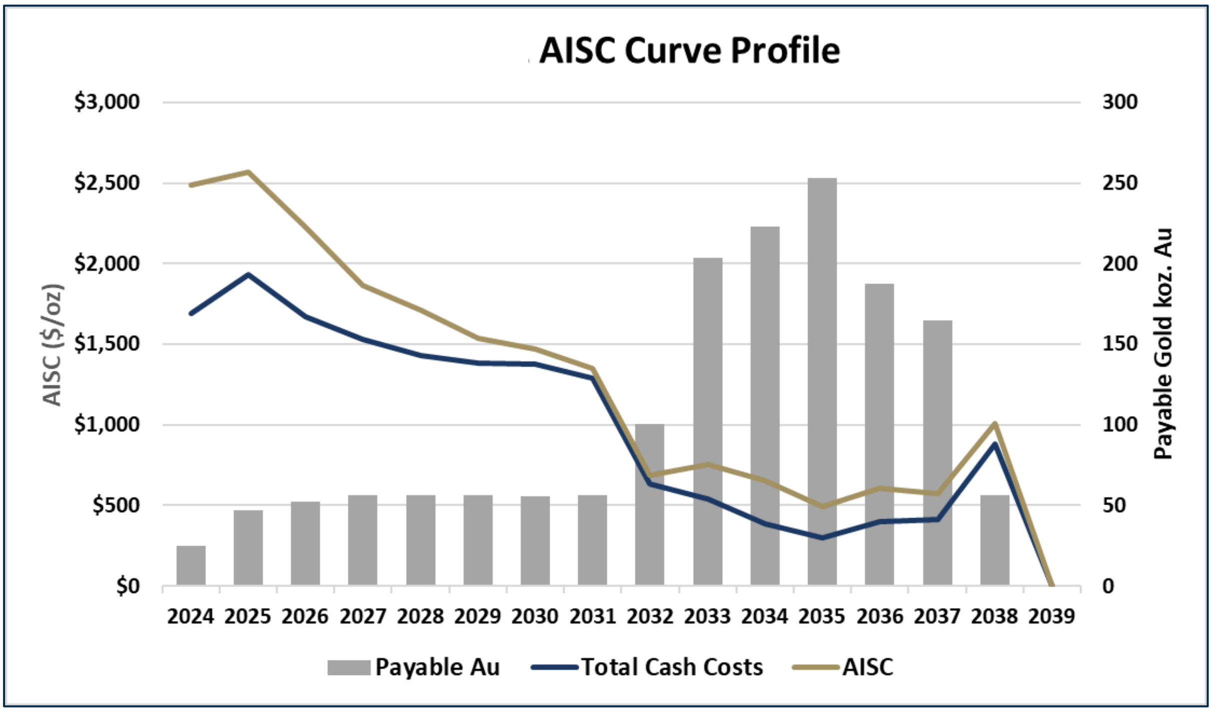


Figure 22-5: Annual AISC and Total Cash Cost Curve Profile

Table 22-8: Annual AISC Curve Profile

	NI 43-101 All In Sustaining and Cash Cost Profile														
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Payable Au	25	47	52	57	57	57	56	56	101	204	223	253	188	165	57
RoM AISC $/oz	2,484	2,570	2,224	1,868	1,711	1,537	1,471	1,348	685	757	654	494	605	572	1,010

22.3 Taxes, Royalties and Other Interests

The main taxation assumptions utilized within the model are as follows:

- MUG and WUG royalties are payable to the NZ government at the greater of a 1 % royalty on net sales revenue from gold and silver or 5 % of accounting profits
- In addition, parts of the Wharekirauponga Mining Permit, MP 60541, are subject to an additional 2 % of sales royalty payable to Osisko (acquired from Geoinformatics)
- The New Zealand corporate income tax (CIT) rate is 28 %. There are no state or municipal income taxes in New Zealand
- Existing Net Operating Loss (NOL) pools are not considered.

The TEM was created on a project level basis and no fractional ownership, if applicable, was considered in the result. Local authorities levy tax known as 'rates' on land within their territorial boundaries. Rates are levied on properties based on the properties' rateable value and included in the G&A costs.

22.4 Sensitivity Analysis

22.4.1 Operational Sensitivity

After-tax NPV sensitivity analyses for key operational parameters are shown in Figure 22-6 and is nominally most sensitive to revenue. Sensitivities to capital and operating costs are similar but slightly more susceptible to variations in operating costs.

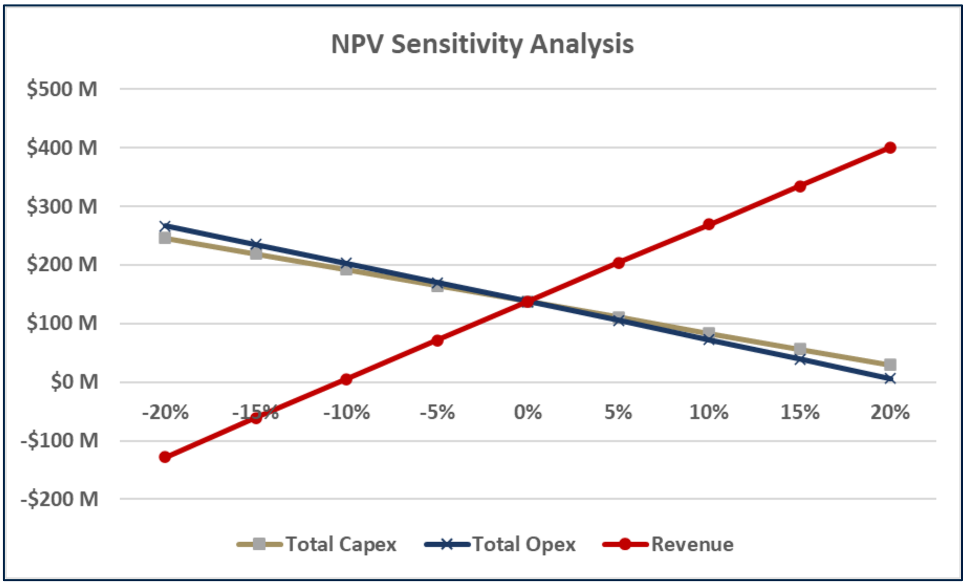


Figure 22-6: NPV Sensitivity Analysis

22.4.2 Gold Price Sensitivity

Additional gold price sensitivity analyses are shown with after-tax cumulative cashflow at various constant gold prices of $1,100, $1,500, $2,000 and $2,400. Figure 22-7 and Table 22-9 show the gold price sensitivity analysis by year and compare with the Reserve case at $1,750 /oz Au.

