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PRELIMINARY ECONOMIC ASSESSMENT
TECHNICAL REPORT

MINTO

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MINTO

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NOTICE

JDS Energy & Mining, Inc. prepared this National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, for Minto Explorations Ltd. The quality of information, conclusions and estimates contained herein is based on: (i) information available at the time of preparation; (ii) data supplied by outside sources, and (iii) the assumptions, conditions, and qualifications set forth in this report.

Minto Explorations Ltd. filed this Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities law, any other use of this report by any third party is at that party's sole risk.

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1 EXECUTIVE SUMMARY

1.1 Introduction

JDS Energy & Mining Inc. (JDS) was commissioned by Minto Explorations Ltd (MintoEx or the Company) to carry out a Preliminary Economic Assessment (PEA) of the Minto Mine (Minto), a resource development base metal project owned by MintoEx located in the Yukon, Canada.

This Technical Report pertains to the Minto operating mine and areas of development for future production. The Minto mine has been operated since 2007 by several public companies and since 1977 during the exploration and permitting stages. It was acquired by the current owners in May of 2019 in a state of temporary closure. The current mine operations are based on two underground zones Minto East and Copper Keel, a process plant to produce high grade copper, gold and silver concentrate and all supporting infrastructure associated with a remote location in the Yukon.

Although this is an operating mine with well-established history of metal production, this Technical Report is a PEA, since some of the future development areas at Minto are classified as Inferred resources and create a longer overall mine life and have a large influence on overall project economics.

1.2 Project Description

The Minto Property comprises 164 Yukon quartz mining claims covering 2,760 hectares (6,817 acres), centered at 62°37'05" N Latitude, 137°14'56" W Longitude, within the Whitehorse Mining District.

1.3 Location, Access and Ownership

The Minto Mine is located within a package of Category A settlement land held by the Selkirk First Nation ("SFN"), and within the traditional territory of the SFN. There is a Co-operation Agreement (CA) between MintoEx and the SFN, with a Net Smelter Return (NSR) royalty payable to the SFN.

The property is located west of the Yukon River, about 20 km WNW of Minto Landing, the latter on the east side of the river. The property is accessible by Yukon Highway 2 to Minto Landing. In summer months, MintoEx operates a barge connecting the landing with an all-weather gravel road extending 27 km from the west bank to the mine site. In winter, the crossing is accessed by an ice bridge. There is typically a 6 to 8-week period associated with each of freeze-up and break-up, where access across the river is not possible. During freeze-up and break-up, access is provided by chartered air services from Whitehorse to an airstrip on the property.

The property is serviced by a spur of the main Yukon electrical grid. Basic fuel and grocery services, and an available work force are located at the villages of Pelly Crossing and Carmacks, both along the North Klondike Highway. The property is located approximately 250 road-km north

of the City of Whitehorse, the capital city of Yukon, which is a full-service community of about 32,000.

Figure 1-1: Location of Minto Mine



Source: Minto (2019)

1.4 History, Exploration and Drilling

1.4.1 History

The present Minto property was first staked in 1971. In 1973, United Keno Hill Explorations (UKHM) discovered mineralization on the adjoining DEF claims, leading to the formation of a joint venture with the holders of the DEF claims. This joint venture completed core drilling programs in 1973 and 1974, targeting the “North Zone”, and, in 1974, constructed a winter road to an existing airstrip on the property.

In 1993, MintoEx acquired the Minto claims and were consolidated into the Minto Property.

In 1996, MintoEx completed a feasibility study and, in April 1997, a final screening report on the Environmental Assessment of the proposed project was released, followed in 1998 by issuance of a Type A water use licence. Also, in 1997, a Co-operation Agreement (CA) with the Selkirk First Nation towards development and operation of the Minto Project was signed.

In June 2005, the Sherwood Mining Corporation (Sherwood) acquired ownership of the Minto Project. MintoEx continued as the operator as a 100% owned subsidiary of Sherwood. In July 2005, Sherwood released an NI 43-101 compliant resource estimate for the Main Zone.

In 2006, Sherwood Copper completed infill drilling at the Main Zone and exploratory drilling to the north and west of it, and on “Area 2”. Sherwood Copper also began mill construction and pre-stripping of the Main Zone. In 2007, Sherwood completed another core drilling program, which resulted in discovery of significant copper-gold mineralization at the Area 118, Copper Keel, Airstrip and Ridgetop zones. Also, in 2007, Sherwood Copper produced the first copper-gold concentrates and expanded the mill to handle 2,400 tpd. In July, Sherwood Copper delivered its first concentrate shipment to the Skagway, Alaska port, and announced it had reached commercial production on October 1, 2007.

In September 2008, Sherwood Copper entered into an agreement with the Capstone Mining Corporation to create a mid-tier copper producer retaining the name of Capstone Mining Corp (Capstone). In November, the merger was completed and the mine was officially connected to Yukon Energy’s electrical grid.

In November 2008, Sherwood Copper, MintoEx and Kutcho Copper Corp. entered into an agreement with Silverstone Resources Corp. (Silverstone) whereby MintoEx would sell to Silverstone all payable gold and silver recovered from the Minto Mine. In May 2009 Silverstone was purchased by the Silver Wheaton Corporation, now Wheaton Precious Metals Corp.

In 2009, MintoEx completed a core drilling program focusing on infilling of the Ridgetop and Area 2 deposits leading to discovery of the Minto North and Minto East zones. In 2010, the Minto East Deposit was defined, the copper-gold resources for the Area 2/ Area 118 were expanded, and drilling led to discovery of the Wildfire and Inferno prospects, now part of Minto East 2. In 2011, the Copper Keel and Wildfire resource sub-domains were defined and incorporated into the larger Minto South Deposit (MSD).

Exploration from 2012 onwards was limited to delineation core drilling and related activities, and no significant surface or underground exploration occurred from 2013 through 2018.

1.4.2 Production History

Following the official announcement of production on October 1, 2007, production and recovery rates increased through 2008 and 2009, although were cut back in 2010 due to constraints in the tailings filtration facility. In 2012, mining and stripping of the Area 2 pit was ongoing, with a slight decrease in production. In October, an amendment to Minto's Water Use Licence (WUL) was approved, and development of the underground ramp to access future underground workings at Area 2 commenced.

In 2013 Capstone submitted to the Yukon Environmental and Socioeconomic Assessment Board (YESAB) an operating plan for all remaining mineral reserves as identified in the 2012 Phase V/VI Pre-Feasibility Study (PFS).

In 2014, Capstone completed mining of the Area 2 pit, then moved on to mining the M-Zone and the Area 118 open pit. Mining of both of these were completed, and underground operation of the Area 118 deposit commenced.

In 2015, operations focused on underground mining in Area 118, as well as stockpiles. Stripping commenced on the Minto North deposit which began to be extracted in December.

Open pit mining ceased in April 2018, the same month underground development of the Minto East deposit commenced. In October 2018 Capstone commenced immediate placement of the mine on care and maintenance,

1.4.3 Acquisition by Pembrige Resources PLC

In June 2019 Pembrige entered into definitive "Share purchase Agreement" (SPA) with Capstone and closed the acquisition of 100% of MintoEx, and the care and maintenance period ended and the restart process commenced. Operations at Minto resumed in October 2019.

1.5 Geology and Mineralization

1.5.1 Geological Setting

The Minto property is located within the Minto Copper Belt (formerly known as the Carmacks Copper Belt) (Kovacs, 2018), a 42 km long, NW-trending series of copper-gold deposits and occurrences in central Yukon. These deposits are hosted within deformed and metamorphosed inliers engulfed by the intrusions of the Late Triassic to Early Jurassic Minto pluton (204-195 Ma) (Colpron et al., 2015).

The MINTO/DEF property area is underlain by the southern margin of the 204 – 195 million-year old (Ma) Minto pluton. The Minto pluton consists of medium to coarse grained granite, biotite-hornblende granite, granodiorite and quartz monzonite. The south boundary lies in east-west trending normal fault contact with mafic to intermediate volcanic rocks of the Late Cretaceous Carmacks Group. The east boundary lies in NNW trending fault contact with Lewes River Group, Povoas Formation augite phyric basalt, volcanoclastic rocks, and hornblende gabbro (Hart and

Radloff, 1990). Lewes River Group rocks comprise part of the northern extent of the Whitehorse Trough, representing the northern limit of the Stikine Terrane, or “Stikinia”.

Hypogene copper sulphide mineralization is hosted within variably deformed, metamorphosed, and migmatized Late Triassic rocks that are engulfed by the undeformed and unmineralized felsic intrusive phases of the Minto pluton (Kovacs, 2018). Copper sulphide mineralization is restricted to the metamorphic rocks and occurs in three distinct forms: disseminated chalcopyrite $\pm$ pyrite, foliaform chalcopyrite, and net-textured bornite-chalcopyrite $\pm$ digenite (Kovacs, 2018). Contacts between foliated and massive phases are typically very sharp and lack chilled margins. Oxidation and alteration of primary mineralization indicates near-surface extensions of mineralized zones. Drill intercepts of copper-mineralized cobbles indicate that, by the Cretaceous period, “Minto-style” mineralization was exposed, eroded and re-deposited in sedimentary strata.

Both brittle and ductile deformation occur in the Minto Mine vicinity. Amphibolite facies ductile deformation affected the metamorphic rock, evident by the alignment of hornblende and biotite grains forming foliation, and by the segregation of quartz and feldspar grains, forming a gneissic texture in areas of higher strain. Deformation zones occur as sub-horizontal horizons traceable for more than 1,000 m and are commonly stacked in parallel to sub-parallel sequences. The felsic intrusive rocks are generally undeformed, although moderate to strong foliation is locally developed near the contact with the metamorphic inliers (Kovacs, 2018).

Late faulting and brittle fracturing occur throughout the property, significantly affecting the economic potential. The Minto Creek fault (MC Fault), a steeply north-east dipping fault, roughly bisects the Minto Main deposit into north and south blocks. The north block has moved upwards and to the left of the south block, although displacement appears minimal. To the north, the roughly east-west striking, north-northwest dipping DEF fault marks the northern limit of the Minto Main deposit. The sense of movement may be similar to the MC Fault, but with a significant inferred displacement. Elsewhere, the boundary between the Area 2 and Area 118 deposits is a NW-SE striking, northeast-dipping fault, showing significant displacement.

Pervasive potassic (biotite $\pm$ magnetite) alteration of the metamorphic host rocks is associated with hypogene copper mineralization (Kovacs, 2018). Chloritic and/or hematitic fracturing in some areas locally host visible gold, suggesting this late structural/hydrothermal event may be economically significant. There are no veins associated with hypogene copper mineralization; however, a few late chlorite-hematite-carbonate veinlets are locally present indicating post-mineral hydrothermal alteration.

1.5.2 Mineralization

Four major deposits have been delineated and/or have undergone mineral extraction: the Minto Main, Minto East, Minto North and Minto South deposits. The Area 2, Area 118, Copper Keel and Wildfire resource sub-domains are now considered to be continuous, comprising the Minto South deposit. Recent delineation and infill drilling programs have divided the Copper Keel into the Copper Keel Main, Copper Keel North, Copper Keel West and Copper Keel South deposits.

A north-northwest trend of copper deposits and prospects is evident from the alignment of the known deposits and also regionally (extending over 42 km). The trend includes the Carmacks Copper Cu-Au-Ag deposit and the Stu prospect. Copper grades increase progressively towards the north within the trend.

The primary hypogene minerals are chalcopyrite, bornite, chalcocite, and minor pyrite. Copper sulphide minerals occur mainly as disseminated grains, foliaform stringers, and net-textured domains. Sulphide mineral content tends to increase with ductile deformation. Native gold, electrum, and gold tellurides mainly occur as inclusions in bornite. Coarse free gold is locally found along late chloritic fractures, likely resulting from secondary enrichment from a hydrothermal event. Hypogene sulphide mineralization is almost always associated with biotite alteration and magnetite.

A crude zonation occurs from west to east at the Minto Main deposit, with bornite predominating in the west, transitioning to a thicker, lower grade chalcopyrite-bearing zone in the east. Both the Minto North and Minto East deposits show a similar zonation.

At the Area 2, Area 118 and Copper Keel resource subdomains of the Minto South deposit, ductile deformation appears to be more developed and mineralization is characterized by disseminated grains and minor foliaform stringers. The assemblage consists mainly of chalcopyrite-bornite-magnetite and minor pyrite. Mineralization is more homogenous and consistent than at the Minto Main and Minto North deposits, where mineralization is dominated by net-textured domains of bornite-chalcopyrite.

The predominant alteration assemblage associated with hypogene copper mineralization in the Minto mine area is a pervasive, potassic alteration, characterized by elevated biotite and magnetite content, within the horizontal mineralized zones, present in all Minto deposits. Pervasive silicification tends to coincide with areas of higher-grade mineralization.

Copper oxide mineralization resulting from supergene alteration processes represents either the erosional remnants of foliated horizons above the deposits, or the vertical remobilization of copper along late brittle faults and fracture zones from underlying copper sulphide zones. The oxide mineral assemblage consists of chalcocite, malachite, minor chrysocolla and azurite and rare native copper. Mineralization occurs as fracture-fill and joint coatings and, to a lesser extent, interstitially to rock-forming silicate minerals. Oxidation is related directly to the depth of the water table, typically less than 30 m, and is a minimal component of the Minto Main zone, due to its depth.

1.6 Deposit Types

The Minto deposit has been modified by deformation, amphibolite facies metamorphism, and localized metamorphic anatexis (Kovacs, 2018). Recent studies of the setting and mineralization of the Minto deposits by Kovacs (2018) have determined that mineralization may be hosted by 215-212 Ma Late-Triassic Povoas Formation volcanic rocks subsequently engulfed into the 198 Ma Minto pluton. The Minto deposits are metallogenically related to the Carmacks Copper deposit 42 km to the south, indicated by their spatial relation and deformed, metamorphosed, and partially oxidized nature. A recent study integrated the two deposits into a single genetic model and proposed that the Minto deposit is the more highly migmatized analogue of the Carmacks Copper deposit (Kovacs, 2018). The same study also concluded that the two deposits represent Late Triassic porphyry deposits hosted within Late Triassic volcanic rocks of Stikinia that have undergone amphibolite facies metamorphism, deformation, and partial melting (Kovacs, 2018).

1.7 Exploration

Exploration in late 2019 and 2020, post-dating release of the Competent Person's Report (CPR) in June, 2019, mainly comprised a core drilling program at the Minto Mine property, which is summarized in Section 1.6.

In September, 2019 MintoEx contracted Pioneer Aerial Surveys Ltd. (Pioneer) to conduct an airborne magnetic survey (UAV-MAGTM) covering the Minto property. The surveyed area covered approximately 24 km² and included the mine site and its surrounding areas. Flight lines were flown at an orientation of 065° at a 50 m line spacing, and tie lines were flown at a 500 m spacing and at a 335° orientation. A total of 554.71-line km were flown, including 480.59 km of flight lines and 74.11 km of tie lines. Final deliverable products from Pioneer included Total Magnetic Intensity (TMI) and 1st Vertical Derivative imagery. The tight spacing of survey lines using the drone platform allowed for the collection of high-resolution magnetic data. This high-resolution data allowed for more accurate targeting of anomalous magnetic features, potentially associated with mineralization.

At the Minto Mine property, the TMI map clearly indicates the WNW-trending fault separating the Minto pluton from Carmacks Group basaltic rocks to the south. A second WNW-trending structure extends across the central property area, marking the northern limit of the Minto mine deposit area. To the north of this, a series of strong northwest trending magnetic "high" features mark regional stratigraphic trends. Several magnetic high anomalies may indicate targets for "Minto-style" mineralization. The 1st Vertical Derivative imagery support the TMI imagery, and indicates strong magnetic contrasts along the southern fault and the stratigraphic setting in the northeastern area.

In late 2019, a soil geochemical survey was completed across four grids, or "zones", on the Hun South property, centered on magnetic anomalies identified from airborne drone magnetic surveying. All grids comprised a 50 m line spacing and 50 m station spacing. A total of 1,810 soil samples targeting the C-horizon and covering 5.54 km² were collected.

At Zone 1, the two most notable anomalous areas lie in the northeast and southeast corners respectively of the target area. The northeast area shows elevated Cu values from 25 to 100 ppm, correlating with an oval magnetic "high" anomaly. The southeast area outlines a larger area of anomalous Cu values between 25 to 50 ppm, with weakly elevated Au and Ag values. 1st Vertical derivative imagery indicates a WNW trend of stratigraphy as well as NNW trending features that may indicate structural occurrences.

At Zone 2, sampling revealed a WNW trending area of weakly to moderately elevated Cu values, associated with weakly elevated Au and Ag values, in the central property area. This occurs along a strong "low" feature returned from 1st Vertical Derivative imagery.

Geochemical sampling on Zone 3 revealed a 1,000 m by 500 m long NNE-trending Cu anomaly in the eastern area, with Cu values from 25 to 50 ppm, and Ag values between 75 and 150 ppb. The 1st Vertical Derivative imagery revealed WNW trending alternating high and low features, likely indicating stratigraphic trends, and also an NNE trending "low" feature coincident with a topographic low along the western margin of the Cu anomaly. Geochemical sampling on Zone 4, directly south of Zone 3, returned intermittent weakly elevated Cu values from 25 to 100 ppm along the north flank of an ESE trending valley. 1st Vertical Derivative imagery indicates the stream is coincident with a linear "low" feature, and that a more pronounced "low" feature is

oriented parallel to this along the central axis of the grid. Two anomalous gold values of 33.9 ppb and 20.1 ppb respectively were returned proximal to the stream.

1.8 Drilling

The 2019-2020 infill-drilling campaign comprised 23,321 m of surface and underground diamond drilling of NQ core, targeting the Copper Keel West, North, South, Minto North 2 and Minto East deposits. The surface drilling comprised 62 holes totaling 16,485 m targeting the Copper Keel West, Copper Keel North, Copper Keel South, and Minto North 2 deposits. The underground infill-drill program mainly targeted the Copper Keel West and Copper Keel North lenses. Additional drilling was also completed on the Minto East and Copper Keel Main production areas. A total of 6,835 m in 75 underground holes was completed.

At the Copper Keel Main deposit, 23 drill holes totaling 979 m of underground drilling were completed, targeting the Copper Keel Main lens to obtain geo-mechanical information for mine design. At the Copper Keel West deposit, five holes were drilled for a total of 2,211 m, targeting gaps of coverage in the lens. The underground diamond drilling program consisted of 2,618 m in 12 holes. An additional 2 condemnation drill holes totaling 156 m were also completed from the 5600 ramp.

At the Copper Keel North deposit, 4,848 m in 11 surface drill holes were completed with the objective to expand and define the lens towards the north. Surface results indicate the Copper Keel North deposit lies to the north of the Copper Keel Main area, about 100 m to 150 m below it, and remains open to the north. Due to high metal values returned from surface drilling, the underground drilling focused on testing for the extension of the deposit to the north. The underground program comprised 6 drill holes, totaling 1,161 m.

The Copper Keel South lens, located southwest of the Copper Keel Main mining area, underwent surface diamond drilling to test for mineralization southwest of the Copper Keel Main lens. The program comprised 3,816 m in 15 drill holes and confirmed that the Copper Keel South deposit comprises a series of northwest trending stacked lenses. The largest and uppermost lens dips gently eastwards, and likely represents the western continuation of the Copper Keel Main deposit.

The Minto North 2 deposit is located southeast of the Minto North deposit, which was the highest-grade deposit on the property and is now mined out. Drilling at Minto North 2 comprised 5,609 m in 31 holes, completed on 25 m to 30 m drill spacings. The main purpose of the 2020 drill program, staged in two phases, was to delineate the Minto North 2 deposit. Phase 1 results show that this deposit is a flat-lying, shallow lens which lies ~175 m below surface and 90 m east from the Minto North deposit. Phase 2 targeted the extension of the deposit to the south and east, results of which indicate it extends to the south and is cut off by a major NNW-trending fault along its east margin. Historic drill holes located on the east side of the fault intersected mineralization at depth, potentially representing the offset and down-dropped eastern portion of the Minto North 2 deposit.

At the Minto East target, an underground diamond drilling program comprising 1,565 m in 30 holes was completed. The objective was to test lateral and upward continuity of the Minto East lens to the south. Two additional holes totaling 355 m were also completed, targeting the pillars of the Minto East 490 level. The objective was to acquire geological and geotechnical information for future pillar recovery.

1.9 Metallurgical Testing and Mineral Processing

The metallurgical testing of the Minto Mine mineralized material has been extensive over the years since 2007 when the processing plant was commissioned. The primary mineralized material is typically a mixture of chalcopyrite and bornite, with little other sulphides allowing the plant to achieve high recoveries with a very high concentrate grade (35 – 40% Cu). There is also a component of mineralized material that consists of various quantities of oxidized copper minerals which do not recover well in the flotation circuit.

The mineralized material is classified as either “sulphide” or “POX” (partially oxidized) based on the ratio of acid soluble copper grade to total copper grade. Mineralized material is considered POX if the oxide ratio is above 20%. There are several opportunities that can be investigated for processing oxidized copper mineralization which could include further investigation of flotation options or the recovery that could be achieved by leaching and SXEW for oxidized zones.

The recent operating data was collated to develop recovery equations for copper and silver which can be seen in Table 1-1. The data analyzed did not include gold assays and, therefore, the site technical group produced this recovery equation.

Table 1-1: Recovery Equations

Parameter	Unit	Concentrates Zone 1
Cu Recovery	%	$95.5 + (1.07 * Cu_{tot} \%) - (113 * \text{Oxide Ratio})$
Au Recovery	%	$62.01 * (20.99 * \text{g/t Au})$
Ag Recovery	%	$69.4 + (1.9 * \text{g/t Ag})$
Concentrate Grade		
Cu	%	35

1.10 Mineral Resource Estimate

The Mineral Resource estimate with an effective date of March 31, 2021 is summarized in Table 1-2.

The following factors, among others, could affect the Mineral Resource estimate: commodity price and exchange rate assumptions; pit slope angles; assumptions used in generating the LG pit shell, including metal recoveries, and mining and process cost assumptions.

The QP is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

Table 1-2: Total Mineral Resource Estimate with an Effective Date of March 31, 2021

Type	Class	Cut-off	Tonnes	In situ Grades				Metal		
		CA\$/t milled	(000t)	NSR (CA\$/t milled)	Cu (%)	Au (gpt)	Ag (gpt)	Cu (000lb)	Au (000oz)	Ag (000oz)
Open Pit	Indicated	\$35	3,480	79.40	1.16	0.36	3.33	88,915	40	372
	Inferred		1,986	70.41	1.04	0.28	3.01	45,566	18	192
Underground	Indicated	\$70	7,612	133.46	1.59	0.61	5.40	267,632	149	1,320
	Inferred		11,027	112.63	1.34	0.53	4.83	324,539	189	1,712
Total	Indicated	Varies	11,092	116.50	1.46	0.53	4.75	356,548	189	1,693
	Inferred		13,013	106.18	1.29	0.49	4.55	370,104	207	1,903

Source: MMTS (2021)

Notes:

- Resources are reported using the 2014 CIM Definition Standards and were estimated using the 2019 CIM Best Practices Guidelines.
- Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- Metal prices of US\$1500/oz Au, US\$18/oz Ag, US\$3.10/lb Cu.
- The following NSR calculations are used to determine cutoff grades: for open pit: $NSR = CA\$61.688 * Cu\% + CA\$21.384 * Augpt + CA\$0.0599 * Aggpt$, for Underground: $NSR = CA\$68.946 * Cu\% + CA\$37.842 * Augpt + CA\$0.0862 * Aggpt$.
- For the NSR calculations: a currency exchange rate of 0.76 US\$ per \$CA; 95% payable Cu, 77% payable Au and Ag; offsite costs (refining, transport and insurance) of US\$240.39/dmt; royalties as described in Section 19.
- The following equations are used for metallurgical recovery: $RecCu = 95.5\% + 1.07 * CU\% - 113 * TCu / Ascu$ to a Maximum of 95%, $RecAu = 20.99 * Augpt + 62.01$; $RecAg = 100 * (0.694 + 0.019 * Aggpt)$ both to a maximum of 85%.
- The Mineral Resource has been confined by a "reasonable prospects of eventual economic extraction" pit or underground shape using the 130% base case NSR for the Ridgetop open pit and the 100% NSR case for the Area 118 pit and by a confining shape for the underground.
- Mining costs are CA\$3.70/t for open pit, CA\$41.03/t for underground, Processing costs are CA\$19/t.
- Pit slope angles are assumed at 45°.
- The specific gravity of the deposit has been assigned based on domain as between 2.578 and 2.849 based on sg measurements in the Minto deposit.
- Numbers may not add due to rounding.

1.11 Mineral Reserve Estimate

Mineral reserves can only be estimated as a result of an economic evaluation as part of a preliminary feasibility study or a feasibility study of a mineral project. Accordingly, at the present level of development, there are no mineral reserves at the Project.

1.12 Mining

The mineralized material zones can be described as lenses of foliated metamorphic rocks bounded at their hanging wall and footwall contacts by undeformed granodiorite host rock. The metamorphic zones are typically 5 to 30 m thick. These zones typically dip at 20° to 35°. The width and dip of mineralized zones are locally variable. At least some of the irregularity in the

geometry and thickness of the mineralized zones is due to small-scale and large-scale structural displacements.

Minto utilized both underground and open pit mining methods to extract the mineralized material for processing. In the past, the operation performed mostly open pit mining using a standard truck and shovel fleet, which was contractor operated. Since the restart of operations in 2019, Minto has undertaken only underground mining, using a ramp access system with longhole upper cut retreat mining with standard rib and pillar support. The longhole stopes are left open when completed. Underground mining is planned for Copper Keel, Minto East, Area 2 Minto North and Ridgetop. Open pit mining is planned for both Ridgetop and 118 deposits.

The parameters used for the pit and stope optimizations are shown in Table 1-3: Mine Planning Optimization Input Parameters. Due to the presence of POX within the open pit area, a recovery formula based on oxide content was used. This was not required for the underground assessment as the material is largely sulfide. Results of optimization by area and mining type are summarized in Table 1-4 and Table 1-5. Mining is scheduled over a period of 8 years with an average mill throughput of 4,000 tpd.

Table 1-3: Mine Planning Optimization Input Parameters

Parameter	Unit	Value
Metal Prices		
Cu Price	US\$/lb	3.1
Au Price	US\$/oz	1,500
Ag Price	US\$/oz	18
Exchange Rate	C\$:US\$	0.76
Recovery to Cu Concentrate		
Cu Recovery - Underground	%	95%
Cu Recovery - Open Pit	%	Variable see Note
Au Recovery	%	75%
Ag Recovery	%	75%
Concentrate Grade		
Cu	%	34%
Au	g/t	variable with Cu
Ag	g/t	variable with Cu
Moisture Content	%	8%
Smelter Payables		
Cu Payable	%	95%
Min. Cu deduction	% Cu/tonne	1%
Au Payable	%	77%
Min. Au deduction	g/t concentrate	1

Parameter	Unit	Value
Ag Payable	%	77%
Min. Ag deduction	g/t concentrate	30
Treatment & Refining Costs		
Cu TC	US\$/dmt con	62
Cu RC	US\$/payable lb	0.062
Au RC	US\$/payable oz	5
Ag RC	US\$/payable oz	0.4
Transport Costs		
Transport Costs	US\$/wmt	123.1
	US\$/dmt	133.81
Royalties		
Royalties - Cu	%	1.50%
Royalties - Au	%	1.50%
Royalties - Ag	%	1.50%
Wheaton - Au	price cap US\$/oz	1,000
Wheaton - Ag	price cap US\$/oz	4.29
Operating Costs		
Underground Mining Cost	C\$/tonne mined	41.03
Open Pit Mining Cost (Contract Mining)	C\$/tonne mined	3.70
Processing Cost	C\$/tonne milled	19.00
G&A	C\$/tonne milled	18.08

Notes:

Recovery formula for Copper calculated as:

$$\text{Recovery} = 0.955 + (0.0107 \times \text{Total Copper Grade}) - (1.13 \times \text{Oxide Ratio})$$

Where Oxide Ratio is defined as the ratio of Oxide Copper to Total Copper Grade

For more information regarding recovery formula, please see Section 13.2.

These parameters differ slightly from those used in the economic model due to subsequent, more detailed estimation work but the differences are not considered material to the PEA results.

Table 1-4: Mineralized Material Mined by Deposit

Item	Mineralized Material (Mt)	Copper Grade (%)
UNDERGROUND MINE PRODUCTION BY ZONE		
Copper Keel	4.01	1.43
Minto East	2.27	1.39
Area 2	1.30	1.19
Ridgetop	1.28	1.19

Item	Mineralized Material (Mt)	Copper Grade (%)
Minto North	0.85	1.34
Subtotal Underground	9.71	1.35
OPEN PIT MINE PRODUCTION BY ZONE		
Ridgetop	1.14	1.22
118	0.05	1.38
Subtotal Open Pit	1.19	1.23
TOTAL MINERALIZED MATERIAL	10.89	1.34

Table 1-5: Total Material Mined

Item	Mineralized Material (Mt)	Copper Grade (%)	Gold Grade (g/t)	Silver Grade (g/t)	Contained Cu (Mlbs)	Contained Gold (koz)	Contained Silver (koz)
Underground	9.71	1.35	0.58	4.95	289	181	1,544
Open Pit	1.19	1.23	0.27	2.51	32	10	96
TOTAL MINE	10.89	1.34	0.55	4.68	321	191	1,640

1.13 Recovery Methods

The Minto Mine has an established processing plant that consists of a contract crushing circuit, SAG mill, 2 Ball Mills and a 3-stage flotation circuit. The flotation concentrate is thickened in a 9.4 m thickener and filtered by a 30 m² ceramic disc filter. The tailings are currently directed to a 15.25 m dia. thickener, which operates to maintain the process water tank level. The tailings thickener underflow is deposited into the Minto Main pit which is currently being used as the tailings storage facility.

The grinding circuit consists of a 16.5 ft dia. x 5 ft EGL (effective grinding length – as measured from the inside of the of the feed end liner to the inside of the discharge end liner) SAG Mill and 2 10.5 ft dia. x 12 ft EGL Ball Mills. The grinding circuit feed is crushed to 100% passing (F₁₀₀) of 19 mm. The grinding circuit product size is 80% passing (P₈₀) 200 µm.

The flotation circuit is made up of a Rougher circuit (Rougher and Rougher Scavenger flotation cells), First Cleaner circuit, and Re-cleaner circuit. The rougher circuit consists of 3-1340 cu ft tank Rougher cells and 4-500 ft³ Rougher Scavenger flotation cells. The First Cleaner circuit has 4-350 ft³ flotation cells. Th Re-cleaner circuit consists of 6-100 ft³ flotation cells. The flotation circuit produces a concentrate that is typically 35 – 40% copper and 10 – 15 g/t gold.

The plant has an operating crew of 54 operations and maintenance staff and hourly employees and 6 staff and hourly employees in the technical group.

1.14 Infrastructure

As the Minto mine is currently in operation, limited new infrastructure will be required to support the continued operation of the Mine. The Project will continue to make use of the existing infrastructure including the processing plant, site access and airstrip, camp facilities, maintenance and storage facilities along with bulk fuel storage and explosive storage.

Existing infrastructure to be expanded include the Mine Waste management facilities along with the tailings facilities. Additional camp facilities and power supply facilities will also be included, to meet the increase project demand.

1.14.1 Infrastructure

The Minto site has been an operating mine since 2007 and has a very well developed and operating infrastructure. Existing on-site infrastructure on the site include:

- Process building;
- Filter Plant building;
- Concentrate storage shed;
- Crusher and crusher conveyor;
- Assay lab;
- Mill warehouse;
- Mechanics & Electricians shops;
- Water Treatment facilities;
- On-Site Substation;
- Explosives Storage;
- Camp and associated facilities;
- On site roads;
- Airstrip;
- River ferry and landing site; and
- Fire engine and medical area.

1.14.2 Tailings & Waste

Mine development started in 2007, and at that time, tailings deposition consisted of filtered tailings deposited onto a dry-stack facility. The mine subsequently expanded and is currently operating under their Phase V/VI and have applications in for Phase VII mine plans. When the Phase IV water licence was received, tailings deposition transitioned from dry stack tailings to thickened (50 to 60% solids by weight) hydraulic placement of tailings directly into the Main Pit. Since this time, and to current (2021), reclamation has started on the dry stack facility, and the Main Pit as well as the Area 2 pits have been the primary areas used for active tailings deposition.

To accommodate the mine plans, outlined in this PEA, additional storage capacity will be needed for storage of tailings water (operational and surge capacity) and waste rock with a neutralization potential to acid potential ratio value of less than 3 (NP:AP < 3).

For this PEA the proposed waste management approach includes:

Tailings

1. Continued tailings deposition into the Area 2 pit. This includes initial testing for tailings cyclones to help maximize in-pit storage volumes;
2. Additional tailings deposition within Main Pit. Engineering interventions in the form of the Phase 1 (crest elevation 812 m) main pit containment dam to be constructed to increase the capacity of the Main Pit;
3. Tailings deposition in the mined out Minto North Pit;
4. Tailings deposition in the mined out Ridgetop Pit;
5. Additional tailings deposition in the Area 2 pits. Foundation improvement and construction of a containment dam 'plug' over the northeastern edge of the Area 2 pit required for this second stage of tailings deposition at the Areas 2 pits. This is done to raise tailings deposition in the Area 2 pits up to elevation 802m (crest of northeast wall improved up to the 805m elevation); and
6. Additional tailings deposition with the Main Pit. A Phase 2 raise to the Main Pit containment dam (raised to a crest elevation of 822m) completed using the underflow of the cyclone tailings.

Waste Rock

1. Deposition of waste rock that has an NP:AP ration less than 3:1 within the pits (Main Pit, Area 2 pits, Minto North and Ridgetop); and
2. Stockpiling of the remainder of the waste rock in the new Ridgetop Waste Rock Storage facility (located immediately west of the Area 118 and Ridgetop pit).

The underground voids have not been utilized in the PEA as a primary area for waste or water storage (to be conservative in terms of storage volumes) but the underground could be made available as a contingency or for surge events if required.

1.15 Environment and Permitting

Several government agencies, both federal and territorial, are involved in reviewing, assessing, authorizing, and monitoring Minto Mine. The major instruments or authorizations include Type A Water Use License QZ14-031 issued by the Yukon Water Board and Quartz Mining Licence QML-0001 issued by the Department of Energy Mines and Resources, Yukon Government. The project and its expansion plans have been subject to numerous environmental and socio-economic assessments prior to these licenses being issued and amended. The project is also subject to numerous other regulations and permits. The Minto Mine is located within a block of Category A land (SFN R-6A) held by the SFN. As the landowner, SFN is Minto's primary stakeholder. As the claims were staked long before designation of this block, the YG Quartz Mining Act regulatory regime applies to the Minto claims. MintoEx has pursued consultation and community engagement with the SFN, as well as project regulators and other stakeholders.

WUL QZ14-031 governs water management activities and reporting at the site, including mine water and runoff storage, usage, and discharge. Water storage, treatment and effluent discharge is challenging at Minto, and remains the subject of ongoing planning initiatives.

The ML/ARD characterization indicates that the waste rock from surface and underground mining components had low potential for acid generation due to sulphur content and moderate but sufficient neutralization potential. Significant metal leaching is also not expected. Only a small proportion of the mineralized waste rock is expected to generate localized ML/ARD. The ML/ARD results also indicate low potential for acid conditions developing from the tailings due to an excess of neutralizing potential. However, neutral metal leaching is expected from these tailings under unsaturated conditions as suggested by the operational monitoring of the Dry Stack Tailings Storage Facility (DSTSF).

Minto has recently submitted the most recent update to the project Reclamation and Closure Plan, which is currently under review by the Yukon Water Board and Yukon Government. It addresses the long-term physical and chemical stability of the site and includes reclamation of surface disturbances. It includes a program for site monitoring and management during closure implementation and after completion of decommissioning and reclamation. This RCP includes plans for temporary closures and incorporates reassessment of progressive closure and reclamation activities where possible during site operations for use during final closure. This plan was developed based on the approved mine plan at the time of preparation (2020), which differs from the mine plan being evaluated in this PEA. However, the closure goals, objectives, and proposed mitigation measures in RCP version 2020-01 are reasonably expected to apply to the PEA mine plan on a planning basis, and if/when approved, the RCP will be updated to reflect the new mine plan.

The estimates for reclamation and closure liability have been prepared in accordance with the costing guidance from YG EMR in the document *Reclamation and Closure Planning for Quartz Mining Projects: Plan Requirements and Closure Costing Guidance* (YG, 2013) and form the basis of financial security requirements, on the estimates of each infrastructure units described in the RCP. Estimated closure costs for the End of Mine (EOM) stand at \$57.1M, assuming progressive reclamation being carried out while operations continue. Approval of the Type A Water Use Licence in 2015 included a requirement for issuance of a higher security amount than Minto's estimate, so in accordance with that requirement, Capstone placed a surety bond of approximately CAD \$72M with the appropriate regulatory agencies. While this surety bond is

outstanding, Capstone will act as an indemnitor to the surety bond provider and MintoEx will indemnify Capstone for environmental liabilities at the Mine.

1.16 Operating and Capital Cost Estimates

1.16.1 Capital Cost Estimate

The capital cost estimate was prepared using a combination of benchmarks and first principles where applicable, with applied project experience as well as information from the existing operating site. Given that assumptions have been made due to a lack of available engineering information, the accuracy of the estimate and/or ultimate construction costs arising from the engineering work cannot be guaranteed. The estimate deemed to be at the level of an AACE Class 4 Estimate, with a target accuracy of -15 to -30% and +20 to +50%.reflective of the current level engineering and design.

Costs are expressed in CA\$ and does not include allowances for escalation or exchange rate fluctuations unless stated otherwise.

The scope of the capital cost estimate covers all the capitalized costs from January 1, 2021. Total life of mine capital costs are estimated to be \$184.9M. These costs are summarized in Table 1-6. The capital costs do not include open pit mining fleet as it is accounted for in operating costs through leasing. Contingency for the project totals \$12.5M. Individual contingency rates were applied to each of the capital cost categories where applicable, with rates ranging from 0-25% where applied. This resulted in a blended contingency rate of 7.25% across the entire project, which is in-line with the scope of the expect construction activities of an Operating Mine.

Closure costs amount to \$23.6M and were assumed to be a mixture of progressive reclamation activities, occurring during the mine life, and end of mine activities.

Table 1-6: Capital Cost Summary

Capital Costs	Total (M\$)
Mining	\$107.0
Primary Crushing & Storage	\$3.6
Tailings & Waste Rock Management	\$16.6
On-Site Infrastructure	\$5.1
Project Indirects	\$1.7
Engineering & EPCM	\$1.7
Owner's Costs	\$13.3
Closure	\$23.6
Subtotal	\$172.4
Contingency	\$12.5
Total Capital Costs	\$184.9

1.16.2 Operating Cost Estimate

As the Minto Mine is currently in operations, the operating costs estimates for processing and Site G&A were prepared using historical site data and forecasted operating budget information provided by Minto Mine. Adjustments were made to the provided budget information to incorporate changes from the Life of Mine (LoM) throughput, and the change from contracted to internal crushing. The UG mining operating costs were prepared using first principles, applying project experience and avoiding the use of general industry factors. Inputs are derived from engineers, contractors and suppliers who have provided similar services to other projects.

Operating costs in this section of the report include Open Pit and Underground mining, Rehandle, processing, tailings, and administration up to the production of concentrate from the site. Concentrate transportation, treatment and refining charges, and royalties are discussed in Section 22.

Operating costs are presented in 2021 Canadian dollars on a calendar year basis. No escalation or inflation is included. Average annual operating costs over the life of mine are \$103.2M and are summarized in Table 1-7.

The overall LoM operation cost summary is as follows:

Table 1-7: LoM Unit Operating Costs

Area	Unit Cost	LoM M\$
Open Pit Mining (\$/t mined)	3.92	41.0
Underground Mining (\$/t mined)	36.40	353.3
Rehandle (\$/t milled)	0.14	1.5
Processing (\$/t milled)	18.30	199.3
G&A (\$/t milled)	18.76	204.4
Total (\$/t milled)	73.40	799.6

1.17 Economic Analysis

An engineering economic model was developed to estimate annual cash flows and sensitivities. Pre-tax estimates of project values were prepared for comparative purposes, while after-tax estimates were developed to approximate the true investment value. Tax estimates involve many complex variables that can only be accurately calculated during operations and, as such, the after-tax results are only approximations.

This PEA is preliminary in nature and includes the use of inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the results of the preliminary economic assessment will be realized.

This technical report contains forward-looking information regarding commodity price assumptions, projected mine production rates, construction schedules and forecasts of resulting cash flows. Factors such as the ability to obtain permits to construct and operate a mine, or to obtain major equipment or skilled labor on a timely basis, to achieve the assumed mine production rates at the assumed grades, may cause actual results to differ materially from those presented in this economic analysis.

1.17.1 Results

The Minto project has an after-tax net present value at 8% (NPV8%) of \$111 M. Figure 1-2 shows the projected annual cash flows. Table 1-8 summarizes the overall economic results.

Figure 1-2: Cumulative Cash Flows



Table 1-8: Economic Results Summary

Category	Unit	Value
Net Revenues	M \$	1,147
Operating Costs	M \$	800
Cash Flow from Operations	M \$	348
Total Capital Costs*	M \$	185
All-in Sustaining Cost (net by-product credits) [°]	US\$/lb	2.71
Net Pre-Tax Cash Flow	M \$	163
Pre-Tax NPV_{8%}	M \$	134
Total Taxes	M \$	29
Net After-Tax Cash Flow	M \$	133
Net After-Tax NPV_{8%}	M \$	111

Notes:

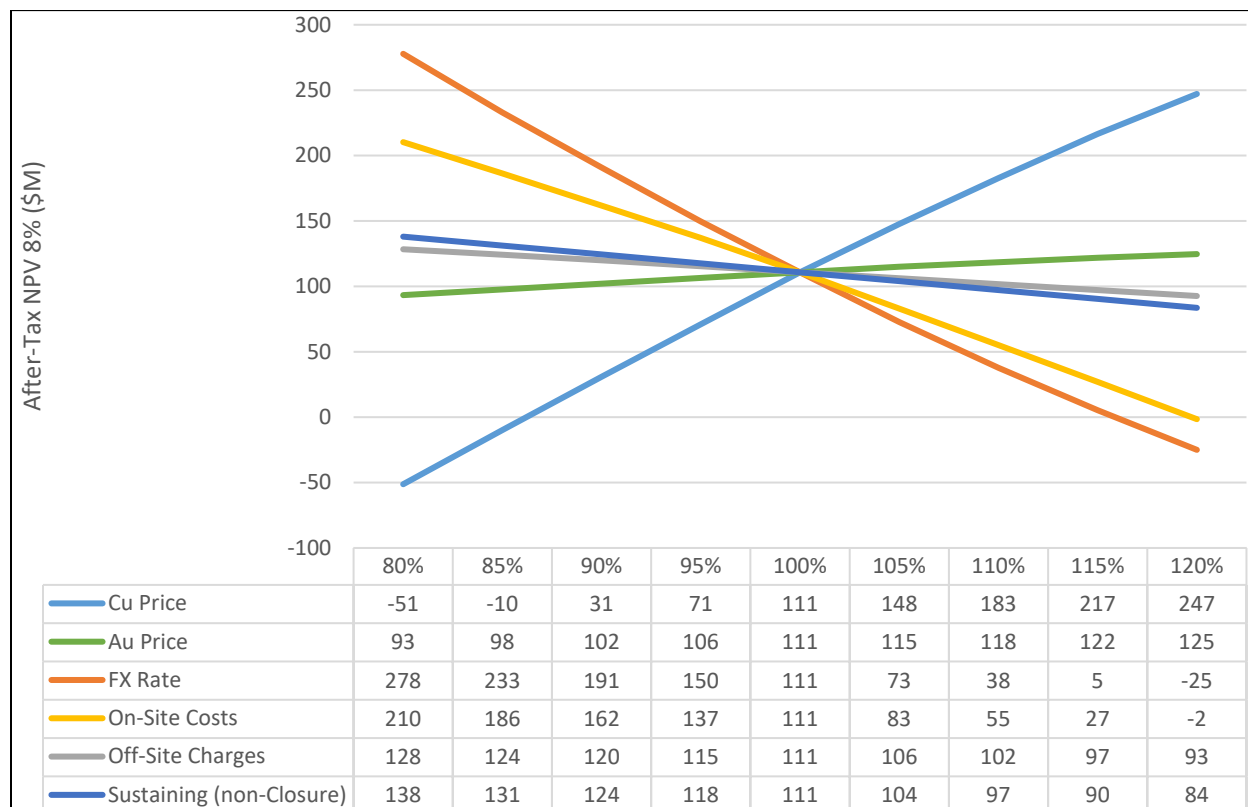
* Includes sustaining, exploration, closure and reclamation capital costs.

[°] AISC formula: (Operating Costs + Refining Costs + Royalties + Sustaining Capital + Closure - By Product Credits) / Payable Cu lb

1.17.2 Sensitivities

Sensitivity analyses were performed using metal prices (Copper and Gold), foreign exchange rate (CAD:USD), On-site costs, Off-site Charges (TC/RC & Transport) and sustaining (non-closure) capital as variables. The value of each variable was changed plus and minus 20% independently while all other variables were held constant. The results of the sensitivity analyses are shown in Figure 1-3.

Figure 1-3: After-Tax Discounted NPV Sensitivities



1.18 Conclusions

It is the conclusion of the QPs that the PEA summarized in this technical report contains adequate preliminary detail and information to support a PEA-level report. Standard industry practices, equipment and design methods were used in the PEA.

Based on the assumptions used for this preliminary evaluation, the project shows positive economics.

The most significant potential risks associated with the project are uncontrolled dilution with waste rock and rock from different mineralized zones, operating and capital cost escalation, permitting and environmental compliance, unforeseen schedule delays, changes in regulatory requirements, ability to raise financing and metal price. These risks are common to most mining projects, many of which can be mitigated with adequate engineering, planning and pro-active management.

To date, the Qualified Persons (QP) are not aware of any fatal flaws for the project.

1.19 Recommendations

It is recommended that Minto continue with current operations and advance the project as outlined in this study. This includes expanding the underground operations, incorporating Ridgetop and 118 open pits and upgrade the Minto Crushing plant to eliminate the current contract crushing circuit.

In addition, JDS recommends that a geometallurgical inspired testwork program be conducted to investigate improved recovery options for POX material. This program is expected to cost approximately \$750k.

MMTS recommends that the Minto database include corrections made to the data and exporting process to ensure the correct assay method is used and that a standardized process is established for QAQC analyses. Re-assays of failed values should be added to the database and additional check assays should be done based on comparisons with Standards.

It is also recommended that environmental and permitting continue as needed to support Minto project development plans.

2 INTRODUCTION

2.1 Context, Scope and Terms of Reference

JDS Energy & Mining Inc. (JDS) was commissioned by Minto Explorations Ltd. (MintoEx or the Company) to prepare a Preliminary Economic Assessment (PEA) Technical Report in accordance with the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1, collectively referred to as National Instrument (NI) 43-101 for the Minto Project (Minto or the Project) located in Yukon, Canada.

In the preparation of this work, JDS led a team comprised of:

- Moose Mountain Technical Services (MMTS);
- Aurora Geoscience;
- Ensero Solutions; and
- SRK (Canada) Ltd.

The Minto mining operation has been in production since 2007, initially operated by Capstone Mining Corp. The Minto operations originally operated as open pit operations and began underground mining in 2014. In 2018 the operation was placed on Temporary Closure. The mine was purchased by the Current Owners in May of 2019. The ventilation and access to the underground operation was then rehabilitated and the mill started operating again in September of 2019.

The effective date of this report is 31 March 2021, and the report is based on technical information known to the authors at that date. The effective date of the resource estimate is March 31, 2021 with the final QAQC data provided on this date.

The Company has reviewed draft copies of this report for factual s and omissions. Any changes made as a result of these reviews did not include alterations to the interpretations and conclusions made. Therefore, statements and opinions expressed in this document are given in good faith and the belief that such statements and opinions are not false and misleading at the date of this report.

2.2 Cautionary Notes

2.2.1 Independence

This report has been authored by various employees and associates of JDS, Moose Mountain, SRK, Ensero and Aurora (the Authors). None of the authors have any material present or contingent interest in the outcome of this report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence in the preparation of this report. All authors and their companies have prepared this report in return for

professional fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report. No Author is, or is intended to be, a director, officer or other direct employee of MintoEx. No Author has, or has had, any shareholding in MintoEx. Furthermore, there is no formal agreement between the Authors and MintoEx as to MintoEx providing further work for any of the Authors.

2.2.2 Qualifications and Responsibilities

The Qualified Persons for this report are shown in Table 2-1.

Table 2-1: Qualified Person Responsibilities

Qualified Person	Company	Report Section(s)
Dino Pilotto	JDS	1 - 3, 15, 16, 19, 21 - 22, 20.4, 24 - 29
Mike Levy	JDS	16.3, 16.8.2
Tysen Hantelmann	JDS	23
Tad Crowie	JDS	13, 17
Carly Church	JDS	18 (excl. 18.5 - 18.7)
Carl Schulze	Aurora	4 - 10
Sue Bird	MMTS	11 - 12, 14
Cheibany Elemine	Ensero	20.1-20.2, 20.5
Sam Amiralaei	Ensero	20.3
John Kurylo	SRK	18.5 - 18.7

2.2.3 Notice to Third Parties

The Authors have prepared this report having regard to the particular needs and interests of the client, and in accordance with their instructions and with NI 43-101 Technical Reporting. This report is not designed for any other person's particular needs or interests. Third party needs and interests may be distinctly different to the Client's needs and interests, and the report may not be sufficient, fit or appropriate for the purpose of the Third Party, other than its prescription in relating to NI 43-101.

2.2.4 Results are Estimates and Subject to Change

The ability of any person to achieve forward-looking production and economic targets is dependent on numerous factors that are beyond the control of the Authors and cannot be anticipated. These factors include, but are not limited to, site-specific mining and geological conditions, management and personnel capabilities, availability of funding to properly operate and capitalize the operation, variations in cost elements and market conditions, developing and

operating the mine in an efficient manner, unforeseen changes in legislation and new industry developments. Any of these factors may substantially alter the performance of any mining operation, including the Minto Project.

2.2.5 Element of Risk

The interpretations and conclusions reached in this report are based on current geological theory and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty. Any economic decisions which might be taken on the basis of interpretations or conclusions contained in this report will therefore carry an element of risk.

2.3 Sources of Information

Sources of information for the work conducted are listed in the References section and on information provided by the Company and augmented by information obtained during the site visit described in Section 2.4 below. The Authors have undertaken their own review of the technical aspects contained in this report. Based on the data supplied by Minto, Moose Mountain has prepared MRE's for the Minto deposits and has made all reasonable endeavors to confirm the authenticity and completeness of this data. The current operating plan and actual performance data have been used and are adjusted going forward for the Life of Mine operating plan financial model used in this PEA. Current reports for ongoing operating reviews, equipment maintenance and upgrades, and engineering studies have also been provided by the current owner. These have been reviewed and adjusted where applicable by the QPs to meet the requirements of the planning for the future operations.

2.4 Qualified Persons Site Visit

Table 2-2: Qualified Persons Site Visits

Qualified Person	Company	Date	Description of Inspection
Dino Pilotto, P.Eng.	JDS	October 21, 2020	Inspection of the overall property and existing facilities.
Carl Schulze, P.Geo.	Aurora	February 3, 2021	Inspection of mill, tailings storage and core logging facilities
Sue Bird, P. Eng.	MMTS	February 2-4, 2021	Inspection of core security, handling, storage, QAQC protocols, property-wide geology, underground geology, drill hole locations, mill site tour

Qualified Person	Company	Date	Description of Inspection
Tad Crowie, P.Eng.	JDS	February 2-4, 2021	Mill tour, surface tour (including crusher and tailings pond), reviewed mill metallurgical accounting, and gathered information about site infrastructure
John Kurylo, P.Eng.	SRK	May 2015	Inspection of the overall property and surrounding areas on the access road to site. Focus looking at tailings deposition, tailings dry stack, waste and overburden stockpiles, as well as looking at unimpacted areas to help define reclamation slopes and reclamation land units.

Carly Church, Tysen Hantelmann, John Kurylo, Mike Levy, Cheibany Elemine, Sam Amiralei did not visit the project site recently and relied on the other QPs for their information.

2.5 Units, Currency and Rounding

The units of measure used in this report are as per the International System of Units (SI) or “metric”, except for Imperial units that are commonly used in industry (e.g., ounces (oz.) and pounds (lb.) for the mass of precious and base metals).

All dollar figures quoted in this report refer to Canadian dollars (\$) unless otherwise noted.

Frequently used abbreviations and acronyms can be found in Section 29. This report includes technical information that required subsequent calculations to derive subtotals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the QPs do not consider them to be material.

2.6 Data Verification

The QA/QC practices employed by Minto are aligned with international best practice and included a series of routine assessments of assay accuracy and precision. A review of these practices and resulting QA/QC data by Moose Mountain has concluded that there are not material issues with the data QA/QC. When viewed collectively with the robust and well-monitored sample preparation processes and logging and sampling protocols, the data are considered suitable to support the Mineral Resources reported in this Technical Report.

No independent data verification, through check assaying or twin hole drilling, has been undertaken under the guidance of the QP.

3 RELIANCE ON OTHER EXPERTS

The QP's opinions contained herein are based on information provided by MintoEx and others throughout the course of the study. The QPs have taken reasonable measures to confirm information provided by others and take responsibility for the information.

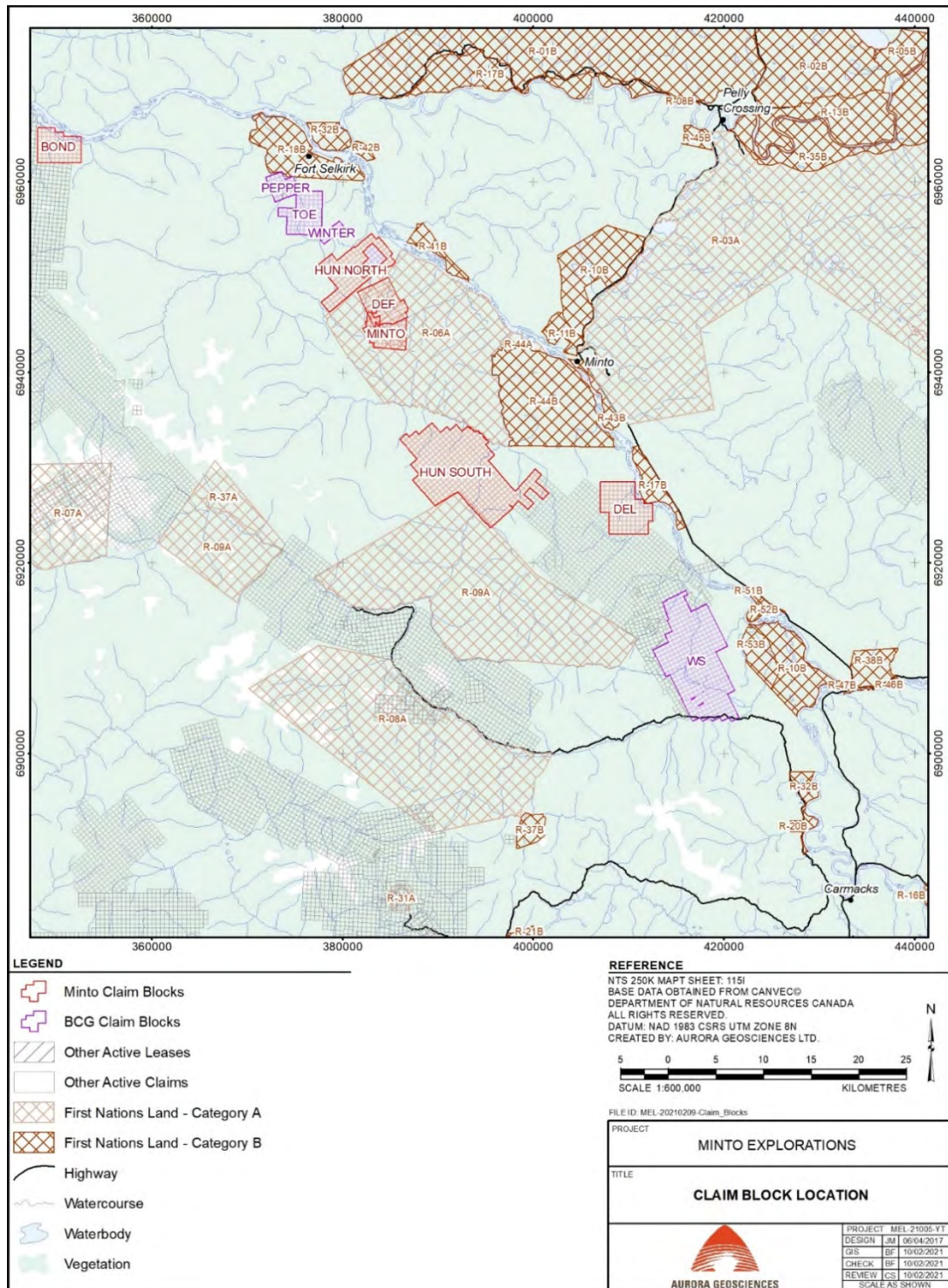
The current owners have engaged a legal counsel to advise them on the legal, political and tax aspects of owning and operating the Minto mining operations including the licencing requirement for developing future zones at the Minto site.

The QPs used their experience to determine if the information from previous reports was suitable for inclusion in this technical report and adjusted information that required amending.

4 PROPERTY DESCRIPTION AND LOCATION

The Minto property is comprised of seven separate claim blocks comprising the Minto Copper - Gold Belt. The blocks are: the Minto/Def block, hosting the mine site, and the Del, Bond, Pepper/Toe/Winter, Hun North, Hun South and WS blocks (Figure 4-1). These properties extend northwest from the WS block, centered about 28 km northwest of the village of Carmacks, Yukon Territory, to the Bond block, located 39 km WNW of the mine site and about 117 km northwest of Carmacks. Figure 4-1 shows the claim blocks comprising the Minto property. The seven claims cover a combined area of 25,000 hectares (61,760 acres)

Figure 4-1: Claim Blocks Comprising Mineral Properties Held by Minto Explorations Ltd.



Source: Aurora (2021)

4.1 Description and Location

4.1.1 Minto/Def Block

The Minto/Def block (Figure 4-2) comprises 164 Yukon quartz mining claims covering 2,760 hectares (Mercer and Sagman, 2012). The mine site is centered at approximately 62°37'05" N Latitude, 137°14'56" W Longitude (UTM NAD 83 co-ordinates 384625 E, 6945045 N, Zone 8) on NTS sheet 115I11, in the Whitehorse Mining District. All claims are 100% held by Minto Explorations Ltd.

Table 4-1 below lists the status of claims comprising the Minto property.

