REPORT ON THE

MINERAL RESOURCES & MINERAL RESERVES

OF THE

FOSTERVILLE GOLD MINE

In the State of Victoria, Australia

Prepared for

KIRKLAND LAKE GOLD LTD

Effective Date December 31, 2017

Dated April 2, 2018

Authors: Troy Fuller, MAIG

Ion Hann, FAusIMM

IMPORTANT NOTICE

This Technical Report has been prepared as a National Instrument 43-101 Technical Report, as prescribed in Canadian Securities Administrators' National Instrument 43-101, Standards of Disclosure for Mineral Projects (NI 43-101) for Kirkland Lake Gold Ltd. (Kirkland Lake Gold). The data, information, estimates, conclusions and recommendations contained herein, as prepared and presented by the Authors, are consistent with: the information available at the time of preparation; the data supplied by outside sources, which has been verified by the authors as applicable; and the assumptions, conditions and qualifications set forth in this Technical Report.

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All forward-looking statements in this Technical 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. Kirkland Lake Gold Ltd. and the Qualified Persons who authored this report undertake no obligation to update publicly or otherwise revise any forward-looking statements contained herein whether as a result of new information or future events or otherwise, except as may be required by law.

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Kirkland Lake Gold has included a non-IFRS measure “total site costs”, “total site costs per ounce” and various unit costs in this Technical Report. The Company believes that these measures, in addition to conventional measures prepared in accordance with IFRS, provide investors an improved ability to evaluate the underlying performance of the Company. The non-IFRS measures are intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. These measures do not have any standardized meaning prescribed under IFRS, and therefore may not be comparable to other issuers.

Information Concerning Estimates of Mineral Reserves and Resources

These estimates have been prepared in accordance with the requirements of Canadian securities laws, which differ from the requirements of United States’ securities laws. The terms “mineral reserve”, “proven mineral reserve” and “probable mineral reserve” are Canadian mining terms as defined in accordance with NI 43-101 and the CIM Definition Standards. The CIM Definition Standards differ from the definitions in the United States Securities and Exchange Commission (“SEC”) Guide 7 (“SEC Guide 7”) under the United States Securities Act of 1933, as amended. Under SEC Guide 7, a “final” or “bankable” feasibility study is required to report mineral reserves, the three-year historical average price is used in any mineral reserve or cash flow analysis to designate mineral reserves and the primary environmental analysis or report must be filed with the appropriate governmental authority. In addition, the terms “mineral resource”, “measured mineral resource”, “indicated mineral resource” and “inferred mineral resource” are defined in NI 43-101 and recognized by Canadian securities laws but are not defined terms under SEC Guide 7 or recognized under U.S. securities laws. U.S. Investors are cautioned not to assume that any part or all of mineral deposits in these categories will ever be upgraded to mineral reserves. “Inferred mineral resources” have a great amount of uncertainty as to their existence and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of an “inferred mineral resource” will ever be upgraded to a higher category. Under Canadian securities laws, estimates of “inferred mineral resources” may not form the basis of feasibility of pre-feasibility studies, except in rare cases. U.S. investors are cautioned not to assume that all or any part of an inferred mineral resource exists or is economically or legally mineable. Disclosure of “contained ounces” in a resource is permitted disclosure under Canadian regulations; however, the SEC normally only permits issuers to report mineralization that does not constitute “reserves” by SEC Industry Guide 7 standards as in place tonnage and grade without reference to unit measures. Accordingly, these mineral reserve and mineral resource estimates and related information may not be comparable to similar information made public by U.S. companies subject to the reporting and disclosure requirements under the United States federal laws and the rules and regulations thereunder, including SEC Guide 7.

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1 EXECUTIVE SUMMARY

This technical report has been prepared for Kirkland Lake Gold Ltd. (Kirkland Lake Gold), the beneficial owner of the Fosterville Gold Mine. Kirkland Lake Gold is listed on the Toronto and New York Stock Exchanges under the ticker symbol "KL" and the Australian Securities Exchange under the ticker symbol "KLA". On November 30, 2016, Newmarket Gold Inc. ("Newmarket") combined with Kirkland Lake Gold Inc. and the combined company was renamed Kirkland Lake Gold Ltd.

This document provides the Mineral Resource and Mineral Reserve estimates for the Fosterville Gold Mine (Fosterville or FGM) that have resulted from ongoing exploration and resource definition and as a result of ongoing mine design and evaluation during the period June 30, 2017 to December 31, 2017.

1.1 LOCATION

The Fosterville Gold Mine is located approximately 20km east of the city of Bendigo and 130km north of the city of Melbourne in the State of Victoria, Australia.

The FGM and all associated infrastructure including the tailings dam and waste dumps are located on Mining Licence 5404, which is 100% owned by Kirkland Lake Gold Ltd.

Kirkland Lake Gold also holds titles through Fosterville Gold Mine Pty Ltd of four surrounding Exploration Licences totaling 1351km^2. These Exploration Licences encompass the entire known strike extent of the Fosterville Goldfield.

1.2 HISTORY AND OWNERSHIP

Gold was first discovered in the Fosterville area in 1894 with mining activity continuing until 1903 for a total of 28koz of production. Mining in this era was confined to the near-surface oxide material. Aside from a minor tailings retreatment in the 1930's, activity resumed in 1988 with a further tailings retreatment program conducted by Bendigo Gold Associates, which ceased in 1989. Mining recommenced in 1991 when Brunswick Mining NL and then Perseverance Corporation Ltd (from 1992) commenced heap-leaching operations from shallow oxide open pits. Between 1988 and the cessation of oxide mining in 2001, a total of 240koz of gold were poured (Roberts et al, 2003).

A feasibility study into a sulfide mining operation was completed by Perseverance in 2003 with construction and open pit mining commencing in early 2004. Commercial production commenced in April 2005 and up to the end of December 2006 had produced 136,882oz gold. In October 2007, Perseverance announced that it had entered into an agreement with Northgate Minerals Corporation to acquire the company with full control passing to Northgate in February 2008.

The 500,000th ounce of sulfide gold production was achieved in April 2011.

In August 2011, Northgate entered into a merger agreement with AuRico Gold Inc who assumed control of Northgate in October 2011. In March 2012 AuRico and Crocodile Gold Corp jointly announced that Crocodile Gold would acquire the Fosterville and Stawell Mines. Crocodile Gold's ownership of Fosterville was achieved on May 4, 2012. In July 2015, Newmarket Gold Inc merged with Crocodile Gold to form Newmarket Gold Inc.

In January 2016 a significant milestone in Fosterville Gold Mine's history was reached when the one millionth ounce of sulfide gold was poured.

At the end of November 2016, Kirkland Lake Gold Inc merged with Newmarket Gold Inc. to form a new mid-tier gold company Kirkland Lake Gold Ltd.

1.3 GEOLOGY AND MINERALIZATION

The Fosterville Goldfield is located within the Bendigo Structural Zone in the Lachlan Fold Belt. The deposit is hosted by an interbedded turbidite sequence of sandstones, siltstones and shales. This sequence has been metamorphosed to sub-greenschist facies and folded into a set of upright, open to closed folds. The folding resulted in the formation of a series of bedding parallel laminated quartz (LQ) veins.

Mineralization at Fosterville is controlled by late brittle faulting. These late brittle faults are generally steeply west-dipping, reverse faults with a series of moderately west-dipping, reverse splay faults formed in the footwall of the main fault. There are also moderately east-dipping faults, which have become more significant footwall to the anticlinal offsets along the west-dipping faults. Primary gold mineralization occurs as disseminated arsenopyrite and pyrite forming as a selvage to veins in a quartz–carbonate veinlet stockwork. The mineralization is structurally controlled with high-grade zones localized by the geometric relationship between bedding and faulting. Mineralized shoots are typically 4-15m thick, 50-150m up and down-dip and 300-2,000m+ down-plunge.

Antimony mineralization, mainly in the form of stibnite, occurs with quartz and varies from replacement and infill of earlier quartz-carbonate stockwork veins, to massive stibnite-only veins up to 0.5m in width. The late stibnite-quartz mineralization in favorable structural locations, such as the Phoenix, Eagle and Lower Phoenix structures. There are also occurrences of primary visible gold (≤3mm in size) that has a spatial association with stibnite in fault related quartz veins. The occurrence of visible gold has become increasingly significant at Fosterville and is observed more frequently with depth and down-plunge within the Lower Phoenix Mineralized Zones. Throughout 2016 and 2017, visible gold (≤3mm in size) mineralization occurrences were also observed at depth in the Harrier Mineralized Zones with notably increased frequency.

Fosterville Gold Mine engaged Quantitative Geoscience (QG) in November 2014, in response to the noted increased frequency of visible gold occurrences at depth, to provide FGM with some external advice and thinking regarding the implications to resource estimation and mine geology practices. Throughout 2015 and 2016 QG continued to assist FGM through review of current practices and providing technical theory and background to sampling, assaying and resource modeling in visible gold environments. In May 2017, Fosterville Gold Mine engaged SRK Consulting (Australasia) Pty Ltd (SRK) to provide an external independent review of laboratory sampling, sample preparation, assay procedures and estimation methodology. Whilst no sub-sampling and assay bias were identified during the review, recommendations were made to test and/or improve the laboratory processes and test for and/or minimize the potential for sub-sampling and assay bias. In regards to modeling methodology, SRK made recommendations related to sub-domaining, de-clustering, top cutting and validation which have been implemented in this December 2017 Mineral Resource estimate.

1.4 CURRENT STATUS

Since the commencement of commercial gold production in April 2005, the sulfide plant at Fosterville Gold Mine has produced 1,416,282oz of gold up to the end of December 2017. This production was initially sourced solely from open cut mining with underground mining starting to contribute from late 2006. The Harrier open cut was initially completed in December 2007 and since that time the underground mine has been the primary source of ore. Ore sourced from a series of pit expansions on the previously mined Harrier, John’s and O’Dwyer's South Pits between Q1 2011 and Q4 2012 has provided supplementary feed to underground ore sources. Since the beginning of 2013 underground operations has been the sole provider of mill feed at Fosterville. Current mining activities are focused on the Central, Phoenix and Harrier underground areas and current gold production guidance for 2018 is 260-300koz.

During 2018, Kirkland Lake Gold has budgeted approximately 168km of exploration and resource definition diamond drilling, 40km of RC/RAB drilling, soil sampling and geophysical surveys and development of dedicated underground drill platforms.

1.5 MINERAL RESOURCES AND MINERAL RESERVES

The Mineral Resources and Mineral Reserves reported are contained within the mining licence MIN5404 (Section 4). Within the Mining Licence, the Mineral Resource Areas of Central, Southern, Harrier and Robbin’s Hill are historically defined resource areas, which were established at different times in the evolution of the project. The Central Area contains multiple Mineral Resource models, primarily for reasons of data handling. Details on Mineral Resource block model extents can be seen in Figure 14-1.

Mineral Resources are reported exclusive of Mineral Reserves (Table 1-1).

All Mineral Reserves are contained within the Central and Harrier Mineral Resource Areas. Mineral Reserves contained within the Central Mineral Resource Area have been subdivided into Central and Phoenix Mineral Reserves Table 15-1.

CIL Residue Mineral Reserves are distinguished from in situ Mineral Reserves in Table 1-2 on the basis of differing gold recovery assumptions.

TABLE 1-1 SUMMARIZED MINERAL RESOURCES (EXCLUSIVE OF MINERAL RESERVE) FOR FGM AS AT DECEMBER 31, 2017

Summarized Mineral Resources (Exclusive of Mineral Reserve) for Fosterville as of December 31, 2017			
Classification	**Tonnes (kt)**	**Gold Grade (g/t Au)**	**Insitu Gold (kOz)**
Oxide and Sulfide Materials			
Measured	1,944	2.90	181
Indicated	11,920	5.15	1,973
Total (Measured and Indicated)	**13,864**	**4.83**	**2,154**
Inferred	8,279	7.14	1,900

Notes:

1. CIM definitions (2014) were followed in the estimation of Mineral Resources.
2. For the Mineral Resource estimate, the Qualified Person is Troy Fuller.
3. The Mineral Resources reported are exclusive of the Mineral Reserves.
4. See notes provided for Table 14-1 for more detail on oxide and sulfide resources.
5. Mineral Resources are rounded to 1,000t, 0.01 g/t Au and 1koz. Minor discrepancies in summation may occur due to rounding.
6. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. The Mineral Resource estimate used a gold price of US$1,280 per ounce (A$1,600 per ounce).
8. Cut-off grades applied are 0.7 g/t Au for oxide, 1.0 g/t Au for near-surface sulfide (above 5050mRL) and 3.0 g/t Au for underground sulfide mineralization (below 5050mRL).
9. A minimum mining width of 2.5m was applied.
10. Dry Bulk Density of mineralized material applied are 2.40t/m^3 for oxide, 2.56t/m^3 for transitional material, 2.64t/m^3 for fresh material between 5000 and 5050mRL, 2.72t/m^3 for fresh material between 4500 and 5000mRL, and 2.78t/m^3 for fresh material below 4500mRL.

TABLE 1-2 SUMMARIZED MINERAL RESERVES FOR FGM AS AT DECEMBER 31, 2017

Summarized Mineral Reserves for Fosterville as of December 31, 2017			
Classification	**Tonnes (kt)**	**Gold Grade (g/t Au)**	**Insitu Gold (kOz)**
Proven	236	14.80	112
Probable	2,052	24.06	1,587
Total (Proven and Probable)	**2,288**	**23.11**	**1,699**
CIL Residues			
Proven	649	7.69	160

Notes:

1. CIM definitions (2014) were followed in the estimation of Mineral Reserves.
2. For the Mineral Reserves estimate, the Qualified Person is Ion Hann.
3. The Mineral Reserve estimate used a gold price of US$1,280 per ounce (A$1,600 per ounce).
4. The cut-off grades applied ranged from 2.0 to 3.8 g/t Au for underground sulfide ore depending upon width, mining method and ground conditions.
5. Dilution ranging from 10 to 50% and mining recovery ranging from 60 to 100% were applied to stopes within the Mineral Reserves estimate.
6. Mineral Reserves are rounded to 1,000t, 0.01 g/t Au and 1koz. Minor discrepancies in summation may occur due to rounding.
7. CIL residue is stated as contained ounces – 25% recovery is expected. Recoveries are based on operating performances.

1.6 CONCLUSIONS AND RECOMMENDATIONS

The Authors have made the following interpretations and conclusions:

- The understanding of the fundamental geological controls on mineralization at Fosterville is high. Primary mineralization is structurally controlled with high-grade zones localized by the geometric relationship between bedding and west-dipping faulting. This predictive model has led to considerable exploration success in following the down-plunge extensions of high-grade mineralization.
    - The **Lower Phoenix Fault** is a major west-dipping structure in the active mine development area and is defined by reverse faulting on a shale package where anticline thrust displacement of ~80m occurs. The fault dips 35-55° to the west and mineralization can be traced along an approximate dip extent of 190m and strike extent of 1.9km. The dominant mineralization style on this structure is disseminated sulfide; however, occurrences of visible gold at depth have become increasingly more common and concentrated where footwall structures intersect one another. The Lower Phoenix System currently remains open to the north and south so maximum plunge extent has not yet been defined;
- Throughout 2016 and 2017, development mapping and continued drilling confirmed that there were multiple mineralized structures of various size and continuity footwall to the main west-dipping **Lower Phoenix Fault**, which present significant resource growth potential. Progressive geological

understanding of the Phoenix and Lower Phoenix footwall environs has highlighted the significance of these favorable settings for mineralization, including;

- East-dipping mineralized structures, namely the **Eagle Fault** and **East Dipping Faults,** which commonly contain quartz–stibnite vein assemblages and substantial concentrations of visible gold which are typically enveloped by halos of disseminated sulfide. The **Eagle Fault** is discordant to bedding and variably dips between 10 and 60° to the east and transforms further to the south to strike in an ENE direction, dipping ~45° to the SSE. Mineralization on the Eagle Zone extends over a ~1km strike extent and is untested and open at depth below the 3805mRL and south of 6125mN. Drilling is planned to target beyond this extent during 2018. **East Dipping Faults** are typically bedding parallel to sub parallel with dips of ~70° east to sub-vertical. The defined extent of East Dipping structures containing significant mineralization is now ~1.6km;
- Low-angled **Lower Phoenix Footwall** west-dipping structures typically consist of large quartz veins up to several meters wide with laminated textures, indicating a series of multiple mineralizing events, including a later stage quartz-stibnite phase of mineralization with visible gold. The faults are interpreted to have minimal offset but rather have been hydraulically fractured. Where these structures form linkages between the **Lower Phoenix** and **East Dipping Faults**, extremely high-gold grades are observed; and
- During 2016 drilling extending footwall to the **Lower Phoenix** discovered west-dipping **Swan** (previously reported as Lower Phoenix Footwall) mineralization, which occupies a reverse fault structure exhibiting rotational displacement. The structure is characterized by a one to three-meter-thick brecciated quartz-dominant vein with clearly defined laminated margins. It exhibits unique spotted stibnite and country rock laminations within the quartz, especially where it is highly developed. High-gold grades are associated with stylolite-rich quartz veins existing as trends of visible gold grains (≤3mm in size). On its periphery there is a lower-grade selvage of sulfide dominated Au mineralization which can be up to 2m in width. The Swan structure has returned some of the highest grade intercepts on the Fosterville Licence. Subsequent drilling during 2017 reaffirmed the high-grade continuity of mineralization and increased the known extent of this highly mineralized structure, which is now defined over 570m in strike length and 390m in vertical extent. The **Swan Zone** is the highest grade mineralized zone defined at Fosterville to date and contributes 1,156,000oz at an average grade of 61.2g/t Au (588,000 tonnes) to the updated December 31, 2017 Mineral Reserve estimate making up 68% of the total in situ Mineral Reserves. The **Swan** appears to adjoin the high-grade Eagle structure at its lower edge and is mostly untested down-plunge. Continued drilling from the hangingwall drill platforms during 2018 will advance the understanding of the size and scale of this priority resource growth target.

- Continued drill definition of these structures over 2017, in combination with ore development and production exposure and reconciliation performance has reaffirmed the significance of footwall structures to the **Lower Phoenix Fault**. The defined continuity, proximity to existing Mineral Resources and high-grade tenor of these structures enhance the December 2017 Mineral Resource and Reserve position. Furthermore, mineralization on these structures is open down-plunge, providing encouraging future Mineral Resource and Mineral Reserve growth potential for the Fosterville operation.

- Drilling into the **Harrier System** over 2016 identified high-grade mineralization containing significant amounts of visible gold at depth, primarily associated with the Harrier Base structure. Resource drilling throughout 2017 continued to support 2016 results and resource confidence has further increased in this zone. In addition, step out drilling identified significant mineralization approximately 100m to the south of the June 2017 Harrier Base Mineral Resource and up dip on the Osprey structure beneath the Daley's Hill Pit indicating the potential for significant resource and reserve growth in this zone. The Harrier Base structure exhibits reverse thrust movement of approximately 60m. Visible gold is hosted within a laminated quartz-carbonate vein assemblage, which may contain minor amounts of stibnite. In the strongest mineralized zones, a broad halo of sulfide mineralization surrounds quartz structures bearing visible gold. The high-grade visible gold mineralization was first recognized at approximately the 4480mRL, a comparable elevation to where visible gold occurrences in the Lower Phoenix became more prominent. The Harrier Base mineralization is open to the south.
- There is an observed change in the nature of some of the Fosterville mineralization at depth with a number of high-grade, quartz-carbonate +/- stibnite vein hosted, visible gold drill intercepts recorded for the Swan, Eagle, Lower Phoenix, Lower Phoenix Footwall, East Dipping and Harrier Zones. Disseminated sulfide mineralization continues to persist at all depths and is relatively uniform in character. It is currently inferred that the quartz-carbonate +/-stibnite-visible gold assemblages have been emplaced at a later date to the disseminated sulfide providing an upgrade to the mineralization;
- Progressive geological interpretation has led to continued development of robust geological and resource models underpinning the Mineral Resource and Mineral Reserve estimates. The relationship between mineralization and the controlling structural/stratigraphic architecture means that quality geological interpretation is critical to producing quality resource/reserve estimates; and
- The modifying factors used to convert the Mineral Resources to Mineral Reserves have been refined with the operating experience gained since underground production commenced in September 2006. In particular, the robustness of the mining recovery and dilution estimates has improved with experience relative to the pre-mining assessments.

The following recommendations are made:

- Further growth exploration activities within the mine licence should be pursued. Given the strong understanding of geological controls on mineralization, this could have the potential to yield additional resources and reserves. Particular areas that are recommended to focus upon are the up and down-plunge extensions of the Lower Phoenix system (northwards up-plunge from 8600mN and southwards down-plunge from 6200mN);
- Exploration of the Lower Phoenix system southwards of 6200mN is technically challenging from surface due to target depths and as such Kirkland Lake Gold has commenced the development of dedicated underground drill platforms to facilitate further exploration of the Lower Phoenix system down-plunge. The current 2018 exploration budget includes development extensions of the Harrier

Exploration Drive Decline to establish drilling platforms to target Phoenix and Lower Phoenix extensions and diamond drilling from these platforms to explore these gold targets. The Harrier Exploration Drive Decline provides an ideal platform to drill test the Phoenix and Lower Phoenix down plunge and is scheduled to connect Harrier and Phoenix mine areas in early 2019. The long term benefits of this development link are significant, not only as providing a hangingwall drill platform to explore the Lower Phoenix and Phoenix extensions over a 1.5km strike extent, but also in supporting production, as it will provide an alternative ore haulage route. Total cost of this program is estimated at A$7.6M.

- Exploration of the Lower Phoenix system up-plunge, northwards of 8600mN will be progressively pursued from surface drill positions to provide satisfactory drill intercept angles. A drill section on 8700mN is planned from surface to explore the extensions of the Lower Phoenix and Lower Phoenix Footwall during 2018. The results of this drilling will determine whether subsequent drilling is proposed further to the north.
- Further work is recommended to explore for extensions of known Mineral Resources that project beyond the extent of the Mining Licence. In particular, the extent and scale of the Harrier system will be defined and resources developed in a timely manner. With an increasing grade profile identified at depth and the establishment of high-grade Mineral Reserves at lower levels in Harrier, it is strongly recommended that the down-plunge extensions of the Harrier system are further explored. The total cost of this project is estimated at A$7.7M.
- Given the potential of near mine exploration targets within the Mining Licence, it is recommended that growth drill programs are implemented in pursuit of defining potential Mineral Resources independent from current mining centers. Growth drill programs planned to be undertaken within the mining lease during 2018 include the Cygnet Drilling program, which will explore for gold mineralization footwall to the Swan Fault, Fosterville Deeps Drilling which will explore for gold mineralization at depth up to 1.2km vertically below current mining areas in the Lower Phoenix, Eastern Fan Drilling which targets projections of defined west-dipping mineralized structures up to 1.2km the east of current mining areas in the Lower Phoenix and Robbin's Hill Programs, which will continue to build an understanding of the underground Mineral Reserve potential beneath the Robbin's Hill pits. A total cost of A$5.2M is budgeted in 2018 to execute these programs.
- It is recommended that an aggressive regional exploration program be undertaken with respect to surrounding exploration leases. During the first half of 2017, Kirkland Lake Gold instigated a review of targets contained within Exploration Licence holdings and generated a proposal to spend A$9M spend over a 2-year period to advance a pipeline of regional targets. The program, termed Large Ore Deposit Exploration (LODE) aims to integrate and interpret all available geoscientific data, rapidly cover the current exploration holdings with reconnaissance exploration techniques such as soil sampling, airborne electromagnetic and gravity and advance development of prospective targets with various drilling techniques. Planning is also currently underway to progress to a 3D seismic survey. If the 3D survey proves to be successful consideration should be given to more regional 2D seismic surveys throughout the Exploration Licences. A total of A$11.6M has been estimated to undertake Fosterville LODE work during 2018.

- Growth Expensed diamond drilling is proposed for targeting extensions of known mineralized trends outside of Mineral Resources. The proposed drilling will target the extensions of Inferred Mineral Resources in both the Lower Phoenix and Harrier systems with the aim to deliver additional Mineral Resource inventory and provide definition along Mineral Resource boundaries. Total cost for this program is estimated at A$3.4M.
- Growth Capital diamond drilling for a total cost of approximately A$9.6M is proposed for the systematic expansion of Indicated Mineral Resources in the Phoenix mineralized system. The proposed drilling will target Inferred Mineral Resources, with the objective to increase resource confidence to an Indicated Mineral Resource classification to allow for Mineral Reserve Evaluation. The drilling will not only provide increased confidence in Mineral Resources which could lead to significant expansion of Mineral Reserves, but additional geological and geotechnical information ahead of mining, essential for optimizing the placement of supporting infrastructure and the effective extraction of the resource.

2 INTRODUCTION

2.1 TERMS OF REFERENCE

This technical report on Fosterville Gold Mine is to support public disclosure of Mineral Resource and Mineral Reserve estimates effective at Fosterville as at December 31, 2017. This report has been prepared in accordance with disclosure and reporting requirements set forth in the National Instrument 43-101 (NI 43-101) 'Standards of Disclosure for Mineral Projects' and Form 43-101F1, dated May 2011.

This report has been prepared for Kirkland Lake Gold, the beneficial owner of Fosterville. Kirkland Lake Gold (KL) is listed on the Toronto Stock Exchange, New York Stock Exchange and the Australian Securities Exchange. Kirkland Lake Gold is a Canadian-listed gold mining and exploration company with operating mines in Canada and Australia.

The report provides an update of the Mineral Resource and Mineral Reserve (MRMR) position as of December 31, 2017. The MRMR estimate for Fosterville is a summation of a number of individual estimates for various mineralized zones or various geographically constrained areas. All of these estimates are contained within the Mining Licence MIN5404 (Fosterville Mining Licence). Details of the locations and geographical constraints of the various mineralized zones as of December 31, 2017 are given in Section 14.

The report includes an overview of Fosterville Gold Mine, which has been compiled from Company technical reports, published geological papers and internal Mineral Resource and Mineral Reserve documents completed by members of the FGM mine geological and engineering teams. The overview includes a description of the geology, project history, exploration activities and results, methodology, quality assurance, interpretations, metallurgy, land issues and environmental information. It also provides recommendations on additional exploration drilling which has the potential to upgrade resource classifications and to augment the resource base.

Mr. Troy Fuller of Fosterville is a Qualified Person as defined by NI 43-101 and accepts overall responsibility for the preparation of sections 1-14, 17, 18.1, 19 – 27 and 28.2 of this report.

Mr. Ion Hann of Fosterville is a Qualified Person as defined by NI 43-101 and accepts overall responsibility for the preparation of sections 15-16, 18.2 and 28.1 of this report.

2.2 FIELD INVOLVEMENT OF QUALIFIED PERSONS

Ion Hann is the Mining Manager for FGM. He has over 26 years of experience in the mining industry. In this time, 13 years of relevant experience in gold mining operations has been gained at Fosterville.

Troy Fuller is the Geology Manager for FGM. He has over 20 years mining experience and has 18 years of gold operations experience in the Northern Territory, Western Australia and Victoria. Troy Fuller has managed all aspects of the geological operations for Fosterville since May 2010.

All of the Qualified Persons are based at Fosterville and through routine personal inspection have a comprehensive understanding of the property conditions, geology and mineralization, work completed and works planned /recommended.

2.3 DEFINITIONS

TABLE 2-1 DEFINITION OF TERMS

Term	Description
AAS	Atomic Absorption Spectroscopy
ABS	Australian Bureau of Statistics
AC	Air core
acQuire	acQuire - Geoscientific Information Management System database software
AEM	Airborne Electromagnetic (survey)
Ag	Silver
AHD	Australian Height Datum (mean sea level)
AHV	Articulated Hydrostatic Vehicle
ALS	Australian Laboratory Services
Aminya	Aminya Laboratory Services
Ammtec	ALS Ammtec Ltd.
AMDEL	Amdel Analytical Laboratories
AMPRD	Absolute Mean Paired Relative Difference
As	Arsenic
Au	Gold
A$	Australian Dollar
AuRico	AuRico Gold Corporation
BAppSc	Bachelor of Applied Science
Bendigo Gold Associates	Bendigo Gold Associates Ltd., owner of the FGM prior to Brunswick
BBus	Bachelor of Business
BEng	Bachelor of Engineering
BEnvSc	Bachelor of Environmental Science
BETS-SHTS	Bendigo to Shepparton power line
BHP	Broken Hill Proprietary, now BHP Billiton
Bi	Bismuth
Biomin	Biomin South Africa Pty Limited
BIOX®	Proprietary bacterial oxidation technology licensed from Goldfields Ltd.
BSc	Bachelor of Science
Brunswick	Brunswick Mining N.L., owner of the FGM prior to Perseverance
BV	Bureau Veritas Laboratory services
C$	Canadian Dollar (CAD)
BOM	Australian Bureau of Meteorology
Ca	Calcium
CCD	Counter Current Decantation
CIL	Carbon in Leach
CIL Residue	Carbon in Leach Residue. The term is equivalent to CIL Tailings.
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	Centimeter
COG	Cut-off Grade
CPA	Certified Practising Accountant
Crocodile Gold	Crocodile Gold Corporation
CRF	Cemented Rock Fill
Cu	Copper

Term	Description
DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DTM	Digital Terrain Model
E	Easting, East
EES	Environmental Effects Statement
EL	Exploration Licence
EMS	Electronic Multi-shot Survey
EPA	Environment Protection Authority
ETW	Estimated True Width
FA	Fire Assay
FAusIMM	Fellow of the Australasian Institute of Mining and Metallurgy
Fe	Iron
FGM	Fosterville Gold Mine Pty Ltd
Fosterville	Fosterville Gold Mine Pty Ltd
ft	Foot (Imperial unit of measurement)
FVTS	Fosterville Terminal Station
FW	Footwall
FX	foreign exchange currency trading market
FY	Financial Year (Canadian)
GAIG	Graduate member of Australian Institute of Geoscientists
GAL	Gekko Assay Laboratory
GDA94	Geocentric Datum of Australia, 1994
GC	Grade Control
GradDipEnvMan	Graduate Diploma of Environmental Management
GSV	Geoscience Victoria (formerly the Geological Survey of Victoria)
Gyro	Gyroscopic downhole directional survey tool
g/t	Grams per (metric) tonne
HCl	Hydrogen Chloride
HDPE	High Density Polyethylene
ha	Hectare (10,000m^2)
HF	Hydrogen Fluoride
HG	High-grade
HiSeis	HiSeis Pty Ltd
Historic Resource	A qualified person has not done sufficient work to classify historical estimates as current Mineral Resources or Mineral Reserves described within the report. Kirkland Lake Gold is not treating any historical estimates as current Mineral Resources or Mineral Reserves.
HL	Heated Leach
HNO_3	Nitric Acid
HQ	63.5 mm diameter diamond drill core
HRM	Harrier Resource Model
HVAS	High Volume Air Sampler
HW	Hangingwall
Hz	Hertz
ICP-AES	Inductively Coupled Plasma – Atomic Emission Spectrometry
Inc.	Incorporated
IP	Induced Polarization – geophysical imaging technique
ISO	International Organization for Standardization
K	Potassium
k	Thousand
Kirkland Lake Gold	Kirkland Lake Gold Limited
KL	New York Stock Exchange ticker symbol for Kirkland Lake Gold Limited
KLA	Australian Securities Exchange ticker symbol for Kirkland Lake Gold Limited
km	Kilometer
km^2	Square kilometer (area)

Term	Description
koz	Kilo ounce
kt	Kilotonne
K/Th	Potassium/Thorium ratio - relating to a 2008 airborne radiometric survey
kV	Kilovolt
kVA	Kilovolt-ampere
kW	Kilowatt
lb	Pound
LG	Low-grade
LODE	Large Ore Deposit Exploration
LOM	Life of Mine
Ltd	Limited
LQ	Laminated Quartz
LW	Leachwell accelerated cyanide leach assay method
M	Mega/Million (SI prefix; Factor 10^6)
m	Meter
µ	Micro (SI prefix; factor 10^{-6})
Ma	Million years
MAI	Managed Aquifer Injection
MAIG	Member of the Australian Institute of Geoscientists
MAusIMM	Member of the Australasian Institute of Mining and Metallurgy
MCC	Motor Control Center
mE	Meters East
mg/m^3	Milligram per cubic meter (metric unit of concentration)
MGA	Map Grid of Australia
MIN	Mining Licence
Mira Geoscience	Mira Geoscience Ltd
ML	Megalitre
ML	Mining licence Prefix (old system)
mm	Millimeter
MMI	Mobile metal ion
MMinGeoSc	Masters of Minerals Geoscience
Mn	Manganese
mN	Meters North
Mo	Molybdenum
MRMR	Mineral Resources and Mineral Reserves
mRL	Meters Reduced Level (Elevation)
MRSD Act	Mineral Resources (Sustainable Development) Act 1990 – Victoria, Australia
MSc	Masters of Science
Mtpa	Mega-tonne (metric) per annum
MVA	Megavolt-ampere
N	Northing, North
NATA	National Association of Testing Authorities
NCC	Non-carbonate carbon
New Holland	New Holland Mining Ltd., now Nu Energy Capital Limited
Newmarket	Newmarket Gold Inc.
NI43-101	National Instrument 43-101
NL	No Liability
NNE	North North-East
NNW	North North-West
NPRM	Northern Phoenix Resource Model
Northgate	Northgate Minerals Corporation Ltd
NRM	Northern Resource Model
NQ	47.6 mm diameter diamond drill core

Term	Description
NQ2	50.6 mm diameter diamond drill core
NW	North West
ODW	O'Dwyer's –what? Resource model? Line of fault/reef/gold?
ONAF	Oil Natural Air Forced – Transformer cooling without pumps and fans for air
ONAN	Oil Natural Air Natural - Transformer cooling without pumps and fans
O/O	Oblique /Oblique (structural setting)
O/P	Oblique /Parallel (structural setting)
OSLS	On Site Laboratory Services
oz	Troy Ounce (31.1034768 grams)
P	Phosphorous
PAF	Potentially Acid Forming
Pb	Lead
PF	Paste Fill
P/O	Parallel /Oblique (structural setting)
P/P	Parallel /Parallel (structural setting)
ppb	Parts per billion
PQ	85.0 mm diameter diamond drill core
PSV	Perseverance Corporation Ltd., listed parent prior to Jan 18th 2008
Q1	Quarter 1
QAQC	Quality Assurance – Quality Control
QG	Quantitative Geoscience (Geostatistical Consultants, now Aranz Geo)
QP	Qualified Person
R^2	R squared – coefficient of determination
RAB	Rotary Air Blast (drill method)
RC	Reverse Circulation (drill method)
RH	Robbin's Hill
Riffle splitter	A device comprising tiers of 'riffles' for equi-probable splitting of dry particulate matter (e.g. drill chips), each tier yields a 50:50 split.
RL	Reduced Level (elevation)
RO	Reverse Osmosis
ROM	Run of Mine
RQD	Rock Quality Designation
S	Sulfur
S	South
SAG	Semi-Autogenous Grinding
Sb	Antimony – present at Fosterville in the mineral stibnite
SD	(Statistical) Standard Deviation
SkyTEM	SkyTEM Australia Pty Ltd
SMS Operations	Swick Mining Services Operations Pty Ltd
SMU	Selective Mining Unit
SP Ausnet	SP Ausnet – Electricity Distributor
Spear Sampling	Using a tube ('spear') to collect a sample for assay from a sample bag of RC or RAB drill chips (this method is not equi-probable as it is susceptible to density segregation in the sample bag)
SPRM	Southern Phoenix Resource Model
SQL	Structured Query Language
SRK	SRK (Australasia) Consulting Pty Ltd
t	(Metric) tonne (2204.6 lb. or 1.1023 short tons)
Tailings	Ground rock and process effluents generated during processing of ore
TGC	Total Graphitic Carbon
t/m^3	Tonne per cubic meter (unit of density)
TOEC	Total Organic and Elemental Carbon
tpa	Tonnes Per Annum
TSF	Tailings Storage Facility

Term	Description
UG	Underground
US$	United States dollar
Vic	Victoria
VG	Visible Gold
W	West
WA	Western Australia
XRF	X-ray fluorescence analytical technique
YTD	Year to Date

3 RELIANCE ON OTHER EXPERTS

The Qualified Persons have prepared this report from a range of sources including their personal work, contributions, from other FGM personnel and reports from a range of external consultants. Where input has been received from these sources, the Qualified Persons have reviewed and verified the contained assumptions and conclusions. The Qualified Persons do not disclaim responsibility for this information.

Other experts which have assisted with the preparation of this report include;

Ashley Jackson (Senior Resource Geologist - Fosterville Gold Mine) BSc (Geology) MSc (Mineral Economics), MAusIMM has made contributions to Sections 10 - 12, 14.1 and 14.2 of this report.

Braden Verity (Senior Exploration Geologist – Fosterville Gold Mine) BEnvSc, GAIG has made contributions to sections 4-12 and 14.3 to 14.5 of this report.

Steve Gannon (Processing Manager – Fosterville Gold Mine) BEng has made contributions to Sections 13 and 17 and 18.1 of this report.

Jon Hurst (Mine Technical Superintendent – Fosterville Gold Mine) has made contributions to Section 15, 16 and 18.2 of this report.

Felicia Binks (Environmental Superintendent – Fosterville Gold Mine) BAppSc, GradDipEnvMan, MAusIMM has made contributions to Section 20 of this report.

Ian Holland (General Manager – Fosterville Gold Mine), BSc (Geology), MMinGeoSc, MAusIMM has made contributions to Sections 16, 21 and 22 of this report.

Craig Reid (Commercial Manager - Fosterville Gold Mine), BBus, CPA has made contributions to Sections 19 and 21 of this report.

Nathan Phillips (Exploration Superintendent – Fosterville Gold Mine) BSc (Hons), MAIG, has made contributions to Section 9

Alice Wilkinson (Exploration Geologist – Fosterville Gold Mine) BSc (Hons) (Geology) has made contributions to Sections 2, 7 and 10 of this report.

Daniel Foulds (Senior Mine Geologist – Fosterville Gold Mine) BSc (Hons) (Geology) MAusIMM has made contributions to Sections 10, 11 and 12 of this report.

Miranda McCarthy (Resource Geologist - Fosterville Gold Mine) BScAdv (Hons) (Geology) has made contributions to Sections 7 and 14 of this report.

4 PROPERTY, DESCRIPTION AND LOCATION

The FGM is located about 20km east of Bendigo and 130km north of Melbourne in the State of Victoria, Australia (Figure 4-1).

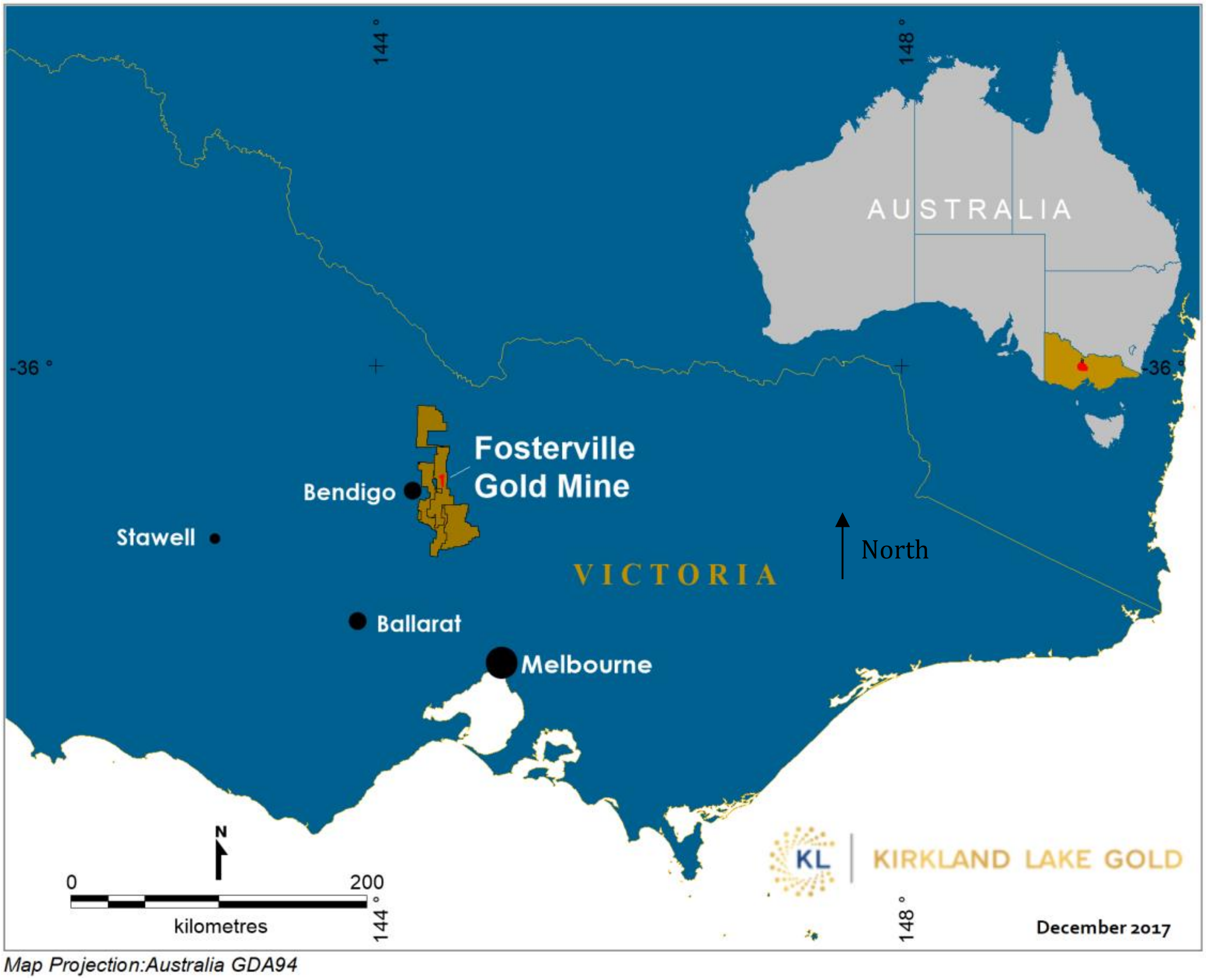


FIGURE 4-1 FOSTERVILLE PROJECT LOCATION MAP

The FGM and all associated infrastructure including the tailings dam and waste dumps are located on Mining Licence 5404 (MIN5404; Figure 4-2), which is 100% owned by Kirkland Lake Gold Ltd. MIN5404 was initially granted as ML1868 on August 24, 1990. The licence later merged with adjoining licence MIN4877, resulting in MIN5404.

In December 2012 another Mining Licence (MIN5565) was granted to FGM, and this licence was also merged into MIN5404. The present MIN5404 has a total area of 1,715.7Ha, and is active until August 24, 2020.

MIN5404 is located at centroid coordinates 276,599.72mE and 5,935,134.9mN using Map Grid of Australia (MGA) Zone 55 (GDA94) coordinate projection.

The FGM grid is an affine plane grid and can be referenced to MGA using the two reference points contained in Table 4-1 and -5000mRL (AHD). Fosterville Mine grid north is 13°20’ west from true north and 21° west from magnetic north.

TABLE 4-1 GRID CONVERSION REFERENCE POINTS

Point 1: MIN5404 Mining Licence peg SE of Daley's Hill		
Coordinate System	**N (m)**	**E (m)**
GDA94 Zone 55	5,930,837.663	278,011.932
Fosterville Mine Grid	4,786.030	2,177.630
Point 2: MIN5404 Mining Licence peg at NE corner		
Coordinate System	**N (m)**	**E (m)**
GDA94 Zone 55	5,939,047.136	278,407.302
Fosterville Mine Grid	12,713.150	4,343.140

Note that all Eastings, Northings, elevations (RL) and azimuths in the text reference the local FGM grid.

The boundaries of land covered by MIN5404 have been accurately surveyed in accordance with the Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013.

Kirkland Lake Gold also holds other titles through Fosterville Gold Mine Pty Ltd, with four Exploration licences totaling 1,351km^2, surrounding FGM. In addition, one Exploration Licence in under application to increase the area to approximately 1,850 km^2. These Exploration Licences extend beyond the entire known strike extent of the Fosterville Goldfield (Figure 4-2).

Within MIN5404, there is a 2.5% gold royalty payable to New Holland Mining Ltd, now Nu Energy Capital Limited for the area outlined by an historical mining lease MIN4877 in the northeastern portion of MIN5404. Further, the royalty agreement extends north and south of MIN5404 where previously existing tenements EL3211, EL3271 and EL3276 (New Holland Mining) overlap with a portion of EL3539 (Figure 4-2).

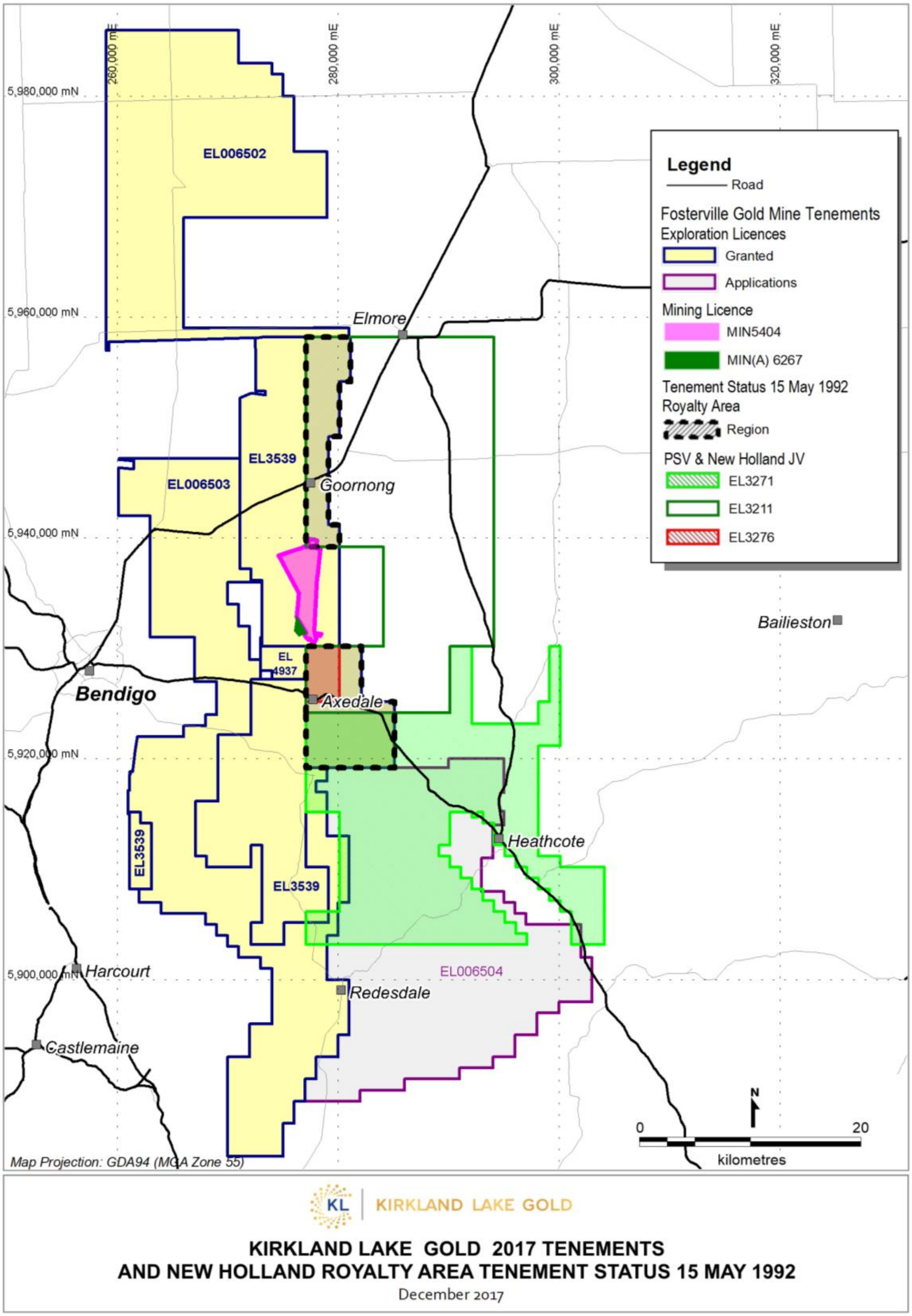


FIGURE 4-2 FOSTERVILLE MINING LEASE PLAN WITH EXPLORATION LICENCES AND ROYALTY AREAS

When Crocodile Gold acquired the Fosterville and Stawell Gold Mines from AuRico in 2012, a sharing arrangement was established where Crocodile Gold was entitled to cumulative net free cash flow from those mines of up to C$60M. Thereafter AuRico was then entitled to 100% of the next C$30M in net free cash flow, after which Crocodile Gold and AuRico would share the subsequent C$30M of net free cash flow on a 50/50 basis until C$120M of cumulative net free cash flow was achieved. After this milestone AuRico would be entitled to 20% on an ongoing basis.

On December 22, 2014 it was announced that Crocodile Gold had reached a mutually beneficial agreement with AuRico that terminated their net free cash flow sharing arrangement in exchange for a one-time payment of C$20M in cash and a net smelter return royalty of 2% from Fosterville Gold Mine (effective upon final approval from the Foreign Investment Review Board of Australia) and a 1% royalty from the Stawell Gold Mines (commencing January 1, 2016), releasing Crocodile Gold from its obligation to pay AuRico any further net free cash flow generated from its Victorian operations. This agreement is interpreted to mean that Kirkland Lake Gold is obligated to pay AuRico a net smelter royalty of 2% from Fosterville Gold Mine. However, Alamos Gold Inc (Alamos) merged with AuRico in July 2015, which has resulted in Kirkland Lake Gold now being obliged to pay the new company, AuRico Metals, the net smelter royalty of 2% from Fosterville Gold Mine.

On January 8th, 2018 Centerra Gold completed the acquisition of AuRico Metals. In terms of the Royalty payment details, nothing has changed as AuRico Metals Australian Royalty Corporation continues to exist as a subsidiary to the group.

A rehabilitation bond is reviewed regularly with the Department of Economic Development, Jobs, Transport and Resources Victoria. In December 2017 the rehabilitation bond was reviewed and increased to A$8.27M. Rehabilitation is undertaken progressively at FGM as per the mining licence conditions and the bond may be reduced on establishment that the land has been rehabilitated in accordance with the MRSD Act. That is, the land is safe and stable, non-polluting and the revegetation cover is self-sustaining. FGM is located near areas of moderate environmental significance (Mt Sugarloaf Nature Conservation Reserve), established productive farmland and is adjacent to the locally significant Campaspe River.

FGM is operating under a Risk Based Work Plan approved in October 2017 under the Mineral Resources (Sustainable Development) (MRSD) Act 1990. The newly approved Work Plan consolidated the previously approved 2004 Work Plan and all subsequent Work Plan Variations into one Risk Based Work Plan. The approval, concerning MIN5404 and MIN4456, was provided Statutory Endorsement by the Department Head of Earth Resources Regulation. Work Plan Variations are submitted when significant changes from the current Risk Based Work Plan are proposed.

MIN5404 and MIN4456 were granted prior to enactment of the Commonwealth Native Title Act of 1993 and as such are not subject to any Native Title compensation claim, now or after any future renewals.

EL3539 is also not subject to any Native Title compensation claim. EL4937 is subject to an indigenous Land Use Activity Agreement.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Fosterville area is flat to very gently undulating with a range of low, rolling hills located 2km to the west and the Campaspe River situated about 2km to the east. On MIN5404, natural surface elevations range from 150m to 185m above sea level (5150mRL to 5185mRL mine grid). Vegetation in the area ranges from native forest to established grazing pasture.

The FGM has ready access via two separate sealed roads and a variety of all-weather un-sealed roads linking to regional highways. The regional center of Bendigo is approximately 20km to the south west has a population of around 147,000 (ABS, 2017), which provides a source of skilled labor.

The climate based on 30-year temperature and humidity data (1961–1990) show FGM is located in an area that is described as having a warm to mild summers, and cold winters (BOM, 2017). Köppen classification for the same 30-year period, based on predominant native vegetation type places FGM in a temperate climate with no dry season (BOM, 2017). Median annual rainfall data over a 100-year period (1900–1999) show the major seasonal rainfall is winter dominated (wet winter and low summer rainfall; BOM, 2017). The operation is not significantly affected by climate, which allows the operation to continue all year.

Power is supplied to the site via a terminal station that was constructed by PSV in 2005. This station is connected to the 220kV transmission line that runs from Bendigo to Shepparton and traverses the southern end of MIN5404 approximately 2km south of the processing plant. There is a connection agreement in place with SP Ausnet who manages the transmission and distribution network.

A pipeline was commissioned in April 2005 that has the capacity to supply approximately 2,000ML annually, which comfortably exceeds the current plant usage of approximately 1,000ML per annum. The current arrangement for the provision of water to site is secured through a ten-year contract between FGM and Coliban Water (catchment management authority). This allows for the supply of treated waste water from the Bendigo sewerage treatment facility. This agreement follows on from a previous ten-year agreement that expired in 2016. One further ten-year contract renewal is available on expiry upon written request.

All other site infrastructure is in place and approved in the Work Plan established in April 2004.

Details of tailings storage areas are covered in sections 18.1.4 and 20.2.

The location and of the processing plant site is illustrated in Figure 18-1 and Figure 18-2. The layout of the comminution circuit allows for installation of a pebble crushing circuit, should it be required and a secondary ball mill to increase grinding circuit capacity. Space was left in the area layouts for additional tank farms and equipment to accommodate a nominal increase in plant capacity. Space exists to the east of the plant site to duplicate existing facilities to double plant throughput, if required.

Mining waste material that cannot be placed underground is brought to the surface and held within the confines of the Ellesmere Pit (Figure 18-1; Section 18.2.4). Details on the storage of historically mined waste overburden is covered in Section 20.2 and tabulated in Table 20-1.

6 HISTORY

Gold was first discovered in the Fosterville area in 1894 with mining activity continuing until 1903 for a total of 28koz of production. Mining in this era was confined to near-surface oxide material.

Aside from a minor tailings retreatment in the 1930's, the field lay dormant until 1988 when Bendigo Gold Associates recommenced gold production at Fosterville from the reprocessing of tailings. By 1989 this program had come to an end and exploration for oxide resources commenced. The leases were then acquired by Brunswick who continued exploration and in 1991 started heap leaching ore derived from shallow oxide open pits. After six months of production, Brunswick went into receivership as a result of the failure of another operation. Perseverance (PSV) bought the operation from the receivers and continued the oxide heap leach operations. PSV continued to produce between 25koz to 35koz per annum until the cessation of the oxide mining in 2001. Between 1988 and 2001, a total of 240koz of gold were poured (Roberts et al, 2003).

In 2001, PSV underwent a significant recapitalization and the focus of the company changed to developing the sulfide resource. A feasibility study investigating a combined open pit and underground mining operation feeding 0.8Mtpa of sulfide ore to a BIOX® processing plant was completed in 2003. Work on the plant and open pit mining commenced in early 2004. Commercial sulfide hosted gold production commenced in April 2005 and up to the end of December 2006 had produced 136,882oz of gold. Underground development commenced in March 2006 with first production recorded in September 2006 and significant open pit production ceasing at the end of 2007, but with minor production from open pits in 2011 and 2012. The 500,000th ounce milestone of 'sulfide' gold production was achieved in April 2011 and by the end of June 2017 'sulfide' gold production totaled 1,416,282oz.

A breakdown of open cut and underground mined tonnes and grade over the previous ten years is given in Table 6-1.

TABLE 6-1 MINED PRODUCTION DATA FOR FOSTERVILLE FOR THE PERIOD 2007- 2017

Mining Area		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Open Cut	**Tonnes (kt)**	423	-	-	-	45	75	-	-	-	-	-
	Grade (g/t Au)	2.3	-	-	-	2.8	2.6	-	-	-	-	-
Under-ground	**Tonnes (kt)**	376	512	780	729	734	729	827	786	704	692	538
	Grade (g/t Au)	4.2	4.5	4.8	5.0	5.0	4.5	4.6	4.6	6.1	7.9	16.1
Total	**Tonnes (kt)**	**799**	**512**	**780**	**729**	**779**	**804**	**827**	**786**	**704**	**692**	**538**
	Grade (g/t Au)	**3.2**	**4.5**	**4.8**	**5.0**	**4.9**	**4.3**	**4.6**	**4.6**	**6.1**	**7.9**	**16.1**

On October 29, 2007, Perseverance announced that it had entered into an agreement with Northgate Minerals Corporation (Northgate) to acquire the company via a Scheme of Arrangement. This agreement was ratified by Perseverance's shareholders and option holders on January 18, 2008 with full control passing to Northgate in February 2008.

In August 2011 Northgate entered into a merger agreement with AuRico, who assumed control of the Northgate assets in October 2011. In March 2012 AuRico and Crocodile Gold jointly announced that Crocodile Gold would acquire FGM and Stawell Mines. Crocodile Gold's ownership of FGM was achieved on May 4, 2012. In May 2015 Crocodile Gold and Newmarket Gold entered into a definitive arrangement agreement and completed a merger on July 10, 2015 to form Newmarket Gold. At the end of November 2016, Kirkland Lake Gold Inc. merged with Newmarket Gold Inc to form a new mid-tier gold company Kirkland Lake Gold Ltd.

A detailed summary of exploration and development works on the property from previous operators can be found in Section 9 and Section 10 of this report. Two historical mineral resource estimates contained within EL3539, Hallanan's and Goornong South Prospects, were reported by Perseverance in their 1999 Annual Report as shown in Table 6-2 and Table 6-3.

Kirkland Lake Gold is not treating these Historical Resources as current Mineral Resources as a QP has not done sufficient work to classify the Historic Resources, or comment on the reliability of the estimates.

TABLE 6-2 HISTORIC RESOURCE OF THE GOORNONG SOUTH PROSPECT PERSEVERANCE (1999)

Historical Mineral Resource (PSV 1999) - Goornong South Prospect									
Classification	Measured			Indicated			Inferred		
	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (Oz)	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (Oz)	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (Oz)
Oxide	216	1.3	9,300	535	1.3	23,100	32	1.6	1,700
Sulfide (High-Grade)	7	1.7	400	46	1.6	2,400	373	1.5	18,200
Sulfide (Low-Grade)	3	0.7	100	11	0.7	300	140	0.8	3,700
Total Sulfide	10	1.4	500	57	1.4	2,700	513	1.3	21,800
Total Oxide & Sulfide	226	1.3	9,800	592	1.4	25,800	545	1.3	23,500

Notes:

1. Historical Resource as reported in Perseverance Annual Report 1999.
2. Kirkland Lake Gold is not treating the historical estimate as a current Mineral Resource as a QP has not done sufficient work to classify the historical estimate or comment the reliability of the estimate.
3. Reporting lower cut-off gold grades used are ≥0.5 g/t Au for oxide, 0.5-1.0 g/t Au for sulfide low-grade and >1.0 g/t Au for sulfide high-grade.
4. Bulk Density values set to 1.8t/m³ for clay, 2.4t/m³ for oxide and 2.8t/m³ for sulfide materials.
5. Resource block grades estimated by Ordinary Kriging of 50m spaced drill sections.
6. Mineral Resources have been rounded to 1,000t, 0.1 g/t Au and 100oz. Minor discrepancies in summation may occur due to rounding.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

TABLE 6-3 HISTORIC RESOURCE OF THE HALLANAN'S PROSPECT PERSEVERANCE (1999)

Historical Mineral Resource (PSV 1999) - Hallanan's Prospect									
Classification	Measured			Indicated			Inferred		
	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (Oz)	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (Oz)	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (Oz)
Oxide	281	1.4	12,900	169	1.4	7,600	41	1.2	1,600
Sulfide (High-Grade)	89	1.5	4,400	240	1.5	11,500	521	1.7	28,600
Sulfide (Low-Grade)	35	0.8	900	66	0.8	1,600	124	0.8	3,000
Total Sulfide	124	1.3	5,200	306	1.3	13,100	645	1.5	31,700
Total Oxide & Sulfide	405	1.4	18,100	475	1.4	20,700	686	1.5	33,300

Notes:

1. Historic Resource as reported in Perseverance Annual Report 1999.
2. Kirkland Lake Gold is not treating the historical estimate as a current Mineral Resource as a QP has not done sufficient work to classify the historical estimate or comment the reliability of the estimate.
3. Reporting Lower cut-off gold grades used are ≥0.5 g/t Au for oxide, 0.5-1.0 g/t Au for sulfide low-grade and >1.0 g/t Au for sulfide high-grade.
4. Bulk Density values of 1.8t/m³ for clay, 2.4t/m³ for oxide and 2.8t/m³ for sulfide materials.
5. Resource block grades estimated by Ordinary Kriging of 25m & 50m spaced drill sections.
6. Mineral Resources have been rounded to 1,000t, 0.1 g/t Au and 100oz. Minor discrepancies in summation may occur due to rounding.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The western sub-province of the Paleozoic Lachlan Orogen in Victoria has been divided into three major fault-bounded structural zones: the Stawell, Bendigo, and Melbourne Zones (Figure 7-1a; Cayley et al, 2011). These structural zones are dominated by chevron-folded Cambro-Ordovician to Devonian turbidite sequences, and were progressively intruded by Early Silurian granite plutons in the west, through to Late Devonian granite plutons in the East (Bierlein & McKnight, 2005; Phillips et al, 2012).

The Fosterville Goldfield is located within the eastern Bendigo Zone, which is bounded by the Avoca Fault to the west and the Heathcote Fault Zone to the east (Figure 7-1b), both of which are steep west-dipping reverse faults. The Bendigo Zone contains thick Ordovician age turbidite sequences that were subjected to low-grade metamorphism during the Late Ordovician Benambran Orogeny (~455-440Ma) and the Late Devonian Tabberabberan Orogeny (~380Ma). East-vergent folding and thrusting indicates a predominantly east-west compression that resulted in the formation of north-south upright folds. Continued deformation caused steepening of fold limbs and progressive development of a series of west-dipping reverse faults. These faults are interpreted to have listric geometries at depth and were likely conduits that provided a regional control on mineralizing processes, in conjunction with intra-zonal west-dipping faults, such as the Redesdale Fault, mapped to the south of Fosterville (Cayley et al, 2008). In addition, smaller reverse faults propagated across fold limbs, linking bedded faults and are well mineralized in the style characteristic to the classic Central Victorian Slate Belt Gold Deposits of Bendigo and Castlemaine (Roberts et al, 2003).

Gold mineralization is associated with to two main events across the western Lachlan Orogen at ~445Ma and ~380-370Ma, with a possibly another minor event at ~410-400Ma (Phillips et al, 2012). The ~445Ma event is thought to have involved crustal thickening and the circulation of metamorphic fluids through the crust (Vandenberg et al, 2000) and formed gold deposits at Bendigo, Castlemaine, Maldon and Daylesford. The ~380-370Ma event is restricted largely to the Melbourne and eastern Bendigo Zones and is responsible for the emplacement of gold at the Fosterville Goldfield (Bierlein & Maher, 2001). The minor period of mineralization at ~410-400Ma is restricted to the Stawell and western Bendigo Zones and is associated with crustal anatexis and Early Devonian plutonism (Phillips et al, 2012). The two major gold mineralizing events have been linked to the Benambran and Tabberabberan Orogenies (Vandenberg et al, 2000). All three gold mineralizing events are characterized by carbonate and sericite alteration, but only the latter two events (~410-400Ma & ~380-370Ma) have elevated Mo, Cu, Sb and W. During the third mineralizing event a range of mineralization styles resulted and include quartz-carbonate vein hosted free gold through to sulfide hosted refractory gold in association with arsenopyrite, pyrite and stibnite (Roberts et al, 2003).

Deep weathering and erosion in the late Tertiary resulted in the development of a regional laterite profile with weathering locally to 50m depths.

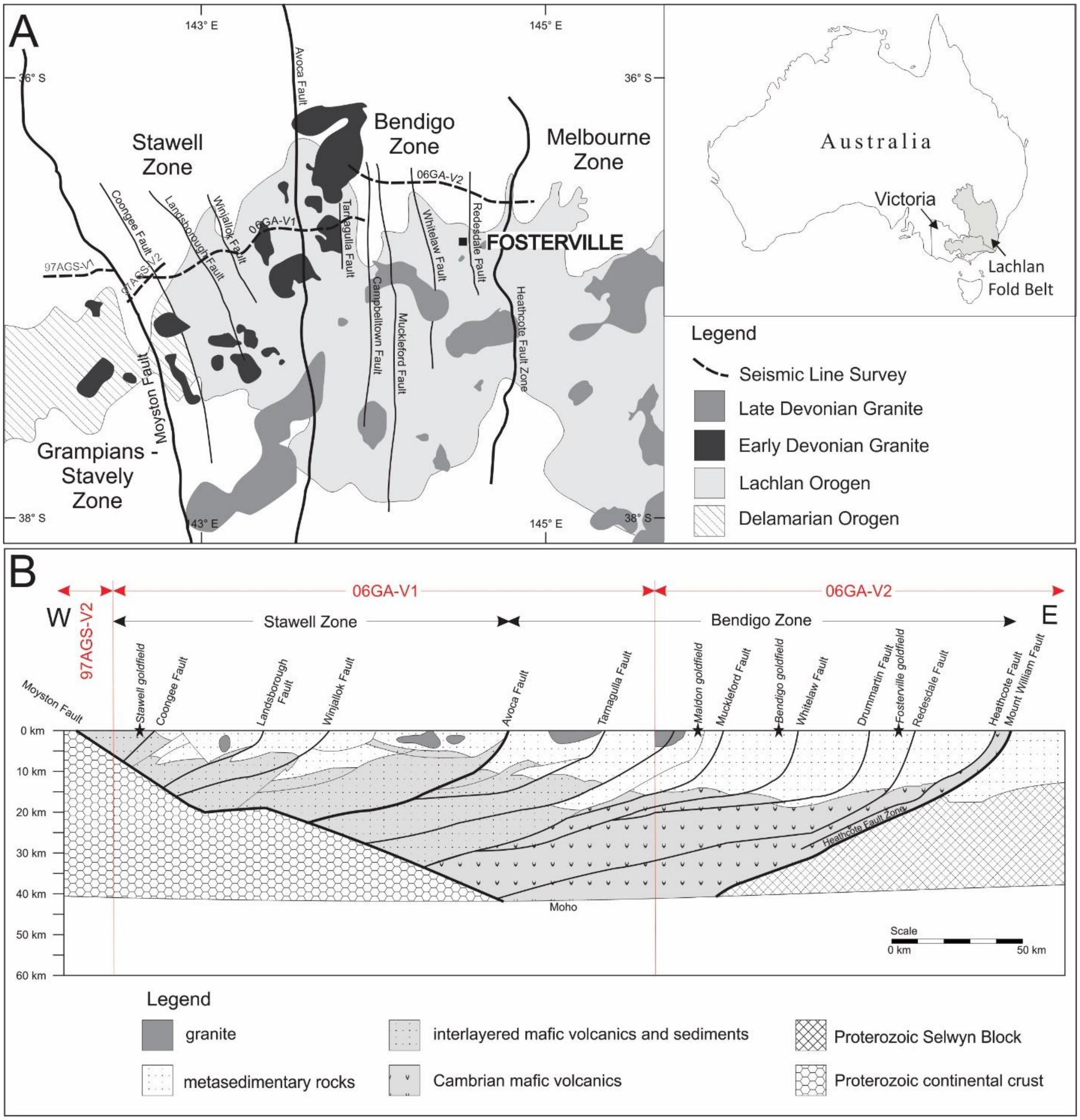


FIGURE 7-1 MAP AND CROSS-SECTION OF THE WESTERN LACHLAN FOLD BELT IN CENTRAL VICTORIA

(a) Distribution of major geologic units and major faults of the Bendigo and Stawell Zones and location of seismic lines. (b) Geological interpretation from seismic surveys. Adapted from Leader & Wilson, 2010.

7.2 LOCAL AND PROPERTY GEOLOGY

The Fosterville Goldfield within the currently held tenements is hosted by Lower Ordovician Lancefieldian (486~488 Ma) turbidites within the Ordovician Castlemaine Group rocks (Figure 7-2 and Figure 7-3). The turbiditic sequence comprises interbedded sandstones, siltstones and shales, which are interpreted as having formed in a meandering submarine channel setting. The sequence is dominated by shale topped sands, 0.2m-1.5m in thickness, with lesser amounts of massive sandstone, shale and black shale (Roberts et al, 2003). Detailed drill core logging has confirmed almost 1km of stratigraphic succession exists at Fosterville and correlation of sedimentary units has been possible over a 10km distance within the Fosterville Mining Licence (Boucher et al, 2008a).

The sequence is metamorphosed to sub-greenschist facies. Illite crystallinity studies support this observation with results falling in the range of anchizone to lower epizone (Melling, 2008). Fluid inclusion work indicates that the Fosterville Goldfield formed at ~270°C and at 2.6-5.7km crustal levels (Mernagh, 2001).

The stratigraphic sequence was folded into a set of upright chevron, occasional open style folds, with fold wavelengths up to 350m. During folding, vertical axial planar (in finer sediments) and radial cleavages (sandstones) developed and are best observed in fold hinges. Bedded LQ veins were also formed during early folding and were preferentially formed in shales.

The north-south trending Redesdale Fault (Figure 7-2), lying approximately 1.5km to the east of FGM, is an important intrazonal fault and occurs in the hangingwall of the Heathcote Fault Zone (Figure 7-1a).

Subordinate faults (third order and higher), such as the Fosterville, O'Dwyer's and Sugarloaf Faults (Figure 7-2) all have associated gold mineralization and are located in the hangingwall of the Redesdale Fault.

Within the Fosterville area the north-north-west trending Fosterville Fault is strike extensive and dips steeply west.

A fold culmination (dome) exists in the Fosterville Mining Licence in the Falcon pit area (Figure 7-3), about which a fold plunge reversal occurs. South of the culmination, folds plunge approximately 20° southwards, and a large west-dipping fold limb, containing parasitic folds and faulting has been well drilled over a 4km length to as far south as Daley's Hill. Extensive drilling focused on south plunging gold mineralization associated with late brittle west-dipping reverse faulting that offsets syncline and anticline fold closures (Figure 7-5). However, it is relatively unknown how extensive the northern fold plunge may be or whether it simply represents a local fold plunge reversal.

In the northern portion of the Mining Licence, in the Robbin's Hill - O'Dwyer's area, a number of west-dipping faults occur and parallel the Fosterville Fault. Late Silurian to early Devonian porphyry dykes (Arne et al, 1998) also occur in this area, are up to 10m in width, intrude the stratigraphic sequence, predominantly along anticlinal axial planes (King, 2005 & Reed, 2007a) and postdate all significant faulting. The porphyry dykes are sericite altered and have associated gold mineralization that was sufficient to support several oxide and minor sulfide (O'Dwyer's South) open pits.

Lamprophyre dykes, typically less than 1m in width, intrude along the general Fosterville Fault trend and are unmineralized. These dykes were emplaced in the Middle Jurassic (157-153Ma; Bierlein et al, 2001) and are of similar age to those that occur at Bendigo.

Erosion of the area followed by Cainozoic Murray Basin sediment valley backfill and weathering has resulted in local clay conglomerate alluvial channels and complete oxidation to about 40m below surface. Immediately below the base of complete oxidation is a 10-15m thick zone of partial oxidation of sulfide minerals. Feldspar destruction and partial carbonate dissolution extends from the base of oxidation to about 150m depths. Approximately 2km to the east of Fosterville Miocene aged Newer Basalt Group rocks mask the Ordovician rocks and Murray Basin Sediments.

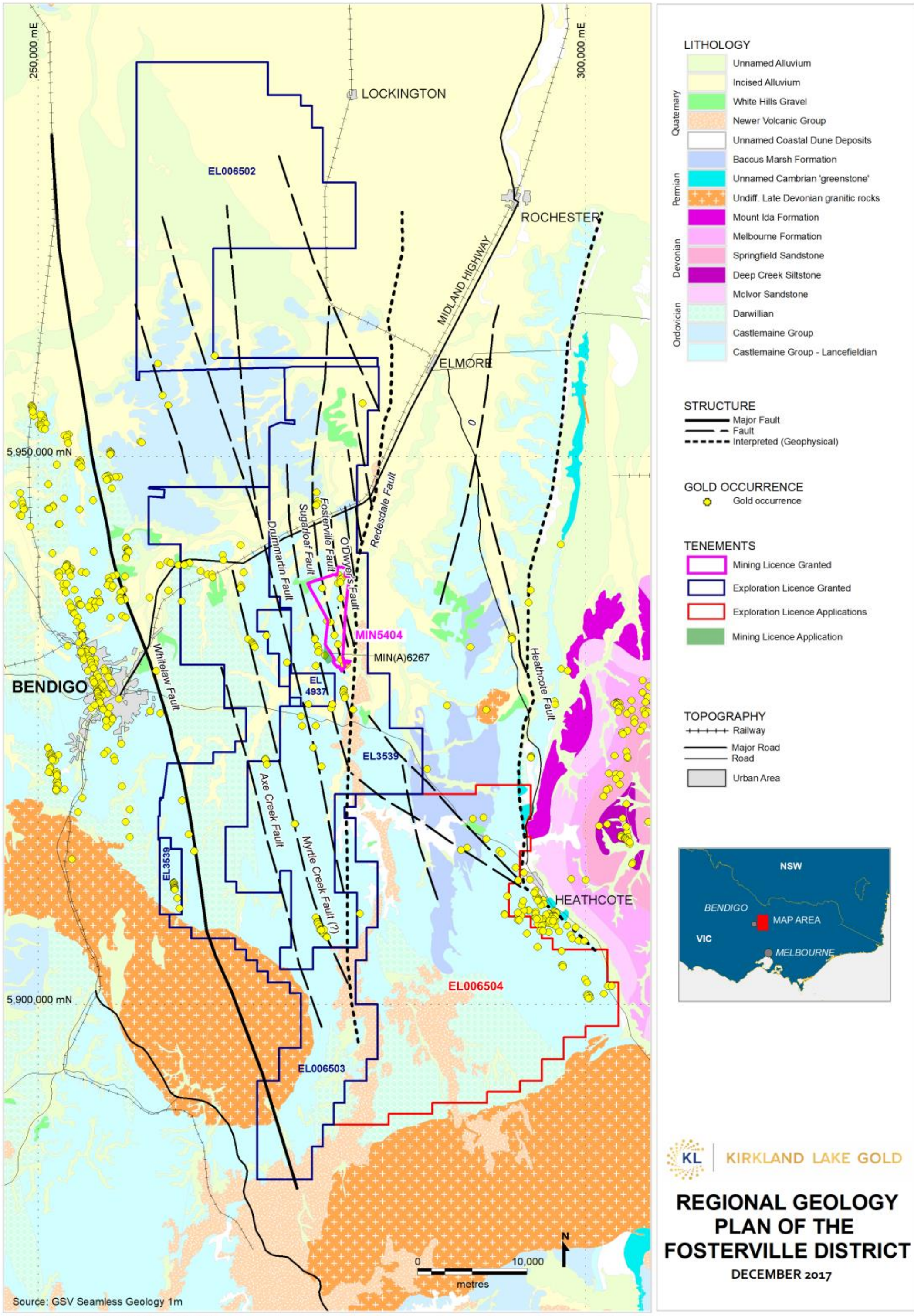
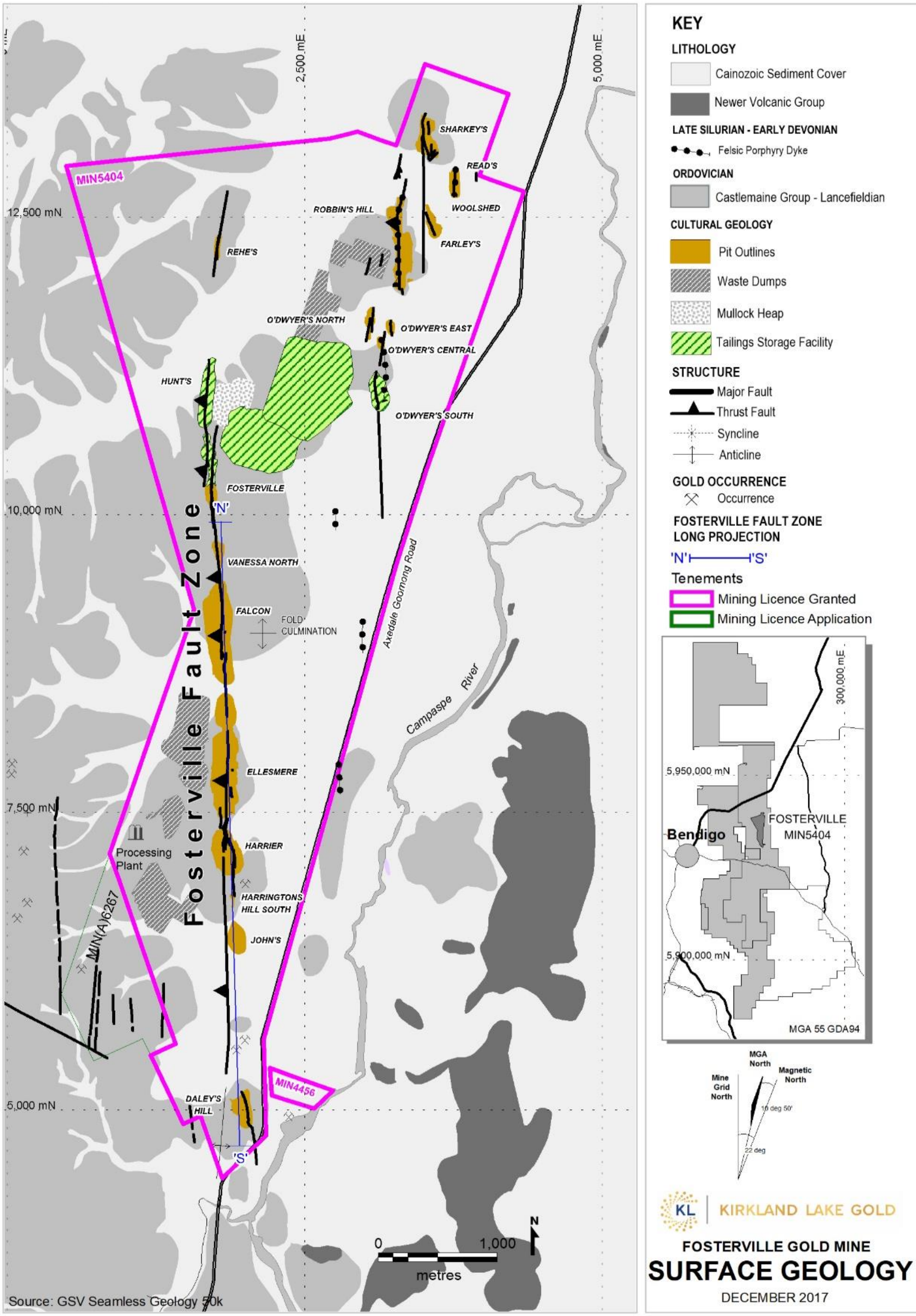


FIGURE 7-2 REGIONAL GEOLOGY PLAN OF THE FOSTERVILLE DISTRICT, SHOWING FOSTERVILLE MINING LICENCES, EXPLORATION LICENCES, OPEN PITS AND HARD ROCK GOLD OCCURRENCES



Map Projection: Fosterville Mine Grid

FIGURE 7-3 FOSTERVILLE SURFACE GEOLOGY PLAN SHOWING SURFACE MINING ACTIVITY

7.2.1 SCHEMATIC GEOLOGICAL CROSS SECTION

The geological knowledge of the Fosterville Fault Zone architecture has progressively grown over the last decade as diamond drilling explored new areas and underground mining reached deeper levels. The present understanding of the faulting is shown on schematic cross sections (Figure 7-4 and Figure 7-5). Pictured is the moderate-steep west-dipping Fosterville Fault, which has several en echelon arrays of footwall reverse faults that link across from a western anticline to a syncline in the east.

Most of the lower faults (Hawk through to Kestrel) are thought to exist as bedding parallel LQ veins at depth to the west of their respective footwall anticlines. However, eastwards between footwall and hangingwall anticlines the faults can have concordant/discordant (parallel/oblique) bedding relationships and to the east of hangingwall anticlines, the faults shallow in dip and have discordant contacts with adjacent bedding. When certain stratigraphic units are encountered across the east-dipping limb, conjugate east-dipping structures form, creating zones of greater structural complexity. Further eastwards the single stranded west-dipping faults become an unmineralized zone of distributed faults for 50-100m, before merging into a single fault, approximately 50m west of footwall synclines. East of the footwall syncline the faults' dip steepens, matching the dip of the footwall bedding. Between footwall and hangingwall synclines, faults have discordant/concordant bedding relationships and to the east of the hangingwall syncline the faults exist as bedding parallel LQ veins, commonly with pug on one margin.

Structurally higher level faults such as the Harrier and Osprey Faults appear as footwall faults splaying from the footwall of the Fosterville Fault.

The schematic cross section portrays a number of fault segments where gold mineralization occurs and includes examples of areas of fault-bedding discordant relationships, changes in fault dip and localization of mineralization between hangingwall and footwall synclines, and between hangingwall and footwall anticlines. In particular, the Phoenix Fault System is an important structure at Fosterville for gold mineralization. It has 120 to 150m of reverse offset and as underground mining has progressed to deeper levels, faulting has become more complex. Nearer to surface the Phoenix Fault was a relatively narrow west-dipping reverse fault. However, down-plunge the faulting changes to also include mineralized hangingwall splay faulting and west-dipping footwall faults emanating from bedding parallel LQ veins.

Other faults at structurally higher positions have comparable fault offset and are well mineralized. These include the Harrier and Osprey Faults (exposed at Harrier Pit) that are footwall splays of the Fosterville Fault. The faults have over 200m of combined reverse movement, and are mined at the southern end of the Mining Licence.

Where wall rocks are faulted and brecciated, fractures are healed by quartz-carbonate veining and commonly have arsenopyrite and pyrite disseminated in the wall rock up to 0.5m from the veins. The wall rock proximal to faults is also sericitized, sometimes with visually subtle alteration, and has similar spatial extents to the gross disseminated sulfide distribution. Bedded faults exist as bedding parallel LQ veins and are thought to have formed during ductile deformation. As such they pre-date mineralizing events and are generally poorly mineralized.

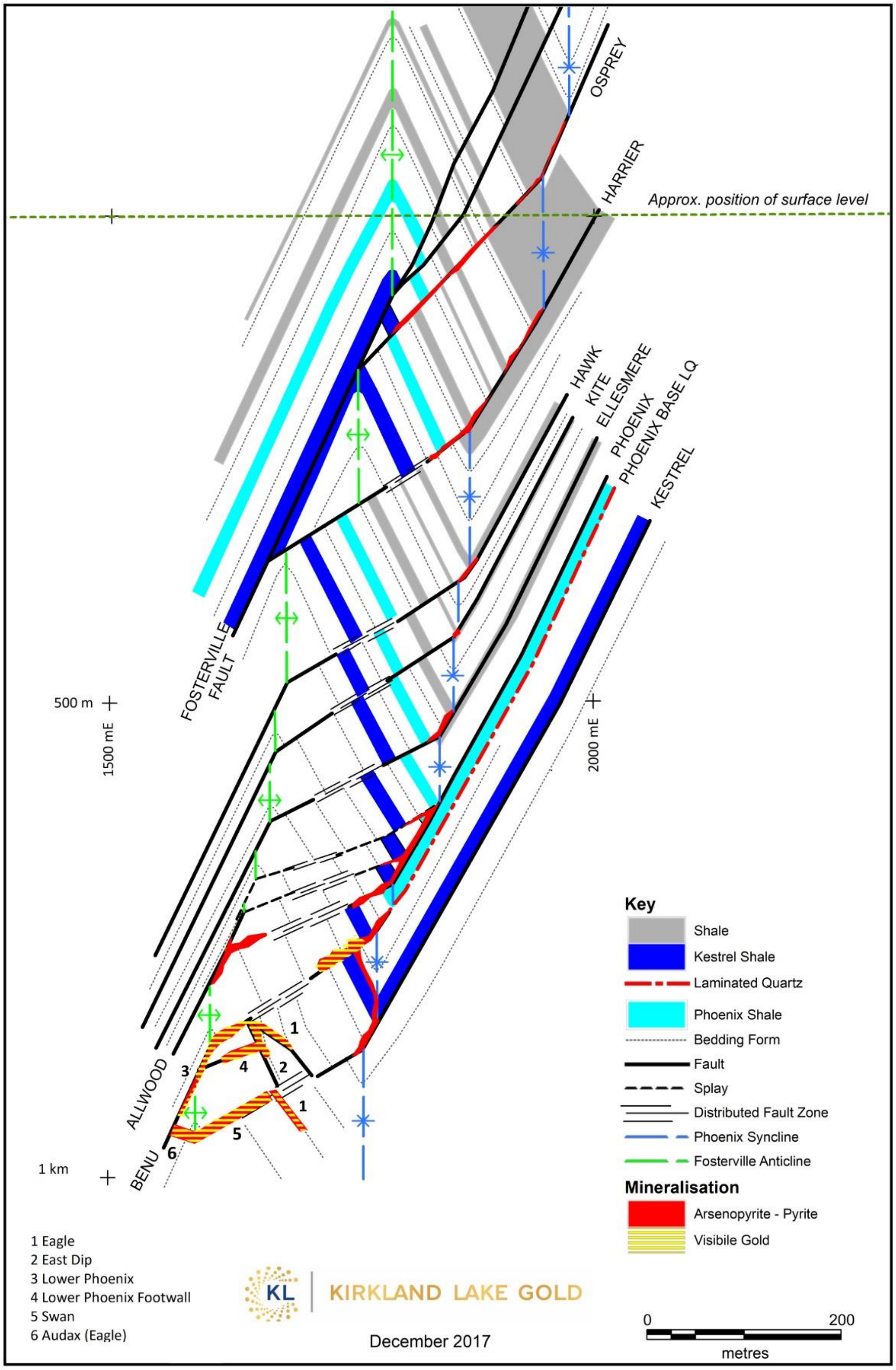


FIGURE 7-4 FOSTERVILLE FAULT ZONE SCHEMATIC CROSS SECTION

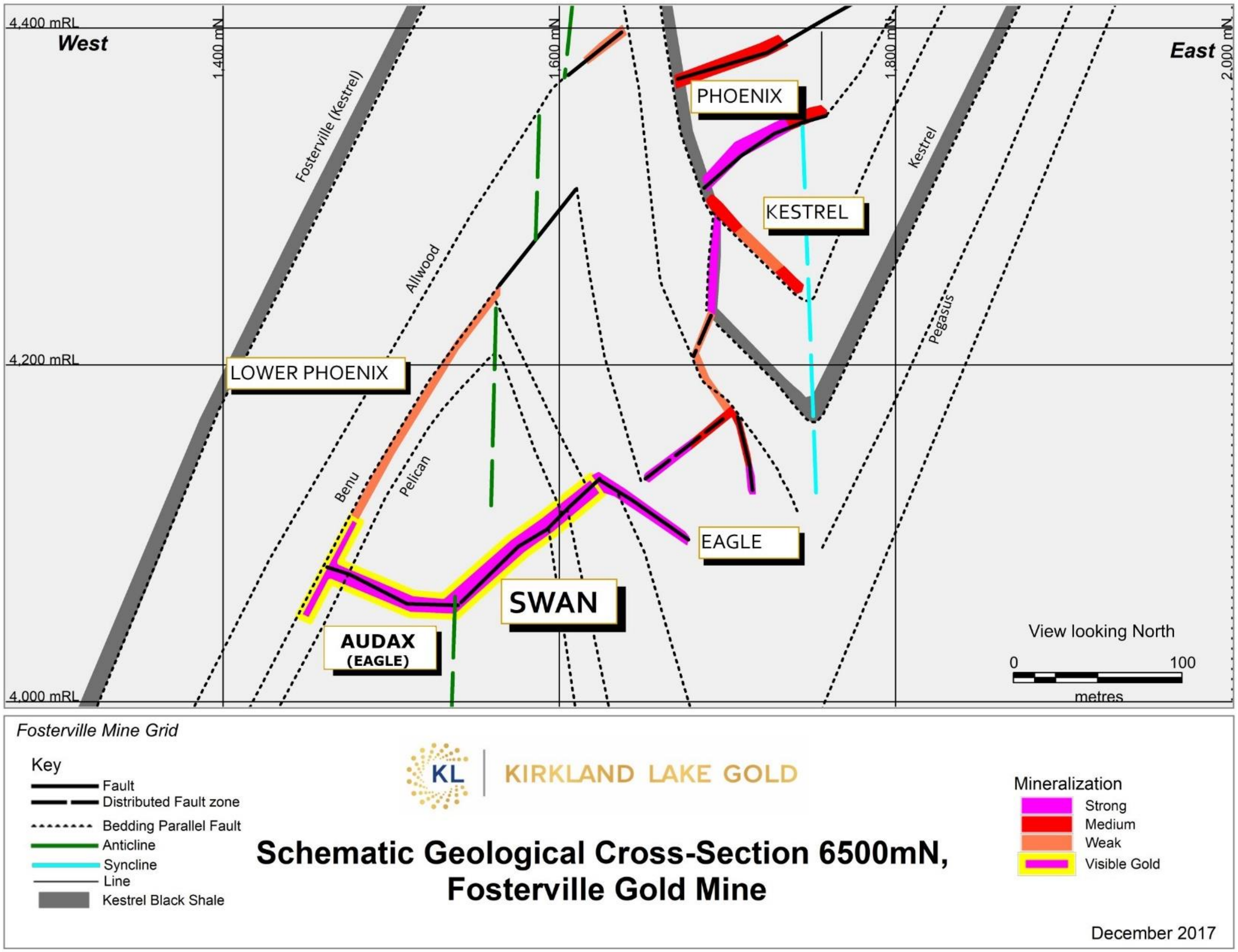


FIGURE 7-5 SCHEMATIC GEOLOGICAL CROSS-SECTION OF 6500mN

7.3 MINERALIZATION

Gold is presently mined in two forms at FGM: Sulfide-Hosted Gold and Visible Gold.

