2022 Mineral Resource Update for the Niblack Polymetallic Project, Prince of Wales Island, Alaska, USA

Prepared for:

Blackwolf Copper & Gold Ltd.

Prepared by:
Dr. Gilles Arseneau, P.Geo.

ARSENEAU Consulting Services Inc.

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1 SUMMARY

Arseneau Consulting Services Inc. (ACS) was commissioned by Blackwolf Copper and Gold Ltd. (Blackwolf or the Company) to prepare a mineral resource update in accordance with National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101) for the Niblack polymetallic deposits located on Prince of Wales Island in Southern Alaska, near the town of Ketchikan (Niblack Project).

1.1 Access and Location

The Niblack Project consists of seven patented mining claims surrounded by 298 contiguous staked Federal mining claims, and seven State of Alaska tideland claims. The total land area covers an aggregate of approximately 6,238 acres (about 2,524 hectares).

Access to the Niblack Project area is by float equipped aircraft, helicopter, or boat from Ketchikan (population 8,200) where there is a deep-water seaport and an international airport, with regular daily jetliner service to Seattle, Washington.

Climatic conditions are typical of the Alaska Panhandle region, with warm summers and relatively wet, cool winters. Snow cover can be heavy at higher elevations. Rainfall is often very heavy, with average annual precipitation of about 442 centimetres (cm).

The present camp facility can accommodate up to sixty people. Accommodations, cafeteria and office space are provided by Weatherhaven® tents. A 100 meter (m) long pile-secured floating dock and barge moorage/landing facility has been constructed on site to facilitate marine transport of equipment and supplies. Power is not available in the immediate vicinity of the property.

Dirt roads connect the dock to the portal and core logging facility. Beyond these areas, helicopter and foot are the most efficient means of on-site travel.

The property is 100 percent indirectly owned by Blackwolf.

1.2 History

The Niblack area has been explored since the initial copper discovery in 1899 at Niblack Anchorage. The Niblack Mine was developed in 1902 and operated between 1905 and 1908, producing just over 30,000 tons grading about 3.2 percent copper, 0.04 troy ounce per ton (opt) gold and 0.68 opt silver. The mine was closed in late 1908, believed to be the result of litigation. Several exploration adits were driven in the general area, at unspecified dates.

The Niblack Project remained inactive until it was explored by Cominco American Incorporated (Cominco) in 1974 and 1976 when six diamond drillholes totalling 2,893 feet (882 m) were completed in the area of the Niblack Mine.

In 1977, The Anaconda Company (Anaconda) staked 118 claims, acquired the original patented claims, and did line-cutting, geology and geochemistry.

In 1980, Noranda Exploration Incorporated (Noranda) optioned the property and did geological mapping and geophysics, and diamond drilled eighteen core holes (8,536 ft or 2,602 m) in the Lookout Mountain area.

In 1984, Lac Minerals (USA) Incorporated (Lac) entered into a joint venture with Noranda on the property. From 1984 to 1989, Lac completed twenty diamond drillholes (11,364 ft or 3,464 m). The Niblack Project was then placed on care and maintenance until the 1992 field season when Lac drilled an additional fifteen diamond drillholes (15,712 ft or 4,789 m).

In early 1995, Abacus Minerals Corp. (Abacus) acquired the Niblack Project and between 1995 and 1997 drilled 101 holes (84,895 ft or 25,876 m).

In late 2004, Abacus transferred ownership of the Niblack Project to a new company incorporated under the name Niblack Mining Corp. (NMC).

NMC explored the property from late 2005 to early 2009. A total of 58 holes were drilled from surface and 28 holes were drilled from underground for a total length of (56,249 ft or 21,331 m.

In October 2008, Committee Bay Resources Ltd merged with NMC and prepared a mineral resource estimate for the Niblack Project.

In February 2009, Committee Bay Resources Ltd changed its name to CBR Gold Corp and in April 2010, to Niblack Mineral Development Inc. (NMD).

In July 2009, Heatherdale Resources Ltd (Heatherdale) entered into an agreement with NMD to acquire up to 70% of the Niblack Project and formed Niblack Project LLC (the Niblack Joint Venture). Initial interests in the Niblack Joint Venture were 49% held by NMD and 51% held by Heatherdale.

The Niblack Joint Venture conducted drilling programs on the property between 2009 and 2011 under the supervision of Heatherdale, resulting in the Heatherdale increasing its interest in the Niblack Joint Venture to 60% and reducing NMD's interest to 40%. A total of 146 core holes were drilled between 2009 and 2011 for 56,002 m.

On January 1, 2012, Heatherdale acquired all of the outstanding shares of NMD resulting in Heatherdale owning indirectly 100% of the Niblack Project and drilled an additional 10 holes totalling 4,245 m.

After the 2012 drill program, the Niblack Project was placed under care and maintenance until 2020. Heatherdale returned to Niblack Project in late 2020 and drilled 12 surface holes for 1,785 m and further five holes for 1,810 m were completed underground at the Lookout Deposit in 2021.

In April 2021, the Heatherdale changed its name from Heatherdale Resources Ltd to Blackwolf Copper and Gold Ltd.

1.3 Geology

The southern part of Prince of Wales Island is underlain by rock assemblages belonging to the Alexander terrane. This major tectonostratigraphic unit underlies portions of the coast of northwest British Columbia, extends northward through the Alaskan panhandle into the Saint Elias Mountains of British Columbia and the Yukon, and westward into the Wrangell Mountains of Alaska.

The Alexander terrane evolved along a convergent plate margin during late Precambrian through to Early Devonian time, being characterised by the deposition of arc-type igneous and sedimentary rocks. Deformation and metamorphism of these rocks occurred during Middle Cambrian-Early Ordovician and Middle Silurian-early Devonian orogenic events.

The Alexander terrane is further sub-divided into the Admiralty and Craig subterranes, with the rocks of Prince of Wales Island lying wholly within the latter subdivision.

At the Niblack Project itself, the rock succession consists primarily of a basal bimodal mafic-felsic suite of volcanic flows and volcaniclastic rocks, overlain by a younger volcano-sedimentary cover. The rocks have undergone low-grade greenschist facies metamorphism.

Though complex in detail, the local stratigraphy can readily be divided into three main distinctive units; the Niblack Stratigraphic Footwall Succession (consisting primarily of dacitic and basaltic volcanic and volcaniclastic rocks); the Niblack Felsic Succession (previously referred to as the “Lookout Rhyolite” and comprising felsic flows and volcaniclastic rocks - host to all known sulphide occurrences); and the Niblack Stratigraphic Hanging Wall Succession (made up of mafic volcano-sedimentary rocks and basaltic flows). All of these units are cut by several suites of mafic to felsic dykes and/or sills.

1.4 Exploration

In December 2020, a 12-hole 1,785-meter drill program targeting extensions to mineralization at the historic Niblack mine site was completed. One of the primary purposes of this program was to test a revised geological model.

The Company recompiled the geological model for the Niblack Project and generated a revised geological model interpreting that the volcanic stratigraphy had been overturned.

During the first half of 2021, Blackwolf completed rehabilitation of the 850-meter exploration drift, including electrical upgrades to permit safe access to conduct underground resource expansion and exploration drilling.

During 2021, five holes, totaling 1,810 meters of NQ2 core were completed underground at the Lookout Deposit. The primary objectives of this program were to expand the mineral resource area by targeting massive sulphide mineralization approximately 300 meters away from the underground ramp and to test for the down dip extension of the Lookout mineralized horizon and exploration to the west of the Bluebell strike-slip fault, which runs shallowly oblique to the Lookout Zone.

1.5 Mineralization

The Niblack Project hosts volcanogenic massive sulphide deposits. These types of deposits form at or beneath the seafloor, through hydrothermal processes driven by contemporaneous volcanism. They are customarily polymetallic, with the metals of commercial significance usually being some combination of copper, zinc, lead, gold, and silver.

At the Niblack Project, metals of economic importance include copper, zinc, gold and silver and while lead is locally elevated, it is rarely present in appreciable amounts. Gold content is noticeably higher than the average for volcanogenic systems and is associated with all styles of mineralization.

Mineralization occurs in at least six known sulphide deposits, Niblack, Trio, Lookout, Lindsy, Dama and Mammoth with historical mineral resources defined for the Niblack, Trio and Lookout deposits. The mineral resource model presented herein represents an updated resource evaluation for the Niblack polymetallic sulphide deposit and defined current mineral resources for the for the Lookout and Trio deposits.

The Lookout deposit is approximately 700 m long with an average thickness of 21 m. The higher-grade sulphide mineralization occurs in several subparallel, partially interconnecting lenses. These lenses are usually separated by regions of lower-grade mineralization. In the central portion of the Lookout deposit, stacked lenses cumulatively comprise 80 to 100 m of sulphide mineralization separated by 5 to 10 m intervals of lower grade mineralization. While individual lenses vary in down-plunge extent, the maximum extent of the largest lens defined to date exceeds 300 m.

Sulphide mineralization at the Trio deposit is similar to that in the Lookout deposit. However, the Trio deposit consists only of two parallel south dipping lenses of massive to semi-massive sulphide mineralization with associated stringer-style mineralization. The outlined dimensions of the Trio deposit are 580 m by 170 m, with an average thickness of 30 m.

1.6 Drilling

A total of 424 holes have been drilled representing 124,191 m of core. Of these, 255 were drilled from surface and 169 were drilled from underground stations in the Lookout adit. Drill core and original drill logs are available for all drillholes. Some of the cores from the older drill programs are stored in wood boxes that have now totally deteriorated and could not be recovered. All drill logs are still available in paper format. For the most part, drilling seemed to have been well done, with good to excellent core recoveries. The Company drilled 179 of the 424 drill holes.

1.7 Mineral Resource Estimate

The mineral resource model presented herein represents the first resource evaluation on the Niblack Project since the previous estimate conducted by the Company (formerly known as Heatherdale Resources Ltd.) and Niblack Mine Development Inc. in 2011. The resource evaluation incorporates 197 drill holes, 78 completed by the Company and 119 holes drill by the previous property owners. In the opinion of the QP, the block model resource estimates reported herein are a reasonable representation of the global precious and base metal mineral resources found in the Lookout and Trio deposits at the current level of sampling. Mineral Resources for the Niblack Project are reported in accordance with the guidelines of the Canadian Securities Administrators National Instrument 43-101; and have been estimated in conformity with generally accepted CIM "Estimation and Mineral Resource and Mineral Reserve Best Practices" guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

The database used to estimate the Lookout and Trio mineral resources was reviewed and audited by the QP. Mineralization boundaries were modelled by Blackwolf based on parameters designed by the QP. The QP reviewed and modified the interpretation as required and is of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries of the mineralization domains and that the assay data are sufficiently reliable to support the estimation of mineral resources.

Mineral resources were estimated in a single three-dimensional block model using Geovia Gems version 6.8.4 software. Precious and base metal grades within the mineralized domains were estimated in three successive passes by ordinary kriging for the Lookout deposit and by inverse distance squared interpolation for the Trio deposit. The first pass considered a relatively small search ellipsoid while for the second and third pass search ellipsoids were larger. Search parameters were generally set to match the correlogram parameters but also designed to capture sufficient data to estimate a grade in the blocks. All assays were composited to 2.0 m and capped at the 97 or 98 percentiles before estimation.

The sampling information was acquired primarily by core drilling on sections spaced at about 25-metre spacing for most of the deposits with the Lookout deposit and at about 50-m spacing for the Trio deposit. At the current stage of drilling, the QP considers that the mineralization at the Lookout and Trio deposits satisfies the definition of indicated and inferred mineral resource as defined by CIM.

Blocks were classified as indicated mineral resource if estimated during the first estimation pass and informed by at least three drillholes within an average distance less than 50 m or if estimated during pass two with at least four drillholes. All other estimated blocks were classified as inferred mineral resource.

To determine the quantities of material offering “reasonable prospects for eventual economic extraction” by underground mining methods, the QP utilised a stope optimizer to evaluate the proportions of the block model (Indicated and Inferred blocks) that could be “reasonably expected” to be mined from an underground operation utilizing a longhole stoping and cut and fill mining methods.

The QP considers that the blocks above cut-off (based on benchmarking projects with similar mineralization in Alaska) located within a continuous solid captured by the stope optimizer satisfied the “reasonable prospects for eventual economic extraction” and can be reported as a mineral resource.

The QP estimated that the Lookout and Trio deposits combined contained 5.85 million tonnes grading 0.94% copper, 1.73% zinc, 1.83 g/t gold and 29 g/t silver in the indicated category and 214 thousand tonnes of inferred mineral resource grading 0.93% copper, 1.38% zinc, 1.52 g/t gold and 18 g/t silver. All mineral resources are assumed to be accessible by underground mining methods. The mineral resources as estimated by the QP on February 14, 2023 are summarized in Table 1.1.

Table 1.1 Table 1.1: Lookout and Trio Mineral Resource Statement at 100 US$ Cut-off, Niblack Project Alaska, February 14, 2023

Area	Class	Tonnes (000)	Cu (%)	Cu Mlb	Zn (%)	Zn Mlb	Au (g/t)	Au oz	Ag (g/t)	Ag oz
Lookout	Indicated	5,391	0.92	108.9	1.72	204.9	1.88	326,600	30	5,168,200
	Inferred	159	0.93	3.3	1.31	4.6	1.63	8,300	18	93,300
Trio	Indicated	460	1.16	11.8	1.75	17.7	1.30	19,200	20	293,800
	Inferred	55	0.91	1.1	1.61	1.9	1.20	2,100	18	31,700
Total	Indicated	5,851	0.94	120.7	1.73	222.6	1.83	345,800	29	5,462,000
	Inferred	214	0.93	4.4	1.38	6.5	1.52	10,400	18	125,000

(1) Mineral Resources are not Mineral Reserves do not have demonstrated economic viability.
(2) The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(3) The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
(4) The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
(5) Numbers may not add up due to rounding.

1.8 Conclusions and Recommendations

Base and precious metal mineralization at the Niblack Project is hosted in volcanic and volcaniclastic rocks of the Neoproterozoic Niblack Felsic Unit of the Wales Group. The Niblack felsic Unit rocks range from coherent rhyolite flows to volcaniclastic breccias and hyaloclastites. The succession exceeds 100 m in thickness in some locations and is locally graded. Mineralization is hosted in massive to semi-massive sulphide bodies consisting mainly of pyrite, chalcopyrite and sphalerite with minor amounts of galena.

While several massive sulphide bodies are known on the Niblack Project, mineral resources have been estimated for the Lookout and Trio deposits only as part of this study. A total of 424 drillholes, 124,191 m have been drilled on the Niblack Project area. The resource model is limited to the Lookout and Trio areas within which a total of 57,891 m of sampling has been accomplished. All holes were diamond drillholes with the majority drilled by the Company and Abacus.

The QP recommends that Blackwolf continue to explore the Niblack Project. Specifically, the QP recommends a 2,400-metre drill program focused on infilling and testing for expansion of the known mineralization at the Lookout and Trio deposit. All drill holes collars are located at surface.

The Niblack Project also contains five additional known massive sulphide deposit that have been partially drilled. While these zones are worthy of additional drilling, the QP recommends that a complete compilation of the surface geology combined with 3D modelling be done prior to planning drill programs for these deposits.

The QP estimate that the above recommendations would cost approximately US$ 1.9 million.

2 INTRODUCTION

Arseneau Consulting Services Inc. (ACS) was contracted by Blackwolf Copper & Gold Ltd. (Blackwolf or the Company) to prepare a mineral resource update in accordance with National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101) for the Niblack polymetallic deposits located on Prince of Wales Island in Southern Alaska, near the town of Ketchikan (Niblack Project).

2.1 Terms of Reference

The Report was prepared to update the previous estimate conducted by the Company (formerly known as Heatherdale Resources Ltd) and Niblack Mine Development Inc. in 2011. The updated mineral estimate was completed to incorporate three additional rounds of drilling on the property, to evaluate the potential of including additional resources from other target areas on property and to reflect current economic parameters. The effective date of this technical report is February 14, 2023.

2.2 Qualified Persons

Gilles Arseneau, PhD, P.Geo., of ARSENEAU Consulting Services Inc. (ACS) is an independent qualified person as the term is defined in NI 43-101. ACS is registered with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) under permit to practice number 1000256 issued on July 1, 2022.

Gilles Arseneau visited Niblack Project on June 28 and 29, 2022. The site visit included examination of the surface and underground geology and drill core stored on the property. Surface access and property physiology were reviewed, and independent samples were also collected.

2.3 Information Sources and References

The primary source of information for this report is a technical report prepared by SRK for Heatherdale and NMD in 2011 (Nowak et al, 2011), information in the public domain and data gathered during the site visit.

2.4 Terms and Definitions

All units in this report are System International (SI) unless otherwise noted. Table 2.1 summarizes the commonly used abbreviations used throughout this report.

Table 2.1: List of Common Abbreviations

Unit	Abbreviation
Silver	Ag
Gold	Au
Copper	Cu
Lead	Pb
Zinc	Zn
acre	Ac
hectare	ha
square kilometre	km^2
square mile	mi^2
grams per metric ton	g/t
troy ounces per short ton	opt
foot	ft
metre	m
kilometre	km
centimetre	cm
mile	mi
yard	yd
gram	g
kilogram	kg
troy ounce	oz
Imperial ton 2000 pounds	Ton
metric tonne	t, tonne
Dry metric tonne	DMT
million years	Ma
cubic yard	cu yd
degrees Celsius	°C
degrees Fahrenheit	°F

2.4.1 Monetary

All monetary values are given in United States dollars US ($) unless otherwise stated.

3 RELIANCE ON OTHER EXPERTS

3.1 Mineral Tenure

The QP has not reviewed the mineral tenure, nor independently verified the legal status, ownership of the Niblack Project area or underlying property agreements and has relied on information provided by Blackwolf and by Stoel Rives LLP former legal advisors to the Company and has reviewed but not independently verified this information.

This information is used in Sections 4.1 and 4.2 of the Report.

3.2 Surface Rights

The Company owns surface rights to the 7 patented mineral claims encompassing 110 hectares (ha). These rights are adequate for the current and proposed exploration programs. All permits necessary for the proposed programs are held.

Any additional surface rights for mining operations would be acquired when the project advances to mining.

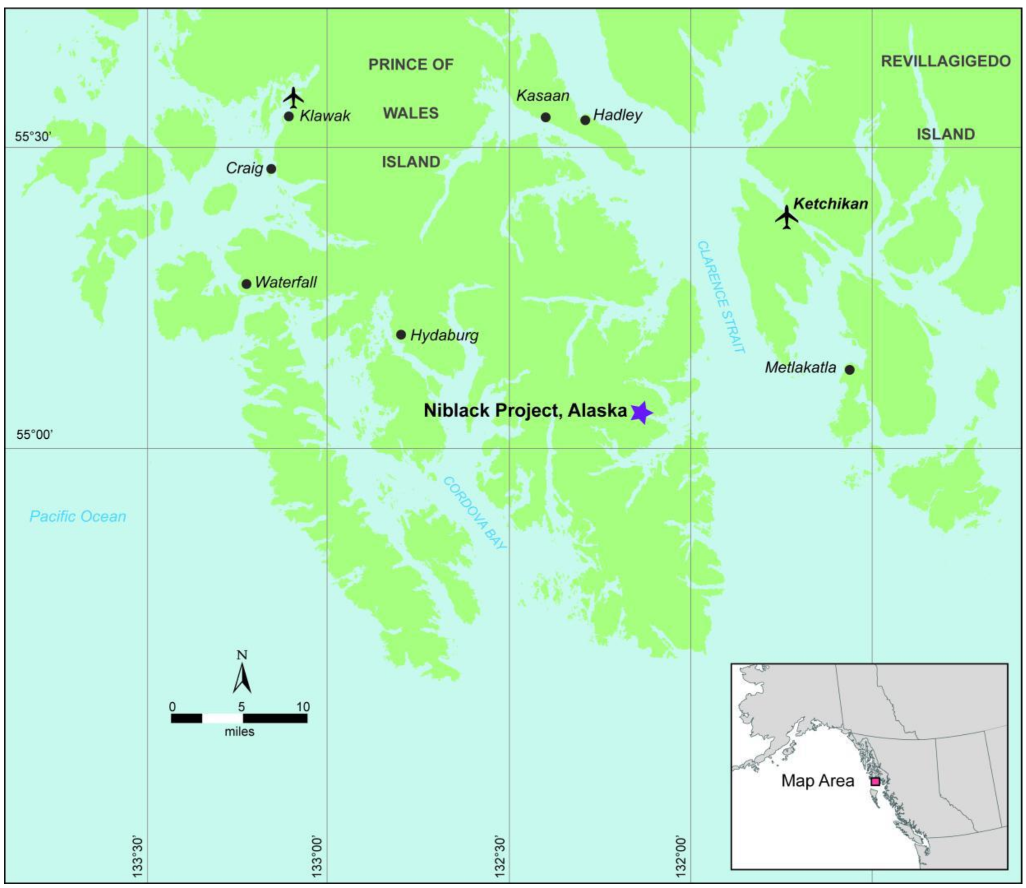
The Property is situated in the Traditional Territory of the Tlingit First Nation. The 1971 Alaska Native Claims Settlement Act (ANCSA) directed the Bureau of Land Management (BLM) to convey 45.5 million acres of public land to village and regional Native corporations.

4 PROPERTY DESCRIPTION AND LOCATION

Information from this section of the report is taken from Nowak et al (2011) with modifications.

The Niblack mineral property is located on southern Prince of Wales Island about 50 kilometres (km) south-west of Ketchikan, southeast Alaska (Figure 4.1). The claims lie to the south, west and north of Niblack Anchorage, a small bay off Moira Sound. The property is in the Ketchikan Recording District, with the area of immediate interest centered at about 55 degrees and 04 minutes latitude north and 132 degrees and 05 minutes longitude west, on Craig A-1 USGS Map Quadrangle geographic map sheet.

The QP has relied upon land tenure, corporate agreements, and environmental considerations provided by Blackwolf and by Stoel Rives LLP former legal advisors to the Company and has not independently verified this information.



Source: SRK (2011)

Figure 4.1: Location Map of Niblack Polymetallic Project

4.1 Land Tenure

The Niblack Project consists of 7 Alaska state tideland claims totalling about 348 ha, 7 patented mineral surveys totalling about 110 ha, and 298 federal mining claims totalling about 2,467 ha.

Due to overlap of some of these leases, surveys, and claims, the total surface area of the Niblack Project is currently about 2,524 ha (Figure 4.2).

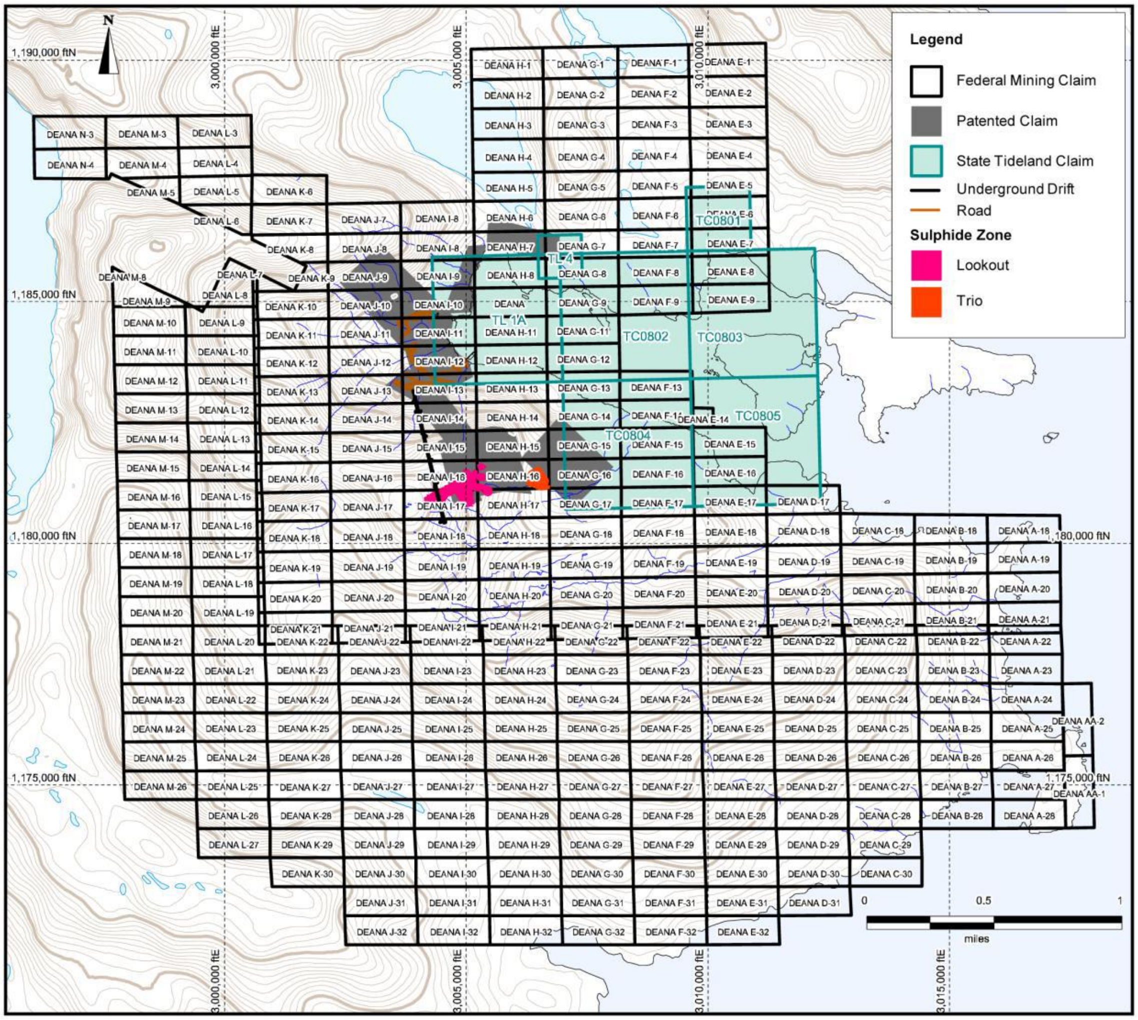
The patented claims on located in the unorganized borough of Prince of Wales-Hyder and no property taxes are charged or collected.

The mineral resources reported herein are located within both patented and Federal mining claims. The boundaries of the patented claims have been legally surveyed; boundaries of the other claims have not.

