



Golden Blocks Presentation Delivered at AusIMM NZ

The Company has attached a presentation and technical paper delivered at the AusIMM NZ conference today, AusIMM is the premier technical association of professionals engaged in all facets of the resources sector. The Company, along with companies such as OceanaGold are sponsors of the 125th AusIMM NZ conference in New Zealand.

The presentation describes the opportunity for Golden Blocks and how it technically compares to other New Zealand's gold mines.

The technical paper shows the structural similarities of Golden Blocks goldfield and the Reefton goldfield, the Aorangi mine produced 26,000oz of gold at a recovered grade of 36g/t and an estimated insitu grade of 59g/t, making it one of the highest-grade producing gold mines in New Zealand. Mining within the Golden Blocks goldfield prematurely ceased in 1914 due to the war, water containment challenges and labour shortages.

Unlike other mines in New Zealand and Australia, which had substantial development work with modern technology after the war, the Golden Blocks goldfield remained privately owned and completely untouched. This was the case until the Company re-invigorated exploration in 2012, conducting numerous exploration programs with technical experts from New Zealand and Australia.

Current work on the Golden Blocks project consists of negotiations with regulatory and other parties for access into the area to continue exploration.

About Strategic Elements Ltd

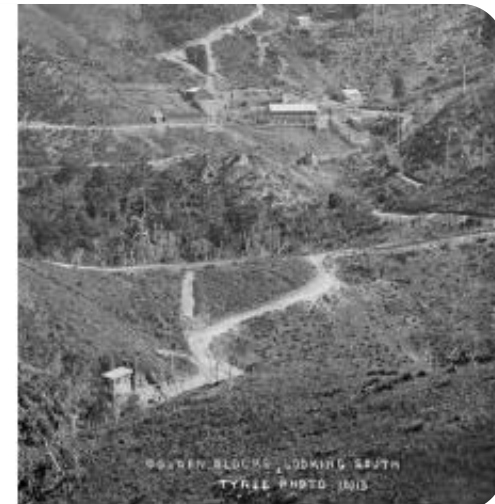
Strategic Elements shares are listed on the Australian Stock Exchange under the code "SOR". The Company is registered under the Pooled Development Program run by the Australian Federal Government to encourage investment into SME's. SOR focuses on backing innovation in the **technology and resource sectors**. To assist Pooled Development Fund's to raise capital, the Federal Government enables most shareholders in a Pooled Development Fund to **make capital gains and receive dividends tax-free**. In return the Company must back only Australian SME's.

More Information

Mr Charles Murphy, Managing Director Phone: +61 8 9278 2788 Email:
admin@strategicelements.com.au Sign up for updates at: www.strategicelements.com.au

Golden Blocks

The Forgotten Gold Mine



Disclaimer and Forward Looking Statements

Competent Person Statement

Information in this presentation which relate to geological interpretation and exploration at the Golden Blocks Gold Project is reviewed and approved by Paul Angus, BSc (Hons), who is a full time employee of Angus Resource Consulting Limited. He is a Member of the Australasian Institute for Mining and Metallurgy (AusIMM) and has reviewed the technical information in this report. Mr Paul Angus has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity which it is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves. Mr Paul Angus consents to the inclusion in this presentation of the matters based on information in the form and context in which it appears.

Forward Looking Statements

The document contains background Information about Strategic Elements Ltd current at the date of this presentation. The presentation is in summary form and does not purport to be all inclusive or complete. Recipients should conduct their own investigations and perform their own analysis in order to satisfy themselves as to the accuracy and completeness of the information, statements and opinions contained in this presentation.

Neither this presentation nor the information contained in it constitutes an offer, invitation, solicitation or recommendation in relation to the purchase or sale of shares in any jurisdiction. The presentation may not be distributed in any jurisdiction except in accordance with the legal requirements applicable in such jurisdiction. Recipients should inform themselves of the restrictions that apply to their own jurisdiction as a failure to do so may result in a violation of securities laws in such jurisdiction.

This presentation does not constitute investment advice and has been prepared without taking into account the recipient's investment objectives, financial circumstances or particular needs and the opinions and recommendations in this presentation are not intended to represent recommendations of particular investments to particular persons. Recipients should seek professional advice when deciding if an investment is appropriate. All securities transactions involve risks, which include (among others) the risk of adverse or unanticipated market, financial or political developments.

To the fullest extent of the law, Strategic Elements Limited, its officers, employees, agents and advisers do not make any representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of any information, statements, opinion, estimates, forecasts or other representations contained in this presentation. No responsibility for any errors or omissions from the presentation arising out of negligence or otherwise is accepted.

This presentation may include forward-looking statements that are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Strategic Elements Limited. Actual values, results or events may be materially different to those expressed or implied in this presentation. Given these uncertainties, recipients are cautioned not to place reliance on forward-looking statements in the presentation as they speak only at the date of issue of this presentation. Subject to any continuing obligations under applicable law and ASX Listing Rules, Strategic Elements Limited does not undertake any obligation to update or revise any information or any of the forward looking statements in this presentation or any changes in events, conditions or circumstances on which any such forward-looking statement is based.

No New Information

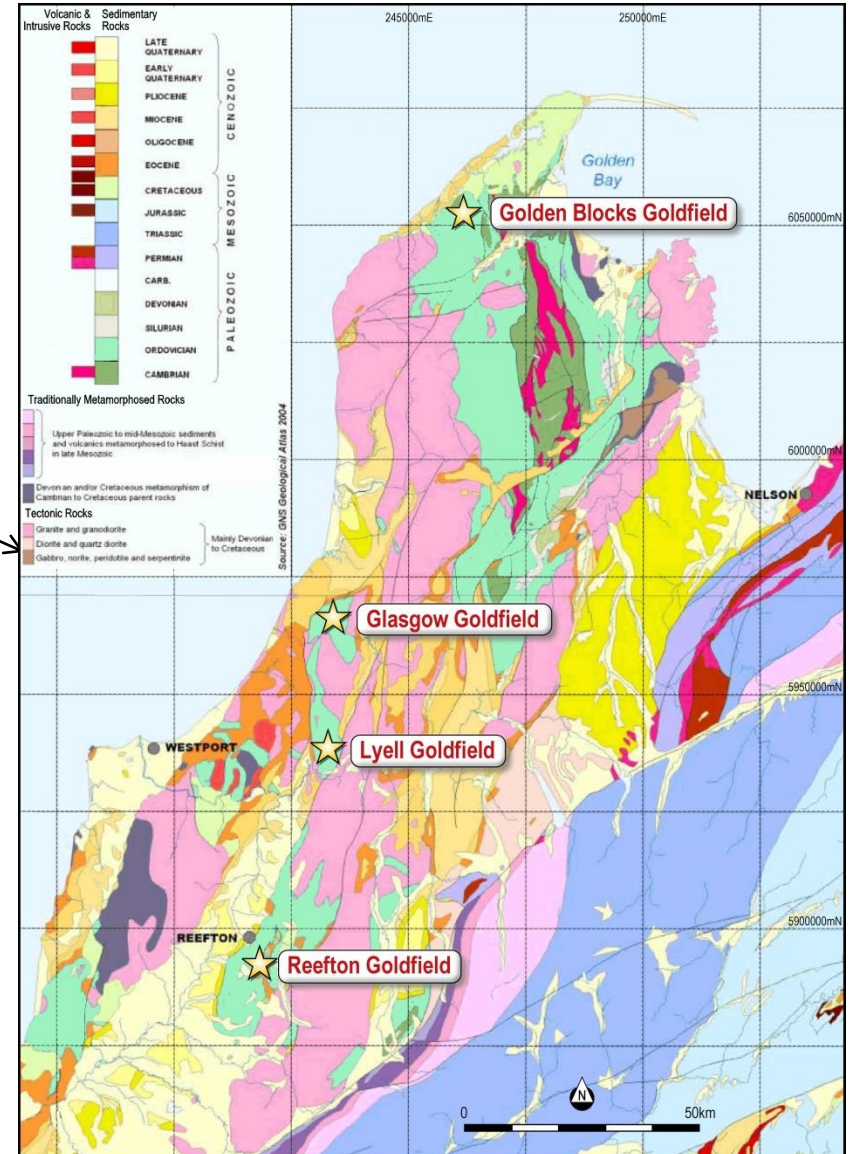
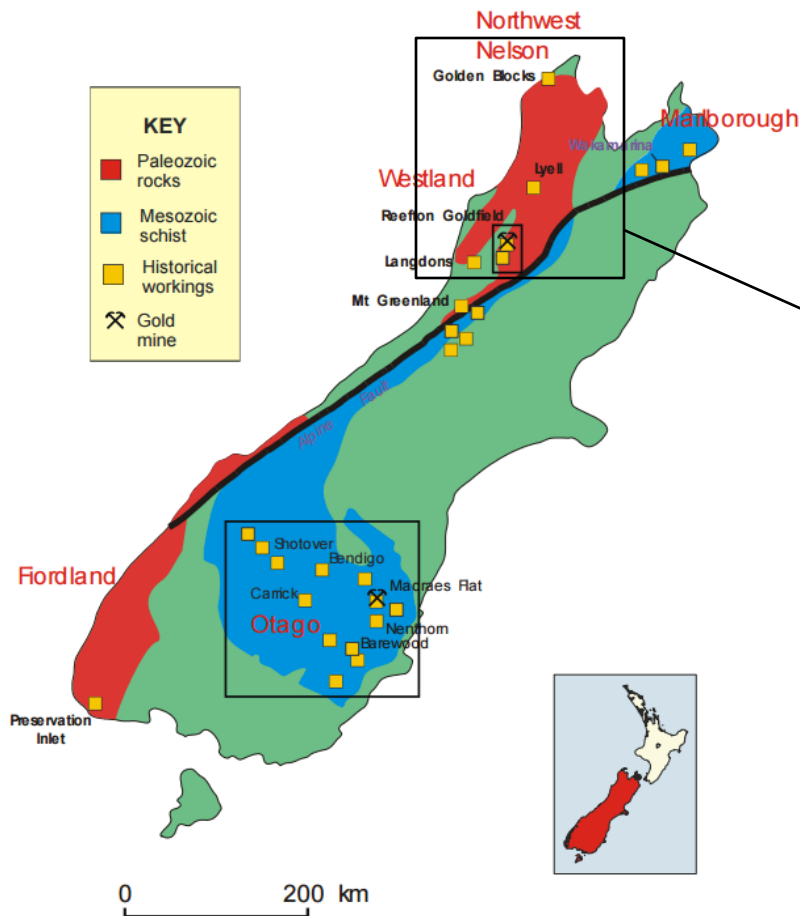
To the extent that this presentation contains references to prior exploration results, which have been cross referenced to previous market announcements made by the Company, unless explicitly stated, no new information is contained. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements.