Sulfide-Hosted Gold

Mineralization at FGM occurs mainly as gold atoms trapped within the crystal lattice of disseminated arsenopyrite and pyrite (sulfides). These sulfide minerals precipitate in the wall rock as selvage alteration proximal to veins that penetrate the host rock. Associated alteration mineralogy within veins is mainly euhedral to amorphous quartz-carbonate, with minor amorphous albite-chlorite-epidote.

Arsenopyrite crystals occur as 0.05-6mm long acicular needles in random orientations. The disseminated pyrite associated with gold mineralization occurs as crystalline pyritohedrons 0.1-2mm in size. Electron microprobe analyses and metallurgical test work indicates that the arsenopyrite contains 100-1,000 g/t Au and the auriferous pyrite 10-100 g/t Au (Roberts et al, 2003). Approximately 80% of sulfide-hosted gold occurs in arsenopyrite, with the remaining 20% hosted by pyrite.

The quartz–carbonate veining forms in several styles that range from isolated veins through to stockwork veining. The quartz–carbonate veining is barren of sulfide gold. Broad zones of sulfide selvage altered zones are located where stockwork veining occurs. This can allow a pervasive body of sulfide mineralization in the wall rock around that stockwork veining to form, with widths up to several meters.

Visible Gold

Visible gold has been observed in all areas of the underground workings at FGM and in some open cut pits within the MIN5404 lease.

Visible gold is observed within quartz-carbonate veins, with a noticeable increase in recent years as underground mining and diamond drilling has advanced deeper. Visible gold particles are predominantly specks (up to 3mm), however more rarely they can be > 5mm as seen in drill core, underground development face/wall mapping, and stope sampling. The width of quartz-carbonate veining that contain visible gold is variable, with widths ranging from a few millimeters to several meters (true thickness). The veins usually have incomplete infill with druse quartz within those voids. Visible gold can be found as specks in narrow linear trends as well as isolated specks without a clear trend (Figure 7-7). Alteration mineralogy associated with veins that host visible gold includes quartz - carbonate (ankerite), with minor occurrences of fibrous boulangerite ($Pb_5Sb_4S_{11}$) as inclusions in euhedral quartz or as fibrous growths within void spaces. Selvage sulfide alteration can be present, proximal to veins hosting visible gold.

The visible gold has a spatial association with stibnite (Sb_2S_3). However, the stibnite mineralization can occur without visible gold (Henderson, 2014). The rationale for the one-way correlation is likely due to the stibnite mineralization occurring in different events, but utilizing the same structurally favorable locations. Stibnite mineralization is observed in all areas of the underground workings at FGM and has historically/previously been observed in some open cut pits within MIN5404. Figure 7-6 illustrates antinomy mineralization within an east-dipping quartz-carbonate vein.

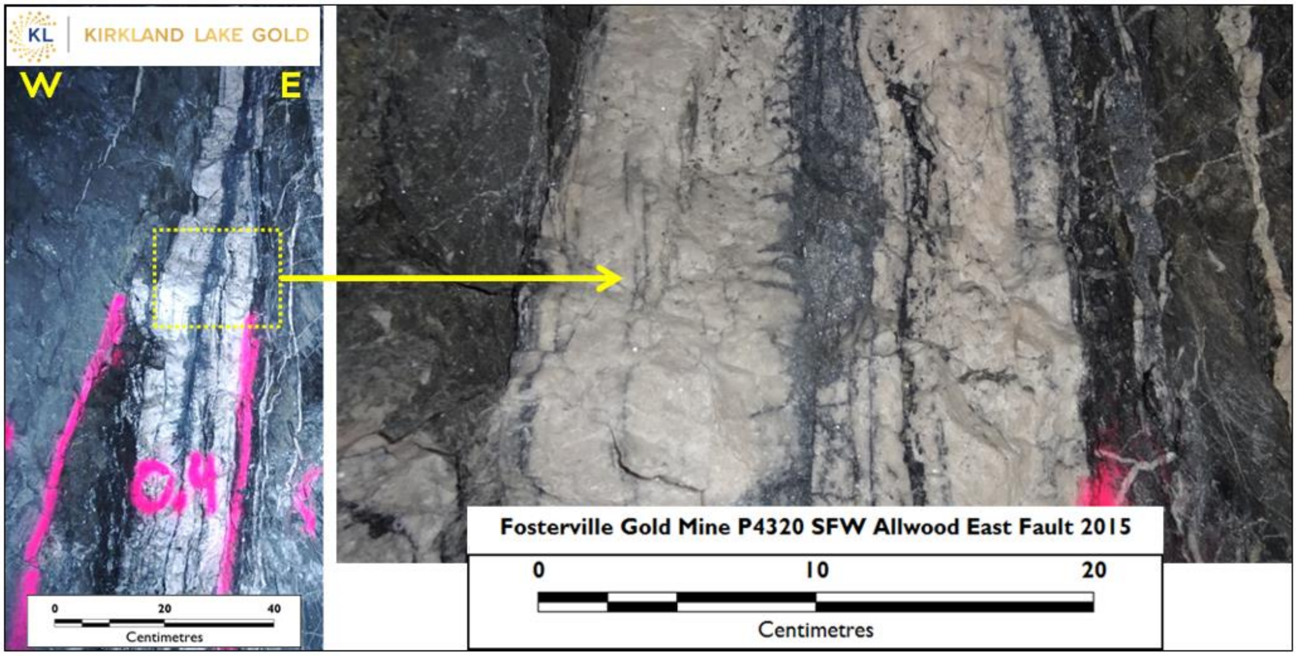


FIGURE 7-6 UNDERGROUND FACE PHOTO OF THE P4320 SOUTH FOOTWALL DEVELOPMENT SHOWING STIBNITE OVERGROWTH OF QUARTZ CARBONATE VEINING ON THE ALLWOOD EAST FAULT

FIGURE 7-7 DRILL CORE FROM HOLE UDH1817 SHOWING VISIBLE GOLD IN A QUARTZ-CARBONATE VEIN

Framboidal pyrite aggregates (≤50mm in size) and laminations of pyrite (≤20mm widths) are common in the stratigraphic sequence, especially in black shale units. The framboidal pyrite is diagenetic and drill core assaying of this material regularly returns grades <5ppb Au.

Other sulfides present at FGM in small quantities include galena, sphalerite and chalcopyrite, boulangerite ($Pb_5Sb_4S_{11}$) and rarer still are tennantite ($CuFe_{12}As_4S_{13}$), tetrahedrite ($CuFe_{12}Sb_4S_{13}$), and bournonite ($PbCuSbS_3$), which have been reported in processing plant sulfide concentrates (McArthur, 2012; & Townsend, 2009)

Silver grades are low at Fosterville; usually about one tenth of the gold grade with only ~1% silver commonly in poured gold doré in the early years of sulfide gold operations. However, the silver content in poured doré has gradually increased to the present ~4% silver levels and may be related to the gradual increase in contribution of visible gold that is mined.

7.4 CONTROLS ON GOLD MINERALIZATION

At Fosterville sulfide gold mineralization is structurally controlled and localized by the discordant relationship between bedding and faulting (Figure 7-4). Gold mineralization is more continuous and of higher grades in fault zones where east-dipping beds occur adjacent to west-dipping footwall beds across faulting, such as along the Phoenix Fault (Boucher et al, 2008a), i.e.: discordant-concordant structural setting (locally termed oblique/parallel or parallel/oblique). Mineralized shoots are typically 4-15m thick, 50m-150m up/down-dip and 300-2,000m+ down-plunge (Figure 7-8). Sulfide gold grades are relatively smoothly distributed with both extremely high values and extremely low values being uncommon.

There are four geometric bedding-fault relationships present at Fosterville; primarily created through the interaction of west-dipping faulting that links across fold closures, from an anticline in the west to a syncline in the east. The four bedding relationships across a fault are locally referred to as parallel/parallel, parallel/oblique, oblique/oblique and oblique/parallel structural settings. These are briefly described below:

- **Parallel/Oblique (P/O)** setting is where hangingwall bedding is parallel to the fault, but the footwall bedding is at an oblique angle (discordant) to the fault. Parallel/oblique settings occur at Fosterville where a west-dipping fault offsets a footwall anticline axial plane. This structural setting is generally well mineralized**;**
- **Oblique/Oblique (O/O)** setting is where bedding in both the hangingwall and footwall is oblique to faulting. Oblique/oblique settings occur where a west-dipping structure passes through east-dipping bedding between the hangingwall anticline and footwall syncline axial planes. This structural setting is variably mineralized;
- **Oblique/Parallel (O/P)** setting is where bedding hangingwall to faulting is oblique to faulting and the footwall bedding is parallel. Oblique/parallel settings occur at Fosterville where a west-dipping fault offsets a syncline axial plane. This setting is also generally well mineralized; and
- **Parallel/Parallel (P/P)** setting is where the bedding in the hangingwall and footwall is parallel (concordant) with faulting. This setting was once thought to be non-prospective for sulfide gold mineralization, however, recent developments have shown that economic mineralization can form in parallel/parallel setting where the stress between slipping beds can form stacked vein arrays that form perpendicular to the bedding orientation, termed ladder veins. Visible gold and stibnite can also form within veins constrained by bedding units giving another mechanism for parallel/parallel mineralization.

The controls on visible gold mineralization are less well tested compared with sulfide-hosted gold, however, general observations suggest that visible gold is focused along reactivated faults where sulfide hosted gold mineralization is located. Visible gold is generally found in higher concentrations on faulting proximal to anticline hinges. The Eagle Zone has a fault (Audax Fault) with an orientation that is east-west striking, and steeply south plunging, which is significantly different to all other mineralized faults at FGM. It would appear that this orientation has a strong control on visible gold mineralization, however, this is yet to be tested in other areas within FGM. The Swan Fault is uniquely flatter in dip (45-60°) and rotated to a more northwesterly orientation than the well-known Fosterville Fault Zone faults such as Benu and Kestrel. These noticeably different fault orientations around the Swan Zone mineralization are likely to strongly influence the degree of visible gold seen.

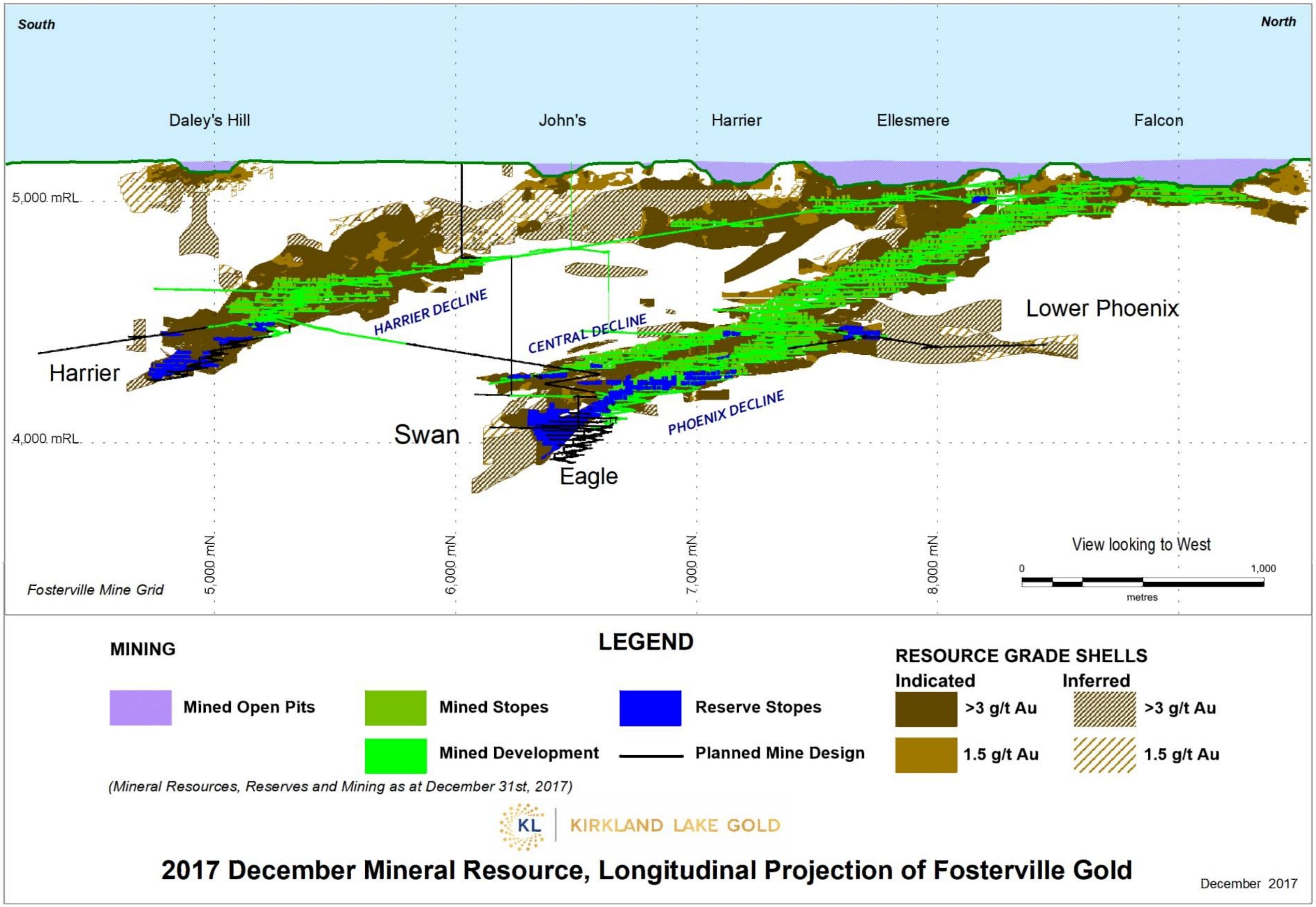


FIGURE 7-8 FOSTERVILLE FAULT ZONE LONGITUDINAL PROJECTION SHOWING RESOURCES, RESERVES, MINING AND TARGET AREAS

7.5 FOSTERVILLE FAULT ZONE

The Fosterville Fault Area represents a linear trend of gold mineralization within MIN5404 extending from Daley's Hill in the south to Rehe's pit in the north (Figure 7-3).

Early deformation of the sedimentary packages developed laminated quartz veins proximal to shale packages that were susceptible to accommodation flexural slip. Due to the brittle and ductile contrast between quartz and shale packages, compressive forces have focused fault movement along these zones. Faulting has added re-mobilized carbon sourced from carbonaceous sedimentary units and from deep-seated structurally induced fluid flow. As deformation intensified these preserved shale laminations became nucleation points for brittle fault failure across east-dipping bedding. The accommodation of strain between the syncline and anticline provided a fault mesh as a complex interplay between east and west-dipping faults. From 9000mN to 7500mN, this interplay was largely not recognized due to the short eastern limb length. Over this northing range most of the compressive force was accommodated by large fault offsets of the Fosterville and Phoenix Faults. As exploration continued south, the syncline and anticline appeared to diverge subtly from one another, increasing the eastern limb length. Force accommodation between the zones had longer distances to cut across, resulting in faulting that has reduced measurable offset.

The result of the reduced offset appears to have an effect on how the east-dipping rocks accommodated faulting at depth, with ladder vein systems opening in bedding parallel zones along shale boundaries. Fluids utilizing these pathways were not constrained to one pathway as seen in the Phoenix and Falcon Zones, but used a diverse network including fold-hinges, sedimentary units and contacts as well as east- and west-dipping faults. There also appears to be an element of fluid pressurization injecting up-plunge, seeking lower pressure environments.

This fluid pressurization appears to be strongly coincident with the increase in veining that contains quartz, stibnite and visible gold at depth. Veining can be several meters thick, often stylolitic, and suggests an element of hydraulic fracturing, which acts as a trap. This occurs in the Eagle / Lower Phoenix interaction zone around the Fosterville Anticline.

Along the mineralized trend at approximately 8800mN (Falcon Pit area), a fold culmination (dome) occurs. The culmination causes plunge reversals to both folds and mineralization, and to the north of the culmination, the footwall syncline and mineralization shoots plunge gently to the north. Similarly, south of the culmination, the footwall syncline and mineralization shoots plunges approximately 20° southwards.

The Fosterville Fault Zone consists of ten primary and eight secondary Mineralized Zones (Table 7-1).

TABLE 7-1 FOSTERVILLE FAULT ZONE PRIMARY AND SECONDARY MINERALIZATION ZONES

Fosterville Fault Zone Mineralization Zones	
Primary	**Secondary**
Phoenix	Splays
Falcon	Ellesmere
Harrier	Vulture
Lower Phoenix	Osprey
Lower Phoenix Footwall	Robin
Eagle	Raven
East Dippers	Shamrock
Allwood	Griffon
Kestrel	
Swan	

7.5.1 CENTRAL, NORTHERN AND LOWER PHOENIX DOMAINS

Based on observed variations in geology, orientation, variography, geochemistry, statistics and spatial location within the Fosterville Mine Area, mineralization in the Central, Northern and Lower Phoenix Areas has been divided into 23 distinct domains, two redundant and one common domain shared with the Harrier Area, detailed in Section 7.5.2.

Domains are created due to the identification of a unique set of parameters that are coincident with economic mineralization traced through a number of drilled sections. Unique parameters may include the presence of a defining structure (Fosterville Fault, Phoenix Fault, Benu Fault, etc.), consistent orientation along strike and dip, mineralization style (disseminated sulfide, massive stibnite or visible gold), spatial location or geological setting (hinge, oblique/oblique, parallel/parallel, parallel/oblique, oblique/parallel, etc.). Surrounding all the mineralized domains is a waste domain that was used to generate the waste gold grades in the immediate vicinity of the mineralization.

Broader zones of mineralization have been defined in the Central Area and each of these zones may consist of multiple domains. Below are descriptions of the mineralized zones within the Central Area.

TABLE 7-2 MODEL DOMAINS, CODES AND ASSIGNED MINERALIZED ZONES

Domain Classification			
Model	**Domain Name**	**Domain Code**	**Mineralized Zone**
Central	Fosterville HG	1	Falcon, Vulture, Ellesmere
	Fosterville LG	2	Falcon, Vulture, Ellesmere
	Phoenix HG	3	Phoenix
	Phoenix LG	4	Phoenix
	Splay HG	5	Splays
	Splay LG	6	Splays
	Kite	7	Splays

Domain Classification			
Model	**Domain Name**	**Domain Code**	**Mineralized Zone**
	Kite LG (redundant)	*8*	*Splays*
	Raven (redundant)	*9*	*Raven*
	Vulture	10	Vulture
	Harrier OP	11	Harrier
	Phoenix Base	12	Phoenix
	East Dippers	18	East Dipper
Lower Phoenix (Northern and Southern)	Audax	1	Eagle
	Phoenix HG	3	Phoenix
	Splay HG	5	Splays
	Splay LG	6	Splays
	Allwood	8	Allwood
	Vertical	9	East Dipper
	Benu W1	10	Lower Phoenix Footwall
	Swan	11	Swan
	Phoenix Base	12	Phoenix
	Benu	13	Lower Phoenix
	Benu FW	14	Lower Phoenix Footwall
	Kestrel	15	Kestrel
	Bedded East	16	East Dipper, Kestrel
	Shallow East Dippers	17	East Dipper
	East Dippers	18	East Dipper, Eagle
	Eagle	20	Eagle
	Allwood East	21	Eagle
	Audax FW	22	Eagle
	Phoenix Base FW	23	Phoenix
Northern	Fosterville HG	1	Falcon, Vulture, Ellesmere
	Fosterville LG	2	Falcon, Vulture, Ellesmere
	Phoenix HG	3	Phoenix
	Splay LG	6	Splays
	Griffon	7	Splays

Phoenix

The Phoenix Mineralized Zone is situated within offset zones of Phoenix Syncline Hinge created by faulting within the Phoenix Shale package. Faulting that occurs at the top of the approximate 8m, moderately sericitized shale package, is defined as the Phoenix Fault, with the Phoenix Base Fault occurring towards the base before transition into undifferentiated sandstones.

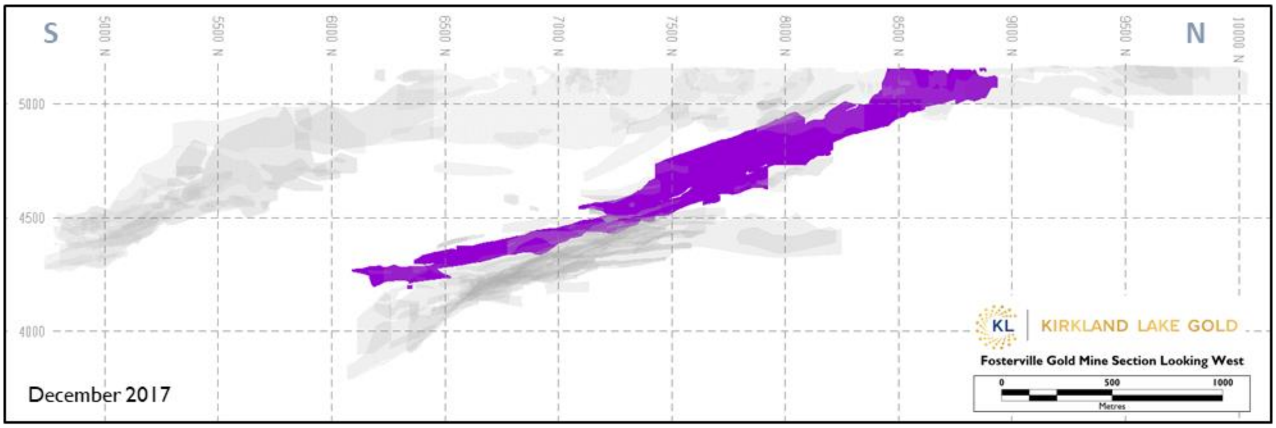


FIGURE 7-9 LONGITUDINAL PROJECTION OF THE PHOENIX MINERALIZED ZONE (PURPLE)

Movement and fluid generation for the Phoenix Fault appears to nucleate from the Fosterville Anticline as west-dipping faulting branches through east-dipping beds (Figure 7-4). This fault movement creates an offset of the syncline hinge resulting in wall rock brecciation and permeation of mineralized fluids into the surrounding country rocks. Brecciation and economic mineralization appear to cease as the system encounters the hangingwall offset of the syncline hinge sending the fluid into parallel bedding and limiting sulfide dissemination.

The mineralization in the Phoenix Domain plunges 15° to 20° to the south. Mineralization on the Phoenix Fault is consistent in width and geometry-dipping 45° to 65° to the west with an internal high-grade shoot geometry that plunges roughly 70° to the south with a strike length of 30m to 40m and a width up to 20m.

The high-grade shoot geometry, believed to be related to subtle strike changes to the Phoenix Fault, appears also to be periodic in occurrence with a shoot occurring around every 200m between 7300mN and 8200mN. Syncline offset on the Phoenix Fault ceases around 7085mN with movement and mineralization transferring to Phoenix Base Fault from the 8212.5mN section becoming more evident from 7537.5mN (Figure 7-9).

Mineralization associated with the Phoenix Base and Phoenix Footwall Faults occurs south of 7337.5mN and remains open down-plunge. The Phoenix Base area differs slightly to the Phoenix as fluid flow and fault movement appear to be related to compressive compensation of the Phoenix Syncline Hinge along the Kestrel Shale package. Current faulting mechanisms suggest that as the Phoenix Syncline Hinge is squeezed by East-West regional compression, a pervasive low angle structure (~35°) links from the Eastern limb of the Kestrel Shale package across to the Phoenix Base laminated quartz vein with ~30m of movement at its maximum. Sulfide mineralization appears to be sourced from gold-bearing fluid migration up the Phoenix Syncline Hinge.

South of 6360mN an apparent change in orientation has been noted on the Phoenix Base fault, striking in a more south southeast direction, with the dip steepening to ~60°. This change appears to correlate with the development of a parasitic syncline-anticline pair on the western limb of the Phoenix FW Syncline.

Lower Phoenix

The Lower Phoenix Mineralized Zone encompasses mineralization that is directly related to the west-dipping faulting associated with the Benu sedimentary strata package below 4500mRL. Source mineralization is interpreted to migrate up the system from deep intersections with other mineralized structures including potential hinges and other proximal oblique structures. Fluids utilize fault and fracture pathways to migrate up-plunge and dip towards the Fosterville Anticline before linking across to a zone of distributed faults, which eventually re-forms up-dip into the Phoenix Zone.

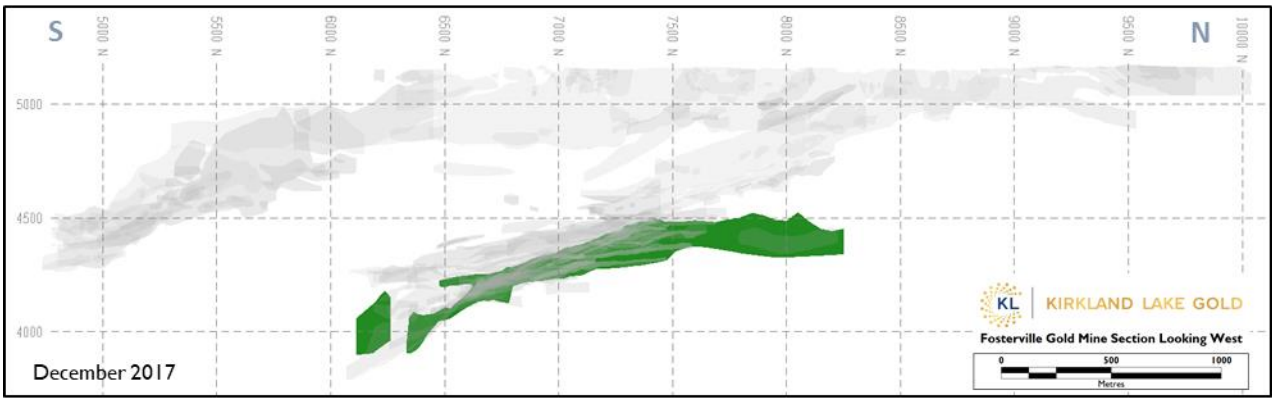


FIGURE 7-10 LONGITUDINAL PROJECTION OF THE LOWER PHOENIX MINERALIZED ZONE (GREEN)

The Lower Phoenix is defined by west-dipping faulting on the Benu Shale sequence and associated west-dipping strata where an anticline has thrust displacement of approximate 80m. Components of mineralization can also be traced up-dip into east-dipping stratigraphy and down-dip into parallel-bedded zones giving a maximum dip extent of 190m. The system currently remains open to the north and south and maximum plunge extent has not yet been characterized.

The system orientation is predominately controlled by west-dipping bedding orientation giving the zone a similar structural orientation to that of both Phoenix and Falcon Zones with a strike of ~355°, a general plunge of ~20°S and a dip of 55°W in parallel/oblique settings, but shallowing to 35°W dip in oblique/oblique settings.

To the south of the Lower Phoenix, mineralization is strongly influenced by the intersection with the Eagle System where faulting appears to cross-cut west-dipping bedding strata providing an environment where parallel/parallel economic mineralization occurs to the north and up-plunge of this intersection.

Extension drilling programs during 2018 are planned to test up and down-plunge components to the ore zone, which presently remain unconstrained by drill data.

Lower Phoenix Footwall

The Lower Phoenix Footwall Mineralized Zone encompasses mineralization that is associated with west-dipping structures footwall to the Lower Phoenix System below 4500mRL.

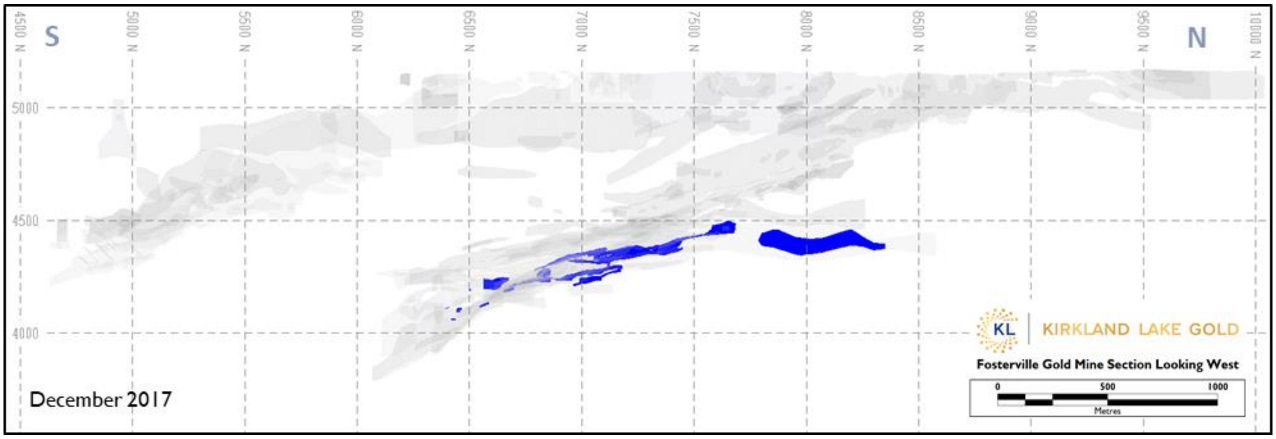


FIGURE 7-11 LONGITUDINAL PROJECTION OF THE LOWER PHOENIX FOOTWALL MINERALIZED ZONE (BLUE)

Mineralization domained within the Lower Phoenix FW (Figure 7-11) is interpreted to be due to low angled structures that largely have minimal offset but have been hydraulically fractured by gold bearing fluids, though down below the Eagle System the structures appear to accommodate more significant movement, such as on the Swan Fault, which has at least ~20m of thrust offset. The hydraulically fractured zones can create large quartz carbonate veins that can be several meters wide in true thickness. The presence of multiple laminations within the quartz veins indicates a series of fault events with differing geochemistry including later stage quartz-stibnite mineralization associated with visible gold.

The vein systems are interpreted to migrate across east-dipping stratigraphy, appearing to terminate on prominent stratigraphic shale units such as the Kestrel East, Pegasus East and Allwood East LQ veins. The vein and mineralization termination is due to mineralizing fluids moving out of an oblique/oblique setting as the structure cuts across beds into a parallel/parallel setting as fluids readily escape into the east-dipping bedding parallel laminations.

Swan

The Swan Mineralized Zone (Figure 7-12) is situated within the Lower Phoenix System below the 4300mRL and is genetically linked to the network of hydraulically fractured quartz veins in the Lower Phoenix. The west-dipping Swan Fault exists as an oblique structure cross-cutting the eastern limb of the anticline (Figure 7-4 and Figure 7-5) and is bounded by the Audax Fault down-dip and the Kestrel Syncline at its upper margin. Unlike the significant west-dipping faults such as the Fosterville Fault that follow stratigraphic units the Swan Fault cross cuts stratigraphic units, striking approximately 150° (mine grid). This geometry sees the structure splay off the Benu and migrate from the Lower Phoenix Anticline in the north towards the Kestrel Syncline in the south. More significantly, the Swan Fault exhibits a rotational displacement increasing to the south, which suggests the Swan represents a short-lived late-stage accommodation structure within The Lower Phoenix System.

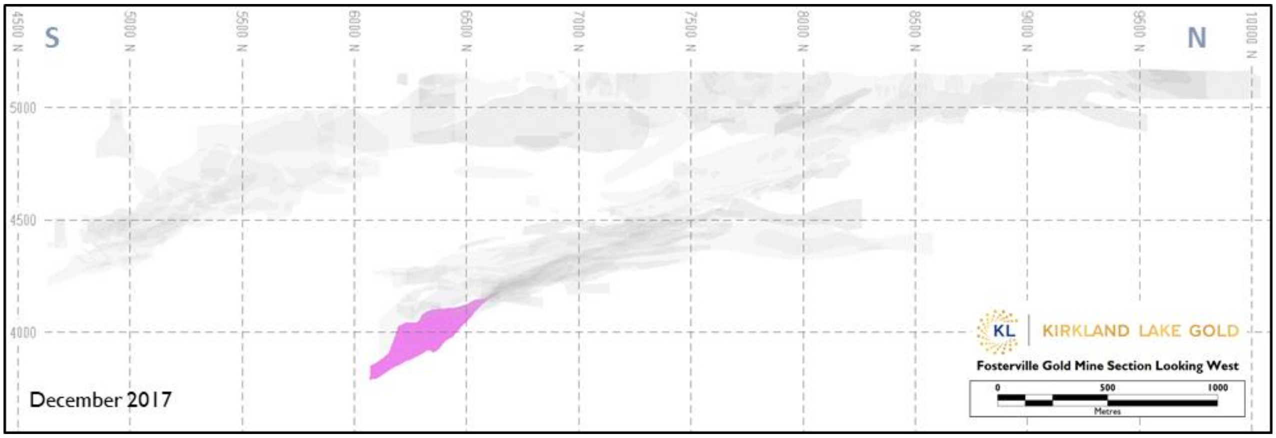


FIGURE 7-12 LONGTITUDINAL PROJECTION OF THE SWAN MINERALIZED ZONE (PINK)

Geologically, the Swan Fault is characterized by a massive 1-3m thick brecciated quartz-dominant vein with clearly defined laminated margins. It exhibits unique spotted stibnite and country rock laminations within the quartz, especially where it is highly brecciated. High gold grades are associated with stylolite-rich quartz veins existing as trends of visible gold. On its periphery there is a lower-grade selvage of sulfide dominated gold mineralization, which can be up to 2m in width. The Swan offsets numerous bedded geological packages such as the Pelican East LQ and there appears to be a grade contrast on the Swan Fault as the units pass from the hangingwall to the footwall. This translates to the upper RL elevations of the Swan Fault being of a lower grade gold tenor than the currently defined lower elevations.

The Swan represents the highest grade visible gold hosted structure discovered to date within the Fosterville goldfield and continues to exhibit consistent, very high-grades.

East Dippers

The East Dippers System has developed at depth as the Fosterville Anticline has diverged away from the Phoenix Syncline System creating new networks for fluids to migrate up the Fosterville System. Systems utilize similar mechanics to that established within the west-dipping fault network where rheological contrasts between bedding units (primarily slip associated with graphitic laminated quartz veins around carbonaceous shales) provide an accommodation zone for stress and mineralization (Figure 7-13).

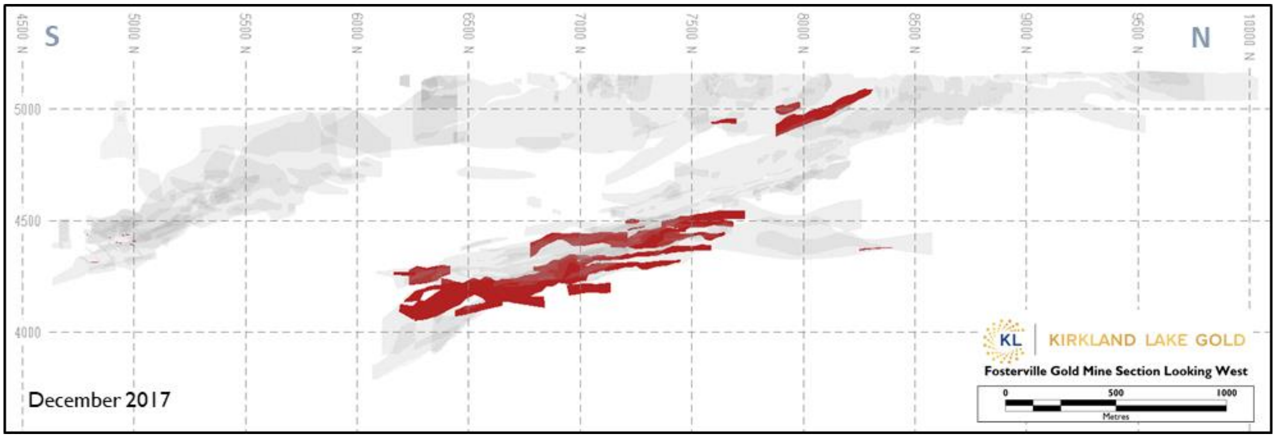


FIGURE 7-13 LONGITUDINAL PROJECTION OF THE EAST DIPPERS MINERALIZED ZONE (RED)

The difference between the west and east-dipping packages are in the way that sedimentary packages accommodate forces acting on the zone. The East Dipping Zones accommodate stress by attenuation whereas the more ductile shale package deforms plastically and the more sand rich units show brittle deformation in the form of ladder veins. These veins sets that radiate out from the shale boundaries perpendicular to the bedding orientation provide a mechanism for sulfides to leach into the host rocks.

The environments where East Dipper System occurs have shale packages that correlate to a west-dipping counterpart such as Kestrel, Allwood, Benu and Pegasus Zones. The East Dipping Fault naming convention utilizes the identified shale characteristics matched to the west-dipping counterpart and given the E suffix to denote the east-dipping status of the structure.

Eagle

The Eagle System occurs below 4400mRL where forces look to accommodate strain between the Fosterville Anticline and Phoenix Syncline (Figure 7-4) via east-dipping structures that are discordant to bedding. Although similar to the East Dippers System spatially, Eagle differs as east-dipping faults link from one east-dipping shale package to another, where the bedding angle is high (>70°). This movement from across bedding creates a fault angle oblique to bedding that allows for mineralization to permeate into the host rocks (Figure 7-14).

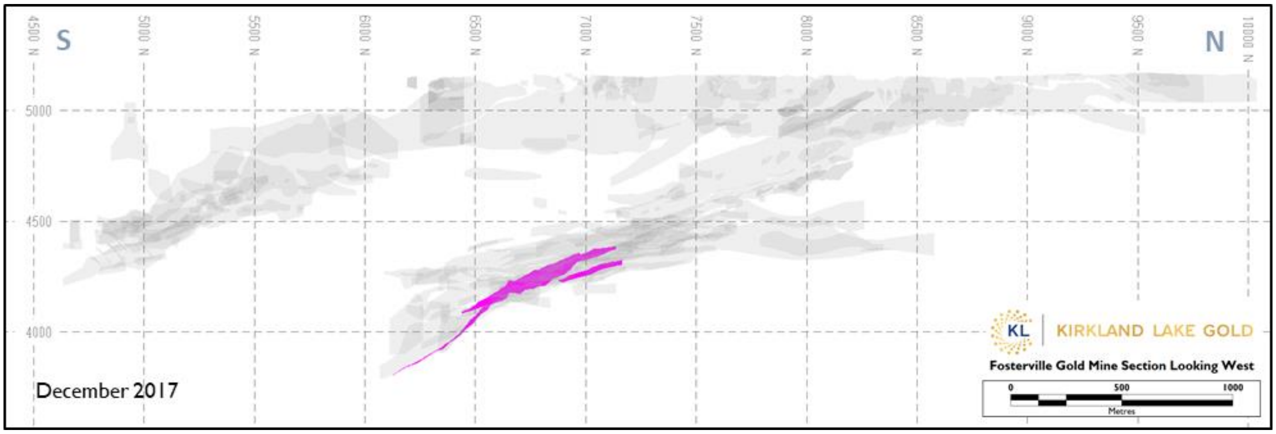


FIGURE 7-14 LONGITUDINAL PROJECTION OF THE EAGLE MINERALIZED ZONE (MAGENTA)

Movement on the system via direct underground measurement and sedimentary marker displacement appears to have a sinistral strike slip orientation. Predominant slip orientations on west-dipping structures indicate a steep dip slip movement with a plunge to the south.

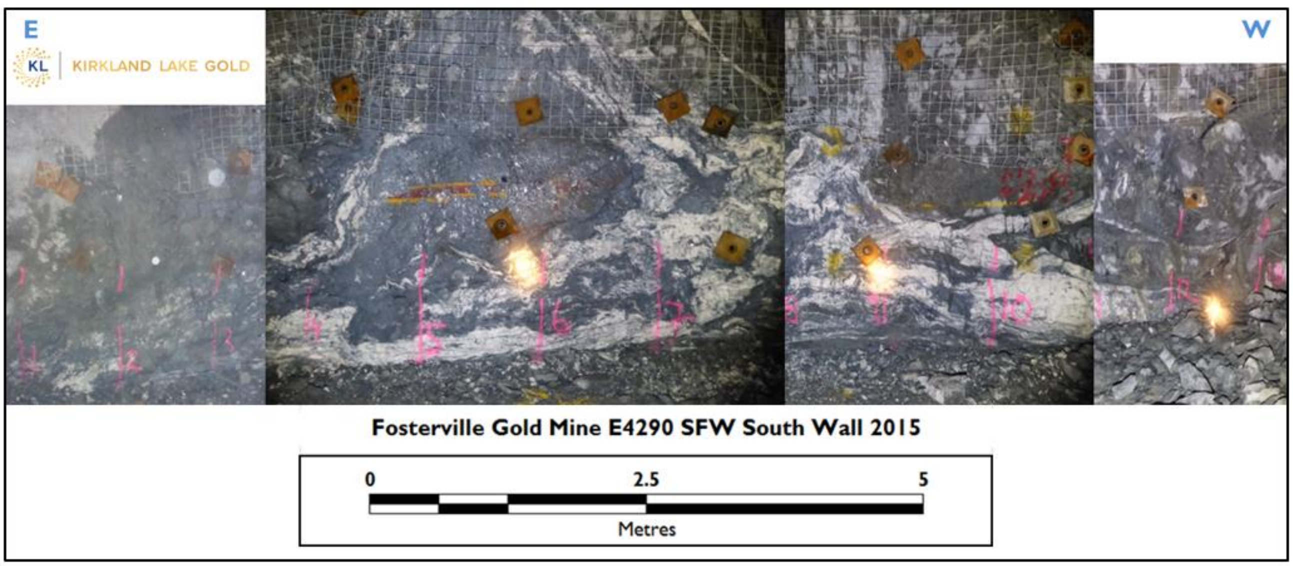


FIGURE 7-15 WALL MAPPING ON THE P4310 LEVEL CONVERGENCE OF THE D20 EAGLE AND D14 BENU FW

Mineralization gold grades on the Eagle System increase up-dip where east-dipping faulting is proximal to the Fosterville Anticline and west-dipping faulting. The convergence of east and west-dipping structures in proximity to the Fosterville Anticline appears to provide a barrier for fluid migration resulting in flow textures of quartz and stibnite (Figure 7-15). Isolated areas of visible gold can be seen within the zone as fine specks that form in alignment with stylolitic fractures that can extend for up to ~10cm. Typically the arsenopyrite / pyrite mineralization within the zone is weaker with grades in the 1-2 g/t Au range with sulfide disseminations localized around the zone.

Moving down-dip away from the hinge, the quartz stibnite vein pinches out with disseminated arsenopyrite and pyrite wall rock alteration increasing in intensity and grade. Dissemination is still localized to the main Eagle Fault (with 1-2m of the structure), however, interaction with bedded faults creates zones where fracture interplay between the two systems increases the fluid flux and therefore increases the width of the mineralization zone.

Down-plunge and dip continuation of the Eagle System is currently being evaluated. However, drill intercepts that show potential extensions to the system, have already been intersected.

Splays

Throughout the Central Area, there are a number of significant mineralized structures and settings that fail to have size, confidence or spatial continuity to develop into extensive mineralized zones. These systems are captured within the Splays HG and Splays LG domain and present either proximal mining opportunity or future potential growth prospects. Most systems within the Splay domains are defined by shallow west-dipping faulting (~30-40°), of anastomosing nature and highly variable grade distribution (Figure 7-16).

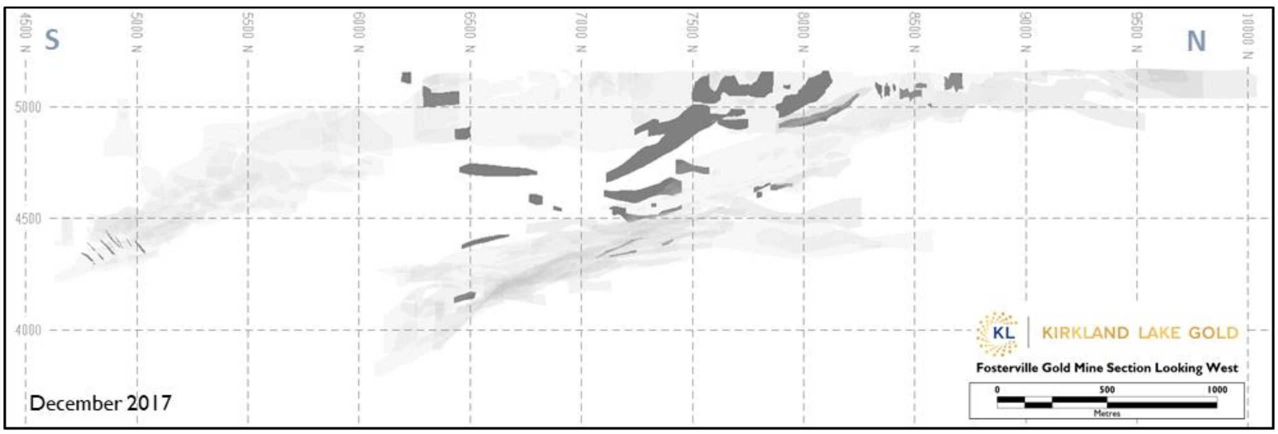


FIGURE 7-16 LONGITUDINAL PROJECTION OF THE SPLAYS MINERALIZED ZONE (DARK GREY)

Splay faults are interpreted to be short-lived structures that split as the structure moves from a Lower Phoenix Zone setting across to the Phoenix Zone setting. Larger splay faults are prevalent between the anticline offset of the Fosterville Fault, where the large thrust movement has nucleated a number of smaller structures. The largest of the splays in the zone is the Kite Fault. The Kite Area of mineralization is interpreted to be due to an oblique/oblique setting created between bedding relationships with the Kite Fault. The Kite Fault is an example of a mid-splay system that nucleates from the Fosterville Fault linking across to the Phoenix Footwall Syncline setting. The main system extends from 7660mN through to 7065mN with an overall dip of ~30° to the west and a plunge of 25° to the south.

Allwood Domain

The Allwood Area is interpreted to be created by 30m of fault movement along the Allwood Shale package that offsets an anticline creating a parallel/oblique setting for mineralization. The system is analogous to the Phoenix Lower Zone setting and extends 562m to the south from the 7675mN section. Orientation of the Allwood Zone is similar to other geometries constrained by a west-dipping hangingwall (Fosterville HG, Fosterville LG, and Benu) with a 65° dip to the west and a 10° plunge to the south. (Figure 7-17).

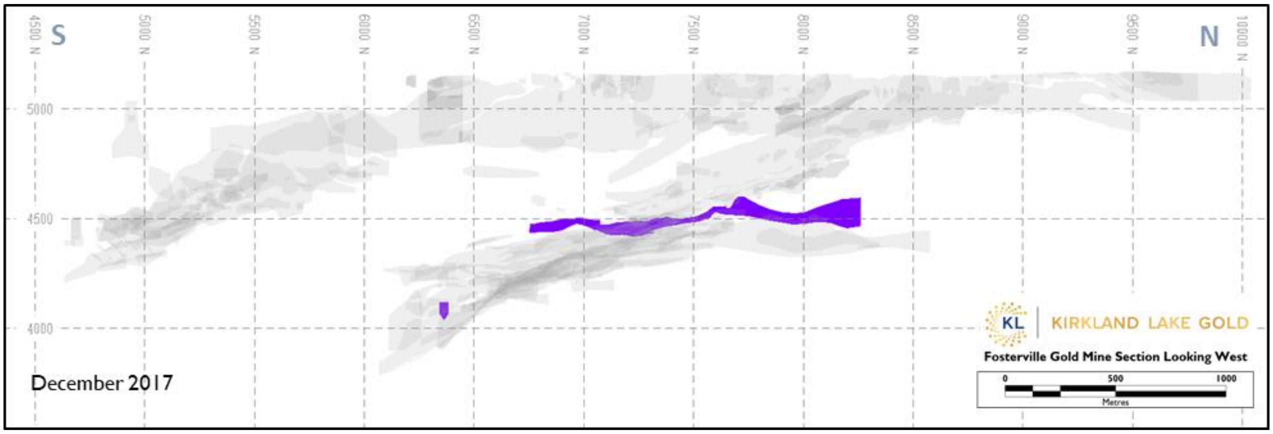


FIGURE 7-17 LONGITUDINAL PROJECTION OF THE ALLWOOD MINERALIZED ZONE (PURPLE)

Kestrel

During 2016 the Kestrel Area was re-interpreted to incorporate the observations from the geological mapping of the first ore sill developed into the Phoenix Syncline Hinge Zone (Figure 7-18). The initial section of development was consistent with previous interpretations which described a broad zone of low to moderate grade (1-4 g/t Au) mineralization through the Hinge Zone, with fluid pathways appearing to utilize weaknesses in cleavage and flexural slip planes between contrasting beds. The higher grade mineralization was associated with an east-dipping structure which nucleated within the Hinge Zone, with increasing amounts of offset noted across the structure as it developed into an oblique-parallel setting.

Based on the observed interaction the mineralized domains in the Kestrel System were reinterpreted to group the higher-grade intercepts together to link up to east-dipping bedding-parallel LQ veins (faults). The intersection of the structures with the syncline hinge is interpreted to be responsible for the dilational zones, which allows for the localized enrichment above the background low-grade within the Hinge Zone. Drill programs testing this interpretation during 2017 have mostly confirmed this high-grade association.

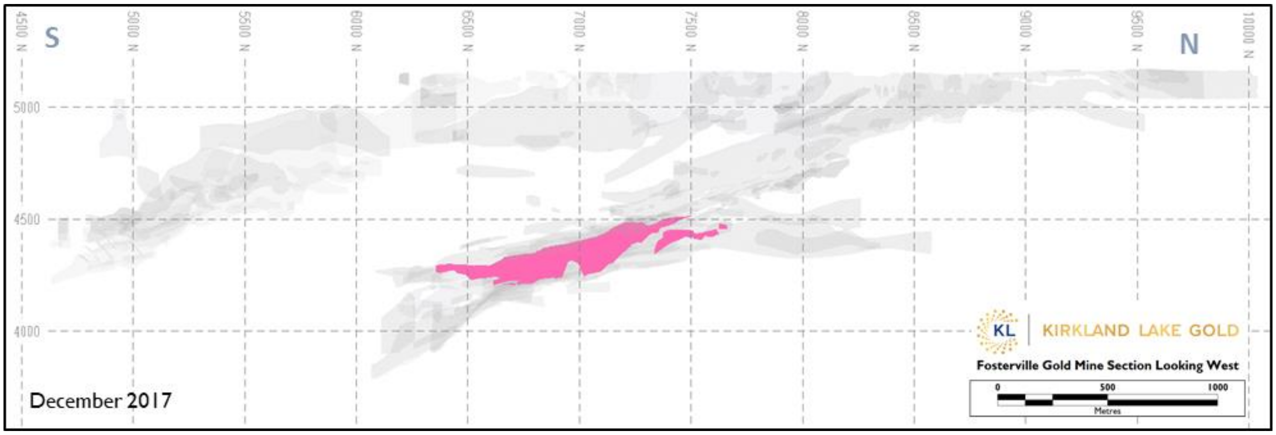


FIGURE 7-18 LONGITUDINAL PROJECTION OF THE KESTREL MINERALIZED ZONE (PINK)

Falcon

The Falcon Mineralized Zone (Figure 7-19) is situated on the Fosterville Fault where it displaces the Fosterville Anticline along a distinguishable black shale horizon. The thrust movement on the fault creates an offset of ~500m with several splay faults that nucleate from the main Fosterville Thrust. These splays cross east-dipping bedding creating smaller orebodies such as the Ellesmere and Vulture Mineralized Zones.

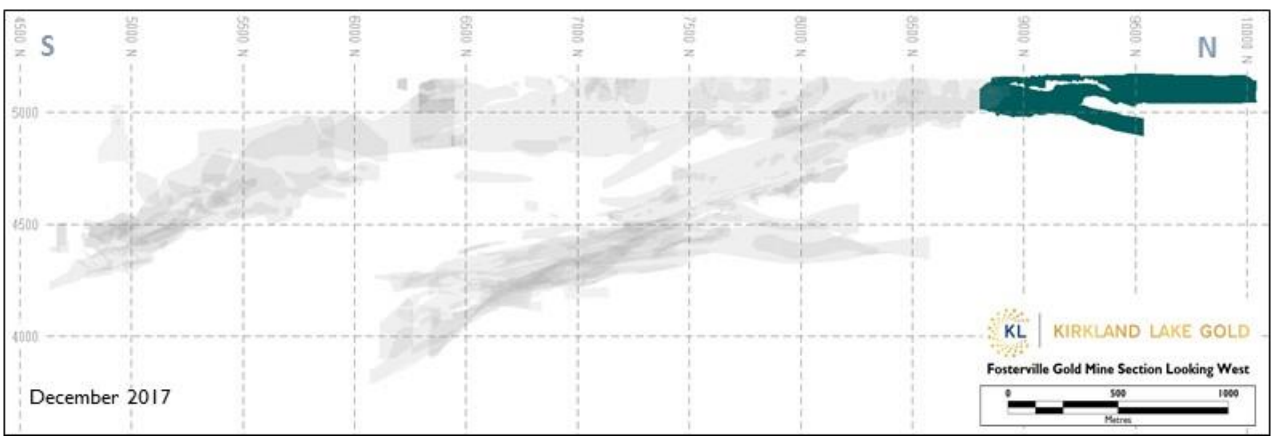


FIGURE 7-19 LONGITUDINAL PROJECTION OF THE FALCON MINERALIZED ZONE (SEA GREEN)

The Falcon Mineralized Zone consists of Fosterville HG and Fosterville LG domains. Fosterville HG is reasoned to be a population of discernibly higher grade assays that exist due to a shoot geometry that is geologically controlled within the larger Fosterville LG Domain. A plunge reversal occurs between 8800mN and 8900mN and all of the mineralization between 8900mN and 11000mN plunges gently to the north. The vast majority of the mineralization in the Falcon Domain occurs on the Fosterville Fault and dips about 70° to the west. Most of this domain is relatively shallow (less than 150m below surface) and has been drilled by either RC drilling grade control drilling on 6.25m spaced sections or by RC and diamond exploration drilling on 20m spaced sections.

Ellesmere

The Ellesmere Mineralized Zone is characterized by Fosterville Zone type mineralization and resides primarily between the Fosterville HG and Fosterville LG domains, south of the culmination. Overall the plunge of the mineralization within the Ellesmere orebody appears to be 20° to 40° to the south with internal narrow (~20m) high-grade shoots plunging 70°S and occurring at roughly 100m intervals. The high-grade shoots are believed to be the results of smaller footwall splay fault interaction with the Fosterville Fault. Mining of the Ellesmere orebody was completed in 2010 (Figure 7-20).

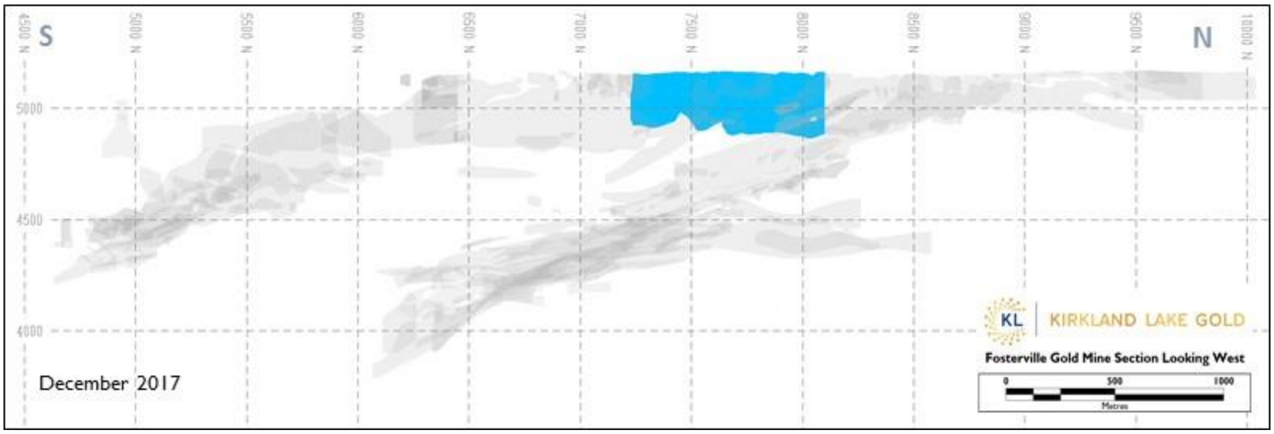


FIGURE 7-20 LONGITUDINAL PROJECTION OF THE ELLESMERE MINERALIZED ZONE (TURQUOISE)

Raven

The Raven Mineralized Zone exists as a zone of high-grade splay mineralization north of the Phoenix Mineralized Zone analogous with Phoenix Zone mineralization. The orebody is situated where fault movement associated with the Phoenix Fault links across to the Phoenix Base Footwall Syncline Hinge moving into an oblique/oblique setting. Mineralization forms on a number of splay structures that typically have a shallower dip (~40°) and strikes more NNW than the typical N-S bearing of the Phoenix Zone (Figure 7-21).

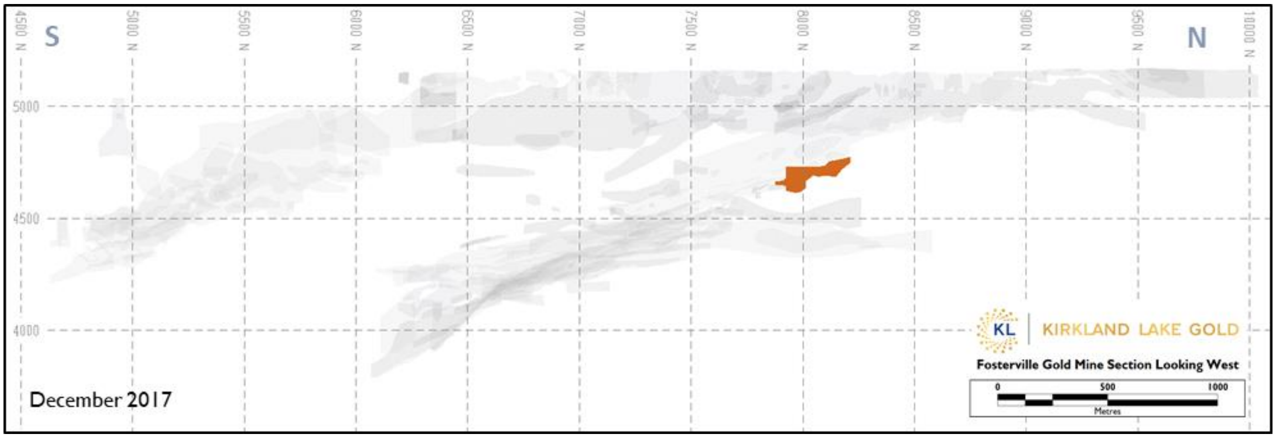


FIGURE 7-21 LONGITUDINAL PROJECTION OF THE RAVEN MINERALIZED ZONE (ORANGE)

Vulture

The Vulture Mineralized Zone occurs between 6262.5mN and 7337.5mN in a zone characterized primarily by Harrier faulting where economic mineralization occurs proximal to the intersection between the interpreted Harrier Base Fault and the Fosterville Fault. The main Vulture Mineralized Zone on the Harrier Base Fault dips ~45°W, steepening as the fault diverges from the Fosterville Fault. Mining of parts of the Vulture Zone was completed in early 2012. Knowledge gained from mining the Harrier Zone is being applied to the remainder of the Vulture Zone to optimize further extraction potential (Figure 7-22).

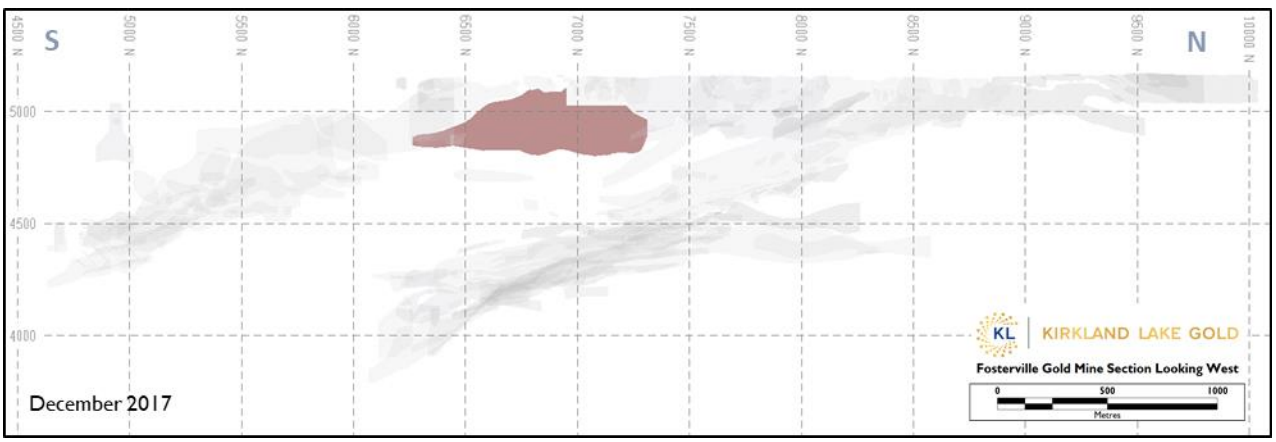


FIGURE 7-22 LONGITUDINAL PROJECTION OF THE VULTURE MINERALIZED ZONE (PINK)

Robin, Griffon & Shamrock Zones

The Robin Mineralized Zone, shown in light blue in Figure 7-23 is interpreted to be a zone where mineralization switches back from the Phoenix Fault across to the Fosterville Fault around the hangingwall section of the Phoenix Syncline Hinge. The fault network is a combination of east and west-dipping structure that has a zonation plunge on the intersection with the Fosterville Fault of ~30°. The interaction zone occurs from 8600mN to 8100mN where separation distance between the Fosterville and Phoenix Faults widens to the south reducing the intensity of faulting reducing mineralization intensity.

The Griffon Mineralized Zone, shown in green (Figure 7-23), is a zone of mineralization on the Phoenix Keel Zone where faulting from the Fosterville Fault directly links across to the footwall section of the Phoenix Syncline Hinge. The zone exists between 8800mN and 8600mN with mining completed in 2009.

The Shamrock Mineralized Zone, shown in teal (Figure 7-23), is a Zone of mineralization footwall to the Fosterville Fault where the Phoenix Fault is directly adjacent to the system. The zone existed between 8600mN and 8350mN with mining completed in 2009.

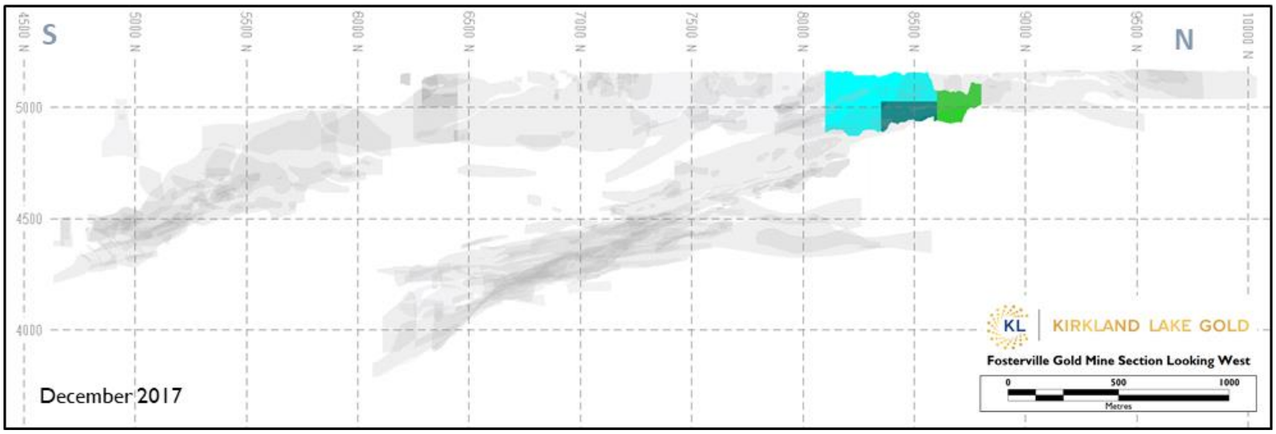


FIGURE 7-23 LONGITUDINAL PROJECTION OF THE ROBIN (LIGHT BLUE), GRIFFON (GREEN), AND SHAMROCK (TEAL) MINERALIZED ZONES

7.5.2 HARRIER AREA GEOLOGY

Within the Harrier UG Model area, there appears to be two main zones of mineralization, one zone associated with the Harrier Fault System and the other with the Osprey Fault System. Both systems trace their roots back to movement along the Fosterville Fault; however, they appear to differ at their nucleation points with the Osprey System sitting higher in the system with relation to the Harrier System (Figure 7-24).

Both systems generate most of their fault related mineralization within oblique/oblique environments as movement propagates away from the Fosterville Fault. The systems are related by the way of linking structures that strike ~5° as opposed to the Osprey and Harrier Systems that strike ~350°. The relationship between structures takes on a large *en-echelon* type geometry with mineralization intensity increasing at the intersections between main systems and linking structures.

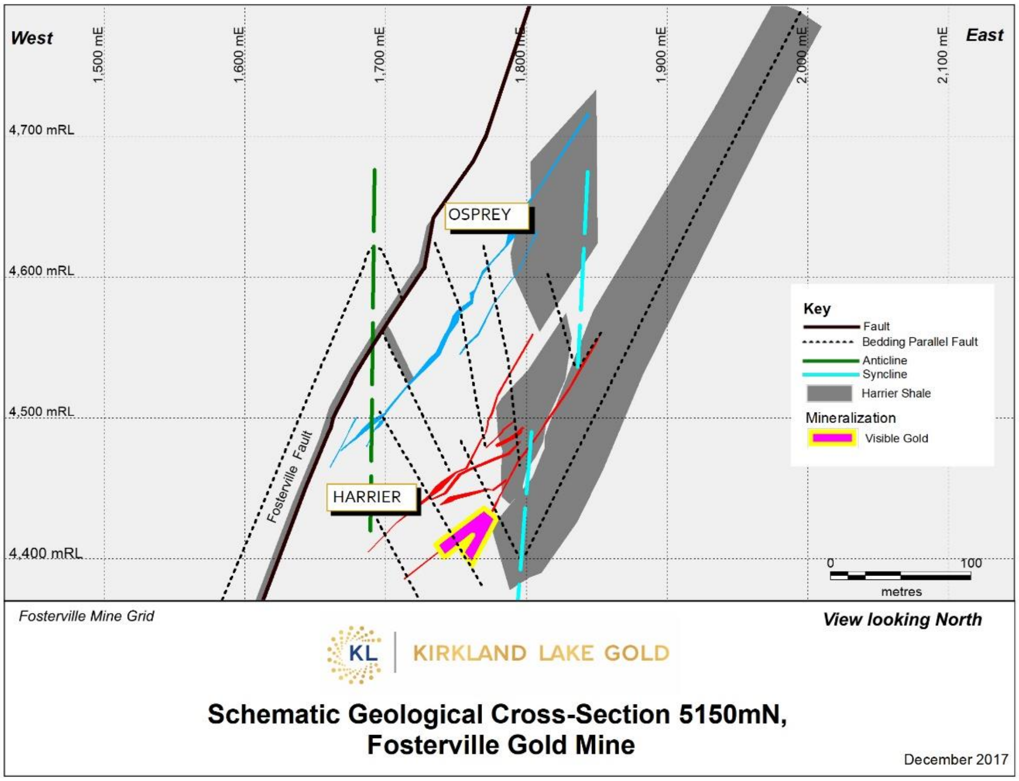


FIGURE 7-24 GEOLOGICAL CROSS-SECTION THROUGH THE HARRIER AREA AT 5150mN

Since 2011 drilling to a 25m x 25m drill spacing has allowed domains to be built on 25m spaced sections. Areas of particular geological difficulty were drilled to 12.5m spacing and domains also constrained using underground face mapping, sampling and sludge hole sampling data. Drill program progress was improved with the addition of the Harrier 4625mRL Diamond Drill Drive, which provided resource definition as far south as 4750mN.

Harrier Domains

Based on observed variations in geology, variography, geochemistry, statistics and spatial location within the Fosterville Mine Area, mineralization in the Harrier Area has been divided into nine unique domains and one common splay domain shared with the Central Area. The domains and domain codes corresponded to:

6	Splay LG (Low-grade) – common to Harrier and Central Areas;
20	Harrier;
21	Harrier Base;
22	Harrier Link;
23	Harrier E Dipper
24	Harrier HW;
25	Harrier Splay;
29	N Dipper
30	Osprey;
31	Osprey Base;
32	Osprey Link;
33	Wagon Wheel
35	Osprey Splays.

The domains can be generically categorized into two groups, Harrier Figure 7-25, Osprey Figure 7-26, including various Splays. Harrier and Osprey Domain differentiations are driven primarily on grade population differences between structures that reside within close proximity to each other. The host geology of the mineralization within the Harrier UG Area is consistent with details listed within the Central Area.

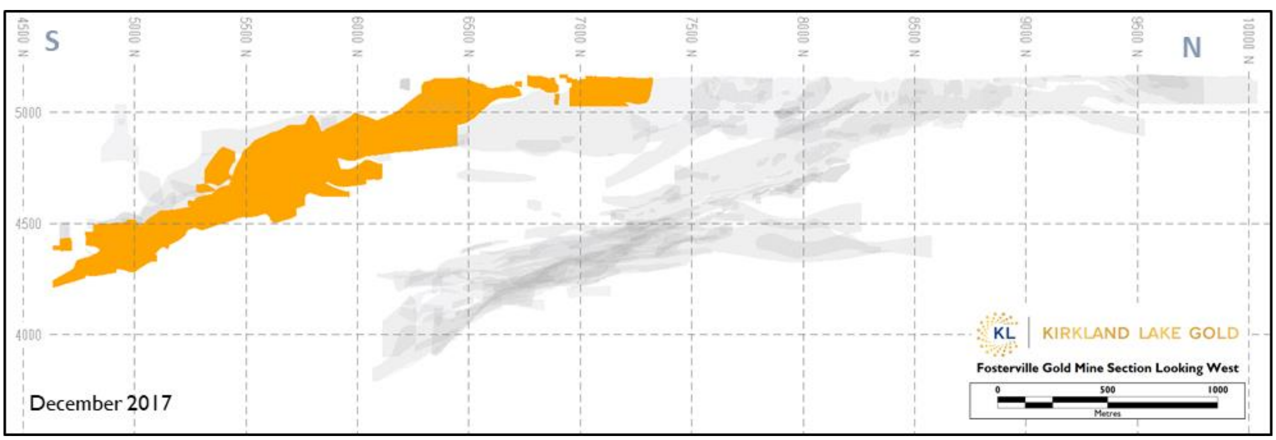


FIGURE 7-25 LONGITUDINAL PROJECTION OF HARRIER MINERALIZED ZONE (ORANGE).

The Harrier System is interpreted to have developed as reverse thrust faulting progressed up the Fosterville Fault reaching the anticline, refracting and developing a complex system of splay faults that link across to the eastern syncline hinge. Fault propagation continues across east-dipping interbedded sandstone and shale beds before movement conformed into the large Harrier Shale package. Movement into the Eastern Syncline (Figure 7-24) and Harrier Shale package develops several minor hinge offsets along early LQ veins that create localized zones of oblique/parallel mineralization.

The Harrier Shale package proximal to the orebody has been is estimated to be ~30m in thickness with several LQ veins throughout the succession. Major LQs were correlated along strike and structurally wireframed to create the Harrier Base and Harrier Upper Faults. The total displacement over the Harrier suite of faults is about 120m.

The Harrier Mineralized Zone extends through to surface having been mined as the Harrier Open Pit with its northernmost extent around 7300mN. The system has an overall plunge of 25° with the main underground shoot of mineralization not beginning until around the 4760mRL. The Harrier Zone consists of five distinct domains including the Harrier, Harrier Base, Harrier Link, Harrier Splay and Splay LG Domains.

Mineralization within the Harrier Zone consists of primary sulfides including arsenopyrite and pyrite with the area having only localized amounts of stibnite. The sulfides are disseminated into the host sandstone and shale packages around strongly faulted and fractured areas. Grade tenor proxies utilized in the Central Zone such as the percentage of arsenopyrite can be misleading due to mica rich sand horizons being mistaken for mineralization, silicification of host rocks giving a false indication of quartz fluid flow and fine sulfide crystal growth that can be overlooked as dust or sedimentary fine grains.

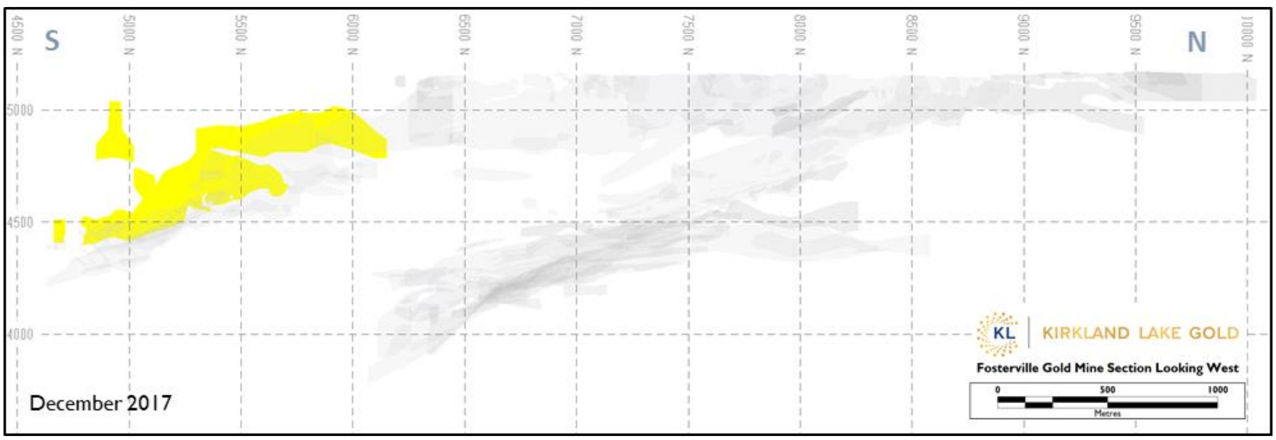


FIGURE 7-26 LONGITUDINAL PROJECTION OF OSPREY MINERALIZED ZONE (YELLOW).

The Osprey System is modeled ~50m hangingwall to the Harrier System and appears to be the last splay fault that bifurcates from the Fosterville Fault before the Fosterville Anticline. The movement seen on the Osprey System appears to maintain its offset to the Harrier System up-dip, however, it does not appear to connect through to the eastern syncline hinge as the Harrier System does. There is growing support to suggest that mineralization in the Osprey System is directly influenced by the western limb of the Harrier Shale package as areas of intersection appear to act as a barrier to the flow of mineralization further up-dip of the Osprey System.

The Osprey System shares similar geometries to that seen in the Harrier System with economic mineralization largely running in parallel between 5420mN and 5100mN. North of 5420mN, the Osprey System mineralization links across to the Harrier System utilizing the linking structures. South of 5100mN, the Osprey System appears to trend more north-south with similar trends to the second order linking structures. Structures that trend more north-south appear to take on a lower grade tenor than those that strike towards ~355°, although the controls on why this occurs are poorly understood.

The Osprey System consists of four distinct geometries including the Osprey, Osprey Base, Osprey Link and Osprey Splays. The main shoot of Osprey mineralization is encompassed within the Osprey Domain that is modeled south of 5725mN and remains open at depth. The Osprey System has similar geological properties to the Harrier System (Strike ~355°, Dip ~40°, and Plunge ~20°), however, it gains some complexity to the south of 5450mN where multiple converging geometries are modeled.

7.5.3 DALEY'S HILL

Within the Southern Model Area, the controlling features include the Fosterville Fault and the Footwall Harrier suite of faults, which have variable reverse offsets and a total reverse displacement of about 200m.

Reverse movement on the Fosterville Fault lessens from north (100m+) to south (~10m at Daley's Hill) and becomes less important southwards with respect to mineralization. At Daley's Hill the Fosterville Fault is un-mineralized and passes to the west of the oxide pit.

The east-west folding in the area varies from gently southerly plunging in the north to moderate southerly plunging at Daley's Hill in the south. Fold plunge is important as the mineralized west-dipping fault geometry is controlled by the eastern limbs of syncline fold plunges where the faults become un-mineralized "bedded" LQ vein features.

At Daley's Hill, the Daley's Hill Fault has an associated 10m of reverse fault movement and localizes the bulk of gold mineralization. Lesser well mineralized east-west structures occur in the eastern parts of the pit and several other poorly defined hangingwall mineralized fault structures are present in the western portions of the pit.

Daley's Hill is unusual in that late stage, free, primary gold, in association with stibnite-quartz, is noted in several diamond holes. The mineralized structure ("Wagon Wheel") is restricted to an 80m strike extent, and was partially tested during 2017 by the 'Harrier Up-Dip' drill program where a series of holes were drilled from underground. This drilling appears to have confirmed the east-west controls on some higher-grade gold mineralization (e.g. 33.2g/t Au over 5.7m in UDE124), which was not replicated on adjacent E-W orientated drill sections.

The geology of the Southern Model area was reviewed by independent consultant Stephen King in 2004 (King, 2004) and the northern parts again in 2006 (King, 2006). Rod Boucher (geological consultant, Linex Pty Ltd Geological Consultation) has also contributed much to the stratigraphic-structural understanding of the area. A geological interpretation was also reported by Reed (2007).

Domains

Domaining of the Daley's Hill area was based on geological structure, orientation, material types and variography. The structures and material types include:

- Daley's Hill N-S Faults;
- Daley's Hill E-W Faults; and
- Materials (Oxide, Transitional and Fresh).

Mineralization domains were created by initially using a nominal 0.2 g/t Au to 0.5 g/t Au outer limit for sectional strings in weathered areas and 0.5 g/t Au to 1.0 g/t Au in un-weathered mineralization. These values reflect natural breaks to the mineralization.

The strings were then linked or extruded to form a three dimensional wireframe domain. The strings were generally extruded a maximum of half the drill spacing. This varied from as little as 5m, in well drilled pit locations, to 50m, where mineralization extended over several 100m spaced drill sections.

The Daley's Hill Area (Figure 7-27, Figure 7-28, Figure 7-29 and Figure 7-30) has two separate northerly trending sub-vertical to westerly-dipping mineralized domains: DH Main Fault, and DH West Area.

The domains have variable strike lengths (between 50m and 650m), dips (-50°W to -90°) and exhibit ~20° southerly plunges.

A domain (DH Syncline) has also been generated that encompasses mineralization associated with the Daley's Hill Syncline. The syncline axial plane trends grid NNE with a 45° plunge towards the south and is located in the far northern position of the existing Daley's Hill Pit.

East-west mineralized structures occurring in the eastern parts of the pit are footwall to the main Daley's Hill N-S structure. The Daley's Hill E-W Domain (DH Campaspe) comprises four separate structures, which trend 060° and dip 80°N.

Three 'material' domains were constructed, similar to that described previously for the Central Area Model. The domains are:

- Oxide (sulfide minerals completely oxidized, Fe-carbonates largely oxidized);
- Transition (sulfide minerals may be partially oxidized, includes zones of mixed fresh and oxide); and
- Fresh (sulfide minerals completely un-oxidized).

The Transitional Domain lower boundary is only an approximation because there is insufficient logging of the base of transition to allow a reasonable interpretation of this surface over the entire Southern Model. The base of transition was taken to be 5110mRL after comparison with drill data and results from open pit mining in the area.

Separate material domains were constructed for transitional and fresh materials and coded into the Southern Model for inventory and metallurgical recovery study purposes. However, during block model interpolations, drill assays coded as transitional and fresh material types are treated as if they are the same material type.

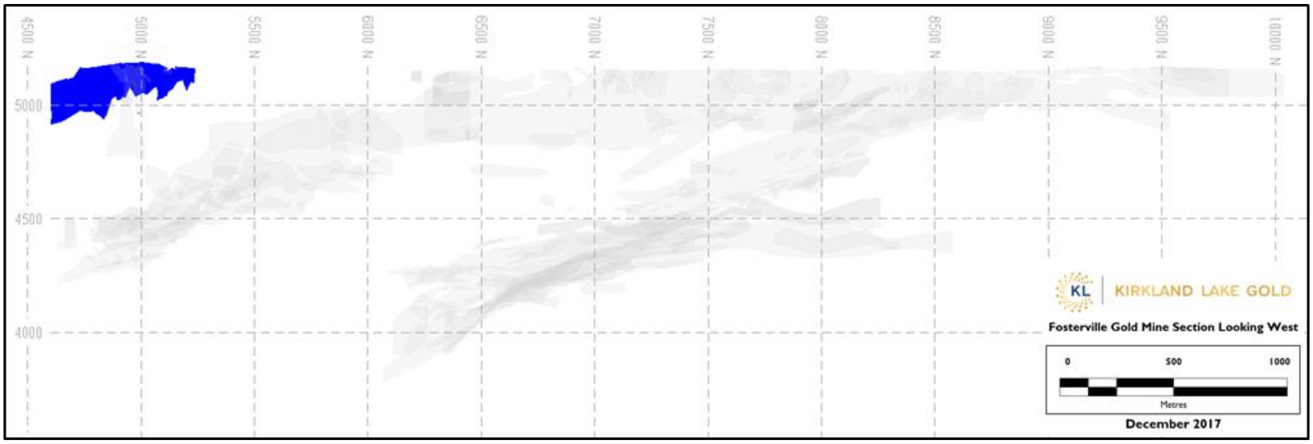


FIGURE 7-27 LONGITUDINAL PROJECTION LOOKING WEST OF DALEY'S HILL DH MAIN FAULT (BLUE)

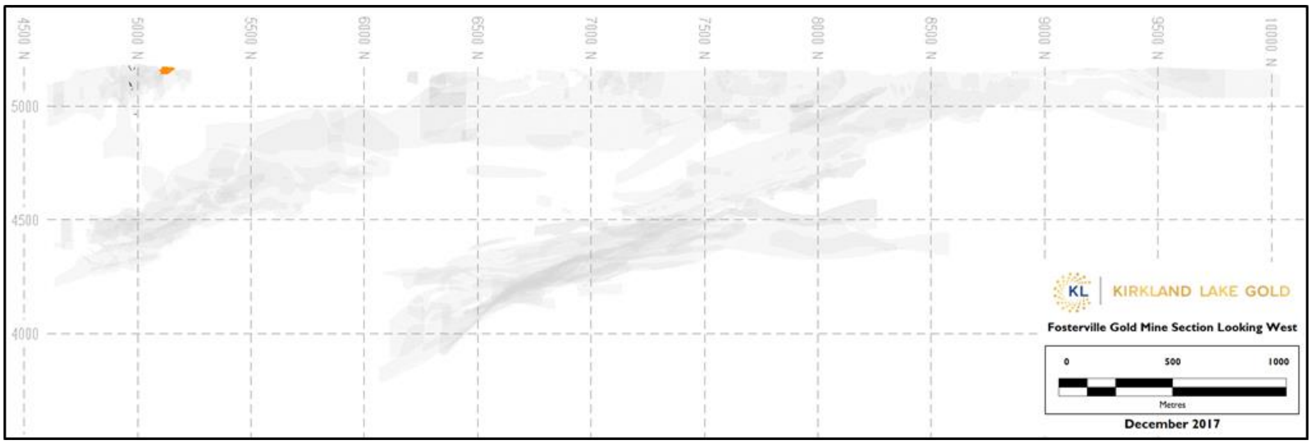


FIGURE 7-28 LONGITUDINAL PROJECTION LOOKING WEST OF DALEY'S HILL DH SYNCLINE (ORANGE)

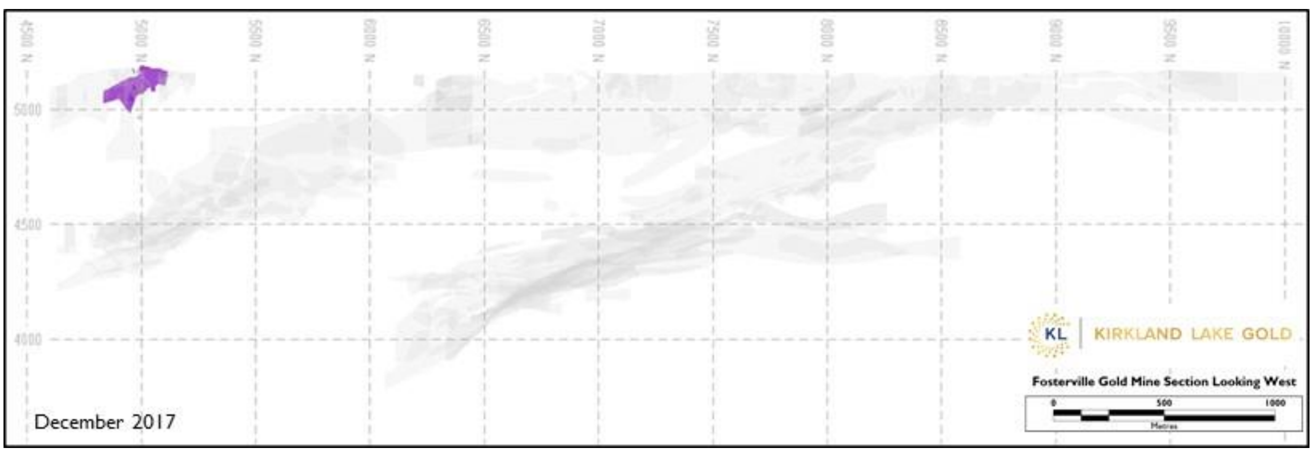


FIGURE 7-29 LONGITUDINAL PROJECTION LOOKING WEST OF DALEY'S HILL DH WEST AREA (PURPLE)

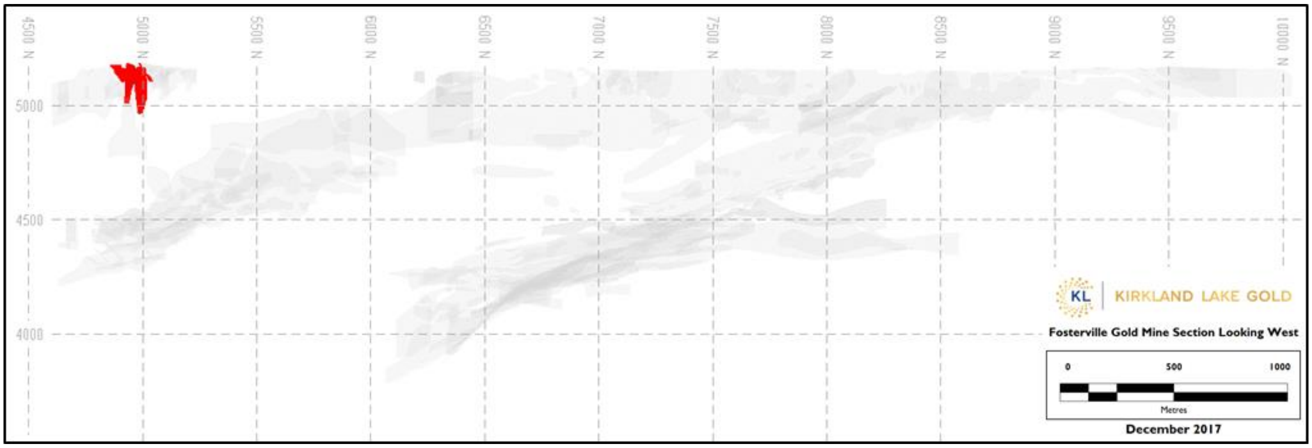


FIGURE 7-30 LONGITUDINAL PROJECTION LOOKING WEST OF DALEY'S HILL DH CAMPASPE (RED)

7.6 ROBBIN'S HILL AREA

The Robbin's Hill Area lies northeast of the Central Area and contains the O'Dwyer's, Robbin's Hill, Farley's, Sharkey's, Woolshed and Read's oxide pits as shown in Figure 7-3 and Figure 7-33. The area can be defined as the zone east of 2,700mE, between 10,500mN and 14,00mN. The fault architecture of the Robbin's Hill Area is much more complex than that observed in the Fosterville Fault Zone.