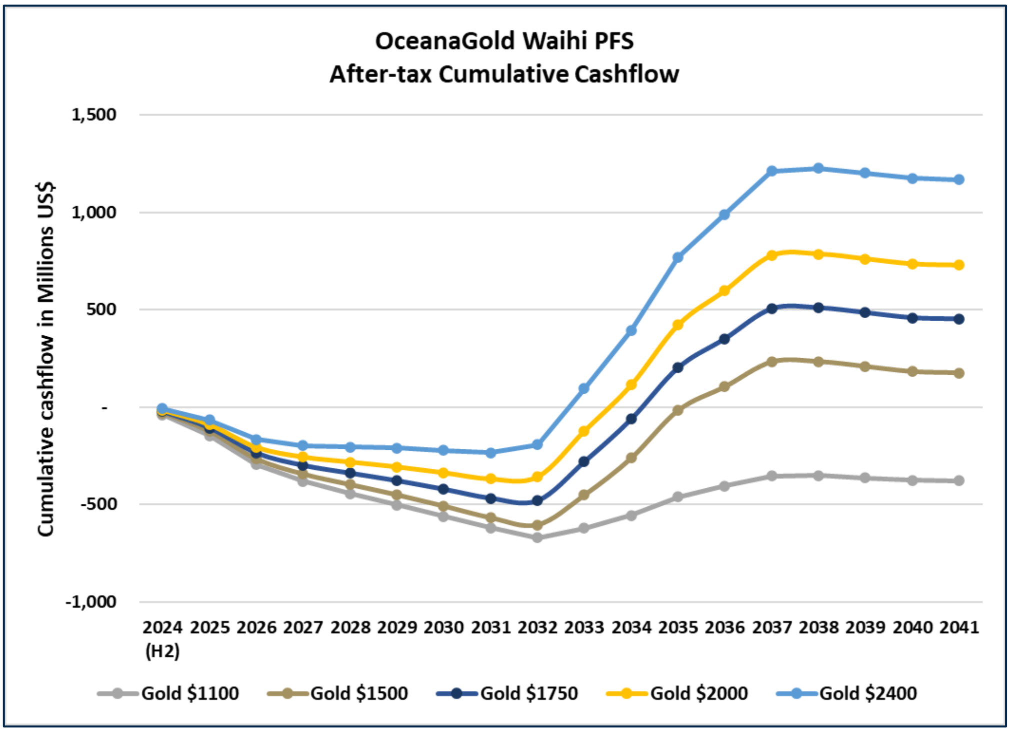


Figure 22-7: Gold Price Sensitivity Analysis

Table 22-9: Gold Price Sensitivity analysis

	2024 (H2)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Gold $1100	-39	-153	-316	-416	-492	-567	-647	-729	-804	-727	-620	-456	-355	-261	-258	-283	-309	-315
Gold $1500	-29	-125	-267	-344	-398	-451	-509	-569	-605	-452	-262	-17	105	232	233	208	182	176
Gold $1750	-23	-107	-237	-300	-340	-379	-422	-469	-481	-281	-62	202	351	504	509	484	458	452
Gold $2000	-17	-91	-208	-257	-283	-308	-338	-370	-359	-123	113	420	597	777	784	760	733	727
Gold $2400	-7	-66	-166	-197	-205	-211	-223	-235	-194	94	392	770	990	1,212	1,225	1,200	1,174	1,168

Note: For brevity rehabilitation years 2042 to 2048 are not shown in the Table or Chart. At gold price $1,100, $1,500, $1,750, $2,000 and $2,400 /oz the final cumulative cashflow estimate is -$336M, $155M, $431M, $706M and $1,147M respectively at completion of rehabilitation works.

The after tax NPV5 % and IRR for the gold price sensitivity cases are shown in Table 22-10.

Table 22-10: Gold Price

	NI 43-101 Sensitivity to Gold price	
	After tax NPV 5 % ($ M)	IRR (%)
Gold $1,100	-387	N/A
Gold $1,500	-52	N/A
Gold $1,750	138	9.2 %
Gold $2,000	326	14.8 %
Gold $2,400	621	24.0 %

22.5 OceanaGold Pricing Model Result

22.5.1 Cash Flow Analysis

Key economic results are as presented in Table 22-11, using 1 July 2024 as the reference commencement date and the cash flow summary is presented in Table 22-12 and Table 22-13.

Table 22-11: Key Economic Metrics

Financial Metric	Unit	Reserve Case Price	Alternative Case Price
Gold Price	$/oz	1,750	2,400
Exchange Rate	$: NZ$	0.61	0.61
Before-Tax			
$NPV_{5\%}$	$M	259	902
Internal Rate of Return	%	12	29
LoM Cumulative Free Cash Flow	$M	648	1,629
After-Tax			
$NPV_{5\%}$	$M	138	621
Internal Rate of Return	%	9	24
LoM Cumulative Free Cash Flow	$M	431	1,147
Payback Period	years	11.2	9.7
Cash Costs C1	$/oz	719	719
AISC	$/oz	994	1,026

Table 22-12: Cash Flow Summary Mineral Reserves (Reserve Case Price)

Description	TOTAL	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Payable (koz)	1,593	25	47	52	56	56	56	56	56	101	204	222	253	187	165	57	-
Revenue	**$ 000's**																
Gross Gold Revenue	2,788,394	43,316	82,467	91,272	98,852	98,804	98,847	97,400	98,159	176,164	356,133	389,181	442,370	327,844	288,516	99,072	-
Silver By-Product Credit	54,598	1,478	2,906	3,615	2,681	2,568	2,698	2,421	1,797	6,614	5,768	5,355	5,781	4,619	4,475	1,822	-
Total Gross Revenue	2,842,992	44,794	85,373	94,886	101,532	101,371	101,546	99,820	99,956	182,778	361,900	394,535	448,151	332,463	292,991	100,894	-
Operating Costs	**$ 000's**																
Mining	753,223	29,651	67,089	62,695	60,709	54,783	51,940	49,717	43,998	39,399	80,886	56,317	47,397	45,711	38,706	24,224	-
Processing	222,717	7,426	13,462	13,840	14,094	14,075	13,998	14,353	14,844	15,065	18,023	17,688	17,719	17,735	17,677	12,719	-
Site G&A	191,026	6,197	13,277	13,277	13,277	13,277	13,277	13,277	13,277	13,277	13,102	13,102	13,102	13,102	13,102	13,102	-
Selling/Refining	5,584	128	249	301	246	239	247	228	188	558	635	633	699	540	502	191	-
Other - Carbon Costs and stockpile movements	28,232	-	-	778	1,091	1,224	1,391	1,551	2,022	2,255	3,541	3,464	3,225	3,332	2,707	1,651	-
Total Direct Operating Costs	1,200,783	43,402	94,076	90,892	89,418	83,598	80,853	79,126	74,329	70,554	116,187	91,204	82,141	80,421	72,694	51,887	-
Royalties payable to Government	58,213	447	851	946	1,013	1,011	1,013	996	998	3,250	8,585	10,348	12,837	7,910	7,001	1,007	-
Other Royalties	38,582	-	-	-	-	-	-	-	17	1,598	6,444	7,871	8,943	6,619	5,248	1,842	-
Total Non-Direct Operating Costs	96,795	447	851	946	1,013	1,011	1,013	996	1,015	4,848	15,029	18,219	21,780	14,529	12,249	2,849	--
Operating Cash Flow	1,545,414	946	9,555	3,049	11,101	16,762	19,679	19,698	24,612	107,376	245,307	284,992	344,122	237,157	197,130	43,038	-
Income Tax	217,309	-	22	-	-	-	-	-	-	-	-	22,647	52,847	65,789	40,227	35,776	-
Capital	**$ 000's**																
Sustaining Capital	341,590	19,197	29,251	27,969	17,927	14,723	7,786	4,342	2,214	332	28,974	41,819	27,068	23,342	14,179	4,402	24,923
Non-Sustaining Capital	555,807	6,793	47,974	103,933	56,466	41,542	50,589	59,011	68,337	118,353	2,808	0	0	0	0	0	0
Total Capital	897,397	25,990	77,225	131,902	74,392	56,265	58,374	63,353	70,551	118,684	31,782	41,819	27,068	23,342	14,179	4,402	24,923
Metrics	**$ 000's**																
Pre-Tax Free Cash Flow	648,017	-23,046	-84,337	-129,108	-63,424	-39,831	-38,837	-43,735	-46,201	-12,219	199,933	241,655	316,221	215,032	193,777	40,205	-24,923
After-Tax Free Cash Flow	**430,709**	**-23,046**	**-84,359**	**-129,108**	**-63,424**	**-39,831**	**-38,837**	**-43,735**	**-46,201**	**-12,219**	**199,933**	**219,009**	**263,374**	**149,243**	**153,550**	**4,428**	**-24,923**

Rehabilitation years from 2040 to 2048 inclusive are not shown in Table but reflected in Totals.

Table 22-13. Cash Flow Summary Mineral Reserves (Alternative Case Price)