State tideland claims in Alaska may be kept in good standing by performing annual assessment work or by paying cash in lieu of assessment work in the amount of US$100 per partial or whole 40-acre mineral claim per year and by paying annual escalating state rentals. All of the claims come due annually on August 31. However, credit for excess work can be carried forward, to a maximum of five years, and can be applied as necessary to continue to hold the claims in good standing. The Niblack tideland claims have a variable amount of credit that can be applied in this way. Annual assessment work obligations for the Niblack tideland claims total some US$2,200.00 and annual state rentals for 2022 were US$4,535.

The 298 unpatented federal mining claims may be kept in good standing by paying an annual maintenance fee on or before September 1 of each year. The maintenance fee may be adjusted by the Bureau of Land Management, but in 2022 the maintenance fee was US$165 per claim for a total obligation of US$49,170.

The mineral resources reported herein are located on Patented Claims and Federal mining claims as indicated on Figure 4.2.



Source: SRK (2011)

Figure 4.2: Niblack Claim Map

4.2 Underlying Agreements

The Niblack Project is subject to a 15% Net Profits Interest (NPI) of Cook Inlet Regional Inc. (successor by conveyance from Atlantic Richfield Company, which was the corporate successor to The Anaconda Company) and a sliding scale 1 to 3 percent Net Smelter Return Royalty (NSR) of Royal Gold Inc., successor by conveyance from Lac Minerals (USA) Inc. Two of the 18 patented mining claims (Trio and Broadgauge) included in the Niblack property are only partially owned by Niblack Project LLC, which owns an undivided 7/18ths interest in these claims.

4.3 Environmental Considerations

The Niblack Project is a resource delineation stage polymetallic exploration project in an area of historical mining. Remnants of mining activity dating back to 1905 include a waste rock dump covering an approximately 1-acre area and several short adits, shafts and pits throughout the property. Heavy rainforest has overgrown and obscured much of this early work. Other, more recent, surface disturbance associated with modern exploration efforts includes cut grid lines and helicopter serviced drill pads, all of which have partially or completely been reclaimed.

The property also includes a camp and portal with a 850 m long access drift, 1,500 m of road, a barge landing and moorage facility, sediment ponds, water treatment facility, fuel farm, waste rock storage areas, and various laydown and storage areas (Figure 4.3).

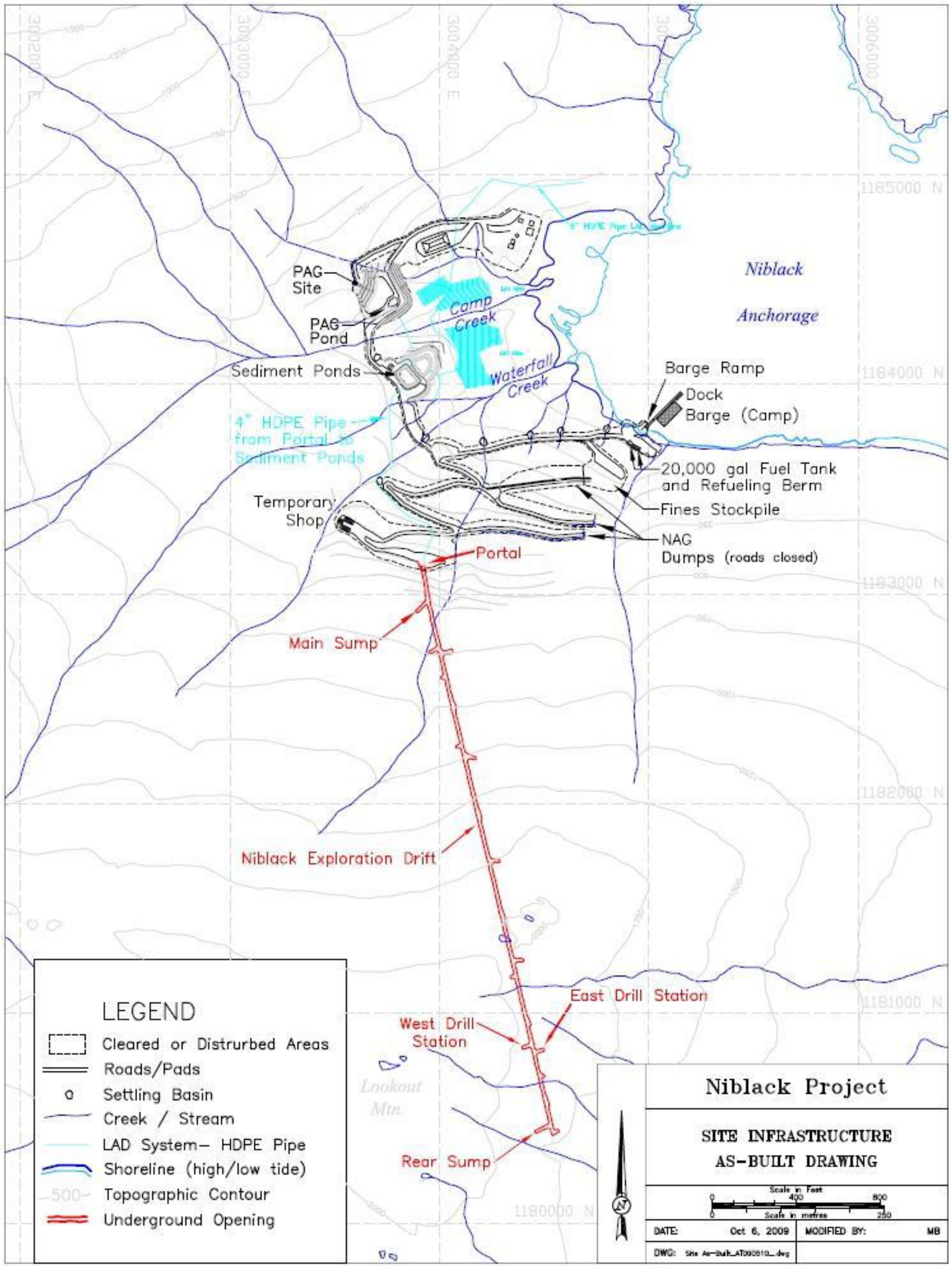
Potentially acid generating/metals leaching waste rock is stored on a lined facility, with run-off water collected and directed to a water treatment facility.

The Company continues to review and seek amendments to existing permits to ensure planned work complies and permits align. Blackwolf's subsidiary Niblack Project LLC has entered into a Memorandum of Understandings and Reimbursement Agreement (MOU) with the Alaska Department of Natural Resources (DNR), under the authority of Alaska Statue 38.05. The purpose of this MOU is to establish a framework for DNR to coordinate the efforts and services of state agencies for the review and processing of future permitting requirements for exploration and development of the Niblack Project. In addition, the Company is seeking under this MOU the issuance of renewal for it Waste Management Permit, which has been administratively extended and updating the financial assurance estimate for the approved Reclamation Plan.

In June 2022, the permit for surface exploration work at the Niblack Project from the US Forest Service, USDA was received. The authorized surface exploration, subject to various terms and conditions and bonding, includes detailed geological mapping; ground based geophysical using Induced Polarization; soil sampling for geochemical analysis; and diamond core drilling at a maximum of fifteen sites.

According to the State of Alaska approved Reclamation Plan, upon project closure the potentially acid generating waste rock will be placed back underground and the drift sealed with a concrete plug. A reclamation bond totalling US$1.22 million has been posted for this work along with other reclamation and long-term monitoring.

The Company has obtained baseline archaeological and environmental studies, which, although not exhaustive, are not known to have identified any substantial concerns which might limit or preclude future development of the Niblack Project.



Source: SRK (2011)

Figure 4.3: Niblack Property Surface and Underground Layout

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

Information from this section of the report is taken from Nowak et al (2011) with minor modifications.

Access to the Niblack Project area is typically gained by float equipped aircraft, helicopter, or boat from Ketchikan.

Climatic conditions are typical of the Alaska Panhandle region, with warm summers and relatively wet, cool winters. Snow cover can be heavy at higher elevations. Rainfall is often very heavy, with average annual precipitation of about 442 cm. The presence of the underground workings has provided access for year round drilling at site. Surface work is restricted to summer months.

The area encompassed by the claims is covered by temperate rainforest at lower elevations, giving way to sparse sub-alpine vegetation at the highest elevations. The property terrain is mountainous, with moderate to very steep slopes rising up from Niblack Anchorage. Total relief is approximately 700 m.

The nearest supply centre is Ketchikan (population 8,200), where there is a deep-water seaport and an international airport with regular daily jetliner service to Seattle, Washington. A sophisticated marine-highway barge and ferry system provides efficient marine transport of goods between the communities of southeast Alaska, British Columbia and Washington State. A variety of contractors, service providers, and resource industry professionals are available in Ketchikan.

The property is remote from population centres, and would require on-site accommodation for a mining operation. The present camp facility is suited to an exploration program with up to sixty people. A 100 m long pile secured floating dock, and barge moorage/landing facility has been constructed on site to facilitate marine transport of equipment and supplies (Figure 5.1).

Newly errected accommodations, cafeteria and office space are available at site. Roads, totalling approximately 1,500 m, connect the barge ramp to the portal and core logging facility. Beyond these areas, helicopter and foot are the most efficient means of on-site travel.

Power is not available in the immediate vicinity of the property. Water is plentiful on the property, and includes several streams, and lakes.

Source: Blackwolf (2022)

Figure 5.1: Niblack Property Typical Physiography

Note: A) Barge area, looking East; B) Niblack anchorage and Mora Sound Looking East; C) Portal and access roads; D) Aerial view with surface projections of mineralized zones.

6 HISTORY

Information from this section of the report is taken from Nowak et al (2011) with minor modifications.

6.1 General History

The Niblack area has been explored for minerals since the initial copper discovery at Niblack Anchorage made in 1899. The Niblack Mine was developed at the site of the initial discovery as early as 1902. Available records show that the mine shipped ore from 1905 through 1908, producing just over 30,000 tons grading about 3.2 percent copper, 0.04 opt gold and 0.68 opt silver. The mine was closed in late 1908, believed to be the result of litigation.

The Niblack Mine was developed on five levels to a depth of about 91 m below surface, with access by a shaft inclined at seventy degrees to the west. Several exploration adits were driven in the general area, at unspecified dates. Most are very short, and some are still accessible for mapping and sampling.

In the period 1974 - 1976, the property was explored by Cominco American Incorporated (Cominco). Work consisted of line-cutting, geological mapping, soil sampling and geophysical surveys. Six diamond drillholes totalling 882 m were completed in the area of the Niblack Mine. Three holes cut short intervals of copper mineralisation, but on the whole the work was not encouraging, so Cominco withdrew from the project.

In 1977, The Anaconda Company (Anaconda) staked 118 claims, acquired the original patented claims, and did line-cutting, geology and geochemistry. Gold-bearing limonitic mineralisation was discovered on surface at Lookout Mountain at the “Anaconda Pit”. One 345 m diamond drillhole was completed, which remained in hanging wall strata throughout its entire length.

In 1980, Noranda Exploration Incorporated (Noranda) optioned the property, with the underlying obligations, from Anaconda. Noranda did geological mapping and geophysics, and diamond drilled eighteen core holes (8,536 ft or 2,602 m) in the Lookout Mountain area.

In 1984, Lac Minerals (USA) Incorporated (Lac) entered into a joint venture with Noranda. Over the next six years, work consisted of detailed geological mapping, soil geochemical sampling, and two electromagnetic (EM) surveys. From 1984 to 1989, Lac completed nineteen diamond drillholes (3,464 m). The property was then held on care and maintenance until the 1992 field season.

Lac resumed work in 1992, initially focussing on re-logging of drill core, extensive rock sampling for a litho-geochemical study, detailed structural geology studies, and various ground and airborne geophysical surveys, including EM, magnetics, induced polarization (I.P.) and radiometrics. A further fifteen diamond drillholes (4,789 m) were completed in 1992 and 1993. In late 1994, Lac was acquired by Barrick Gold Corporation (Barrick).

In early 1995, Abacus Minerals Corp. (Abacus) acquired the rights (and obligations) to the Niblack Project from Barrick and Noranda. Abacus actively explored the property between 1995 and 1997. Work included compilation of existing data, an extensive line-cutting program, soil geochemical sampling, geophysical surveys, trenching in the area of the old Niblack Mine, prospecting and geological mapping, and structural geology studies. Diamond drilling on the Niblack Project from 1995 to the end of the 1997 program totalled 102 holes (26,246 m). A resource estimate was prepared at the end of both the 1996 and 1997 field seasons.

In late 2004, Abacus transferred ownership of the Niblack Project to a new company incorporated under the name Niblack Mining Corp. (NMC). NMC explored the property from late 2005 to early 2008. A total of 60 holes (LO-155 to LO-212) were drilled from surface and 9 holes (U001 to U009) were drilled from underground for a total length of 17,174 m.

NMC commenced an underground exploration program in 2007. The program included the construction of a new portal at the 122 m (400 foot) elevation, and an access drift 850 m long, 4.5 m wide, and 4.5 m high was driven. This drift was driven down at a grade of -16% for the first 50 m and then up at a grade of +4.7% for the remainder.

In October 2008, Committee Bay Resources Ltd merged with NMC. In February 2009, Committee Bay Resources Ltd changed its name to CBR Corp and in April 2010 to Niblack Mineral Development Inc. (NMD). A total of 19 underground holes (U010 to U028) with a total length of 4,186 m were drilled under the supervision of NMD.

6.2 Recent History

In July 2009, the Heatherdale Resources Ltd (Heatherdale) entered into an agreement with NMD to acquire up to 70% of the Niblack Project and formed Niblack Project LLC (the Niblack Joint Venture). Initial interests in the Niblack Joint Venture were 49% held by NMD and 51% held by Heatherdale.

Heatherdale conducted drilling programs on the property between 2009 and 2012 increasing its interest in the Niblack Joint Venture to 60% and reducing NMD's interest to 40%. A total of 136 underground core holes were drilled between 2009 and 2012 for 53,652 m and 21 surface core holes were drilled for 7,114 m.

On January 1, 2012, Heatherdale acquired all of the outstanding shares of NMD resulting in Heatherdale owning indirectly 100% of the Niblack Project.

In 2012, Niblack Project was placed under care and maintenance. In late 2020, Heatherdale returned to Niblack Project and drilled 12 surface holes for 1,785 metres and a further five holes in 2021, totaling 1,810 m underground at the Lookout deposit.

In April 2021, the Heatherdale changed its name from Heatherdale Resources Ltd to Blackwolf Copper & Gold Ltd.

6.3 Exploration History

6.3.1 Geological Mapping

Most companies working at the Niblack Project have completed rigorous surface mapping programs. The most comprehensive surface mapping has been that done by Anaconda, the Lac-Noranda joint venture and Abacus.

6.3.2 Geochemical Surveys

Extensive surface sampling of soils and rocks was undertaken by Lac and Noranda. The results of these surveys were compiled by Adamson and Gray (1995). Several areas of anomalous soil and rock geochemistry were defined, with the elements of interest being copper, zinc, gold and silver.

6.3.3 Geophysical Surveys

There have been a large number of geophysical surveys conducted over the years on the Niblack Project. For the most part, these have been of limited efficiency. The following is a brief listing of programs and results, compiled from various reports and in some cases second hand.

Cominco (1974): Ground magnetometer and pulse electromagnetics at the Niblack Mine and in the Lookout and Dama areas. Brown (1976) felt that the results, especially at Lookout and Dama, were "mostly invalid, due to the rugged terrain".

Anaconda (1978-79): Airborne magnetic and electromagnetic survey (Geonics helicopter mounted in-phase - quadrature instrument) flown by Aerodat Limited over much of Prince of Wales Island in 1978 and 1979. Several moderately strong conductors were detected in the Niblack area.

Anaconda (1979): Olm and Smith (1979) - ground checking of airborne anomalies in several areas, including Niblack, during 1979. Instrumentation included various electromagnetic techniques and ground magnetometer. Three lines at Lookout and two near the Niblack Mine were surveyed, with no positive encouragement.

Noranda (1982-84): Adamson and Gray (1995) - surveys by Noranda used a so-called "modified applied potential" technique, on several grids, as well as Time Domain Electromagnetics (TEM) in the Lookout area. Results were equivocal; apparently the terrain conditions caused problems.

Lac (1985-89): Adamson and Gray (1995) - work by Lac involved Crone Pulse Electromagnetics (CPEM) on selected lines near massive sulphide occurrences in several areas of the property. Results are reported to have been not definitive.

Lac (1992): de Carle (1992) - helicopter-borne survey, by Aerodat Limited, consisting of electromagnetics (EM), very low frequency electromagnetics (VLF-EM) and radiometrics over a large area including the Niblack property. The survey resulted in a few electromagnetic responses worthy of ground follow-up, mostly in areas of prior interest. Magnetic, VLF and radiometric data were considered to be of little or no use.

Lac (1992-93): Adamson and Gray (1995) - summarized work by Delta Geoscience Ltd (Delta Geoscience) of Delta, British Columbia. Surface work covered much of the property and included: 38.7 miles (62 km) of ground magnetics; 36.3 miles (58 km) of ground VLF-EM; 26.6 miles (43 km) of gradient induced polarization (I.P.); 6.6 miles (10 km) of time domain I.P.; downhole EM in ten holes; and downhole physical property logging in ten holes. Results of these surveys have been useful in defining geological trends, and several drill targets resulted, some of which remain untested.

Abacus (1996): Price (1996) - Delta Geoscience did some ground magnetics work near the Niblack Mine and completed borehole induction system (Boris) surveys in three drillholes (LO-42, LO-61 and LO-63), as well as a Mise a la Masse survey in hole LO-61. The results of these surveys did not appear to have added significantly to the understanding of the property. The general impression gained by examining the data from the numerous geophysical surveys is that the results were in many cases not definitive. However, some geophysical surveys have been useful to outline general geological trends, and some specific drill targets have been defined. Down-hole pulse electromagnetic surveys appear to have been of limited use.

Niblack Mining Corp (2005-2008): NMC completed a several month-long review of the property data that included 3D-modelling of the Lookout zone. This review led to refinement and re-interpretation of the geological model and controls on mineralization. The geological model included multiple (possibly as many as four) stacked massive sulphide lenses with predictable geometries and plunge directions. Plunge control on sulphide zones was assumed to be a product of both the syn-depositional environment and later folding. The new model was confirmed through drilling in late 2005, in which

NMC intersected mineralization in every hole. Follow-up surface drill programs were completed in 2006 and 2007, which expanded and better defined the Lookout and Trio zones. Additional holes also targeted the Niblack Mine, Mammoth zone, and Dama zone areas.

In 2006 NMC initiated permitting for an underground exploration program and completed 1,500 m of road building in anticipation of underground work starting in 2007. Environmental work relating to the permit applications was carried out in 2005, 2006, and 2007, including baseline surface water quality studies, hydrology and meteorology monitoring programs, acid rock drainage studies, and various biology surveys. Portal construction commenced in September 2007. The underground work led to the construction of an 850 m drift that cross cuts the deepest portion of the Lookout zone. Fifteen-metre-deep muck bays and crosscuts were constructed every 150 m along the main access drift that doubled as drill stations.

Nine underground holes totalling 6,030 ft (1,837 m) were completed in late 2007 and early 2008 in and around the Mammoth zone target, located near to the portal entrance. A total of 19 underground holes (U010 to U028) with a total length of 4,186 m were drilled in 2008 summer drill program.

Heatherdale (2009-2011): Geological mapping and compilation including the relogging of some 50,000 m of drill core and surface mapping. The results of this compilation led to the development of a new geological model which Heatherdale is testing by drilling holes from the underground workings. Between September 2009 and October 2011, Heatherdale completed 146 drillholes (U029 through S163).

Blackwolf (2020-2021): The 2020-2021 program included 12 surface holes for a total of 1,785 m and five underground holes totaling 1,810 m at the Lookout deposit.

6.4 Historical Mineral Resource Estimate

Mineral resources for the Niblack deposit were estimated in 1997, 2008, 2009 and 2011. All historical mineral resources except for the 1997 estimate were prepared by SRK Consulting Canada Inc. (SRK, 2008, SRK, 2009, Nowak et al 2011). The SRK historical mineral resources were prepared in accordance with the CIM definitions for mineral resources at the time and used mineral resource categories as outlined in NI43-101. The mineral resources are relevant in that they reflect the potential of the Niblack deposit at the time that they were estimated. The mineral resources are not current as they don’t consider any of the recent drilling performed on the Project and as such the historical estimates shouldn’t be relied upon.

Price (1997) estimated an overall resource for four zones in the Lookout Area that were supported by sufficient drilling information. The reader is cautioned that this historical resource estimate was prepared before the implementation of National Instrument 43-101 and as such doesn't used resource categories as defined by the Instrument. The historical mineral resources were estimated using a polygonal methodology on vertical sections and included several thin intercepts that were added for the sake of continuity. The historical resources polygons were classified as "indicated" if they included a drillhole intercept and as "inferred" for those polygons projected beyond the drilling data to a maximum of 150 ft in dip direction and 50 ft (15.2 m) along strike.

Grades for "inferred" polygons were assigned based on adjacent "indicated" polygons. Indicated blocks were limited to sections with drillhole intercepts. Projections were a maximum of 20 ft (7.62 m) in the dip direction, or halfway to the next drillhole. Strike projection was limited to 25 ft (7.6 m) in each direction, which is halfway to the adjacent section. No minimum thickness criterion was used, but most blocks have a true thickness greater than 3.0 ft (0.9 m), and many of the thinner blocks are high grade and thus will stand dilution. Inferred polygons were extended in the dip directions beyond indicated blocks, and in the strike direction beyond indicated and inferred material.

The 1996 estimate was updated based on 1997 drill results, with the addition of a small resource in the Trio area (Peatfield, 1997). Results of this update are shown on Table 6.1.

Table 6.1: 1997 Historical Mineral Resource Estimate for Niblack Project

Class	Zone	Tonnes	Cu (%)	Z (%)	Au (g/t)	Ag (g/t)
Indicated	Lookout	306,500	1.73	3.16	3.20	46.28
Indicated	Trio	17,500	2.33	4.67	2.02	27.55
Indicated	Gold	163,500	0.30	0.28	4.86	67.24
Inferred	Lookout	1,730,000	1.80	3.56	2.63	36.41
Inferred	Trio	206,000	2.42	4.74	2.20	35.58
Inferred	Gold	99,500	0.18	0.14	7.10	38.35

In 2008, SRK estimated a new resource based upon drilling by NMC. This resource model was prepared by SRK and documented in a technical report (SRK, 2009). The 2008 estimate was later updated by SRK in 2009 to include data from 19 underground drillholes and again in 2011 to include results from the 2010 drill program by NMD and Heatherdale (Nowak et al, 2011).

The SRK estimates were prepared by ordinary kriging using Datamine software into blocks that were 7.6 by 1.52 by 4.57 m. The mineral resources were estimated and classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM 2005). The resource blocks informed by two or more holes contributing at least six composites to the estimate and located at an average distance of less than seventy-five feet from the informing composites were assigned an Indicated classification and all other estimated blocks were classified as inferred. Table 6.2 summarises the 2011 SRK mineral resource statement. The mineral resources are relevant but are now superseded by the mineral resources presented in Section 14 of this report.

Table 6.2: SRK 2011 Mineral Resource Statement

Class	Deposit	Tonnes	Cu (%)	Au (g/t)	Zn (%)	Ag (g/t)
Indicated	Lookout	5,638,000	0.95	1.75	1.73	29.52
Inferred	Lookout	2,370,000	0.73	1.42	1.17	21.63
Inferred	Trio	1,023,000	1.00	1.11	1.56	16.56
Inferred	Total	3,393,000	0.81	1.32	1.29	20.10
Notes: US$50 Net Smelter Return (NSR) cut-off uses long-term metal forecasts: gold US$1150/oz, silver US$20.00/oz, copper US$2.50/lb, and zinc US$1.00/lb; Recoveries (used for all NSR calculations) to Cu concentrate of 95% Cu, 56% Au and 53% Ag with payable metal factors of 96.5% for Cu, 90.7% for Au, and 89.5% for Ag; to Zn concentrate of 93% Zn, 16% Au, and 24% Ag with payable metal factors of 85% for Zn, 80% for Au and 20% for Ag						

The mineral resources are historical as defined in NI43-101 and no qualified person has done the work necessary to classify the historical mineral resources as current mineral resources as defined under NI3-101. To convert the historical mineral resources to current mineral resource, a new mineral resource will have to be prepared to include all the recent drilling carried out after 2011. The Company is not treating the historical mineral resource as current and the historical resource estimates should not be relied upon.

6.5 Historical Production

The Niblack Mine was developed on five levels to a depth of about 230 feet below sea level, with access by a shaft inclined at -70º to the west, located near the present camp site. Mine plans show that mineralization was mined from lenses dipping south at approximately -70º and varying in thickness from half to 10 m in thickness. In late 1908, litigation between Niblack Copper and Wakefield caused closure of the mine.

Available records show that the mine shipped ore from 1905 through 1909, producing just over 30,000 tons grading about 3.2 percent copper, 0.04 opt gold and 0.68 opt silver (Peatfield, 1997).

Most of the ore was shipped in relatively small lots to the Tacoma Smelting Company (Tacoma) facility at Tacoma, Washington. In addition, several small shipments of siliceous ore with generally lower copper content, went to the Alaska Copper Company Works (Alaska Copper) at Copper Mountain, Prince of Wales Island. Zinc was not recovered (Table 6.3).