Rhyolitic dyke associated gold mineralization also occurs in the area, with mineralization mainly within 2m of the dyke contacts. The rhyolitic porphyry dyke bodies have a general north-south trend, are typically sub-vertically orientated and are observed to often intrude anticlinal axial planes.

Higher grade gold zones are controlled by the intersection of fault controlled mineralization with the dykes.

7.6.1 GEOLOGICAL OVERVIEW

The region between Robbin's Hill in the south (12,100mN) and Sharkey's in the north (14,000mN) contains three significant fold closures – the Robbin's Hill Anticline and Syncline and the Trench Syncline, with associated parasitic folds in the eastern limb of the syncline. The folds are all roughly north-trending and asymmetrical, however, the plunge of the folds are variable with complexities arising from the intersection of both steep and shallow bedding-parallel and bedding-discordant faults.

The Robbin's Hill Anticline and Syncline appear to plunge gently north, whilst the Trench Syncline dips gently south. The Robbin's Hill Anticline and Syncline also lose amplitude and wavelength southwards, from amplitude of around 100m in the north to become a small parasitic fold pair in the south of Robbin's Hill Pit. The axial plane of the anticline is intruded by a mineralized felsic porphyry dyke (RH Porphyry), which also pinches out towards the south.

On 12,100mN, the Robbin's Hill Anticline and Syncline form asymmetric folding on east-dipping bedding (Figure 7-31). The mineralized felsic dyke intrudes the core of the anticline, consistent with more northern sections. A number of low-angle oblique-oblique west-dipping faults crosscut the geology, and are associated with localized mineralization. The Trench Syncline has a large wavelength, with a major plane of slip (Curie Fault) developing in a black shale unit on the eastern limb of the syncline. Moving north towards 12,300mN, faulting on this plane increases in complexity, becoming broader and further displacing the geology (west-over-east).

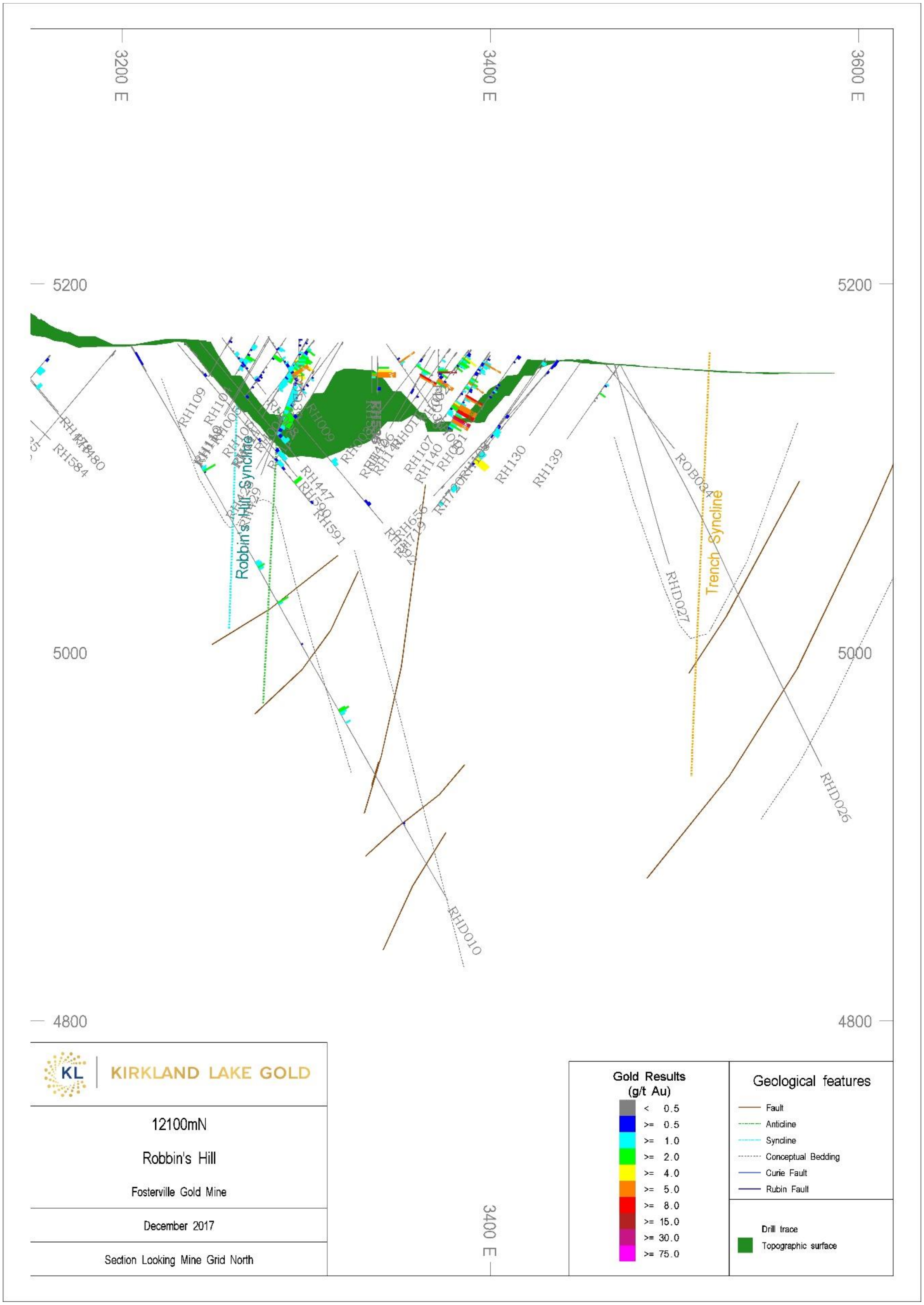


FIGURE 7-31 ROBBIN'S HILL AREA CROSS-SECTION FOR 12100mN, VIEW LOOKING MINE GRID NORTH.

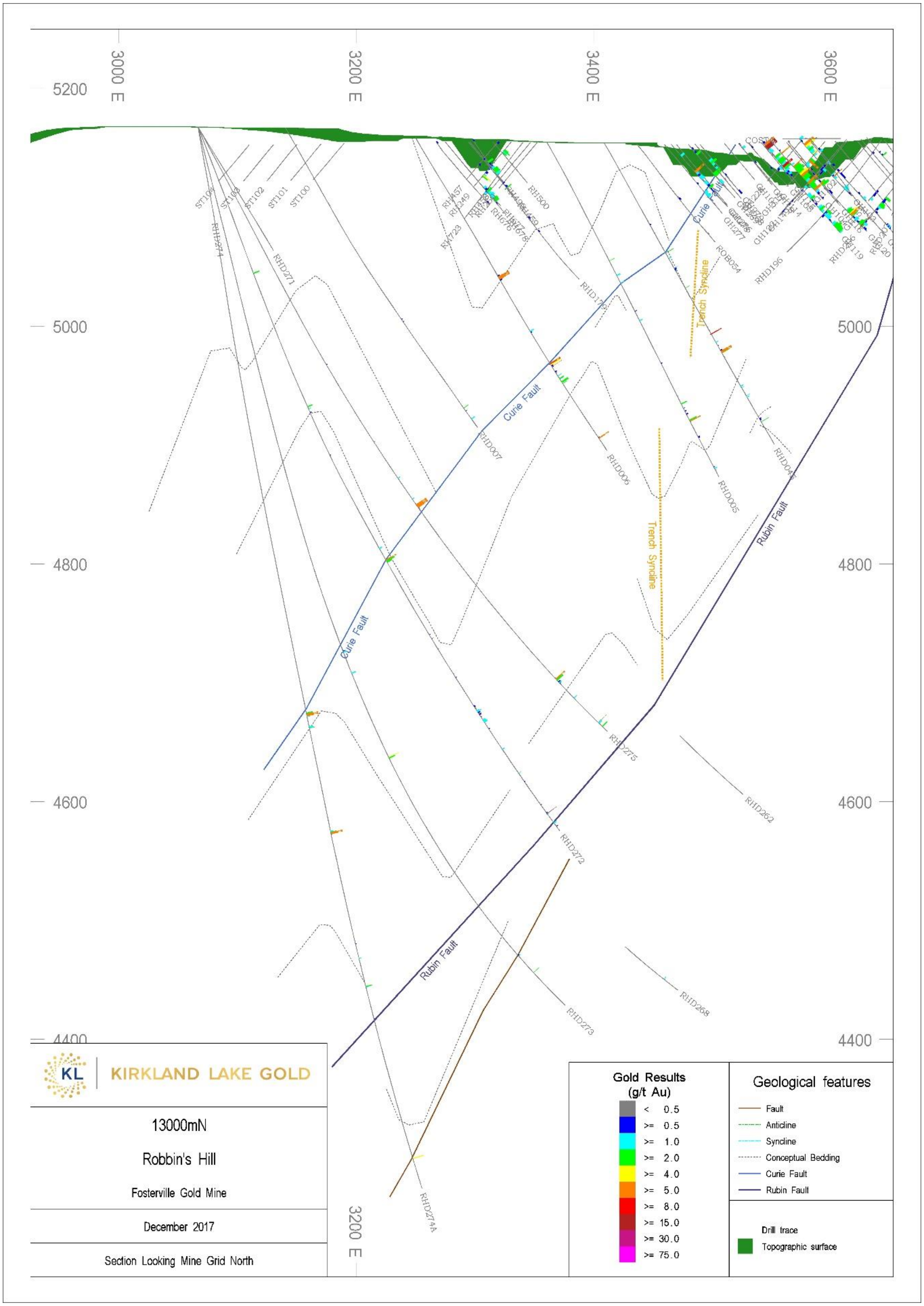


FIGURE 7-32 ROBBIN'S HILL AREA CROSS-SECTION FOR 13000mN, VIEW LOOKING MINE GRID NORTH

On 12,400mN, the amplitude and wavelength of the Robbin's Hill Anticline and Syncline has increased (width ~50m), forming tight folds with axial planes, which increasingly dip towards the west with depth. The axial-trace of the anticline is intruded by the same mineralized felsic dyke intercepted further south. The Trench Syncline has decreased in amplitude, with significant displacement on the faulted zone (Curie Fault) in the eastern limb. Mineralization in the Trench Syncline is confined to the faulted zone in the hangingwall of the major younging change fault. Minor parasitic folding has developed on the eastern limb of the Trench Syncline.

Further down-dip Curie Fault becomes an oblique-parallel younging-change fault, truncating the steep eastern limb of the Robbin's Hill Anticline. Lithology exerts a strong control on mineralization associated with Curie Fault (previously named Farley's Fault) in this section, with the development of mineralized stockwork veining in sandstone in the hangingwall of the fault. A second steep west-dipping fault (Rubin Fault – previously Farley's FW Fault) occurs in the footwall of the Curie Fault, however, deformation associated with the fault is minor.

Low-angle oblique/oblique faults with associated localized mineralization also crosscut the Robbin's Hill Anticline and dyke in this section. The dips of the faults become steeper as they approach the surface, with bedding-parallel sections highly brecciated, indicating a protracted history of movement.

On 12,600mN, the Robbin's Hill Syncline and Anticline are better defined as a result of their south-plunging geometry. Both folds are asymmetric, with an axial plane that increasingly dips towards the west with depth. There is a much greater degree of faulting and shearing in the eastern limb of the RH Syncline.

The amplitude and wavelength of the parasitic folding in the eastern limb of the Trench Syncline is now more open, with faulting and displacement in the Curie Fault Zone becoming accordingly more distributed. This represents a zone of increased deformation with shearing and quartz-carbonate stockwork veining developed between the faults and focused on the two parasitic fold hinges. Within this zone, deformation has occurred mainly as puggy faulting with little actual displacement on any one fault. Quartz-carbonate stockwork is well developed in the hangingwall and footwall to the puggy faults, where the bulk of the sulfide mineralization is hosted.

Off-set along the NNW-trending Curie Fault appears to be reduced in this section (~100m), allowing the delineation of the Trench Syncline in the footwall of the fault down-dip (~4850RL). The hinge of the Trench Syncline has a major impact on the dip of the Curie Fault, transitioning from steep (oblique-parallel) where it utilizes the black shale unit as a plane of slip, to shallow, becoming bedding-discordant. This accounts for the broad zone of deformation and mineralization in the hangingwall of the fault, characterized by stockwork veining and numerous faults of various orientations.

Highly mineralized east-dipping structures are present in the footwall of the Curie Fault, above the syncline hinge. The faults are brecciated with evidence of significant movement but it is unclear if these faults relate to the steep west-dipping faults or post-date this movement. Highly mineralized east-dipping structures are also present in the Sharkey's Area, NE of the Robbin's Hill Pit.

Displacement on the Rubin Fault has markedly increased, off-setting the hinges of the parasitic folds in the eastern limb of the Trench Syncline. As a result of the interaction with these hinges, the zone of deformation surrounding the fault is much broader.

South of Robbin's Hill Pit to O'Dwyer's South Pit (between 10,500mN and 12,100mN), the same west-dipping fault structure (Curie Fault) is mineralized and has a curvilinear grid north trend. East of, and paralleling this fault, is an anticline structure, which has a mineralized porphyry dyke (ODW Porphyry) occupying the sub-vertical axial plane. The ODW Porphyry occurs in the eastern portion of the ODW South pit and in the middle of the ODW Central Pit. Several west-dipping mineralized faults occur on both sides of the ODW Porphyry and outcrop in ODW Central and Eastern Pits.

Northeast trending unconsolidated Murray Basin clays, sands and gravels mask the Ordovician basement and the northwest and southeast parts of the Robbin's Hill Model area.

FIGURE 7-33 PLAN VIEW OF ROBBIN'S HILL AREA

7.6.2 ROBBIN'S HILL DOMAINS

Basic high-level statistics and variographic analysis was completed on the interpreted mineralization wireframes in the Robbin's Hill Area. Oxide and sulfide mineralization was grouped into single domains for the Porphyry and the Faults Domains because there is very little difference in the statistics of the oxide and sulfide mineralization for the domains. Subtle changes in the strike of the domains are captured in separate domains. General descriptions are listed in Table 7-3.

TABLE 7-3 ROBBIN'S HILL DOMAINS

Domain	Description
D40	Steep west-dipping, NNW trend
D41	Steep west-dipping, north trend
D42	Sub-vertical, north trend (RH Dyke)
D43	West-dipping, NNE trend
D44	West-dipping, NWN – N trend (i.e.: Farley's Fault)
D45	Steep east-dipping, north trend
D46	West-dipping, NNE trend
D47	Steep west-dipping, NW trend
D48	Steep to shallow east-dipping
D49	East-dipping, NE trend
D50	Steep west-dipping, north trend
D51	Shallow east-dipping, north trend
D52	West-dipping, north trend
D53	Steep east-dipping, NNW trend
D54	Sub-vertical, north trend
D55	Sub-vertical, NNE trend

Oxidation Domains

Four 'material' domains were constructed, similar to that described for the Southern Models in order to assess density differences on gold grades in these zones.

The four domains are:

- Alluvium (near surface transported material, generally barren of gold, largely clay, free digging);
- Oxide (sulfide minerals completely oxidized, Fe-carbonates largely oxidized);
- Transition (sulfide minerals may be partially oxidized, includes zones of mixed fresh and oxide); and
- Fresh (sulfide minerals completely un-oxidized).

7.7 CONTROLS ON OXIDE MINERALIZATION

Minor re-mobilization of gold into the immediately surrounding country rocks has resulted in an approximate 50% increase in the width of mineralization and consequent reduction in gold grade. There is no evidence of a wide spread high-grade supergene zone immediately below the water table.

Other elements have been more significantly affected by weathering processes. Dissolution of sulfur by oxidizing groundwater above the water table has effectively removed all sulfur from the oxide zone. Arsenic has been strongly remobilized over a zone five to ten times the width of mineralization. The greater width of anomalous arsenic values in the oxide zones makes arsenic soil geochemistry a very useful tool for finding exposed gold mineralization.

Geochemical studies (Arne and House, 2009) found evidence of Fe or Mn oxide minerals scavenging Au, As or Sb in the weathered zone and that raw concentrations of Au, As and Sb may be used for defining secondary dispersion (with allowance made for the rock type for Sb).

8 DEPOSIT TYPES

Sulfide gold mineralization at Fosterville is relatively homogenous with only one deposit type present. There are minor variations in the host rock type and structural setting. Fosterville-type deposits form a sub-group of orogenic gold deposits that are typified by gold occurring in fine crystals of arsenopyrite and/or pyrite disseminated in country rocks as a selvage to faults or veins. Fosterville-type deposits and classic vein-hosted deposits are effectively end members with many orogenic gold deposits displaying features of both.

Sulfide gold mineralization at Fosterville is controlled by late brittle faulting. These late brittle faults are stacked, generally steeply west-dipping with reverse movement varying from a few meters to over 150m. In the upper parts the fault system a series of moderately west-dipping reverse splay faults occurs in the footwall of the Fosterville Fault. Sulfide gold mineralization occurs as disseminated arsenopyrite and pyrite forming as a selvage to veins in quartz – carbonate veinlet stockwork. The mineralization is structurally controlled with high-grade zones localized by the geometric relationship between bedding and faulting. Mineralized shoots are typically 4-15m thick, 50m-150m up/down-dip and 300-1,500m+ down-plunge. These sulfide bodies are targets for exploration activities, especially where there is potential for grades in excess of 3 g/t Au (i.e. above underground resource cut-off gold grades).

Within the oxide zone, there has typically been minor re-mobilization of gold into the immediately surrounding country rocks which has resulted in an approximately 50% increase in the width of mineralization and consequent reduction in gold grade. There is no evidence of a wide spread high-grade supergene zone immediately below the water table. There is no current focus on exploring for additional oxide resources.

Until about 2015 the occurrence of primary visible gold had no clear control, with limited observations made mostly in oxide pits at the time they were mined. However, FGM now has many observations of visible gold mineralization in drill core and underground face/wall mapping. Based on those observations, FGM is of the view that visible gold mineralization is spatially associated with stibnite and quartz-carbonate veining. This stibnite-quartz-carbonate mineralization occurs as a late stage overprint/ replacement/reactivation of existing structures.

The broader concept that was used to explain observations of sulfide gold mineralization at FGM was primarily as an orogenic gold system. However, with the increase in visible gold and stibnite mineralization, there is a view that FGM may be part of a much larger scale intrusion-related gold system (e.g. Bierlein & McKnight, 2005) that may help to explain the overprinting relationship between the sulfide hosted gold and visible gold.

9 EXPLORATION

9.1 PRE-1992 EXPLORATION

Exploration prior to 1983 was undertaken by numerous companies including, Noranda Australia, Pennzoil, Newmont, Lone Star Exploration and Apollo International which obtained significant results, but concluded that target potential did not meet with their high tonnage exploration criteria.

1984 – 1987 – Bendigo Gold Associates Pty Ltd - EL1392

Relevant and available literature of the area was collected and researched and an extensive pilot study was undertaken in the Fosterville area, investigating the relationships between gold, arsenic, mercury in soils and mineralization believed to be typical for the area. Positive correlations were found between mineralization and all three elements in the soil C Horizon. Arsenic, due to better contrast characteristics was selected for future exploration (Van Riel, 1985). A general survey of the EL was also conducted, locating and inspecting historic workings.

A 730m long traverse of auger hole drilling soil program at 10m intervals was completed east of Mt Sugarloaf and west of the Fosterville Fault Zone with C Horizons assayed for As. A 230ppm anomaly was returned which indicated potential mineralized lines parallel to the Fosterville Fault Zone. A reconnaissance stream sediment survey was also initiated with main streams on the EL bulk sampled. All anomalous results from the stream sediment survey were explained by nearby old workings (Van Riel, 1985).

The old mining areas of Yankee Creek, The Sugarloaf Range and the New Windsor Rush area were mapped and investigated in detail. Both the Sugarloaf and New Windsor Rush workings were chip and channel sampled. In particular, the New Windsor Rush area showed encouraging gold values over a strike length of 250m.

A semi regional geochemical sampling program was conducted over the Sugarloaf Range area. Four anomalous zones were identified from nine sample lines at 500m spacing and 25m sample intervals, the most significant aligning with a line of historic workings. Two auger lines over the 250m anomaly at New Windsor Rush did not reflect the anomaly and no further follow-up work was conducted. A total of 99 bedrock samples were taken at the Axedale Mine workings area on an 800 x 200m grid but gold values tended to be low and erratically dispersed (Swensson, 1986).

During 1985 a pilot ground magnetic survey was conducted over selected areas of the Fosterville Goldfield. A Geometrix G-816 magnetometer was used with readings taken at 10m intervals along lines. In some instances, magnetic anomalies could be related to underlying reefs (Van Riel, 1985a).

1989 – 1990 – BHP Goldmines Ltd - EL1881

In early December 1989 BHP Goldmines entered into a joint venture with Homestake Limited to explore for possible extensions to the Fosterville and O’Dwyer’s Faults north of the Fosterville goldfield into the north eastern parts of EL1881.

Soil sampling was undertaken from 22 lines using a broad star pattern defined by 400 x 200m centers with five sub samples, each 1kg collected near each center. One is taken from the center sample site and four others are taken 50m grid east, west, north and south of the center generating a representative composite sample (Benn, 1989). From this sampling, a NNW trending Au anomaly between 500 and 800m in with and strike extent of 5km.

By September 1989, a stream sediment sampling program for gold and base metals was completed. A total of 190 samples from 89 sites were taken. From each site, two samples were collected: a nominal 4kg to 5kg sample of <4mm active gravel/gravel trap sediment which was analyzed for gold using bulk cyanide leach method and an active silt sample sieved to -80 microns analyzed for Cu, Pb, Zn and As. The Au bulk cyanide leach results identified a number of moderate to strongly anomalous drainages (Cameron, 1988).

In 1990 exploration activities within the project area comprised RAB drilling and rock chip sampling to evaluate the gold potential of the northern projection of the Fosterville and O'Dwyer's Fault systems. Low gold and arsenic geochemistry across the inferred position of both structures suggested that the faults were not significantly mineralized along this section of the fault system (Rabone et al, 1990).

The tenement was relinquished in September 1990 after the potential of the area was downgraded.

Other

The Russell's Reef area, south of the current Fosterville Mining Licence, has been subjected to several lines of soil sampling, and several programs of shallow RC drilling (50 holes averaging 31m depth) undertaken over a protracted period from 1976 to 1989.

Modern exploration in the Myrtle Creek area has occurred since 1974 by companies such as Noranda Australia (rock chip sampling, geological mapping, soil geochemistry (Au, Cu)), Ghana Gold (structural interpretation of aerial photography) and BHP (stream sediments and follow up soil surveys).

In the early 1990's Brunswick completed a 100m by 20m soil geochemistry grid across the Fosterville project area and as far west as the Sugarloaf Range. The soil geochemistry was very effective at defining gold mineralization except where alluvial cover exceeded about two meters. Two preliminary IP/resistivity lines were also completed with mixed results.

9.2 1992-2001 EXPLORATION

A 25m by 25m gradient-array IP/resistivity survey was conducted in the Robbin's Hill area by Perseverance in 1997. This survey did not conclusively define gold mineralization; however, it was successful in mapping carbonaceous shales and alluvial channels.

In the 12-month period leading up to 25 February 1998 PSV conducted hand auger bedrock geochemistry samples from Accott's Prospect, Glen Lyell and Sedgwick South where mildly anomalous zones of mineralization were defined. Hand auger soil sampling was also run along road reserves in the Goornong North Area and in combination with RAB drilling resulted in the identification of two new prospects, May Reef and Rasmussen's. An Au-As soil geochemical survey was undertaken in the Myrtle Creek area where encouraging results were obtained where gold mineralization appears to be associated with a small granite intrusion. Reconnaissance work and rock chip sampling was also undertaken during this period on the Fosterville East and Wild Duck Prospects (Van Riel, 1998).

Throughout 1998 and 1999 PSV continued to actively undertake extensive hand auger soil sampling and rock chip sampling at multiple prospects including West of Axedale-Goornong Road, Cochrane's Prospect, Rasmussen's, Sharkey's North, Glen Lyell South, Sugarloaf East and Sugarloaf North. Most of these surveys returned indifferent results. A further soil geochemistry and rock chip sampling at Myrtle Creek delineated sandstone hosted and granite related mineralization. An orientation soil geochemical study was undertaken to establish the parameters for exploring Goornong South type deposits buried below deep soil and gravel cover (Van Riel, 1999).

A geo-botanical survey was conducted within the Fosterville Mining Lease by Australian Geochemical Survey Ltd. It was found that an association of Au with As, Sb and also with Zn exists in this environment (i.e. tree bark was sampled). The survey results appear to point at three virtually untested anomalies: one west of Hunt's and two at Daley's Hill North (Van Riel, 1999).

After 1999 PSV regional exploration activities were limited with the company focusing on resource drilling at two of its advanced projects, Goornong South and Mills. Resources were determined for both, and Environmental Effects Statement (EES)-feasibility studies instigated.

9.3 2001-2017 EXPLORATION

After the EES studies for both the Goornong South and Hallanan's projects were completed, the company suspended its plans and proposals to mine the surface expressions of the deposits to focus on the sulfide project at Fosterville.

Two IP/resistivity surveys were completed by Perseverance in 2001 (Search Exploration Services) and 2005 (MIMDAS Geophysics). The 2001 survey consisted of four lines of 50m node spacing over the Central Area. This survey was designed to define gold mineralization at depths of between 50m to 250m. The data was inverted to make a model in real space. Anomalies were defined along the Fosterville Fault Zone, but the 50m node spacing meant that the survey resolution was unable to distinguish the carbonaceous shale in the hangingwall of the Fosterville Fault from mineralization in the footwall of the Fosterville Fault. In 2005 another four IP/resistivity lines were completed across the northern end of the Fosterville Goldfield, covering the Sugarloaf geochemical anomaly, the Fosterville Fault Zone and the Robbin's Hill Area. This survey defined weak geophysical anomalies over the Sugarloaf geochemical anomaly and the strike projection of the Fosterville Fault Zone north of MIN5404.

During the period June 2005 to June 2006, 1:10,000 scale color aerial photography was flown over the area surrounding the Fosterville Mining Licence by PSV. In addition, a Landsat image of the entire Exploration Licence was obtained to assist in regional interpretation (Norris, 2006).

During the period June 2006 to June 2007 PSV conducted a detailed mapping, soil-and rock chip- sampling program at the Myrtle Creek prospect. Petrography of twenty samples concluded that (altered and mineralized) granite is much more extensive than originally mapped.

It is concluded that the mineralization at Myrtle Creek is related to igneous (granitic) activity. This class of deposits is most unusual for Victoria, and never mined in the modern era, although examples are known elsewhere in the Lachlan Fold belt. A literature study was carried out which assisted in developing a suitable exploration model. A first-ever drilling program was designed for Myrtle Creek (Van Riel, 2007).

Northgate explored the Myrtle Creek area between 2008 and 2009, undertaking additional surface sampling in the northern area of historical workings, but the results were disappointing with the overall tenor of gold-in-soil much lower than observed elsewhere on the prospect.

UTS Geophysics, based in Perth WA, was commissioned in the latter half of 2008 to fly a detailed airborne magnetic, radiometric and digital terrain survey over Northgate's Fosterville Group of tenements and EL3484 Greenstones. A total of 23,172 line km were flown between October 2nd and November 26th, 2008 of which approximately 22,000 line km were completed over the Fosterville Group. A table of all geophysical data grids produced during the interpretive work is presented in Table 9-1. Magnetics Reduced to Pole and Total Count Radiometric results are illustrated in Figure 9-2 and Figure 9-3 respectively.

TABLE 9-1 2008 UTS GEOPHYSICAL SURVEYS OVER THE FOSTERVILLE GOLD MINE AND SURROUNDING AREAS

Dataset	Grid name
Magnetics	Total Magnetic Intensity
	Reduced to Pole
	First Vertical Derivative
	RTP First Vertical Derivative
Radiometrics	Total Count
	Potassium Percentage
	Thorium Percentage
	Uranium Percentage
	Potassium vs Thorium
	Ternary Image
Digital Terrain Data	Digital Terrain Map
	Digital Terrain Contours
Magnetic ZS Filters	RTP Block
	RTP Edge Zone
	RTP Tilt
	RTP Plateau

Over the period from 2009 to 2016, the Fosterville Gold Mine changed ownership multiple times with each company having a different view on the development of the project. Investment in exploration was directed towards developing near mine resource targets around the Lower Phoenix, Lower Phoenix North, Harrier and Robbin's Hill projects. The discovery of visible gold within the Lower Phoenix coincident with the merger between Newmarket Gold and Kirkland Lake Gold late 2016 saw a renewed interest in regional exploration within EL3539.

This interest saw the creation of a regional exploration department dedicated to the task of exploring for large ore deposits external to the mining lease with preference towards future underground opportunities. A review of current datasets suggested there was an opportunity to acquire geophysical datasets that could increase the sectional geological understanding such as seismic and airborne electromagnetic surveys to support the existing IP data.

Early 2017, Kirkland Lake engaged the services of HiSeis to conduct de-risking study to establish if the geospatial and petrophysical properties inherent within the turbidite sequence are conducive to be imaged by seismic surveys. The results of the study were positive enough to support a planned program of three lines of 2D seismic surveys across the northern, middle and southern sections of the Mining Licence with each line length designed at 8km.

Data acquisition commenced in August 2017 with some logistical issues reducing the acquired line length of the northern line (Line 3) by 2.3km and unable to collect any data on the southern line (Line 1) (see Figure 9-1). Basic seismic parameters for lines 2 and 3 included utilizing a vibe truck (60,000lb INOVA AHV) as the energy source along a geophone array with stations set at 5m spacing. Energy input was for 14 seconds sweeping through a frequency range of between 8 - 120Hz.

The teams from HiSeis and Fosterville Gold Mine conducted a review of the processed data and were able define some of the broader geological features such as alteration networks, general fold architecture and regional faults such as the Fosterville and Redesdale Faults.

Fosterville Gold Mine engaged the services of SkyTEM during 2017 to fly an Airborne Electromagnetic (AEM) survey across EL3539. The survey design was developed to fly 250m line sections east – west down the length of the lease. The total survey distance aimed to cover 1,980 line kilometers however due to the inability to fly the survey over cultural infrastructure only 1,325 line kilometers were achieved (see Figure 9-1).

The data was processed by SkyTEM and delivered to Mira Geoscience for incorporation in a broader regional target generation project. This project would combine Fosterville's geophysical datasets including gravity, magnetics, AEM and IP with physical geological data including surface mapping and drill hole measurements to develop a picture of the regional geology.

To assist with the regional geology interpretation, geophysical consultants were engaged to reprocess some of the historic geophysical data including magnetics, gravity and IP. The focus of the project was to utilize new technology, faster processing, and running new algorithms to help filter and invert the data. The following datasets were updated:

- Magnetics: Filter out the cultural features and minimize the signal of the tertiary basalt flow to attempt to image the finer magnetic signature of the turbidite sequence

- Gravity: Filter out longer wavelengths to better image some of the shorter local wavelengths. Local increases in gravity signature could be due to increase of density either by alteration or by physical changes created by folding of ductile stratigraphy

- IP: Several generations of IP have been conducted through the area. Raw data was reviewed for QAQC and re-inverted to bring consistency between the different generational IP datasets.

To complement the collection and review of the geophysical datasets, Fosterville Gold Mine committed to a regional soil sample campaign throughout EL3539. Historic collection of the soil assay data demonstrates a high level of correlation between the presence of gold and arsenic anomalism. Arsenic, potentially weathered from arsenopyrite, is much more prevalent in the regolith than gold and provides a strong proxy for determining significant areas of interest.

The updated soils project targets roadside verges, crown land and strategic parcels of privately owned land in a comprehensive 10,000 sample campaign. The project was designed to target 400m line section spacing with samples collected on traverses east-west at 100m intervals. The program targets geochemical trends running north – south however due to sediment cover in the north, the program was split between aqua regia assaying to the south and mobile metal ion (MMI) assaying in the north.

MMI analysis is used to analyze any metal ions that bind to clays and soils in the near surface. The ions migrate by capillary transportation through the regolith by the rising and falling of meteoric ground water. Research into the technology suggests that arsenic is an element that would be mobile in such terrain conditions. The utilization of the technology was also supported by the Victorian Governments Target 2 Initiative supporting new investigative methods to find mineralization under cover.

The opportunity to review the geophysical and geochemical datasets to determine opportunities also allowed for the staged assessment of potential drill targets within EL3539. Between Kirkland Lake Geologists and consultants, some criteria were established to critically assess a number of regional prospects that could be developed into a mineral resource. Factors including previous work, location, community, environment and quality of data were all taken into account before the targets were ranked for more drilling.

Near mine targets such as the O'Donnell's, Goornong, Russell's Reef, Backhaus and O'Dwyer's lines of mineralization (Figure 9-1) were all identified as having a level of work conducive to immediate diamond drilling campaigns. Areas such as Accott's, Rasmussen, Sugarloaf, Glen Lyall, Myrtle Creek, Sedgwick and May Reef all required further review in conjunction with the new acquired geophysical, geological and geochemical data to be elevated towards a targeted drill zone.

It was also identified that the collection of the soils and AEM data may lead to the discovery of previously unidentified areas of mineralization, particularly to the north in areas covered by Murray Basin sediments. These areas will be investigated using other drill methods such as RC drilling or Aircore.

Ongoing geological interpretation work has made significant inroads into supporting some historic findings as well as providing new insights into the fundamental geological system hosting the Fosterville gold mine. The reprocessed magnetic dataset was able to increase the contrast between the magnetic signature between the sand and silt units by removing the stronger signals created by tertiary basalt flows. Some lithological units could be traced throughout the lease and breaks in continuity are generally proximal to regional structures such as the Fosterville and Drummartin Faults.

In April/May 2010, Haines Surveys completed a ground-based grid and traverse gravity survey centered on the Fosterville Mining Licence and covering part of EL3539 and EL4572. A total of 34 survey lines and 723 stations were completed during the survey. Grid station spacing was nominally 200m in the central corridor of interest defined by the GSV Redesdale Fault model, increasing to 400m towards the edge of the grid. A number of roadside traverse lines were then completed in the southern portion of the Fosterville licence group, designed to infill existing state data and potentially track the course of the Redesdale Fault towards the Harcourt Batholith.

Early interpretation of a strong gravimetric contrast from high to low responses to the east of the Fosterville gold mine has been a compelling piece of evidence for the existence of the GSV’s Redesdale Fault. The existence of the Redesdale Fault was first proposed in late 2009 by the Geological Survey of Victoria and is supported by the 2006 State seismic transect (which passes north of EL3539), geological mapping near Redesdale and interpretation of State and Northgate gravity data. The interpretation importantly defined a number of gravity highs within the Redesdale Fault corridor, corresponding with known areas of gold mineralization including the Fosterville and O’Dwyer's Fault Systems.

Further geophysical processing has focused on verifying the correlation of anomalously high gravity responses associated with the known position of mineral resources with the exploration lease. Early theories for the relationship speculated that the density increases in the zones could be due to zones of increased fluid flow introducing denser minerals into the area. Revised data has not conclusively either supported or dismissed the theory however it has also been postulated that the highs could be due to the folding of shale sequences creating the increase in density.

Anomalous increases in density, by either mechanism, has been viewed as important criteria when evaluating the prospectivity of regional drill sites in conjunction with previous soils, mapping, mining and drilling datasets. The positive correlation between these datasets and known areas of gold mineralization supported the drilling of the O’Donnell’s and Goornong lines of mineralization in 2017. Diamond drilling results in both areas returned discreet structural zones hosting anomalous gold mineralization that will require further interpretation to understand how these areas fit into the broader regional geological framework.

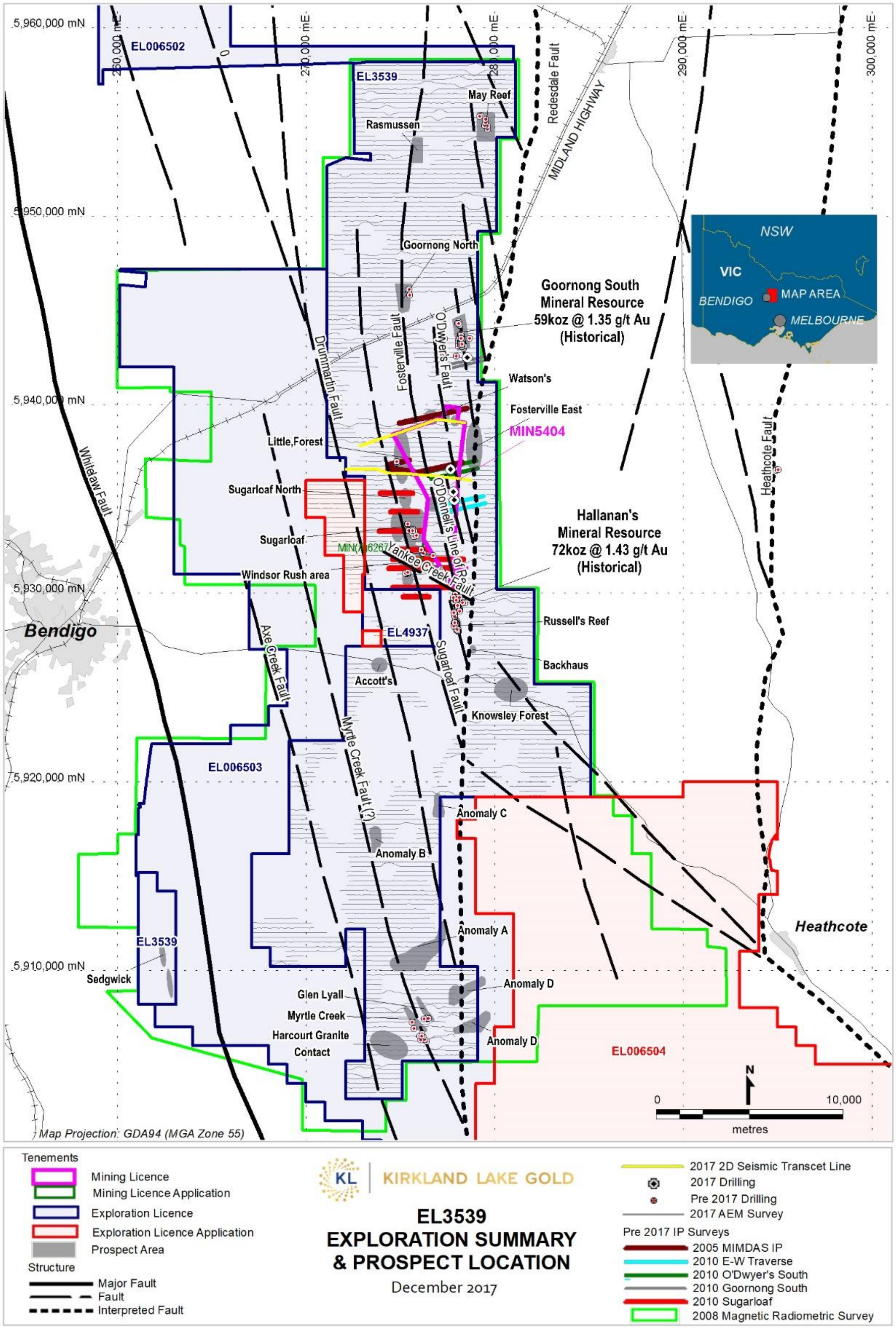


FIGURE 9-1 PLAN OF IP SURVEY AREAS AND PROSPECTS SURROUNDING FOSTERVILLE GOLD MINE

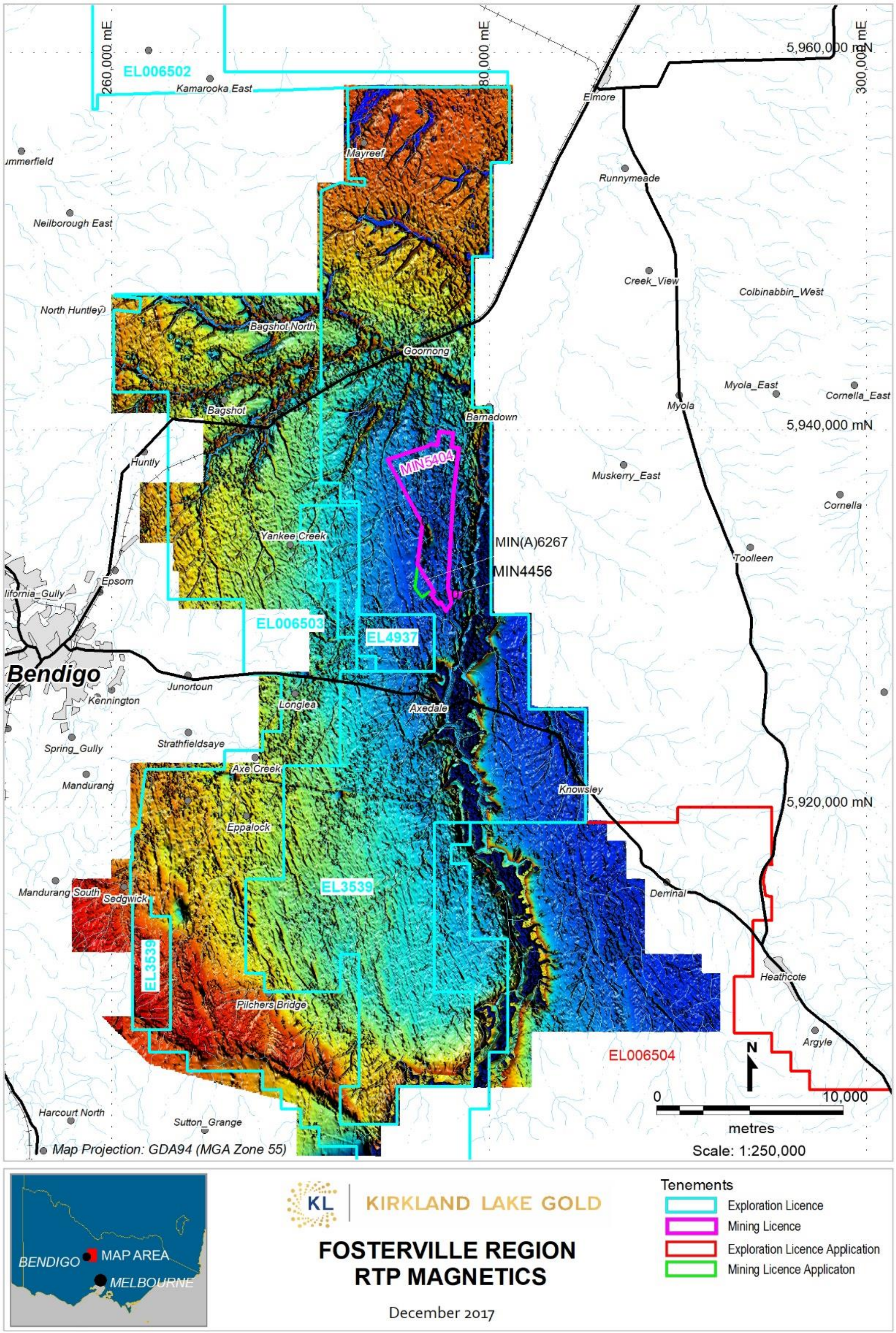


FIGURE 9-2 PLAN OF RTP MAGNETICS SURROUNDING FOSTERVILLE GOLD MINE

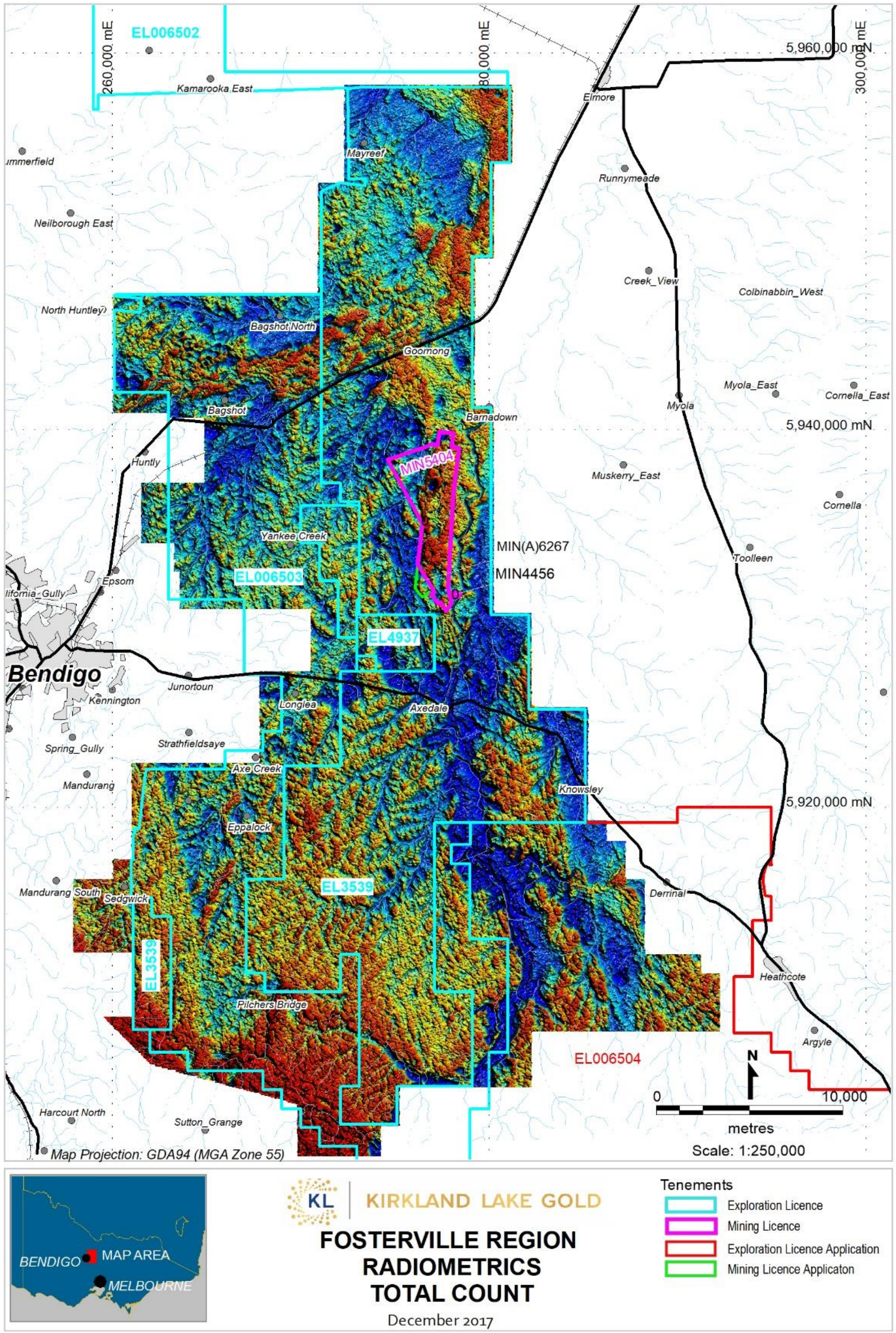


FIGURE 9-3 PLAN OF TOTAL COUNT RADIOMETRICS SURROUNDING THE FOSTERVILLE GOLD MINE

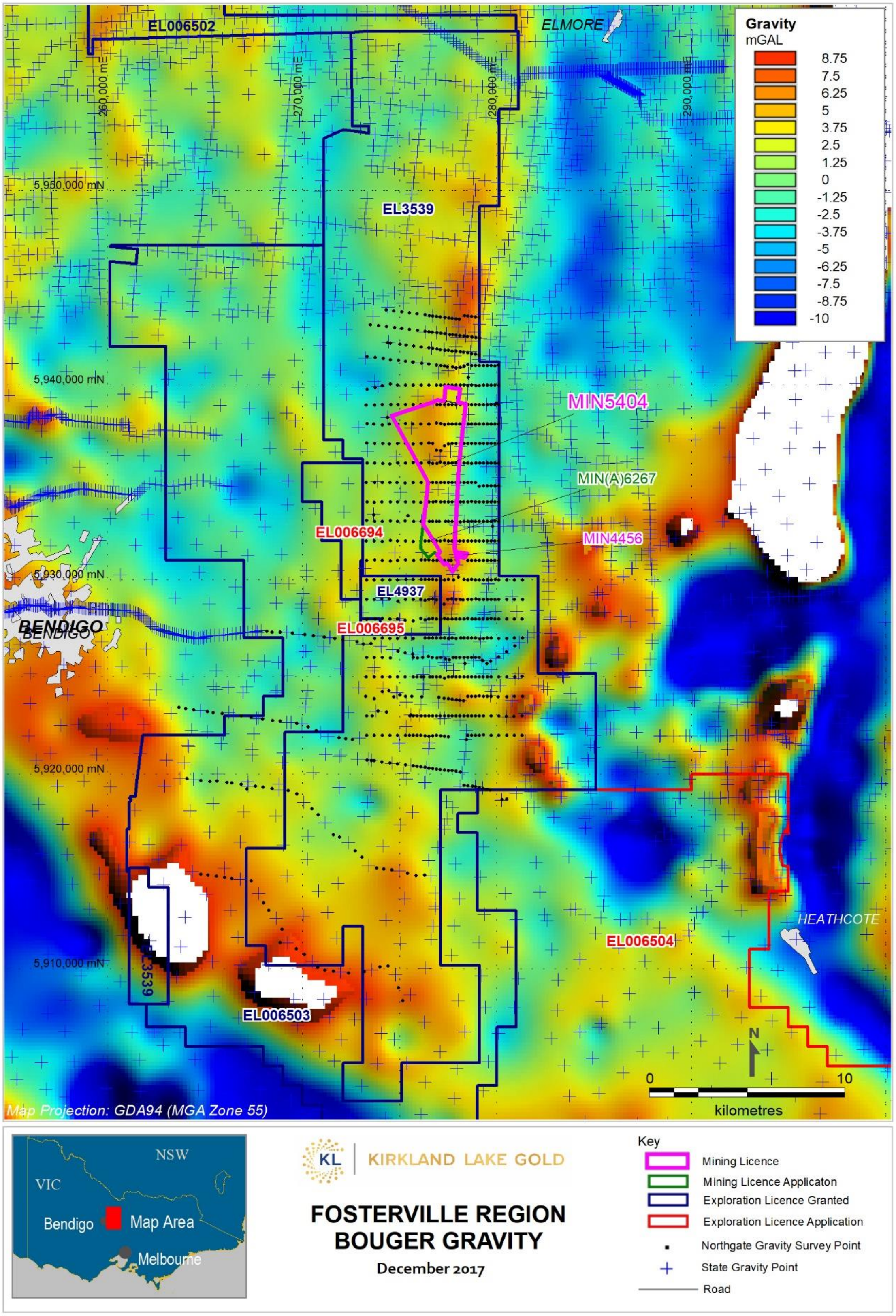


FIGURE 9-4 REGIONAL BOUGER GRAVITY

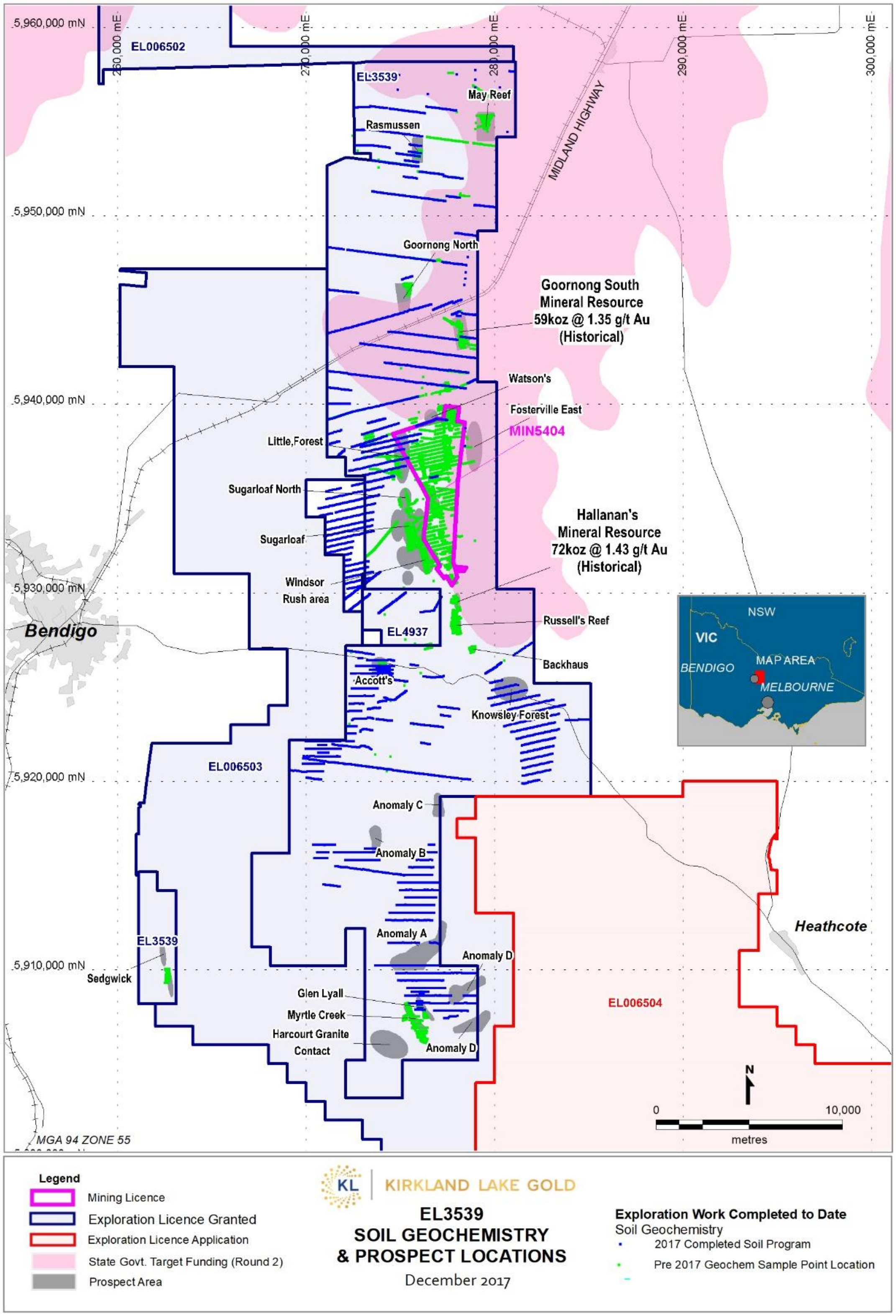


FIGURE 9-5 EL3539 SOIL GEOCHEMISTRY SAMPLE LOCATION DATA INCLUDING 2017 CAMPAIGN DATA

10 DRILLING

10.1 PRE-1992 DRILLING

Modern exploration commenced at Fosterville during the 1970's. Apollo International Minerals NL drilled three HQ diamond holes in what is now the Hunts area. Noranda Inc. drilled three HQ diamond holes in the Daley's Hill area. None of these holes have been included in the drilling database due to uncertainty in their collar locations.

From 1987 to 1991 Bendigo Gold Associates and later Brunswick drilled 488 RC holes and six HQ diamond holes targeting oxide mineralization on the Fosterville Fault and the Robbin's Hill area. This program resulted in the development of a heap leach operation, which commenced in 1991.

10.2 1992-2001 DRILLING

On acquiring the Fosterville Mining Licence in 1992, Perseverance (through a drilling contractor) started RC drilling for further oxide resources and reserves using a combination of cross over and face sampling hammers. These holes used the CN, CEL, CEN, DH and HAR prefixes.

In late 1994, while continuing to explore for oxide mineralization, Perseverance began to drill for sulfide mineralization on the Fosterville Fault potentially amenable to open cut mining. The 1997 Feasibility Study drilling was almost entirely RC with minor diamond drilling for metallurgical and geotechnical purposes and extended from 6000mN to 10700mN. Most of the drilling was completed by 1997 with minor infill drilling continuing to 1999. Holes from this program have the SP (sulfide project), CN, CEL (D), CEN (D), GT or HAR (D) prefixes, the 'D' denoting holes with a diamond tail (Table 10-2 and Table 10-3).

Section spacing was either 25m or 20m except in two small zones in the Falcon and Ellesmere Areas where 12.5m sections were drilled. This drilling program was generally restricted to within 100m of surface, extending to a vertical depth of 150m below surface in the Central North Area, reflecting the perceived limits of open cut mining. The data from this drilling program formed the basis of the 1997 Sulfide Project Feasibility Study, which was later updated in 2000 (Perseverance, 1997; 2000).

Two deep diamond holes, SPD7 and SPD8 were also drilled. SPD7 was drilled beneath the Central Ellesmere pit and intersected 53.8m at 1.97 g/t Au (drill hole abandoned in mineralization) from 382m, while SPD8 was drilled to 450m below Central North intersecting only 2.0m at 0.58 g/t Au on a splay fault some 60m to the east of the Fosterville Fault.

All the RC drill holes used face sample hammers. After 1996, if the sample was unable to be kept dry the hole was finished with an NQ2 diamond tail.

Open hole down-hole surveys were completed on all drill holes at 30m intervals except for a small number of holes, which collapsed before a survey instrument could be lowered down the hole. The vast majority of holes were drilled from the west towards the east, generally intersecting mineralization at 50° to 80°. Most sections include at least one hole drilled towards the west as a check on the geological interpretation.

The Fosterville Mine Surveyor used a Total Station Instrument to run a complete digital survey of the topography for any areas where drilling and later resource evaluation was planned to take place. Spot heights were measured at suitable intervals where easting, northing and RL are noted. Closer spaced measurements were taken around noticeable highs and lows in the topography. These spot heights were then triangulated using Minsurv software to construct a Digital Terrain Model (DTM). This DTM was used in all resource/reserve estimates at Fosterville. The spot heights were measured to an accuracy of $\pm$1.0cm at spacing of approximately two meters.

10.3 2001-2016 DRILLING

The current drilling program which commenced in July 2001 is focused largely on the Fosterville Fault Zone and is ongoing.

The drilling programs at Fosterville have essentially been continuous from 2001 to present. Most of the surface drilling was conducted by Silver City Drilling Pty Ltd until November 2009 and thereafter by Macquarie Drilling (drilling contractor). Deepcore Pty Ltd provided all underground diamond drilling services as well as completing diamond holes from surface during this period.

The majority of drilling carried out in this period has been diamond drilling with a limited amount of RC being undertaken, as well as a few AC holes. RC has been utilized to some extent for pre-collars (with diamond tails) this was predominantly undertaken for SPD holes up until 2008. The diamond tails commenced at least 20m before the Fosterville Fault so that all mineralization was intersected by the diamond tail. The RC pre-collars were generally 150m to 200m deep and the diamond drilling was double tube wireline drilling. In addition, navi or wedge drilling was undertaken from parent holes where holes depths are great, and since 2008 many of SPD prefixed holes were drilled using diamond drilling exclusively, HQ collars with NQ2 tails.

Collar locations are surveyed using the same technique as prior to 2001 (see Section 10.2 above).

The direction of the RC pre-collars was controlled to some degree by the use of a stabilizer rod, the relative size of the bit compared to the rods and by the weight on the hammer. Drill holes shallower than 70° tended to lift. Drill holes steeper than 75° tended to drop. With experience, deviation in the pre-collar was restricted to less than 1° in 10m. Navigational drilling was occasionally used to keep holes on target where the RC pre-collar deviated significantly. Down-hole surveys were carried out using a single shot Eastman camera (up until 2007) and then using Reflex™ or Pathfinder™ cameras (from 2007 onwards) at 25m intervals in the pre-collars (every 50m inside the rods as the hole was drilled and the intervening 25m intervals open hole after the pre-collar was completed) and at 30m intervals in the diamond tails. As a check on the validity of the single shot surveys six holes were surveyed at 6m intervals using an EMS (electronic multi-shot) tool. Between 2010 and 2016 holes greater than 130m have been surveyed at every 6m utilizing the EMS tool on hole completion.

The drill hole traces are currently calculated using the ‘semi tangent’ de-surveying algorithm on 10m intervals in MineSight™ software. This method is suitable for deeper RC holes, which have more than two down-hole surveys. The ‘fit-spine’ algorithm was previously used because it dealt well with RC holes that have only one or two surveys near the top of the hole and also because this algorithm was used historically at Fosterville.

The NQ2 diamond core has generally been drilled using either six-meter core barrels for surface drill rigs or three-meter core barrels for underground drill rigs. A core orientation mark is attempted for each three meter run predominantly utilizing an electronic core orientation tool, such as the reflex orientation tool (spear and mechanical devices has also been utilized in the past). An Ace Core Tool is employed to take structural measurements, where the Ace Core Tool cannot be utilized, structural measurements are taken from an inferred reference plane (regional cleavage) or are un-oriented.

Sieved chips from the RC pre-collars were logged in two meter intervals for lithology, weathering, alteration, percentage quartz, color and recovery. The logging information in the past has been recorded into the database via offline logging using hand held IPAQ computers and uploaded to the database. Since 2008 geological information has been entered into laptops running acQuire^{TM} Offline logging software, which supports increased validation options prior to uploading into the SQL Fosterville geology database.

The diamond core is transported to the core shed where the core is washed, oriented, geologically logged, recovery and RQD measured, marked up for sampling, digitally photographed, sampled and dispatched. Geotechnical logging occurs on an as needs basis, but is completed for each resource definition drill hole. The remaining core is stored on site either in the core farm behind the core shed or at a storage facility at the backfilled portion of the Falcon pit. The geological logging involves direct digital recording of observations on sediment grain size, lithology, planar and linear structural observations (as alpha, beta and gamma measurements), mineralization, alteration and quartz veining and identification of sample locations. Logging is recorded in the database by utilizing online acQuire logging software with data validation, the usual automated error checking and a list of samples printed as a cutting sheet. True dip and dip direction values for each collected structural measurement is calculated using a stored procedure in acQuire^{TM} software. Since 2008 logged data has been verified through viewing of the data using MineSight^{TM} 3D software.

The strategy for underground diamond drilling is to infill the exploration drilling intercepts (100m sections) to a notional 25m x 25m grid spacing (or tighter if required) prior to the mining of underground development. Underground diamond drill core samples used in the Phoenix and Harrier resource estimations are predominately NQ2 in diameter.

The change in drilling methods to largely oriented diamond core, intensive re-mapping of old oxide pits and a change in logging methods to collect detailed grain size data allowing sequence stratigraphic analysis allowed much more detailed and robust geological models. These geological models allowed a better understanding of the controls on gold mineralization, which in turn resulted in the better targeting and more efficient use of drilling.

The post-2001 exploration resulted in the discovery and definition of the Phoenix, Wirrawilla and Farley's deep zones. In addition, the Falcon, Ellesmere and Harrier Zones were extended. Modest additions to resources were made at the Daley's Hill, Sharkey's and Hunts Deposits.

The 2008 surface diamond drilling program tested the characteristics and extent of resources of the Wirrawilla (renamed as Harrier UG) and Phoenix resource areas. Thirty-six holes totaling 16,253m were completed with 86% completed in Harrier UG Area and 14% in the Phoenix Area.

The program resulted in the discovery of extensions to three north striking, west-dipping areas of gold mineralization within the Harrier UG Area: The Osprey; Raptor; and, Harrier Base Fault Zones. The zones are situated 1.5km south of the current Phoenix Mineralized Zone and are interpreted to be at a higher stratigraphic level, but down-plunge of the Harrier open-pit Mineralized Zone, which was mined in 2007.

The 2009 exploration program consisted of an additional 12,179m of drilling that served as the basis for an underground resource estimate in the Harrier Area using a 3.0 g/t Au lower cut-off.

Additional exploration drilling in 2009 consisted of 6,633m of drilling on Phoenix Extension, 1,051m on other targets in the Fosterville Mining Licence as well as 1,695m in ten holes on the Myrtle Creek Prospect (EL3539) located south of the FGM.

The 2010 exploration program consisted of 49,980m of drilling; the majority of which was directed towards the Harrier (47%) and Phoenix (30%) Zones, to both extend zones and reduce drill spacing to upgrade the confidence in the resources prior to reserve studies. The balance of the exploration was directed to other targets on the Mining Licence and a small amount of drilling was undertaken on the exploration tenements surrounding the Mining Licence.

The 2011 exploration program consisted of 17,032m of drilling directed towards thirteen different target areas on the Mining Lease, some of which are push backs on existing open pits and others are underground mining target areas.

Between 2012 and 2016 exploration has predominantly focused on diamond drilling in close proximity to current mining, with programs based on extending known extents of gold mineralization. This period saw approximately 155,021m of exploration drilling occur in the Robbin's Hill, Falcon North, Harrier, Phoenix, Lower Phoenix, Lower Phoenix Footwall, Fosterville Splays, Eagle and Kestrel areas.

The nominal progression of drilling is from initial surface exploration, through 100m by 50m and then 50m by 50m. Near surface mineralization is then further in-filled to 25m by 25m to allow pit design. Open pit grade control drilling consists of RC holes drilled 5m apart on 10m-12.5m sections to a maximum depth of 30m. However, for the O'Dwyer's South cutback, Harrier pit cutback and the deepening of John's pit, two 2.5m riffle split samples of 5m deep blast holes were used for grade control purposes. The open pit drilling, sampling and logging methods are the same as exploration RC drilling. Underground mineralization is in-filled to 25m by 25m or tighter if required by underground diamond holes.

Strike drives are face sampled each round (~3m) and sludge hole sampled on 6m Northings in a ring pattern with holes selected by geologists after review of current geological information. The selection criteria for sludge sampling are based on either the need for providing diamond drill data support or the need for additional sampling in data poor zones. No face sampling or sludge hole sampling is used in resource grade estimation, however, the information is considered for domain boundary placements.

Based on drilling results, geological interpretations are made in three dimensional surfaces to form a geological model. The geological model is utilized to interpret the mineralized zones, with geological solids subsequently generated from these interpretations. Further detailed discussion on this process is contained in Section 14 under each of the modeled areas.

10.4 2017 DRILLING

During 2016 the Phoenix decline was re-directed to the hangingwall of the Fosterville Footwall Anticline and a new drill drive (P4190 DD) from a hangingwall location was completed. 2017 saw a second drill drive created (Harrier Exploration Drill Drive) for drilling targeting primarily the D11 Swan (Lower Phoenix Footwall) and the D13 Benu (Lower Phoenix). The D01 Audax (Eagle) was also drilled during this time from Central Decline stockpiles with secondary targeting into the D11 Swan also occurring. The drill fleet was split between these main areas and the fleet was extended to handle the multiple east and west-dipping mineralized targets requiring drilling.

During Q1 in 2017 underground drilling at Fosterville Gold Mine was transitioned from being carried out by Deepcore Pty Ltd to a new drilling contractor, Swick Mining Services Operations Ltd. By the end of 2017, 433 holes collared from underground locations were completed for a total of 104,083 meters. Holes drilled into the Eagle Zone comprised 22.4%, Harrier, 17.5%, Lower Phoenix, 15.9%, Lower Phoenix Footwall, 15%, East Dippers, 12%, Phoenix, 8.3% Osprey, 2.8%, Kiwi, 2.3%, Sugarloaf, 0.5% and Geotechnical, 3.2%. In addition, there were 52 growth exploration holes collared from surface with a total of 32,899m, including 12 in the Northern Phoenix, 5 in the O'Donnell's line, 1 at O'Dwyer's South, 3 at Goornong South and 31 in the Robbin's Hill area.

During 2017, growth exploration diamond drilling from surface and underground totaled 61,267m in 108 drill holes.

Near Mine Exploration focused on targets to replace reserves by extending known ore shoots. These holes targeted areas within MIN5404 and EL3539 (Figure 10-7, Figure 10-8 and Figure 10-9) including the Eagle, north and south extensions of the Lower Phoenix and Lower Phoenix Footwall, Harrier Upper and Harrier South Areas (Figure 10-4 and Figure 10-5). O'Dwyer's South, O'Donnell's Line and the Robbin's Hill Area (Figure 10-6) Regional exploration outside the MIN5404 region was focused on the developing Goornong South prospect area southwards and following up on IP targets as well extensions of historic resource corridors (Figure 10-13). Resource definition drilling was focused on infill drilling of both the Phoenix and Harrier (Figure 10-1 , Figure 10-2 and Figure 10-3). Significant high-grade results were returned from this drilling with several intercepts containing visible gold in the Swan, Eagle, Lower Phoenix Footwall and Harrier Base structures. Drill results returned from the Swan structure that form part of the 2017 Mineral Resource estimate are illustrated in Figure 10-14.

10.5 2017 Q3 & Q4 DRILLING

Drilling during the reporting period just over 80km of diamond drilling was completed from both surface and underground. Around 41.5km (52%) of diamond drilling targeted the Lower Phoenix area, which includes the Swan Fault, Audax Fault, & Benu Fault. Almost 13.4km (17%) of diamond drilling targeted Harrier related mineralization, which includes the Osprey Fault. Surface drilling accounted for approximately 16.1km (20%) of drilling, with the remaining 63.9km drilled from the underground.

Project areas that were focused on during the reporting period are summarized in Table 10-1

Approximately 3.6km of drilling was conducted outside of the known resource and did not have an existing resource to extend.

TABLE 10-1 2017 Q3 AND Q4 GROWTH DRILLING SUMMARY

Program area	Diamond drill metres	Comments on program
Harrier South 4650mN	3767m	Harrier South drilling allowed the resource extension of several known mineralized domains 100m south including D21 Harrier Base, D22 Harrier Link, D24 Harrier HW, D30 Osprey and D32 Osprey Link.
Harrier Up-Dip 4900mN	1105m	This drilling allowed a data gap between Daley's Hill and Harrier to be filled as it was predicted to be prospective. These holes allowed for inferred resource growth between the two mineralized trends, which remains prospective at the time of reporting
Lower Phoenix 6200mN Lower Phoenix 6300mN Lower Phoenix 6400mN	2407m 3782m 1156m	Lower Phoenix programs are designed to extend the known inferred mineralized resource ahead of current mining fronts to the south. Specifically focusing on mineralization related to the high grade Swan Fault, and any footwall structures that may be present
Lower Phoenix 8600mN	3196m	This program was testing for mineralization that extended to the north of the currently known Lower Phoenix mineralization. The program did intersect mineralization however due to the timing of return of assay results, the entire program was not used for resource evaluation.
Robbin's Hill area	11174m	This program focused on extending the Curie Fault and Rubin Fault (previously reported as Farley's Fault and Farley's Footwall fault). The Curie Fault was extended to a strike length of 760m and dip extent of 360m, and the Rubin Fault to a strike length of 300m and dip extent of 500m. Both are prospective future targets to the north and south and at depth.
Sugarloaf 5450mN	1344m	Exploration hole designed to see where the regional Sugarloaf N-S trending fault may be located and if it is mineralized. No significant mineralization was intersected, and the hole was not used for any resource evaluation modelling

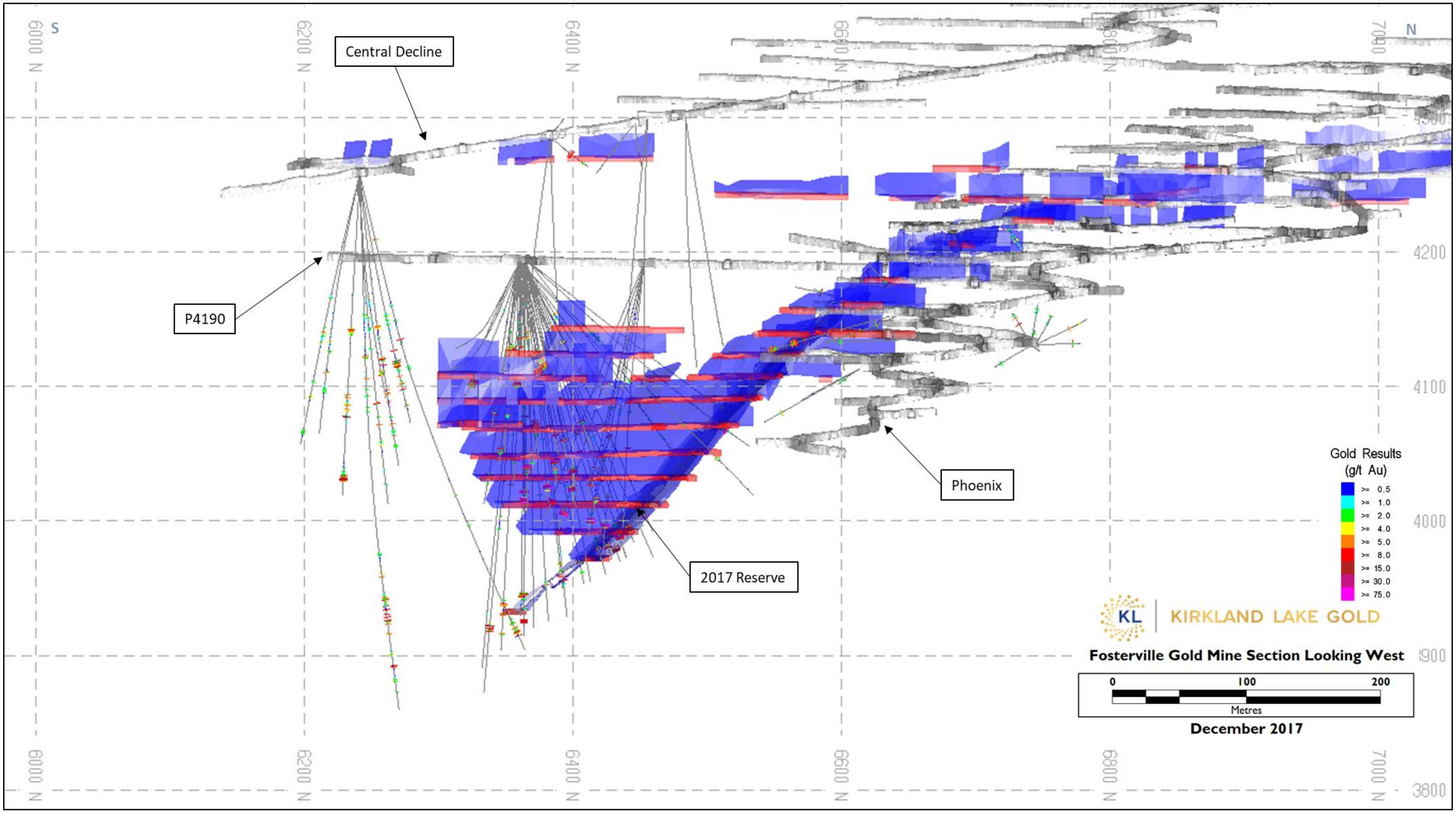


FIGURE 10-1 2017 H2 UNDERGROUND RESOURCE DEFINITION DIAMOND DRILLING CENTRAL AND PHOENIX SOUTH

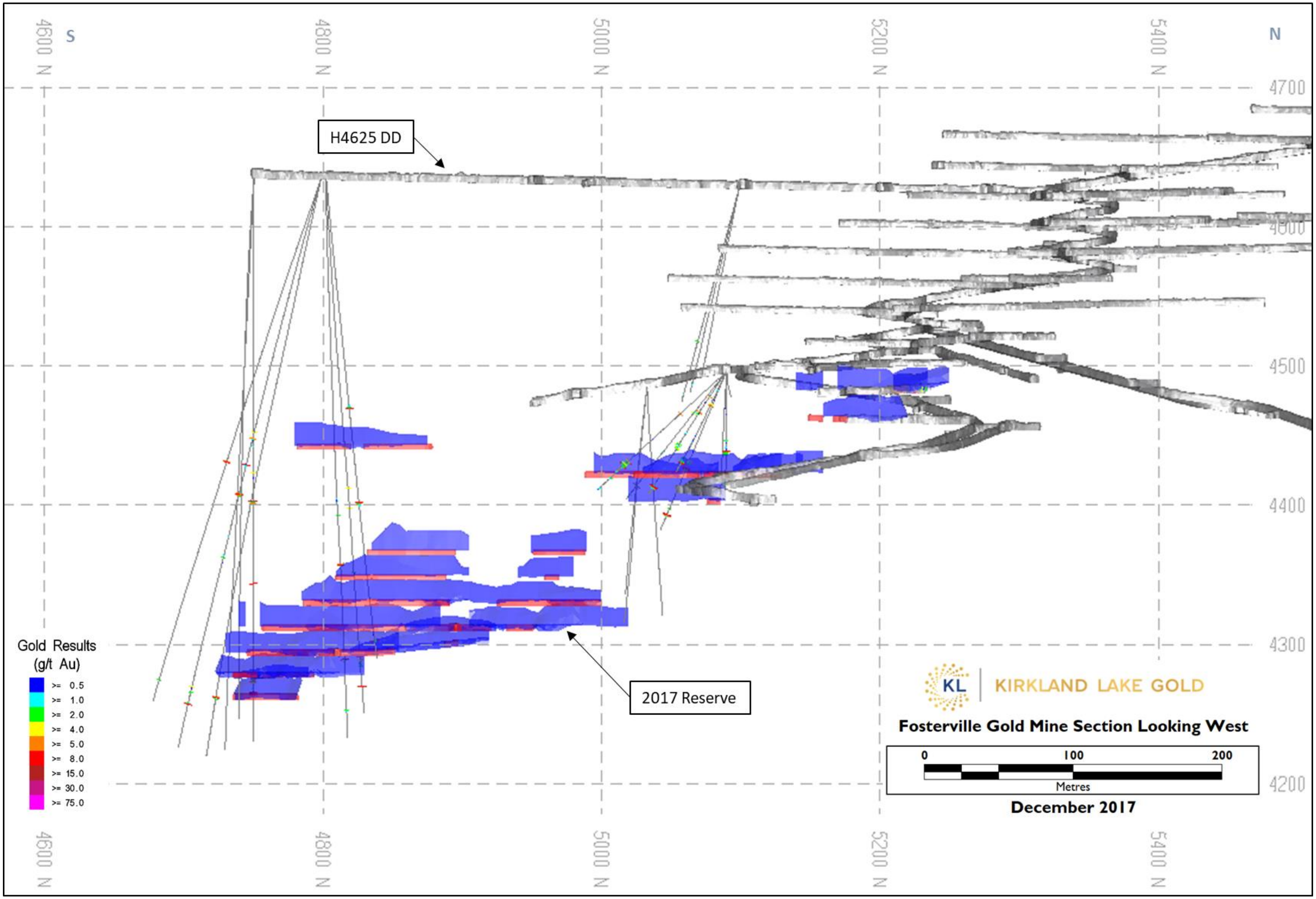


FIGURE 10-2 2017 H2 UNDERGROUND RESOURCE DEFINITION DIAMOND DRILLING - HARRIER

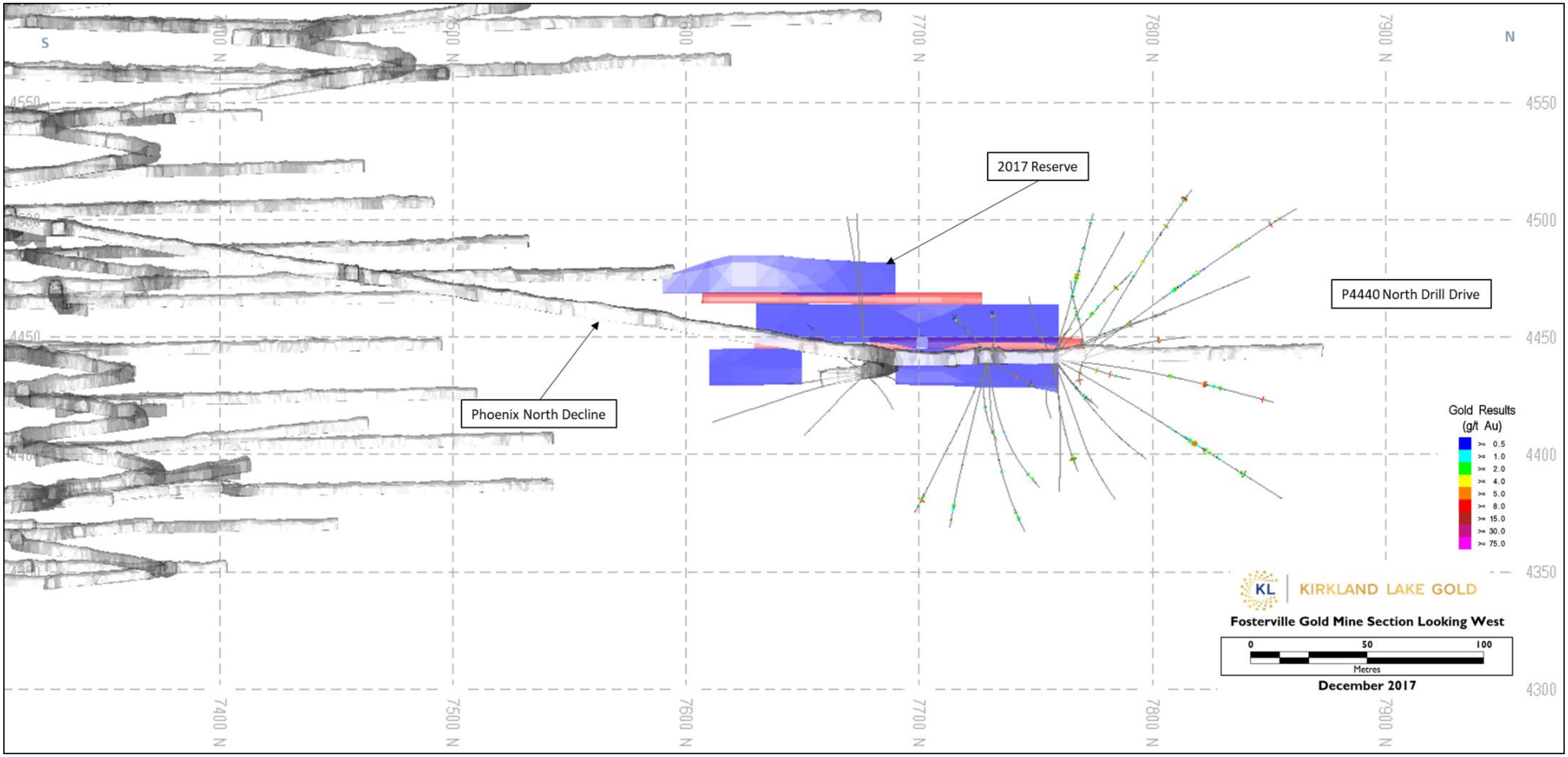


FIGURE 10-3 2017 H2 UNDERGROUND RESOURCE DEFINITION DIAMOND DRILLING – PHOENIX NORTH

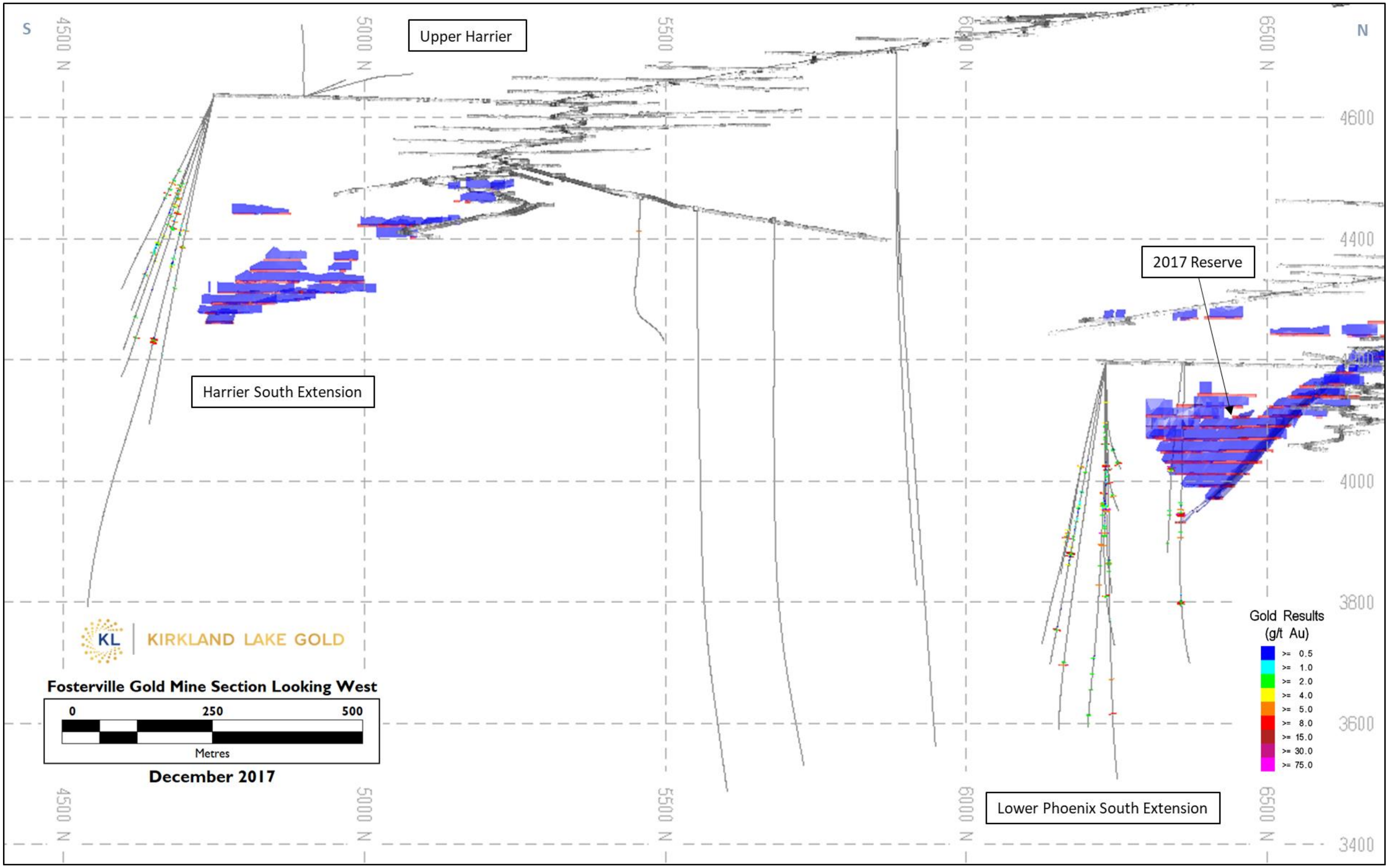


FIGURE 10-4 2017 H2 SURFACE AND UNDERGROUND EXPLORATION DIAMOND DRILLING - LOWER PHOENIX SOUTH, HARRIER SOUTH AND UPPER HARRIER