Description	TOTAL	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Payable (koz)	1,593	25	47	52	56	56	56	56	56	101	204	222	253	187	165	57	
Revenue	US$ 000's																
Gross Gold Revenue	3,824,083	59,404	113,097	125,172	135,568	135,502	135,562	133,577	134,618	241,596	488,410	533,733	606,678	449,615	395,679	135,870	
Silver By-Product Credit	54,598	1,478	2,906	3,615	2,681	2,568	2,698	2,421	1,797	6,614	5,768	5,355	5,781	4,619	4,475	1,822	
Total Gross Revenue	3,878,682	60,883	116,003	128,787	138,249	138,070	138,260	135,997	136,415	248,211	494,178	539,088	612,460	454,234	400,154	137,693	
Operating Costs	**$ 000's**																
Mining	753,223	29,651	67,089	62,695	60,709	54,783	51,940	49,717	43,998	39,399	80,886	56,317	47,397	45,711	38,706	24,224	-
Processing	222,717	7,426	13,462	13,840	14,094	14,075	13,998	14,353	14,844	15,065	18,023	17,688	17,719	17,735	17,677	12,719	-
Site G&A	191,026	6,197	13,277	13,277	13,277	13,277	13,277	13,277	13,277	13,277	13,102	13,102	13,102	13,102	13,102	13,102	-
Selling/Refining	5,584	128	249	301	246	239	247	228	188	558	635	633	699	540	502	191	-
Other - Carbon Costs and stockpile movements	28,232	-	-	778	1,091	1,224	1,391	1,551	2,022	2,255	3,541	3,464	3,225	3,332	2,707	1,651	-
Total Direct Operating Costs	1,200,783	43,402	94,076	90,892	89,418	83,598	80,853	79,126	74,329	70,554	116,187	91,204	82,141	80,421	72,694	51,887	-
Royalties payable to Government	98,343	831	1,158	1,285	1,380	1,378	1,380	1,358	1,492	6,522	15,199	17,576	21,053	13,998	12,359	1,375	
Other Royalties	52,742	-	-	-	-	-	-	-	23	2,185	8,808	10,760	12,227	9,047	7,174	2,516	
Total Non-Direct Operating Costs	151,085	831	1,158	1,285	1,380	1,378	1,380	1,358	1,515	8,707	24,008	28,336	33,280	23,045	19,534	3,891	
Operating Cash Flow	2,526,815	16,650	20,769	36,611	47,450	53,093	56,027	55,513	60,571	168,950	368,607	419,429	496,931	350,411	297,008	78,795	
Income Tax	482,089	-	4,420	3,971	4,542	3,929	4,033	3,483	2,559	7,928	34,085	78,394	90,489	108,576	71,938	63,742	
Capital	**$ 000's**																
Sustaining Capital	341,590	19,197	29,251	27,969	17,927	14,723	7,786	4,342	2,214	332	28,974	41,819	27,068	23,342	14,179	4,402	24,923
Non-Sustaining Capital	555,807	6,793	47,974	103,933	56,466	41,542	50,589	59,011	68,337	118,353	2,808	0	0	0	0	0	0
Total Capital	897,397	25,990	77,225	131,902	74,392	56,265	58,374	63,353	70,551	118,684	31,782	41,819	27,068	23,342	14,179	4,402	24,923
Metrics																	
Pre-Tax Free Cash Flow	1,629,418	-7,473	-54,133	-95,573	-27,098	-3,498	-2,490	-7,915	-10,244	49,118	322,681	375,991	468,868	328,638	293,773	76,842	-24,923
After-Tax Free Cash Flow	**1,147,329**	**-7,473**	**-58,552**	**-99,544**	**-31,640**	**-7,428**	**-6,523**	**-11,398**	**-12,803**	**41,190**	**288,596**	**297,597**	**378,379**	**220,062**	**221,834**	**13,099**	**-24,923**

Rehabilitation years from 2040 to 2048 inclusive are not shown in Table but reflected in Totals.

23 ADJACENT PROPERTIES

There are no adjacent properties that are relevant to this report.

24 OTHER RELEVANT DATA AND INFORMATION

New Zealand has an established framework that is well regulated and monitored by a range of regulatory bodies. OceanaGold has dedicated programs and personnel involved in monitoring consent compliance and works closely with authorities to promptly address additional requests for information. Risks associated with review and renewal of operating consents is, upon that basis, regarded as manageable within the ordinary course of business.

OceanaGold holds a suite of land ownership, surface access rights and resource consents authorising existing operations within the MP 41808 area and a range of the activities proposed for the WNP within the MP 41808 and MP 60541 areas. Processes to secure the remaining land access rights, permits, consents and approvals are underway or planned, including through the government's proposed Fast-track Approvals Bill in which the WNP is a listed project.

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

Following review of the data available on the Waihi District Study, the QPs have reached the following interpretations and conclusions.

25.1 Geology and Mineralization

The Martha, Gladstone and Wharekirauponga deposits are located within the Coromandel Peninsula which hosts over fifty gold and silver deposits that make up the Hauraki Goldfield. The peninsula is built up of Miocene to Quaternary volcanic rocks, the Coromandel Volcanic Zone (CVZ) overlying a Mesozoic basement. It is bound to the west by the Hauraki Rift, a large graben filled with Quaternary and Tertiary sediments, and to the south by volcanics deposited by the presently active Taupo Volcanic Zone (TVZ).

The geological understanding of the setting, lithologies, and structural and alteration controls on mineralization is sufficient to support estimation of Mineral Resources and Mineral Reserves. The geological knowledge of the area is also considered sufficiently acceptable to reliably inform mine planning. The mineralization style and setting are well understood and can support declaration of Mineral Resources and Mineral Reserves. The deposit displays classic features that are typical of volcanic-hosted epithermal Au deposits. The QP considers the model and interpreted deposit genesis to be appropriate to support exploration activities.

25.2 Resource Estimation

The drillhole database and Resource estimation methodology are appropriate for the purposes of estimating the open pit and underground Mineral Resources. OceanaGold has completed industry standard Resource definition drilling at the MOP, GOP, MUG and WUG deposits to support the current Mineral Resource estimations. Regular internal peer reviews and, where appropriate, independent external reviews, of the geological and estimation processes are undertaken. The results of the drilling, sampling, analytical testing, core logging and geologic interpretation provide good support for an industry standard Resource estimation. A summary of the Resource estimates is shown in Table 14-22.

OceanaGold is not aware of any environmental, permitting, legal, socio-economic, marketing, political, or other factors that might materially affect the Mineral Resource estimates. The QPs acknowledge that the consenting timeline is a risk, however, are satisfied with the Company’s risk mitigation plans.

25.3 Status of Exploration, Development and Operations

Exploration activities since 1986 comprised surface reconnaissance exploration, geological and structural mapping, geochemical sampling, airborne, ground, and downhole geophysical surveys, surface and underground drilling, engineering studies and mine development.

The exploration programs completed to date are appropriate to the style of the deposit and prospects. The research work supports the genetic interpretation of the Waihi vein deposits.

The majority of surface drilling was by triple tube wireline diamond methods. Surface holes are collared using large-diameter PQ core, both as a means of improving core recovery and to provide greater opportunity to case off and reduce diameter when drilling through broken ground and historic stopes. Drill hole diameter is usually reduced to HQ at the base of the post mineral stratigraphy. RC drilling is mostly confined to the immediate pit vicinity, or isolated first pass exploration drill holes.

The quantity and quality of the lithological, geotechnical, collar and downhole survey data collected in the exploration, delineation, underground, and grade control drill programs are sufficient to support Mineral Resource and Mineral Reserve estimation. Sampling methods are acceptable, meet industry-standard practice, and are acceptable for Mineral Resource and Mineral Reserve estimation and mine planning purposes.

Approximately 370 km of diamond core has been drilled within the Martha and Gladstone areas since 1980 (as of June 2024) and WUG has had ~64 km of diamond drilling since 1980 (as of June 2024). Additionally, 86 km has been drilled in approximately 4,500 reverse circulation grade control holes during the open pit operation. Recent diamond drilling has largely focused on the Wharekirauponga, Martha and Gladstone deposits. The exploration programs completed to date are appropriate to the style of the deposit and prospects.

25.4 Geotechnical, Hydrology, Mining and Reserves

25.4.1 Geotechnical

At Wharekirauponga, a geotechnical field characterisation program has been undertaken to assess the expected rock quality. This program included logging core, laboratory strength testing, in situ stress measurements and oriented core logging of jointing. The results of this program have provided adequate quantity and quality data for prefeasibility-level design of the underground workings.

A geotechnical assessment of the orebody shape and ground conditions has determined that a combination of modified Avoca and longhole open stoping mining are appropriate mining methods. Stopes have been sized to maintain stability once mucked empty. For the bulk stopes, a primary/secondary extraction sequence with tight backfilling allows optimization of ore recovery while maintaining ground stability. Primary stopes will be backfilled with cemented rockfill, while secondary stopes will be backfilled with cemented and uncemented waste rock.

The WUG Mine geotechnical risks are assessed to be hydrology and hydrogeological conditions for development, LoM crown stability for production, and excessive overlying cover and poor rock conditions for ventilation rises requiring pre-conditioning or consolidation. Control measures include footwall infrastructure drilling, structural geology assessments and numerical modelling to optimise current empirical assessments and LoM crown stability.

The Willows geotechnical investigations have included the waste rock stack (WRS) foundation and slope stability, contact and seepage water control measures, portal slope stability, portal box cut and WRS toe interaction, underground tunnel and infrastructure stability and Ventilation Shaft 1 site selection, depth of cover and stability. Initial geotechnical investigations at Willows portal, tunnel WRS and Ventilation Shaft 1 have encountered varying weak weathered to strong fresh andesite generally overlain by ash tuff materials. Studies have confirmed that there are no deep-seated instability risks.

The TSF3 geotechnical considerations include quality and methods of extraction for borrow sources, staging of borrow quarrying and starter and embankment development, foundation engineering, seepage and PAF encapsulation. Significant work has been progressed to identify suitable competent material required to build TSF3 in a cost-effective manner.