Table 6.3: Historical Production Records from Niblack Mine (1905 - 1909)

Shipped to Tacoma				
Year	Tons	Cu (%)	Au (opt)	Ag (opt)
1905	4,236	4.50	0.04	0.97
1906	9,818	2.93	0.03	0.50
1907	8,235	3.18	0.03	0.60
1908	5,007	3.30	0.10	1.04
1909	1,698	3.79	0.03	0.73
Total	28,994	3.35	0.04	0.70
Shipped to Alaska Copper				
Year	Tons	Cu (%)	Au (opt)	Ag (opt)
1906	386	1.50	0.11	0.30
1907	1,083	2.48	0.03	0.59
Total	1,469	2.23	0.05	0.52
Total Shipped from Niblack				
	Tons	Cu (%)	Au (opt)	Ag (opt)
	30,463	3.29	0.05	0.70

7 GEOLOGICAL SETTING AND MINERALIZATION

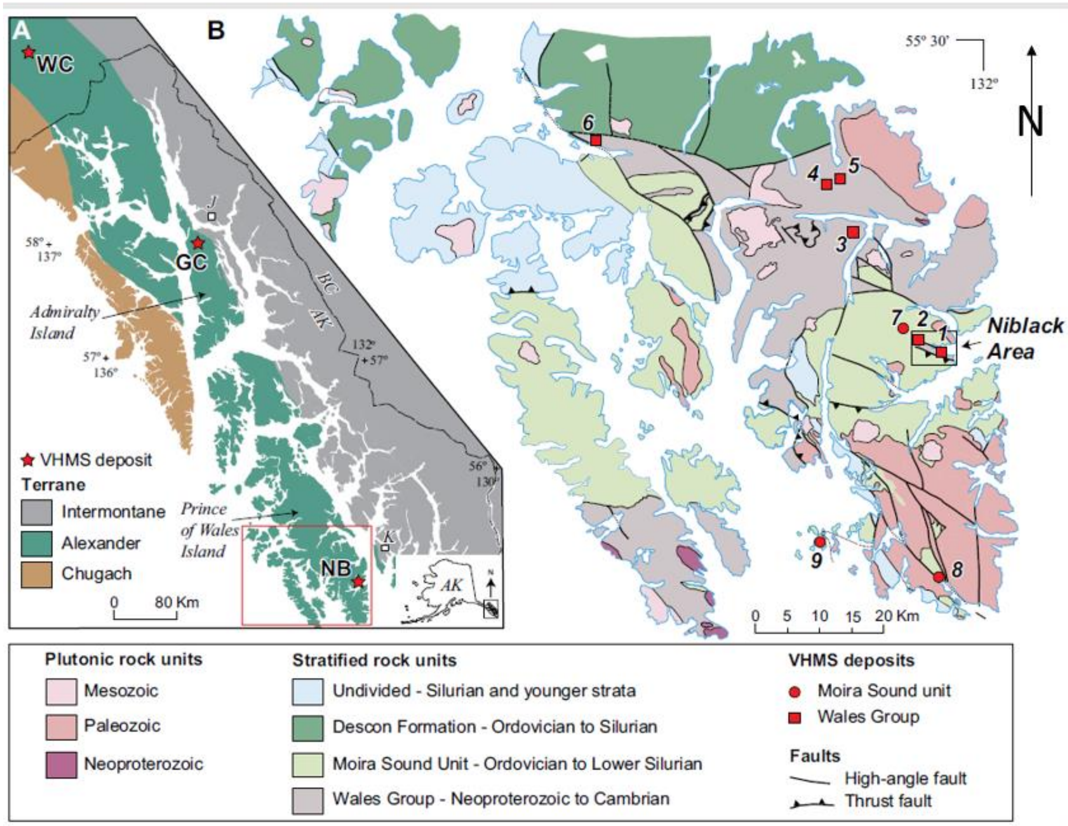
Information from this section of the report is taken from Nowak et al (2011) and Oliver et al (2021) with modifications.

7.1 Regional Geology

The southern part of Prince of Wales Island is underlain by rock assemblages belonging to the Neoproterozoic to early Paleozoic Alexander terrane which is known to contain several volcanic hosted massive sulphide deposits (Eberlein et al, 1983, Oliver et al, 2021). This major tectonostratigraphic unit underlies portions of the coast of northwest British Columbia, extending northward through the Alaskan Panhandle into the Saint Elias Mountains of British Columbia and the Yukon, and westward into the Wrangell Mountains of Alaska (Wheeler and McFeely, 1991) (Figure 7.1).

The Alexander terrane evolved along a convergent plate margin during late Precambrian through to Early Devonian time and is characterized by the deposition of arc-type igneous and sedimentary rocks (Gehrels and Berg 1994). Deformation and metamorphism of these rocks occurred during Middle Cambrian-Early Ordovician and Middle Silurian-early Devonian orogenic events. Following this, shallow marine carbonate and clastic rocks, and subordinate mafic to intermediate volcanic rocks were deposited during a period of relative tectonic stability (Gehrels and Saleeby, 1987a). Another assemblage of rift-related volcanic and sedimentary rocks was subsequently deposited, unconformably, on the older rocks during the Late Triassic (Gehrels et al., 1986). The mid-Jurassic to Cretaceous accretion of the Alexander terrane to inboard Cordilleran terranes resulted in renewed deformation and metamorphism of the region (Berg et al., 1972; Coney et al., 1980), and additional dismemberment along regional-scale right-lateral strike slip faults continued throughout the Tertiary and into Recent times.

The Alexander terrane is further sub-divided into the Admiralty and Craig subterranes, with Prince of Wales Island lying wholly within the latter subdivision. The Craig subterrane is comprised of the (a) the dominantly volcanic and slightly older (Neoproterozoic to Cambrian) Wales Group; (b) the younger (Ordovician to Lower Silurian), sedimentary-dominated Moira Sound Unit; and (c) the younger volcanic and sedimentary rocks of the Descon Formation (Gehrels and Saleeby, 1987a).



Source: Oliver et al. (2021)

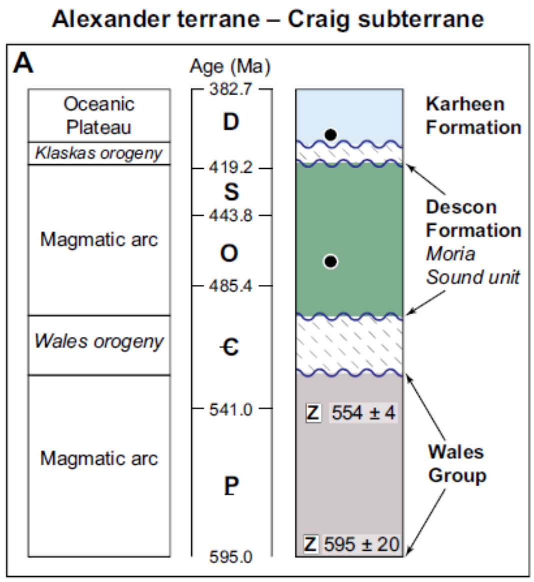
Note: 1: Niblack property, 2: Luella zone, 3: Ruby Tuesday, 4: Khayyam, 5: Stumble-On, 6: Big Harbor, 7: Moira Copper, 8: Nicholas Bay, 9: Barrier Islands. AK =Alaska, BC = British Columbia, GC = Greens Creek, J = Juneau, K = Ketchikan, NB = Niblack, VHMS = volcanic-hosted massive sulfide, WC = Windy Craggy.

Figure 7.1: Regional Geological Setting of Niblack Deposits

The Wales Group comprise mainly of submarine basaltic to rhyolitic lavas and volcaniclastic rocks, turbidites, and limestones. The Moira Sound unit unconformably overlies the Wales Group and contains andesitic volcaniclastic rocks, turbidites, graphitic limestones, and cherts. The Descon Formation conformably overlies the Moira Sound unit and includes mostly greywackes, volcanic derived sedimentary rocks, and laminated mudstones. The Descon Formation rocks were intruded by a 465–425 Ma diorite, quartz diorite, and tonalite igneous complex (Figure 7.2).

Two major orogenic events are recorded on Prince of Wales Island and surrounding islands. A middle Cambrian to earliest Ordovician lower greenschist to upper amphibolite metamorphic event (D_1), referred to as the Wales orogeny, is characterized by the development of S_1 foliation and regional-scale uplift accompanied by regional- and outcrop-scale isoclinal to recumbent folds (Gehrels and Saleeby, 1987b; Gehrels, 1990).

The absence of penetrative S_1 fabrics in the overlying Moira Sound unit and Descon Formation suggests that D_1 deformation occurred prior to their deposition (Gehrels and Saleeby, 1987a; Gehrels, 1990).



Source: Oliver et al. (2021)

Figure 7.2: Composite Stratigraphic Column for the Craig Subterrane

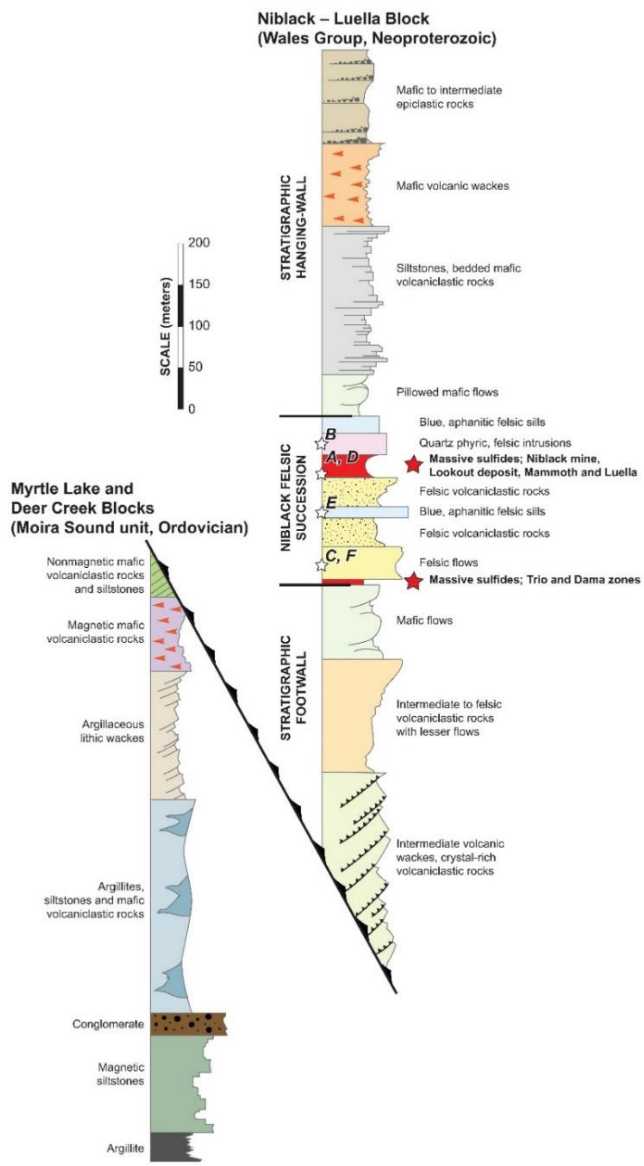
A Silurian to Early Devonian deformation event known as the Klakas orogeny (D_2) event is associated with lower greenschist metamorphism, development of an S_2 slaty cleavage of variable intensity, and regional-scale uplift (Gehrels and Saleeby, 1987a). Deformation associated with the Klakas orogeny is strongest in the southern and western portions of Prince of Wales Island, diminishing to the north. As a result of this protracted deformational history, geologic contacts between the Wales Group and Moira Sound unit on Prince of Wales Island are reported as unconformities or faults (e.g., Berg et al., 1972; Gehrels and Saleeby, 1987b, Gehrels et al., 1983).

7.2 Property Geology

At Niblack Anchorage, the rock succession consists of a bimodal mafic-felsic suite of volcanic flows and volcaniclastic rocks, overlain by a younger volcano sedimentary cover. All of these rocks have undergone low-grade greenschist facies metamorphism. The geological map for Niblack has been constructed based on several generations of detailed fieldwork, drilling, and an extensive litho-geochemical database (Proffett, 1980; Brewer 1988; Adamson and Gray, 1995; Price, 1996; Lindberg, 1997; Oliver, 2010).

The litho-stratigraphy of the Niblack area has been subdivided into two litho-tectonic assemblages: the Ordovician Moira Sound unit and the Neoproterozoic Wales Group (Gehrels and Berg 1994, Ayuso et al. 2005, and Slack et al. 2006).

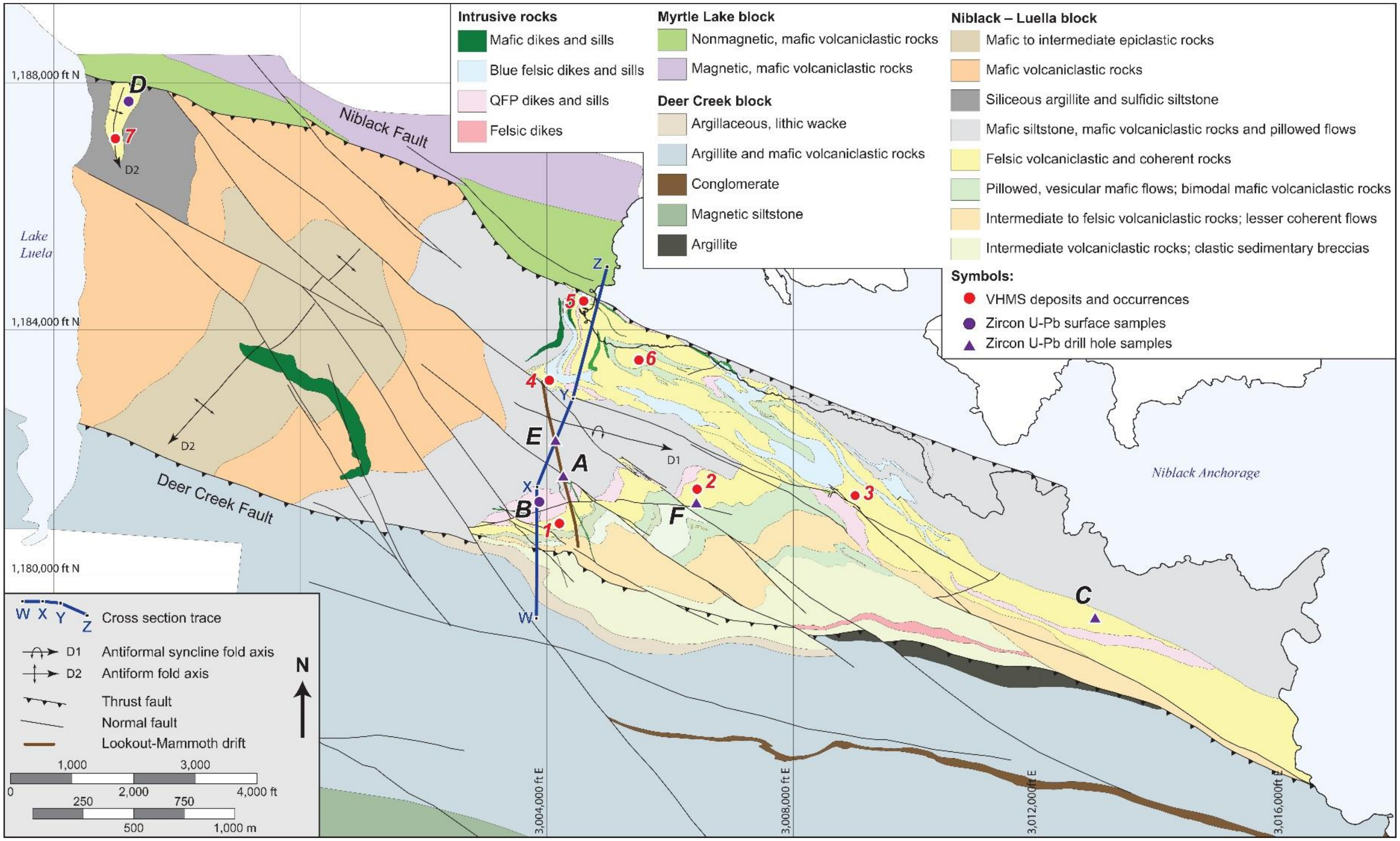
Oliver et al. (2021) further subdivided the two regional litho-tectonic assemblages on the Niblack Property into three fault-bounded lithological blocks: the Myrtle Lake, Deer Creek, and Niblack-Luella blocks (Figure 7.3).



Source: Oliver et al. (2021)

Figure 7.3: Stratigraphic Column of the Niblack Area

Rocks in the Niblack-Luella block are thrust over younger rocks of the Myrtle Lake block along the NNE-verging Niblack fault. The Deer Creek fault trends subparallel to the Niblack fault and forms the southern contact between Deer Creek and Niblack-Luella blocks (Figure 7.4). All rocks within the fault-bounded Myrtle Lake and Deer Creek blocks are part of the Ordovician to Silurian Moira Sound unit. All volcanic hosted massive sulphide (VHMS) deposits on the Niblack property occur in the Wales Group Neoproterozoic stratigraphy of the Niblack-Luella block.



Source: Oliver et al. (2021)

Figure 7.4: Niblack Property Geology

Note: Sulphide deposits: 1) Lookout; 2) Trio; 3) Dama; 4) Mammoth; 5) Niblack mine; 6) Lindsy; 7) Luella.

7.2.1 Moira Sound Unit Myrtle Lake Block

Rocks assigned to the Myrtle Lake block occur north of the Niblack fault (Figure 7.4) and are further subdivided into nonmagnetic and magnetic units.

Nonmagnetic rocks include, bedded mafic volcaniclastic rocks and bedded siltstones. The bedded, fine-grained, mafic volcaniclastic rocks north of the Niblack fault have well-defined planar, centimeter-scale, dark green to black beds. Coarser, lithic fragments are rare and where present form discontinuous lenses (Oliver et al, 2021).

Magnetic rocks include mafic volcaniclastic rocks with moderately to strongly magnetic signature and composed of abundant cuspate to elongate millimeter- to centimeter-scale volcanic and clastic rock fragments, supported by a green, noncalcareous, mafic matrix. Mafic volcaniclastic rocks are generally massive and poorly stratified. Rare, well-bedded mafic tuffs are locally interbedded with these rocks (Oliver et al, 2021).

7.2.2 Moira Sound unit Deer Creek Block

Rocks of the Deer Creek block are located south of the Deer Creek fault and are similar to the lithological units noted in the Myrtle Lake block (Figure 7.4). These rocks are also interpreted to belong to the Moira Sound unit, and they comprise fine-grained, clastic, and volcaniclastic sedimentary rocks, which include argillaceous lithic greywackes, conglomerates, and mafic volcaniclastic rocks.

Minor conglomerate horizons are locally present south of the Deer Creek fault. These units are typically nonmagnetic and consist of matrix-supported, cobble- sized fragments embayed in a sandy, siliceous matrix. In general, the magnetic susceptibly in these rocks is low (Oliver et al, 2021).

7.2.3 Wales Group Niblack-Luella Block

Rocks of the Wales Group are bounded between two regional-scale faults, the Niblack fault to the north and the Deer Creek fault to the south (Figure7.4). The Niblack-Luella block is characterized by coherent felsic to intermediate flows and volcaniclastic rocks, pillowed mafic flows, and fine-grained clastic sedimentary rocks dominated by fine-grained, jet-black, and locally carbonaceous argillites, which embay highly strained, narrow felsic volcaniclastic units. Structural data suggest that rocks in the Luella area constitute a minor felsic volcanic cycle that forms stratigraphically above rocks that host the Niblack VHMS deposits (Oliver et al, 2011).

Rocks of the Niblack Project are grouped into four stratigraphic units: (1) the footwall unit; (2) the Niblack felsic units hosting mineralization; (3) the stratigraphic hanging unit and (4) intrusive rocks.

Stratigraphic Footwall Unit

The footwall to the Niblack felsic succession consists of felsic to intermediate volcanic rocks and mafic flows. In the immediate vicinity of the Lookout deposit, intense, discordant mesh textured silica stockwork and replacement zones occur locally and are discordant to all footwall rock types. The footwall pillowed basalts are south dipping, younging to the north and are underlain by bone-white, weathered, felsic to intermediate flows and monolithic breccias. Pyrite stringers, which have a distinctive red-orange color when weathered, commonly cut intermediate flows. The deep footwall stratigraphy is dominated by poorly stratified, fine-grained, plagioclase-bearing volcaniclastic rocks (Oliver et al, 2021).

Niblack Felsic Unit

The Niblack felsic volcaniclastic rocks exceed 100 m in thickness in some locations and are locally graded. Felsic clasts dominate these rocks, whereas lithic clasts and deformed massive sulfide clasts are locally observed. The volcaniclastic units are poorly bedded, but rare, 3- to 7-m-thick mafic volcaniclastic siltstones are located at the boundaries between coarser volcaniclastic beds. The felsic volcaniclastic rocks range in fragment size from fine lithic (ash) and ash-crystal tuffs through to coarse block-tuff fragmental rocks. Many of these rock types contain variably abundant, coarse, sometimes fractured, often bluish quartz crystals liberated by pyroclastic processes.

In the Lookout deposit the coarse grained, blocky-tuffaceous fragmental rocks likely represent pyroclastic debris and/or autoclastic talus accumulations adjacent to flow-dome complexes. As a result, the proximal facies are dominated primarily by coarse rhyolite fragments, with minor rhyodacite to dacite components. These debris accumulations transition to mass flow deposits and debris aprons and become progressively finer grained and increasingly heterolithic. These coarse grained, variably polymictic fragmental rocks are an important host to the sulphide mineralization.

Coherent, massive quartz-phyric felsic flows are another principal component of the Niblack felsic sequence. These flows have good lateral continuity and are texturally homogeneous except for the development of characteristic hyaloclastite-rich aprons along the flow margins (Oliver, 2010).

Very fine grained, quartz-rich units include hematite ± quartz associated with thin-bedded turbidites and may be found immediately above massive sulfide mineralization at the Niblack mine. The stratiform nature of these deposits, their enhanced iron contents, the aphanitic nature of the silica, and their proximity to sulfide lenses at the Niblack mine all suggest that the deposits are syn -mineral cherts (Nowak et al, 2011).

Stratigraphic Hanging Wall Unit

The hanging wall unit consists mainly of pillowed mafic flows and fine-grained, well-bedded siltstones and mafic volcaniclastic rocks. North of the Lookout Deposit, coarse-grained, nonmagnetic, and weakly hematitic epiclastic rocks occur in the hanging wall. In the Luella Zone, hanging-wall rocks to sulfide zones comprise black, graphitic argillites and bedded, pyritic siltstones.

Intrusive Rocks

Quartz-feldspar-phyric sills and dikes, as well as altered fine-grained mafic intrusions, occur proximal to many of the sulfide occurrences in the Niblack-Luella block. Fine-grained, post-mineral dark-green mafic dikes are up to a few meters in width. These sill-like intrusions were emplaced parallel to major unit contacts and are deformed with the enclosing stratigraphy. Occasionally mafic dikes are discordant to bedding and postdate deformation, suggesting that two mafic dike phases, pre- to post-deformation, are present. Most mafic dikes are not mineralized.

Quartz-feldspar-phyric intrusions contain >20% euhedral quartz phenocrysts that are embayed within a fine-grained, quartz- and sericite-rich groundmass. The quartz-feldspar-phyric intrusions are moderately to strongly magnetic. Massive, aphanitic, siliceous, felsic sills and dikes contain fine-grained, disseminated hematite and magnetite, have high magnetic susceptibilities, and are unmineralized (Oliver et al, 2021).

7.3 Structure

Rocks in the Niblack area have been deformed into northerly verging, moderate to tight folds. At least two major deformational events between the Cambrian and Early Devonian have been recognized (Oliver et al, 2021). The D_1 deformation (Cambrian to Ordovician Wales orogeny) produces the dominant S_1 planar fabric of 209°/70° that corresponds to the axial trace of D_1 folds. A property-wide antiform in the Lookout-Niblack mine area is cored by younger sedimentary rocks and is interpreted as an antiformal syncline (Oliver et al, 2021).

Evidence for D_2 deformation, interpreted as the mid-Silurian to earliest Devonian Klakas orogeny, is suggested by early D_1 linear L1 fabrics overprinted by younger D_2-L_2 intersection lineation.

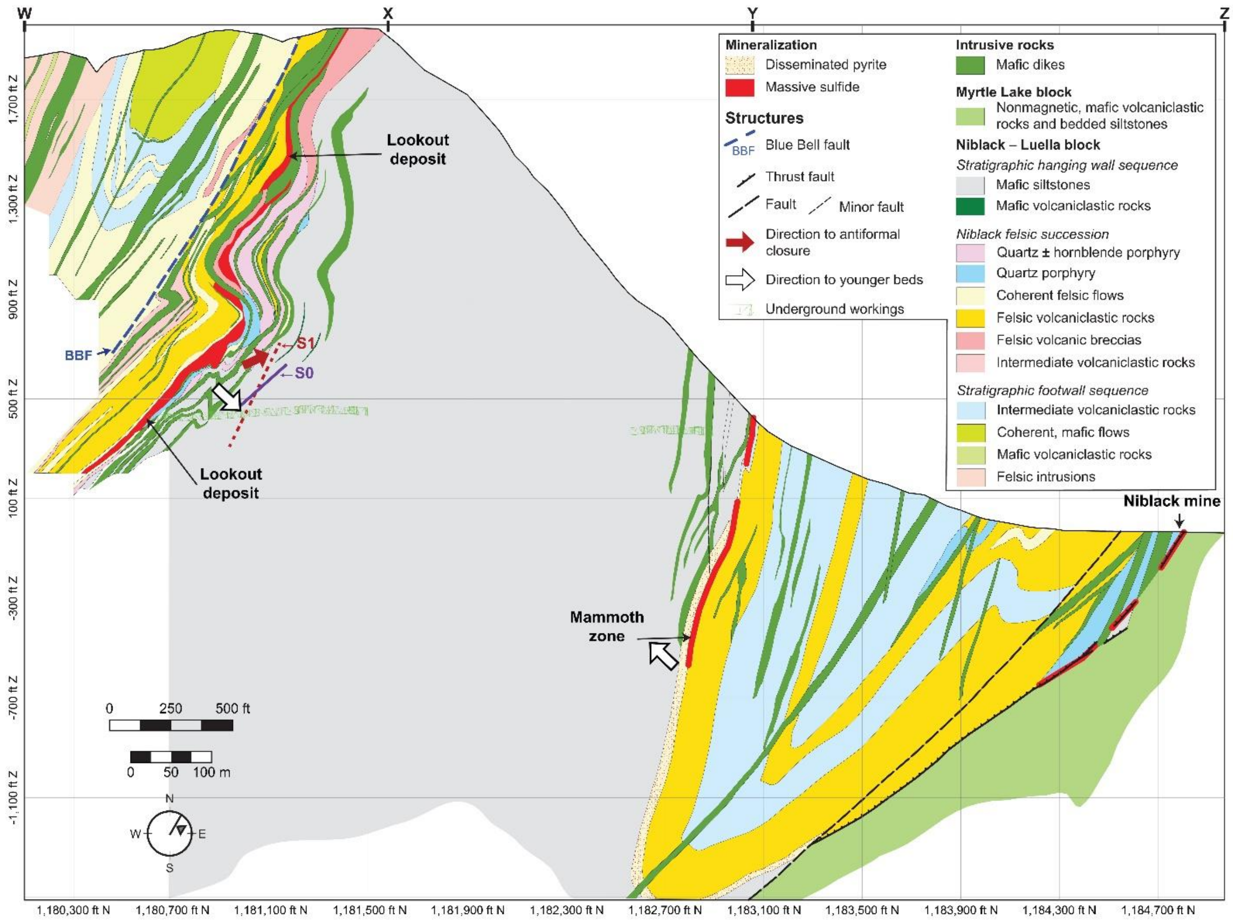
The interaction of the D_2 event resulted in changes in the plunge direction of sulfide lenses suggesting that D_2 deformation overprinted a previously folded rock mass (Ramsay and Huber, 1987). The main sulfide zone of the Lookout deposit plunges 35° to 45° towards 240° and is nearly orthogonal to the plunge direction of D_1 folds. The sulfide zone of the Trio zone has a subvertical plunge, and the orientation of mine workings and stopes in the Niblack mine suggests steep rakes of 70° to 80° towards 135°. Divergent mineralized zone plunge directions may result from the interaction between D_1 and D_2 deformation or may record a primary variation in shape and form of sulfide depositional sites (Oliver et al 2021).