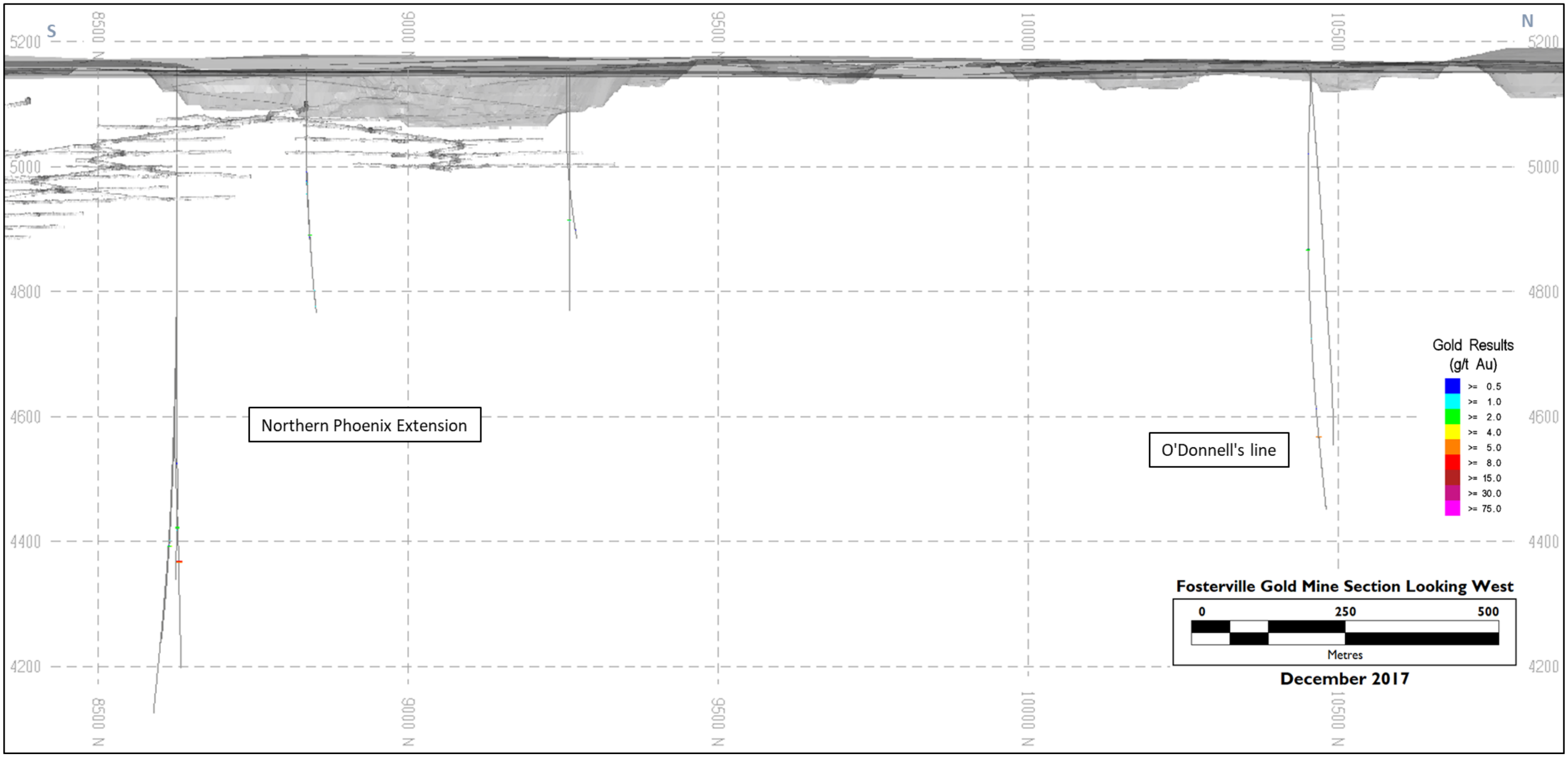


FIGURE 10-5 2017 H2 SURFACE EXPLORATION DIAMOND DRILLING – NORTHERN PHOENIX AND O'DONNELL'S LINE

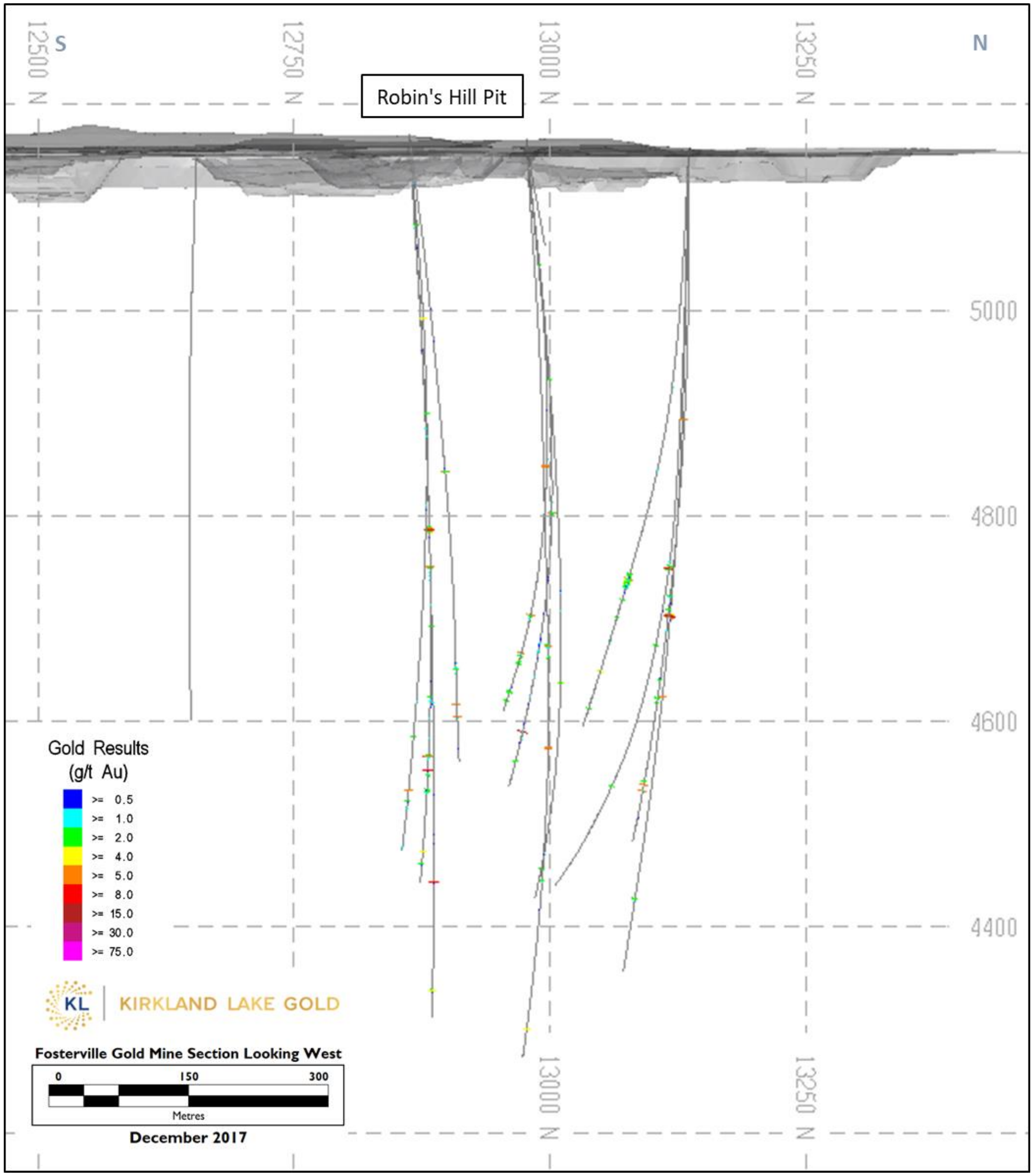


FIGURE 10-6 2017 H2 SURFACE EXPLORATION DIAMOND DRILLING – ROBBIN'S HILL

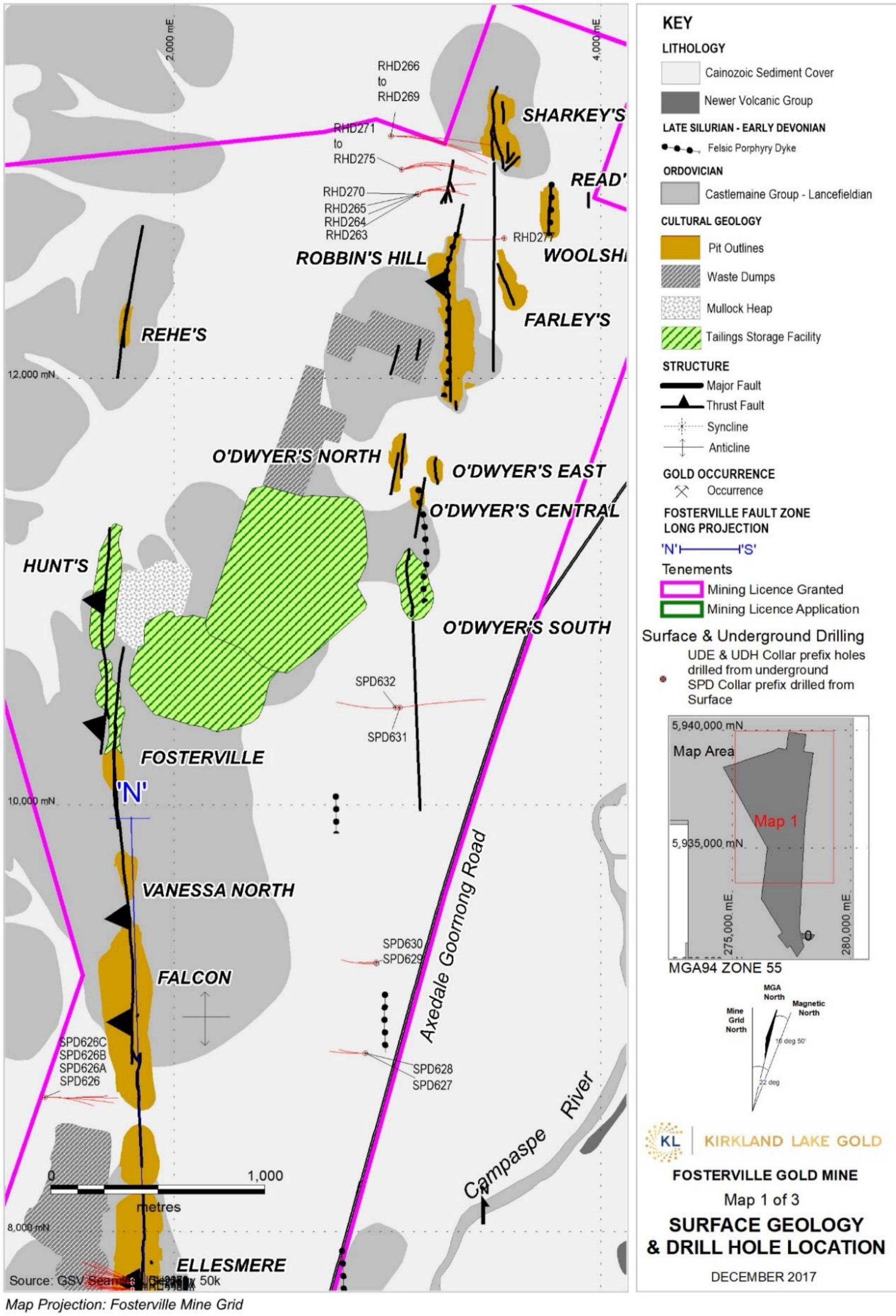
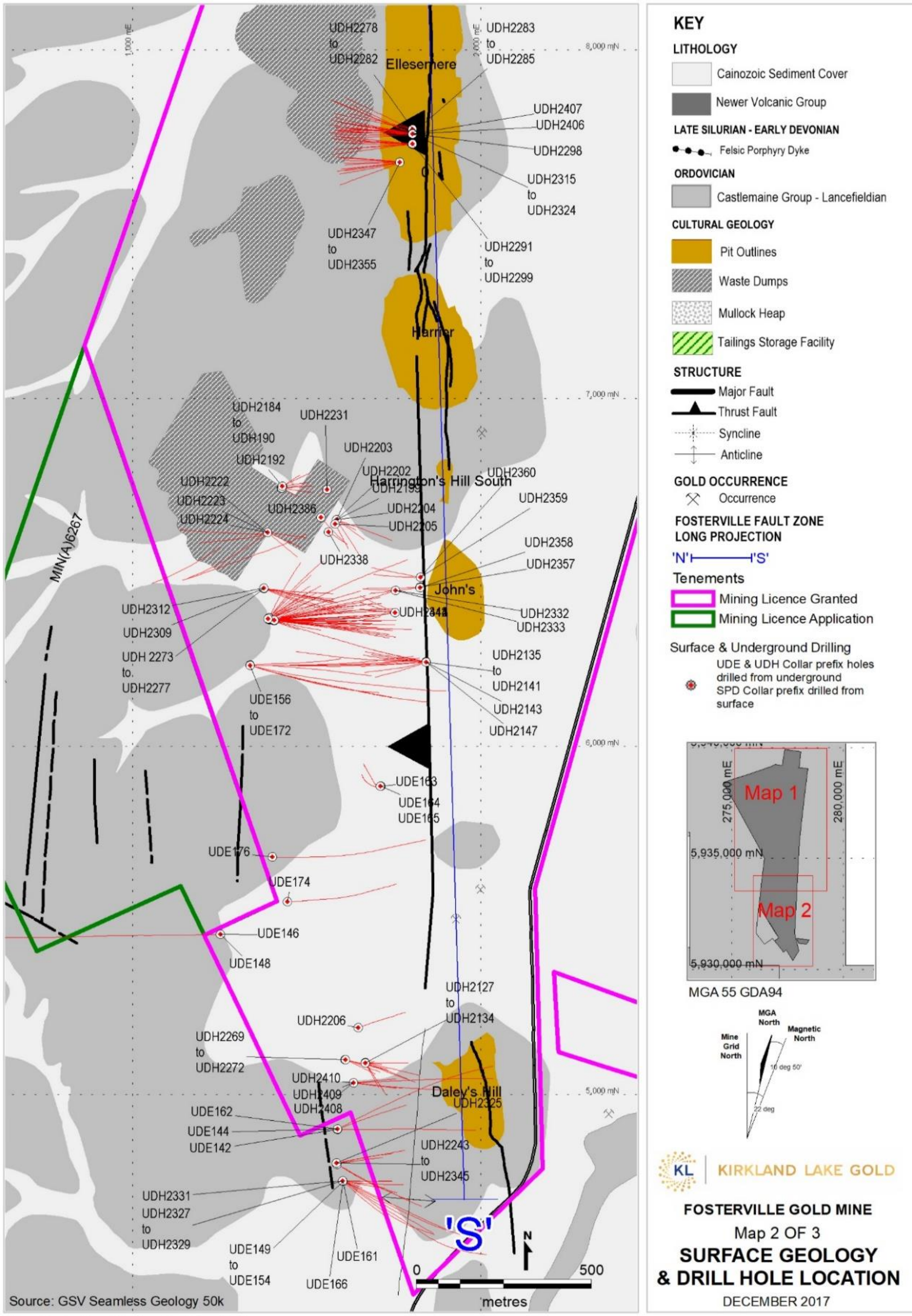
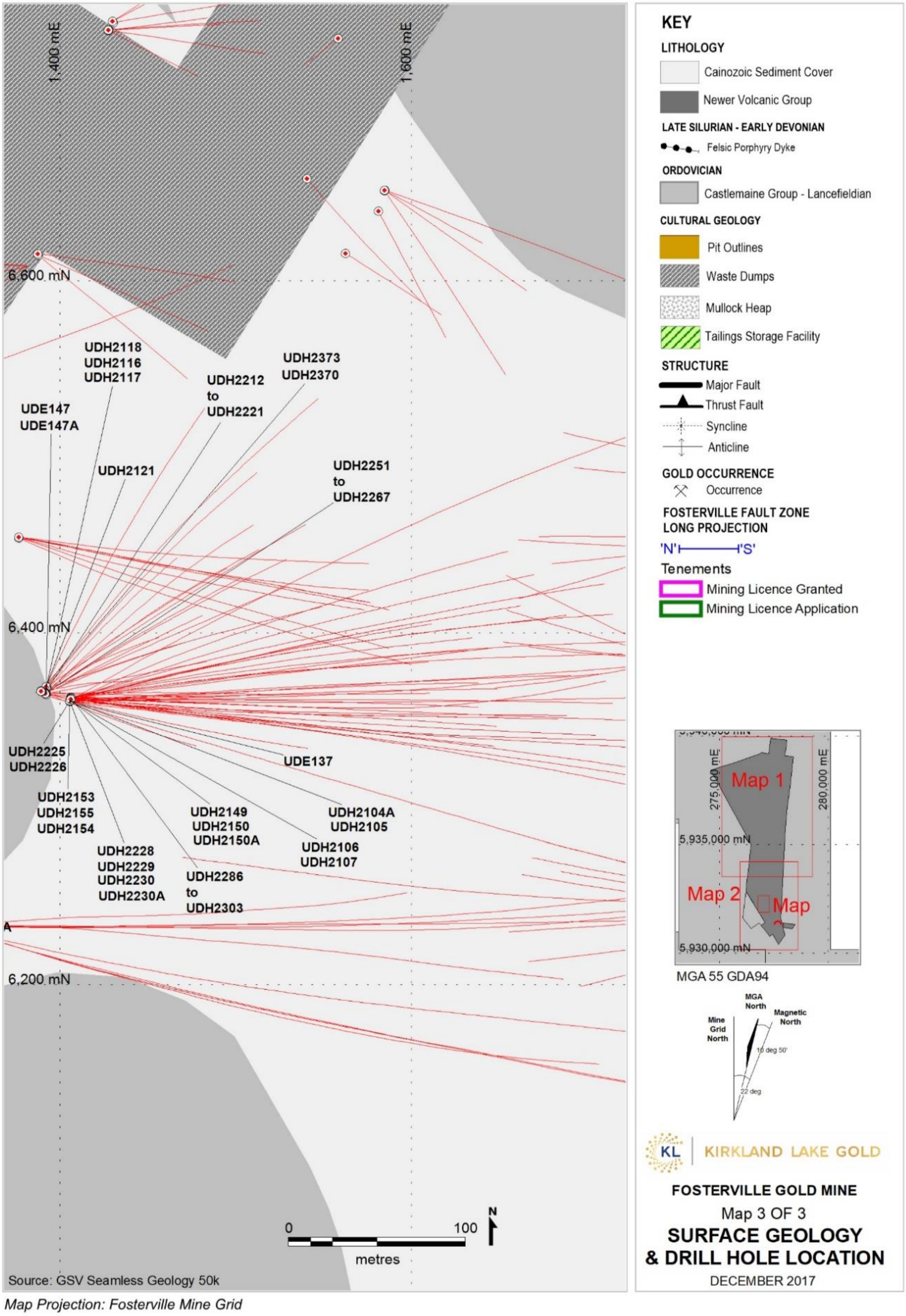


FIGURE 10-7 PLAN VIEW OF SURFACE GEOLOGY AND DRILL HOLE LOCATIONS MAP 1



Map Projection: Fosterville Mine Grid

FIGURE 10-8 PLAN VIEW OF SURFACE GEOLOGY AND DRILL HOLE LOCATIONS MAP 2



Map Projection: Fosterville Mine Grid

FIGURE 10-9 PLAN VIEW OF SURFACE GEOLOGY AND DRILL HOLE LOCATION MAP 3

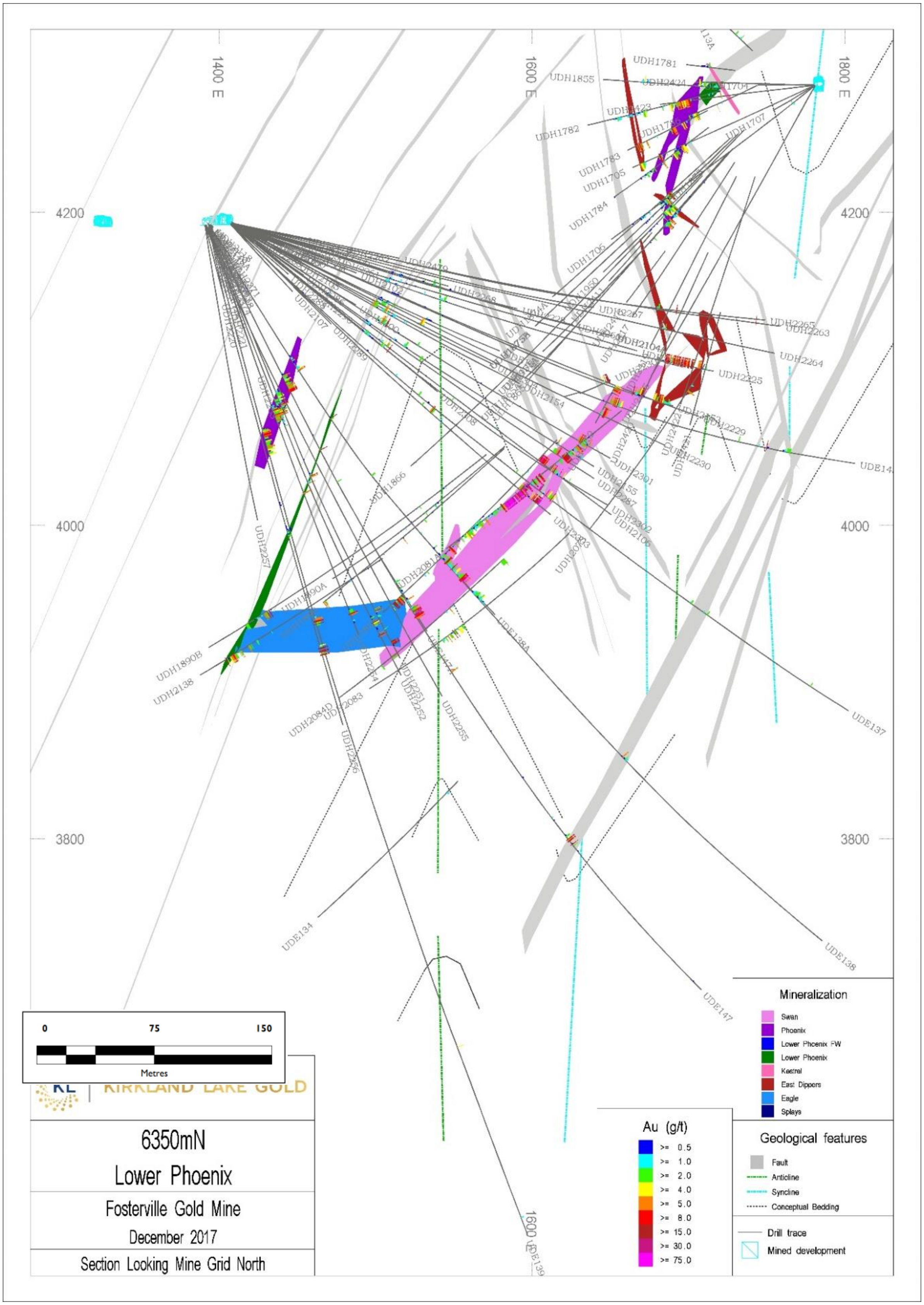


FIGURE 10-10 6350N LOWER PHOENIX DRILL SECTION LOOKING MINE GRID NORTH

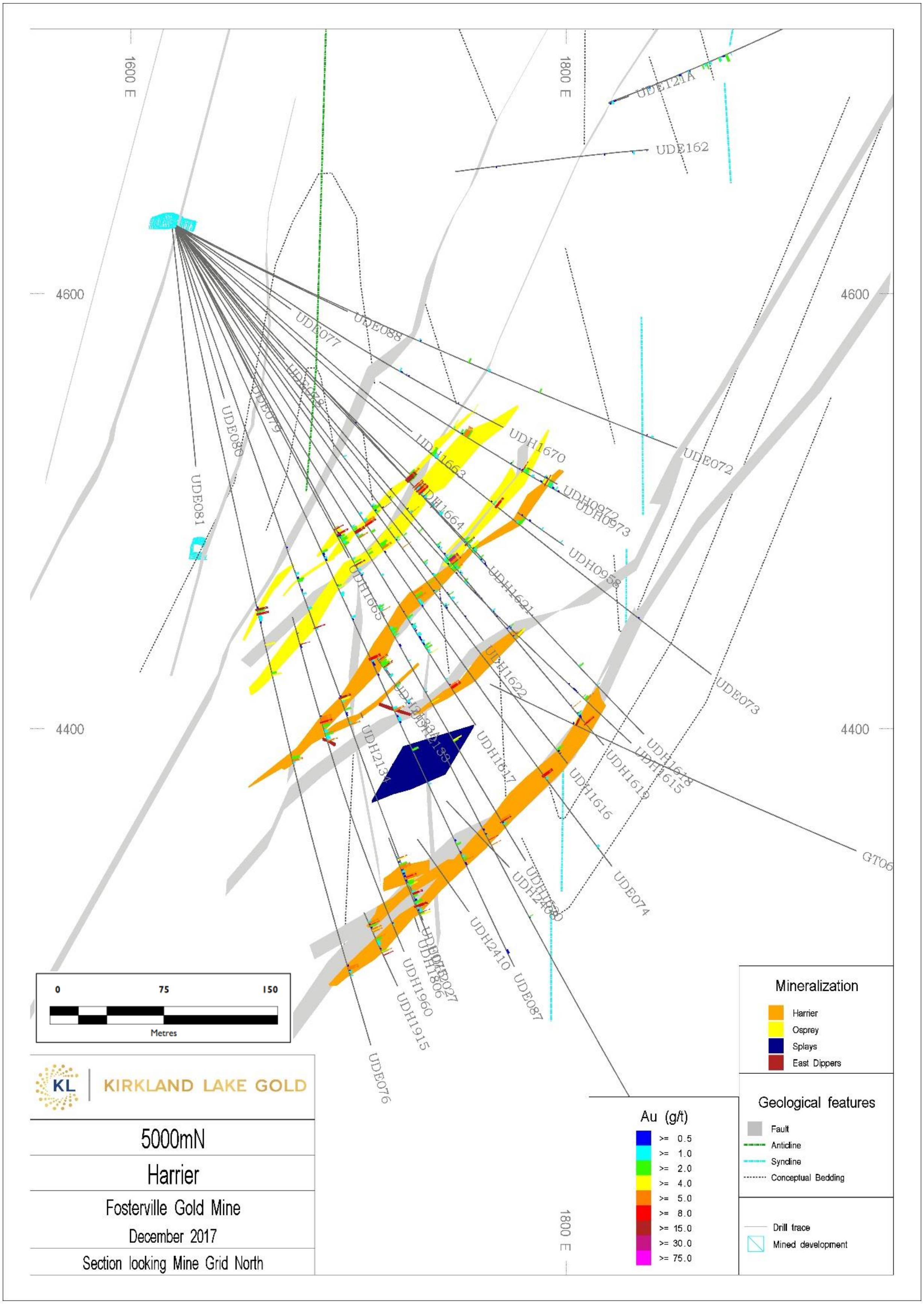


FIGURE 10-11 5000N HARRIER DRILL SECTION LOOKING MINE GRID NORTH

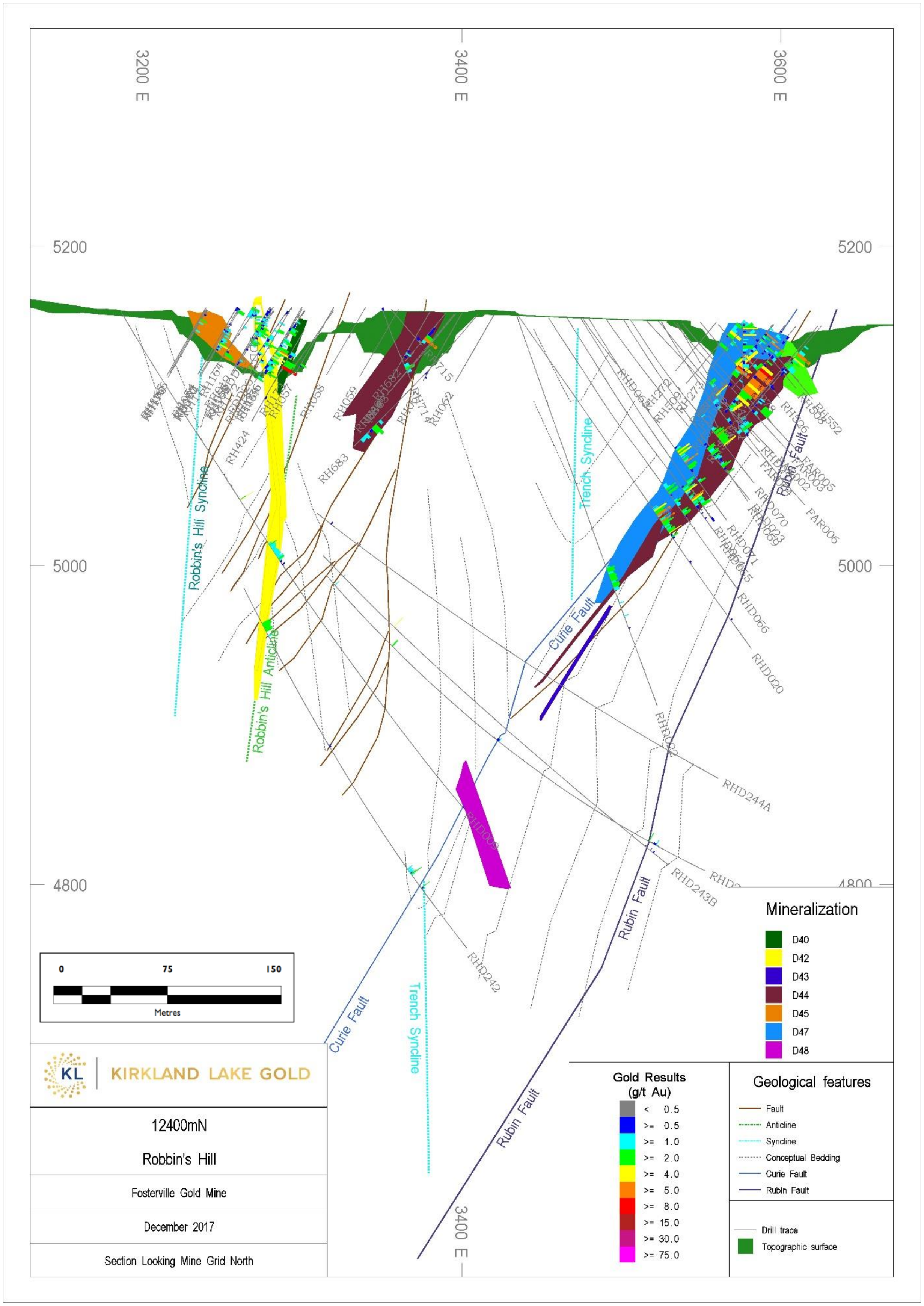


FIGURE 10-12 12400N ROBBINS HILL SECTION LOOKING MINE GRID NORTH

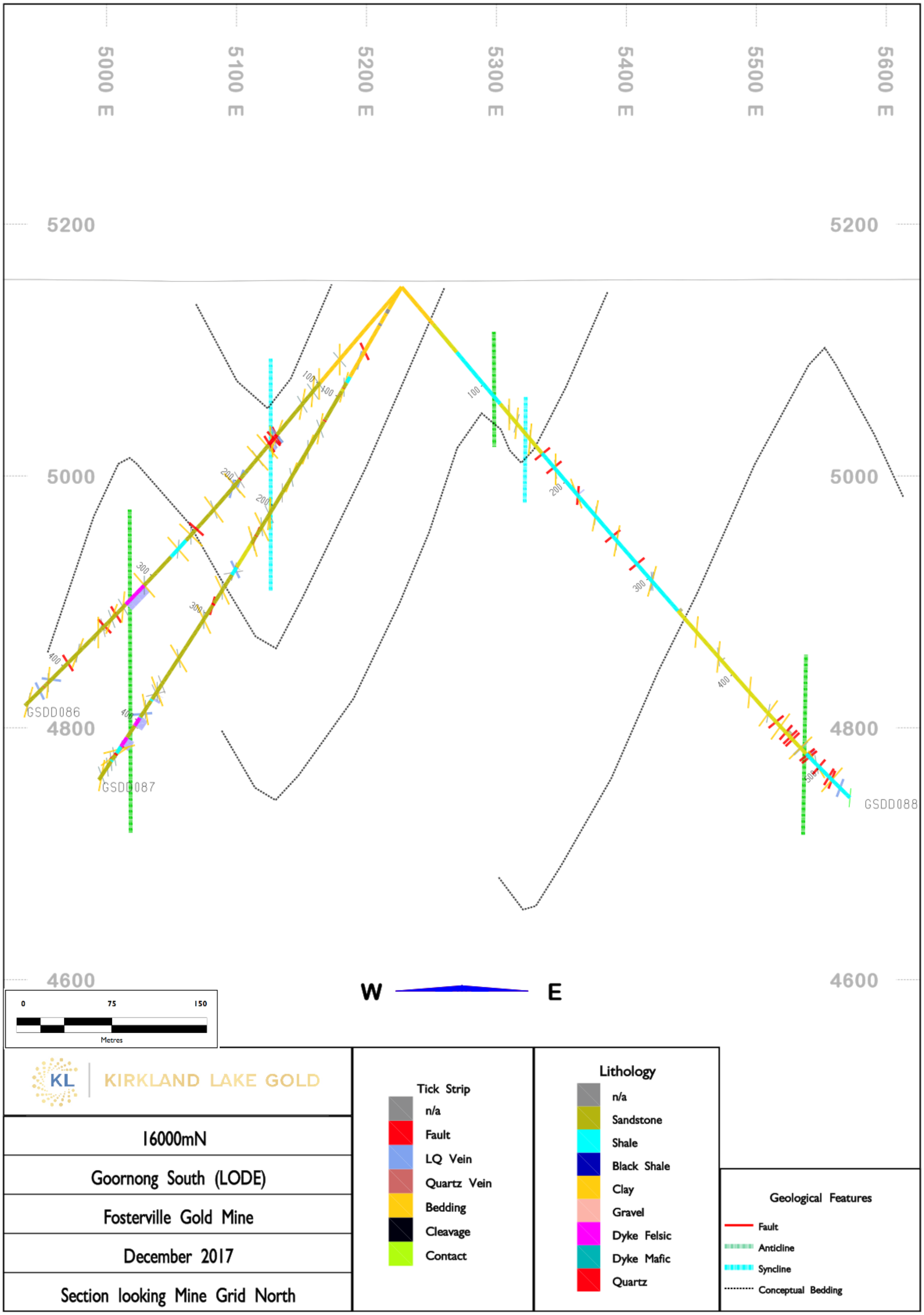


FIGURE 10-13 16000N GOORNONG SOUTH SECTION LOOKING MINE GRID NORTH

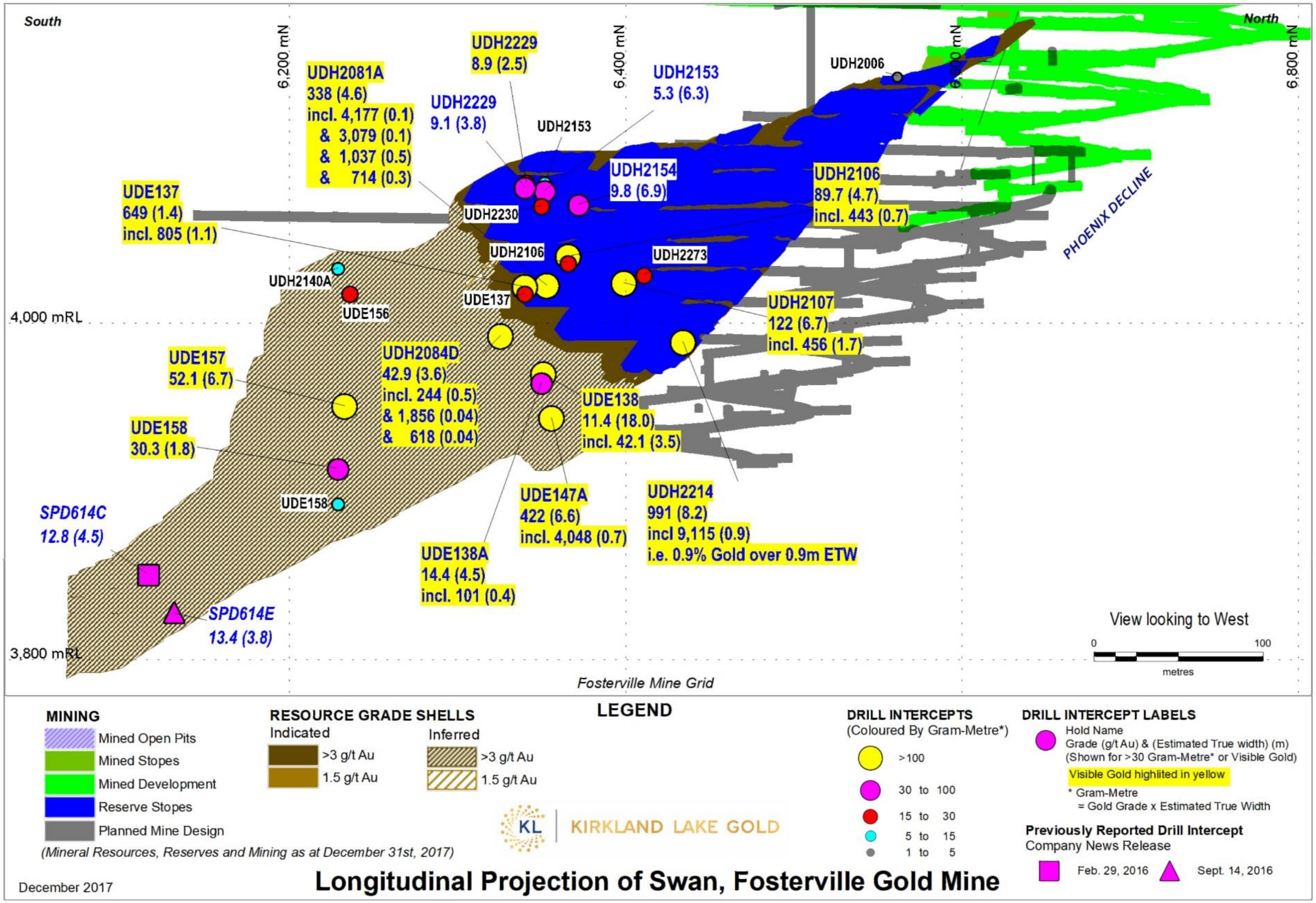


FIGURE 10-14 LONGITUDINAL PROJECTION OF SWAN MINERALIZATION DISPLAYING EXPLORATION AND H2 2017 RESOURCE DEFINITION DRILL INTERCEPTS

TABLE 10-2 DRILL HOLE PREFIXES FOR ALL DRILLING ON THE FOSTERVILLE FAULT CORRIDOR SOUTH OF 10,000MN

Hole Series		No. of Holes	Comments
BGL001	BGL106	35	1990-2016 RC hydrological
CEL001	CEL124	96	1997 RC & AC open pit sulfide
CELD020	CELD106	26	1997-2003 Diamond tails from RC wet drilling
CELD051	CELD058	8	1996 Diamond metallurgical
CEM100	CEM105	6	1994 RC metallurgical
CEN001	CEN124	80	1997 RC for open pit sulfides
CEND019	CEND103	22	1997-8 Diamond tails of RC
CEND110	CEND112	2	1997 Diamond Exploration
CEND038	CEND113	12	1996-7 Diamond metallurgical
CN100	CN248	149	1994 RC exploration
CNM001	-	1	1995 RC metallurgical
DALD001	DALD020	21	2003-6 Daley's Hill diamond
DDH3*	DDH5*	3	1976 Daley's Hill diamond
DH001	DH238	193	1995-9 Daley's Hill RC
DHRB010	DHRB013	4	1997 Daley’s Hill RC
ELRC0001	ELRC0949	912	2005-7 Ellesmere pit RC (7500mN–8425mN)
FARC0001	FARC0825	825	2005 Falcon pit RC (8615mN–8800mN)
FDD14A	FDD33	7	1990 Diamond (Brunswick)
FO002	FO379	235	1986-90 RC (Bendigo Gold Associates)
FO400	FO487	56	1992-1994 RC (Perseverance)
FOS056	FOS214	3	1998-2000 RC & AC exploration
GT001	GT065	64	2004-2017 Diamond geotechnical
H4805RAWPILOT	-	1	2014 Pilot hole for Harrier 4805 RAW
HAR003	HAR065	61	1997-9 Harrington’s Hill RC
HARC001	HARC248	233	2006-11 RC (6350mN-7315mN)
HARD1	-	1	1996 Diamond PQ metallurgical
MB12	-	1	2009-12 RC hydrological monitoring
SH003	SH016	14	2012 – 2015 Underground Services
SD001	SD039	43	2007-8 Diamond (7775mN-8675mN)
SP001	SP372	299	1994-6 RC drilled down to 5100mRL
SPD001	SPD009C	9	1995 Diamond exploration
SPD010	SPD632	712	2001-17 RC and diamond exploration
ST009	ST179	50	2003 RC & AC Sterilization
SVH001	SVH009	9	2010 Underground Services
UD001	UD995	934	2006–11 Underground diamond
UDE001	UDE174	187	2010-17 Underground diamond exploration
UDH0001	UDH2407	1982	2011–17 Underground diamond
	Total Holes	**7,296**	

TABLE 10-3 DRILL HOLE PREFIXES FOR ALL DRILLING IN THE ROBBIN'S HILL - O'DWYER'S AREA

Hole Series		No. of Holes	Comments
FAC001	FAC003	3	1993-2001 Farley's AC
FAR001	FAR011	10	1997 Farley's RC (face)
FARM001	-	1	1994 Farley's metallurgy RC (x-over)
FDD019	FDD040	12	1989-90 Robbin's Hill diamond HQ
FO303	FO309	6	1998 O'Dwyer's RC (face)
GH100	GH354	254	1993-96 Sharkey's RC (x-over) & diamond HQ (1) & NQ (1) & RAB (2)
GHM001	GHM002	2	1994 Sharkey's metallurgy RC (x-over)
MBOS01	MBOS07	7	2011 O'Dwyer's South RC hydrological monitoring
ODW001-134, 150-158 & 167		128	1999, (2005 ODW167) O'Dwyer's RC (face)
ODW135-149 & 159-166		23	1999 O'Dwyer's AC
ODW168	ODW206	39	2007 O'Dwyer's South RC (face)
ODW207	ODW228	22	2011 O'Dwyer's RC (17, face) & NQ2 (5)
ODWD001	ODWD003	3	1997 O’Dwyer's diamond NQ
PBOS01	PBOS05	5	2012 O'Dwyer's South RC hydrological production
RD001	RD151	147	1994-98 Read's RC (83, face) and AC (64)
RDD146	-	1	1998 Read's diamond NQ
RH001	RH878	756	1987-96 Robbin's Hill and O'Dwyer's RC
RHD001	RHD207	204	1994, 2004-07 Robbin's Hill RC & diamond NQ2 (47) & HQ (15)
RHD208	RHD275	75	2009-17 Robbin's Hill & Farley's-Sharkey's diamond NQ2 (25) & NQ3 (3) & RC (6, face)
RHM001	RHM004	4	1993 Robbin's Hill metallurgy RC (x-over)
ROB001	ROB012	11	1996 Robbin's Hill RAB
ROB013	ROB066	51	1998-99 Robbin's Hill RC (face) & AC (3)
SHA001	SHA033	25	1997 Sharkey's RC (face)
ST001	ST008	8	1993 Sterilization RC (x-over)
Total No. of Holes		**1,797**	

No drill holes are excluded from the database. However, drill holes that are of questionable quality (due to suspect collar coordinates, down-hole surveys or sampling/analytical QAQC) are omitted from any resource calculation process. Such holes typically are in areas of historic mining and have no influence on the current Mineral Resource estimates.

10.6 QAQC OF DRILL HOLE SURVEYS

Allwood (2003) details the results of down-hole surveys repeated using both an Eastman camera and an Electronic Multi-Shot (EMS) tool. The EMS down-hole surveys agreed with the single shot surveys to within 0.1° in dip and 2° in azimuth resulting in a total average variation of 0.4m per 100m down-hole. The repeated Eastman surveys have an average variation of 0.6° in azimuth and 1.6° in dip, reflecting the precision of the Eastman camera survey tool. Comparing the drill hole traces plotted using the Eastman data with the EMS data shows that the variation in drill hole location due to survey method is considerably less than the variation in hole trace caused by the use of different drill hole de-surveying algorithms. However, in 2007 the use of EMS tools as a standard in preference to Eastman cameras was adopted across the various rigs operating at Fosterville, and in 2010 it became common practice to have survey data at six meter increments or less down each hole. The increased density of down-hole survey data has permitted ability to readily identify and remove suspect azimuth measurements.

Accuracy of down-hole surveys are most effected by proximal ferrous mine infrastructure and/or proximal in-hole casing. Other factor affecting the accuracy of the position of Drill hole survey data is the accuracy of the collar position. Drill holes can be affected when passing close to existing development due to steelwork (mesh, plates and cable bolts) associated with underground development; the effect is shown through elevated magnetic readings, which allow the removal affected surveys. Over time the survey instruments accuracy degrades through usage. Routine testing of all down-hole survey cameras on a test bench of known dips and azimuths checks tool accuracy degradation.

TABLE 10-4 DOWN-HOLE SURVEY CAMERA TESTS SUMMARY

Testbed Roll Tests		
Tools	Test Days	Fails
67	350	6

Dip				
Testbed	Roll Tests	Average	Std Dev	Degrees Absolute error
A	73	14.32	0.06	- 0.08
B	2931	38.01	1.36	0.01
C	114	27.44	0.08	0.04
Azi				
Testbed	Roll Tests	Average	Std Dev	Degrees Absolute error
A	73	1.25	0.35	0.15
B	2931	1.33	4.27	0.23
C	114	1.07	0.33	-0.03

Since October 2017 a REFLEX GYRO tool has been used in conjunction with a Minnovare Azimuth Aligner tool for holes with a positive dip or a length greater than 350m. Test work completed in the first half of 2017 suggested that this combination results in a much more accurate hole projection on longer holes.

10.7 PLANNED 2018 EXPLORATION

The planned exploration drilling activities in 2018 are focused on near-mine targets and extending mineralized trends within MIN5404. Regional exploration activity throughout the expansive EL3539 commenced in 2017 and is anticipated that more regional drilling activity will follow in 2018 to advance the understanding of prospective targets. The intent of the exploration is to replace and increase the mineralized resource at Fosterville by extending presently known ore shoots and to locate anomalous gold mineralization for further exploration investigation, then subsequent resource evaluation.

Regional Exploration for 2018 includes 19,388m of planned diamond drilling for an estimated cost of A$4.1M, A$4M on 3D seismic surveys, A$83k on soil geochemical surveys, and 40,000m of Aircore and Reverse circulation drilling with a total expenditure of A$3M within the MIN5404 and EL3539.

The 3D seismic survey will be the first of its kind within the state of Victoria. The aim of the project is to define the 3 dimensional geometry of the Swan resource with the aim to better understand some of the geological controls away from the mining corridor. If successful, the program may be a vital tool in vectoring in on prospective zone of mineralization to allow for more informed targeting with conventional drilling methods.

Near mine exploration drilling activities planned for 2018 include:

Lower Phoenix (6000mN & 6200mN) Drilling

This program targets the southern extension of the Lower Phoenix System. The system is not constrained to the south, so the programs will test the southern continuation of the currently known gold mineralization. At the time of the report the 6200mN program was nearing completion with A$241k of expenditure budgeted in 2018. The 6000mN program meters proposed for the year are estimated to cost A$800K.

Lower Phoenix Footwall (5550mN & 5650mN) Drilling

This program is designed to follow up a drill program on the 5450mN section that completed in 2016. The 5550mN and 5650mN programs commenced in Q4 2017, continuing into 2018 with an estimated combined cost of A$730k.

Cygnet (6450mN & 6550mN) Drilling

This program targets the northern extent of the Lower Phoenix Footwall system, specifically the Cygnet which is footwall to the Swan. The system is not constrained to the north, so the programs will test the northern continuation of the currently known gold mineralization. This program has an estimated combined cost of A$1M.

Lower Phoenix North (8700mN) Drilling

This surface diamond drilling program is designed to test for economic gold mineralization associated with the Lower Phoenix mineralized system, up-plunge from high-grade intercepts on 8200mN, 8300mN and 8500mN. The program expenditure for this program in 2018 is budgeted to be A$451k

Upper Phoenix (5700mN & 5950mN)

This program targets mineralization associated with the upper regions within the Phoenix orebody and may provide for further exploration targeting in the future. This program is a combined estimated cost of A$1.29M.

Harrier South (4550mN, 4450mN & 4350mN)

This program targets mineralization associated with the Harrier and Osprey Faults south along strike of high-grade sulfide and visible gold mineralization on the 4750mN. This program is a combined estimated to cost A$3.41M.

Robbin's Hill Extension Drilling (12500mN, 12600mN & 12700mN)

This program is designed to test for potential economic gold mineralization observed in recent drilling completed below Robbin's Hill Pit. This program is estimated to cost A$1.87M.

Robbin's Hill Infill Drilling

This program is designed to infill a portion of the current Inferred Mineral Resource. This program is estimated to cost A$719k.

Robbin's Hill Sub Vertical Targets Drilling (12350mN & 12650mN)

This program is designed to test for mineralization associated with sub-vertical faulting observed in recent drilling completed to the west of the Robbin's Hill Pit. Drilling began in 2017 Q4, continuing into 2018. The budget estimate to complete this drilling is A$68k.

O'Dwyer's South VG Extension Drilling

This program is designed to follow up on gold mineralization intersected underneath the O'Dwyer's South open pit. This area remains largely untested and leaves open dip and strike potential. This program is estimated to cost A$110k.

Eastern Fan (7350mN) Drilling

This program is designed to test for gold mineralization potential to the east of current mining operations on the O'Donnell's line and is estimated to cost A$490k.

Fosterville Deeps (6750mN) Drilling

This program is designed to test for gold mineralization below known ore shoot trends and is estimated to cost A$900k.

Z - Swan, Audax (5100mN, 5500mN & 5900mN) Drilling

This program will target gold associated with the Lower Phoenix Footwall and Swan mineralized systems, between 450m and 1,250m down-plunge from current Inferred Mineral Resources. 'Z' holes are a category of hole that gives maximum opportunity to understand resource corridor dynamics by drilling in a direction that stays within prospective terrains regardless of orebody orientation. This program began in 2017, continuing into 2018 with an estimated cost of A$1.24M.

10.8 EXPLORATION POTENTIAL

10.8.1 Goornong South

The Goornong South Prospect is located approximately 4km north of the Fosterville Mining Licence, where Fosterville style gold mineralization occurs beneath transported cover on privately owned land. The gold prospect was discovered by Perseverance during regional exploration in the mid 1990's. PSV identified a 1.3km long anomalous zone of gold mineralization and systematically drilled the anomaly between 1995 and 1999 for its open pit potential. The drilling was comprised of 71 RC holes (totaling 4,482m) and one diamond hole (69m) with a further eight aircore holes (293m) drilled for ground water monitoring purposes.

Perseverance subsequently reported a Historic Resource in their 1999 Annual Report as shown in Table 6-2. Kirkland Lake Gold is not treating the Historical Resource as a current Mineral Resource as a QP has not done sufficient work to classify the Historic Resource, or comment on the reliability of the estimate.

In 2010 Northgate reviewed the Goornong South area for its potential to host gold mineralization amenable to underground mine extraction. The initial exploration saw completion of two lines of IP/resistivity survey (Figure 9-1) to the south of the prospect in order to identify chargeability anomalies along strike from the sulfide mineralization at Goornong South. IP chargeability anomalies were encountered on both lines and a five diamond drill hole program (totaling 1,532m) was completed.

A 2010 diamond drilling program was undertaken from the roadside and spans about a 750m north-south trend. Of the five holes drilled, three returned assay intercepts averaging greater than 2.5 g/t Au and the strike length of the prospect had been extended southwards a further 300m.

Mid 2017, the Goornong South prospect was identified as having an advanced status for potential conversion into a mineral resource corridor. To effect the classification, the continuity of the historic pit resource need to be developed as a potential underground project. The highest grade achieved in the 2010 diamond drill campaign were evaluated with the shallow RC information to determine opportunities to develop the corridor.

The overall setting was developed as a west-dipping shear extending from the base of the near surface resource, however a number of low grade and lower confidence geological factors were identified as being prohibitive to forming a viable west-dipping resource. Structural data on GSDD082 identified high-grade mineralization associated with an east-dipping structure presenting the opportunity to drill a section of data towards the west on a section ~700m south of the Goornong South Zone.

10.8.2 HALLANAN'S

The Hallanan's Prospect area, located 1km south of the Fosterville Mining Licence, was explored for oxide gold by Perseverance between 1994 and 1998. During this period Perseverance completed 104 RC drill holes (totaling 6,245m with an average drill hole length of 60m), two diamond holes (109m) and 11 monitoring bore holes (354m). Gold mineralization was identified in drill intercepts over a 750m north-south trend and at the end of drilling a Historic Resource was estimated and reported by Perseverance in their 1999 Annual Report as shown in Table 6-3. However, Kirkland Lake Gold is not treating the Historic Resource as a current Mineral Resource as a QP has not done sufficient work to classify the Historic Resource, or comment the reliability of the estimate.

No exploration activity has been undertaken on the Hallanan's Prospect since 1999 and during the intervening period to 2012 much has been learnt about structural controls of Fosterville-style gold mineralization at the nearby Mining Licence. Diamond drill core is virtually absent from the Hallanan's Prospect, and this coupled with an absence of any deep drilling, with RC drilling only averaging 60m in depth, the prospect is viewed by Kirkland Lake Gold as being under explored for underground gold targets. The area is to be reviewed for drill testing in the future.

10.8.3 HARRIER UG FAR SOUTH

The Harrier mineralized system is located to the south of MIN5404. Gold grades are less consistent in the Harrier System and it has largely been dominated by sub-average to average sulfide mineralization. Resource definition drilling in 2016 intersected visible gold in several drill holes. The Harrier System is not constrained up-dip and to the south beyond 4750mN, drilling to the south on the 3800mN and 4200mN sections forms part of the 2018 proposed exploration target areas.

10.8.4 MAY REEF

The May Reef Prospect is located in the northeastern portion of EL3539, some 15km north of the Fosterville Mining Licence. Several minor historic shafts (early 1900's) occur in the area including the May Reef shaft, which is the namesake of the prospect. Shallow RAB drilling with follow up RC (eight) drilling in the area through the unconsolidated gravel and clays to Ordovician turbidite bedrock identified gold and arsenic anomalism 100m west of the historical workings. The RC drilling in 1998 returned only one significant intersection (MR4: 1.0 g/t Au over 10m from 42m incl. 3.7 g/t Au over 2m).

The area has been viewed as prospective and will be drilled utilizing both RC and Diamond drilling methods. Geochemical surveys in the area show the strike continuity of arsenic anomalism extending both north and south of the historically drilled region. This, in conjunction with new insights given by AEM data suggests that historic RC drilling would have only superficially tested bedrock (10 – 20m of depth). Most of the hole would have been through unconsolidated sediment cover.

The AEM data also gives increased resolution as to the location of potential faults and fold horizons beneath cover. May Reef resides in a geospatial environment akin to the Fosterville system to the south, with fault offsets off the more regionally dominant Redesdale Fault being similar.

It is postulated that conducive mineralized corridors will fall within certain proximities to major regional faults. If this is true, May Reef would follow the trend of mineralized systems trending along the Redesdale Fault that include Fosterville, Robbin's Hill and Goornong South.

10.8.5 MYRTLE CREEK

The Myrtle Creek prospect is located in the southern part of EL3539 on private land, 24km south of the Fosterville Mining Licence. The prospect is 4km northeast of, the 370Ma, Harcourt Batholith where rocks on the prospect comprise 440Ma Lower Ordovician Lancefieldian sediments, dominated by sandstone and quartzite, of the Castlemaine Supergroup. The sediments are tightly folded on an axis trending NNW, similar to that of other Bendigonian sediments east of the Whitelaw Fault. The sandstone-dominated sequence has been intruded by a granitic stock that measures 250m by 200m at surface, and by several quartz porphyry dykes up to 1.5m wide, both of which may be related to the Upper Devonian Harcourt Granodiorite.

Gold was first discovered in the Myrtle Creek area in 1858 and sporadic mining for alluvial and quartz reef gold occurred up until the 1930's. Production from the goldfield is not well recorded, but James (2005) reported quartz reefs grading 1-2oz/ton Au. Modern exploration in the general Myrtle Creek area has occurred since 1974 by companies such as Noranda Australia (rock chip sampling, geological mapping, soil geochemistry (Au, Cu)), Ghana Gold (structural interpretation of aerial photography) and BHP (stream sediments and follow up soil surveys). Perseverance explored the area from the mid 1990's to 2006, completing regional stream sediment, rock chip and soil sampling, geological mapping and petrographic work on rock samples. Northgate explored the area between 2008 and 2009, undertaking additional surface sampling in the northern area of historical workings, but the results were disappointing with the overall tenor of gold-in-soil much lower than observed elsewhere on the prospect.

In 2009 Northgate drilled 10 diamond holes (totaling 1,695m) at Myrtle Creek to test a number of proposed mineralization settings including intrusion-related, fold-fault related, dyke-related and disseminated styles. Much of the drilling was centered about a 600m long by x 200m wide NW trending Au-Mo soil geochemical anomaly centered on the granite stock (Quartz Hill). The drilling, reported by Dean (2010), gained financial support of a drilling grant from the Rediscover Victoria Strategic Drilling Initiative.

Two of the holes returned significant intersections of gold mineralization are reported and interpreted to be from the NE trending New Amelia Mine Shear; Down-hole widths of 2.0 g/t Au over 10.9m from 0.9m (incl. 3.1 g/t Au over 6.0m from 4.0m) in hole MCD004 and 1.9 g/t Au over 8.0m from 84.0m (incl. 5.2 g/t Au over 2.0m from 88.0m) in hole MCD006.

Anomalous gold (7.61 g/t Au peak) and molybdenum (2,882 ppm) were encountered throughout much of the prospect, particularly in proximity to the granite. Visible gold was observed twice within sheeted quartz veins and there appears to be a strong intrusion-related Au-Mo-As correlation. A significant nugget-effect may be present given the presence of coarse gold and frequent highly anomalous As/Mo results without corresponding elevated gold.

The drilling at Myrtle Creek indicates that gold occurs in structurally controlled shears and is not disseminated widely through the wall rock. This fact caused Northgate to suspend exploration on the prospect. However, the drill intercepts on the New Amelia Shear remain untested along strike and down-dip and this prospect is to be further reviewed by Kirkland Lake Gold in the future.

10.8.6 ACCOTT'S

Accott's is a historic mining area 10km south west of the Fosterville Gold Mine operations covered by surface working and shafts with some reportedly reaching down ~150m. The prospectivity of the area has been recognized with several geochemical surveys and RC drilling campaigns testing the area.

21 historic RC holes through 2 phases of drilling have yielded a peak result of 5.42 g/t Au over 3m from 25m (ACTC4), with many not returning significant gold grades. Kirkland Lake geologists conducted a field survey of the area selecting rocks to test for gold anomalism associated with massive quartz veins similar to those seen within Fosterville's underground workings. The result returned 13.1 g/t Au, the highest reported grade of any sample recently recorded. This suggests that the Accott's prospect has elements of both sulfide and visible gold anomalism.

Recent geological studies into the Accott's area suggests that historic mining focused on tensional vein arrays associated with a local anticline. This has been further verified by interpretive work conducted on the AEM data, which established an interpreted cross section of the area attempting to map out fold closures.

The AEM data has also given insight as to the position of the Drummartin Fault, a fault that is interpreted to be a parallel line to the Fosterville Fault and a second generational fault of the regional Redesdale Fault. The mechanisms for gold emplacement are not well understood given the lack of structural drilling data in the area. It is possible that historically mined mineralization has migrated up the anticline's axial plane suggesting that the Drummartin Fault may be an active corridor for auriferous fluids. Plans will be to test both the presence of mineralization at depth on the hinge and also the relationship the area has with the Drummartin Fault system.

10.8.7 RASMUSSEN

The Rasmussen prospect is the northern strike extension of the Fosterville Fault corridor identified by gravity, electromagnetic and soils geochemistry surveys. The region is under Murray Basin sediment cover and has only minor historic workings. The target is seen as a priority owing to the strength of the electromagnetic signature and its clear relationship along strike of the multimillion-ounce Fosterville orebodies.

A series of RC holes will be conducted across the section to help identify mineralization and alteration signature in the area. Given the blind nature of the zone, holes will be campaigned along strike-dipping towards the east to maximize exposure to the interpreted west-dipping structure. Several transect lines will also be designed along strike to ensure best exposure to potentially mineralized horizons.

10.8.8 Russell's Reef

The Russell's Reef Prospect is located within EL3539, approximately 2.4km south of the Fosterville Mining Licence. See Figure 9-1. The prospect is based on shallow historical shafts and pits spread over about a 250m north-south extent. Recorded historical production in the area totals 417oz from the 1897-1900 period of mining.

The area has been subjected to several lines of soil sampling, and several programs of shallow RC drilling (50 holes averaging 31m depth) undertaken over a protracted period from 1976 to 1989. Perseverance subsequently drilled nine diamond holes in 2006 to test for Fosterville style sulfide hosted gold mineralization. Three of the nine diamond holes returned drill intercepts averaging above 3.0 g/t Au.

These included:

- RRD006:
  - 6.1 g/t Au over 4.0m from 48.0m (incl. 9.4 g/t Au over 2.0m from 49.0m)
- RRD005:
  - 2.2 g/t Au over 10.4m from 57.8m,
    (incl. 2.9 g/t Au over 4.3m from 57.8 and 3.1 g/t Au over 2.3m from 65.9m)
- RRD007:
  - 3.1 g/t Au over 10.7m from 141.5m,
    (incl. 7.5 g/t Au over 0.9m from 147.1m and 12.3 g/t Au over 1.4m from 150.8m)

The Russell's Reef area is seen to be prospective for exploration as it is interpreted to be the southern extension of the Fosterville workings. The area has many similar geological features to the Fosterville zone including offset across an anticline hinge on the Fletcher's Fault and mineralization including pyrite, arsenopyrite, stibnite and coarse gold.

10.8.9 Sugarloaf Range

The Sugarloaf Prospect area encompasses the entire length of the Sugarloaf Range, a ridge of steeply dipping sandstone and quartzite located immediately west and southwest of the Fosterville Mining Licence. The prospect area is mostly within the Sugarloaf Nature Conservation Reserve.

A compilation and interpretation of available drilling and geochemical data in conjunction with interpretation of FGM's airborne geophysical data (acquired in 2008) and consideration of Geoscience Victoria's (GSV) Redesdale Fault Model indicates potential for Fosterville-style gold mineralization within the prospect area.

Exploration data in the area includes surface geochemistry, RC drilling, airborne magnetics and radiometrics and ground IP. However, it should be noted that historical (1989-1991) drilling of 36 RC holes (totaling 1,164m) in the area averages only 32m in depth and diamond drilling is absent.

Ground IP/resistivity data, collected in 2010, maps resistive chargeability anomalies beneath the Sugarloaf Range and between the range and the Fosterville Fault. In addition to this an airborne radiometric K/Th ratio anomaly in the southern part of the prospect may represent a potassium alteration halo proximal to faulting. The K/Th ratio anomaly also has a coincidental and similar trend to the Sugarloaf Fault IP chargeability anomaly. The chargeability anomaly could be caused by the presence of subsurface black shale stratigraphy and/or sulfides.

Kirkland Lake Gold has budgeted A$240k to follow up geochemical and AEM anomalies with diamond drilling in the Sugarloaf Range prospect in 2018.

11 SAMPLE PREPARATION, ANALYSES & SECURITY

11.1 SAMPLING METHOD AND APPROACH

From the acquisition of the project by Perseverance in 1992 through to the present, all RC drilling through mineralization has been collected at one meter intervals and sampled as two-meter composite samples. Prior to 1995, samples were collected using ‘spear’ sampling. Since 1995 all RC holes have been sampled using a riffle splitter split to either 12.5% or 6.25% depending on the drill hole diameter. After 1996, if the sample was unable to be kept dry the hole was finished with an NQ2 diamond tail. In the central area, spear samples comprise 16% of all mineralized samples and 28% of all mineralized RC samples. All RC holes were completely sampled.

As part of the 1997 Feasibility Study several of the FO prefixed holes (see Table 10-2) with long, high-grade intersections were twinned with RC holes drilled with a much bigger compressor and a face sample hammer resulting in dry samples. These twin holes demonstrated that there was significant down-hole contamination in the FO holes (Perseverance, 1997). As a result, the FO holes were only used for estimating oxide resources and reserves where it is assumed that dry samples were recovered and down-hole contamination was not an issue.

In the diamond drill core, all visible sulfide mineralization, quartz vein stockwork and LQ veins plus at least three meters of apparent waste either side is sampled. Samples are cut to geological boundaries and within a length range of 0.05m to 1.3m, with a preferred length of one meter. Infill diamond holes (spaced at 25m or less) can be full-core sampled; the entire core sample is broken with a hammer in the tray and moved directly into the sample bag. All other core is halved using a diamond saw and the upper half of the core dispatched for analysis and the lower half returned to the core tray in its original orientation. PQ core was sampled by cutting a sliver equivalent in volume to half NQ2 core from the top of the core. Recovery of diamond drill core is acceptable where it is determined that over 90% recovery for a run has been achieved. If recovery is proven to be less due to core loss or because of poor ground, the samples may not be used for Mineral Resource estimation.

In underground sampling, an attempt is made to sample every round (3 to 4m nominal advance) in the ore- drives where safe to do so. Sample intervals are chosen based on structure, mineralization and lithology, and are a minimum of 0.1m and a maximum of 1.5m in length. Mapping data that was collected at the same time as the samples are used to validate the sample results.

Figure 11-1 includes some 576 duplicate face sample pairs were collated including face sample duplicates taken on the Phoenix 4380mRL (2014) and the Phoenix 4280mRL (2015-2016). With outliers removed, the duplicates show a moderate correlation with an R^2 of 0.6402. This study covered the underground face sampling method from late 2006 to the end of 2016. Face sampling data is used to refine resource domain boundaries. Sample grades from face sampling are not used in the resource estimation process.

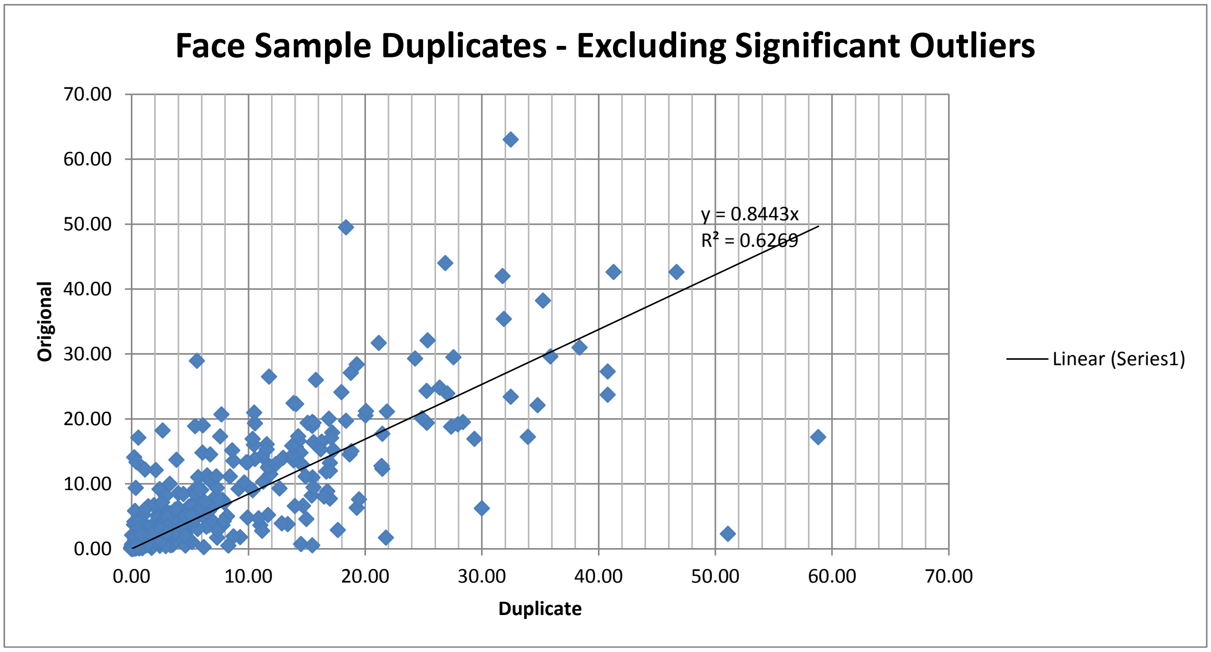


FIGURE 11-1 UNDERGROUND FACE SAMPLE DUPLICATE RESULTS

Through time, sludge holes have been bored with 54mm diameter drill bits and sampled at two-meter composite intervals, or at 1.8m intervals corresponding to rod length. Occasionally 1m samples are taken on 76mm diameter production charge holes, for a similar sample volume, nominally weighing between 2kg to 5 kg per sample. Cuttings are collected by a custom designed apparatus to maximize the catchment area to improve sample quantity/quality. Samples are inspected for quartz percentage, non-carbonate carbon content, sulfides present and lithology. Due to the poor quality of the samples, sludge samples are not used directly in resource estimations but may aid in defining domain margins.

All remaining diamond drill core is stored on site within the fenced and gated core handling facility or within the mine compound on the backfilled Falcon Pit storage area. Assay sample pulps are also returned from the laboratory and stored at the core handling facility.

The RC samples from previous grade control programs were kept at an on-site depot for approximately three months after the receipt of final assay results. This allowed time for any re-sampling that might be necessary. The plastic sample bags photo-degrade rendering re-sampling impossible after 6 to 12 months and presenting an environmental hazard from windblown plastic, therefore the sample bags are disposed of as part of routine site rehabilitation works. Exploration RC pre-collar samples were collected in hessian sample bags since 2005 and similarly retained for a three-month period at the drill sites. Hessian was chosen as it poses less of an environmental hazard and allows for mechanical rehabilitation of drill sites.

11.2 ELEMENTS ANALYZED

TABLE 11-1 ANALYSED ELEMENTS BY METHOD AND TIME PERIOD

Element/ Analysis	Reason for Analysis	Sample selection/Method/Timing
Au	Primary Commodity	All samples 25g Fire Assay, except: fresh (non-oxide) rock until December 2004 (40g FA) oxide samples until December 2004 (25g Aqua Regia digestion, AAS) production drill core sent to GAL in 2012-2016 (30g FA) Some Robbin's Hill Exploration RC and drill core sent to ALS in 2007 (40g FA), pulps sent to Bureau Veritas in 2016 (40g FA).
As	Toxic to BIOX®	Analysed since August 1995. All Exploration drill samples 1995 - 2017. Metallurgical diamond drill samples in 1997. Blast hole sampling sulfide open pits 2004 - 2007. Underground face sampling 2008 - 2009. Stope sampling 2008 - 2009. ICP-AES Select stope samples only 2016 - 2017. All by ICP-AES, except: Aminya 2001 - 2006 (AR50) ALS Bendigo 1994 - 2002 (AAS) Production drill core samples on significant Au intercepts from late 2017
S	Primary feed for BIOX®	All Au values over 0.5 g/t August 1995 to May 2001. All Exploration drill samples by ICP-AES 2001 to 2016. Sulfide open pit grade control and blast holes by ICP 2005 – 2006. All production drilling and underground sampling by LECO or equivalent (IR detection), 2006 - 2009. Production drill core samples on significant Au intercepts from 2009 - 2017. All open pit sulfide grade control RC and blast holes, 2006 - 2007. Selected blast holes 2011. All underground face samples 2006 - 2009. Selected sludge holes 2007 - 2008. Selected stope samples 2007 - 2009. Selected open pit sulfide grab samples 2011. All open pit sulfide RC samples 2012.
Sb	Toxic to BIOX®, indicator for high-grade Au	For all Au values over 0.5 g/t August 1995 to May 2001. From 2001, all Exploration core routinely. Production samples only where stibnite observed. ICP-AES except: AAS on RC drilling by ALS Bendigo 1999. 50g Aqua Regia digest with AAS finish. 2002 - 2006. XRF by Amdel 2006 - 2007 >0.6% ICP-AES derived Sb grade then OSLS modified triple acid digest with AAS finish 2013 - 2017 Production core submitted to GAL 2015/2016 with stibnite observed, Aqua Regia/AAS (<10%) and Acid Digest/Titration (>10%)

Element/ Analysis	Reason for Analysis	Sample selection/Method/Timing
NCC/TOEC	Organic carbon is preg-robbing and competes with activated carbon in CIL recovery. Historically an effective indicator for preg-robbing potential.	IR detection, LECO or equivalent carbon/sulfur analyser. All Au values over 0.5g/t August 1995 to May 2001. Since 2001 only where high carbon content is observed. Sulfide open pit grade control and blast holes only selected samples 2006 - 2007. Selected sludge samples 2006 - 2017. Selected stope samples 2007 - 2010. 2012 - 2017. Selected face samples 2007 - 2010. 2012 - 2017.
Preg-Robbing Activity	Method developed by Fosterville Metallurgy and provided to OSLS to perform at scale, where NCC is not an adequate proxy. Some ore is low NCC but high preg-robbing. Some ore is low preg-robbing despite high NCC.	Selected face samples 2014. Selected stope samples 2014 – 2017.
ICP suite: Au, Ag, As, Bi, Cu, Fe, K, Mo, S, Sb, NCC +/- (Ni, Pb, Te, Zn)	Near mine and regional exploration suite: elements selected can provide useful information for mineralization vectoring, and can be used for preliminary screening to identify potential processing complications	2010 to present day Ni, Pb, Te, & Zn – has been added to regional exploration suite from Q4 2017

11.3 DESCRIPTION OF ANALYTICAL TECHNIQUES

All of the gold analyses used in the sulfide resource model in the 2000 Sulfide Feasibility Study were fire assays of a 40g charge carried out by ALS at Bendigo, a commercial laboratory (non-accredited). The other elements were analyzed by a variety of techniques at a variety of laboratories. A full program of repeats, standards and inter-laboratory check sampling was conducted on the gold analyses.

For the 2001 – 2004 NQ2 SPD diamond drilling campaign, gold analyses were determined by fire assay of a 40g charge by AMDEL in Adelaide, a commercial laboratory (ISO 9001 accredited). A 30 element suite including As, S and Sb was analyzed by ICP-AES from a separate 5g charge following HNO_3/HF digestion. From November 2002 to August 2003 TGC (total graphitic carbon) was analyzed on a selective basis. A full program of repeats, standards and inter-laboratory check sampling was conducted on the gold analyses.

Since 2005, independent On Site Laboratory Services (OSLS), a commercial laboratory based in Bendigo, has been the primary provider of analytical services to the operation. The OSLS Bendigo laboratory gained ISO 9001 accreditation in October 2008 with registration ISO9001:2008 (CERT-C33510).

OSLS use a combined crusher and mill to pulverize the entire sample to a nominal 90% passing 75µm. A 25g sub-sample is analyzed for gold by fire assay with an AAS finish. Au results greater than 80g/t are diluted to 1:10 and tested sing the AAS. A 0.5g sub-sample of the pulp is digested in a HNO_3/HCl digest and then analyzed for Ag, As, Bi, Ca, Cu, Fe, K, Sb and S by ICP-AES. A full program of repeats, standards and inter-laboratory check sampling was conducted on the gold analyses.

An audit of the OSLS facility was completed for Perseverance by an external consultant during 2007 (Stewart, 2007). This Audit found that OSLS's procedures were adequate and presented no major risk to the resource estimate. There were areas for improvement identified with the following corrective actions taken during the second half of 2007:

- Temperature variation within the drying oven is now being measured and recorded;
- Sizing analysis for all pulps is now being conducted and recorded;
- Calibration of scales is now being recorded and documented;
- Further improvements also included AAS electronic data capture in 2011; and
- Fosterville staff has formal monthly laboratory meetings to discuss performance.

Work undertaken by employees of Fosterville is limited to core logging and the mark-up, cutting and bagging of samples. All other sample preparation and analysis was conducted off-site at the commercial laboratories.

Gekko Analytical Laboratories (GAL) were contracted to provide analytical services for diamond core and underground face samples between April 2015 and April 2016. Analytical techniques include fire assay for gold, titration and atomic absorption spectrometry for Antimony, combustion analysis and Infrared detection for both sulfur and Non-organic Carbon. Gekko Analytical Laboratories gained National Association of Testing Authorities, Australia accreditation (NATA) in October 2015 with accreditation number, 19561.

All samples are dried at approximately 105° C. GAL uses a Jaw crusher to crush the sample material to 8mm. The sample is then placed within a Boyd crusher and rotary splitter combination to enable further crushing to 3mm and optional splitting of the sample if it weighs in excess 3kg. Pulverization takes place with up to 3kg of sample to achieve 90% passing 75um. Sizing is reported with Au assays at 1:20 frequency. Approximately 120g of pulverized sample is scooped into a wire and cardboard pulp packet. Two pulp packets are created as a laboratory duplicate at a frequency of 1:10. A 25g scoop of sample is taken from the pulp packet and smelted with 180g flux. A 10g scoop from the pulp is re-fired for comparison if the initial grade was determined at >50g/t. Antimony is analyzed by using an aqua regia digestion with an AAS finish. If the result is over 1% Sb, the sample is then analyzed by an acid digestion and titration. Total sulfur is analyzed using combustion analysis followed by Infrared detection. Non-Carbonate carbon is analyzed by weak acid digest and combustion analysis followed by Infrared detection (LECO). During this time the laboratory was audited by FGM personnel to assess the preparation and sample handling processes. No major risks were observed.

11.4 QAQC

Fosterville uses independent assay laboratories, which provide assay data in digital form. On Site Laboratory Services (OSLS) is Fosterville's main assay laboratory used to assay drill and grab samples, and has been since July 2007. GAL received a percentage of diamond core samples and all production face samples from April 2015 through June 2016.

Quality Assurance and Quality Control (QAQC) are completed on samples after being imported into the database. Assays not passing the QAQC tolerances on blanks, standards, duplicates and repeats are retained in the database but are not available for viewing or Resource work within Mine Sight. Where it is determined the sample itself is compromised, rather than the analysis, then the sample is demoted and its assays also are not reported in Mine Sight or other applications.

Any values falling beyond defined quality parameters are investigated according to laboratory and company procedures. Sufficient proof or suspicion of error requires re-assays on the affected portion of a job, where the original assays are rejected, and the results from the subsequent batch (provided these pass QAQC processes) are used instead.

The QAQC review process has been improved and developed over the years. The system comprises four main strands with the reliance on standards (certified reference materials), duplicates, repeats and blanks samples. Each strand is summarized below.

11.4.1 STANDARDS

Standards (also known as Certified Reference Materials) are submitted and analyzed with samples to monitor the analytical process and check accuracy of results. Statistical analysis is performed prior to release from the manufacture to quantify the content of the material of interest (e.g. Au) to within known limits of error (usually a 95% confidence interval).

Drilling programs up to the end of 2007 included the use of four gold mineralized standards provided by Gannet Holdings Pty Ltd (ST148, ST109/0285, ST73/7192 and ST43/7194) and one standard prepared from approximately 500kg of Fosterville sulfide mineralization from previous RC drilling (AA). Over time the use of gold mineralized standards from Gannet Holdings Pty Ltd has diminished, with alternative suppliers being favored.

Since 2008, a further 28 gold standards have been adopted for use at Fosterville, with 18 of these still available for use. Of these available standards, only a small selection is “active” (in use) at any one time, to ensure each provides a sufficiently large dataset month to month with which to effectively assess laboratory performance with respect to bias, variation, and any change in trend of these factors. Each standard remains in use for several consecutive months to gauge trends over the longer term, before gradually being replaced with a different standard with a similar mean. Active standards are rotated occasionally to prevent predictability of expected means and to demonstrate that standards are being accurately analyzed.

FGM purchase “fit for purpose” standards from Geostats Pty Ltd as certified reference materials. Unlike laboratory standards these standards are submitted for analysis in particular order with a laboratory consignment so as to better test the laboratory’s accuracy at different grade ranges. FGM standards are inserted at a rate of about one in forty, and have a wide range of gold grades extending from less than 0.3 g/t Au to about seven times the average ore grade expected at Fosterville.

Standards which fall outside of 3 Standard Deviations potentially indicate an issue with the job, such as contamination in fire assay, fusion issues, or AAS calibration. A fresh standard is submitted (from the same batch if possible) to be fired with repeats from the original pulp packets of the 10 surrounding samples. If the new standard performs and there is no significant bias between the original and repeat fires, it is assumed that only the standard was in error and that the primary samples were not compromised.

As recommended by QG (Quantitative Group Pty Ltd), reported populations associated with a given laboratory/method are intermittently reviewed against certified ranges. Where populations are sufficiently large (usually greater than 400 assays) the mean and standard deviation of the reported population is calculated, and these are used to assess the standards performance, in place of the certified values, for that laboratory/method.

No recalculation was performed on standards used in 2017. All standards presented in Table 11-2 are in reference to manufacturer certification.