EP 60180



Regional Geology

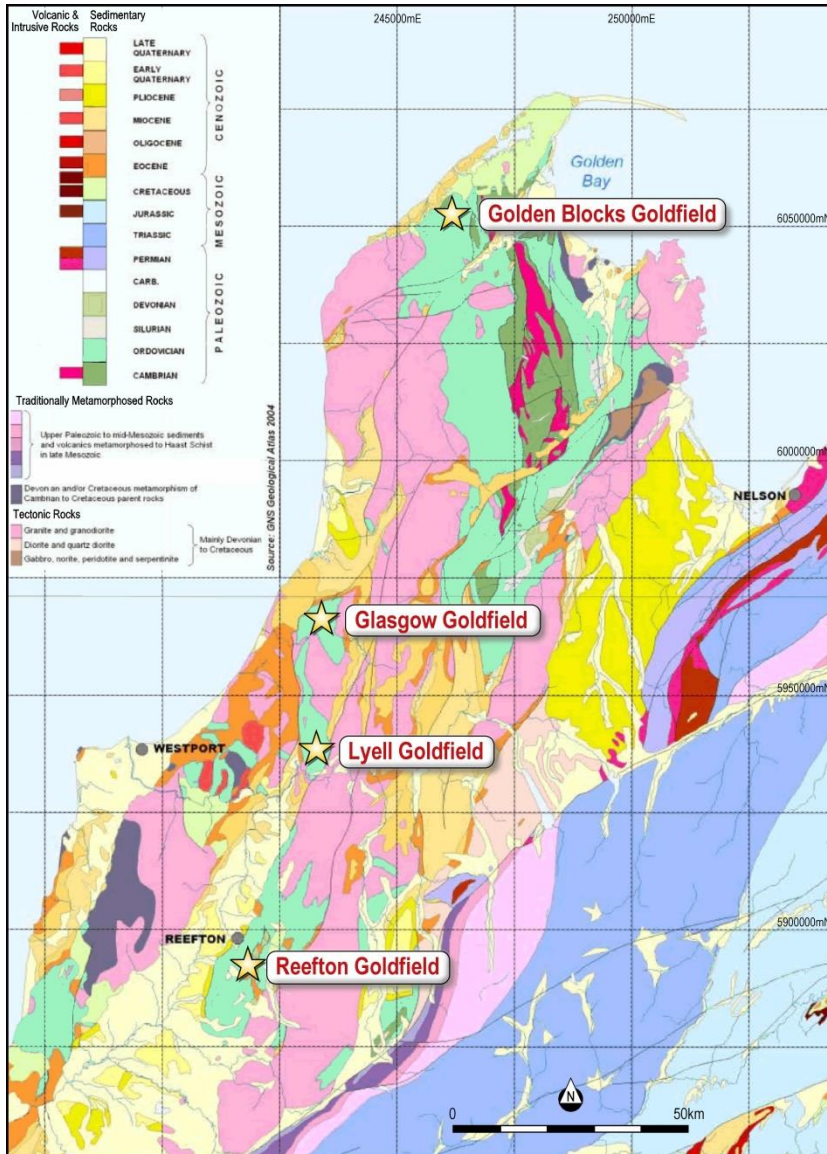
New Zealand mesothermal gold deposits



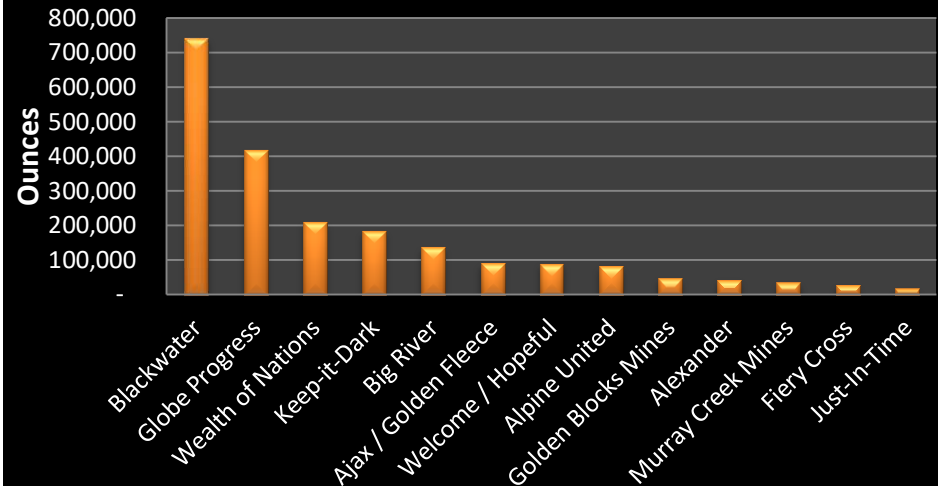


Rank	Mine Name	Mine Area	Production		Recovered Grade (g/t)	Max Mined Depth (m)	Comment
			Tonnes	Ounces			
1	Blackwater	Reefton	1,603,157	740,403	14.2	710	Open
2	Globe Progress	Reefton	1,062,727	418,345	12.2	420	Offset by fault
3	Wealth of Nations	Reefton	458,034	208,980	14.2	663	Diminished ore & collapse of shaft
4	Keep-it-Dark	Reefton	333,780	182,616	17.0	412	Lack of ore
5	Big River	Reefton	124,060	135,965	34.1	600	Lost ore
6	Ajax / Golden Fleece	Reefton	136,642	89,636	20.4	550	Open
7	Welcome / Hopeful	Reefton	44,867	88,607	61.4	350	Offset by fault
8	Alpine United	Lyell	149,024	80,514	17.0	550	Open
9	Golden Blocks Mines	Golden Blocks	39,743	46,000	36.0	120	Open
10	Alexander	Reefton	48,492	41,089	26.4	225	Open
11	Murray Creek Mines	Reefton	52,943	33,887	19.9	210	Offset by fault
12	Fiery Cross	Reefton	24,956	27,843	34.8	250	Offset by fault
13	Just-In-Time	Reefton	13,755	17,168	38.8	300	Offset by fault
Total Underground Production			4,092,180	2,111,053	16.0		

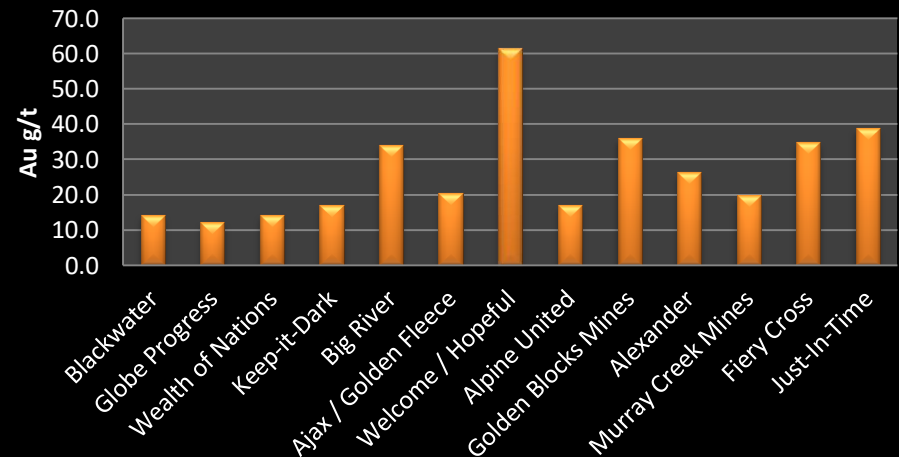
Historical Production



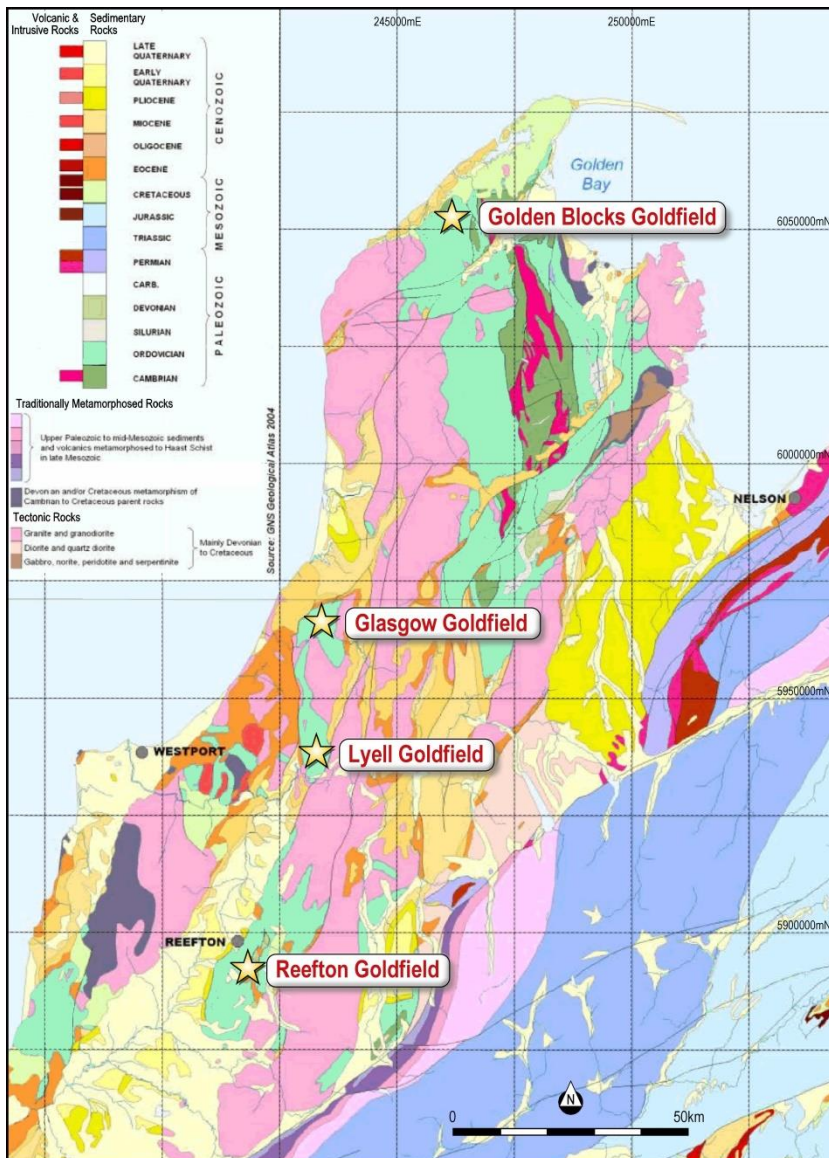
Production Oz's



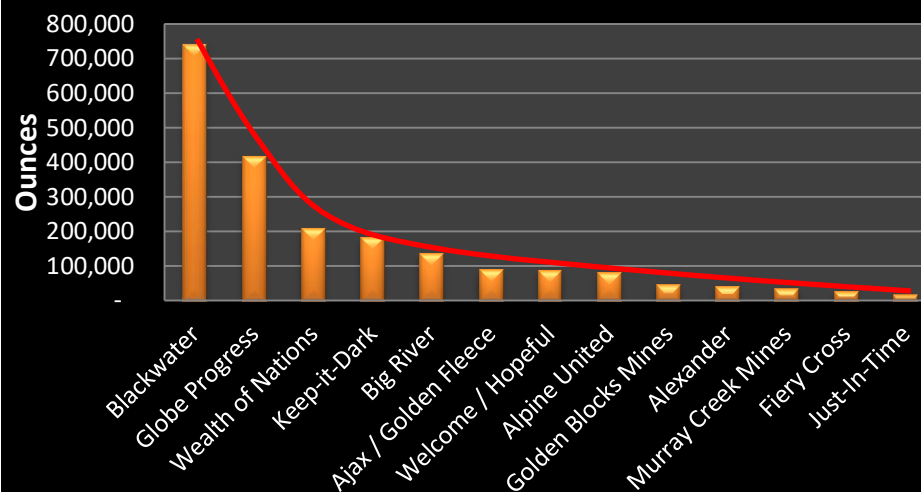
Recovered Grade



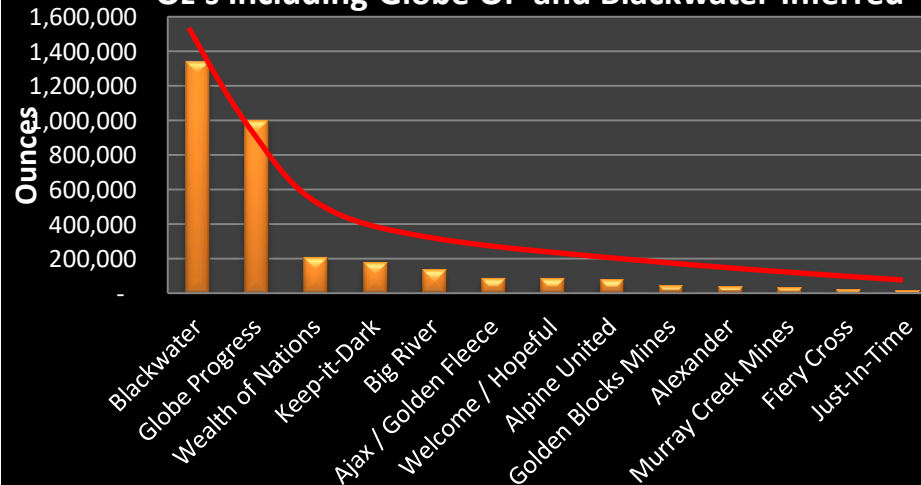
Historical Production



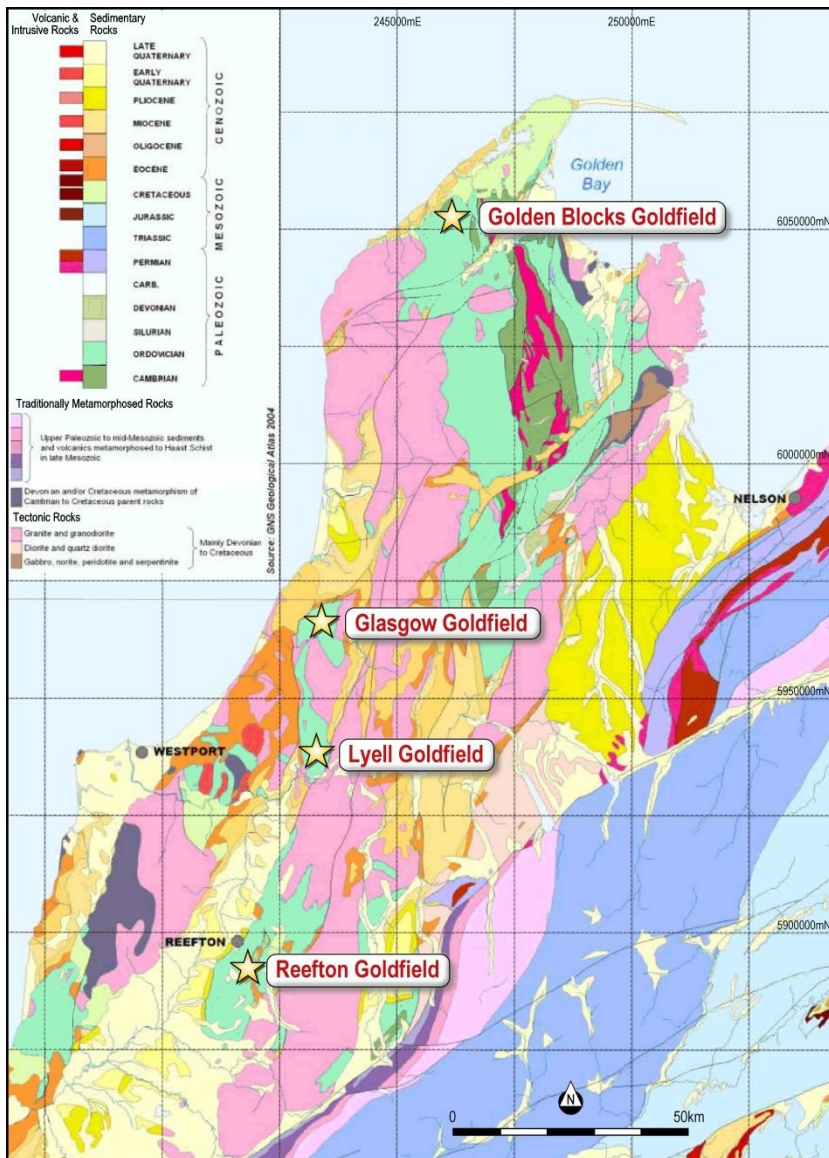
Production Oz's



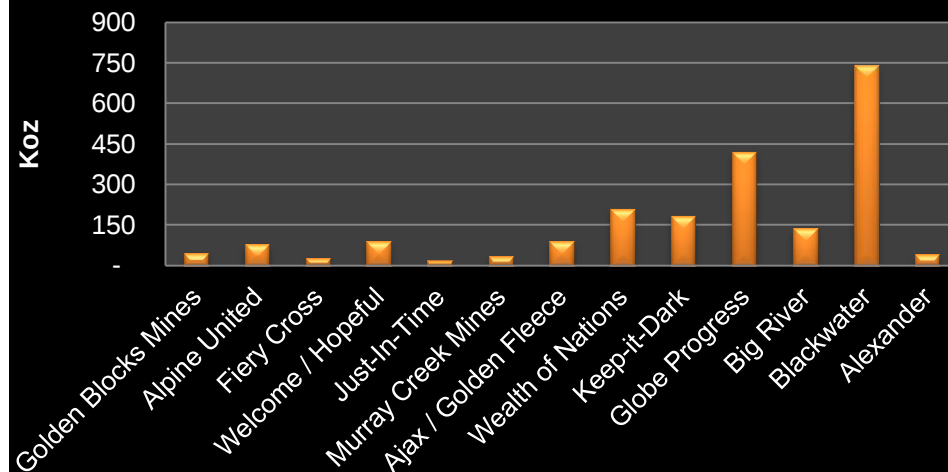
Oz's Including Globe OP and Blackwater Inferred