7.4 Mineralization

There are seven VHMS occurrences within an area of approximately 10 km^2 at the Niblack property, Lookout, Trio, Niblack mine, Dama, Mammoth, Lindsy and Luella. All of the sulphide deposits with the exception of the Luella occur on the Niblack Project. Most of these deposits have similar stratigraphic relationships (McNulty, 2014). The distribution of these sulfide zones is controlled by fold repetition of the Niblack felsic succession. The Lookout and Trio zones are located on the overturned, southwestern limb of a property scale antiformal syncline (1,000 m apart, along strike; Figure 7.4), whereas the Mammoth and Niblack mine are located on the northeastern limb of the corresponding synformal anticline (Figure 7.5).

By far the most significant style of mineralisation at the Niblack Project comprise sub seafloor replacement of a porous-permeable volcaniclastic host. As a result, the extent to which different styles of mineralisation have been referred to in the past as massive, semi-massive/stringer or disseminated styles is generally a matter of degree, rather than due to any fundamental difference in process.

For the purposes of core logging, massive sulphide comprises at least 50% sulphide, semi massive sulphide consists of between 25 to 50% sulphide, and stringer-disseminated sulphide contains <25% sulphide, with no sharp distinction between either stringer or disseminated styles based on sulphide content. Pyrite, which is often the most abundant sulphide mineral, occurs as individual grains or fine micro-aggregates, while chalcopyrite may manifest itself as either irregular granular patches or stringers. Quartz crystals, ancillary lithic ash and even large volcaniclastic fragments are common gangue components. While the mineralization tends to change laterally and vertically from copper (chalcopyrite) dominated to zinc (sphalerite) dominated, metal zoning patterns are complex and not evident.



Source: Oliver et al. (2021)

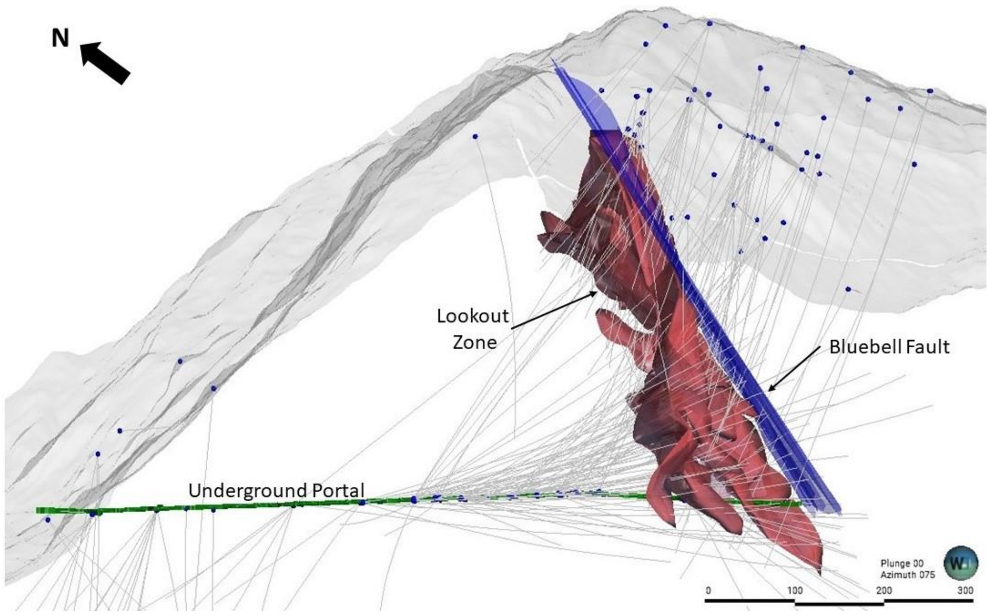
Figure 7.5: Schematic Cross Section of Niblack Area

7.4.1 Lookout

The outlined dimensions of the Lookout deposit are approximately 700 m with an average thickness of 21 m. The higher-grade sulphide mineralization at Lookout occurs in several subparallel, partially interconnecting lenses. These lenses are usually separated by regions of lower-grade mineralization. To a large extent, the higher-grade zones may reflect regions of greater porosity-permeability within the complexly interbedded coarse fragmental rocks and the finer tuffaceous units. In the central portion of the Lookout deposit, stacked lenses cumulatively comprise 80 to 100 m of sulphide mineralization separated by 5 to 10 m intervals of lower grade mineralization. While individual lenses vary in down-plunge extent, the maximum extent of the largest lens defined to date exceeds 300 m.

Increased thickness of mineralization can also be attributed to the hinge zones of parasitic folds on the limbs of the major structures, where the mineralized zone is folded back on itself. A gold and silver-rich oxide zone is developed at the upper reaches of the Lookout zone. Secondary copper and zinc oxide mineralization is generally rare.

The zone is transected by the Blue Belle fault that closely parallels the hanging wall side of the zone (Figure 7.6).



Source: ACS (2022)

Figure 7.6: Perspective View of Lookout Zone and Blue Bell Fault

7.4.2 Trio

Sulphide mineralization at the Trio deposit is similar to that in the Lookout zone to the extent that it occurs in stacked lenses. However, the Trio deposit consist only of two parallel south dipping lenses of massive to semi-massive sulphide mineralization with associated stringer-style mineralization. Current geological interpretation suggests a moderate southerly dip to these lenses within the overall felsic stratigraphy, with mineralization following the margins of an intensely (stockwork) veined, rhyolite flow/dome complex.

The outlined dimensions of the Trio deposit are 580 m by 170 m, with an average thickness of 30 m.

7.4.3 Dama

The Dama zone is located 850 m east of the Trio deposit and is in the hinge of the property-scale antiform that traverses the property. Limited drilling indicates that massive sulphide occurs close to the hinge, at the contact between rhyolite of the Felsic Unit and dacitic rocks of the Footwall Unit. A total of twenty-two holes have tested the target area, most drilled on relatively tight centres. No drilling has tested the area between the Trio and Dama zones.

7.4.4 Mammoth

Sulphide mineralization at the Mammoth zone occurs in the Niblack Felsic Unit near the contact with the overlying Hanging Wall Unit (Figure 7.5 above). Mineralization consists of semi-massive and massive pyrite +/- chalcopyrite that has been defined over a strike length of 160 m and approximately 150 m down dip.

7.4.5 Lindsy

The Lindsy zone, also known as the Lindsy 88 Showing, is exposed in outcrop 700 m east of the Mammoth zone on the lower, northern slope of Lookout Mountain. It consists of sulphide fragments up to 1.0 m in size, of varying compositions, in a quartz-crystal bearing rhyolitic fragmental rock.

7.4.6 Niblack Mine

The Niblack Mine deposit was mined on five levels to a depth of 90 m below surface, and over a maximum strike length of 80 to 90 m. Mine plans show that material was mined from lenses dipping south at approximately seventy degrees and varying in thickness from 0.5 to 10 m. A total of thirty-four holes have been drilled in the area since 1975, which have extended massive sulphide 110 m downdip of the historic workings. Strike length, defined by drilling below workings, is limited to about 50 m and the zone appears to narrow with depth. The Niblack Mine is one of few areas on the Niblack property where jasper-massive magnetite is common and is found in direct contact with massive sulphide. Zinc was not recovered or reported in the mine's production records, but recent drilling clearly indicates sphalerite is an important component of the massive sulphide.

7.5 Mineralogy

The sulphide and precious metal mineralization generally pyrite dominated with associated sphalerite and chalcopyrite with lesser galena (Schurer and Fuchs, 1989) (Table 7.1).

Table 7.1: Summary of Sulphide Minerals Identified at Niblack

Mineral	Composition	Abundance
Pyrite	FeS_2	Abundant
Chalcopyrite	$CuFeS_2$	Abundant

Sphalerite	(Zn, Fe)S	Abundant
Gold	Au, Ag	Common
Galena	PbS	Common
Anatase	TiO_2	Common
Goethite	FeO(OH)	Common
Hematite	Fe_2O_3	Common
Acanthite	Ag_2S	Uncommon
Covellite	CuS	Uncommon
Tetrahedrite- Tennantite	$(Cu,Fe)_{12}(Sb,As)_4S_{13}$	Uncommon
Pyrrhotite	$Fe_{(1-x)}S$	Uncommon
Magnetite	Fe_3O_4	Uncommon

Source (Peatfield, 2004)

The Company conducted preliminary QUEMSCAN study on 10 selected samples of well-mineralised material from selected drillhole intervals, with Au contents ranging from 5.5 to 13.5 g/t (Gregory, 2010). This was undertaken to gain a better understanding of gold deportment in the base metal sulphide zones. Results of this study found that approximately 60% of all gold grains comprised electrum, with the other 40% consisting of the mineral petzite, an Au-telluride.

Similarly, other than providing an electrum component, Ag was also found to be hosted almost exclusively in the mineral hessite, an Ag-telluride. Mean grain size of the 250 gold grains identified was 4.0 microns. This study also confirmed that the associated sphalerite is essentially pure ZnS in composition, with no Fe_2+ lattice component.

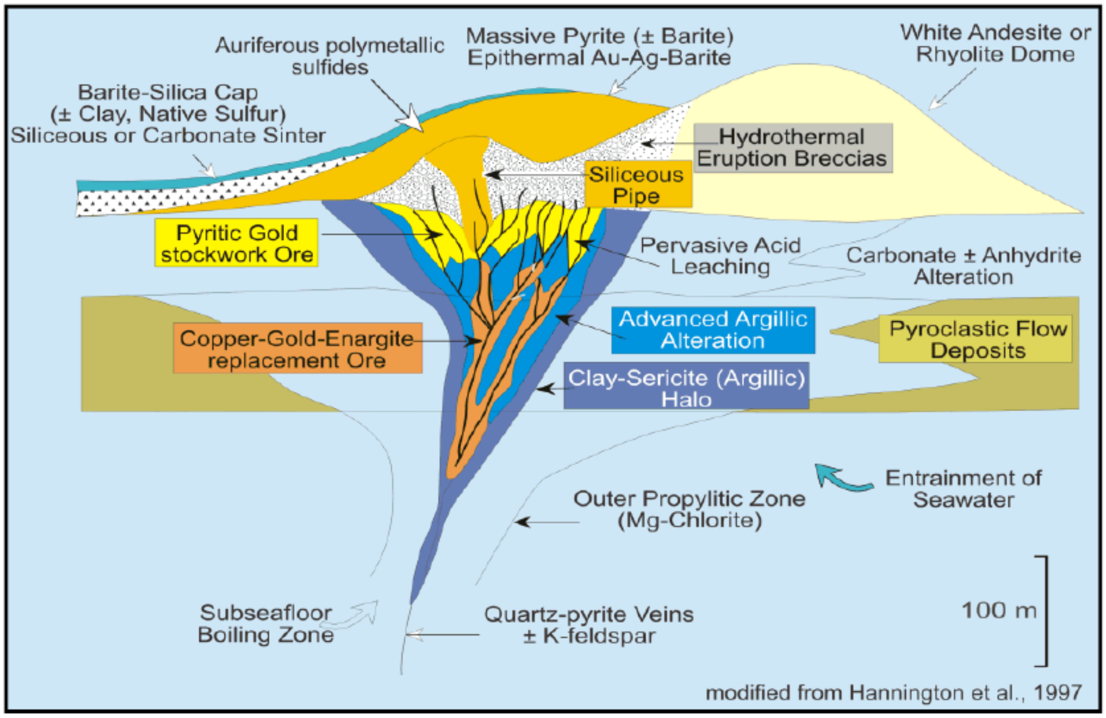
8 DEPOSIT TYPES

The Niblack Project hosts volcanogenic massive sulphide (VHMS) deposits. These deposits form at or just below the seafloor, through hydrothermal processes driven by contemporaneous volcanism.

They are customarily polymetallic, with the metals of commercial significance usually being some combination of copper, zinc, lead, gold, and silver. At the Niblack Project, metals of economic importance include copper, zinc, gold and silver and, while lead is locally elevated, it is rarely present in appreciable amounts. Gold content is noticeably higher than the average for volcanogenic systems and is associated with all styles of mineralization. Equally important is the low concentration of deleterious trace elements (e.g. arsenic, antimony, cadmium, mercury, selenium) commonly associated with VHMS deposits).

VHMS deposits form by the precipitation and accumulation of sulphide minerals near submarine discharge sites (vents) of hydrothermal fluids that produces stratiform, often banded or bedded massive sulphide lenses, with a distinct metal zonation (Franklin et al., 1981; Lydon, 1984). In many cases these lenses are underlain by stockwork "feeder" or "stringer" sulphide zones and overlain by exhalite, cherty sediment and/or argillite. The Niblack deposit(s) differ somewhat from the classic model in that the majority of the sulphide deposition appears to have taken place beneath the seafloor, within permeable, unconsolidated(?) fragmental volcanic rocks, yielding pore-space filling or matrix replacement zones of semi-massive and massive sulphide. These hydrothermal plumbing systems can be quite extensive at times, leading to significant sulphide accumulations (Hannington et al., 1999).

The deposits are stratabound and to some extend stratiform in that they often preferentially occur within stratigraphic units possessing favourable porosity-permeability qualities. They consistently occur within the upper portion of the felsic (rhyolitic) unit (Figure 8.1).



Source (Hannington et al., 1999)

Figure 8.1: Typical Cross Section of Gold Rich Volcanic Hosted Massive Sulphide Deposits

9 EXPLORATION

In December 2020, a 12-hole 1,785-meter drill program targeting extensions to mineralization at the historic Niblack mine site was completed. One of the primary purposes of this program was to test a revised geological model.

Blackwolf has recompiled the geological model for the property and generated a revised geological model interpreting that the volcanic stratigraphy had been overturned.

During the first half of 2021, Blackwolf completed rehabilitation of the 850-meter exploration drift, including electrical upgrades to permit safe access to conduct underground resource expansion and exploration drilling.

During 2021, five holes, totaling 1,810 meters of NQ2 core were completed underground at the Lookout Deposit. The primary objectives of this program were to expand the mineral resource area by targeting massive sulphide mineralization approximately 300 meters away from the underground ramp and to test for the down dip extension of the Lookout mineralized horizon and exploration to the west of the Bluebell strike-slip fault, which runs shallowly oblique to the Lookout Zone.

10 DRILLING

10.1 Historical Drill Programs

There have been a large number of diamond drill programs completed on the Niblack Project prior to the acquisition by Niblack Mining Corp. (NMC) A total of 162 holes have been drilled representing 38,469 m of core. The historical drilling is summarized by companies in Table 10.1. Over half of the historical drilling was carried out by Abacus between 1995 and 1997.

Table 10.1: Summary of Historical Drill Programs

Company	Metres	No holes
Abacus	26,245.66	102
Anaconda	345.03	1
Cominco	882.41	6
Lac	8,252.73	34
Noranda	2,601.88	18
Unknown	141.43	1
Total	38,469.14	162

10.1.1 Historical Drilling Procedures

Drill core and original drill logs are available for all drillholes. Some of the cores from the older drill programs are stored in wood boxes that have now totally deteriorated and could not be recovered. All drill logs are still available in paper format. For the most part, drilling seemed to have been well done, with good to excellent core recoveries. A re-logging program was completed in 1993 that standardized rock type names and core logging conventions, and these have remained more or less consistent since.

All drilling and core logging data has been collected in Imperial units (later converted to metres). Within the Lookout and Trio zones, most of drilling was completed on north-south sections nominally spaced at 20 m to 30 m.

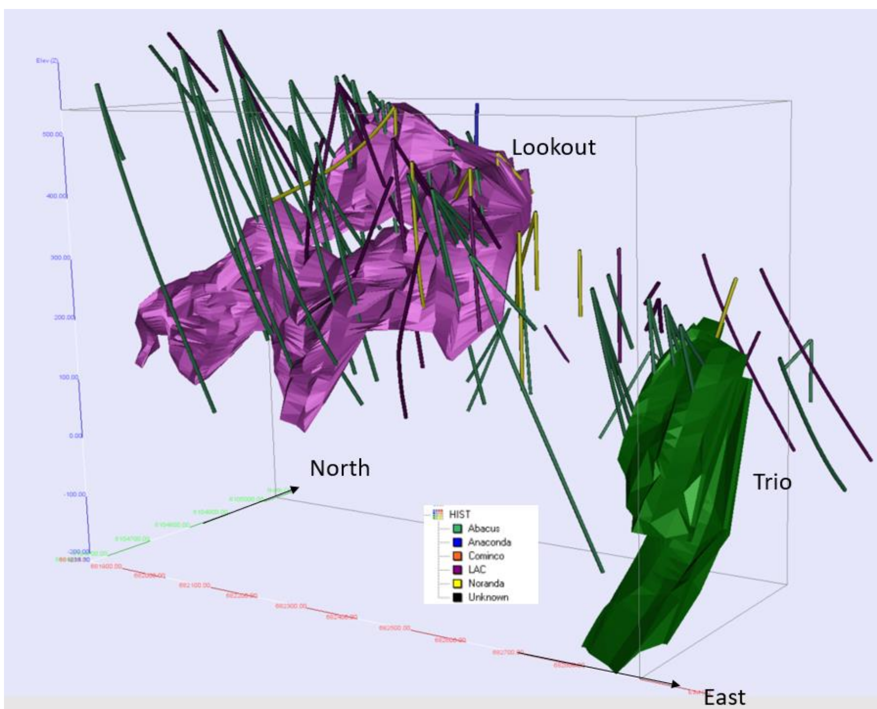
All historical drill collars were surveyed using a theodolite from known control points. Downhole survey data is available for all holes except NIB-01 to NIB-06, drilled by Cominco, and holes LO-002 to LO-012, drilled by Noranda. Drillholes LO-002 to LO-009 are within the area of the resource estimate. They average less than 120 m in length so are unlikely to have deviated significantly. For all other holes, both azimuth and dip were collected every 30 m to 60 m down hole. Surveying methods vary. Photographs were taken of virtually all drill core.

There are no records of historical sampling procedures conducted by previous project operators. Review of historic drill core stored on site indicates core was split or sawn lengthwise in half, with one half sent for assay and the other half replaced in the core box for archive. Most samples were collected at 5.0 ft (1.52 m) intervals or less, and generally consist of material containing visible sulphide minerals.

All historical holes were drilled from surface and were either NX or NQ core in size. Of the 162 holes drilled, 87 were targeted at Lookout and 19 at Trio (Table 10.2 and Figure 10.1).

Table 10.2: Summary of Historical Drilling by Area

Area	Metres	No Holes
Dama	4,962.17	19
Exploration	4,561.29	20
Lookout	21,253.63	87
Niblack	3,522.43	17
Trio	4,169.62	19
Total	38,469.14	162

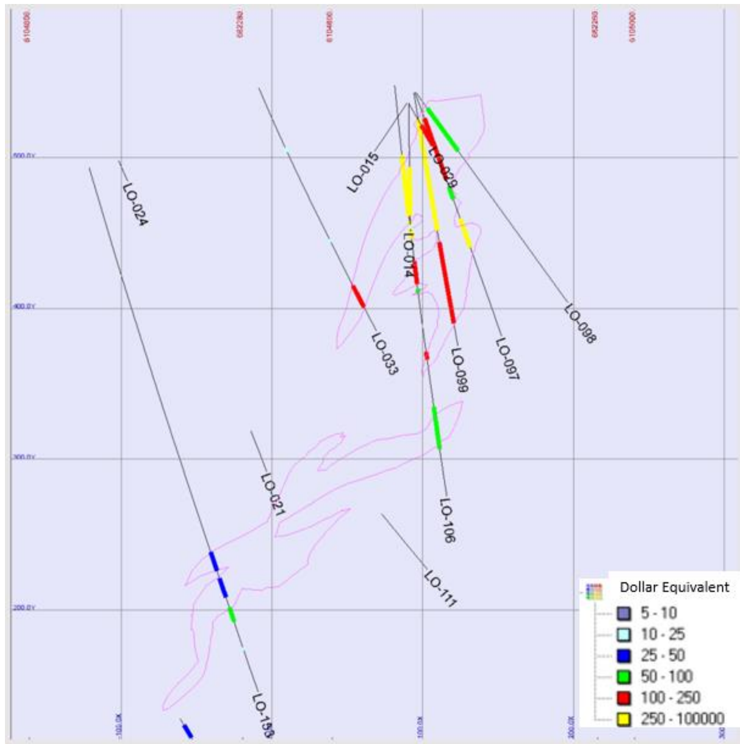


Source: ACS (2022)

Figure 10.1: Historical Drillhole within Lookout and Trio Resource Areas

Note: markers are 100 m apart

While most holes were targeted to intersect the mineralized zones at right angles, several of the down hole lengths represent 150 to more than 200% of the true width of the mineralized intervals because of the complex nature of the folding of the sulphide zones (Figure 10.2).



Source: ACS (2022)

Figure 10.2: Cross Section of Lookout Deposit with Historical Drillhole Intersections

Note: Grid lines are markers are 100 m apart

10.2 NMC Drilling Program

From 2005 to 2008, NMC completed sixty-nine drillholes for a total of 17,174 m. Over eighty percent of these drillholes are within the area of the resource estimate.

In the fall of 2005, NMC conducted a short exploration program to test new structural theories at the Lookout zone. The program consisted of nine drillholes (LO-155 to LO-161) for a total of 2,016 m.

In 2006, NMC completed thirty-two drillholes (LO-162 to LO-193) totalling 8,342 m.

Drilling focused on expanding the Lookout Deposit as well as testing property wide targets. Significant new mineralization was identified within the South Lookout subzone, and wide zones of mineralization within the Main Lookout subzone were extended further down plunge.

In 2007, NMC completed nineteen drillholes (LO-194 to LO-212) totalling 4,977 m. These holes expanded the South Lookout subzone and doubled the known depth extent of mineralization at the Trio zone.

Nine underground holes (U001 to U009) totalling 1,838 m were completed in late 2007 and early 2008 in and around the Mammoth zone target, which is located near to the portal entrance. These holes were drilled during the early stages of drift construction and collared within 150 m of the portal.

10.2.1 NMC Drilling Procedures

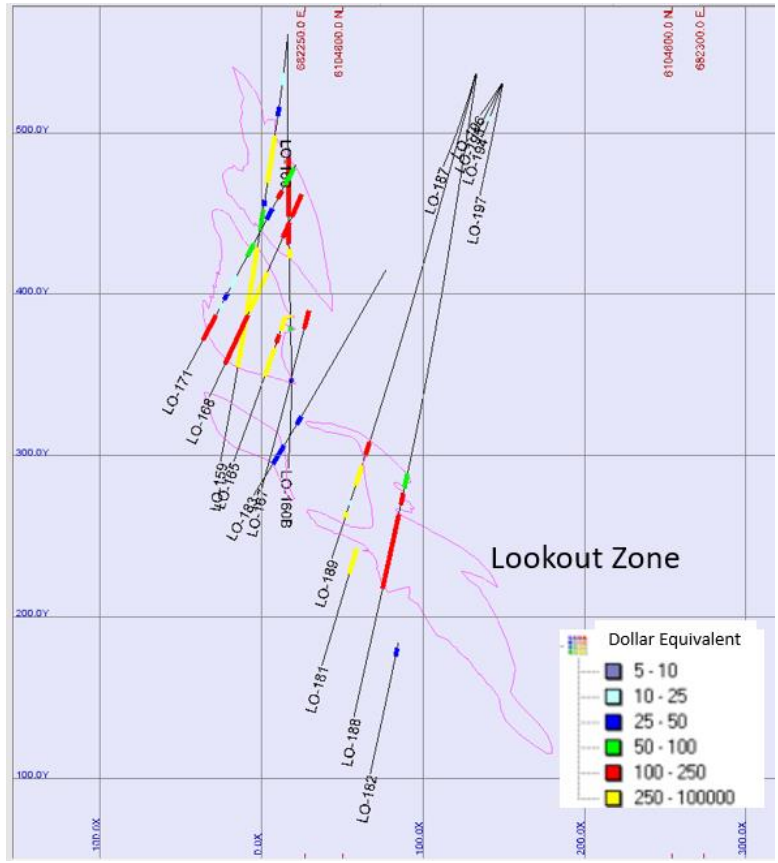
All NMC drillholes were completed by Connors Drilling USA. Surface drilling utilized modified Longyear 38 drill rigs. Crew and drills were transported by helicopter.

All drill collars were surveyed using a theodolite from known control points. Downhole surveys were collected with a Reflex “EZ-Shot” instrument at 150-foot (45.7 m) intervals. The instrument collected azimuth, dip and magnetic intensity measurements for each survey point. Azimuths for surveys with unacceptable magnetic intensity data were corrected in the drill database. All holes were logged on paper at the site. Drill core was NQ2 in size and core recovery was generally good to excellent except in the oxidized zones where recovery was generally poorer.

Core samples were collected from half core cut lengthwise with a diamond saw. Core was typically sampled at five-foot (1.52 m) intervals or along lithological breaks, whichever was earlier. Care was taken to split the core perpendicular to the sulphide mineralization.

Sample intervals vary in length, honouring geological, alteration and mineralization boundaries. In areas of poor recovery, as occurred locally in the oxide zone, some sample intervals were significantly longer than average. Sampling intervals were marked by a geologist and core was typically sampled continuously across the sulphide zones, including post-mineral dikes, and generally included shoulder samples either side of a mineralized zone. One half of the core was used for assaying and the other half retained in the core box. Prior to sampling all core was photographed and logged for geological, structural and geotechnical features.

While most holes were targeted to intersect the mineralized zones at right angles, several of the holes intersected the mineralized zones at less than 90 degrees and true widths are anywhere from 50 to 100% of the drillhole intervals. (Figure 10.3).