Table 4-1: Claim Status, Minto/Def Property (as of May 4, 2021)

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Lease Number	Area_m^2
Y 61693	DEF	1	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00230	207578.252
Y 61694	DEF	2	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00231	205730.262
Y 61695	DEF	3	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00232	209871.635
Y 61696	DEF	4	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00233	204504.399
Y 61697	DEF	5	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00234	204711.176
Y 61698	DEF	6	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00235	212872.091
Y 61699	DEF	7	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00236	208709.438
Y 61700	DEF	8	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00237	203525.483
Y 61701	DEF	9	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00238	204026.870
Y 61702	DEF	10	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		197330.490
Y 61703	DEF	11	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00239	196309.949
Y 61704	DEF	12	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		199376.072
Y 61705	DEF	13	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00240	1769.710
Y 61706	DEF	14	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00241	114046.051
Y 61707	DEF	15	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00242	206630.146
Y 61708	DEF	16	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00243	208254.357
Y 61709	DEF	17	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00244	208205.858
Y 61710	DEF	18	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00245	207860.838
Y 61711	DEF	19	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		210088.556
Y 61712	DEF	20	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		201903.477
Y 61713	DEF	21	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		199846.674
Y 61714	DEF	22	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		201909.021
Y 61715	DEF	23	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		190250.355
Y 61716	DEF	24	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		201902.554

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Lease Number	Area_m^2
Y 61717	DEF	25	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		183151.750
Y 61718	DEF	26	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		201905.147
Y 61719	DEF	27	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		179163.882
Y 61720	DEF	28	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		201905.352
Y 61721	DEF	29	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		179494.794
Y 61722	DEF	30	Minto Explorations Ltd. - 100%	1971-08-23	2022-03-01		202035.760
Y 61723	DEF	31	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00246	211550.737
Y 61724	DEF	32	Minto Explorations Ltd. - 100%	1971-08-23	2028-10-07	OW00247	206100.362
Y 61978	DEF	33	Minto Explorations Ltd. - 100%	1971-09-08	2028-10-07	OW00248	115045.382
Y 61979	DEF	34	Minto Explorations Ltd. - 100%	1971-09-08	2028-10-07	OW00249	205855.088
Y 61980	DEF	35	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		221942.417
Y 61981	DEF	36	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211033.502
Y 61982	DEF	37	Minto Explorations Ltd. - 100%	1971-09-08	2028-10-07	OW00250	208460.677
Y 61983	DEF	38	Minto Explorations Ltd. - 100%	1971-09-08	2028-10-07	OW00251	208237.313
Y 61984	DEF	39	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		203275.491
Y 61985	DEF	40	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		220563.203
Y 61986	DEF	41	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		205114.098
Y 61987	DEF	42	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		218567.802
Y 61988	DEF	43	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		206950.366
Y 61989	DEF	44	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		216572.056
Y 61990	DEF	45	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		208787.679
Y 61991	DEF	46	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		214580.358
Y 61992	DEF	47	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		210630.053
Y 61993	DEF	48	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212592.919
Y 61994	DEF	49	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211984.091
Y 61995	DEF	50	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212033.884
Y 61996	DEF	51	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211909.247
Y 61997	DEF	52	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211952.403
Y 61998	DEF	53	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211830.891
Y 61999	DEF	54	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211872.631
Y 62000	DEF	55	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211752.675
Y 62001	DEF	56	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211798.325
Y 62002	DEF	57	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211677.220
Y 62003	DEF	58	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211716.514
Y 62004	DEF	59	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212073.604
Y 62005	DEF	60	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212120.092
Y 62006	DEF	61	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212001.307

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Lease Number	Area_m^2
Y 62007	DEF	62	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212045.069
Y 62008	DEF	63	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211921.843
Y 62009	DEF	64	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211960.347
Y 62010	DEF	65	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211840.969
Y 62011	DEF	66	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211887.480
Y 62012	DEF	67	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211762.186
Y 62013	DEF	68	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211806.347
Y 62014	DEF	69	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212166.732
Y 62015	DEF	70	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212209.343
Y 62016	DEF	71	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212091.259
Y 62017	DEF	72	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212130.443
Y 62018	DEF	73	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212009.261
Y 62019	DEF	74	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		212053.709
Y 62020	DEF	75	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211931.345
Y 62021	DEF	76	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211975.329
Y 62022	DEF	77	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211853.740
Y 62023	DEF	78	Minto Explorations Ltd. - 100%	1971-09-08	2022-03-01		211896.931
Y 66779	DEF	79	Minto Explorations Ltd. - 100%	1972-07-11	2028-10-07	OW00252	1.537
Y 66780	DEF	80	Minto Explorations Ltd. - 100%	1972-07-11	2028-10-07	OW00253	18217.009
Y 66781	DEF	81	Minto Explorations Ltd. - 100%	1972-07-11	2028-10-07	OW00254	25503.963
Y 66782	DEF	82	Minto Explorations Ltd. - 100%	1972-07-11	2028-10-07	OW00255	31739.197
Y 66783	DEF	83	Minto Explorations Ltd. - 100%	1972-07-11	2028-10-07	OW00256	36995.523
Y 66784	DEF	84	Minto Explorations Ltd. - 100%	1972-07-11	2028-10-07	OW00257	36937.987
Y 76954	DEF	85	Minto Explorations Ltd. - 100%	1973-08-31	2022-03-01		171902.143
Y 76955	DEF	86	Minto Explorations Ltd. - 100%	1973-08-31	2022-03-01		192756.546
Y 76956	DEF	87	Minto Explorations Ltd. - 100%	1973-08-31	2022-03-01		173744.460
Y 76953	DEF	1379	Minto Explorations Ltd. - 100%	1973-08-31	2028-10-07	OW00258	31550.333
Y 61620	MINTO	1	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00313	192542.549
Y 61621	MINTO	2	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00314	192502.225
Y 61622	MINTO	3	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00315	197218.700
Y 61623	MINTO	4	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00316	191691.681
Y 61624	MINTO	5	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00317	188310.431
Y 61625	MINTO	6	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00318	193768.225
Y 61626	MINTO	7	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00319	195419.994
Y 61627	MINTO	8	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00320	191208.527
Y 61628	MINTO	9	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00321	193914.105
Y 61629	MINTO	10	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00322	144644.814

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Lease Number	Area_m^2
Y 61630	MINTO	11	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00323	190366.593
Y 61631	MINTO	12	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00324	118820.647
Y 61632	MINTO	13	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00325	184550.039
Y 61633	MINTO	14	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00326	122205.279
Y 61634	MINTO	15	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00327	203572.564
Y 61635	MINTO	16	Minto Explorations Ltd. - 100%	1971-08-09	2039-05-13	OW00328	111957.270
Y 61904	MINTO	17	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00329	191806.348
Y 61905	MINTO	18	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00330	181862.803
Y 61906	MINTO	19	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		218034.781
Y 61907	MINTO	20	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		205906.468
Y 61914	MINTO	23	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		194244.798
Y 61915	MINTO	24	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		164822.990
Y 61916	MINTO	25	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		183271.665
Y 61917	MINTO	26	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		148123.239
Y 61918	MINTO	27	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		184835.637
Y 61919	MINTO	28	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		145660.833
Y 61932	MINTO	29	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		185099.331
Y 61933	MINTO	30	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		156128.015
Y 61920	MINTO	31	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		231023.258
Y 61921	MINTO	32	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00333	81332.152
Y 61922	MINTO	33	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		177710.586
Y 61923	MINTO	34	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00334	156464.456
Y 61908	MINTO	35	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00331	199601.932
Y 61909	MINTO	36	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00332	193882.337
Y 61910	MINTO	37	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		213360.361
Y 61911	MINTO	38	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		200726.584
Y 61926	MINTO	41	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		207717.942
Y 61927	MINTO	42	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		137607.522
Y 61928	MINTO	43	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		187230.893
Y 61929	MINTO	44	Minto Explorations Ltd. - 100%	1971-08-31	2022-03-01		124406.615
Y 61930	MINTO	45	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00335	206410.815
Y 61931	MINTO	46	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00336	178653.279
Y 61934	MINTO	47	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00337	198195.788
Y 61935	MINTO	48	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00338	158622.431
Y 61936	MINTO	49	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00339	186714.611
Y 61937	MINTO	50	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00340	150383.755
Y 61938	MINTO	51	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00341	187891.528

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Lease Number	Area_m^2
Y 61939	MINTO	52	Minto Explorations Ltd. - 100%	1971-08-31	2039-05-13	OW00342	140314.758
Y 62296	MINTO	65	Minto Explorations Ltd. - 100%	1971-09-22	2039-05-13	OW00343	189012.668
Y 62297	MINTO	66	Minto Explorations Ltd. - 100%	1971-09-22	2039-05-13	OW00344	175188.479
Y 62298	MINTO	67	Minto Explorations Ltd. - 100%	1971-09-22	2039-05-13	OW00345	114694.517
Y 62299	MINTO	68	Minto Explorations Ltd. - 100%	1971-09-22	2039-05-13	OW00346	23038.818
Y 62300	MINTO	69	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		8041.428
Y 62301	MINTO	70	Minto Explorations Ltd. - 100%	1971-09-22	2039-05-13	OW00347	14801.921
Y 62302	MINTO	71	Minto Explorations Ltd. - 100%	1971-09-22	2039-05-13	OW00348	72581.586
Y 62303	MINTO	72	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		209049.690
Y 62304	MINTO	73	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		65928.834
Y 62305	MINTO	75	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		210211.872
Y 62306	MINTO	76	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		16564.532
Y 62307	MINTO	77	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		55227.355
Y 62308	MINTO	78	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		205879.630
Y 62309	MINTO	79	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		208301.630
Y 62310	MINTO	80	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		204388.316
Y 62311	MINTO	81	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		231526.215
Y 62312	MINTO	82	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		232890.575
Y 62313	MINTO	83	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		180737.620
Y 62314	MINTO	84	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		175847.888
Y 62315	MINTO	85	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		187367.747
Y 62316	MINTO	86	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		188737.304
Y 62317	MINTO	87	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		196202.968
Y 62318	MINTO	88	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		195205.980
Y 62319	MINTO	89	Minto Explorations Ltd. - 100%	1971-09-22	2022-03-01		217668.979
Y 77310	MINTO	94	Minto Explorations Ltd. - 100%	1973-10-01	2022-03-01		15783.537
Y 77311	MINTO	95	Minto Explorations Ltd. - 100%	1973-10-01	2022-03-01		33393.873
Y 78024	MINTO	96	Minto Explorations Ltd. - 100%	1973-11-13	2022-03-01		41401.887
Y 78025	MINTO	97	Minto Explorations Ltd. - 100%	1973-11-13	2022-03-01		135049.158

Source: Aurora (2021)

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. Yukon quartz mining leases have been surveyed by an authorized Canada Lands Surveyor, in accordance with instructions from the Surveyor General. These Quartz mining claims have not undergone a legal survey.

The Minto property is located within a package of Category A settlement land held by the Selkirk First Nation (SFN R-6A), and within the traditional territory of the SFN. All claims were originally

staked, and 65 were brought to lease, prior to finalization of the settlement land package. Subsequently, any Yukon First Nation government which has completed selection of its Category A settlement lands retains the surface and subsurface rights to the land. Category A First Nations settlement lands prohibit any further staking, and also prohibit exploration without a formal agreement between the proponent and the First Nation.

4.1.2 Del Block

The DEL claim block comprises 113 Yukon quartz mining claims, covering 2,360 hectares (Figure 4-3) centered at 62° 27' 07" N Latitude, 136° 44' 52" W Longitude (UTM NAD 83: 409820, 6925759, Zone 8), and located about 32 km southeast of the centre of the main Minto block. All claims are 100% held by Minto Explorations Ltd.

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. None of the claims have undergone a legal survey. All claims are located on Crown Land, within an overlap area of the traditional territories of the Selkirk First Nation and the Little Salmon - Carmacks First Nation (LSCFN).

Table 4-2 lists the claim status as of May 4, 2021.

Table 4-2: Claim Status, Del Block (as of May 4, 2021)

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC65413	DEL	1	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.6
YC65414	DEL	2	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.6
YC65415	DEL	3	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.3
YC65416	DEL	4	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.8
YC65417	DEL	5	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.2
YC65418	DEL	6	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.7
YC65419	DEL	7	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.1
YC65420	DEL	8	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.8
YC65421	DEL	9	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.8
YC65422	DEL	10	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.0
YC65423	DEL	11	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.3
YC65424	DEL	12	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.4
YC65425	DEL	13	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.9
YC65426	DEL	14	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.0
YC65427	DEL	15	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.3
YC65428	DEL	16	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.2
YC65429	DEL	17	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.8
YC65430	DEL	18	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.4
YC65431	DEL	19	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.1
YC65432	DEL	20	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.0

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC65433	DEL	21	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.9
YC65434	DEL	22	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.4
YC65435	DEL	23	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.3
YC65436	DEL	24	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.2
YC65437	DEL	25	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.0
YC65438	DEL	26	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.9
YC65439	DEL	27	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.9
YC65440	DEL	28	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.8
YC65441	DEL	29	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.7
YC65442	DEL	30	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.0
YC65443	DEL	31	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.4
YC65444	DEL	32	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.0
YC65445	DEL	33	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.4
YC65446	DEL	34	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.0
YC65447	DEL	35	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.4
YC65448	DEL	36	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.0
YC65449	DEL	37	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.7
YC65450	DEL	38	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.2
YC65451	DEL	39	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.7
YC65452	DEL	40	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.7
YC65453	DEL	41	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.8
YC65454	DEL	42	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.8
YC65455	DEL	43	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.8
YC65456	DEL	44	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.8
YC65457	DEL	45	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.0
YC65458	DEL	46	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.0
YC65459	DEL	47	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.1
YC65460	DEL	48	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.9
YC65461	DEL	49	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208903.9
YC65462	DEL	50	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.4
YC65463	DEL	51	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.9
YC65464	DEL	52	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.1
YC65465	DEL	53	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.9
YC65466	DEL	54	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.6
YC65467	DEL	55	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208904.9
YC65468	DEL	56	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.9
YC65469	DEL	57	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.3
YC65470	DEL	58	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.6
YC65471	DEL	59	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.3
YC65472	DEL	60	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.9
YC65473	DEL	61	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.8
YC65474	DEL	62	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.9

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC65475	DEL	63	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.5
YC65476	DEL	64	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208906.9
YC65477	DEL	65	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.1
YC65478	DEL	66	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.1
YC65479	DEL	67	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.5
YC65480	DEL	68	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.2
YC65481	DEL	69	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.1
YC65482	DEL	70	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.2
YC65483	DEL	71	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.3
YC65484	DEL	72	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.7
YC65485	DEL	73	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.1
YC65486	DEL	74	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.0
YC65487	DEL	75	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.1
YC65488	DEL	76	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.5
YC65489	DEL	77	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208907.8
YC65490	DEL	78	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.0
YC65491	DEL	79	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208908.1
YC65492	DEL	80	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.0
YC65493	DEL	81	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.8
YC65494	DEL	82	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.4
YC65495	DEL	83	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.8
YC65496	DEL	84	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.2
YC65497	DEL	85	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.4
YC65498	DEL	86	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.2
YC65499	DEL	87	Minto Explorations Ltd. - 100%	2007-08-06	2021-09-03	208905.4
YC83114	DEL	88	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208908.3
YC83115	DEL	89	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208829.2
YC83116	DEL	90	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208909.9
YC83117	DEL	91	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	207728.6
YC83118	DEL	92	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208907.6
YC83119	DEL	93	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	207255.6
YC83120	DEL	94	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208909.9
YC83121	DEL	95	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	206784.5
YC83122	DEL	96	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208908.3
YC83123	DEL	97	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	207727.9
YC83124	DEL	98	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208908.8
YC83125	DEL	99	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	210088.4
YC83126	DEL	100	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208909.2
YC83127	DEL	101	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	212449.7
YC83128	DEL	102	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	201827.3
YC83129	DEL	103	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	204658.9
YC83130	DEL	104	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208907.3

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC83131	DEL	105	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208907.3
YC83132	DEL	106	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208908.4
YC83133	DEL	107	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208908.0
YC83134	DEL	108	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208906.2
YC83135	DEL	109	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208906.6
YC83136	DEL	110	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208907.6
YC83137	DEL	111	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208907.1
YC83138	DEL	112	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208905.1
YC83139	DEL	113	Minto Explorations Ltd. - 100%	2008-09-03	2021-09-03	208905.8

Source: Aurora (2021)

4.1.3 Bond Block

The BOND claim block comprises 70 Yukon quartz mining claims covering 1,461.6 hectares (Figure 4-4) located along the south shore of the Yukon River and centered at 62° 46' 26" N Latitude, 137° 56' 02" W Longitude (UTM NAD 83: 350280, 6963835, Zone 8). The claims are located about 39 km WNW of the centre of the Minto/Def block (Figure 4-2). All claims are 100% held by Minto Explorations Ltd.

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. None of the claims have undergone a legal survey. All claims are located on Crown Land, within the traditional territory of the Selkirk First Nation.

Table 4-3 lists the claim status as of May 4, 2021.

Table 4-3: Claim Status, Bond Block (as of May 4, 2021)

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC66345	BOND	39	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208982.1
YC66315	BOND	9	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.4
YC66335	BOND	29	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208982.1
YC66333	BOND	27	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.4
YC66351	BOND	45	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208982.1
YC66328	BOND	22	Minto Explorations Ltd. - 100%	2007-10-16	2021-10-18	208981.4
YC66326	BOND	20	Minto Explorations Ltd. - 100%	2007-10-16	2021-10-18	208982.1
YC66362	BOND	56	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.4
YC66374	BOND	68	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.9

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC66314	BOND	8	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.4
YC66349	BOND	43	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.9
YC66368	BOND	62	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.4
YC66312	BOND	6	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208982.1
YC66366	BOND	60	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.4
YC66353	BOND	47	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208982.2
YC66346	BOND	40	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208981.4
YC66344	BOND	38	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.7
YC66356	BOND	50	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66308	BOND	2	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.7
YC66334	BOND	28	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66337	BOND	31	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.7
YC66372	BOND	66	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66352	BOND	46	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.7
YC66361	BOND	55	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66325	BOND	19	Minto Explorations Ltd. - 100%	2007-10-16	2021-10-18	208980.7
YC66350	BOND	44	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66358	BOND	52	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.7
YC66365	BOND	59	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66363	BOND	57	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.7
YC66339	BOND	33	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66327	BOND	21	Minto Explorations Ltd. - 100%	2007-10-16	2021-10-18	208980.7
YC66360	BOND	54	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208980.0
YC66324	BOND	18	Minto Explorations Ltd. - 100%	2007-10-16	2021-10-18	208979.3
YC66348	BOND	42	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208978.6
YC66316	BOND	10	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208979.3
YC66318	BOND	12	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208978.6
YC66347	BOND	41	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208979.3
YC66373	BOND	67	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208978.6
YC66367	BOND	61	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208979.3
YC66340	BOND	34	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208978.6
YC66354	BOND	48	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208979.3
YC66357	BOND	51	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208978.9
YC66371	BOND	65	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208979.3
YC66369	BOND	63	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208978.9
YC66330	BOND	24	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208979.3

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC66329	BOND	23	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208978.6
YC66313	BOND	7	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.9
YC66323	BOND	17	Minto Explorations Ltd. - 100%	2007-10-16	2021-10-18	208977.2
YC66355	BOND	49	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.9
YC66320	BOND	14	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.2
YC66310	BOND	4	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.9
YC66364	BOND	58	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.2
YC66336	BOND	30	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.9
YC66370	BOND	64	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.2
YC66338	BOND	32	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.7
YC66331	BOND	25	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.2
YC66319	BOND	13	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.7
YC66332	BOND	26	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208977.2
YC66343	BOND	37	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208976.5
YC66376	BOND	70	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208975.8
YC66342	BOND	36	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208976.5
YC66309	BOND	3	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208975.8
YC66375	BOND	69	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208976.5
YC66311	BOND	5	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208975.8
YC66359	BOND	53	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208976.5
YC66317	BOND	11	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208975.8
YC66321	BOND	15	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208976.5
YC66307	BOND	1	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208975.8
YC66322	BOND	16	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208976.5
YC66341	BOND	35	Minto Explorations Ltd. - 100%	2007-10-18	2021-10-18	208975.9

Source: Aurora (2021)

4.1.4 Pepper, Toe and Winter Blocks

The Pepper, Toe and Winter blocks (Figure 4-5) form a marginally contiguous block of claims about 17 km northwest of the Minto-Def block. The Pepper claim block comprises 32 Yukon quartz mining claims covering 662 hectares located 6.5 km south of the Yukon River and centered at 62° 44' 38" N Latitude, 137° 28' 23" W Longitude (UTM NAD 83: 373661 6959482, Zone 8). All claims are 100% held by Minto Explorations Ltd. following Minto's purchase of the claims from BCGold Corp.

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. None of the claims have undergone a legal survey. The claims are located on the traditional territory of the Selkirk First Nation and the northeastern edge of the claims overlap with Selkirk First Nation R-18B settlement land to which the Selkirk First Nation holds surface rights.

The TOE claim block comprises 76 Yukon quartz mining claims covering 1,588 hectares located 7 km west of the Yukon River and centered at 62° 43' 4" N Latitude, 137° 25' 25" W Long (UTM NAD 83: 376072 6956490, Zone 8). The claims are 14 km northwest of the Minto/Def block. All claims are 100% held by Minto Explorations Ltd. following its purchase of the claims from BCGold Corp.

The WINTER claim block comprises 12 Yukon quartz mining claims covering 250 hectares, located 5 km to the west of the Yukon River and centered at 62° 42' 8.5" N Latitude, 137° 22' 5" W Longitude (UTM NAD 83: 378843 6954655, Zone 8). The claims are 10 km northwest of the Minto/Def block. All claims are 100% held by Minto Explorations Ltd. following Minto's purchase of the claims from BCGold Corp.

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. None of the claims have undergone a legal survey. The claims are located on the traditional territory of the Selkirk First Nation.

Table 4-4 lists the claim status as of May 4, 2021.

Table 4-4: Claim Status, Pepper, Toe and Winter Claims (as of May 4, 2021)

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC46710	PEPPER	1	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208947.5
YC46711	PEPPER	2	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208947.3
YC46712	PEPPER	3	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208947.0
YC46713	PEPPER	4	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208946.8
YC46714	PEPPER	5	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208946.4
YC46715	PEPPER	6	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208946.2
YC46716	PEPPER	7	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208946.2
YC46717	PEPPER	8	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208945.5
YC46718	PEPPER	9	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208945.3
YC46719	PEPPER	10	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208945.1
YC46720	PEPPER	11	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208944.6
YC46721	PEPPER	12	Minto Explorations Ltd. - 100%	2006-04-04	2022-04-04	208944.6
YC66520	PEPPER	13	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208947.1
YC66521	PEPPER	14	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.9
YC66522	PEPPER	15	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.6
YC66523	PEPPER	16	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.4
YC66524	PEPPER	17	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.0
YC66525	PEPPER	18	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208945.8

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC66526	PEPPER	19	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208945.6
YC66527	PEPPER	20	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208945.0
YC66528	PEPPER	21	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208945.3
YC66529	PEPPER	22	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208944.3
YC66530	PEPPER	23	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208944.5
YC66531	PEPPER	24	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	143958.6
YC66532	PEPPER	25	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208948.0
YC66533	PEPPER	26	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208947.8
YC66534	PEPPER	27	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208947.4
YC66535	PEPPER	28	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208947.2
YC66536	PEPPER	29	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.9
YC66537	PEPPER	30	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.7
YC66538	PEPPER	31	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.6
YC66539	PEPPER	32	Minto Explorations Ltd. - 100%	2007-11-21	2022-04-04	208946.5
YC46628	TOE	1	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208946.1
YC46629	TOE	2	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208946.1
YC46630	TOE	3	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208945.9
YC46631	TOE	4	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208946.0
YC46632	TOE	5	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208944.9
YC46633	TOE	6	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208944.9
YC46634	TOE	7	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208944.6
YC46635	TOE	8	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208944.5
YC46636	TOE	9	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208944.2
YC46637	TOE	10	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208944.2
YC46638	TOE	11	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208943.3
YC46639	TOE	12	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208943.4
YC46640	TOE	13	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.8
YC46641	TOE	14	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.2
YC46642	TOE	15	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.8
YC46643	TOE	16	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.2
YC46644	TOE	17	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.8
YC46645	TOE	18	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.2
YC46646	TOE	19	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.8
YC46647	TOE	20	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.2
YC46648	TOE	21	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.8
YC46649	TOE	22	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.2
YC46650	TOE	23	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208943.0
YC46651	TOE	24	Minto Explorations Ltd. - 100%	2006-03-20	2022-03-20	208942.4
YC46674	TOE	25	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208944.0
YC46675	TOE	26	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.9
YC46676	TOE	27	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.3
YC46677	TOE	28	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.3

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC46678	TOE	29	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208942.7
YC46679	TOE	30	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208942.7
YC46680	TOE	31	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208942.1
YC46681	TOE	32	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208942.2
YC46682	TOE	33	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.5
YC46683	TOE	34	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.6
YC46684	TOE	35	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.0
YC46685	TOE	36	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.0
YC46686	TOE	37	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.1
YC46687	TOE	38	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.6
YC46688	TOE	39	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.0
YC46689	TOE	40	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.8
YC46690	TOE	41	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.1
YC46691	TOE	42	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.8
YC46692	TOE	43	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.1
YC46693	TOE	44	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.6
YC46694	TOE	45	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.1
YC46695	TOE	46	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.7
YC46696	TOE	47	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.3
YC46697	TOE	48	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208941.9
YC46698	TOE	49	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.4
YC46699	TOE	50	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.6
YC46700	TOE	51	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208944.0
YC46701	TOE	52	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208944.2
YC46702	TOE	53	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208944.8
YC46703	TOE	54	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208944.8
YC46704	TOE	55	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208945.2
YC46705	TOE	56	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208945.4
YC46706	TOE	57	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.6
YC46707	TOE	58	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.4
YC46708	TOE	59	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208944.2
YC46709	TOE	60	Minto Explorations Ltd. - 100%	2006-04-04	2022-03-20	208943.9
YC66548	TOE	61	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208945.2
YC66549	TOE	62	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208945.0
YC66550	TOE	63	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208944.6
YC66551	TOE	64	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208944.6
YC66552	TOE	65	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208944.0
YC66553	TOE	66	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208942.9
YC66554	TOE	67	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208943.5
YC66555	TOE	68	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208943.2
YC66556	TOE	69	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208942.9
YC66557	TOE	70	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208941.7

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC66558	TOE	71	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208942.3
YC66559	TOE	72	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208942.0
YC66560	TOE	73	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208941.8
YC66561	TOE	74	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208940.9
YC66562	TOE	75	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208941.6
YC66563	TOE	76	Minto Explorations Ltd. - 100%	2007-11-21	2022-03-20	208887.9
YC46794	WINTER	1	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208938.8
YC46795	WINTER	2	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208938.5
YC46796	WINTER	3	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208939.2
YC46797	WINTER	4	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208938.9
YC46798	WINTER	5	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208939.3
YC46799	WINTER	6	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208939.7
YC46800	WINTER	7	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208939.7
YC46801	WINTER	8	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208940.1
YC46802	WINTER	9	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208940.2
YC46803	WINTER	10	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208940.5
YC46804	WINTER	11	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208940.6
YC46805	WINTER	12	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208941.0

Source: Aurora (2021)

4.1.5 Hun North Block (includes MEL claims)

The HUN North claim block comprises 146 Yukon quartz mining claims covering 2,873 hectares (Figure 4-6) located along the southwestern shore of the Yukon River and centered at 62° 40' 11" N Latitude, 137° 18' 54" W Longitude (UTM NAD 83: 381433 6950929, Zone 8). This block of claims comprises the MEL 8, 33 - 38, 58, 60, 61, 97, 99 - 106 claims, the HUN 385 – 486 claims and the APEX 1-28 claims. The block is centered approximately 6 km north of the centre of the MINTO/DEF block. All claims are 100% held by Minto Explorations Ltd. following Minto's purchase of the claims from both BCGold Corp. and 536445 Yukon Inc. in 2020.

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. No claims have undergone a legal survey. All claims are located on Crown Land, within the traditional territory of the Selkirk First Nation (SFN), and border SFN Category R-6A settlement land at their southern margin.

Table 4-5 lists the claim status as of May 4, 2021.

Table 4-5: Claim Status, Hun North Block (as of May 4, 2021)

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC47182	APEX	1	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	191473.0
YC47183	APEX	2	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	181266.5
YC47184	APEX	3	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208936.1
YC47185	APEX	4	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208935.7
YC47186	APEX	5	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208935.2
YC47187	APEX	6	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208935.7
YC47188	APEX	7	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208935.2
YC47189	APEX	8	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.8
YC47190	APEX	9	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.4
YC47191	APEX	10	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.8
YC47192	APEX	11	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.4
YC47193	APEX	12	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.0
YC47194	APEX	13	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.0
YC47195	APEX	14	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208933.6
YC47196	APEX	15	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	183204.1
YC47197	APEX	16	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	172997.6
YC47198	APEX	17	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	162791.1
YC47199	APEX	18	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	152584.6
YC47200	APEX	19	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	142377.9
YC47201	APEX	20	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	132171.0
YC47202	APEX	21	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	116643.0
YC47203	APEX	22	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208935.1
YC47204	APEX	23	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208935.6
YC47205	APEX	24	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.8
YC47206	APEX	25	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208935.2
YC47207	APEX	26	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.5
YC47208	APEX	27	Minto Explorations Ltd. - 100%	2006-06-29	2022-04-02	208934.8
YF72785	HUN	385	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.4
YF72786	HUN	386	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	196874.0
YF72787	HUN	387	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.9
YF72788	HUN	388	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	196065.1
YF72789	HUN	389	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.5
YF72790	HUN	390	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	195256.3
YF72791	HUN	391	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.1

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72792	HUN	392	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	194447.4
YF72793	HUN	393	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.7
YF72794	HUN	394	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	193638.6
YF72795	HUN	395	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.3
YF72796	HUN	396	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	192829.8
YF72797	HUN	397	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.8
YF72798	HUN	398	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	192021.0
YF72799	HUN	399	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.4
YF72800	HUN	400	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	191212.1
YF72801	HUN	401	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	190403.4
YF72802	HUN	402	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	189594.5
YF72803	HUN	403	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.8
YF72804	HUN	404	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.3
YF72805	HUN	405	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.9
YF72806	HUN	406	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.5
YF72807	HUN	407	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.0
YF72808	HUN	408	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.6
YF72809	HUN	409	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.9
YF72810	HUN	410	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.1
YF72811	HUN	411	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.4
YF72812	HUN	412	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.7
YF72813	HUN	413	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.0
YF72814	HUN	414	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.7
YF72815	HUN	415	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208936.7
YF72816	HUN	416	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208936.4
YF72817	HUN	417	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	86009.4
YF72818	HUN	418	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	75802.3
YF72819	HUN	419	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	65595.2
YF72820	HUN	420	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	167199.5
YF72821	HUN	421	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	160213.0
YF72822	HUN	422	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.4
YF72823	HUN	423	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.7
YF72824	HUN	424	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.9
YF72825	HUN	425	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.2
YF72826	HUN	426	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.5
YF72827	HUN	427	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.8

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72828	HUN	428	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.9
YF72829	HUN	429	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.4
YF72830	HUN	430	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.5
YF72831	HUN	431	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.9
YF72832	HUN	432	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.1
YF72833	HUN	433	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.5
YF72834	HUN	434	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.1
YF72835	HUN	435	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.4
YF72836	HUN	436	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.7
YF72837	HUN	437	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.0
YF72838	HUN	438	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.2
YF72839	HUN	439	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.5
YF72840	HUN	440	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.7
YF72841	HUN	441	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.1
YF72842	HUN	442	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.3
YF72843	HUN	443	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.7
YF72844	HUN	444	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208938.2
YF72845	HUN	445	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.7
YF72846	HUN	446	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.4
YF72847	HUN	447	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.4
YF72848	HUN	448	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208937.1
YF72849	HUN	449	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208936.9
YF72850	HUN	450	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208936.7
YF72851	HUN	451	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208936.4
YF72852	HUN	452	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	206602.7
YF72853	HUN	453	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208936.0
YF72854	HUN	454	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	193474.6
YF72855	HUN	455	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208935.5
YF72856	HUN	456	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	183266.5
YF72857	HUN	457	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208935.1
YF72858	HUN	458	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	169346.8
YF72859	HUN	459	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208934.7
YF72860	HUN	460	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	148788.6
YF72861	HUN	461	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	146150.5
YF72862	HUN	462	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	188786.9
YF72863	HUN	463	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208932.9

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72864	HUN	464	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	74909.0
YF72865	HUN	465	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208932.6
YF72866	HUN	466	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	175510.1
YF72867	HUN	467	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208932.4
YF72868	HUN	468	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	183028.9
YF72869	HUN	469	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	170477.0
YF72870	HUN	470	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208932.4
YF72871	HUN	471	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	180684.1
YF72872	HUN	472	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208932.7
YF72873	HUN	473	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	190891.3
YF72874	HUN	474	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208933.1
YF72875	HUN	475	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	201098.5
YF72876	HUN	476	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208933.4
YF72877	HUN	477	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208568.6
YF72878	HUN	478	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208933.7
YF72879	HUN	479	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208941.1
YF72880	HUN	480	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.8
YF72881	HUN	481	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.7
YF72882	HUN	482	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.4
YF72883	HUN	483	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208940.3
YF72884	HUN	484	Minto Explorations Ltd. - 100%	2018-02-07	2024-02-07	208939.9
YF72885	HUN	485	Minto Explorations Ltd. - 100%	2018-02-07	2022-02-07	208939.8
YF72886	HUN	486	Minto Explorations Ltd. - 100%	2018-02-07	2022-02-07	208939.4
YC41194	MEL	8	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	208938.1
YC47256	MEL	33	Minto Explorations Ltd. - 100%	2006-07-17	2022-02-23	208937.3
YC47257	MEL	34	Minto Explorations Ltd. - 100%	2006-07-17	2022-02-23	208937.0
YC47258	MEL	35	Minto Explorations Ltd. - 100%	2006-07-17	2022-02-23	208936.9
YC47259	MEL	36	Minto Explorations Ltd. - 100%	2006-07-17	2022-02-23	208936.6
YC47260	MEL	37	Minto Explorations Ltd. - 100%	2006-07-17	2022-02-23	208936.5
YC47261	MEL	38	Minto Explorations Ltd. - 100%	2006-07-17	2022-02-23	208936.2
YC41244	MEL	58	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	208937.4
YC41246	MEL	60	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	208937.0
YC41247	MEL	61	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	208937.4
YC41283	MEL	97	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	208937.1
YC41285	MEL	99	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	208936.7
YC41286	MEL	100	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	188785.4

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YC41287	MEL	101	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	208936.4
YC41288	MEL	102	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	187974.7
YC41290	MEL	104	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	174030.7
YC41292	MEL	106	Minto Explorations Ltd. - 100%	2006-02-23	2022-02-23	115909.4

Source: Aurora (2021)

4.1.6 Hun South Block

The HUN South claim block comprises 384 Yukon quartz mining claims covering 7,914 hectares (Figure 4-7) located 15 km southwest of the Yukon River and centered at 62° 29' 4" N Latitude, 137° 04' 56" W Longitude (UTM NAD 83: 392690 6929908, Zone 8). The claims are approximately 18 km SSE of the MINTO/DEF block. All claims are 100% held by Minto Explorations Ltd. following Minto's purchase of the claims from 536445 Yukon Inc. in 2020.

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. None of the claims have undergone a legal survey. All claims are located on Crown Land. The northern half of the claim block is located on the traditional territory of the Selkirk First Nation while the southern half of the claim block is located within an overlap of the traditional territories of the Selkirk First Nation and the Little Salmon - Carmacks First Nation (LSCFN). The claims are bordered to the southwest by LSCFN R-9A settlement land and to the northeast by Selkirk First Nation R-6A settlement land.

Table 4-6 lists the status of the claims as of May 4, 2021.

Table 4-6: Claim Status, Hun South Block (as of May 4, 2021)

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72401	HUN	1	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	170816.6
YF72402	HUN	2	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.2
YF72403	HUN	3	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	175963.7
YF72404	HUN	4	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.5
YF72405	HUN	5	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	181110.1
YF72406	HUN	6	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.8
YF72407	HUN	7	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	186255.9
YF72408	HUN	8	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.2
YF72409	HUN	9	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	191400.9
YF72410	HUN	10	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.5

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72411	HUN	11	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	196545.4
YF72412	HUN	12	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.9
YF72413	HUN	13	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	201689.4
YF72414	HUN	14	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.1
YF72415	HUN	15	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	206810.2
YF72416	HUN	16	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.5
YF72417	HUN	17	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.2
YF72418	HUN	18	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.8
YF72419	HUN	19	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.6
YF72420	HUN	20	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.2
YF72421	HUN	21	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.9
YF72422	HUN	22	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.5
YF72423	HUN	23	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.2
YF72424	HUN	24	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.7
YF72425	HUN	25	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.6
YF72426	HUN	26	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.2
YF72427	HUN	27	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.9
YF72428	HUN	28	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.6
YF72429	HUN	29	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.2
YF72430	HUN	30	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.9
YF72431	HUN	31	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.5
YF72432	HUN	32	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.2
YF72433	HUN	33	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.9
YF72434	HUN	34	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.5
YF72435	HUN	35	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.2
YF72436	HUN	36	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.8
YF72437	HUN	37	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.6
YF72438	HUN	38	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.1
YF72439	HUN	39	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.9
YF72440	HUN	40	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.5
YF72441	HUN	41	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.3
YF72442	HUN	42	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.9
YF72443	HUN	43	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.6
YF72444	HUN	44	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.2
YF72445	HUN	45	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.9
YF72446	HUN	46	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.5
YF72447	HUN	47	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.2

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72448	HUN	48	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.9
YF72449	HUN	49	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.6
YF72450	HUN	50	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.3
YF72451	HUN	51	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.9
YF72452	HUN	52	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.6
YF72453	HUN	53	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.2
YF72454	HUN	54	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.0
YF72455	HUN	55	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.6
YF72456	HUN	56	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.3
YF72457	HUN	57	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.9
YF72458	HUN	58	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.5
YF72459	HUN	59	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.2
YF72460	HUN	60	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.8
YF72461	HUN	61	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.5
YF72462	HUN	62	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.1
YF72463	HUN	63	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.9
YF72464	HUN	64	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.5
YF72465	HUN	65	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.1
YF72466	HUN	66	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.8
YF72467	HUN	67	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.5
YF72468	HUN	68	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.2
YF72469	HUN	69	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.8
YF72470	HUN	70	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.4
YF72471	HUN	71	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.2
YF72472	HUN	72	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.8
YF72473	HUN	73	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.4
YF72474	HUN	74	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.1
YF72475	HUN	75	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.9
YF72476	HUN	76	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.5
YF72477	HUN	77	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.1
YF72478	HUN	78	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.7
YF72479	HUN	79	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.4
YF72480	HUN	80	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.0
YF72481	HUN	81	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.8
YF72482	HUN	82	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.4
YF72483	HUN	83	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.2
YF72484	HUN	84	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.8

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72485	HUN	85	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.5
YF72486	HUN	86	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.1
YF72487	HUN	87	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.8
YF72488	HUN	88	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.4
YF72489	HUN	89	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.1
YF72490	HUN	90	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.7
YF72491	HUN	91	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.5
YF72492	HUN	92	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.1
YF72493	HUN	93	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.8
YF72494	HUN	94	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.4
YF72495	HUN	95	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.1
YF72496	HUN	96	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.7
YF72497	HUN	97	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.5
YF72498	HUN	98	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.2
YF72499	HUN	99	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.9
YF72500	HUN	100	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.5
YF72501	HUN	101	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.2
YF72502	HUN	102	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.7
YF72503	HUN	103	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.5
YF72504	HUN	104	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.1
YF72505	HUN	105	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.8
YF72506	HUN	106	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.4
YF72507	HUN	107	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.1
YF72508	HUN	108	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.7
YF72509	HUN	109	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.5
YF72510	HUN	110	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.1
YF72511	HUN	111	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.2
YF72512	HUN	112	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.8
YF72513	HUN	113	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.4
YF72514	HUN	114	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.0
YF72515	HUN	115	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.8
YF72516	HUN	116	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.4
YF72517	HUN	117	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.1
YF72518	HUN	118	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.7
YF72519	HUN	119	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.4
YF72520	HUN	120	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.1
YF72521	HUN	121	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.7

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72522	HUN	122	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.4
YF72523	HUN	123	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.0
YF72524	HUN	124	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.7
YF72525	HUN	125	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.4
YF72526	HUN	126	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.0
YF72527	HUN	127	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.7
YF72528	HUN	128	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.3
YF72529	HUN	129	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.1
YF72530	HUN	130	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.7
YF72531	HUN	131	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.3
YF72532	HUN	132	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.9
YF72533	HUN	133	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.6
YF72534	HUN	134	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.3
YF72535	HUN	135	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.0
YF72536	HUN	136	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.7
YF72537	HUN	137	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.4
YF72538	HUN	138	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.0
YF72539	HUN	139	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.8
YF72540	HUN	140	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.4
YF72541	HUN	141	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.0
YF72542	HUN	142	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.6
YF72543	HUN	143	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.4
YF72544	HUN	144	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.9
YF72545	HUN	145	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.8
YF72546	HUN	146	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.3
YF72547	HUN	147	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.0
YF72548	HUN	148	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.6
YF72549	HUN	149	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.2
YF72550	HUN	150	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.9
YF72551	HUN	151	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.8
YF72552	HUN	152	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.4
YF72553	HUN	153	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.2
YF72554	HUN	154	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.7
YF72555	HUN	155	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.4
YF72556	HUN	156	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.9
YF72557	HUN	157	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.8
YF72558	HUN	158	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.3

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72559	HUN	159	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.2
YF72560	HUN	160	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.7
YF72561	HUN	161	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.4
YF72562	HUN	162	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.9
YF72563	HUN	163	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.8
YF72564	HUN	164	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.4
YF72565	HUN	165	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.5
YF72566	HUN	166	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	198614.1
YF72567	HUN	167	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.1
YF72568	HUN	168	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.7
YF72569	HUN	169	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.4
YF72570	HUN	170	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.0
YF72571	HUN	171	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.8
YF72572	HUN	172	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.4
YF72573	HUN	173	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.0
YF72574	HUN	174	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.6
YF72575	HUN	175	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.3
YF72576	HUN	176	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.9
YF72577	HUN	177	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.7
YF72578	HUN	178	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.3
YF72579	HUN	179	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.0
YF72580	HUN	180	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.6
YF72581	HUN	181	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.4
YF72582	HUN	182	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.9
YF72583	HUN	183	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.6
YF72584	HUN	184	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.2
YF72585	HUN	185	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.9
YF72586	HUN	186	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.5
YF72587	HUN	187	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.3
YF72588	HUN	188	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.9
YF72589	HUN	189	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.7
YF72590	HUN	190	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.3
YF72591	HUN	191	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.0
YF72592	HUN	192	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.6
YF72593	HUN	193	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.3
YF72594	HUN	194	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.9
YF72595	HUN	195	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.6

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72596	HUN	196	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.2
YF72597	HUN	197	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.0
YF72598	HUN	198	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.6
YF72599	HUN	199	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.3
YF72600	HUN	200	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.9
YF72601	HUN	201	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.6
YF72602	HUN	202	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.2
YF72603	HUN	203	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.0
YF72604	HUN	204	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.6
YF72605	HUN	205	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.3
YF72606	HUN	206	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.9
YF72607	HUN	207	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.6
YF72608	HUN	208	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.2
YF72609	HUN	209	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.9
YF72610	HUN	210	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.5
YF72611	HUN	211	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.3
YF72612	HUN	212	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.0
YF72613	HUN	213	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.6
YF72614	HUN	214	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.3
YF72615	HUN	215	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.0
YF72616	HUN	216	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.6
YF72617	HUN	217	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.3
YF72618	HUN	218	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.9
YF72619	HUN	219	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.6
YF72620	HUN	220	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.2
YF72621	HUN	221	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.0
YF72622	HUN	222	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.6
YF72623	HUN	223	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.3
YF72624	HUN	224	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208919.9
YF72625	HUN	225	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.6
YF72626	HUN	226	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.2
YF72627	HUN	227	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.9
YF72628	HUN	228	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.5
YF72629	HUN	229	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.2
YF72630	HUN	230	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.8
YF72631	HUN	231	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.5
YF72632	HUN	232	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.2

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72633	HUN	233	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.9
YF72634	HUN	234	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.5
YF72635	HUN	235	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.3
YF72636	HUN	236	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.9
YF72637	HUN	237	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.5
YF72638	HUN	238	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.1
YF72639	HUN	239	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.9
YF72640	HUN	240	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.5
YF72641	HUN	241	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.2
YF72642	HUN	242	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.9
YF72643	HUN	243	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.5
YF72644	HUN	244	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.1
YF72645	HUN	245	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.8
YF72646	HUN	246	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.3
YF72647	HUN	247	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.2
YF72648	HUN	248	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.8
YF72649	HUN	249	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.5
YF72650	HUN	250	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.2
YF72651	HUN	251	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.8
YF72652	HUN	252	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208924.5
YF72653	HUN	253	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.8
YF72654	HUN	254	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.4
YF72655	HUN	255	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.1
YF72656	HUN	256	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208920.8
YF72357	HUN	257	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.4
YF72358	HUN	258	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.1
YF72359	HUN	259	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.7
YF72360	HUN	260	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.4
YF72361	HUN	261	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.1
YF72362	HUN	262	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208921.7
YF72363	HUN	263	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.5
YF72364	HUN	264	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.1
YF72365	HUN	265	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.7
YF72366	HUN	266	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208922.4
YF72367	HUN	267	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.1
YF72368	HUN	268	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	207538.5
YF72369	HUN	269	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208923.5

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72370	HUN	270	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	157374.9
YF72671	HUN	271	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	196290.6
YF72672	HUN	272	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	181736.2
YF72673	HUN	273	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	188480.3
YF72674	HUN	274	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	126036.4
YF72675	HUN	275	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208914.9
YF72676	HUN	276	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208914.5
YF72677	HUN	277	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.1
YF72678	HUN	278	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208914.8
YF72679	HUN	279	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.5
YF72680	HUN	280	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.2
YF72681	HUN	281	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.9
YF72682	HUN	282	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.6
YF72683	HUN	283	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.4
YF72684	HUN	284	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.1
YF72685	HUN	285	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.8
YF72686	HUN	286	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.5
YF72687	HUN	287	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208917.1
YF72688	HUN	288	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.8
YF72689	HUN	289	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.3
YF72690	HUN	290	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.6
YF72691	HUN	291	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.6
YF72692	HUN	292	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.9
YF72693	HUN	293	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208915.9
YF72694	HUN	294	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.3
YF72695	HUN	295	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.2
YF72696	HUN	296	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.6
YF72697	HUN	297	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.5
YF72698	HUN	298	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.9
YF72699	HUN	299	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208916.8
YF72700	HUN	300	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208917.2
YF72701	HUN	301	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208917.2
YF72702	HUN	302	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	194460.5
YF72703	HUN	303	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208917.5
YF72704	HUN	304	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	104116.6
YF72705	HUN	305	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208917.8
YF72706	HUN	306	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	129498.6

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72707	HUN	307	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208918.1
YF72708	HUN	308	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	154880.8
YF72709	HUN	309	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	160496.4
YF72710	HUN	310	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.0
YF72711	HUN	311	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	120317.9
YF72712	HUN	312	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.3
YF72713	HUN	313	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	82779.6
YF72714	HUN	314	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.7
YF72715	HUN	315	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	45240.2
YF72716	HUN	316	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.1
YF72717	HUN	317	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.6
YF72718	HUN	318	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.3
YF72719	HUN	319	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.1
YF72720	HUN	320	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.6
YF72721	HUN	321	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.3
YF72722	HUN	322	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208925.9
YF72723	HUN	323	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.7
YF72724	HUN	324	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.3
YF72725	HUN	325	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.0
YF72726	HUN	326	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.6
YF72727	HUN	327	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.3
YF72728	HUN	328	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.0
YF72729	HUN	329	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.7
YF72730	HUN	330	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.3
YF72731	HUN	331	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.1
YF72732	HUN	332	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.7
YF72733	HUN	333	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.3
YF72734	HUN	334	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.0
YF72735	HUN	335	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.7
YF72736	HUN	336	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.3
YF72737	HUN	337	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.1
YF72738	HUN	338	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.7
YF72739	HUN	339	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.4
YF72740	HUN	340	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.1
YF72741	HUN	341	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.8
YF72742	HUN	342	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.4
YF72743	HUN	343	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208930.2

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72744	HUN	344	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.7
YF72745	HUN	345	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208930.4
YF72746	HUN	346	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208930.1
YF72747	HUN	347	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208930.8
YF72748	HUN	348	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208930.5
YF72749	HUN	349	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.4
YF72750	HUN	350	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.0
YF72751	HUN	351	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.8
YF72752	HUN	352	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.4
YF72753	HUN	353	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.1
YF72754	HUN	354	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.7
YF72755	HUN	355	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.4
YF72756	HUN	356	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.1
YF72757	HUN	357	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.8
YF72758	HUN	358	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.4
YF72759	HUN	359	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.1
YF72760	HUN	360	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.7
YF72761	HUN	361	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.5
YF72762	HUN	362	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.0
YF72763	HUN	363	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.8
YF72764	HUN	364	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.5
YF72765	HUN	365	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.2
YF72766	HUN	366	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.8
YF72767	HUN	367	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.4
YF72768	HUN	368	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.1
YF72769	HUN	369	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	179085.6
YF72770	HUN	370	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	207294.2
YF72771	HUN	371	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.2
YF72772	HUN	372	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208926.8
YF72773	HUN	373	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.6
YF72774	HUN	374	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.2
YF72775	HUN	375	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.9
YF72776	HUN	376	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.5
YF72777	HUN	377	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.2
YF72778	HUN	378	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208927.9
YF72779	HUN	379	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.5
YF72780	HUN	380	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.2

Grant No.	Claim Name	Claim No.	Claim Owner	Recording Date	Expiry Date	Area_m^2
YF72781	HUN	381	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.9
YF72782	HUN	382	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.5
YF72783	HUN	383	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208929.2
YF72784	HUN	384	Minto Explorations Ltd. - 100%	2018-02-07	2025-02-07	208928.9

Source: Aurora (2021)

4.1.7 WS Block

The WS claim block comprises 351 Yukon quartz mining claims covering 6,963 hectares (Figure 4-8). It is located 8 km southwest of the Yukon River and centered at 62° 18' 35.5" N Latitude, 136° 35' 59.5" W Longitude (UTM NAD 83: 417061 6909725, Zone 8). The claims are 50 km SSE of the MINTO/DEF block. All claims are 100% held by Minto Explorations Ltd. following Minto's purchase of the claims from BCGold Corp. in 2020.

The status of the claims was verified through the Whitehorse Mining Recorder (online) on May 4, 2021. None of the claims have undergone a legal survey. All claims are located on Crown Land, within the traditional territory of the Little Salmon – Carmacks First Nation (LSCFN).

Table 4-7 lists the claim status as of May 4, 2021.