25.4.2 Hydrogeology and Hydrology

A wide range of specialist technical studies have been undertaken to date, looking at effects on the environment and water ingress potential from dewatering of WUG. This included hydrology and hydrogeological data collection, numerical groundwater modelling and uncertainty analysis. The geology is characterized by low-permeability, low-storage Andesite or Rhyolite with structurally controlled storage and flux/transmissivity. The technical studies undertaken have assessed minor impact on surface bodies and ecology from mining activities at WUG.

25.4.3 Mining

Mineral Resources and Mineral Reserves have been estimated using core drill data, performed to industry best practices, and conform to the requirements of CIM Definition Standards on Mineral Resources and Reserves (2014). The Mineral Reserves are acceptable to support mine planning. Reviews of the environmental, permitting, legal, title, taxation, socio-economic, and marketing factors and constraints support the declaration of Mineral Reserves using the set of assumptions outlined.

Resource and Reserve estimates have been based on assumptions, which are considered appropriate, for commodity prices, metallurgical recovery, changes to the geotechnical and hydrogeological parameters used for stope and open pit mine design, dilution, and changes to capital and operating costs. Tonnage and grades presented in the Mineral Reserve include dilution and recovery and are benchmarked to the existing MUG operation as well as other similar operations.

MUG is an operating mine. Productivities have been adjusted based on existing productivities achieved and also taking into account any future scheduled activities.

WUG productivities were developed from a combination of existing MUG benchmarking, first principles and benchmarking against similar projects where applicable. Equipment used in this study is standard equipment used worldwide with only standard package/automation features.

The UG production schedule was completed using Deswik® scheduling software and is based on mining operations occurring 365 days/year, seven days/week, with two 12-hr shifts each day. A production rate of approximately 2,200 t/d was targeted for WUG with ramp-up to full production as quickly as possible. Resource levelling was used for ore tonnage and lateral development.

A workable ventilation plan was developed to support the mining fleet that satisfied the NZ Mining Regulations for both MUG and WUG.

MUG support infrastructure is largely in place. No infrastructure is in place for WUG.

25.4.4 Mineral Reserves

Measured Mineral Resources were converted to Proven Mineral Reserves, and Indicated Mineral Resources were converted to Probable Mineral Reserves by applying appropriate modifying factors. MUG mining Reserves of 4.4 Mt (diluted) with an average grade of 3.8 g/t Au and WUG Reserves of are 4.1 Mt (diluted) with an average grade of 9.2 g/t Au presented in Table 15-4.

25.5 Mineral Processing, and Water Treatment

25.5.1 Mineral Processing

Metallurgical test work and associated analytical procedures are appropriate to the mineralization type, appropriate to establish the optimal processing routes, and were performed using samples that are typical of the mineralization styles found.

Samples selected for testing were representative of the various types and styles of mineralization. Samples were selected from a range of depths within the deposit. Sufficient samples were taken so that tests were performed on sufficient sample mass. As mining progresses deeper and/or new mining zones are identified, additional variability tests will be undertaken as required.

Mill process recovery factors are based on production data or from ore composite test work and are considered appropriate to support Mineral Resource and Mineral Reserve estimation, and mine planning.

Metallurgical testwork on WUG supports ongoing use of the existing process flowsheet with plant expansions to enable higher throughput rates. These expansions will be timed to align with the development of new orebodies. Key elements of the expansions include installation of a jaw crusher, replacement of the ball mill with a 1.8 MW tower mill; refurbishment of the adsorption circuit; and new pumps and pipework for delivery of tailings to TSF3. This will increase throughput capacity from 0.66 to 0.8 million tonnes per annum of underground ore.

25.5.2 Water Treatment

It is estimated that WUG, including the tunnels will generate 12,000 m^3/d of water, dependent on the number of structures intersected and permeability of rock. It is estimated that the Willows Waste Rock Stack generate up to 20,000 m^3/d, and MUG 15,000 m^3 per day, with a combined total less than the Regime E high river flow discharge limit. The design capacity of the expanded WTP is double that of the existing infrastructure – 1,800 m^3/hr for metals removal and 500 m^3/hr for cyanide destruction and metals removal.

25.6 Project Infrastructure

MUG uses the existing process facilities, tailings storage, water treatment facilities and other site infrastructure. Power is supplied through the local utility, provided from the national grid and supplied to the Company's substation. Sufficient tailings storage facilities have been planned for the MUG, involving lifts on existing TSF's.

New surface facilities and infrastructure at Willows will be required for WUG, including:

- Waste rock stack
- Boxcut portal façade excavation
- Access road to portal
- Bulk earthworks and drainage
- Collection/Silt ponds and associated pumping requirements
- Surface Facilities Area, including workshop, warehouse, bathhouse, substations, offices, parking, fuel and explosives storage, washbays
- An upgrade of the existing SH 25 and Willows Road intersection.

A services trench between the Processing Plant and Willows (approximately 5 km) for water treatment, potable water, mine dewatering, electrical supply and communications (fibre optic cables)

A new tailings storage facility, TSF3, is to be constructed adjacent to existing tailings facilities at Baxter Road for the Waihi Operations, featuring downstream construction and associated stockpiles, containment ponds and diversion drains.

The capacity of the water treatment plant (WTP) will be doubled to allow treatment of mine dewatering from WUG and decant water off TSF3.

A high voltage (HV) power upgrade will also be required from the Transpower Waikino grid exit point (GXP) in Hauraki District Council (HDC) Road Reserve to a new 33 kV / 11 kV substation at the Baxter Road Waihi operations.

25.7 Mineral Tenure, Surface Rights, Royalties, Environment, Social and Permits

25.7.1 Mineral Tenure and permitting

MUG falls within MP 41808, with a duration out to March 21st, 2044. WUG falls within MP 60541, with a duration out to August 4th, 2060. Both permits are in good standing.

OceanaGold holds a suite of land ownership, surface access rights and resource consents authorising existing operations within the MP 41808 area and a range of the activities proposed for the WNP within the MP 41808 and MP 60541 areas. Processes to secure the remaining land access rights, permits, consents and approvals are underway or planned, including through the government's proposed Fast-track Approvals Bill in which the WNP is a listed project.

25.7.2 Martha

All permits are in place for MUG and Martha Phase 4 pit. Mining tenure held by OceanaGold in the areas for which Mineral Resources and Mineral Reserves are estimated is valid.

OceanaGold holds sufficient surface rights to support mining operations over the planned life of mine that was developed based on the Mineral Reserves. Permits held by OceanaGold are sufficient to ensure that mining activities are conducted within the regulatory framework required by New Zealand law.

OceanaGold has sufficiently addressed the environmental impact of the operation, and subsequent closure and remediation requirements that Mineral Resources and Mineral Reserves can be declared, and that the mine plan is appropriate and achievable. Closure provisions are appropriately considered. Monitoring programs are in place.

The existing infrastructure, availability of staff, the existing power, water, and communications facilities, the methods whereby goods are transported to the mine, and any planned modifications or supporting studies are sufficiently well-established, or the requirements to establish such, are well understood by OceanaGold, and can support the declaration of Mineral Resources and Mineral Reserves and the current mine plan.

The mine currently holds the appropriate social licenses to operate. OceanaGold has developed a community's relations plan to identify and ensure an understanding of the needs of the surrounding communities and to determine appropriate programs for filling those needs. The Company monitors socio-economic trends, community perceptions and mining impacts.

25.7.3 WUG

Permits are required to enable the WNP to proceed. Applications for resource consents were lodged in June 2022 and the Company has subsequently undertaken additional field studies and analysis in order to satisfy requests for further information from the Council regulators largely related to groundwater, surface water, wetland, and ecology. The Company's expectation is that the process of gaining consents and approvals for WNP will move to come under the proposed Fast-track Approvals Bill following its passage into law and becoming operational (scheduled for the first quarter of 2025) and that permits would be obtained under this legislation, in a form allowing works to commence, before the end of 2025.

25.8 Economic Analysis

The Mineral Reserves case is presented using underground Mineral Resources. Mineral Reserves are declared for the first time at WUG.

- Total capital costs are $897 M, including $556 M growth capital. Total operating costs, including mining, processing, and G&A, are $1,201 M, or $141.8 per tonne of ore including carbon costs. Carbon costs have been estimated at $27 million. All-In Sustaining Cost (AISC) averages $994 /oz, with life of mine cash cost $717 /oz.
- The cumulative undiscounted free cash flow after tax been calculated at $431 M. The average free cash flow is $30 M per year with the highest year for free cash flow in 2035 at $263 million.
- For $1,750 /oz gold price and 5 % discount rate, pre-tax NPV is $259 M and after-tax NPV is $138 M. Pre-tax IRR is 12 % and after-tax IRR is 9 %.