TABLE 11-2 STANDARD PERFORMANCE 2017

Expected Mean (g/t)	#	Z Score	Relative Difference Percent	Coefficient of Variation
2	12	-0.67	-2%	4.0%
2	347	-0.97	-4%	4.0%
5	25	0.36	1%	1.9%
5	296	0.46	2%	3.7%
5	197	-0.45	-1%	3.7%
10	66	0.44	2%	3.8%
10	28	0.42	2%	4.0%
10	77	0.37	1%	2.8%
10	93	-0.04	0%	3.7%
10	16	-0.37	-1%	3.1%
33	43	-0.03	0%	3.4%
49	248	-0.32	-1%	2.3%
Totals	**1448**	**-0.22**	**-0.01**	**3.5%**

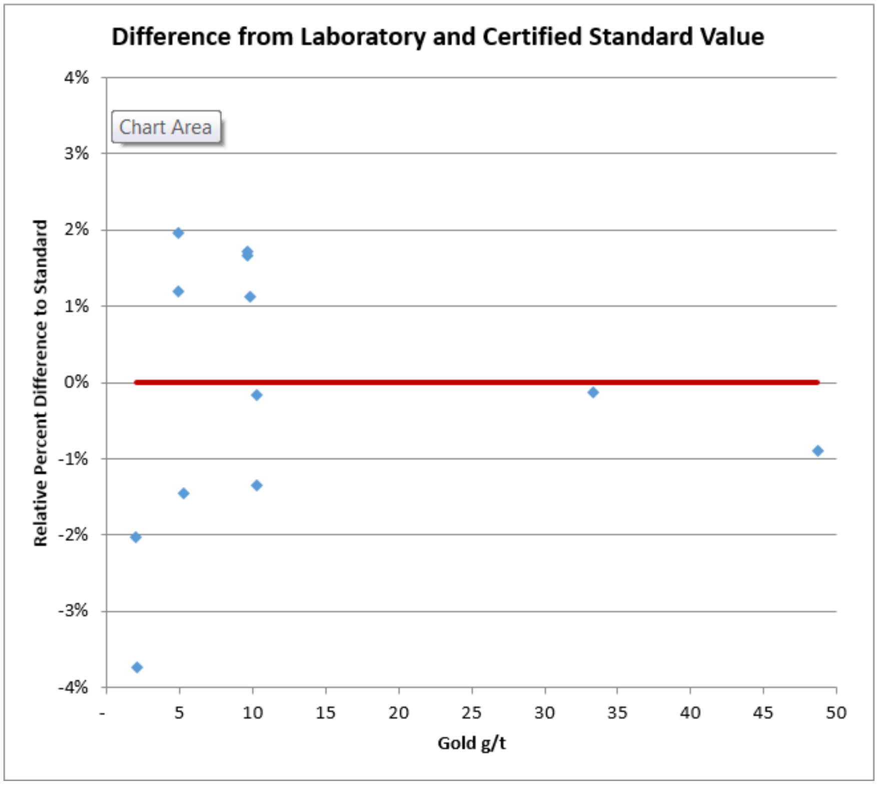


FIGURE 11-2 STANDARD PERFORMANCE 2017

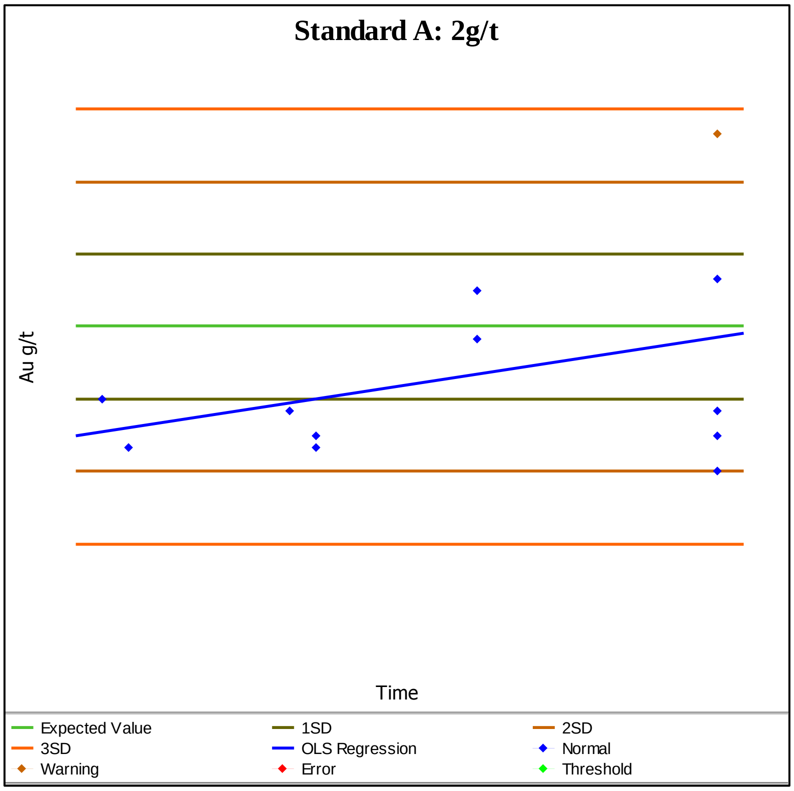


FIGURE 11-3 STANDARD A PERFORMANCE 2017

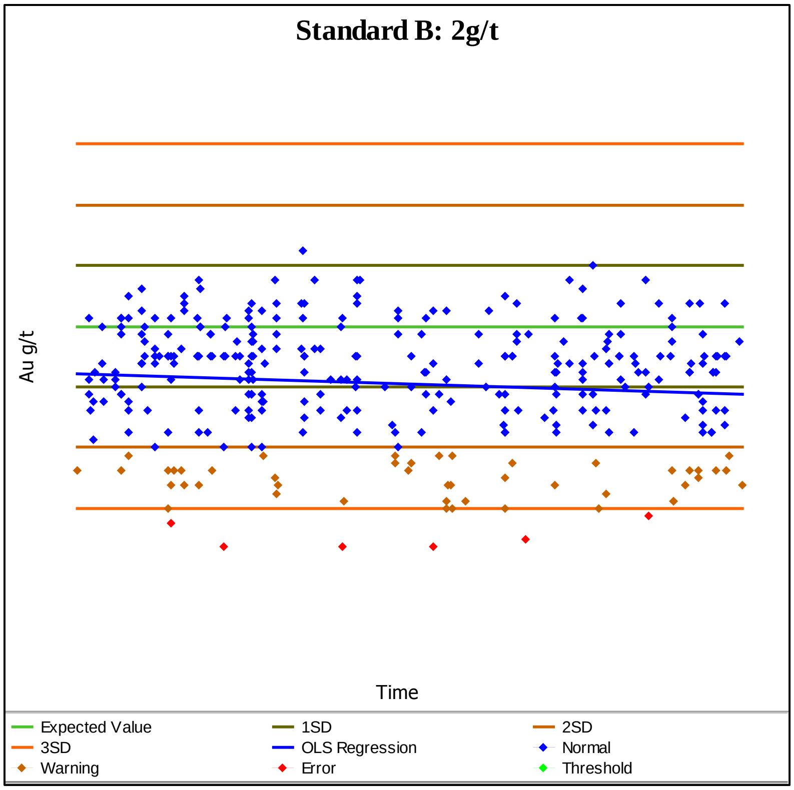


FIGURE 11-4 STANDARD B PERFORMANCE 2017

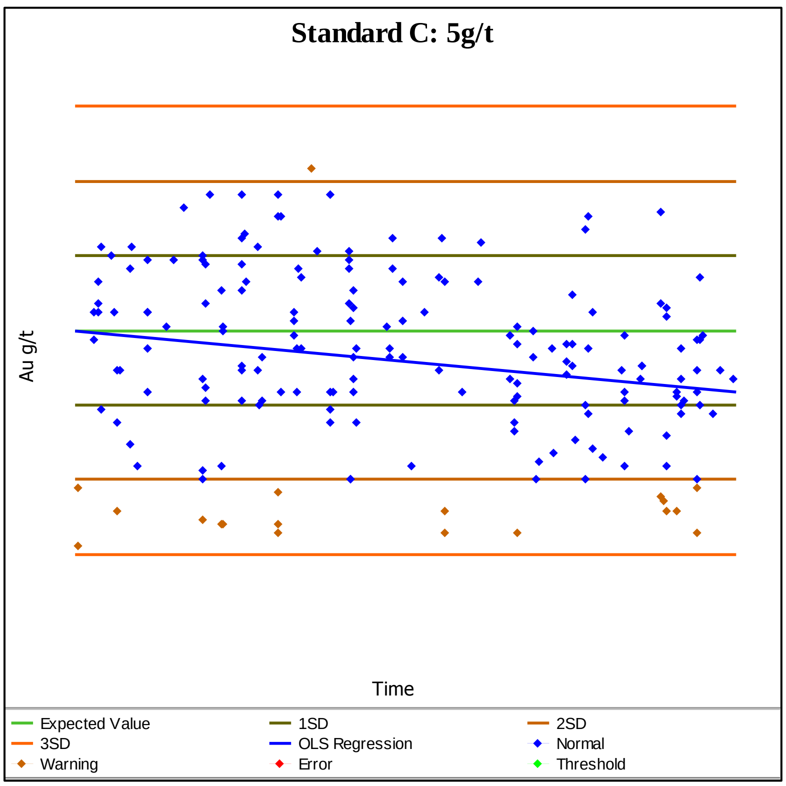


FIGURE 11-5 STANDARD C PERFORMANCE 2017

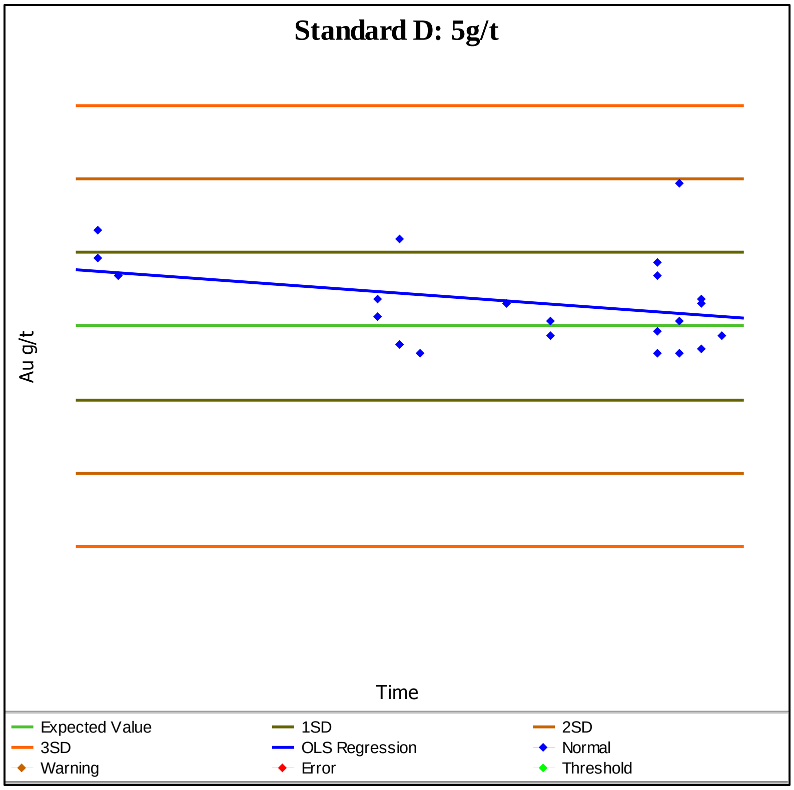


FIGURE 11-6 STANDARD D PERFORMANCE 2017

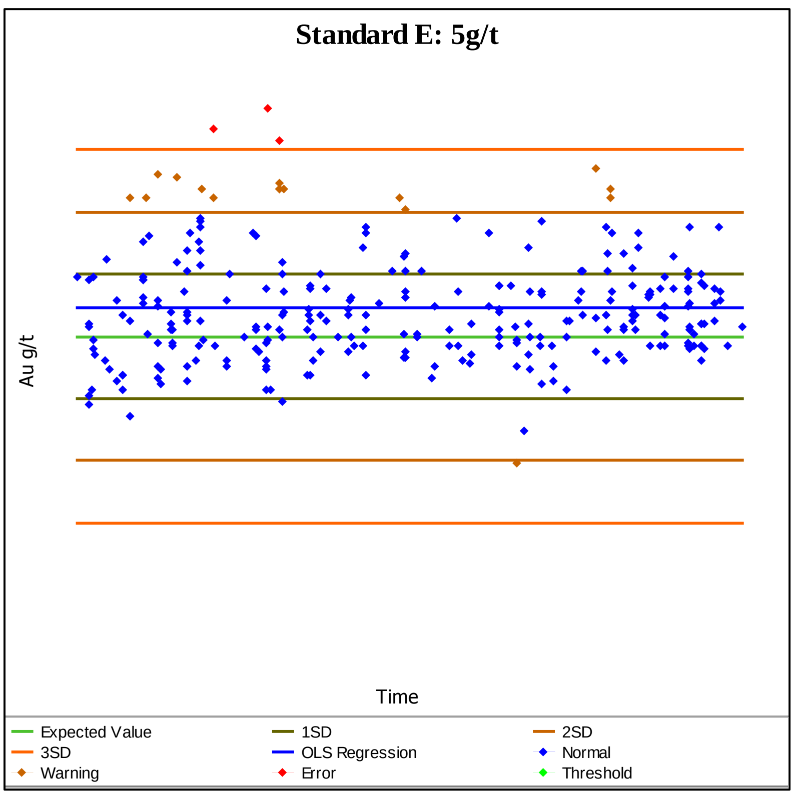


FIGURE 11-7 STANDARD E PERFORMANCE 2017

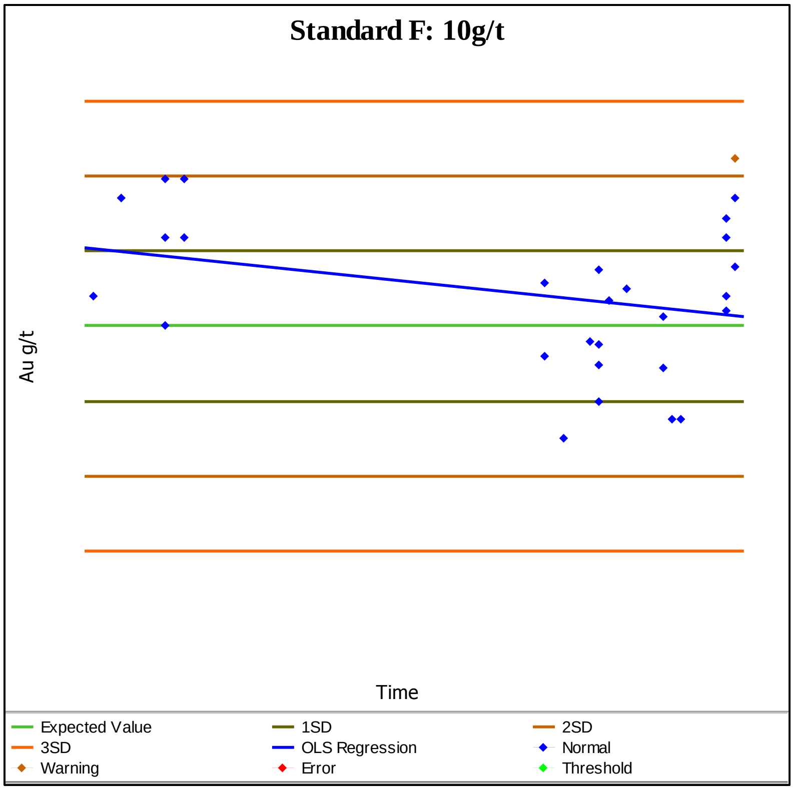


FIGURE 11-8 STANDARD F PERFORMANCE 2017

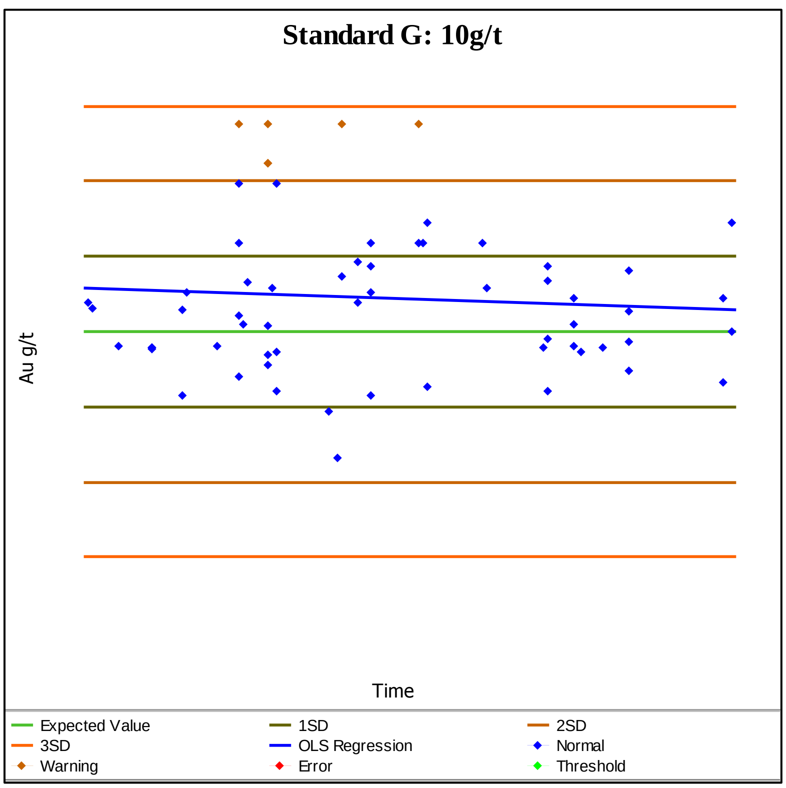


FIGURE 11-9 STANDARD G PERFORMANCE 2017

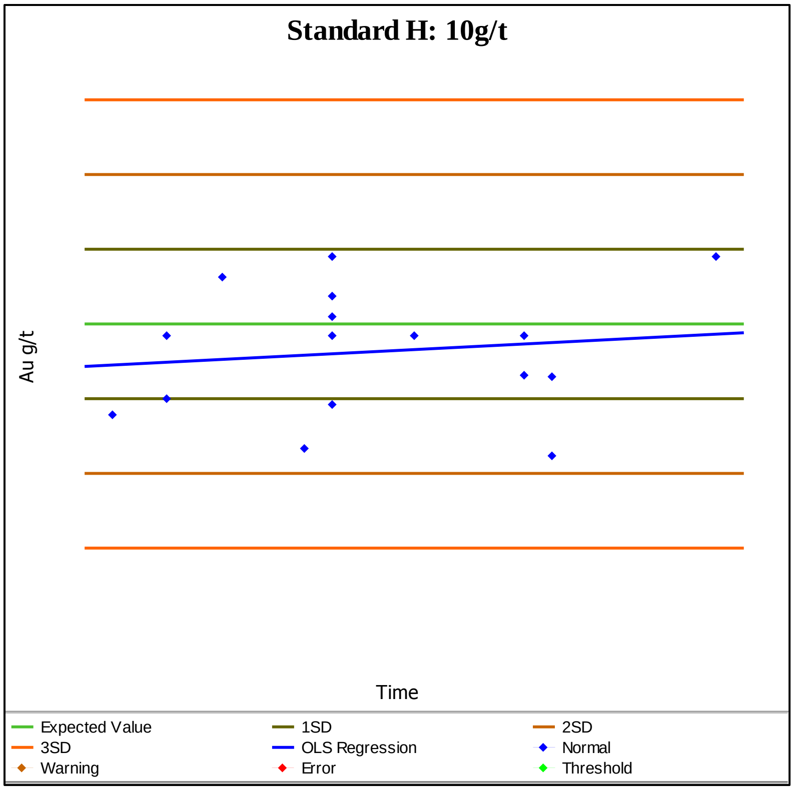


FIGURE 11-10 STANDARD H PERFORMANCE 2017

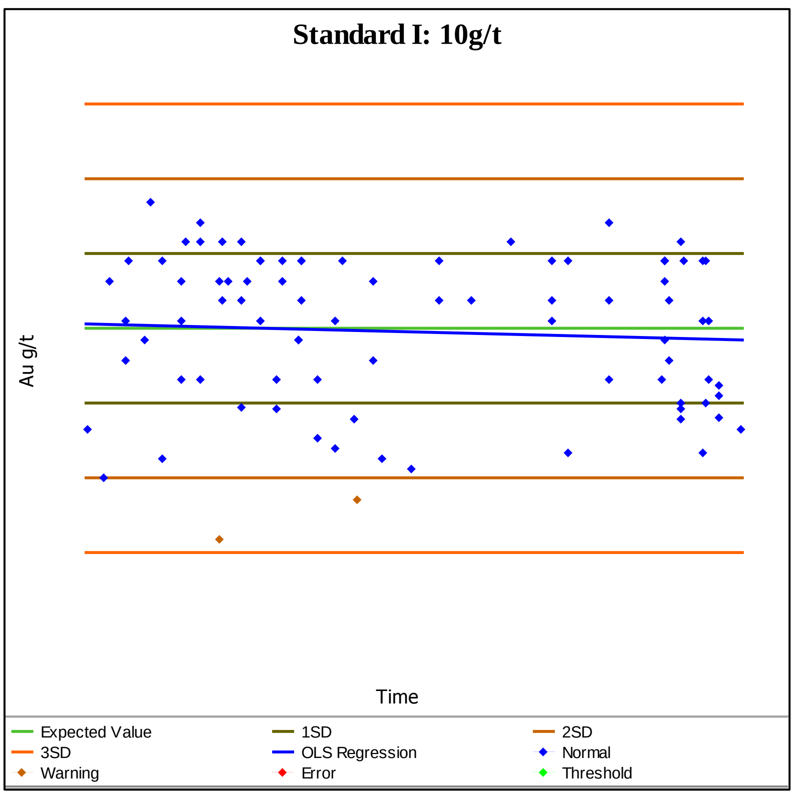


FIGURE 11-11 STANDARD I PERFORMANCE 2017

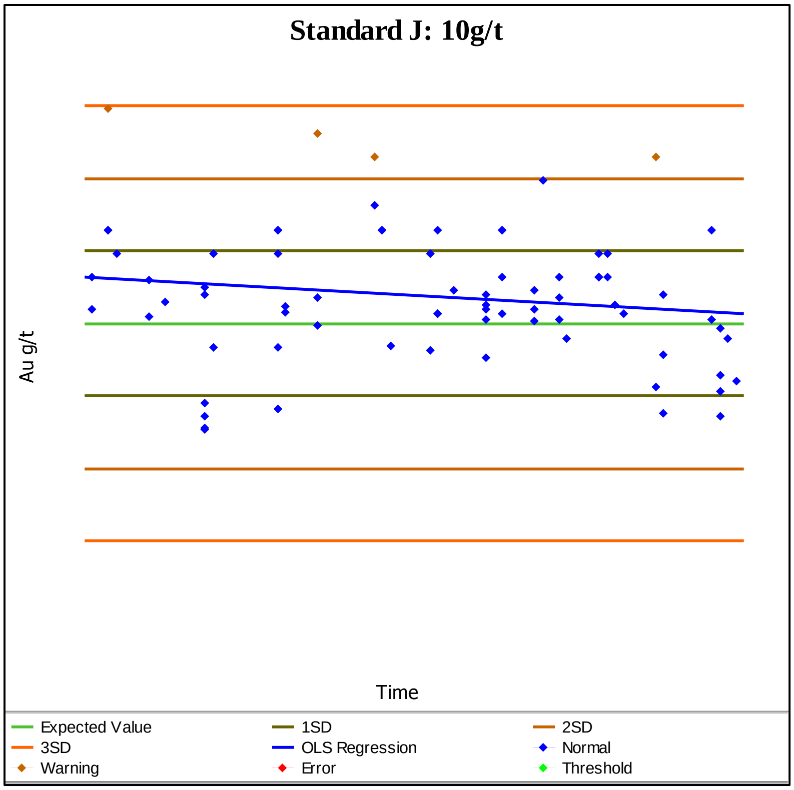


FIGURE 11-12 STANDARD J PERFORMANCE 2017

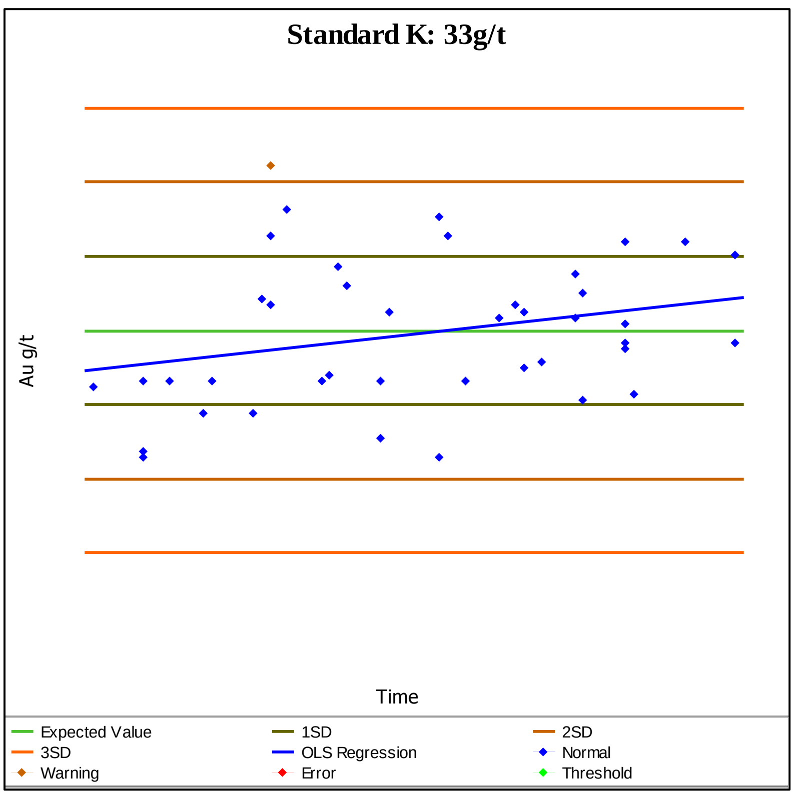


FIGURE 11-13 STANDARD K PERFORMANCE 2017

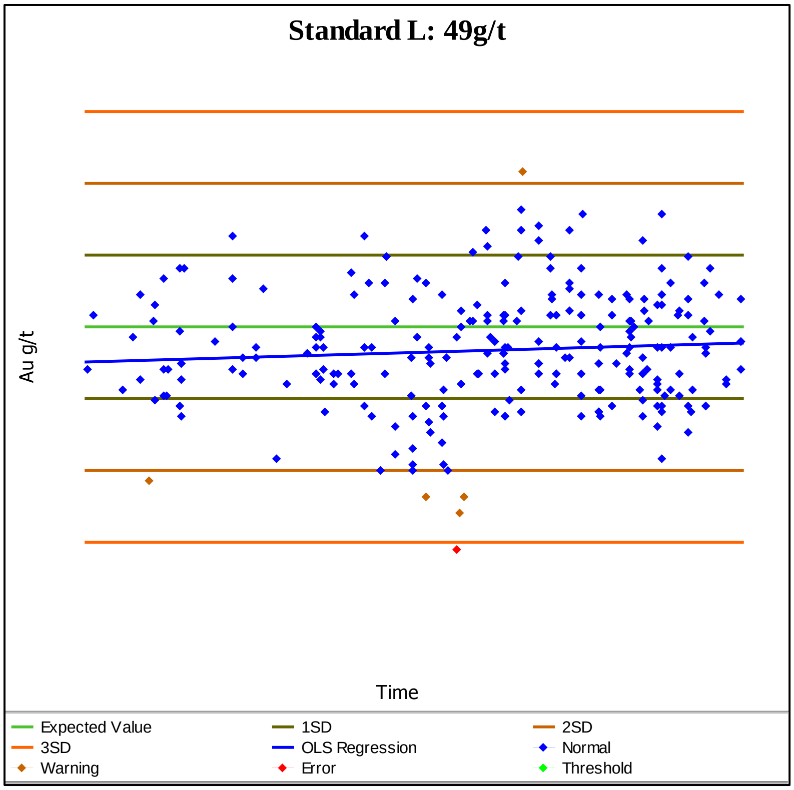


FIGURE 11-14 STANDARD L PERFORMANCE 2017

In addition to client-supplied standards, assay laboratories will insert their own standards into assay batches to monitor accuracy and quality. OSLS have reported laboratory standards with assay results since August 2012. All GAL jobs have been reported with laboratory standards.

Table 11-3 documents the laboratory standards reported by OSLS in 2017, along with the nominal ranges used to validate them.

TABLE 11-3 OSLS LABORATORY STANDARDS, G/T AU

STANDARD ID	Expected Mean (g/t)	Mean – 3SD	Mean + 3SD	Bias from expected (%)
ST345	0.055	0.040	0.070	-5.5
ST588	1.6	1.45	1.75	-0.13
ST643	4.92	4.50	5.34	0.23
ST484	7.49	6.74	8.24	-0.47

11.4.2 LABORATORY DUPLICATE SAMPLES

Laboratory pulp duplicates are provided as part of internal laboratory QC as an indication of preparation/pulverization homogeneity, but may also indicate random analytical errors. Laboratory duplicates are selected at random at a rate of approximately one in ten and constitute a second ~200g subsample taken from the pulverizer. From this stage of laboratory preparation, the duplicate is treated as an additional sample and undergoes the same process at the same time as the original aliquot being used to represent the submitted sample.

Fosterville only collects laboratory duplicate data on Au.

Fosterville sulfide samples have historically shown to be highly repeatable.

A review of OSLS laboratory Au duplicate data collected from 2012 to 2015 found a very strong correlation with an R^2 of 0.98. GAL laboratory Au duplicate data collected during 2015 had an R^2 correlation coefficient of 0.94.

In 2016, the combined dataset of OSLS and GAL 25g Fire Assay duplicates on primary sulfide Au samples totaled 915, excluding results less than 10x lower limit of detection. Bias was insignificant (-0.83%) with an R^2 of 0.997. 85.79% were within 10% AMPRD and 96.5% were within 20%.

Fire Assay laboratory duplicates on primary sulfide Au samples in 2017 totaled 1,268, excluding results less than 10x lower detection (Figure 11-15). Bias was insignificant (-0.76%) with an R^2 of 0.998. 84.78% were within 10% AMPRD and 96.77% were within 20%.

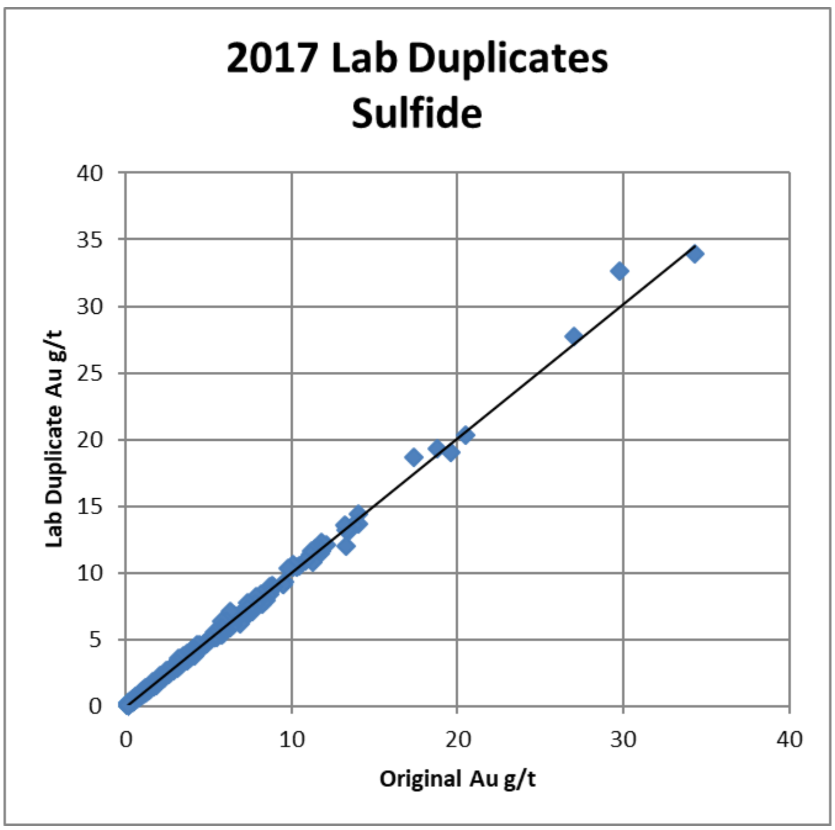


FIGURE 11-15 2017 SULFIDE LABORATORY DUPLICATES

In 2016, the OSLS 25g Fire Assay repeats on primary samples dispatched as Visible Gold (VG) samples totaled 121, and included values up to 2,497 g/t Au. Bias was insignificant (-0.96%) with an R^2 of 0.966. A total of 72.73% were within 10% AMPRD and 84.30% within 20%. GAL did not analyze any 'VG' samples in 2016.

Au Laboratory Duplicates on 'VG samples' in 2017 totaled 179 and included values up to 19,766g/t Au (Figure 11-16 with values >1000ppm, n = 5, not shown for reasons of scale). Bias was insignificant (-4.60%) with an R^2 of 0.999. 79.33% were within 10% AMPRD and 92.18% were within 20%.

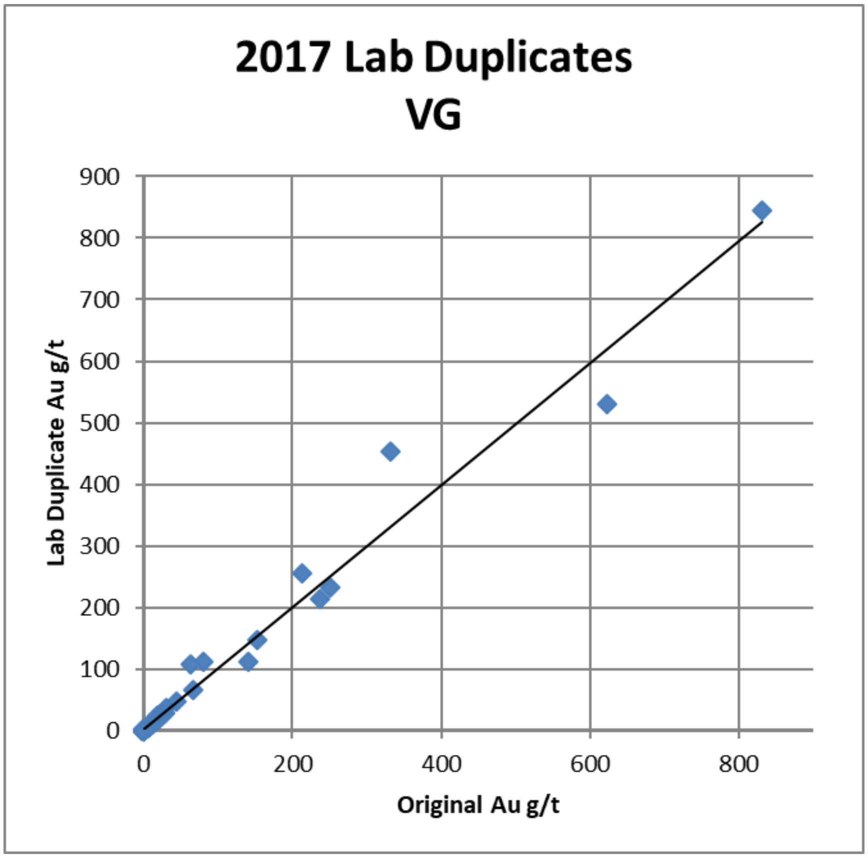


FIGURE 11-16 2017 VISIBLE GOLD LABORATORY DUPLICATES

11.4.3 LABORATORY REPEAT (REPLICATE) SAMPLES

Laboratory repeats are additional fires from the original pulp run in a subsequent fire. At OSLS, the laboratory repeats are specifically performed on a different day and by a different fire assay technician than those of the originals. At GAL, the fire was run on a different day, but there is no explicit requirement for a different technician to perform each fire. Repeats are required to be selected, run and reported by the laboratory before finalized results can be released to the FGM. Repeats may additionally be requested on specific samples at the client's request and reported as an amendment, in support of the original values.

Fosterville only collects laboratory repeat data on Au.

In 2016, laboratory repeats, not flagged as Visible Gold or potential, showed insignificant bias (0.27%) and a strong correlation with an R^2 of 0.963, from 2,501 pairs. This represented both the GAL and OSLS datasets combined and excluded results less than 10x lower limit of detection. 93.56% of these were within 10% AMPRD, and 99.65% within 20%. This dataset included a small handful of notable outliers above 40 g/t Au, with differences such as 44.1 g/t Au vs 105.9 g/t Au (82.4% AMPRD) and 126.4 vs 73.3 g/t Au (53.2% AMPRD). It is likely that these samples were not identified at the logging stage for their potential to host coarse gold.

In 2017, laboratory repeats on primary sulfide Au samples totaled 4,618, excluding results less than 10x lower detection (Figure 11-17). Bias was insignificant (-0.05%) and excellent correlation was shown with an R^2 of 0.997. 93.62% were within 10% AMPRD with a maximum of AMPRD of 49.63% (60.6 vs 100.6g/t). Seven outliers were included in the above statistics but not shown in the chart for reasons of scale. These appear to be the result of unexpected coarse gold, with grades ranging from 43.9 to 349g/t.

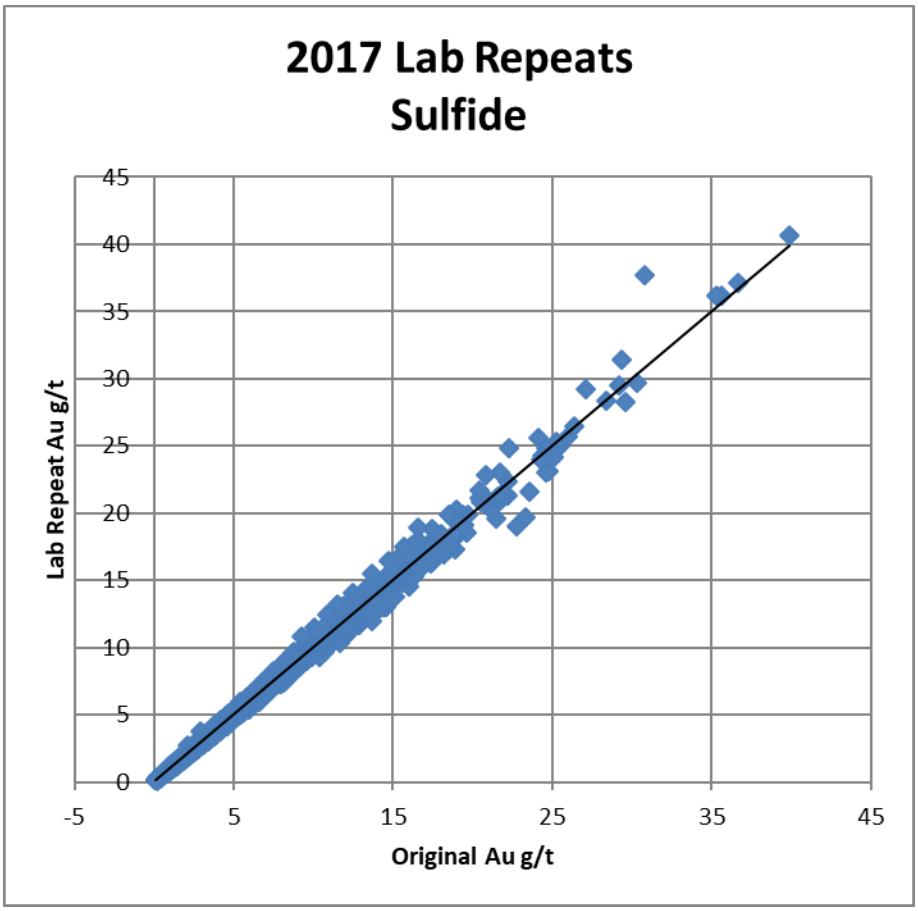


FIGURE 11-17 2017 LABORATORY REPEAT SULFIDE SAMPLES

Laboratory Repeats from 2016, which were flagged for Visible Gold or potential show insignificant bias (0.21%) and correlate strongly, with an R^2 of 0.981 from 425 pairs (threshold 10x detection). 95 of these pairs (or 22.34%) had an assay at 200 g/t Au or more. 61.64% of the 425 pairs were within 10% AMPRD, with 82.35% within 20%.

Laboratory repeats on primary samples with observed or potential VG in 2017 totaled 491, with values up to 5,911g/t Au (Figure 11-18). Correlation was strong with an R^2 of 0.984, and an insignificant bias of 1.58%. 71.89% of pairs were within 10% AMPRD and 92.43% were within 20%.

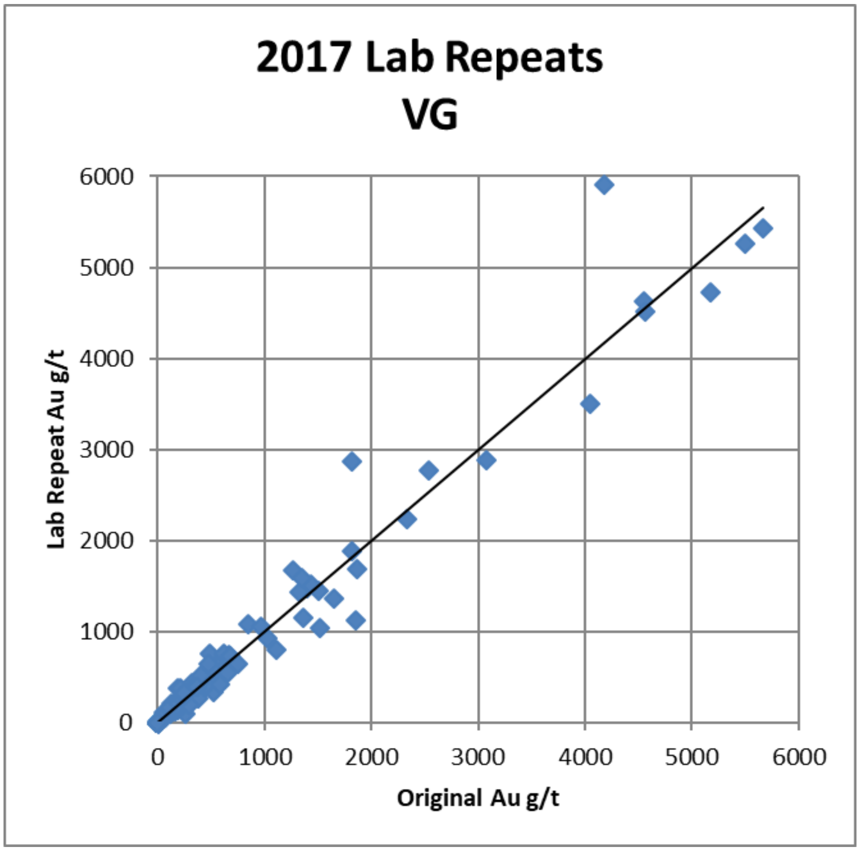


FIGURE 11-18 2017 LABORATORY REPEAT VISIBLE GOLD SAMPLES

11.4.4 BLANKS

Field blanks were historically not used because there is a sharp visual grade contrast between mineralization and waste, which provides a natural blank. However, in 2009 the use of field blanks was adopted to assess quality control of the sample preparation; i.e. to test for contamination from one job to the next and also from sample to sample within the job. These were produced by half core sampling 1.2m intervals of barren material. Intervals showing less than 0.03ppm were then split into 0.3m lengths, with each constituting a 'field blank'. From October 2012, this process was refined and original 1.2m samples were analyzed at ppb levels, for more precise determination of values below 0.03ppm/30ppb. A minimum of two field blank samples is inserted into each diamond drill hole sample batch. At least one field blank sample is inserted at the beginning of the job, with others inserted between mineralized samples.

In the period June 2014 – February 2016 interstitial blanks were routinely inserted within zones containing potential or observed visible gold as an attempt to control and quantify contamination between samples. From February 2016 this process was improved by instead inserting quartz wash samples between samples of potential or observed coarse gold, with blanks occasionally following these to verify the effectiveness of the quartz wash.

Since August 2012 laboratory blank samples have been imported and assessed as part of the FGM QAQC process for drill core. OSLS reports blanks in Au Fire Assay only, where barren flux is fired in a new pot. Elevated grades will usually either indicate drift in calibration, or contamination during fire assay. All elemental analytical methods requested by GAL have been reported with laboratory blanks.

11.4.5 FIELD DUPLICATES

Half core samples (cut in half longitudinally by diamond tipped saw blade) are duplicated at a rate of about one in every 80 samples per drill hole. The second half of core, usually discarded after a time or retained indefinitely for reference, is submitted blindly to the laboratory and processed like any primary sample within the same job. These test the sample representativity of the Fosterville half core sampling process and aid in quantifying the nugget effect.

Field duplicate data collected over the 2013 – 2015 period showed an R^2 value of 0.96 with no apparent bias.

Field duplicates from 2016 on sulfide samples represented 436 pairs, with insignificant bias (-0.97) and an R^2 of 0.922. Excluding two extreme outliers, which are believed to contain unobserved coarse gold, the R^2 becomes 0.980.

There were a total of 788 Field Duplicate pairs on half core diamond samples in 2017 (Figure 11-19), not including results where both halves were reported below 10x lower detection limit. Excluding one sample with observed visible gold (1515 vs 1349g/t) and one sample identified while logging as potentially containing coarse gold (0.79 vs 0.67g/t), this dataset is believed to represent sulfide-hosted ore and has a bias of 0.59% and an R^2 of 0.976.

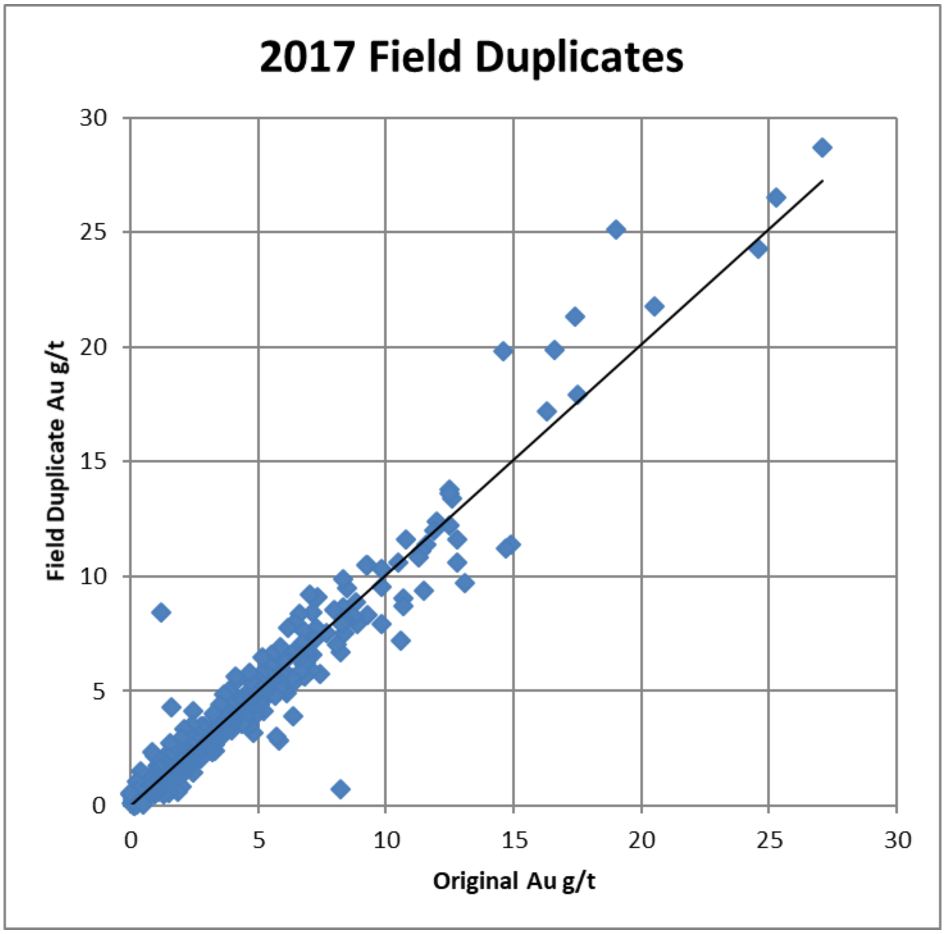


FIGURE 11-19 FIELD DUPLICATE GOLD DATA FOR 2017

11.5 ANALYTICAL TECHNIQUE VERIFICATION

Various analytical testing has been conducted in 2016 and 2017 to ascertain the accuracy of using the FA25g analysis technique employed at FGM with respect to the suitability of it in high-grade visible gold resources and also to check the accuracy of the main service provider of analytical services to the mine.

11.5.1 COMPARISON OF ANALYTICAL TECHNIQUES

During May to July 2016 a series of stope samples were collected from three stoping panels on the P4240mRL. Each stope sample was collected as a truck dump grab from the ROM. The samples were approximately 3-5kg mass in a calico bag as per standard mine geology practice. In addition to each sample being tested using the FA25g technique (see section 12.3), the pulp created for each sample was further tested for gold by fire assay with a 50g charge (FA50) and by Screen Fire Assay (SFA) techniques. The bulk of the same sample (sample mass minus pulp mass) was sub set to ~3kg (maximum) and 2kg of mass were then analyzed by Leach well with the tail residue being analyzed by FA25. The analysis type was selected in order of increasing sample analyzing mass (sample support) to detect any analytical bias introduced by FA25.

Quantitative Group Pty Ltd consultants (2016) reviewed the stope sample data and commented regarding the limitations regarding stope sampling ROM material in that the bias represented between FA25 and Leachwell (for example) may be exacerbated. Notwithstanding this, the results do suggest that although the averages of each data set are very similar, there is a change in the nature of the correlation of the data, particularly between the FA25 and the LW data sets. There seems to be a positive conditional grade bias of the FA25 data over the other three methods with assays exceeding 20 g/t Au (Figure 11-20).

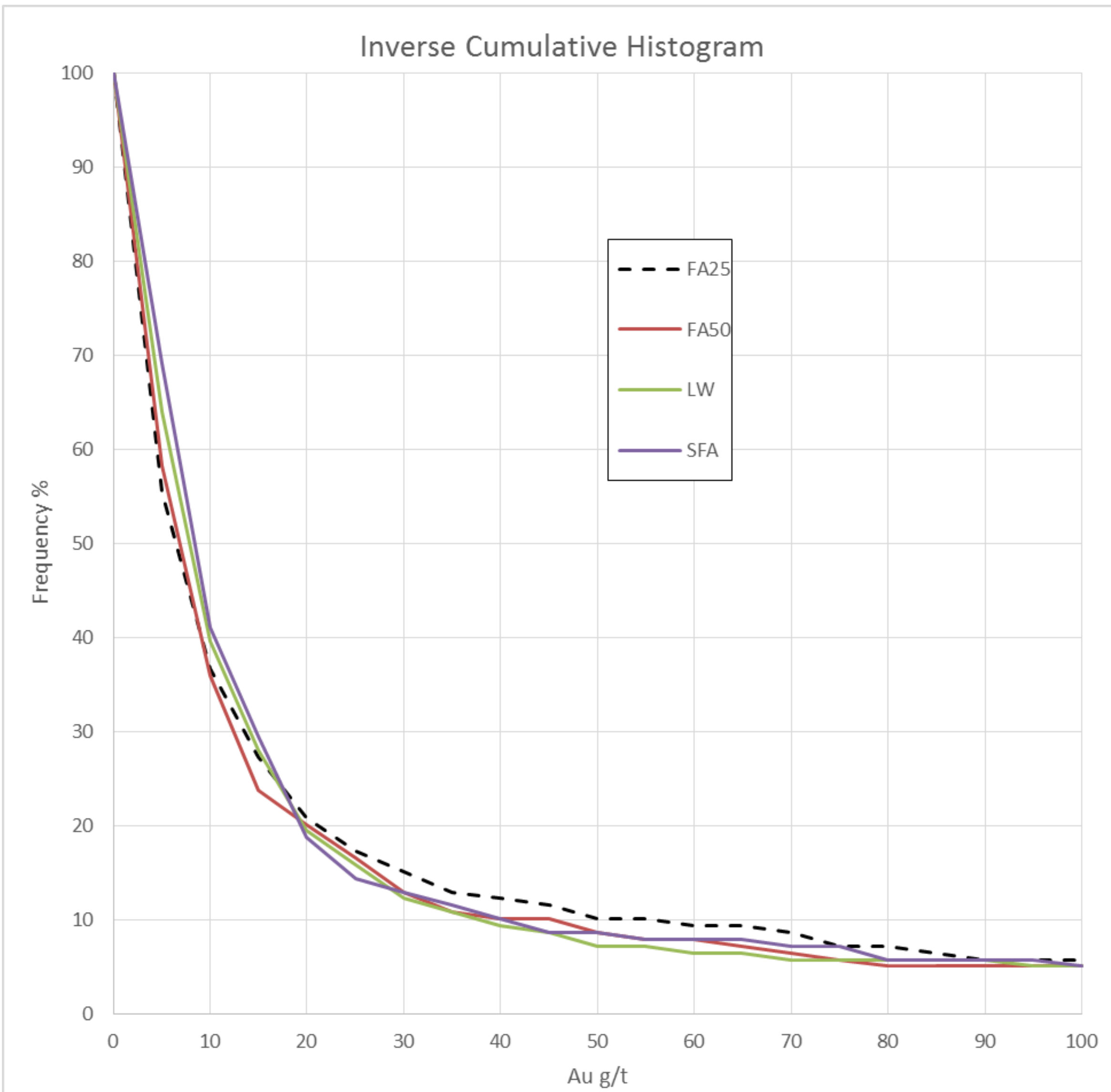


FIGURE 11-20 INVERSE CUMMULATIVE HISTOGRAM SHOWING A POSITIVE CONDITIONAL GRADE BIAS OF FA25 GOLD DATA. (QG CONSULTANT REPORT 2016)

In 2017, a large scale project was initiated to compare traditional 25g Fire Assay and ~2kg 36-hour Leachwell on drill core samples of observed or potential visible gold. Data collection is ongoing as new core samples are produced and submitted to the laboratory. Preliminary results are charted in Figure

11-21. A clear population of samples up to 25g/t Au with low leachability and excellent correlation between the original fire assay and the fire assay on leachate (solids) are suggestive of samples containing only sulfide hosted gold.

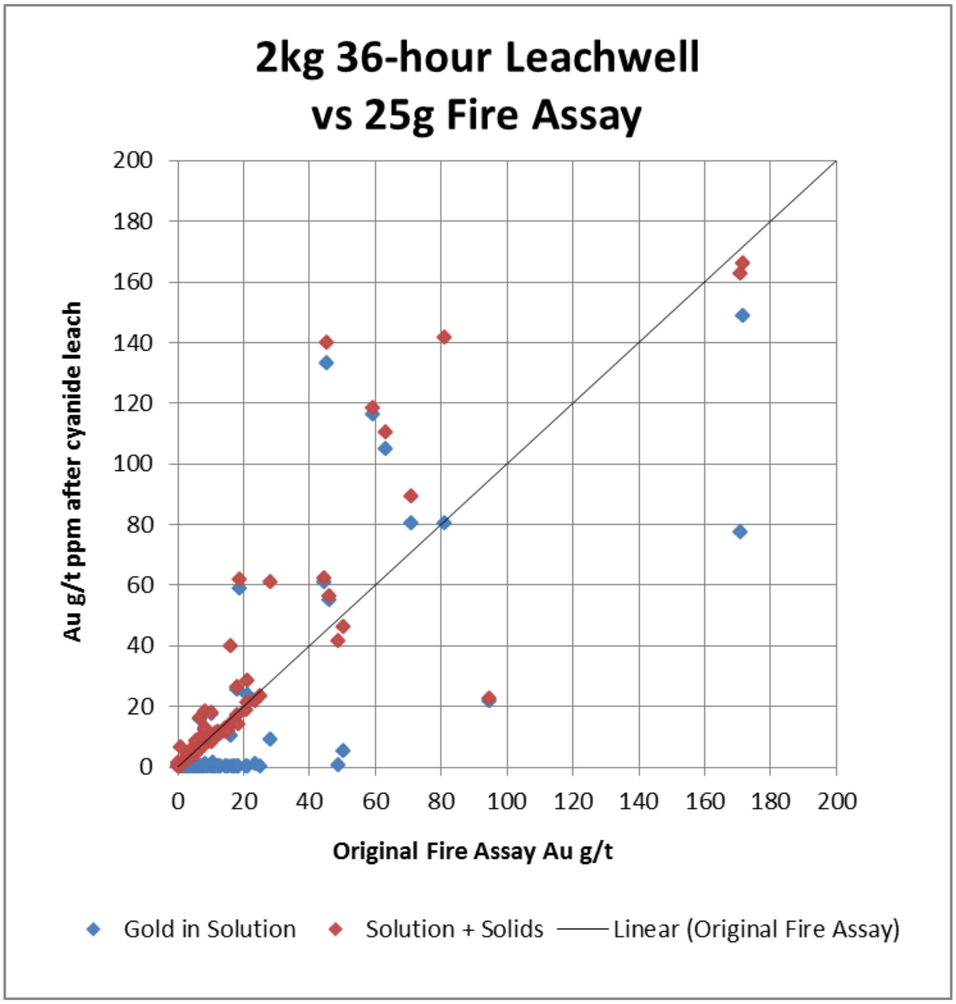


FIGURE 11-21 2017 FIRE ASSAY VS LEACHWELL

Some samples show gold in solids equal to or greater than the amount of gold in cyanide solution, which in many cases correlates with strong visual carbon content, i.e. preg-robbing. Some of these have been followed up by running Fire Assay to extinction on the leachate residue. In one case, having 63 individual 25g fires, high variability was seen in the leachate (Coefficient of Variation = 0.45) (Figure 11-22).

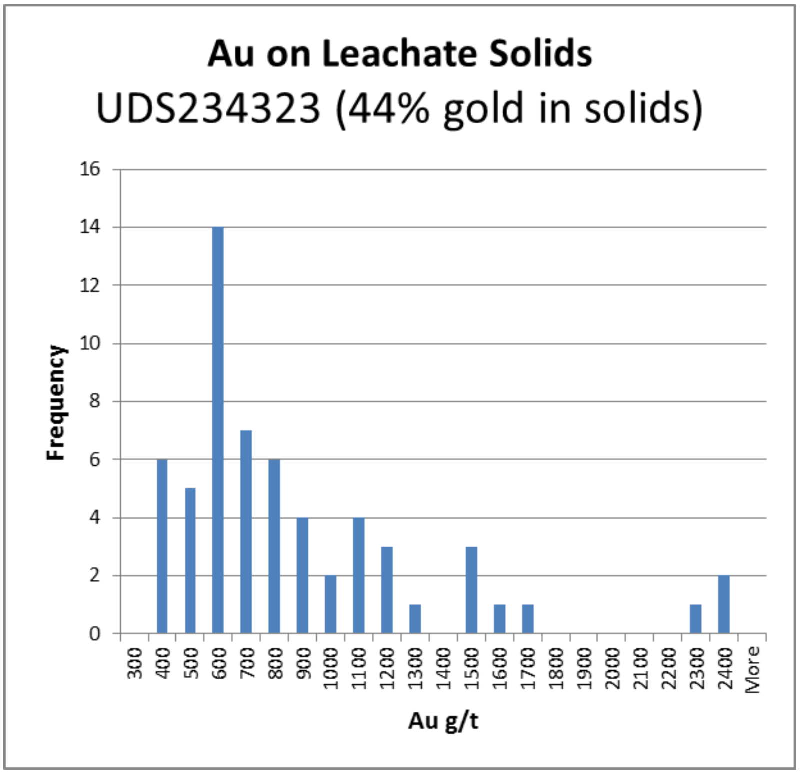


FIGURE 11-22 GOLD IN SOLIDS OF HIGH NCC SAMPLE

11.5.2 VISIBLE GOLD DUPLICATE SAMPLE COMPARISON

During 2016, some 81 remaining half core intervals were selected from diamond core tested quartz lode zones, many of them containing visible gold. A FA25 sample was analyzed from each half of the core, similar to the normal QAQC field duplicate protocol as mentioned in section 11.4. This project was to augment the small population of field duplicates already taken in quartz lode zones so as to determine the homogeneity of the FA25 analyses from each half of the selected intervals.

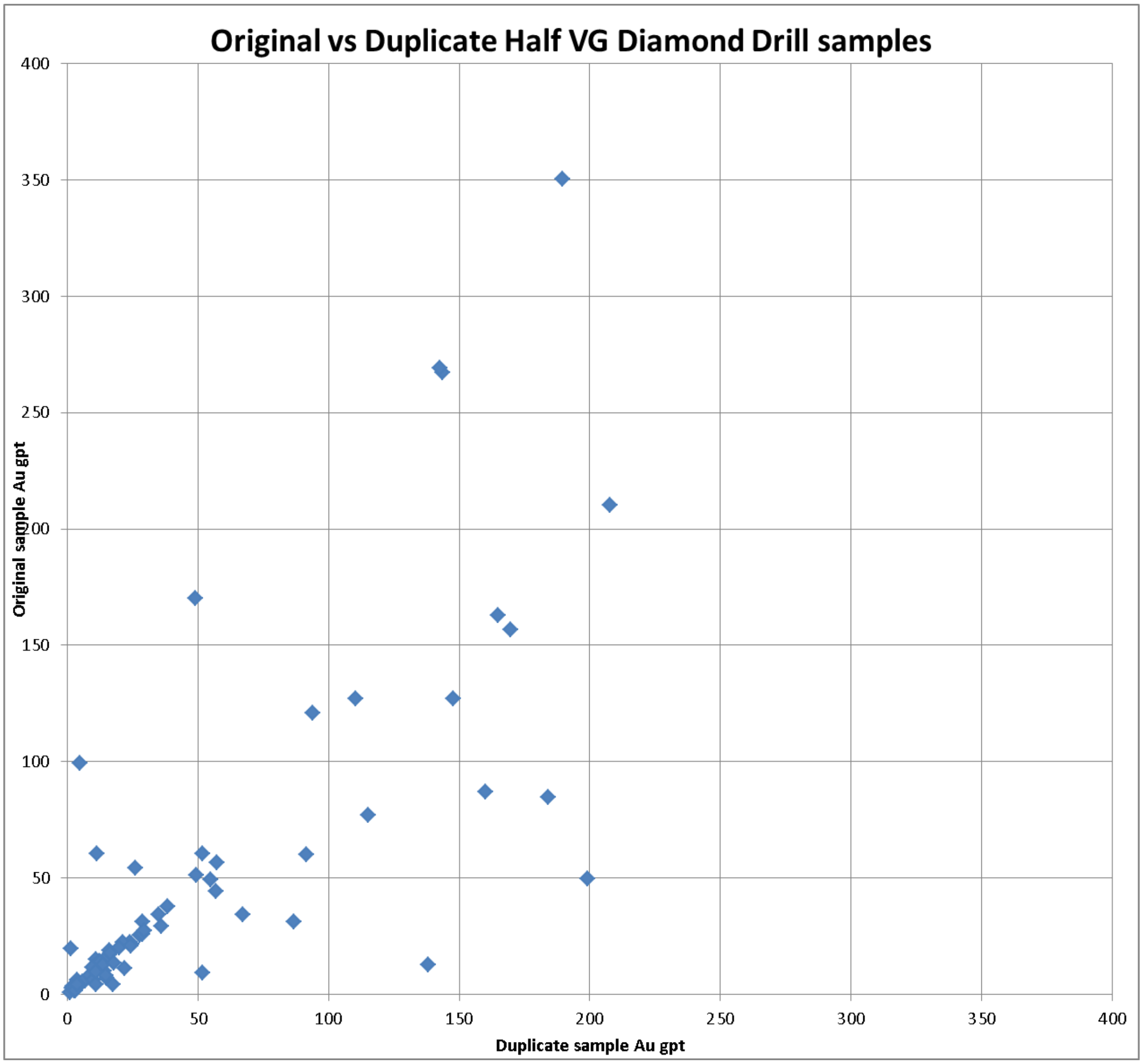


FIGURE 11-23 CORRELATION PLOT OF THE VISIBLE GOLD FIELD DUPLICATE DATA

Figure 11-23 shows a raw correlation of the VG field duplicate data set (excluding a handful of extreme outliers) where even without a regression model added, a change in the correlation of the data can be discerned over the 30-40 g/t Au grade level between the two field duplicate samples. Visible gold prepping procedures were identical for all of the samples as was the analysis method. Sample variability increases significantly above approximately 50g/t.

However, studies to date have not shown any significant bias between FA25 and larger fusion masses (FA50 and screen fire assays). Data continues to be analyzed to ensure this does not change in the future. Some departure is apparent in extremely high grade samples but the number of samples falling into this category has made it difficult to draw firm conclusions as to any consistent bias between FA25 and FA50 test regimes.

TABLE 11-4 FIRE ASSAY WEIGHT STUDY RESULTS – Q-Q RESULTS

Percentile	Grade Threshold			Records		
	FA25	FA50	SFA	FA25	FA50	SFA
10%	2.61	2.51	2.93	224	224	224
20%	4.02	3.98	5.45	199	199	199
30%	6.75	7.01	7.58	174	174	174
40%	8.39	8.60	8.77	149	149	149
50%	10.20	9.75	10.47	125	125	125
60%	12.96	11.90	12.88	100	101	100
70%	15.20	14.20	15.99	77	76	75
80%	21.72	19.32	20.22	50	50	50
90%	39.12	34.28	38.53	25	25	25
93%	61.30	50.46	54.79	19	19	19
95%	105.72	81.90	91.71	13	13	13
98%	215.46	218.26	150.02	7	7	7
99%	366.51	536.37	370.07	3	3	3
100%	640.10	1,260.00	815.07	1	1	1

Other studies compared Atomic Absorption Spectrometry results with Gravimetric detection methods. The results were inconclusive in establishing a clear departure point between the two detection methods. Additional test work will be required to refine this understanding further.

TABLE 11-5 STATISTICAL COMPARISON BETWEEN AAS AND GRAVIMETRIC GOLD RESULTS

Parameter	AAS	Grav.
Mean	1,155	1,126
Median	1,014	968
Std Dev	639	590
CV	55%	52%
Min	307	278
Max	3,489	3,135

11.5.3 UMPIRE LABORATORY CHECKS

Confidence in analytical accuracy is further assessed by re-submitting pulps from one laboratory to another and comparing differences in results. Such a program is usually done at least every few years.

A program of inter-laboratory checks was undertaken in 2002 comparing the AMDEL results to two other commercial laboratories – Aminya Laboratories Pty Ltd (Aminya) and Genalysis Laboratory Services (Genalysis). The two batches (147 samples) sent to Aminya returned an average of 9% higher with an R^2 correlation coefficient of 0.993. The Genalysis results were 2% lower with an R^2 correlation coefficient of 0.996. The inter-laboratory check samples range in grade from below detection (<0.01 g/t Au) to 45 g/t Au. This inter-laboratory check data is presented in Allwood (2003).

During 2013, the OSLS 25g Au Fire Assay method was compared against GAL's 50g Au Fire Assay method. All 245 samples showed an overall bias of only 2%, with an R^2 correlation coefficient of 0.988.

In 2016, 82 samples were selected from various domains and their pulps submitted for umpire test work at Bureau Veritas Minerals (Adelaide) (BV). A summary of the ore sources is shown in Table 11-6.

TABLE 11-6 UMPIRE SAMPLING BY ZONE

Zone	Sulfide	Visible Gold	Total
Eagle	20	23	43
Harrier	15	5	20
Phoenix	13	7	20
Total	**48**	**35**	**83**

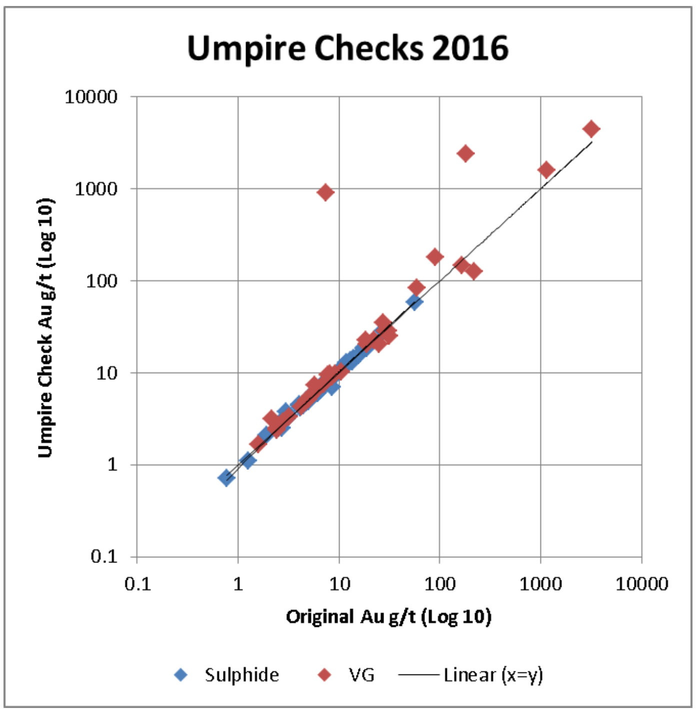


FIGURE 11-24 CORRELATION OF OSLS AND BV PULPS

A correlation of FA samples from Bureau Veritas (BV) and On Site Laboratory Services (OSLS) laboratories comprises the OSLS 25g Fire Assay method and the BV 40g Fire Assay method (Figure 11-24). Following transportation, the pulps (sourced from OSLS) were re-homogenized at BV by mat roll so as to avoid smearing and contamination in the pulverizer. Small population size should be taken into consideration when reviewing the following statistics, however the 'Sulfide' subset (n = 48) shows insignificant bias (0.957%) and an R^2 of 0.997. Apart from a few high-grade results showing significant variation, there is a very good correlation with the results, even considering the differences in charge weight and slight acid digest differences.

The umpire test work detailed within section 11.5.3 includes only 83 samples. A yearly umpire comparison will be undertaken using up to 1000 samples and FGM would aim for this test work to be completed on a yearly basis.

11.5.4 SAMPLE SEGREGATION TESTING

A preliminary study was conducted in mid-2017 to assess if there was risk of sample bias during sample preparation at OSLS. The methods of collection of subsampling lead to gaining some comparative data that could assess differences between an "ideal sample preparation" collection regime against the actual practices employed at the laboratory. Two stages were identified for testing, one being the subsampling of ~3kg of pulverized material into a ~200g pulp packet, the other being the subsampling of the ~200g pulp packet into a 25g charge for Fire Assay. 20 x 3kg high-grade samples containing coarse gold were taken from underground for the purpose of the study.

Results were largely inconclusive due to lack of sample size (number of tests). FGM intend to revisit this study on a larger scale during 2018.

11.6 SAMPLE AND DATA SECURITY

11.6.1 SAMPLE SECURITY

The methods of sample storage and transport have remained largely unchanged throughout the life of the project.

Samples are bagged and numbered either on site at the drill rig or at the FGM core handling facility.

Samples sent to laboratories outside Bendigo were in plastic bags in lots of about five and transported using the laboratory's pick up vehicles. On arrival at the laboratory, the list of samples sent is matched to the actual samples received and confirmation is sent by either fax or email using a sample consignment system.

Analytical laboratories have operated in Bendigo during the periods 1992 – 2000 and 2005 to present. During these periods individual samples from the drill rig or core shed have been placed in a designated area within the mine security gate and collected daily by laboratory staff. Again, on arrival at the laboratory, the list of samples sent is matched to the actual samples received.

Work undertaken by employees at Fosterville is limited to core logging and the mark-up, cutting and bagging of samples. All other sample preparation and analysis is conducted off-site at commercial laboratories.

11.6.2 DATA SECURITY

Data security is ensured through the use of an 'acQuire/SQL Server' database of all company exploration drilling information. This database includes all assays, geological and geotechnical information. As well as data interrogation, the database allows automated error checking as new data is entered. The database is backed up in full daily, and incrementally four times a day.

Access to the database is controlled by user login permissions (Windows NT Authentication). Write access is further restricted by requiring the acQuire database application and associated software licensing.

11.7 ADEQUACY OF PROCEDURES

It is the opinion of the Authors that the sample preparation, security and analytical procedures are adequate and have been appropriately applied over the life of the project to ensure that the data is representative and of high quality.

12 DATA VERIFICATION

12.1 DATABASE VALIDATION

The drilling carried out by previous owners at Fosterville routinely included quality assurance and quality control checks. The nature of these checks evolved through time and these are described below. In addition, sampling QAQC consultants SMP Consultants reviewed the sampling, analytical and data storage procedures used in drilling programs to May 2002 (Crase, 2002). Data system reviews of the exploration database were also undertaken by IO Digital Systems in 2004 and 2006 (Kelemen, 2004; McConville, 2006).

The database includes numerous automated data validation methods. The database structure and the use of primary key fields prevent certain types of invalid data (e.g. overlapping sample intervals) from being stored in the database. Also, numerous checks are performed on the data when it is imported (e.g. assay QAQC performance gates, variation in down-hole surveys from previous survey).

Prior to 2000, the geological data was entered directly into the database by hand from the original hardcopy geological log with a manual validation system. From 2001 until 2008, all geological data was uploaded directly from IPAQ hand held logging devices into the database with similar automatic checks as used for the assays. Immediately after the IPAQ was uploaded a hard copy of the geological log was printed to provide an extra back up of the data. Since 2008 geological information has been entered into laptops running acQuireTM offline logging software. This software supports an increased range of logging validation that prompts the user while logging and also prior to uploading of the logged data into the Fosterville Geological SQL database.

The down-hole drilling survey data, between 2001 and 2010, was the only data hand entered into the Fosterville geology database. Allwood (2003) reports a program conducted in 2002 where approximately 10% of the SPD holes were randomly selected for checking the database against the original survey shots. This check found several errors so it was decided to check the entire down-hole survey database against the original surveys shots. All errors found were corrected. Diamond drill hole (underground holes are prefixed by UD, UDE and UDH) traces are visually checked in MineSight™ software against the design trace, as soon as the down-hole surveys are entered into the database.

12.2 DATA VERIFICATION

In addition to the quality control and data verification procedures discussed in detail above, the Qualified Persons preparing the Mineral Resource estimates have further validated the data upon extraction from the database prior to resource interpolation. This verification used MineSight™ drill views as the primary tool to identify data problems. This allowed the omission of holes if they were of questionable quality, for example due to low quality sample techniques or incomplete assaying. When coupled with the more mechanical check processes ensuring high quality data is entering the database in the first place, these checks were effective in allowing the Qualified Persons to be confident that the data was geologically coherent and of appropriate quality and adequate for use in resource estimations and reserve studies.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Details of previous metallurgical test work conducted on a range of Fosterville ores can be referenced in the Fosterville Technical Report December 2015. Metallurgical test work is ongoing with particular focus on maximizing gravity recoverable gold and also understand and prepare for any future ore that will challenge existing gold recovery methods.

Several newly discovered geological structures at depth, such as Eagle, East Dipping and Swan Faults, have gold in the form of coarse visible gold that frequently occurs with low sulfide mineralization. In 2015, a series of plant trials and mineralogy surveys indicated that the visible gold is being recovered in the flotation concentrates (primarily Flash flotation concentrate) and is recoverable from this concentrate by gravity methods. A gravity gold circuit was commissioned in April 2016. The gravity circuit consists of a Knelson concentrator and Gemeni tables recovering gold from the recirculating load of the concentrate regrind mill. Funding has been approved for installation of an additional gravity circuit in the primary grinding circuit and associated expansion to the tabling room with aim to maximize gravity gold recovery.

In the opinion of the authors, all deleterious elements are effectively managed and it is considered that their presence does not have a significant impact on economic extraction. No identified processing factors have a significant impact on economic extraction.

14 MINERAL RESOURCE ESTIMATES

The Mineral Resources reported are broken down into areas contained within the Mining Licence MIN5404 (Section 4). Mineral Resource Areas of Central, Southern, Harrier and Robbin's Hill (Table 14-1) are defined resource areas, which were established at different times in the projects history. The Central Area contains multiple Mineral Resource models primarily for reasons of data handling. Details on Mineral Resource block model extents can be seen in Figure 14-1.

CIL Residue Mineral Resources are distinguished from in-situ Mineral Resources in Table 14-1 on the basis of differing recovery assumptions.

The current Mineral Resource estimate for FGM is presented in Table 14-1.

TABLE 14-1 MINERAL RESOURCES (EXCLUSIVE OF MINERAL RESERVE) FOR FGM AS AT DECEMBER 31, 2017

Mineral Resources (Exclusive of Mineral Reserves) - Fosterville as at December 31, 2017										
Classification		**Measured**			**Indicated**			**Inferred**		
		Tonnes (kt)	**Grade (g/t Au)**	**Insitu Gold (kOz)**	**Tonnes (kt)**	**Grade (g/t Au)**	**Insitu Gold (kOz)**	**Tonnes (kt)**	**Grade (g/t Au)**	**Insitu Gold (kOz)**
Fosterville Fault Zone Sulfide Resources										
Central Area	**Upper**	1,463	2.47	116	808	2.69	70	24	1.45	1
	Lower	184	8.32	49	4,946	7.03	1,119	3,355	10.90	1,176
Southern Area	**Upper**	21	3.32	2	463	2.44	36	537	2.29	40
	Lower	0	0.00	0	0	0.00	0	66	3.50	7
Harrier Area	**Upper**	0	0.00	0	0	0.00	0	0	0.00	0
	Lower	6	6.14	1	2,689	6.20	536	1,098	7.33	259
Robbin's Hill Area Sulfide Resources										
Combined	**Upper**	0	0.00	0	1,434	2.23	103	726	2.29	54
	Lower	0	0.00	0	253	3.69	30	2,139	5.03	346
Sulfide Upper		1,484	2.48	118	2,705	2.40	209	1,287	2.28	94
Sulfide Lower		190	8.26	50	7,888	6.64	1,685	6,657	8.35	1,788
Total Sulfide		1,674	3.13	169	10,594	5.56	1,894	7,944	7.37	1,882
Total Oxide		270	1.47	13	1,326	1.84	79	335	1.18	17
Total Oxide & Sulfide		**1,944**	**2.90**	**181**	**11,920**	**5.15**	**1,973**	**8,279**	**7.14**	**1,900**

Notes:

1. CIM definitions (2014) were followed in the estimation of Mineral Resource.
2. For the Mineral Resource estimate, the Qualified Person is Troy Fuller.
3. The Mineral Resources reported are exclusive of the Mineral Reserves.
4. Mineral Resources are rounded to 1,000t, 0.01 g/t Au and 1koz. Minor discrepancies in summation may occur due to rounding.
5. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
6. The Mineral Resource estimate used a gold price of US$1,280 per ounce (A$1,600 per ounce).
7. Cut-off grades applied are 0.7 g/t Au for oxide, 1.0 g/t Au for near-surface sulfide (above 5050mRL) and 3.0 g/t Au for underground sulfide mineralization (below 5050mRL).
8. A minimum mining width of 2.5m was applied.
9. Dry bulk density of mineralized material applied 2.40t/m^3 for oxide, 2.56t/m^3 for transitional material, 2.64t/m^3 for fresh material between 5000mRL and 5050mRL, 2.72t/m^3 for fresh material between 4500mRL and 5000mRL and 2.78t/m^3 for fresh material below 4500mRL.

The reported Mineral Resources are as at December 31st 2017 and reported by Kirkland Lake Gold in accordance with NI43-101.

In all cases, the Qualified Person has complied with CIM standards as prescribed by NI43-101.

The Authors are not aware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing and political or other relevant factors that would materially affect the Mineral Resource estimate.

The location and extents of the block models for each of these areas are displayed in Figure 14-1. Current underground mining activities are confined to the Central (Northern, North Phoenix, South Phoenix, Central Models) and Harrier (Harrier Model) Areas. Open pit mining activities were last undertaken in 2012 in the Robbin's Hill Area (Robbin's Hill Model). The Robbin's Hill Resource was updated as at December 2017.

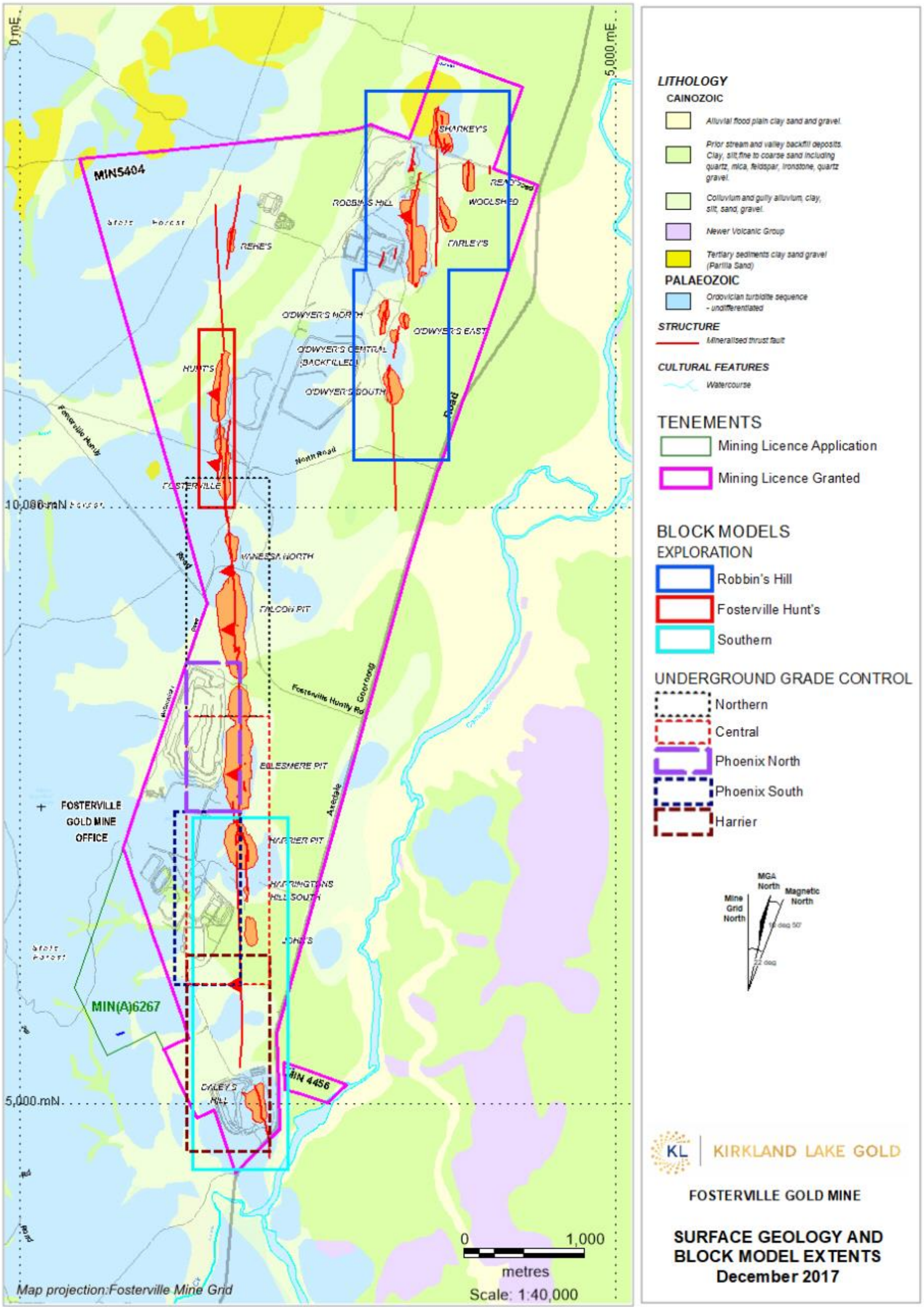


FIGURE 14-1 PLAN SHOWING MINING LEASES AND THE AREA COVERED BY EACH OF THE BLOCK MODELS

14.1 CENTRAL AREA

14.1.1 AREA GEOLOGY

The Central Area is divided into nine current and six remnant mineralized zones.

Current	Remnant
Phoenix	Falcon
Lower Phoenix	Ellesmere
Lower Phoenix Footwall	Shamrock
Eagle	Robin
East Dippers	Griffon
Allwood	Vulture
Kestrel	
Splays	
Swan	

As at December 2017 the majority of drilling, mining, mapping, interpretation and subsequent Mineral Resource Modeling were undertaken within the extents of the Lower Central and Harrier Areas, below the 5050mRL. The Mineral Resources in the Lower Central and Harrier Areas are detailed in Table 14-2.

TABLE 14-2 CENTRAL AND HARRIER AREA LOWER SULFIDE MINERAL RESOURCES (EXCLUSIVE OF MINERAL RESERVES) BELOW 5050MRL - FOSTERVILLE AS AT DECEMBER 31ST, 2017

Central Area + Harrier Lower Sulfide Mineral Resources @ 3g/t Au cut-off (Exclusive of Mineral Reserves) below 5050 mRL as at December 2017									
Classification	Measured			Indicated			Inferred		
	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (koz)	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (koz)	Tonnes (kt)	Grade (g/t Au)	Insitu Gold (koz)
Allwood	5	5.49	1	164	5.77	30	338	6.26	68
Eagle	20	17.81	11	216	9.70	67	168	6.08	33
East Dippers	12	8.57	3	878	6.12	173	100	5.55	18
Ellesmere	0	0.00	0	331	5.73	61	22	3.39	2
Harrier	6	6.14	1	1912	6.22	382	345	6.17	68
Kestrel	1	4.08	0	527	4.52	77	51	4.00	7
Lower Phoenix	26	9.26	8	264	6.47	55	951	6.83	209
Lower Phoenix Footwall	18	6.28	4	199	7.51	48	289	5.22	48
Swan	0	0.00	0	46	115.69	172	570	36.59	671
Osprey	0	0.00	0	824	6.04	160	708	7.77	177
Phoenix	102	6.74	22	823	6.15	163	38	4.59	6
Raven	0	0.00	0	127	8.13	33	0	0.00	0
Robin	0	0.00	0	15	8.35	4	0	0.00	0
Splays	0	0.00	0	803	5.70	147	240	4.65	36
Vulture	0	0.00	0	504	5.05	82	635	4.56	93
Total Sulfide	**190**	**8.26**	**50**	**7635**	**6.74**	**1655**	**4454**	**10.02**	**1435**

Notes:

1. CIM definitions (2014) were followed in the estimation of Mineral Resource.
2. For the Mineral Resource estimate, the Qualified Person is Troy Fuller.
3. The Mineral Resources reported are exclusive of the Mineral Reserves.
4. Mineral Resources are rounded to 1,000t, 0.01 g/t Au and 1koz. Minor discrepancies in summation may occur due to rounding.
5. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
6. The Mineral Resource estimate used a gold price of US$1,200 per ounce (A$1,500 per ounce).
7. Cut-off grades applied are 0.7 g/t Au for oxide, 1.0 g/t Au for near-surface sulfide (above 5050mRL) and 3.0 g/t Au for underground sulfide mineralization (below 5050mRL).
8. A minimum mining width of 2.5m was applied.
9. Dry Bulk Density of mineralized material applied 2.40t/m^3 for oxide, 2.56t/m^3 for transitional material, 2.64t/m^3 for fresh material between 5000 and 5050mRL, 2.72t/m^3 for fresh material between 4500 and 5000mRL and 2.78t/m^3 for fresh material below 4500mRL.

14.1.2 GEOLOGICAL MODELS

In order to constrain the mineral resource models, a number of three-dimensional geological models were generated for each zone using MineSight™ software. The models produced were of three types:

- structural wireframe models;
- mineralization wireframe models; and
- waste wireframe models.

Structural models contain three-dimensional wireframe surfaces of major faults and minor structures as interpreted from surveyed data points obtained from open pit and underground mapping and diamond drill core logs. The mineralization model defines the interpreted gold-bearing mineralized envelopes and is constrained either by structural, lithological or grade boundaries. The waste model is defined by a 10m to 15m envelope surrounding the mineralization model.

Mineralization domain wireframes are constructed on screen using MineSight™ where points are added to a wireframe mesh until the desired interpretation is achieved. This has resulted in interpretations completed on 6.25m sections in areas of open pit grade control drilling and on 25m in areas of underground grade control drilling and, 50m and 100m sections where there is only surface and underground exploration drilling.

Mineralization used within the domain boundary is selected based on a current cut-off of four gram-meters (generally two meters at 2.0 g/t Au. Internal waste below the cut-off may be incorporated into the mineralization envelope where there is adjacent higher gold grade data directly adjacent or if the intercept lies central to other peripheral economic intercepts on the same interpreted structure. Sub-economic mineralization may also be included around the periphery of the domain to produce more representative estimates towards the margins of the mineralized envelope.

Data points that satisfy particular economic or geological criteria for inclusion are directly clipped into the domain solid so that the assay interval is either entirely within or entirely excluded from the interpreted mineralized envelope. Separate mineralization envelopes are created to distinguish between geologically or economically distinct zones such as high-grade/low-grade envelopes or changes in structural orientations.

In mid-2017 high-grade sub-domains were also utilized in the Southern Phoenix Resource model to better spatially separate the zones with a higher prevalence of high-grade free-gold related mineralization. The sub-domaining was expanded in the 1712_SPRM, with the separation of the high grade D01 Audax and D11 Swan domains into laminated quartz domain nested within a lower grade sulfide halo domain.

Historical information derived from RC and more recently from diamond drill data (assays, structure, lithology, etc.) are used in the initial construction of the mineralized domains. Mineralized zones that become viable for mining are further constrained by the addition of geological mapping, surveyed structures, open pit blast hole samples, underground sludge hole and face samples (Figure 14-2).

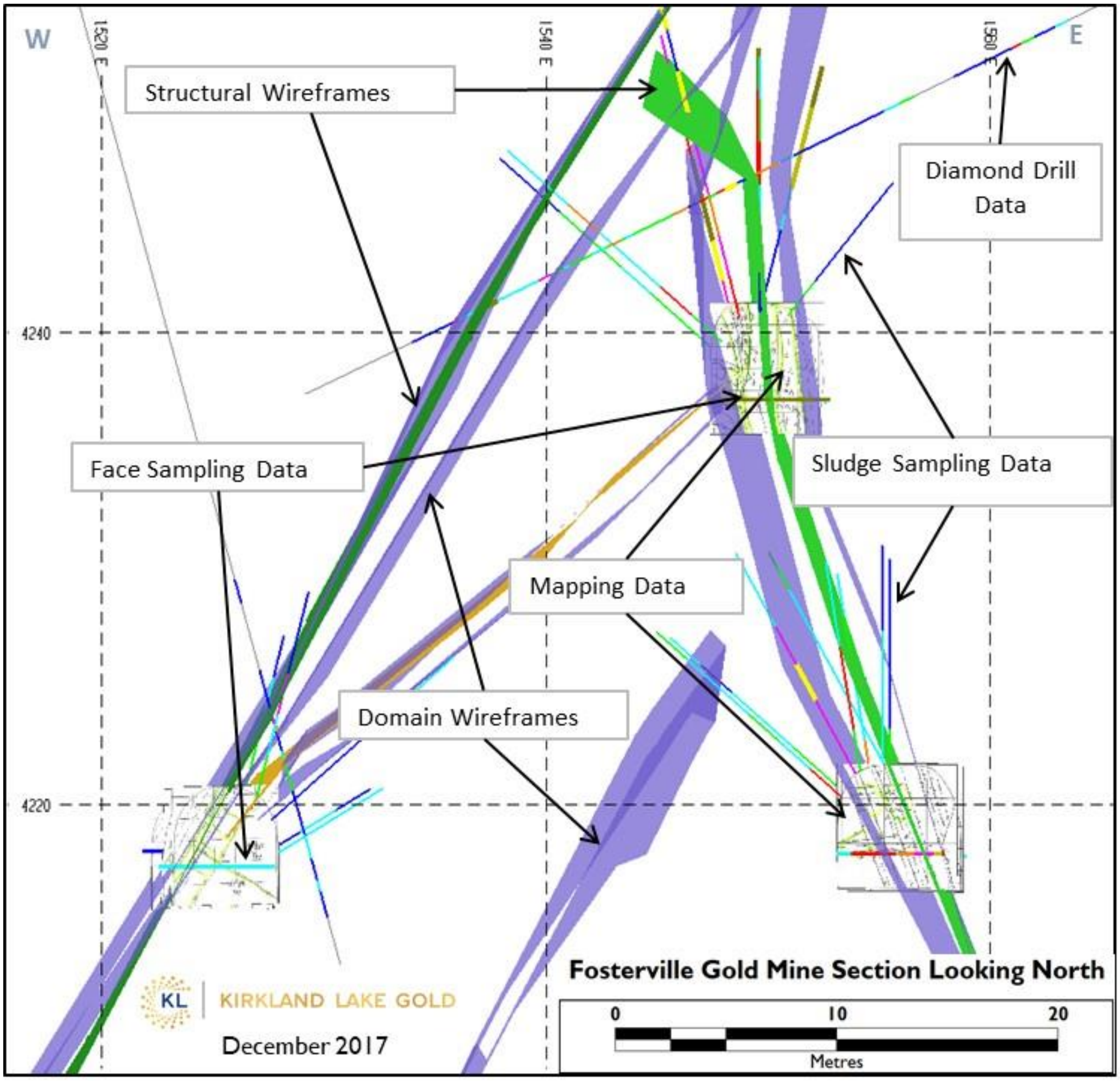


FIGURE 14-2 6770mN SECTION SHOWING DATA FOR CREATING MINERALIZATION DOMAIN WIREFRAMES (UNDERGROUND)

14.1.3 DRILLING DATA

Drill hole assay data used to produce the model was subjected to a number of data preparation processes:

1. Files containing all drill hole logging and assay data were imported from the AcQuire production and exploration database into MineSight™ using an automated script.
2. A MineSight™ procedure coded the drill holes with the appropriate properties from the geological models and a drill hole composite file was constructed for values inside the mineralization wireframes.
3. The files were viewed in MineSight™ in order to identify holes that contained obvious erroneous data missed during the validation process. Data that was considered erroneous was either corrected or deleted from the data set. Note: step 1 and 2 were also completed prior to the geological models being finalized to ensure the interpretations were completed on a validated drill hole file.

In combination, the drill hole files used for the Central Area Models (1712_SPRM, 1710_NPRM, 1506_CRM and 1201_NRM) contained a total of 6329 drill holes between them to estimate mineralization, of which 2408 (38%) are RC holes and 3921 (62%) diamond core holes (Figure 14-3).

TABLE 14-3 CENTRAL AREA RESOURCE MODEL DRILLING DATA EXTENTS

Central Area Resource Models Drilling Data Extents									
Model	**North Min (m)**	**North Max (m)**	**RL Min (m)**	**RL Max (m)**	**Total Holes**	**Diamond Holes**	**RC/AC Holes**	**% Diamond Holes**	**(% RC/AC) Holes**
1506_CRM	6000	8250	4600	5200	2706	1483	1223	54.8%	45.2%
1712_SPRM	5800	7650	3700	5200	1640	1640	-	100.0%	0.0%
1710_NPRM	7300	8700	4000	5200	146	146	-	100.0%	0.0%
1201_NRM	8250	10250	4800	5200	1837	652	1185	35.5%	64.5%
Total					6329	3921	2408	61.95%	38.05%

Model bound inclusive data only, and only includes data used within the mineralized domains.

Compositing

The raw sample results were composited to 2m intervals in the 1712_SPRM, 1710_NPRM, 1506_CRM and the 1201_NRM (Northern) Model using the MineSight™ compositing procedure. A 2m composite length was selected as it encompasses a vast amount of legacy data left over from open pit mining and RC drilling. Future work will include a review of such an interval compared to a primary sampling interval in the current mining areas of the 1712_SPRM of less than 1m.

The compositing process creates up to 2m sample length composites of the primary assay intervals in a down-hole direction honoring the coded geological domains. The MineSight™ software down-hole compositing routine provides an option to accumulate short intervals (up to 50% of the composite length) into the preceding interval. Assay intervals above the minimum 50% primary sample length are treated as a unique composite interval. For example, an assay interval over 1.0m in length is left in the composite file as is, and an assay interval less than 1.0m is added into the preceding composite interval (Figure 14-3) This option has been used to prevent a number of smaller intervals from forming on the down-hole margins of estimation domains, and as such all intervals can be used in the estimation process.