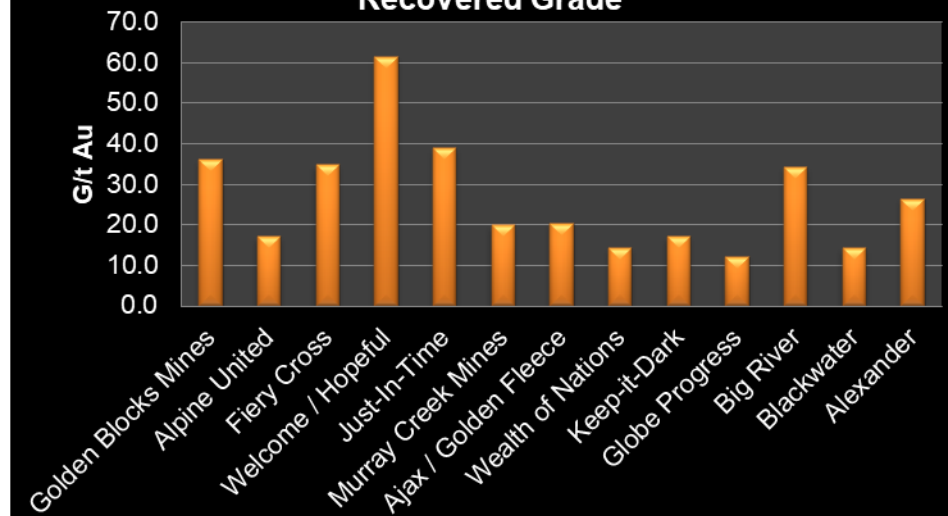
Historical Production



Ounces Produced



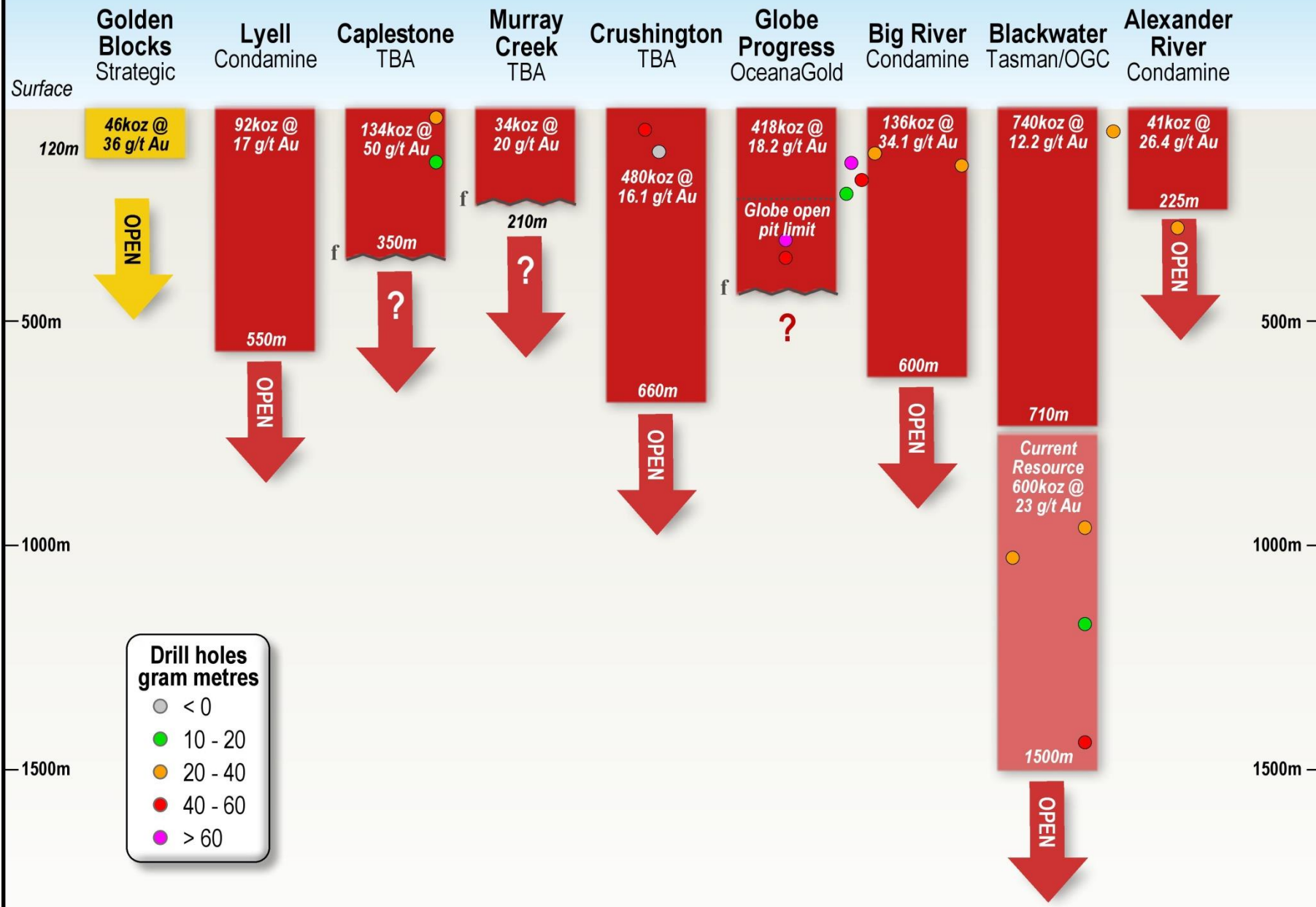
Recovered Grade



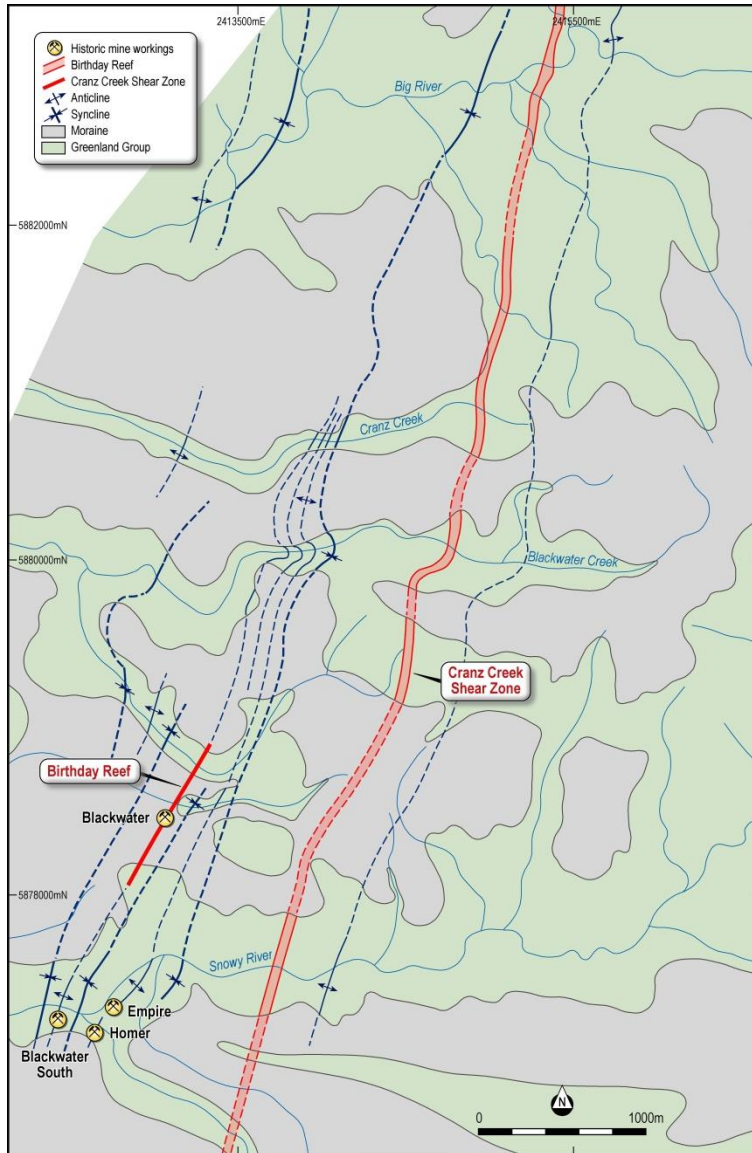
North

South

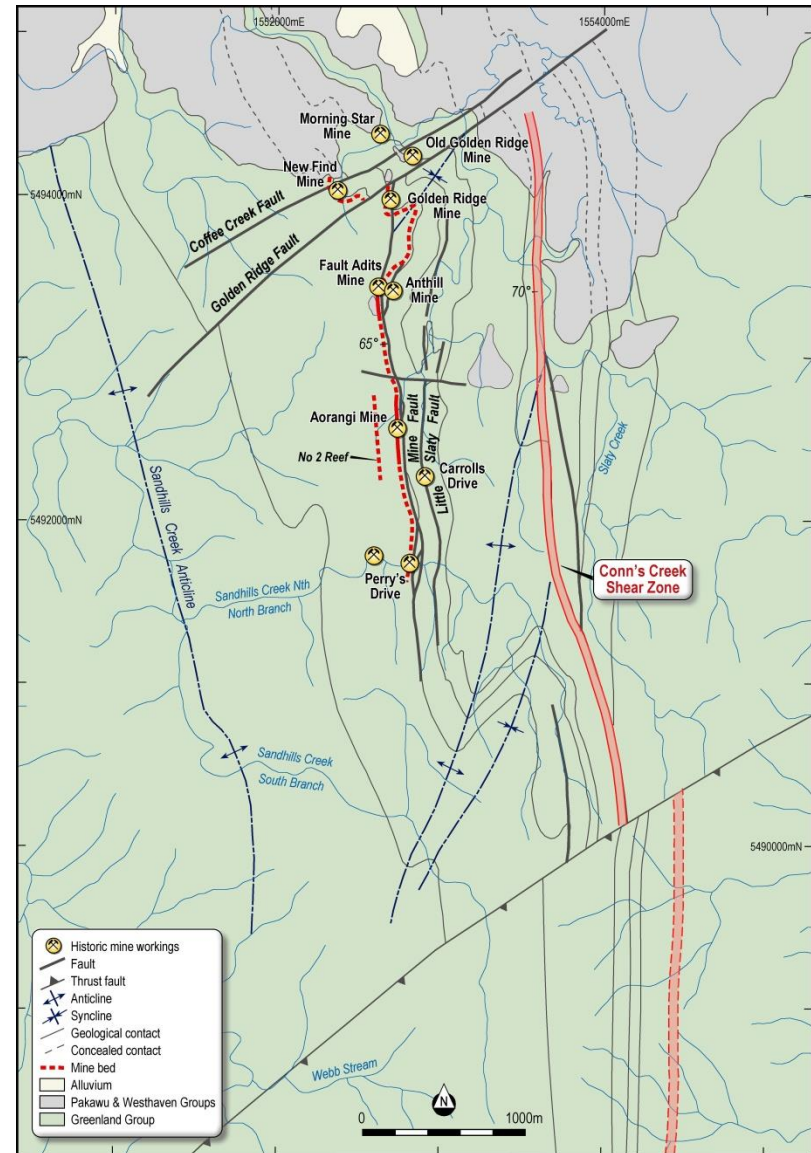
High Grade Underground Historical Mine Production