Source: ACS (2022)

Figure 10.3: Cross Section of Lookout Deposit with NMC Drillhole Intersections

Note: Grid lines are markers are 100 m apart

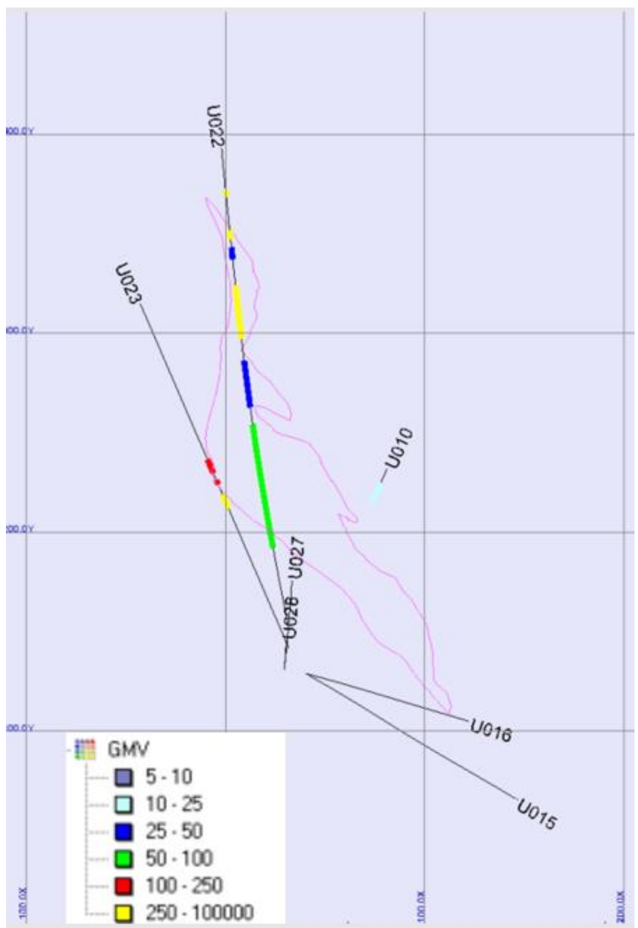
10.3 NMD Drill Program

A total of 19 underground holes (U010 to U028) were drilled in 2008 by NMD from two underground drill stations. A total of 4,186 m of core were recovered and all holes were targeted at the Lookout zone.

10.3.1 NMD Drilling Procedures

All holes were drilled by Connors Drilling USA and the collars were surveyed using a theodolite from known control points. Downhole surveys were collected with a Reflex

“EZ-Shot" instrument at 200-foot intervals. The instrument collected azimuth, dip and magnetic intensity measurements for each survey point. Most samples were collected at 5-foot intervals (1.52 M) and the core was cut with a diamond saw and half of the core was returned to the box and stored at the Niblack site. The core was logged on paper log sheet at the site and all core was photographed prior to sampling. Core recovery was good to excellent. For the most part drillhole intersections were targeted to intersect the mineralized zone at right angle, but several intervals are much longer and not really representative of the true width of the mineralized zones (Figure 10.4). True widths are anywhere from 50 to 100% of drill intersections.



Source: ACS (2022)

Figure 10.4: Cross Section of Lookout Deposit with NMD Drillhole Intersections

Note: Grid lines are markers are 100 m apart

10.4 Niblack Joint Venture/Heatherdale/Blackwolf Drill Programs

In August 2009, Niblack Joint Venture commenced an exploration program under the supervision of Heatherdale. A total of 8 underground drillholes (2,628 m) were completed in 2009 with the hole series number of U029 through U035, including U033A.

In 2010, a further 86 underground holes and a total of 30,192 m were drilled with hole ID from U036 to U116, including U037A, U046A, U053A, U055A and U055B.

In 2011, a total of 52 holes (23,181 m) including 10 surface holes and 42 underground holes have been drilled. The serial numbers for these holes are listed as follows: U117 through U136 (including U124A and U124B), U138, U139, U141, U142, U142A, U146, U149 through U151, U153 through U162 (including U160A); S137, S140, S143 through S145, S147, S147 and S148A.

10.4.1 Niblack Joint Venture Drilling Procedures

Heatherdale followed similar procedures to NMD and NMC. The 2009, 2010 and 2011 drill programs were conducted by Swick Drilling . All collars were surveyed using a theodolite from known control points. Downhole surveys were collected with a Reflex "EZ-Shot" instrument at 3 m intervals. The instrument collected azimuth, dip and magnetic intensity measurements for each survey point.

All cores were boxed and transported from the drilling site to the logging facility located near the portal of the Niblack Mine on the north end of the Niblack Anchorage.

The core was cleaned with water and the core boxes labeled and laid out in sequential order. The core was logged geologically and geotechnically by the on-site personnel. The samples were logged, and the intervals marked by a geologist. The pre-marked water-proof sample tags are then placed in the core boxes.

The core was photographed using a digital camera. All core was sampled, and two different analytical protocols were used separately for mineralized samples and the wall rock samples. The core was sawn in half lengthwise with a diamond saw. One half core was collected for the assay sample and the other half was retained in the core box at site. Most samples were taken at 1.5 m intervals, but length varied based on lithology, alteration and mineralization boundaries as determined by the site geologist.

All samples were sealed in individual plastic bags, and then shipped in sealed sacks by air, transport barge and truck to the ALS Minerals (ALS) analytical laboratory in North Vancouver, Canada for assaying. Core recovery was generally good to excellent. Blackwolf Drill Program.

10.4.2 Heatherdale/Blackwolf Drilling Programs

In 2012, eleven surface holes were drilled for a total of 4,763 m (S164 to S173). The property was then placed care-and-maintenance until 2020.

One of the primary purposes of the 2020 drill program was to test the revised geological model interpreting the volcanic stratigraphy as an overturned sequence. With two major, regional folding events, the revised interpretation is that the target area represents a synform, rather than antiform as previously interpreted. The drilling intersected high-grade polymetallic mineralization, as well as confirmed the revised geological model. A total of 12 surface holes targeting the old Niblack Mine area (LO-213 to LO -224) were drilled for a total of 1,785 m.

During 2021, five holes, totaling 1,810 meters of NQ2 core were completed underground at the Lookout Deposit. The primary objectives of this program were to expand the resource area and to test for the down dip extension of the Lookout mineralized horizon west of the Blue Bell strike-slip fault, which runs shallowly oblique to the Lookout Zone. Two resource expansion drillholes (U21-226 and U21-227) intersected wide intervals of massive sulphide mineralization. Two exploration drillholes up and down-dip of the deposit encountered encouraging base and precious metal intervals within the prospective massive sulphide horizon.

Table 10.3 summarizes the significant drill intersections encountered in the 2020 Blackwolf drilling.

Table 10.3 : Summary of Significant Intersections from the 2020 Heatherdale Drilling

Hole-ID	Zone	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	Ag (g/t)	Zn (%)
LO20-213	Niblack mine	26.50	37.58	11.08	2.33	2.98	45.04	1.78
Including	Niblack mine	32.00	34.50	2.50	4.79	7.97	105.82	5.44
LO20-213	Niblack mine	56.81	59.77	2.96	0.98	0.58	27.66	4.21
LO20-213	Niblack mine	83.00	88.50	5.50	4.32	1.36	30.84	4.43
LO20-213	Niblack mine	95.30	101.00	5.70	1.86	1.21	22.29	0.57
LO20-214	Niblack mine	25.95	33.22	7.27	0.51	0.11	4.62	0.02
LO20-214	Niblack mine	65.66	66.20	0.54	3.06	9.22	146.00	0.95
LO20-214	Niblack mine	77.04	79.05	2.01	0.43	2.40	9.36	1.48
LO20-214	Niblack mine	106.68	114.00	7.32	1.06	0.24	15.42	2.72
Including	Niblack mine	107.50	109.50	2.00	0.64	0.26	15.85	8.24
LO20-215	Niblack mine	100.58	108.17	7.59	5.18	2.66	145.15	6.53
LO20-215	Niblack mine	111.00	113.80	2.80	6.10	2.56	56.39	0.84
LO20-216	Niblack mine				No Significant Intercepts			
LO20-217	Niblack mine				Hole abandoned			
LO20-218	Niblack mine				Hole abandoned			
LO20-219	Niblack mine	70.10	74.20	4.10	0.42	1.41	6.32	3.75
LO20-219	Niblack mine	85.15	86.80	1.65	3.88	2.59	68.52	1.25

Hole-ID	Zone	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	Ag (g/t)	Zn (%)
LO20-219	Niblack mine	119.50	122.60	3.10	9.34	4.25	76.28	3.23
LO20-219	Niblack mine	136.60	143.25	6.65	1.59	0.67	22.96	1.33
Including	Niblack mine	136.60	139.30	2.70	2.70	1.33	44.01	2.57
LO20-220	Niblack mine				No Significant Intercepts			
LO20-221	Niblack mine	90.35	92.35	2.00	0.98	0.70	5.25	0.02
LO20-222	Niblack mine	10.50	15.24	4.74	2.28	0.33	9.53	0.06
Including	Niblack mine	12.00	13.00	1.00	4.94	0.53	16.40	0.05
LO20-222	Niblack mine	21.34	23.00	1.66	1.34	0.14	5.99	0.06
LO20-223	Niblack mine				No Significant Intercepts			
LO20-224	Niblack mine	13.00	15.50	2.50	0.84	0.28	6.65	0.07
LO20-224	Niblack mine	18.50	20.00	1.50	1.72	8.02	27.70	0.37

Note: True thicknesses are estimated to be 60 to 100% of drilled intervals.

As the holes cut the mineralization at different angles, they all have different true widths. In general, the true width is estimated to be 60% to 100% of the stated interval length. Table 10.4 summarizes the significant intervals from the Blackwolf drill program.

Table 10.4: Summary of Significant Intersections from the 2021 Blackwolf Drilling

Hole-ID	Zone	From (m)	To (m)	Interval (m)	True Thickness (m)	Cu (%)	Au (g/t)	Ag (g/t)	Zn (%)
U21-225	Lookout Ext	301.00	303.66	2.66	2.20	0.11	0.36	13.47	1.34
U21-226	Lookout	326.00	353.00	27.00	25.00	0.11	0.36	13.47	1.34
including	Lookout	327.00	331.00	4.00	3.70	2.61	4.93	76.58	2.34
U21-227	Lookout	321.90	354.50	32.60	30.00	1.03	1.49	26.54	0.92
Including	Lookout	325.00	328.00	3.00	2.70	2.37	3.29	58.97	1.42
U21-228	Lookout Ext	298.75	310.75	12.00	9.00	0.13	0.45	4.66	0.25
Including	Lookout Ext	304.75	305.75	1.00	0.70	0.14	1.18	11.50	0.33
U21-228	Lookout Ext	308.75	310.75	2.00	1.75	0.62	1.07	11.40	0.52
U21-228	Lookout Ext	350.75	366.50	15.75	12.30	0.01	0.02	5.39	0.21
U21-229						Abandoned			

10.4.3 Heatherdale/Blackwolf Drilling Procedures

The 2012 drilling program was conducted by Blackhawk drilling and Heatherdale followed similar procedures to NMD and NMC.

The 2020 and 2021 drill programs were carried out by Morecore Drilling of Stewart BC using a track-mounted drill rig. All collars were surveyed using a theodolite from known control points. Downhole surveys were collected with a Reflex “Gyro Sprint-IQ“ instrument at 15 m intervals. The instrument collected azimuth, dip and magnetic intensity measurements for each survey point.

All cores were boxed and transported from the drilling site to the logging facility located near the portal of the Niblack Mine on the north end of the Niblack Anchorage.

All core logging and technical tasks were completed by geologists and supervised geological technicians employed by Blackwolf.

Once the initial assessment was completed, the sample intervals were marked directly on the core with China markers. The start and end meterage of each core box was marked on the upper left and lower right respectively. A metal tag, noting hole identification, box number, and meterage was stapled to the top end of the core box for easy identification while stored.

Geotechnical data was collected by a supervised geological technician or by the logging geologist. Data collected for all drillholes included recovery, rock quality data and magnetic susceptibility. Holes were also examined for hardness, weathering and oxidation, as well as fracture count. The logging geologist also recorded lithology, oxidation condition, alteration, mineralization, and structural data. The geologist marked sampling intervals for assay analyses, and inserted QA/QC samples at regular intervals along the core.

Once logging and sampling was completed, the core was photographed wet, with the hole ID, box number, and start/end meterage clearly visible on a white placard. The core was cut in half and placed into the clear plastic sample bags. The remaining half core was placed back into the core boxes and stacked outside the core shed on a wooden palette. All core drilled in 2021 is stored on site at the Niblack camp.

Core recovery was good to excellent except in the fault zones where recovery was generally poorer.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sampling Preparation

11.1.1 Historical Drilling (1974-1997)

There are no records of historical sampling procedures conducted at the Niblack Project by operators prior to Niblack Mining Corp. Drill cores were generally split or sawn lengthwise in half, with one half sent for assay and the other half replaced in the core box for archive. Samples were generally collected at five-feet intervals and usually only within visible sulphide mineralization. There is no information on the quality control or security procedures taken prior to shipping the samples to the lab.

11.1.2 NMC and NMD (2005-2008)

All samples collected between 2007 and 2008 followed protocols designed by NMC geological staff. Sampling protocols included all aspects of the sampling, handling and dispatching to the assay laboratory. All samples were under the supervision of the Project Manager employed by NMC.

NMC used one primary laboratory for preparing and assaying all core samples collected on the Niblack Project. All samples submitted for assaying were sealed in individual plastic bags at site, and shipped in sealed sacks by air, transport barge, and truck to the ALS Chemex assay laboratory in North Vancouver, Canada.

11.1.3 Niblack Joint Venture/Heatherdale/Blackwolf (2009-2021)

All cores collected during the Niblack Joint Venture, Heatherdale and Blackwolf programs were boxed and transported from the drilling site to the logging facility located near the portal of the Niblack mine by the drilling contractor.

Once at the core logging facility, the core was cleaned with water and the core boxes labeled and laid out in sequential order. The core was logged geologically and geotechnically by the on-site qualified personnel. The samples were logged, and the intervals marked by a geologist. Sample tags were then placed in the core boxes and the core was photographed prior to sampling using a digital camera. In general, the entire core was sampled, and two different analytical protocols were used separately for mineralized samples and the wall rock samples.

The core was sawn in half lengthwise with a diamond saw. One half core was collected for assay and the other half is retained in the core box. Most samples were taken at 1.5 m intervals, but some samples lengths varied based on lithology, alteration and mineralization boundaries as determined by the site geologist.

All samples were sealed in individual plastic bags, and then shipped in sealed sacks by air, transport barge and truck to the ALS Minerals (ALS) analytical laboratory in North Vancouver, Canada.

11.2 Sample Analyses

11.2.1 Pre-MNC Drilling (1974-1997)

Historical samples for the Noranda and Lac drilling programs were assayed at Bondar-Clegg, X-ray Assay Labs, Chemex laboratories using industry standard preparation and assaying procedures. More than ninety percent of the analyses were performed at Chemex laboratories, the predecessor of the ALS laboratory used by Heatherdale. It is uncertain if any of these laboratories were accredited at the time the analyses were performed but all laboratories were independent and well recognized in the mining industry.

Between 1995 and 1997, Abacus used Chemex Laboratories (predecessor to ALS Chemex), and core samples were assayed for gold using a standard fire assay procedures and a suite of elements including the common base metals and silver by aqua regia digestion followed by inductively coupled plasma (“ICP”) spectrometry.

11.2.2 NMC and NMD (2005-2008)

All NMC and NMD Samples were shipped to ALS Chemex for analysis. The ALS Chemex Vancouver laboratory was accredited to ISO 9001 by QMI and ISO 17025 by the Standards Council of Canada for a number of specific test procedures, including fire assay for gold with atomic absorption and gravimetric finish, multi-element by ICP-AES and atomic absorption assays for silver, copper, lead and zinc. ALS Chemex laboratories also participate in a number of international proficiency tests, such as those managed by CANMET and Geostats.

At ALS Chemex, core samples were prepared using industry standard preparation procedures. After reception, samples were organized into batches and weighed. The entire sample was then crushed, split and pulverized as follows; fine crush entire sample to >70 percent passing 2.0 millimetres (mm) (-10 mesh), split off up to 1.5 kg and pulverize split to >85 percent passing 75 microns.

All core samples submitted to ALS-Chemex were assayed for: gold using a fire assay procedure on a thirty grams sub-sample with atomic absorption spectroscopy finish; and for a suite of thirty-three or forty-eight elements using a four-acid digestion and ICP-Atomic Emission Spectroscopy (“AES”).

High grade and over limit analysis were analyzed using the same four-acid digestion with either an AAS or AES finish.

11.2.3 Niblack Joint Venture/Heatherdale/Blackwolf (2009-2021)

All Niblack Joint Venture, Heatherdale and Blackwolf drill core samples were shipped to ALS in Vancouver for analysis. The ALS is fully accredited to ISO 17025-2017 standards for specific procedures, as well as ISO 9001:2000 standards.

After reception at ALS, samples were organized into batches, weighed and dried. The entire sample was then crushed to >70 percent passing 2.0 mm (-10 mesh).

The crushed sample was split into two portions. The sub-sampled portion, about 250 grams for a wall rock samples, or 1000 grams for mineralized samples, was taken for further processing. The remaining coarse reject was stored. The sub-sample was pulverized to >85 percent passing 75 microns.

The primary assay was conducted by ALS Minerals in North Vancouver. There are two types of samples: wall rock and mineralized, as determined by site geologist. They are assayed differently.

For wall rock samples, 48 elements including Ag, Cu, Pb and Zn were determined after a four-acid digestion with a combination of ICP-AES and ICP-MS finish (ALS method code: ME-MS61). Wall rock samples were not assayed for gold.

For mineralized samples, 33 elements, including Ag, Cu, Pb and Zn, were determined by four-acid digestion with an ICP-AES finish (ALS method code: MEICP61a). Gold was determined for mineralized samples by a fire assay procedure on a thirty gram sub-sample with an AAS finish (ALS method code: Au-AA25). For both types of samples, mercury was determined separately using a cold vapour method (ALS method code: Hg-CV41).

Check assaying was performed by Acme Analytical Laboratories (Vancouver) Ltd. On a pulverized pulp split. For the wall rock samples, 40 elements including Ag, Cu, Pb and Zn were determined using a four-acid digestion with ICP-AES or ICP-MS finish (Acme method code 7TX). Gold was not determined for waste rock samples. For mineralized samples, 40 elements including Ag, Cu, Pb and Zn were also determined using a four-acid digestion with an ICP-AES or ICP-MS finish (Acme method code 7TX). Gold was determined using a fire assay procedure on a 30-gram sub-sample with ICP-AES finish.

11.3 Quality Assurance and Quality Control Procedures

Assaying protocols typically involve regular duplicate and replicate assays and insertion of quality control samples to monitor the reliability of assaying results throughout the sampling and assaying process. Check assaying is typically performed as an additional reliability test of assaying results. This typically involves re-assaying a set number of sample rejects and pulps at a secondary umpire laboratory.

11.3.1 Pre-NMC Drilling (1974-1997)

The QP could not locate any information on any quality assurance or quality control procedures for the drill programs prior to 2005.

11.3.2 NMC and NMD (2005-2008)

The exploration works conducted by NMC and NMD were carried out using quality assurance and quality control programs generally meeting industry best practices. All aspects of the exploration data acquisition and management including mapping, surveying, drilling, sampling, sample security, and assaying and database management were conducted under the supervision of appropriately qualified geologists.

The analytical quality control data for the Niblack Project include both internal and external quality control measures. ALS-Chemex implemented internal laboratory measures consisting of inserting quality control samples (blanks and certified reference materials and duplicate pulp) within each batch of samples submitted for assaying.

External analytical quality control measures were implemented for all Niblack Project drill programs. This included inserting quality control samples (blanks and certified reference standards) with each batch of core drilling samples. NMC inserted blanks and standards at a frequency of one of every twenty-five samples. At the end of the 2006 drill program, duplicate sampling of quartered drill core was performed on forty-two samples of 2005 and 2006 drill core that were comprised of all of the major styles of sulphide and oxide mineralization. In 2007, NMC routinely inserted duplicate samples of quartered core with each batch at a frequency of one duplicate every thirty-three samples.

In 2006, NMC carried out a review of all historical drill records for Niblack Project. The review included a verification of assay records against the digital database. Several errors were noted and corrected with the data gathered by Cominco, Anaconda and Noranda. Most of the problems were associated with inconsistencies between sample numbers within the original drill log and that within the database. In several cases certain samples were missing from the database and in a few cases all the samples from a particular drill hole were absent from the database. In some cases, copies of the assay certificates were missing and the analytical data for these drill holes could not be reviewed. No errors were noted with the data collected by Abacus.

11.3.3 Niblack Joint Venture/Heatherdale/Blackwolf (2009-2021)

Niblack Joint Venture, Heatherdale and Blackwolf followed the same QA/QC procedures as implemented by NMC for the 2009 through 2021 underground drilling program. Blanks and standards were inserted at a frequency of one for every twenty regular mainstream samples. In 2009 and 2011, Heatherdale randomly selected pulp duplicates for every twentieth regular sample and submitted them as checks to Acme Lab for analysis.

ACME Labs, now part of Bureau Veritas, is a well-known assay independent laboratory. The QP is unaware of the certification held by ACME at the time the assays were carried out in 2010.

11.4 Qualified Person Comments

The QP is of the opinion that the sample preparation, analytical procedures and sample security for samples collected since 2007 was excellent and adequate for inclusion in resource estimation. While the quality control of samples collected prior to 2007 is not documented. The QP reviewed the data distribution of historical samples (pre-2007) and compared them with more recent data (post 2007) and found that the two data sets were comparable and that no bias was apparent with the historical data at Niblack. The QP is of the opinion that the historical data can also be included in the resource estimation.

12 DATA VERIFICATION

Dr. Arseneau of ACS carried out visits to the Niblack Project on June 28 to 29, 2022. During the site visit, the surface geology, property access and infrastructure were examined. The mineralization was observed in drill core and several drill locations were verified with hand-held GPS. Selected samples were collected from drill core and geological logging and sample-lengths were verified by examining drill core (Table 12.1).

Table 12.1: Check samples collected by the QP during site visit

			Original Assays						Check Assays				
Hole-ID	From	To	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)		Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
U033A	282.31	283.46	7.48	120.00	5.40	0.11	5.17		6.93	116.00	4.57	0.15	5.08
LO20-213	33.50	34.50	10.50	133.00	3.33	0.00	5.96		9.40	175.00	3.34	0.01	6.64
U21-226	336.00	337.00	2.42	105.00	1.35	0.09	1.53		1.86	38.00	1.17	0.07	1.15
LO133	193.85	195.22	0.17	10.29	0.93	0.07	1.00		0.23	8.00	0.26	0.05	0.93

While the samples collected by the QP don't match exactly the original assay results, the sampling does indicate the presence of precious and base metals in levels similar to that had been reported for the deposit by previous operators. The samples collected by the QP were not true duplicates but selected grabs from the sample intervals to test for the presence of the precious and base metal mineralization only. On average, the check samples agree reasonably well with the original assay results.

12.1.1 Database Verifications

A routine verification of the assay database was carried out by checking the digital database against original assay certificates. There are 29,520 assay records in the Niblack Project database, 7,541 were included in the mineral resource estimate presented in this report (Table 12.2).

Table 12.2: Assay Data Informing the Mineral Resources

Company	Count	No checked	% Checked
Noranda	340	105	30.88
Lac	398	169	42.46
Abacus	1858	290	15.61
NMC	1655	1655	100.00
NMD	698	698	100.00
Heatherdale	2504	2504	100.00
Blackwolf	88	88	100.00
Total	7541	5509	73.05

All assays in the mineral resource database for Niblack, Heatherdale and Blackwolf were verified against assay certificated provided by ALS. The digital verification included 52% of all assays in the Niblack database, and 65% of all assays used in the resource estimate. A few data entry errors were noted and corrected prior to estimation.

In addition, the QP carried out a verification of the historical data (pre-NMC) by checking the database values against original paper certificates. The pre-NMC data comprises 34% of the assays used in the resource estimate. A total of 564 were checked and 3 material errors were noted and corrected. The errors were attribute to simple data entry error. The QP also noted that 29 samples re-assayed by Lac had the average value entered in the database and that some below detection limits were either entered as half the value or the detection value. The QP noted that Noranda and Lac Minerals values were entered as parts per million (ppm) on the certificates but reported as percent in the database and that the ppm values were either rounded to the nearest 100th ppm or truncated when converted to percent. While these errors are not material to the mineral resource estimate they don't correspond well with the certificate values. The QP recommends that Blackwolf carry out a full audit of the database value to assure better agreement with the assay certificates.

No errors were noted in the Abacus data set.

12.1.2 Verification of Analytical Quality Control Data

The QP reviewed the QA/QC results for samples collected by NMC, Heatherdale and Blackwolf and found that the QA/QC procedures and results were in keeping with industry standards practices.

A total of 6,477 samples were shipped to the lab for assay between 2005 and 2021. These included 607 standard reference material (SRM), 825 blank samples and 605 duplicates (Table 12.3).

Table 12.3: List of Samples Shipped for Assays between 2005 and 2021

	Count	Percent of Total
Core Samples	4,440	68.55
SRM	607	9.37
Blanks	825	12.74
Duplicates	605	9.34
Total	6,477	100.00

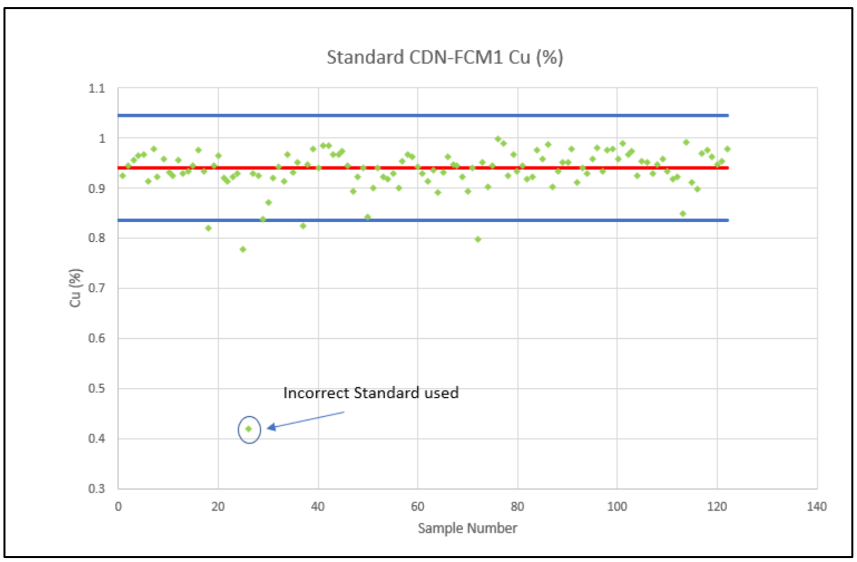
Standard Reference Material

Six different SRM have been used since 2005, all were prepared by CDN Laboratory. Of the six SRM used, Standard FCM1, ME-2 and ME-6 were used the most and over several years (Table 12.4).