Structured risk assessments have shown that the key project risks lie in:

- defining the geological Resource and grade estimation
- project staffing
- geotechnical and hydrogeological conditions in the WUG access tunnel, and ventilation shaft
- geotechnical conditions associated with waste storage facilities
- higher than expected dewatering volumes and rates at WUG
- capital cost overruns
- consent conditions and delays to finalising consents.

Mitigation plans have been developed to address or control these risks.

26 RECOMMENDATIONS

26.1 Recommended Work Programs

26.1.1 Geology, Mineralization and Resource Estimation

A broad development and drilling strategy is recommended to extend WUG Resources in a south-westward direction from Drill Site 9. Infill drilling in the northern and central area of WUG will be a target in 2025 and 2026, to convert Inferred Au Resources to Indicated. This includes 5,000 m of planned and budgeted conversion drilling in 2025.

The key activities include:

- Identify opportunities through access agreements or the Fast track consenting program to provide additional exploration drilling sites at WUG
- Analysis of the Q4 2024 geophysical survey along the alignment of the main WUG access incline to identify potentially faulted or water bearing structures and weathering horizons to assist in mine design
- Conduct suitable sterilisation of any selected decline route where appropriate or, otherwise demonstrate that any incidental ore discovery along the route will not be sterilized.

A rolling front of pre-production infill drilling at approximately 15 m x 15 m spacing will be maintained from underground development to improve confidence in tonnage and grade estimates supporting the mine plan. Future capital development and resource infill drilling will further improve the geological interpretation.

- Study grade control strategy including data spacing studies and investigating the potential for underground, reverse circulation, grade control drilling
- Identify whether close spaced, short, ore-drive parallel diamond drilling is the preferred option for grade control drilling.

OceanaGold will continue to expand resources adjacent to underground Reserves in the Waihi district through core drilling aligned with LoM plans. Systematic target generation and rationalisation supported by mapping, drilling, geochemistry, and geophysics is expected to yield new discoveries during the next five years, particularly for underground deposits.

26.1.2 Mine Planning, Reserves and Geotechnical Investigations

Key recommendations relating to the mine planning include completing:

- Extensional and infill drilling to further optimise capital infrastructure requirements
- Continue geotechnical investigations for WUG including data collection for crown pillar area, footwall development and EG Vein areas, investigative drillholes for each ventilation shaft and numerical modelling for both crown and pillar stability
- Material balance analysis for TSF construction options
- Willows waste rock stack design and construction methodologies provided by EGL
- Willows Portal boxcut and tunnel will be provided by PSM
- Ventilation Shaft 1 on Willows to be undertaken by PSM
- Mine equipment fleet and material handling optioneering
- Staged ventilation modelling and optimisation.

26.1.3 Metallurgy and Processing

The process plant flowsheet is effectively fixed and established on site. Ongoing future ores testwork programs should continue to inform forecasting assumptions and identify (and address) potential risks to production targets.

Infill drilling presents the opportunity to continue test work on available core samples to confirm hardness and recovery estimates for any new Reserves that are defined. This should occur as material becomes available to de-risk the use of existing throughput and recovery models.

26.1.4 Project Infrastructure

Detailed design and execution works is planned for the services trench to join the Processing Plant to Willows, the water treatment plant upgrade, and bulk earthworks for Willows. Geotechnical investigations will continue to enable portal boxcut and waste rock stack detailed design, and the first 1.5 km of decline to Ventilation Shaft No.1.

A geotechnical borehole investigation will be conducted around the ridges to the east of the proposed TSF3 and borrow pits to identify suitable materials for construction of the embankment and extent of earthworks required.

Additional infrastructure design works includes:

- undertake drilling with man portable drill rig that does not require vegetation clearance to identify near surface conditions favourable for construction of the ventilation shafts within the Coromandel Forest Park
- confirming the methodology for construction of ventilation shafts with specialist contractors
- confirming the suitability of the proposed plant upgrade as metallurgical testwork and mine schedule plans are updated
- completion of detailed design for the 33 kV buried powerline upgrade from Waikino and the Baxter Road and Willows substations.

26.1.5 Environmental Study

Continue collection of baseline data and refinement of an integrated hydrogeological and hydrological model(s).

26.1.6 Permitting and Consenting

As part of the proposed fast-track consent application, develop staged / separate groups of the WNP’s activities within the application to prioritise the processing of approvals for works relating to activities that would be undertaken in the next two years, over the processing of those activities that will be required later in the works program of the WNP. Specifically, exploration and geotechnical investigations, Willows infrastructure, the services trench, and the Processing Plant to Willows access tunnel.

26.2 Recommended Work Program Costs

The estimated costs for the next stage of Feasibility are shown in Table 26-1.

Table 26-1: Recommended Work Program Costs

Area	Scope	Cost ($ M)
Geology and Mineralization	Geophysical survey, external reviews, drilling.	3.4
Mine Planning	Geotechnical drilling, Material balance study, FS Design work.	1.9
Tailings Infrastructure	Geotechnical drilling of eastern ridges, embankment, and liner design.	0.2
WUG supporting surface infrastructure	Geotechnical drilling of portal and waste stack, detailed design of waste stack and box cut / initial tunnel ground support. Detailed design of services trench.	3.0
Power Supply	Complete license to occupy road reserve, early commitment to long lead items including substation transformer supply.	0.3
Water Treatment	Geotechnical investigations for plant foundations. Detailed design of WTP Upgrade and discharge.	1.1
Mineral Processing and Metallurgical Testing	Test work to confirm metallurgical assumptions on ore hardness and recovery for future ore sources. This will support future Feasibility Studies and resource growth.	0.5
Permitting	Legal support, consenting assessments and environment and social performance.	3.9
Total $		**14.2**

27 REFERENCES

A. 2013 QEMSCAN Analysis of Samples from the Waihi District, New Zealand: Correnso. Unpublished report. Universidad Catolica del Norte, Antofagasta, Chile.

Allwood, K. Geomodelling Limited 2024. Waihi MUG Resource Estimation Review. Unpublished Memo to OceanaGold.

Barker, S., Hood, S., Hughes, R., Richards, S. 2019. The Lithogeochemical signatures of hydrothermal alteration in the Waihi epithermal District, New Zealand. New Zealand Journal of Geology and Geophysics, Vol 62, Issue 4.

Biggalow, J. 2015. Review of multielement geochemistry of Waihi drill data. Unpublished Internal Review. Newmont.

Coote, A. 2011 Petrological Studies of Diamond Core from WKP029 and WKP030, of the WKP South Project, Coromandel, New Zealand. Unpublished Report to Newmont Waihi Gold

De Veth, A. AMC Limited 2022. Report Waihi North – Mining Pre-Feasibility Study (GOP Block Model Review Final Report). Unpublished Memo to OceanaGold.

De Veth, A. AMC Limited 2022. Report Waihi North – Mining Pre-Feasibility Study (MOP Block Model Review Final Report). Unpublished Memo to OceanaGold.

GWS Limited 2012. Proposed Underground Mining Extensions ‐ Waihi. Assessment of Groundwater Inflows and Throughflows. Prepared for Newmont Waihi Gold.

Inglis R. 2013. Heterogeneity Study. Unpublished Internal Report, Newmont Waihi Gold.

Kirk, A. 2012. Geochemistry of Ore, Tailings and Waste Rock Assessment by URS New Zealand for the Correnso Underground Mine (Newmont Waihi Gold).

Mauk J. 2009. Petrographic Examination of Samples from the Reptile North and Number Nine Veins, Waihi. Unpublished Report to Newmont Waihi Gold.

Mauk, J.L., Hall, C.M., Barra, F., and Chesley, J.T., 2011, Punctuated evolution of a large epithermal province: The Hauraki goldfield, New Zealand. Economic Geology, v. 106, p. 921‐943.

McArthur, F. 2019 WKP SG Data Memo. Unpublished Internal Report. OceanaGold.

Meyer, N 2024 Dry Bulk Density Testing WKP, Unpublished Internal Report, OceanaGold.

Meyer, N. 2024 Dry Bulk Density Testing MOP5, Unpublished Internal Report, OceanaGold.

Rhys, DA. 2009 Observations, and exploration recommendations at Newmont exploration properties Hauraki Goldfield. Unpublished Memo to Newmont Waihi Gold.