Table 4-7: Claim Status, WS Block (as of May 4, 2021)

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC60218	BC	35	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	194507.2
YC60219	BC	36	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	192140.6
YC60220	BC	37	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	193453.7
YC60221	BC	38	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	188836.6
YC60222	BC	39	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	185418.2
YC60223	BC	40	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	212379.1
YC60224	BC	41	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	185417.8
YC60225	BC	42	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	211594.1
YC60226	BC	43	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	163873.4
YC60227	BC	44	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	187373.2
YC60228	BC	45	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	185414.1
YC60229	BC	46	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	210109.1
YC60230	BC	47	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	185402.7
YC60231	BC	48	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	209316.3
YC60232	BC	49	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	185497.7
YC60233	BC	50	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208656.5
YC60248	BC	65	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.1

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC60249	BC	66	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.0
YC60250	BC	67	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.5
YC60251	BC	68	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208894.9
YC60252	BC	69	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.3
YC60253	BC	70	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.2
YC60254	BC	71	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.1
YC60255	BC	72	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208894.7
YC60256	BC	73	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208894.7
YC60257	BC	74	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.3
YC60258	BC	75	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208894.4
YC60259	BC	76	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208894.4
YC60260	BC	77	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.2
YC60261	BC	78	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.9
YC60262	BC	79	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.2
YC60263	BC	80	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.0
YC60264	BC	81	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.4
YC60265	BC	82	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.9
YC60266	BC	83	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.5
YC60267	BC	84	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.3
YC60268	BC	85	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.3
YC60269	BC	86	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.1
YC60270	BC	87	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.6
YC60271	BC	88	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	194370.3
YC60272	BC	89	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.6
YC60273	BC	90	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	194134.2
YC60274	BC	91	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208897.2
YC60275	BC	92	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	193899.4
YC60276	BC	93	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.9
YC60277	BC	94	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	193663.5
YC60278	BC	95	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	209617.3
YC60279	BC	96	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208899.0
YC60280	BC	97	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	210190.4
YC60281	BC	98	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.1
YC60282	BC	99	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	210732.3
YC60283	BC	100	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208899.6
YC60284	BC	101	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	211275.1
YC60285	BC	102	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208899.5
YC60286	BC	103	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	211907.5
YC60287	BC	104	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208898.9
YC60288	BC	105	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	212629.4
YC60289	BC	106	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208899.5
YC60290	BC	107	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	189327.2

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC60291	BC	108	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	184626.0
YC60292	BC	109	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	55907.7
YC60293	BC	110	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	72051.2
YC60294	BC	111	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	209675.6
YC60295	BC	112	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	211696.5
YC60296	BC	113	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	116577.0
YC60297	BC	114	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	107151.1
YC60298	BC	115	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208897.9
YC60299	BC	116	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208898.7
YC60300	BC	117	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208897.3
YC60301	BC	118	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208899.1
YC60302	BC	119	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208896.6
YC60303	BC	120	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208898.5
YC60304	BC	121	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.0
YC60305	BC	122	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.2
YC60306	BC	123	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.8
YC60307	BC	124	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208901.0
YC60308	BC	125	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.5
YC60309	BC	126	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.4
YC60310	BC	127	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.8
YC60311	BC	128	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.8
YC60312	BC	129	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208899.9
YC60313	BC	130	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.0
YC60314	BC	131	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.1
YC60315	BC	132	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208900.3
YC60316	BC	133	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	184626.5
YC60317	BC	134	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	184626.8
YC60318	BC	135	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	161896.5
YC60319	BC	136	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208895.6
YC60320	BC	137	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	132184.7
YC60321	BC	138	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208882.0
YC60322	BC	139	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	174597.8
YC60323	BC	140	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	201488.0
YC60324	BC	141	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208898.3
YC60325	BC	142	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208898.4
YC60326	BC	143	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208898.2
YC60327	BC	144	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208898.9
YC46784	ICE	1	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208899.1
YC46785	ICE	2	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208898.9
YC46786	ICE	3	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208898.8
YC46787	ICE	4	Minto Explorations Ltd. - 100%	2006-04-12	2022-04-12	208898.6
YC54407	ICE	5	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202242.2

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC54408	ICE	6	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208897.4
YC54409	ICE	7	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202242.5
YC54410	ICE	8	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208896.4
YC54411	ICE	9	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	180700.1
YC54412	ICE	10	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	186644.6
YC54413	ICE	11	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202242.8
YC54414	ICE	12	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208894.9
YC54415	ICE	13	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202242.3
YC54416	ICE	14	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208894.0
YC54417	ICE	15	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202242.6
YC54418	ICE	16	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208893.5
YC54419	ICE	17	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202491.3
YC54420	ICE	18	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208900.2
YC54421	ICE	19	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202502.0
YC54422	ICE	20	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208900.2
YC54423	ICE	21	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	180941.2
YC54424	ICE	22	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	186648.6
YC54425	ICE	23	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202522.2
YC54426	ICE	24	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208899.3
YC54427	ICE	25	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202533.1
YC54428	ICE	26	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208899.7
YC54429	ICE	27	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202543.6
YC54430	ICE	28	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208899.4
YC54431	ICE	29	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202426.2
YC54432	ICE	30	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208810.8
YC54433	ICE	31	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	202423.0
YC54434	ICE	32	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208631.0
YC54435	ICE	33	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	179670.4
YC54436	ICE	34	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	186488.4
YC54437	ICE	35	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	21204.4
YC54438	ICE	36	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	209795.5
YC54439	ICE	37	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	208899.2
YC54440	ICE	38	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	183964.8
YC54441	ICE	39	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	200873.8
YC54442	ICE	40	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	97619.9
YC54443	ICE	41	Minto Explorations Ltd. - 100%	2006-11-28	2022-04-02	67765.4
YC60134	SLEEP	13	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	195334.7
YC60135	SLEEP	14	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	197822.9
YC60136	SLEEP	15	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	207592.3
YC60137	SLEEP	16	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208006.5
YC60138	SLEEP	17	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	215778.3
YC60139	SLEEP	18	Minto Explorations Ltd. - 100%	2007-04-02	2022-04-02	208901.8

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC53521	WS	1	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	208903.0
YC53522	WS	2	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	209080.2
YC53523	WS	3	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205691.1
YC53524	WS	4	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205691.5
YC53525	WS	5	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205894.2
YC53526	WS	6	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205894.3
YC53527	WS	7	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205690.1
YC53528	WS	8	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205690.2
YC53529	WS	9	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205893.6
YC53530	WS	10	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205893.9
YC53531	WS	11	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205689.4
YC53532	WS	12	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205689.5
YC53533	WS	13	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	183046.0
YC53534	WS	14	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	182828.4
YC53535	WS	15	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	208903.0
YC53536	WS	16	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	202061.6
YC53537	WS	17	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205690.4
YC53538	WS	18	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199014.3
YC53539	WS	19	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205893.9
YC53540	WS	20	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199270.5
YC53541	WS	21	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205689.7
YC53542	WS	22	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199132.0
YC53543	WS	23	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205892.8
YC53544	WS	24	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199387.8
YC53545	WS	25	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205688.9
YC53546	WS	26	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199249.8
YC53547	WS	27	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	186491.2
YC53548	WS	28	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	174527.9
YC53549	WS	29	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	208901.7
YC53550	WS	30	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	202288.2
YC53551	WS	31	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205689.6
YC53552	WS	32	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199202.0
YC53553	WS	33	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205892.8
YC53554	WS	34	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199422.6
YC53555	WS	35	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205688.6
YC53556	WS	36	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199249.7
YC53557	WS	37	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205892.0
YC53558	WS	38	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199470.9
YC53559	WS	39	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205687.9
YC53560	WS	40	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199297.4
YC53561	WS	41	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	182734.5
YC53562	WS	42	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	177459.6

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC53563	WS	43	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	208901.0
YC53564	WS	44	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	202464.3
YC53565	WS	45	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205688.8
YC53566	WS	46	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199347.8
YC53567	WS	47	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205891.9
YC53568	WS	48	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199541.9
YC53569	WS	49	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205688.0
YC53570	WS	50	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199341.2
YC53571	WS	51	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205891.0
YC53572	WS	52	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199534.7
YC53573	WS	53	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205687.3
YC53574	WS	54	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199334.4
YC53575	WS	55	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	182720.3
YC53576	WS	56	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	177074.2
YC53577	WS	57	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	208900.3
YC53578	WS	58	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	202378.9
YC53579	WS	59	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205688.5
YC53580	WS	60	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199277.3
YC53581	WS	61	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205891.5
YC53582	WS	62	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199484.2
YC53583	WS	63	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205687.2
YC53584	WS	64	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199296.7
YC53585	WS	65	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205890.6
YC53586	WS	66	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199503.5
YC53587	WS	67	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205686.9
YC53588	WS	68	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199315.8
YC53589	WS	69	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	182678.1
YC53590	WS	70	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	177028.0
YC53591	WS	71	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205895.1
YC53592	WS	72	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199563.3
YC53593	WS	73	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205777.2
YC53594	WS	74	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199445.9
YC53595	WS	75	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205893.9
YC53596	WS	76	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	199555.9
YC53597	WS	77	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	202271.8
YC53598	WS	78	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	196042.4
YC53599	WS	79	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	205894.4
YC53600	WS	80	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	182361.4
YC53601	WS	81	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	202272.3
YC53602	WS	82	Minto Explorations Ltd. - 100%	2006-08-11	2022-04-02	195844.8
YC53748	WS	83	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199131.4
YC53749	WS	84	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	176961.8

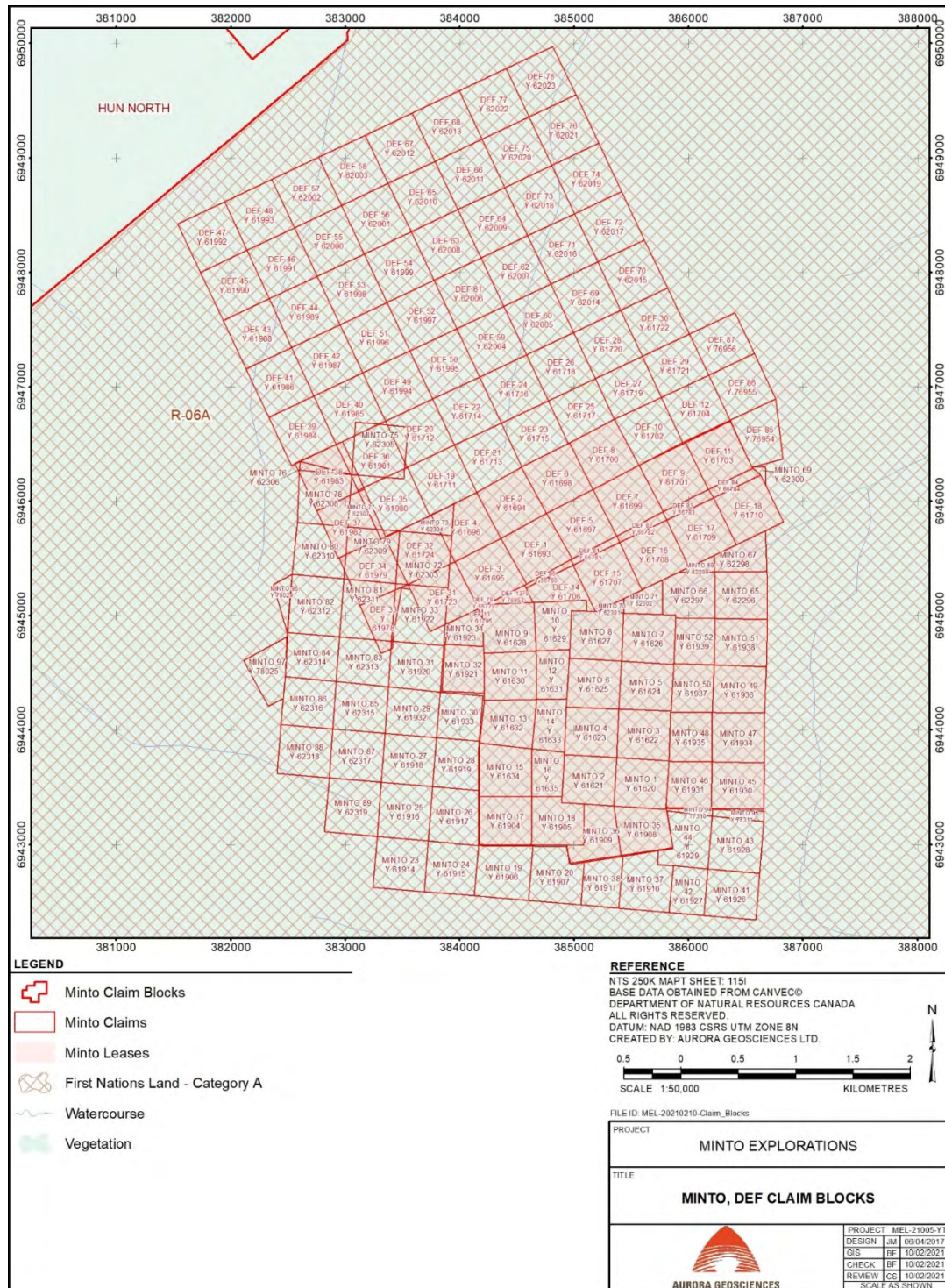
Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC53750	WS	85	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205686.6
YC53751	WS	86	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	182896.4
YC53752	WS	87	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	194394.1
YC53753	WS	88	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	172627.7
YC53754	WS	89	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	201450.2
YC53755	WS	90	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	179339.6
YC53756	WS	91	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205686.9
YC53757	WS	92	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	183221.5
YC53758	WS	93	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205686.5
YC53759	WS	94	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	183332.3
YC53760	WS	95	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199131.1
YC53761	WS	96	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199328.2
YC53762	WS	97	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205685.9
YC53763	WS	98	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205889.7
YC53764	WS	99	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	194393.1
YC53765	WS	100	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	194585.9
YC53766	WS	101	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	201447.9
YC53767	WS	102	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	201648.4
YC53768	WS	103	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205683.8
YC53769	WS	104	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205888.6
YC53770	WS	105	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205683.1
YC53771	WS	106	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205888.2
YC53772	WS	107	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199026.2
YC53773	WS	108	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199328.8
YC53774	WS	109	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205413.5
YC53775	WS	110	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205890.4
YC53776	WS	111	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	194033.7
YC53777	WS	112	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	194586.2
YC53778	WS	113	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	200971.6
YC53779	WS	114	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	201648.3
YC53780	WS	115	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205088.0
YC53781	WS	116	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205889.1
YC53782	WS	117	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	204976.3
YC53783	WS	118	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205888.3
YC53784	WS	119	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	195824.1
YC53785	WS	120	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202348.1
YC53786	WS	121	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202270.6
YC53787	WS	122	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	209175.2
YC53788	WS	123	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	191165.8
YC53789	WS	124	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	197793.4
YC53790	WS	125	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	198104.2
YC53791	WS	126	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205077.5

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC53792	WS	127	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202269.8
YC53793	WS	128	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	209500.6
YC53794	WS	129	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202269.5
YC53795	WS	130	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	209612.0
YC53796	WS	131	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	195947.0
YC53797	WS	132	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202271.9
YC53798	WS	133	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199445.6
YC53799	WS	134	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205893.4
YC53800	WS	135	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199321.6
YC53801	WS	136	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205776.4
YC53802	WS	137	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199312.5
YC53803	WS	138	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205772.4
YC53804	WS	139	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	196590.7
YC53805	WS	140	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202962.0
YC53806	WS	141	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	200031.8
YC53807	WS	142	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	206514.9
YC53808	WS	143	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199330.7
YC53809	WS	144	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205893.0
YC53810	WS	145	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199217.7
YC53811	WS	146	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205776.0
YC53812	WS	147	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199213.4
YC53813	WS	148	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	205771.6
YC53814	WS	149	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	196492.3
YC53815	WS	150	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202961.4
YC53816	WS	151	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	199931.8
YC53817	WS	152	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	206513.6
YC53818	WS	153	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	200874.0
YC53819	WS	154	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	207487.3
YC53820	WS	155	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	202242.7
YC53821	WS	156	Minto Explorations Ltd. - 100%	2006-08-23	2022-04-02	210617.2
YC53993	WS	157	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	163951.4
YC53994	WS	158	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202887.1
YC53995	WS	159	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	90615.7
YC53996	WS	160	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	206489.9
YC53997	WS	161	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	69666.7
YC53998	WS	162	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	207454.0
YC53999	WS	163	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	48494.5
YC54000	WS	164	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208854.9
YC54001	WS	165	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	200974.5
YC54002	WS	166	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	207488.1
YC54003	WS	167	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202342.3
YC54004	WS	168	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208901.9

Grant No.	Claim Name	Claim No.	Original Owner	Recording Date	Expiry Date	Area_m^2
YC54005	WS	169	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	209006.2
YC54006	WS	170	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208898.8
YC54007	WS	171	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202242.0
YC54008	WS	172	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202068.2
YC54009	WS	173	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208898.7
YC54010	WS	174	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208719.4
YC54011	WS	175	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202459.1
YC54012	WS	176	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202448.5
YC54013	WS	177	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.0
YC54014	WS	178	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.4
YC54015	WS	179	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202437.5
YC54016	WS	180	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202441.7
YC54017	WS	181	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.6
YC54018	WS	182	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.6
YC54019	WS	183	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	210547.1
YC54020	WS	184	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208386.0
YC54021	WS	185	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202242.4
YC54022	WS	186	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202242.1
YC54023	WS	187	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208898.0
YC54024	WS	188	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208898.2
YC54025	WS	189	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202480.3
YC54026	WS	190	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202469.8
YC54027	WS	191	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.0
YC54028	WS	192	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.5
YC54029	WS	193	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202429.8
YC54030	WS	194	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	202433.7
YC54031	WS	195	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.4
YC54032	WS	196	Minto Explorations Ltd. - 100%	2006-10-04	2022-04-02	208900.3
YC91789	WS	197	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	204597.0
YC91790	WS	198	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	197431.2
YC91791	WS	199	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	204596.9
YC91792	WS	200	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	197430.8
YC91793	WS	201	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	204596.8
YC91794	WS	202	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	197430.8
YC91795	WS	203	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	208899.1
YC91796	WS	204	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	208899.4
YC91797	WS	205	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	208898.9
YC91798	WS	206	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	208899.2
YC91799	WS	207	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	208898.7
YC91800	WS	208	Minto Explorations Ltd. - 100%	2009-08-18	2022-04-02	208899.0

Source: Aurora (2021)

Figure 4-2: Claim Map, Minto/Def Block



Source: Aurora (2021)

Figure 4-3: Claim Map, Del Block



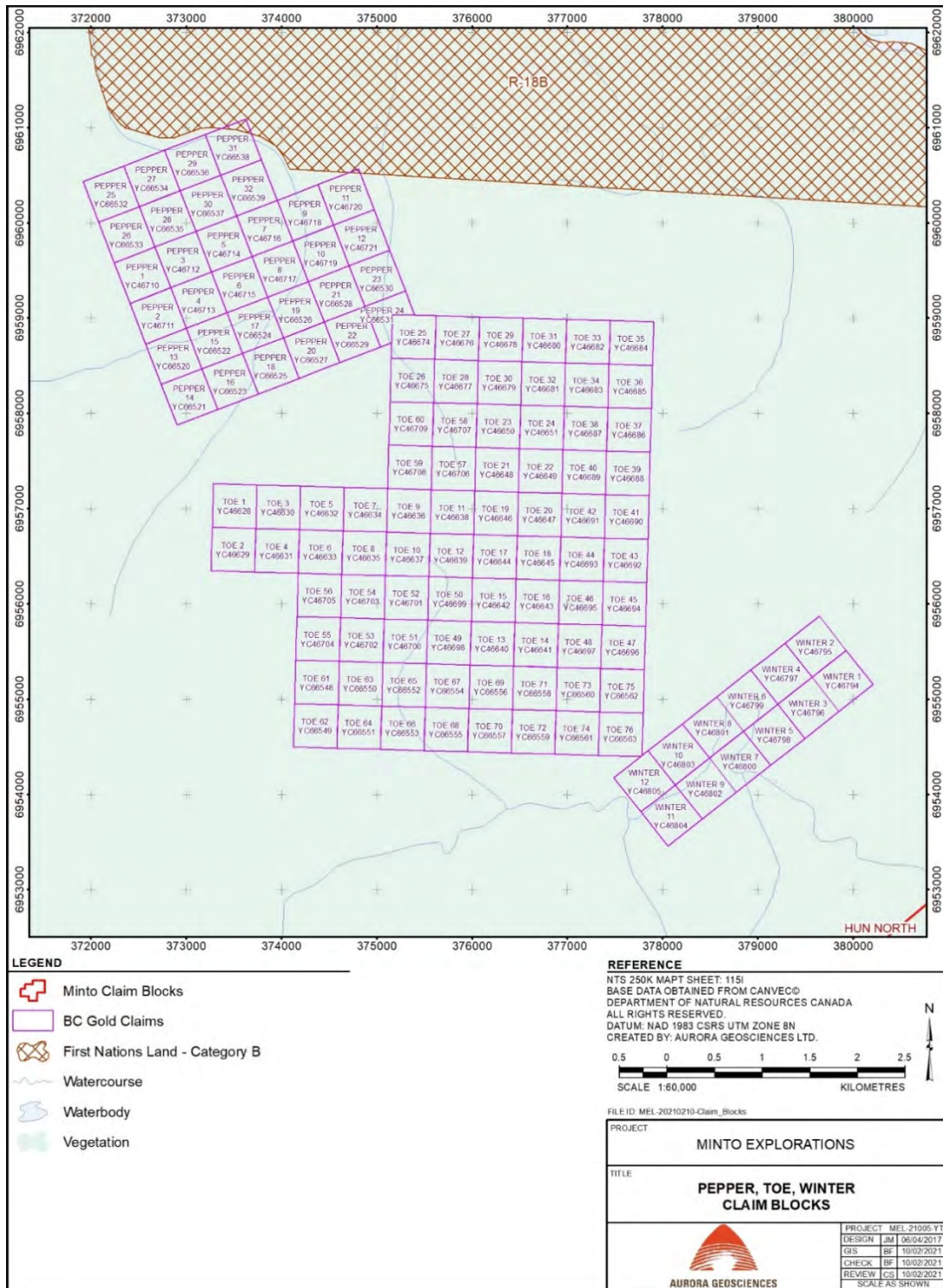
Source: Aurora (2021)

Figure 4-4: Claim Map, Bond Block



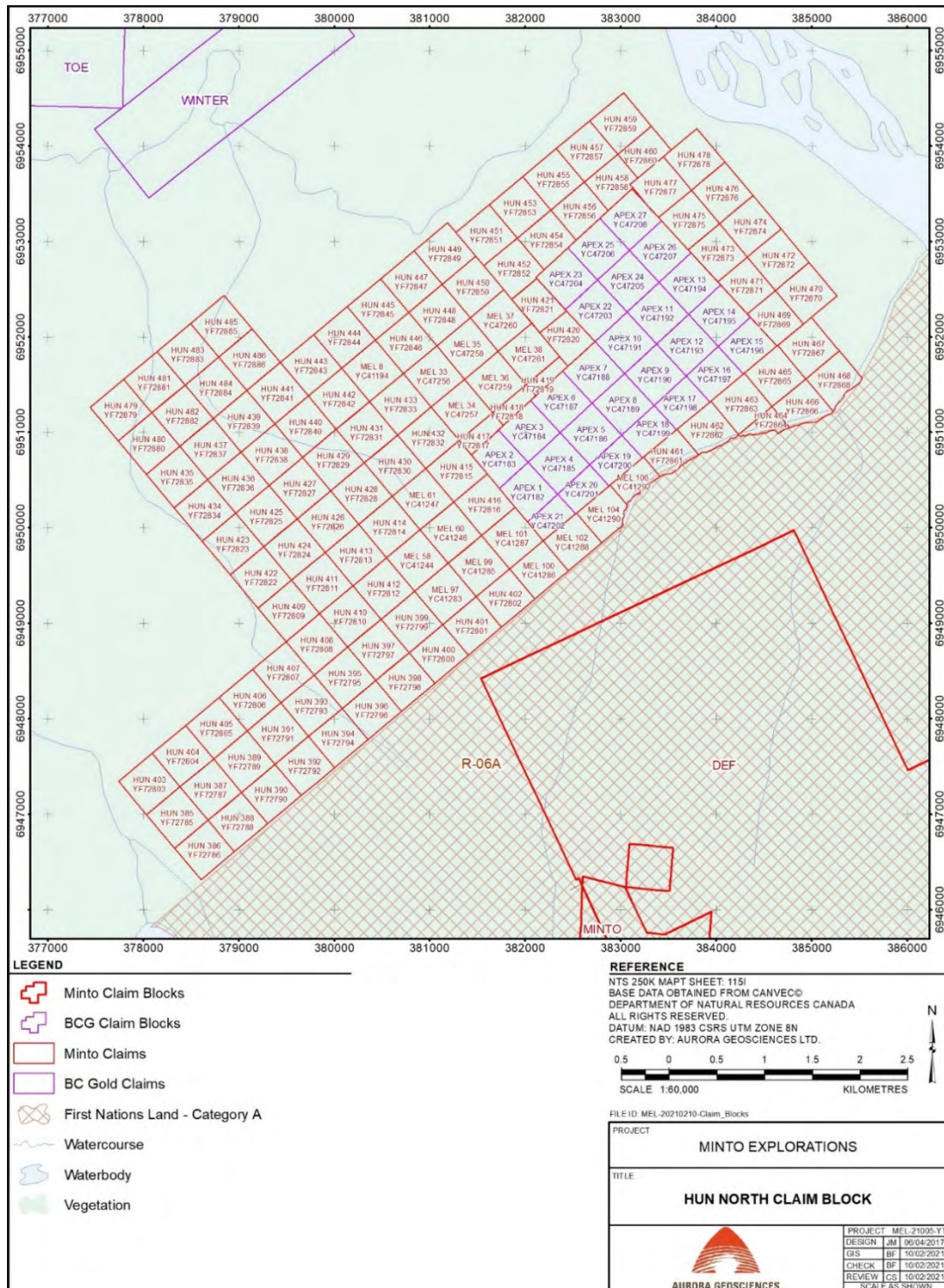
Source: Aurora (2021)

Figure 4-5: Claim Map, Pepper, Toe and Winter Block



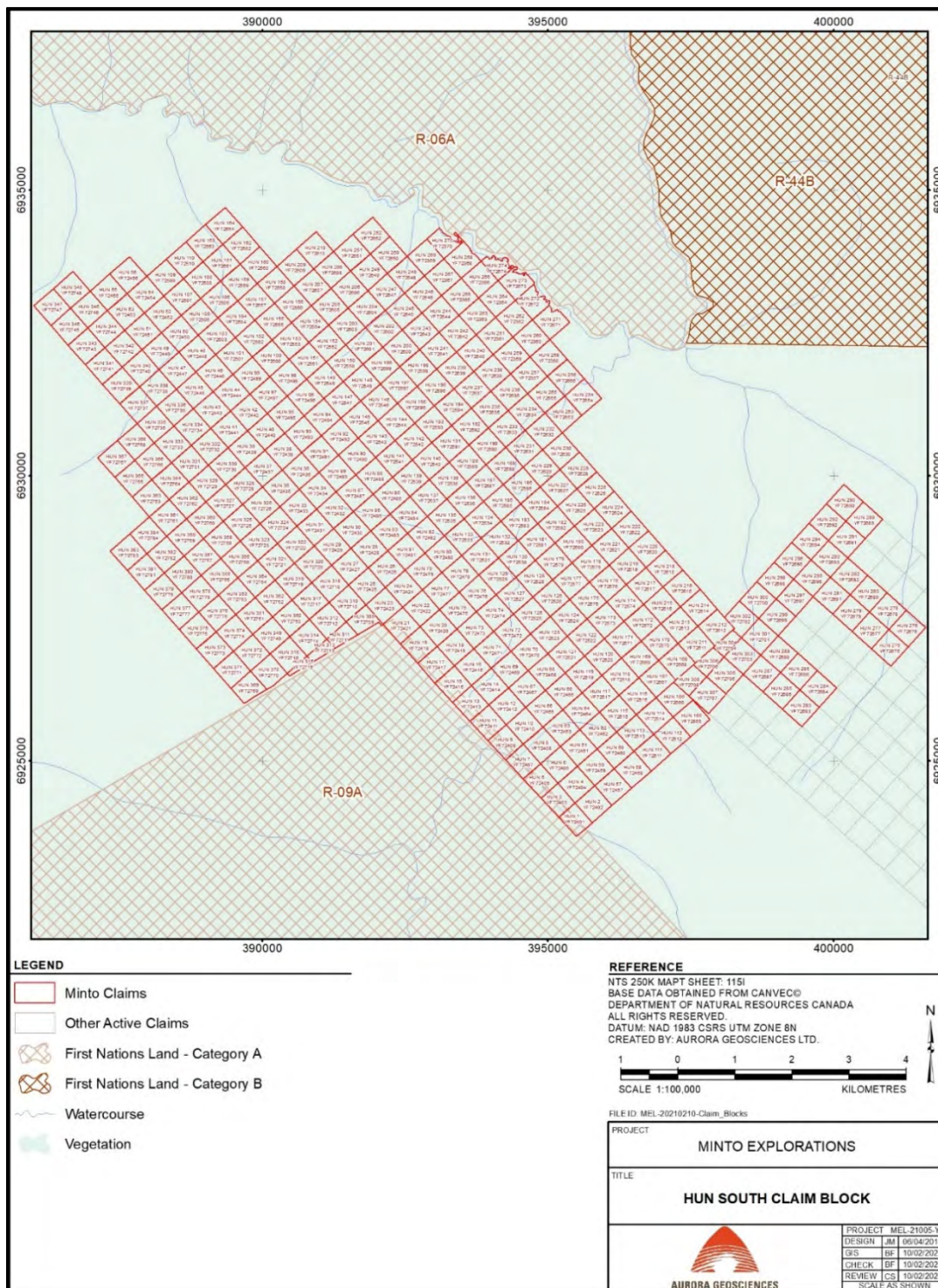
Source: Aurora (2021)

Figure 4-6: Claim Map, Hun North Block



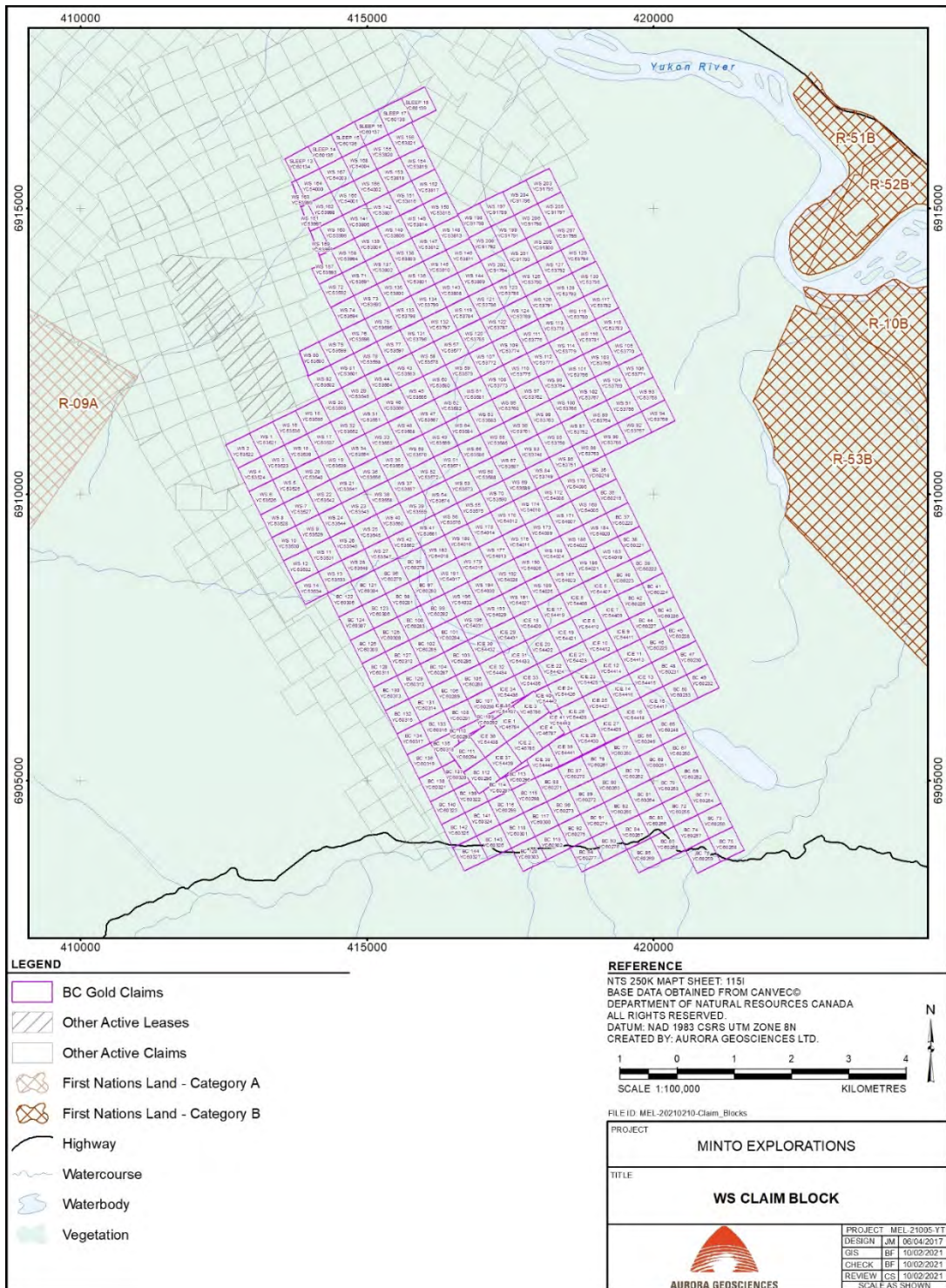
Source: Aurora (2021)

Figure 4-7: Claim Map, Hun South Block



Source: Aurora (2021)

Figure 4-8: Claim Map, WS Block



Source: Aurora (2021)

4.2 Cooperation Agreement with the Selkirk First Nation

In September 1997, MintoEx entered into a Co-operation Agreement (CA) with the Selkirk First Nation (SFN) towards development and operations of the Minto Project. The agreement called for co-operation between the two parties, stating that MintoEx pledges that the project would provide meaningful benefits to the SFN and its beneficiaries. In turn, Selkirk would co-operate and assist in development and operation of the project by providing access, goods and services, assisting in training and recruitment of candidates for employment, participating in environmental and social assessment activities, and supporting Minto's application for a Type A Water Licence. Minto agrees to prepare and carry out an effective program of progressive reclamation, temporary closure, final reclamation and long-term monitoring. Minto would also investigate, together with the SFN, the establishment of a trust to establish funding for closure, final reclamation and post-closure monitoring.

The original 1997 Agreement and subsequent additions to the agreement have been outlined in the 2019 Competent person's Report (CPR) titled "Competent Person's Report: Minto Mine – Yukon Territory, Canada". This was prepared for Pembridge Resources plc. and filed with the London Stock Exchange on August 9, 2019.

The Agreement includes the following financial considerations:

- a. \$35,000 within ten days of signing of the Agreement;
- b. \$35,000 within ten days of issuance of a Type A Water Licence;
- c. \$35,000 within 30 days of the commissioning of a mill; and
- d. a Net Smelter Return (NSR) royalty of 0.500%.

In 1997, Minto estimated the project would generate NSR royalties of approximately CAD\$4 million to the federal government. Minto agreed to pay the aforementioned royalty to the SFN instead, and "Minto shall not be made liable to pay royalties to both Government and Selkirk" (1997 Co-operation Agreement Concerning the Minto Project).

On October 1, 1997 the SFN, and all other Yukon First Nations with completed land claim agreements, acquired ownership of their Category A and B settlement lands, including Settlement Land Parcel R-6A. These land claim agreements provide fee simple title to minerals therein and thereunder, except for those held by holders of pre-existing claims. The Sherwood Mining Corporation (Sherwood) took over ownership of MintoEx in 2005. On December 31, 2008, Capstone Mining Corp. (Capstone) became the owner of all issued and outstanding shares held by Capstone Mining North Ltd. and Sherwood Copper Corporation. Following this acquisition, a new Co-operation Agreement (CA) was completed in October, 2009. This agreement called for issuance by Capstone to the SFN of 1,200,000 common shares of Capstone, with 600,000 shares to be paid out on the effective date of the Agreement and 100,000 shares to be paid out on each of the next six anniversary dates of the effective date of the Agreement.

The 2009 CA also stated a revised policy for provision of NSR royalty payments to the SFN as follows:

- a. 0.5% of the NSR for each Quarter Shipment, on or after April 1, 2009, where the Benchmark Quarter Price of the London Metals Exchange (LME) does not exceed US\$1.80/lb;
- b. 1.0% of the NSR for each Quarter Shipment where the Benchmark Quarter Price is greater than US\$1.80/lb, up to and including US\$2.50/lb;
- c. 1.25% of the NSR for each Quarter Shipment where the Benchmark Quarter Price exceeds US\$2.50/lb, up to and including US\$3.00/lb; and
- d. 1.5% of the NSR for each Quarter Shipment where the Benchmark Copper Price exceeds US\$3.00/lb.

The NSR for a Quarter shall be the amount equal to the Product Value of all Quarter Shipments in that Quarter less eligible deductions for all Quarter Shipments during that Quarter.

Should MintoEx identify any “New Reserves” (calculated in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), beyond a Threshold Amount of 5 Mt grading 1.5% copper, MintoEx may not develop or otherwise exploit these reserves until Minto and the SFN have reached a new or amended agreement. The new agreement will establish a new NSR royalty and other financial participation, or benefits, in favour of the SFN.

MintoEx shall also advance to Selkirk a “QMA Royalty Advance” (where QMA stands for Quartz Mining Act) of 50% of Minto’s estimated QMA royalty for that calendar quarter, within 50 days of the end of that calendar quarter.

Other financial considerations of the revised CA are as follows:

For the purpose of finding “Eligible Projects”, MintoEx was obligated to contribute a total of \$5,000,000 by June 10, 2010. An “Eligible Project” is any project or program which has been approved by the Selkirk Council where Selkirk is the sponsor, alone or with others. The project must result in tangible, ongoing benefits to the SFN, the community of Pelly Crossing or a Selkirk community at Minto Landing.

As per Business Opportunities, where a Designated Affiliate, designated by the SFN, has indicated that it wishes a “Project Requirement” to be treated as a “Preferred Opportunity”, a Selkirk Affiliate or Selkirk business shall have the preferential right and opportunity to negotiate and potentially be awarded a contract to supply that Project Requirement. If the Designated Affiliate does not wish a particular project requirement to be treated as a Preferred Opportunity or is not awarded a contract for this, Minto shall acquire the same required goods or services by means of a Competitive Bid Process, unless it elects to do so on a “Self-Supply Basis” or by means of a “Sole Source Supplier”.

Regarding employment opportunities, Minto agrees to provide priority in recruitment, training, retention and advancement of potential employees to available SFN citizens and residents of Pelly Crossing, and to offer similar opportunities to other Northern Tutchone persons. The SFN will identify available candidates for employment. Minto, in consultation with the representative of the SFN, will determine which candidates are suitable for employment, either by existing job

qualifications or are deemed suitable for training to meet these qualifications. This is in preference to other potential candidates.

A notice to renew the lease agreements for the Airport Area, Mill Site and Camp, Overburden Dump and Explosives Plant/Magazine, Tailings Disposal Area and Waste Dump – Open Pit (together, the “Lease Agreements”) was submitted to the Chief of the SFN on March 23, 2016. This specifies a renewal for a further 10 years, under the same terms and conditions in the original applicable Lease Agreement. In 2016, MintoEx exercised its renewal of the CA for a further 10 years.

4.3 Precious Metal Purchase Agreement, Silverstone Resource Corporation

Sales of gold and silver are subject to a Precious Metals Purchase Agreement (PMPA) between MintoEx and Wheaton Precious Metals Corporation (Wheaton), as stated in a Term Sheet dated March 30, 2021. Compensation terms within this Term Sheet were agreed to on January 27, 2021 (the Effective Date) and have been in place and enforced retroactively to that date.

The production payment for each ounce of gold delivered under the PMPA after the end of the Modified Gold Purchase Price Period is equal to:

- a. If received by Wheaton prior to the earlier of: (i) the second anniversary of the Effective Date; and (ii) delivery of 27,000 ounces of gold, then the production payment will be the lower of: (i) 65% of the closing spot price of gold on the immediately preceding business day; and (ii) \$1,250; or
- b. If received by Wheaton thereafter, the lower of (i) 50% of the closing spot price of gold on the immediately preceding business day; and (ii) \$1,000.

Finalization of the PMPA is pending; however, the terms outlined in the Term Sheet have been honored since the Effective Date.

4.4 Acquisition Agreement, Pembridge Resources PLC and Capstone Mining Corporation

On June 3, 2019 Pembridge Resources plc (Pembridge) and Capstone Mining Corporation (Capstone) signed a Definitive Share Purchase Agreement (SPA) which closed Pembridge's acquisition of 100% of Minto from Capstone. The SPA replaces the original agreement signed between the parties and first announced on February 15, 2018. This agreement has been documented in the Competent Person's Report – Minto Mine – Yukon Territory, Canada (Aug 9, 2019 on the London Stock Exchange).

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The property is located west of the Yukon River, about 240 km north of Whitehorse, Yukon, and about 20 km WNW of Minto Landing, the latter on the east side of the river. The property is accessible by Yukon Highway 2 (the North Klondike Highway) to Minto Landing. During the summer months, MintoEx operates a barge across the Yukon River (250m in width) connecting the landing with an all-weather gravel road extending 27 km from the west bank to the mine site. In winter, the crossing is accessed by an ice bridge as ice conditions permit. There is typically a 6 to 8-week period associated with each of freeze-up and break-up, where access across the river is impossible. West of the river, the access road crosses one major tributary, Big Creek, by means of a single-span bridge with reinforced concrete abutments and deck. During times of suitable river crossing, the access roads and river crossing allow for heavy vehicle traffic. When river access is available, personnel are transported by commercial bus from Whitehorse. During freeze-up and break-up, access is provided by chartered air services from Whitehorse to a 1,300 m airstrip on the property (Mercer and Sagman, 2012).

Employees of MintoEx work on a two-week rotational basis, whereby 14 days of work are immediately followed by a 14-day break. The schedules of contracting firms can vary from this.

Due to the ongoing COVID-19 pandemic, upon landing at the Whitehorse airport, employees from outside Yukon are transported directly to the mine site by a local fixed wing carrier. Although they are allowed to work their regular shifts, they are otherwise obligated to self-isolate for 14 days in their rooms during non-working hours, with meals delivered to them rather than taken in the mess hall. Personnel are also not allowed to use or visit any other camp facilities. MintoEx is also providing the Moderna vaccine to any personnel requesting it; this policy was approved by the Government of Yukon.

Figure 5-1: Minto Barge Crossing, Yukon River (Mercer and Sagman after SRK 2009)



Source: SRK (2009)

The barge typically ceases operation in October and resumes operations in May. A winter road is typically in operation from January through March.

The climate is continental sub-arctic, with short warm summers and long, very cold winters. Average January high and low temperatures are -22.2°C to -32.8°C , respectively, with a daily mean temperature of -27.5°C . The average July high and low temperatures are 22.6°C and 8.3°C , respectively, with a daily mean of 15.5°C . Average precipitation is 310.3 mm (12.2"), occurring mainly as rain in the summer months (Wikipedia, 2017, after Environment Canada). The field season for surface exploration work extends from late May to late September. Drilling may continue later into the season and can begin in late winter, provided water lines can be kept from freezing. Mining activities continue year-round, although surface operations may be temporarily suspended during periods of extreme cold.

The property lies towards the eastern limit of the Dawson Range which is typified by rolling hills and gentle to moderate topography, with elevations ranging from 640 m (2,100') to 975 m (3,200') ASL. The fairly gentle slopes do not result in accessibility problems, or avalanche risk. South facing slopes are normally stable and suitable for building and infrastructure construction while north-facing slopes are typically permafrost-bearing. Overburden consists mainly of colluvium, comprised of sand originating from weathering of granitic bedrock underlying the area. Overburden depth is typically fairly thin, although may exceed 50 m locally. Bedrock exposure is fairly abundant along ridgelines and hilltops but is scarce elsewhere. The Minto mine site occurs somewhat east of the western limit of the Reid glacial advance, occurring from 120 to 60 Ka (Yukon Geological Survey). Vegetation consists of typical northern boreal forest, which has undergone several episodes of burning, the most recent in 2010.

The property is serviced by a spur of the main electrical grid servicing Whitehorse, Haines Junction, Faro and Dawson. Power requirements are approximately 6.0 MW available from the main Yukon power grid. An additional 2 MW is expected to be required for underground operations; this would be provided by additional generators. The property size and moderate terrain have proven sufficient to accommodate mining facilities, mill processing sites, and waste disposal sites. There is sufficient room for expansion of these facilities. There is sufficient water on the property to supply mining and milling operations, including accommodations and drilling.

Limited fuel and grocery services, and an available work force for some activities, are located at Pelly Crossing (population 291, 2008 estimate), the only community of the Selkirk First Nation. Pelly Crossing is located along the North Klondike Highway about 35 road-km northeast of Minto Landing. Somewhat more comprehensive grocery, fuel, hardware services and accommodations, and a limited work force, are available at the Village of Carmacks (pop. 491, 2016 Census), located at the junction of the North Klondike and Robert Service highways, which is roughly 70 km south of the access road extending from the North Klondike highway to the mine site.

The property is located approximately 250 road-kilometres north of the City of Whitehorse, a full-service community of about 31,000 including surrounding communities. Whitehorse has excellent accommodations, groceries, hardware, camp supplies, bulk fuel and expediting services. The Mining Recorder's Office for the Whitehorse Mining District is located in Whitehorse, as are territorial and some federal government services. Whitehorse, the capital city of Yukon, has a substantial skilled labour force, including professional geoscientists and tradespeople. The mining operation at Minto includes staff from outside Yukon.

6 HISTORY

6.1 History – Minto Block

The following section pertaining to history up to 2011 is taken from the Yukon Minfile, by the Yukon Geological Survey.

The present Minto property was first staked in 1971 as the Minto 1-16 claims, by the Dawson Syndicate (Silver Standard Mines Ltd and Asarco Inc.), covering a target identified from a regional stream sediment program. Later in 1971, the Dawson Syndicate conducted soil sampling, Induced Polarization (IP) surveying, hand pitting, and a 1,158 m core drilling program in 7 holes. In 1972, the Syndicate followed up with detailed geological mapping, airstrip construction, extensive bulldozer trenching and an 1,871 m core drill program in 12 holes.

In June of 1973, United Keno Hill Explorations discovered mineralization on the adjoining DEF claims. This led to the formation of a joint venture with the holders of the DEF claims to conduct a 7,887 m core drilling program in 62 holes targeting the “North Zone” along the northern Minto property boundary, as well as the staking of four fractional claims. In early 1974, a winter road was constructed to the airstrip, and another core drilling program of 11,228 m in 58 holes was completed.

In 1977, United Keno Hill Mines (UKHM) released results of a joint feasibility study, reporting reserves at the Main Zone of 6,550,778 t grading 1.86% copper (Cu), 0.51 gold (Au) g/t, and 6.86 silver (Ag) g/t, of which 41% of the deposit was located on the DEF claims. This is a historical reserve estimate and does not distinguish between proven and probable reserves or other resource categories and is not compliant with modern resource and reserve standards in National Instrument 43-101. As such, the reserve estimate has not been verified and cannot be relied upon.

In 1984, Silver Standard changed its name to Consolidated Silver Standard Mines Ltd. It transferred its interest to a subsidiary, Western Copper Holdings Ltd, which in 1989 transferred its interest in most of the claim block to Teck Corp (Teck). Teck conducted a magnetometer/VLF survey in 1991.

In 1993, Teck and Asarco sold their interests in the Minto claims to MintoEx, a newly formed company incorporated specifically to acquire the Minto and DEF claims. The two blocks were consolidated into the Minto Property. Later that year, MintoEx conducted an airborne radiometric survey and a 984 m core drilling program comprising 8 delineation holes for infilling and metallurgical studies.

In 1994, MintoEx conducted another core drilling program comprising 2,084 m in 16 holes and tested exploration targets outside of existing deposits. They also performed engineering and geotechnical studies including standard acid-base accounting, tests on tailings solids and effluent, and overburden and waste characterization. MintoEx also released a “geological reserve” estimate of 8,818,000 t grading 1.72% Cu, 0.48 Au g/t and 7.5 Ag g/t, at a cut-off grade of 0.5% Cu. This is a historical reserve estimate, is not compliant with modern resource and reserve standards in National Instrument 43-101, has not been independently verified by this

author, and should not be relied upon. MintoEx did not distinguish the portion located within the DEF claims.

In 1995, MintoEx completed a 425 m core drilling program in 5 holes targeting four aeromagnetic anomalies identified from the 1993 airborne survey. MintoEx continued to focus on engineering, geotechnical and environmental studies to support permit applications. They also drilled a single “condemnation hole” comprising 147 m, north of the proposed mill location.

In January of 1996, MintoEx completed a feasibility study and arranged project funding in May 1996. This was followed by an announcement in July that it had entered into a joint venture with Asarco to take the project to production. Asarco gained a 70% interest by providing funding up to US\$25 million, with MintoEx retaining the other 30% and operatorship.

In 1996, MintoEx upgraded 17 km of the access road and installed a 40 m single span bridge across Big Creek. The remaining 12.8 km of access road was upgraded in 1997, and two grinding mills were moved to site. MintoEx also completed geotechnical programs, conducted some core drilling along the deposit margins, and continued environmental reviews and working through mine permitting hearings. In April 1997, a final screening report on the Environmental Assessment of the proposed project was released by DIAND, followed in 1998 by issuance of a Type A water use licence.

In October 2004, MintoEx completed an agreement with Asarco and Falconbridge to engage Roman Friedrich and Company Ltd. to solicit bids for the sale of all shares of Minto Explorations Ltd. Falconbridge agreed not to exercise its DEF claim repurchase right, provided that MintoEx purchases the right for a cash amount equivalent to 42.5% of the total of any takeover consideration.

In March 2005, the Sherwood Mining Corporation (Sherwood) initiated a takeover offer for Minto Explorations Ltd. The offer closed in June of 2005, resulting in Sherwood acquiring ownership of the Minto Project.

In July 2005, Sherwood released a National Instrument (NI) 43-101 compliant resource estimate for the Main Zone. The resource estimate comprised 8,340,000 t grading 1.83% Cu, 0.55 Au g/t and 7.95 Ag g/t, in the Measured and Indicated categories, and an additional Inferred Resource of 700,000 t grading 1.41% Cu, 0.45 Au g/t and 6.0 Ag g/t. This estimate has not been independently verified by this author. Later in 2005, Sherwood conducted a 6,772 m core drilling program focusing on confirmation and upgrading of the resource base. In September, Sherwood changed its name to the Sherwood Copper Corporation (Sherwood Copper) and obtained a 10-year extension on its Type A water licence.

In June of 2006, Sherwood Copper received a 10-year extension of its quartz mining licence, valid until June 30, 2016. In 2006, Sherwood completed 24,252 m of core drilling in 119 holes. This work program included infill drilling at the Main Zone and exploratory drilling to the north and west of it, and on “Area 2”, 300 m southeast of the Main Zone. Sherwood Copper also began mill construction and pre-stripping of the Main Zone.

In 2007, a core drilling program comprising 23,292 m in 91 exploration and 10 geotechnical/metallurgical holes was completed. This resulted in discovery of significant copper-gold mineralization at Area 118, Copper Keel, Airstrip and Ridgertop zones, as well as in areas between the Main and Area 2 zones. In February 2007, Sherwood Copper released a resource

estimate for the Area 2 deposit, comprising a Measured and Indicated resource base of 7.6 Mt grading 1.26% Cu and 0.48 Au g/t at a 0.5% Cu cut-off.

Also, in 2007, Sherwood Copper completed the mill and pre-stripping of the Main Zone. On May 1st, they produced their first copper-gold concentrates and expanded the mill to handle 2,400 tpd. On July 16th, Sherwood Copper delivered its first concentrate shipment to the Skagway, Alaska port, and announced it had reached commercial production on October 1st.

In 2008, Sherwood Copper conducted a core drilling program of 23,840 m in 118 holes, focusing on expanding and upgrading the resource base at the Area 2, Area 118 and Ridgetop deposits. This drilling allowed for the preparation of a pre-feasibility study for expanded mining and milling rates. The mill expansion was completed, meeting or exceeding its design capacity of 2,400 tpd.

In September 2008, Sherwood Copper entered into an agreement with the Capstone Mining Corporation to create a mid-tier copper producer retaining the name of Capstone Mining Corp (Capstone). The merger was completed on November 24, 2008. The following day, Capstone and Yukon Energy announced the mine was officially connected to Yukon Energy's electrical grid.

Exploration in 2009 consisted of Titan-24 DC Induced Polarization (IP) and Magnetotelluric (MT) geophysical surveys across the property. MintoEx completed a core drilling program, comprising 31,479 m in 201 holes, focusing on infilling of the Ridgetop and Area 2 deposits, and testing of other targets. This led to the discovery of the Minto North and Minto East zones and provided upgraded resource and reserve figures for the Main, Ridgetop and Area 2/ Area 118 deposits (Yukon Minfile, 2014).

The following section is based on a January 2012 Technical report titled "Minto Phase VI, Preliminary Feasibility Study Technical Report", by B. Mercer and J. Sagman.

In 2010, the Minto East Deposit was defined, the copper-gold resources for the Area 2/ Area 118 were expanded, and drilling led to discovery of the Wildfire and Inferno prospects. A preliminary resource estimate for the Minto East deposit was provided in August and was updated later in 2010. Also, the Titan 24 survey was expanded to cover 85% of the Minto property (Mercer and Sagman, 2012).

In 2011, the Copper Keel and Wildfire resource sub-domains were defined and incorporated into the larger Minto South Deposit (MSD), and upgraded resource calculations were provided in May and again in December of that year. Core drilling led to discovery of the Fireweed prospect down-dip and to the north of the MSD.

Table 6-1 below lists historical resource and reserve estimates on the Minto Project inclusive of 1994.

Table 6-1: Historical Resources and Reserves, Minto Project (after Mercer and Sagman 2012)

Year	Source*	Cut-off (% Cu)	Short Tons	Cu (%)	Au (oz./ton)	Ag (oz./ton)	Comments
1976	R. T. Heard, UKHM	Unknown	8,219,370	2.04			
1976	L.A. Wigglesworth, Falconbridge	Unknown	8,210,219	2.03			
1975	R.J. Previdi, ASARCO	0.6	8,441,941	1.74			
1976	R.J. Previdi, ASARCO	Unknown	7,220,900	1.86			
1980	D.M. Fletcher, ASARCO	2.00	2,968,600	3.24	0.027	0.411	
1989	J. Proc & H.L Klingmann, Minto Explorations	0.8	6,368,000	2.11	0.016	0.33	Open Pit and Underground recovery at 75% and 5% dilution
1990	SRK/Falconbridge	Unknown	7,592,318	1.88	0.016		Includes Lower Zone
1992	J. Proc & H.L Klingmann, Minto Explorations	Unknown	6,071,000	2.21	0.018	0.28	Open Pit and Underground, = 1,600,000 ton @ 3.73% Cu, 0.038 Au oz./t, 0.49 Ag oz./t
1994	G. Giroux Montgomery Consultants	0.5	8,780,000	1.76	0.015	0.223	Pre-43-101 "proven and probable"

Notes:

These are historical resource and reserve estimates, do not distinguish between proven and probable reserves or other resource categories, are not compliant with modern resource and reserve standards in National Instrument 43-101, have not been independently verified by this author, and should not be relied on.

Source: Aurora (2021)

Mineral reserve estimates as of 2012 are listed in Table 6-2 below.

Table 6-2: Historical Resources and Reserves, Minto Project (after Mercer and Sagman 2012)

Deposit	Mineral Reserve Class	Tonnes (Kt)	Diluted grade			Contained metal		
			Cu (%)	Au (g/t)	Ag (g/t)	Cu (Mlbs)	Au (koz)	Ag (koz)
Open Pit Reserves								
Minto North	Proven	1,596	2.26	1.21	8.12	79	62	417
	Probable	9	1.68	0.58	6.92	0	0	2
	Sub-total	1,604	2.26	1.21	8.12	80	62	419
Ridgetop	Proven	1,073	1.02	0.25	2.12	24	9	73
	Probable	1,020	1.00	0.28	2.97	22	9	97
	Sub-total	2,093	1.01	0.26	2.54	46	18	171
MSD-118	Proven	-	-	-	-	-	-	-
	Probable	483	1.28	0.10	1.81	14	2	28
	Sub-total	483	1.28	0.10	1.81	14	2	28
MSD-Area 2	Proven	3,306	1.44	0.54	4.99	105	57	530
	Probable	1,694	1.00	0.27	3.20	37	15	174
	Sub-total	5,000	1.29	0.45	4.38	142	72	704
Open Pit Subtotal	Proven	5,974	1.58	0.67	5.31	208	128	1,020
	Probable	3,204	1.04	0.25	2.92	74	25	301
	Sub-total	9,179	1.39	0.52	4.48	282	153	1,321
Underground Reserves								
Minto East	Proven	-	-	-	-	-	-	-
	Probable	709	2.28	1.04	6.15	36	24	140
	Sub-total	709	2.28	1.04	6.15	36	24	140
MSD – Area 2/ 118	Proven	-	-	-	-	-	-	-
	Probable	1,731	1.76	0.74	7.19	67	41	400
	Sub-total	1,731	1.76	0.74	7.19	67	41	400

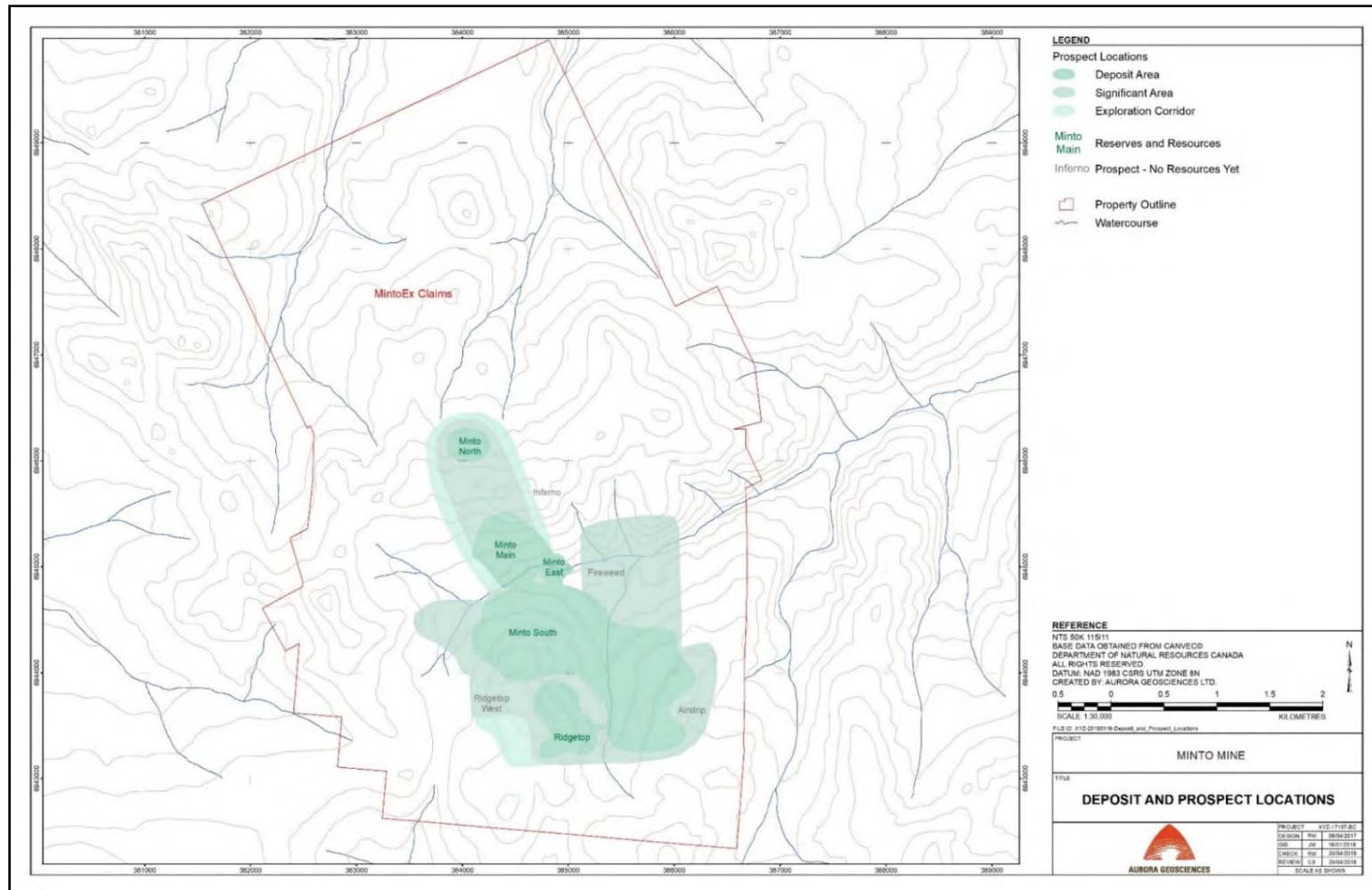
Deposit	Mineral Reserve Class	Tonnes (Kt)	Diluted grade			Contained metal		
			Cu (%)	Au (g/t)	Ag (g/t)	Cu (Mlbs)	Au (koz)	Ag (koz)
MSD – Copper Keel	Proven	106	1.74	0.61	6.3	4	2	22
	Probable	1,455	1.81	0.65	6.7	58	30	313
	Sub-total	1,561	1.81	0.64	6.67	62	32	335
MSD-Wildfire	Proven	301	1.8	0.77	6.06	12	7	59
	Probable	59	1.59	1.00	7.85	2	2	15
	Sub-total	360	1.76	0.80	6.35	14	9	73
Underground Subtotal	Proven	407	1.78	0.73	6.12	16	9	81
	Probable	3,954	1.87	0.76	6.83	163	97	868
	Sub-total	4,361	1.86	0.76	6.77	179	106	948
Stockpiles	Proven	852	1.23	0.41	3.71	23	11	102
	Probable	-	-	-	-	-	-	-
	Sub-total	852	1.23	0.41	3.71	23	11	102
Total								
Total Reserves	Proven	7,233	1.55	0.64	5.17	247	148	1,203
	Probable	7,158	1.50	0.53	5.08	237	122	1,169
	Sub-total	14,392	1.53	0.58	5.12	484	270	2,371

Notes:

Mineral resources have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines and are reported in accordance with Canadian Securities Administrators' National Instrument 43-101 and using CIM Definition Standards.

Source: Aurora (2021)

Figure 6-1: Deposit and Prospect Locations, as of January, 2012 (Mercer and Sagman, Capstone Mining Corp.)



Source: Aurora (2021)

6.2 History of Regional Claim Blocks

Exploration in the region can be broadly separated into two distinct phases: the first occurring from 1970 to 1982 following initial copper discoveries in the region, and the second from 2006 to 2013. The first phase was conducted by various companies and the majority of claims staked have since lapsed. Exceptions include the Minto/DEF block, which encompass the Minto deposits, and the DUN, BOY, and W claims, which partially encompass the Carmacks Copper deposit currently owned by Granite Creek Copper.

Renewed interest in the area began in 2006 when prospector Shawn Ryan staked the WS, Ice, BC, Winter, Pepper, Toe, and Apex claim groups. Following brief work programs in 2006, these claims were optioned to the BCGold Corporation in exchange for cash, shares and certain work commitments (Yukon Minfile). BCGold Corporation pursued a regional exploration strategy including geophysical and geochemical surveys and drilling programs, which are detailed below. In 2010, BCGold Corporation fulfilled the terms of its option agreement with S. Ryan and these claims were transferred to the company (Yukon Minfile).

MintoEx staked the Bond, MEL, and DEL claim groups in 2007. In June, 2008 Sherwood Copper, of which MintoEx was a wholly owned subsidiary, signed a memorandum of understanding with Northern Tiger Resources Inc. (Northern Tiger) whereby Sherwood Copper vended its 100% interest in the blocks along with their historical exploration database. This was in exchange for retained back-in rights to acquire a 65% interest in any of Northern Tiger Resources' properties located within a 50 km radius of the Minto Mine facilities (Yukon Minfile). The three claim blocks were subsequently returned to MintoEx.

6.2.1 History of Bond Block

The area encompassed by the current Bond claims was originally staked as the TUF 1-40 claims by United Keno Explorations in August, 1972. It was later staked as the FUN 1-40 claims by Canadian Superior Exploration Ltd. in April 1974. The Bond 1-70 claims were staked in their current configuration in October, 2007.

The following is a timeline summary of work programs which either completely or partially overlap the current BOND property.

- 1972** United Keno Explorations (a joint venture of United Keno Hill Mines Ltd, Falconbridge Nickel Mines Ltd and Canadian Superior Exploration Ltd.) explored the block with geological mapping and grid soil geochemical sampling. They identified two occurrences of chalcopyrite and minor galena spaced about 30 m apart within siliceous gneiss. Three hand trenches exposed chalcopyrite, bornite, azurite, malachite and galena, with the best result being 0.93% Cu in a grab sample.
- 1974** Canadian Superior Exploration Ltd. explored the FUN 1-40 block with geological mapping, grid geochemical soil sampling, and ground Direct Current Induced Polarization (DCIP) geophysical surveying. No anomalous results were identified and the claims were allowed to lapse (Sinclair et al., 1974).

- 2008** An exploration program, including collection of 2 rock, 128 soil and 29 silt geochemical samples and geological mapping along geochemical traverse lines was conducted on the BOND 1-70 claims (Schulze, 2008). No anomalous results were returned, although further exploratory geochemistry work was recommended on unexplored areas of the property. In August, 2008 the claims were officially transferred to Northern Tiger, and in November of that year Sherwood Copper merged with Capstone Mining Corporation (Yukon Minfile, 2021).
- 2009** An airborne gamma ray spectrometer and magnetic geophysical survey was flown over the entire Bond Block (Ouellette, 2009). The survey was flown at a 100 m line spacing. The survey identified several NNW trending moderate-strength magnetic “high” anomalies in the vicinity of the historic showings. Detailed mapping and soil sampling overtop of these anomalies was recommended.
- 2011** A 3 line-km ground DCIP survey was conducted (Ouellette and Pollries, 2012). One anomalous chargeability zone was identified and an expanded ground DCIP survey was recommended.

6.2.2 History of Del Block

The Del property was first staked as the DEL 1-84 claims in March 1974 by United Keno Hill Mines Ltd. (UKHM) to cover a Cu-Ag occurrence revealed during construction of an access road from Carmacks to the DEF claim block (Yukon Minfile). The considerable size of the block was selected due to proximity to the Williams Creek (now Carmacks Copper) deposit and mineral potential of the area. The claims were allowed to lapse following an initial work program. MintoEx restaked the DEL block as the DEL 1-87 claims in July 2007. The property was then acquired by Northern Tiger Resources Ltd. in 2008, which expanded the claim block by staking the DEL 88-113 claims in August 2008. In June 2011, the DEL 114 -123 claims were staked expanding the block to the west; these 10 claims have since lapsed.

The following is a timeline summary of work programs which either completely or partially overlap the current DEL property:

- 1974** Geological mapping and soil sampling revealed minor chalcopyrite and malachite occurrences along the access road and within a dioritic intrusion and proximal mafic and siliceous dykes. No further work was recommended, and the claims were allowed to lapse by UKHM (Schulze, 2008).
- 2008** A brief geochemical exploration program was pursued comprising 11 rock, 137 soil and 27 silt geochemical samples. Minor copper-in-soil anomalies were identified in the south-central portion of the block. A strong gold-in-soil anomaly in the northern portion of the block led to the expansion of the property with the staking of the DEL 88-113 claims. A follow-up program of expanded soil sampling was recommended (Schulze, 2008).
- 2009** An airborne gamma ray spectrometer and magnetic geophysical survey was flown over the entire DEL block (Ouellette 2009). Two magnetic “high” anomalies were identified in the centre of the DEL block and a follow-up soil geochemical survey targeting these was recommended.