Blackwater



Golden Blocks



Golden Blocks Historical Production



STRATEGIC
ELEMENTS



Golden Blocks Historical Production



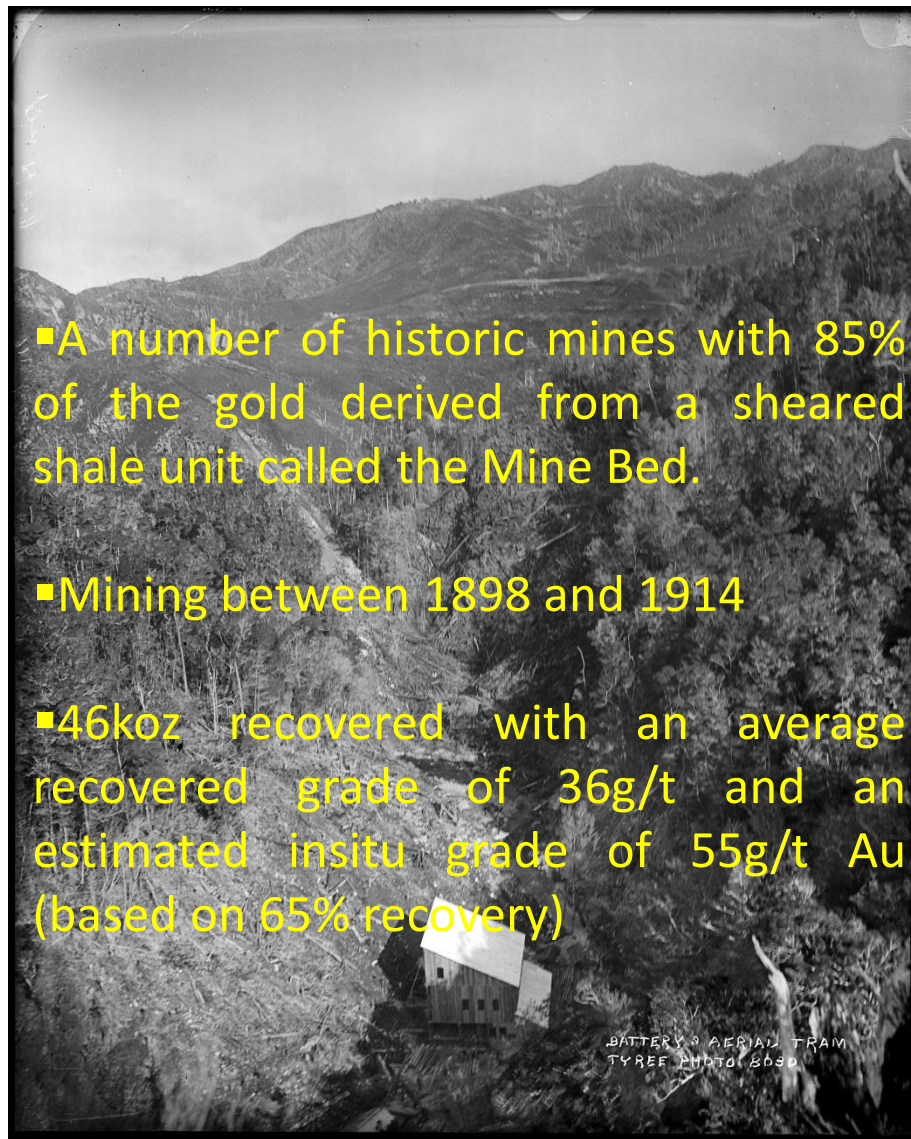
STRATEGIC
ELEMENTS



TAITAPU GOLD LIMATE
VALLEY ROAD MINE
1911 PHOTO 5011



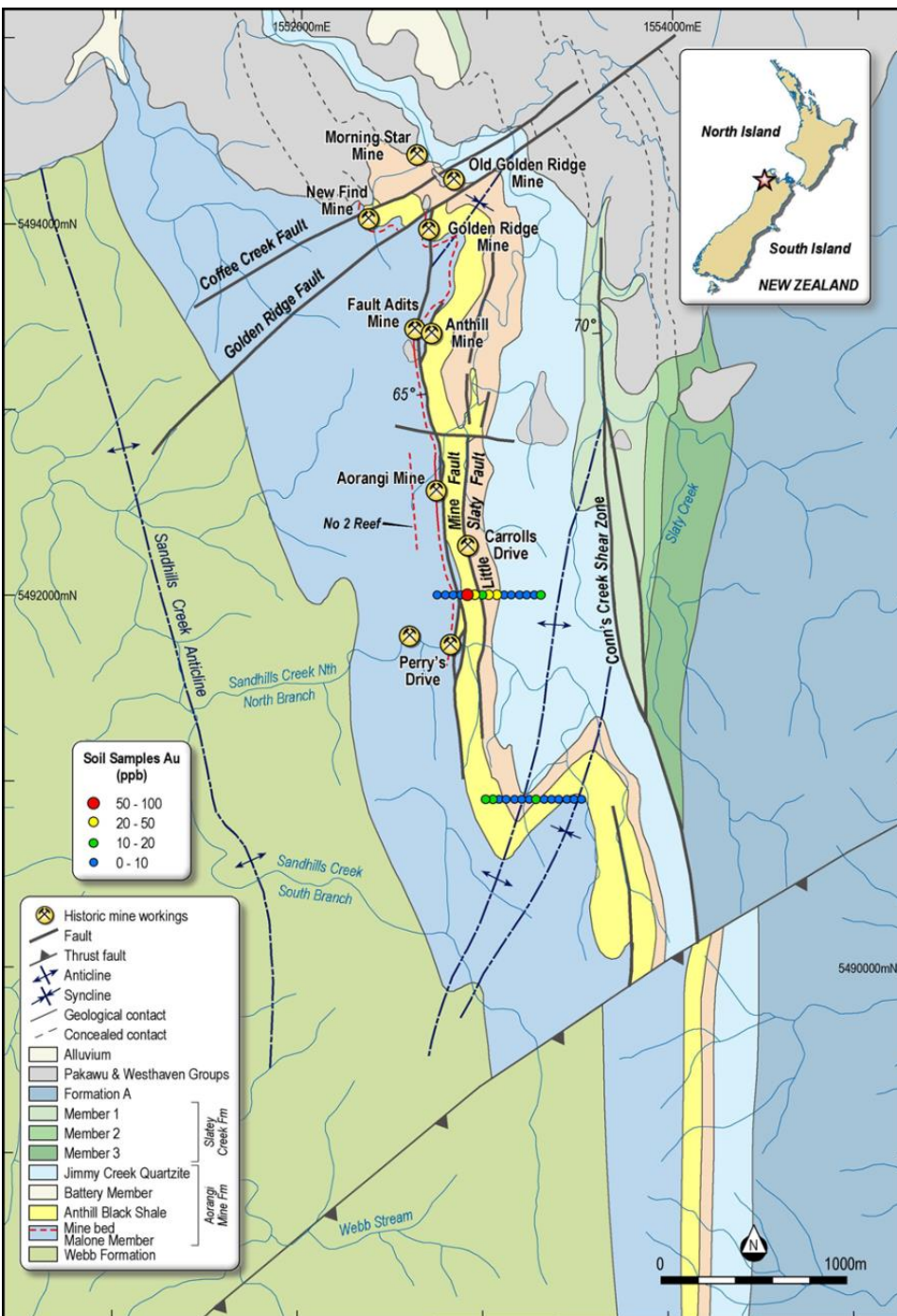
TAITAPU GOLD LIMATE
VALLEY ROAD MINE
1911 PHOTO 5011



BATTERY & AERIAL TRAM
TYREE PHOTO 8030

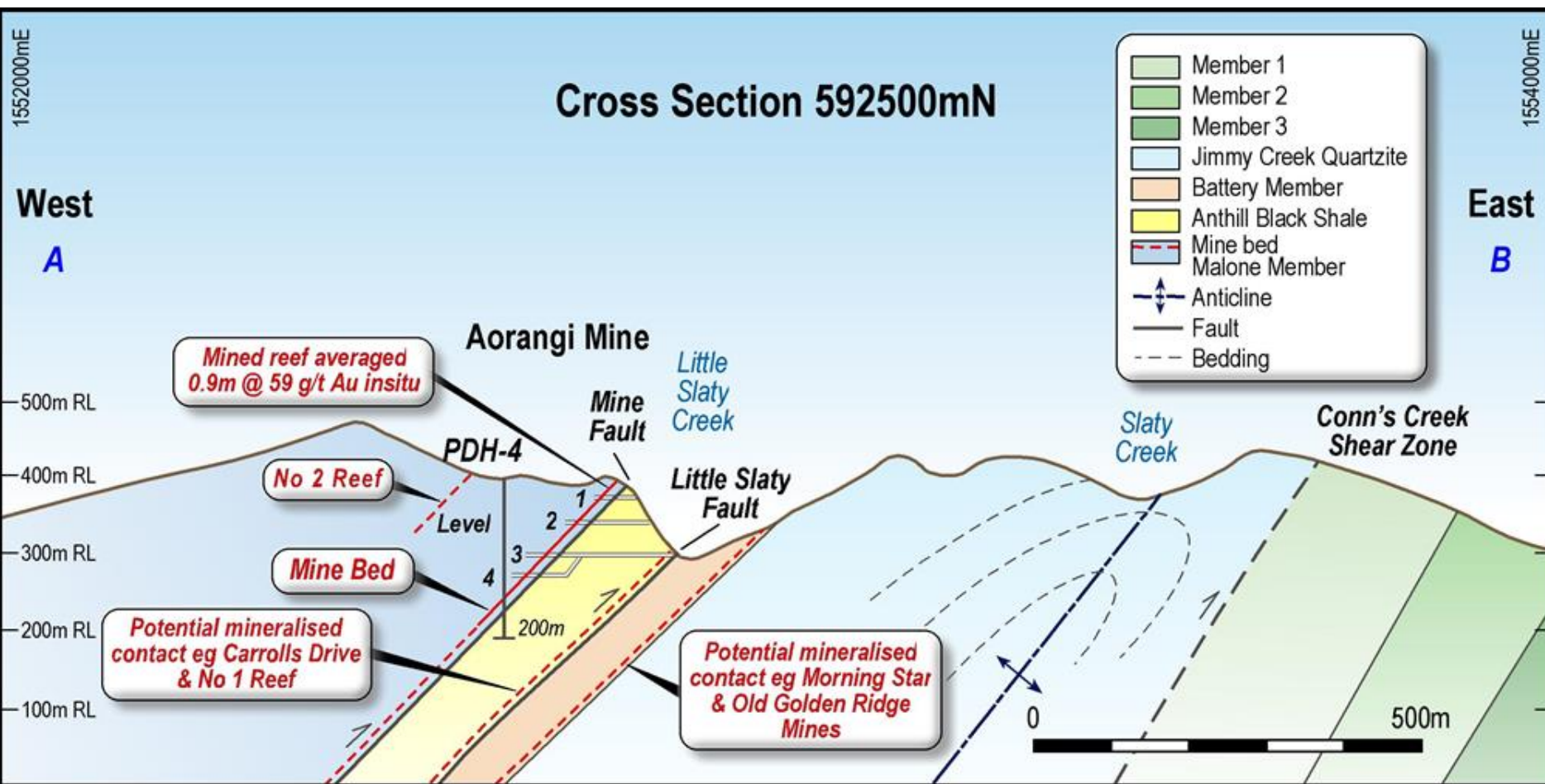
- A number of historic mines with 85% of the gold derived from a sheared shale unit called the Mine Bed.
- Mining between 1898 and 1914
- 46koz recovered with an average recovered grade of 36g/t and an estimated insitu grade of 55g/t Au (based on 65% recovery)

- In contrast to Reefton and Lyell the Golden Blocks area has mappable rock units.
- The Main quartz reef lies close to the contact Malone Member and Anthill Black Shale in a unit called the Mine Bed
- The Mine Bed extends ~2.5km and was intermittently mined at Perry's Drive, Aorangi, Fault Adits, Golden Ridge and the New Find mines.
- Parallel reefs lie on the contact between the Anthill Black Shale and Battery Member and between the Battery Member and the Jimmy Creek Quartzite.



Aorangi Mine

Cross Section 592500mN



Aorangi Mine



- Gold mineralisation associated with later stage folding and axial planner shearing.
- The Lodes consist of poddy lenses of quartz within sheared and brecciated carbonaceous shale generally around 1-5m thick continuously mined over a distance of 1,500 feet (450m).
- Generally along the contact between carbonaceous black shales and quartz sandstone.
- Ore was described as laminated graphitic quartz which was relatively soft and easily crushed.
- Park noted that the gold was coarse and plainly visible in much of the stone. It contained very little pyrite and marcasite and the gold was free milling.

Historical N-S Section

South

North

Longitudinal Section of Aorangi Reef

GOLDEN BLOCKS MINE

Extension 1000ft.

Extension 1000ft.

SOUTH EXTENSION OF REEF

NORTH EXTENSION OF REEF

SHAFT SITE

Rich Ore shoot
March 1938.

Areas, shaded, shows stoped section of reef.

Areas, in red, shows blocks of ore to be further opened up.

Areas, in yellow, shows extension of reef acquired by Golden Blocks Mines, N.Z.

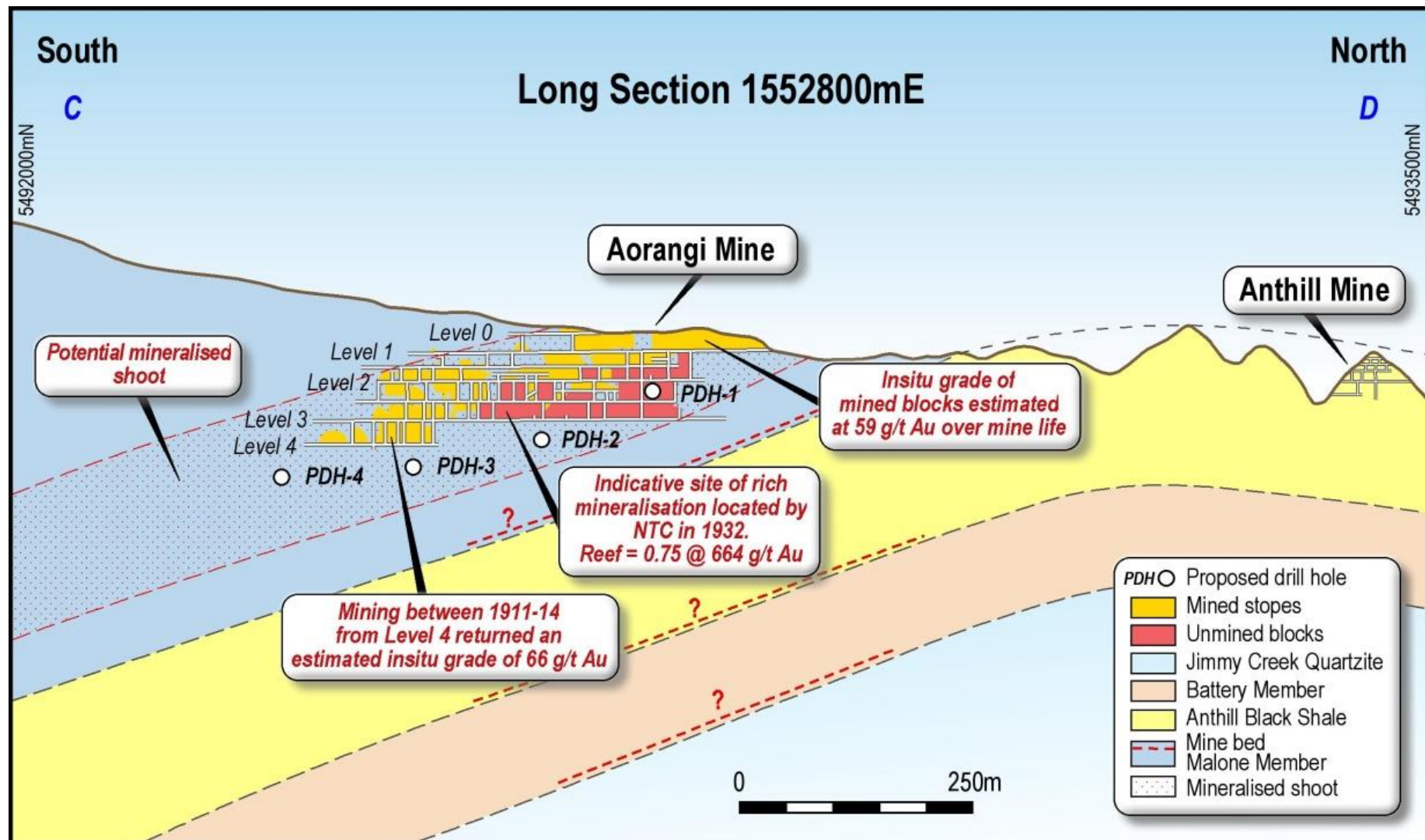
⊗ Indicates site of previous rich ore.

● Indicates site of rich ore-shoot located by New Taitapu Gold Prospecting Co., Ltd.