Table 12.4: List of SRM used between 2005 and 2021

SRM	2005	2006	2007	2008	2009	2010	2011	2012	2020	2021	Totals
CDN-FCM1	23	68	6		8	17					**122**
CDN-FCM2			19		14						**33**
CDN-HLLC			5	6		8					**19**
CDN-HC-2				46		12	8				**66**
CDN-HLHZ					8	10					**18**
CDN-ME-2					7	56	58	14	3	3	**141**
CDN-ME-6						36	36	15	7	4	**98**
CDN-ME-7						27	45	12		3	**87**
CDN-ME-12						1	2	14	5	1	**23**
TOTALS	**23**	**68**	**30**	**52**	**37**	**167**	**149**	**55**	**15**	**11**	**607**

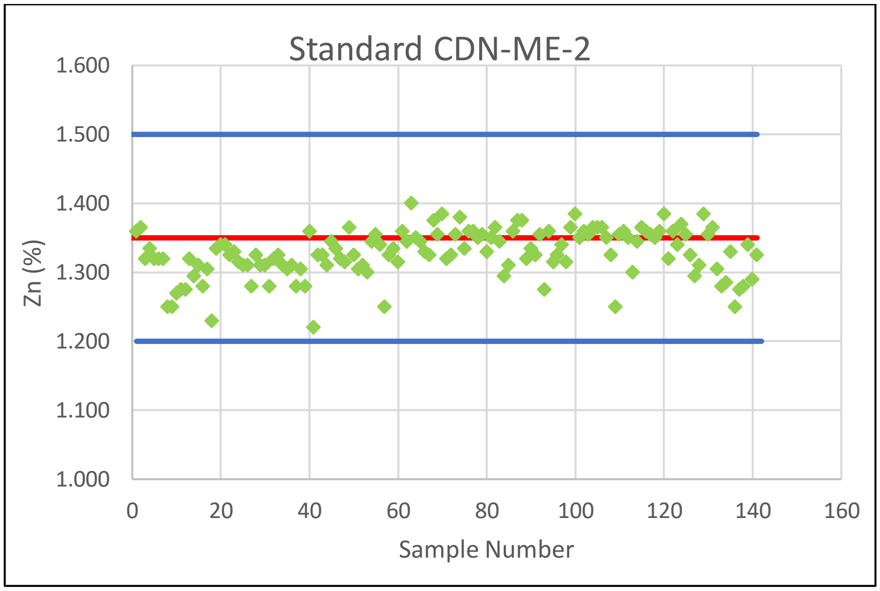
Most standards performed well with most batches reporting well within the ± 3 standard deviation of the expected value. One major exception was noted with Standard FCM1 where the incorrect standard was inserted (Figure 12.1).



Source: ACS (2022)

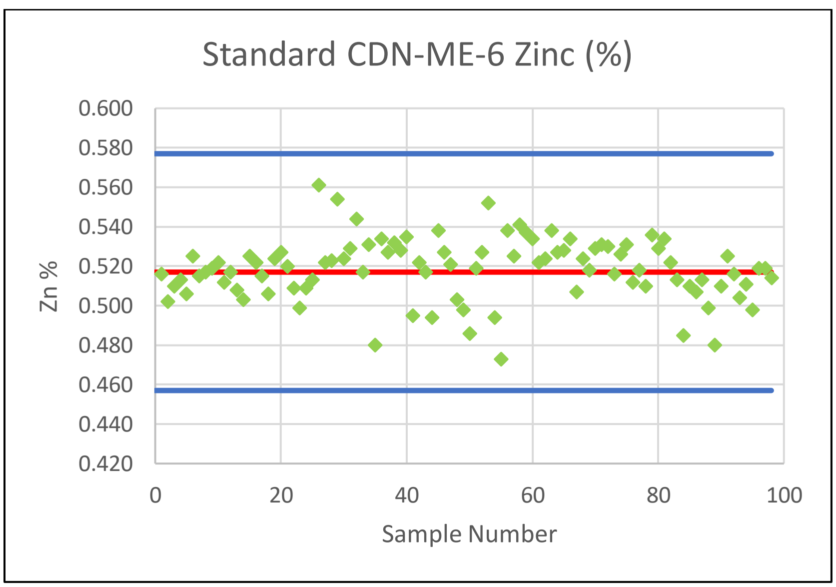
Figure 12.1: Performance of SRM FCM1 for Copper

Standard ME-2 performed well for all elements but seem to report slightly lower than the expected value for zinc while SRM ME-6 reported slightly higher than expected for zinc (Figure 12.2 and Figure 12.3).



Source: ACS (2022)

Figure 12.2: Performance of SRM ME-2 for zinc



Source: ACS (2022)

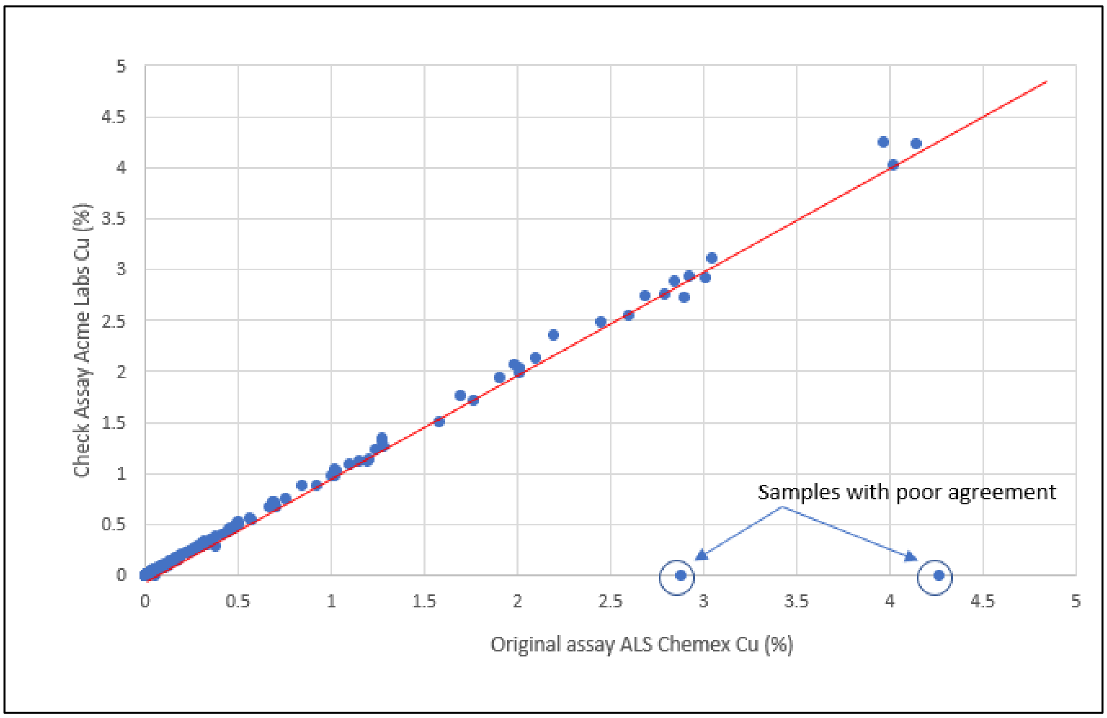
Figure 12.3: Performance of SRM ME-6 for zinc

Blank Material

A total of 825 blank samples were used between 2005 and 2021. Of the 825 blanks used, 252 were coarse blank material source locally and 573 were pulverized material provided by CDN laboratory. A review of the blank material doesn't show any evidence of contamination at the laboratory, however the QP is of the opinion that using pulverized blank material is less useful than using coarse material for detecting laboratory contamination.

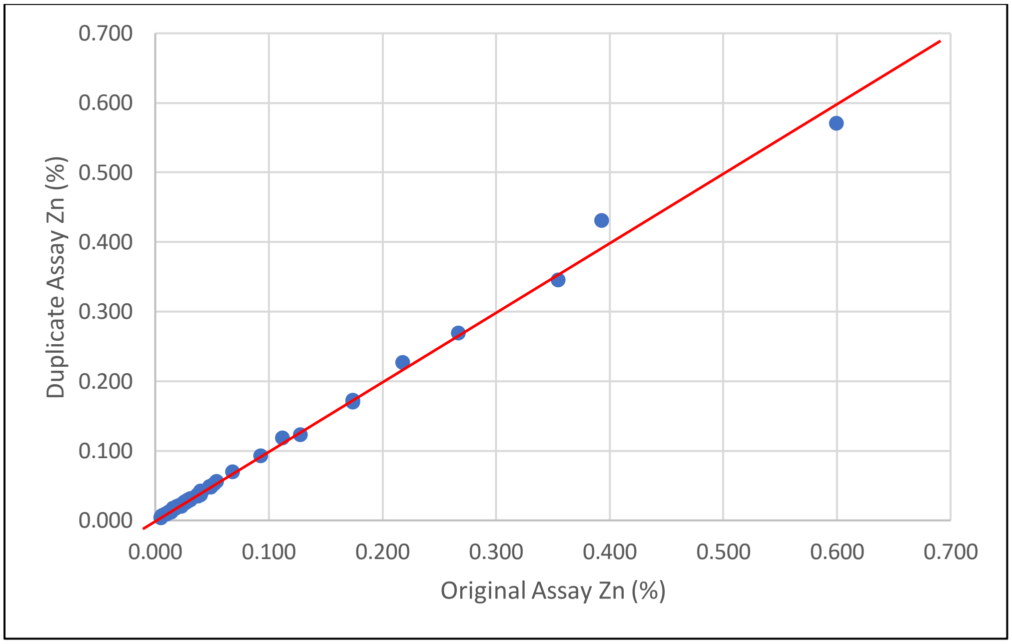
Duplicate samples

Of the 605 duplicate samples assayed, 534 were pulp duplicates sent to ACME Labs for analysis and the remainder 71 samples were actual field duplicates, quarter core or coarse reject duplicates. With the exception of two pulp duplicates, both coarse and pulp duplicates agreed well with the original samples and no lab bias were apparent (Figure 12.4 and Figure 12.5).



Source: ACS (2022)

Figure 12.4: Pulp Duplicate Samples for Copper



Source: ACS (2022)

Figure 12.5: Coarse Duplicate Samples for Zinc

12.2 Qualified Person Comments

In summary, the QP is of the opinion that the drillhole database is adequate for the inclusion in a resource estimate and that the minor errors noted with the historical data set are not material and don't bias the estimation.

The QP didn't verify the metallurgical information discussed in Section 13 of this report as all the work was done many years ago. However, the QP has no reason to question the validity of the historical metallurgical testwork. The work was carried out by well-recognized independent laboratory with expertise in metallurgical testwork.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Metallurgical Testwork

Three metallurgical test programs have been completed on Niblack Project. The first test was completed at the Placer Dome Metallurgical Research Centre in 1990, the second test program was conducted in 1997 at Met Engineers Ltd on behalf of Abacus and the third test program was conducted in 2008/2009 by SGS Mineral Services on behalf of NMD. All three programs were conducted on a laboratory bench-scale basis.

13.2 Dome Metallurgical Center Test Program (1990)

A total of five separate flotation tests were done on the composites, three on core from drill hole LO-30 and two on core from hole LO-33 (Hall, 1990) (Table 13.1).

Table 13.1: Weights and Grades of Various Concentrates and Tails

Composite	Conc.	Weight (%)		Cu (%)		Zn (%)		Au (g/t)		Ag (g/t)	
Number	Type	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
LO-30A	Copper	41.28	18.46	8.4	18.6	n/a	n/a	7.19	12.85	67	129
	Pyrite	23.16	45.71	0.2	0.2	n/a	n/a	3.19	3.03	19	20
	Tails	35.56	35.83	0.04	0.05	n/a	n/a	0.47	0.4	18.45	6.75
Head Grade				3.45		0.54		3.82		30	
LO-30B	Copper	45.3	34.27	2.68	3.52	n/a	n/a	4.79	5.39	29	35
	Pyrite	2.78	12.79	0.25	0.08	n/a	n/a	3.32	2.48	21	13
	Tails	51.92	52.94	0.02	0.02	n/a	n/a	0.16	0.16	1	0.95
Head Grade				1.19		0.18		2.34		15	
LO-30C	Copper	52.25	29.83	5.12	8.74	n/a	n/a	5.7	8.16	40	58
	Pyrite	3.59	26.56	0.64	0.2	n/a	n/a	4.31	2.19	15	10
	Tails	44.16	43.6	0.07	0.06	n/a	n/a	0.5	0.43	1.95	1.55
Head	Grade			2.58		0.17		3.44		24	
LO-33A	Copper	20.52	21.48	2.92	2.92	n/a	n/a	5.23	4.98	73	71
	Pyrite	2.05	3.92	0.35	0.16	n/a	n/a	2.27	1.8	15.5	14
	Tails	77.44	74.61	0.06	0.05	n/a	n/a	0.27	0.24	2.3	1.9
Head Grade				0.63		0.89		1.32		17	
LO-33B	Copper	44.22	21.74	6.48	13.3	5.68	11.7	5	8.44	70	125
	Zinc	1.82	25.02	0.57	0.14	0.13	0.03	1.74	1.88	30	22
	Pyrite	1.44	2.27	0.56	3	0.1	2.68	1.25	0.98	23	17
	Tails	52.52	50.97	0.03	0.02	0.02	0.08	0.18	0.17	2.2	1.8

The tests were preliminary in nature and from only two drill holes from the Lookout deposit. The work was directed primarily toward optimizing gold recovery, by producing bulk copper concentrates. The samples were selected from gold-rich zones, with little regard towards optimizing either base metal or total sulphide contents (Peatfield, 2004).

Overall recoveries for base and precious metals were good to very good, but the concentrates were all rougher concentrates, with grades too low to constitute saleable products. This appears to be primarily because of the high pyrite contents of the concentrates (Table 13.2).

Table 13.2: Flotation Tests Results from Holes LO-30 and LO33

Composite	Concentrate	Cu Recovery (%)		Zn Recovery (%)		Au Recovery (%)		Ag Recovery (%)	
Number	Type	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
LO-30A	Copper	98.24	96.88	NA	NA	76.65	60.82	71.62	67.32
	Pyrite	1.31	2.58	NA	NA	19.08	35.51	11.4	25.84
	Tails	0.45	0.54	NA	NA	4.27	3.67	16.98	6.84
LO-30B	Copper	98.76	98.52	NA	NA	92.53	82.23	92.25	84.7
	Pyrite	0.57	0.84	NA	NA	3.93	14.12	4.1	11.74
	Tails	0.67	0.64	NA	NA	3.54	3.65	3.65	3.56
LO-30C	Copper	98.05	96.95	NA	NA	88.8	76.01	93.72	83.85
	Pyrite	0.85	1.04	NA	NA	4.62	5.86	2.42	3.28
	Tails	1.1	2.01	NA	NA	6.58	18.13	3.86	12.87
LO-33A	Copper	92.23	93.94	NA	NA	81	81.31	87.71	88.58
	Pyrite	1.1	0.91	NA	NA	3.51	5.36	1.86	3.18
	Tails	6.67	5.15	NA	NA	14.59	13.33	10.43	6.84
LO-33B	Copper	98.91	96.18	99.37	95.85	93.847	76.01	93.84	79.97
	Zinc	0.36	1.16	0.1	0.28	1.35	19.48	1.66	16.2
	Pyrite	0.28	2.26	0.06	2.29	0.76	0.92	1	1.13
	Tails	0.45	0.45	0.47	1.58	4.02	3.59	3.5	2.7
Averages		97.24	96.49	99.37	95.85	86.57	75.28	87.83	80.88

Following the preliminary metallurgical work in 1990 by Lac, Abacus engaged Met Engineers Ltd. to carry out additional metallurgical work.

13.3 Met Engineers Ltd. Testing (1997)

This study was still considered “preliminary in nature” and was based on a limited number of small samples derived from drill holes completed by Abacus at the Lookout Deposit between 1996 and 1997 (Peatfield, 2004). The work included grinding and floatation tests and modal analyses of the flotation products (Brown and Lafreniere, 1997). The tests showed that copper and zinc could be recovered together to a sulphide concentrate, with minimal losses to tails, and that precious metal recoveries to such a concentrate were acceptable. While four composites were prepared, tests were apparently only conducted on the massive low-lead composite which was believed to represent the bulk of the style of the mineralization at Lookout (Table 13.3).

Table 13.3: Head Grade of Composite Core Samples

Composite Sample	Cu (%)	Pb (%)	Zn (%)	Fe (%)	Au (g/t)	Ag (g/t)
Massive Low Lead	3.3	0.05	5.6	18.8	3.44	58
Stringer Low Lead	1.08	0.11	4.5	5	6.8	148
Interstitial Low Lead	1.84	0.12	4.4	12.3	3.23	54
Massive High Lead	2.02	1.53	18.5	19.1	5.8	188

The flotation tests showed that to produce a concentrate with a viable grade (either copper or zinc) it was necessary to reduce overall metal recoveries somewhat. Table 13.4 details several of the flotation test results, for those tests that produced cleaner concentrates and tails.

Table 13.4: Test Results from Met Engineers Ltd. 1997 Program

Test No./Product	Weight (%)	Cu (%)	Cu (%) recovery	Zn (%)	Zn (%) recovery	Au (g/t)	Au (%) recovery	Ag (g/t)	Ag (%) recovery
Sample KM761-1									
Cu Concentrate	7.3	29.6	62.6	3.5	4.5	21.6	53.5	238.0	30.7
Cu Concentrate + 2 Cleaner Tails	12.5	24.5	88.5	7.1	15.5	15.1	63.9	239.0	52.6
Cu Concentrate + 3 Cleaner Tails	52.9	6.4	97.7	10.6	98.3	5.2	93.3	98.0	91.0
Sample KM761-10									
Cu Concentrate	8.7	31.6	85.2	3.2	14.0	14.1	41.1	194.0	30.8
Cu Concentrate + 2 Cleaner Tails	11.0	27.1	91.9	6.9	13.9	NA	NA	NA	NA
Zinc Concentrate	1.2	0.9	0.3	55.9	12.7	5.4	2.2	120.0	2.7
Zinc Concentrate + 2 Cleaner Tails	2.3	0.9	0.6	33.7	14.0	NA	NA	NA	NA
Cu/Zn Scavenger Cleaner Conc.	6.3	1.1	2.1	57.0	65.8	3.0	6.3	142.0	16.2
Cu/Zn Scavenger Rougher Conc.	7.4	1.3	3.0	49.5	67.6	NA	NA	NA	NA
Sample KM761-11									
Cu Concentrate	9.6	30.1	84.9	4.6	7.9	13.5	43.2	220.0	38.4
Cu Concentrate + 2 Cleaner Tails	11.9	25.6	89.8	9.3	19.8	NA	NA	NA	NA
Zinc Concentrate	5.7	3.4	5.7	55.0	56.2	5.3	10.1	125.0	13.0
Zinc Concentrate + 2 Cleaner Tails	6.8	3.0	6.0	48.9	59.8	NA	NA	NA	NA
Cu/Zn Scavenger Cleaner Conc.	1.6	1.4	0.7	53.8	15.6	3.1	1.7	217.0	6.4
Cu/Zn Scavenger Rougher Conc.	2.4	1.6	1.1	39.4	16.8	NA	NA	NA	NA
Sample KM761-12									

Test No./Product	Weight (%)	Cu (%)	Cu (%) recovery	Zn (%)	Zn (%) recovery	Au (g/t)	Au (%) recovery	Ag (g/t)	Ag (%) recovery
Cu Concentrate	10.0	30.3	89.8	3.4	6.0	15.5	58.4	236.0	43.0
Cu Concentrate + 2 Cleaner Tails	12.3	26.1	95.2	6.2	13.7	14.1	65.5	257.0	57.8
Zinc Concentrate	5.8	0.7	1.1	63.2	66.5	3.6	7.9	103.0	11.0
Zinc Concentrate + 2 Cleaner Tails	7.5	3.4	1.5	54.4	73.2	3.4	9.5	110.0	15.0
Cu/Zn Scavenger Cleaner Conc.	1.1	1.0	0.3	51.5	9.9	4.5	1.8	200.0	5.2
Cu/Zn Scavenger Rougher Conc.	1.6	1.1	0.5	35.5	10.4	4.2	2.6	174.0	9.6
Sample KM761-13									
Cu Concentrate	9.3	30.3	83.2	3.4	5.9	14.3	44.5	215.0	36.5
Cu Concentrate + 2 Cleaner Tails	11.9	25.3	88.2	6.3	13.7	NA	NA	NA	NA
Zinc Concentrate	5.5	2.6	4.2	51.7	52.8	4.6	8.5	100.0	10.1
Zinc Concentrate + 2 Cleaner Tails	7.1	2.4	4.9	42.9	56.4	NA	NA	NA	NA
Cu/Zn Scavenger Cleaner Conc.	1.0	5.1	1.5	56.3	10.1	6.6	2.1	318.0	5.6
Cu/Zn Scavenger Rougher Conc.	3.4	3.0	3.0	39.2	24.8	NA	NA	NA	NA
Average of KM761-10 to KM761-13									
Cu Concentrate	9.4	30.6	85.8	3.7	8.5	14.4	46.8	216.3	37.2
Cu Concentrate + 2 Cleaner Tails	11.8	26.0	91.3	7.2	15.3	NA	NA	NA	NA
Zinc Concentrate	4.6	1.9	2.8	56.5	47.1	4.7	7.2	112.0	9.2
Zinc Concentrate + 2 Cleaner Tails	5.9	2.4	3.3	45.0	50.9	NA	NA	NA	NA
Cu/Zn Scavenger Cleaner Conc.	2.5	2.2	1.2	54.7	25.4	4.3	3.0	219.3	8.4
Cu/Zn Scavenger Rougher Conc.	3.7	1.7	1.9	40.9	29.9	NA	NA	NA	NA

All tests were performed using a standard flowsheets and reagents for the production of two separate copper and zinc concentrates. The samples were ground to 100 microns for flotation and pH was adjusted to 10 with the addition of lime.

Initial results showed that the production of saleable concentrates was most likely possible, with acceptable recoveries. Overall lead levels were too low that it was deemed unlikely that a lead concentrate would be produced from the material.

Copper recoveries averaged 85.8%, ranging from 83.2 to 89.8% generating concentrate ranging from 30.1 to 31.6% copper. Zinc recoveries in the zinc concentrate ranged from 12.7 to 66.5%. the zinc in the concentrate averaged 56.7%. However, the tests showed that a significant portion of the zinc reported to the copper concentrate.

The results also showed that reasonable gold and silver recoveries were achieved into the copper concentrate of 46.8 and 37.2 percent, respectively.

13.4 SGS Metallurgical Testing (2009)

NMD provided 69 samples to SGS Metallurgy Vancouver (“SGS”). Each sample was designated by SGS to be part of one of two composites to be prepared (SGS, 2009). The one composite reflected an anticipated life of mine (“LOM”) grade and the other reflected a higher-grade zone (“HG”).

The concentrations of the elements of interests in the final solutions were estimated based on the grades of the head and the final residue for each sample. Chemical assays and ICP scans were performed by SGS on the two composites to determine the head grade of each composite (Table 13.5).

Table 13.5: Head Grade of Composite Samples

Composite Sample	Cu (%)	Zn (%)	Au (g/t)	Ag (g/t)
LOM	1.87	4.14	3.23	47.2
HG	2.92	8.69	4.20	74.6

Test work undertaken on these two composites included chemical analyses, mineralogical analysis, bond ball mill work Index testing, and metallurgical test work.

Locked cycle metallurgical tests were completed using a conventional flowsheet for copper-zinc sulphides. This test work involved six cycles that produced two primary sulphide concentrates for each composite sample. The results from this test work are summarized in in Table 13.6.

Table 13.6: Test Results from SGS Program (2009)

Sample/Product	Weight (%)	Cu (%)	Cu (%) recovery	Zn (%)	Zn (%) recovery	Au (g/t)	Au (%) recovery	Ag (g/t)	Ag (%) recovery
LOM Sample									
Cu Cln2 Concentrate	6.04	29.95	94.33	5.02	7.24	29.94	62.15	503.03	61.15
Zinc Cln2 Concentrate	6.24	0.9	2.94	60.45	90.16	4.5	9.65	125.6	15.79
Zn Scavenger Tails	14.79	0.12	0.95	0.29	1.04	2.14	10.89	33.07	9.85
Zn Rougher Tails	72.93	0.05	1.78	0.09	1.57	0.69	17.31	9	13.22
HG Sample									
Cu Cln2 Concentrate	9.12	29.32	94.87	5.13	5.25	21.62	56.17	419.21	53.38
Zinc Cln2 Concentrate	12.66	0.58	2.59	65.62	93.26	4.5	16.23	135.33	23.91
Zn Scavenger Tails	7.27	0.27	0.69	0.71	0.58	2.53	5.23	48.23	4.89
Zn Rougher Tails	70.96	0.07	1.85	0.11	0.9	1.11	22.36	18	17.83

The tests showed that both copper and zinc concentrate from the LOM and HG composite samples would be suitable for smelting as they have high grades, and the concentration of deleterious elements is low.

13.5 AUSENCO Review of Metallurgical Test Program (2021)

In 2021, Blackwolf commissioned AUSENCO to review the SGS test work to identify risks and opportunities for the Niblack Project and to recommend future metallurgical test work to further optimize the value of the project (Ausenco, 2021).

Based on the review, Ausenco concluded that:

- Very good results were achieved for both composites. Copper was floated first followed by zinc flotation from copper tailings. Only two cleaning stages were needed to achieve sealable concentrate grade and pH was kept above 10.5 to depress pyrite to final tailings. Reagent scheme was typical for copper-zinc sulphide flotation.

- Most of gold and silver losses were associated to the rougher tails. Low penalty element concentration was observed in copper concentrate for both composites with very clean zinc concentrate.