Rhys, DA. 2010 WKP prospect: review of exploration results with recommendations. Unpublished Memo to Newmont Waihi Gold.

Rhys, DA. 2011 Observations of selected drill core from the WKP prospect (with WKP-30 information added). Unpublished Memo to Newmont Waihi Gold.

Rhys, DA. 2011. Review of the Structural Setting of the Correnso Vein System, Waihi, New Zealand. Unpublished Report to Newmont Waihi Gold.

Rhys, DA. 2017. Waihi District geology: continuing contributions to understanding structural setting and zonation as applied to exploration and mining. Unpublished Memo to OceanaGold.

Rhys, DA. 2020. Review of the core logging template for the Martha Underground Project. Unpublished correspondence to OceanaGold.

Rhys, DA. 2020. Review of the structural controls of the WKP prospect. Unpublished Memo to OceanaGold.

Richards, SD. 2019. Review of the WKP vein model using orientation data. Unpublished internal validation.

Richards, SD. 2023. Review of the WKP vein model. Unpublished internal review.

Ross, KV. and Rhys, DA. 2011. Petrographic Study of Representative Samples from the Correnso Vein System, Waihi District, New Zealand. Unpublished Report to Newmont Waihi Gold.

Simpson, M. 2012 SWIR report for drill holes WKP-24, WKP-27, and WKP-30, Wharekirauponga, Southern Hauraki Goldfield. Unpublished Report to Newmont Waihi Gold.

Van de Ven, M. and Sterk R. RSC Limited 2020. Data Quality Review: Waihi Martha Underground Project. Unpublished Memo to OceanaGold.

Van de Ven, M. and Sterk R. RSC Limited 2024. Draft Independent Technical Review of Mineral Resources, Waihi North Project, NZ. Unpublished Memo to OceanaGold.

Vigour-Brown, W. 2019 Martha Underground SG Memo, Unpublished Internal Report. OceanaGold.

White, T. 2012 Correnso Dry Bulk Density Study. Unpublished Internal Report, Newmont Waihi Gold.

28 GLOSSARY

The Mineral Resources and Mineral Reserves have been classified according to CIM (CIM, 2014). Accordingly, the Resources have been classified as Measured, Indicated, or Inferred, the Reserves have been classified as Proven, and Probable based on the Measured and Indicated Resources as defined below.

28.1 Mineral Resources

A **Mineral Resource** is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

An **Inferred Mineral Resource** is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

An **Indicated Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

A **Measured Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

28.2 Mineral Reserves

A **Mineral Reserve** is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. The public disclosure of a Mineral Reserve must be demonstrated by a Pre-feasibility Study or Feasibility Study.

A **Probable Mineral Reserve** is the economically mineable part of an Indicated Mineral Resource, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.

A **Proven Mineral Reserve** is the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.

28.3 Definition of Terms

The following general mining terms may be used in this report.

Table 28-1: Definition of Terms

Term	Definition
Assay	The chemical analysis of mineral samples to determine the metal content.
Capital Expenditure	All other expenditures not classified as operating costs.
Composite	Combining more than one sample result to give an average result over a larger distance.
Concentrate	A metal-rich product resulting from a mineral enrichment process such as gravity concentration or flotation, in which most of the desired mineral has been separated from the waste material in the ore.
Crushing	Initial process of reducing ore particle size to render it more amenable for further processing.
Cut-off Grade (CoG)	The grade of mineralized rock, which determines as to whether or not it is economic to recover its gold content by further concentration.
Dilution	Waste, which is unavoidably mined with ore.
Dip	Angle of inclination of a geological feature/rock from the horizontal.
Fault	The surface of a fracture along which movement has occurred.
Footwall	The underlying side of an orebody or stope.
Gangue	Non-valuable components of the ore.
Grade	The measure of concentration of gold within mineralized rock.
Hanging wall	The overlying side of an orebody or slope.
Haulage	A horizontal underground excavation which is used to transport mined ore.
Hydrocyclone	A process whereby material is graded according to size by exploiting centrifugal forces of particulate materials.
Igneous	Primary crystalline rock formed by the solidification of magma.
Kriging	An interpolation method of assigning values from samples to blocks that minimizes the estimation error.
Level	Horizontal tunnel the primary purpose is the transportation of personnel and materials.
Lithological	Geological description pertaining to different rock types.
LoM Plans	Life-of-Mine plans.
Material Properties	Mine properties.
Milling	A general term used to describe the process in which the ore is crushed and ground and subjected to physical or chemical treatment to extract the valuable metals to a concentrate or finished product.
Mineral/Mining Lease	A lease area for which mineral rights are held.
Mining Assets	The Material Properties and Significant Exploration Properties.

Term	Definition
Ongoing Capital	Capital estimates of a routine nature, which is necessary for sustaining operations.
Ore Reserve	See Mineral Reserve.
Paper Road	Unformed legal road that is undeveloped or partly formed but provides public access to a particular area or feature.
Pillar	Rock left behind to help support the excavations in an underground mine.
RoM	Run-of-Mine.
Sedimentary	Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.
Shaft	An opening cut downwards from the surface for transporting personnel, equipment, supplies, ore and waste.
Sill	A thin, tabular, horizontal to sub-horizontal body of igneous rock formed by the injection of magma into planar zones of weakness.
Smelting	A high temperature pyrometallurgical operation conducted in a furnace, in which the valuable metal is collected to a molten matte or doré phase and separated from the gangue components that accumulate in a less dense molten slag phase.
Stope	Underground void created by mining.
Stratigraphy	The study of stratified rocks in terms of time and space.
Strike	Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.
Sulphide	A sulphur bearing mineral.
Tailings	Finely ground waste rock from which valuable minerals or metals have been extracted.
Thickening	The process of concentrating solid particles in suspension.
Total Expenditure	All expenditures including those of an operating and capital nature.
Variogram	A statistical representation of the characteristics (usually grade).
Waihi District	Includes Martha Underground (MUG), Martha Open Pit (MOP), Gladstone Open Pit (GOP) and Wharekirauponga Underground (WUG).

28.4 Abbreviations

The following abbreviations may be used in this report.

Table 28-2: Abbreviations

Abbreviation	Definition
AAS	Atomic absorption spectroscopy
AECOM	AECOM Pty Ltd
AEP	Amenity Effects Program
Ag	silver
AMC	AMC Consultants
Analabs	Analabs Propriety Limited
ANCOLD	Means the Australian National Committee on Large Dams Inc., which is an Australian based non-government, non-profit association of professional practitioners and corporations with a profession interest in dams. ANCOLD is a member of the International Commission on Large Dams (ICOLD) and

Abbreviation	Definition
	publishes international recognized guidelines for the sustainable development and management of dams and water resources.
ATV	Acoustic Televiewer
Au	gold
AuEq	gold equivalent
bcm	bank cubic metre(s)
BFA	bench face angles
Block model	is a computer-based representation of a deposit in which geological zones are defined and filled with block which are assigned estimated values of grade and other attributes. The purpose of the block model is to associate grades with the volume model.
BQ	is a reference to the ~ 60 mm diameter drill rods used to recover diamond drill core.
Bulk density	is the dry in-situ tonnage factor used to convert volumes to tonnage.
CIL	carbon in leach
CIM	the Canadian Institute of Mining, Metallurgy and Petroleum
CIM Standards	are the CIM Definitions Standards for Mineral Resources and Mineral Reserves adopted by the CIM Council on 27th December 2010, for the reporting of Mineral Resource, Mineral Reserve and Mining Studies used in Canada. The Mineral Resource, Mineral Reserve and Mining Study definitions are incorporated, by reference, into the NI 43-101, and from the basis for the reporting of Reserves and Resources in the Technical Report. With triple listing on the TSX, ASX and NZX. OceanaGold also reports in accordance with the JORC Code and where necessary reconciles its reporting to ensure compliance with both the CIM Standards and the JORC Code.
CIP	carbon in pulp
CMA	Crown Minerals Act 1991
cm	centimetre(s)
CRM	Certified Reference Material
CSR	corporate social responsibility
Cu	copper
cut-off grade	is the lowest grade value that is included in a Mineral Resource Statement, being the lowest grade, or quality of mineralized material that has reasonable prospect for eventual economic extraction.
CVZ	Coromandel Volcanic Zone
DH	drill hole
diamond drilling or DD	is a rotary drilling technique using diamond set or impregnated bits, to cut a solid, continuous core sample of the rock.
DOC	Department of Conservation
E	East
EDA	Exploration Data Analysis
EG	East Graben
EIS	Environmental Impact Assessment
ELB	Eastern Laybback
EOM	end of month
EOY	end of year
EPCM	Engineering, Procurement and Construction Management