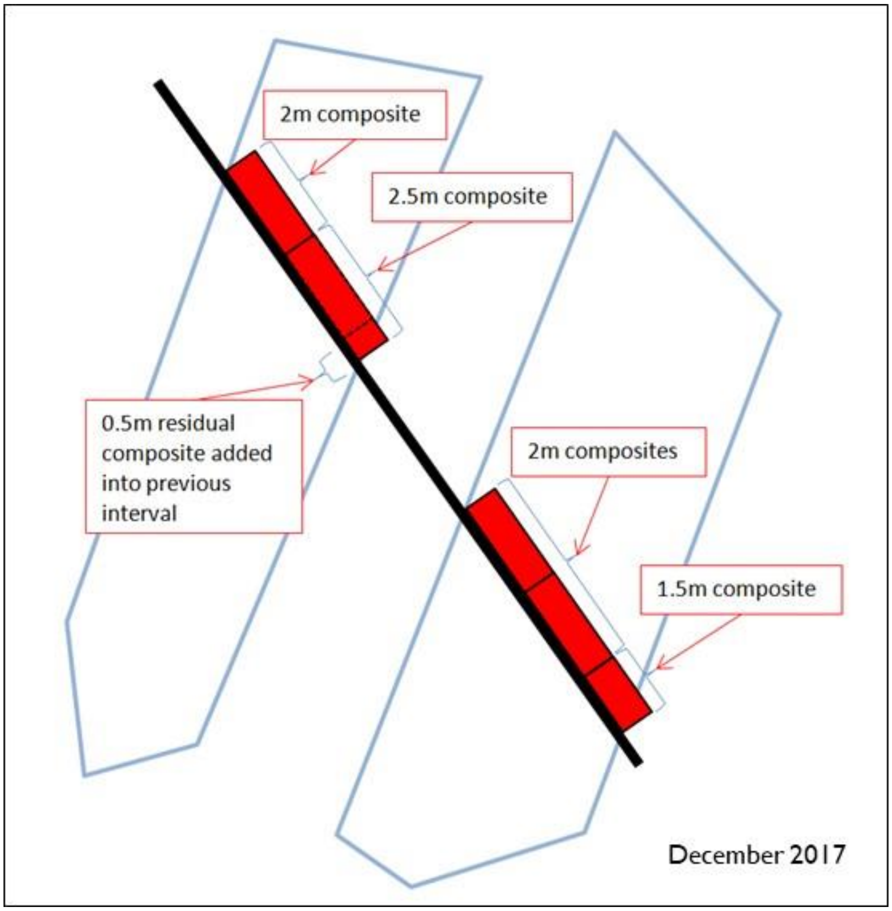


FIGURE 14-3 DOWN-HOLE COMPOSITING WHERE DOMAIN BOUNDARIES ARE HONOURED IN THE COMPOSITE FILE

A listing of descriptive statistics for the estimated domains is provided for the Northern Model (1201_NRM) in Table 14-4.

TABLE 14-4 DESCRIPTIVE STATISTICS FOR THE NORTHERN MODEL

Model	1201_NRM		Descriptive Statistics					
Date:	Dec-2011							
Variable	Data Type(s)	Number of Samples	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	Std Dev g/t	Variance g/t²	Coeff of Var
Code 1 Fosterville HG								
Au 2.0m Composites TC 40	DD	1,701	0.01	49.60	4.61	5.45	29.70	1.18
Code 2 Fosterville LG								
Au 2.0m Composites	DD	9,949	0.00	104.60	5.66	6.63	43.96	1.17
Code 3 Phoenix HG								
Au 2.0m Composites	DD	4,021	0.00	60.44	5.50	6.95	48.30	1.26
Code 6 Splay LG								
Au 2.0m Composites	DD	740	0.00	36.89	2.25	3.41	11.63	1.52
Code 7 Griffon								
Au 2.0m Composites	DD	101	0.20	57.21	9.74	10.62	112.78	1.09

A listing of composite statistics is provided in Table 14-5 for the Northern Model (1201_NRM).

TABLE 14-5 COMPOSITE STATISTICS BY COMPOSITE LENGTH IN THE NORTHERN MODEL

Composite Length	Number	% of Composites	Mean Length (m)	Mean Grade (g/t Au)
< 1.0m	41	0%	0.65	3.37
≥ 1.0 and < 2.0	8209	98%	1.97	5.39
≥ 2.0m	129	2%	2.49	5.60
Total*	**8,379**	**100%**	**1.97**	**5.38**

*Some 70 composites had zero length and grade and were deleted from the data.

A listing of descriptive statistics for the estimated domains is provided in Table 14-6, Table 14-17 and Table 14-18 for the 1712_SPRM Southern Phoenix Model, 1710_NPRM Northern Phoenix and the 1506_CRM Central Models respectively. These statistics are provided as a context for the size and the average grade in each of the domains. The 1201_NRM model name encompasses the build date of the model and infers that the model includes the latest drilling and interpolation data in that respective area. Therefore, the Northern area has not had interpretational and/or drilling additions since January 2012. Similarly, the Central Model has not had any changes since June 2015. The Northern and Southern Phoenix models used the December 2017 data however, and the Southern Phoenix Model also includes areas within the active mining and drilling zones up to December 2017. The spatial distribution of the central area models including the Harrier model is shown in Figure 14-8.

TABLE 14-6 DESCRIPTIVE STATISTICS OF GOLD FOR THE SOUTHERN PHOENIX MODEL

Model:	1712_SPRM	**Descriptive Statistics**					
Date:	Dec-17						
Mineralized Domain	**DD Variable**	**Number of Samples**	**Minimum (g/t Au)**	**Maximum (g/t Au)**	**Mean (g/t Au)**	**Std. Dev.**	**Coeff. of Var.**
Code 1 Audax	Au Raw	872	0.01	12039.00	69.36	465.81	6.72
	Au 2.0m Composites (top-cut)	282	0.01	700.00	55.98	130.86	2.34
Code 3 Phoenix HG	Au Raw	373	0.02	38.60	7.52	6.02	0.80
	Au 2.0m Composites (top-cut)	170	1.18	29.57	7.52	4.55	0.61
Code 5 Splay HG	Au Raw	502	0.01	62.30	6.10	6.01	0.99
	Au 2.0m Composites (top-cut)	209	0.10	44.70	6.10	4.56	0.75
Code 6 Splay LG	Au Raw	1440	0.01	352.20	3.70	7.68	2.08
	Au 2.0m Composites (top-cut)	707	0.01	75.00	3.60	3.42	0.95
Code 8 Allwood	Au Raw	304	0.02	25.50	5.19	4.11	0.79
	Au 2.0m Composites (top-cut)	123	0.04	17.40	5.19	3.19	0.61
Code 9 Vertical	Au Raw	349	0.01	7368.00	50.03	355.68	7.11
	Au 2.0m Composites (top-cut)	224	0.45	850.00	36.42	127.82	3.51
Code 10 Benu W1	Au Raw	271	0.01	860.00	30.13	99.19	3.29
	Au 2.0m Composites (top-cut)	87	0.02	100.00	21.90	26.49	1.21
Code 11 Swan	Au Raw	432	0.01	21490.00	165.05	952.32	5.77
	Au 2.0m Composites (top-cut)	308	0.03	1600.00	138.43	308.25	2.23
Code 12 Phoenix Base	Au Raw	743	0.01	1694.70	11.76	72.16	6.14
	Au 2.0m Composites (top-cut)	292	0.01	75.00	8.98	8.41	0.94
Code 13 Benu	Au Raw	1862	0.01	1685.00	11.38	45.58	4.01
	Au 2.0m Composites (top-cut)	761	0.03	1600.00	11.35	35.86	3.16
Code 14 Benu FW	Au Raw	613	0.01	186.80	8.62	9.97	1.16
	Au 2.0m Composites (top-cut)	234	0.04	55.20	8.62	6.80	0.79
Code 15 Kestrel	Au Raw	517	0.03	25.20	4.27	2.75	0.64
	Au 2.0m Composites (top-cut)	205	0.54	10.89	4.27	1.96	0.46
Code 16 Bedding East	Au Raw	2163	0.01	104.00	5.49	6.04	1.10
	Au 2.0m Composites (top-cut)	932	0.01	75.00	5.47	4.75	0.87
Code 17 Shallow East Dippers	Au Raw	501	0.01	290.00	14.28	82.61	5.79
	Au 2.0m Composites (top-cut)	224	0.12	75.00	8.05	13.31	1.65
Code 18 East Dipper	Au Raw	1570	0.01	454.00	6.86	9.64	1.41
	Au 2.0m Composites (top-cut)	661	0.08	52.58	6.86	5.76	0.84
Code 19 Phoenix Base Sth	Au Raw	152	0.09	29.20	5.77	4.91	0.85
	Au 2.0m Composites (top-cut)	52	1.16	21.99	5.77	3.63	0.63
Code 20 Eagle	Au Raw	346	0.01	175.00	8.41	13.85	1.65
	Au 2.0m Composites (top-cut)	128	0.80	75.00	8.01	6.82	0.85
Code 21 Allwood East	Au Raw	591	0.01	17050.00	30.70	357.33	11.64
	Au 2.0m Composites (top-cut)	197	0.36	160.00	17.43	28.57	1.64
Code 22 Audax FW	Au Raw	916	0.01	180.40	3.83	7.60	1.98
	Au 2.0m Composites (top-cut)	314	0.01	65.25	3.83	4.97	1.30
Code 23 Phoenix Base FW	Au Raw	364	0.02	47.70	6.66	6.33	0.95
	Au 2.0m Composites (top-cut)	184	0.02	32.60	6.66	5.18	0.78
Code 24 Audax Sulfide	Au Raw	98	0.02	44.90	6.87	8.27	1.20
	Au 2.0m Composites (top-cut)	48	0.02	24.41	6.87	6.95	1.01
Code 25 Swan Sulfide	Au Raw	389	0.01	157.10	6.15	10.15	1.65
	Au 2.0m Composites (top-cut)	162	0.01	40.70	6.15	6.52	1.06

TABLE 14-7 DESCRIPTIVE STATISTICS OF GOLD FOR THE NORTHERN PHOENIX MODEL

Model:	1710_NPRM	**Descriptive Statistics**					
Date:	Oct-17						
Mineralized Domain	**DD Variable**	**Number of Samples**	**Minimum (g/t Au)**	**Maximum (g/t Au)**	**Mean (g/t Au)**	**Standard Deviation**	**Coeff. of Var.**
Code 3 Phoenix HG	Au Raw	144	0.05	75.00	9.00	10.76	1.20
	Au 2.0m Composites	64	0.53	47.98	8.23	7.86	0.96
Code 5 Splay HG	Au Raw	72	0.26	15.00	5.21	3.33	0.64
	Au 2.0m Composites	29	1.43	10.29	5.15	2.03	0.39
Code 6 Splay LG	Au Raw	72	0.19	24.30	4.99	4.85	0.97
	Au 2.0m Composites	35	0.89	23.40	4.91	4.45	0.91
Code 8 Allwood	Au Raw	92	0.05	33.30	7.63	6.82	0.89
	Au 2.0m Composites	40	1.60	21.76	7.73	4.70	0.61
Code 12 Phoenix Base	Au Raw	21	0.02	17.20	5.63	5.20	0.92
	Au 2.0m Composites	12	0.02	15.63	5.85	5.07	0.87
Code 13 Benu	Au Raw	322	0.02	44.20	7.38	5.89	0.80
	Au 2.0m Composites	133	0.69	29.37	7.49	4.73	0.63
Code 14 Benu FW	Au Raw	58	0.22	23.60	6.77	4.42	0.65
	Au 2.0m Composites	24	2.83	19.61	6.79	3.35	0.49
Code 15 Kestrel	Au Raw	46	1.24	10.40	4.69	2.10	0.45
	Au 2.0m Composites	27	1.80	9.23	4.75	1.73	0.36
Code 16 Bedding East	Au Raw	101	0.06	15.40	4.71	3.10	0.66
	Au 2.0m Composites	46	1.04	12.20	4.71	2.52	0.54
Code 18 East Dipper	Au Raw	86	0.13	26.10	6.10	4.34	0.71
	Au 2.0m Composites	47	0.62	15.31	6.33	3.32	0.52
Code 23 Phoenix Base FW	Au Raw	39	0.24	22.20	5.07	5.39	1.06
	Au 2.0m Composites	20	0.59	20.80	5.17	4.74	0.92

TABLE 14-8 DESCRIPTIVE STATISTICS OF GOLD FOR THE CENTRAL MODEL

Model:	1506_CRM	**Descriptive Statistics**					
Date:	Jun-15						
Mineralized Domain	**DD Variable**	**Number of Samples**	**Minimum (g/t Au)**	**Maximum (g/t Au)**	**Mean (g/t Au)**	**Standard Deviation**	**Coeff. of Var.**
Code 1 Fosterville HG	Au Raw	571	0.02	72	7.93	6.45	0.81
	Au 2.0m Composites	287	0.02	28.98	7.49	4.68	0.62
Code 2 Fosterville LG	Au Raw	6993	0	41	2.81	3.706	1.32
	Au 2.0m Composites	6556	0	41	2.82	3.667	1.30
Code 3 Phoenix HG	Au Raw	2694	0.01	104.8	8.37	8.672	1.04
	Au 2.0m Composites	1175	0.01	49.54	7.96	6.388	0.80
Code 4 Phoenix LG	Au Raw	124	0.01	27.3	4.08	4.79	1.17
	Au 2.0m Composites	75	0.01	17.5	4.33	4.23	0.98
Code 5 Splay HG	Au Raw	873	0.01	57.6	6.41	7.007	1.09
	Au 2.0m Composites	394	0.01	38.18	6.11	5.55	0.91
Code 6 Splay LG	Au Raw	2291	0	28.8	2.24	2.853	1.27
	Au 2.0m Composites	1875	0	24.6	2.04	2.53	1.24
Code 7 Kite	Au Raw	298	0.42	28.6	8.02	5.96	0.74
	Au 2.0m Composites	145	1.21	23.85	7.73	4.39	0.57
Code 10 Vulture	Au Raw	595	0.14	24.2	5.03	2.86	0.57
	Au 2.0m Composites	313	0.45	19.9	4.97	2.35	0.47
Code 11 Harrier OP	Au Raw	1635	0	15.33	2.44	2.69	1.10
	Au 2.0m Composites	1574	0	15.33	2.41	2.66	1.10
Code 12 Phoenix Base	Au Raw	184	0.01	52.4	10.51	8.8	0.84
	Au 2.0m Composites	84	0.01	32.4	10.08	7.08	0.70
Code 18 East Dipper	Au Raw	245	0.06	59.4	7.52	6.5	0.86
	Au 2.0m Composites	114	0.32	24.61	7.25	4.06	0.56

A listing of composite statistics is provided in Table 14-9 for the (1712_SPRM, 1710_NPRM and 1506_CRM) Phoenix and Central Models.

TABLE 14-9 COMPOSITE STATISTICS BY COMPOSITE LENGTH CLIPPED TO THE MODEL EXTENTS FOR THE CENTRAL MODEL (1506_CRM), SOUTHERN PHOENIX (1712_SPRM) AND NORTHERN PHOENIX MODEL (1710_NPRM)

Model	Composite Length	Number	% of Comps	Mean length (m)	Mean Grade (g/t Au)
1712_SPRM	< 1.0m	936	15.3%	0.62	13.72
	≥ 1.0 and <2.0m	1,643	26.9%	1.38	20.73
	≥ 2.0m	3,526	57.8%	2.11	23.4
	Total	**6105**	**100%**	**1.68**	**21.2**
1710_NPRM	< 1.0m	65	13.5%	0.61	4.53
	≥ 1.0 and <2.0m	132	27.5%	1.35	5.17
	≥ 2.0m	283	59.0%	2.11	7.14
	Total	**480**	**100%**	**1.7**	**6.24**
1506_CRM	< 1.0m	86	2.1%	0.68	4.92
	≥ 1.0 and <2.0m	572	14.0%	1.34	7.14
	≥ 2.0m	3,431	83.9%	2.03	0.56
	Total	**4089**	**100%**	**1.91**	**1.57**

Variography

Modeling of the spatial continuity (variography) of gold for the Harrier and Lower Phoenix Models were carried out using Supervisor™ software (Figure 14-4), while the variography for the Central and Northern Models was calculated using MineSight™ software. Sulfur is estimated in each domain as a variable using the domain geology shape, with a general sulfur variogram employed in the Northern and Central Models. For the Sulfur estimation in the Lower Phoenix Model, Sulfur variography corresponding to the Au domains is employed, utilizing the available Sulfur data. Non-Carbonate Carbon (NCC) is estimated using two broad domain shapes, encompassing east and west geometries, using a general variogram structure. Gold grade continuity is the highest along structures contained within parallel/oblique sedimentary host rock bedding contrasts. Within the parallel/oblique bedding zones it is common to see variogram structure ranges of up to 80m. In oblique/oblique host sedimentary settings the spatial grade continuity is less consistent, giving rise to variogram structures with ranges of less than 40m. Therefore, high level mining decisions (reserve block and capital development) are made where drill spacing is at least 50m x 50m and a decision to mine a given level is only made on an indicated resource with a drill spacing of at least 25m x 25m (sulfide hosted gold resources only). A similar rationale currently exists for confidence around the development and extraction of the visible gold quartz hosted style mineralization.

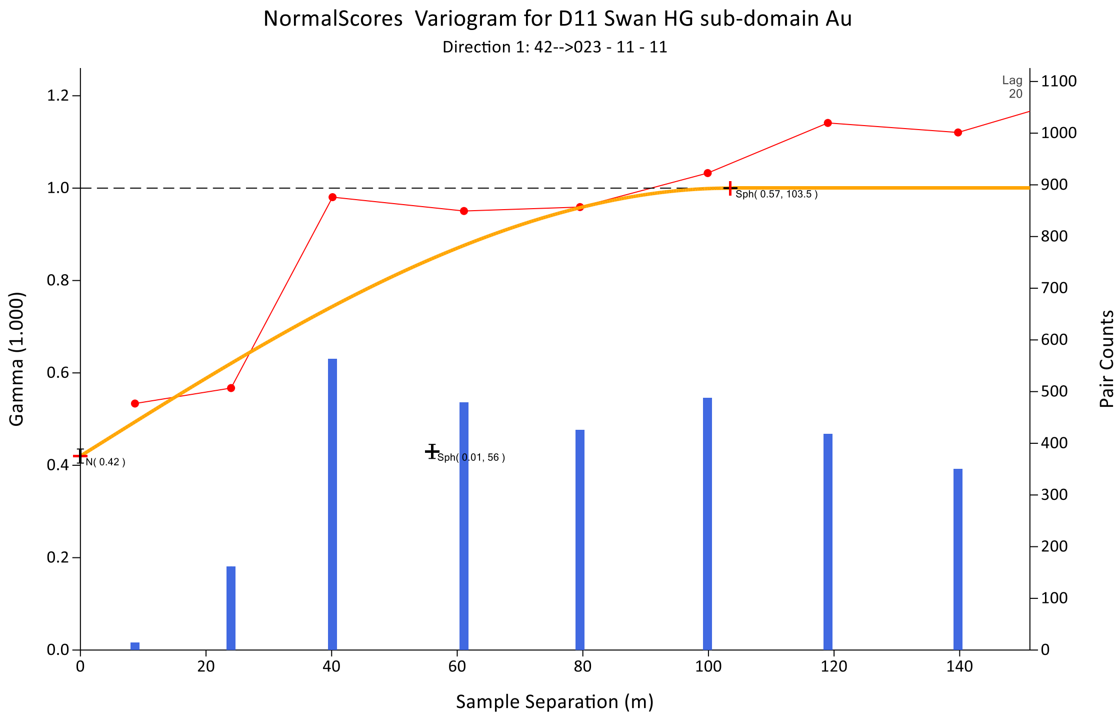


FIGURE 14-4 VARIOGRAM OF THE MAJOR DIRECTION OF THE HIGH GRADE SUB-DOMAIN OF DOMAIN=11 SWAN DOMAIN

Variogram parameters used for gold in the Northern Block Model (1201_NRM) estimation are listed in Table 14-10.

TABLE 14-10 VARIOGRAM PARAMETERS USED FOR NORTHERN MODEL GOLD ESTIMATION

Fosterville 1201_NRM	GOLD VARIOGRAM PARAMETER TABLE																	
AREA	**Z Rotation**	**X Rotation**	**Y Rotation**	**Nugget**	**1st Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**2nd Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**3rd Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**Total Variance**	**Nugget**
	meds rotation																	
D01 Fosterville LG	0	20	70	3.7	5.7	7	5	5	1.6	20	20	10	3.2	48	55	15	14.20	26%
D02 Fosterville HG	0	20	70	3.7	5.7	7	5	5	1.6	20	20	10	3.2	48	55	15	14.20	26%
D03 Phoenix HG	355	20	50	20.0	10.0	10	15	5	21	45	25	10					51.00	39%
D06 Splay LG	0	20	60	7.0	1.0	10	10	5	11.8	30	20	10					19.80	35%
D07 Griffon	0	20	60	20.0	10.0	10	15	5	21	45	25	10					51.00	39%

- Variogram parameters used for gold in the Southern Phoenix Block Model (1712_SPRM) estimation are listed in Table 14-11.
- Variogram parameters used for gold in the Northern Phoenix Block Model (1710_NPRM) estimation are listed in Table 14-12.
- Variogram parameters used for gold in the Central Block Model (1506_CRM) estimation are listed in Table 14-13.

TABLE 14-11 VARIOGRAM PARAMETERS USED FOR THE SOUTHERN PHOENIX MODEL (1712_SPRM) GOLD ESTIMATION

Fosterville	GOLD VARIOGRAM PARAMETER TABLE													
1712_SPRM (Southern Phoenix Model)														
AREA	**Z Rotation**	**X Rotation**	**Y Rotation**	**Nugget**	**1st Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**2nd Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**Total Variance (Total Sill)**	**Nugget**
	meds rotation													
Au Waste	50	20	50	20	10	10	15	5	21	45	25	10	51	39%
D01 Audax	42	24	-33	0.25	0.59	46.5	9.5	5	0.16	50	52	10	1	25%
D03 Phoenix HG	12	28	-131	0.24	0.44	7	5.5	8	0.32	40	20.5	10	1	24%
D05 Splay HG	-177	-29	107	0.25	0.31	7	7.5	5	0.44	99.5	37	10	1	25%
D06 Splays LG	13	24	-129	0.29	0.71	50	129	10					1	29%
D08 Allwood	15	17	-122	0.18	0.15	6	8.5	5	0.67	51	22	10	1	18%
D09 Vertical	3	20	-85	0.07	0.28	2	2.5	3.5	0.65	40	30.5	10	1	7%
D09 Vertical High Grade Sub-domain	-9	18	-64	0.32	0.38	3	2	1	0.29	56.5	27.5	10	1	32%
D10 Benu W1	16	13	-142	0.54	0.17	1	1.5	1	0.29	16	18	10	1	54%
D11 Swan	168	-15	-48	0.5	0.5	45	24	14					1	50%
D11 Swan High Grade Sub-domain	23	42	-161	0.57	0.1	56	3	3	0.32	103.5	35.5	15	1	57%
D12 Phoenix Base	7	11	-147	0.45	0.28	5	3.5	5	0.27	85.5	60.5	10	1	45%
D13 Benu	16	26	-124	0.4	0.24	6	5.5	3.5	0.36	75.5	50	10	1	40%
D14 Benu FW	25	17	-149	0.25	0.1	8	4.5	5	0.65	181.5	86.5	10	1	25%
D15 Kestrel	-5	30	-90	0.39	0.14	6.5	3	5	0.47	56.5	40	10	1	39%
D16 Bedded East	-8	39	-77	0.18	0.39	9	8.5	5	0.43	38	36.5	10	1	18%
D17 Shallow East Dippers	-175	0	165	0.36	0.64	32.5	10	6					1	36%
D18 East Dippers	11	14	-43	0.21	0.08	2.5	2	2	0.71	47.5	20	10	1	21%
D19 Phoenix Base South	-14	8	-125	0.12	0.44	6	6	5	0.44	54.5	15	10	1	12%
D20 Eagle	24	-7	167	0.13	0.44	5	3.5	5	0.44	47.5	20.5	10	1	13%
D21 Allwood East	7	40	-57	0.12	0.44	6	6	5	0.44	54.5	15	10	1	12%
D22 Audax FW	11	19	-36	0.43	0.35	10.5	4.5	5	0.22	65.5	12	10	1	43%
D23 Phoenix Base FW	-5	0	-120	0.36	0.07	5	4.5	5	0.57	45.5	30.5	10	1	36%
D24 Audax Sulfide	42	24	-33	0.25	0.59	46.5	9.5	5	0.16	50	52	10	1	25%
D25 Swan Sulfide	8	29	-138	0.16	0.69	64.5	5	10	0.15	69.5	13	10	1	16%

TABLE 14-12 VARIOGRAM PARAMETERS USED FOR THE NORTHERN PHOENIX MODEL (1710_NPRM) GOLD ESTIMATION

Fosterville 1710_NPRM (Northern Phoenix Model)	GOLD VARIOGRAM PARAMETER TABLE													
AREA	**Z Rotation**	**X Rotation**	**Y Rotation**	**Nugget**	**1st Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**2nd Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**Total Variance**	**Nugget**
	meds rotation													
Au Waste	50	20	50	20.00	10	10	15	5	21	45	25	10	51	39%
D03 Phoenix HG	-20	-11	-131	0.27	0.47	51	20	8	0.26	170	40	10	1	27%
D05 Splay HG	56	72	-147	0.11	0.41	9	13	10	0.48	79	65	14	1	11%
D06 Splays LG	-3	19	-111	0.21	0.58	26	22	14	0.22	109	30	20	1	21%
D08 Allwood	10	17	-122	0.20	0.8	62	18	8					1	20%
D12 Phoenix Base	15	9	-120	0.25	0.26	7	6	3	0.49	22	6	8	1	25%
D13 Benu	-9	-18	-116	0.70	0.26	32	8	5	0.03	51	25	10	1	71%
D14 Benu FW	75	49	-168	0.37	0.63	53	35	10					1	37%
D15 Kestrel	-17	38	-71	0.16	0.84	25	23	11					1	16%
D16 Bedded East	4	-9	-65	0.18	0.62	30	12	11	0.19	155	52	11	1	18%
D18 East Dippers	-14	19	-36	0.13	0.55	35	22	10	0.32	223	80	20	1	13%
D23 Phoenix Base FW	-23	-24	-129	0.43	0.57	75	10	5					1	43%

TABLE 14-13 VARIOGRAM PARAMETERS USED FOR THE CENTRAL MODEL (1506_CRM) GOLD ESTIMATION

Fosterville **1506_CRM (Central Model)**	**GOLD VARIOGRAM PARAMETER TABLE**													
AREA	**Z Rotation**	**X Rotation**	**Y Rotation**	**Nugget**	**1st Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**2nd Rotation Spherical Sill**	**Range (y)**	**Range (x)**	**Range (z)**	**Total Variance**	**Nugget**
	meds rotation													
D01 Fosterville HG	116	65	-50	3.7	5.7	7	5	5	4.8	48	55	15	14.2	26%
D02 Fosterville HG	0	20	70	3.7	5.7	7	5	5	4.8	48	55	15	14.2	26%
D03 Phoenix HG	10	30	50	20	10	10	15	5	21	45	25	10	51	39%
D03 Phoenix HG var 2	260	-50	5	20	10	10	15	5	21	45	25	10	51	39%
D04 Phoenix LG	0	20	50	2.4	1	10	15	5	2.65	35	25	10	6.05	40%
D05 Splay HG	0	20	70	7	1	10	10	5	11.8	30	20	10	19.8	35%
D05 Splay HG var 2	60	46	30	7	1	10	10	5	11.8	30	20	10	19.8	35%
D06 Splay LG	0	20	70	7	1	10	10	5	11.8	30	20	10	19.8	35%
D06 Splay LG var 2	260	-50	5	7	1	10	10	5	11.8	30	20	10	19.8	35%
D07 Kite	5	25	50	7	1	10	10	5	11.8	30	20	10	19.8	35%
D07 Kite var 2	270	-45	5	7	1	10	10	5	11.8	30	20	10	19.8	35%
D10 Vulture	10	20	50	2	2	25	20	5	2.5	60	35	8	6.5	31%
D10 Vulture var 2	91	50	-10	2	2	25	20	5	2.5	60	35	8	6.5	31%
D11 Harrier OP	350	0	75	2.52	2.02	10	5	5	2.9	28	30	13	7.47	34%
D11 Harrier OP var 2	55	70	30	2.52	2.02	10	5	5	2.9	28	30	13	7.47	34%
D12 Phoenix Base	57	35	5	20	10	10	15	5	21	45	25	10	51	39%
D12 Phoenix Base var 2	50	45	30	20	10	10	15	5	21	45	25	10	51	39%
D18 East Dippers	358	15	-47	0.06	0.1	125	50	25					0.16	38%
D18 East Dippers var 2	338	53	-58	0.06	0.1	125	50	25					0.16	38%

14.1.4 Resource Modeling

Block Models

For reasons of data handling, the Central Area was divided into four separate block models – Northern, Central, Southern Phoenix and Northern Phoenix, with the following extents and block dimensions contained within (Table 14-14) (Figure 14-8).

TABLE 14-14 CENTRAL AREA BLOCK MODEL DIMENSIONS

Parameter	Northern	Central	Northern Phoenix	Southern Phoenix
Northing Min (m)	8,250	6,000	7,450	6,000
Northing Max (m)	10,250	8,250	8,700	7,450
Easting Min (m)	1,400	1,400	1,400	1,300
Easting Max (m)	2,100	2,100	1,850	1,850
RL Max (m)	5,200	5,200	4,600	4,600
RL Min (m)	4,800	4,600	4,150	3,700
X direction m (East)	2	2	2	2
Y direction m (North)	10	10	10	10
Z direction m (Vertical)	5	5	5	5

All models use Ordinary Kriging to interpolate grades.

Top Cuts

Historically, gold grades which were predominantly associated with disseminated sulfides were top cut to 75 g/t Au in order to limit the influence of a low number of high-grade intercepts. This top cut approach has been applied to the Northern, Central and Northern Phoenix models, whereas an increasing frequency of high-grade composites associated with visible gold intersections evident in the Southern Phoenix model (Table 14-15) has driven ongoing review of top cut values and methodology.

TABLE 14-15 COMPARISON BETWEEN NUMBER OF COMPOSITES PRESENT ABOVE THE CUT-OFF VALUE FROM 2014 TO DECEMBER 2017 FOR THE SAME RESOURCE AREA

Model Year	2m Composite Grade Cut-off (g/t Au)					
	50 g/t	100 g/t	200 g/t	500 g/t	1000 g/t	1600 g/t
	Number of Composites above Grade Cut-off					
2014	20	10	5	1	-	-
2015	75	46	23	8	3	1
2016	143	84	48	23	13	2
2017	235	154	97	48	20	11

Top cut values are determined using analysis of the Au histograms, mean and variance plots (Figure 14-6) and log probability plots (Figure 14-7) in the geostatistical package Supervisor™. In consultation with SRK the method of Au top cut application was reviewed mid-2017, resulting in the use of an outlier range restriction with an over-arching high Au grade top cut value. This composite range restriction methodology (Table 14-15) limits the influence of the very high-grade values by allowing them to be utilized for the estimation for model blocks within a specified range, while blocks beyond the range utilize the specified outlier value as a top cut. An overarching top cut value of 1,600 g/t Au was also applied to limit the influence of extreme grades in the 1712_SPRM model.

This methodology was combined with the application of sub domains, with the spatial differentiation producing a more consistent Au grade distribution. This allows separate analysis and estimation of the sub domain and the remaining original domain, as well as the application of different outlier range restriction values for the spatially distinct populations. This new approach was validated with a model vs mill reconciliation performance.

Au composite top cuts will be revised on an ongoing basis as data populations increase through additional drilling and mining in the visible gold environments of the Lower Phoenix Area.

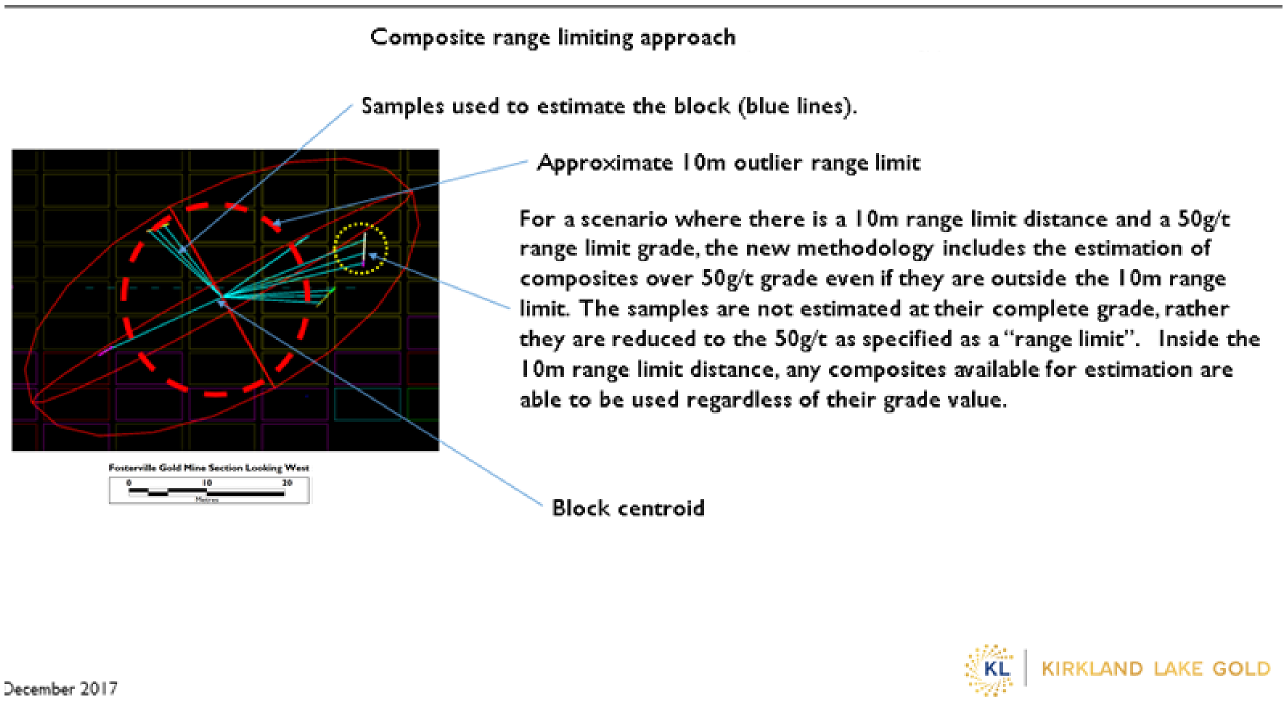


FIGURE 14-5 COMPOSITE RANGE LIMITING

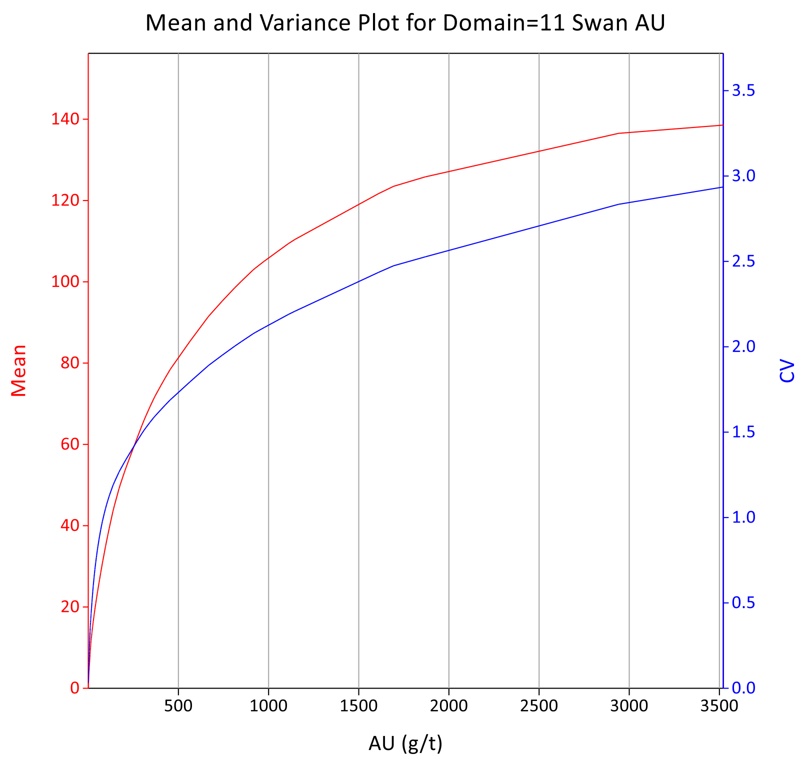


FIGURE 14-6 MEAN AU (G/T) AND CO-VARIANCE PLOT OF THE AU OF DOMAIN=11 SWAN

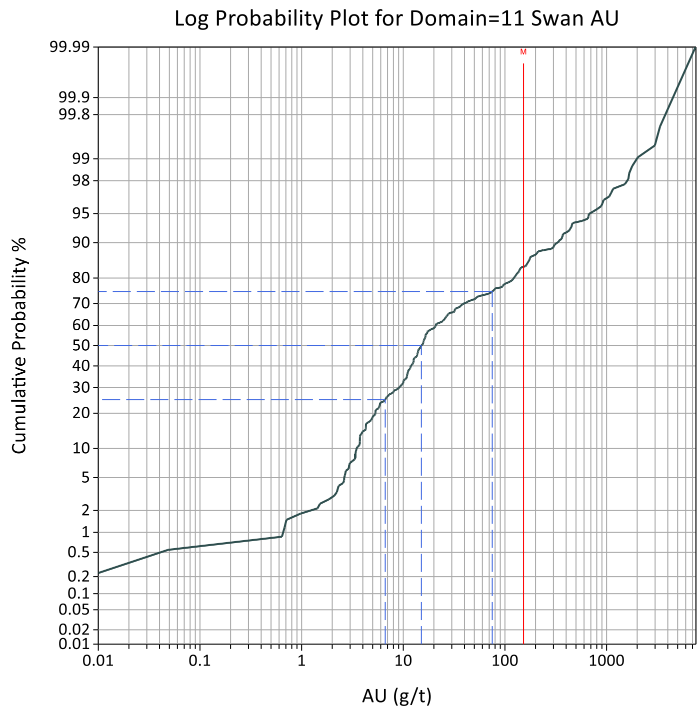


FIGURE 14-7 LOG PROBABILITY PLOT FOR THE AU OF THE DOMAIN=11 SWAN

Search Criteria

Gold, Antimony, Sulfur and NCC grades are interpolated into blocks meeting the following criteria:

- Greater than 1% of the block volume is inside one of the domain envelopes;
- Blocks within one of the domain solids; and
- Blocks whose ellipsoid includes at least one composite, depending on the particular mineralized envelope.

The search ellipsoid geometries were based on optimized variogram models, also taking into account the geology and drill spacing of the relevant zone so that a block could 'see' at least the nearest sections along strike and holes up or down-dip.

Only composites meeting the following criteria are used to interpolate any one block, where:

- Composites (to a maximum of 35) within the search ellipsoid dimensions and search area limits;
- Where more than 35 composites lie within the search ellipsoid, the closest 35 samples in anisotropic ellipsoid space are used;
- There was no quadrant search employed in the 1710_NPRM Model, 1712_SPRM Model or the 1506_CRM Model. A maximum of 10 composites per quadrant were estimated in a four sector quadrant search in the 1201_NRM Model (Table 14-19);
- Codes of both the composite and the block were matched by correlating the coded composite item with the coded block model item; and
- A maximum of ten composites can be taken from any single drill hole.

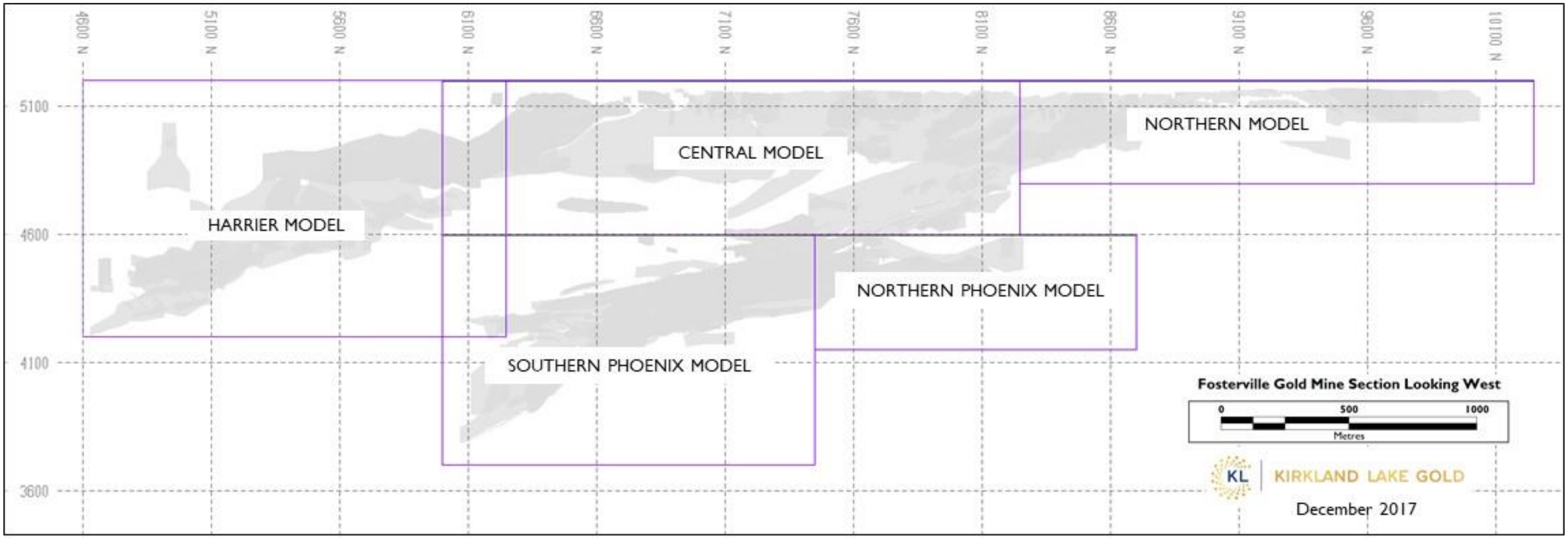


FIGURE 14-8 LONGITUDINAL PROJECTION SHOWING NORTHERN, CENTRAL AND HARRIER MODEL EXTENTS AS OF DECEMBER 31, 2017

In order to optimize the search ellipsoids used for interpolation, variogram fans were calculated and analyzed. The variogram structure with the lowest nugget and longest range that was concordant with known geological trends or interactions was utilized to dictate the search ellipsoid. A Kriged 'de-bug' search ellipsoid was also created in MineSight™ on selected domains for the variogram to be used allowing visual inspection of the composites and Kriging weights calculated for the block at the center of the ellipsoid.

Search ellipsoids in Figure 14-9 show the maximum range extents that composites were employed to estimate a block. Range extents for the 1712_SPRM Model can be seen in Table 14-16, with the extents for the 1710_NPRM Model in Table 14-17. Search routines used to interpolate blocks in the model are a combination of a broad extensive searches based on a low sample support estimate combined with an overprint of a tighter estimation with a maximum search distance no greater than the range calculated in the variogram model.

The majority of the domains in the 1712_SPM and 1710_NPRM model have a moderate southerly plunge, following the observed mineralized shoot geometry resulting from the intersection of the main fault structures with secondary splay faults as well as the southerly plunging fold hinges. An example of the search direction in the 1712_SPRM following the observed structural interactions can be seen in Figure 14-9, which shows the search ellipsoid for DOMAIN=11 Swan plunging on a similar orientation to the footwall intersection with the Benu ELQ Fault.

The resultant block models are tightly constrained by wireframe envelopes derived from detailed geological interpretation and modeling of the mineralized zones. This provides the vital basic geological control over the computer-generated grade estimations. A section through the block model is included in Figure 14-11.

TABLE 14-16 SEARCH PARAMETERS FOR THE SOUTHERN PHOENIX RESOURCE MODEL (1712_SPRM)

1712_SPRM (Southern Phoenix model)	**SEARCH PARAMETER TABLE**							
DOMAIN	**y axis (°)**	**x axis (°)**	**z axis (°)**	**min samples 1st search**	**max samples 1st search**	**max samples per hole**	**Outlier range restriction grade (Au g/t)**	**Outlier restriction range (m)**
	search distance			*sample number definition*				
Au Waste	200	200	50	1	35	4	5	5
D01 Audax first search	100	100	30	1	35	10	700	5
D01 Audax second search	50	50	30	4	35	10	700	5
D01 Audax third search	30	20	30	2	35	10	700	5
D03 Phoenix HG	35	20	30	1	35	10	75	5
D05 Splay HG first search	60	50	30	1	35	10	75	5
D05 Splay HG second search	35	20	30	1	35	10	75	5
D06 Splays LG first search	75	55	30	1	35	10	75	5
D06 Splays LG second search	40	20	20	1	35	10	75	5
D08 Allwood	50	30	10	1	35	10	75	5
D09 Vertical first search	40	30	30	1	35	6	40	5
D09 Vertical second search	30	10	20	1	35	6	40	5
D09 Vertical High Grade Sub-domain	20	10	20	1	35	6	850	5
D10 Benu W1	20	15	30	1	35	10	100	5
D11 Swan first search	100	70	30	1	35	4	100	10
D11 Swan second search	40	20	10	1	35	4	300	20
D11 Swan High Grade Sub-domain	30	20	10	4	35	10		
D12 Phoenix Base	45	25	30	1	35	10	75	5
D13 Benu first search	100	70	20	1	35	10		
D13 Benu second search	30	20	10	2	35	10		
D14 Benu FW	40	30	30	1	35	10	75	5
D15 Kestrel	50	30	30	1	35	6	75	5
D16 Bedded East first search	100	80	40	1	35	10	75	5
D16 Bedded East second search	40	20	20	1	35	10	75	5
D17 Shallow East Dippers first search	100	50	60	1	35	10	75	5
D17 Shallow East Dippers second search	30	10	30	1	35	10	75	5
D18 East Dippers first search	60	40	50	1	35	10	75	5
D18 East Dippers second search	40	20	30	1	35	10	75	5
D19 Phoenix Base South	30	20	30	1	35	10	75	5
D20 Eagle	35	20	30	1	35	10	75	5
D21 Allwood East	40	30	30	1	35	10	160	5
D22 Audax FW	30	20	30	1	35	10	75	5
D23 Phoenix Base FW	40	30	30	1	35	10	75	5
D24 Audax Sulfide first search	100	100	40	1	35	10		
D24 Audax Sulfide second search	30	30	40	1	35	10		
D25 Swan Sulfide first search	80	80	40	1	35	4		
D25 Swan Sulfide second search	40	40	40	1	35	4		

TABLE 14-17 SEARCH PARAMETERS FOR THE NORTHERN PHOENIX RESOURCE MODEL (1710_NPRM)

1710_NPRM (Northern Phoenix model)	SEARCH PARAMETER TABLE							
DOMAIN	**y axis (°)**	**x axis (°)**	**z axis (°)**	**min. samples**	**max. samples**	**max. samples per hole**	**Outlier range restriction grade (Au g/t)**	**Outlier search distance (m)**
	search distance			***sample number definition***				
Au Waste	200	200	50	1	35	10	5	10
D03 Phoenix HG	50	40	20	2	35	10	30	40
D05 Splay HG first search	140	120	50	1	35	10		
D05 Splay HG second search	60	50	20	1	35	10		
D06 Splays LG	80	60	40	2	35	10	15	40
D08 Allwood first search	120	100	30	1	35	10		
D08 Allwood second search	40	20	20	1	35	10		
D13 Benu first search	130	70	40	1	35	10		
D13 Benu second search	90	30	20	1	35	10		
D13 Benu third search	50	20	10	3	35	3		
D14 Benu FW	60	50	30	1	35	10		
D15 Kestrel	30	25	15	1	35	10		
D16 Bedded East	50	30	15	1	35	10		
D18 East Dippers first search	80	60	40	1	35	10		
D18 East Dippers second search	30	40	10	1	35	10		
D23 Phoenix Base FW	40	20	20	1	35	10		

TABLE 14-18 SEARCH PARAMETERS FOR THE CENTRAL MODEL (1506_CRM)

1506_CRM (Central model)	SEARCH PARAMETER TABLE							
DOMAIN	**y axis ^{0}**	**x axis ^{0}**	**z axis ^{0}**	**min samples**	**max samples**	**max samples per hole**	**Outlier grade cut (Au g/t)**	**Outlier search distance (m)**
	search distance			*sample number definition*				
D01 Fosterville HG first search	80	30	20	2	35	4		
D01 Fosterville HG second search	80	20	20	4	35	4		
D02 Fosterville HG first search	160	160	80	2	35	4		
D02 Fosterville HG second search	80	80	50	8	35	4		
D03 Phoenix HG first search	70	50	40	2	35	2	30	40
D03 Phoenix HG second search	50	20	20	4	35	2	30	40
D04 Phoenix LG first search	85	75	40	2	35	4		
D04 Phoenix LG second search	70	40	40	8	35	4	10	40
D05 Splay HG first search	80	55	45	1	35	4	24	40
D05 Splay HG second search	50	40	20	4	35	4	24	40
D06 Splay LG first search	110	90	40	2	35	4	12	40
D06 Splay LG second search	50	20	20	4	35	4	20	40
D07 Kite first search	80	60	30	1	35	4	12	40
D07 Kite second search	50	30	30	4	35	4	12	40
D10 Vulture first search	115	90	45	1	35	2		
D10 Vulture second search	80	30	20	3	35	2		
D11 Harrier OP first search	100	100	80	6	35	4		
D11 Harrier OP second search	40	30	20	4	35	4		
D12 Phoenix Base first search	80	50	40	1	35	2	25	20
D12 Phoenix Base second search	60	30	30	5	35	2	25	20
D18 East Dippers first search	110	80	30	1	35	2	20	17
D18 East Dippers second search	80	40	20	3	35	2		

TABLE 14-19 SEARCH PARAMETERS FOR THE NORTHERN MODEL (1201_NRM)

1201_NRM (Northern Model)	SEARCH PARAMETER TABLE						
DOMAIN	**y axis ⁰**	**x axis ⁰**	**z axis ⁰**	**min. samples 1st search**	**max. samples 1st search**	**Quadrant sample selection**	**max. samples per hole**
	1st/3rd search distance			**sample number definition**			
D01 Fosterville HG first search	100	100	50	2	35	10	4
D01 Fosterville HG second search	40	40	20	5	35	10	4
D02 Fosterville LG first search	100	100	80	6	35	10	4
D02 Fosterville LG second search	80	80	50	8	35	10	4
D03 Phoenix HG first search	120	120	50	3	35	10	4
D03 Phoenix HG second search	60	50	30	8	35	10	4
D06 Splays LG first search	120	120	50	1	35	10	4
D06 Splays LG second search	100	100	50	8	35	10	4
D07 Griffon	80	80	50	8	35	10	4

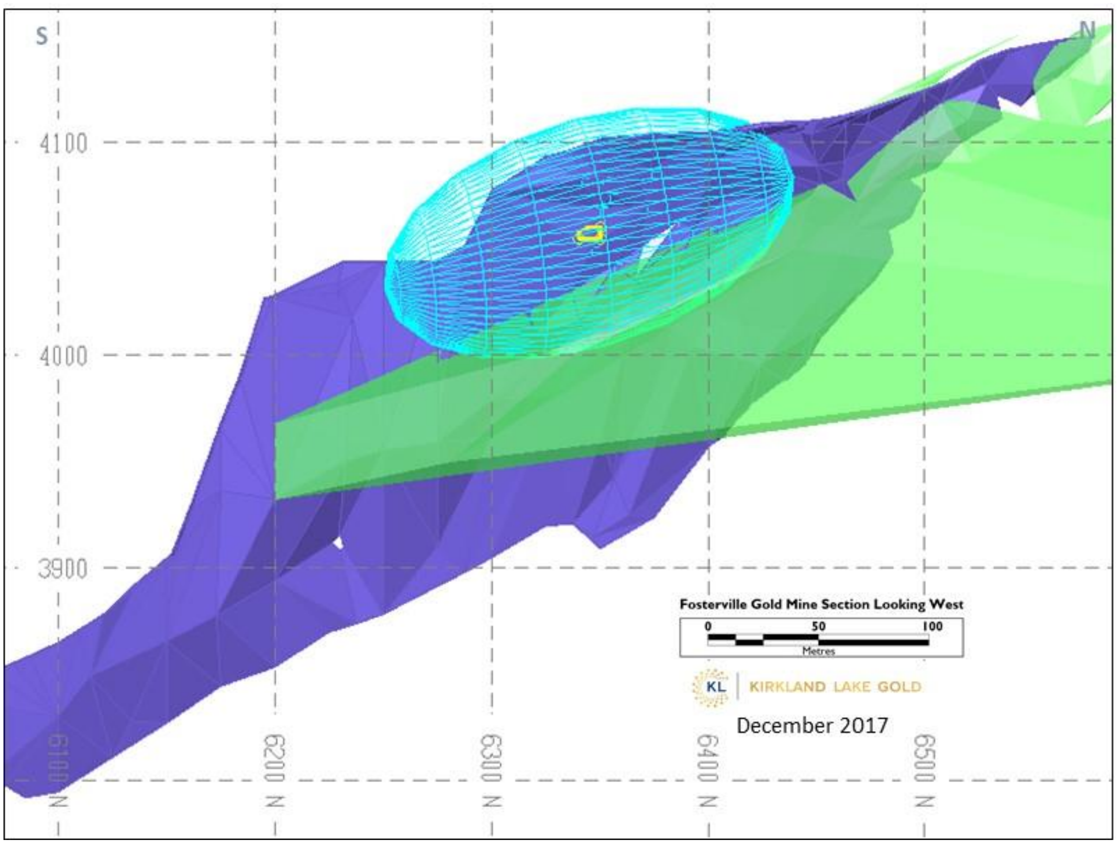


FIGURE 14-9 SEARCH ELLIPSOID FOR DOMAIN=11 SWAN (PURPLE) REFLECTING THE PLUNGE INTERSECTION WITH THE BENU ELQ FAULT (GREEN)

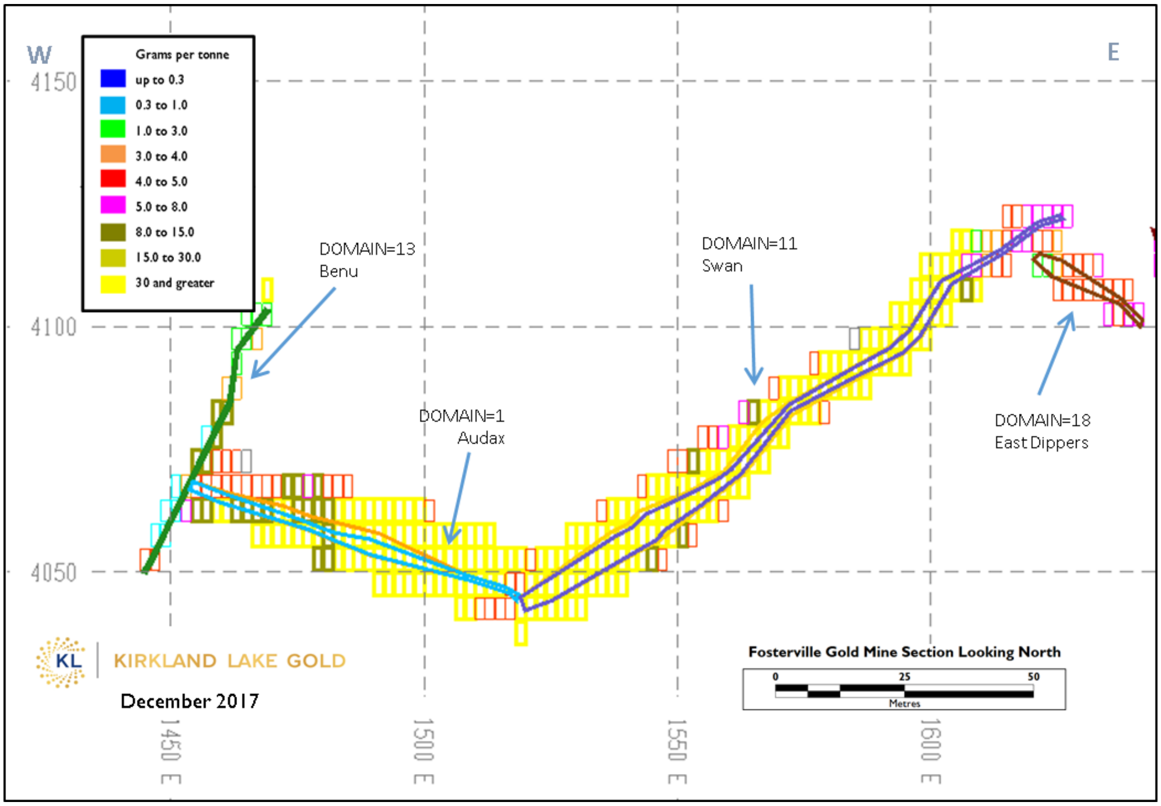


FIGURE 14-10 6500mN CROSS-SECTION OF THE PHOENIX MODEL SHOWING GOLD GRADES

The above figure shows DOMAIN=1 Audax, DOMAIN=11 SWAN, DOMAIN=13 Benu and DOMAIN=16 East Dippers mineralization envelopes.

Model Validation

There are a number of methods employed to validate the block model estimate, including the generation of swath plots for each mineralized domain, statistical comparisons of the mean of each domain against the top cut composite mean, and the diluted stope tonnage, grade and metal comparison with mill reconciled production data. Visual comparison of the estimated block grades is also carried out by displaying the blocks colored by grade against the drill hole composite data as well as the sludge and face samples.

The comparison of the model mean block grade of each mineralized domain against the top cut composite mean grade is shown in Table 14-20. For most of the domains the correlation is deemed acceptable, with the under call evident in some of the minor domains due to the low data support in inferred areas of the resource.

TABLE 14-20 MINERALIZED DOMAIN MEAN GRADE COMPARISON FOR 1712_SPRM

Domain Name	Model Block Mean Grade (g/t Au)	Top Cut Declustered Composite Mean Grade (g/t Au)	Variance %
D01 Audax	33.02	34.39	-4%
D03 Phoenix HG	7.81	6.79	15%
D05 Splay HG	5.89	5.74	3%
D06 Splays LG	4.72	5.33	-11%
D08 Allwood	5.32	5.30	0%
D09 Vertical	36.10	33.1	9%
D10 Benu W1	22.69	22.67	0%
D11 Swan	95.06	89.4	6%
D12 Phoenix Base	9.18	8.75	5%
D13 Benu	9.99	9.58	4%
D14 Benu FW	9.18	8.59	7%
D15 Kestrel	4.39	4.28	2%
D16 Bedded East	5.47	5.05	8%
D17 Shallow East Dippers	4.82	7.57	-36%
D18 East Dippers	6.11	5.54	10%
D19 Phoenix Base South	5.77	5.93	-3%
D20 Eagle	8.57	8.62	-1%
D21 Allwood East	19.40	18.2	7%
D22 Audax FW	3.69	3.73	-1%
D23 Phoenix Base FW	6.63	6.20	7%
D24 Audax Sulfide	4.89	5.53	-12%
D25 Swan Sulfide	6.93	6.66	4%

An example swath plot for Domain=11 Swan is shown in Figure 14-11. The high variability of the sample grades is evident across the orebody with some degree of smoothing evident in the block model estimate, though overall the estimate correlates well with the composite data.

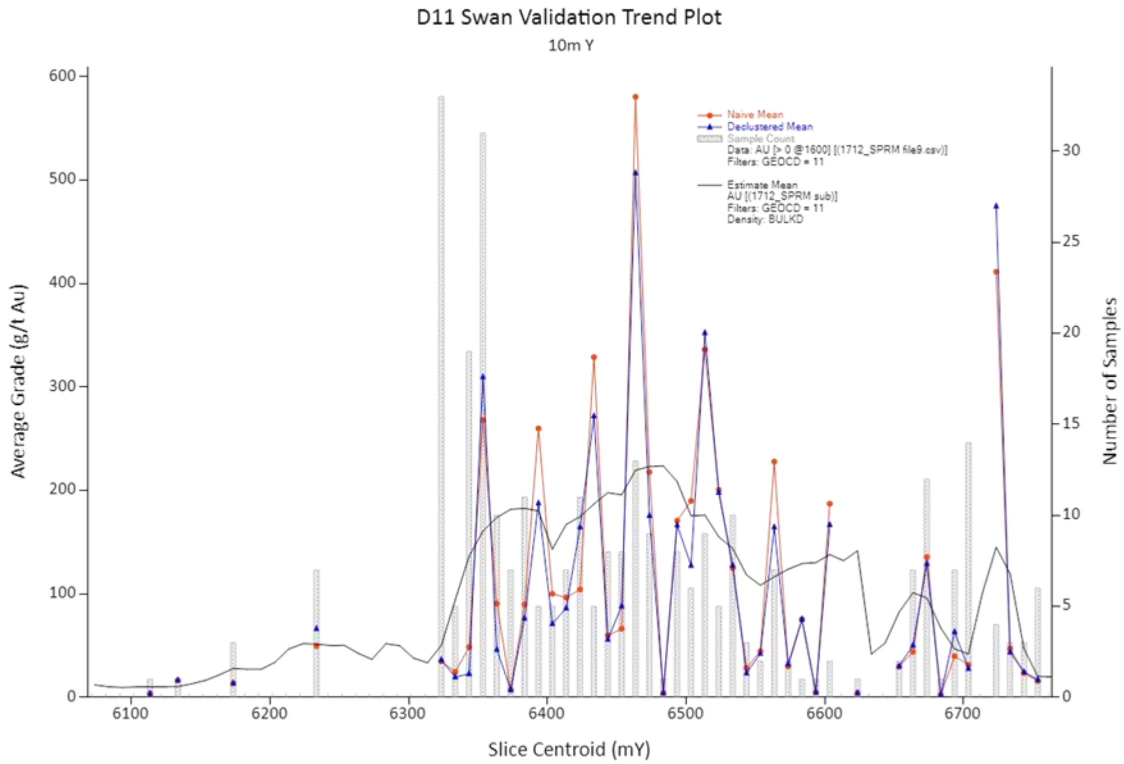


FIGURE 14-11 EXAMPLE SWATH PLOT BY NORTHING SLICES FOR DOMAIN=11 SWAN

Bulk Density

To supplement the ongoing program of diamond drill core bulk density measurements, additional analysis was undertaken during 2013 and again in 2017 of bulk density values for grab samples from known underground production locations. Bulk density measurements conducted on production samples via a water displacement method (Lipton, 1997) shows the average densities of mineralized material at 2.79t/m^3, Stibnite material at 3.20t/m^3 and waste material at 2.76t/m^3 (Table 14-21). This data is reflective of the diamond drill core data seen in Figure 14-12, where a total of 2,157 samples of mineralized and un-mineralized samples were charted against their respective reduced level. Figure 14-13 shows the bulk density values for only the mineralized diamond drill core samples. Based on the observed trends the current model density values have been deemed appropriate.

TABLE 14-21 BULK DENSITY SAMPLES FROM UNDERGROUND PRODUCTION LOCATIONS

Source	Reduced Level (m)	Description	Calculated Density (t/m^3)
O4640	4640	Mineralized	2.77
O4640	4640	Mineralized	2.68
C4480	4480	Mineralized	2.75
C4480	4480	Mineralized	2.94
C4480	4480	Stibnite	3.52
C4460	4460	Mineralized	2.84
C4460	4460	Mineralized	2.75
C4460	4460	Stibnite	3.00
C4460	4460	Stibnite	3.07
C4460	4460	Waste	2.67
C4460	4460	Waste	2.77
C4480	4480	Waste	2.82
C4480	4480	Waste	2.79
O4640	4640	Waste	2.70
O4640	4640	Waste	2.79

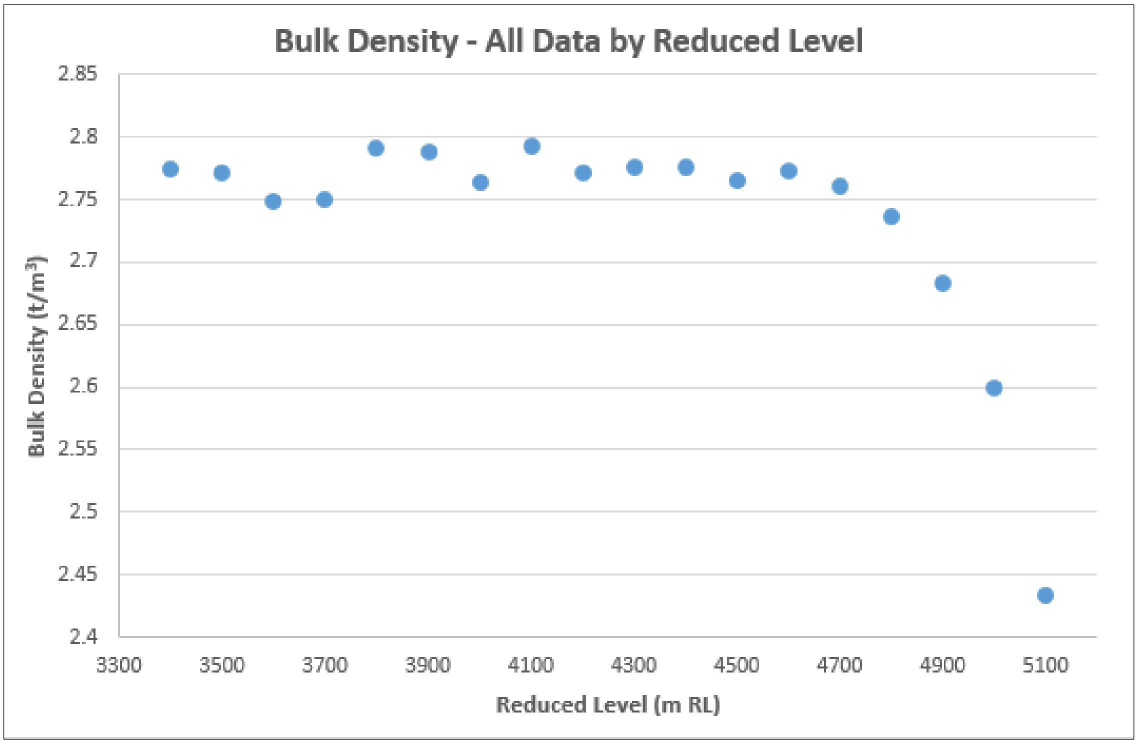


FIGURE 14-12 DIAMOND DRILL CORE BULK DENSITY VALUES VS. REDUCED LEVEL FOR DATA UP TO DECEMBER 2017

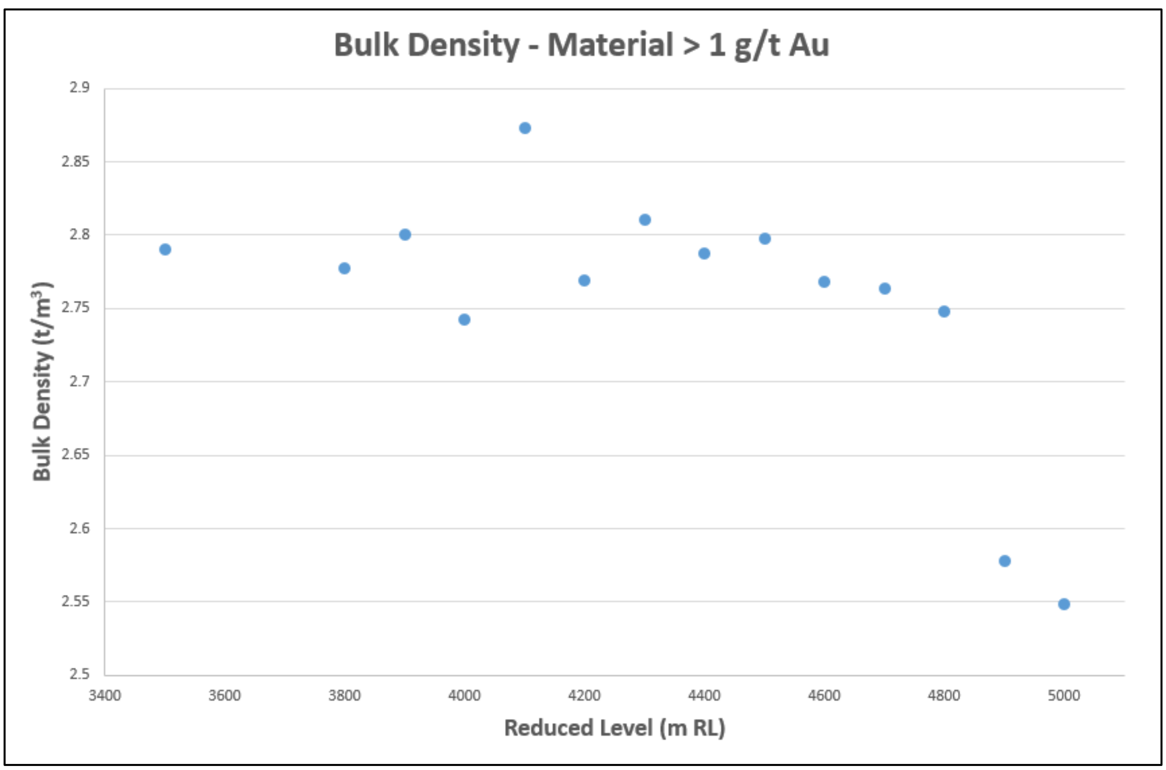


FIGURE 14-13 DRILL CORE BULK DENSITY VALUES (INTERVALS >1 g/t Au) VS. RL FOR DATA UP TO DECEMBER 2017

Bulk density within the oxide zone from surface to base of complete oxidation is determined from RC drilling, and test work assigns it a value of 2.40t/m^3. Fresh rock is then divided into four zones determined by test work carried out on the diamond drill core. The three categories are based on reduced level with transitional material between fresh and oxide above 5050mRL assigned 2.56t/m^3, fresh material between 5050mRL and 5000mRL assigned 2.64t/m^3, fresh material between 5000mRL and 4500mRL assigned 2.72t/m^3 and fresh material below 4500mRL assigned 2.78t/m^3 (Figure 14-14).

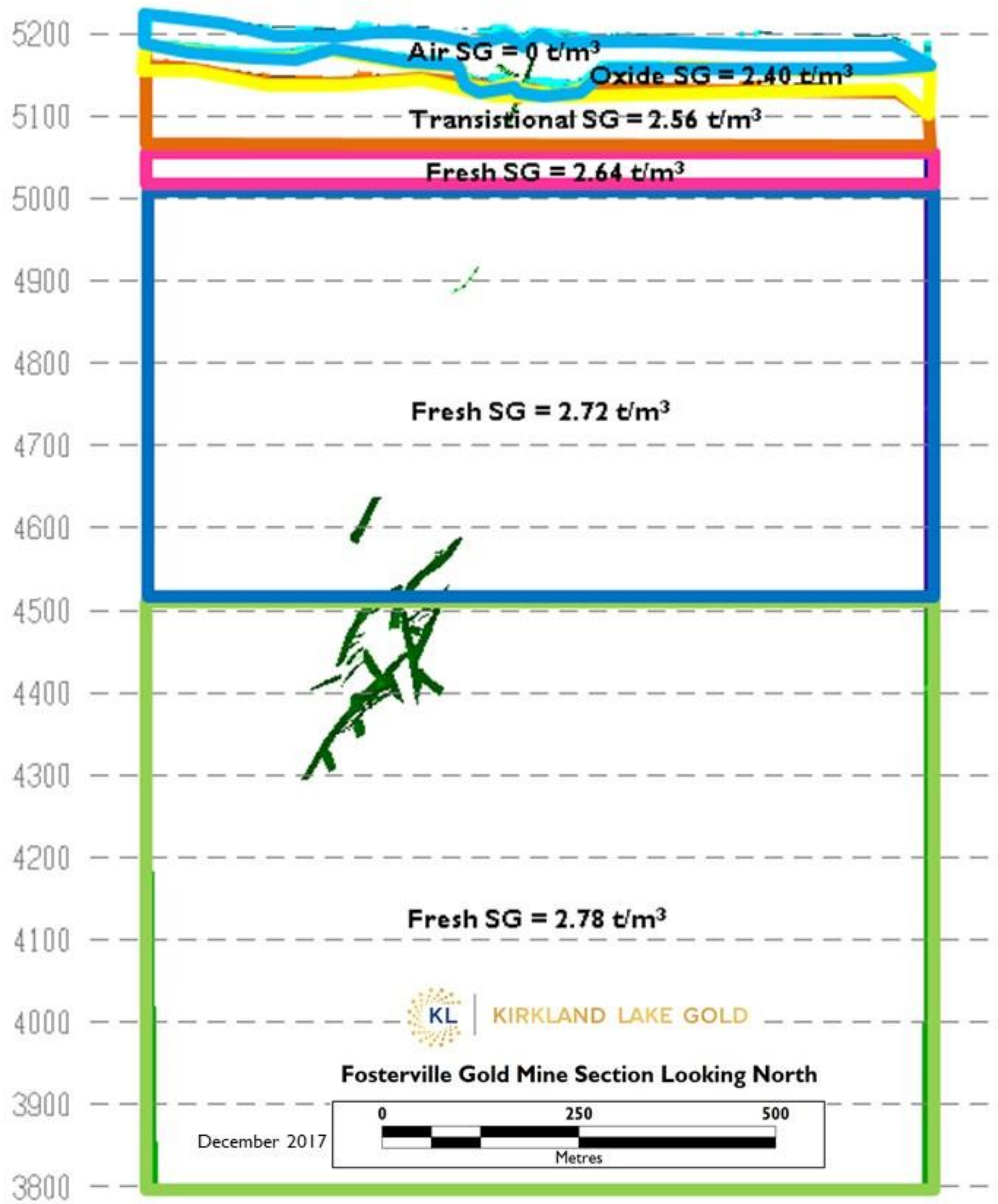


FIGURE 14-14 BULK DENSITY VALUES USED IN RESOURCE MODELS MINERAL RESOURCE CLASSIFICATION

14.1.5 MINERAL RESOURCE CLASSIFICATION

The Mineral Resource estimates were generally classified according to the following parameters:

- Areas that have proximal underground development (as a draw point to a stoping block) were classified as Measured Mineral Resources with the Resources having adjacent mapping, face sampling and sludge sampling through the area. This does not extend to the material in stoping blocks below the lowest developed level in the area. This also infers that diamond drilling has been completed to a maximum spacing of at least 25m x 25m.
- Areas drilled from a spacing of 50 x 50m to a spacing of 25m x 25m were classified as Indicated Mineral Resources.
- Areas drilled to spacing wider than 50m x 50m were classified as Inferred Mineral Resources.

These parameters may vary subject to the level of geological confidence in specific areas. Visible gold Indicated Mineral Resources generally required a spacing of no less than 25m x 25m.

- Other factors used in the verification of mineral resources at FGM are; grade stationarity, slope of regression, grade continuity and geological setting.

Figure 14-15 depicts Mineral Resource classifications encompassing the Central and Phoenix Areas as at 31st December 2017.

14.1.6 FURTHER WORK FOR 2018

The resource models have been improved in the December 2017 in two main areas:

- The treatment of high-grade composite data with the use of a composite range limit.
- The increased use of sub-domaining of high-grade shoots within mineralized domains.

For the remainder of the year further refinement will be undertaken to subdomain the high-grade lenses in order to improve local scale estimates and bolster the confidence around the model's ability to estimate resources reliability at a monthly production resolution.

Work is planned to be undertaken include

- Refinement of sample search criteria through comprehensive Quantitative Kriging Neighborhood Analysis for each mineralized domain
- Optimization of drill support for increases in local estimation accuracy through drill spacing studies
- Collation and analysis of multi element analysis data to assess potential for further segregation of data populations to refine sub-domaining and improve grade stationarity

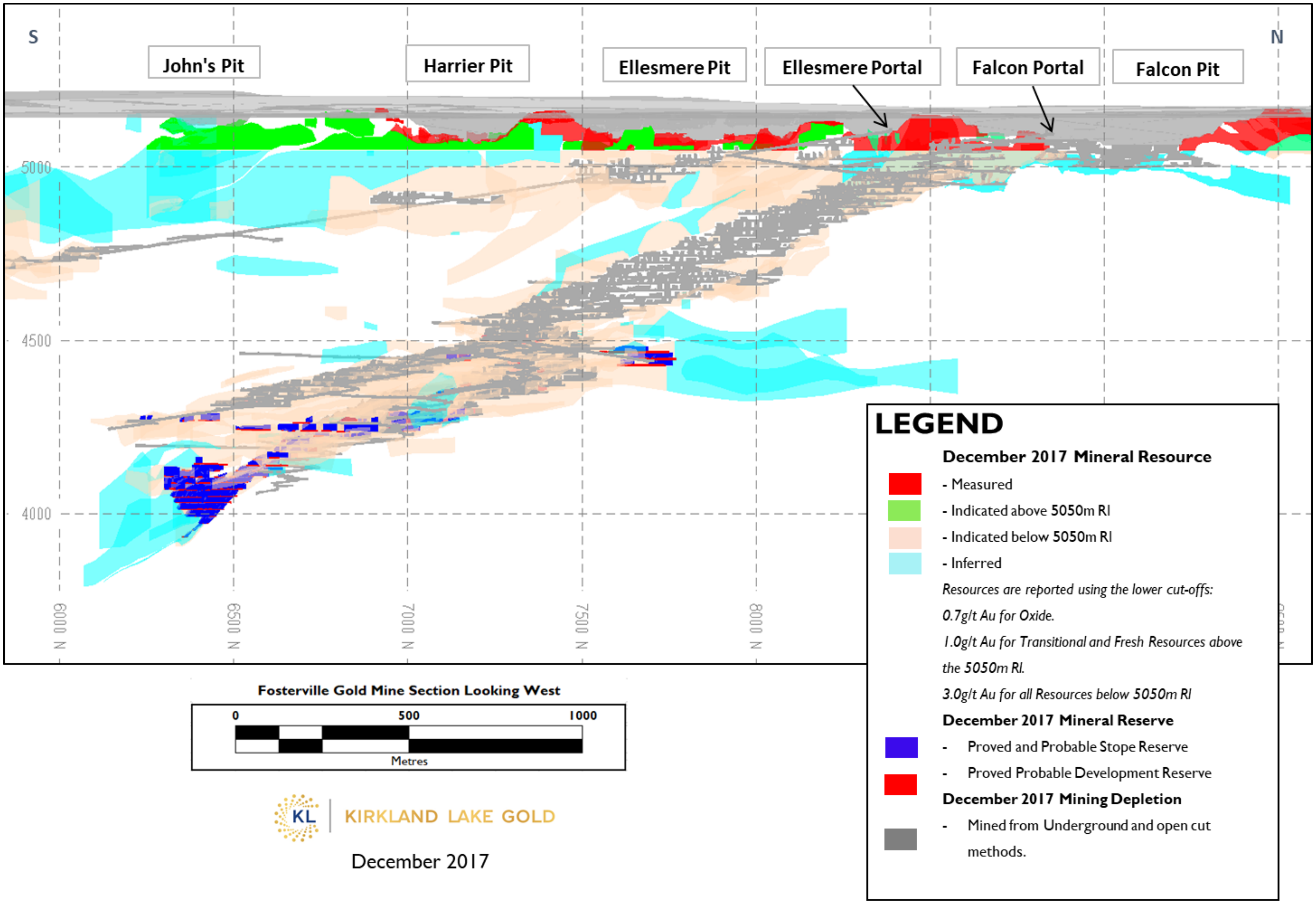


FIGURE 14-15 LONGITUDINAL PROJECTION SHOWING MINERAL RESOURCES CLASSIFICATION IN THE NORTHERN, CENTRAL AND LOWER PHOENIX MODELS

14.1.7 RESULTS

Results for the Mineral Resources contained in the Central Area (Central, Phoenix and Northern Model) are provided in Table 14-1.

14.2 HARRIER AREA

The Harrier UG Area sits within the bounds of the Southern Model Area and replaced the Wirrawilla region in 2009, and does not encompass the Daley's Hill Open Pit region, which is reported in the Southern Model Area. Project definitions and model boundaries were altered to coincide with the transition of the Harrier UG project from Exploration to Mine Geology (Figure 14-1).

In late 2009 a detailed review of the information gathered was undertaken to determine mining risk. Analogues derived from systems developed to understand Central Area geology were applied to the Harrier UG dataset. While fundamental Fosterville geological principles such as the larger faulting systems, stratigraphy and plunge were found to be sound; the inter-relationship between structure and grade required further investigation. Further discussion of the Harrier geological domains is covered in Section 7.5.2.

14.2.1 DRILLING DATA

Compositing

The same compositing procedure was used for the Harrier model as employed in the Phoenix models (detailed in section 14.1.3).

The Harrier Model (1712_HRM) has used a total of 653 drill holes with 8 RC (1%) and 645 diamond holes (99%).

Table 14-22 includes descriptive model statistics for the Harrier Model (1712_HRM) and Table 14-23 includes composite length statistics for the composite file.

TABLE 14-22 DESCRIPTIVE STATISTICS FOR THE HARRIER MODEL (1712_HRM)

Model:	1712_HRM	**Descriptive Statistics**					
Date:	Dec-17						
Mineralized Domain	**DD Variable**	**Number of Samples**	**Minimum (g/t Au)**	**Maximum (g/t Au)**	**Mean (g/t Au)**	**Std. Dev.**	**Coeff. of Var.**
Code 6 Splay LG	Au Raw	672	0.01	27.10	3.59	4.10	1.14
	Au 2.0m Composites (top cut)	354	0.03	24.60	3.24	3.47	1.07
Code 20 Harrier	Au Raw	1172	0.01	45.30	6.99	5.75	0.82
	Au 2.0m Composites (top cut)	496	0.28	20.00	6.92	4.35	0.63
Code 21 Harrier Base	Au Raw	546	0.01	879.00	15.84	61.42	3.88
	Au 2.0m Composites (top cut)	183	0.02	75.00	12.14	15.28	1.26
Code 22 Harrier Link	Au Raw	231	0.08	300.60	6.85	22.55	3.29
	Au 2.0m Composites (top cut)	98	0.12	73.57	6.16	10.16	1.65
Code 23 Harrier E Dipper	Au Raw	32	1.02	26.90	7.86	4.57	0.58
	Au 2.0m Composites (top cut)	15	3.99	10.44	7.12	2.23	0.31
Code 24 Harrier HW	Au Raw	644	0.03	34.68	7.35	5.68	0.77
	Au 2.0m Composites (top cut)	278	0.08	20.91	7.25	4.36	0.60
Code 25 Harrier Splay	Au Raw	644	0.01	1033.00	7.80	41.18	5.28
	Au 2.0m Composites (top cut)	271	0.30	75.00	6.08	5.55	0.91
Code 29 N Dipper	Au Raw	193	0.18	153.80	8.60	13.58	1.58
	Au 2.0m Composites (top cut)	83	0.27	50.00	7.54	6.94	0.92
Code 30 Osprey	Au Raw	1187	0.01	29.80	6.53	5.21	0.80
	Au 2.0m Composites (top cut)	542	0.01	27.32	6.43	4.37	0.68
Code 31 Osprey Base	Au Raw	80	0.02	45.70	8.21	8.00	0.97
	Au 2.0m Composites (top cut)	34	0.60	27.62	7.65	5.59	0.73
Code 32 Osprey Link	Au Raw	361	0.07	28.00	6.18	4.14	0.67
	Au 2.0m Composites (top cut)	168	0.57	20.22	5.74	3.15	0.55
Code 33 Wagon Wheel	Au Raw	42	0.11	315.70	24.77	70.36	2.84
	Au 2.0m Composites (top cut)	13	2.45	75.00	15.20	21.47	1.41
Code 35 Osprey Splays	Au Raw	342	0.06	24.00	5.45	3.96	0.73
	Au 2.0m Composites (top cut)	173	0.20	15.75	5.43	3.12	0.57

TABLE 14-23 COMPOSITE STATISTICS BY COMPOSITE LENGTH FOR THE (1712_HRM) HARRIER MODEL

Composite Length	Number	% of comps	mean length (m)	mean grade (g/t Au)
< 1.0m	631	23.3%	0.61	5.31
≥ 1.0m and < 2.0m	875	32.3%	1.34	6.19
≥ 2.0m	1205	44.4%	2.12	7.14
Table 14-24	**2711**	**100%**	**1.51**	**6.41**

No gold top cuts were imposed in the 1712_HRM Model. However, similar to the Southern Phoenix Model, composite range limiting was used to constrain high-grade data in select domains.

Variography

The variography for each domain was analyzed and optimized using Snowden's Supervisor program, with directions cross-referenced against geological interpretations. The variogram and search parameters for the gold variables in the Harrier (1712_HRM) Model domains are summarized in Table 14-24.

TABLE 14-24 VARIOGRAM PARAMETERS USED FOR THE HARRIER RESOURCE MODEL (1712_HRM) GOLD ESTIMATION

Fosterville	**GOLD VARIOGRAM PARAMETER TABLE**													
1712_HRM (Harrier Model)														
AREA	**Z Rotation (°)**	**X Rotation (°)**	**Y Rotation (°)**	**Nugget**	**1st Rotation Spherical Sill**	**Range (y) (m)**	**Range (x) (m)**	**Range (z) (m)**	**2nd Rotation Spherical Sill**	**Range (y) (m)**	**Range (x) (m)**	**Range (z) (m)**	**Total Variance**	**Nugget**
	meds rotation													
Au Waste	355	20	50	2.5	2.0	10.0	5.0	5.0	2.9	28.0	30.0	13.0	7.47	34%
D06 Splay LG	4	18	-116	0.2	0.8	61.0	43.5	5.0					1	17%
D20 Harrier	5	23	-134	0.2	0.4	7.5	60.0	10.0	0.4	88.0	60.5	20.0	1	16%
D21 Harrier Base	-12	6	-140	0.6	0.3	31.0	20.0	10.0	0.2	170.5	33.0	20.0	1	55%
D22 Harrier Link	-9	-19	-144	0.6	0.4	61.0	54.0	3.0					1	58%
D23 Harrier East Dipper	8	12	-30	0.6	0.5	65.0	20.0	10.0					1	55%
D24 Harrier HW	95	50	-180	0.5	0.1	59.0	22.5	10.0	0.4	94.0	105.5	20.0	1	53%
D25 Harrier Splay	14	19	-144	0.7	0.0	5.5	18.5	10.0	0.3	41.5	20.5	20.0	1	73%
D29 North Dippers	69	-19	24	0.6	0.2	28.5	20.0	20.0	0.2	64.0	65.0	52.0	1	57%
D30 Osprey	-11	-8	-125	0.5	0.2	10.0	9.0	5.0	0.4	22.5	13.0	10.0	1	45%
D31 Osprey Base	40	45	-145	0.2	0.8	64.0	16.5	5.0					1	22%
D32 Osprey Link	28	29	-138	0.7	0.2	7.5	16.0	10.0	0.1	19.0	16.5	20.0	1	65%
D33 Wagon Wheel	360	20	70	5.0	4.3	32.9	10.6	6.8	0.7	87.3	23.7	12.4	10	50%
D35 Osprey Splays	26	27	-142	0.6	0.1	20.5	20.0	10.0	0.3	67.5	28.0	20.0	1	62%

14.2.2 Resource Modeling

Block Models

The Harrier Block Model was created to allow modeling of mineralization between 4700mN and 6250mN (Table 14-25). The XYZ block dimensions of 2m (east) by 10m (north) by 5m (RL) were used.

This block size was chosen after consideration of:

- Drilling with the intent to mine was conducted at a nominal density of 25m x 25m spacing, although some areas of the Harrier Mineral Resource are drilled to 12.5m spacing;
- Variogram model ranges of 20-80m, with variogram model selection the same as for the Central models;
- Typical mineralization width of 1-8m; and
- Likely underground mining methods (Selective Mining Unit).

TABLE 14-25 HARRIER BLOCK MODEL EXTENTS AND CELL SIZE

Model Extents	Minimum	Maximum	Cell	Dimension (m)
Northing (m N)	4600	6,250	Y Direction (North)	10
Easting (m E)	1,400	2,100	X Direction (East)	2
Reduced Level (m RL)	4,200	5,200	Z Direction (Vertical)	5

The Harrier Block Model used Ordinary Kriging to interpolate grades without a composite top cut.

Search Criteria

Search Criteria methods and justification within the Harrier Block Model are the same as those used for the Central Area.

Search ellipsoids, shown in Figure 14-16, depict the maximum range extents that composites can be used to estimate a block. Search parameters for the Harrier Block Model are provided in Table 14-26. Search ellipsoids for the 1712_HRM model were derived from variography for each domain. Variography was scrutinized against geological mapping, mining performance and interpretations made from diamond drilling.

Figure 14-17 shows a cross section of the 1706_HRM Block Model with respect block size and Resource Domains.