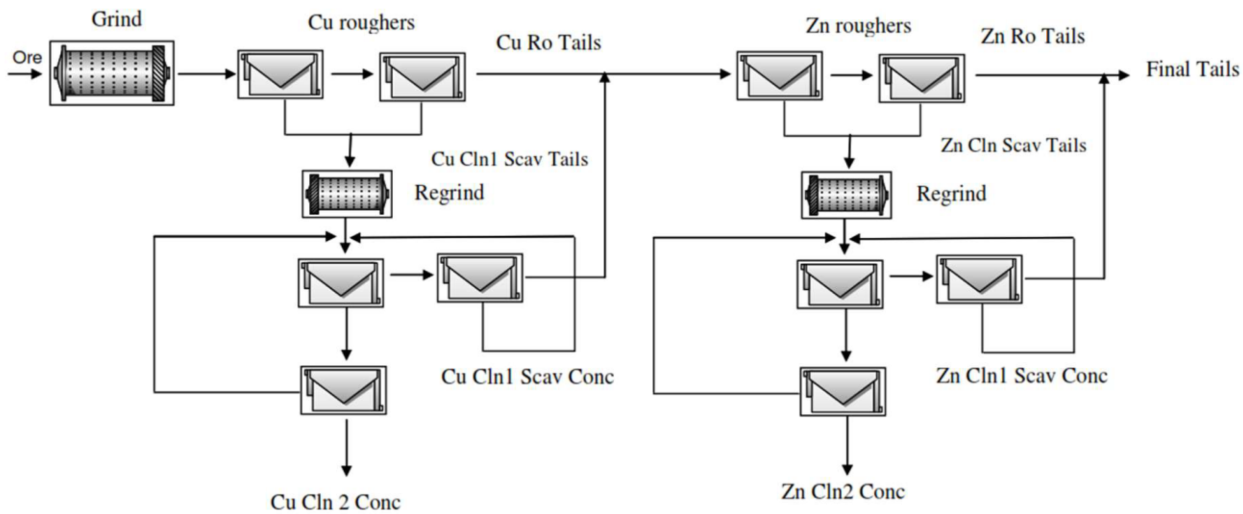
- Main minerals of interest for Niblack Project are chalcopyrite, sphalerite, electrum and gold and silver tellurides. The precious metals of interest are gold and silver. Use of alternative collectors may improve the recovery of precious metals from electrum and tellurides. A finer primary grind size should improve the recoveries of precious metals.

- A metal correlation analysis completed for the samples available for testing indicated considerable variability of mineral assemblage.

- A preliminary heterogeneity analysis indicated that the Niblack deposit is amenable to preconcentration. The results showed potential to reject up to 40% of mass with minimal loss of copper and gold with preconcentration.

- Estimated processing costs are expected to be in the range of US$ 21-48/tonne and mine to mill transportation cost in the range of US$10-44/tonne for the many scenarios under evaluation. Preconcentration offers a good opportunity to improve the project economics.

- The overall flotation flowsheet is relatively straightforward as shown on Figure 13.1.



Source: Ausenco (2021)

Figure 13.1 : Proposed Preliminary Flowsheet for Niblack Project

Any minerals not recovered on copper rougher stage will flow into the zinc circuit. Any copper or precious metal not recovered to the final copper concentrate (Cu Cln 2 Conc) will either be recovered in the final zinc concentrate (Zn Cln 2 Conc) or lost to the final tails. Copper recovered to the zinc concentrate is not payable and it is considered a loss.

Typically, only 75% of precious metal values are payable in zinc concentrates while precious metal payables in copper concentrates are in the range of 90 to 98%.

Ausenco made the following recommendations to further evaluate the metallurgical recoveries at the Niblack Project:

1. Complete a more in-depth desktop bulk ore sorting analysis.

2. Test dithiophosphate collectors and other collectors to improve precious metal recovery.

3. Conduct further primary grind size optimisation test work to maximize precious metals recovery to copper concentrate and improve project economics.

4. Test finer regrind size after assessing changes in collector and primary grind size.

5. Test pyrite flotation to better quantify opportunities to optimize tailings disposal.

6. Conduct comminution tests after the flotation grind sizes are confirmed.

7. Test variability of the deposit using discrete samples and geo-metallurgy composites to re-risk the project and allow for more flexibility on project optimization.

14 MINERAL RESOURCE ESTIMATE

14.1 Introduction

As previously described, there are currently no title, legal, taxation, marketing, permitting, socio-economic or other relevant issues that may materially affect the mineral resources described in this Technical Report. Future changes to legislation and/or government or local attitudes to foreign investment cannot be and have not been evaluated within the scope of this Technical Report.

The mineral resource model presented herein updates the previous estimate conducted by the Company (formerly known as Heatherdale Resources Ltd) and Niblack Mine Development Inc. in 2011. The updated mineral estimate was completed to incorporate three additional rounds of drilling on the property, to evaluate the potential of including additional resources from other target areas on property and to reflect current economic parameters. In the opinion of the QP, the block model resource estimates reported herein are a reasonable representation of the global volcanic hosted sulphide mineralization found in the Lookout and Trio zones at the current level of sampling. Mineral Resources for the Niblack Project are reported in accordance with the guidelines of the Canadian Securities Administrators National Instrument 43-101; and have been estimated in conformity with generally accepted CIM “Estimation and Mineral Resource and Mineral Reserve Best Practices” guidelines (CIM, 2019). Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserves. The resource estimate was completed by Dr. Gilles Arseneau, P. Geo. (APEGBC#23474) an independent qualified person as defined by NI 43-101 working with ARSENEAU Consulting Services Inc (ACS). ACS is registered with APEGBC and operates under Permit to Practice Number 1000256 issued on July 1, 2022.

This section describes the work undertaken by the QP and key assumptions and parameters used to prepare the initial mineral resource model for the Lookout and Trio zones, together with appropriate commentary regarding the merits and possible limitations of such assumptions.

The database used to estimate the Lookout and Trio mineral resources was reviewed and audited by the QP. Mineralization boundaries were modelled by Blackwolf and reviewed, modified, and validated by the QP. The QP is of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries of the sulphide mineralization domains and that the assaying data are sufficiently reliable to support estimating mineral resources.

The QP used GEMS 6.8.4 software for generating gold mineralization solids, a topography surface, and resource estimation. Statistical analysis and resource validations were carried out with non-commercial software and with Sage2001.

14.2 Resource Database

The Niblack Project database was provided to ACS in an CSV format. Current drillhole database consists of over 124,304 metres of drilling from 424 drillholes. The resource model is limited to the Lookout and Trio areas within which a total of 57,891 metres of sampling from 197 drillholes. All holes were diamond drillholes with the majority drill by Heatherdale and Abacus (Table 14.1).

Table 14.1: Summary of Drillholes used in the Resource Estimation

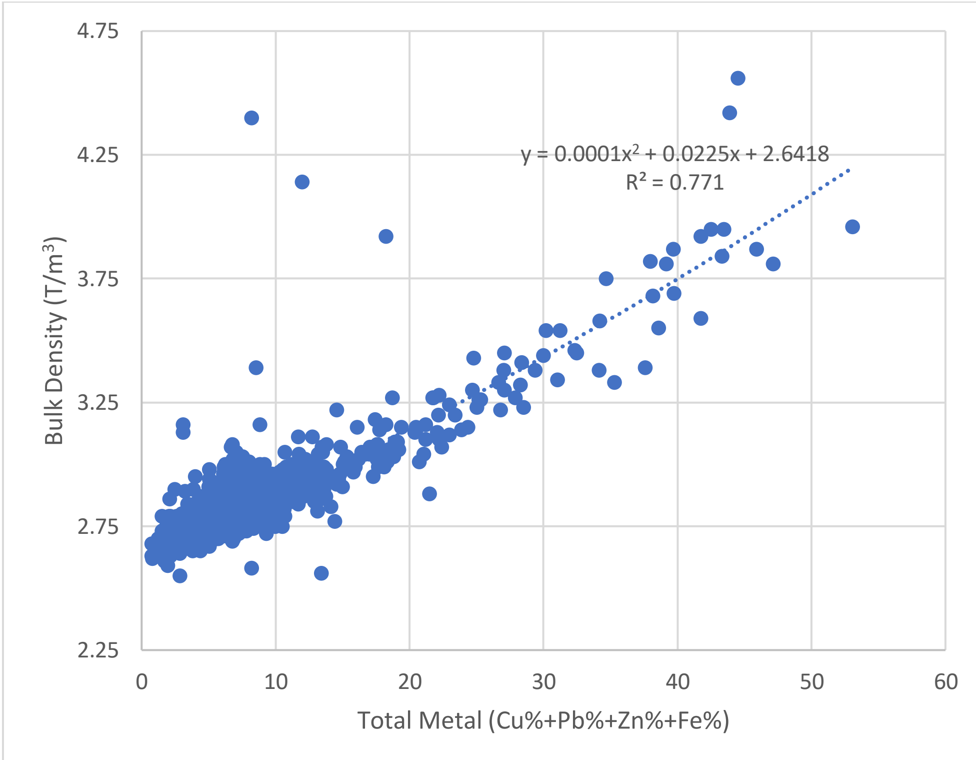
Company	Metres	No of Holes
Abacus	12669.15	46
Blackwolf	760.47	2
Niblack Joint Venture	27867.71	76
LAC	2609.59	12
NMC	9604.57	34
NMD	3009.89	16
Noranda	1370.34	11
Total	57891.7	197

The assay results reported below the detection limit, were assigned half of the detection limit or set at the detection limit. For statistical analysis and grade estimation non-sampled intervals were assigned zero grades, assuming that there were no visible reasons to collect assay samples.

A topography surface was created in GEMS using LIDAR technology.

14.3 Bulk Density

The bulk density database comprises pulp and bulk density determinations of samples representing a combination of data from ALS Chemex, Global Discovery Labs, and in-house measurements. A total of 3,126 density measurements exists in the database. For resource modelling 814 measurements exists within the modelled domains. In general, bulk density vary in relation with the total metal content of the rock (Cu + Pb + Zn + Fe) (Arseneau, 2014). Figure 14.1 shows the relationship of bulk density against the total metal content for the Niblack Project. For those samples where total metal values were estimated but bulk density was not measured, a bulk density value can be derived from the total metal content. Using this relationship, an additional 18,488 density data points were added to the database (Table 14.2). Bulk density of the host rock was set at 2.77, the average of 2,312 measurements.



Source: ACS (2022)

Figure 14.1: Relationship between Bulk Density Measurements and Total Metal Content

Table 14.2: Niblack Bulk Density Data

Density Type	Zone	Count	Average Density (t/m^3)
Measured	Waste/other	2,312	2.77
Measured	Lookout	814	2.88
Measured	**Total**	**3,126**	**2.80**
Estimated	Waste/other	14,427	2.77
Estimated	Lookout	3,610	2.91
Estimated	Trio	451	2.79
Estimated	**Total**	**18,488**	**2.80**

14.4 Evaluation of Extreme Assay Values

Block grade estimates may be unduly affected by very high-grade assays. Therefore, the assay data were evaluated for the high-grade outliers. The QP decided to cap the assays prior to compositing.

The capping values were established by checking the sample population grade distributions on cumulative probability plots and evaluating the effects of capping on the average grade of the sample population. Capping of raw assays is presented in Table 14.3.

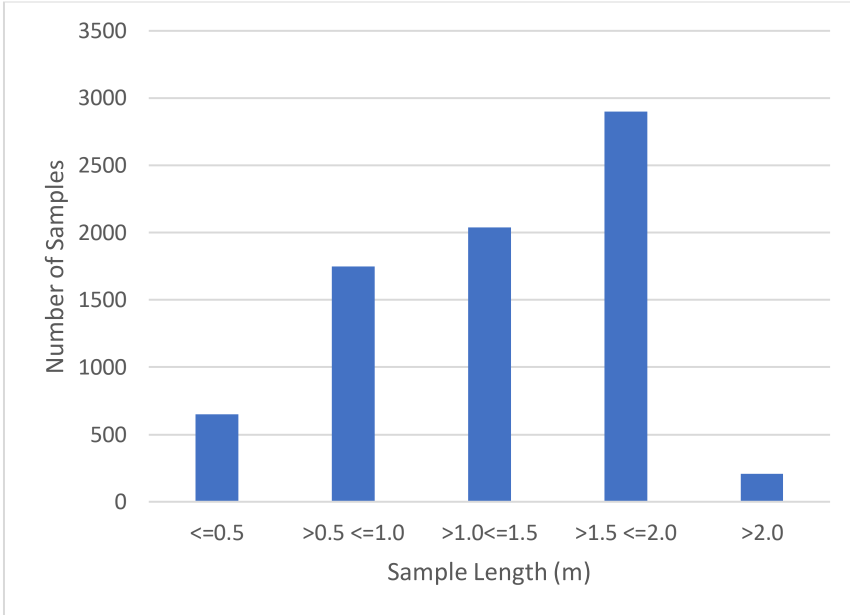
Table 14.3: Capping Levels for Lookout and Trio Assays

Deposit	Metal	Max	Count	Cap level	No comps Cap	CV no cap	CV Cap	Metal Lost (%)	% Capped
Lookout	Au (g/t)	219.39	6778	50	11	3.31	2.39	4.70	0.16
	Ag (g/t)	1516	6778	400	26	2.45	1.98	5.10	0.38
	Cu (%)	21.4	6778	11.5	9	1.92	1.84	0.90	0.13
	Pb (%)	9.06	6778	2.3	9	4.44	3.12	8.20	0.13
	Zn (%)	48.93	6778	30	29	2.89	2.67	3.40	0.43
Trio	Au (g/t)	14.09	763	7	3	2.15	1.91	3.30	0.39
	Ag (g/t)	194	763	100	3	2.27	1.97	4.50	0.39
	Cu (%)	11.4	763	7	5	2.48	2.23	3.70	0.66
	Pb (%)	1.64	763	0.7	2	4.00	2.99	7.60	0.26
	Zn (%)	28.5	763	10	13	3.07	2.57	10.40	1.70

*Metal lost is (*Aver* - *AverCap)/Aver**100 where *Aver* is the average grade of the de-clustered assays before capping and *AverCap* is the average grade of de-clustered assays after capping.

14.5 Compositing

Almost all assay samples inside the mineralized domains were collected at 1.52 m or shorter interval, for this reason, the QP decided to composite all assay data to 2.0 m (Figure 14.2). Basic statistics of the composited assay data for the Lookout and Trio zones are presented in Table 14.4 for the Lookout Deposit and Table 14.5 for the Trio Deposit.



Source: ACS (2022)

Figure 14.2: Histogram of Sample Lengths in the Lookout and Trio Zones

Table 14.4: Basic Statistical Data for Lookout Composites

	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Count	4445	4445	4445	4445	4445
Mean	1.24	19.72	0.55	0.04	0.97
Variance	6.46	1400.00	0.83	0.02	5.41
Standard Deviation	2.54	37.43	0.91	0.12	2.33
Coefficient of variance	2.05	1.90	1.66	2.81	2.39
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	42.79	400.00	9.19	2.08	30.00
first quartile	0.13	1.71	0.06	0.00	0.04
Median	0.42	6.15	0.20	0.01	0.23
Third quartile	1.29	20.50	0.59	0.04	0.86

Table 14.5: Basic Statistical Data for Trio Composites

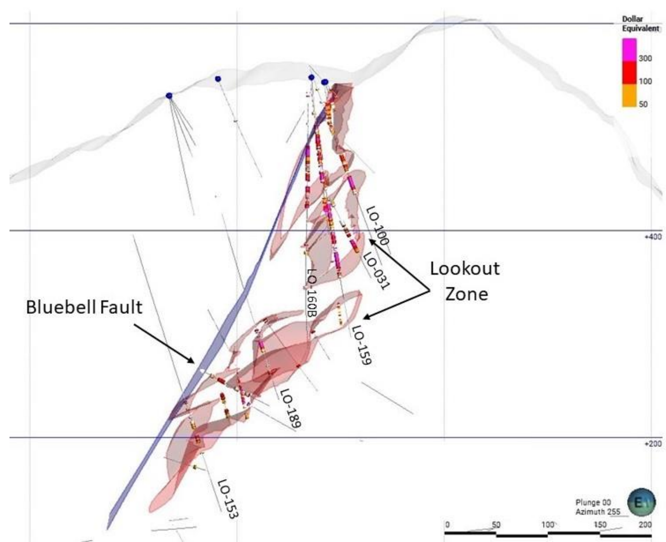
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Count	517	517	517	517	517
Mean	0.41	5.82	0.32	0.01	0.52
Variance	0.43	106.49	0.39	0.00	0.05
Standard Deviation	0.65	10.32	0.63	0.03	1.09
Coefficient of variance	1.58	1.77	1.96	2.07	2.09

Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	5.07	77.98	7.00	0.31	10.00
first quartile	0.12	1.02	0.03	0.00	0.04
Median	0.22	2.33	0.12	0.01	0.13
Third quartile	0.39	5.59	0.32	0.01	0.45

14.6 Solid Modelling

Mineralization at the Niblack Project is hosted in a bimodal mafic-felsic suite of volcanic flows and volcaniclastic rocks, overlain by a younger volcano sedimentary cover. All of these rocks have undergone low-grade greenschist facies metamorphism.

The mineralized zones were constructed on sections spaced at 25 metre and contacts were generally drawn using a nominal US$10 equivalent value to limit the wireframes on section (Figure 14.3). Because of the complex nature of the mineralization and of the folding, several lower-grade intervals had to be included within the wireframes to assure geological continuity.



Source: ACS (2022)

Figure 14.3: Typical Cross Section of Lookout Deposit showing Dollar Equivalent and Wireframe Limits

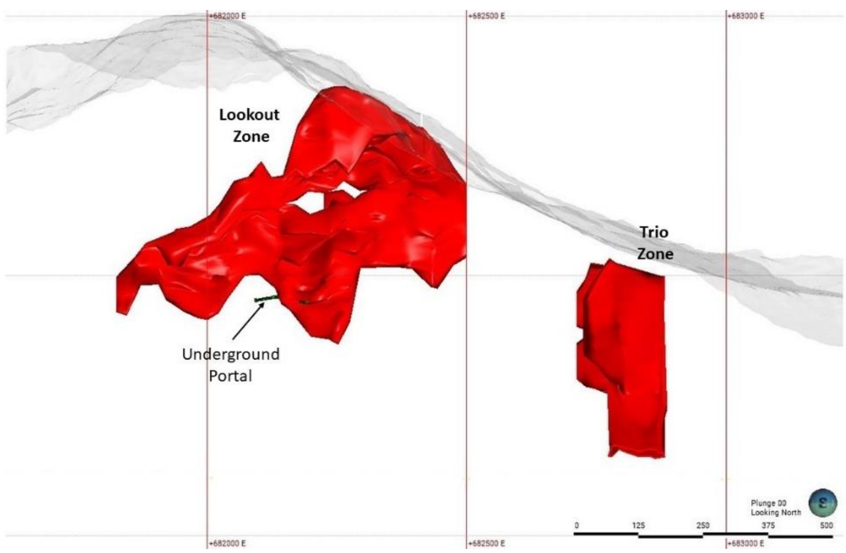
14.6.1 Lookout

The outlines of the Lookout deposit are approximately 700 m with an average thickness of 21 m. The higher-grade sulphide mineralization at Lookout occurs in several subparallel, partially interconnecting lenses. These lenses are usually separated by regions of lower-grade mineralization.

14.6.2 Trio

Sulphide mineralization at the Trio deposit is similar to that in the Lookout deposit to the extent that it occurs in stacked lenses. However, the Trio deposit consist only of two parallel south dipping lenses of massive to semi-massive sulphide mineralization with associated stringer-style mineralization. Current geological interpretation suggests a moderate southerly dip to these lenses within the overall felsic stratigraphy, with mineralization following the margins of an intensely (stockwork) veined, rhyolite flow/dome complex.

The outlined dimensions of the Trio deposit are 580 m by 170 m, with an average thickness of 30 m and occurs about 200 m east of the Lookout (Figure 14.4).



Source: ACS (2022)

Figure 14.4: Perspective View Looking North of Lookout and Trio Deposits

14.7 Variography

Experimental correlograms and model were generated for the Lookout deposit only. A review of the data distribution for the Trio deposit indicated that too few data points were present to support a valid variographic analysis.

Variogram model rotations were generally based on the attitude of the mineralized zone. The nugget effects (that is, gold variability at very close distance) were established from down hole variograms for each of the metal. The nugget values range from 25 to 50% of the total sill. Note that the sill represents the grade variability at a distance beyond which there is no correlation in grade.

Variogram models used for grade estimation in the Lookout Deposit are summarized in Table 14.6.

Table 14.6: Exponential Correlogram Models for the Lookout Deposit

Metal	Nugget C_0	Sill C_1/C_2	Correlogram			Ranges a_1/a_2		
			around Z	around Y	around Z	X-Rot	Y-Rot	Z-Rot
Copper	0.30	0.46/0.24	30	52	-34	40/112	58/28	46/152
Zinc	0.25	0.64/0.11	-48	-29	63	41/97	35/23	26/219
Gold	0.50	0.32/0.18	46	47	-35	30/58	32/26	19/98
Silver	0.40	0.36/0.24	17	30	56	36/38	15/89	63/116
Lead	0.30	0.46/0.24	56	18	-38	30/64	11/28	13/105

14.8 Resource Estimation Methodology

Mineral resources for the Lookout deposit were estimated by Ordinary Kriging (OK) and resources for the Trio deposit were estimated using inverse distance square interpolant (ID^2). The two deposits were estimated in a single three-dimensional block model using Geovia GEMs version 6.8.4 software. The geometrical parameters of the block model are summarized in Table 14.7.

Table 14.7: Lookout and Trio Deposits Block Model Parameters

	Minimum	Maximum	Extent	Block Size	Number of blocks
Easting	681700	683000	1300	5	260
Northing	6104500	6105100	600	5	120
Elevation	-300	600	900	5	180

Base and precious metal grades within the mineralized domains were estimated in three successive passes as outlined in Table 14.8. The first pass considered a relatively small search ellipsoid while for the second and third pass search ellipsoids were larger. Search parameters were generally set to match the correlogram parameters but also designed to capture sufficient data to estimate a grade in the blocks.

Table 14.8: Grade Estimation Parameters for Lookout and Trio Deposits

Deposit	Search Pass	Estimation	Rotation			Search Radii			Number of Composites		Max. Samples per DDH
			Z	Y	Z	X (m)	Y (m)	Z (m)	Min.	Max.	
Lookout	1	OK	30	52	-34	35	10	30	6	24	4
	2	OK	30	52	-34	55	20	70	6	24	4
	3	OK	30	52	-34	112	30	140	4	24	3
Trio	1	ID^2	0	-40	0	55	10	55	6	24	4
	2	ID^2	0	-40	0	65	20	85	6	24	4
	3	ID^2	0	-40	0	90	40	125	4	24	3

14.9 Mineral Resource Classification

Mineral resources were estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserve Best Practices" Guidelines (CIM 2019). Mineral resources are not mineral reserves and do not have demonstrated economic viability. Mineral Resources were classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) by Dr. Gilles Arseneau, P. Geo. (APEGBC#23474) an "independent qualified person" as defined by NI 43-101.

Mineral resource classification is typically a subjective concept, industry best practices suggest that resource classification should consider both the confidence in the geological continuity of the mineralized structures, the quality and quantity of exploration data supporting the estimates and the geostatistical confidence in the tonnage and grade estimates. Appropriate classification criteria should aim at integrating both concepts to delineate regular areas at similar resource classification.

The QP is satisfied that the geological modelling honours the current geological information and knowledge. The location of the samples and the assay data are sufficiently reliable to support resource evaluation. The sampling information was acquired primarily by core drilling on sections spaced at about 25-metre spacing for most of the deposits with the Lookout Deposit and at about 50-m spacing for the Trio Deposit. At the current stage of drilling, the QP considers that the mineralization at the Lookout and Trio deposits satisfies the definition of indicated and inferred mineral resource as defined by CIM.

Mineral reserves can only be estimated based on the results of an economic evaluation as part of a preliminary feasibility study or feasibility study. As such, no mineral reserves have been estimated as part of this study. There is no certainty that all or any part of the mineral resources will be converted into a mineral reserve.

The estimated blocks were classified according to:

- Confidence in interpretation of the mineralized zones;
- Continuity of base metal grades defined from a variogram model;
- Number of drillholes used to estimate a block;
- Average distance to the composites used to estimate a block.

Blocks were classified as indicated mineral resource if estimated during the first estimation pass and informed by at least three drillholes within an average distance less than 50 m or if estimated during pass two with at least four drillholes. All other estimated blocks were classified as inferred mineral resource.

The mineral resources may be impacted by further infill and exploration drilling that may result in increase or decrease in future resource evaluations. The mineral resources may also be affected by subsequent assessment of mining, environmental, processing, permitting, taxation, socio-economic and other factors. There is insufficient information in this early stage of study to assess the extent to which the mineral resources will be affected by these factors that are more suitably assessed in a conceptual study.

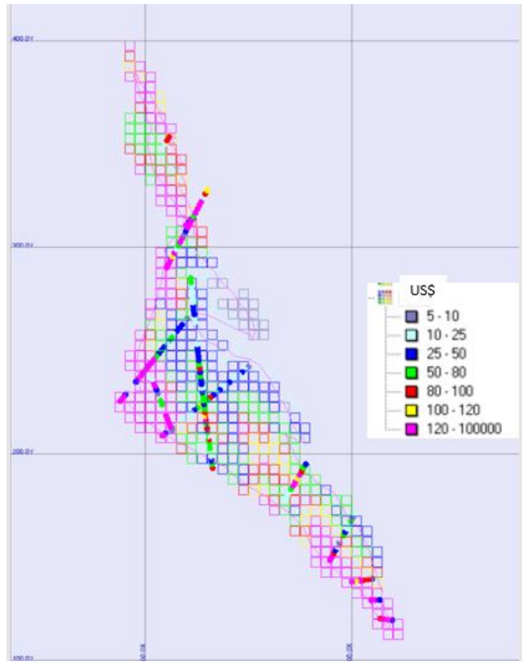
14.10 Validation of the Block Model

The Niblack Project resource block model was validated by completing a series of visual inspections and by:

- Comparison of estimated block grades against composited grades on sections and in plan view; and
- Comparison of average assay grades with average block estimates along different directions – swath plots.

Figure 14.5 shows a comparison of estimated gold block grades with drillhole composite data for the Lookout deposit in section and Figure 14.6 shows the same in plan view. On average, the estimated blocks are similar to the composite data.

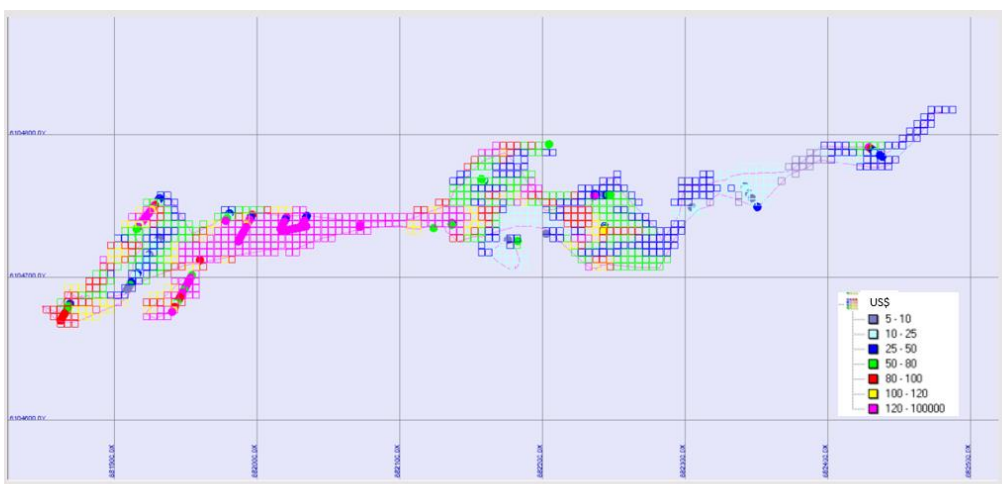
As a final check, average composite grades and average block estimates were compared along different directions. This involved calculating de-clustered average composite grades and comparison with average block estimates along east-west, north-south, and horizontal swaths. Figure 14.7 to Figure 14.10 shows the swath plots for the Lookout Deposit. The average composite grades and the average estimated block grades are quite similar in all directions for all metals. Overall, the validation shows that current resource estimates are good reflection of drillhole assay data.