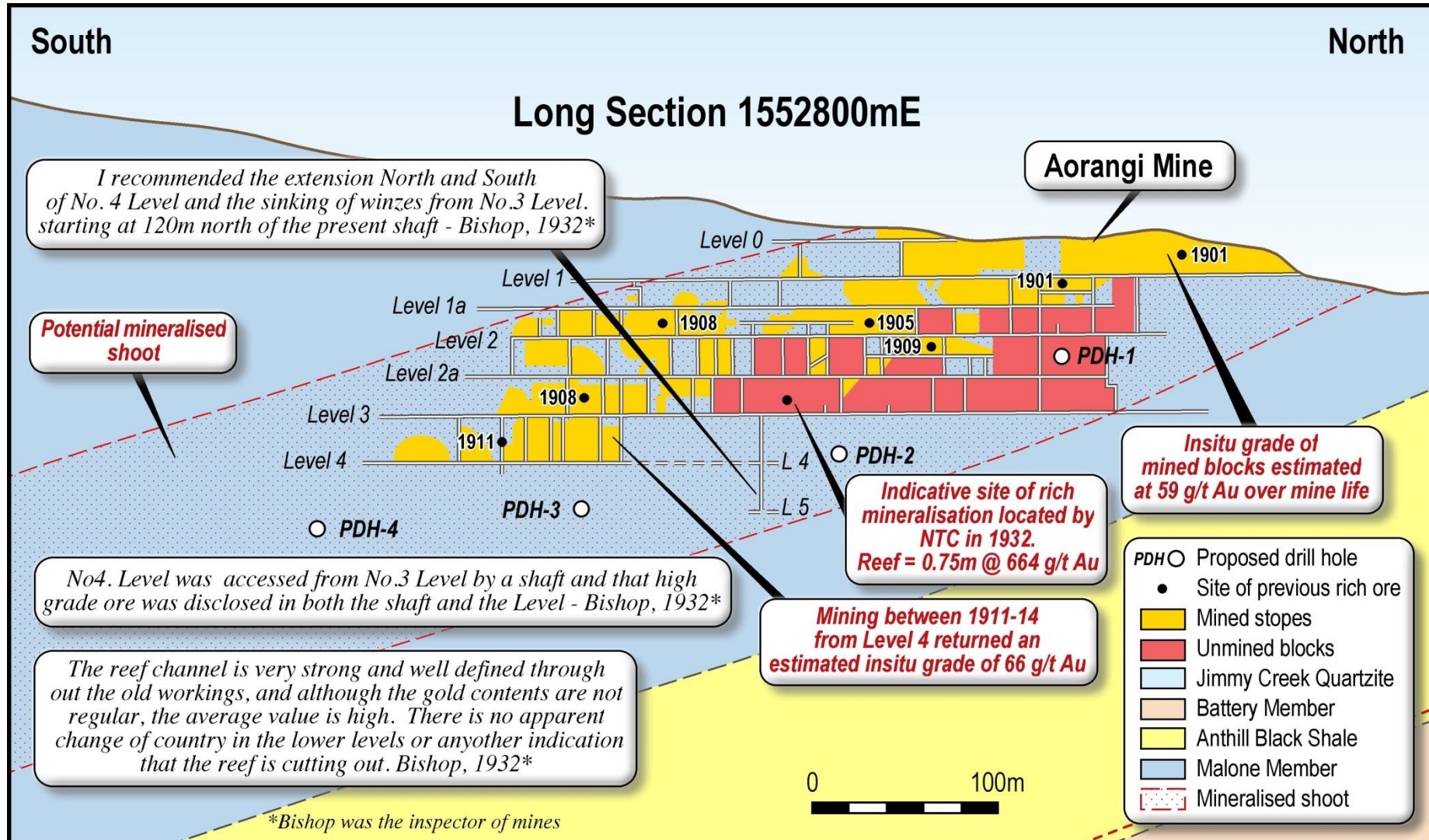
Scale: 1in. to 240ft.

Extension—1000 Ft. vertically

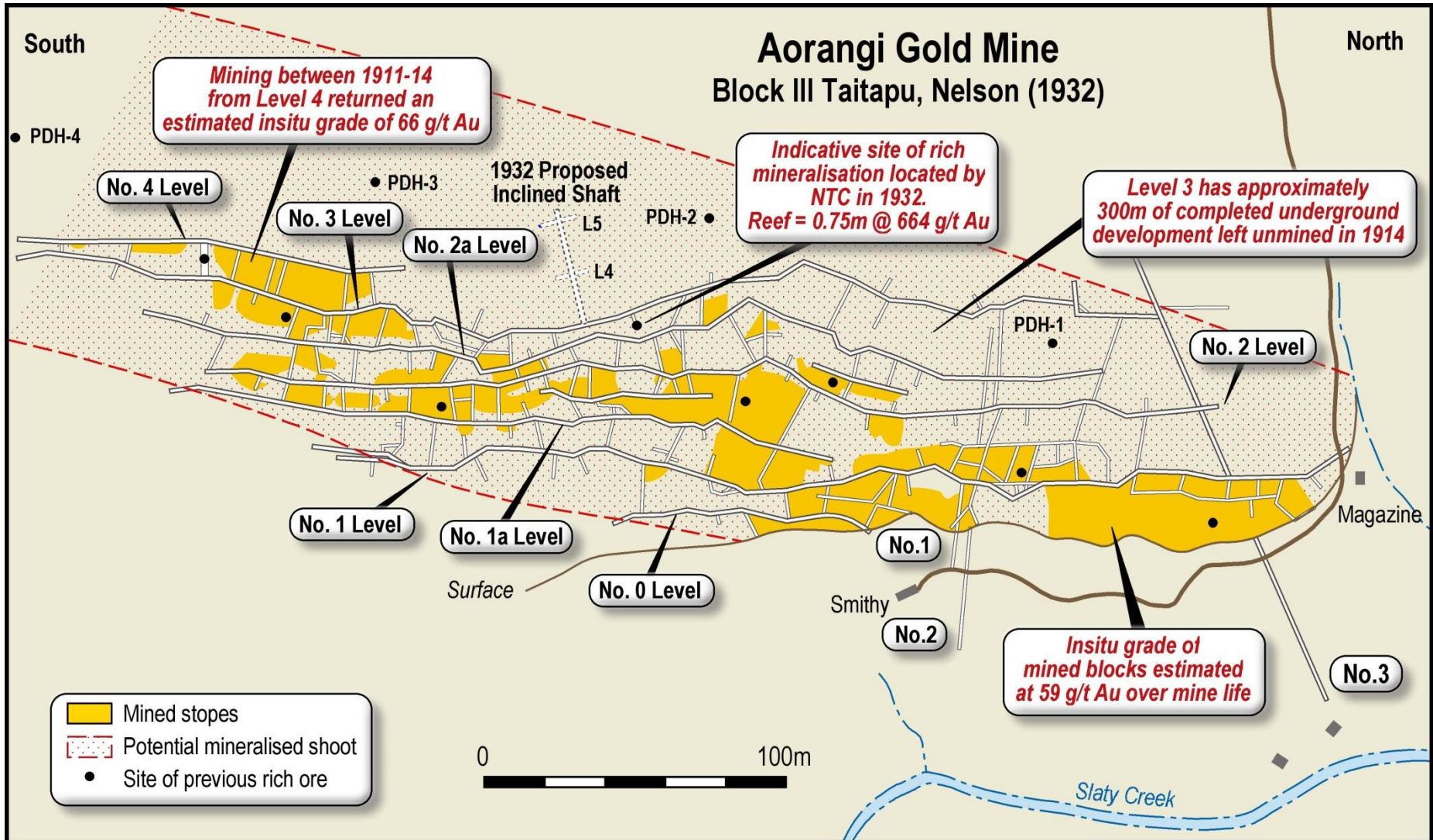
Aorangi Mine



Aorangi Mine



Aorangi Mine Plan



Aorangi Mine

North

South

Historical Production (yellow blocks)
26koz at an recovered grade of 36g/t Au &
estimated insitu grade of 59g/t Au