- 2010** A brief one-day exploration program including geological mapping and collection of 57 soil geochemical samples was pursued on the DEL 90 claim (Ouellette and Pollries, 2011). A widespread copper-in-soil anomaly was identified with anomalous values ranging from 100-447 ppm Cu. An expansion of both the property and the soil geochemical grid to the southwest was recommended.
- 2012** An exploration program including a 3 line-km Ground DCIP and magnetic survey orientated at a line azimuth of 250° was conducted (Ouellette and Pollries, 2013). Weak to moderate coincident magnetic, chargeability, and resistivity anomalies were identified on the eastern portion of the grid. Further soil geochemical sampling and an expanded IP grid were recommended.

6.2.3 History of the Hun North Block

The HUN North block comprises the HUN 385-486, APEX 1-27, and MEL 8, 33-38, 58, 60, 61, 97, 99-102, 104, 106 claims. The APEX 1-27 claims were staked in June 2006. The MEL 8 and 33-38 claims were staked in July, 2007 and the remaining MEL claims were staked in February 2006. All HUN claims were staked in February 2018.

The following is a timeline summary of work programs which either completely or partially overlap the current HUN North property:

- 1972** Soil sampling was performed over the WAIN 1-64 claims owned by Wainoco Oil Ltd. (Archer, 1972). The claims covered the present southwest edge of the HUN North group. A total of 1,012 soil samples were taken along a grid with a variable line spacing of 500' (152m) to 900' (275m) and a 200' (61 m) station spacing. These were analyzed for Cu, molybdenum (Mo), and Ag. All samples returned Ag values < 0.5 ppm and Mo < 1 ppm. A northwest-trending 3,000 by 400 feet (914 m x 61 m) linear zone of anomalous Cu values ranging from 40 to 100 ppm Cu was identified in the northwest corner of the claim block. No further work was performed.
- 1972** Soil sampling and geologic mapping were performed on the ORI 1-64 claims owned by NRD Mining Ltd. (Archer 1972) which overlap the central area of the present HUN North claims. Soil samples were analyzed for Cu, Mo, Ag. No anomalous Cu values were detected, and all Ag and Mo values were sub-detection limit.
- 1973** Soil sampling was performed on the Navajo claim group of which the western half was owned by Black Giant Mines Ltd. and the eastern half was owned Tay River Mines Ltd. The Navajo group covered the present central HUN NORTH claims. A soil geochemical program comprising 1,800 samples, extending across parts of both properties, was completed and analyzed for Cu. Several northeast oriented linear trends of anomalous Cu values ranging from 40 ppm to 1,440 ppm Cu were identified in the southern area of the group (Nusbaum, 1974).
- 1974** The two portions of the Navajo claim group were combined into the single Navajo claim group, fully owned by Black Giant Mines Ltd. in 1974. A ground magnetometer survey was completed and followed by mechanical trenching and a diamond drilling program of 818 m of in 5 holes ranging in depth from 140 to 200 m. Minor geologic mapping and prospecting were also completed. Trenching and drilling targeted coincident soil and magnetometer anomalies, and the drilling specifically targeted a zone of malachite and

azurite mineralized biotite gneiss. The biotite gneiss was intersected in several holes; however, all grades were low with the best intersections being 0.26% Cu over 0.3 m and 0.10% Cu over 3.048 m (Nusbaum, 1974).

Most work from the 1974 season occurred south and southeast of the current Hun North property boundary, although the north boundary of the magnetometer survey covered part of the current property.

- 2006** A soil geochemical sampling program with Mobile Metal Ion (MMI) and Inductively Coupled Plasma ICP-MS geochemical analysis was conducted on the SPEAR 1-4 claims owned by S. Ryan, located within the current northwest corner of the Hun North property. The goal was to determine which soil geochemical method would best identify anomalous Cu values. A total of 5 ICP and 5 MMI soil samples were taken at identical points for comparison; however, due to a lack of data the results were deemed inconclusive (Ryan, 2007).
- 2007** A program of MMI soil sampling and prospecting was completed on the APEX 1-39 claims owned by S. Ryan and optioned to BCGold Corp. A total of four rock samples were collected on the APEX 28-39 claims, which are now covered by the Hun North claim group. All samples returned assays of < 0.03 g/t Au and < 0.01 % Cu (Doherty, 2007).
- 2008** A program of MMI soil sampling and prospecting was conducted on the APEX 1-39 claims. A total of 100 MMI soil samples were collected on the western block of the claims (APEX 28-39). A northwest oriented linear trend of anomalous values including one of 3,200 ppb Cu was identified in the southern part of the APEX claims (Newton, 2008).
- 2008** A ground Induced Polarization (IP) survey was conducted on the SPEAR 1-12 claims. Three moderate chargeability anomalies were identified, none of which correlated to previous soil sampling (Newton, 2008).
- 2008** The majority of the land covered by the present Hun North property was staked as the MEL claims by Northern Tiger who performed a program of soil and silt geochemical sampling and geologic mapping. As a result of a claim dispute between Northern Tiger and S. Ryan, Northern Tiger was not able to claim the full area. A total of 2 rock, 102 soil, and 16 silt samples were collected across the property, none of which returned anomalous results (Schulze, 2008).
- 2009** An airborne radiometric and magnetic survey was flown across the entire MEL block, encompassing both the Mel East and Mel West claim blocks and roughly matching the current Hun North property boundary. A ground IP geophysical survey was completed, together with soil sampling along the IP lines in the northeast corner of the Mel East claim block. No anomalous results were noted from any survey method. East-west trending radiometric and magnetic trends were interpreted to represent regional geology (Ouellette, 2009).
- 2009** A program including a ground IP geophysical survey, geological mapping, prospecting, soil sampling, and MMI soil sampling was completed on the APEX 1-27 claims. A total of 15.2-line kms of IP surveying was completed, in addition to 27 conventional soil samples and 273 MMI samples. Three zones of high chargeability and resistivity features, broadly coincident with moderate magnetic high features and Cu - Au MMI anomalies, were identified (Pautler, 2010).

- 2010** A program including a ground IP geophysical survey and soil, rock, and silt geochemical sampling was conducted over the Mel East and Mel West claim blocks. A zone of anomalous soil samples in the Mel East block underwent a subsequent ground IP geophysical survey. A total of 3 rock, 55 soil, and 1 silt sample were also taken. The IP survey returned no anomalous features. (Ouellette and Pollries, 2011). A total of 5 soils and 1 silt sample were collected on the MEL West claim block, none of which returned anomalous values (Ouellette and Pollries, 2011).
- 2010** BCGold conducted a 795.53 m diamond drill program in three holes on the APEX 1-27 claims, following up on targets identified during the 2009 program. All holes failed to intersect mineralization (O'Brien, 2011).
- 2020** 536445 Yukon Inc. conducted a brief 4-day prospecting program over the centre of the Hun North claims. No rock samples were submitted for geochemical analysis (Kovacs 2020).

6.2.4 History of the Hun South Block

The Hun South claim block (HUN 1-384) were staked in their current configuration in January 2018, centered about 17 km southeast from the Minto deposit. The HUN South property encompasses ground previously covered by the FIL, HI, MOON, and OPRAH claim groups.

The following is a timeline summary of work programs which either completely or partially overlap the current HUN South property.

- 1976** The HI claims were staked in 1976 by United Keno Hill Mines Ltd. within the northeast corner of the current Hun South claims. Field work consisted of geological and geochemical surveys (Joy and VanTassell, 1977). Geological mapping identified a few narrow lenses of northwest trending biotite-rich gneiss. These rocks were described as strongly foliated malachite-stained quartz-feldspar-biotite gneiss apparently similar to the rocks within the DEF claims. Soil sampling on the entire claim block revealed two narrow anomalous zones with values between 382 - 510 ppm Cu, as well as other, isolated anomalies. Although Ag, lead (Pb), zinc (Zn), and Mo were also analyzed, no anomalous areas were indicated for any of these metals.
- 1978** United Keno Hill Mines Ltd. (UKMH) conducted a ground IP geophysical survey on a portion of the HI claims. A total of 1.5 km of IP survey were completed, and no chargeability anomalies were detected (Smith 1978).
- 1980** The Moon claims were staked in 1980, occupying the southwest corner of the current Hun South block. That year, UKHM conducted a small geological mapping program on parts of the block, identifying a few prominent outcrops of biotite-quartz-feldspar gneiss. The property-wide soil geochemical survey returned few copper values exceeding 30 ppm Cu. It was concluded that the topography and thick overburden diminished the survey quality. A few isolated anomalies occur within a northwest trend that correlates well with the strongly foliated mafic-rich gneiss (Leblanc and Joy, 1980).

The FIL claim block was staked in 1980 by UKHM along the Minto Copper Belt. The claims were located in the southeast corner of the present Hun South block.

1981 Reconnaissance geological mapping and geochemical surveying were completed across the Moon claims. Mapping confirmed the presence of quartz-feldspar gneiss across the entire property. The soil survey completed reconnaissance geochemical surveying of the property. The samples were analyzed only for Cu, returning generally low values, likely due to thick glaciofluvial cover. An airborne combined DIGHEM II electromagnetic (EM) and magnetometer survey was flown over the Moon claims as part of a more aerially extensive survey which included the FIL claim block. The survey comprised 946 line-km at a 200 m line-spacing. Data from the survey outlined a sharp contrast between the low-resistivity volcanic rocks and the high-resistivity granodiorite and gneiss. A small amount of follow-up work targeting the EM conductors did not lead to significant conclusions.

1981 Field work on the FIL block comprised property-wide geological mapping and rock/soil geochemical sampling (Davidson and Joy, 1981). Geological mapping identified a large area of strongly foliated, northwest striking gneissic rocks with high biotite and magnetite content in the southeast corner of the property. Scattered traces of malachite were found in the gneissic fragments. A total of 27 rock grab samples, representing a mix of lithologies, were collected for assaying. These included variably foliated intrusive and undeformed volcanic rocks; however, no favourable assay values were returned. The geochemical sampling involved the collection of 17,046 grid soil samples at a 100 m line spacing and 30 m station spacing over the entire property. Most Cu anomalies identified from the survey were low order (50-100 ppm), and indicated a northwest trend. Based on these anomalies, five areas of interest were outlined, with Cu values of 100-187 ppm. The highest copper value obtained in the survey was 192 ppm.

The FIL claims were included in the same airborne electromagnetic DIGHEM II and magnetometer survey that covered the Moon claims. Various areas of interest were identified, including areas of low resistivity and high conductivity on the eastern side of the FIL claims.

2010 The Oprah claims were staked by Canadian Dehua International Mines Group Inc. (Dehua Mines) in 2010. The claim boundaries are roughly conformable to the current Hun South property. An airborne radiometric and magnetic geophysical survey, totaling 1,168 line km, was flown at a 100 m line spacing and a 060° heading (Wanjin and Xie, 2011). The airborne geophysical survey and subsequent data processing were completed by Precision GeoSurveys Inc. Post-field program geological interpretation and mineral targeting work was done by Mira Geosciences Inc. and Aurora Geosciences Ltd. on behalf of Dehua Mines. Based on the integrated radiometric and magnetic geophysical survey, Mira Geosciences completed targeting for the surveyed areas using a Minto-style mineralization exploration model and criteria. By utilizing sparse regional stream sediment data and regional geologic data, in addition to new geophysical data, Dehua Mines identified several prospective northwest trending magnetic zones. Some of these zones are associated with anomalous potassium (K) values, interpreted to indicate prospective areas. Numerous targets were identified, mainly in the central area, based on proximity to faults, and the presence of magnetic and radiometric “high” features. Ten primary targets were identified, based on stream sediment values ranging from 10 to 15 ppm Cu, and on magnetic high features from 200 m to 300 m in extent.

2011 Dehua Mines carried out ground exploration on the claims, including targeted IP surveys and soil sampling, based on the 2010 geophysical survey (Xie, 2011). The IP ground surveys were conducted along 1.0 km long lines through the centre of the claim block. Soil sampling was carried out at a 50 m spacing along IP lines. Statistical analysis on

the soil results showed maximum values of 199 ppb Au, 3.43 ppm Ag, and 699 ppm Cu, respectively. The ground IP survey identified numerous high chargeability zones associated with anomalous Cu values and magnetic “high” anomalies.

2020 536445 Yukon Inc. carried out a program of soil sampling and prospecting over the HUN South claims (Kovacs, 2020). Following up on 2010 airborne geophysical surveying results, a total of 1,810 soil samples were taken over 4 separate grids with a 50 m line spacing and a 50 m station spacing. Several Cu-in-soil anomalies were identified, with anomalous values ranging from 50 to 276 ppm Cu.

6.2.5 History of the WS Block

The current WS block (Williams South block) comprises the ICE 1-41 claims, SLEEP 13-18 claims, BC 35-144 claims, and WS 1-208 claims. All claims were originally staked by S. Ryan and acquired through an option agreement by BCGold Corporation. The claims were then acquired by Minto Explorations Ltd. in 2020.

From 1970 to 1982, the area now within the WS Block saw limited exploration work by various operators, including the Mitsubishi Metal Mining Co. Ltd., Taseko Mines Ltd., Minto Mining Ltd., and United Keno Hill Mines Ltd. (Kikuchi, 1970; Guardia 1972; Mullan, 1974; Canam, 1982). Work during this period comprised geochemical soil surveys, geological mapping, and ground magnetometer surveys. The only discovery was of a limited malachite occurrence identified by United Keno Hill Mines Ltd. on the POON 1-4 claims, located in the southern portion of the current WS block. All claims staked during this period were allowed to lapse.

A second period of exploration work occurred from 2006 to 2008, following renewed interest in the area after S. Ryan restaked the POON 1-4 claims as the ICE 1-4 claims in 2006. Exploration work during this period included MMI soil geochemical sampling, airborne magnetic geophysical surveying, ground DCIP geophysical surveying, and limited diamond drilling (Ryan, 2007; Doherty, 2008; Barrios and Newton, 2009). A diamond drilling program of 857 m in 4 holes was done on the ICE claims. Two holes intersected near surface mineralization, including 0.47 % Cu over 5.47 m in Hole ICE-07-04, and 0.55% Cu over 4.83 m in Hole ICE-07-02 (Doherty 2008).

6.3 Minto Production History

6.3.1 Production History to October 2018

This section has been reported in a public report titled “Competent Person’s Report, Minto Mine – Yukon Territory, Canada” for Pembridge Resources plc, by Carl Schulze, PGeo, of Aurora Geosciences Ltd., and filed with the London Stock Exchange on August 9, 2019.

Sherwood Copper produced its first copper-gold concentrates on May 1, 2007 and expanded the mill to handle up to 2,400 tpd of copper-gold ore. The first concentrate was delivered to port facilities in Skagway, Alaska on July 16, 2007, and Sherwood Copper officially announced it had reached commercial production on Oct 1, 2007, after a 4-month commissioning period.

Production and recovery rates increased through 2008 and 2009, as the mill expansion plans were implemented and mill facility optimization plans carried out. In 2010, operations were cut

back for an extended period due to constraints in the tailings filtration facility. Positive processing results were due largely through the amenability of the feed to flotation at a coarse primary grind size (Mercer and Sagman).

Table 6-3 below lists the operating results from 2007 to 2011.

Table 6-3: Operating Results 2007 - 2011

Parameter	Unit	2007	2008	2009	2010	2011
Waste mining	Mt	9.26	8.37	11.13	7.97	10.44
Ore mining	Mt	0.75	0.83	1.15	1.49	0.73
Total material mined	Mt	10.01	9.53	12.28	9.47	11.17
Tonnes processed	Tonnes	238,446	809,426	1,031,190	915,051	1,258,308
Mill head copper grade	%	2.16	2.91	2.59	2.22	1.52
Mill head gold grade	g/t	n/a	1.28	1.14	0.93	0.6
Mill head silver grade	g/t	7.7	11.8	11.0	8.7	6.1
Copper recovery	%	85.1	91.9	92.6	90.3	87.9
Gold recovery	%	n/a	77.7	75.3	81.1	75.8
Silver recovery	%	77.5	84.6	81.9	80.6	78.6
Concentrate produced	Dmt	12,630	53,148	59,863	47,065	45,952
Concentrate grade - Cu	%	34.7	40.7	41.4	39.0	36.6
Concentrate grade - Au	g/t	n/a	15.9	14.9	14.7	12.4
Concentrate grade - Ag	g/t	113	152	155.8	137	132
Copper in concentrate	M lb	9.66	47.69	54.63	40.50	37.06
Gold in concentrate	Oz	n/a	27,202	18,828	22,284	18,348
Silver in concentrate	Oz	45,885	217,489	299,767	206,838	195,298

Source: 2011 Manager's Discussion and Analysis (2012)

The following section is based on operating statistics and operational updates in Capstone's annual Management Discussion and Analysis (MD&A) documents filed on the SEDAR website.

In 2012, mining and stripping of the Area 2 pit was ongoing, with the first feed release occurring in the second quarter. Mill feed release continued as planned until Q4, when pit wall stability issues were encountered, resulting in reduction of higher-grade material from the pit wall, and replacement of this with lower grade stockpiled material. This resulted in a slight decrease in production.

In October, an amendment to Minto's Water Use Licence (WUL) was approved, and MintoEx began placing Area 2 tailings in the mined-out Main Pit. Also, development of the underground ramp to access underground workings at Area 2 commenced in Q3.

Two mineral resource estimates, on the Fireweed and Inferno discoveries respectively, were completed in 2012. The “Fireweed Extension” is an extension of the Minto East deposit, and the “Inferno North Extension” is located north of the Main Zone pit. Mineral resource estimates utilizing a 1.2% copper cut-off grade (Cu COG) for both are listed in Table 6-4 and Table 6-5 below. Combined, they provide an additional 101 million pounds of copper in the Measured and Indicated categories, and a further 86 million pounds in the Inferred category.

Table 6-4: Mineral Resource Estimate for the Fireweed Extension Deposit

Category	Tonnes (000's)*	Copper (%)	Gold (g/t)	Silver (g/t)	Contained Cu (000's lbs) *	Contained Au (000's oz.) *	Contained Ag (000's oz.) *
Indicated (I)	2,152	2.14	1.0	8.9	101,528	69.7	618.7
Inferred	1,506	1.64	0.66	5.4	54,536	31.9	262.5

Notes:

* Rounded to nearest thousand; totals may not sum exactly, due to rounding,

Mineral resources have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with Canadian Securities Administrators’ National Instrument 43-101 and using CIM Definition Standards.

Source: 2012 MD&A Report (2013)

Table 6-5: Mineral Resource Estimate for the Inferno North Extension Deposit

Category	Tonnes (000's)*	Copper (%)	Gold (g/t)	Silver (g/t)	Contained Cu (000's lbs) *	Contained Au (000's oz.) *	Contained Ag (000's oz.) *
Inferred	688	2.06	0.82	6.5	31,277	18.1	143.9

Notes:

* Rounded to nearest thousand; totals may not sum exactly, due to rounding,

Mineral resources have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with Canadian Securities Administrators’ National Instrument 43-101 and using CIM Definition Standards.

Source: 2012 MD&A Report (2013)

Mineral resources that are not mineral reserves do not have demonstrated economic viability. Mineral resource estimates do not account for mining ability, selectivity, mining loss and dilution. These mineral resource estimates include Inferred mineral resources that are normally considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves. There is also no certainty that these Inferred mineral resources will be converted to Measured and Indicated categories through further drilling, or into mineral reserves, once economic considerations are applied (MD&A report, Capstone Mining Corp, Mar 13, 2013).

Exploration in 2012 consisted of core drilling and related activities, with total expenditures of CAD\$5.7 million. Capital expenditures stood at \$20.3 million, with activities focusing on surface infrastructure and underground development, purchasing of mining equipment and supplies for underground operations, Phase V and VI environmental and socio-economic assessment and permitting, and a water treatment plant module and other environmental and geotechnical services.

In 2013, pit instability issues along the highwall of the Area 2 pit delayed release of high-grade material until Q4, which accounted for 40% of the 2013 production. However, overall throughput and metal recoveries were strong. Development of the underground access ramp continued until Q4 when it was suspended following the decision to defer development and production of the “Area 118 underground” for one year. Production increased somewhat in 2013, offsetting a slight reduction of grade. Capital spending increased substantially to CAD\$50.1 million, including \$33.0 million for underground development, \$7.1 million for camp improvement, \$4.0 million for underground mobile equipment and \$2.5 million for further permitting initiatives.

In July, 2013 Capstone submitted to YESAB an Environmental and Socio-Economic Assessment report for an operating plan for all remaining mineral reserves as identified in the 2012 Phase V/VI Pre-Feasibility Study (PFS). In December the proposal was deemed adequate and was advanced to the evaluation stage. The process for renewal of the Class A Yukon Water Licence commenced following approval by YESAB.

In 2014, Capstone completed mining of the Area 2 pit, then moved on to underground mining of the M-Zone, accessed from the pit bottom, and the Area 118 open pit. Mining of both of these was completed, and underground operation of the Area 118 deposit commenced to compensate for delays in the permitting process for the Minto North pit. Copper production increased somewhat, partly due to increased grades, although these decreased later in the year as Area 2 became mined out. The mine plan changed towards a blend of higher-grade underground and lower grade stockpiled material. Capital spending in 2014 stood at CAD\$14.8 million, mainly on underground development, camp improvement, permitting and a new blasthole drill.

In 2015, operations focused on underground mining in Area 118, where realized grades exceeded budget. In early February, the Yukon Water Board requested additional information, resulting in processing mineralized material from the Area 118 underground and stockpiles, while awaiting issuance of the Water Use Licence (WUL) to facilitate open pit mining of the Minto North deposit. The WUL, granted in early August, completed the final phase of permitting for all mineral reserves identified in the 2012 Phase VI Pre-Feasibility Study. Following this, stripping commenced on the Minto North deposit, and mill feed began to be extracted in December.

Copper production in 2015 decreased due to lower throughput and lower recoveries resulting from an increase in partially oxidized material in the mill feed. Cash costs increased to CAD\$2.54 per pound of payable copper, while copper prices continued on a downward trend. Capital spending, excluding stripping, totaled CAD\$7.6 million, the majority on underground development and a ventilation system for Area 118. Stripping costs for Minto North stood at CAD\$15.6 million.

In 2016, mill throughput, head grades and recoveries, mainly from the Minto North deposit, all exceeded expectations, roughly doubling production of copper, gold and silver from 2015. In Q4 the mill also processed stockpiled material. The increase in recoveries resulted from a greater proportion of sulphide material, rather than oxide, in the mill feed.

Capital spending on stripping totaled CAD\$6.6 million, only 60% of forecast expenditures. This was partly due to utilization of some stripping waste for progressive reclamation, resulting in an offsetting of \$3.5 million in stripping costs as reclamation activities. Capital spending excluding stripping stood at \$0.6 million.

As of the end of Q4, 2016, Capstone reported it had an approximate 3-year mine life remaining post-2017 at the Minto Mine. Continued production would depend largely on the copper price outlook in the second half of 2017.

By early 2017 Capstone began planning to curtail actual mining operations, focusing on processing of stockpiled material, with plans to place the mine on care and maintenance in November, 2017. Improvement in copper prices caused Capstone to decide to continue operations until at least mid-2021, and also in a decision by the Company to continue extraction through incorporation of several previously impaired bodies into the mine plan. Significant development and stripping costs in H2 of 2017 were incurred, to facilitate mine life extension and to benefit future periods.

To facilitate the mine life extension, Capstone issued 6.8 million shares valued at \$7.5 million to Wheaton Precious Metals Corp on October 13, 2017, in exchange for a modification in the precious metal purchase agreement whereby Capstone would receive increased gold revenues if copper prices fall below USD\$2.50/lb. In addition to the base price of US\$300 per oz of payable gold (subject to the annual inflation clause explained in Section 6.2.1), there is an additional “Gold Top Up Payment” based on the following formula:

$$\text{\$900} \times \frac{(\text{Ceiling Price} - \text{Actual Price})}{(\text{Ceiling Price} - \text{Floor Price})}$$

whereby the Ceiling Price is set at US\$2.50/lb copper, and the Floor Price is set at US\$1.75/lb copper. This represents a simple sliding scale of payments ranging from a maximum of \$1,200 at US\$1.75/lb copper, to a minimum of US\$318/oz at US\$2.50/oz copper (both numbers subject to the annual inflation). The Gold Top Up Payment is capped at the greater of (i) the market price per ounce of gold less US\$300 plus the annual inflation, and (ii) nil.

Production by underground mining was disrupted due to changes in sequencing of mining and processing. Decreased underground production resulted in higher utilization of POX and lower grade stockpiled material, impacting overall grade and recovery. Underground mining was also disrupted by upgrading of the emergency response capacity in the areas of current stoping while development of Area 2 continued. In Q3, the mill feed was supplemented with POX from the Area 2, Stage 3 open pit, as well as from stockpiles, resulting in lower head grades and recoveries.

Capital spending in 2017 totaled CAD\$2.7 million, including CAD\$2.4 million in Q4, mainly for underground infrastructure development to support the extended mine life. This includes the installation of a second egress at Minto East Underground.

Table 6-6 lists annual operating results from 2012 to 2018.

Table 6-6: Operating Statistics, 2012 - 2018

Parameter	Unit	2012	2013	2014	2015	2016	2017	2018
Waste mining (Open pit)	(000s t)	9,805	9,696	2,858	5,044	5,585	7,890	1,315
Mill Feed mining (Open pit)	(000s t)	943	2,013	517	383	1,506	941	547
Total material mined (OP)	(000s t)	10,748	11,709	3,376	5,428	7,091	8,831	1,862
Mill Feed (Underground)	(000s t)	-	-	301	457	246	328	284
Tonnes processed	(000s t)	1,341	1,402	1,439	1,388	1,491	1,439	907
Mill head copper grade	%	1.34	1.31	1.37	1.38	2.21	1.37	1.31
Mill head gold grade	g/t	0.58	0.52	0.56	0.49	1.23	0.79	0.44
Mill head silver grade	g/t	5.1	4.6	4.7	4.7	8.0	4.8	4.33
Copper recovery	%	90.5	92.3	93.2	86.2	95.2	82.6	87.5
Gold recovery	%	74.0	78.4	77.5	73.6	67.0	59.3	61.1
Silver recovery	%	84.1	78.5	78.5	76.9	87.8	77.6	77.3
Concentrate produced	Dmt	43,423	46,303	50,246	45,703	70,348	37,372	27,371
Concentrate grade - Cu	%	37.5	36.5	36.6	36.1	44.7	43.7	38.1
Production: Copper (contained metal)	(000's lbs)	35,928	37,238	40,506	36,400	69,157	35,900	22,974
Gold (contained metal)	Oz	18,599	18,361	19,909	16,114	39,506	21,672	7,844
Silver (contained metal)	(000's Oz)	184	162	171	161	337	171	97

Source: Capstone MD&A Reports (2018)

All-in sustaining costs (AISC) for 2017 at the mine were CAD\$2.75/lb of payable copper.

The CAPEX expenditures to October 31, 2018 were CAD\$9.5 million, with an AISC of US\$3.13/lb.

From April to June 2018, infill core drilling was conducted at the Copper Keel West lens and the Copper Keel Main Lens. At Copper Keel West, ten holes for a total of 1,725 m were drilled, and at Copper Keel Main, three holes for 917 m were drilled. The Copper Keel Main holes were drilled to obtain geo-mechanical information to be utilized for mine design. Although additional holes were planned for the Copper Keel West and North lenses, these programs were not approved prior to the October 11th decision to place Minto under care and maintenance (McIlveen et al, 2018).

In late 2017, infill core drilling was conducted at the Minto East and Ridgetop deposits, in order to close any gaps to a 40 m spacing to satisfy requirements to upgrade resources to the Indicated category and to confirm the geological interpretation in advance of mine planning activities (McIlveen et al, after BD Resource Consulting, 2015). A total of 4 holes for 1,526 m were drilled at Minto East, and 35 holes for 3,361 m were drilled at the Ridgetop deposit.

In early 2018, SRK Canada undertook a mineral resource update for the north part of the Ridgetop deposit. The resource model was utilized for planning of the Ridgetop North pit, but

excluded results from the Ridgeway South zone, as results were still pending at the time. Although a preliminary pit for Ridgeway North was investigated, the deposit economics did not justify proceeding with the project. The resource estimate for Ridgeway was partially updated in 2018, but was found to contain no mineral reserves at current copper prices (McIlveen et al, 2018).

In 2018, mining was completed on the Area 2 Stage 3 open pit and the Area 2 underground lower “P” lens. Conclusion of mining at the Area 2 open pit represents the termination of open pit mining at Minto (McIlveen et al, 2018).

Copper production during the period Q1 through Q3, 2018, at 3,179 tpd, was lower than that for 2017 YTD, at 3,991 tpd, mainly due to lower throughput and lower grades from processing of low-grade stockpiles averaging 1.25% versus 1.47% Cu. Site operating costs for the nine-month period averaged US\$68.02. The copper C1 cash cost for Q1 through Q3 stands at US\$3.17/lb of payable copper produced, although this represents a decrease from US\$3.46 for Q1 to US\$2.66 for Q3. All-in sustaining costs stand at US\$3.49/lb of payable copper produced, again representing a steady decrease from US\$3.77/lb for Q1 to US\$3.15/lb for Q3.

On October 11, 2018, Capstone made the decision to immediately place the Minto mine on care and maintenance, following the decision by Capstone and Pembroke to terminate the agreement for the sale of the Minto Mine. Pembroke was unable to complete the necessary financing to complete the transaction, due to unfavourable equity market conditions. All mining operations ceased immediately, and mineral processing activities ceased on October 19. Care and maintenance expenditures were estimated at US\$5 million for each of 2018 and 2019, and US\$4 million per annum thereafter. Approximately 200 employees and contractors were affected, although a core team of no less than 8 employees were retained during the care and maintenance phase to oversee the site and ensure environmental monitoring and legal requirements were met.

Table 6-7 below lists the operating statistics for Q1 through Q3, 2018. Some underground production occurred from Oct 1 through 11, 2018, and processing of stockpiles ceased on October 19, 2018. At the end of October, 2018, a total of 192 kt of stockpiled material, containing 3 kt of Cu metal, from the Stage 3 pit remained unprocessed. To mitigate this mill feed shortfall, about 29 kt of stockpiled high-grade waste (“HGW”) averaging 0.34% Cu, and 13 kt of low-grade POX, averaging 0.78% Cu from the “Top-of-the-World” (“TOTW”) stockpile, were sent as mill feed.

Table 6-7: Operating Statistics, Q1 - Q3 2018

Parameter	Unit	2018
Waste mining (Open Pit)	(000s t)	1,315
Mill feed mining (Open Pit)	(000s t)	547
Total material mined (Open Pit)	(000s t)	1,862
Mill feed (Underground)	(000s t)	284
Tonnes processed	(000s t)	907
Mill head copper grade	%	1.31
Mill head gold grade	g/t	0.37

Parameter	Unit	2018
Mill head silver grade	g/t	4.33
Copper recovery	%	86.5
Gold recovery	%	61.5
Silver recovery	%	76.5
Concentrate produced	Dmt	27,383
Concentrate grade - Cu	%	38.0
Production: Copper (contained metal)	(000's lbs)	22,968
Gold (contained metal)	Oz	6,636
Silver (contained metal)	(000s Oz)	97

Source: Capstone MD&A Reports (2018)

Upon resumption of operations, all-in sustaining costs are estimated at US\$2.78/lb for 2019, decreasing to US\$2.33/lb at the end of the mine life (McIlveen et al, 2018).

6.3.2 Production History from 2019 to Present

Production at the Minto Mine resumed in October, 2019, with milling operations occurring on a 2-weeks-on, 2-weeks off basis through February, 2021. By the end of Q4, 2019 Pembridge had received USD\$7.1 million for production in October and November, pursuant to the offtake agreement between Sumitomo Canada Limited ("Sumitomo") and MintoEx dated 22 July 2019 (the "Offtake Agreement"). This states that Minto is to receive a 90% advance payment for copper concentrate produced by each month-end. All production was from the Minto East deposit. At the end of Q4, mining of Minto East was expected to be completed by Q2 of 2020, at which point operations would move on to the Copper Keel deposit (LSE announcement, Jan 9, 2020).

Table 6-8 lists copper production during Q4, 2019.

Table 6-8: Copper Production, Q4, Minto East Deposit

Month	Feed Produced dmt*	Head Grade % Cu	Cu Recovery %	Concentrate Produced dmt	Cu in Concentrate** dmt
October	33,541	1.90	91.6	1,661	583
November	31,575	2.13	95.6	1,839	644
December	38,890	2.69	96.9	2,919	1,014
2019 Total	104,005	2.27	95.1	6,436	2,247

Notes:

* dmt = dry metric tonnes

** Cu in concentrate figures do not include Au and Ag credits.

Source: LSE, Pembridge Resources (2020)

Production continued through 2020, with a total for the year of 24,625 wet metric tonnes of concentrate. Table 6-9 lists the quarterly production at the Minto mine.

Table 6-9: Copper Production, 2020, Minto Mine

Quarter	Production Wet Metric Tonnes	Payment from Sumitoma (USD x 1.0M)
Q1*	6,975	18.7
Q2	6,820	9.8
Q3	5,707	18.4
Q4	5,143	17.5
2020 Total	24,645	64.4

Notes:

*Q1 payment includes US\$5.4m related to December 2019 production.

Source: LSE, Pembridge Resources (2020)

7 GEOLOGICAL SETTING AND MINERALIZATION

Section 7 was provided by Nikolett Kovacs, MSc, and Exploration Manager for MintoEx. Minor edits were made by Carl Schulze, Qualified Person for this section.

7.1 Regional Geology

The Minto property is located within the northwest-trending Minto Copper Belt (Kovacs et al., 2020), central Yukon, in the northernmost apical junction of the Stikine and Yukon Tanana terranes. The Minto Copper Belt hosts the Minto mine, the Carmacks Copper deposit, the Stu prospect, and several other Cu-Au-Ag occurrences.

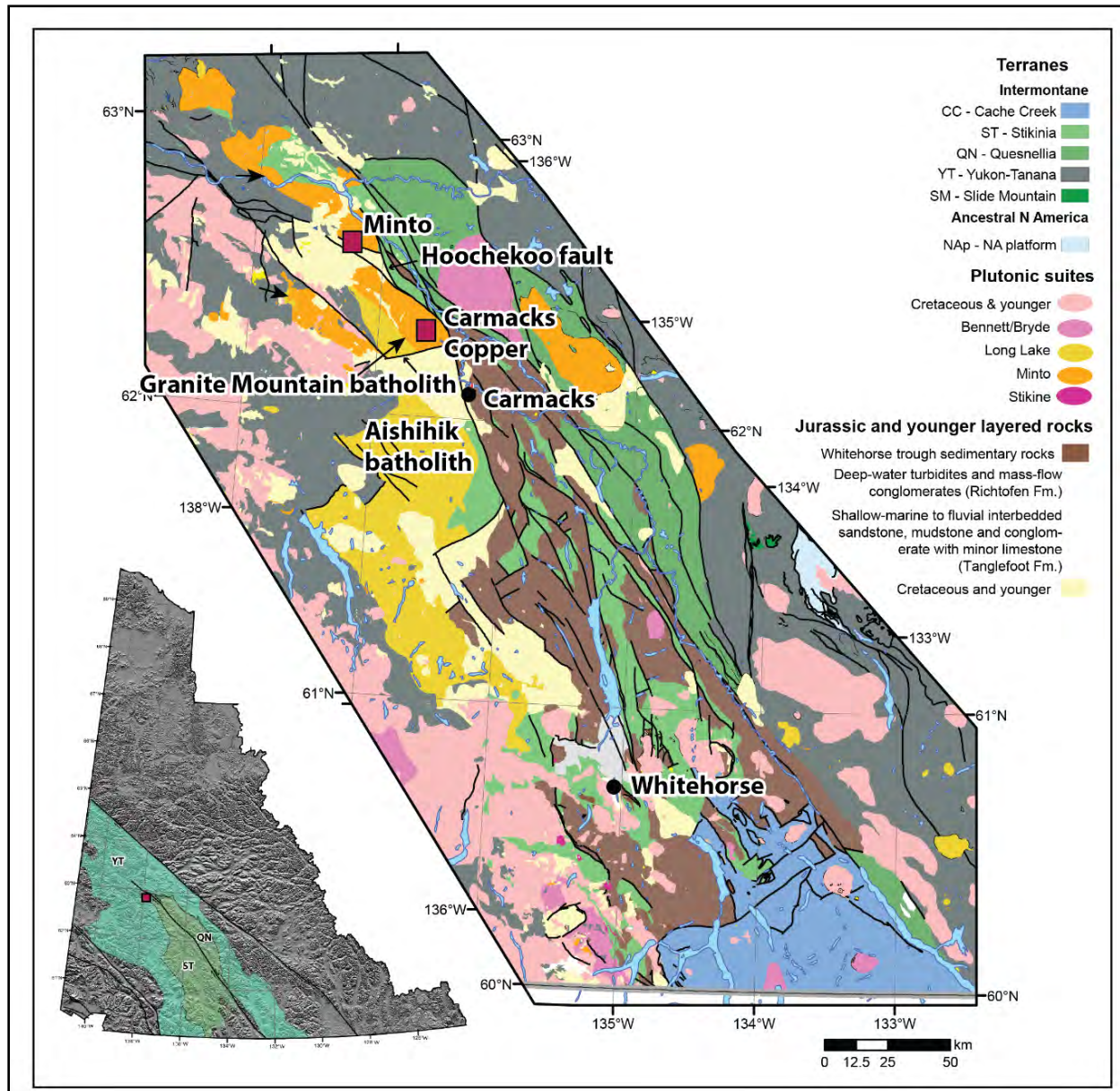
Mineralization is hosted within Late Triassic variably deformed and metamorphosed rafts of volcanic rocks that are engulfed by intrusions of Late Triassic to Early Jurassic Minto plutonic suite (205-194 Ma) (Kovacs 2018; Kovacs et al., 2020). The Minto suite occurs as a series of large plutons intruded along the contact between mid-Paleozoic rocks of the Yukon-Tanana terrane and Late Triassic rocks of the Lewes River Group of the Stikine terrane (Stikinia).

Southwest of the Minto pluton, the Yukon-Tanana terrane is represented mainly by orthogneiss of the Mississippian Simpson Range plutonic suite (Mortensen, 1992). Stikinia arc rocks, east of the Minto pluton, include the volcanic and sedimentary rocks and local subvolcanic intrusions of the Late Triassic Povoas Formation of the Lewes River Group (Hart, 1997). The Povoas Formation in Yukon is characterized by variably deformed, sub-greenschist to locally amphibolite facies metamorphosed augite porphyritic basalt, volcanoclastic rock, and hornblende gabbro (Tempelman-Kluit, 1984, 2009; Hart, 1997; Hart and Radloff, 1990).

To the west, the Minto pluton lies in east-west trending normal fault contact with Late Cretaceous Carmacks Group (73 – 68 Ma) stratigraphy that consists of mafic to intermediate volcanic rocks to the south of the fault. To the east, the pluton is in fault contact with the northwest-trending belt of the Late Triassic Povoas Formation (229 – 217 Ma), of the Lewes River Group.

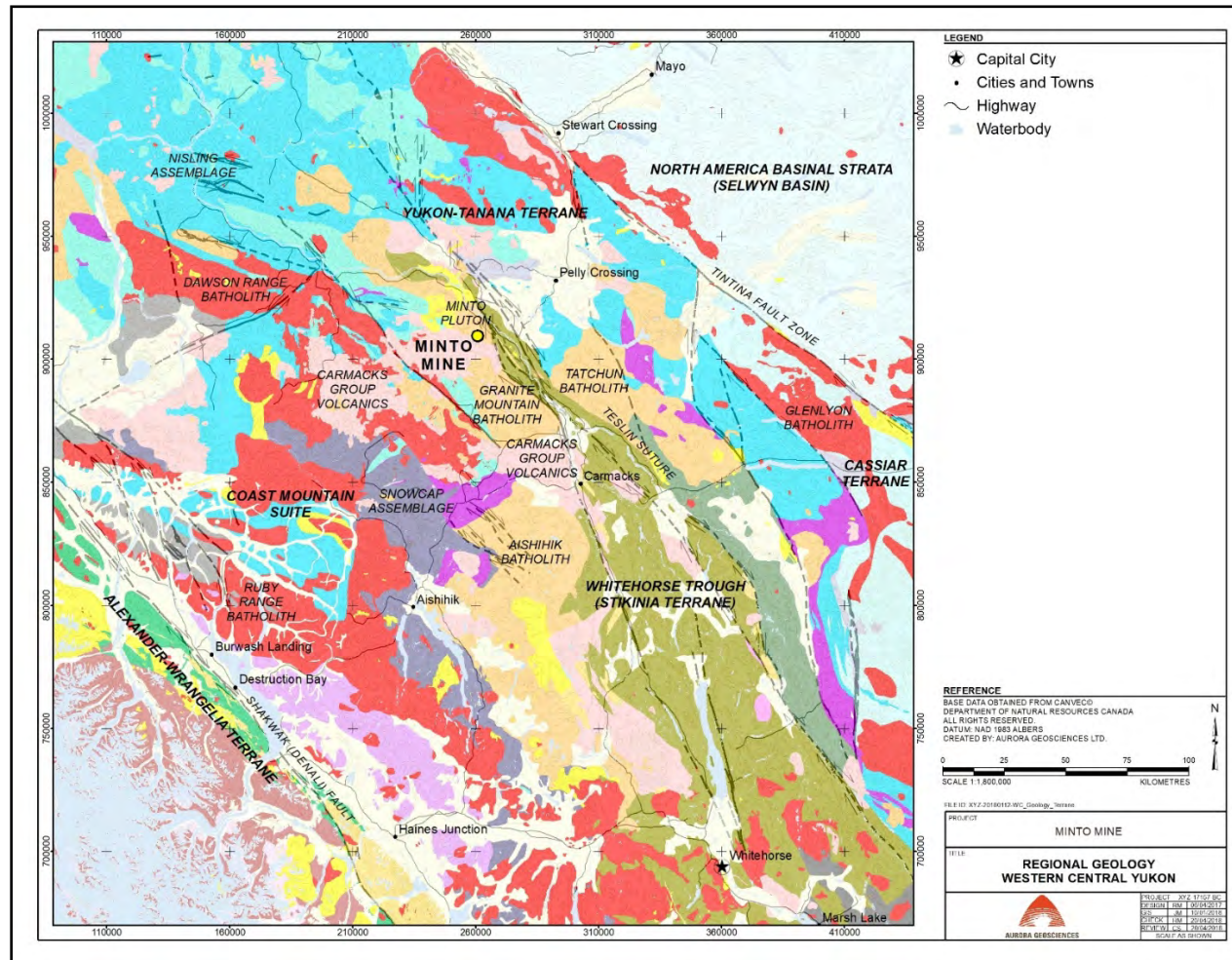
The Minto Property is located near the northwestern limit of Pleistocene glaciation (Duk-Rodkin, 1996). Glacial erosion was restricted to subalpine areas, and bedrock below discontinuous till has preserved its deep oxidative weathering profile. At Minto, some deposits with copper oxide minerals are locally capped by Carmacks Group volcanic rocks, indicating that at least part of the oxidation history is Late Cretaceous or older.

Figure 7-1: Yukon Geological Terranes



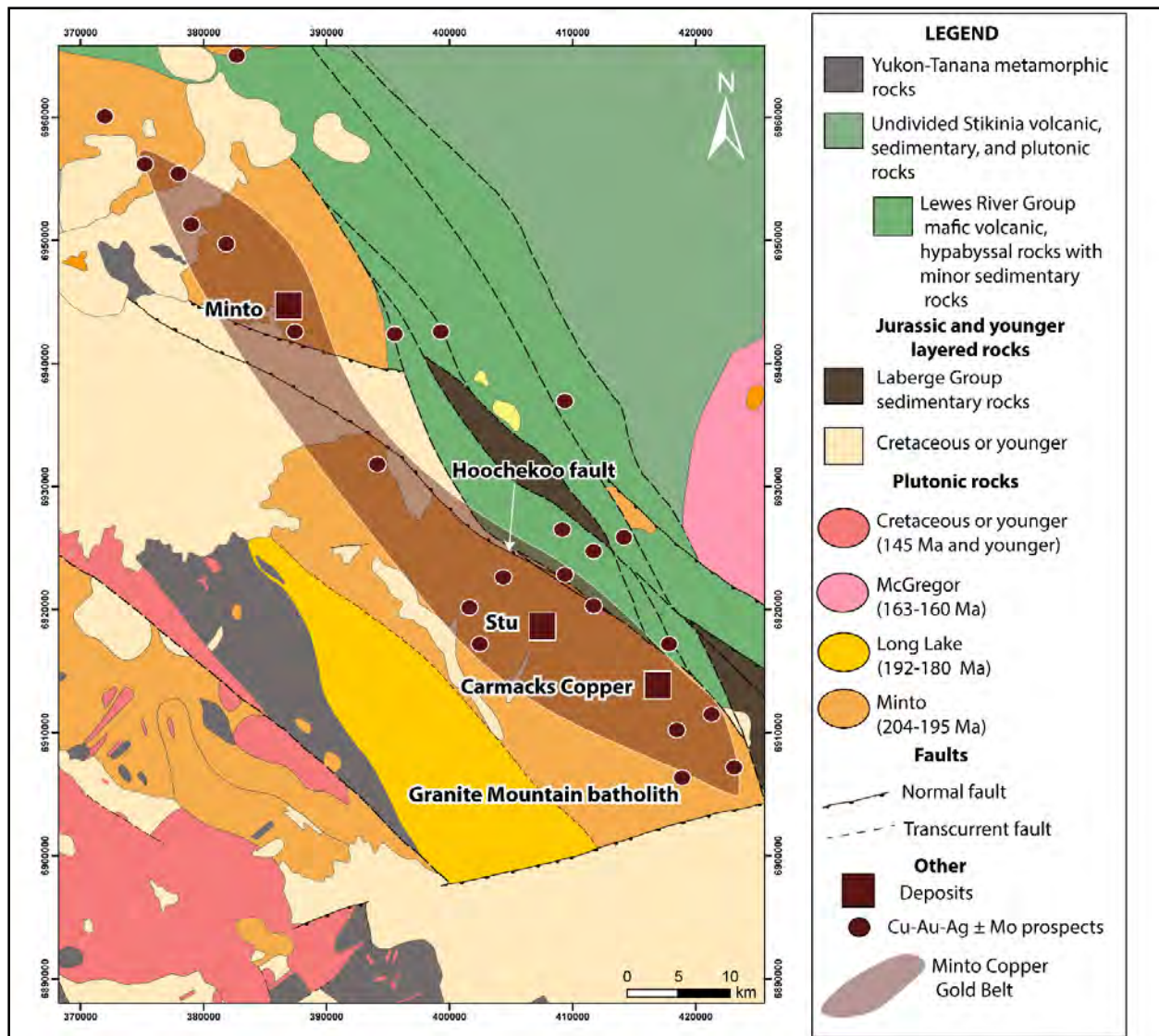
Source: Kovacs (2018)

Figure 7-2: Regional Geology, West-central Yukon



Source: Yukon Mapmaker Online, Yukon Geological Survey

Figure 7-3: Local Geology, Minto Mine Area



Source: Kovacs (2018)

7.2 Property Geology

Hypogene copper sulphide mineralization is hosted within variably deformed, metamorphosed, and migmatized Late Triassic volcanic rocks of Stikinia (Kovacs, 2018) that occur as rafts within the Late Triassic-Early Jurassic age Minto pluton (204-195 Ma).

Inliers of metamorphic rocks within the intrusive phases of the Minto pluton have been characterized as migmatite that is texturally and compositionally variable (Kovacs 2018, Kovacs et al., 2020). Age dating on the migmatite by complex “laser-ablation inductively coupled plasma mass spectrometer” (LA-ICP-MS) and “chemical abrasion isotope dilution-thermal ionization mass spectrometry” (CA-ID-TIMS) zircon dating using U-Pb geochronology yielded a CA-TIMS weighted mean date of 217.53 ± 0.16 Ma and 217.07 ± 0.23 Ma respectively. These ages support the protolith age of the migmatite at 217.5 to 217.0 Ma, within the Late Triassic (Kovacs et al., 2020), indicating these rocks belong to Late Triassic metavolcanic rocks of the Povoas Formation of the Lewes River Group that outcrop 10km east of the Minto Property.

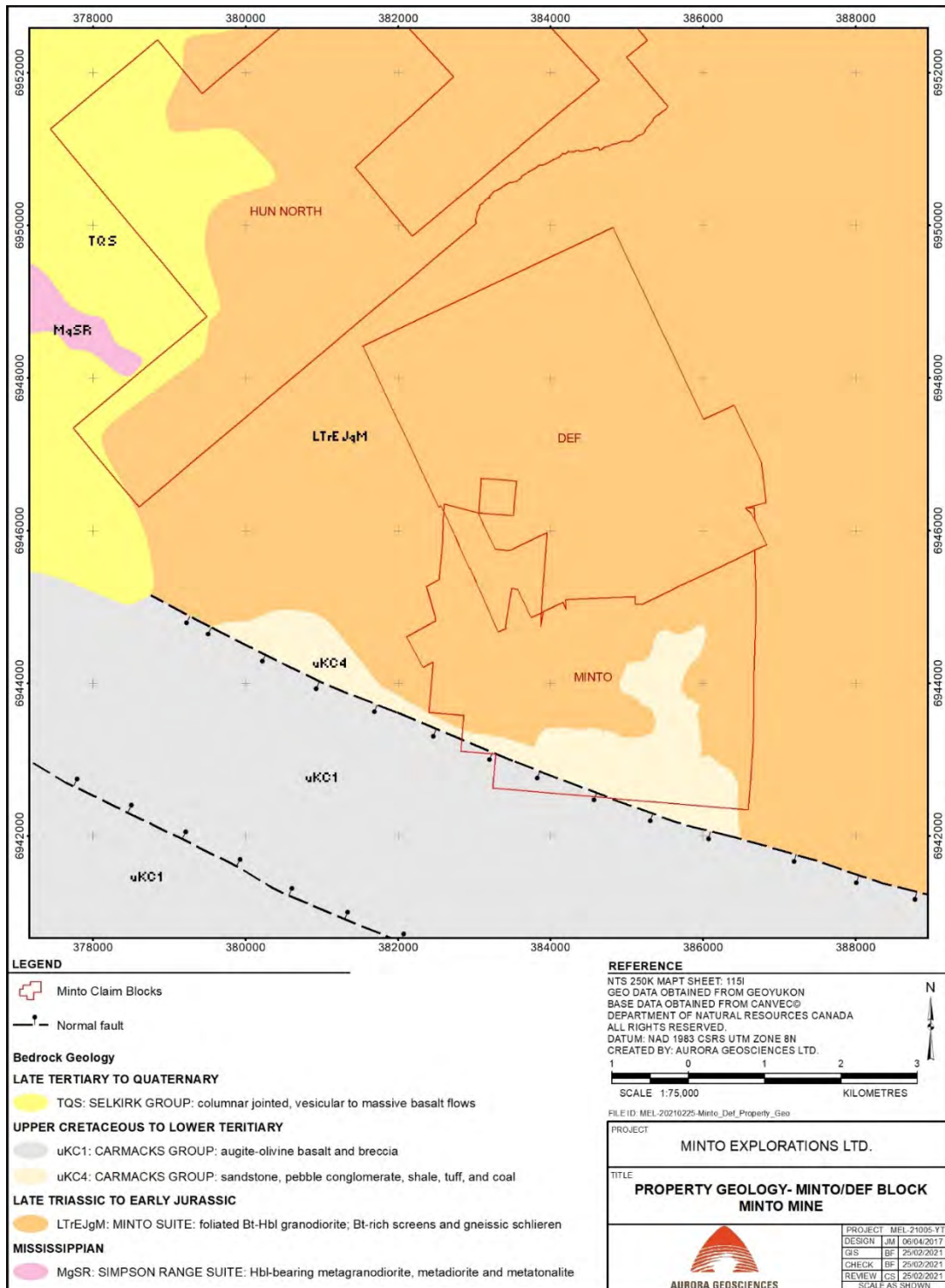
The metavolcanic protolith of the mineralized material hosting migmatite was mineralized in the Late Triassic and subsequently underwent partial melting during the emplacement of the Late Triassic-Early Jurassic Granite Mountain batholith and the Minto pluton at ca. 205-195 Ma. The temperature and pressure regimes were $\sim 800^{\circ}\text{C}$ at 5.5-6.5 kbar respectively (Kovacs, 2018; Tafti, 2005). During this partial melting event the mineralized metavolcanic xenoliths/rafts were variably migmatized, and the existing copper mineralization was remobilized as an immiscible sulphide melt. This melt crystallized into a migmatite as coarse, net-textured bornite and chalcopyrite, coeval with crystallization of the Minto plutonic suite (ca. 198 Ma from $187\text{Re}/187\text{Os}$ molybdenite) (Kovacs, 2018).

Three distinct intrusive phases of the pluton are identified on the Minto property: K-feldspar megacrystic granodiorite to quartz diorite, diorite to monzonite, and quartz granodiorite to granitic pegmatite (Tafti, 2005; Hood, 2008; Kovacs 2018, Kovacs et al., 2020). The most common intrusive phase is dominantly medium to coarse grained, K-feldspar megacrystic granodiorite which is in gradational contact with subordinate quartz diorite. These rocks are mainly undeformed, but locally exhibit weak tectonic foliation near their contacts with the metamorphic inliers. U-Pb geochronology by CA-ID-TIMS analysis on the intrusive rocks yielded $195.14 \pm 0.25 - 0.31$ Ma ages for the K-feldspar megacrystic granodiorite.

Dykes of quartz monzonite, quartz monzodiorite, granite pegmatite, and aplite crosscut the metamorphic host rocks and other massive intrusive phases (e.g., K-feldspar megacrystic granodiorite) and are variably overprinted in the metamorphic rocks by folding and boudinage. U-Pb geochronology by CA-ID-TIMS age dating revealed 194 Ma ages for these dykes, indicating that they are slightly younger than the massive phases of the pluton. Collectively, the geochemistry of all intrusive phases is consistent with I-type, magmatic arc affinity.

The felsic intrusive rocks are unconformably overlain by the volcanic rocks of the Upper Cretaceous Carmacks Group, which are preserved as an extensive blanket south of the Minto pluton and as isolated erosional remnants within the pluton. The Carmacks Group rocks commonly occur as conglomerate in drill core, and as hornblende-phyric andesite dykes cross-cutting the felsic intrusive rocks.

Figure 7-4: Property Geology Map, Minto/Def Block



Source: Aurora (2019)

7.3 Structural Setting

Both brittle and ductile deformation occur in the vicinity of the Minto Property. Ductile deformation on a regional-scale is characterized by northwest-trending foliation defined by the alignment of biotite and hornblende grains and by the segregation of quartz and feldspar grains, locally resulting in a gneissic texture in the metamorphic rocks. The Area 2 region shows tight to isoclinal folding with a wavelength of about 30 m (Hood et al., 2008). The folds trend roughly NW – SE, and mimic regional structural trends (Templeman-Kluit, 1984). There are local gentle folds with north-south trending axial traces. Deformation zones occur as sub-horizontal horizons and are commonly stacked in parallel to sub-parallel sequences. The orientation of foliation is highly variable within individual deformation zones and exhibits chaotic partial melting textures and pygmatic folding in the migmatite.

Late faulting and brittle fracturing occur throughout the Minto pluton and adjacent units within the property, in some cases significantly affecting economic potential of mineralized zones. The Minto Creek (MC) fault, modelled as a steeply northeast dipping fault with a left lateral reverse displacement, roughly bisects the Minto Main deposit into north and south blocks with minimal displacement. To the north, the roughly east-west striking, north-northwest dipping DEF fault marks the northern limit of the Minto Main deposit. The sense of movement may be similar to the MC fault, with significant inferred displacement. Determining the magnitude of the displacement may be helpful in locating the extension of the Minto Main deposit along the north side of the DEF fault.

The boundary between the Area 2 and Area 118 resource sub-domains is a NW-SE striking, northeast dipping fault, showing significant displacement. In Area 118, at least two other parallel structures have been identified. In this area, the “N” zone has undergone a vertical displacement of up to 66 m. Other zones exhibit variable thicknesses and orientations, suggesting block rotation.

The Minto East fault is a northwest-trending moderately northeast-dipping structure that extends from the Minto East lens to at least the southern extent of the Copper Keel Main deposit. No major offsets have been noted so far at the Minto East fault; however, it is associated with intense alteration, strong clay and gouge development and loose rock.

Three major faults have been identified near the Copper Keel Main deposit. One is a northwest trending, steeply dipping fault which coincides with the trend of the Minto East fault and thus likely represents its south extension. Two other major faults bisect the Copper Keel Main lens at its northern tip and form a northwest and north east trending conjugate set. Numerous minor northwest trending, steeply dipping faults also occur as splays from major structures. These minor faults commonly parallel the lens headings and visibly offset the lens by a few metres.

Major faulting is also evident at the Minto North 2 deposit. Almost all 2020 surface drillholes intersected fault zones from 10m to 20m in thickness at variable depths. Faulting in drill core is characterized by gouge development and sandy sections with strongly hematized intervals, indicating that these structures may be water-bearing. Larger faulted intervals have poor “rock quality designation” (RQD) and show intense alteration, commonly with gypsum, clay, and carbonate veining. The western side of the Minto North 2 deposit is truncated by a major structure that appears to be north trending. The sense of displacement and the movement on the fault is currently unknown. More drilling to provide structural data is required.

Local faulting underground is characterized by hematite-chlorite-clay gouge. Fractures are commonly hematite, chlorite, clay and locally epidote-coated. Extensive faulting in drill core is pervasively hematite-chlorite altered with common late cross-cutting carbonate and clay veinlets.

Faulting post-dates the main copper-gold-silver mineralizing event. However, coarse grained visible gold occurs locally along, and within, chloritic fractures, indicating a hydrothermal event may have been associated with structural remobilization of gold mineralization.

Major veins in the deposit are rare. Minor veining is comprised of thin epidote, hematite, carbonate and gypsum stringers associated with faulting or zones of intense alteration post-dating mineralization.

7.4 Alteration

The predominant alteration assemblage associated with hypogene copper mineralization, present at all Minto deposits, is a pervasive potassic alteration, characterized by elevated biotite and magnetite content within the horizontal mineralized zones. Magnetite occurs as disseminated grains within the mineralized sections. Local larger isolated grains of magnetite also occur in the felsic intrusive rocks which have no significant magnetic response.

The late, post-mineralization alteration assemblage includes replacement of mafic minerals by chlorite, sericite, and epidote in both unmineralized rocks and mineralized felsic intrusive rocks. Sericite alteration is also locally pervasive, and feldspar grains are locally hematite and epidote-altered. Pervasive hematite alteration, likely of supergene origin, is common along faults, and generally occurs along fracture surfaces. Pervasive silicification tends to coincide with areas of higher-grade mineralization. Veinlets and stringers of carbonate, clay, epidote and gypsum are common and represent the latest alteration phase, as they cross-cut earlier pervasive alteration settings and fault zones. Epidote veins commonly have a characteristic hematite halo.

Copper oxide mineralization resulting from supergene alteration processes represents either erosional remnants of foliated horizons above the deposits, or vertical remobilization of copper along late brittle faults and fracture zones from underlying copper sulphide zones. The oxide mineral assemblage consists of malachite, minor chrysocolla, azurite and rare native copper. Oxidation is also manifested as pervasive limonite, earthy hematite and clay alteration of feldspars. Oxidation is related directly to the depth of the water table, which is mainly less than 30 m.