Abbreviation	Definition
ESE	East Southeast
SEIA	Environmental and Social Impact Assessment
FAR	fresh air rise
Fe	iron
FTE	full-time employee(s)
FUFG	flotation and ultra-fine grind
FX	Foreign Exchange
g	gram(s)
G&A	general and administration
GHD	GHD Limited
GOP	Gladstone Open Pit
g/t	grams per metric tonne
GWS	GWS Limited Consulting
Ha	hectare(s)
HDC	Hauraki District Council
HDPE	high density polyethylene
Hg	mercury
HQ	is a reference to the ~ 96 mm diameter of drill rods used to recover diamond drill core
HR	hydraulic radii
ID2	Inverse Distance weighting to the second power method
ID3	Inverse Distance weighting to the third power method
IRA	inter-ramp angles
JK	JKTech Pty Ltd
kg	kilogram(s)
km	kilometre(s)
km^2	square kilometres(s).
koz	thousand troy ounces.
kt	thousand metric tonnes.
kV	kilovolts.
kWh	kilowatt hour(s)
kWh/t	kilowatt-hours per tonne
LG	Lerch Grossman
LHD	load haul dump machines
LHOS	long hole open stoping
LINZ	Land Information New Zealand
LoM	Life of mine
µm	micron or micrometre
m	metre(s)
M	million(s)

Abbreviation	Definition
m^3	cubic metre(s)
m^3/h	cubic metres per hour
m/s	metres per second
Ma	million years
MEO	Mt Eden Old Cadastral grid
Metso	Metso Technology PTSI Pty Ltd
Mineralization	the concentration of minerals in a body of rock
MLR	Multiple Linear Regression
mm	millimetre(s)
MOP	Martha Open Pit
MOP4	Martha Open Pit Phase 4
MOP5	Martha Open Pit Phase 5
Moz	million troy ounces
MP	Mining Permit
m RL	Reduced Level from mien datum
MSO	Mineable Stope Optimiser software
Mt	million metric tonnes
Mtpa	million tonnes per annum
MUG	Martha Underground
multiple indicator kriging	is a grade estimation technique
MW	megawatt(s)
N	North
NAF	non-acid forming rock
NAPP	negative acid producing potential
NATA	National Association of Testing Authorities, the body which accredits laboratories and inspection bodies within Australia.
NE	Northeast
NI 43-101	National Instrument 43-101 – Standards of Disclosure for Mineral Projects of the Canadian Securities Administrators.
NNE	North northeast
NPV	net present value
NQ	is a reference to the ~ 76 mm diameter drill rods used to recover diamond drill core.
NRS	Northern Rock Stack
NSR	net smelter return
NW	Northwest
NZMG	New Zealand Map Grid
NZPAM	New Zealand Petroleum and Minerals
NZ$	New Zealand Dollar
NZ$M	New Zealand Dollar Millions
NZTM	New Zealand Transverse Mercator
OceanaGold	means OceanaGold Corporation and/or any of its subsidiaries.

Abbreviation	Definition
OCEANAGOLD or OGC	means OceanaGold Corporation
OEM	Original Equipment Manufacturer
OHPL	Overhead Power Line
ordinary kriging or OK	is a grade estimation technique
Outotec	Outotec Pty Ltd
oz	troy ounce (31.103477 grams)
PAF	potentially acid forming rock
Pb	lead
PEA	Preliminary Economic Assessment
PMP	Probable Maximum Precipitation storm event
polygonal method	is a grade estimation technique
ppb	parts per billion
ppm	parts per million
PPS	Polishing Ponds Stockpile
PQ	is a diamond tube size equivalent to 85 mm inside diameter
PFS	Preliminary Feasibility Study as defined under the CIM Standards
PSM	PSM Consultants Pty Ltd
pXRF	portable X-ray fluorescence
Q1	Quarter beginning 1 January and ending 31 March
Q2	Quarter beginning 1 April and ending 30 June
Q3	Quarter beginning 1 July and ending 30 September
Q4	Quarter beginning 1 October and ending 31 December
QA/QC	quality assurance / quality control
Qualified Person or QP	as defined under the CIM Standards means and individual who is an engineer or geoscientist with at least five years of experience in mineral exploration, mine development or operation, or mineral project assessment, or any combination of these; has experience relevant to the subject matter of the mineral project and the Technical Report; and is a member or licensee in good standing of a professional association.
PLI	Point Load Index
RAB	rotary air blast
RAR	return air rise
RC	Reverse Circulation drilling
RMA	Resource Management Act 1991
RMI	Rick Management Intercontinental Pty Ltd
ROM	Run-of-mine
RPS	Waikato Regional Policy Statement
RQD	Rock Quality Designation index of rock quality
S	South
SABC	SAG mill / Ball mill / pebble crusher
SAG	semi-autogenous grinding mill
SCSR	self-contained self-rescuer

Abbreviation	Definition
SE	Southeast
SEDAR	System for Electronic Document Analysis and Retrieval (www.sedar.com)
SG	specific gravity
SGS	SGS Laboratory Waihi
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
SMU	selective mining unit
SRK	SRK Consulting Pty Ltd
SSC	Southern Stability Cut
STDEV	standard deviation
SW	Southwest
t	metric tonne (1,000 kilograms)
TCDC	Thames Coromandel District Council
TEM	Technical economic model
the District	Waihi District
t/m^3	tonnes per cubic metre
tpa	tonnes per annum
tpd	tonnes per day
tpm	tonnes per month
TSF	Tailings Storage Facility
TSP	total suspended particulate
TSS	total suspended solids
TSX	Toronto Stock Exchange
TVZ	Taupo Volcanic Zone
UCS	Uniaxial Compressive Strength
$	United States dollars
$M	United States Dollar Millions
UTM	Universal Transverse Mercator
UTS	Uniaxial Tensile Strength
W	West
WKP	Wharekirauponga
WNP	Waihi North Project
WRC	Waikato Regional Council
WRD	waste rock dump
WUG	Wharekirauponga Underground mine
wt	weight
WTP	water treatment plant
XRF	x-ray fluorescence
Zn	zinc
3D	three-dimensional

Abbreviation	Definition
@	at
%	percent
ºC	degrees Celsius

APPENDICES

APPENDIX A – CERTIFICATES OF QUALIFIED PERSONS

CERTIFICATE OF QUALIFIED PERSON

I, David James Townsend, Assoc Deg (Surveying), GDip (Mining), MAusIMM CP(Min), do hereby certify that:

1. I am the Manager of Mining at the Waihi Operation of OceanaGold Corporation ("**OceanaGold**"), Suite 1020, 400 Burrard Street, Vancouver, British Columbia V6C 3A6.

2. This certificate applies to the technical report titled "NI 43-101 Technical Report Waihi District Pre-feasibility Study, New Zealand" dated December 11, 2024 with an effective date of June 30, 2024 (the "**Technical Report**").

3. I graduated with an Associate Degree in Spatial Science (Surveying) from the University of Southern Queensland and a Graduate Diploma in Mining from the University of Ballarat. I am a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. I have 23 years of experience in technical, operational and management roles in underground epithermal gold mines.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("**NI 43- 101**") and certify that by reason of my education, affiliation with a professional/technical association, (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements of a "qualified person" for the purposes of NI 43-101.

5. I last visited the Waihi Operations in December 2024.

6. I have been employed at the Waihi Operation by OceanaGold Corporation since 2015, and with previous companies since 2006.

7. I am responsible for the preparation of Sections 1.6 - 1.7, 1.13, 15.1, 15.3, 16.1 - 16.2, 16.4, 25.4, and 26 of the Technical Report that relate to the Martha Underground Mine (MUG).

8. I am not independent of the issuer applying all the tests in Section 1.5 of NI 43-101 as I have been a full-time employee of OceanaGold since 2015.

9. Prior to my employment with OceanaGold, I was employed at the property with previous companies.

10. I have read NI 43-101 and Form 43-101F1 and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101 and Form 43-101F1.

11. As of the aforementioned effective date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: December 11, 2024

(Signed) "David Townsend" *"Stamped"*

David James Townsend, Assoc Deg (Surveying), GDip (Mining), MausIMM CP(Min)

CERTIFICATE OF QUALIFIED PERSON

I, Leroy Crawford-Flett, BCA/BSc (Management/Geology), MPM, MAusIMM CP (Geo), do hereby certify that:

1. I am the Exploration and Geology Manager of OceanaGold Corporation ("**OceanaGold**"), Suite 1020, 400 Burrard Street, Vancouver, British Columbia V6C 3A6.