L0

L1

L2

L3

L3

L4

NTC Crosscut
0.7m @ 650g/t Au

Mining between 1911 & 1914
Estimated Insitu grade of 66g/t Au

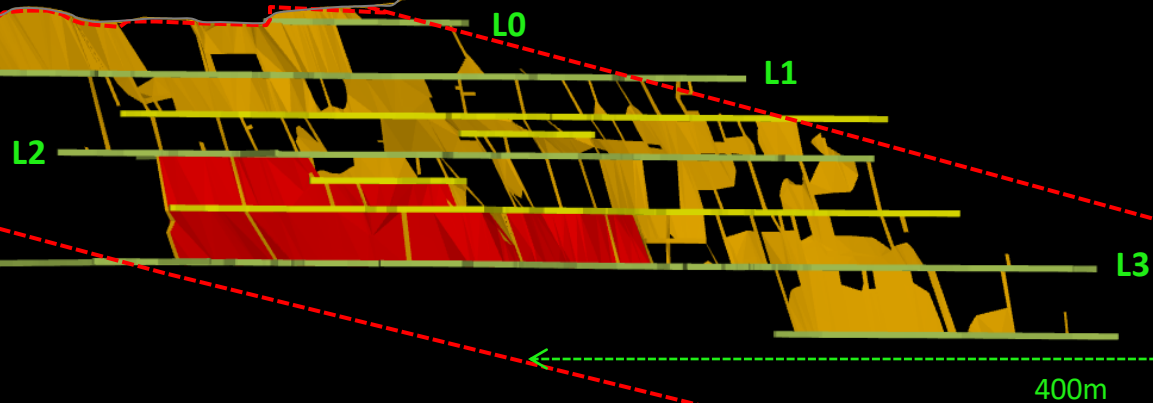
100m



Aorangi Mine

North

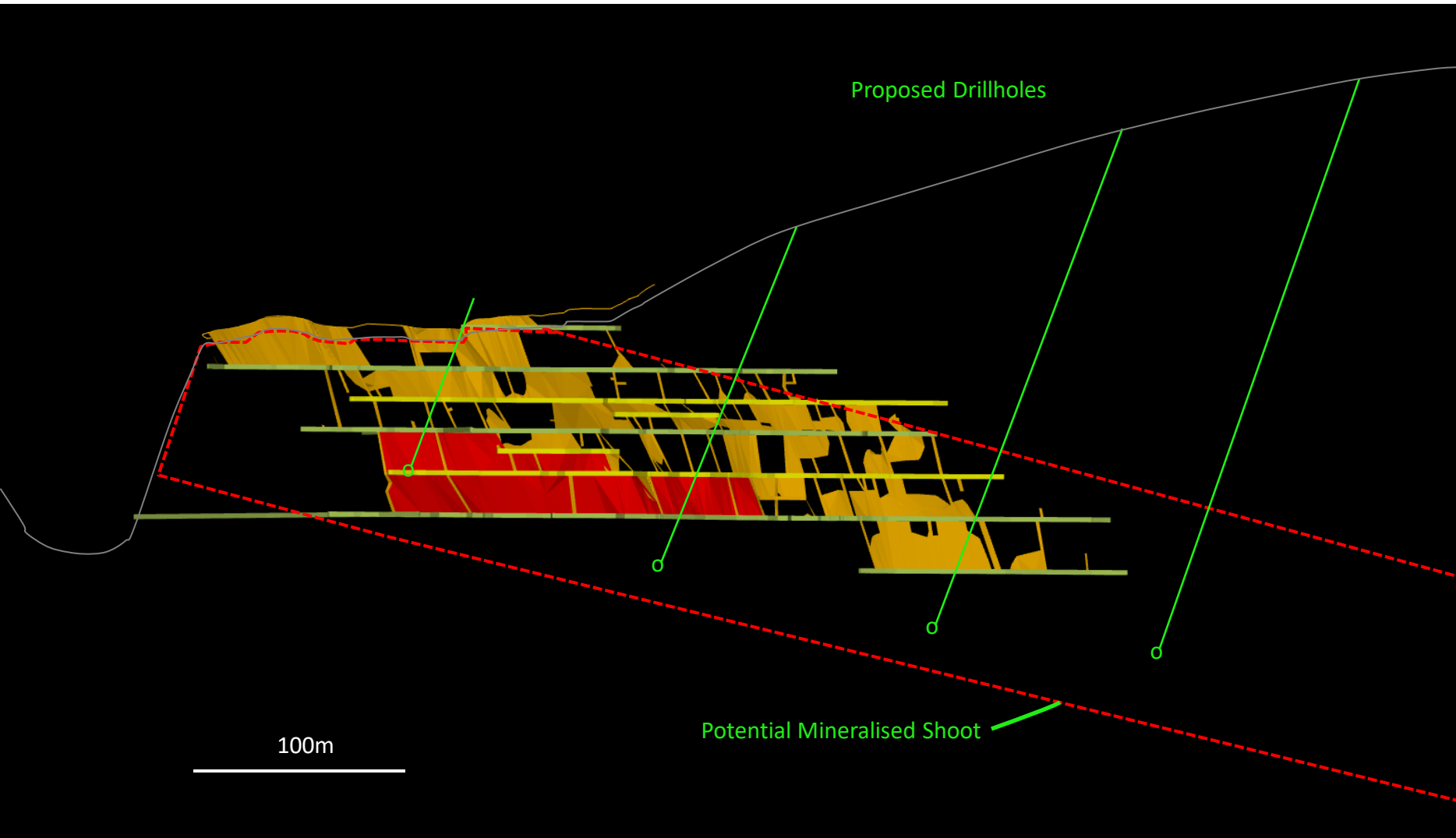
South



100m

Potential Mineralised Shoot

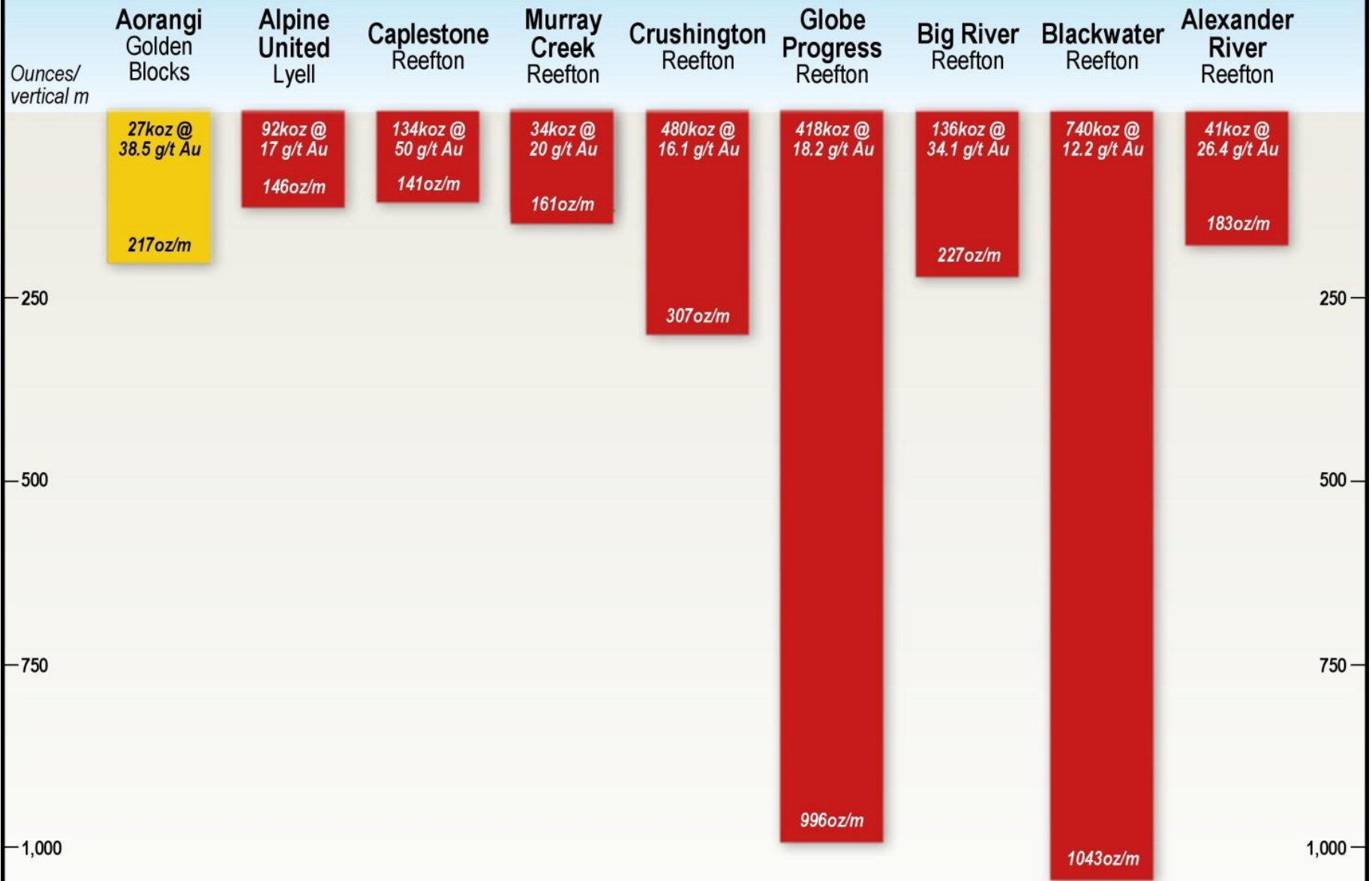
Aorangi Mine



North

South

Mine Production - Ounces per Vertical Metre



Project Benefits

- Excellent regional development project for Tasman district:
 - Drilling program planned once access is secured.
- High grade narrow view gold target:
 - Simplified processing (free milling gold).
 - Mine still in high grade zone when work ceased.
 - Underground mine with tunnels developed and remain in good condition.
 - Very low arsenic level in rocks.
 - Potential for ore to be processed off site at Reefton.
 - Excellent upside with additional anomalous targets unexplored.

Golden Blocks, the Forgotten High Grade Gold Mine

P.V.M. Angus¹, M.D. Howard²

¹ ARC Ltd, 18 Princes St, Dunedin paul.angus@xtra.co.nz

² Strategic Elements Ltd, 138 Churchill Ave, Perth matthew@strategicelements.com.au

Abstract

The quartz lodes at Golden Blocks are very similar to those developed at the Reefton and Lyell goldfields to the south and Bendigo and Ballarat goldfields in Victoria, Australia. Gold production at Golden Block (46koz) is relatively small compared to Reefton (2.5Moz) and Lyell (90koz) but the recovered grade was significantly higher averaging 36g/t compared with an average of 16g/t at both Reefton and Lyell.

The Aorangi mine was developed over 4 levels to depth of around 120 metres. The reef was strong and well defined throughout the workings and had been developed for length of ~400m along the north-south strike. During the mine life 23kt of ore was processed and returned 27koz of gold for an average recovered grade of 38.5/t with an estimated insitu grade of ~59g/t.

The No.4 Level was driven approximately 110m. Production records between 1911 to 1914 when the mine closed, indicted the insitu grade of the ore was ~66g/t and that the reef continued at both ends of the drive, and the No.3 Level had approximately 300m of underground development left unmined.

In 1932 New Taitapu Gold Company re-established the mine with 750m of crosscuts and levels re-conditioned. A prospecting rise was developed in an ore block between No.3 and No. 2 levels. The reef at this point was 0.75m thick grading 663.8 g/t Au with the reef thickly impregnated with coarse gold.

This indicates that the high grade shoots that was mined from surface to No.4 Level, will continue at depth. Some of the Reefton mines were developed to depths of over 600m and Birthday Reef at Blackwater developed to over 700m, with drilling confirming that the reef continuation to a depth of at least 1.5kms. The relatively shallow depth of the Aorangi Mine and high grade mineralisation on the bottom level indicates that mineralisation is open and could extend for a significant depth.

Keywords: New Zealand, Northwest Nelson, Greenland Group, Golden Blocks, High-Grade quartz veins, Aorangi Mine, Folding.

Introduction

The Greenland Group paleozoic rocks extend intermittently over 200kms from south of Reefton to the Golden Blocks area in NW Nelson (Figure 1). The gold mineralisation is considered to representative of higher-level, orogenic-style gold deposits. The style of deposit is recognised to be broadly synchronous with deformation, metamorphism and magnetism during lithospheric-scale continental margin orogeny. This mineralisation has important similarities, and is probably co-genetic and coeval to, the mineralisation at Bendigo and Ballarat in Victoria, Australia (Cooper and Tulloch 1992). In both goldfields mineralisation occurs within Ordovician sediments and is associated with the later stage folding and thrust faulting.

The higher-level orogenic style gold mineralisation at Reefton is interpreted too lie along a locally complex north-south trending structural corridor. Based on the orogenic-style deposit model, the gold systems are likely to be depth extensive, with deposits occurring as small specific shoots in favourable structural settings.

Golden Blocks located in NW Nelson (Figure 1) is considered a northern extension of the Reefton and Lyell Goldfields where over 2.6Moz of gold has been produced from largely narrow vein quartz lodes with very similar para-genesis to Golden Blocks. The primary insitu gold grade at Reefton is around 20-25g/t (recovered grade of 16g/t Au). The largest gold deposit was the Birthday Reef at Blackwater which historically produced 740koz of gold from a north plunging ore shoot that was mined to a depth of 710m. Recent drilling has extending high grade mineralisation to at least 1.5kms below surface (Oceana Gold 2013).

The Lyell Goldfield contains around 21 historic mines that collectively produced 95,000oz of gold from narrow high grade quartz veins over a 5km long zone striking NNW. The best gold grades are found where E-W striking, north dipping faults cross cut the fold hinge, leading to steep north plunging ore shoots that have been mined to a depth of 550m (Barry 1995).

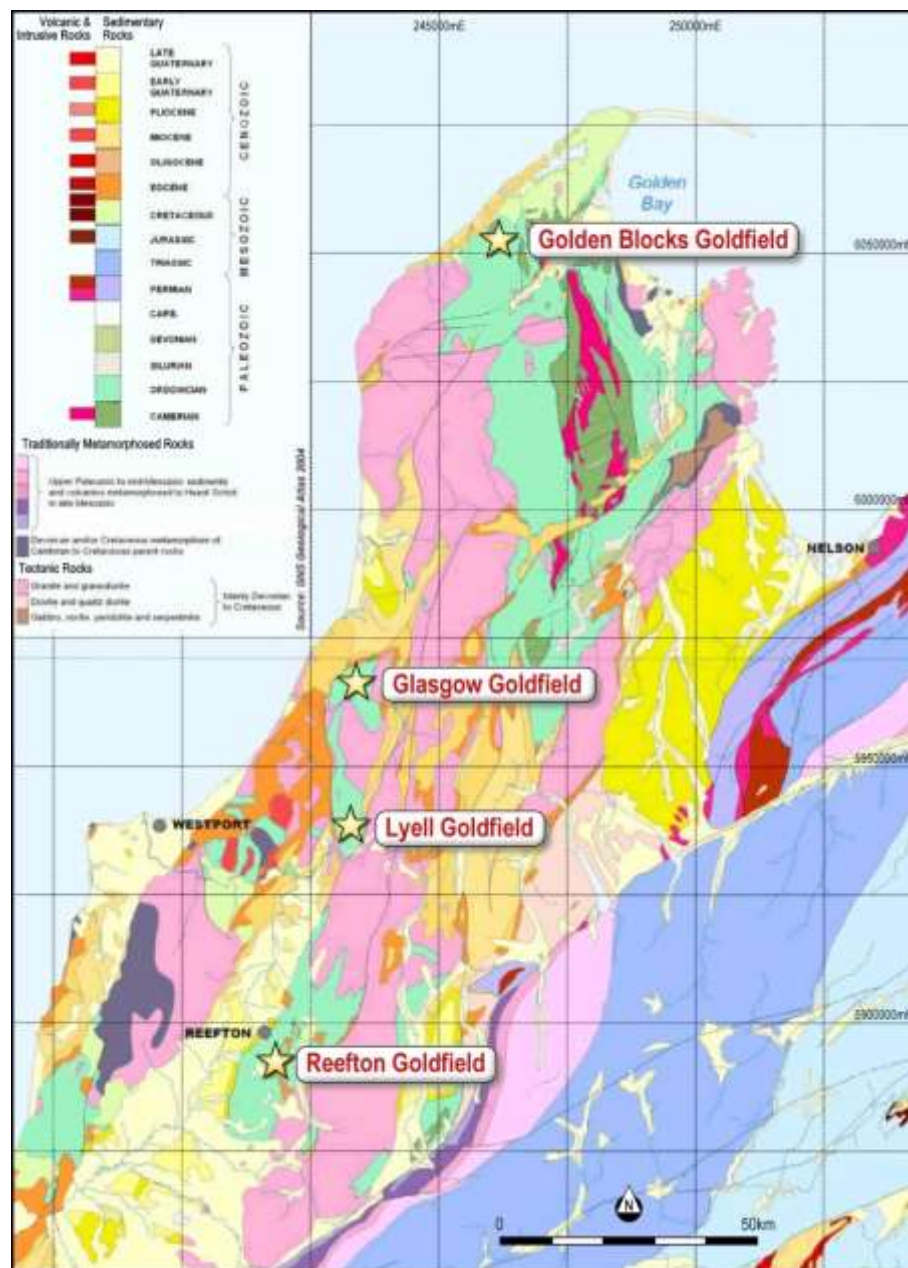


Figure 1: Generalised geological map of the NW Nelson area (source QMap)

Regional Geology

The terranes that make up New Zealand's basement are divided up into a Western Province, composed of the Buller and Takaka Terranes (Figure 1), and an Eastern Province, composed of the Brook Street, Murihiku, Dun Mountain-Maitai, Caples, Torlesse Composite (Rakaia and Pahau), and Waipapa Composite Terranes. The Median Batholith forms the boundary between the two provinces. All these terranes occur within or near the Nelson Region (Cooper 1965).

The Buller Terrane forms the basement rocks to the west of the Anatoki Fault, and throughout the West Coast, west of the Alpine Fault, to Milford Sound. The Greenland Group rocks form the base, and are composed of sandstones and mudstones deposited in a submarine fan environment (Late Cambrian-early Ordovician, 505-470 Ma). They are overlain by the Golden Bay Group rocks, composed quartz sandstone and shale (Ordovician, 490-443 Ma).

The Buller and Takaka Terranes are believed to have been amalgamated around Early or Middle Devonian times, about 390 Ma ago. After amalgamation, in Late Devonian times (370-354 Ma), the Karamea Suite granites were intruded into the Buller Terrane.

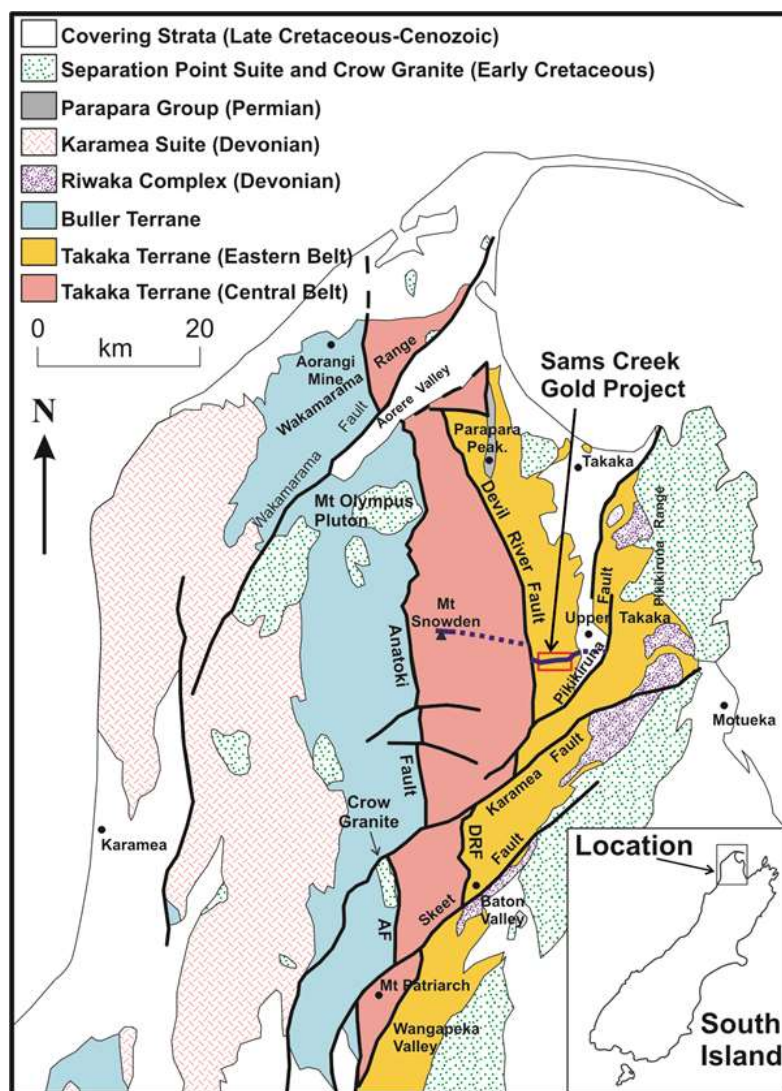


Figure 2: Generalised geological map of the NW Nelson area Adapted from Cooper and Tulloch 1992.