7.5 Mineralization

The primary hypogene minerals are chalcopyrite, bornite, chalcocite, and minor pyrite. Copper sulphide minerals occur mainly as disseminations, foliaform stringers and as net-textured copper sulphides. The intensity of copper sulphide minerals increases with ductile deformation. The highest-grade mineralization occurs as semi-massive net-textured intergrowths of bornite and chalcopyrite. Typical bornite-chalcopyrite ratios are 3:1, and net-textured bornite is especially abundant in melanosome (mafic sections), where it forms higher grade (1 - 2% Cu) domains. Covellite locally occurs rimming bornite. Both bornite and chalcopyrite are commonly replaced by secondary digenite. Molybdenite locally occurs intergrown with net-textured copper sulfides.

Hessite (a gold telluride), native gold, and electrum occur as inclusions in bornite, accounting for high gold recoveries in copper concentrate. Coarse free gold has also been identified in late chloritic fractures, which may be the result of secondary hydrothermal enrichment. Copper sulphide mineralization is almost always associated with elevated biotite and magnetite.

At the Area 2, Area 118, Copper Keel, and Minto East deposits, mineralization occurs mainly as disseminated and foliaform grains, and the net-textured domains are generally absent. The mineralogical assemblage consists mainly of chalcopyrite-bornite-magnetite and minor pyrite.

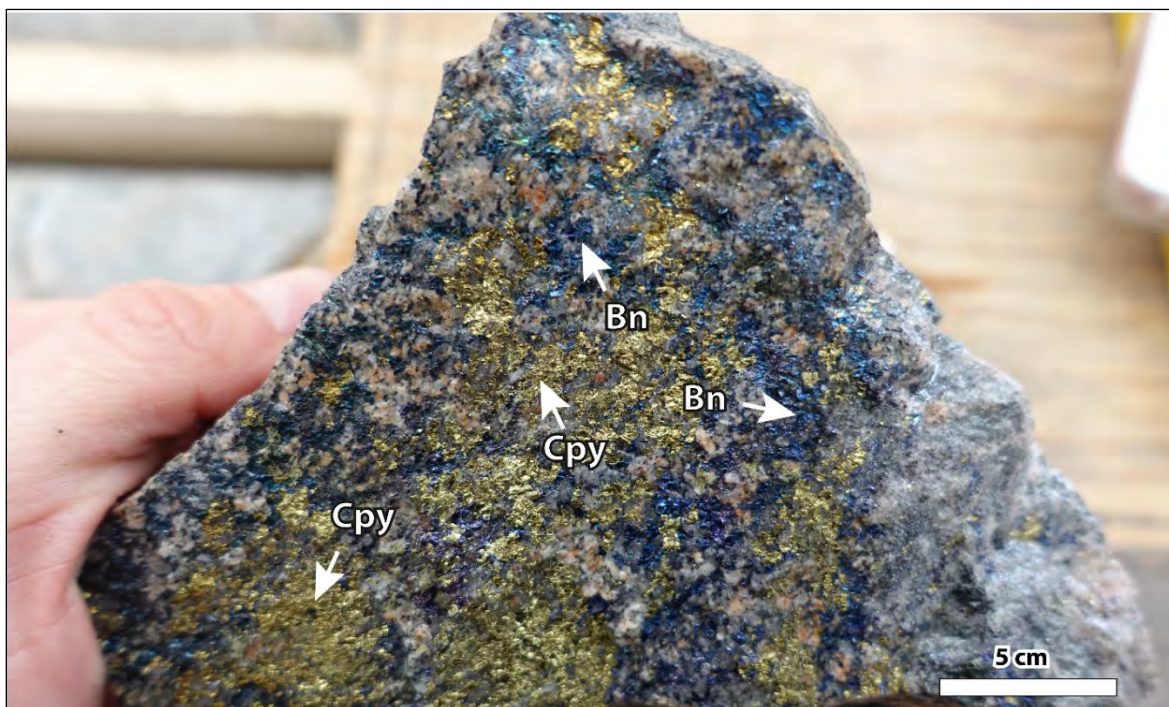
The mineralogy of the Minto North deposit differs from the other deposits. At Minto North bornite is dominant over chalcopyrite and occurs as net-textured domains to massive lenses up to 2 m thick. Precious metal grades are elevated, and rare visible gold also occurs.

At the Minto North 2 deposit the dominant copper assemblage is chalcopyrite-bornite-chalcocite. Chalcocite commonly occurs as disseminated or local intergrowths with magnetite.

At the Ridgetop and Copper Keel South deposits, mineralization is subdivided into a near-surface horizon of supergene oxide, and a lower zone of more typical sulphide mineralization. The supergene copper oxide mineralization is characterized by malachite, chrysocolla, and local azurite. Oxidized magnetite and pyrite are also common. The mixture of oxide material with sulphides is commonly referred to as 'POX' (partially oxidized material). The lower zone is marked by an assemblage of chalcopyrite, magnetite, minor pyrite, and only minor amounts of bornite. Chalcopyrite occurs as disseminations and foliaform stringers. Magnetite is present as disseminated grains, local stringers and bands up to 0.3 m in thickness.

Copper grades increase progressively northwards from the lower grade material found at the Ridgetop towards the highest-grade material at the Minto North deposit (Mercer and Sagman, 2012). This trend is also observed on a regional scale, indicated by lower grade (chalcopyrite-dominant) mineralization of the Carmacks Copper deposit, progressively increasing northwestward in grade towards the bornite dominant higher-grade Minto deposits. This change in grade is likely caused by the increasing northward metamorphic gradient responsible for higher copper grades.

Figure 7-5: Net Textured Bornite-chalcopyrite, Minto Main Deposit



Source: Kovacs (2018)

Figure 7-6: Net-textured Bornite-chalcopyrite in Migmatite, Minto Main Deposit



Source: Kovacs (2018)

7.6 Property Geology, Other Minto Area Blocks

This section, describing the BOND, MEL (part of the HUN North) and DEL blocks is taken from the Competent Persons Report for Pembridge Resources plc. by Schulze, 2019.

The BOND, MEL and DEL blocks were all staked to cover areas of similar geological settings to that of the Minto Mine. The DEL and BOND showings also cover previously identified copper occurrences.

7.6.1 Bond Property

The 2008 exploration program indicated that the BOND 1-70 claims are underlain almost entirely by Minto Suite biotite granite to granodioritic gneiss that is particularly hornblende-enriched in the western and central areas. The majority of the intrusive rocks are moderately foliated, with stronger foliation evident near the Yukon River in northwestern areas. Biotite enrichment, including secondary biotite, also occurs in more strongly foliated areas along the Yukon River, likely identifying structural features (Schulze, 2008).

7.6.2 Pepper-Toe-Winter Property

This property is comprised of three attached claim blocks, located northwest of the MINTO/DEF block. The Pepper block, to the northwest, is underlain mainly by a large intrusion of Late Triassic to Early Jurassic Minto Suite granodiorite. Extreme southwestern areas cover Late Cretaceous to Early Tertiary Carmacks Group basalts. The southeast corner, contiguous with the Toe block, covers a small unit of Late Tertiary to Quaternary Selkirk Group basalts.

The Toe block is underlain mainly by the same Minto Suite block as the Pepper claims. Western areas cover the same Carmacks Group volcanic assemblage as the Pepper block. The Winter block is almost completely underlain by young Selkirk Group basalts.

7.6.3 MEL / Hun North Property

The Hun North property, which includes the remaining MEL claims, is underlain by hornblende granodiorite, probably part of the Minto plutonic suite. Western areas are underlain by Tertiary to Quaternary basalts. The property has a similar regional airborne Total Magnetic Intensity (TMI) signature to the Minto mine area. The felsic intrusions of the MEL property consist of medium to coarse grained biotite granite, which are potassic feldspar-porphyritic to megacrystic in northwestern areas. Some exposures of granodiorite are foliated, with narrow, centimetre-scale biotitic zones, particularly in northwestern property areas.

7.6.4 Hun South Property

The Hun South property, which underwent grid soil sampling in four grids or “zones”, covers the northern extension of a large batholith of Minto Group granodiorite, also called the Granite Mountain batholith. Extreme northern areas cover Late Cretaceous Carmacks Group basalts.

The Minto Group intrusion is bounded along its northeast side by a district-scale normal fault, with down-dropping occurring along the northeast side. Total Magnetic Imagery (TMI) and 1st Vertical Derivative maps indicate that stratigraphy is oriented in a WNW direction (Section 9.3).

7.6.5 DEL Property

The present DEL property was staked partly on the basis of a strong TMI “high” signature, similar to that of the actual Minto mine site. Based on the data of the Yukon Geological Survey (YGS), the property is underlain by a northwest-southeast trending assemblage of Lewes River Group, Povoas Formation andesitic to basaltic flows, tuffs and local tuff breccia. The western boundary of this assemblage is in a strike-slip fault contact with the northwestern portion of the Granite Mountain Batholith. Mapping in 2008 revealed that the majority of the property is underlain by mafic to intermediate volcanic rocks, with a small region in the southwestern property area underlain by Minto Suite biotite granite with minor calc-silicate alteration. The southeastern area of the property, paralleling the Yukon River is also underlain by Minto Suite granodioritic rocks (Schulze, 2008).

7.6.6 WS Property

The WS property is wholly underlain by Minto Group rocks marking the southern extent of the Granite Mountain batholith. East of the property, the batholith lies in dextral transpressional fault contact with Upper Triassic Lewes River Group augites and feldspar phyric andesites (website, Yukon Geological Survey). The Lewes River Group assemblage represents the northwestern portion of the Whitehorse Trough, part of Stikinia. Directly south of the WS block, the Granite Mountain batholith is terminated by an east-west trending normal fault, with the down-dropped side to the south, and separating the batholith from Carmacks Group volcanic rocks to the south.

8 DEPOSIT TYPES

This section was provided from a 2018 M.Sc. thesis titled “Genesis and Post-ore Modification of the Migmatized Carmacks Copper Cu-Au-Ag Porphyry Deposit, Yukon, Canada” and a paper written by Kovacs et.al., 2020, titled “Carmacks Copper Cu-Au-Ag Deposit: Mineralization and Postore Migmatization of a Stikine Arc Porphyry Copper System in Yukon, Canada”.

Since discovery of the Carmacks Copper and Minto deposits in the 1970s, several models have been proposed for their genesis, including (1) copper mineralization in digested Triassic volcanic rocks (A. Archer, pers. comm., in Sinclair, 1977), (2) metamorphosed red-bed copper (Kirkham, 1974), (3) deformed and metamorphosed porphyry copper-gold (Pearson and Clark, 1979; Tafti, 2005), (4) iron-oxide copper gold (IOCG; Mercier and Sagman, 2012), and (5) a shear-hosted hydrothermal system generated in the ductile root zones of a porphyry system (Hood, 2012).

The most current geologic and geochronologic constraints require that mineralization was an inherited feature of a Late Triassic protolith, which was subsequently metamorphosed in the latest Triassic and texturally modified during subsequent magmatism in the Early Jurassic. For this reason, a syn-metamorphic or syn-intrusion model for mineralized material formation is unsupported. Furthermore, deep emplacement of the Minto pluton cannot be used as a proxy for the emplacement depth of mineralization at the Minto mine, as the emplacement of the Minto pluton postdates mineralization by >10 Ma. Similarly, the oxidation state of the pluton and the widespread presence of alteration hematite (Tafti, 2005; Hood et al., 2008) is irrelevant to the deposit that formed >10 Ma prior to the emplacement of the pluton. Lastly, the structurally controlled distribution of mineralized material is also not a demonstrably primary feature of either of the deposits, as material was melted and remobilized during the emplacement of the Minto pluton. In addition, the intensity and extent of alteration that is common in IOCG deposits is not well-developed at Minto and mineralized zones are not breccia hosted. As such the IOCG deposit model is not considered viable for the Minto deposit.

The recognition that the least deformed and migmatized host rocks at the Carmacks Copper deposit contain low-grade, disseminated Cu as a chalcopyrite-pyrite assemblage hosted in biotite-bearing and K-enriched host rocks is consistent with a porphyry copper deposit model. Hypogene grades from ~0.2 to 1% Cu and ~0.1 to 1 g/t Au at the Carmacks Copper, Minto, and Stu systems are within the range of typical porphyry copper grades globally (e.g., Kesler et al., 1992). The caveat to this is that post processes may have affected grade. Copper to gold ratios of 23,000 to 34,000 are also typical of gold-bearing porphyry copper deposits. Although no intrusive phases related to the pre-metamorphic hydrothermal system are recognized at Carmacks Copper, it is permissible that the population of 217.53 ± 0.16 Ma igneous zircons represents magmatic activity temporally and genetically related to $>212.5 \pm 1.0$ Ma copper mineralization.

Hydrothermal features such as veins, alteration halos, or hydrothermal breccias are not recognized through the overprinting effects of metamorphism, penetrative deformation, and partial melting. However, the general lack of quartz rich domains within metamorphic rocks suggests that quartz-sulphide veins were likely absent from the protolith. It is therefore likely that protolith mineralization was introduced as disseminations or as sulfide dominant veinlets in conjunction with widespread biotite - magnetite alteration. Together, these observations suggest that the Carmacks Copper and Minto deposits each preserve the high-temperature potassic core

of a porphyry copper system. Several features listed above are also consistent with alkalic porphyry affinity:

1. Low abundance of pyrite;
2. Association with alkaline intrusions;
3. Low volume or absence of hydrothermal quartz; and
4. Cu-Au metal tenor (compared to Cu-Au - Mo in calc alkalic porphyry systems).

The interpretation of the Carmacks Copper and Minto deposits as metamorphosed porphyry copper systems is further supported by their temporal and lithotectonic affinity with porphyry belts in British Columbia. First, correlation of metavolcanic host rocks at Carmacks Copper with Stikinia arc equivalents in Yukon (Kovacs, 2018) supports a similar tectonic and geodynamic setting to porphyry systems in British Columbia. Second, the ~217 to 213 Ma age of mineralization at Carmacks Copper constrains the system to within the prolific 227 to 178 Ma epoch of porphyry Cu mineralization in the Stikinia and Quesnellia arcs of British Columbia, and broadly coincident with peak productivity in Stikinia (e.g., Schaft Creek ~222 Ma, Galore Creek ~210–205 Ma, Red Chris ~204 Ma; Logan and Mihalynuk, 2014, and references therein).

9 EXPLORATION

Exploration in 2019 through 2020 consisted mainly of diamond drilling within the Minto Mine property, which is discussed in Section 10, as well as an airborne survey in September 2019. Exploration elsewhere was limited to the Hun North and Hun South properties and is described in Sections 9.2 and 9.3 respectively.

9.1 Airborne Survey

MintoEx contracted Pioneer Aerial Surveys Ltd. (Pioneer) to conduct an airborne magnetic survey (UAV-MAGTM) covering the Minto property over the course of 15 days in September, 2019. The surveyed area covered approximately 24 km² and included the mine site and its surrounding areas. Access to the takeoff points for the UAV survey unit was primarily by truck with one area being accessed by helicopter.

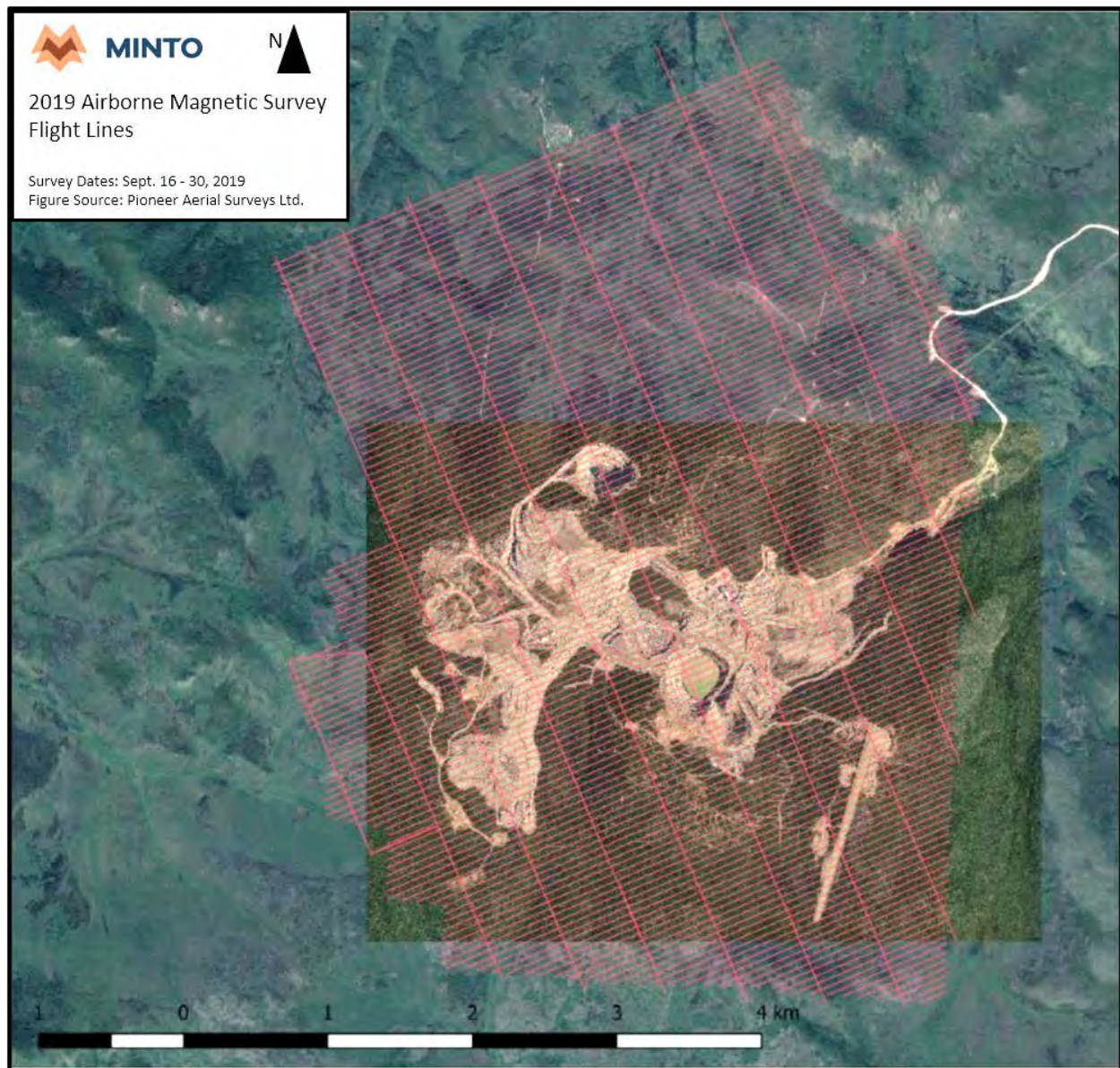
The principle airborne sensor used in the survey was a Gem Systems Canada GSMP-35U potassium vapor sensor that was mounted on a Matrice 600 Pro UAV platform. A stationary GEM GSM-19 Overhauser magnetometer was used as a base station. Flight lines were flown at an orientation of 065° at a 50 m line spacing, and tie lines were flown at a 500 m spacing and at a 335° orientation (Figure 9-1). A total of 554.71-line km were flown, including 480.59 km in flight lines and 74.11 km in tie lines.

During post processing, airborne data was corrected for diurnal variation, adjusted for lag/heading bias and microlevelled to mitigate the corrugation effect associated with gaps between the data lines. Final deliverable products from Pioneer included maps of Total Magnetic Intensity (Figure 9-2), 1st Vertical Derivative (Figure 9-3), and Analytic Signal. The tight spacing of survey lines enabled by the use of a drone platform, as opposed to traditional helicopter and/or fixed wing surveys, provided high-resolution magnetic data. The high-resolution data allows for more accurate targeting of anomalous magnetic features potentially associated with mineralization on the Minto property.

The Total Magnetic Intensity (TMI) map clearly indicates the WNW-trending fault separating the Minto pluton from Carmacks Group basaltic rocks to the south. A second WNW-trending structure extends across the central property area, marking the northern limit of the Minto mine deposit area. To the north of this, a series of strong northwest trending magnetic “high” features mark regional stratigraphic trends. The subdued magnetic response immediately north of the pronounced southern fault is partially explained by the presence of a veneer of Carmacks Group conglomerates, sandstones and shales. Several magnetic high anomalies may indicate targets for “Minto-style” mineralization.

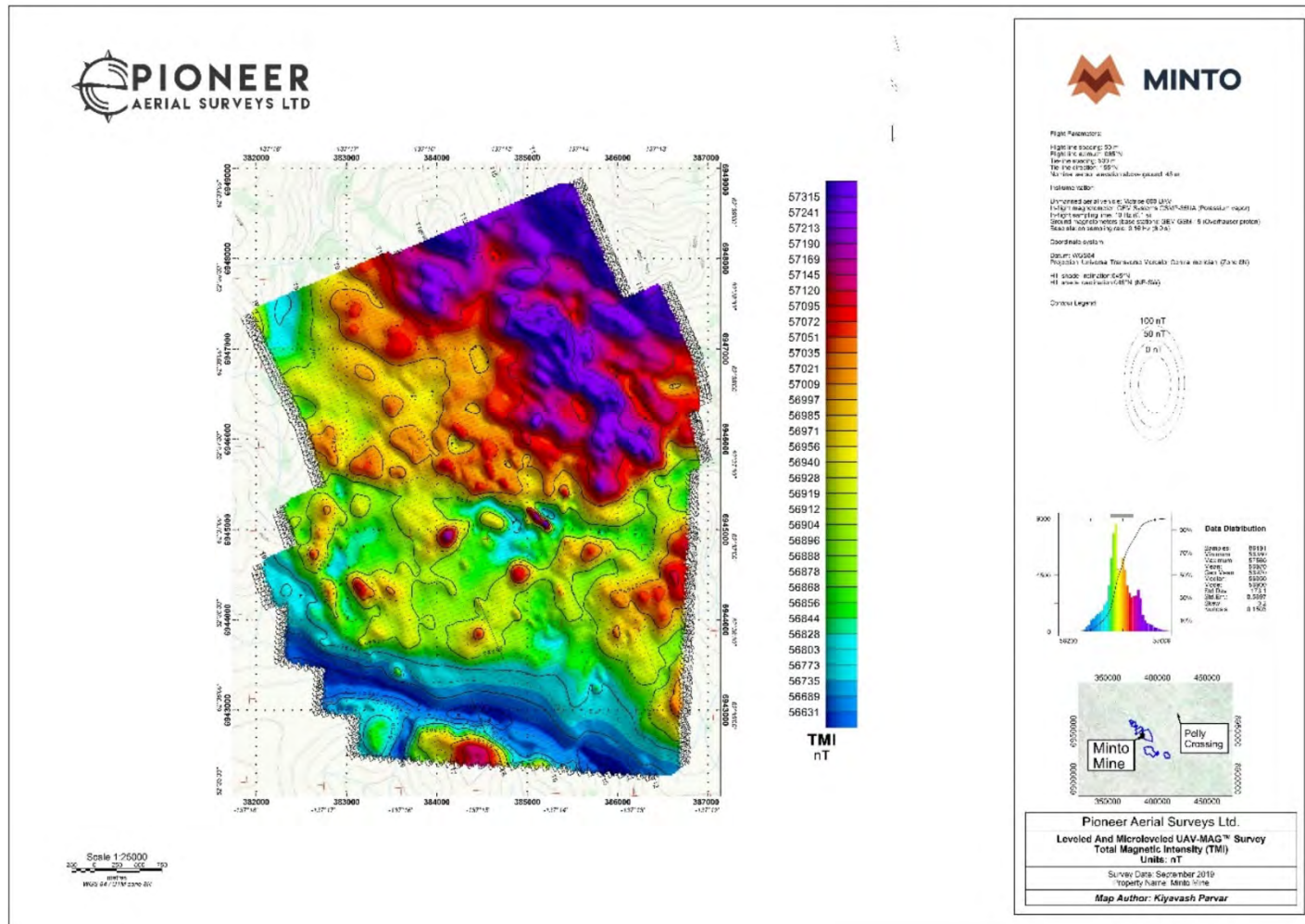
The 1st Vertical Derivative image supports the TMI image documenting the strong magnetic contrasts along the southern fault and associated with the stratigraphic setting in the northeastern area. The central WNW-trending feature does not stand out as magnetically depressed as in the TMI, suggesting that there are some surface features creating the noisy background.

Figure 9-1: Airborne Survey Lines, 2019 Drone Airborne Survey, Minto Mine Property



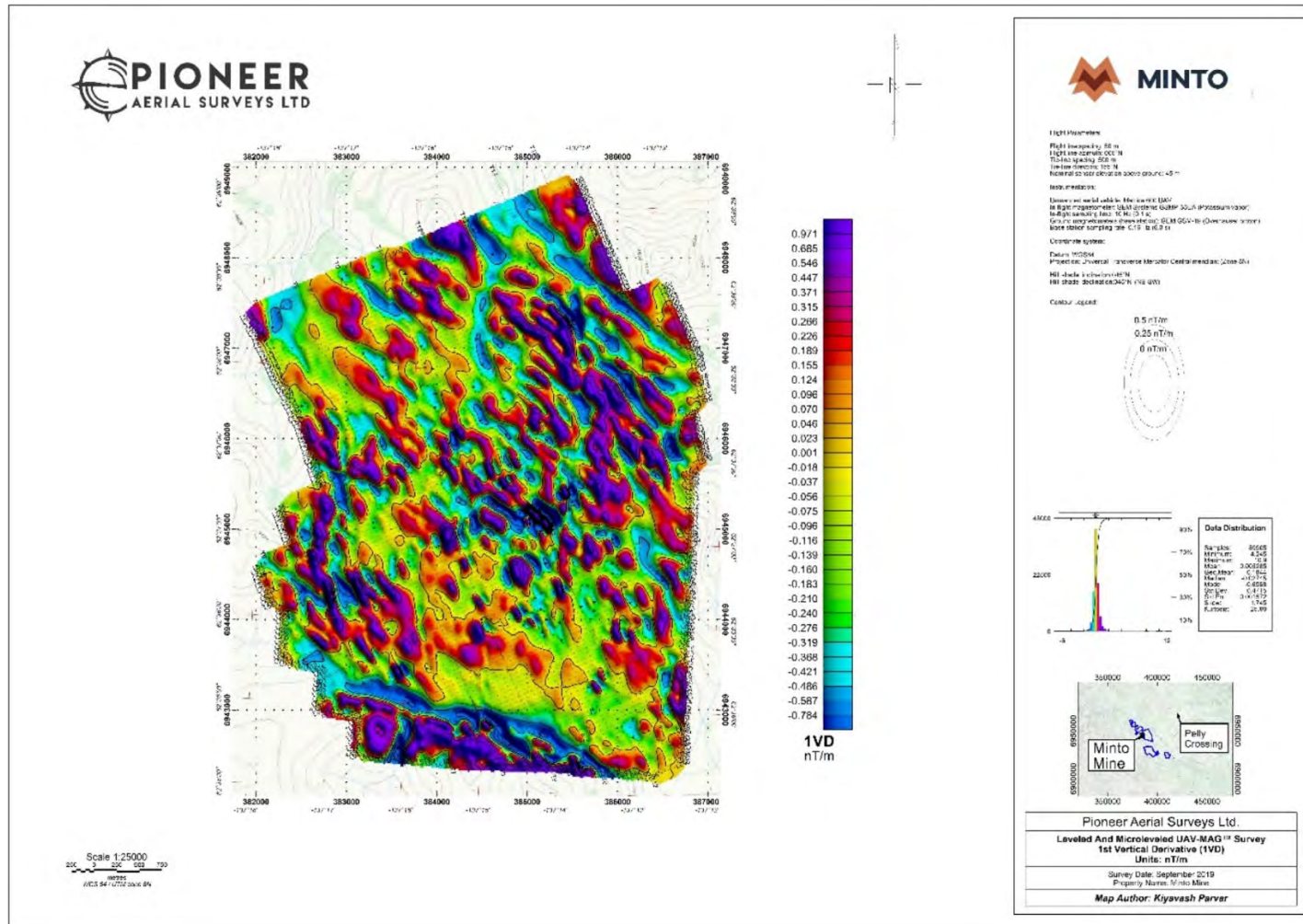
Source: Pioneer Aerial Surveys Ltd. (2019)

Figure 9-2: Total Magnetic Intensity (TMI) Airborne Survey, Minto Mine Property



Source: Pioneer Aerial Surveys Ltd. (2019)

Figure 9-3: First Vertical Derivative, Airborne Magnetic Surveying, Minto Mine Property

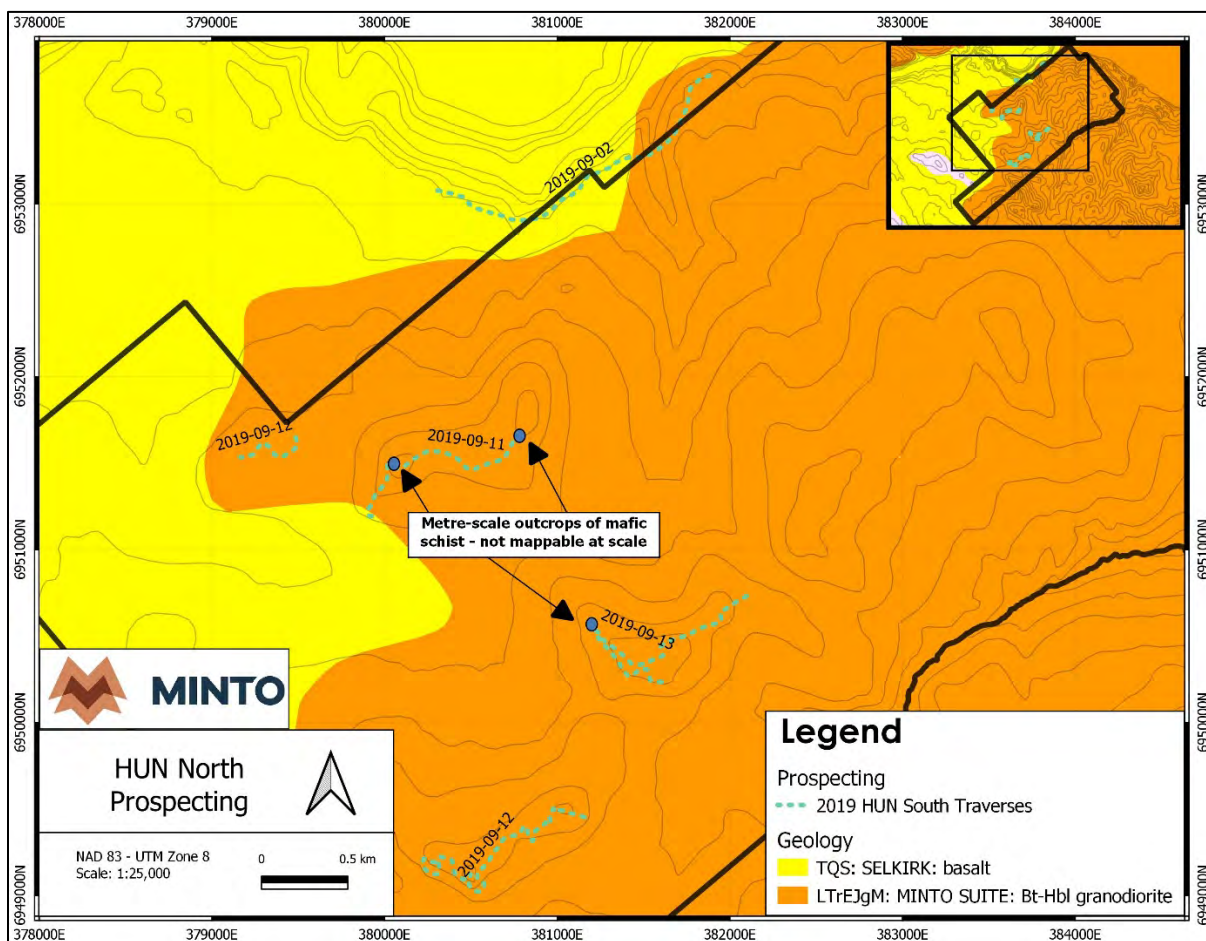


9.2 Hun North

A 4-day prospecting program was conducted by a two-person prospecting team on the HUN North property from late August to early September of 2019. Access to the property was by helicopter from the Minto Mine airstrip. A total of 5 traverses totaling 7.4 km in length were completed, focusing on the ridges in the west-central property area. Locations of outcrops were recorded as point data, utilizing portable Garmin GPS units. Scarcity of outcrop presented difficulties to the prospecting campaign and no rock samples were submitted for geochemical analysis. Further data compilation of previous exploration work was also completed and digitized.

The program identified several metre-scale outcrops of strongly foliated quartz-plagioclase-biotite schist across the property. These outcrops may represent inliers of the Late Triassic Povoas Formation, the original host rock to the Minto-style copper-gold mineralization within the Minto Copper Belt. Further investigation is required to confirm the origin of these foliated outcrops.

Figure 9-4: Prospecting Traverses, 2019 Program, Hun North Property



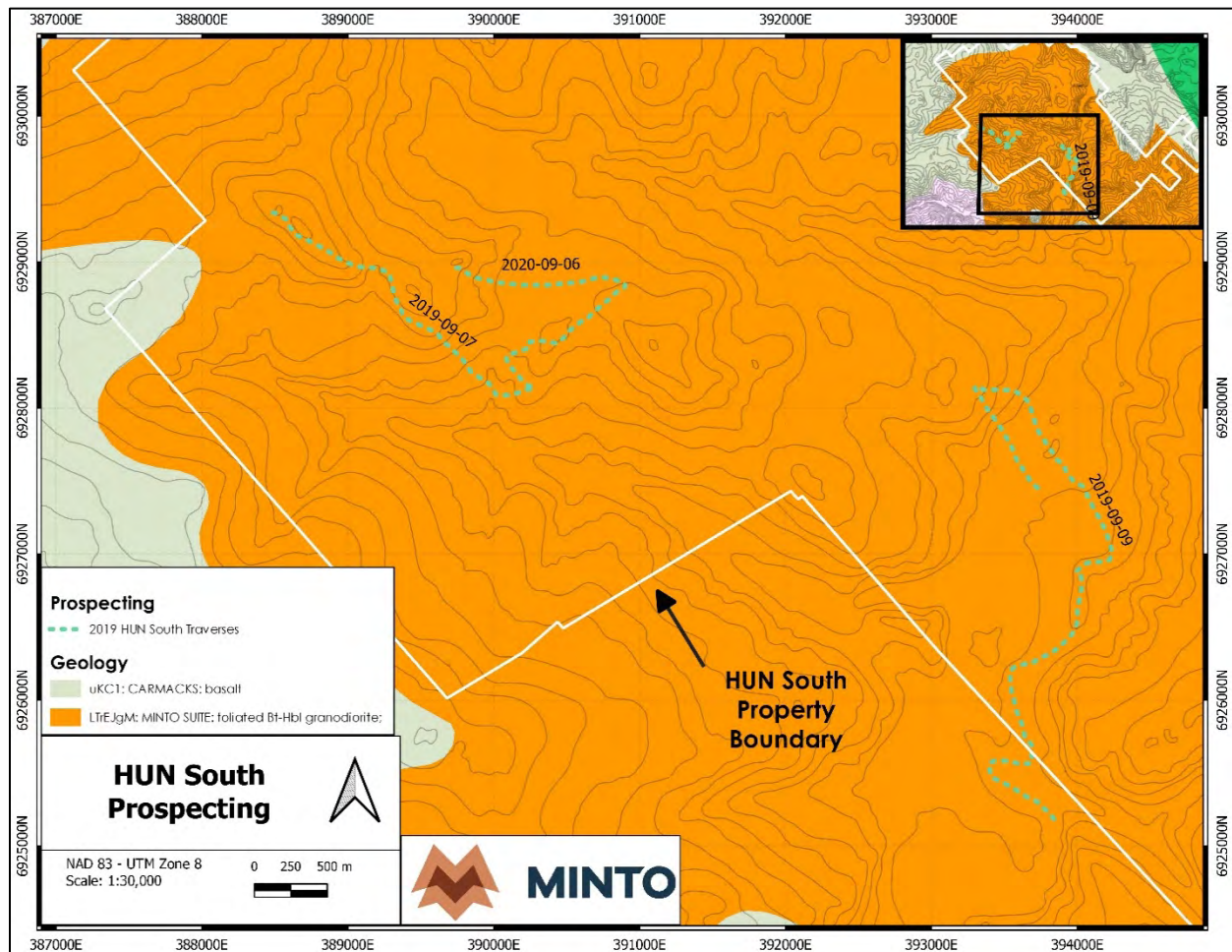
Source: Minto (2021)

9.3 Hun South

9.3.1 Hun South Prospecting

An eighteen-day exploration program of soil sampling and prospecting was completed by a five-person sampling team on the Hun South property in late August to early September of 2019. Access to the property was by helicopter from the Minto Mine airstrip. A total of 3 person-days comprising three traverses measuring a total of 10.2 km were dedicated to prospecting on the property. Scarcity of outcrop presented difficulties to prospecting and no rock samples were taken. However, prospecting confirmed that previous regional mapping in the area was accurately done, and that the HUN South property is underlain mainly by Minto Group intrusive rocks.

Figure 9-5: 2019 Prospecting Traverses, Hun South Property



Source: Minto (2021)

9.3.2 Hun South Soil Geochemical Surveying

A total of 1,810 soil samples targeting the C-horizon and covering 5.54 km² were collected across four soil grids (Zones 1 through 4) in the central property area. The grids comprised a 50 m line spacing and 50 m station spacing. The sampling grids were centered on targeted geophysical anomalies. Location information for each sample station was recorded using portable Garmin GPS units, and additional information on sample horizon, sample depth, colour, texture, sample quality, and surrounding vegetation was recorded. Samples were submitted to the Whitehorse lab of ALS Geochemical laboratories for sample preparation, and then sent to the Vancouver ALS Geochemistry lab for actual analysis.

9.3.2.1 Zone 1

Zone 1 shows numerous copper-gold anomalous areas. The two most notable anomalous areas lie in the northeast and southeast corners respectively of the target area (Figure 9-6). The northeast area shows elevated copper in soil values between 25 to 100 ppm, and correlates with an oval-shaped 200 m by 250 m magnetic “high” anomaly. Sporadic elevated silver values (Figure 9-7) were returned, although gold analysis did not return anomalous values (Figure 9-8). The southeast area outlines a large 500 m by 250 m wide area of anomalous Cu values between 25 to 50 ppm, coinciding with weakly elevated Au and Ag values.

Figure 9-9 shows the Au and Cu results overlain on 1st Vertical derivative imagery. The imagery indicates a WNW trend of stratigraphy as well as NNW trending features that may indicate structural occurrences. Both of these anomalous areas occur along the latter features, and the southern geochemical anomaly is centered on the intersection area of the WNW and NNW trending features.

9.3.2.2 Zone 2

Geochemical sampling at Zone 2 revealed a WNW trending area of weakly to moderately elevated Cu values, associated with weakly elevated Au and Ag values, in the central property area. This occurs along a strong “low” feature returned from 1st Vertical Derivative imagery (Figure 9-10), itself coincident with a topographic low area. Airborne magnetic surveying revealed two magnetic “high” anomalies, the larger in the northeastern area of the zone and the smaller in the southwestern area. Elevated Cu values conform to flanks of the small valley, and may represent some degree of downslope dispersion.

9.3.2.3 Zone 3

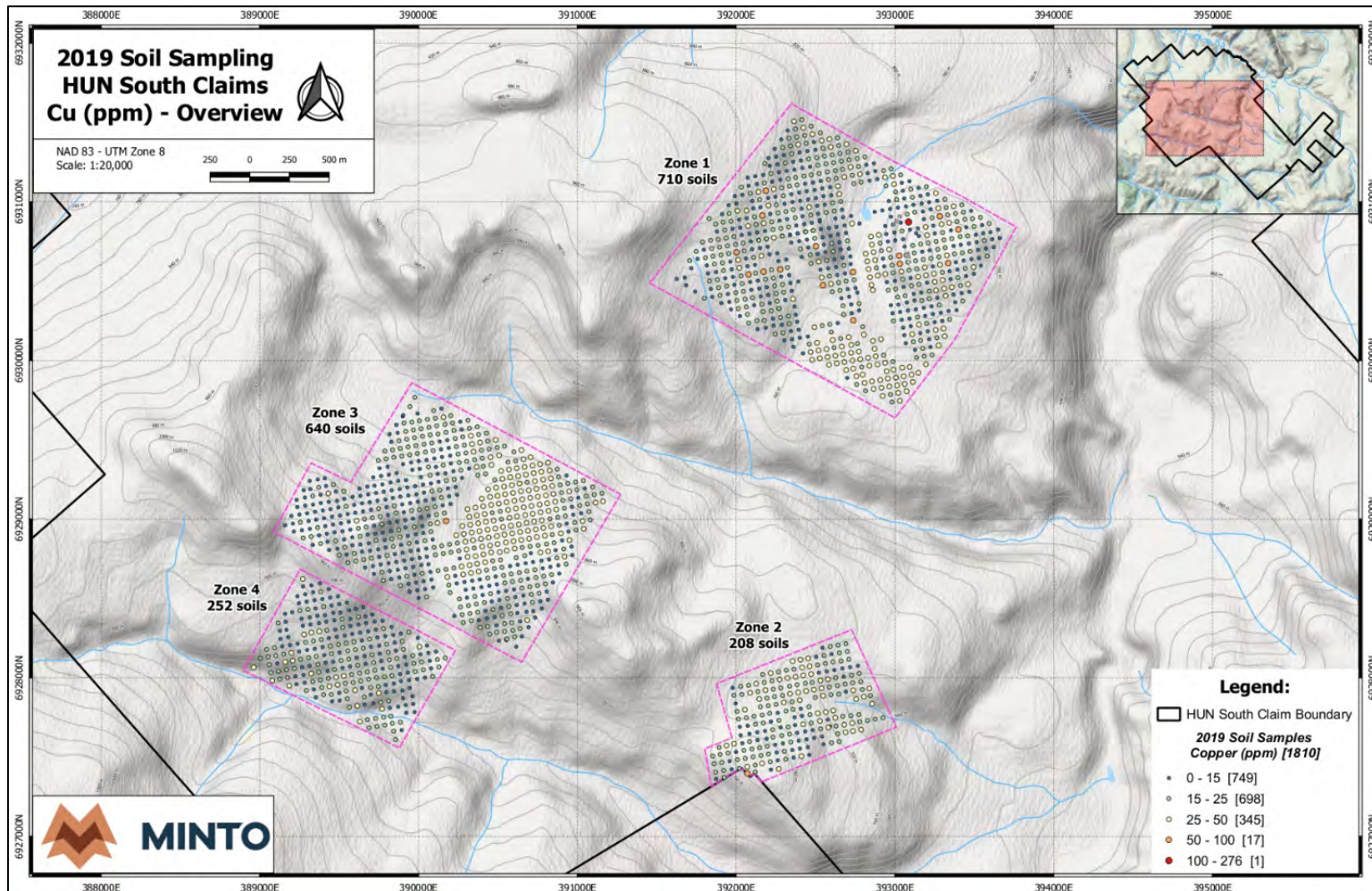
Geochemical sampling on Zone 3 revealed a 1,000 m by 500 m long NNE-trending Cu anomaly, with Cu values consistently between 25 and 50 ppm Cu and Ag values between 75 and 150 ppb. The anomaly occurs along the east flank of a linear topographic low. The 1st Vertical Derivative imagery revealed WNW trending alternating high and low features, likely indicating stratigraphic trends, and also an NNE trending “low” feature coincident with the topographic low (Figure 9-11). Scattered anomalous Au values are spatially closely associated with these features, indicating they may represent structural corridors amenable to fluid movement.

Elevated metal values may be partially attributable to better soil conditions and lesser permafrost development along west-facing slopes of the small valley, allowing for ease of metal ion transport.

9.3.2.4 Zone 4

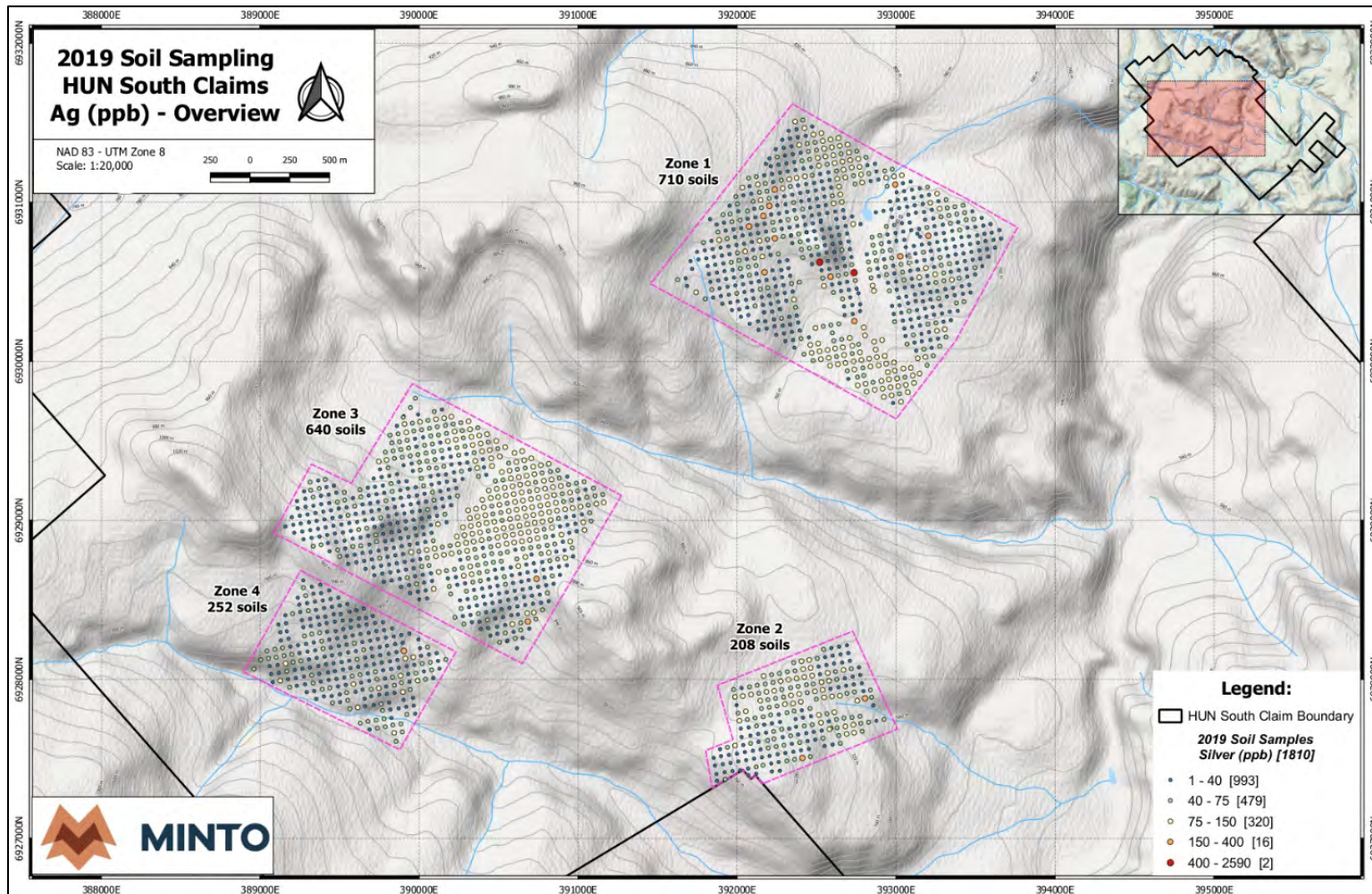
Geochemical sampling on Zone 4 occurred along the north side of a stream within an ESE trending valley. 1st Vertical Derivative imagery indicates the stream is coincident with a linear “low” feature, and that a similar, though more pronounced, feature extends along, and is oriented to, the centre of the grid (Figure 9-11). Sampling returned intermittent weakly elevated Cu values from 25 to 100 ppm, and scattered elevated Ag values from 75 to 150 ppb. Two anomalous gold values of 33.9 ppb and 20.1 ppb respectively were returned proximal to the stream. Elevated values along the south-facing flank of the valley may be attributable to better, permafrost-free soil conditions.

Figure 9-6: Copper Value Ranges, Soil Geochemical Surveying, Hun South Block



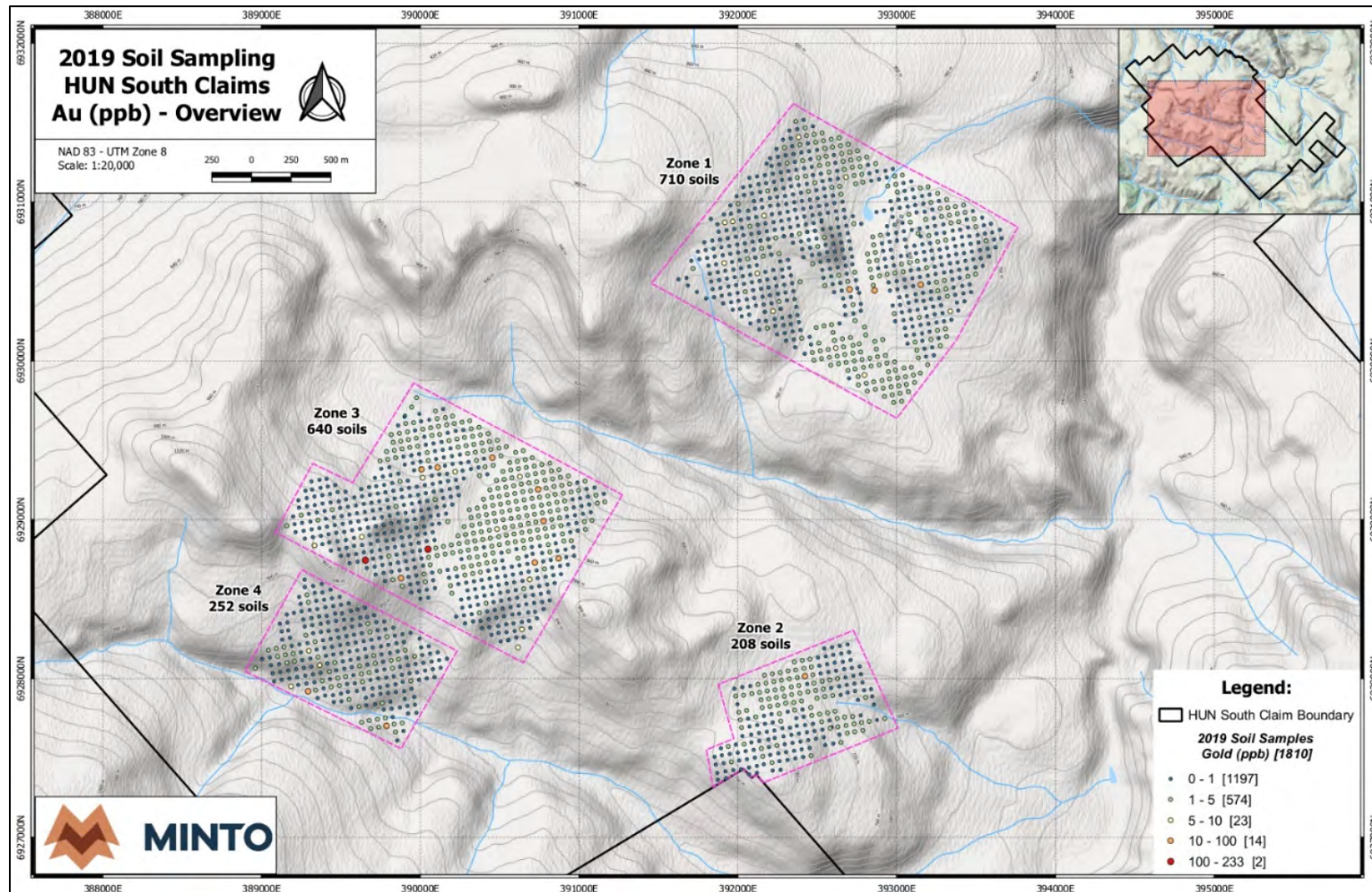
Source: Minto (2020)

Figure 9-7: Silver Value Ranges, Soil Geochemical Sampling, Hun South Block



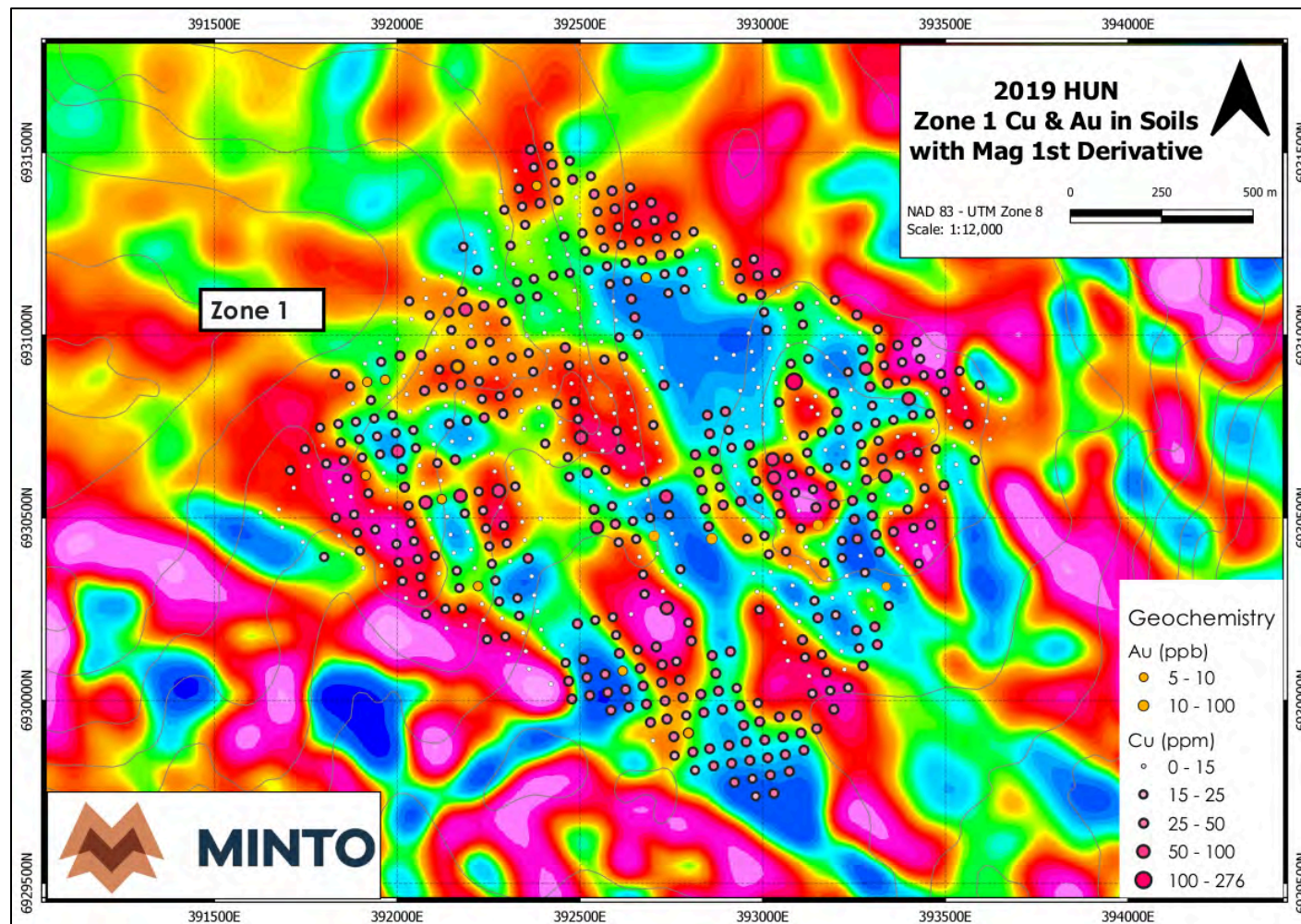
Source: Minto (2020)

Figure 9-8: Gold Value Ranges, Soil Geochemical Surveying, Hun South Block



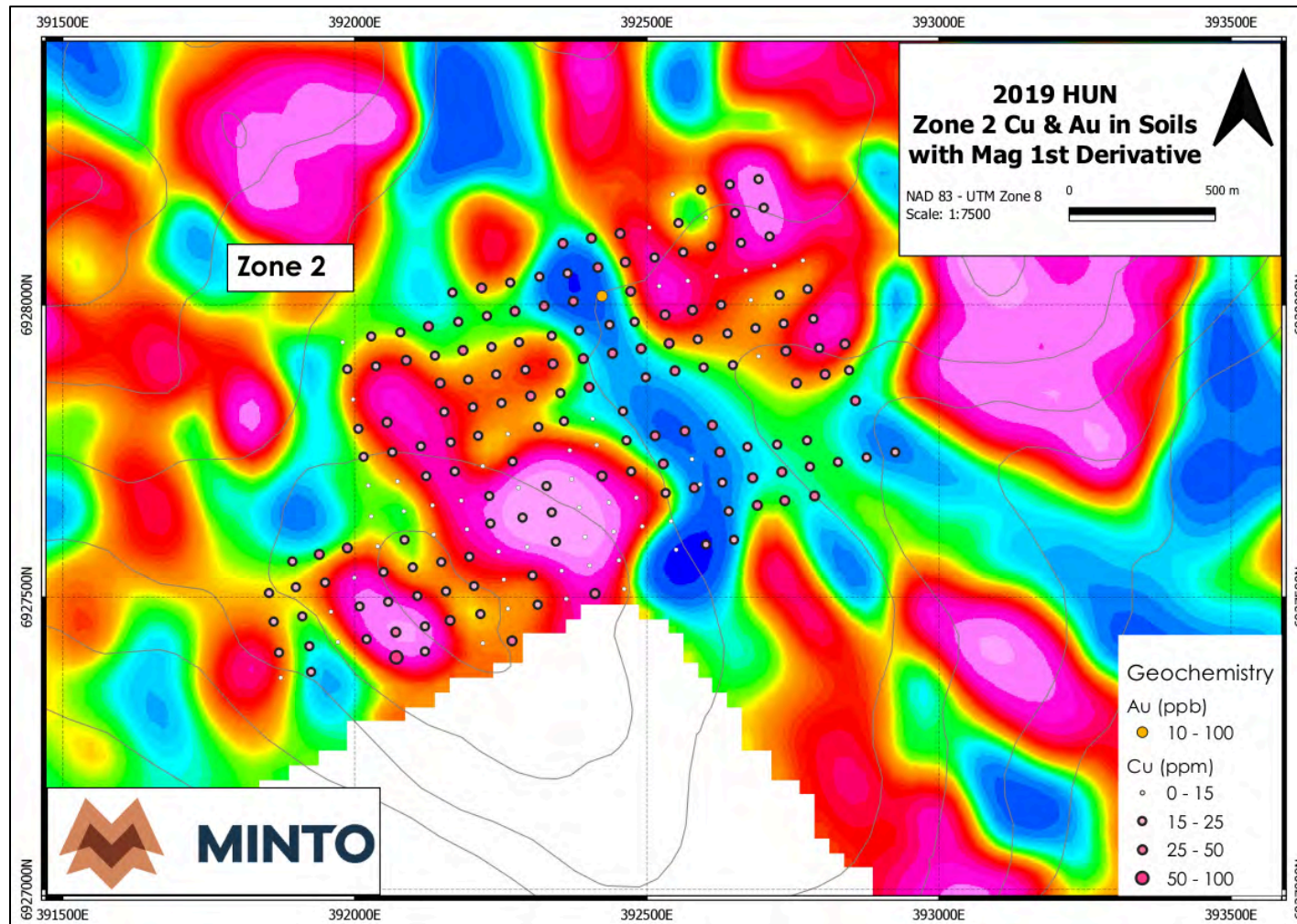
Source: Minto (2020)

Figure 9-9: First Vertical Derivative Image and Copper, Gold Soil Geochemical Value Ranges, Hun South Block



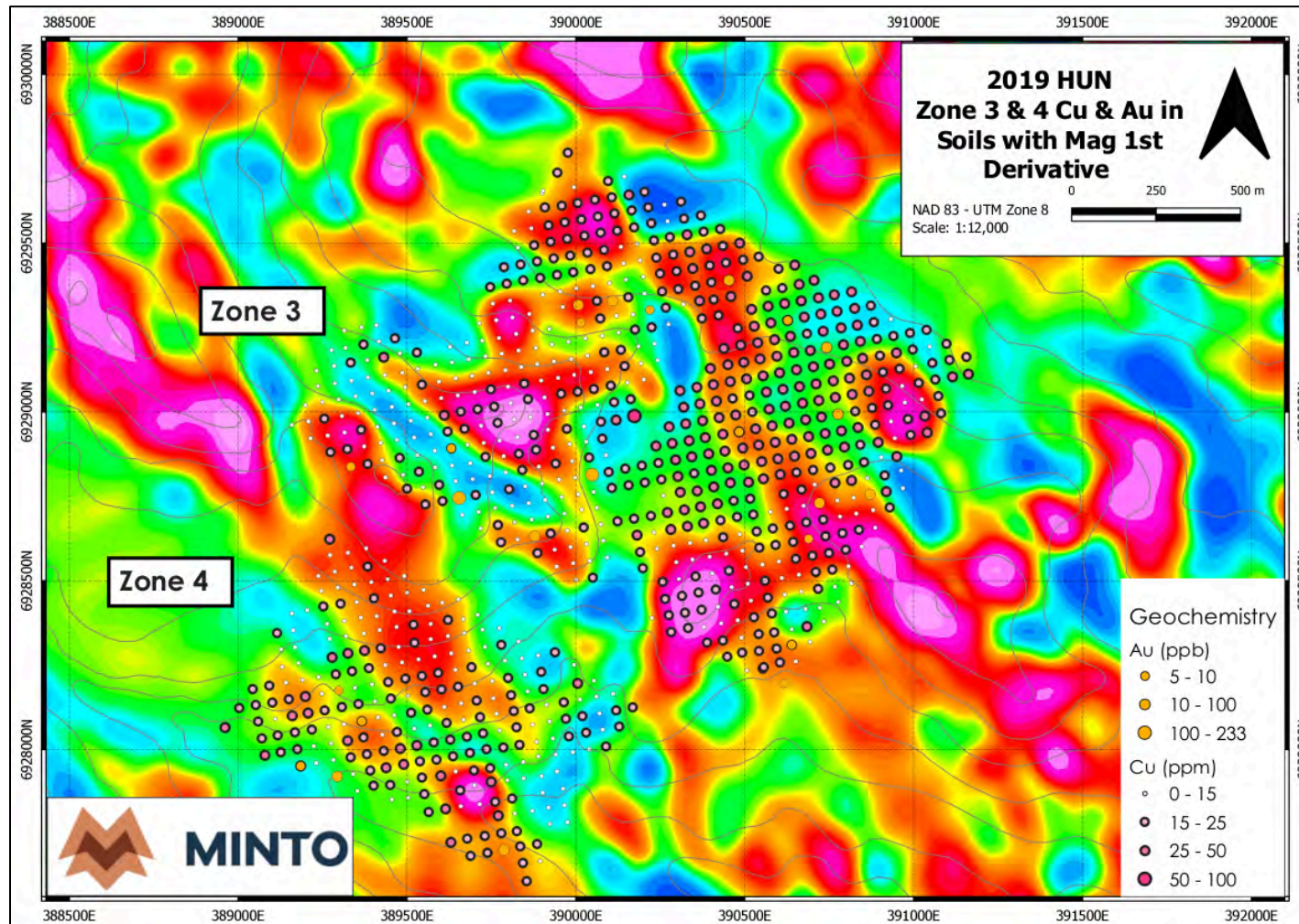
Source: Minto (2020)

Figure 9-10: First Vertical Derivative Image and Copper, Gold Soil Geochemical Value Ranges, Zone 2, Hun South Block



Source: Minto (2020)

Figure 9-11: First Vertical Derivative Imagery and Copper, Gold Value Ranges, Zones 3 and 4, Hun South Block



Source: Minto (2020)

The large number of samples, regular sample spacing and complete coverage, except for lowland areas that may be riparian, should remove the majority of bias during geochemical sampling. Other aspects mitigating possible bias are the repetitive nature of sampling, consistent targeting of the C-Horizon, and standardized descriptions of each sample. However, the location of samples with respect to particular topographic settings may result in enhanced or subdued metal values returned. Geochemical anomalies along slopes tend to extend downslope beyond bedrock source boundaries due to downslope dispersion. Certain elements are more easily transportable downslope as a result of groundwater or surface water movement. Copper and arsenic are more easily transportable than gold, resulting in more widespread downslope anomalies of the former. Similarly, areas with permafrost development tend to return subdued metal values. Areas with very thin soil or talus fine cover tend to return higher gold values than areas having well developed soil.