TABLE 14-26 SEARCH PARAMETERS FOR THE HARRIER RESOURCE MODEL (1712_HRM)

1712_HRM (Harrier model)	SEARCH PARAMETER TABLE							
DOMAIN	**y axis (°)**	**x axis (°)**	**z axis (°)**	**min samples 1st search**	**max samples 1st search**	**max samples per hole**	**Outlier grade (g/t Au)**	**Outlier restriction range (m)**
	search distance			sample number definition				
Au Waste	220	220	80	1	35	4		
D06 Splay LG first search	120	80	40	1	35	6		
D06 Splay LG second search	60	40	20	1	35	6		
D20 Harrier first search	80	55	30	1	35	6	20	20
D20 Harrier second search	60	30	30	2	35	6	20	20
D21 Harrier Base first search	80	50	30	2	35	10	75	20
D21 Harrier Base second search	60	50	30	6	35	10	75	20
D22 Harrier Link first search	60	50	30	1	35	6		
D22 Harrier Link second search	30	20	30	1	35	6		
D23 Harrier East Dipper	50	45	30	1	35	3		
D24 Harrier HW	60	30	30	1	35	6		
D25 Harrier Splay first search	100	50	30	1	35	10	75	20
D25 Harrier Splay second search	40	20	30	1	35	10	75	20
D29 N Dipper	50	40	15	1	35	6	50	20
D30 Osprey first search	90	60	30	1	35	6		
D30 Osprey second search	60	60	30	1	35	6		
D30 Osprey third search	30	20	30	1	35	6		
D31 Osprey Base first search	50	50	30	1	35	6		
D31 Osprey Base second search	30	15	30	1	35	6		
D32 Osprey Link first search	50	30	30	1	35	6		
D32 Osprey Link second search	40	30	30	1	35	6		
D33 Wagon Wheel	90	70	80	1	35	6	75	20
D35 Osprey Splays	40	35	20	1	35	6		

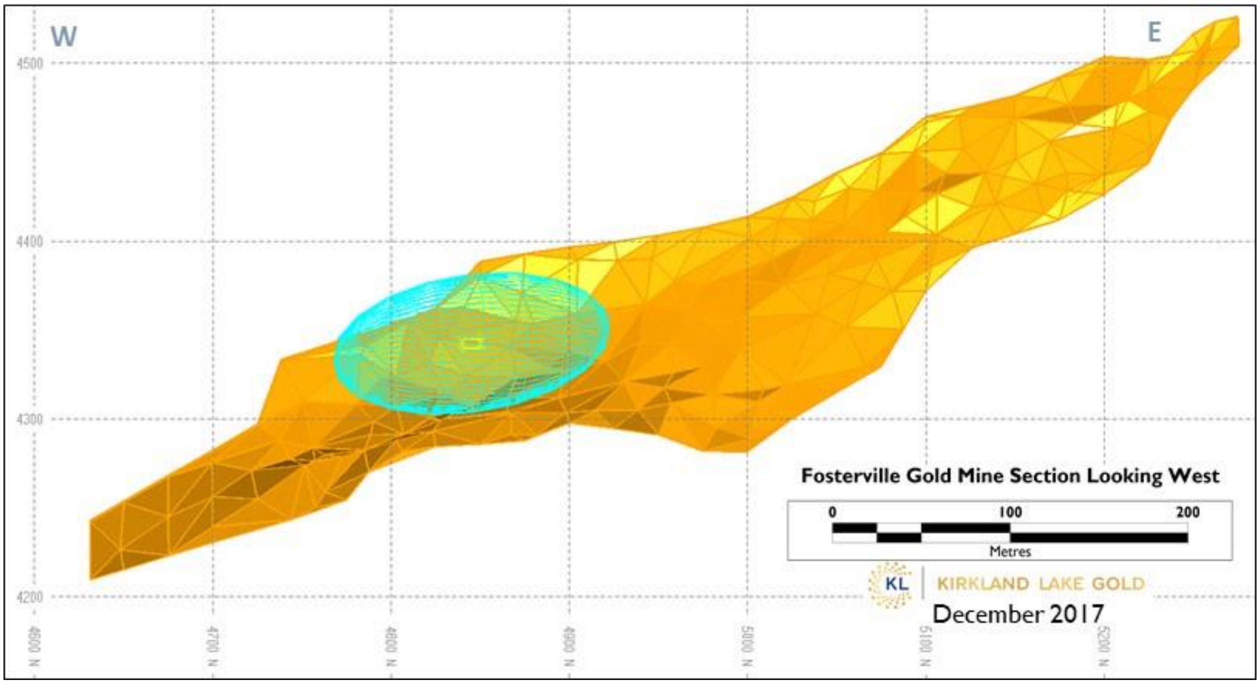


FIGURE 14-16 SEARCH ELLIPSOID FOR DOMAIN=21 HARRIER BASE

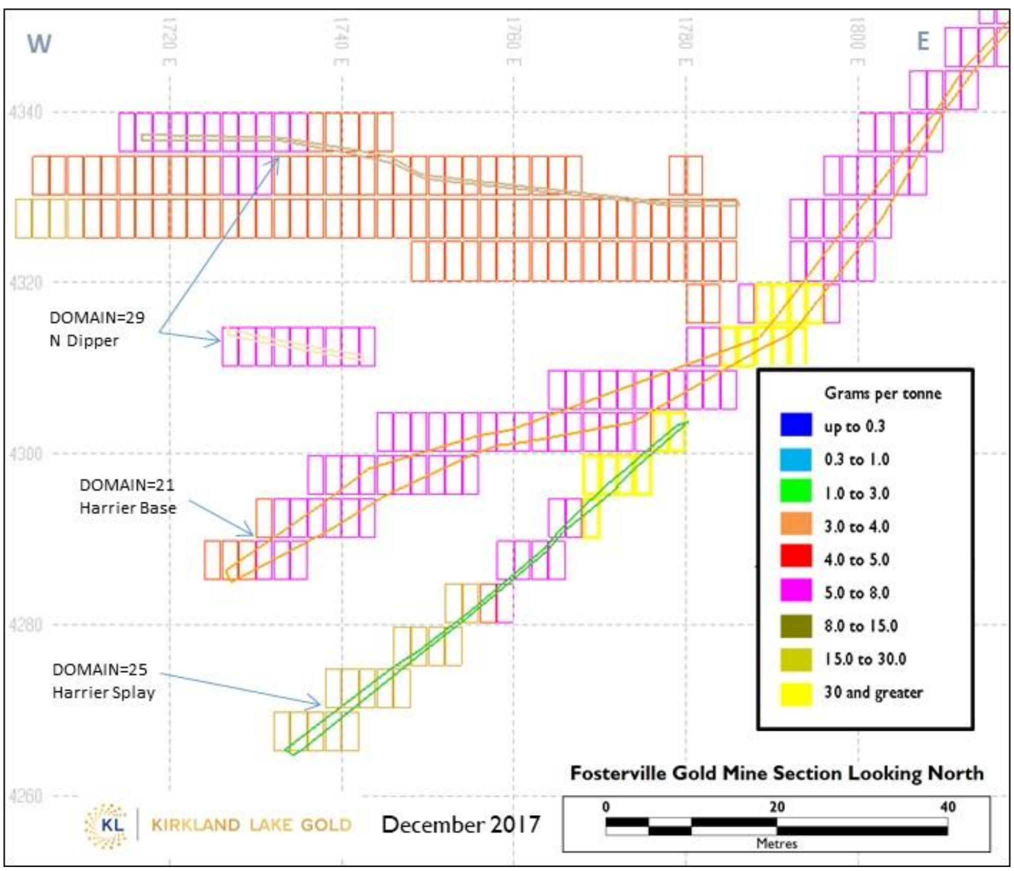


FIGURE 14-17 CROSS-SECTION 4830 mN OF THE 1706_HRM HARRIER MODEL

Shown above are DOMAIN=21 Harrier Base, DOMAIN=29 N Dipper and DOMAIN=25 Harrier Splay Mineralization Domains.

Bulk Density

Bulk density data obtained from exploration diamond core testing within the model area showed no material difference from density data obtained in the Central Area Models. Consequently, bulk density values were assigned to the Harrier Block Model according to material type using values from data collected in the Central Area (Figure 14-14). As mining continues below the 4500mRL, collecting of further density data will be required to compliment density measurement taken from similar levels within the Phoenix Area.

14.2.3 MINERAL RESOURCE CLASSIFICATION

The Mineral Resource classification for the Harrier Block Model uses the same technique as within the Central Area. Figure 14-18 illustrates the Harrier Model Resource classification.

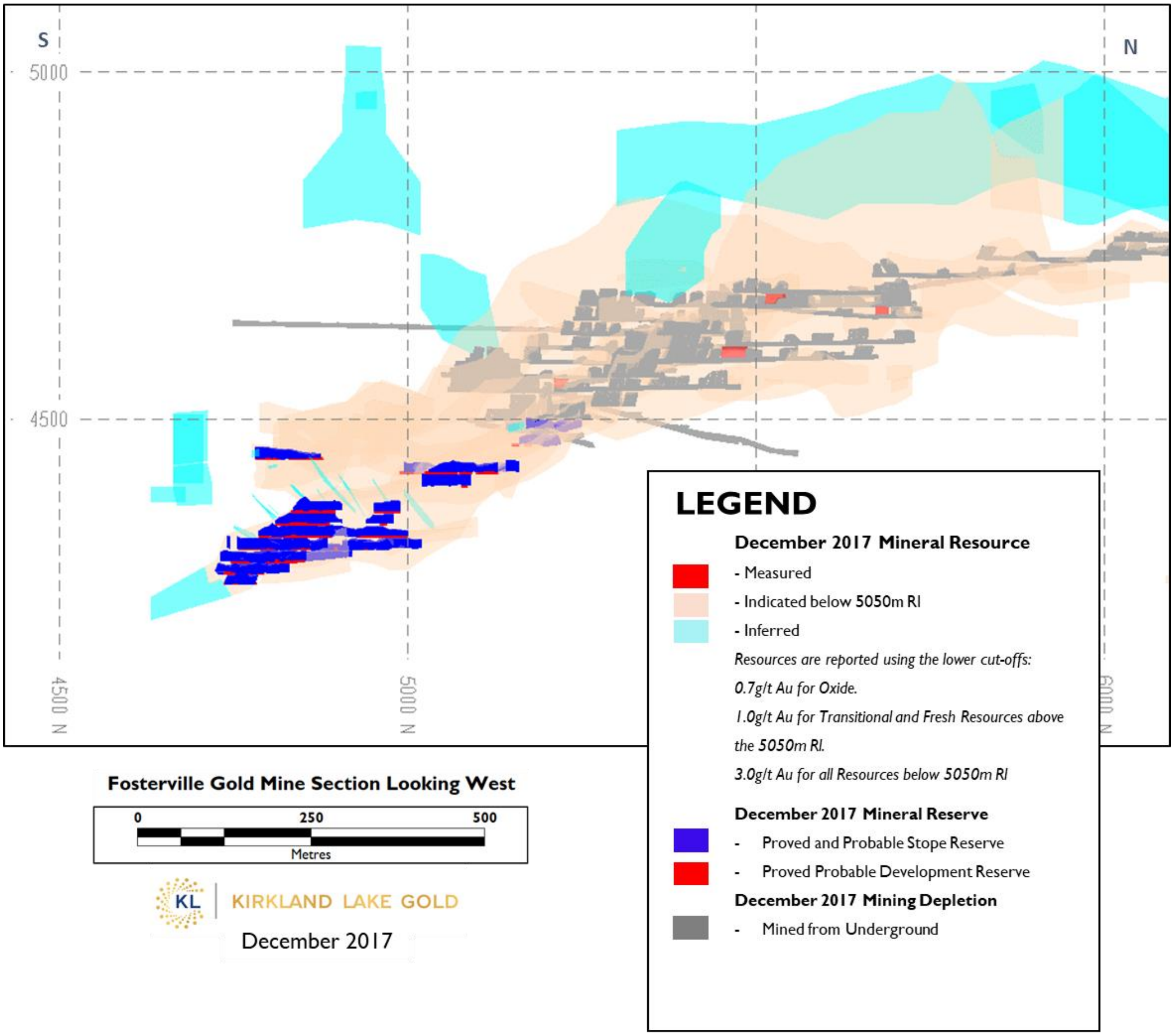


FIGURE 14-18 LONGITUDINAL PROJECTION SHOWING RESOURCE CLASSIFICATION FOR THE HARRIER MODEL

14.2.4 RESULTS

Results for the Mineral Resources contained in the Harrier Area are provided in Table 14-1.

14.3 FOSTERVILLE-HUNTS AREA

The Fosterville-Hunts Model is located to the north of the Central Area and is defined as the zone between 10,000mN and 11,500mN (Figure 14-1) and conveniently extends over Fosterville and Hunt's oxide pits.

14.3.1 AREA DISCUSSION AND RESULTS

The controlling structural features from west to east include: the moderately west dipping Hunt's Fault, several footwall splays and the Fosterville Fault (Figure 14-19). The geology of the area was assessed by Fosterville staff, later reviewed by Stephen King (King, 2007) and Mineral Resource Modeling undertaken by Kerrin Allwood (2008).

The gold mineralization in the Fosterville-Hunt's area was historically mined for oxide gold and in the 1990's mining for oxide heap leach material created the Fosterville and Hunt's oxide pits.

However, since 2010, flotation in-pit tailings have and are, being placed into the Fosterville and Hunt's pits. This tailings placement has resulted in no Mineral Resources being reported from the Fosterville-Hunts area for 2017.

It is the opinion of the Authors that the placement of tailings within the Fosterville and Hunts pits currently impedes reasonable prospect for eventual economic extraction of the mineral occurrence, which lies directly below these pits.

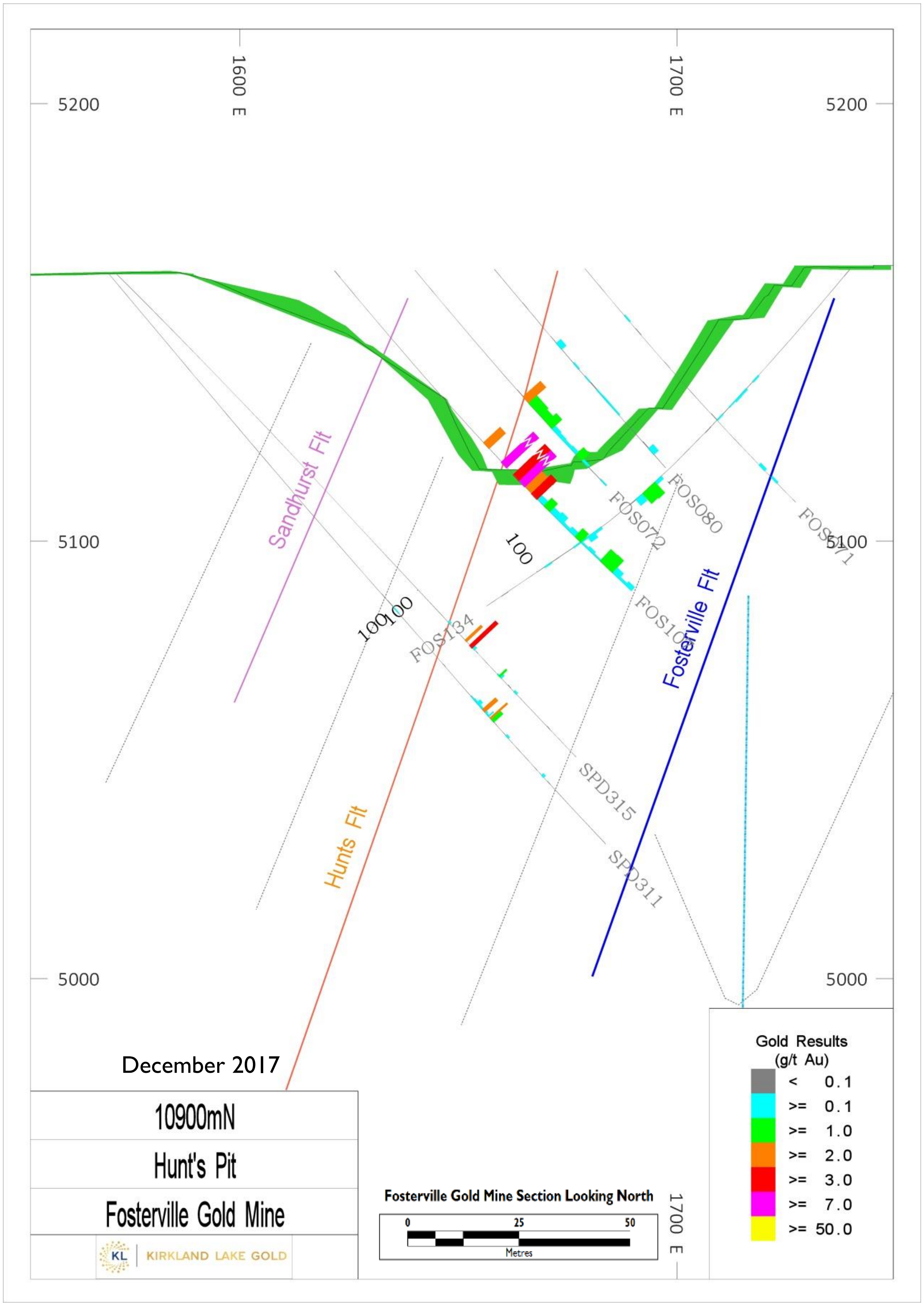


FIGURE 14-19 GEOLOGICAL CROSS-SECTION 10,900MN THROUGH HUNT'S PIT

Shown are the relationships between the Hunt's Fault, bedding and the set of splays that strike obliquely to the fault.

14.4 DALEY'S HILL AREA

The Southern Model spans from the Harrier Pit area to Daley's Hill Pit, close to the southern margin of the Fosterville Mine Lease (MIN5404) as shown in Figure 14-1.

The Southern Model was in existence before the initial Harrier Mine Model became operational. Where there is overlap between the Harrier Model and Southern Model, the Harrier Model is used in preference for Mineral Resource reporting with the only exception being the Daley's Hill Pit area (south of 5300mN and above 4800mRL), where Southern Model has been used. Only the Daley's Hill area is discussed in detail in the following sections.

14.4.1 GEOLOGICAL MODELS

Geological modeling undertaken is essentially identical to that used for the Fosterville-Hunt's and Robbin's Hill Models. Several iterations of Mineral Resource modeling of the Southern Model were undertaken and reported in Hitchman (2006). A review of the 2006 resource work was undertaken by Scott Jackson from QG Consultants (Jackson, 2007).

14.4.2 DRILLING DATA

The drilling quality is variable in the southern area and includes:

- RAB – Rotary air blast;
- Reverse circulation – Cross over hammer and face sampling hammer variants; and
- Diamond core – HQ and NQ2, often with RC pre-collars.

During drill hole data extraction for resource interpolations, the omission of RAB holes and one diamond hole was required owing to low quality sample techniques and incomplete assaying respectively. MineSight™ drill views were the primary tool used to identify data problems.

Included as part of the drill data review process assay data were:

- Imported from the acQuire Exploration databases into MineSight™ using customizable parameter screens; and
- Coded for mineralization using 3D gold wireframe solids.

Within the oxide open pit areas, the historical 5m blast holes are vertical and generally had one sample collected over a 5m length. These holes were used to aid interpretation, but were not used during subsequent Kriging owing to sample quality and that the 5m sample lengths were in excess of the desired 2m composite lengths.

Compositing and Coding

Compositing and coding of drill holes was undertaken similar to the Central Area.

Variography

In the Daley's Hill area where drill spacing is nominally on 10m to 20m, variography work demonstrates relative nugget effect values of 50% and most of the variance in the first ~30m. The variogram models closely follow the expected geological controls with 20° southerly plunging shoots in 70° west dipping faults.

14.4.3 MINERAL RESOURCE MODELING

Block Models

The Southern Block Model (Southern Model) was originally created to allow modeling of gold mineralization south of 7,400mN to the southern end of the Fosterville Mine Lease. However, as mining advanced southwards, the use of the Southern Model has diminished, such that it is only being used for reporting Mineral Resources in the Daley's Hill Area.

The Southern Model XYZ block dimensions used were 4m (east) by 10m (north) by 5m (RL) were used. This block size was chosen after consideration of the maximum drilling density (25m by 15m), mineralization geometry (typical mineralization width of 3m to 8m) and probable open pit mining methods.

Search Criteria

Gold grades were interpolated into blocks meeting the following block criteria:

- Greater than 1% of the block volume is inside one of the domain envelopes;
- Blocks whose search ellipsoid includes at least five composites; and
- Blocks whose material code is set to Fresh (1), Transitional (2) or Oxide (3).

Similarly, only composites meeting the following criteria are used to interpolate any one block:

- All composites (to a maximum of 30 composites) within the search ellipsoid dimensions and search area limits outlined in the table below;
- Where more than 30 composites lie within the search ellipsoid the 30 closest composites in ellipsoid space are used;
- Maximum of six composites are used from any split quadrant of the search ellipsoid (a split-quadrant is 1/8th of the search ellipsoid dividend in the major, intermediate and minor ellipsoid axes); and
- The CODE1 and MATL values of both the composite and the block must match (i.e. only fresh composites are used to interpolate a fresh block and vice versa for oxide).

The search ellipsoid orientations are in line with the directions of kriging. The search ellipsoid dimensions allow the block being interpolated to 'see' two sections along strike and two holes up or down-dip.

Bulk Density

The bulk density profile (Figure 14-14) established for the Central Area was taken as being appropriate for the Southern Model given the similar rock types, levels of oxidation and identical mineralization and gangue mineralogy. Deep drilling in the Central Area and Harrier Area has supported the inclusion of a bulk density value of 2.78t/m^3 for material below 4500mRL. However, as the mineralization at Daley's Hill is shallower than 4500mRL, reporting of Resources for this area from the Southern Model is unchanged.

14.4.4 MINERAL RESOURCE CLASSIFICATION

Three solids were created enclosing regions of geological confidence (Measured=1, Indicated=2 and Inferred=3) and these three regions were used to code the Mineral Resource category item in the block model. The solids generally enclose areas of approximately equally spaced drilling, but also allow areas where there is reduced confidence in the geological interpretation to be reported to a lower confidence category.

In areas of the Southern Model at depth below and to the north of the Daley's Hill Pit, the diamond drilling is on nominal 100m north spaced drill sections with 50m down-dip holes spacing, and for this drill density the mineralization is broadly classified as Inferred Mineral Resource. Beneath the open pits where the drill spacing is reduced to 10m to 20m north by 10m to 15m east, mineralization is classified as Measured Mineral Resource with a halo of Indicated Mineral Resource.

The Daley's Hill east-west structures are not well understood and as such this mineralization is classified as Inferred Mineral Resource. During 2017 drilling of some of this resource was completed on a nominal 50m section spacing and an Inferred Resource was targeted, known as the Wagon Wheel. The Wagon Wheel resource has been transferred to the 1712_HRM Harrier resource model area given the juxtaposition of the resource to the upper Osprey Resource in the Harrier area.

14.4.5 RESULTS

Results for the Mineral Resources contained in the Southern Model are provided in Table 14-1.

Small oxide gold resources exist in the Daley's Hill Area and are confined along strike from the previously mined open pit in the top 40m from surface.

The bulk of the sulfide Mineral Resources reported from the Daley's Hill Area within the Southern Model are based on 100m by 50m spaced diamond drilling supplemented by closer spaced, but lower quality face and cross over RC drilling. Infill drilling will be required to increase resource confidence from an Inferred Mineral Resource category.

14.5 ROBBIN'S HILL AREA

The Robbin's Hill Area lies northeast of the Central Area and contains the O'Dwyer's, Robbin's Hill, Farley's, Sharkey's, Woolshed and Read's oxide pits as shown in Figure 14-1. The area can be defined as the zone east of 2,700mE, between 10,500mN and 14,000mN. The fault architecture of the Robbin's Hill Area is much more complex than that observed in the Fosterville Fault Zone.

The controlling structural features in the area include a variety of north-trending west-dipping faults and failed anticline axes intruded by dykes.

The geology of the area was assessed by Fosterville staff during diamond drilling activities between 2004 and 2007, reported by Reed (2007a) and reviewed twice by Stephen King (2005 and 2007). The area was also the subject of a study conducted by Chris Davis (Davis, 2006). Robbin's Hill Model resource modeling conducted by Kerrin Allwood and Simon Hitchman is reported in Allwood (2006) and Hitchman (2007). A further review of modeling in the Farley's-Sharkey's area is also reported in Allwood (2007). Following on from an open pit optimization study in March 2011 (Dincer, 2011) 5,257m of combined RC and diamond drilling was undertaken in the Robbin's Hill Project area to test beneath and along strike from existing open pits. This drilling was for both open pit and underground targets occurring in the Robbin's Hill Area until August 2012, during which resource modeling was undertaken.

Since 2013 to 2015, limited diamond drilling has taken place at Robbin's Hill. In 2016 Diamond drilling resumed on the 12400 – 12600m N sections and has continued North until the time of writing of this report. Mineralization has been delineated along the Farley's fault and limited mineralization has been discovered along Farley's footwall structures.

A short-lived sulfide open pit mining operation was completed at the O'Dwyer's South Pit in 2012 and is now the site for flotation tailing storage.

14.5.1 GEOLOGICAL MODELS

Geological modeling undertaken was essentially identical to that described for the Southern Models above.

14.5.2 DRILLING DATA

The quality of the drilling is variable in the Robbin's Hill Area. Drilling was conducted from 1989 to 2011, and up until 2001 drilling was focused on oxide heap leach targets and as such cheaper less precise drilling methods were used and dominate the dataset. After 2004, diamond holes were used to aid structural interpretation and often, RC pre-collars were diamond tailed.

The model uses more than 1,110 holes of which about 95% are RC holes and 5% are NQ_2 and HQ diamond core holes. Pre-2016 drill data was treated as per previous model procedures; with data omitted where there was uncertainty of coordinates, dubious down-hole surveys and grade or geological mismatch. MineSight™ drill views were the primary tool used to identify data grade and geological mismatches. Post-2016 drill data was assessed and validated to the same standard as used in the Central and Harrier Models.

Subsequent to the drill data review, process assay data were:

- Imported from the acQuire exploration databases into MineSight™ using customizable parameter screens; and
- Coded for mineralization using 3D gold wireframe solids.

Compositing and Coding

Similar to the Central Area, coded Robbin's Hill Model area drill data was composited to 2m lengths starting from the point at which the drill hole enters the mineralization envelope. If the final composite was less than 1m it was added to the previous composite making a composite with length between 2m and 3m. Final composites between 1m and 2m in length were left as is. The 2m composite lengths were chosen to reflect the anticipated minimum mining width, to allow across strike variability to be maintained within the data, and because the vast majority of RC drilling samples are 2m in width. Table 14-27 below shows the Robbin's Hill Model composite statistics.

TABLE 14-27 COMPOSITE STATISTICS BY COMPOSITE LENGTH FOR THE ROBBIN'S HILL MODEL

Composite Length (m)	Number of Composites	% of Composites	Mean Length (m)	Mean Grade (g/t Au)
<1	68	1.7%	0.26	1.50
≥1and <2	362	8.8%	1.17	2.92
≥2	3,678	89.5%	2.01	2.20
Total	**4108**	**100%**	**1.91**	**2.25**

Variography

In all domains, the nugget effect (46% to 59%) is typical of gold deposits at Fosterville. Typically, low nugget effects elsewhere at Fosterville reflect the fine grained, disseminated nature of the sulfide minerals hosting the elements analyzed and are confirmed by the very low variability exhibited in assay QAQC data. The higher nugget effects modeled for these domains may reflect some mixing of populations, possibly owing to re-mobilization of gold by weathering resulting in erratically distributed extreme gold grades.

The longer range structures in the RH-ODW Areas possibly reflect high-grade zones occurring where faults intersect the quartz porphyry dykes. The variogram models closely follow the expected geological controls with flat to shallowly south plunging shoots in steeply west dipping faults and sub vertical porphyry contact zones.

14.5.3 MINERAL RESOURCE MODELING

Block Models

The combined Robbin's Hill Block Model was created in 2016 and has sufficient extents to contain all drilled mineralization beneath the open pits in the area, replicating model extent parameters setup in 2005. Previously, several smaller block models were used as inventory mineralization for the oxide pits in the area. These models had differing block dimensions and orientations from one another and so combining them into a single unified model was not possible. In 2017 the model was split into a northern and southern model to facilitate faster processing.

The Robbin's Hill Model has XYZ block dimensions of 2m (EW) by 10m (NS) by 5m (RL). The 2m width was chosen as it is approximates the minimum mining width for both open pit and underground mining. The 10m N–S block dimension is half the section spacing in the most densely drilled areas. The 5m vertical block dimension is the likely open pit mining bench height and allows sufficient resolution for future pit optimization.

TABLE 14-28 ROBBIN'S HILL BLOCK MODEL EXTENTS

Parameter	Robbin's Hill North	Robbin's Hill South
Northing Min (m)	12,000	10,400
Northing Max (m)	13,500	12,000
Easting Min (m)	2,900	2,800
Easting Max (m)	4,100	3,600
RL Min (m)	4,100	4,800
RL Max (m)	5,200	5,200
X direction m (east)	2	2
Y direction m (north)	10	10
Z direction m (vertical)	5	5

Historic Mineral Resource Modeling includes a previous Robbin's Hill Resource Model (2012) and various grade control models that overlapped with the resource model and were used as a sub-set for detailed mining extraction. No active mining has been conducted within the Robbin's Hill resource model data extents since 2012.

To facilitate renewed open pit mining in 2012 at O'Dwyer's South a Grade Control (GC) resource model was created with XYZ block dimensions of 2m (EW), 5m (NS) and 5m(RL), with the dimensions chosen to cosmetically better represent likely open pit SMU (Selective Mining Unit) volumes. The block size is identical to those that were previously in use at Harrier and John's open pits.

The Mineral Resource in the Robbin's Hill Area is shown in Figure 14-20.

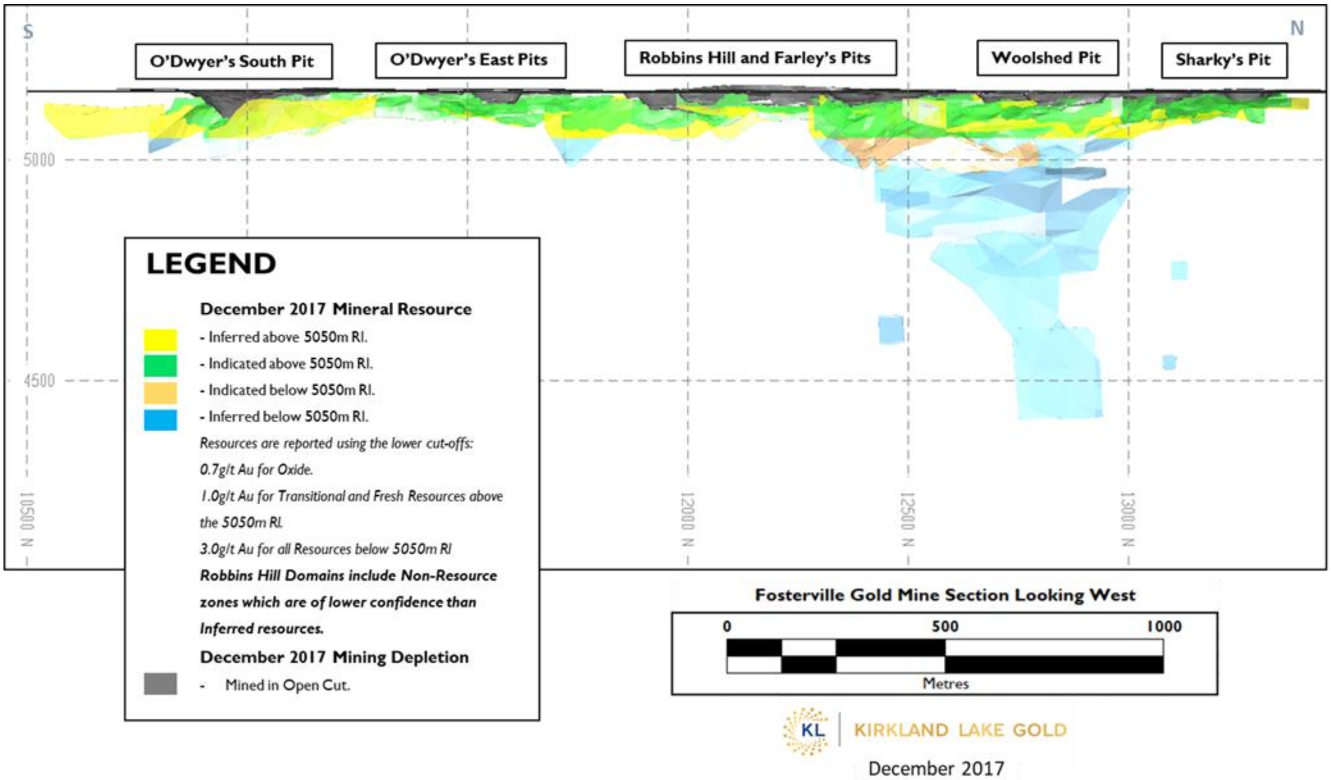


FIGURE 14-20 LONGITUDINAL SECTION VIEW OF MINERAL RESOURCE IN ROBBIN'S HILL AREA

Search Criteria

Gold and sulfur grades are only interpolated into blocks meeting the following criteria:

- Greater than 1% of the block volume is inside one of the domain envelopes; and
- Blocks whose search ellipsoid includes at least one composite.

Similar to the Central Area models, only composites meeting the following criteria are used to interpolate any one block:

- All composites to a maximum of 35 composites within the search ellipsoid dimensions and search area limits;
- Where more than 35 composites lie within the search ellipsoid the 35 closest composites in ellipsoid space are used; and
- The mineralization code of both the composite and the block match by relating a block coding of the same numerical suffix as the composite code.

The search ellipsoid orientations follow interpreted variogram structures (similar to the central models). The search ellipsoid within domains follows the dimensions of the ranges set in the variograms, and allow the block being interpolated to ‘see’ two sections along strike and two holes up or down-dip.

To check the suitability of the search ellipsoids used, search ellipsoids were checked in MineSight™ to allow visual inspection of the composites to be used and the suitability of the interpolation direction within the domain which closely matches the structural framework of the mineralized lens.

Bulk Density

The bulk density profile established for the Central Area was taken as being appropriate for the Robbin’s Hill Model area given the similar rock types, levels of oxidation and identical mineralization and gangue mineralogy.

14.5.4 MINERAL RESOURCE CLASSIFICATION

No Mineral Resources in the Robbin’s Hill Area have been categorized as Measured owing to drill hole data spacing and uncertainties in the quality of the largely historical data used to construct this model.

Two solids were created enclosing regions of geological confidence (Indicated or Inferred Mineral Resources) and these regions were in turn used to identify Inferred and Indicated Resource for reporting purposes. The solids generally enclose areas of approximately equally spaced drilling, but also allow areas where there is reduced confidence in the geological interpretation to be reported to a lower confidence category. The Indicated Mineral Resource solid is always surrounded by a halo of Inferred Resource. There is some modelled mineralization falling outside both the Indicated and Inferred solids. These areas were not reported as Mineral Resource and were flagged as non-resource zones (Figure 14-20).

14.5.5 RESULTS

The drilling conducted during 2017 has consolidated the 2016 drilling which yielded significant mineralization of moderate grade in the vicinity East of Robbin’s Hill pit on Farley’s Fault on sections 13,000–12500mN. With a combination of existing drilling, drill results have increased the Inferred Mineral Resource in this area. (Figure 14-20).

Oxide gold resources exist in the Robbin’s Hill Model area, notably east of Sharkey’s Pit where exploration drilling in 2007 discovered shallow oxide mineralization. Elsewhere remnant low-grade oxide gold mineralization is found below and along strike from previously mined open pits.

Resources in the Farley’s-Sharkey’s area are based on modern face sampling RC methods and substantial diamond drilling and as such the geological information is better than elsewhere in the modeled area.

Inferred resources at Robbin’s Hill have increased significantly toward the end of 2017 with the inclusion of an extension to the Currie’s fault and Rubin’s lenses to the North of 12600mN (Figure 14-21).

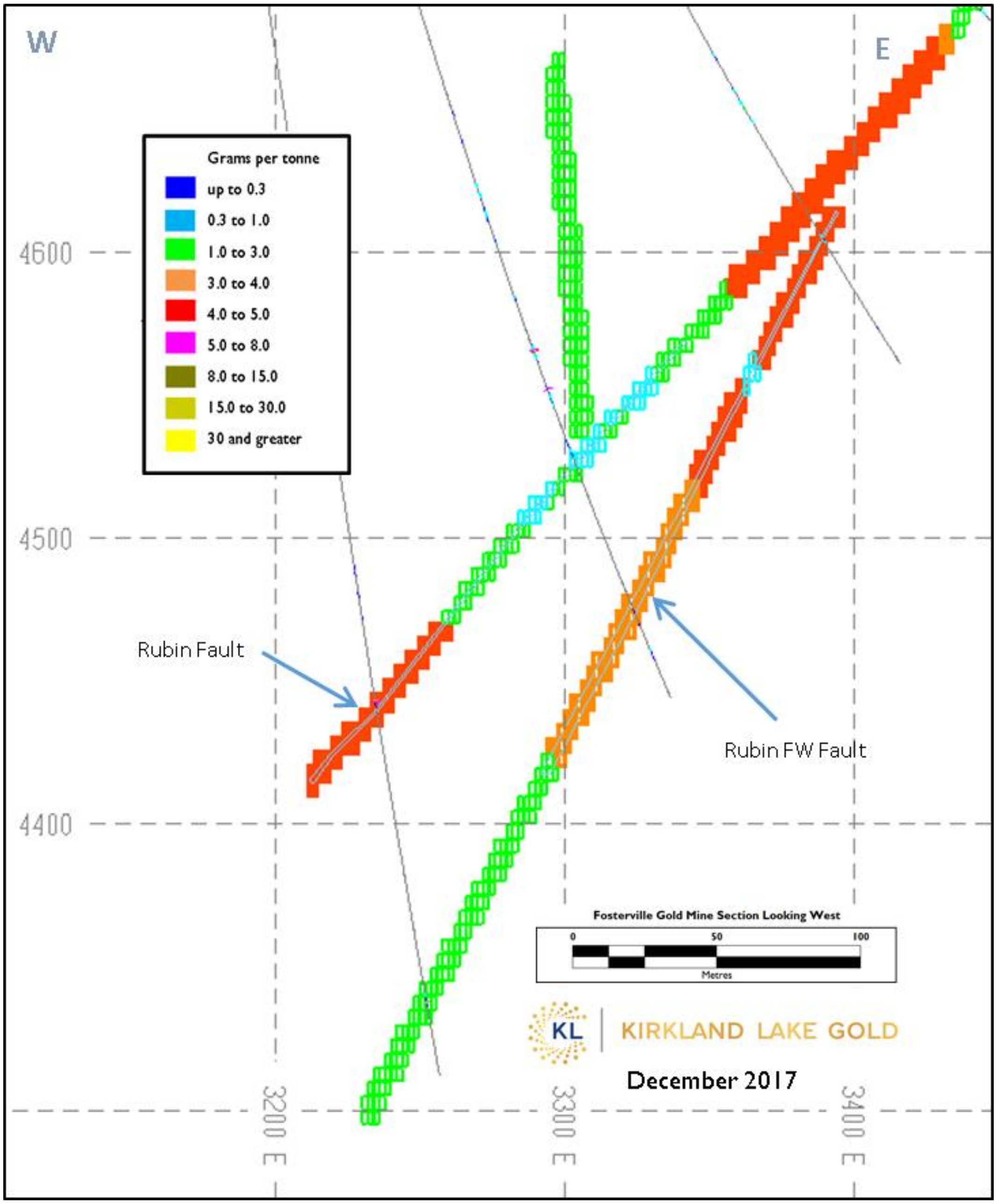


FIGURE 14-21 ROBBIN'S HILL CROSS-SECTION 12910mN

15 MINERAL RESERVE ESTIMATES

The current Mineral Reserve estimate, from the available Mineral Resource estimates, is presented below in Table 15-1. Mineral Reserves are subdivided on the basis of accessing decline i.e. Central, Phoenix and Harrier. A further breakdown of the Phoenix Mineral Reserves is presented in Table 15-2, where reserves on the Eagle and Swan structures are separated.

CIL Residue Mineral Reserves are distinguished from in situ Mineral Reserves in Table 15-1 and Table 15-2 on the basis of differing recovery assumptions.

TABLE 15-1 MINERAL RESERVES FOR FGM AS AT DECEMBER 31, 2017

Classification	Proven			Probable			Total		
	Tonnes (kt)	Grade (g/t Au)	In situ Gold (kOz)	Tonnes (kt)	Grade (g/t Au)	In situ Gold (kOz)	Tonnes (kt)	Grade (g/t Au)	In situ Gold (kOz)
Underground									
Central	17	5.07	3	71	4.73	11	88	4.80	14
Phoenix	217	15.62	109	1,553	29.42	1,468	1,770	27.72	1,577
Harrier	1	6.55	0	428	7.85	108	430	7.84	108
Surface									
	0	0.00	0	0	0.00	0	0	0.00	0
Total	**236**	**14.80**	**112**	**2,052**	**24.06**	**1,587**	**2,288**	**23.11**	**1,699**
Residues									
CIL Residues	649	7.69	160	0	0.00	0	649	7.69	160
Total	**649**	**7.69**	**160**	**0**	**0.00**	**0**	**649**	**7.69**	**160**

Notes:

1. CIM definitions (2014) were followed in the estimation of Mineral Reserves.
2. For the Mineral Reserves estimate, the Qualified Person is Ion Hann. The Mineral Reserve estimate used a gold price of US$1,280 per ounce (A$1,600 per ounce). Cut-off grades applied ranged from 2.0 g/t Au to 3.8 g/t Au for underground sulfide ore depending upon width, mining method and ground conditions.
3. Dilution and mining recovery factors as per Table 15-3 and Table 15-4 were applied to stopes within the Mineral Reserves estimate.
4. Mineral Reserves are rounded to 1,000t, 0.01 g/t Au and 1koz. Minor discrepancies in summation may occur due to rounding.
5. CIL residues are stated as contained ounces – 25% recovery is expected. Recoveries are based on laboratory and processing plant test work and operating experience.

TABLE 15-2 MINERAL RESERVES (WITH EAGLE / SWAN SUBDIVISIONS) FOR FGM AS AT DECEMBER 31, 2017

Classification	Proven			Probable			Total		
	Tonnes (kt)	Grade (g/t Au)	In situ Gold (kOz)	Tonnes (kt)	Grade (g/t Au)	In situ Gold (kOz)	Tonnes (kt)	Grade (g/t Au)	In situ Gold (kOz)
Underground									
Central	17	5.07	3	71	4.73	11	88	4.80	14
Phoenix	172	15.90	88	684	6.90	152	856	8.71	240
Eagle	45	14.57	21	280	17.78	160	325	17.33	181
Swan	0	0.00	0	588	61.16	1,156	588	61.16	1,156
Harrier	1	6.55	0	428	7.85	108	430	7.84	108
Surface									
	0	0.00	0	0	0.00	0	0	0.00	0
Total	**236**	**14.80**	**112**	**2,052**	**24.06**	**1,587**	**2,288**	**23.11**	**1,699**
Residues									
CIL Residues	649	7.69	160	0	0.00	0	649	7.69	160
Total	**649**	**7.69**	**160**	**0**	**0.00**	**0**	**649**	**7.69**	**160**

Notes:

1. CIM definitions (2014) were followed in the estimation of Mineral Reserves.
2. For the Mineral Reserves estimate, the Qualified Person is Ion Hann. The Mineral Reserve estimate used a gold price of US$1,280 per ounce (A$1,600 per ounce). Cut-off grades applied ranged from 2.0 g/t Au to 3.8 g/t Au for underground sulfide ore depending upon width, mining method and ground conditions.
3. Dilution and mining recovery factors as per Table 15-3 and Table 15-4 were applied to stopes within the Mineral Reserves estimate.
4. Mineral Reserves are rounded to 1,000t, 0.01 g/t Au and 1koz. Minor discrepancies in summation may occur due to rounding.
5. CIL residues are stated as contained ounces – 25% recovery is expected. Recoveries are based on laboratory and processing plant test work and operating experience.

15.1 MINERAL RESERVE ESTIMATE

The initial stage of the Mineral Reserve estimation process was the revision of the Mining Method Selection chart. The mining methods that were considered for the Mineral Reserve estimation process were sill driving, up-hole open stoping, up-hole stoping with fill, underhand open stoping with chain and rib pillars and transverse open stoping. These methods were selected based upon previous experience at the Fosterville mine or because they were considered suitable for the ore zone geometry and geotechnical conditions present and expected.

15.1.1 OPEN STOPE DESIGN

Stope reserve shapes were created to cover all active and planned mining areas. These stope shapes did not necessarily reflect the final stope strike and/or crown pillar dimensions. Stoping widths vary from 3m out to 10m. Mining method selection criteria and applied design parameters are described in the Mining Methods Selection process (see Figure 15-2).

The open stope reserve wireframe design parameters applied were:

- Strike length dictated by grade distribution in block model;
- Minimum true width of 2.5m;
- Maximum height of 20m vertical from backs to floor; and
- Internal waste incorporated within the stope block design.

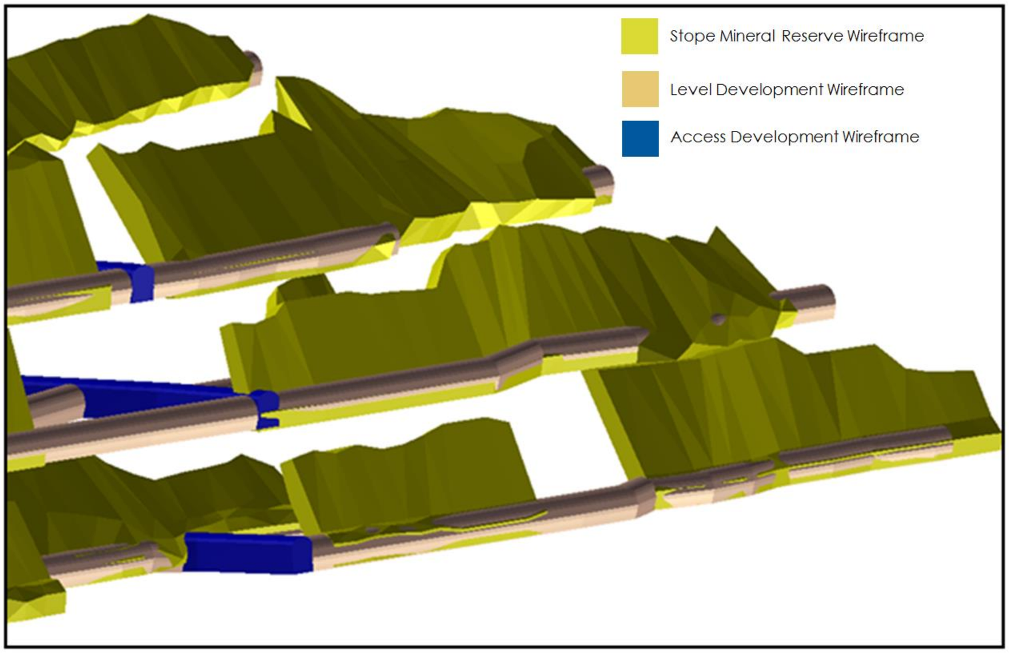


FIGURE 15-1 AN EXAMPLE OF AN OPEN STOPE RESERVE WIREFRAME DESIGN

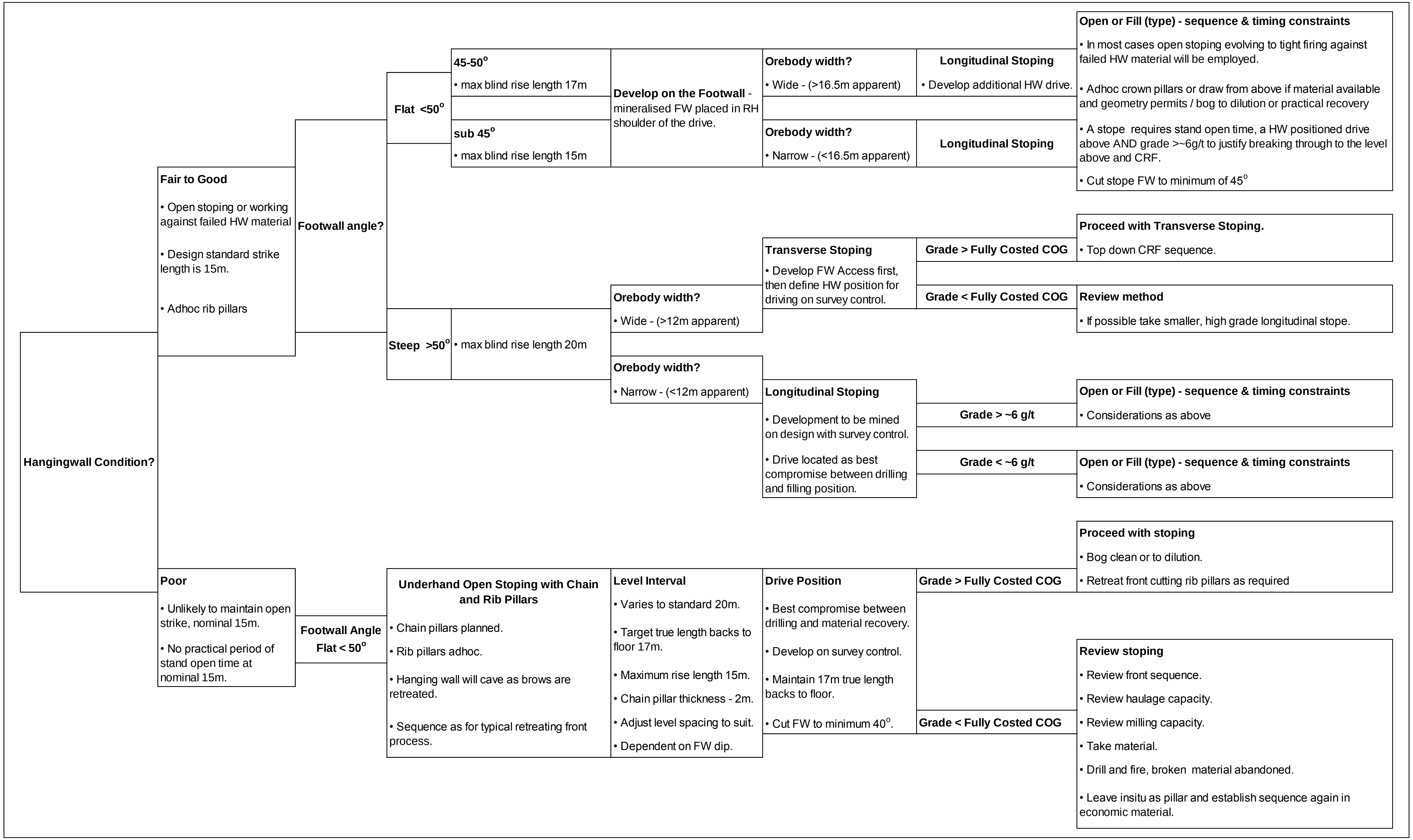


FIGURE 15-2 MINING METHOD SELECTION CRITERIA

Mining recovery from open stopes at Fosterville is principally influenced by the following factors:

- Accuracy of the geological interpretation;
- Accuracy of the production hole drilling;
- Stope dimensions;
- Sill drive dimensions and position relative to bench stope;
- Presence or absence of adjacent filled voids and pillars; and
- Geotechnical integrity of stope and sill drive walls.

The above factors manifest themselves as ore loss in the following ways:

- The need for planned pillars due to accessing of ore blocks (i.e. top down mining sequence);
- Frozen rings due to ground movement or out of sequence firing;
- Bridged stopes;
- Failure of the stope to break back to a main structural plane of weakness; and
- Unplanned ore pillars left to improve ground support.

Unplanned dilution in open stopes at Fosterville is a function of the following factors:

- Regional geotechnical conditions;
- Location of sill drives relative to the open stope;
- Width of sill drives relative to the open stope width;
- Production drilling accuracy;
- Quantity, quality and type of ground support in sill drive walls;
- Speed of ore extraction from active stopes; and
- Length of time sill drives have been open before stoping commences.

Inclusive within the production mining cycle are systematic cavity monitoring surveys, data from which is feedback into the understanding and scaling of dilution factors by area.

In order to correctly apply recovery and dilution factors to all stopes in the Mineral Reserve, factors such as orebody dip, rock RQD and development and stope sequence were considered.

Table 15-3 and Table 15-4 show the recovery and dilution factors that were applied to the reserve blocks:

TABLE 15-3 RECOVERY AND DILUTION FACTORS FOR THE RESERVE BLOCKS AS DISPLAYED IN FIGURE 16-1

Description	Recovery Factor - Tonnes	Dilution Factor - Tonnes	Comments
Stoping - Phoenix	80%	24%	Top down, crown and rib pillars, and/or CRF, and/or paste, underhand open stoping with chain and rib pillars
Stoping - Central	82%	19%	Top down, crown and rib pillars, and/or CRF, underhand open stoping with chain and rib pillars
Stoping – Harrier	77%	22%	Top down, crown and rib pillars, and/or CRF, underhand open stoping with chain and rib pillars
Strike Development	100%	15%	

Notes:

1. Dilution and Recovery factors are assigned based on sequence, angle of the hangingwall, strike length of panel and surrounding voids whether open, failed or filled, both laterally and vertically (and the likelihood of adjacent panels failed).
2. Primary stopes are in-situ with solid unfired material on all extremities excluding development.
3. Secondary panels are those adjacent to a single panel either laterally or vertically that may or may not be filled.
4. Tertiary panels are those adjacent to two or more panels either laterally or vertically that may or may not be filled.
5. Table 15-4 provides guidelines for individual panel recovery and dilution for specific mining scenarios.

TABLE 15-4 DILUTION AND RECOVERY FACTORS USED FOR THE DECEMBER 2017 MINERAL RESERVES

	Dilution	Recovery
Development	1.15	1.00

		Dilution	Recovery	Type	Angle	Strike
PRIMARY	Stope	1.10	0.95	Pillar / Initial Panel	Steep	<15m
	Stope	1.15	0.90	Pillar / Initial Panel	Steep	15m to 25m
	Shrink	1.25	0.80	No Pillar / Shrink	Steep	>25m
	Stope	1.15	0.85	Pillar / Initial Panel	Average	<15m
	Stope	1.20	0.80	Pillar / Initial Panel	Average	15m to 25m
	Shrink	1.30	0.70	No Pillar / Shrink	Average	>25m
	Stope	1.20	0.80	Pillar / Initial Panel	Flat/Narrow	<15m
	Stope	1.25	0.75	Pillar / Initial Panel	Flat/Narrow	15m to 25m
	Shrink	1.40	0.55	No Pillar / Shrink	Flat/Narrow	>25m
SECONDARY	Stope	1.15	0.90	Secondary Stope against CRF	Steep	<15m
	Stope	1.20	0.85	Secondary Stope against CRF	Steep	15m to 25m
	Stope	1.20	0.80	Secondary Stope against CRF	Average	<15m
	Stope	1.25	0.75	Secondary Stope against CRF	Average	15m to 25m
	Stope	1.30	0.70	Secondary Stope against CRF	Flat/Narrow	<15m
	Stope	1.35	0.65	Secondary Stope against CRF	Flat/Narrow	15m to 25m
SECONDARY	Stope	1.15	0.90	Secondary Stope against PASTE	Steep	<15m
	Stope	1.20	0.85	Secondary Stope against PASTE	Steep	15m to 25m
	Stope	1.20	0.80	Secondary Stope against PASTE	Average	<15m
	Stope	1.25	0.75	Secondary Stope against PASTE	Average	15m to 25m
	Stope	1.25	0.75	Secondary Stope against PASTE	Flat/Narrow	<15m
	Stope	1.30	0.70	Secondary Stope against PASTE	Flat/Narrow	15m to 25m
SECONDARY	Stope	1.30	0.80	Pillar / Initial Panel below caved	Steep	<15m
	Stope	1.35	0.75	Pillar / Initial Panel below caved	Steep	15m to 25m
	Stope	1.45	0.65	Pillar / Initial Panel below caved	Steep	>25m
	Stope	1.35	0.70	Pillar / Initial Panel below caved	Average	<15m
	Stope	1.40	0.65	Pillar / Initial Panel below caved	Average	15m to 25m
	Stope	1.50	0.55	Pillar / Initial Panel below caved	Average	>25m
	Stope	1.40	0.65	Pillar / Initial Panel below caved	Flat/Narrow	<15m
	Stope	1.45	0.60	Pillar / Initial Panel below caved	Flat/Narrow	15m to 25m
	Stope	1.60	0.40	Pillar / Initial Panel below caved	Flat/Narrow	>25m
SECONDARY	Stope	1.15	0.90	Pillar / Initial Panel below CRF	Steep	<15m
	Stope	1.20	0.85	Pillar / Initial Panel below CRF	Steep	15m to 25m
	Stope	1.30	0.75	Pillar / Initial Panel below CRF	Steep	>25m
	Stope	1.20	0.80	Pillar / Initial Panel below CRF	Average	<15m
	Stope	1.25	0.75	Pillar / Initial Panel below CRF	Average	15m to 25m
	Stope	1.35	0.65	Pillar / Initial Panel below CRF	Average	>25m
	Stope	1.30	0.70	Pillar / Initial Panel below CRF	Flat/Narrow	<15m
	Stope	1.35	0.65	Pillar / Initial Panel below CRF	Flat/Narrow	15m to 25m
	Stope	1.50	0.45	Pillar / Initial Panel below CRF	Flat/Narrow	>25m
SECONDARY	Stope	1.15	0.90	Pillar / Initial Panel below PASTE	Steep	<15m
	Stope	1.20	0.85	Pillar / Initial Panel below PASTE	Steep	15m to 25m
	Stope	1.30	0.75	Pillar / Initial Panel below PASTE	Steep	>25m
	Stope	1.20	0.80	Pillar / Initial Panel below PASTE	Average	<15m
	Stope	1.25	0.75	Pillar / Initial Panel below PASTE	Average	15m to 25m
	Stope	1.35	0.65	Pillar / Initial Panel below PASTE	Average	>25m
	Stope	1.25	0.75	Pillar / Initial Panel below PASTE	Flat/Narrow	<15m
	Stope	1.30	0.70	Pillar / Initial Panel below PASTE	Flat/Narrow	15m to 25m
	Stope	1.45	0.50	Pillar / Initial Panel below PASTE	Flat/Narrow	>25m

TERTIARY	Stope	1.25	0.80	Tertiary Stope against CRF/Caved	Steep	<15m
	Stope	1.30	0.75	Tertiary Stope against CRF/Caved	Steep	15m to 25m
	Stope	1.35	0.75	Tertiary Stope against CRF/Caved	Average	<15m
	Stope	1.40	0.70	Tertiary Stope against CRF/Caved	Average	15m to 25m
	Stope	1.40	0.60	Tertiary Stope against CRF/Caved	Flat/Narrow	<15m
	Stope	1.50	0.55	Tertiary Stope against CRF/Caved	Flat/Narrow	15m to 25m
TERTIARY	Stope	1.20	0.85	Tertiary Stope against PASTE/Caved	Steep	<15m
	Stope	1.25	0.80	Tertiary Stope against PASTE/Caved	Steep	15m to 25m
	Stope	1.30	0.80	Tertiary Stope against PASTE/Caved	Average	<15m
	Stope	1.35	0.75	Tertiary Stope against PASTE/Caved	Average	15m to 25m
	Stope	1.35	0.65	Tertiary Stope against PASTE/Caved	Flat/Narrow	<15m
	Stope	1.40	0.60	Tertiary Stope against PASTE/Caved	Flat/Narrow	15m to 25m
TERTIARY	Stope	1.40	0.60	Tertiary Stope against CRF/ below Caved	Steep	<15m
	Stope	1.50	0.55	Tertiary Stope against CRF/ below Caved	Steep	15m to 25m
	Stope	1.60	0.50	Tertiary Stope against CRF/ below Caved	Steep	>25m
	Stope	1.35	0.65	Tertiary Stope against CRF/ below Caved	Average	<15m
	Stope	1.45	0.60	Tertiary Stope against CRF/ below Caved	Average	15m to 25m
	Stope	1.55	0.55	Tertiary Stope against CRF/ below Caved	Average	>25m
	Stope	1.30	0.70	Tertiary Stope against CRF/ below Caved	Flat/Narrow	<15m
	Stope	1.40	0.65	Tertiary Stope against CRF/ below Caved	Flat/Narrow	15m to 25m
	Stope	1.50	0.60	Tertiary Stope against CRF/ below Caved	Flat/Narrow	>25m
TERTIARY	Stope	1.35	0.65	Tertiary Stope against PASTE/ below Caved	Steep	<15m
	Stope	1.45	0.60	Tertiary Stope against PASTE/ below Caved	Steep	15m to 25m
	Stope	1.55	0.55	Tertiary Stope against PASTE/ below Caved	Steep	>25m
	Stope	1.30	0.70	Tertiary Stope against PASTE/ below Caved	Average	<15m
	Stope	1.40	0.65	Tertiary Stope against PASTE/ below Caved	Average	15m to 25m
	Stope	1.50	0.60	Tertiary Stope against PASTE/ below Caved	Average	>25m
	Stope	1.25	0.75	Tertiary Stope against PASTE/ below Caved	Flat/Narrow	<15m
	Stope	1.35	0.70	Tertiary Stope against PASTE/ below Caved	Flat/Narrow	15m to 25m
	Stope	1.45	0.65	Tertiary Stope against PASTE/ below Caved	Flat/Narrow	>25m
TERTIARY	Stope	1.50	0.55	Tertiary Stope against Caved / below Caved	Steep	<15m
	Stope	1.55	0.50	Tertiary Stope against Caved / below Caved	Steep	15m to 25m
	Stope	1.60	0.45	Tertiary Stope against Caved / below Caved	Steep	>25m
	Stope	1.45	0.60	Tertiary Stope against Caved / below Caved	Average	<15m
	Stope	1.50	0.55	Tertiary Stope against Caved / below Caved	Average	15m to 25m
	Stope	1.55	0.50	Tertiary Stope against Caved / below Caved	Average	>25m
	Stope	1.40	0.65	Tertiary Stope against Caved / below Caved	Flat/Narrow	<15m
	Stope	1.45	0.60	Tertiary Stope against Caved / below Caved	Flat/Narrow	15m to 25m
	Stope	1.50	0.55	Tertiary Stope against Caved / below Caved	Flat/Narrow	>25m

Gold Cut-Off Grades

Table 15-5 shows the calculated cut-off grades used in the estimation of the Mineral Reserve. Cost assumptions are based on the 2018 Budget (inclusive of royalties) and 2017 performance.

TABLE 15-5 MINERAL RESERVE GOLD CUT-OFF GRADES

Description	g/t Au
Open Stope – full	3.8
Open Stope - marginal	2.0
Development - marginal	3.0

For certain other situations, a lower cut-off grade is applied. For development, which is justified for other reasons (i.e. access to a higher grade block or infrastructure considerations), the marginal cut-off grade is applied to reflect that the material only has to cover the non-mining costs to break even. This is only applied if the development material had to be trucked to surface anyway and that it is not displacing higher-grade ore from the mill. Likewise, for incremental stoping production where the development has already been mined (i.e. for access to a higher-grade block), the marginal cut-off grade is applied to reflect that the development cost has already been incurred.

Stope and development shapes are limited in their extremity by the application of appropriate COGs (Table 15-5) and a full conceptual design is subsequently created around the resultant shapes. This design includes, but is not necessarily limited to; decline design, associated level infrastructure and vertical development.

Physicals generated from the design are applied against budget costs and assumptions to provide an economic model by level and area (Table 15-6). This model is capable of representing various cost structures and is utilized as the final hurdle point for determination of inclusion/exclusion of material into the mine plan and reserve statement.

TABLE 15-6 DEVELOPMENT COSTS AND PHYSICALS SPREADSHEET

Level:	4365	4345	4330
Drive:	Harrier	Harrier	Harrier
Area:			
Model:			
Orebody:			
Dec / Inc (m)			
Cap Other (m)	117	132	118
Cap RAR (vertical m) - big raise bore			
Cap Escapeway - RaiseBore & Safescape			
Cap RAR (vertical m) - D&B not supported			
Cap RAR & E/way (vertical m) D&B Supported			
Waste Operating (m)	40	30	20
Ore driving (m)	125	150	210
Ore driving (tonnes)	7,210	6,212	13,110
Ore driving (ounces)	1,843	1,081	2,499
Stope (tonnes)	12,771	14,570	35,363
Stope (ounces)	3,362	4,221	7,183
Production Drilling (m)	4,257	4,857	11,788
Slot Rise (m)			
CRF (tonnes)			
PASTE (m3)			
RF (tonnes)			
Check Ore (m)	58	41	62
Dilution Factor - Development Material	1.00	1.00	1.00
Dilution Factor - Stope Material	1.00	1.00	1.00
Recovery Factor - Development Material	1.00	1.00	1.00
Recovery Factor - Stope Material	1.00	1.00	1.00
Indic Prod ore (t)	12,771	14,570	35,363
Indic Prod ore (g/t)	8.19	9.01	6.32
Indic Prod ore (oz)	3,362	4,221	7,183
Indic Dev ore (t)	7,210	6,212	13,110
Indic Dev ore (g/t)	7.95	5.41	5.93
Indic Dev ore (oz)	1,843	1,081	2,499
Total Prod ore (t)	12,771	14,570	35,363
Total Prod ore (g/t)	8.19	9.01	6.32
Total Prod ore (oz)	3,362	4,221	7,183
Total Dev ore (t)	7,210	6,212	13,110
Total Dev ore (g/t)	7.95	5.41	5.93
Total Dev ore (oz)	1,843	1,081	2,499
Total ore (t)	19,980	20,782	48,473
Total ore (g/t)	8.10	7.93	6.21
Total ore (oz)	5,205	5,302	9,682
CAPITAL			
Access			
Decline Dev.			
Other Dev.			
Equipment			
RAR - big raisebore	$ -	$ -	$ -
Escape way - raisebore & Safescape	$ -	$ -	$ -
Sustaining			
Decline Dev.	$ -	$ -	$ -
Other Dev.	$ 905,034	$ 1,023,365	$ 917,508
Vent rise	$ -	$ -	$ -
RAR & Escape way	$ -	$ -	$ -
OPERATING			
Development			
Ore	$ 881,069	$ 1,061,192	$ 1,483,020
Waste	$ 282,480	$ 211,860	$ 141,240
Production			
Ground Support (Stope)	$ 74,582	$ 85,090	$ 206,519
Drilling	$ 137,116	$ 156,436	$ 379,679
Blasting	$ 123,877	$ 141,332	$ 343,020
Load & Truck	$ 388,772	$ 455,117	$ 1,125,649
Backfill - CRF	$ -	$ -	$ -
Backfill - PASTE	$ -	$ -	$ -
Backfill - RF	$ -	$ -	$ -
Slot Rise	$ -	$ -	$ -
Other Fixed			
Mine Administration - includes geology	$ 238,965	$ 248,557	$ 579,733
Milling Administration	$ 792,622	$ 824,437	$ 1,922,912
Finance & Administration	$ 490,319	$ 510,000	$ 1,189,520
Site Capital Sustaining	$ 58,742	$ 61,100	$ 142,510
Other Variable			
Mine General	$ 117,684	$ 122,408	$ 285,504
Milling	$ 347,059	$ 360,990	$ 841,971

15.1.2 DEPLETION AND RESULTS

The Mineral Reserves reported above are the result of work based on data to December 31, 2017 and reported by Kirkland Lake Gold in accordance with NI43-101. The evaluation models have been depleted for material mined up to December 31, 2017. The process involved the generation of surveyed solid models for the mined development and stope areas and then running a depletion process in order that the depleted areas can be excluded from the Mineral Reserve.

Results for the Mineral Reserves contained in the Fosterville operating areas are provided in Table 15-1.

Infrastructure required for the exploitation of the stated reserves are either in place or have been planned to be developed within the LOM plan generated through the reserving process. All works fall within the granted mining lease boundaries and are covered within the existing approved work plan. It is unlikely that either infrastructure or permitting could materially affect the stated reserve position.

There are no known political, legal, environmental or other risks that could materially affect the potential development of the Mineral Reserves.

16 MINING METHODS

Since the completion of the Harrier Open Cut Mine in early December 2007, the sole source of ore had been the underground operations until Q2 2011 when ore feed became available from a series of open pit cut backs on the Harrier Pit, John's Pit and O'Dwyer's South Pit. Since the completion of O'Dwyer's South cut back in Q4 2012, the sole source of ore has been from the underground operations. The current Life of Mine (LOM) plan contains ore sourced from underground operations only (Figure 16-1, Figure 16-2 and Figure 16-3).

The underground mine commenced declining in March 2006 with production first recorded in September 2006. Development and stoping have been conducted in the Phoenix, Falcon, Ellesmere, Kink, Vulture, Raven, Robin and Harrier ore bodies since that time. As at January 1, 2018 works are planned to continue in the Phoenix (including Swan Eagle, et al), Central and Harrier ore bodies. All areas are planned to be extracted using open stoping techniques with the application of Cemented Rock Fill (CRF) or Paste Fill (PF) where applicable and practical. Selection of the specific mining method within the open stoping regime is based upon previous experience at the Fosterville Mine and expectations of ore zone geometry and geotechnical conditions (Figure 15-2). A standard level interval of 20 vertical meters can be applied across all mining areas. However, this can be varied as is required to maximize the extraction of the economic material. The Phoenix to 4240mRL, Harrier below 4500mRL, Central and Robin ore bodies are accessed from a footwall decline position while the Phoenix below 4240mRL and Harrier orebody above 4500mRL are accessed from the hangingwall.

Underground mining is conducted using a conventional fleet including 2 boom development drills, production drills, loaders, trucks and ancillary equipment. Current mining is undertaken as predominantly owner miner.

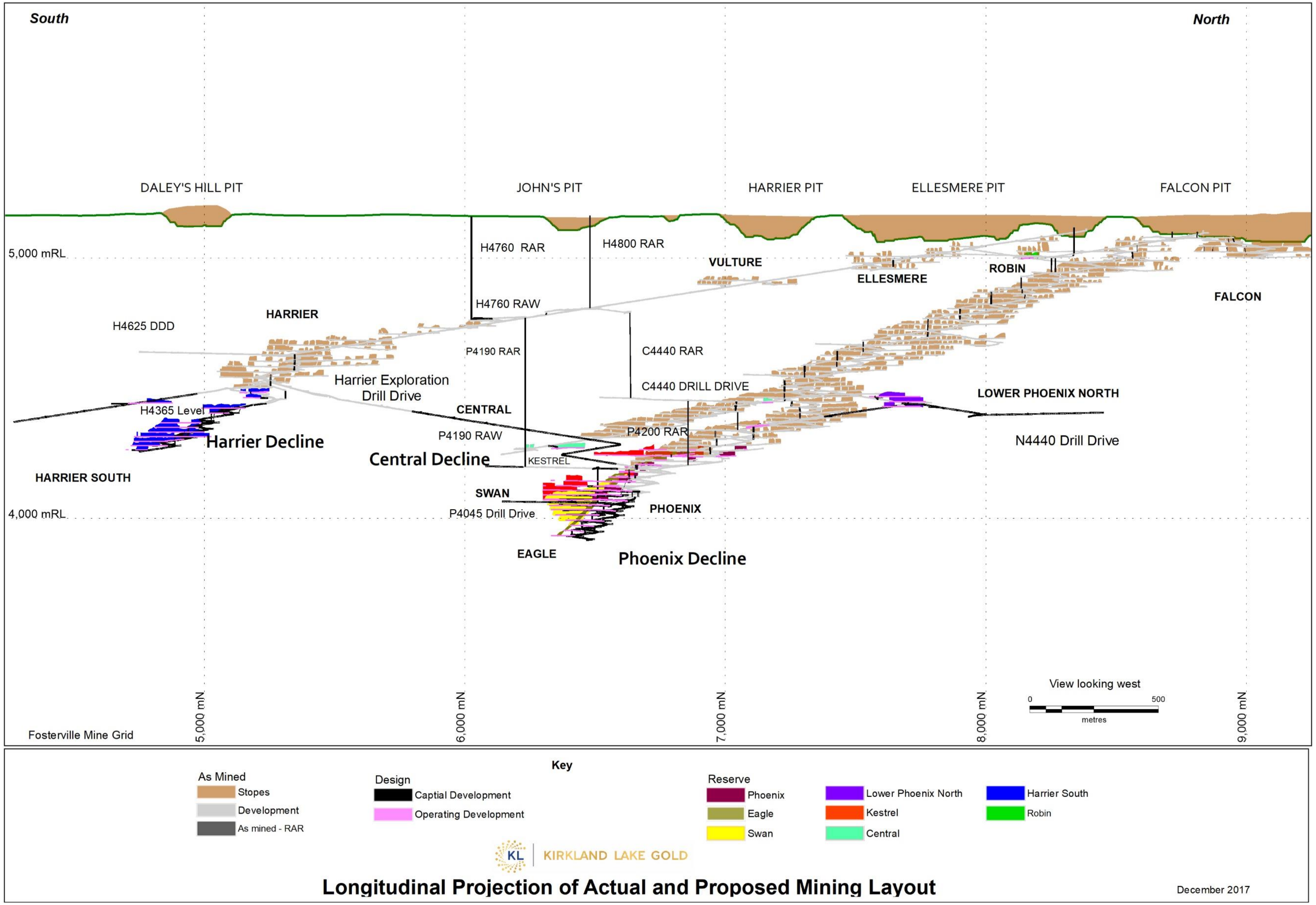


FIGURE 16-1 LONGITUDINAL PROJECTION OF ACTUAL AND PROPOSED MINING LAYOUT AS AT DECEMBER 31, 2017

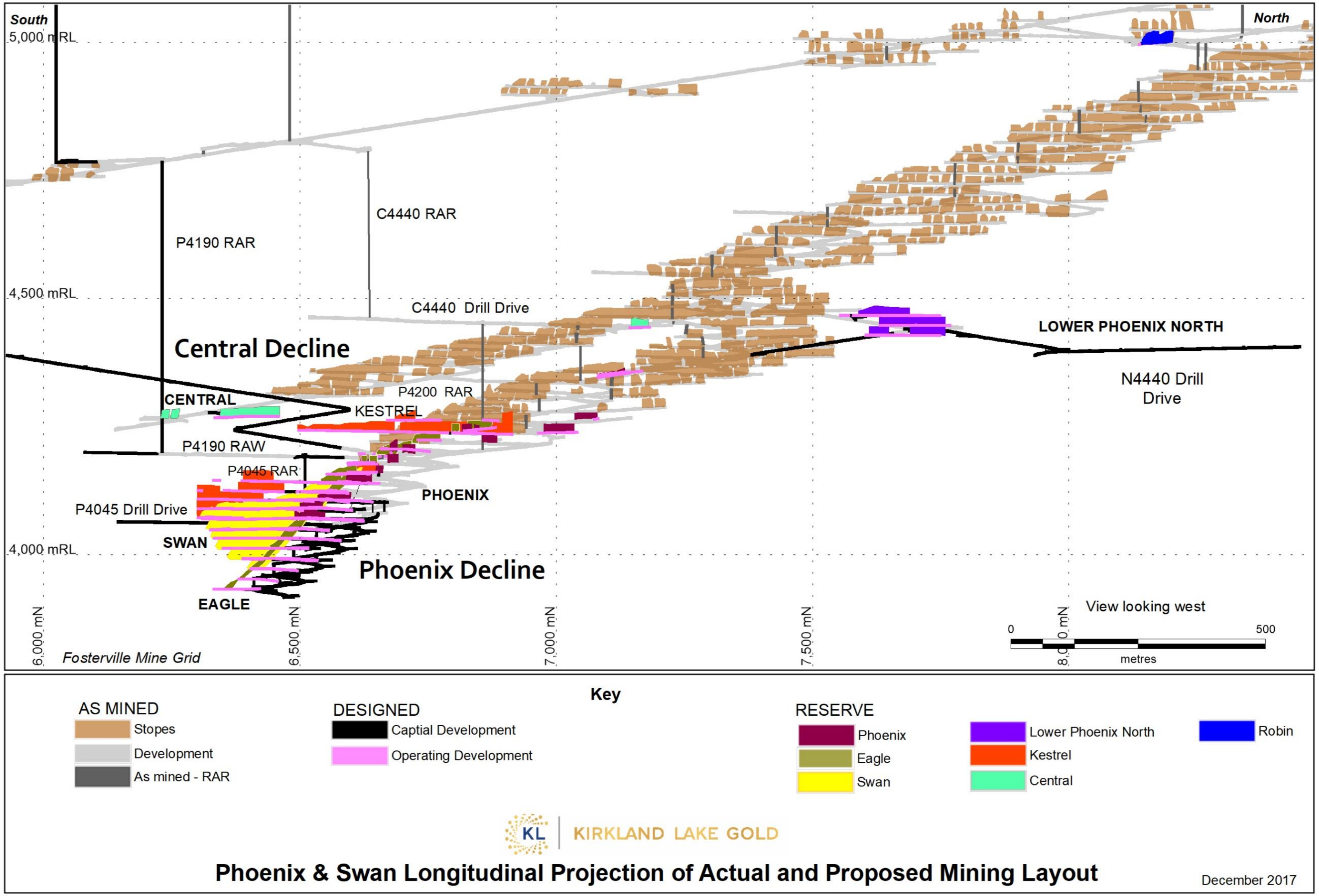


FIGURE 16-2 LONGITUDINAL PROJECTION OF PHOENIX AND SWAN ACTUAL AND PROPOSED MINING LAYOUT AS AT DECEMBER 31, 2017

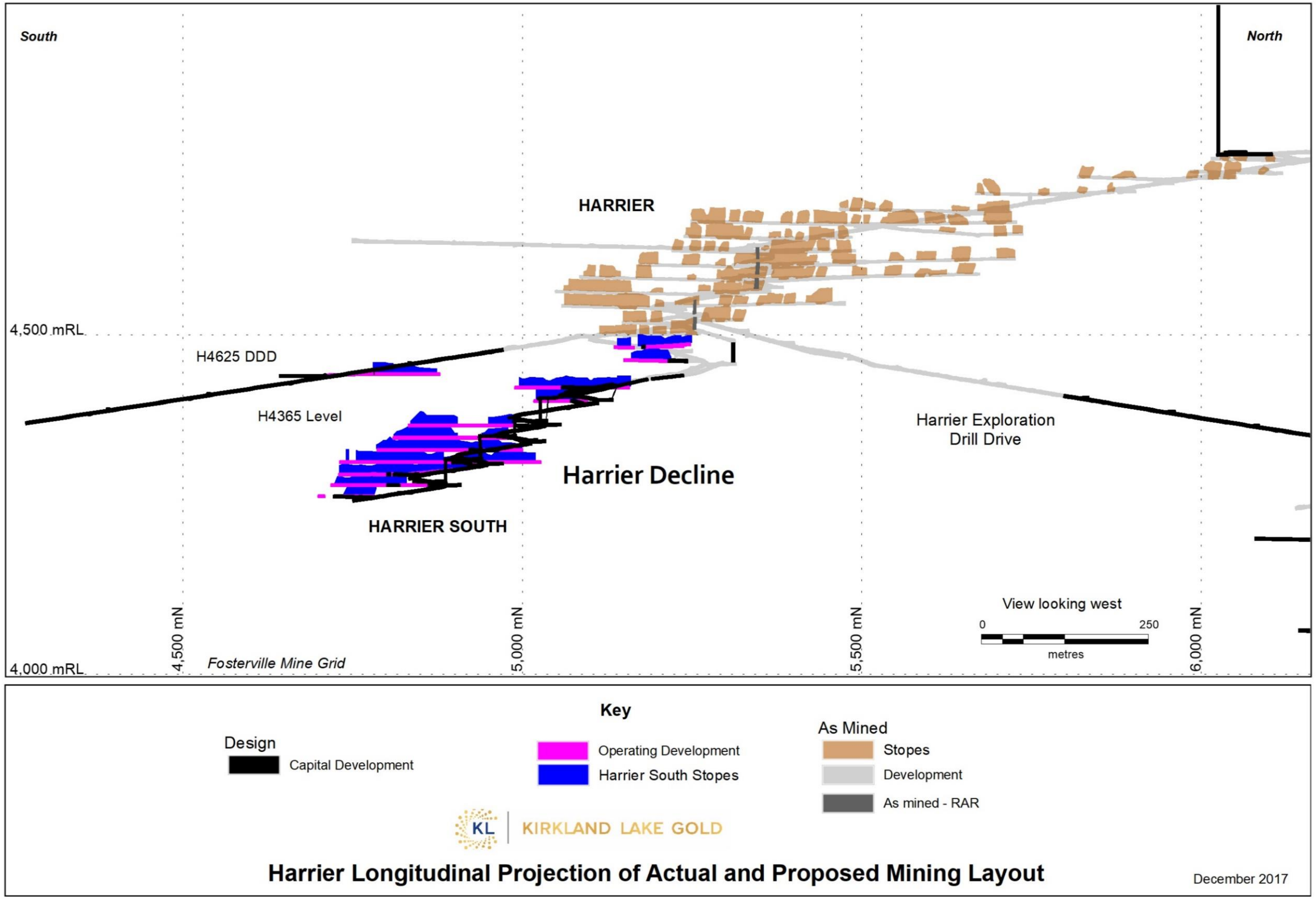


FIGURE 16-3 LONGITUDINAL PROJECTION OF HARRIER ACTUAL AND PROPOSED MINING LAYOUT AS AT DECEMBER 31, 2017

17 RECOVERY METHODS

Since the commissioning of the processing plant in 2004, all processing models for the mill have been based on actual plant performances. The processing budget takes into consideration the mining schedule (ore source location, tonnes to be mined and gold grade), and predicted sulfur grades to be processed. Recovery data for Fosterville is detailed in Table 17-1.

TABLE 17-1 ACTUAL PLANT PERFORMANCES (2009 – 2017)

Plant Parameter		2009	2010	2011	2012	2013	2014	2015	2016	2017
Tonnes Milled	t	781,878	817,535	785,503	786,572	792,166	814,835	703,788	693,066	547,476
Sulfur Feed grade	%	1.71	1.6	1.59	1.44	1.35	1.36	1.34	1.71	1.51
Feed Grade	g/t Au	4.79	4.57	4.87	4.36	4.53	4.62	6.11	7.55	15.78
Flotation recovery	%	96.2	96.2	96.7	95.0	95.9	95.7	96.6	97.0	98.6
Gravity gold recovery	%								12.9	27.6
BIOX® recovery	%	99.0	98.7	98.4	97.8	98.0	98.6	98.5	98.4	98.7
Sulfide Oxidation	%	96.3	98.6	97.7	97.7	98.2	98.1	98.3	97.7	97.3
CIL recovery	%	86.2	79.8	81.3	80.5	86.2	87.1	90.9	89.9	93.9
Heated leach recovery	%	0.3	7.1	6.0	7.6	4.5	4.6	2.0	3.7	2.4
Overall Leach recovery	%	86.6	86.9	87.3	88.1	90.7	91.6	92.9	93.6	96.2
Overall Plant recovery	%	85.0	82.5	83.0	82.0	85.2	86.5	88.5	90.1	95.0
Mining Au produced	oz	102,336	99,032	102,048	90,358	98,354	104,518	122,362	151,585	263,845
Retreat: Leach tails: tonnes	t	9,634	13,222	4,495	2,623	854	4,951	4,519	2,141	0
Retreat: Leach tails: grade	g/t Au	10.25	10.37	8.27	6.98	7.05	10.48	10.75	7.90	0
Retreat: Leach tails: recovery	%	32.5	30.3	12.2	12.1	35.2	49.0	46.3	30.8	0
Retreat: Leach tails: Au produced	oz	1024	1,410	154	80	69	824	734	169	0
Total gold produced	oz	103,360	100,442	102,201	90,439	98,423	105,342	123,096	151,755	263,845

The process plant incorporates the following unit operations:

- Single stage crushing with a primary jaw crusher;
- Open stockpile with reclaim tunnel;
- 20ft diameter by 20ft length Semi-autogenous grinding (SAG) mill;
- Flotation circuit to produce a gold bearing sulfide mineral concentrate and a barren residue;
- 8ft diameter by 13ft length flotation concentrate regrind mill;
- A gravity circuit to recover coarse gold from the flotation concentrate with gravity circuit concentrate being direct smelted;

- A Bio-oxidation circuit consisting of BIOX® reactors to oxidize the flotation concentrate, releasing gold from the sulfide mineral matrix;
- A three-stage CCD circuit to separate the gold bearing oxidized solid residue from the solubilized acid oxidation products;
- A liquor neutralization circuit to neutralize acid and precipitate arsenic as stable basic ferric arsenate and sulphate as calcium sulphate (gypsum) using both ground limestone and lime slurries;
- A limestone grinding facility comprising a single wet ball mill operated in closed circuit with a hydrocyclone to produce ground limestone slurry for pH control in the BIOX® tanks and neutralization of sulfuric and arsenic acids produced from oxidation of gold bearing sulfide minerals;
- Carbon-in-leach (CIL) circuit, with a pH adjustment tank at the head of the circuit, to leach gold from oxidized material and load the cyanide soluble gold onto activated carbon;
- Heated Leach (HL) circuit to combat preg-robbing capabilities of the non-carbonaceous carbon always present in the Fosterville orebody. Specialized in-house technology unique to Fosterville; and
- Pressure Zadra elution circuit to remove gold from carbon, followed by recovery by electro-winning and smelting to doré.

A schematic flow sheet detailing unit operations is presented in Figure 17-1.

The plant was laid out on either side of a central rack in order to facilitate the distribution of reagents, services, and piping arrays. Individual plant areas are separated by bunding to isolate and contain spillage. Storm water and abnormal spillage events report to an existing drainage channel, which discharges to a separate containment dam.

The layout of the comminution circuit allows for installation of a pebble crushing circuit should it be required, and a secondary ball mill to increase grinding circuit capacity. Space was left in the area layouts for additional tank farms and equipment to accommodate a nominal increase in plant capacity. Space exists to the east of the plant site to duplicate existing facilities to double plant throughput if required.

Plant commissioning began in November 2004 with first gold production in Q1 2005.

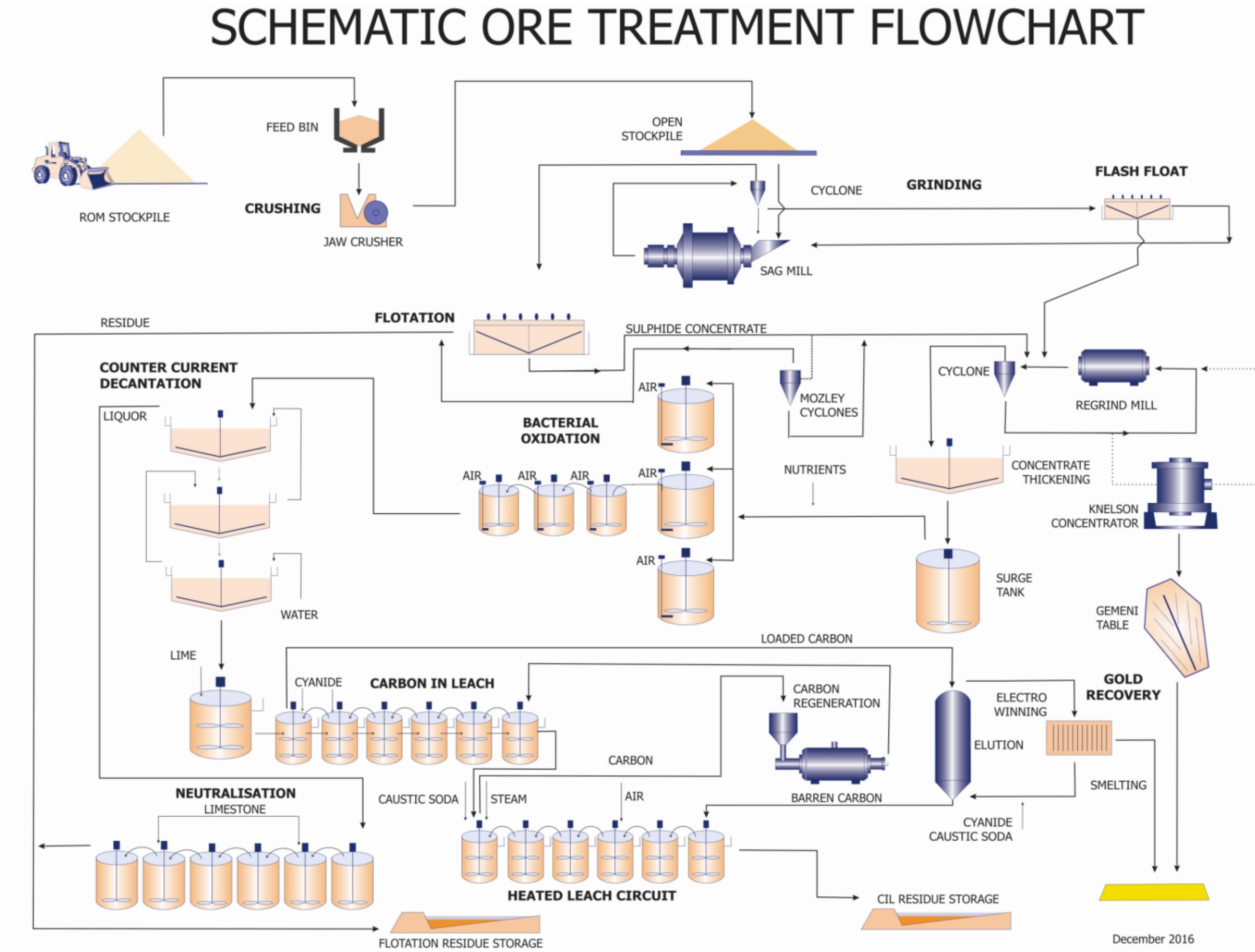


FIGURE 17-1 SCHEMATIC ORE TREATMENT FLOWCHART

Crushing and Milling

The crushing circuit has the capacity to operate 24 hours per day, 7 days/week, at the design availability of 80%.