The Western Belt contains the Greenland, Golden Bay and Aorere Group quartz-rich greywacke, sandstone and black slate, of mainly Ordovician age and host shear-zone gold quartz lodes at Golden Blocks, Lyell and Reefton. The lithological content and structural style for all three areas are very similar with fossils from the Aorangi Mine area and Reefton the same age (Copper 1979). The three areas were separated by the intrusion of the Karamea Batholith during Devonian times.

The early Palaeozoic metasediments have been intruded along the western margin by Devonian to Carboniferous age Karamea Suite. Outlying stocks and plutons related to both the Karamea and Separation Point intrusive events occur within the metasediments of the Western Belt. The Palaeozoic rocks are overlain unconformably by Tertiary to Cretaceous conglomerates, sandstones, mudstones, and coal measures of the Pakawau GP.

Deposit Geology

The Golden Bay Group includes the Aorangi Mine Formation which hosts the gold bearing quartz lodes and historic mines, which extend over a strike length of about 2.8 km between Sandhills Creek and the Morning Star Mine (Figure 3). The Aorangi Mine Formation consists of four members.

The Malone Member is composed of thick-bedded and massive, pale, quartz-rich sandstone and rare interbedded pale siltstones and black shale. The main gold mines at Golden Ridge, Anthill Creek and Aorangi are sited in the uppermost beds of the Malone Member.

The Anthill Black Shale is composed of predominately of extremely hard, siliceous, pyritic shale and less abundant chert. Black and pale grey quartz sandstone and soft blue-grey argillite are present throughout. Cooper (1979) regarded the anomalously high silica content of the black shales as being primary rather than large scale replacement or silicification as delicate microbedding and graptolites have not been destroyed. The presence of organic carbon (ranging from 1.5 to 2.0%) and relatively abundant pyrite (3-6%) imply a low Eh sedimentary environment.

The Battery Member is composed of medium to dark, soft, blue-grey massive siltstone with interbedded bands of hard grey quartz sandstone and black slate.

The Jimmy Creek Quartzite member is composed of thick quartz sandstone (quartzite) units and an intervening band of interbedded sandstone and micaceous siltstone. The Slaty Creek Formation which lies to the east of the area of interest consists of alternating sandstones and blue-grey siltstones with rare massive quartzite's as a thick unit of black shale.

During late Ordovician - Early Silurian the Greenland group was subject to lower greenschist facies metamorphism with an early phase of isoclinal folding and cleavage development parallel to bedding (F1 / S1). The Sandhills Creek Anticline (Figure 3 and 4) is a F1 recumbent fold. A second folding phase led to the development of N-NE trending steeply west dipping gently south plunging folds (F2) with axial planar cleavage (S2). Fold wavelength are between 15 and 200m.

The axial planes are locally faulted and sheared and contain the mineralised lodes. The prominent structures are N-S striking faults with reverse, normal and sinistral movement. Faults dip west 40-70 degrees, with a crush zone of up to 3m wide. Thin quartz veins up to 2m long are scattered irregularly throughout the fault and lensoid shaped masses of quartz up to 1m wide occur. The Mine Fault closely follows the contact between the Malone Member and the Anthill Black Shale. The Aorangi, Anthill and Golden Ridge Mines worked orebodies

that were very close to this fault zone and this fault may have been important in the localisation so the mineralisation.

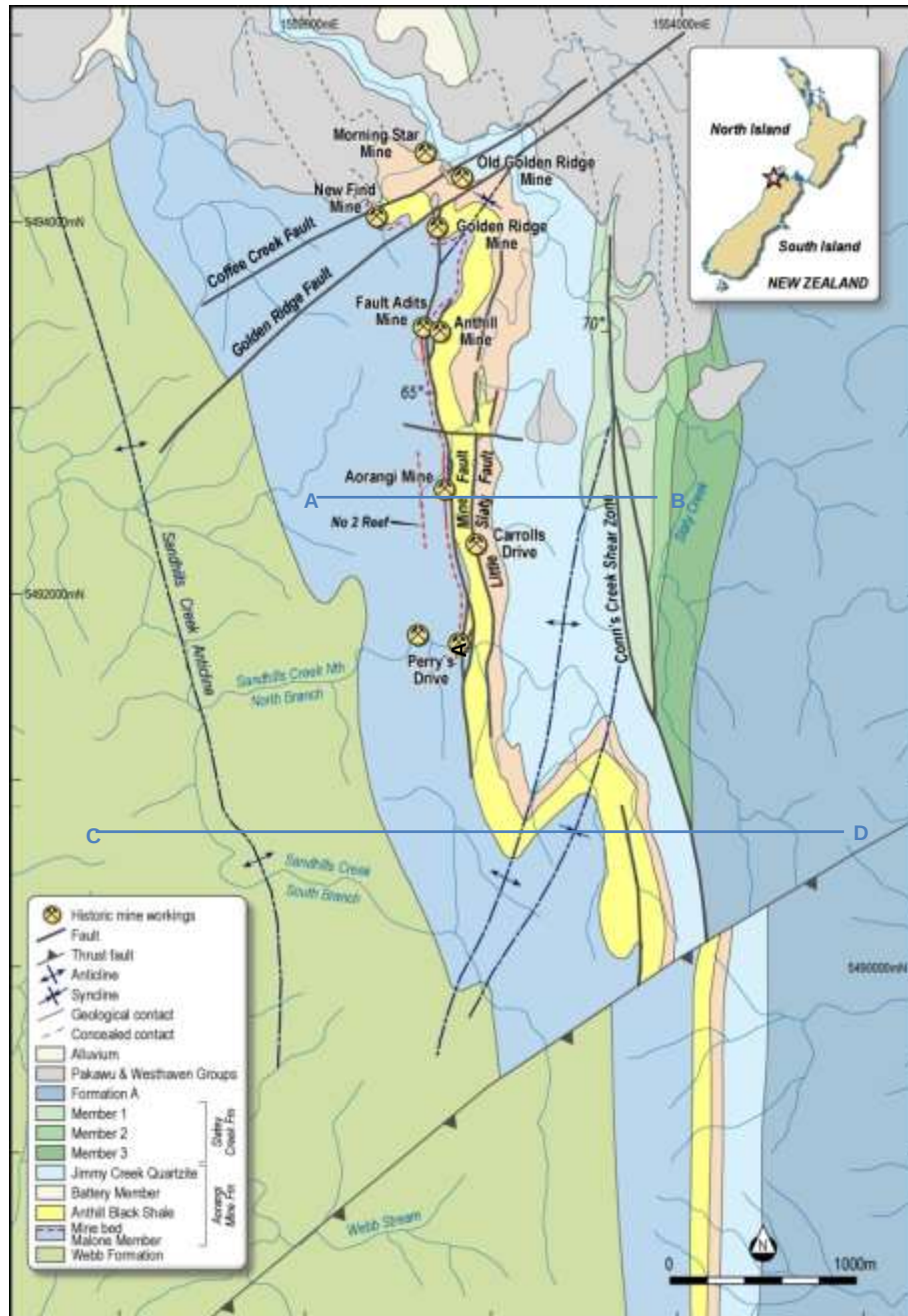


Figure 3. Map of the Aorangi Mine FM in the northern end of the permit area (adapted from Cooper).

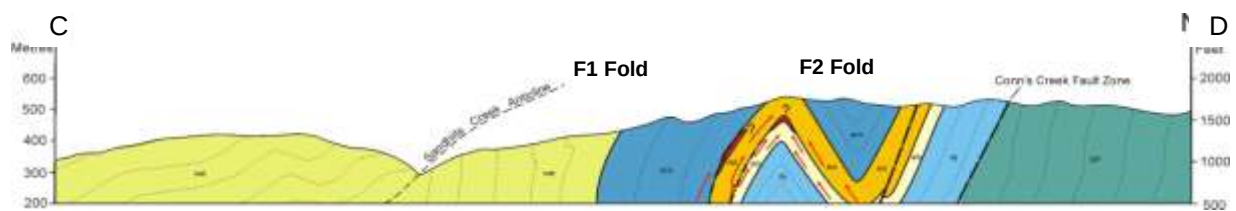


Figure 4. E-W Cross Section C-D through the Aorangi Mine Formation.

Within the Reefton the metasediments have tightly folded into a broad structural corridor that extends along the length of the goldfield. The fold hinge zones are often sheared and contain the majority of the historic mines. The Cranz Creek Shear Zone lies approximately 1km to the east of the main historic mines (Blakemore 2016) and forms the eastern boundary of the structural corridor and may have been important in focussing the gold mineralisation. The Conn Creek Shear Zone at Golden Blocks also lies around 1km to the east of the Mine Fault (Figure 4) and generally lies on the contact between the Jimmy Creek Quartzite and the Douglas Formation (Cooper 1969). The shear zone extends 400m along Slaty Creek and lower reaches of Conn Creek, and is up to 5m wide.

Gold Mineralisation

The bulk of the gold mined at Golden Blocks came from narrow quartz lodes within a relatively thin bed (10-40m thick) of carbonaceous shale historically called the Mine Bed close to the stratigraphic top of the Malone Member (Burgess 1978). The lodes consist of poddy lenses of quartz within sheared and brecciated carbonaceous shale around 1-5m thick, generally along the contact between carbonaceous black shales and quartz-sandstone (Figure 5). The more significant mines, the Aorangi, Anthill and Golden Ridge mines all lie within or close to the Mine Fault which closely follows the top of the Malone Member.



Figure 5. Deformed quartz Lode in Level 2 of the Aorangi Mine.

The Quartz is usually white and typically mixed with carbonaceous matter or graphite. Pyrite and marcasite along with relatively rare arsenopyrite occur as disseminations and fracture fillings and are intimately associated with gold. Bell (1907) reported minor native copper in some vein material but has a negative correlation with gold. The gold is commonly coarse grained, although it has been found as films on fracture or cleavage surfaces.

Bell (1907) described the vein quartz as lenticular sheets in both vertical and horizontal cross section. The Aorangi Mine is the only working for which there is a detailed mine plan which shows a shallow dipping southerly plunge to the stoped blocks. This is likely to be associated

with the south plunging axis of an F2 fold. At Reefton the ore shoots generally dip shallowly to the north parallel to the north dipping F2 folds.

The gold mineralisation is interpreted to occur towards the end of the main folding (F2) and low grade metamorphic events. The gold mineralisation is structurally controlled in transgressive steeply dipping N-S trending fault zones which cut across the hinges of the F2 folds and along the contact between mudstone and sandstone beds. Most of the deposits are aligned in a N-S linear belt suggesting a deep seated major structure that has tapped the mineralising fluids sourced from metamorphic devolatilisation of the sedimentary pile. The deposits formed in reverse fault/shear zones that are parallel to regional fold axis, cleavage and bedding. The attitude of these deposits has not always been favourable for the formation of significant shear zones, dilatant zones or fluid channel ways. Mineralisation is associated with brittle faulting and associated quartz veining and deposition of free gold.

Mining History

The Golden Blocks area comprises a number of historic mines located at the contact between shale and sandstone lithology's with 85% of the gold production derived from poddy quartz veins in a sheared shale unit called the Mine Bed. The Mine Bed appears to extend approximately 2.5km and was intermittently mined at Perry's Drive, Aorangi, Fault Adits, Golden Ridge and the new Find mines (Figure 3).

Other parallel mineralised quartz reefs lie on the contact between the Anthill Black Shale and Battery Member (Carrolls Drive and unmined reef east of the Aorangi Mine) and between the Battery Member and the Jimmy Creek Quartzite (Morning Star and Old Golden Ridge mines). The No 2 reef identified in the Golden Blocks Mine Prospectus lies approximately 200m to the west of the Mine Bed near the Aorangi Mine and lines up with a historic mine in Sandhills Creek (Figure 3).

Total gold production was 46koz with an average grade of 36g/t with the largest Aorangi mine producing 26koz between 1898 and 1914 when the mine closed due to shortages of labour. During the mine life 21kt of ore was processed and returned 27koz for an average recovered grade of 38.5g/t. Recovery was estimated at 65% (Golden Blocks 1932) indicating an insitu grade of 59.2g/t.

The Mine Bed at the Aorangi was mined over 4 levels down to 130 metres below the surface (Figure 6). The reef was strong and well defined throughout the workings and had been developed for length of around 400m along the north-south strike (Figure 7). The reef average around 1m thick and dipped ~45° to the west with a shallow 20° south plunge to the oreshoot. As shown in Figure 8, the height of the oreshoot is estimated to be around 150m based on the top and bottom of the stoped (grey) and unstoped blocks (red). The potential exists for other parallel mineralised shoots along strike to the north and south.

The reef consists of a series of lenticular quartz veins continuously connected and mined along 450m and was considered to have considerable vertical and lateral extensions (Bell 1907). In 1911 an inclined 5m by 5m shaft was sunk 30m from No 3 Level to No 4 level. The reef extended across the width of the shaft (0.30m thick on the south side and 0.75m on the north side) with 200oz's recovered for an average grade of 32g/t (Golden Blocks Mines 1932). From the bottom of the shaft the Level 4 drive has been driven approximately 110m. From 1911 to 1914 when the mine closed the returns from the mine averaged 43g/t.