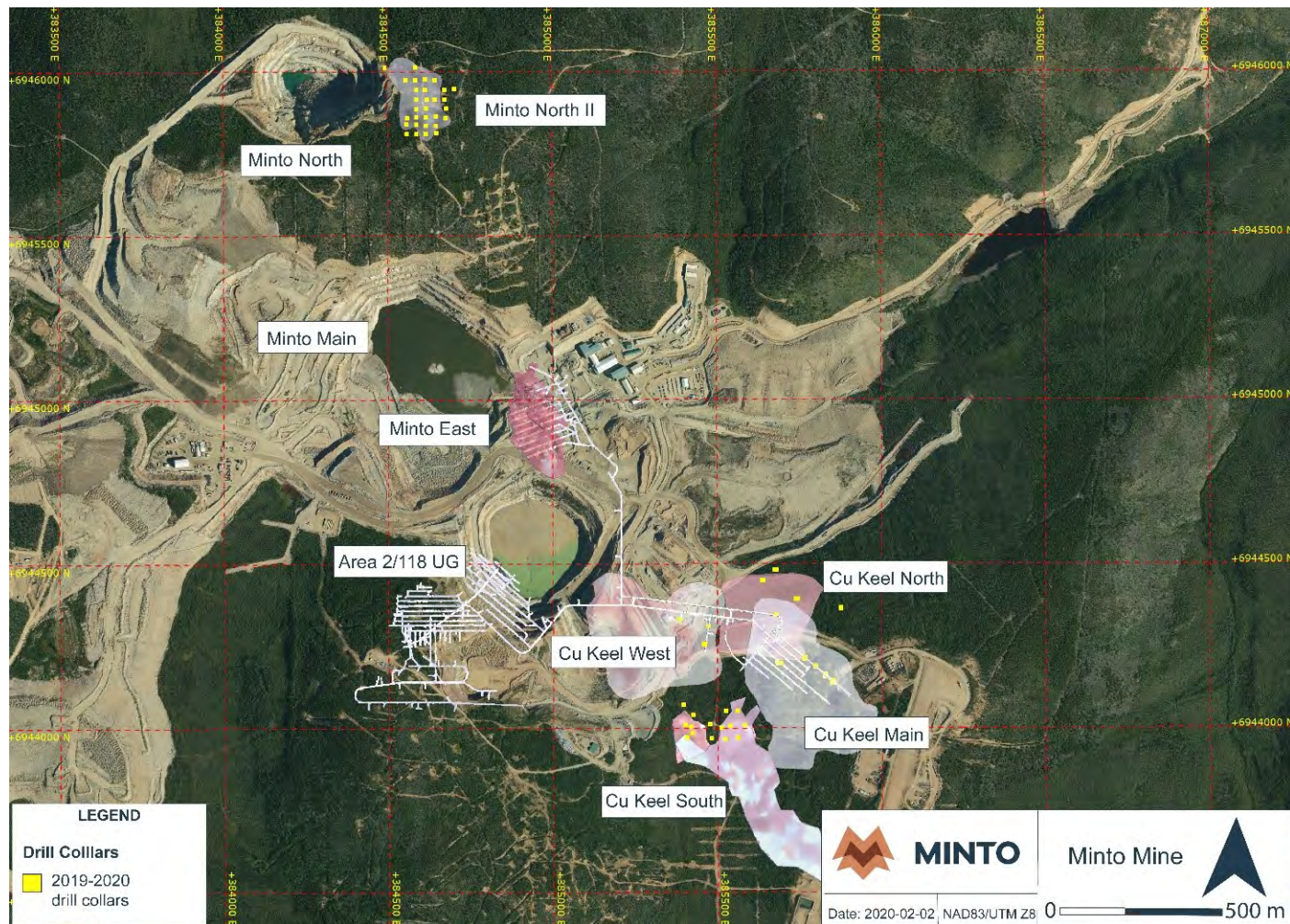
10 DRILLING

The 2019 and 2020 infill-drilling campaign comprised 21,400 m of surface and underground diamond drilling targeting the Copper Keel West, North, South, and Minto North 2 deposits. With the inclusion of the Minto East target, the total amount of drilling during 2019 and 2020 was 23,321 m. The objective was to upgrade the current resource base and to gain geological confidence for the optimization of the mine design.

The surface drilling program commenced in late 2019 with the majority of drilling completed in 2020. This program included 62 NQ-diameter diamond drill holes totaling 16,485.3 m targeting the Copper Keel West, Copper Keel North, Copper Keel South, and Minto North 2 deposits. The underground infill-drill program mainly targeted the Copper Keel West and Copper Keel North lenses; however, additional drilling was also completed on the Minto East and Copper Keel Main production areas. A total of 6,835 m in 75 underground diamond drill holes were completed between May and November 2020.

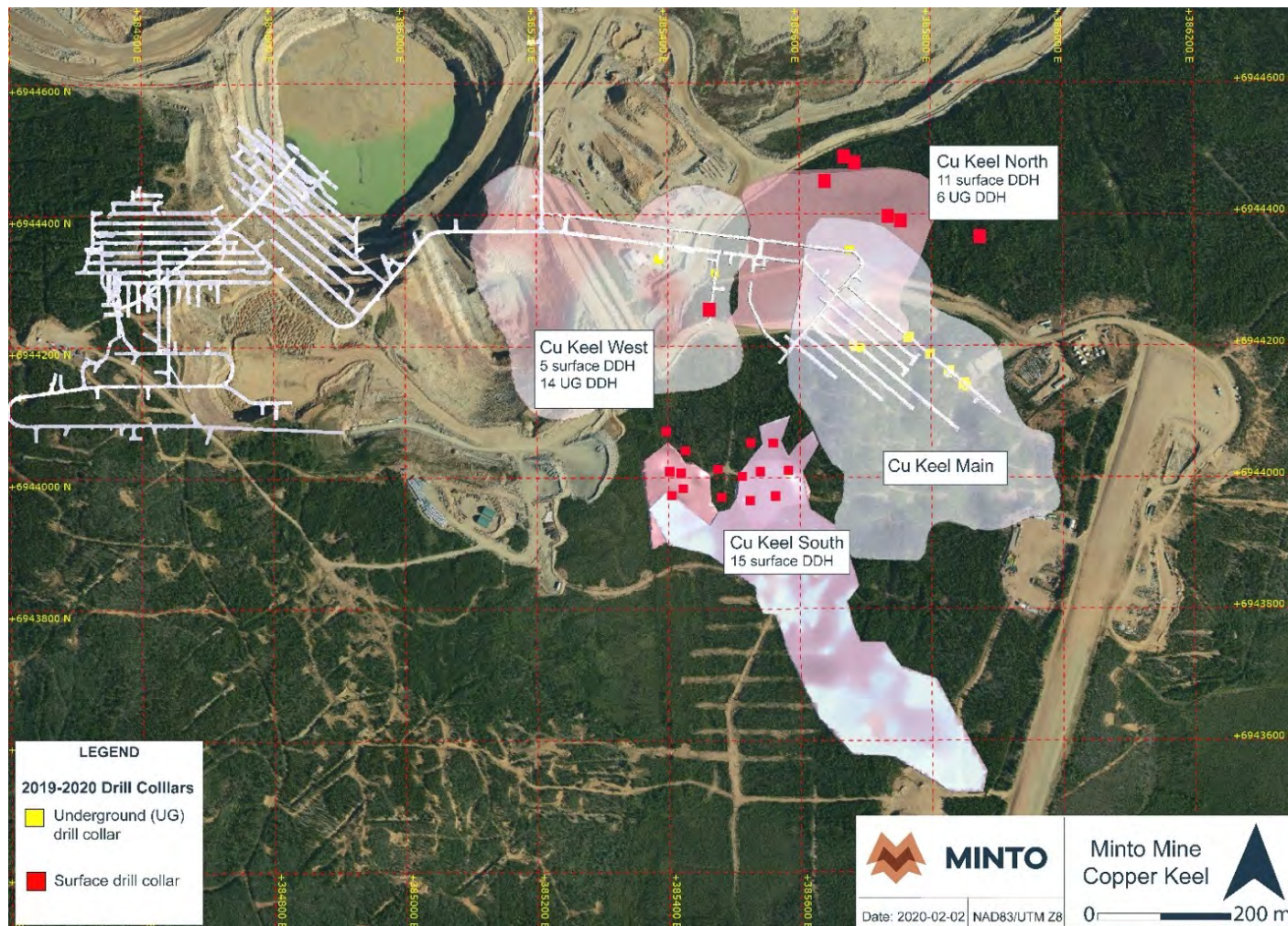
Figure 10-1 shows the overview of the Minto mine area, and Figure 10-2 is a detailed image of the Copper Keel area.

Figure 10-1: Overview, Minto Mine Area



Source: Minto (2021)

Figure 10-2: Overview, Copper Keel Area



Source: Minto (2021)

Table 10-1 through Table 10-8 show the collar locations per zone.

Table 10-1: Collar Locations, Copper Keel West Surface Deposit Area

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuKW	19MIN1066	-90	0	385462.63	6944252.48	812.75	300
CuKW	19MIN1067	-70	254	385450.30	6944259.70	813.20	302
CuKW	20MIN1068	-70	289	385460.10	6944254.39	812.50	506
CuKW	20MIN1069	-75	293	385460.60	6944255.68	812.48	551
CuKW	20MIN1070	-85	215	385461.46	6944258.03	812.81	552

Source: Aurora (2021)

Table 10-2: Drill Collar Location Data, Copper Keel West Underground

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuKW	20UG107*	-5	187	385471.84	6944310.00	574.66	55
CuKW	20UG108*	9	187	385471.84	6944310.00	574.66	55
CuKW	20UG109	4	234	385385.53	6944331.99	582.55	252
CuKW	20UG110	0	234	385385.63	6944332.05	582.40	251
CuKW	20UG111	-4	234	385385.65	6944332.03	582.27	200
CuKW	20UG112	-12	234	385385.64	6944332.00	582.01	101
CuKW	20UG113	4	215	385387.72	6944331.38	582.08	251
CuKW	20UG114	0	215	385386.63	6944331.55	582.39	251
CuKW	20UG115	-4	215	385386.64	6944331.54	582.25	254
CuKW	20UG116	-12	215	385386.61	6944331.51	582.03	122
CuKW	20UG117	4	195	385387.68	6944331.33	582.50	272
CuKW	20UG118	-3	195	385387.68	6944331.32	582.28	270
CuKW	20UG119	-12	195	385387.62	6944331.25	581.91	272
CuKW	20UG120	-23	195	385387.69	6944331.29	581.31	122.5

Source: Aurora (2021)

Table 10-3: Collar Data, Surface Drilling, Copper Keel North Deposit Area

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuKN	19MIN1063	-90	0	385705.15	6944413.48	819.86	416
CuKN	19MIN1064	-90	0	385654.84	6944407.82	816.49	412
CuKN	19MIN1065	-66	258.8	385874.50	6944364.00	839.00	481
CuKN	20MIN1071	-90	0	385739.39	6944393.71	825.57	516
CuKN	20MIN1072	-86	169.3	385745.06	6944394.57	825.40	456
CuKN	20MIN1073	-90	0	385875.78	6944363.73	837.59	501
CuKN	20MIN1074	-83	215	385876.22	6944367.10	837.38	347
CuKN	20MIN1075	-90	0	385639.28	6944449.99	809.50	407
CuKN	20MIN1076	-90	0	385680.63	6944481.13	806.80	459
CuKN	20MIN1077	-85	126	385675.16	6944483.16	806.80	423.2
CuKN	20MIN1078	-85	216.4	385635.92	6944449.96	809.46	431

Source: Aurora (2021)

Table 10-4: Drill Collar Data, Copper Keel North Underground Drilling

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuKN	20UG142	-75	11	385677.31	6944344.75	565.67	176
CuKN	20UG143	-60	11	385677.63	6944345.17	565.67	200
CuKN	20UG144	-60	33	385677.99	6944344.88	565.70	200
CuKN	20UG145	-60	325	385675.62	6944345.18	565.70	212
CuKN	20UG146	-45	314	385675.36	6944344.99	565.69	212
CuKN	20UG147	-90	0	385677.38	6944344.74	565.69	161

Source: Aurora (2021)

Table 10-5: Drill Collar Locations, Copper Keel South Deposit Area

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuKS	20MIN1079	-90	0	385561.32	6943970.62	843.53	270
CuKS	20MIN1080	-90	0	385523.50	6943966.68	840.62	261
CuKS	20MIN1081	-90	0	385480.15	6943969.91	835.14	242
CuKS	20MIN1082	-90	0	385582.17	6944008.87	843.50	249

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuKS	20MIN1083	-90	0	385539.16	6944008.15	838.15	240
CuKS	20MIN1084	-90	0	385524.63	6944052.17	836.00	248
CuKS	20MIN1085	-90	0	385559.15	6944052.93	838.05	221
CuKS	20MIN1086	-90	0	385422.24	6943983.60	828.53	233
CuKS	20MIN1087	-90	0	385418.66	6944005.64	827.43	227
CuKS	20MIN1088	-90	0	385476.06	6944012.36	834.11	257
CuKS	20MIN1089	-90	0	385511.28	6944001.50	837.35	275
CuKS	20MIN1090	-90	0	385426.10	6944040.93	825.54	254
CuKS	20MIN1091	-90	0	385396.20	6944071.01	821.42	251
CuKS	20MIN1092	-86	269	385402.34	6944009.78	825.46	290
CuKS	20MIN1093	-87	303	385406.42	6943972.98	827.64	298

Source: Aurora (2021)

Table 10-6: Drill Collar Location Data, Copper Keel Main Deposit Area

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuKM	20UG100	21	40	385799.46	6944189.63	565.20	20.4
CuKM	20UG101	90	0	385798.23	6944187.89	567.39	20.5
CuKM	20UG102	49	220	385796.13	6944185.41	567.38	30.7
CuKM	20UG103	15	40	385768.30	6944214.68	562.01	20.0
CuKM	20UG104	90	0	385765.80	6944211.63	564.34	15.5
CuKM	20UG105	42	220	385764.30	6944209.87	563.48	30.5
CuKM	20UG106	50	40	385765.48	6944211.27	564.23	20.0
CuK	20UG121	45	180	385825.39	6944158.35	570.05	35.0
CuK	20UG122	20	180	385825.39	6944157.92	568.76	71.0
CuK	20UG123	-35	130	385825.72	6944157.85	567.55	50.0
CuK	20UG124	-5	180	385827.78	6944161.09	566.48	26.0
CuK	20UG125	-20	70	385829.75	6944163.60	567.05	42.0
CuK	20UG126	40	220	385847.52	6944140.14	573.30	26.0
CuK	20UG127	-30	220	385847.35	6944139.85	570.31	20.0
CuK	20UG128	-90	0	385853.83	6944138.05	570.80	30.0
CuK	20UG129	-30	40	385854.28	6944137.73	572.08	71.0
CuK	20UG130	-20	130	385851.34	6944145.21	570.02	32.0
CuK	20UG131	5	130	385848.87	6944141.74	569.90	16.0

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
CuK	20UG132	12	230	385680.71	6944201.42	572.39	92.0
CuK	20UG133	25	230	385680.81	6944201.55	572.89	90.0
CuK	20UG134	15	179	385683.26	6944198.06	573.03	100.0
CuK	20UG135	90	0	385691.55	6944197.20	575.16	31.0
CuK	20UG136	9	129	385692.98	6944195.92	572.84	90.0

Source: Aurora (2021)

Table 10-7: Drill Collar Location Data, Minto North 2 Area

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
MnN	20MIN1094	-90	0	384493.70	6946011.97	933.62	182
MnN	20MIN1095	-90	0	384585.46	6946013.12	942.14	152
MnN	20MIN1096	-90	0	384589.05	6945945.36	956.14	176
MnN	20MIN1097	-90	0	384614.92	6945945.51	956.43	176
MnN	20MIN1098	-90	0	384619.83	6945916.58	962.59	176
MnN	20MIN1099	-90	0	384588.97	6945915.86	961.47	176
MnN	20MIN1100	-90	0	384559.50	6945914.27	960.32	176
MnN	20MIN1101	-90	0	384618.50	6945888.32	967.51	176
MnN	20MIN1102	-90	0	384588.14	6945886.26	968.49	152
MnN	20MIN1103	-90	0	384614.73	6945975.91	950.62	176
MnN	20MIN1104	-90	0	384584.56	6945975.63	949.19	161
MnN	20MIN1105	-90	0	384554.82	6945975.60	948.15	152
MnN	20MIN1106	-90	0	384673.72	6945944.66	958.98	176
MnN	20MIN1107	-90	0	384704.66	6945946.22	957.01	176
MnN	20MIN1108	-90	0	384644.55	6945916.09	963.11	152
MnN	20MIN1109	-90	0	384675.07	6945916.24	963.79	152
MnN	20MIN1110	-90	0	384679.58	6945887.12	968.24	176
MnN	20MIN1111	-90	0	384648.41	6945864.24	973.46	175.5
MnN	20MIN1112	-90	0	384616.71	6945861.53	973.84	179
MnN	20MIN1113	-90	0	384588.54	6945861.61	972.21	176
MnN	20MIN1114	-90	0	384560.46	6945859.00	971.72	176
MnN	20MIN1115	-90	0	384647.91	6945835.80	978.37	176
MnN	20MIN1116	-90	0	384617.23	6945836.83	978.35	175.5
MnN	20MIN1117	-90	0	384588.60	6945839.06	977.20	175.5

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
MnN	20MIN1118	-90	0	384557.51	6945840.39	974.81	175.5
MnN	20MIN1119	-90	0	384678.11	6945858.57	972.75	427
MnN	20MIN1120	-90	0	384649.64	6945812.35	979.19	191
MnN	20MIN1121	-90	0	384617.17	6945811.28	981.75	181.5
MnN	20MIN1122	-90	0	384644.12	6945975.16	952.66	182
MnN	20MIN1123	-90	0	384588.69	6945810.60	981.35	180
MnN	20MIN1124	-90	0	384558.98	6945811.47	978.43	176

Source: Aurora (2021)

Table 10-8: Drill Collar Data, Minto East Deposit Area

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
MnE	20UG045	35	155	384965.32	6944816.37	525.54	60.5
MnE	20UG046	-81	155	384964.18	6944819.20	526.25	50.5
MnE	20UG047	34	258	384959.90	6944821.36	524.82	74.3
MnE	20UG048	67	215	384961.87	6944822.33	525.89	59.0
MnE	20UG049	35	95	384966.05	6944820.56	525.55	40.1
MnE	20UG050	-90	155	384964.61	6944818.26	521.53	79.5
MnE	20UG051	35	69	385014.34	6944835.75	525.33	40.0
MnE	20UG052	10	95	384966.54	6944820.42	524.22	50.3
MnE	20UG053	-7	279	384959.15	6944822.11	522.81	59.3
MnE	20UG054	-50	155	384965.18	6944816.69	526.57	50.5
MnE	20UG055	10	60	385014.54	6944835.83	523.90	41.0
MnE	20UG057	-5	95	384966.68	6944820.43	523.46	50.5
MnE	20UG058	90	60	385010.91	6944833.84	526.29	30.5
MnE	20UG059	-5	60	385014.56	6944835.83	523.31	40.0
MnE	20UG060	-15	60	385014.59	6944835.88	522.97	40.0
MnE	20UG062	-65	155	384964.86	6944817.50	527.19	50.0
MnE	20UG063	-3	185	384961.12	6944816.75	522.94	50.3
MnE	20UG064	2	155	384965.39	6944816.14	523.97	80.0
MnE	20UG065	52	240	384960.88	6944821.32	525.78	50.3
MnE	20UG066	-13	155	384965.41	6944816.12	522.83	70.0
MnE	20UG067	3	215	384960.18	6944819.97	523.00	41.5
MnE	20UG068	3	258	384959.73	6944821.34	523.00	38.3
MnE	20UG069	65	125	384964.77	6944818.49	526.46	41.7

DataSet	Hole_ID	Collar Dip	Azimuth	Easting (NAD 83)	Northing (NAD 83)	Elevation (m)	Depth (m)
MnE	20UG070	35	125	384966.71	6944817.07	525.90	41.3
MnE	20UG072	9	185	384961.10	6944816.71	522.60	46.4
MnE	20UG073	-15	215	384960.25	6944820.04	522.35	41.2
MnE	20UG074	-23	185	384961.11	6944816.81	522.03	58.6
MnE	20UG075	15	185	384961.18	6944817.74	524.05	51.6
MnE	20UG076	-15	215	384960.33	6944820.10	523.52	39.9
MnE	20UG077	10	125	384967.09	6944816.81	524.32	98.5
MnE	20UG140	-12	250	385022.13	6944980.93	487.74	151.5
MnE	20UG141	-6	250	385022.24	6944980.92	487.511	203.25

Source: Aurora (2021)

10.1 Copper Keel West

The Copper Keel West lens lies west of the Copper Keel Main area. The surface drilling campaign on the Copper Keel West deposit began in late 2019 and was completed in January 2020. Two drill holes totaling 602 m were drilled in 2019 and the latter 3 drill holes totaling 1,609 m were completed in early 2020, for a total of 2,211 m. The drilling was targeting gaps of coverage in the lens. Due to difficult ground conditions and overburden, the surface program was shortened and substituted with underground drilling from the 5600 ramp Re-muck Bay 2. The underground diamond drilling program consisted of 2,618 m in 12 holes, designed to fill gaps of coverage caused by the difficult surface drilling conditions. An additional 2 condemnation drill holes totaling 156 m were also completed from the 5600 ramp.

Table 10-9 shows the collar locations for the Copper Keel West deposit area. Figure 10-3 shows the various deposit areas of the Copper Keel deposit area.

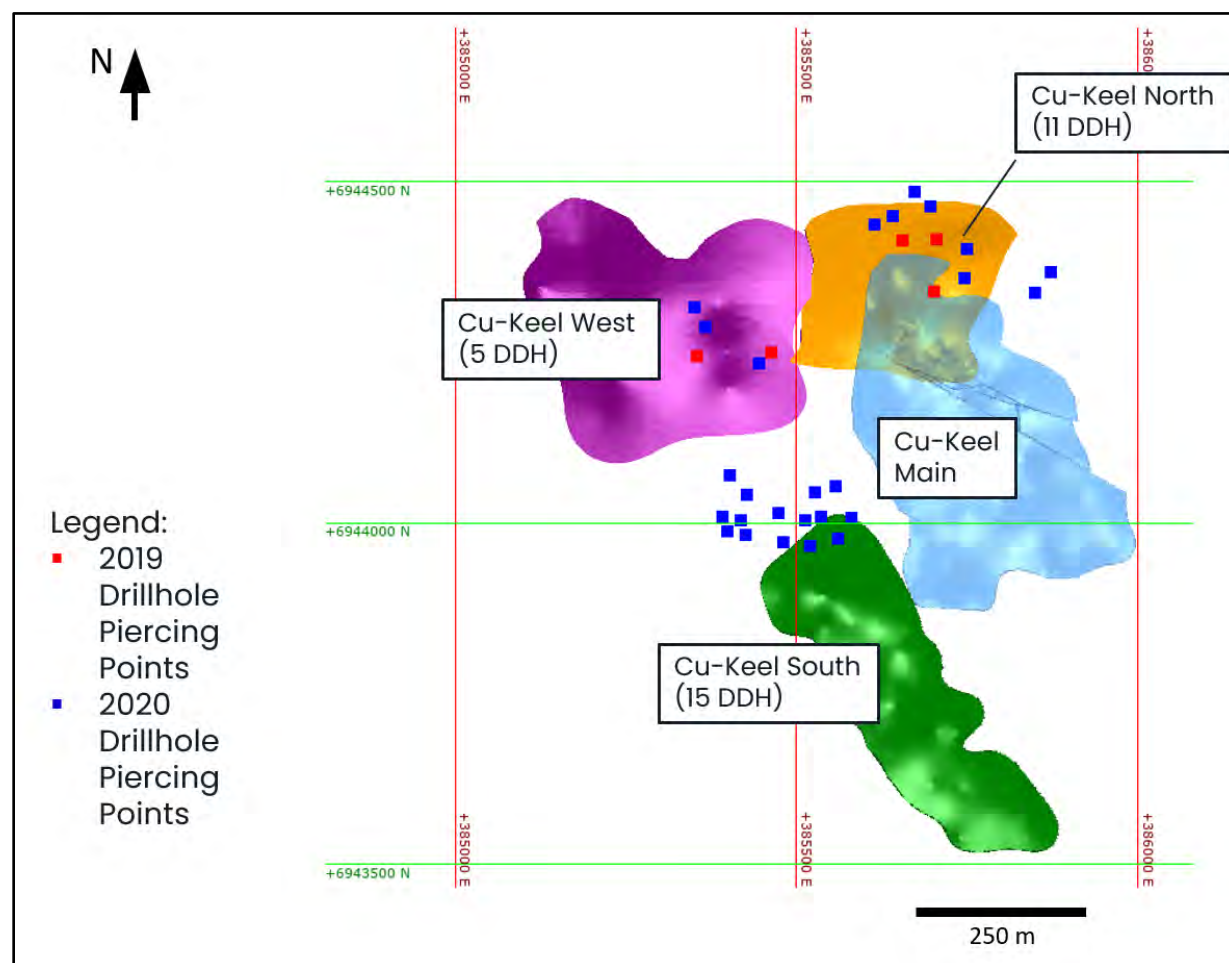
Table 10-9: Significant Intercepts, Surface Drilling, Copper Keel West Deposit

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
19MIN1066	169.90	170.90	1.00	0.727	0.21	2.7
19MIN1066	224.90	226.90	2.00	2.57	1.41	12.8
19MIN1066	248.15	248.45	0.30	2.75	1.95	16.7
19MIN1067	134.72	136.72	2.00	0.72	0.12	0.8
19MIN1067	259.75	261.27	1.52	1.875	0.86	7.9
19MIN1068	138.90	147.90	9.00	0.95	0.27	2.5
19MIN1068	272.50	275.00	2.50	1.67	0.99	10.4

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
19MIN1069	123.85	128.85	5.00	1.65	0.24	1.8
19MIN1069	160.70	161.36	0.66	1.35	0.29	2.5
19MIN1069	167.70	167.92	0.22	0.925	0.16	1.8
19MIN1069	168.92	169.92	1.00	0.834	0.21	5.1
19MIN1069	375.90	376.72	0.82	9.59	1.15	51.3
19MIN1069	412.30	413.30	1.00	1.245	0.32	11.0
19MIN1070	223.25	229.75	6.50	2.09	1.06	8.5
19MIN1070	244.75	246.00	1.25	1.51	1.30	12.5

Source: Aurora (2021)

Figure 10-3: Drill Collar Locations, Copper Keel Area



Source: Minto (2021)

Table 10-9 lists the significant intercepts from surface drilling at the Copper Keel West target. Widths are not necessarily true width, which remain undetermined.

Table 10-10 lists the significant intercepts from underground drilling at the Copper Keel West target.

Table 10-10: Significant Intervals, Underground Drilling, Copper Keel West

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
20UG107				No significant Cu intercepts		
20UG108	41.80	44.80	3.00	0.71		
20UG108	63.10	70.30	7.20	1.88		
20UG109	0.00	8.00	8.00	0.69		
20UG109	15.00	21.00	6.00	0.85		
20UG109	118.00	120.00	2.00	1.22		
20UG109	141.00	142.00	1.00	1.50		
20UG109	149.00	157.00	8.00	1.15		
20UG109	161.00	166.00	5.00	0.81		
20UG109	174.00	177.00	3.00	1.17		
20UG109	186.00	194.00	8.00	0.97		
20UG109	225.00	244.00	19.00	1.00		
20UG110	0.00	8.00	8.00	0.71	0.18	2.4
20UG110	11.72	13.72	2.00	0.84	0.15	2.6
20UG110	98.73	120.37	21.64	1.16	0.64	5.1
incl.	105.70	106.70	1.00	3.04	1.55	14.9
20UG110	122.72	123.72	1.00	0.51	0.07	1.8
20UG110	128.72	129.72	1.00	0.57	0.10	1.9
20UG110	133.51	137.34	3.83	0.84	0.41	4.0
20UG110	143.00	143.75	0.75	0.81	0.39	6.2
20UG110	172.65	179.64	6.99	3.83	1.34	14.4
incl.	177.65	178.65	1.00	4.44	1.11	19.3
20UG110	194.42	196.64	2.22	1.14	0.55	5.7
20UG111	0.00	4.30	4.30	0.74	0.21	1.9
20UG111	11.60	15.00	3.40	0.52	0.21	2.0
20UG111	74.35	74.65	0.30	1.08	0.69	5.9
20UG111	78.00	79.00	1.00	0.62	0.17	2.2
20UG111	84.00	103.00	19.00	1.47	0.82	8.3

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
incl.	88.00	89.00	1.00	4.23	2.46	24.1
20UG111	181.00	181.55	0.55	0.97	0.44	5.2
20UG112	0.00	1.00	1.00	1.41	0.24	-
20UG112	65.00	68.60	3.60	1.21	0.63	-
20UG112	71.00	72.10	1.10	1.37	0.52	-
20UG113	3.25	5.25	2.00	0.52	0.21	1.4
20UG113	11.00	18.85	7.85	0.59	0.25	1.9
20UG113	67.00	68.00	1.00	0.67	0.19	1.3
20UG113	163.73	166.73	3.00	1.23	0.65	6.1
20UG113	168.73	170.25	1.52	1.57	0.53	4.4
20UG113	172.47	177.47	5.00	0.52	0.12	1.4
20UG113	181.47	195.47	14.00	0.61	0.23	3.3
20UG113	204.26	206.78	2.52	0.74	0.22	3.5
20UG114	0.00	3.00	3.00	0.8	0.18	1.6
20UG114	15.00	15.45	0.45	1.08	0.191	4.5
20UG114	103.15	122.00	18.85	2.40	0.96	10.0
incl.	110.15	112.15	2.00	4.82	1.26	18.9
20UG114	142.25	143.65	1.40	0.91	1.22	5.8
and	226.00	251.00	25.00	1.64	1.62	9.8
20UG115	0.00	3.50	3.50	0.69	0.14	-
20UG115	92.40	95.40	3.00	2.42	1.00	-
20UG115	107.15	110.65	3.50	0.80	0.43	-
20UG115	217.60	228.85	11.25	2.00	0.80	10
incl.	217.60	218.60	1.00	6.92	3.04	37
20UG116	9.50	10.50	1.00	1.84	0.13	-
20UG116	13.50	15.50	2.00	0.97	0.14	-
20UG116	18.50	20.50	2.00	0.70	0.18	-
20UG116	86.35	103.25	16.90	1.50	0.99	6
20UG116	68.60	69.25	0.65	6.01	3.22	71
20UG116	72.75	77.70	4.95	2.45	1.74	7
20UG117	1.00	2.00	1.00	0.57	0.13	0.9
20UG117	18.00	19.00	1.00	0.84	0.31	3.5
20UG117	40.00	41.00	1.00	0.63	0.28	1.8
20UG117	47.00	48.00	1.00	0.58	0.09	1.8
20UG117	73.00	74.00	1.00	0.53	0.07	1.5
20UG118	3.00	4.00	1.00	0.58	0.18	2.0

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
20UG118	22.00	29.00	7.00	0.80	0.09	2.0
20UG118	57.00	58.00	1.00	0.79	0.08	2.2
20UG118	67.00	68.00	1.00	0.71	0.08	1.5
20UG118	73.00	76.00	3.00	0.69	0.09	1.2
20UG118	100.20	142.33	42.13	2.55	1.10	8.8
incl.	100.20	103.04	2.84	4.79	2.62	17.5
incl.	118.23	119.23	1.00	4.87	1.76	17.8
20UG119	0.00	2.45	2.45	0.52	0.19	1.9
20UG119	63.81	85.15	21.34	1.68	0.80	6.1
incl.	77.46	78.46	1.00	4.01	1.60	17.5
20UG120	5.17	7.17	2.00	0.62	0.12	1.8
20UG120	47.45	49.20	1.75	2.41	1.11	11.2
20UG120	55.46	67.56	12.10	2.68	1.21	17.6
incl.	56.50	57.50	1.00	9.35	3.52	81.6

Notes:

Ag values shown as “-” are undetermined, but less than 5 ppm (g/t).

Widths are not necessarily true width, which remain undetermined.

Source: Aurora (2021)

10.2 Copper Keel North

The Copper Keel North deposit is located north of the Copper Keel Main area. A total of 4,848 m in 11 surface drill holes was completed in February, 2020 on the Copper Keel North area, with the objective to expand and define the lens towards the north. Due to high metal values returned from the surface drilling program, the underground drilling focused on testing for the extension of the deposit to the north, and to infill the gaps in the central portion of the lens. The underground program was conducted from the 5700 ramp, and consisted of 6 drill holes, totaling 1,161 m. Results for Copper Keel North underground holes 20UG142 through 20UG147 were pending at time of writing.

Surface drilling results indicate the Copper Keel North deposit lies to the north of the Copper Keel Main area, and about 100 m to 150 m below it. The Copper Keel North deposit remains open to the north, in an area deemed prospective from the 2019 airborne magnetic surveying results.

Table 10-11 lists the significant intercepts from surface drilling at Copper Keel North target.

Table 10-11: Significant Intercepts, Surface Drilling, Copper Keel North Area

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
20MIN1063	310.51	313.51	3.00	0.86	0.45	6.00
20MIN1063	394.57	403.08	8.51	3.13	0.87	10.62
incl.	394.57	399.57	5.00	4.01	0.76	12.20
20MIN1064	363.17	372.05	8.88	2.07	1.03	7.98
incl.	369.05	370.05	1.00	4.09	1.76	19.10
20MIN1065	397.40	404.40	7.00	3.77	3.15	16.64
incl.	397.40	399.40	2.00	5.05	5.02	22.40
20MIN1071	428.42	434.38	5.96	0.44	0.33	1.96
20MIN1072	345.30	349.65	4.35	2.24	1.56	11.60
incl.	345.30	346.30	1.00	4.26	2.38	21.90
20MIN1073	324.50	330.80	6.30	0.67	0.21	3.46
20MIN1074	89.30	92.05	2.75	1.15	0.24	2.2
20MIN1074	274.30	274.78	0.48	4.06	0.19	11.3
20MIN1074	323.65	326.65	3.00	0.74	0.10	3.0
20MIN1075	354.30	375.00	20.70	0.83	0.48	3.2
20MIN1076	387.22	400.00	12.78	0.99	0.67	3.8
20MIN1077	396.73	403.30	6.57	1.45	0.70	5.20
20MIN1078	319.30	320.00	0.70	1.46	0.49	4.4
20MIN1078	344.20	353.20	9.00	0.79	0.24	1.5

Notes:

Widths are not necessarily true width, which remain undetermined.

Source: Aurora (2021)

10.3 Copper Keel South

The Copper Keel South lens is located southwest of the Copper Keel Main mining area. The Copper Keel South deposit underwent surface diamond drilling to test for extension of mineralization towards the southwest of the Copper Keel Main lens, where most of the production stopes at Minto were excavated. Surface drilling was completed from March to April 2020 and consisted of 3,816 m in 15 drill holes.

The 2020 program confirmed that the Copper Keel south deposit comprises a series of northwest trending stacked lenses. The largest and uppermost lens dips gently eastwards, and extends towards the Copper Keel Main mining area. The Copper Keel South deposit likely represents the western continuation of the Copper Keel Main deposit.

Table 10-12 lists the significant intercepts from surface drilling at Copper Keel South target.

Table 10-12: Significant Intercepts, Surface Diamond drilling, Copper Keel South Target

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
20MIN1079	160.45	170.00	9.55	1.81	0.59	5.43
20MIN1079	180.00	182.00	2.00	0.70	0.16	4.10
20MIN1079	226.00	232.00	6.00	2.29	1.37	8.42
20MIN1079	256.45	259.00	2.55	1.90	0.37	5
20MIN1080	128.00	143.75	15.75	1.44	0.35	2.69
incl.	140.00	142.00	2.00	2.63	0.77	3.65
20MIN1080	153.00	155.00	2.00	1.00	0.23	2.80
20MIN1080	211.30	214.30	3.00	0.59	0.03	1.80
20MIN1080	249.00	252.00	3.00	0.81	0.08	5
20MIN1081	92.70	95.70	3.00	0.89	0.00	1.2
20MIN1082	183.50	189.50	6.00	2.63	0.77	7.23
20MIN1082	236.00	239.25	3.25	3.07	1.77	9.00
20MIN1083	159.70	163.40	3.70	2.08	0.92	6.35
20MIN1083	173.00	178.74	5.40	0.54	0.09	1.20
20MIN1083	217.00	225.50	8.50	2.14	1.46	9.79
incl.	218.00	219.00	1.00	7.47	6.84	34.00
20MIN1084				Waste: not sampled		
20MIN1085	166.60	168.50	1.90	1.20	0.54	5
20MIN1085	187	188	1.00	0.84	0.12	3.1
20MIN1085	200	200.6	0.60	1.61	0.78	13.2
20MIN1086	192.00	209.20	17.20	2.94	1.34	9.66
incl.	192.00	194.00	2.00	4.60	1.36	5.00
incl.	202.00	204.00	2.00	5.31	1.82	23.05
20MIN1087	188.60	207.10	18.50	1.70	0.70	5.30
incl.	200.85	201.83	1.00	4.54	2.17	18.80
20MIN1088				No Significant Intercepts		
20MIN1089	133.27	136.56	3.29	1.23	0.32	5.00
20MIN1089	209.50	213.40	3.90	1.69	0.71	6.30
20MIN1089	255.84	263.78	7.94	0.39	0.08	1.20
20MIN1090				No Significant Intercepts		
20MIN1091	87.15	90.23	3.08	1.53	0.18	4.90
20MIN1091	107.92	111.11	3.19	1.80	0.35	3.30
20MIN1092	180.35	199.84	19.49	1.50	0.62	7.00

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
incl.	185.35	186.35	1.00	6.70	2.40	46.30
20MIN1093	189.80	208.90	19.10	1.72	0.85	8.58
incl.	189.80	191.80	2.00	4.97	2.05	24.90
20MIN1093	285.40	287.40	2.00	0.70	0.31	2.40

Notes:

Widths are not necessarily true width, which remain undetermined.

Source: Aurora (2021)

10.4 Copper Keel Main

An additional 23 drill holes totaling 979 m of underground drilling were also completed from the 5728 and 5722 stopes in the Copper Keel Main lens (Figure 9-5) to obtain geo-mechanical information for mine design. Results are listed in Table 10-13 below.

Table 10-13: Significant Intercepts, Underground Drilling, Copper Keel Main Underground

Hole ID	From	To	Width	Cu %
20UG100	3.40	5.02	1.62	1.18
20UG100	7.20	15.80	8.60	2.22
20UG100	16.35	17.40	1.05	2.81
20UG101	1.50	10.45	8.95	2.58
20UG102	5.55	23.05	17.50	2.03
20UG103	5.47	8.65	3.40	1.24
20UG103	9.59	11.26	1.67	2.97
20UG104	0.25	0.65	0.40	3.79
20UG104	1.25	1.55	0.30	5.04
20UG104	2.00	5.10	3.10	1.80
20UG105	7.08	12.20	5.12	2.65
20UG105	13.47	14.40	0.93	1.74
20UG105	15.82	16.27	0.45	1.77
20UG105	16.75	18.50	1.75	2.60
20UG106	0.45	5.05	4.60	2.01
20UG107				Condemnation hole
20UG108				Condemnation hole
20UG121	3.00	15.40	12.40	1.29

Hole ID	From	To	Width	Cu %
20UG122	12.00	34.00	22.00	2.84
20UG122	37.75	44.35	6.60	2.03
20UG122	57.00	71.00	14.00	2.26
20UG123	11.75	18.75	7.00	2.26
20UG124			0	Not assayed
20UG125			0	No Significant values
20UG126			0	No Significant values
20UG127	0.00	13.75	13.75	0.72
Incl.	0.00	4.00	4.00	1.61
20UG128	0.00	6.00	6.00	1.96
20UG129	0.00	21.00	21.00	1.67
20UG129	28.00	31.00	3.00	0.55
20UG130	0.00	6.00	6.00	2.10
20UG131	0.00	4.00	4.00	1.99
20UG132				Not assayed
20UG133	3.00	74.89	71.89	1.50
20UG134	0.00	100.00	100.00	1.13
20UG135	0.00	14.00	14.00	1.39
20UG136	2.00	83.00	81.00	1.66

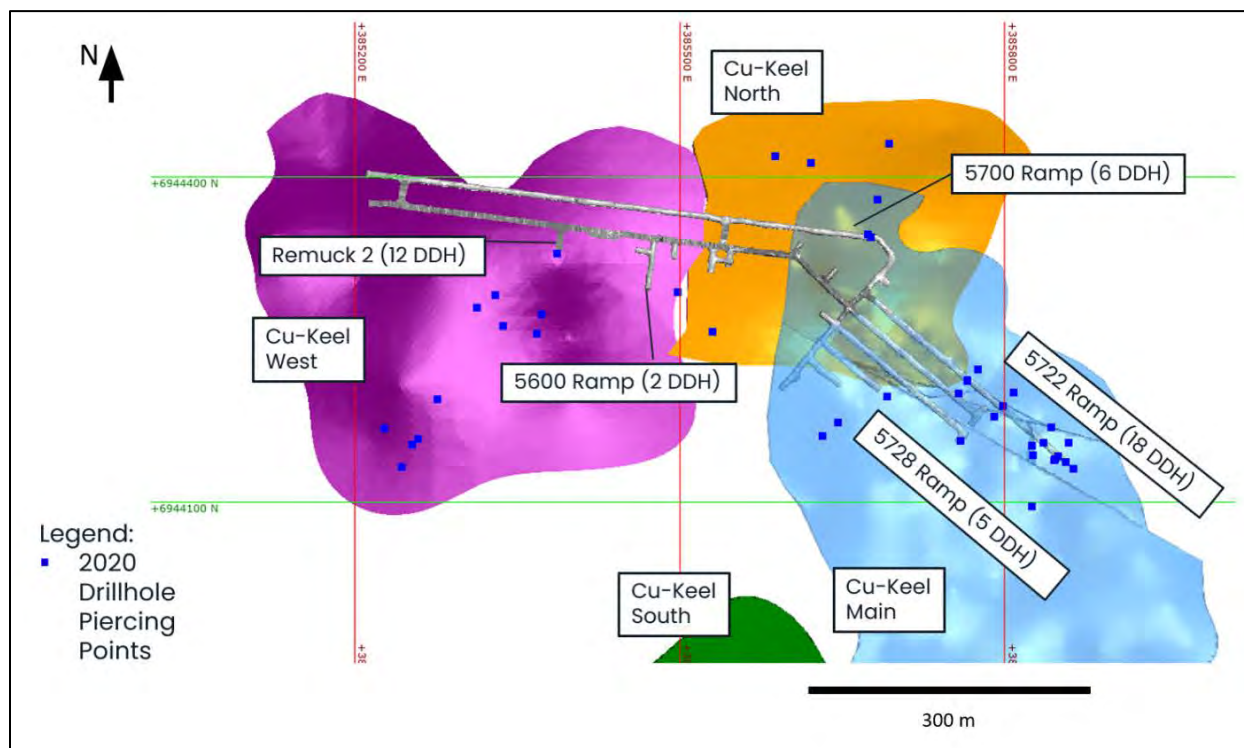
Notes:

Widths are not necessarily true width, which remain undetermined.

Source: Aurora (2021)

Figure 10-4 shows the location of underground drilling at the Copper Keel Main deposit.

Figure 10-4: Location of Underground Diamond Drill Holes, Copper Main Deposit



Source: Minto (2021)

10.5 Minto North 2

The Minto North 2 deposit is located southeast of the Minto North deposit, which was the highest-grade deposit on the property. Extraction by open-pit mining was completed by 2016, but the proximity of the Minto North 2 deposit renders the latter as a high-priority drill target.

The main purpose of the 2020 drill program was to confirm the location and extent of the deposit, as only 10 historic diamond drill holes were completed prior to 2020. The 2020 drill program comprised 5,609 m in 31 holes, completed on 25 m to 30 m drill spacings (Figure 10-5 and Figure 10-6). The program was conducted in two phases between May and September 2020. The Phase I drill program targeted the central portion of the deposit. Results show that the Minto North 2 deposit is a flat-lying, shallow lens occurring ~175 m below surface and 90 m east from the Minto North deposit.

Following up on results of the Phase I program, the second phase targeted the extension and definition of the deposit to the south and east, based on the 2019 high-resolution MAGTM drone survey in combination with 3D inverted Titan 24 DC-IP geophysical survey data. The Phase II drilling results indicate that the Minto North 2 deposit extends to the south and is cut off by a major NNW-trending fault along its east margin. Historic drill holes located on the east side of

the fault intersected mineralization at depth, potentially representing the offset and down-dropped portion of the Minto North 2 deposit to the east.

Table 10-14 lists significant intercepts from the 2020 program at Minto North 2, and Figure 10-5 shows the location of the 2020 diamond drill collars.

Table 10-14: Significant Intercepts, Surface Diamond Drilling, Minto North 2 Target

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
20MIN1094				No Significant Results		
20MIN1095	105.00	124.50	19.50	0.54	0.20	2.1
20MIN1096	23.6	24.6	1.00	0.97	0.51	6.4
20MIN1096	112.25	151.15	38.90	1.66	0.51	5.0
incl.	120.25	122.25	2.00	4.01	1.45	13.3
20MIN1097	84.19	85.35	1.16	4.65	1.19	12.5
20MIN1097	112.87	114.56	1.69	1.16	0.42	13.4
20MIN1097	117.47	146.95	29.48	1.47	0.69	4.6
incl.	130.91	133.91	3.00	3.05	0.85	8.1
20MIN1098	109.80	146.70	36.90	2.40	0.72	7.0
incl.	109.80	113.80	4.00	3.99	1.45	14.1
incl.	131.80	132.80	1.00	10.25	3.00	25.8
20MIN1099	30.35	31.35	1.00	0.79	0.13	2.1
20MIN1099	113.52	142.93	29.41	2.07	0.65	5.7
incl.	122.20	125.20	3.00	2.99	1.16	9.5
incl.	126.52	129.52	3.00	4.75	1.70	10.3
incl.	133.52	135.52	2.00	3.26	0.69	10.9
20MIN1100	120.00	134.30	14.30	2.05	0.41	5.9
incl.	128.60	129.60	1.00	8.19	0.99	15.7
20MIN1101	107.83	146.41	38.58	1.44	0.33	4.3
incl.	126.52	127.11	0.59	6.21	0.60	9.6
20MIN1102	109.00	145.32	36.32	1.00	0.21	2.7
20MIN1103	99.42	102.50	3.08	0.67	0.22	2.9
20MIN1103	106.50	110.50	4.00	0.57	0.13	2.3
20MIN1103	115.50	138.50	23.00	0.53	0.13	2.2
20MIN1104	114.25	139.40	25.15	1.28	0.24	4.2
incl.	131.25	134.25	3.00	3.59	0.56	11.7
20MIN1105	14.55	15.55	1.00	0.55	0.27	3.1

Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
20MIN1105	122.75	135.55	12.80	1.21	0.33	3.6
incl.	123.75	124.75	1.00	3.40	0.73	7.7
20MIN1106	101.36	113.82	12.46	0.55	0.18	2.3
20MIN1107	171.22	171.56	0.34	1.08	0.72	7.2
20MIN1108	109.68	142.70	33.02	1.67	0.66	6.0
incl.	134.21	135.21	1.00	4.92	1.50	16.2
20MIN1109				No Significant Results		
20MIN1110				No Significant Results		
20MIN1111	88.30	123.17	34.87	0.70	0.16	2.6
incl.	118.81	119.85	1.04	3.46	0.677	7.5
20MIN1112	86.13	142.80	56.67	1.11	0.18	2.8
incl.	128.4	129.4	1.00	3.01	0.512	6.5
incl.	100.57	101.57	1.00	3.49	0.381	8.5
incl.	141.30	142.30	1.00	4.75	0.74	6.6
20MIN1112	165.40	172.50	7.10	0.40	0.35	2.3
20MIN1113	110.77	135.14	24.37	1.03	0.14	2.5
incl.	113.70	114.70	1.00	5.17	0.41	10.2
20MIN1114	139.00	145.00	6.00	0.56	0.11	1.9
20MIN1115				No Significant Results		
20MIN1116	84.88	116.30	31.42	0.95	0.13	2.3
incl.	88.88	91.50	2.62	2.71	0.33	6.4
20MIN1116	160.31	166.80	6.49	0.60	0.30	2.4
20MIN1117	32.15	33.15	1.00	0.56	0.13	2.0
20MIN1117	116.22	121.00	4.78	0.97	0.14	3.1
20MIN1117	156.50	159.44	2.94	0.84	0.35	3.5
20MIN1118	111	112	1.00	1.73	0.07	9.7
20MIN1118	130.96	131.74	0.78	0.61	0.09	1.6
20MIN1118	136.1	138.25	2.15	0.95	0.22	3.5
20MIN1119				Assays pending		
20MIN1120				Assays pending		
20MIN1121				Assays pending		
20MIN1122	104.75	114.75	10.00	0.66	0.16	1.8
20MIN1122	129.75	132.75	3.00	1.20	0.98	6.0

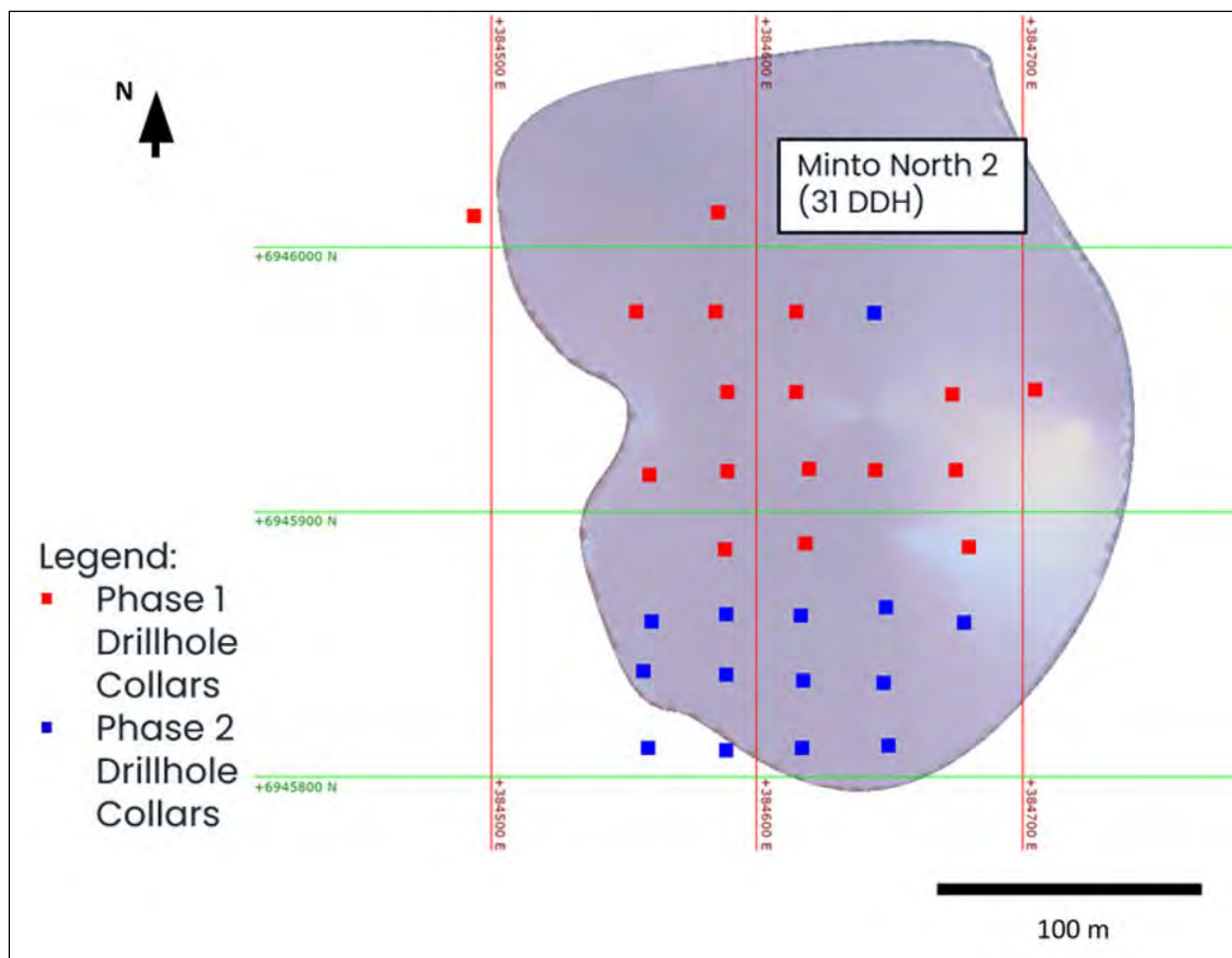
Hole ID	From	To	Width	Cu %	Au g/t	Ag g/t
20MIN1123	164	167	3.00	0.95	0.27	2.8
20MIN1124				Assays pending		

Notes:

Widths are not necessarily true width, which remain undetermined.