Run of Mine (ROM) ore is reclaimed from stockpiles on the ROM pad and fed to a bin by front-end loader, blending the ore in the process. Ore is then fed to a 760mm x 1,372mm single toggle jaw crusher by a vibrating grizzly feeder and minus 100mm crushed ore is conveyed to a coarse ore open stockpile with reclaim tunnel providing feed to a SAG mill.

Dust suppression measures are installed at the ROM bin. The crusher discharge and conveyor transfer points both being fitted with dust collectors.

Crushed ore is fed at a controlled rate onto a conveyor feeding 3,500kW SAG mill (~6.1m in diameter x 6.1m). The ore is ground to a P_{80} of 75µm in closed circuit with hydrocyclones to liberate sulfide minerals containing gold from the barren gangue minerals. The milling circuit is designed to operate 24 hours per day with a throughput of up to 120 dry tph.

Flotation

Hydrocyclone overflow from the SAG mill gravitates to the flotation circuit where the gold containing sulfide minerals are concentrated into a flotation concentrate containing about 8 - 10% of the feed mass with a barren flotation residue, which is rejected from the process.

The design basis for the flotation circuit is to maximize gold recovery to a concentrate grading approximately 20% S^2. The flotation circuit consists of a rougher-scavenger cleaner circuit. Rougher concentrate passes directly to final concentrate, while scavenger concentrate passes to the cleaning circuit for upgrading. Cleaner tailing is recycled to the head of the rougher circuit.

The following flotation reagents are added to the hydrocyclone overflow launder and flash flotation feed:

- Copper sulphate – as Activator;
- Potassium amyl xanthate (PAX) – as Collector; and
- Frother.

Reagent selectivity is a key aspect of the flotation circuit management, based not just on performance, but also toxicity and preg-robbing aspects to the downstream Bacterial Oxidation Circuit and the Cyanide leach circuit respectively.

Flotation residue gravitates to a tailings hopper where it is combined with the products from neutralization of the BIOX® liquor and the combined product is pumped to the flotation residue storage facility.

Flotation concentrate is reground to 80% passing 20µm and is thickened in a high-rate thickener prior to feeding the BIOX® circuit.

Gravity Recoverable Gold

With recent changes in the orebody showing increased occurrences of visible gold, a gravity recoverable gold circuit was constructed in Q1 2016 and commissioned in April 2016.

The gravity recoverable gold circuit is installed in the flotation concentrate regrind circuit and continuously processes 100% of the recirculating load. A Knelson concentrator is used as the primary concentrating device, with Knelson concentrate passing to a surge tank. On a day shift basis only, gravity concentrate is removed from the day surge tank and processed over a secondary concentrating Gemini GT1000 table. GT1000 concentrate is then tertiary processed over a GT250 Gemini table. All table tails are passed directly back to the regrind mill recirculating load where they pass back through the Knelson concentrator.

Final shaking table concentrate is calcined in an oven with oven exhaust being wet scrubbed. Calcine concentrate is direct smelted to doré bars.

Oxidation - BIOX®

Due to the different design availabilities between the milling/flotation circuits and BIOX® circuit, and the need for steady operation of the BIOX® circuit, a surge tank with a live capacity of about 48 hours acts as a buffer between the circuits.

The BIOX® bacteria are sensitive to chloride levels in the water, and management of BIOX® feed dilution water quality to <1,000ppm Cl^- is critical for the health of the BIOX® circuit. Likewise, cyanide and thiocyanate species are also toxic materials to the bacteria, hence the Flotation and Neutralization waters, plus CIL decant liquors are managed separately at the Fosterville operations to eliminate any processing risks.

Nutrient solution is dosed to the feed splitter box to maintain the correct levels of nitrogen (N), potassium (K) and phosphorous (P) levels in the BIOX® reactors.

The BIOX® culture is kept active in the reactors by controlling the slurry conditions within specific ranges. The oxidation reactions are exothermic and it is necessary to constantly cool the slurry. The reactors are equipped with cooling coil baffles through which cooling water is circulated to control the slurry temperature at about 43°C in each reactor.

Oxygen requirements for sulfide oxidation are significant and medium pressure air is injected into each of the reactors.

The slurry pH in each of the reactors is controlled between 1.0 and 1.6 by addition of ground limestone. Hence the corrosive nature of the BIOX® slurry and the potential risk for elevated chloride levels resulted in selection of SAF 2205 stainless steel for equipment in the BIOX®, CCD, and neutralization circuits.

The oxidized product discharged from the final secondary BIOX® reactor gravitates to the first of three CCD thickeners.

During bio-oxidation iron, sulfur and arsenic is solubilized and is washed from the solid oxidized gold containing residue in the series of three CCD thickeners. A three-stage CCD circuit with a wash ratio of 4.0 is used to ensure soluble arsenic and acid is reduced to levels acceptable in the oxidized concentrate prior to the CIL process. Process water is used as wash water in the CCD circuit and is added to the feed tank ahead of the third (last) CCD thickener. The underflow from the last CCD thickener (washed product) is pumped to an agitated pH adjustment tank at the head of the CIL circuit.

The acidic solution overflowing the first CCD thickener is pumped to the first of six agitated neutralization tanks in series and the solution flows from tank to tank via launders. By-pass launders allow tanks to be taken off line for cleaning and maintenance. In the neutralization circuit the majority of the sulfuric acid is neutralized and precipitated as calcium sulphate (gypsum) and the soluble arsenic and iron precipitated as stable basic ferric arsenate.

The neutralized effluent gravitates to the flotation residue hopper and is pumped with the flotation residue to the residue storage facility.

Mozley Cyclones

Ahead of the BIOX® surge tank, the Mozley de-sliming cyclones were installed in April 2008. The Mozley cyclones are used when the feed blend to the flotation circuit is more than 0.3% NCC. The rougher and cleaner concentrate from the flotation concentrate is run through the Mozley cyclones.

The cyclone clusters come in two sets of 20 cyclones and have a typical spigot /vortex finder arrangement of 2.2/7.0mm. The cyclones are fed at a pressure of 250Kpa resulting in typical mass split of 60% to the underflow. Typical feed rate of 40-50m^3/hr at 16% solids with 30-40m^3/hr at 5-8% solids reporting to the overflow tailings.

Leaching

Six adsorption tanks are identical in size at 190m^3 with a total circuit residence time of about 48 hours at a 30% pulp density. Test-work indicates that the leaching of the oxidized residue plateaus at 36 to 48 hours. Underflow from the last CCD thickener is pumped to the pH adjustment tank and lime slurry is used to neutralize residual acid and raise the pH of the pulp to 11 prior to cyanide addition.

Carbon concentrations (20-30g/L) are maintained in all tanks to ensure high gold adsorption efficiency and maintain a low solution tail. The last CIL tank can be used as tails retreat feed tank.

Heated leach

CIL discharge is fed to heated leach circuit, which was commissioned in April 2009. The process utilizes heat from steam injection and caustic to facilitate gold release from native carbon.

The heated leach circuit consists of six 75m^3 tanks with a residence time of 8-12 hours. The first three tanks are heated while the last three tanks are cooled to avoid loss of gold in solution. The heated leach process is effective in destroying WAD cyanide to <50ppm and has replaced the former detoxification circuit.

Elution and Gold Electro-winning

The following operations are carried out in the elution and gold room areas:

- Acid washing of carbon;
- Stripping of gold from loaded carbon using a pressure Zadra elution circuit;
- Electro-winning of gold from pregnant solution; and
- Smelting of electro-winning and gravity products.

The elution and gold room areas operate seven days a week, with the loaded carbon recovery on nightshift and the majority of the elution occurring during dayshift. The 3.5t pressure Zadra elution circuit consists of separate rubber lined acid wash and stainless steel elution columns.

Energy, water and major process reagents consumed by the processing plant are all readily available in Australia. FGM do not anticipate there to be any significant increases or decreases to the current consumption rates.

18 PROJECT INFRASTRUCTURE

All project infrastructures are in place servicing mining and processing operations (Figure 18-1).

18.1 SURFACE INFRASTRUCTURE

18.1.1 PLANT

The process plant site was selected close to the western boundary of the Fosterville Mining Licence, as it:

- Offers easy access from the existing public road system;
- Minimizes haulage distances from mining operations, particularly, the underground portal location; and
- Minimizes the potential for noise impact on nearby residential areas to the east and south by allowing waste dumps and noise abatement bunds to be constructed to the east of the plant site.

The process plant has a nominal capacity of 830,000tpa and incorporates the following unit process operations (Figure 18-2):

- Single stage crushing with a primary jaw crusher;
- Open stockpile with reclaim tunnel;
- Semi-autogenous grinding (SAG) mill;
- Flotation circuit to produce a gold bearing sulfide mineral concentrate and a discardable barren residue;
- Flotation concentrate regrind mill to produce a 20µm product
- A gravity gold recovery circuit consisting of a Knelson concentrator and two Gemini tables;
- A bank of de-sliming hydrocyclones for removing native carbon from flotation concentrate;
- Bio-oxidation circuit consisting of BIOX® reactors to oxidize the flotation concentrate, releasing gold from the sulfide mineral matrix;
- A three stage CCD circuit to separate the gold bearing oxidized solid residue from solubilized acid oxidation products;
- A liquor neutralization circuit to neutralize acid and precipitate arsenic as stable basic ferric arsenate and sulphate as calcium sulphate (gypsum) using both ground limestone and lime slurries;
- A limestone grinding facility comprising a single wet ball mill operated in closed circuit with hydrocyclones to produce ground limestone slurry for neutralization;
- Carbon-in-leach (CIL) circuit, with a pH adjustment tank at the head of the circuit, to leach gold from oxidized material and load the cyanide soluble gold onto activated carbon;
- A heated leach circuit consisting of 6 x 75m^3 tanks to recover ‘preg-robbed’ gold from native carbon; and
- Pressure Zadra elution circuit to remove gold from carbon, followed by recovery by electro-winning and smelting to doré.

The plant is laid out on either side of a central rack in order to facilitate the distribution of reagents, services and inter-area piping. Individual plant areas are separately bunded to isolate and contain spillage. Storm water and abnormal spillage events report to an existing drainage channel, to the west of the plant area, which discharges to an existing containment dam to the north.

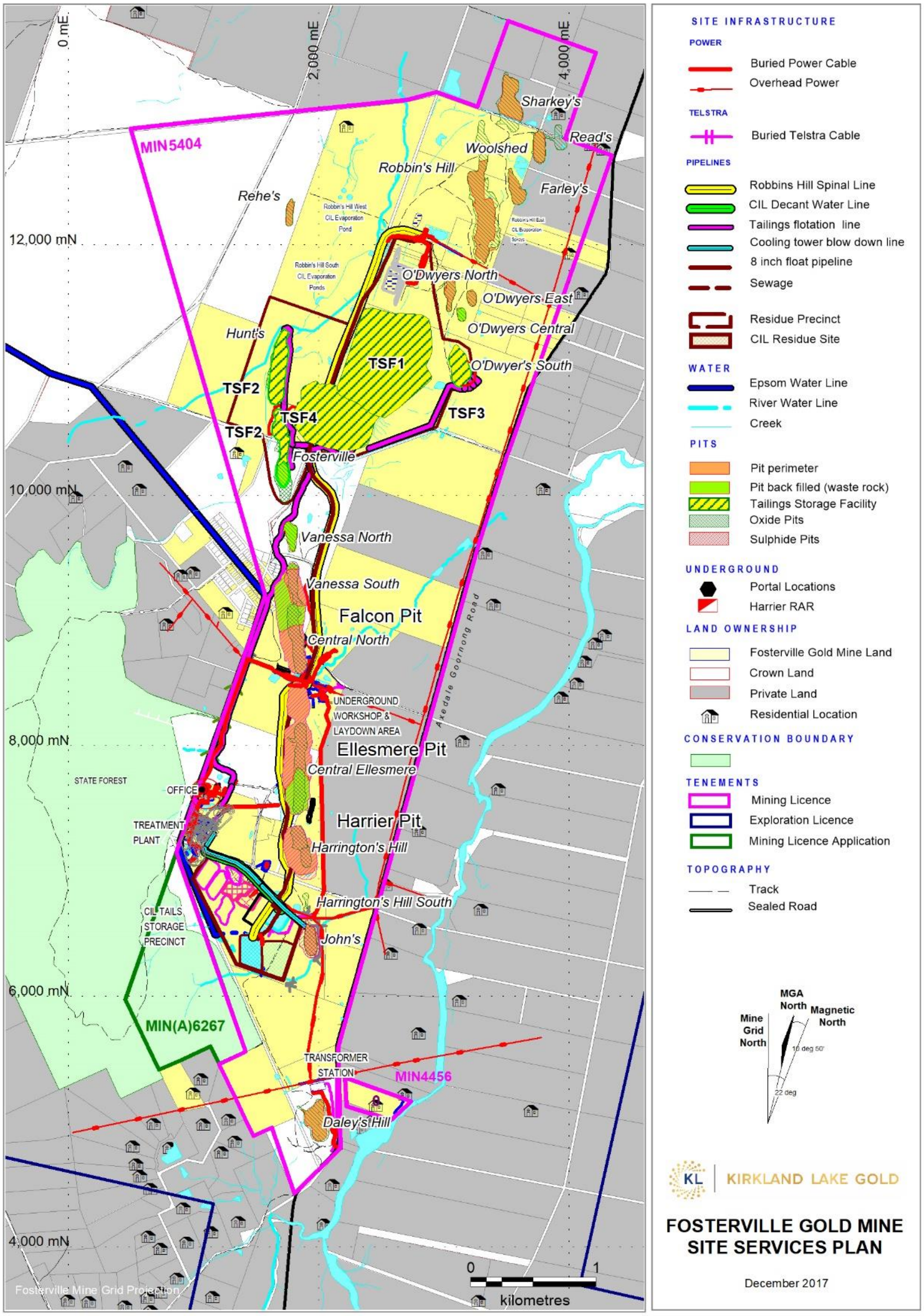


FIGURE 18-1 FOSTERVILLE GOLD MINE SITE SERVICES PLAN

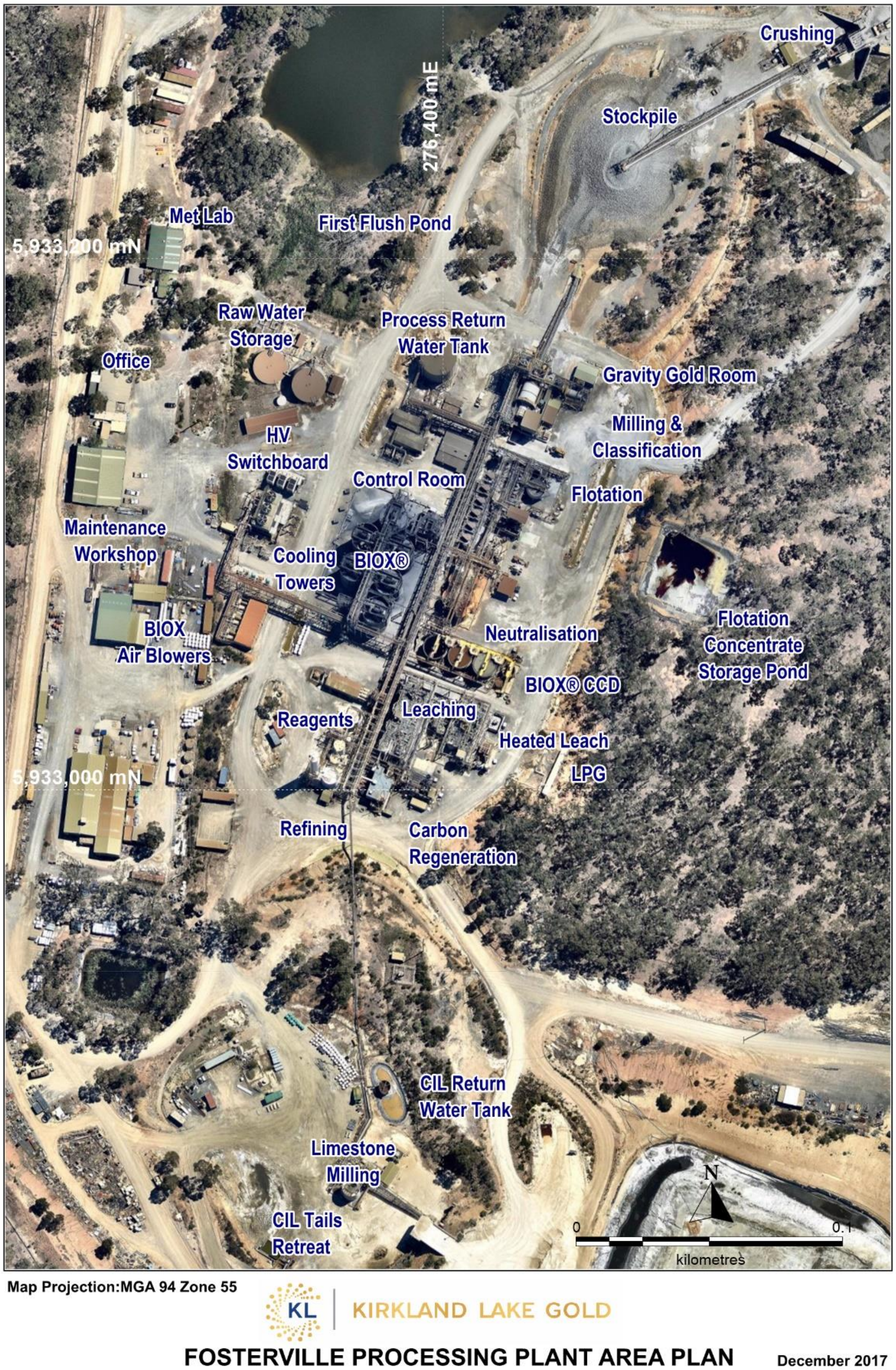


FIGURE 18-2 FOSTERVILLE PROCESSING PLANT AREA PLAN

18.1.2 Buildings

The site buildings comprise of administration, processing and mining office complexes, toilet/shower/change room facilities, store/warehouse, light vehicle and heavy vehicle workshops, a surface maintenance workshop and core shed facility.

The site is serviced by security infrastructure, phone and internet services.

18.1.3 Power

Site power is supplied by the Fosterville Terminal Station (FVTS), which is a zone substation on the 220kV power line from Bendigo to Shepparton (BETS-SHTS). The terminal station is owned by Fosterville, operated by SP Ausnet and maintained by Powercor.

The terminal station has a single 15/20MVA ONAN/ONAF 220/11kV transformer.

An overhead 11kV power line runs from the FVTS to the processing plant. The power line is 2,800m long at consists of 19 poles.

At pole 9 there is an 11kV switch room, which supplies the U/G operation.

The processing plant has five 11kV/ 415V transformers and low voltage MCC's to supply and control the processing plant.

There is also an 11kV 3,500kW SAG Mill motor and three 11kV 750kW motors for the BIOX® Blowers.

The processing plant also has a Power Factor Correction unit.

Power consumption in the processing plant is approximately 7,000kW at a power factor of 0.98.

There are also a couple of 22kV supplies into site, which supply remote areas for site water management as well as the main administration offices.

The site also has a 2.5km long 11kV cable from the U/G settling dams to the in pit Tails MCC, which has a 750kVA 11kv/415V transformer.

18.1.4 Tailings

There are two separate residue streams at Fosterville, a flotation/neutralization residue (Figure 18-3) and a cyanide bearing residue (Figure 18-4):

- The flotation / neutralization residue is a combination of flotation tails (95%) which is ground ore and neutralized liquor containing precipitated solids (5%) from the oxidation process. These tailings are either stored within an above ground paddock style Residue storage facility, or within an In-Pit facility.

Fosterville operates Victoria's first In-Pit facilities, whereby through extensive hydro-geological modeling, abandoned oxide ore pits where identified as preferred storage options. In-Pit facilities offer significantly lower capital and operating costs compared to above ground facilities, and also contribute to the overall rehabilitation of the mine site. Water from these facilities is reused back through the milling, flotation and bacterial oxidation processes. The starter embankment for TSF#4 was constructed in 2015 and has the capacity to hold two years' worth of flotation/neutralization tailings. Fosterville currently has at least four years of permitted (regulator approved) storage capacity. Therefore, Fosterville has a permitted flotation/neutralization storage plan until 2021. Planning of future flotation / neutralization storage is underway to provide adequate storage for LOM; and

- Cyanide bearing leach residue: The leaching circuit uses cyanide to extract the gold and subsequently the liquor possesses traces of cyanide species. As a consequence, the leach residue is deliberately stored separately to that of the flotation residue in a HDPE or clay lined storage facility and only utilized back within the leaching circuits. Tailings is excavated annually from one of the CIL TSF's and placed onto one of the CIL hardstands. Fosterville has at least two years of storage capacity available on existing CIL Hardstands. In 2017, Fosterville will seek regulatory approval for further CIL Hardstand upgrades.

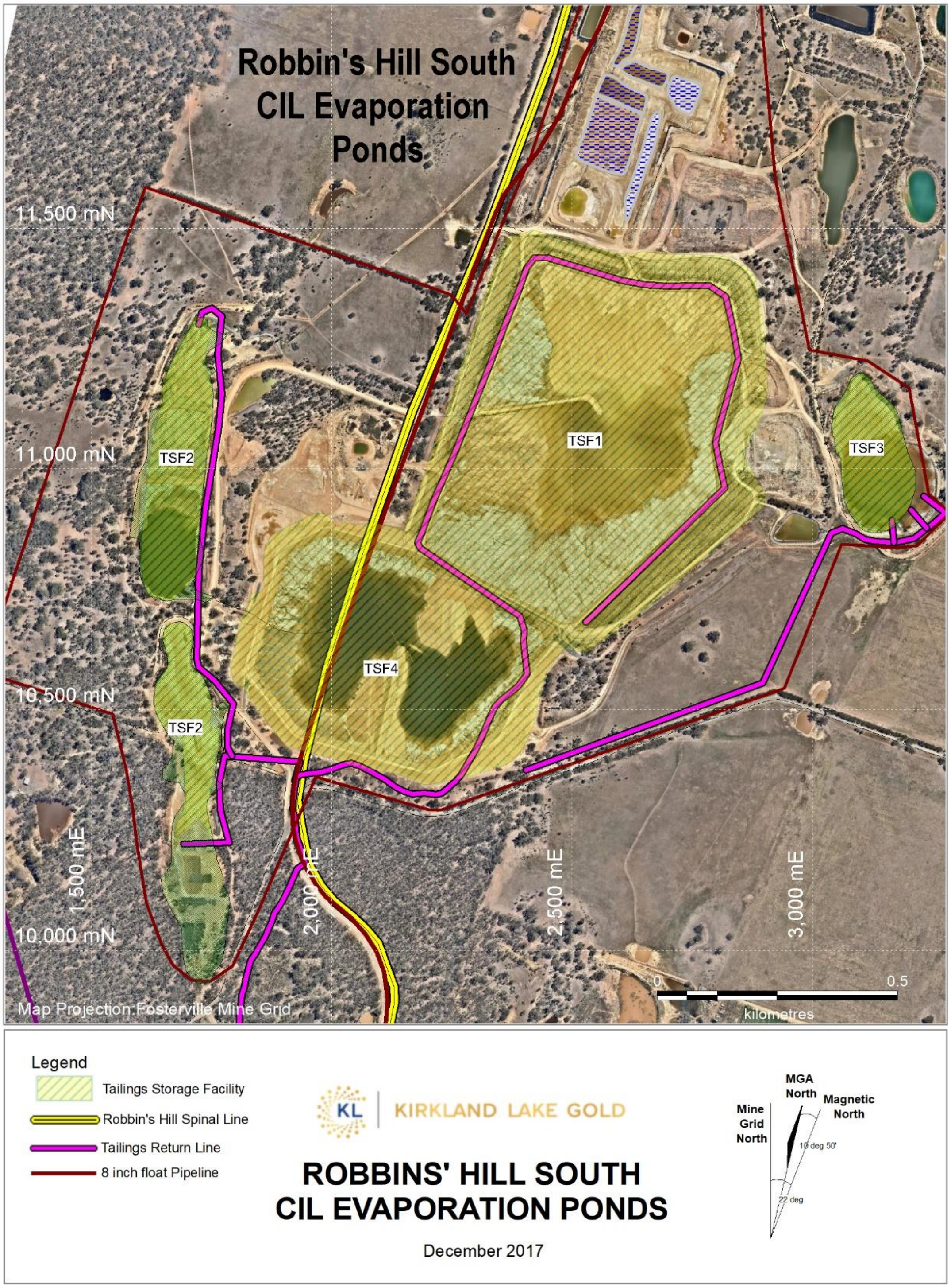


FIGURE 18-3 FOSTERVILLE FLOTATION AND NEUTRALIZATION RESIDUE STORAGE AREA PLAN

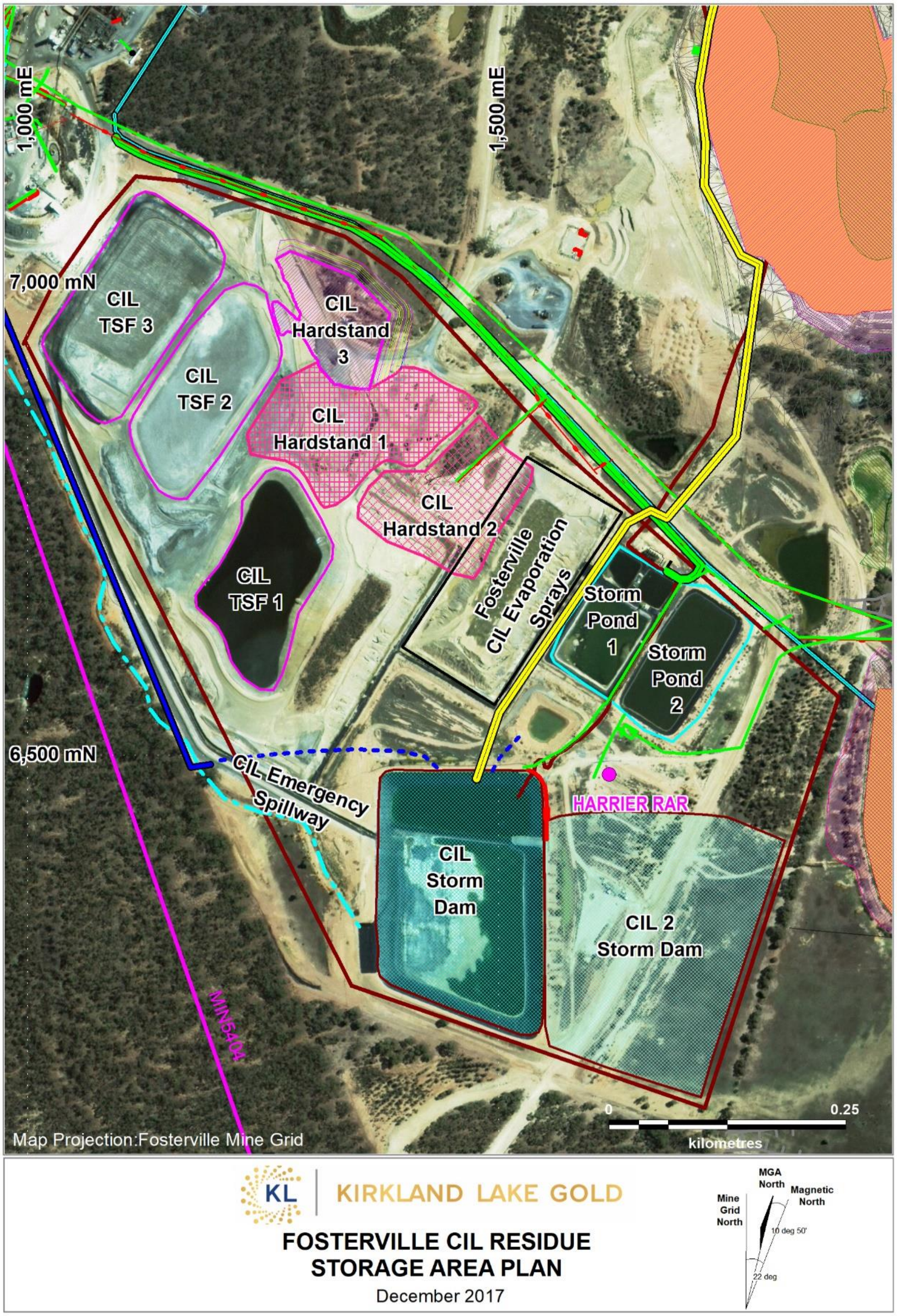


FIGURE 18-4 FOSTERVILLE CIL RESIDUE STORAGE AREA PLAN

18.2 UNDERGROUND INFRASTRUCTURE

18.2.1 POWER

Power for the underground operations is drawn from Pole 9 11kV Switch Room that connects to the Fosterville Terminal Station (FVTS) Transformer located adjacent to Daley's Hill.

Three 11,000 volt feeds each enter the underground workings at:

- Harrier at the 4775m RL Sub Station, via the Harrier vent shaft;
- Phoenix at the 5031m RL Sub Station, via a service hole; and
- Ellesmere at the 4968m RL Sub Station, via a service hole.

From these locations low voltage (1000 volt) is reticulated to the working areas via cable and distribution boxes. Further 11,000 volt sub-stations are cascaded from the above named primary points as mine working load requires.

Existing and planned future underground power reticulation (we are currently operationally limited by power) has been sized to meet the designed LOM requirements.

18.2.2 WATER

Dewatering of the Fosterville underground workings is conducted utilizing two pumping stations.

Each of these stations comprises of three by WT088 helical rotor pumps that are fed from purpose constructed feed dams.

The Phoenix/Central Area is serviced by a station situated at the 4830m RL; this station pumps directly to the surface via a steel rising main line that is run through service holes and mine workings and discharges into the Falcon Pit caving area for final settlement of mine solids so that the water can then be utilized within the mine water reticulation system.

The Harrier Area is serviced by a station situated at the 4775m RL; this station pumps directly to the surface via steel rising main that is run through service holes, mine workings and the Harrier vent shaft and discharges to the Harrier pit.

Mine water is managed through sumps that are, where possible, connected by drain holes, otherwise pumps are used to move water to collection points where it enters staged pumps that transport water from the working areas of the mine to the pump station feed dams. Pumps used for the staged transfer of water are of the helical rotor type, predominantly WT103 type.

Underground mine process water is recycled from the mine water and is reticulated to the underground working areas from a tank farm on the surface.

18.2.3 VENTILATION

Primary ventilation of the Fosterville underground workings is achieved utilizing three return air systems; fresh air is drawn into the mine workings via the Falcon and Ellesmere portals and a total of 330m^3/s is delivered to the underground workings.

- Central/Phoenix
  - Uses a shared system that exhausts through the Harrier ventilation shaft.
    - 1 x Howden 1500/2400 axial fan situated within the Harrier workings draws air through a series of rises and horizontal development that at present terminate at the Phoenix 4085m RL.
- Phoenix
  - 1 x FlaktWoods TR-1400-GV-4P fan situated underground at the Phoenix 5071m RL draws air through a series of rises and horizontal development to maintain flow through the underground magazines. Exhaust is via a rise to the Falcon pit.
- Harrier
  - Up to 4 x FlaktWoods TR-1400-GV-4P fans are situated underground and draw air through a series of rises and horizontal development that at present terminate at the 4350m RL. Exhaust to the surface is via the Harrier ventilation shaft.

Secondary ventilation is provided to the mine working areas utilizing electric fans and flexible ducting. Fans are sized according to air-flow requirements and range in size from 22-180 kW.

18.2.4 DUMPS

Waste material that cannot be placed underground is brought to the surface and dumped within the confines of the Ellesmere pit. As the available volume for waste material within the Ellesmere pit moves towards exhaustion, waste material placement processes will be modified to exploit void available within alternative pit envelopes.

19 MARKET STUDIES AND CONTRACTS

19.1 MARKETS

Fosterville produces gold doré bars at mine site, which during the period January1 to June 30, 2017 were transported to the ABC Refinery in Marrickville, NSW, Australia and refined to produce gold bullion. The gold bullion is sold over the counter through either ABC Refinery directly, or third party international brokers.

Gold is the principal commodity at Fosterville and is freely traded, at prices that are widely known, so that prospects of any production are virtually assured. Prices are usually quoted in US dollars per ounce.

To determine the Australian denominated gold price to use in the Mineral Resource and Mineral Reserve calculations, reference was made to publicly available price forecasts by industry analysts for both the gold price in US dollar terms and the A$/US$ foreign exchange rate.

This exercise was completed in December 2017, and yielded the following average gold forecast prices and corresponding average forecast A$/US$ FX rates.

For Mineral Reserve purposes, a US$1,280 per ounce gold price was used and an FX rate of $0.80 for an approximate Australian dollar gold price of A$1,600 per ounce.

19.2 CONTRACTS

Fosterville is subject to a licence fee following a Licence agreement entered into with Biomin South Africa Pty Limited (Biomin) (formally known as Minsaco) in 2003. Biomin has a Licence from the proprietor to implement a process known as the BIOX® process in Australia whereby micro-organisms are used in the oxidation of certain gold bearing sulfidic minerals in order to facilitate gold recovery. Fosterville agreed to pay a licence fee to Biomin calculated as an amount determined by multiplying the number of ounces of gold produced from FGM treated through the BIOX® Plant by A$1.33. The licence fee was payable from the date of commencement of operations and shall terminate when 1,500koz of gold in the aggregate has been produced from FGM treated at the BIOX® plant. Licence costs are integrated into the operating expenditure cost structure.

When Crocodile Gold acquired the Fosterville and Stawell Gold Mines from AuRico in 2012, a net free cash flow sharing arrangement was established where Crocodile Gold was entitled to cumulative net free cash flow from those mines of up to C$60M. AuRico would then be entitled to 100% of the next C$30M in net free cash flow, after which Crocodile Gold and AuRico would share the next C$30M of net free cash flow on a 50/50 basis until C$120M of cumulative net free cash flow was achieved, following which AuRico would be entitled to 20% on an ongoing basis.

On December 22, 2014 it was announced that Crocodile Gold had reached a mutually beneficial agreement with AuRico that terminated their net free cash flow sharing arrangement in exchange for a one-time payment of $C20M in cash and a net smelter return royalty of 2% from Fosterville (effective upon final approval from the Foreign Investment Review Board of Australia) and a 1% royalty from the Stawell Gold Mines (commencing January 1, 2016), releasing Crocodile Gold from its obligation to pay AuRico any further net free cash flow generated from its Victorian operations.

This agreement means that Kirkland Lake Gold is obligated to pay AuRico a net smelter royalty of 2%. However, Alamos Gold Inc. (Alamos) merged with AuRico Gold in July 2015, which has resulted in Kirkland Lake Gold now being obliged to pay the new company, AuRico Metals, the net smelter royalty of 2% from Fosterville Gold Mine.

On January 8th, 2018 Centerra Gold completed the acquisition of AuRico Metals. In terms of the Royalty payment details, nothing has changed as AuRico Metals Australian Royalty Corporation continues to exist as a subsidiary to the group.

Fosterville is an owner/operator business with mining, processing, technical and administration functions undertaken by personnel employed by Kirkland Lake Gold. Supplementary support to the operation is sourced through various service contracts. The most significant service contracts include:

- E.B. Mawson & Sons Pty Ltd – providing services and supply of concrete products;
- Downer EDI Mining Pty Ltd – providing underground drilling services;
- Hoare Bros. Pty Ltd – providing surface haulage services; and
- Swick Mining Services (SMS) Operations Pty Ltd – providing underground diamond drilling
- Deepcore Australia Pty Ltd – providing surface diamond drilling services.

The terms and rates of these contracts are within industry norms. The Authors are not aware of any other agreements that are not within normal market parameters.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 ENVIRONMENTAL STUDIES AND RELATED ISSUES

Environmental studies conducted at FGM related to environmental issues are outlined below:

Paste Plant

Paste Fill is the use of mine tailings or imported aggregate material to backfill excavated zones created by underground mining operations. The backfill material is prepared on the surface in a dedicated Paste Plant facility. Thickened mine tailings are mixed with a binder, usually cement, and then pumped underground via bores to fill voids and help support the underground workings.

The current practice at Fosterville is to utilize cemented rock fill (‘CRF’) to fill these mine voids. Cemented Rock Fill differs from Paste Fill through the use of waste rock mixed with a cement slurry delivered by concrete agitator trucks from a surface batch plant. This material is prepared in dedicated mix bays underground, and tipped directly into the stope.

In preliminary feasibility studies (Outotec, 2017) Fosterville Gold Mine identified Paste Fill technology as the preferred option to environmentally and efficiently improve underground stope stability and mining practices. The identification of the project need centers on the mine sites continuous improvement practices.

In summary:

- Paste Fill allows better confinement than the CRF;
- Improved safety is experienced through tighter and more rapid filling of voids;
- CRF is not suitable for flatter ore bodies, such as Lower Phoenix, and may present a barrier to future mining of similar orebody structures at Fosterville.
- Paste Fill also minimizes the foot print of surface tailings facilities, and is considered a leading best practice within the mining industry.

A paste plant is currently going through the design and approval stage with construction planned for late 2018.

Water Treatment Plant

Fosterville Gold Mine produces an excess of mine water from the dewatering of underground operations. Regulatory approval has been gained to treat excess mine water using a Reverse Osmosis (RO) plant, which is scheduled for construction in mid-2018. RO technology is a common solution for water treatment, readily available and understood. A by-product of the process is the generation of a concentrated saline solution called brine. The brine produced will be stored in a new evaporation pond, which will be able to withstand seasonal rainfalls without discharge.

Treated mine water will be used within the process circuit, reducing the amount of recycled water which is delivered by pipeline from the Epsom Wastewater Treatment plant. This will also assist in reducing the volume of water pumped into mine water storage, therefore improving the water management on site.

Managed Aquifer Injection

Managed Aquifer Injection (MAI) is a potential mine water storage strategy currently under investigation at Fosterville. MAI involves the intentional injection of water into a host aquifer for storage and/or potential reuse for environmental and agricultural benefits. Water is treated prior to injection so that the water chemistry meets the same specifications as the host aquifer. A pilot mine water treatment plant was successfully established at Fosterville to investigate the effectiveness of the treatment process. Investigations into the water treatment process are continuing in order to demonstrate the robustness of the selected processes, hence ensuring groundwater will not be adversely impacted.

An injection trial was carried out in January 2017 whereby water of an approved quality was physically injected into the aquifer and evidence of that water chemistry was monitored at a series of groundwater monitoring bores. The trial also improved the understanding of how the water moves through the aquifer.

Fosterville propose that a longer term injection trial will be forecast in the future. The objective of this trial will be to validate the theoretical groundwater movements over a longer duration and compare against actual field data.

Further correspondence with the regulators prior to undertaking any further trials will be undertaken. If the trial is successful, it is envisioned a formal work plan variation will be submitted for approval.

Environmental Noise Assessments and Mitigation

FGM's operations generate noise from a variety of sources that may impact off site receptors. Activities include vehicle movements, processing operations, ancillary infrastructure, surface and underground blasting and exploration activities. Noise levels at sensitive receptors vary depending on the location and elevation of the noise source, intervening topography, climatic conditions, background noise levels and engineered noise attenuation barriers present.

During the second half of 2017 the following noise related projects have been investigated or implemented:

- A consultant (AECOM) was engaged to set up a continuous noise monitor to better determine what the main noise contributors are from site.
- An acoustic enclosure for BIOX Agitator 3 was installed at the Processing Plant, which included an underfloor to minimize leakage of noise under the agitator motor. The design and specifications for the enclosure have been prepared by noise control specialists, Flexshield.
- Monitoring indicated that the ore stockpile fan was operating at an elevated noise level. A silencer for these fans has therefore been ordered and installation is scheduled for early 2018.
- Surface drilling contractor Deepcore Drilling improved a noise attenuation shed used for drill rigs, by installing a shield to deflect noise upwards from the air circulation fans. Three noise attenuation sheds are in operation to mitigate noise from surface drilling operations.

- AECOM conducted environmental noise assessments for the proposed paste plant and underground mining ventilation system. This included design specifications and control strategies to mitigate noise.

Storm Water Management

During 2017, FGM implemented the recommendations by consultants Advisian to improve the ability of storm water dams to contain mine affected runoff from a 1:100-year rainfall event. This included excavation and enlargement of the existing Stand-pipe dam, improved pumping capacity to remove water from the dam, and diversion of upstream catchment. An operational management plan for storm water management in this catchment has been implemented.

Biosolids Trial

In collaboration with Coliban Water, FGM is planning to conduct an extended Biosolids fertilizer trial upon regulatory approval. Biosolids is a solid product from sewage treatment processes which have been treated in a way to make them safe for further use. The Biosolids fertilizer has previously been incorporated into a number of soil plots and planted with native species. The extended trial will be over a larger area with salt tolerant pasture species and saltbush.

Monitoring of the plots will be undertaken by consultants RMCG. Monitoring in the original plots indicated certain plant species had good growth rates when Biosolids was mixed with waste rock.

Dust Control

During 2016, AECOM consultants were commissioned to model the dust dispersion patterns from mining activities and provide recommendations on the appropriate siting of existing dust monitoring equipment. As per the recommendations of the report, FGM modified the depositional dust monitoring locations and in 2017 installed an additional High Volume Air Sampler to the south of the mine site.

In addition to the use of water carts for dust suppression, a chemical dust control agent was applied to approximately 13ha of the Fosterville CIL tailings precinct during December 2016 and January 2017. The binding agent provided a semi-permanent and rain resistant crust to mitigate dust generation. This area will be re-applied with chemical dust suppressant in early 2018.

Ventilation Upgrade

A work plan variation to upgrade the mine ventilation system is presently being assessed by the regulator. The upgrade is to provide fresh air to underground workings and maintain a safe working environment. As part of the upgrade, a new ventilation shaft will report to the surface. As per environmental consultant advice, noise controls are being considered in the design phase and environmental offsets for vegetation clearance will be obtained.

20.2 WASTE AND TAILINGS DISPOSAL, SITE MONITORING AND WATER MANAGEMENT

20.2.1 REQUIREMENTS

Requirements for residue storage sites are provided in the following documents:

- Section 4.5 of the 2004 Work Plan;
- Work Plan Variation, Additional Portal Access Points (three in total), additional CIL storage facilities (including on the Fosterville Heap Leach Pad) and the construction of a reload facility (February 22, 2005);
- Work Plan Variation, CIL Tails Storage and Decant Water Management (July 1, 2008);
- Work Plan Variation CIL Residue Hardstand Area (October 23, 2009);
- Work Plan Variation, In-Pit Residue Disposal Facility (November 2009);
- Work Plan Variation, CIL Residue Hardstand #2 Area (March 2012);
- Work Plan Variation, In-Pit Residue Disposal Facility – TSF3 O'Dwyer's South Pit (November 2012);
- Work Plan Variation, Raising of existing embankment of TSF1 (December 2013); and
- Work Plan Variation, Additional Residue Storage Facility - TSF4 (September 2014).

Flotation and Neutralization Tails

Flotation and neutralization tails have been stored in the following facilities:

- TSF1;
- Hunts and Fosterville In-Pit Facilities;
- O'Dwyer's South In-Pit Facility; and
- TSF4

During 2017 FGM has been depositing flotation and neutralization tails into TSF1, Hunts in-pit facility, O'Dwyer's South In-pit facility and TSF4.

The Fosterville In-Pit Facility has been filled and capped. Capping performance is being monitored by the amount of rainfall infiltration through the cap, and is measured by two lysimeters installed within the cover profile.

CIL Tailings

All CIL tailings have been stored in plastic lined facilities within and adjacent to the old Fosterville Heap leach pads. A Work Plan Variation submitted in the fourth quarter 2017 is to gain approval to enlarge the facility. An environmental offset will be obtained for vegetation clearance associated with the application.

Overburden Waste

The deposition/distribution of overburden waste throughout the Fosterville site is outlined in Table 20-1.

TABLE 20-1 OVERBURDEN USE AT FOSTERVILLE GOLD MINE

Overburden Source	Use
Falcon Pit	Construction of TSF1 (internal rock armouring of walls) Construction of the ROM pad Construction of haul roads Backfill into Vanessa's North Pit and at the southern end of Fosterville Pit (the remainder is flotation tailings) Construction of McCormick's Waste Dump (majority)
Ellesmere Pit	Sound bunds on the eastern side of Ellesmere (possibly Harrier sound bund as well) McCormick's Waste Dump Falcon Backfill
Johns Pit	Backfilling Harrington Hill South Open Pit[1] Backfilling into Harrier Open Pit (western side) Use for repairing the CIL Storm Dam wall Abandonment bund walls for Johns Pit South end of Ellesmere
O'Dwyer's South Open Pit	To be used as backfill into the northern end of the Pit To be placed into the existing O'Dwyer's South Waste Dump
Harrier	Backfilling into Ellesmere Pit south to north Construction of internal ramps in Harrier Pit Sound walls to the east of Harrier Pit To be used for rock fill for CIL #3
Hunts	TSF1[2] main embankment TSF4 embankments Fosterville In Pit Tailings capping material Building Hunts Pit Waste Dump
Fosterville	Hunts Waste Dump
Underground	Backfilled into underground workings Used as base in the Ellesmere Saddle

Notes:

1. Sediment from Fosterville Storm Dam was also transferred into Harrington Hill South Pit.
2. TSF1 was also constructed using heap leach material from Robbin's Hill.

Potentially Acid Forming Materials

Potentially acid forming (PAF) materials excavated from open pits have been stored in:

- McCormick's Waste Dump;
- Johns Pit (taken from Johns Pit and Harrier Pit); and
- Flotation and Neutralization Tailings.

A Waste Rock management plan was developed in 2014, which indicated that waste rock was overall non-acid-forming and contained a significant inherent Acid Neutralizing Capacity that was available to offset any isolated acid formation. Kinetic column leach testing of the main waste rock lithologies is continuing to further understand the long term leaching characteristics of the main overburden lithologies. Additional ongoing characterization has begun, with weekly waste rock samples being collected from the Ellesmere tip head for testing of chemical composition and acid-forming potential.

20.2.2 SITE MONITORING AND WATER MANAGEMENT

Water Management

The Fosterville annual water monitoring plan is designed to monitor the impacts of mining activities on surface and groundwater quality and quantity in the regional and local aquifer systems. Water samples are collected on monthly, quarterly or an annual basis in accordance with the Consolidated Work Plan (2017) and the annual water monitoring schedule which is reviewed each year.

Groundwater levels in the monitoring bores are also recorded each month.

Noise Monitoring

Noise monitoring is undertaken in accordance with the Consolidated Work Plan (2017) and includes periodic day, evening and night measurements at nine representative locations surrounding the mine. Noise results are assessed against EPA criteria and any mine related exceedances are reported to the Regulators.

Air Quality

Dust deposition rates were monitored on a monthly basis at 11 sensitive receptors around the mine. The quantity of material deposited was analyzed for total insoluble material (g/m2), which comprises non-combustible material (ash) and combustible material. Ash content provides an indication of the mineral content of a sample. The mineral content may be attributable to mining, but may also be attributable to other sources such as agriculture, unsealed roads etc. The combustible material will not be attributable to mining as this is mostly organic matter.

An additional High Volume Air Sampler (HVAS) installed at the south of the site measures the particulate loading in the air less than 10 and 2.5 microns (mg/m3). This is per the recommendations of consultants AECOM and provides a 'background' sample (depending on wind direction) compared to the first sampler.

Greenhouse gases and other emissions are evaluated and reported under the National Greenhouse and Energy Reporting and National Pollutant Inventory regulatory programs on an annual basis.

CIL and Mine Water Evaporation Spray Monitoring Programs

Evaporation sprays have been setup in the Robbins Hill, Falcon Pit, and Fosterville precincts to reduce excess mine affected water that cannot be re-used in the Processing Plant. Environmental monitoring is conducted in the Robbin's Hill and Fosterville CIL evaporation facilities as per the CIL Management plan. Monitoring is conducted at the Falcon Pit mine water evaporation facility in accordance with the approved Work Plan Variation. Vegetation assessments, soil and spray drift monitoring is carried out to determine if the operation of the sprays is having any impact on the environment.

Rehabilitation Monitoring

As part of the Rehabilitation Management Plan, Fosterville undertakes progressive rehabilitation of areas affected by the operations, taking into consideration the future land use. Progressive rehabilitation includes stabilization earthworks, drainage enhancement and control works, establishing vegetation, weed and pest animal control and continual monitoring. Bi-annual monitoring of the revegetation works associated with the McCormick's Waste Dump site and the O'Dwyer's South Pit remnant patch is conducted by an independent consultant. Landscape Function Analysis monitoring is undertaken by the FGM Environment Department and uses visible indicators of plants, litter and soil surface condition to gauge how effectively a landscape is infiltrating water, cycling nutrients and keeping the soil stable, healthy and productive.

Vibration Monitoring

Blast monitoring was undertaken at 2 sensitive receptors outside the boundary of the Fosterville Mining Licence with permanently installed blast monitors. All of the blasts that were monitored during 2017 were within the Mining Licence limits. Continuous blast monitors with real time external monitoring and reporting capability are being investigated.

20.3 PROJECT PERMITTING REQUIREMENTS

Fosterville currently operates under a Mining Lease and Mining Licence dated 2003. A Work Plan was approved for the project in February 2, 2004. There have been a number of Work Plan Variations that have been prepared for the project which form addendums to the 2004 Work Plan.

An amendment to the MRSD Act in 2015 introduced the requirement for holders of a mining licence to lodge a risk based work plan prior to any further work plan variation approvals. FGM lodged a consolidated risk based work plan in April 2017 and approval was obtained in October 2017.

A mining lease application MIN006267, which is adjacent to the south-western border of MIN5404, was submitted for approval in 2016. The application is currently under review by the Dja Dja Wurrung Clans Corporation for Native Title Settlement.

There are a number of requirements relating to rehabilitation and closure both in the Mining Licence conditions and the Consolidated Work Plan (2017) Plan. All rehabilitation and closure requirements have been incorporated into the site Rehabilitation Management Plan.

20.4 SOCIAL OR COMMUNITY RELATED REQUIREMENTS AND PLANS

Community engagement and consultation on all aspects of the operation continues as an integral part of the FGM business model. There are a range of forums and consultation undertaken including quarterly Environmental Review Committee Meetings, an annual Open Day, newsletters, information updates and an active Facebook Page. A range of project or activity-specific meetings are also held where future activities and plans are communicated. The feedback from these sessions is utilized in planning any future projects. Fosterville Gold Mine also has a Community Engagement Plan and prepares an annual Sustainability Report that is made available to all members of the community. As required under the amendments to the MRSD Act in 2015 a Public Report on sustainability was uploaded to the Kirkland Lake Gold website in June 2017.

In May 2017 two open town hall meetings were held in the towns of Axedale and Goornong, both 10kms north and south of the operation, to provide the community information on all types of exploration programs that may occur within the FGM exploration leases.

20.5 MINE CLOSURE (REMEDIATION AND RECLAMATION) REQUIREMENTS AND COSTS

The Rehabilitation Bond Liability was assessed in November 2017 by the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) and is proposed to be increased from $7,835,000 to $8,274,000. Consultation with the community by the regulator was being conducted in December 2017 prior to final formal acceptance of the review.

All closure requirements are included in the FGM Rehabilitation Management Plan.

Key operational domains for reclamation works include:

- Northern Site Facilities;
- Southern Site Facilities;
- Sulfide Infrastructure;
- Sulfide Open Pits;
- Adits and Shafts;
- Main Overburden Heap;
- Tailings Storage Facility;
- CIL Dams;
- Heap Leach Pads; and
- Oxide Open Pits.

After an investigation into the potential realization estimates of the FGM assets, including the processing plant, ancillary equipment, non-fixed assets and the mining mobile fleet, the Company considers the current processing plant as a valuable asset that will be able to be successfully sold as an entire operation unit and removed down to the foundations on a cash positive basis. The demolition of the plant is therefore an integral cost within the Rehabilitation Bond Liability at this time.

In addition to disposal of the plant, key closure activities for FGM include:

- Decommissioning and rehabilitation of the heap leach facilities, associated dams and infrastructure;
- Decommissioning and rehabilitation of the tailings facilities (including TSF1 and the in-pit storages);
- Decommissioning and rehabilitation of the CIL tails facilities and associated dams;
- Rehabilitation of old open pits; and
- Revegetation of all remaining disturbed areas.

21 CAPITAL AND OPERATING COSTS

21.1 CAPITAL AND OPERATING ESTIMATES

The capital and operating costs for the FGM are presented below in TABLE 21-1.

The basis of the below estimates is on operating history and known increases in cost for 2018.

Operating Costs

- All 2018 costs as per budget.
- Operating costs for 2018 include A$84/t for mining and A$53/t for processing.
- Production for 2018 estimated between 260,000 and 300,000 ozs as per budget.

Capital Costs

- All 2018 costs as per budget.
- Underground Development Capital has been maintained to reflect the intention to maintain three main declines/production fronts (Lower Phoenix South, Harrier South and Lower Phoenix North). Major Project Capital peaks in 2018 with the majority of works completed for the Ventilation Upgrade, Mine Water Treatment Plant and Paste Fill Plant.

TABLE 21-1 2018 CAPITAL AND OPERATING COST ESTIMATES

Fosterville Gold Mine Current LOM Reserves + Resource Conversion	FY-18
Operating Costs	
Underground Mining (includes geo & mine maint.)	$48,895,491
Processing (includes refining, transp. & mill maint.)	$30,810,155
Administration	$12,804,325
Total Operating (ex-Royalty)	$92,509,972
Capital	
Property, Plant and Equipment	$37,242,425
Underground Development	$56,527,809
Resource Definition Drilling	$1,325,517
Major Projects	$42,832,923
Total Capital	$137,928,673

22 ECONOMIC ANALYSIS

As per Item 22: Economic Analysis, Instruction 1, item 22 has been excluded on the basis that the property is currently in production.

23 ADJACENT PROPERTIES

As shown in Figure 4-2, the Fosterville Mining Licence (MIN5404) is completely enveloped by Exploration Licences held by Kirkland Lake Gold (through Fosterville Gold Mine Pty Ltd). Within FGM held ELs sulfide-hosted gold mineralization has been identified in the Goornong area (5km to the north of MIN5404) and the Hallanan's area (2km to the south), as discussed in Van Riel (1999). However, the exploration of these prospects is only at an early stage and not relevant to discuss further in relation to this Technical Report.

No other sulfide hosted gold operations are in production in the Fosterville district. However, sulfide hosted gold mineralization does occur in the Lockington area (Boucher et al, 2008b; Arne et al, 2009), 50km north of Fosterville where eight mineralized trends have been mapped beneath thick cover using aircore drilling. This information is not able to be verified by a Qualified Person (QP) and is not indicative of the mineralization that is the subject of this technical report.

24 OTHER RELEVANT DATA AND INFORMATION

No other relevant information is required to make the technical report understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

The Authors have made the following interpretations and conclusions:

- The understanding of the fundamental geological controls on mineralization at Fosterville is high. Primary mineralization is structurally controlled with high-grade zones localized by the geometric relationship between bedding and west-dipping faulting. This predictive model has led to considerable exploration success in following the down-plunge extensions of high-grade mineralization.
    - The **Lower Phoenix Fault** is significant west-dipping structure in the active mine development area and is defined by reverse faulting on a shale package where anticline thrust displacement of ~80m occurs. The fault dips 35-55° to the west and mineralization can be traced along a dip extent of ~190m and strike extent of ~1.9km. The dominant mineralization style on this structure is disseminated sulfide; however, occurrences of visible gold at depth are becoming increasingly more common, concentrated where footwall structures intersect. The Lower Phoenix System currently remains open to the north and south so maximum plunge extent has not yet been defined;
    - Throughout 2016 and 2017, development mapping and continued drilling confirmed that there were multiple mineralized structures of various size and continuity footwall to the main west-dipping **Lower Phoenix Fault**, which present significant resource growth potential. Progressive geological understanding of the Phoenix and Lower Phoenix footwall environs has highlighted the significance of these favorable settings for mineralization, including;
    - East-dipping mineralized structures, namely the **Eagle Fault** and **East Dipping Faults,** which commonly contain quartz–stibnite vein assemblages and substantial concentrations of visible gold, are typically enveloped by halos of disseminated sulfide. The **Eagle Fault** is discordant to bedding and variably dips between 10 and 60° to the east and transforms further to the south to strike in an ENE direction, dipping ~45° to the SSE. Mineralization on the Eagle Zone extends over a 1km strike extent and is untested and open at depth below the 3805mRL and south of 6125mN. Drilling is planned to target beyond this extent during 2018. **East Dipping Faults** are typically bedding parallel to sub parallel with dips of 70° east to sub-vertical. The defined extent of East Dipping structures containing significant mineralization is now approximately 1.6km;
    - Low-angled **Lower Phoenix Footwall** west-dipping structures typically consist of large quartz veins up to several meters wide with laminated textures, indicating a series of multiple mineralizing events, including a later stage quartz-stibnite phase of mineralization with visible gold. The faults are interpreted to have minimal offset but rather have been hydraulically fractured. Where these structures form linkages between the **Lower Phoenix** and **East Dipping Faults**, extremely high-gold grades are observed; and
    - During 2016 drilling extending footwall to the **Lower Phoenix** discovered west-dipping **Swan** (previously reported as Lower Phoenix Footwall) mineralization, which occupies a reverse fault structure that exhibits rotational displacement. The structure is characterized by a one to three-

meter-thick brecciated quartz-dominant vein with clearly defined laminated margins. It exhibits unique spotted stibnite and country rock laminations within the quartz, especially where it is highly developed. High-gold grades are associated with stylolite-rich quartz veins existing as trends of visible nuggets. On its periphery there is a lower-grade selvage of sulfide dominated Au mineralization which can be up to two meters in width. The Swan structure has returned some of the highest grade intercepts on the Fosterville Licence. Subsequent drilling during 2017 reaffirmed the high-grade continuity of mineralization and increased the known extent of this highly mineralized structure, which is now defined over 570m in strike length and 390m in vertical extent. The **Swan Zone** is the highest grade mineralized zone defined at Fosterville to date and contributes 1,156,000oz at an average grade of 61.2g/t Au (588,000 tonnes) to the updated December 31, 2017 Mineral Reserve estimate making up 68% of the total in situ Mineral Reserve ounces. The **Swan** appears to adjoin the high-grade Eagle structure at its lower edge and is untested down-plunge. Continued drilling from the hangingwall drill platforms during 2018 will continue to advance the understanding of the size and scale of this priority resource growth target.

- Continued drill definition of these structures over 2017, in combination with ore development and production exposure and reconciliation performance has reaffirmed the significance of footwall structures to the **Lower Phoenix Fault**. The defined continuity, proximity to existing Mineral Resources and high-grade tenor of these structures enhance the December 2018 Mineral Resource and Reserve position. Furthermore, mineralization on these structures is open down-plunge, providing encouraging future Mineral Resource and Mineral Reserve growth potential for the Fosterville operation;
- Drilling into the **Harrier System** over 2016 has identified high-grade mineralization containing significant amounts of visible gold at depth, primarily associated with the Harrier Base structure. Resource drilling throughout 2017 continued to support 2016 results and resource confidence has further increased in this zone. In addition, step out drilling identified significant mineralization approximately 100m to the south of the June 2017 Harrier Base Mineral Resource and up dip on the Osprey structure beneath the Daley's Hill Pit indicating the potential for significant resource and reserve growth in this zone. The Harrier Base structure exhibits reverse thrust movement of approximately 60m. Visible gold is hosted within a laminated quartz-carbonate vein assemblage, which may contain minor amounts of stibnite. In the strongest mineralized zones, a broad halo of sulfide mineralization surrounds quartz structures bearing visible gold. The high-grade visible gold mineralization was first recognized at approximately the 4480mRL, a comparable elevation to where visible gold occurrences in the Lower Phoenix became more prominent. The Harrier Base mineralization is open to the south.
- There is an observed change in the nature of some of the Fosterville mineralization at depth with a number of high-grade, quartz-carbonate +/- stibnite vein hosted, visible gold drill intercepts recorded for the Swan, Eagle, Lower Phoenix, Lower Phoenix Footwall, East Dipping and Harrier Zones. Disseminated sulfide mineralization continues to persist at all depths and is uniform in character. It is

currently inferred that the quartz-carbonate +/-stibnite-visible gold assemblages have been emplaced at a later date to the disseminated sulfide providing an upgrade to the mineralization;

- Progressive geological interpretation has led to continued development of robust geological and resource models underpinning the Mineral Resource and Mineral Reserve estimates. The relationship between mineralization and the controlling structural/stratigraphic architecture means that quality geological interpretation is critical to producing quality resource/reserve estimates;
- The modifying factors used to convert the Mineral Resources to Mineral Reserves have been refined with the operating experience gained since underground production commenced in September 2006. In particular, the robustness of the mining recovery and dilution estimates has improved with experience relative to the pre-mining assessments; and
- Fosterville Gold Mine has a demonstrated solid production history over a 10 year plus period since the beginning of commercial sulfide gold production in April 2005, and it is the Authors' view that the risk of not achieving projected economic outcomes is low given the operational experience gained over this time period. A foreseeable risk and uncertainty facing the operation is the changing character of mineralization at depth with an increase in the occurrence of visible gold. Reconciliation results in the past have provided confidence in the sample collection procedures, the quality of assays and the resource estimation methodology, but these processes will need to be continually adapted in consideration of the changing mineralization character at depth. Kirkland Lake Gold needs to continue research to better understand the potential implications on future geological, mining and metallurgical processes and will continue to seek external advice during 2018 in relation to sampling, assaying and Mineral Resource estimation of visible gold mineralization. Based on recommendations from previous external reviews, projects plans have been developed and implemented.

26 RECOMMENDATIONS

The following recommendations are made:

- Further growth exploration activities with the mine licence should be pursued. Given the strong understanding of geological controls on mineralization, this could have the potential to yield additional resources and reserves. Particular areas that are recommended to focus upon are the up and down-plunge extensions of the Lower Phoenix system (northwards up-plunge from 8600mN and southwards down-plunge from 6200mN);

- Exploration of the Lower Phoenix system southwards of 6200mN is technically challenging from surface due to target depths and as such Kirkland Lake Gold has commenced the development of dedicated underground drill platforms to facilitate further exploration of the Phoenix and Lower Phoenix system down-plunge. The current 2018 exploration budget includes development extensions of the Harrier Exploration Drive Decline to establish drilling platforms to target Phoenix and Lower Phoenix extensions and diamond drilling from these platforms to explore these gold targets. The Harrier Exploration Drive Decline provides an ideal platform to drill test the Phoenix and Lower Phoenix down plunge and is scheduled to connect Harrier and Phoenix mine areas in early 2019. The long term benefits of this development link are significant, not only as providing a hangingwall drill platform to explore the Lower Phoenix and Phoenix extensions over a 1.5km strike extent, but also in supporting production as it will provide an alternative ore haulage route. Total cost of this program is estimated at A$7.6M.

- Exploration of the Lower Phoenix system up-plunge, northwards of 8600mN will be progressively pursued from surface drill positions to provide satisfactory drill intercept angles. A drill section on 8700mN is planned from surface to explore the extensions of the Lower Phoenix and Lower Phoenix Footwall during 2018. The results of this drilling will determine whether subsequent drilling is proposed further to the north.

- Further work is recommended to explore for extensions of known Mineral Resources that project beyond the extent of the Mining Licence. In particular, the extent and scale of the Harrier system will be defined and resources developed in a timely manner. With an increasing grade profile identified at depth and the establishment of high-grade Mineral Reserves at lower levels in Harrier, it is strongly recommended that the down-plunge extensions of the Harrier system are further explored. The total cost of this project is estimated at A$7.7M.

- Given the potential of near mine exploration targets within the Mining Licence, it is recommended that growth drill programs are implemented in pursuit of defining potential Mineral Resources independent from current mining centers. Growth drill programs planned to be undertaken within the mining lease during 2018 include the Cygnet Drilling program, which will explore for gold mineralization footwall to the Swan Fault, Fosterville Deeps Drilling which will explore for gold mineralization at depth up to 1.2km vertically below current mining areas in the Lower Phoenix, Eastern Fan Drilling which targets projections of defined west-dipping mineralized structures up to 1.2km the east of current mining areas in the Lower Phoenix and Robbin's Hill Programs, which will continue to build an understanding of the underground Mineral Reserve potential beneath the Robbin's Hill pits. A total cost of A$5.2M is budgeted in 2018 to execute these programs.

- It is recommended that an aggressive regional exploration program be undertaken with respect to surrounding exploration leases. During the first half of 2017, Kirkland Lake Gold instigated a review of targets contained within Exploration Licence holdings and generated a proposal to spend A$9M spend over a 2-year period to advance a pipeline of regional targets. The program, termed Large Ore Deposit Exploration (LODE) aims to integrate and interpret all available geoscientific data, rapidly cover the current exploration holdings with reconnaissance exploration techniques such as soil sampling, airborne electromagnetic and gravity and surveys and advance development of prospective targets with various drilling techniques. Planning is also currently underway to progress to a 3D seismic survey. If the 3D survey proves to be successful consideration should be given to more regional 2D seismic surveys throughout the Exploration Licences. A total of A$11.6M has been estimated to undertake Fosterville LODE work during 2018.

- Growth Expensed diamond drilling is proposed for targeting extensions of known mineralized trends outside of Mineral Resources. The proposed drilling will target the extensions of Inferred Mineral Resources in both the Lower Phoenix and Harrier systems with the aim to deliver additional Mineral Resource inventory and provide definition along Mineral Resource boundaries. Total cost for this program is estimated at A$3.4M.

- Growth Capital diamond drilling for a total cost of approximately A$9.6M is proposed for the systematic expansion of Indicated Mineral Resources in the Phoenix mineralized system. The proposed drilling will target Inferred Mineral Resources, with the objective to increase resource confidence to an Indicated Mineral Resource classification to allow for Mineral Reserve Evaluation. The drilling will not only provide increased confidence in Mineral Resources which could lead to significant expansion of Mineral Reserves, but additional geological and geotechnical information ahead of mining, essential for optimizing the placement of supporting infrastructure and the effective extraction of the resource.

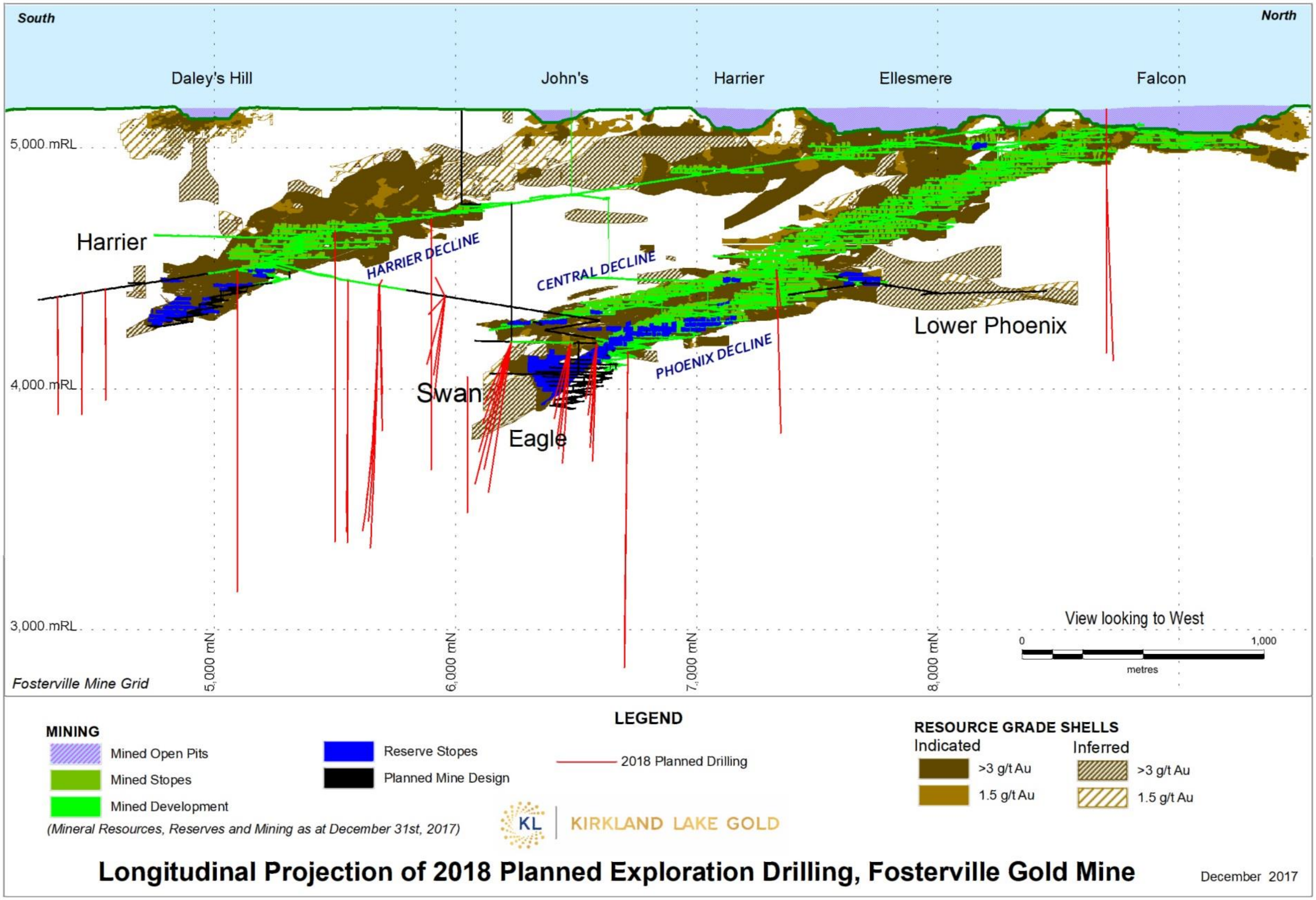


FIGURE 26-1 LONGITUDINAL PROJECTION OF PROPOSED FOSTERVILLE EXPLORATION DRILLING PROGRAMS FOR 2018 (ALL EXPENSED)

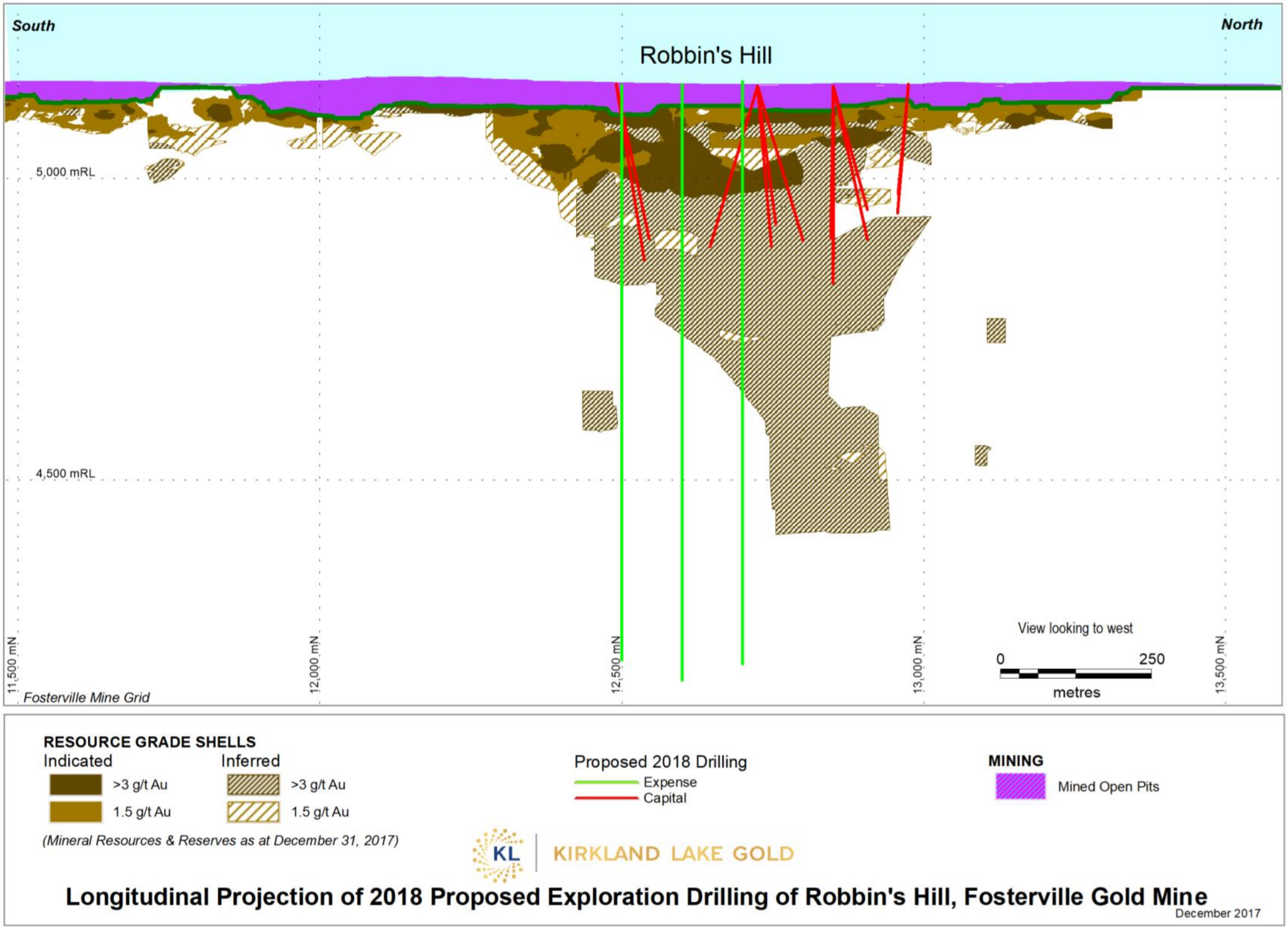


FIGURE 26-2 LONGITUDINAL PROJECTION OF PROPOSED ROBBIN'S HILL EXPLORATION DRILLING PROGRAMS FOR 2018 (EXPENSED AND CAPITALISED)

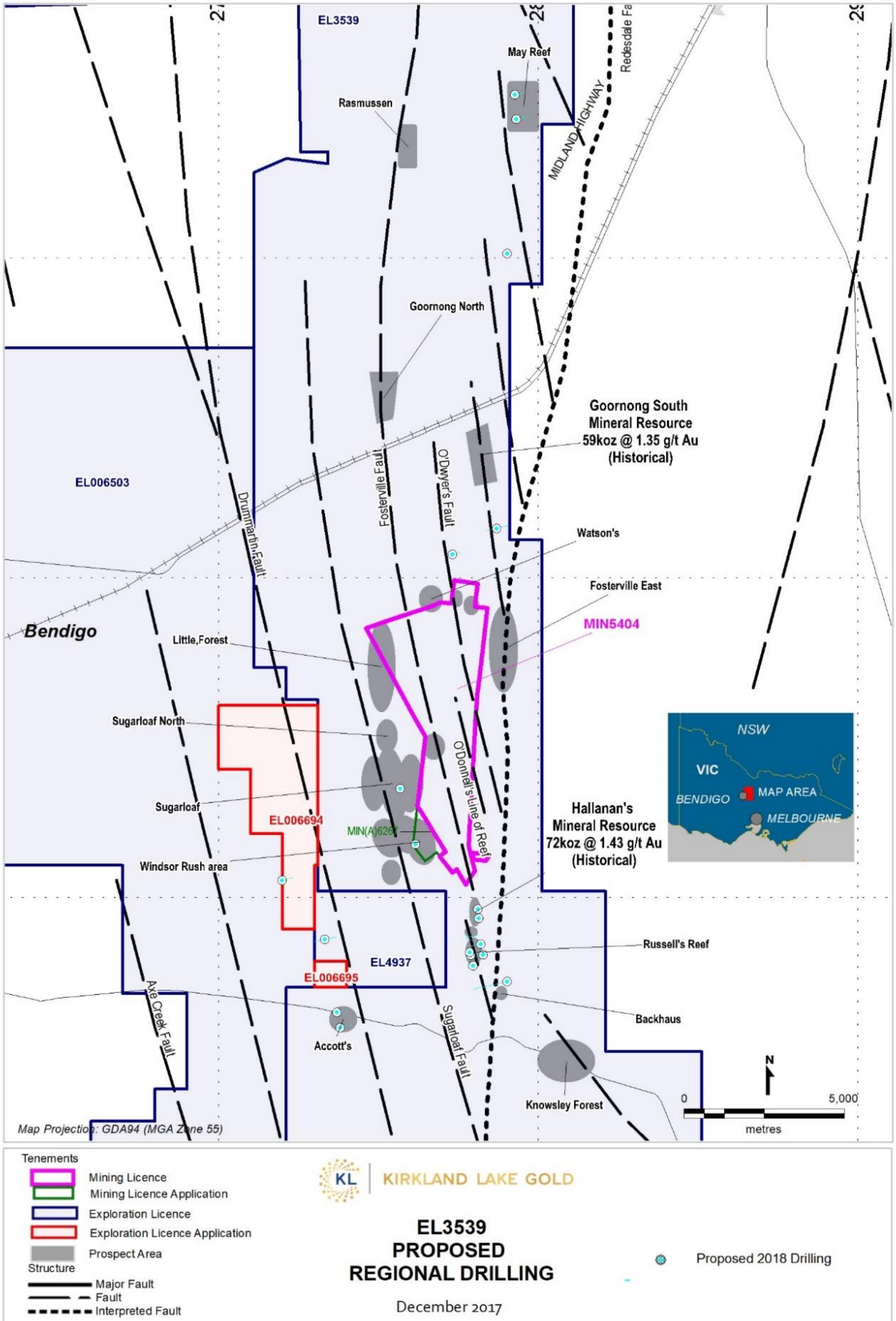


FIGURE 26-3 PROPOSED 2018 REGIONAL DRILLING

TABLE 26-1 PROPOSED EXPLORATION DRILLING PROGRAMS FOR 2018

Exploration programs for 2018	Description	Expenditure (A$)
Near-Mine		
Lower Phoenix FW 5550mN Drilling	Test for extension of down-plunge Lower Phoenix mineralization	342,930
Lower Phoenix FW 5650mN Drilling	Test for extension of down-plunge Lower Phoenix mineralization	385,140
Lower Phoenix 6200mN Drilling	Test for extension of down-plunge Lower Phoenix mineralization	241,220
Z-Swan-Audax 5100, 5500 & 5900mN Drilling	Test for extension of down-plunge Lower Phoenix mineralization	1,239,200
Robbin's Hill Sub-Vertical Targets Drilling	Test continuity of sub-vertical mineralization at Robbin's Hill	68,000
Harrier Drill Drive Decline - Linking Development	Underground development to support Lower Phoenix Drilling	3,575,579
EL3539 H4490 Drill Drive Development	Underground development to support Harrier South Drilling	4,319,027
Harrier South 4550, 4450 & 4350mN Drilling	Test for extension of down-plunge Harrier mineralization	3,406,200
Lower Phoenix 6000mN Drilling	Test for extension of down-plunge Lower Phoenix mineralization	800,000
Upper Phoenix 5700 & 5950mN Drilling	Test for extension of down-plunge Phoenix mineralization	1,291,080
Cygnet 6450 & 6550mN Drilling	Test for mineralization footwall to Lower Phoenix mineralization	1,000,000
Fosterville Deeps 6750mN Drilling	Test for mineralized structures vertically below Lower Phoenix	900,000
Eastern Fan 7350mN Drilling	Test for mineralization footwall to Lower Phoenix mineralization	489,930
Lower Phoenix North 8700mN Drilling	Test for extension of up-plunge Lower Phoenix mineralization	451,150
Robbin's Hill Extension Drilling	Test for depth extensions of Mineral Resources below Robbin's Hill	1,869,000
Robbin's Hill Infill Drilling	Drilling into Inferred Mineral Resources to increase resource confidence at Robbin's Hill	719,250
O'Dwyer's South VG Extension Drilling	Test for extension of mineralization to the south of O'Dwyer's South Pit – Robbin's Hill	110,000
Subtotal - Near-Mine		***21,207,706***
Mine Geology		
Geology Growth Capital Drilling	Drilling into Inferred Mineral Resources to increase resource confidence in mining areas	9,596,913
Geology Growth Expense Drilling	Drilling Resource extensions proximal in current mining areas	3,403,710
Subtotal - Mine Geology		***13,000,623***
Fosterville District (LODE)		

Exploration programs for 2018	Description	Expenditure (A$)
EL3539 – Soil Sampling Survey	LODE – Soil Sampling Survey	83,630
EL3539 – Hallanan's and Russell's Reef Drilling	LODE – Drill test known mineralized trends south of the MIN5404	1,038,000
EL3539 – Goornong South Investigative Drilling	LODE – Drill test known mineralized occurrence north of the MIN5404	371,000
3D Seismic Survey (Lower Phoenix South)	LODE – 3D Seismic Survey over down-plunge projection of Lower Phoenix system	4,000,000
Gravity Infill Survey	LODE - Infill Gravity Survey	50,000
EL3539 Bachhaus Soils Anomaly Drilling	LODE – Drill test soil anomaly south of the MIN5404	250,000
EL3539 Z-Harrier 3800 & 4200mN Drilling	LODE – Drill test extensions of the Harrier South system	1,000,000
EL3539 Accott's Investigative Drilling	LODE – Drill test prospect to the south of the MIN5404	600,000
EL3539 Sugarloaf Investigative Drilling	LODE – Drill test prospect to the west of the MIN5404	240,000
EL3539 May Reef Investigative Drilling	LODE – Drill test prospect in the north western quadrant of the exploration licence	600,000
LODE RAB / AC Drilling	LODE – Rotary Air Blast and Air Core Drilling targets over the exploration licence	1,000,000
LODE RC Drilling	LODE – Reserve Circulation Drilling targets over the exploration licence	2,000,000
EL006502 FGM North Reconnaissance	LODE – Reconnaissance work on newly acquired exploration licence	80,000
EL006503 FGM West Reconnaissance	LODE – Reconnaissance work on newly acquired exploration licence	110,000
EL006504 Heathcote Reconnaissance	LODE – Reconnaissance work on newly acquired exploration licence	100,000
Target Generation	LODE - Integration and interpretation of geological data	60,000
Subtotal - Fosterville District (LODE)		***11,582,630***
Total - All Programs	Exploration (Growth) activities on MIN5404 and surrounding Fosterville ELs	**A$45,790,959**

27 REFERENCES

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28 DATE AND SIGNATURE

28.1 CERTIFICATE OF QUALIFIED PERSON – ION HANN

I, **Ion Hann**, **FAusIMM**, as an author of this report entitled "**Report on the Mineral Resources & Mineral Reserves of the Fosterville Gold Mine Victoria, Australia**" dated effective December 31, 2017 prepared for Kirkland Lake Gold Ltd. (the "**Issuer**") do hereby certify that:

1. I am **Production Manager**, at **Fosterville Gold Mine**, located at **McCormick's Road, Fosterville, Victoria 3557, Australia**.
2. This certificate applies to the technical report entitled "**Report on the Mineral Resources & Mineral Reserves of the Fosterville Gold Mine Victoria, Australia**", dated effective December 31, 2017 (the "**Technical Report**").
3. I graduated with a **Bachelor of Engineering degree in Mining** from the **Western Australian School of Mines**, **Kalgoorlie,** in **1991**. I have worked as an engineer since graduation from university in **1991**. During that time, I have been employed in various operation and technical roles at several mining companies within Australia with exposure to gold, nickel and tantalum. I am a fellow in good standing of the **Australian Institute of Mining and Metallurgy** with Registration No. **302934**.
4. I am familiar with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("**NI 43-101**") and by reason of education, experience and professional registration I fulfill the requirements of a "qualified person" as defined in NI 43-101.
5. I am currently employed on a full time basis at the **Fosterville Gold Mine**, subject of the Technical Report, and have been since March 2005.
6. I am responsible for Sections 15-16, 18.2 and 28.1 of the Technical Report.
7. I am **not** independent of the Issuer as described in section 1.5 of NI 43-101 as I am an employee of the Issuer.
8. I have prior involvement with the property that is the subject of the Technical Report as I was a contributing author of the technical report on the Fosterville Gold Mine entitled "**Report on the Mineral Resources & Mineral Reserves of the Fosterville Gold Mine Victoria, Australia**" dated effective June 30, 2017. Since then, I have been frequently involved with the property by way of my role as Production Manager.
9. I have read NI 43-101 and the parts of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
10. At the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this the 2nd day of April, 2018.

Ion Hann, B.Eng (Mining), FAusIMM
PRODUCTION MANAGER
FOSTERVILLE GOLD MINE

28.2 CERTIFICATE OF QUALIFIED PERSON – TROY FULLER

I, **Troy Fuller**, **MAIG**, as an author of this report entitled "**Report on the Mineral Resources & Mineral Reserves of the Fosterville Gold Mine Victoria, Australia**" dated effective December 31, 2017 prepared for Kirkland Lake Gold Ltd. (the "**Issuer**") do hereby certify that:

1. I am **Geology Manager**, at **Fosterville Gold Mine**, located at **McCormick's Road, Fosterville, Victoria 3557, Australia**.
2. This certificate applies to the technical report entitled "**Report on the Mineral Resources & Mineral Reserves of the Fosterville Gold Mine Victoria, Australia**", dated effective December 31, 2017 (the "**Technical Report**").
3. I graduated with a **Bachelor of Science degree in Geology (Hons)** from **University of Ballarat**, in **1995**. I have worked as a geologist since graduation from university in **1995**. During that time, I have been employed as a Mine Geologist, Resource Geologist, Senior Mine Geologist, Mine Geology Superintendent and Geology Manager, at several mining companies. I have worked for more than 20 years in the mining industry, including more than 18 years in gold mining operations. I am familiar with and have worked on a variety of styles of mineral deposits in Australia, with a particular emphasis on gold mineralization. I am a member in full standing of the **Australian Institute of Geoscientists** with Registration No. **4570**.
4. I am familiar with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("**NI 43-101**") and by reason of education, experience and professional registration I fulfill the requirements of a "qualified person" as defined in NI 43-101.
5. I am currently employed on a full time basis at the **Fosterville Gold Mine**, subject of the Technical Report, and have been since May, 2010.
6. I am responsible for Sections 1-14, 17, 18.1, 19–27 and 28.2 of the Technical Report.
7. I am **not** independent of the Issuer as described in section 1.5 of NI 43-101 as I am an employee of the Issuer.
8. I have prior involvement with the property that is the subject of the Technical Report as I was a contributing author of the technical report on the Fosterville Gold Mine entitled "**Report on the Mineral Resources & Mineral Reserves of the Fosterville Gold Mine Victoria, Australia**" dated effective June 30, 2017. Since then, I have been frequently involved with the property by way of my role as Geology Manager.
9. I have read NI 43-101 and the parts of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
10. At the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 2nd day of April, 2018.

AUSTRALIAN INSTITUTE OF GEOSCIENTISTS
Troy Fuller MAIG 4570

Troy Fuller, BSc (Geology) Hons, MAIG
GEOLOGY MANAGER
FOSTERVILLE GOLD MINE