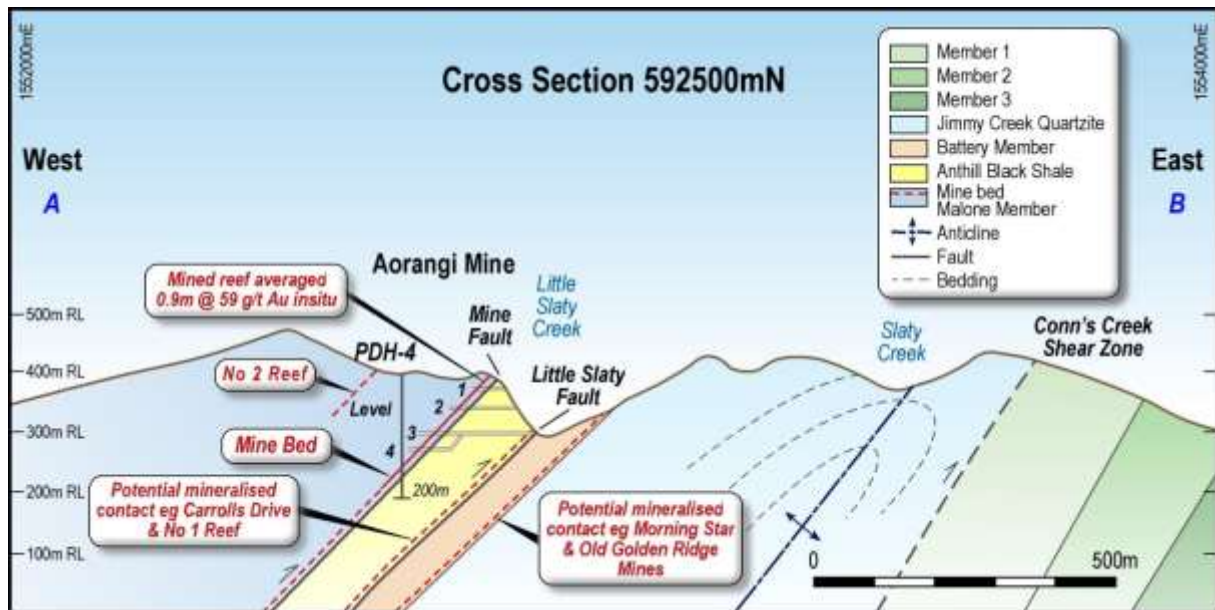


Figure 6. E-W section through Aorangi Mine and Anthill Mines.

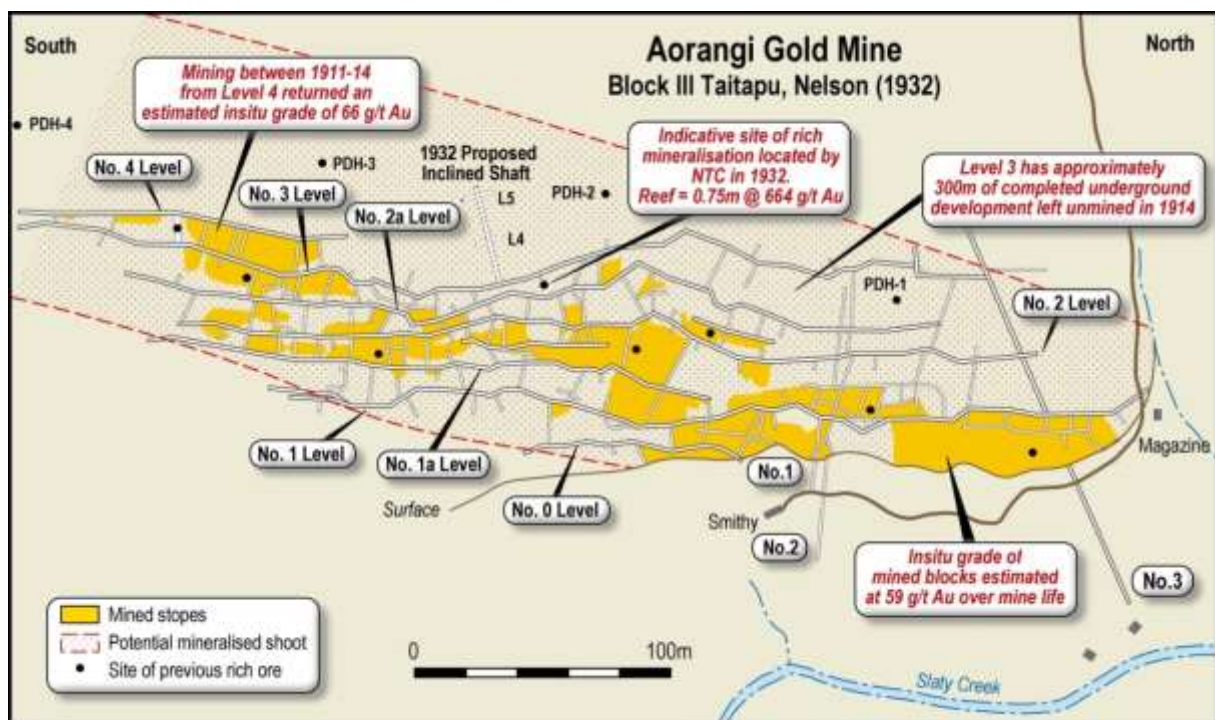


Figure 7. Plan of the Aorangi Mine Historical Mine Levels

In 1932 the New Taitapu Gold Prospecting Company Ltd (NTC) re-established the mine with 750m of cross cuts and levels re-conditioned and rails laid and the examination of over 1,800m of development work. A prospecting rise was developed in an ore block between No.3 and No. 2 levels with exceptionally high grade ore at the point marked on Figure 7 and 8. The reef at this point was 0.75m thick grading 663.8 g/t (NTC 1933). Over the central 25cm of the reef it was reported that the quartz was thickly impregnated with coarse gold. The No.4 Level was flooded and was not entered.

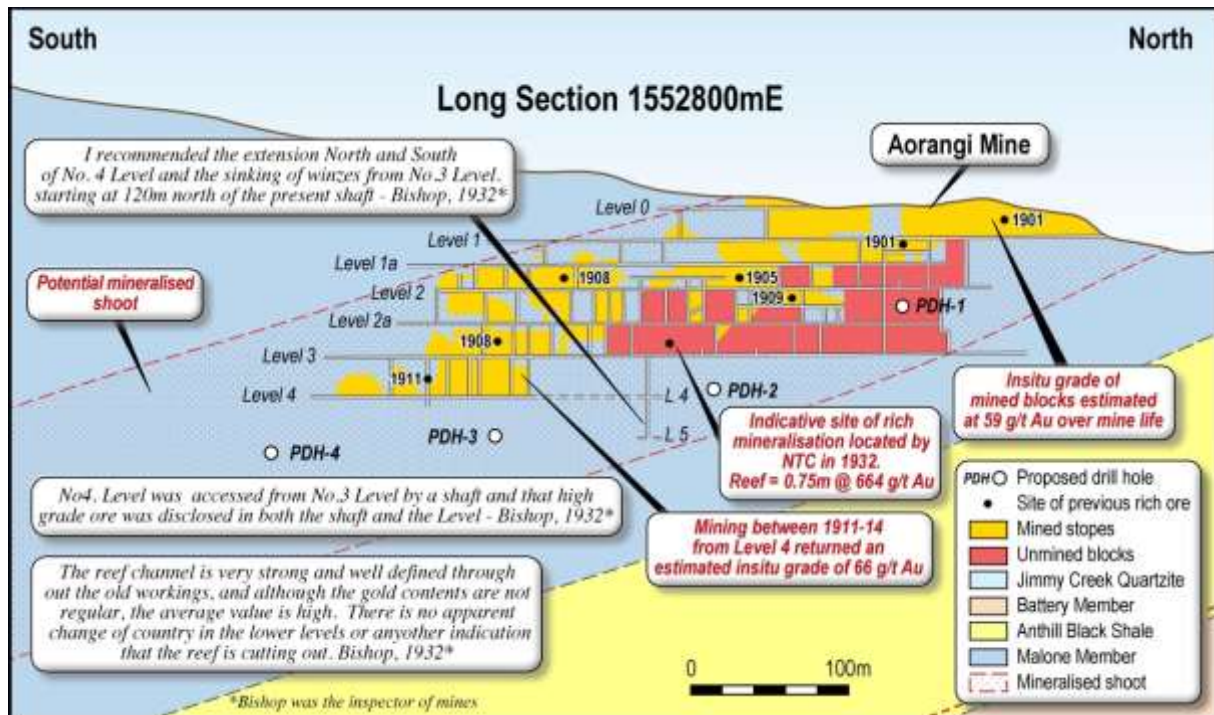


Figure 8. N-S section through Aorangi Mine.

Exploration Potential

The main exploration target is the down plunge extension of the Aorangi Mine mineralisation although there is significant potential for other deposits along strike within the Mine Bed and in parallel reefs i.e. Reef No 2 (Figure 3).

The Mine Bed at the Aorangi was mined over 4 levels down to 130 metres below the surface. The reef was strong and well defined throughout the workings and had been developed for length of around 400m along the north-south strike indicating that the vertical height of the shoot was around 150m (Figure 8). The reef average around 1m thick and dipped $\sim 45^\circ$ to the west with a shallow 20° south plunge to the oreshoot. Figure 8 shows that around a third of the potential mineralised shoot was mined (yellow blocks) to yield 21kt of ore at an average recovered grade of 38.5g/t. Recovery was estimated at 65%-70% (Lowes 1941), indicating an insitu grade of 59g/t. Due to the shallow south plunge of the mineralised shoot the 130m vertical depth equates to a 400m down plunge length (Figure 8).

The quartz lodes at Reefton and Lyell were mined to depths of greater than 500m below surface i.e. Big River 600m, and Alpine United 600m and Blackwater 710m. Recent drilling at Blackwater has extended the depth of the Birthday Reef to over 1,500m and is still strongly mineralised. The relatively shallow depth of the Aorangi Mine and high grade mineralisation on the bottom level indicates that mineralisation is open and could extend for a significant depth.

Park (1933) reported on the potential of gold continuing at depth beneath the old mine: "From what I know of the past history of this mine and the undoubtable favourable geological conditions there is, in my opinion, warrant for the belief that valuable ore shoots may be looked for in the deeper ground".

Bishop (1932) the former government Inspector of Mines who inspected the Aorangi mine multiple times in his official capacity reported that “I am of the opinion that the strength and continuity of the reef in the upper workings entirely justifies the expectation of it living to greater depths”. He also confirmed that the last mined level (No. 4 Level), was assessed from No.3 level by a shaft and that “high grade ore was discovered on both the shaft and lower level”.

He also stated that “It appeared to me that the mine was controlled by the mill, which consisted of a single battery of light stamps. It is recorded in one of the Mine Managers reports which I have examined that “the poorer stone was thrown away and the harder ore was left”. In order to obtain the maximum return from the small tonnage of ore that could be treated, only the richest portions of the reef were mined, a comparatively large tonnage of lower grade ore being left untouched” Bishop also stated that “I am of the opinion that much of the ore left untouched in the upper levels would prove to be of payable milling grade if systematically mined and milled by modern efficient methods so to ensure maximum recovery. Moreover, it is probable that in the complete extraction of these ore bodies further rich pockets would be obtained. The discovery of rich ore which you report as having made recently in rising above No 3 level, confirms this prospect”.

Table 1 shows the larger historical mines in the Greenland Group. Outside of the Reefton Goldfield the Alpine United mine at Lyell is ranked fifth on tonnes and seventh on ounces produced and the Golden Blocks is ranked second on grade and ninth on ounces produced. An extension of the high grade shoot at Golden Blocks could see its rank climb significantly higher.

Table 1. Historical production from Greenland Group mines.

Rank	Mine Name	Mine Area	Tonnes	Ounces	Recovered Grade (g/t)	Total Au (%)
1	Blackwater	Reefton	1,603,157	740,403	14.2	35.1%
2	Globe Progress	Reefton	1,062,727	418,345	12.2	19.8%
3	Wealth of Nations	Reefton	458,034	208,980	14.2	9.9%
4	Keep-it-Dark	Reefton	333,780	182,616	17.0	8.7%
5	Big River	Reefton	124,060	135,965	34.1	6.4%
6	Ajax / Golden Fleece	Reefton	136,642	89,636	20.4	4.2%
7	Alpine United	Lyell	149,024	80,514	17.0	3.8%
8	Welcome / Hopeful	Reefton	44,867	88,607	61.4	4.2%
9	Golden Blocks Mines	Golden Blocks	39,743	46,000	36.0	2.2%
10	Alexander	Reefton	48,492	41,089	26.4	1.9%
11	Murray Creek Mines	Reefton	52,943	33,887	19.9	1.6%
12	Fiery Cross	Reefton	24,956	27,843	34.8	1.3%
13	Just-In-Time	Reefton	13,755	17,168	38.8	0.8%
Total Underground Production			4,092,180	2,111,053	16.0	100%

References

- Barry, J. 1995. Mining History and Geology of the Alpine Reef. Lyell Goldfield Procs AIMM NZ Conference 1996.
- Bell, 1907, "The Geology of the Parapara Subdivision, Karamaea, Nelson", New Zealand Geological Survey Bulletin No. 3.
- Bishop, 1932, "Report to New Taitapu Gold Prospecting Company Limited", in "Golden Blocks Mines Limited Prospectus", Archives New Zealand Record R17869220.
- Burgess, A.W.1978. Gold Mineralisation at the Golden Blocks Goldfield, M.Sc. Thesis, University of Canterbury.
- Blakemore, H. 2016. MEP 40604 - Big River Exploration Report 12 March 2014 to 11 March 2016. Ministry of Economic Development, Wellington, unpublished open-file mineral report MR5343.

- Copper, R.A. 1965. Early Paleozoic terranes in New Zealand and their relationship to the Lachlan Fold Belt. *Tectonophysics*, Vol 214: 129-144.
- Cooper, R.A. 1969. Ordovician Stratigraphy of North-West Nelson, PhD Thesis, University of Wellington.
- Cooper, R.A. 1979. Ordovician geology of the graptolite faunas of the Aorangi Mine area, north-west Nelson, New Zealand. *NZ Geological Survey Paleontological Bulletin* 47.
- Cooper, R.A. and Tulloch, A.J. 1992. Early Paleozoic Terranes in New Zealand and their relationship to the Lachlan Fold Belt. *Tectonophysics* 214, 129-144.
- Gage, M. 1948. The Geology of the Reefton Quartz Lodes. *New Zealand Geological Survey, Bulletin* 42.
- Golden Blocks Mines Limited, 1932, "Prospectus", Archives New Zealand Record R17869220
- Lowes, G.W. 1941. Memorandum to the Under Secretary, Mines Department, Wellington, Archives New Zealand Record R17869220.
- OceanaGold Ltd, 2013. Press release dated 12 April 2013.
- Park, 1933, "Letter to New Taitapu Gold Prospecting Company Limited", Archives New Zealand Record R17869220.