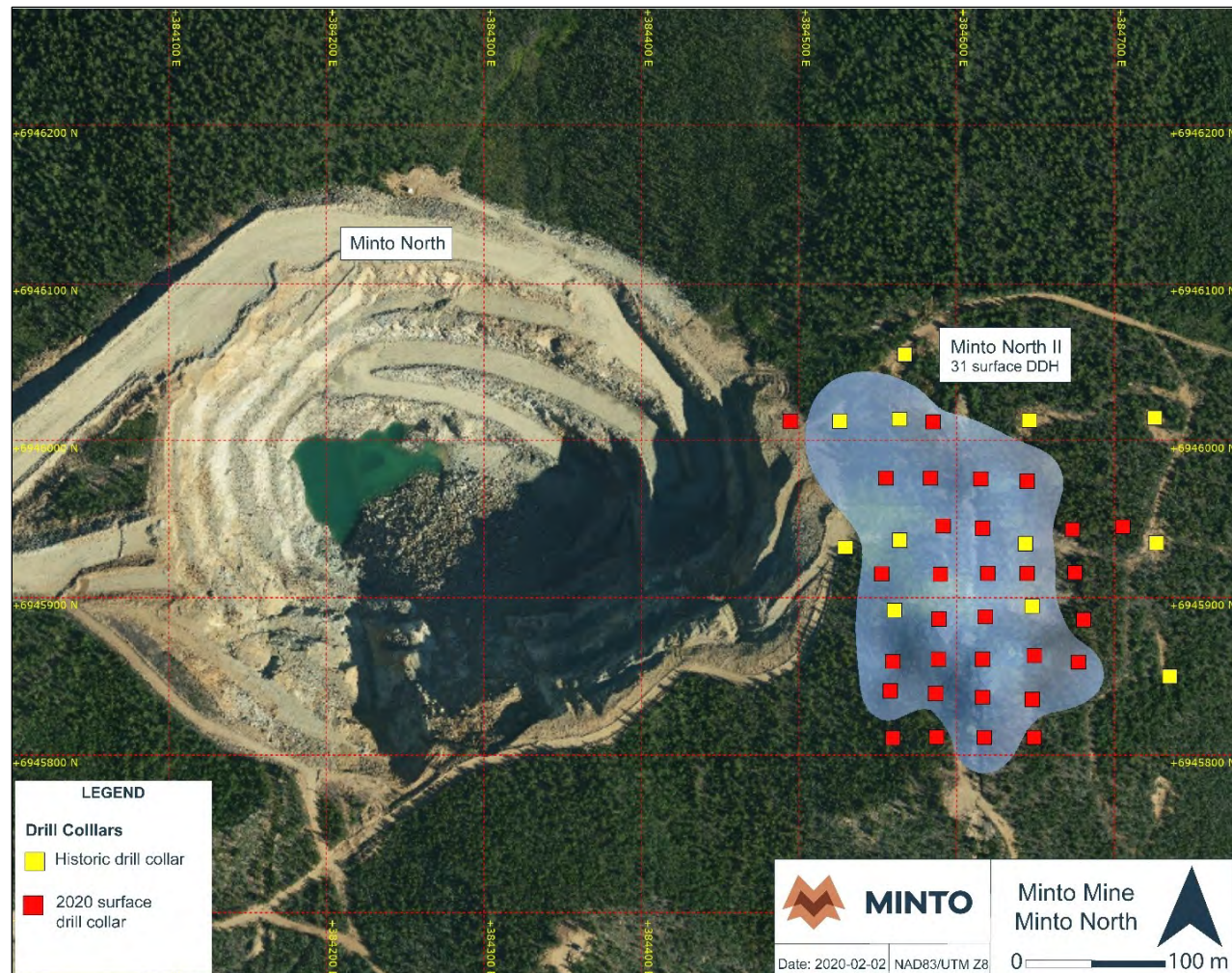
Source: Aurora (2021)

Figure 10-5: Location of 2020 Surface Diamond Drill Collars, Minto North 2 Prospect



Source: Minto (2021)

Figure 10-6: Minto North Open Pit and Minto North 2 Deposit



Source: Minto (2021)

10.6 Minto East

In 2020 an underground drilling program was completed on the Minto East deposit. Drilling was conducted from the 505A stope cross-cuts, and a total of 30 drill holes and 1,565 m was completed. The objective was to test lateral and upward continuity of the Minto East lens to the south, based on results of the MAGTM drone geophysical survey. In addition, 2 diamond drill holes for 355 m were also completed, targeting the pillars of the Minto East 490 level. The objective was to acquire geological and geotechnical information for pillar recovery in the future.

Table 10-15 lists the significant intercepts from 2020 underground diamond drilling at the Minto East prospect.

Table 10-15: Significant Intercepts, 2020 Underground Diamond Drilling, Minto East Deposit

Hole ID	From	To	Width	Cu %
20UG045	9.75	13.42	3.67	1.27
20UG045	15.96	24.66	8.7	0.93
20UG046	0	11.9	11.9	1.71
20UG047	0	20	20	1.64
20UG048	0	9.82	9.82	1.55
20UG049	0	1.67	1.67	2.24
20UG049	10.7	11.97	1.27	1.34
20UG049	14.37	22.14	7.77	1.78
20UG049	36.05	40.1	4.05	0.64
20UG050				No Significant Results
20UG051	0	5.5	5.5	2.07
20UG051	14.2	19	4.8	1.25
20UG052	33.1	46.61	13.51	1.61
20UG053	31.91	32.43	0.52	2.09
20UG054	2.88	21.5	18.62	1.46
20UG055	0	20.6	20.6	1.71
20UG057	0.75	1.75	1	2.65
20UG058	12.5	16	3.5	0.63
20UG059	0	1	1	2.04
20UG059	2	8.5	6.5	2.77
20UG059	25.75	27.15	1.4	1.73
20UG060	0	8	8	1.71
20UG060	11	11.8	0.8	1.26

Hole ID	From	To	Width	Cu %
20UG060	29.7	39.4	9.7	1.11
20UG062	0.5	14.27	13.77	1.52
20UG063	18.3	26	7.7	1.49
20UG063	29.41	32.41	3	1.37
20UG064	27.18	51.5	24.32	0.9
20UG065	0	11.7	11.7	2.06
20UG066			0	No Significant Results
20UG067	16.37	24.5	8.13	1.64
20UG068	20.51	30.75	10.24	0.7
20UG069	0	14	14	1.66
20UG069	29.28	30.14	0.86	0.954
20UG070	6.15	8.41	2.26	1.39
20UG070	12.87	25.6	12.73	1.37
20UG072	16.83	22.43	5.6	1.96
20UG073	15.52	19.86	4.34	4.34
20UG074			0	Not Sampled
20UG075	16.77	22.77	6	1.07
20UG075	42.18	50.31	8.13	1.71
20UG076	7.2	13.53	6.33	2.07
20UG077	39.6	51.75	12.15	1.55
20UG077	77.5	88.92	11.42	1.45

Notes:

Widths are not necessarily true width, which remain undetermined.

Source: Aurora (2021)

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

The sample preparation, security and analytical procedures used by Minto for the Minto Mine have ensured the validity and integrity of samples taken. The procedures and results are described below and come directly from current Minto personnel and previous reports as referenced.

Minto reviews control samples when results are received from the laboratories. MMTS has reviewed all QAQC data from years 2005 through 2020, as provided by Minto, and results follow. There is no available QAQC for holes drilled between 1971 and 2001. Therefore, these samples were validated through statistical comparisons. See Section 12 of this report for a summary of corrections made to both historic and recent data.

11.1 Sampling Protocols and Principal Laboratories

11.1.1 Minto 2019-2020 Sampling, Assaying and QAQC

This information has been provided by current Minto personnel and reviewed by MMTS and found to meet current industry standards.

11.1.1.1 Sample Preparation and Security

All core drilled in 2019-2020 is NQ core. The cut line on the core is marked by the core logger. The core is cut into halves with a diamond saw, with the 'A' side going to the external lab for analysis and the 'B' side retained in the core box. Samples are taken from 1 m intervals with shoulder samples extending 2 m past mineralized zones.

Computer generated bar code tags are provided by the assay lab. These tags are attached to the core box by the core logging geologist at the start of each sample. During cutting, the main part of the tag remains attached to the core box whereas the other 3 bar code tags go into the sample bags with the core. The bags are also marked by hand with a felt maker. The assay lab keeps one tag with each of the sample streams: coarse rejects, fine rejects, and the processed sample.

Prior to core cutting and sample shipment, the drill core is prepared for photography. All individual core boxes are cleaned and then photographed with the meter marks and sample tags clearly indicated using a digital camera. Once the photography is completed, the core loggers upload the photos to Minto's server and rename all photos with the drill hole ID and the from to meterage of the actual core box. These renamed photos are then put into a separate drill hole ID folder on the server.

When core cutting is completed, the drill core is stacked in order by hole ID and then pelletized for storage. The top box of the pellets is sealed with a core lid. The pelletized core boxes are transported to Minto's core yard. Hole IDs are painted on the pelletized boxes.

All sealed sample bags are packaged into rice bags, which are also sealed with a zip-tie and identified by a sample shipment tag. An additional sample shipment tracking sheet is also placed

into the rice bags for tracking. The sample shipment batch identifications are sent to the receiving lab with the total number of samples and sample sequences and once the shipment arrived confirmed by the lab. The rice bags are brought down to Minto's Warehouse, where they are weighted and shipped down to Whitehorse. Samples are usually shipped offsite in batches of 30 to 40 samples to the primary laboratory.

11.1.1.2 Primary Laboratory

As of August 5, 2020, the primary assay laboratory is SGS Canada in Burnaby, BC. SGS in Burnaby is an accredited laboratory by the Standards Council of Canada found to meet standard ISO/IEC 17025:2017. Samples are prepared at the SGS Whitehorse laboratory. Copper assays are done by Aqua Regia digestions with ICP-AES finish, and ICP-MS finish for samples exceeding 10,000 ppm. Gold assays are by Fire Assay with AA finish for 30 g samples. Silver is assayed with 4-acid digestion with AAS and Aqua Regia with ICP-AES finish.

Prior to August, 2020 the ALS laboratory in Whitehorse, YT, served as the preparation laboratory responsible for crushing, splitting and pulverizing. The samples were then shipped to the ALS laboratory in Vancouver, BC for analysis. ALS in Vancouver is a laboratory accredited by the Standards Council of Canada found to meet standard ISO/IEC 17025:2005. At ALS, copper and silver assays are by Aqua Regia digestions with ICP-AES finish, gold assays are 30 g samples by Fire Assay with AA finish.

The change in laboratories occurred after a systemic issue of blank contamination, which appeared as multiple blank assays for copper exceeding 500 ppm.

11.1.1.3 Quality Assurance, Quality Control (QAQC) Procedures

QAQC samples include Standards, Blanks, Pulp Duplicates, Coarse Duplicates and Field Duplicates, one of which is inserted every 10th sample by the Core Logging Geologist. Additional blanks are also inserted before and after high-grade mineralized intervals. All QAQC samples are not identified and considered blind to the laboratory.

QAQC samples are logged into Minto's MaxGeo Logchief drill core logging software with sample ID and depth. Received assay results, are uploaded into Minto's Datashed database, matching by sample numbers. Sample results are monitored and reported by the QAQCR software package by MaxGeo. The lab is notified of failed samples, and re-analyses are requested. Upon receipt of re-assays, new results are uploaded, and ranked with precedence above the first certificate for export.

CMRs are used to monitor accuracy of the laboratory. Minto currently uses CRMs prepared and certified by CDN Resource Laboratories, of Langley, Canada. During the 2019-2020 drill program 195 CRM samples were inserted at frequency of approximately 4% of the sample stream. CRMs are considered failed at the ± 3 standard deviation level. For failed CRMs, the CRM, the two samples preceding, and the two samples following are resubmitted.

Blank samples are used to monitor for contamination at the laboratory. Minto uses material classified as unmineralized granodiorite sourced from the mine's NAG (Not Acid Generating) waste for blanks. The crushed material has been assayed at Minto's on-site lab and determined to be below detection limits of 100ppm for Cu and 1.0 g/t for Ag. The on-site lab does not have the ability to assay gold. Minto's failure criteria for blanks is 500 ppm for copper and 0.15 g/t for gold.

During 2019-2020 drilling program, 183 samples were tested comprising approximately 3.6% of the sample stream. Minto identified 11 blanks failures in the ALS lab results in 2020. These failures affected the sample streams of 401 assays from 10 holes. Quarter-core samples were cut from the stored core for the four surrounding intervals of each failed blank and submitted these to SGS with additional QAQC samples. There were no failures for the included blanks, and two failures for the included CRMs which were reanalyzed. The results of the quarter-core samples were compared to the original ALS assays and found to be within acceptable limits for field duplicates, hence the remaining ALS assays are considered acceptable. The SGS assays have replaced the original ALS assays in the database, and Minto has selected SGS as the primary laboratory. Minto currently uses 100 ppm for copper and 0.03 g/t as failure criteria for blanks.

Field duplicate samples consist of sampling the ‘B’ side of the core of a designated sample as a separate unique sample. Field duplicates are used to assess the variability of the deposit and check for preferential sampling. These samples are numbered consecutively and blind to the laboratory.

A total of 72 field duplicates were sampled during the 2019-2020 drill program at a frequency of approximately 1.5% of the sample stream at regular intervals. Field duplicates show high variability consistent with the heterogeneous mineralization at Minto.

Pulp duplicates are used to assess the repeatability of the laboratory results. Coarse duplicates are used to assess the error introduced during the crush stage of sample prep and the repeatability of the analytical method used. Pulp and coarse duplicate sampling are performed at the lab as directed by Minto geologists, and because of this, the sampling is not truly blind. Coarse duplicate material is sampled following crushing of material to > 75% passing a 2 mm screen. Pulp duplicate material is sampled following pulverization of material to > 85% passing 75 µm screening.

During the 2019-2020 drill program, a total of 54 pulp duplicates for approximately 1% of the sample stream, and 66 coarse duplicates for approximately 1.3% of the same stream were included at regular intervals. Minto's failure criteria for duplicate pairs is outside the 50% error envelope for both types of duplicates.

11.1.2 Sampling, Security and Assaying Minto 2016-2018

This information is based on the Minto's 2014 internal report prepared by Minto's technical team. Per Minto personnel, the same procedures outlined in this report were followed during 2016-2018.

The geologists determine the positioning of samples at the time of logging. For sample markings and cutting lines a red china marker is used. The start and end of the sampling interval and the sample number is written on the core. Using a straight edge mark a saw line on the core a cutting line is established by straightening the core in the proper orientation in the box before drawing the line. During cutting, half of the core samples goes into sample bags and the other half stays in the box. The geologist provides the core cutters a sheet listing all the sample details for each hole, including the “from-to” intervals and type of control sample (e.g., duplicates, standards and blanks).

After the meter marks, geotechnical logging, geological logging, and sample marking have been completed, the core is photographed using a digital camera. Photographs are uploaded to Minto's server.

Optimum sample size is determined to be 1.5 m for all foliated granodiorite units (with or without visible sulfides) along with successive 1 m and 1.5 m shoulder samples at the upper and lower contacts. Sampling fully encompasses the mineralized zone. Sample lengths up to 3.0 m are allowed in waste rock, with a minimum sample size of 0.3 m. Lithological contacts should always be respected. When visible gold (VG) is observed, the sample is assayed using the SCREEN METALLIC method.

A blank, a standard, and one of either a pulp duplicate or coarse reject duplicate is inserted at least once every 20 samples. Thus, there are 3 control samples and 17 core samples out of every 20 samples submitted to the lab.

For standards and blanks, the sample tags are labeled in the stub remaining in the sample book and on the tag stapled to the core box and photographed. For pulp and coarse reject duplicates, the sample tags are labeled in 3 spots including the stub remaining in the sample book, the tag stapled to the core box and photographed, and the tag placed into the sample bag.

The geologist logging the hole is responsible for marking the blanks and standards, including labeling the sample bags and storing these samples where they can easily be added to the sample lineup for shipment.

The core cutter is responsible for writing bags for all of the other samples and taking care of the duplicate samples. For duplicate samples, the first tag and the duplicate tag (marked P or C) goes into the same sample bag. The bag is then be labeled with both sample numbers.

For Blanks, a sample of 30-50 cm pre-cut unmineralized granodiorite is used. It is intended to look like a "regular old core" sample. Blanks are inserted after strongly mineralized samples.

For Duplicates, two types of duplicate samples are used to test the accuracy of the lab at two different stages. Both course and pulp duplicates are selected by the geologist and marked on the sample tags. The coarse reject duplicate is taken after the initial processing steps at the lab, after the first split. The pulp duplicate is taken after the final stage of the sample processing. It tests the homogeneity of the sample material and reproducibility of the result.

For Standards, a 100 g sample of certified reference material is used. Premade standards are stored in Kraft bags are selected by the geologist. The standard that mostly closely matches the estimated grade of the interval is selected.

A Sample Submittal Form is filled out including date and methods required. One copy is placed in a plastic bag and inserted in the Bag #1 of the shipment. The digital file is placed on the portable hard drive, which is given it to the Project Manager. The project manager e-mails the file to the Minto Warehouse and to the data managers. Each bag is marked with the shipping and receiving address, plus the shipment name and bag number. Each shipment includes only samples from a single hole. Shipments are made up in approximately 20 bags lots to keep the load appropriate for the expeditor. The person preparing the sample shipment ensures all samples, including standards and blanks, are packed. The geologist provides a sheet listing all the sample details for each hole, including the "from-to" intervals and type of control sample (e.g., duplicates, standards and blanks). When the bags are loaded on to the truck, the responsible

person ensures that the bags match the total number of bags listed in the submittal form. Shipments are transported to Whitehorse via Small's Expediting Services to ALX Chemex Whitehorse for sample preparation.

11.1.3 Sampling, Security and Assaying MintoEx 2012-2015

This information is based on reporting by Heberlein, 2015 and has not been independently verified by MMTS.

Drill core from exploration and delineation drill holes is sent to ALS in Whitehorse, YT for sample preparation and ALS Vancouver, BC for analysis. NQ diameter cores are photographed, logged and cut at the on-site core shack. Core samples from 0.5 to 2 m in length are sawn into equal halves and one half is bagged and dispatched to the laboratory leaving the second half in the core box as a permanent record.

Both blanks and CRMs are inserted into the sample stream at a frequency of one in 20 samples. Field duplicate sampling using the second half of the core was introduced in early 2015. Field blank material used is unmineralized drill core.

11.1.4 Sampling, Security and Assaying 2011

This section is based on reporting by Minto Explorations, 2012. MMTS has not independently verified the information.

11.1.4.1 MintoEx 2011

The core was transported from the drill rig to the logging facility by the drilling contractor, where MintoEx personnel logged it for geological, sampling, and geotechnical purposes. Geological data including lithology, structure, alteration, and mineralization was recorded for all drill holes. All drill core was photographed for easy reference when constructing geological models for resource estimation.

Sample intervals were marked on the core and a cut line was drawn with a china marker for the diamond saw cutter to follow. Half of the core was placed in a sample bag and the other half was returned to the core box. Sample intervals were nominally taken at 1.5 m in the mineralized zones, with a minimum of 2 shoulder samples taken into the waste contact. Waste material between successively stacked mineralized zones was sampled at 3 m intervals to avoid gaps in assay data.

The 2011 drill core samples, blanks and SRMs were analyzed at the Chemex laboratory for copper and gold analysis in North Vancouver. The pulp and coarse reject duplicates were returned to the MintoEx office in Vancouver, where they were transferred to fresh Kraft paper bags, assigned new sample numbers and resubmitted to Chemex as "blind duplicates".

The samples submitted to Chemex were first crushed in a jaw crusher to reduce the material to greater than 70% -10 mesh (2 mm) with a 250 g subsample split and pulverized to better than 85% passing -75 µm. Copper was determined by aqua regia digestion method with final copper determination by atomic absorption spectroscopy ("AAS"). Non-sulphide copper was analyzed

using sulphuric acid leach with AAS determination. Until May 3, 2011, a screen metallic copper method was used on any samples where native copper was logged. This practice was discontinued when comparison of the two methods showed no appreciable difference in results.

Gold was determined using a fire assay procedure on a 30 g sub-sample with atomic absorption spectroscopy finish. Silver was analyzed using aqua regia digestion and AAS finish.

11.1.5 Sampling, Security and Assaying 1971 – 2010

This section is based on reporting by SRK, 2008, and SRK 2011, MMTS has not independently verified the information.

11.1.5.1 MintoEx 2010

The mineralized intervals in core were sampled in lengths ranging from 0.22 m to 3.90 m and averaging 1.41 m with a median of 1.5 m from 18,739 sawn core samples. Sampling intervals were typically 1.5 m to 2.0 m in mineralized material and 3 m in longer waste intervals between mineralized zones. Drill core assay samples were collected from all foliated granodiorite horizons and, typically, sampling extended into the surrounding massive, unfoliated and unmineralized rock for at least 3.0 m. Individual samples do not cross the geological boundary between foliated and unfoliated rock which is generally a sharp contact. The sampling methodology is appropriate for this style of mineralization.

In 2010, MintoEx cut 18,739 core samples by diamond saw, located on site adjacent to the exploration camp. One half of the core was put into sample bags and then packaged into large rice bags with security zip seals and transported to the laboratory for assaying. From January 28, 2010 to May 5, 2010, 4,437 samples were sent to ALS Chemex in Vancouver for processing and assaying; samples were transported Whitehorse by Small's Expediting Ltd and then to Vancouver by Byers Transport.

When drilling resumed after a short break in the spring, 14,302 samples were sent to ALS Chemex in Whitehorse for processing and then to ALS Chemex in Vancouver for analysis from July 3 to December 15, 2010. The samples were transported initially to Whitehorse by Small's Expediting Ltd. and then in custody of ALS Chemex to Vancouver. The remaining half of the core was returned to the wooden boxes and remains on site as a record of the hole. Drill core was photographed after the sample tags were stapled to the boxes at the down hole end of each sample. Sample tags for standards were also stapled to the box in the order they were taken.

The 2010 drill core samples, blanks and SRMs were analyzed at the Vancouver Chemex laboratory for copper and gold analysis in North Vancouver. In addition, Chemex was also instructed to perform analysis on pulp and coarse reject duplicates injected into the sample stream at regular intervals. After August 2010, the pulp and coarse reject duplicates were returned to the MintoEx office in Vancouver, where they are transferred to fresh Kraft paper bags, assigned new sample numbers and resubmitted to Chemex as "blind duplicates". The samples submitted to Chemex were first crushed in a jaw crusher to reduce the material to greater than 70% -10 mesh (2 mm) with a 250 g subsample split and pulverized to better than 85% passing - 75 µm.

Copper was determined by aqua regia digestion method with final copper determination by atomic absorption spectroscopy ("AAS"). Non-sulphide copper was analyzed using sulphuric acid

leach with AAS determination. When native copper was logged in drill core, a screen metallic copper method was used. Gold was determined using a fire assay procedure on a thirty grams sub-sample with atomic absorption spectroscopy finish. Silver was analyzed using aqua regia digestion and AAS finish.

11.1.5.2 MintoEx 2009

The mineralized intervals in core were sampled in lengths ranging from 0.19 m to 4.50 m and averaging 1.47 m with a median of 1.5 m from 13,026 sawn core samples. Sampling intervals were typically 1.5 m to 2.0 m in mineralized material and 3 m in longer waste intervals between mineralized zones. Drill core assay samples were collected from all foliated granodiorite horizons and, typically, sampling extended into the surrounding massive, unfoliated and unmineralized rock for at least 3.0 m. Individual samples do not cross the geological boundary between foliated and unfoliated rock which is generally a sharp contact.

In 2009, MintoEx cut 13,026 core samples by diamond saw, located on site adjacent to the exploration camp. One half of the core was put into sample bags and then packaged into large rice bags with security zip seals and transported to the laboratory for assaying. From February 4 to October 29, 2009, 13,026 samples were sent to ALS Chemex in Vancouver for processing and assaying. The samples were transported initially to Whitehorse by Small's Expediting Ltd. and then to Vancouver by Byers Transport. The remaining half of the core was returned to the wooden boxes and remains on site as a record of the hole.

Drill core was photographed after the sample tags were stapled to the boxes at the down hole end of each sample. Sample tags for standards were also stapled to the box in the order they were taken.

The 2009 drill core samples, blanks and SRMs were submitted to the Vancouver Chemex laboratory for copper and gold analysis in North Vancouver. In addition, Chemex was also instructed to perform analysis on pulp and coarse reject duplicates injected into the sample stream at regular intervals.

The samples submitted to Chemex were first crushed in a jaw crusher to reduce the material to greater than 70% -10 mesh (2 mm) with a 250 g subsample split and pulverized to better than 85% passing -75 µm. Copper was determined by aqua regia digestion method with final copper determination by atomic absorption spectroscopy ("AAS"). Non-sulphide copper was analyzed using sulphuric acid leach with AAS determination. Gold was determined using a fire assay procedure on a thirty grams sub-sample with atomic absorption spectroscopy finish. Silver was analyzed using aqua regia digestion and AAS finish.

11.1.5.3 MintoEx 2008

The mineralized intervals in core were sampled in lengths ranging from 0.25 m to 4.20 m and averaging 1.29 m with a median of 1.3 m from 12,538 sawn core samples. Sampling intervals were typically 1.5 m in mineralized material and 3 m in longer waste intervals between mineralized zones. Drill core assay samples were collected from all foliated granodiorite horizons and, typically, sampling extended into the surrounding massive, unfoliated and unmineralized rock for at least 3 m. Individual samples do not cross the geological boundary between foliated and unfoliated rock which is generally a sharp contact.

In 2008, MintoEx cut 12,538 core samples by diamond saw, located on site adjacent to the exploration camp. One half of the core was put into sample bags and then packaged into large rice bags with security zip seals and transported to the laboratory for assaying. From March 8 to September 25, 2008, 6,450 samples from outside the Ridgetop area were transported by truck to SGS Laboratories (under contract agreement) at the Minto Mine Site, Yukon for assaying for copper and silver.

During mid-July, MintoEx requested quality control copper reanalysis at the SGS Lakefield, Ontario facility after a switch failure at the Minto Mine Site facility. From July 27 to September 30, 2008, 6,087 samples were sent to ALS Chemex in Terrace for processing and on to Vancouver for assaying. The samples were transported initially to Whitehorse by Small's Expediting Ltd and then to Vancouver or Terrace by Byers Transport. The remaining half of the core was returned to the wooden boxes and remains on site as a record of the hole.

Drill core was photographed after the sample tags were stapled to the boxes at the down hole end of each sample. Sample tags for standards were also stapled to the box in the order they were taken.

Two laboratories were used in 2008. Drill core samples, blanks, SRMs and duplicates were submitted to SGS Laboratories under agreement with MintoEx, and to the Vancouver Chemex laboratory for copper and gold analysis in North Vancouver, BC after processing at the sample preparation facility in Terrace, BC. SGS Laboratories under agreement with MintoEx processed 61% of the total number of samples from areas outside of Ridgetop. The remaining 39% of the samples were analysed at the Vancouver Chemex Lab.

The samples submitted to SGS were first crushed in a jaw crusher to reduce the material to greater than 85% -10 mesh (2 mm). A 250 g subsample was then split and pulverized to better than 90% passing -75 µm. The pulp was split with one part analysed for copper and silver at the SGS facility at the Minto site and one part analysed for gold and non-sulphide copper at SGS Red Lake, ON operation. During mid-July, silver analyses were performed by SGS at Lakefield, ON and Don Mills, ON after a switch failure in SGS Minto ICP-AAS equipment. Copper reanalysis due to SRM failures were done by SGS at Lakefield and Don Mills in Ontario.

Copper was determined by aqua regia digestion method with final copper determination by atomic absorption spectroscopy ("AAS"). Non-sulphide copper was analyzed using sulphuric acid leach with AAS determination. Samples were assayed for gold using a fire assay procedure on a thirty grams sub-sample with atomic absorption spectroscopy finish. Silver was analyzed using aqua regia digestion and AAS finish.

The samples submitted to Chemex from July 27 to August 19 were first crushed in a jaw crusher to reduce the material to greater than 85% -10 mesh (2 mm). A 250 g subsample was then split and pulverized to better than 90% passing -75 µm. The sample turnaround time increased to nearly 7 weeks after implementing the finer crush, so subsequent samples were first crushed in a jaw crusher to reduce the material to greater than 70% -10 mesh (2 mm) with a 250 g subsample split and pulverized to better than 85% passing -75 µm.

At Chemex, copper was determined by the four acid digestion method (HF, HNO₃, HClO₄ digestion and HCL-leach) with final copper determination by atomic absorption spectroscopy ("AAS"). Non-sulphide copper was analyzed using sulphuric acid leach with AAS determination. Gold was determined by one assay-tonne fire assay analysis followed by AAS. Silver was analyzed using aqua regia digestion and AAS finish.

11.1.5.4 MintoEx 2007

The mineralized intervals in core were sampled in lengths ranging from 0.24 m to 3.49 m and averaging 1.33 m with a median of 1.5 m from 7,450 sawn core samples. Sampling intervals were typically 1.5 m in mineralized material and 3.0 m in longer waste intervals between mineralized zones. Drill core assay samples were collected from all foliated granodiorite horizons and, typically, sampling extended into the surrounding massive, unfoliated and unmineralized rock for at least 3.0 m. Individual samples do not cross the geological boundary between foliated and unfoliated rock which is generally a sharp contact.

In 2007, MintoEx cut 7,450 core samples by diamond saw, located on site adjacent to the exploration camp. One half of the core was put into sample bags and then packaged into large rice bags with security zip seals and transported to the laboratory for assaying. From July 5 to 15, 2007, 485 samples were transported by truck to SGS Laboratories (under contract agreement) at the Minto Mine Site, Yukon for assaying for copper and silver. Lab capacity was unsuited to a large, ongoing influx of exploration samples so no further samples were submitted. The coarse rejects for the 485 samples and sawn core for all subsequent samples were sent to ALS Chemex in Terrace for processing and on to Vancouver for assaying and ICP multi-element analysis. Samples were transported initially to Whitehorse by Small's Expediting Ltd and then to Vancouver or Terrace by bonded carrier; either Manitoulin Transport or Air North Ltd. The remaining half of the core was returned to the wooden boxes and remains on site as a record of the hole.

Drill core was photographed after the sample tags were stapled to the boxes at the down hole end of each sample. Sample tags for standards were also stapled to the box in the order they were taken.

The 2007 drill core samples, blanks SRMs and duplicates were submitted to Chemex, the primary laboratory, for copper and gold analysis in North Vancouver, Canada. Some samples were processed at other locations: SGS Laboratories in Vancouver, 6% of the total number of samples; Chemex-Elko, NV, USA processed 4% of the total number of samples, Chemex-Reno, NV, USA processed 10%, and Chemex-Terrace processed 50%.

The samples submitted to Chemex were first crushed in a jaw crusher to reduce the material to greater than 70% -10 mesh (2 mm). A 100 to 250 g subsample was then split and pulverized to better than 85% passing -75 μ m. Copper was determined by four acid digestion method (HF, HNO₃, HClO₄ digestion and HCL-leach) with final copper determination by atomic absorption spectroscopy ("AAS"). Non-sulphide copper was analyzed using sulphuric acid leach with AAS determination. Gold was determined by one assay-tonne fire assay analysis. The gold analysis was determined using AAS method. Silver was analyzed using aqua regia digestion and AAS finish. All sample submittals included SRM samples, blank samples and pulp and coarse reject duplicates to assure the quality of the assay data.

11.1.5.5 MintoEx 2005 to 2006

The mineralized intervals intersected in core have been sampled in lengths ranging from 0.3 m to 3.0 m and averaging 1.0 m to 1.5 m. The sampling intervals were typically 1.5 m in mineralized material and 3.0 m in longer waste intervals within the mineralized zones. Two shoulder samples were taken in waste at both the upper and lower contacts, consisting of a 1.5 m sample and a 1.0 m sample. Samples did not cross geological contacts.

MintoEx analyzed 1,391 sawn core samples in 2005 and 1,354 in 2006. The samples were tagged and then split in half using a rock saw on site. One half of the core was put into sample bags and then packaged into rice bags with security zip seals and sent to Vancouver for assaying. Manitoulin Transport was used to send the samples by ground in 2005 and Air North was commissioned in 2006 to air freight the samples. The remaining core was returned to the boxes and remains on site as a record of the hole. In 2005 and 2006, the core was photographed after the sample tags were stapled to the boxes at the down hole end of each sample. Sample tags for standards were also stapled to the box in the order they were taken.

During 2005 and 2006, drill core samples, blanks and duplicates were submitted to the Vancouver Chemex laboratory for copper and gold analysis in North Vancouver, Canada. In 2005, all samples were processed in Vancouver. In 2006, some samples were processed at other Chemex locations. Chemex-Elko, NV, USA processed 9% of the total number of samples and Chemex-Thunder Bay, ON processed 11%.

The samples submitted to Chemex were first crushed in a jaw crusher to reduce the material to greater than 70% -10 mesh (2 mm). A 100 to 250 g subsample was then split and pulverized to better than 85% passing -75 μ m. Copper was determined through four acid digestion method (HF, HNO₃, HClO₄ digestion and HCL leach) with final copper determination by atomic absorption spectroscopy ("AAS"). Non-sulphide copper was analyzed using sulphuric acid leach with AAS determination.

Gold was determined by one assay tonne fire assay analysis. During 2005, all sample analysis was completed by gravimetric finish. During 2006, the first 17% (1,955) of the sample analysis was completed by gravimetric finish. For the remaining samples (9,182), the gold analysis was determined using AAS method. Silver was analyzed using aqua regia digestion and AAS finish.

All samples were accompanied by Standard Reference Material ("SRM") samples, blank samples and pulp and coarse reject duplicates.

Blank material in 2005 and 2006 is approximately 1 kg of unfoliated granodiorite chips collected from a rock cut located on the main access road approximately 2 km due east of the Minto deposit. Two standard reference material samples (SRM) were inserted for each batch of 20 samples, one for copper and one for gold.

11.1.5.6 Teck 1993 to 2001

From 1993 to 2001, Teck drilled 48 diamond drill holes on the Minto property. Sample lengths vary from 0.55 m to 2.75 m, averaging 1.59 m with a median of 1.53 m. A few stacks of 1994 core were reportedly discovered at the old location of the MintoEx camp site and at the Yukon Geological Survey core library but the bottom of the holes containing mineralized intervals were not present. No other useable drill core from the 1993 to 2001 period remains on-site.

Sampling protocols used for the Teck drill holes were not well documented. The historic samples would likely have been prepared on site from split core under the supervision of Teck and MintoEx geologists, bagged and shipped to the laboratory. It is considered unlikely officers or directors of Teck or MintoEx were involved in sample preparation.

Subsequent sample preparation such as crushing, pulverizing and sample splitting would have been the responsibility of the laboratory. Northern Analytical Services of Whitehorse, Yukon conducted the analyses for copper, gold and silver. Analytical methods are not documented in

the certificates of analysis for this work. Non-sulphide copper was not initially quantified by analysis of soluble copper at Northern Analytical Services.

Silver analysis was performed using reverse aqua regia digestion and AA determination. Bondar-Clegg of North Vancouver carried out the analyses of the 2001 samples. Each sample was coarse analysis, a 0.25 gm sample was digested with HCL, HNO₃, HCLO₄ and HF acids with final copper determination by AA Spectroscopy. Gold and silver were determined by fire assay using a 30 gm sample and AA finish.

Quality control procedures used in during the 1993 to 2001 drill programs are not known. The 2001 sample shipments were accompanied by 4 types of quality control samples, namely: a blank (granodiorite from the site), an ASARCO coarse standard, prepared pulp samples and duplicate splits (coarse ground rejects and the pulverized rejects). Some of the blanks were placed immediately following a rich copper sample and they returned trace amounts of Cu. This could possibly indicate minor contamination during the sample preparation process, but the amount of contamination was deemed insignificant (Simpson, 2001, as cited in SRK, 2008). All of the other quality control measures produced acceptable repeatability (Simpson, 2001, as cited in SRK, 2008) verifying the results of the 2001 drilling. Information regarding security of samples, was not documented during the 1993 to 2001 drill programs.

11.1.5.7 ASARCO 1971 to 1974

There are no detailed descriptions of the historical sampling methods and quality control procedures used by ASARCO, it is thought that they favoured 5 and 10 ft long samples. No usable core survives from that period. Subsequent sample preparation such as crushing, pulverizing and sample splitting would have been the responsibility of the laboratory. Chemex in Vancouver is believed to have been responsible for the 1970s analyses (Simpson, 2002, as cited in SRK, 2008). At the time, copper analyses were typically performed by digesting a 2 g sample pulverized to 100 mesh, in perchloric and nitric acid with an AA finish. Gold analyses in the 1970's probably used a 10 g pulp digested in aqua regia and an AA finish. Some of the early samples were not analyzed for precious metals. Most samples were analyzed solely for total copper. The result is an incomplete data set in terms of gold and silver. Historically, non-sulphide copper was not universally quantified by analysis of soluble copper.

11.2 Minto QAQC Summary

MMTS has been provided with the QAQC database by Minto. The QAQC has been compiled by MMTS by deposit and is summarized in Table 11-1. As shown below, 16% of the total assay database are QAQC samples, which is approximately 4 in 25 samples and therefore is adequate for industry standards.

Table 11-1: Total QAQC Samples by Deposit Area

Area	Assays	Blanks	Standards	Field Duplicates	Pulp Duplicates	Coarse Duplicates	Total QAQC Samples	% QAQC
Copper Keel, Ridgetop and 118	79,965	4,674	4,774	121	4,079	2,034	15,682	16%
Minto East	20,846	1,153	1,311	8	736	280	3,488	14%
Minto North	6,942	406	404	21	297	268	1,396	17%
Total	107,753	6,233	6,489	150	5,112	2,582	20,566	16%

Source: MMTS (2021)

11.2.1 Copper Keel, Ridgetop and 118 QAQC

The total number of QAQC samples is presented in Table 11-2 and represents 16% of the total assay database in Copper Keel, Ridgetop and 118, which is adequate. The assignment of blanks and standards to area and year is approximate and is done by majority of samples and minimum year on certificate.

Table 11-2: Summary of QAQC Samples in Copper Keel, Ridgetop and 118

Year	Assays	Blanks	CRMs	Field Duplicates	Pulp Duplicates	Coarse Duplicates	Total QAQC Samples	% QAQC
2005	5	8	12				20	80%
2006	9772	533	595		392	395	1,915	16%
2007	10,303	638	631		663	511	24,43	19%
2008	12,431	657	728		1016	174	2,575	17%
2009	8,070	509	486		507	524	2,026	20%
2010	13,626	864	852		844	214	2,774	17%
2011	11,585	694	695		352	5	1,746	13%
2012	3,908	236	250		115		601	13%
2014	1,869	113	110	32	43	39	337	15%
2015	2,321	131	130	43	44	42	390	14%
2016	529	27	28	1	13	12	81	13%
2017	1,831	78	77	8	33	46	242	12%
2018	637	42	39	4	14	18	117	16%
2019	143	7	6		1	4	18	11%
2020	2,935	137	135	33	42	50	397	12%
Total	79,965	4,674	4,774	121	4,079	2,034	15,682	16%

Source: MMTS (2021)

11.2.2 Blanks

The results of the analyses of the 4,674 samples of blank material in the assay sample stream is given in Table 11-3. The overall 0.5% failure rate is indicative of minor contamination issues at the laboratory. The 2 failures in 2020 are in samples assayed from the in-house lab in the underground blast holes which were not used in the resource model, and as such are of no consequence to the resource estimate.

Table 11-3: Copper Keel, Ridgetop and 118 Blanks Results for Cu

Year	Blanks	Fails	% Fail
2005	8	0	0.0%
2006	533	1	0.2%
2007	638	1	0.2%
2008	657	4	0.6%
2009	509	6	1.2%
2010	864	3	0.3%
2011	694	2	0.3%
2012	236	0	0.0%
2014	113	5	4.4%
2015	131	0	0.0%
2016	27	0	0.0%
2017	78	0	0.0%
2018	42	0	0.0%
2019	7	0	0.0%
2020	137	2	1.5%
Total	4,674	24	0.5%

Source: MMTS (2021)

The overall failure rates for blanks for gold is 0.4% and silver is 0.2% and follows a similar pattern to the table for copper with all failure in years 2016 and before, indicating contamination has been a minor problem, and is being adequately addressed with current QAQC procedures.

11.2.3 Certified Reference Materials

The results of analysis of 4,624 entries of 36 Certified Reference Materials (CRMs) for Cu with greater than 20 entries in the Copper Keel, Ridgetop and 118 area from years 2005 through 2020, are presented in Table 11-4 and is in order of Expected Value. The overall failure rate is

6% of samples and the failures are shown to happen more frequently due to high assays than low, confirmed by the small overall positive error.

Table 11-4: Copper Keel, Ridgetop and 118 CRM Results for Cu

Standard	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Cu EV (pct)	Cu Avg (pct)	% Error	CV Cu
GS-8	2007	2008	21	4	3	33.3%	0.105	0.107	2.0%	9.9%
CGS-5	2006	2006	34	0	2	5.9%	0.155	0.157	1.5%	3.6%
CU132	2005	2006	31	1	0	3.2%	0.170	0.165	-3.1%	18.1%
CGS-23	2007	2011	688	3	90	13.5%	0.182	0.191	5.1%	23.4%
CM-16	2012	2017	183	2	2	2.2%	0.184	0.188	2.4%	11.5%
CM-36	2015	2020	48	1	0	2.1%	0.227	0.227	0.0%	14.9%
CGS-12	2006	2008	208	2	12	6.7%	0.265	0.270	1.9%	3.9%
CM-20	2012	2018	82	0	0	0.0%	0.316	0.318	0.6%	2.8%
CM-5	2010	2010	72	0	6	8.3%	0.319	0.334	4.8%	3.5%
CGS-18	2008	2009	196	0	13	6.6%	0.319	0.326	2.2%	3.2%
CGS-13	2007	2008	29	0	0	0.0%	0.329	0.332	0.8%	2.1%
CM-8	2010	2010	85	1	6	8.2%	0.364	0.381	4.6%	4.6%
CGS-27	2011	2011	20	1	6	35.0%	0.379	0.394	4.0%	11.1%
CGS-15	2008	2010	396	7	25	8.1%	0.451	0.457	1.4%	8.4%
CU116	2005	2008	31	0	2	6.5%	0.470	0.484	3.0%	2.1%
CM-23	2014	2017	29	0	2	6.9%	0.472	0.527	11.6%	56.1%
CGS-9	2006	2008	154	0	3	1.9%	0.473	0.487	3.0%	3.0%
CGS-24	2010	2011	214	1	3	1.9%	0.486	0.495	1.8%	10.3%
CM-3	2008	2008	20	1	2	15.0%	0.548	0.555	1.2%	6.1%
CGS-29	2011	2012	53	0	0	0.0%	0.575	0.577	0.3%	2.1%
CM-34	2007	2020	49	6	4	20.4%	0.580	0.596	2.7%	41.8%
CM-27	2014	2020	24	0	0	0.0%	0.593	0.595	0.3%	2.3%
CGS-11	2006	2009	501	3	13	3.2%	0.683	0.691	1.2%	2.5%
CGS-22	2008	2012	175	2	22	13.7%	0.725	0.777	7.1%	21.9%
CU115	2005	2006	27	0	3	11.1%	0.990	1.020	3.0%	2.4%
CGS-7	2006	2007	229	2	0	0.9%	1.010	1.012	0.2%	4.0%
CM-2	2006	2009	147	0	0	0.0%	1.013	1.016	0.3%	5.0%
Capstone Minto Standard 1	2008	2018	172	1	3	2.3%	1.135	1.130	-0.4%	5.9%
CGS-10	2006	2008	242	0	3	1.2%	1.550	1.540	-0.6%	2.3%
CGS-28	2011	2018	38	3	0	7.9%	2.033	1.896	-6.8%	27.6%
CGS-17	2008	2016	63	4	0	6.3%	2.360	2.268	-3.9%	18.2%

Standard	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Cu EV (pct)	Cu Avg (pct)	% Error	CV Cu
CDN-CM-18	2017	2020	32	0	0	0.0%	2.370	2.310	-2.5%	5.7%
CU128	2006	2007	48	1	0	2.1%	2.600	2.537	-2.4%	14.8%
Capstone Minto Standard 2	2009	2017	103	0	0	0.0%	2.815	2.780	-1.2%	2.1%
SM-04	2020	2020	89	1	5	6.7%	3.800	3.811	0.3%	9.2%
Capstone Minto Standard 3	2009	2018	91	2	0	2.2%	5.335	5.177	-3.0%	5.3%
Total	2005	2020	4,624	49	230	6%			1.8%	

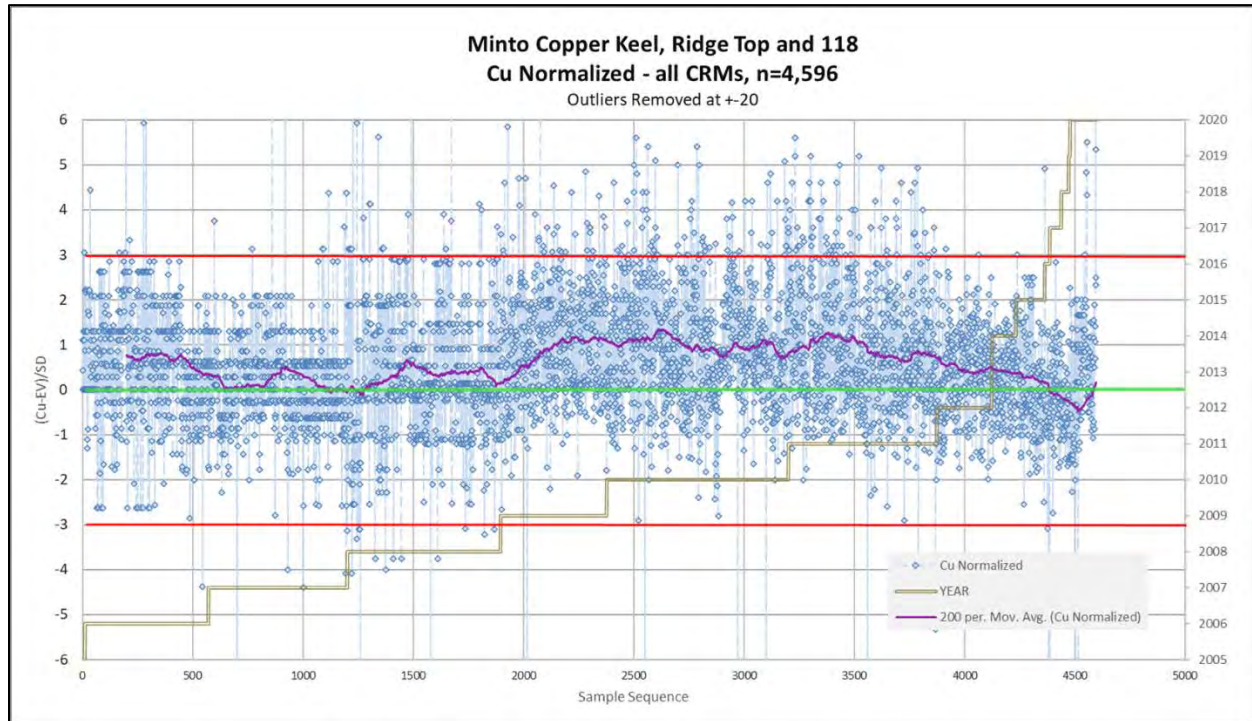
Source: MMTS (2021)

In general, MMTS finds the results of the CRM analyses in Copper Keel, Ridgetop and 118 area to be acceptable. Potential mislabels are a contributing factor to the failure rate as demonstrated in some of the following process control charts. It has been reported that Minto monitored results and ordered re-assaying of a failed sample batch “if a re-assay was warranted” (Minto Explorations, 2012). Because the provided database includes many failures and the condition of “warranted” is not clear, MMTS considers the dataset as is.

A normalized process control chart is given in Figure 11-1 in which the difference between the assay value and the CRM expected value is divided by the standard deviation of the CRM for all samples in order of year and sample number. Acceptable results are expected to fall within the ± 3 standard deviations. The ± 3 std. dev. values are indicated in the plots as red lines. The average value of the data should be close to the zero line (shown in green) and is plotted in purple for the 200-sample moving average. This line confirms the positive trend indicated by the overall positive error above and shows the positive error to be particularly noticeable in years 2009 and 2010 when the moving average line remains close to the +1 standard deviation line. Samples with normalized values greater than 20, or less than -20 have been excluded from this graph, in an attempt to exclude potential “mislabels”. Samples within the ± 20 and outside the ± 6 value are not shown but are included in the moving average calculation.

There are some failures that appear in the 2020 drilling, visible in Figure 11-1 MMTS has been provided with documentation of resubmittals made to the laboratories by Minto, with results not received prior to the database provided to MMTS for modeling.

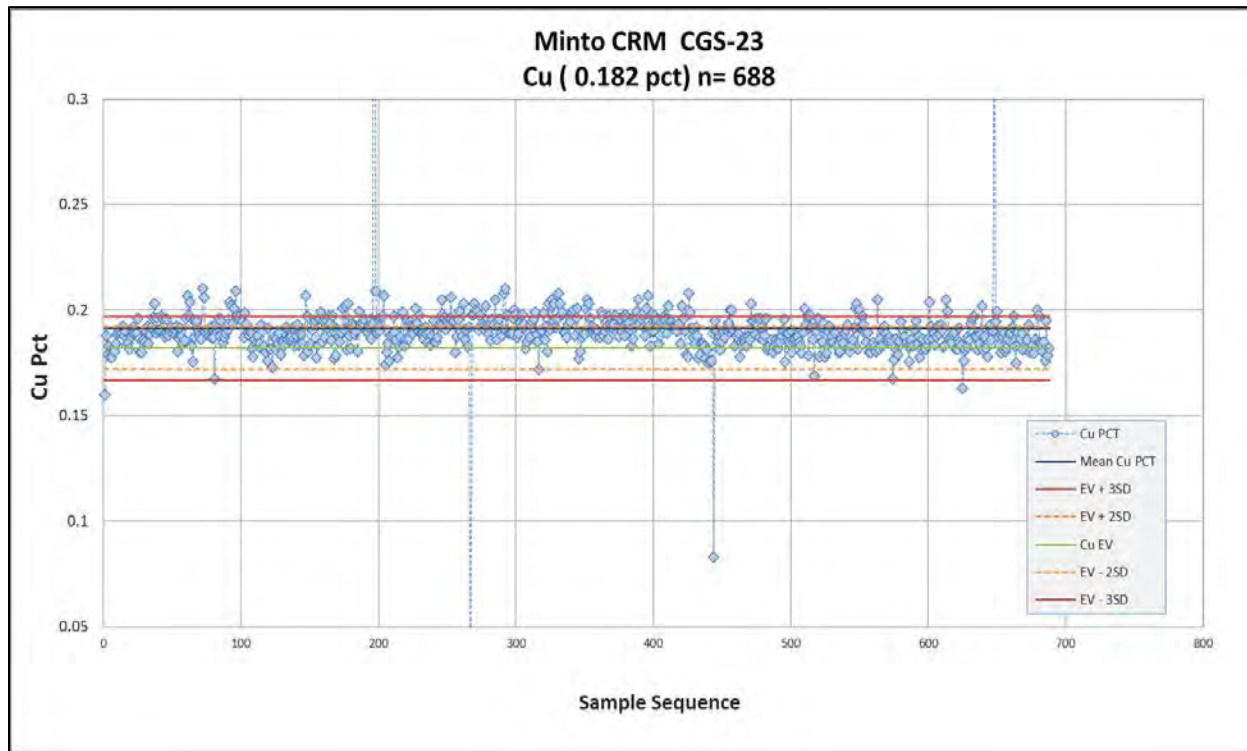
Figure 11-1: Cu Normalized Process Control Chart – Minto Copper Keel, Ridgetop and 118



Source: MMTS (2021)

The results for 688 entries of CGS-23 used between 2007 and 2011, with expected value 0.182% Cu, presented in Figure 11-2. The results show an overall positive bias of almost 5% with a failure rate of 13.5%, has 4 samples with significantly erroneous results that may be mislabeled samples. The next CRM used at a similar grade, CM-16, (process control chart not shown) was used between 2012 and 2017, has 183 entries, has a smaller positive bias and a lower failure rate of 2.3%.

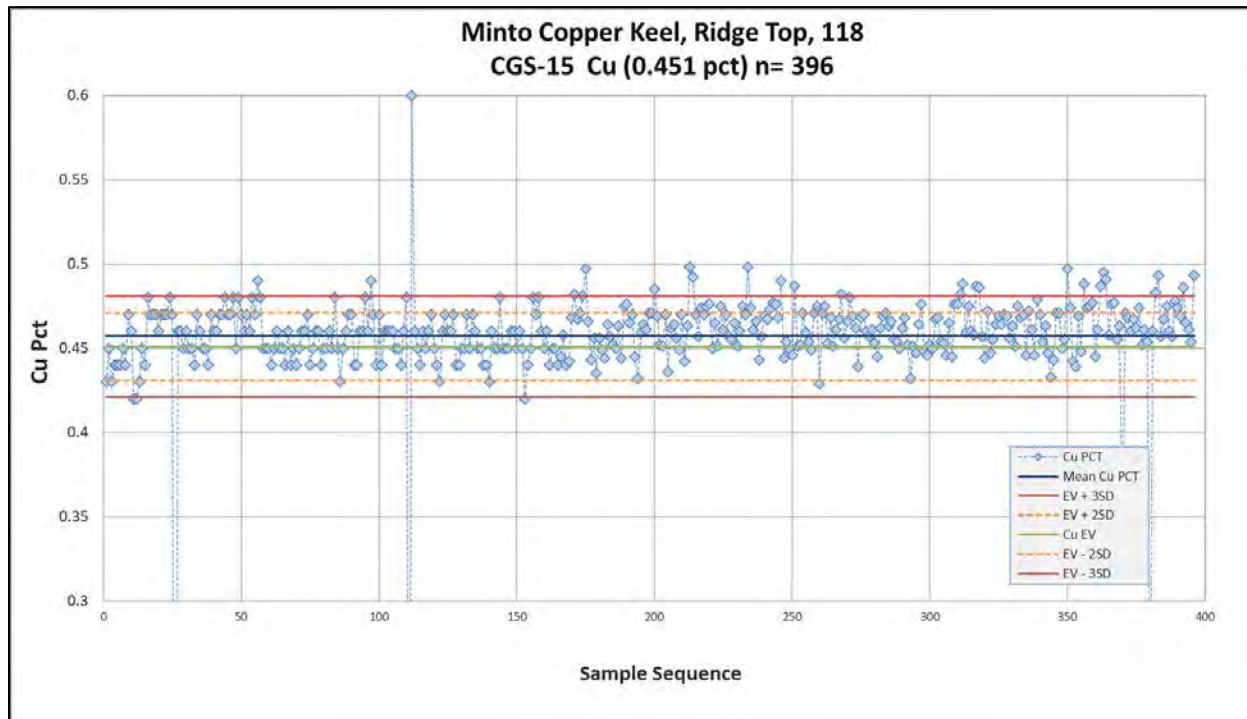
Figure 11-2: Process Control Chart for CGS-23 (Cu=0.182%) Minto Copper Keel, Ridgetop and 118



Source: MMTS (2021)

Figure 11-3 shows results for CRM CGS-15, with expected value 0.451% Cu, used between 2008 and 2010, with 396 samples. The failure rate is 8.1%, with a small positive bias that is seen to trend higher over time. There are five clear outliers that may be mislabeled samples.

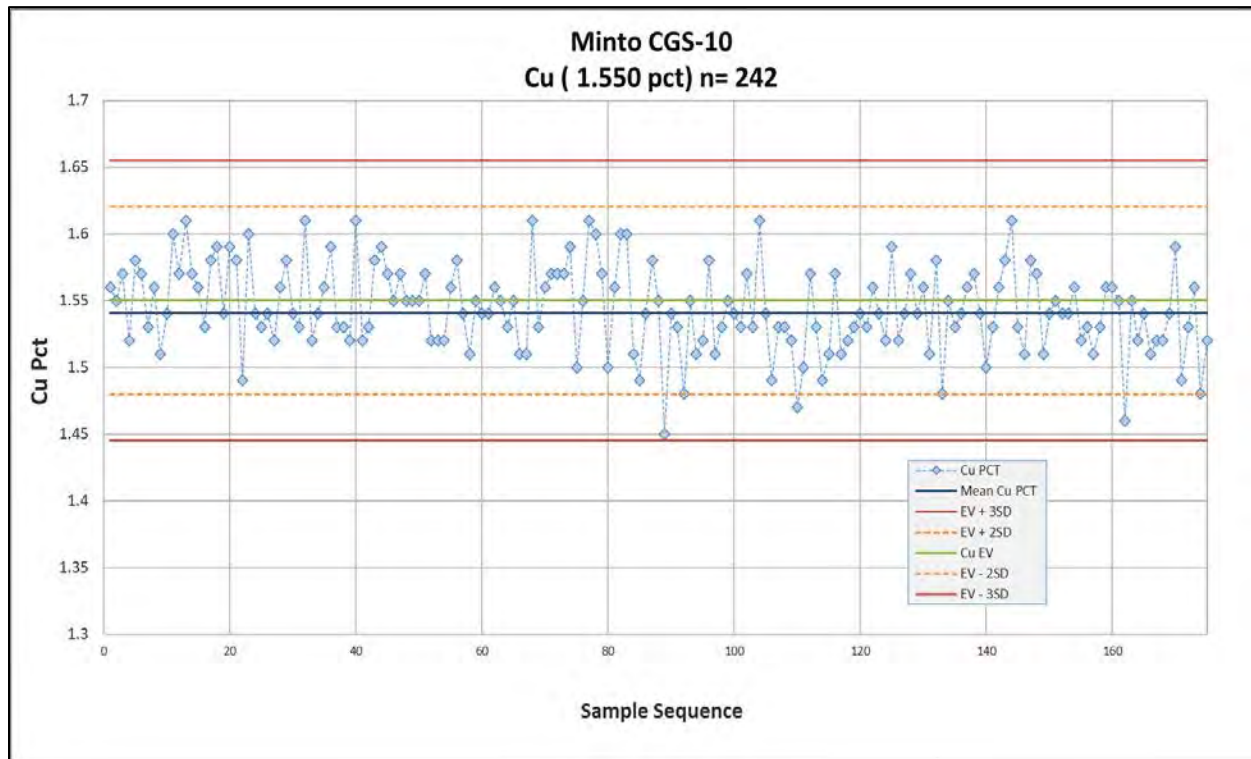
Figure 11-3: Process Control Chart for CGS-15 (Cu=0.451%), in Copper Keel, Ridgetop and 118



Source: MMTS (2021)

The process control chart for CGS-10, with expected value of 1.55% Cu, used between 2006 and 2008, is given in Figure 11-4 and shows good results.

Figure 11-4: Process Control Chart for CGS-10 (Cu=1.550%), in Copper Keel, Ridgetop and 118



Source: MMTS (2021)

The results for all 32 gold CRMs are presented in Table 11-5. It is shown that there is a total failure rate of 5.8% with an overall 0% error meaning that there is no bias evident in either direction. The three CRMs with the highest failure rates (CGS-8, CU132, and CGS-13) comprise less than 2% of the total entries, yet are responsible for 16% of the failed samples, indicating that the failures for gold are concentrated in a few poorly performing standards.