Source: ACS (2022)

Note: Grid lines are 100 by 100 m

Figure 14.5: Section 82150E Looking East Comparing Estimated Total Dollar Values with Drillhole Composites for the Lookout Deposit



Source: ACS (2022)

Note: Grid lines are 100 by 100 m

Figure 14.6: Plan View at 200 m El Comparing Estimated Total Dollar with Drillhole Composites for the Lookout Deposit

Source: ACS (2022)

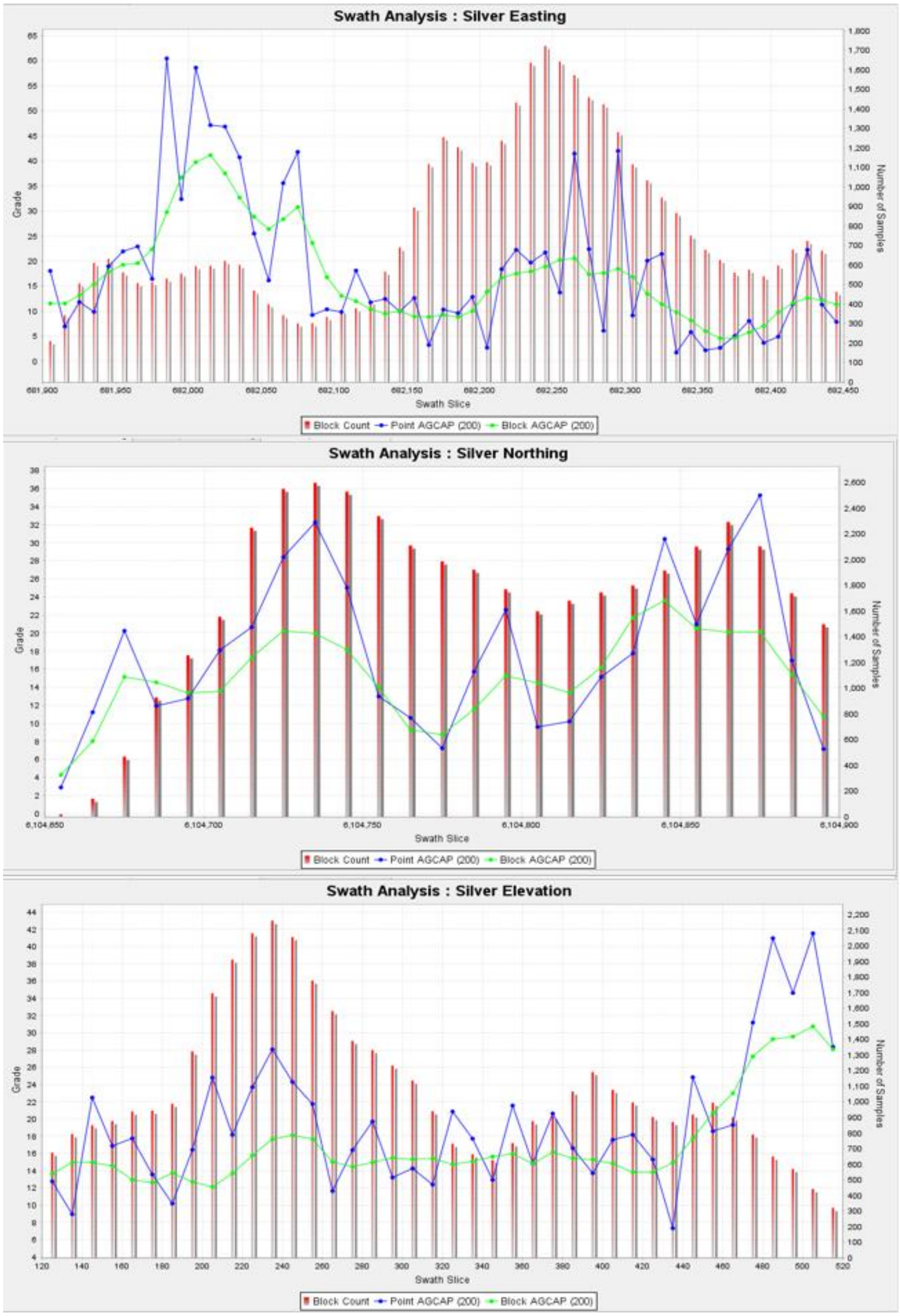
Figure 14.7: Swath Plot for Copper for Lookout Deposit

Source: ACS (2022)

Figure 14.8: Swath Plot for Zinc for Lookout Deposit

Source: ACS (2022)

Figure 14.9: Swath Plot for Gold for Lookout Deposit



Source: ACS (2022)

Figure 14.10: Swath Plot for Silver for Lookout Deposit

14.11 Mineral Resource Statement

CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) defines a mineral resource as:

"*A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling*."

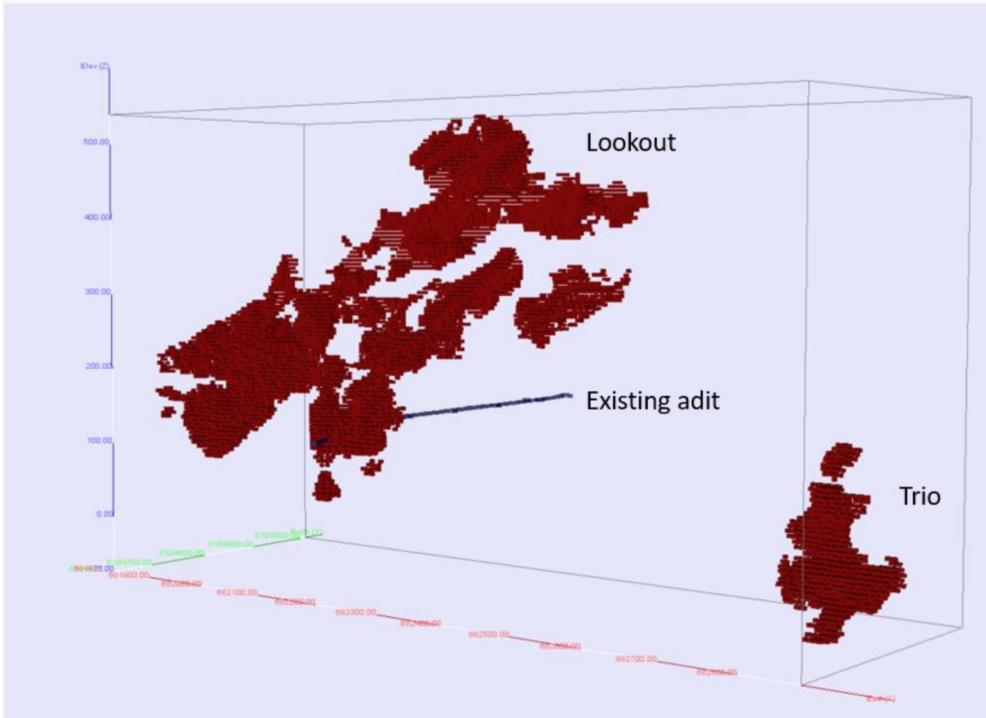
The "material of economic interest" refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals.

The "reasonable prospects for economic extraction" requirement generally imply that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios and processing recoveries. To meet this requirement, the QP considers that the majority of the Lookout and Trio deposits are amenable for underground mining by longhole stoping with minor cut and fill methods similar to the Green's Green deposit (SLR, 2022).

To determine the quantities of material offering "reasonable prospects for eventual economic extraction" by underground methods, the QP used a mining stope optimizer and reasonable mining assumptions to evaluate the proportions of the block model (Indicated and Inferred blocks) that could be "reasonably expected" to be mined by underground methods.

The optimization parameters were selected based on experience and benchmarking against similar projects. The reader is cautioned that the results from the stope optimization are used solely for the purpose of testing the "reasonable prospects for eventual economic extraction" by underground methods and do not represent an attempt to estimate mineral reserves. There are no mineral reserves on the Niblack Project. The results are used as a guide to assist in the preparation of a mineral resource statement and to select an appropriate resource reporting cut-off grade.

The QP considers that all the blocks above cut-off forming a minimum stope shape of 15 by 10 by 5 m easily accessible from the main deposit satisfy the "reasonable prospects for eventual economic extraction" and can be reported as a mineral resource (Figure 14.11).



Source: ACS (2022)

Note: markers are 100 m apart

Figure 14.11: Perspective view Looking Northwest of Blocks Amenable to Underground Extraction for Lookout and Trio Deposits

Table 14.9 summarises the parameters used to derive the "reasonable prospect of economic extraction" of blocks situated below the resource pit.

Table 14.9: Assumptions Considered for Underground Mining Conditions

Parameter*	Value	Unit
Copper Price	3.50	US$ per pound
Copper Recovery	94.30	percent
Zinc Price	1.10	US$ per pound
Zinc Recovery	90.20	percent
Gold Price	1,650	US$ per Oz
Gold Recovery	72.00	percent
Silver Price	20.00	US$ per Oz
Silver Recovery	76.00	percent
Mining Costs	48.00	US$ per tonne mined

Milling Costs	28.00	US$ per tonne of feed
G & A Costs	24.00	US$ per tonne of feed
Mining Rate	1,500	Tones per day
Total Costs	100.00	US$
Cut-off (total value)	100.00	US$

Note*: Metal prices are derived from the London Energy & Metals Consensus Forecast. Recoveries are derived from preliminary metallurgical testes and are assumed to be 100% payable as described in Section 13 of this report and operating costs are derived from benchmarking against similar deposits in Alaska and assuming longhole stoping mining methods.

Table 14.10 summarizes the mineral resources for the Lookout and Trio deposits as estimated by the QP on February 14, 2023.

Table 14.10: Mineral Resource Statement 100 US$ Cut-off, Niblack Base Metal Project, Alaska, ACS February 14, 2023

Area	Class	Tonnes (000)	Cu (%)	Cu Mlb	Zn (%)	Zn Mlb	Au (g/t)	Au oz	Ag (g/t)	Ag oz
Lookout	Indicated	5,391	0.92	108.9	1.72	204.9	1.88	326,600	30	5,168,200
	Inferred	159	0.93	3.3	1.31	4.6	1.63	8,300	18	93,300
Trio	Indicated	460	1.16	11.8	1.75	17.7	1.30	19,200	20	293,800
	Inferred	55	0.91	1.1	1.61	1.9	1.20	2,100	18	31,700
Total	Indicated	5,851	0.94	120.7	1.73	222.6	1.83	345,800	29	5,462,000
	Inferred	214	0.93	4.4	1.38	6.5	1.52	10,400	18	125,000

(1) Mineral Resources are not Mineral Reserves do not have demonstrated economic viability.
(2) The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(3) The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
(4) The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
(5) Numbers may not add up due to rounding.

14.12 Grade sensitivity analysis

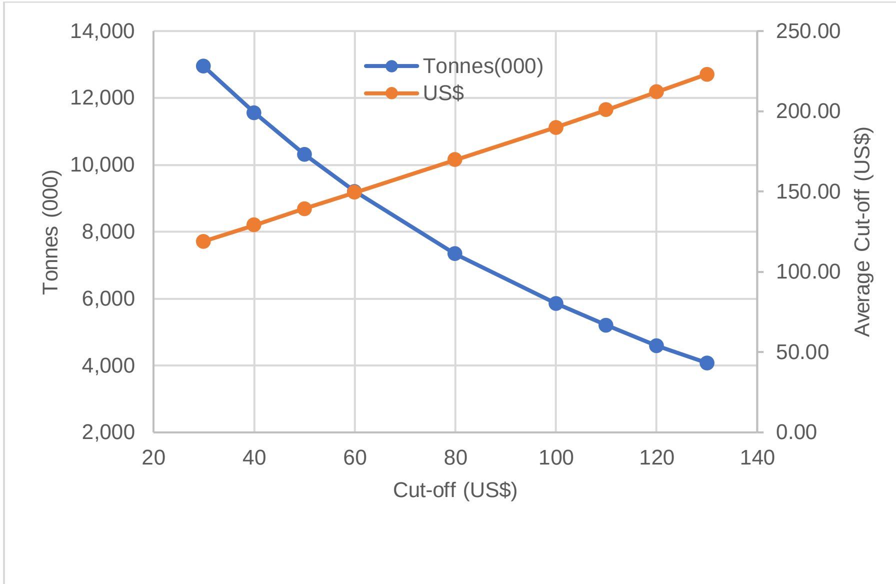
The mineral resources are sensitive to the selection of cut-off grade. Table 14.11 shows the sensitivity of the indicated mineral resource for the combined Lookout and Trio deposits at various cut-off grades Table 14.12 shows the same for the inferred mineral resource. The reader is cautioned that these figures should not be misconstrued as a mineral resource. The reported quantities and grades are only presented as a sensitivity of the resource model to the selection of cut-off grade. Grade tonnage curve for the Indicated resource is presented in Figure 14.12 and the Inferred mineral resource is shown in Figure 14.13.

Table 14.11: Sensitivity Analysis of the indicated mineral Resource at Various Cut-off Grades

Cut-off (US$)	Tonnes (000)	Cu (%)	Zn (%)	Au (g/t)	Ag (g/t)
160	2,890	1.23	2.45	2.43	40
150	3,253	1.18	2.32	2.33	38
140	3,634	1.13	2.20	2.24	36
130	4,081	1.09	2.07	2.15	34
120	4,603	1.04	1.96	2.04	32
110	5,190	0.98	1.84	1.94	31
100	**5,851**	**0.94**	**1.73**	**1.83**	**29**
90	6,554	0.89	1.62	1.74	27
80	7,332	0.84	1.53	1.64	26
70	8,189	0.80	1.43	1.54	24
60	9,183	0.75	1.33	1.44	22
50	10,278	0.70	1.24	1.34	21

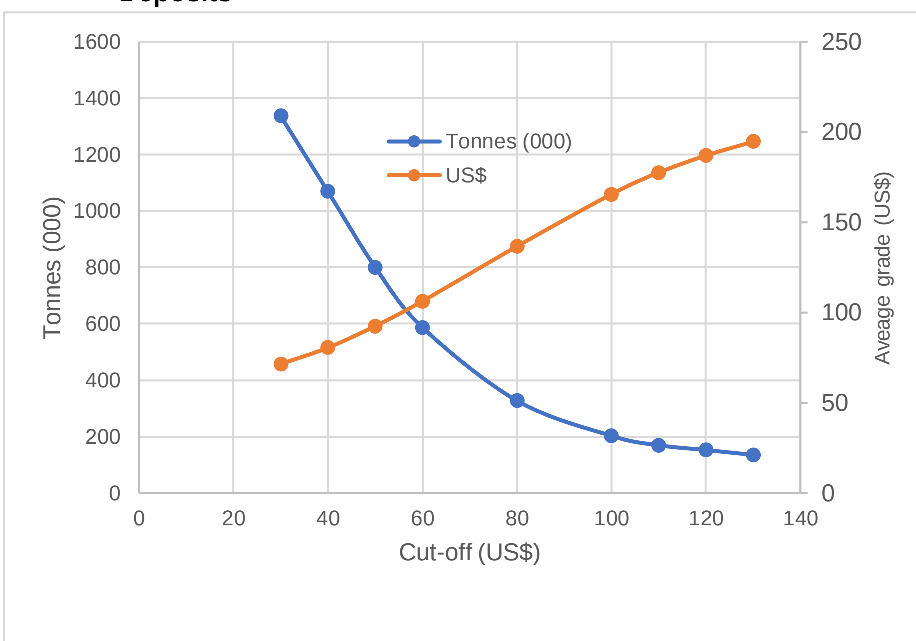
Table 14.12: Sensitivity Analysis of Inferred Mineral Resource at Various Cut-off Grades

Cut-off (US$)	Tonnes (000)	Cu (%)	Zn (%)	Au (g/t)	Ag (g/t)
160	85	1.21	2.01	2.13	23
150	96	1.15	1.96	2.09	22
140	114	1.10	1.84	1.98	21
130	136	1.05	1.71	1.87	20
120	154	1.02	1.62	1.77	19
110	179	0.98	1.52	1.65	19
100	**214**	**0.93**	**1.38**	**1.52**	**18**
90	284	0.85	1.23	1.32	16
80	354	0.78	1.14	1.20	15
70	452	0.70	1.08	1.06	14
60	636	0.59	1.03	0.89	12
50	868	0.51	0.94	0.77	11



Source: ACS (2022)

Figure 14.12: Grade Tonnage Curve for the Indicated Resource at the Lookout and Trio Deposits



Source: ACS (2022)

Figure 14.13: Grade Tonnage Curve for the Inferred Resource at the Lookout and Trio Deposits

14.13 Risks and Opportunities that may affect the Mineral Resource Estimate

Mineral resources are estimated based on drill hole sampling points and grades are interpolated between sampled points. Any interpolation is subject to basic assumptions of continuity of grade and geology between sampled points. As such, the mineral resources are subject to some risks. Conversely, opportunities to expand the mineral resources in area of assumed geological continuity where grade has not been confirmed because of insufficient sampling or drilling also exist.

The QP has identified the following deposit specific risks:

14.13.1 Lookout

The lookout deposit occurs near surface and the upper portion of the deposit is oxidized. The oxidized portion of the deposit may not perform as well as fresh sulphide material during processing. As not all drillholes contain information on the oxidation state, the QP couldn't accurately separate the oxide portion from fresh sulphide. The mineral resources will be adversely affected by the oxidization of the upper portion of the deposit. Based on the few drill holes where the oxidation state was recorded, the QP estimated that less than 10% of the Lookout deposit is at risk.

Folding of the Niblack sequence is complex and the interpretation of the fold structure is difficult from drillholes alone. While the drill spacing at Lookout is at less than 30 m for the central part of the deposit, the mineralization could pinch more than expected between drillholes thereby reducing the total tonnage. Conversely, the mineralization could also be thicker than modelled between drillholes thereby increasing the modelled volume.

14.13.2 Trio

Drillhole spacing at Trio is in the range of 40 to 60 m spacing and the deposit doesn't display the same level of complexity as the Lookout deposit. The complex folding nature of deposit is difficult to identify, and model based on the wider drill spacing and there is the possibility that the deposit shape may change with additional drilling reducing or increasing the volume of the mineralized body.

The QP has identified the following deposit specific opportunities:

14.13.3 Lookout

The Lookout Deposit is open for expansion to the west as well as near surface. The deposit is very close to surface between 682400 E and 682500 E where drilling is sparse close to surface. Shallow drilling could help in defining the depth of oxidation and result in a more robust resource estimation.

14.13.4 Trio

The Trio Deposit is open for expansion to the east and down dip. There is also excellent potential to upgrade the inferred resource to indicated with additional drilling at Trio.

14.13.5 Property Wide

The Niblack Property is host to seven known massive sulphide occurrences. Only the Lookout, Trio and Niblack have been explored with significant drill programs. The remaining four deposits have only seen preliminary drill programs. These targets form an excellent opportunity to develop additional mineral resources on the property.

15 ADJACENT PROPERTIES

There are no adjacent properties considered relevant to this report near the Niblack Project.

16 OTHER RELEVANT DATA AND INFORMATION

These is no other data or information that needs to be included in this technical report.

17 INTERPRETATION AND CONCLUSIONS

Base and precious metal mineralization at the Niblack Project is hosted in volcanic and volcaniclastic rocks of the Neoproterozoic Niblack Felsic Unit of the Wales Group. The Niblack felsic Unit rocks range from coherent rhyolite flows to volcaniclastic breccias and hyaloclastites. The succession exceeds 100 m in thickness in some locations and is locally graded. Mineralization is hosted in massive to semi-massive sulphide bodies consisting mainly of pyrite, chalcopyrite and sphalerite with minor amounts of galena.

While several massive sulphide bodies are known on the Niblack Project, mineral resources have been estimated for the Lookout and Trio deposits only as part of this study. A total of 424 drillholes, 124,191 m have been drilled on the Niblack Project area. The resource model is limited to the Lookout and Trio areas within which a total of 57,891 metres of sampling from 197 drillholes has been accomplished. All holes were diamond drillholes with the majority drilled by Heatherdale and Abacus.

Using results from historical and recent drillholes and the re-interpretation of the mineralization at Lookout and Trio, the QP estimated that the combined deposits contained 5.85 million tonnes grading 0.94% copper, 1.73% zinc, 1.83 g/t gold and 29 g/t silver in the indicated category and 214 thousand tonnes of inferred mineral resource grading 0.93% copper, 1.38% zinc, 1.52 g/t gold and 18 g/t silver. All mineral resources are assumed to be accessible by underground mining methods. The mineral resources as estimated by the QP on February 14, 2023 are summarized in Table 17.1.

Table 17.1: Lookout and Trio Mineral Resource Statement at 100 US$ Cut-off, Niblack Project Alaska, February 14, 2023

Area	Class	Tonnes (000)	Cu (%)	Cu Mlb	Zn (%)	Zn Mlb	Au (g/t)	Au oz	Ag (g/t)	Ag oz
Lookout	Indicated	5,391	0.92	108.9	1.72	204.9	1.88	326,600	30	5,168,200
	Inferred	159	0.93	3.3	1.31	4.6	1.63	8,300	18	93,300
Trio	Indicated	460	1.16	11.8	1.75	17.7	1.30	19,200	20	293,800
	Inferred	55	0.91	1.1	1.61	1.9	1.20	2,100	18	31,700
Total	Indicated	5,851	0.94	120.7	1.73	222.6	1.83	345,800	29	5,462,000
	Inferred	214	0.93	4.4	1.38	6.5	1.52	10,400	18	125,000

(1) Mineral Resources are not Mineral Reserves do not have demonstrated economic viability.
(2) The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(3) The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
(4) The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
(5) Numbers may not add up due to rounding.

18 RECOMMENDATIONS

The QP recommends that Blackwolf continue to explore the Niblack Project. Specifically, the QP recommends a 2,400-metre drill program focused on infilling and testing for expansion of the known mineralization at the Lookout and Trio deposits (Table 18.1). All drill holes are located at surface.

Table 18.1: Location of Proposed Surface Drill Holes for Lookout and Trio Deposits

Hole-ID	Easting	Northing	Elevation	Length	Azimuth	Dip
LO23-01	682450	6104870	440.36	130	360	-40
LO23-02	682425	6104880	450.18	140	360	-72
LO23-03	682475	6104895	414.41	110	360	-45
TR23-01	682750	6104940	260.77	170	360	-65
TR23-02	682850	6104760	215.45	335	360	-70
TR23-03	682900	6104770	204.15	275	360	-50
TR23-04	682900	6104770	204.15	315	360	-70
TR23-05	682900	6104770	204.15	390	360	-90
LO23-05	682500	6104850	399.07	110	360	-53
LO23-06	682500	6104850	399.07	130	360	-81
LO23-07	682525	6104780	391.48	140	360	-50
LO23-08	682525	6104825	390.73	105	360	-50

The Niblack Project also contains five additional known massive sulphide deposit that have only been partially drilled. While these zones are worthy of additional drilling, the QP recommends that a complete compilation of the surface geology combined with 3D modelling be done prior to planning a drill program.

The QP estimates that the above recommendations would cost approximately CDN$ 1.9 million as outlined in Table 18.2.

Table 18.2: Estimated Cost of Proposed Program

Item	Total (USD$)
DDH Drilling (2,400 m)	$1,200,000
Geology Logging and assaying	$250,000
Camp support	$215,000
Geological mapping and compilation	$40,000
Total Recommendations	$1,705,000.00
Contingency @10%	$170,500
TOTAL	**$1,875,500.00**

19 SIGNATURE PAGE

This technical report was written by Dr. Gilles Arseneau, P. Geo. The effective date of this technical report is February 14, 2023.

Original "signed and sealed"

Dr. Gilles Arseneau, P. Geo.

20 CERTIFICATE OF QUALIFIED PERSON

I, Dr. Gilles Arseneau, P. Geo., do hereby certify that:

1. I am President of ARSENEAU Consulting Services Inc. (ACS), a corporation with a business address of Suite 900, 999 West Hastings Street, Vancouver, British Columbia, Canada.
2. I am the author of the technical report entitled "2022 Mineral Resource Update for the Niblack Polymetallic Project, Prince of Wales Island, Alaska, USA" dated March 30, 2023 with an effective date of February 14, 2023 (the "Technical Report") prepared for Blackwolf Copper & Gold Ltd.
3. I am a graduate of the University of New Brunswick with a B.Sc. (Geology) degree obtained in 1979, the University of Western Ontario with an M.Sc. (Geology) degree obtained in 1984 and the Colorado School of Mines with a Ph.D. (Geology) obtained in 1995.
4. I have practiced my profession continuously since 1995. I have worked in exploration in North and South America and have extensive experience with polymetallic mineralization similar to that found on the Niblack Project.
5. I am Professional Geoscientist registered as a member, in good standing, with the Association of Professional Engineers & Geoscientists of British Columbia (no. 23474).
6. ARSENEAU Consulting Services Inc. is licensed by the Association of Professional Engineers and Geoscientists of British Columbia and operates under Permit to Practice number 1000256 issued on July 1, 2022.
7. I have read the definition of "qualified person" set out in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I am a "qualified person" within the meaning of NI 43-101.
8. My most recent personal inspection of the Project occurred from June 28 to June 29, 2022.
9. I am responsible for all the sections of the Technical Report and accept professional responsibility for all sections of the Technical Report.
10. I am independent of Blackwolf Copper & Gold Ltd. as defined in Section 1.5 of NI 43-101.
11. I have had prior involvement with the Niblack Project. I acted as peer reviewer of the November 2012 technical report prepared by SRK.
12. I have read NI 43-101, Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
13. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 30th day of March 2023 in Vancouver, British Columbia.

[Original "signed and sealed"]
Dr. Gilles Arseneau, P. Geo.

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