2. This certificate applies to the technical report titled "NI 43-101 Technical Report Waihi District Pre-feasibility Study, New Zealand" dated December 11, 2024 with an effective date of June 30, 2024 (the "**Technical Report**").

3. I have worked as an Exploration and Geology manager since 2024 and as a Geologist since completion of a degree in Bachelor of Commerce and Administration in Management and a Bachelor of Science in Geology from Victoria University, Wellington in 2009. I completed a Master of Project Management specializing in Risk Management from Sydney University in 2015. I am a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy (AusIMM) CP (Geo). I have 15 years of relevant experience in mine geology, resource development and exploration roles in open pit and underground gold mines, including 9 years of experience in interpretation, estimation, and evaluation of epithermal gold deposits.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("**NI 43- 101**") and certify that by reason of my education, affiliation with a professional/technical association, (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements of a "qualified person" for the purposes of NI 43-101.

5. I last visited the Waihi Operations in December 2024.

6. I have been employed by OceanaGold or its subsidiaries since 2015 in a variety of roles.

7. I am responsible for the preparation of Sections 1.1 - 1.3, 1.5, 1.13, 2 – 4, 6 – 12, 14, 23 -24, 25.1 - 25.3, and 26 of the Technical Report.

8. I am not independent of the issuer applying all the tests in Section 1.5 of NI 43-101 as I have been a full-time employee of OceanaGold since 2015.

9. I have had prior involvement with the property that is the subject of the Technical Report. The nature of my prior involvement has been production geology and resource development since 2011.

10. I have read NI 43-101 and Form 43-101F1 and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101 and Form 43-101F1.

11. As of the aforementioned effective date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: December 11, 2024

(Signed) "Leroy Crawford-Flett *"Stamped"*

Leroy Crawford-Flett, BCA/BSc (Management/Geology), MPM, MAusIMM CP (Geo)

CERTIFICATE OF QUALIFIED PERSON

I, Kirsty Hollis, BEng (Mineral Processing), MBA, FAusIMM CP (Met), do hereby certify that:

1. I am the Principal Metallurgist of OceanaGold Corporation ("**OceanaGold**"), Suite 1020, 400 Burrard Street, Vancouver, British Columbia V6C 3A6.

2. This certificate applies to the technical report titled "NI 43-101 Technical Report Waihi District Pre-Feasibility Study, New Zealand" dated December 11, 2024 with an effective date of June 30, 2024 (the "**Technical Report**").

3. I graduated with a Bachelor of Engineering in Mineral Processing from the University of Auckland in 1989. I am a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy. I have worked as a metallurgist for a total of 36 years since my graduation from university. My relevant experience includes flotation and leaching of gold ores, base metal flotation, ultra-fine grinding, waste-water treatment, process plant design, project evaluation, studies and plant commissioning.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("**NI 43- 101**") and certify that by reason of my education, affiliation with a professional/technical association, (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements of a "qualified person" for the purposes of NI 43-101.

5. I last visited the Waihi Operations in December 2024.

6. I have been employed by OceanaGold or its subsidiaries since 2020.

7. I am responsible for the preparation of Sections 1.4, 1.8, 1.13, 2, 13, 17, 18.4, 18.5, 25.5, 25.6, and 26 of the Technical Report.

8. I am not independent of the issuer applying all the tests in Section 1.5 of NI 43-101 as I have been a full-time employee of OceanaGold since 2020.

9. Prior to my employment with OceanaGold, I had previous involvement with the property that is the subject of the Technical Report. This was as a site employee in the roles of Senior Metallurgist and Process Manager, from 2000 to 2011. The operation was owned by Newmont Corporation at the time.

10. I have read NI 43-101 and Form 43-101F1 and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101 and Form 43-101F1.

11. As of the aforementioned effective date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: December 11, 2024

(Signed) "Kirsty Hollis" *"Stamped"*

Kirsty Hollis, BEng (Mineral Processing), MBA, FAusIMM CP (Met)

CERTIFICATE OF QUALIFIED PERSON

I, Euan Leslie, BEng Mining (Hons), BCom Economics, MAusIMM CP (Min), do hereby certify that:

1. I am the Group Mining Engineer of OceanaGold Corporation ("**OceanaGold**"), Suite 1020, 400 Burrard Street, Vancouver, British Columbia V6C 3A6.

2. This certificate applies to the technical report titled "NI 43-101 Technical Report Waihi District Pre-feasibility Study, New Zealand" dated December 11, 2024 with an effective date of June 30, 2024 (the "**Technical Report**").

3. I have worked as a Mining Engineer since my completion of a Bachelor of Engineering and a Bachelor of Commerce from Curtin University, Western Australian School of Mines (WASM) in 2009. I am a member and Chartered Professional of the Australasian Institute of Mining and Metallurgy (AusIMM) CP (Min). My relevant experience for the purpose of this technical report is mining engineering which has covered exposure as an operator, shift supervisor, underground manager and technical services manager including within hard rock operations involving longhole open stoping, avoca with both paste and cemented rock backfill mining methods.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("**NI 43- 101**") and certify that by reason of my education, affiliation with a professional/technical association, (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements of a "qualified person" for the purposes of NI 43-101.

5. I last visited the Waihi Operations in December 2024.

6. I have been employed by OceanaGold or its subsidiaries since 2021 in a variety of roles.

7. I am responsible for the preparation of Sections 1.6, 1.7, 1.13, 2 – 3, 15.2, 15.3, 16.3, 16.4, 25.4, and 26 of the Technical Report.

8. I am not independent of the issuer applying all the tests in Section 1.5 of NI 43-101 as I have been a full-time employee of OceanaGold since 2021.

9. Prior to my employment with OceanaGold, I had no prior involvement with the property that is the subject of the Technical Report.

10. I have read NI 43-101 and Form 43-101F1 and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101 and Form 43-101F1.

11. As of the aforementioned effective date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: December 11, 2024

(Signed) "Euan Leslie" *"Stamped"*

Euan Leslie, **BEng Mining (Hons), BCom Economics, MAusIMM CP (Min)**

CERTIFICATE OF QUALIFIED PERSON

I, Trevor Maton, ARSM, BSc. (Eng) Mining (Hons), MSc. Economics MAusIMM CP (Min), do hereby certify that:

1. I am the Study Director of OceanaGold Corporation ("**OceanaGold**"), Suite 1020, 400 Burrard Street, Vancouver, British Columbia, V6C 3A6.

2. This certificate applies to the technical report titled "NI 43-101 Technical Report Waihi District Pre-feasibility Study, New Zealand" dated December 11, 2024, with an effective date of June 30, 2024 (the "**Technical Report**").

3. I have worked as a Study Director since 2010. I graduated with a degree in BSc Eng (Hons) Mining Engineering from the University of London in 1981 and Associateship of the Royal School of Mines from Imperial College in 1982. I graduated with a MSc. in Mineral Economics from Curtin University, Western Australia in 2002. I have also held first class mine managers certificates of competence in metalliferous mining from Queensland, Australia, and New Zealand. I am a member and Chartered Professional of the AusIMM. I have worked as a miner, shift supervisor, foreman, mining engineer, consulting engineer, mining manager, study director for a total of 39 years, in open pit and underground mining operations throughout Australia, New Zealand, England, South America, Africa and the USA. Commodities include gold, silver, bauxite, coal, fluorspar, copper, lead, and zinc.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("**NI 43- 101**") and certify that by reason of my education, affiliation with a professional/technical association, (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements of a "qualified person" for the purposes of NI 43-101.

5. I last visited the Waihi Operations in December 2024.

6. I have been employed by OceanaGold or its subsidiaries since 2016 as Study Director.

7. I am responsible for the preparation of Sections 1.9 – 1.13, 2, 3, 5, 18 – 22, 24, 25.6 - 25.8 and 26 of the Technical Report.

8. I am not independent of the issuer applying all the tests in Section 1.5 of NI 43-101 as I have been a full-time employee of OceanaGold since 2016.

9. I have had prior involvement with the property that is the subject of the Technical Report. The nature of my prior involvement has been geotechnical engineering, mine planning, environmental studies, and mine design with the project since 2003.

10. I have read NI 43-101 and Form 43-101F1 and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101 and Form 43-101F1.

11. As of the aforementioned effective date, to the best of my knowledge, information and belief, the sections of the Technical Report I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: December 11, 2024

(Signed) "Trevor Maton" *"Stamped"*

Trevor Maton, ARSM, BSc. (Eng) Mining (Hons), MSc. Economics, MAusIMM CP (Min)