Table 11-5: Copper Keel, Ridgetop and 118 CRM Results for Au

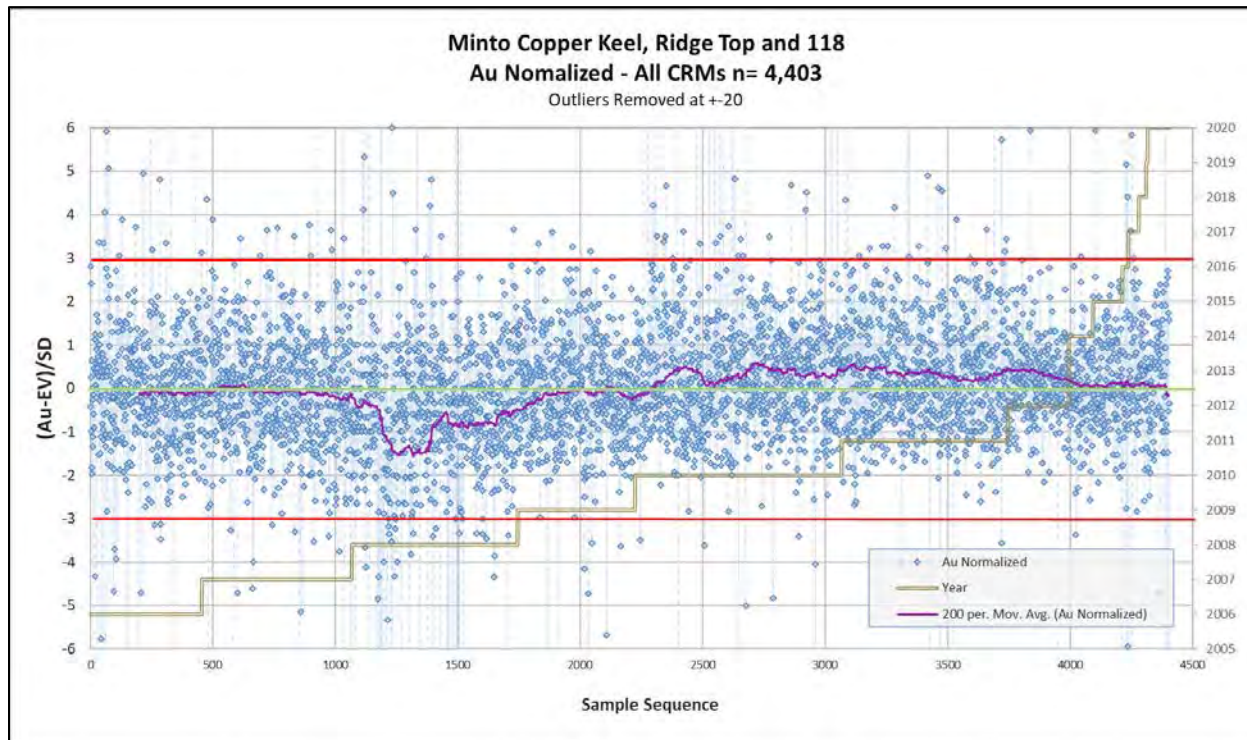
CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Au EV (g/t)	Au Avg (g/t)	% Error	CV Au
CGS-8	2007	2008	21	8	0	38.1%	0.08	0.056	-30.3%	57.2%
CGS-5	2006	2006	34	0	0	0.0%	0.13	0.133	2.4%	5.2%
CU132	2005	2006	29	14	5	65.5%	0.17	0.133	-21.9%	93.9%
CGS-23	2007	2011	687	6	27	4.8%	0.218	0.226	3.6%	17.8%
CGS-29	2011	2012	53	0	1	1.9%	0.228	0.232	1.9%	8.4%
CM-20	2012	2018	82	0	1	1.2%	0.274	0.288	5.1%	8.9%

CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Au EV (g/t)	Au Avg (g/t)	% Error	CV Au
CGS-12	2006	2008	208	7	16	11.1%	0.29	0.290	0.0%	13.9%
CM-16	2012	2017	183	2	1	1.6%	0.294	0.299	1.6%	14.5%
CM-5	2010	2010	72	0	2	2.8%	0.294	0.300	2.0%	10.4%
CGS-18	2008	2009	196	7	2	4.6%	0.297	0.293	-1.4%	13.8%
CM-36	2015	2020	46	0	1	2.2%	0.316	0.323	2.3%	6.9%
CGS-9	2006	2008	152	6	13	12.5%	0.34	0.349	2.7%	14.6%
Capstone Minto Standard 1	2008	2018	172	1	4	2.9%	0.425	0.433	1.9%	10.1%
CGS-27	2011	2011	20	1	1	10.0%	0.432	0.443	2.5%	13.4%
CM-3	2008	2008	20	1	0	5.0%	0.46	0.459	-0.3%	12.0%
CGS-24	2010	2011	214	3	6	4.2%	0.487	0.492	0.9%	10.1%
CM-23	2014	2017	29	1	1	6.9%	0.549	0.533	-2.9%	18.5%
CGS-15	2008	2010	396	14	10	6.1%	0.57	0.562	-1.4%	15.9%
CM-27	2014	2018	23	0	0	0.0%	0.636	0.638	0.3%	6.1%
CGS-22	2008	2012	175	3	17	11.4%	0.64	0.666	4.1%	17.8%
CGS-28	2011	2018	38	3	0	7.9%	0.727	0.701	-3.6%	20.5%
CGS-11	2006	2009	501	19	4	4.6%	0.73	0.708	-3.0%	9.0%
CM-8	2010	2010	85	0	0	0.0%	0.91	0.915	0.6%	5.5%
CGS-7	2006	2007	229	4	5	3.9%	0.95	0.954	0.5%	10.8%
CGS-13	2007	2008	29	13	1	48.3%	1.01	0.676	-33.0%	55.9%
SM-04	2020	2020	57	2	1	5.3%	1.352	1.371	1.4%	11.8%
CM-2	2006	2009	147	1	0	0.7%	1.42	1.431	0.8%	8.4%
Capstone Minto Standard 2	2009	2017	103	1	1	1.9%	1.57	1.606	2.3%	5.3%
CGS-10	2006	2008	239	14	0	5.9%	1.73	1.662	-3.9%	16.1%
Capstone Minto Standard 3	2009	2018	91	1	0	1.1%	2.23	2.205	-1.1%	5.2%
CGS-17	2008	2016	63	2	1	4.8%	2.43	2.381	-2.0%	22.3%
CDN-CM-18	2017	2020	32	0	0	0.0%	5.28	5.207	-1.4%	3.4%
Total	2005	2020	4,426	134	121	5.8%			0.0%	

Source: MMTS (2021)

The normalized process control chart is given in Figure 11-5. The 200-sample moving average line confirms the overall acceptable performance with a significant low dip in 2008, partly influenced by the previously discussed poorly performing CRMs.

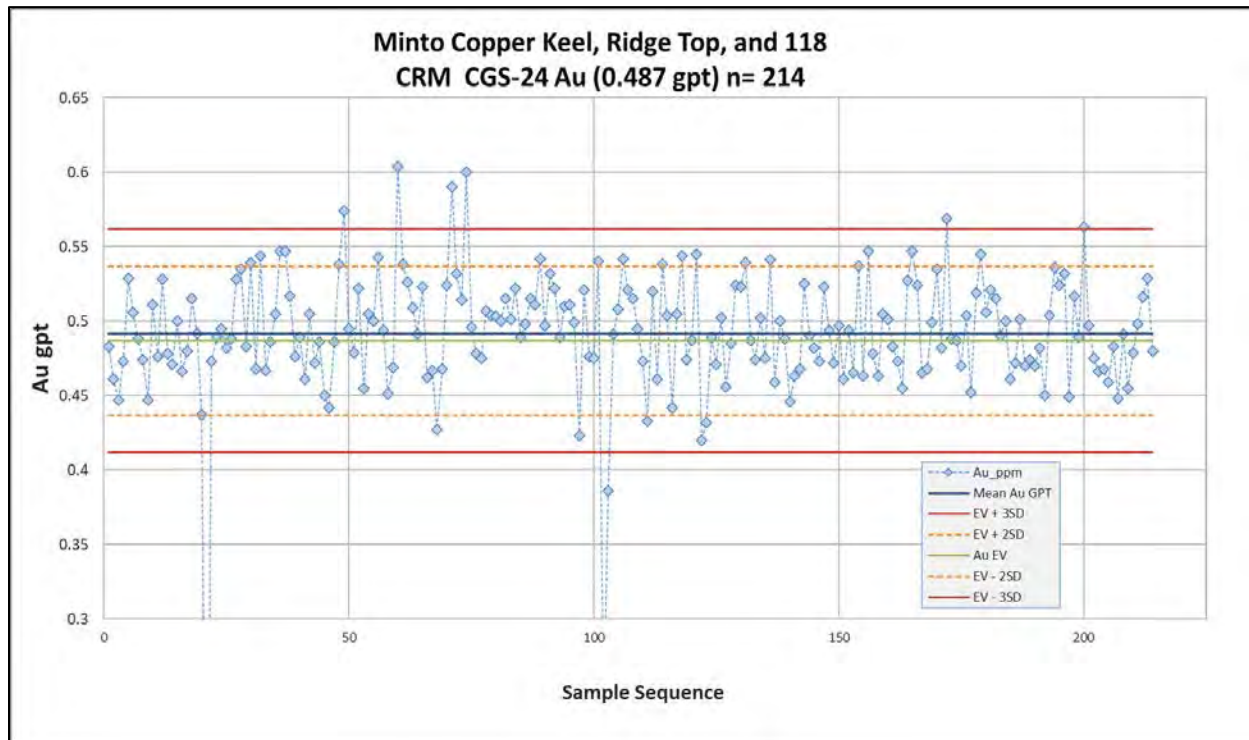
Figure 11-5: Au Normalized Process Control Chart - Minto Copper Keel, Ridgetop and 118



Source: MMTS (2021)

The process control chart for CGS-24, used in 2010 and 2011, with expected value for Au of 0.487 is given in Figure 11-6. It shows good results with a few failures, and the mean close to the expected value.

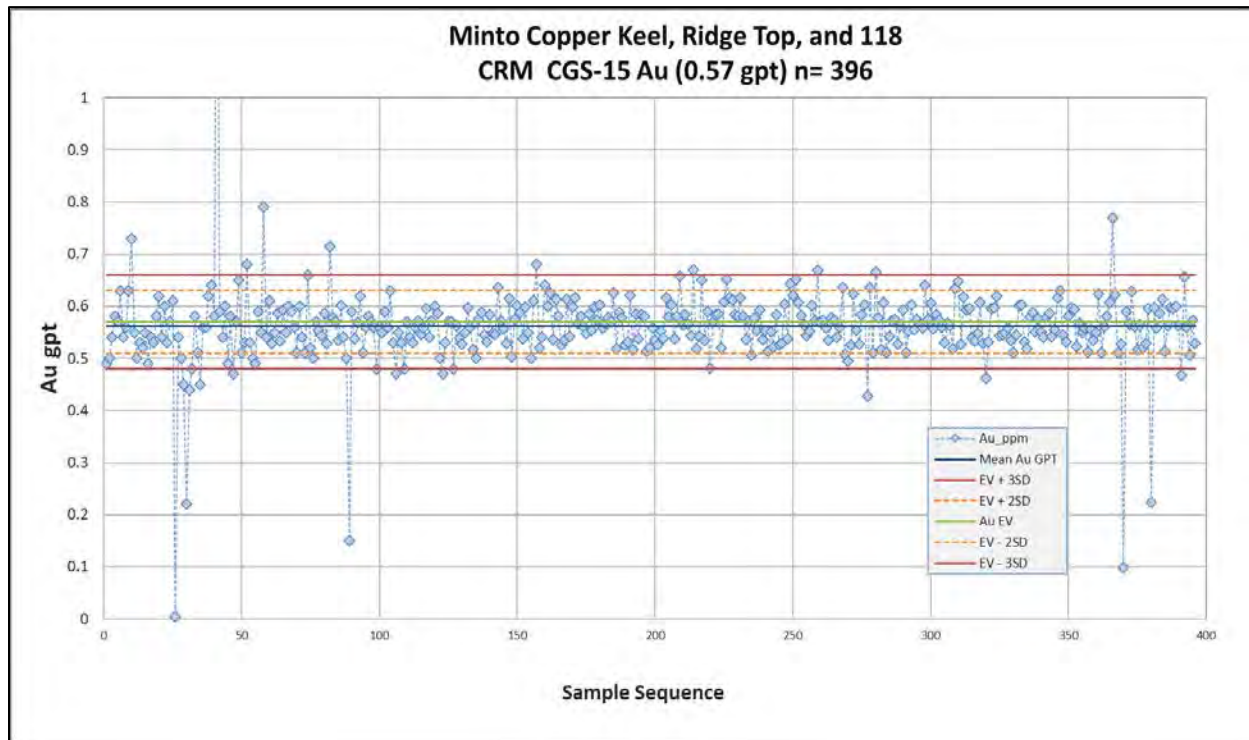
Figure 11-6: Process Control Chart for CGS-24 (Au=0.487 g/t) Minto Copper Keel, Ridgetop and 118



Source: MMTS (2021)

Results for CGS-15, used between 2008 and 2010, with expected value of 0.57 g/t are shown in Figure 11-7 and are also seen to have a mean near the expected value with some failures in either direction.

Figure 11-7: Process Control Chart for CGS-15 (Au=0.57 g/t) Minto Copper Keel, Ridgetop and 118



Source: MMTS (2021)

The results for 10 Ag standards are presented in Table 11-6 below. The overall failure rate of the Ag CRMS is 20%, however, because the bias is nearly 0, the results acceptable for silver.

Table 11-6: Copper Keel, Ridgetop and 118 CRM Results for Ag

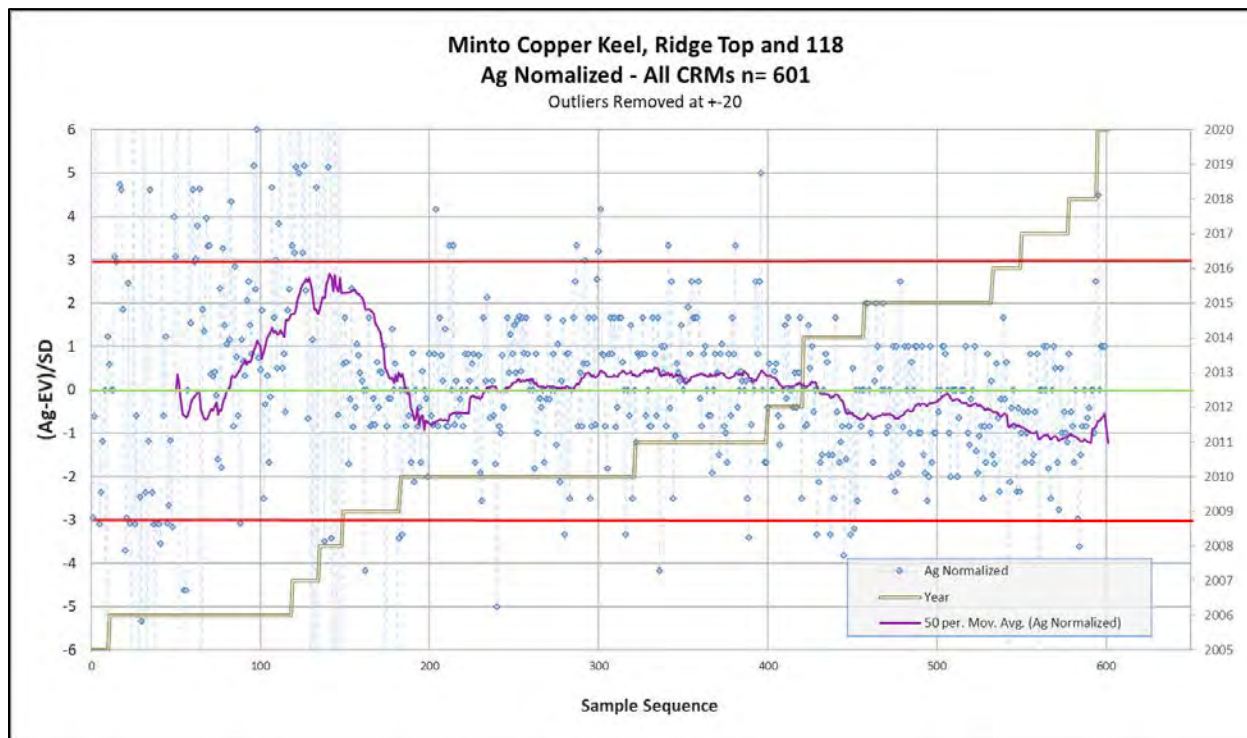
CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Ag EV (g/t)	Ag Avg (g/t)	% Error	CV Ag
CM-36	2015	2020	47	1	3	9%	2.0	2.2	9.1%	35.8%
CM-34	2007	2020	49	6	5	22%	3.7	3.7	0.1%	37.7%
Capstone Minto Standard 1	2008	2018	172	9	9	10%	3.9	3.9	0.5%	6.7%
OREAS 95	2007	2009	18	6	10	89%	7.72	8.6	11.5%	33.7%
Capstone Minto Standard 2	2009	2017	103	1	0	1%	9.4	9.3	-0.5%	4.5%
Capstone Minto Standard 3	2009	2018	91	4	1	5%	18.4	18.1	-1.5%	6.1%

CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Ag EV (g/t)	Ag Avg (g/t)	% Error	CV Ag
CU132	2005	2006	29	15	11	90%	27	25.4	-5.8%	31.6%
CU128	2006	2007	48	3	17	42%	37	37.3	0.7%	16.9%
CU116	2005	2008	31	4	5	29%	42	40.6	-3.4%	26.2%
CU115	2005	2006	26	7	5	46%	70	68.5	-2.1%	16.4%
Total			614	56	66	20%			0.4%	

Source: MMTS (2021)

The normalized process control chart for Ag is given in Figure 11-8. The 50-sample moving average shows a significantly high trend during 2006-2009, and low trend from 2016 to 2020, mirroring results seen in the 2020 SGS check assays discussed previously.

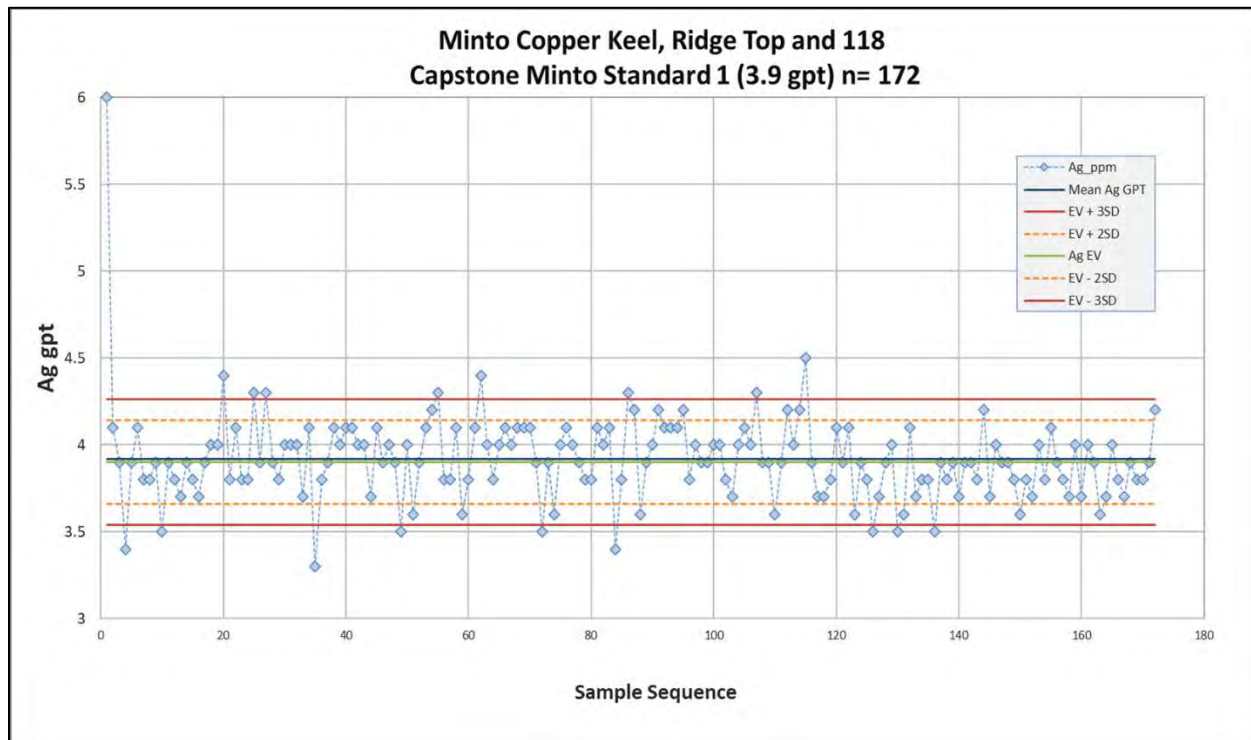
Figure 11-8: Ag Normalized Process Control Chart - Minto Copper Keel, Ridgetop and 118



Source: MMTS (2021)

The process control chart for Capstone Minto Standard 1, with silver expected value 3.9 g/t, is given in Figure 11-9. It shows the frequent fails and significant scatter and confirms that the mean close to the expected value of 3.9 g/t.

Figure 11-9: Process Control Chart for CMS-1 (Ag=3.9 g/t) in Copper Keel, Ridgetop and 118



Source: MMTS (2021)

11.2.4 Duplicates

The provided database contains 121 field duplicates in the Copper Keel, Ridgetop and 118 areas sampled between 2014 and 2020. The results of analysis of the paired data are given in Table 11-7 and shows the slopes and shows reasonable correlation to a 1:1 slope for all elements as well as acceptable R-squared values. Two outliers have been removed from the gold duplicates. The duplicate samples run a slightly above the 1:1 line for gold and slightly below for silver.

For field duplicates the desired criteria for Half Absolute Relative Difference (HARD) is that no fewer than 70% are less than 10% HARD, and this is met for silver and gold, but copper does not meet that criteria, indicating significant heterogeneity in field duplicate samples.

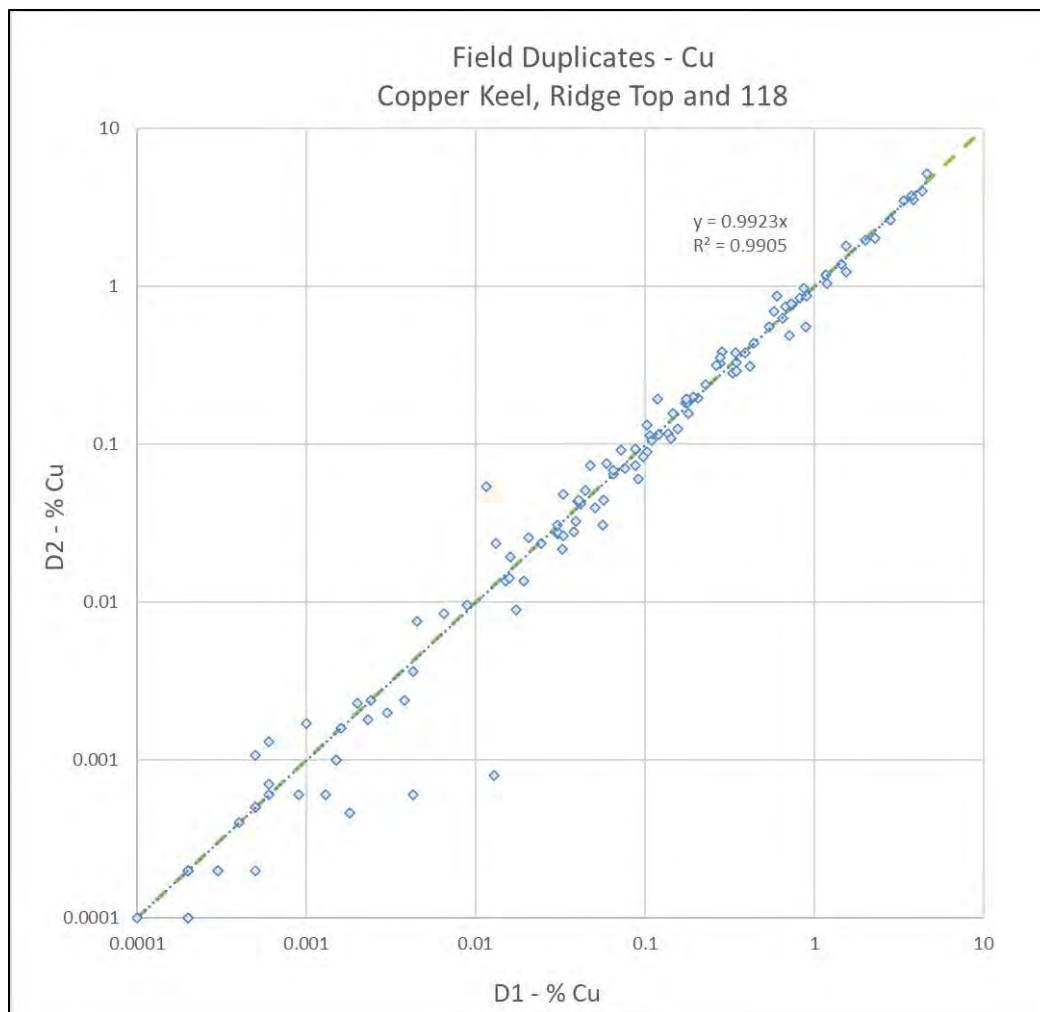
Table 11-7: Field Duplicate Analysis for Minto Copper Keel, Ridgetop and 118

Metal	% less than 10% HARD	LR Slope	LR R-Squared
Cu	61%	0.992	0.9905
Au	72%	1.061	0.9644
Ag	72%	0.987	0.9862

Source: MMTS (2021)

The scatter plot of field duplicate pairs for copper is given in Figure 11-10 where it is seen that for the paired samples above 0.05% copper, there is generally good agreement in the range of most interest.

Figure 11-10: Cu Field Duplicates in Minto Copper Keel, Ridgetop and 118



Source: MMTS (2021)

MMTS has been provided with a database that includes 4,079 pulp duplicates and 2,034 coarse duplicates in the Copper Keel, Ridgetop and 118 areas, with samples prepared and inserted by the laboratory. MMTS has reviewed these duplicate pairs and finds no concerning results.

11.3 Minto East QAQC

MMTS has been provided with the QAQC database by Minto. The total number of QAQC samples is presented in Table 11-8 and represents 14% of the total assay database in Minto East which is adequate. The distribution of blanks and standards to area and year is approximate and is done by majority of samples and minimum year on certificate.

Table 11-8: Summary of QAQC Samples in Minto East

Year	Assays	Blanks	CRMs	Field Duplicates	Pulp Duplicates	Coarse Duplicates	Total QAQC Samples	% QAQC
2005	1,285	30	81				111	8%
2006	975	28	93				121	11%
2007	600	35	37		38	38	148	20%
2008	103	6	7		5		18	15%
2009	863	56	54		51	55	216	20%
2010	4,291	259	272	1	271	150	953	18%
2011	5,380	309	315		157	3	784	13%
2012	5,847	345	366		181		892	13%
2015	93	6	5	1	2	2	16	15%
2017	390	19	16	1	8	10	54	12%
2018	336	16	17	1	7	7	48	13%
2020	683	44	48	4	16	15	127	16%
Total	20,846	1,153	1,311	8	736	280	3,488	14%

Source: MMTS (2021)

11.3.1 Blanks

The results of the analyses of the 1,153 samples of blank material in the Minto East assay stream is given in Table 11-9. The overall 1.0% failure rate is indicative of minor contamination issues at the laboratory. The 3 failures in 2020 are in samples assayed from the in-house lab in the underground blast holes which were not used in the resource model, and as such are of no consequence to the resource estimate.

Table 11-9: Minto East Blanks Results for Cu

Year	Blanks	Fails	% Fail
2005	30	1	3.3%
2006	28	3	10.7%
2007	35	0	0.0%
2008	6	0	0.0%
2009	56	1	1.8%
2010	259	2	0.8%
2011	309	0	0.0%
2012	345	1	0.3%
2015	6	0	0.0%
2017	19	1	5.3%
2018	16	0	0.0%
2020	44	3	6.8%
Total	1,153	12	1.0%

Source: MMTS (2021)

The overall failure rates in Minto East for blanks for gold is 0.3%, all prior to 2015, there are no fails for silver, indicating contamination has been a negligible problem, and is being adequately addressed with current QAQC procedures.

11.3.2 Certified Reference Materials

The results of analysis of 1,154 entries of 17 CRMs in Minto East with more than 20 entries for Cu are given in Table 11-10 in order of increasing expected value. An overall failure of 7.3% is shown with more samples failing high than low and a 3.7% error confirming the general positive trend of the results.

Table 11-10: Minto East CRM Results for Cu

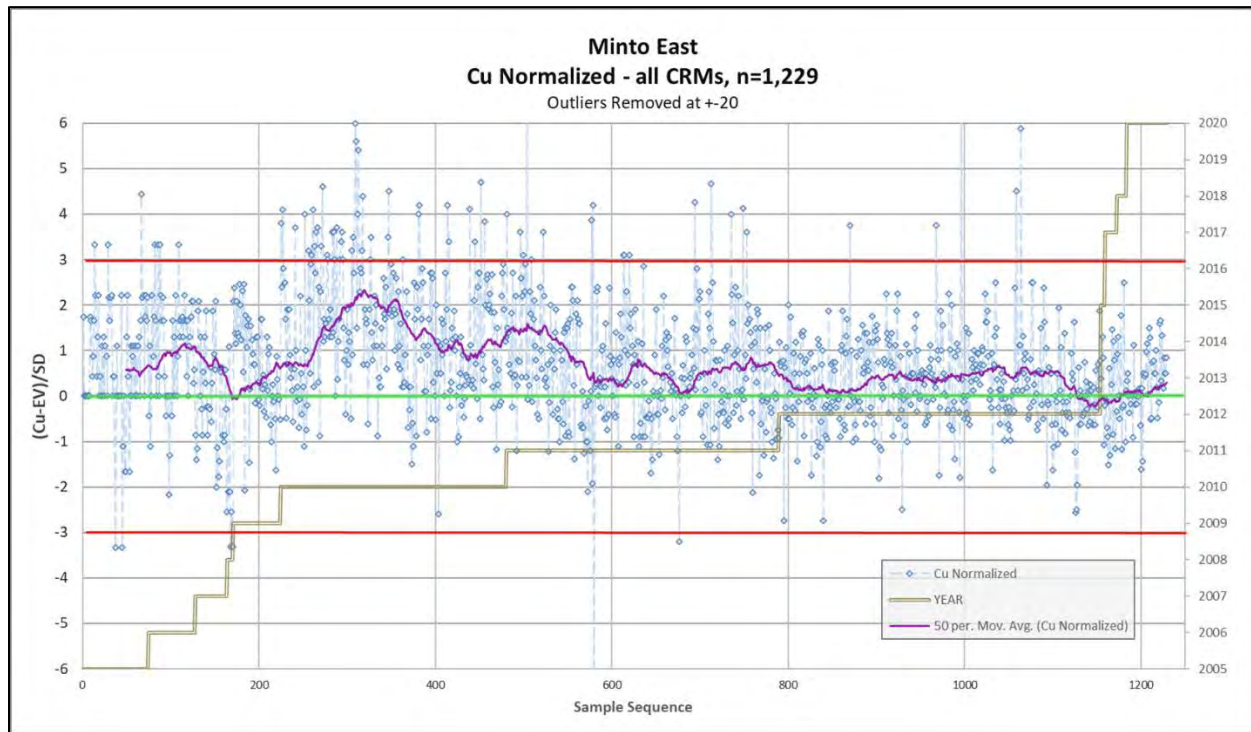
CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Cu EV (pct)	Cu Avg (pct)	% Error	CV Cu
CU132	2005	2007	47	2	2	8.5%	0.170	0.240	41.1%	151.4%
CGS-23	2010	2011	273	2	23	9.2%	0.182	0.194	6.9%	43.7%
CM-16	2011	2012	178	0	2	1.1%	0.184	0.188	2.1%	4.0%
CM-20	2012	2018	90	0	2	2.2%	0.316	0.320	1.3%	3.1%
CM-5	2010	2010	77	0	16	20.8%	0.319	0.338	6.1%	3.8%

CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Cu EV (pct)	Cu Avg (pct)	% Error	CV Cu
CGS-15	2008	2010	43	0	8	18.6%	0.451	0.465	3.2%	3.8%
CU116	2005	2006	41	3	8	26.8%	0.470	0.464	-1.2%	32.6%
CGS-24	2010	2011	27	0	2	7.4%	0.486	0.500	2.8%	5.6%
CGS-29	2011	2012	35	0	0	0.0%	0.575	0.578	0.6%	2.0%
CGS-11	2007	2009	46	2	0	4.3%	0.683	0.692	1.3%	2.8%
CGS-22	2010	2012	33	1	2	9.1%	0.725	0.729	0.6%	18.6%
CU115	2005	2006	41	0	0	0.0%	0.990	1.010	2.0%	2.2%
Capstone Minto Standard 1	2009	2018	88	3	0	3.4%	1.135	1.089	-4.0%	18.8%
CGS-28	2011	2018	31	1	1	6.5%	2.033	2.035	0.1%	4.6%
Capstone Minto Standard 2	2009	2017	36	2	0	5.6%	2.815	2.628	-6.7%	24.3%
SM-04	2020	2020	40	2	0	5.0%	3.800	3.632	-4.4%	22.5%
Capstone Minto Standard 3	2009	2018	28	0	0	0.0%	5.335	5.169	-3.1%	2.2%
Total	2005	2020	1,154	18	66	7.3%			3.7%	

Source: MMTS (2021)

The normalized process control chart is given in Figure 11-11 for all Cu CRM entries with outliers removed at ± 20 . The 50-sample moving average line in purple confirms the trend is generally in the positive direction but at levels very close to the expected value except for years 2010 and 2011. In years, 2013 on, no failures are shown. MMTS find the performance of CRMs in Minto East to be generally acceptable.

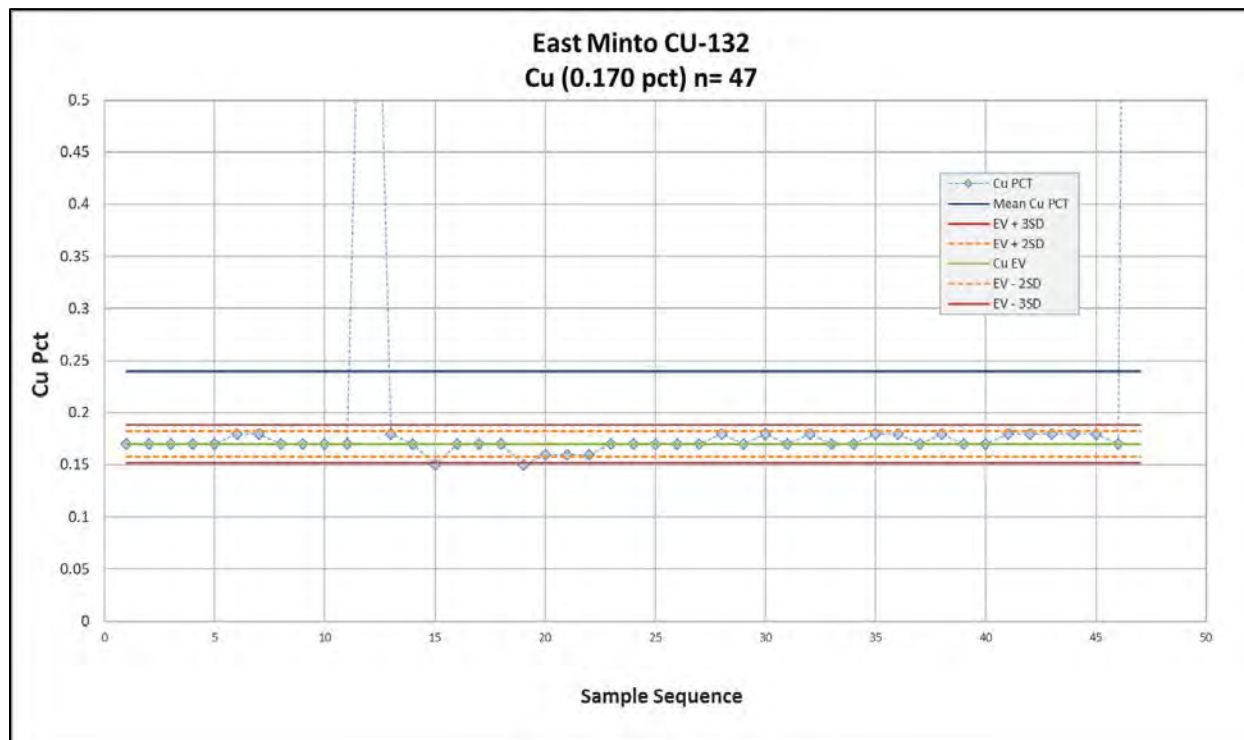
Figure 11-11: Cu Normalized Process Control Chart – Minto East



Source: MMTS (2021)

The plot for CU-132 is given in Figure 11-12 and shows that the high failure rate, % error and CV are primarily due to two samples, with values of 2.53 and 1.02 likely to be mislabeled sampled. Otherwise, the performance of this CRM would be acceptable. Similar results are identified for Capstone Standard 1 and SM-04, however for these two CRMs, the outlier samples are in the negative direction.

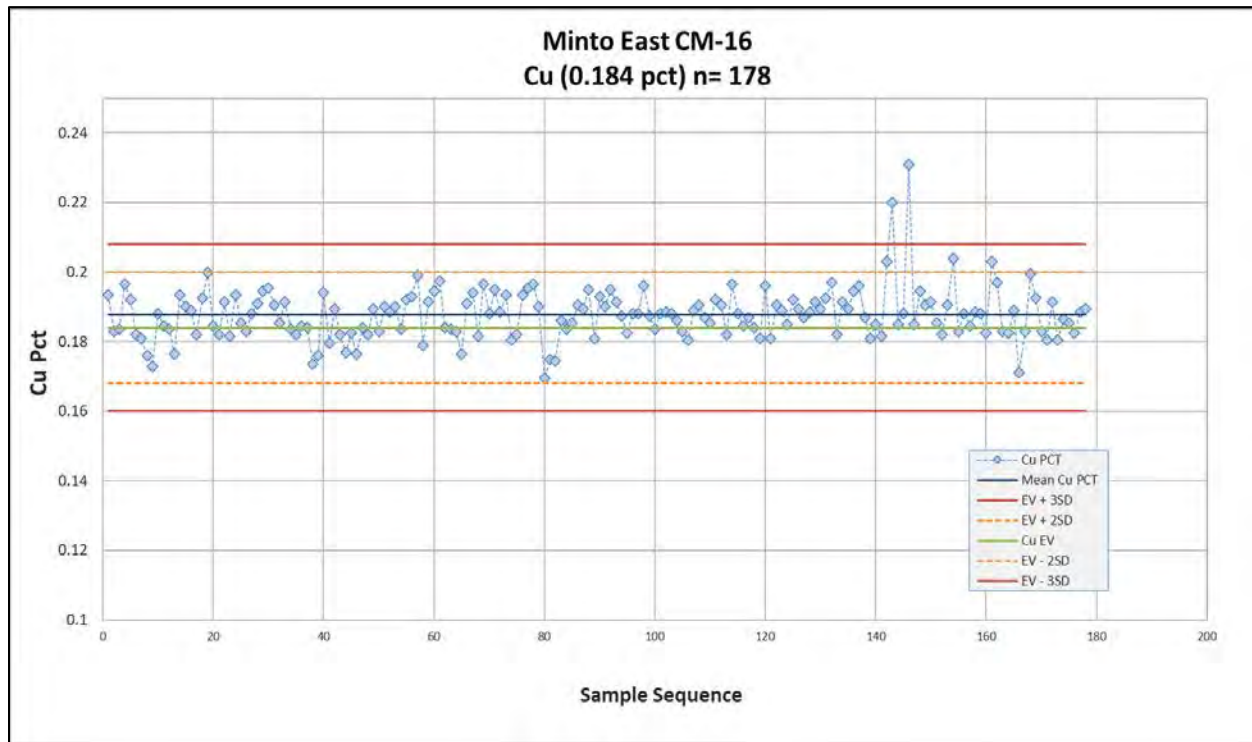
Figure 11-12: Process Control Chart for CU-132 (Cu=0.17%) Minto East



Source: MMTS (2021)

Figure 11-13 shows the results for 178 entries of CM-16, used between 2011 and 1012, which generally very good performance with a small positive bias and a couple of failures.

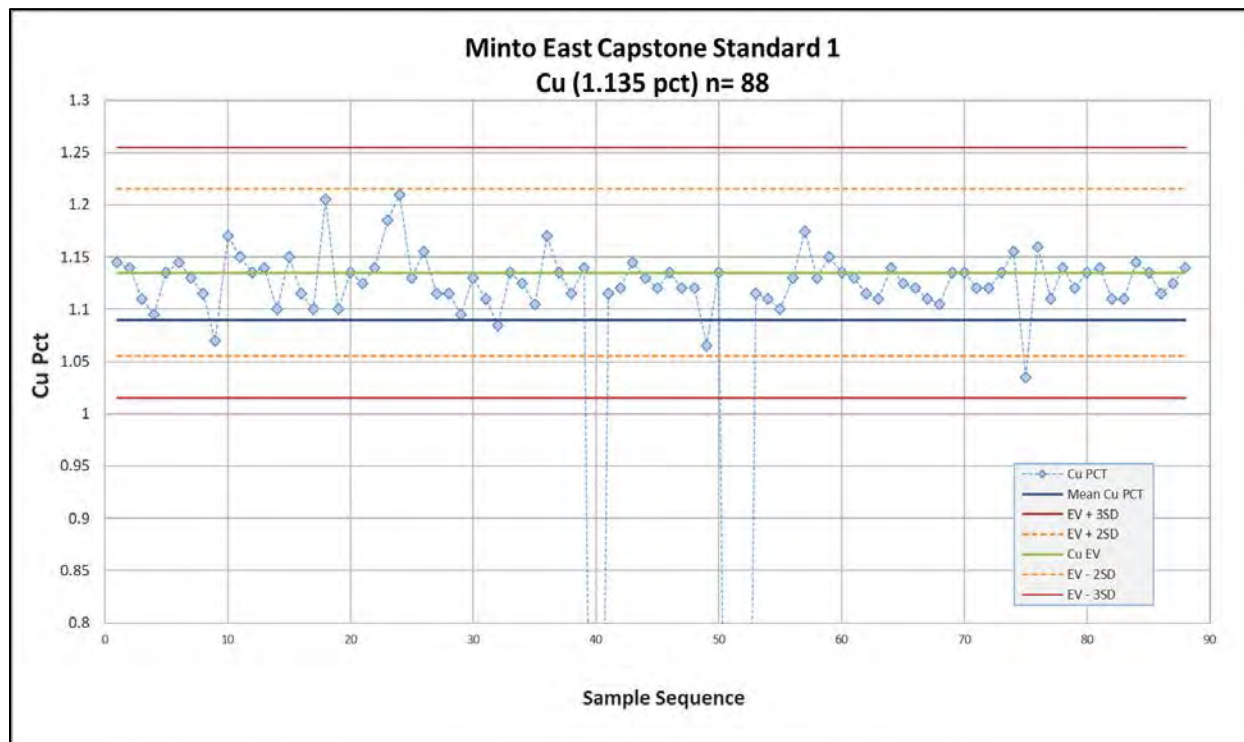
Figure 11-13: Process Control Chart for CM-16 (Cu=0.184) Minto East



Source: MMTS (2021)

The process control chart for Capstone Standard 1 with EV of 1.135% Cu is given in Figure 11-14 and shows good performance about the expected value with the mean showing about 1 SD below the expected value, however this can be seen to be affected primarily by three low outliers, which are potentially mislabeled control samples.

Figure 11-14: Process Control Chart for Capstone Minto Standard 1 (Cu=1.135%) Minto East



Source: MMTS (2021)

The results of 1,022 Au CRMs with greater than 20 entries for drilling in Minto East are given in Table 11-11. A failure rate of 7.4% is shown with a small positive % error.

Table 11-11: Minto East CRM Results for Au

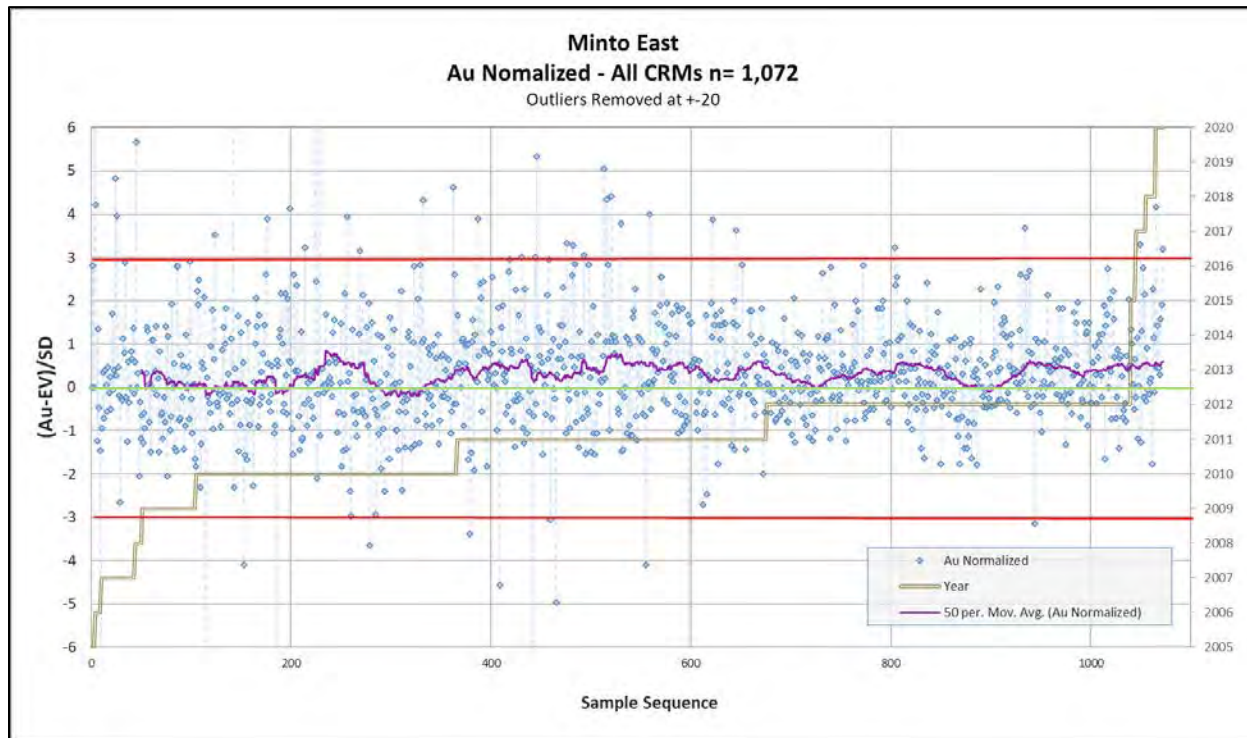
CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Au EV (g/t)	Au Avg (g/t)	% Error	CV Au
CU132	2005	2007	42	34	5	92.9%	0.17	0.110	-35.3%	226.4%
CGS-23	2010	2011	273	3	13	5.9%	0.218	0.227	4.2%	14.3%
CGS-29	2011	2012	35	0	4	11.4%	0.228	0.236	3.5%	10.7%
CM-20	2012	2018	90	1	1	2.2%	0.274	0.292	6.5%	8.3%
CM-16	2011	2012	178	0	0	0.0%	0.294	0.301	2.5%	10.1%
CM-5	2010	2010	77	2	2	5.2%	0.294	0.295	0.2%	14.3%
Capstone Minto Standard 1	2009	2018	85	1	2	3.5%	0.425	0.431	1.3%	5.8%

CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Au EV (g/t)	Au Avg (g/t)	% Error	CV Au
CGS-24	2010	2011	27	0	1	3.7%	0.487	0.500	2.7%	7.1%
CGS-15	2008	2010	43	1	2	7.0%	0.57	0.568	-0.4%	8.9%
CGS-22	2010	2012	33	2	1	9.1%	0.64	0.631	-1.4%	14.1%
CGS-28	2011	2018	31	1	0	3.2%	0.727	0.747	2.8%	6.8%
CGS-11	2007	2009	46	0	0	0.0%	0.73	0.725	-0.7%	4.9%
Capstone Minto Standard 2	2009	2017	34	0	0	0.0%	1.57	1.601	1.9%	5.0%
Capstone Minto Standard 3	2009	2018	28	0	0	0.0%	2.23	2.185	-2.0%	3.9%
Total	2005	2018	1,022	45	31	7.4%			1.0%	

Source: MMTS (2021)

The normalized process control chart for all CRM samples with outliers removed at ± 20 is presented in Figure 11-15. The 50-sample moving average line in purple confirms the small positive error and shows little difference between years.

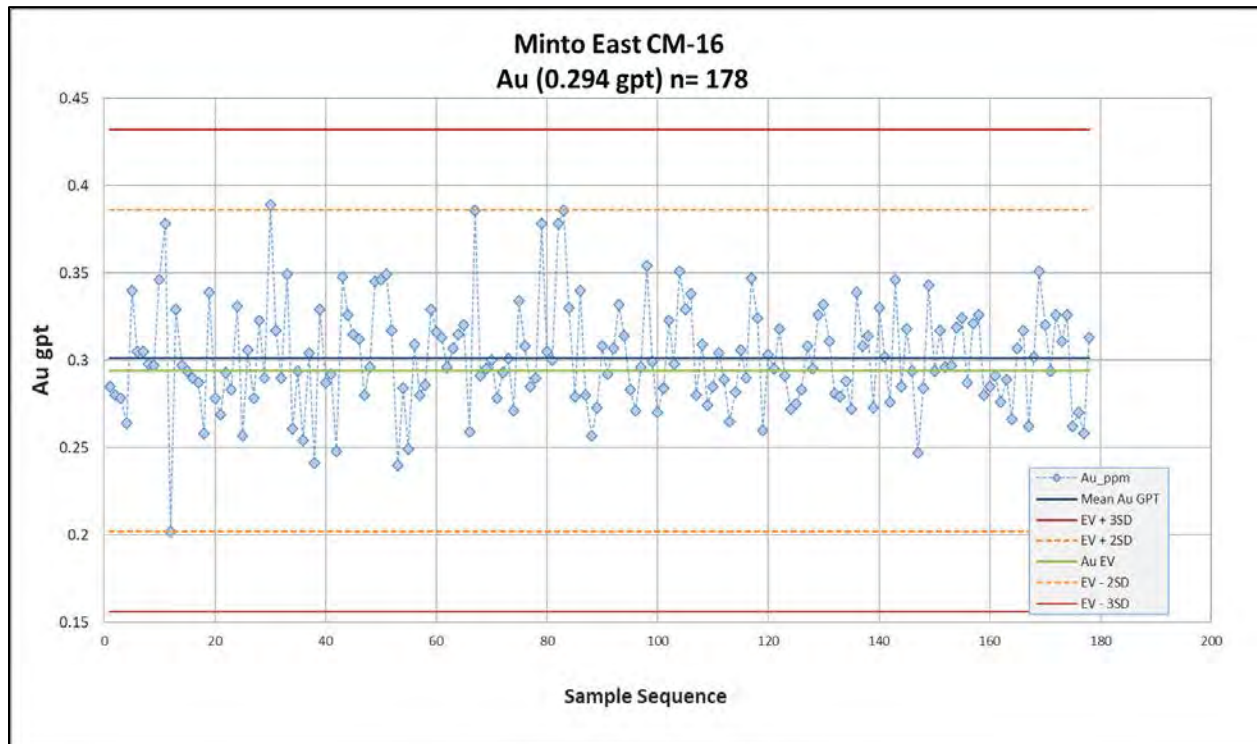
Figure 11-15: Au Normalized Process Control Chart - Minto East 8



Source: MMTS (2021)

The process control chart for the 178 samples of CM-16, with expected value for Au of 0.294 g/t, is given in Figure 11-16 and shows good agreement with the expected value and no failures.

Figure 11-16: Process Control Chart for CM-16 (Au = 0.294) Minto East



Source: MMTS (2021)

The results of CRMs with certified values for silver and 20 or more samples is given in Table 11-12 and shows a high failure rate of 31% with nearly equal fails in either direction and an overall error nearly balanced at 0.4%. The worst performing CRM is seen to be CU132 with a failure rate of 90% and an error of 13%.

Table 11-12: Minto East CRM Results for Ag

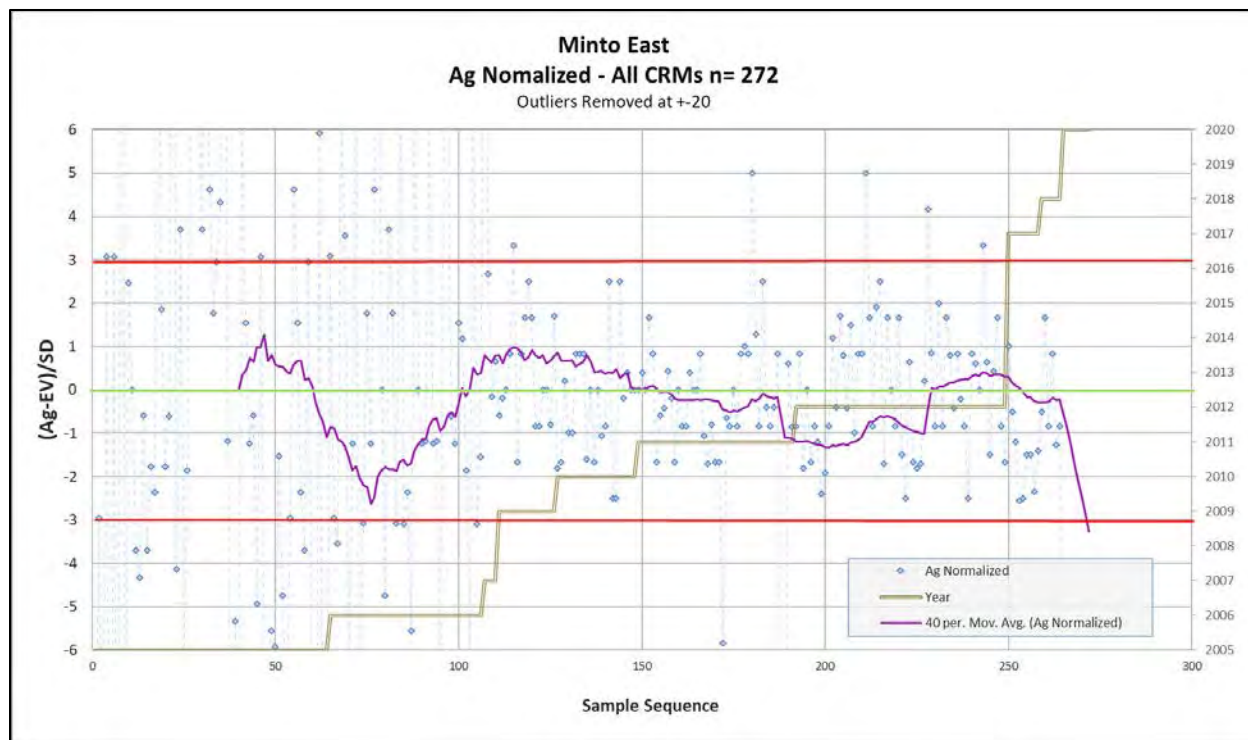
CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Ag EV (g/t)	Ag Avg (g/t)	% Error	CV Ag
Capstone Minto Standard 1	2009	2018	85	1	5	7%	3.9	3.9	0.4%	5.4%
Capstone Minto Standard 2	2009	2017	34	0	0	0%	9.4	9.2	-1.9%	5.4%
Capstone Minto Standard 3	2009	2018	28	0	0	0%	18.4	18.2	-0.9%	3.4%
CU132	2005	2007	42	14	24	90%	27	30.5	13.0%	38.0%
CU116	2005	2006	35	9	5	40%	42	39.7	-5.6%	32.2%

CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Ag EV (g/t)	Ag Avg (g/t)	% Error	CV Ag
CU115	2005	2006	38	16	8	63%	70	66.5	-5.1%	13.9%
Total			262	40	42	31%			0.4%	

Source: MMTS (2021)

The normalized process control chart for silver in Minto East is given in Figure 11-17 with outliers removed at ± 20 . The individual samples show significant variation in years 2005 and 2006 and the 40-sample moving average line shows this deviation from the expected value line at 0 particularly during this period.

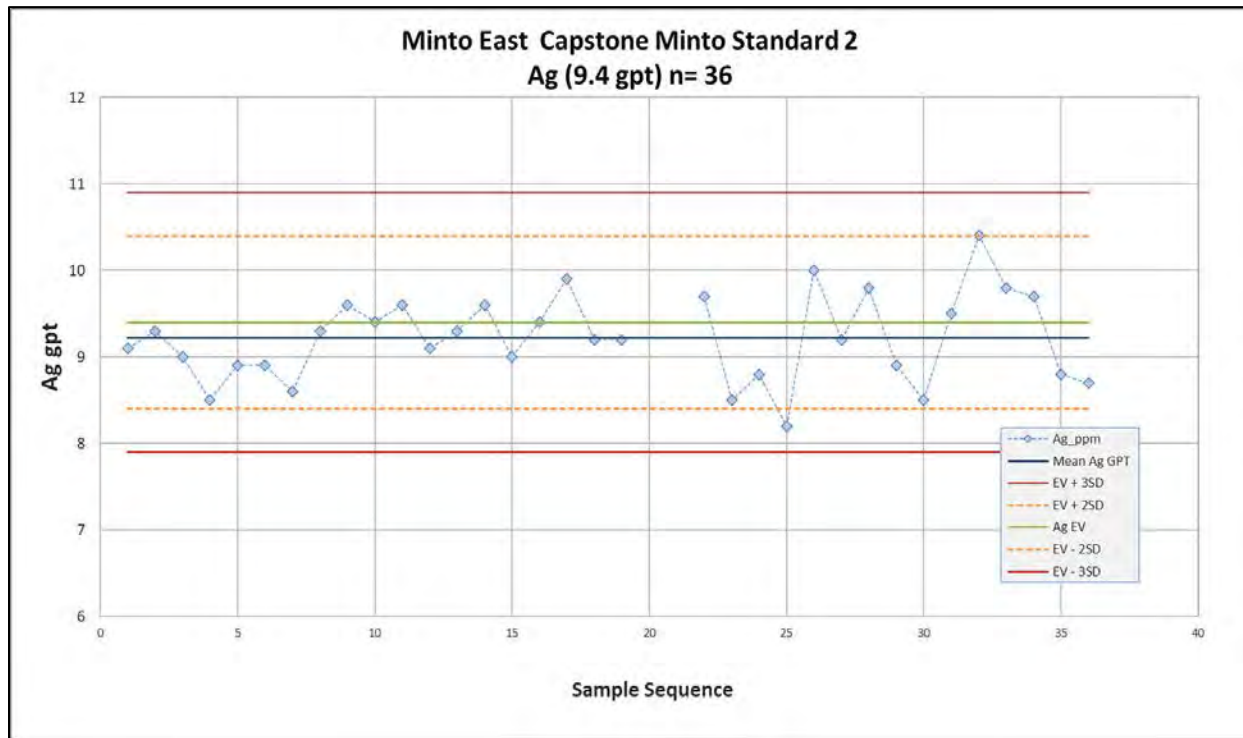
Figure 11-17: Ag Normalized Process Control Chart – Minto East



Source: MMTS (2021)

Figure 11-18 shows the process control chart for Capstone Minto Standard 2 with expected value of 9.4 g/t for silver. Excellent results are seen for this CRM with mean near the expected value and no failures.

Figure 11-18: Process Control Chart for Capstone Minto Standard 2 (Ag=9.4g/t) Minto East



Source: MMTS (2021)

11.3.3 Duplicates

The provided database includes only 8 field duplicate pairs sampled between 2010 and 2020, the results of paired analysis is presented in Table 11-13 and shows reasonable agreement to a 1:1 line for copper and silver as well as acceptable R-squared values. The slope of the linear regression for gold shows the duplicate samples have significantly higher assays than the original samples as well as only 13% below 10% HARD. This indicates a low bias to the assays in the database, but because the sample set is small, not much can be made of this finding at this time.

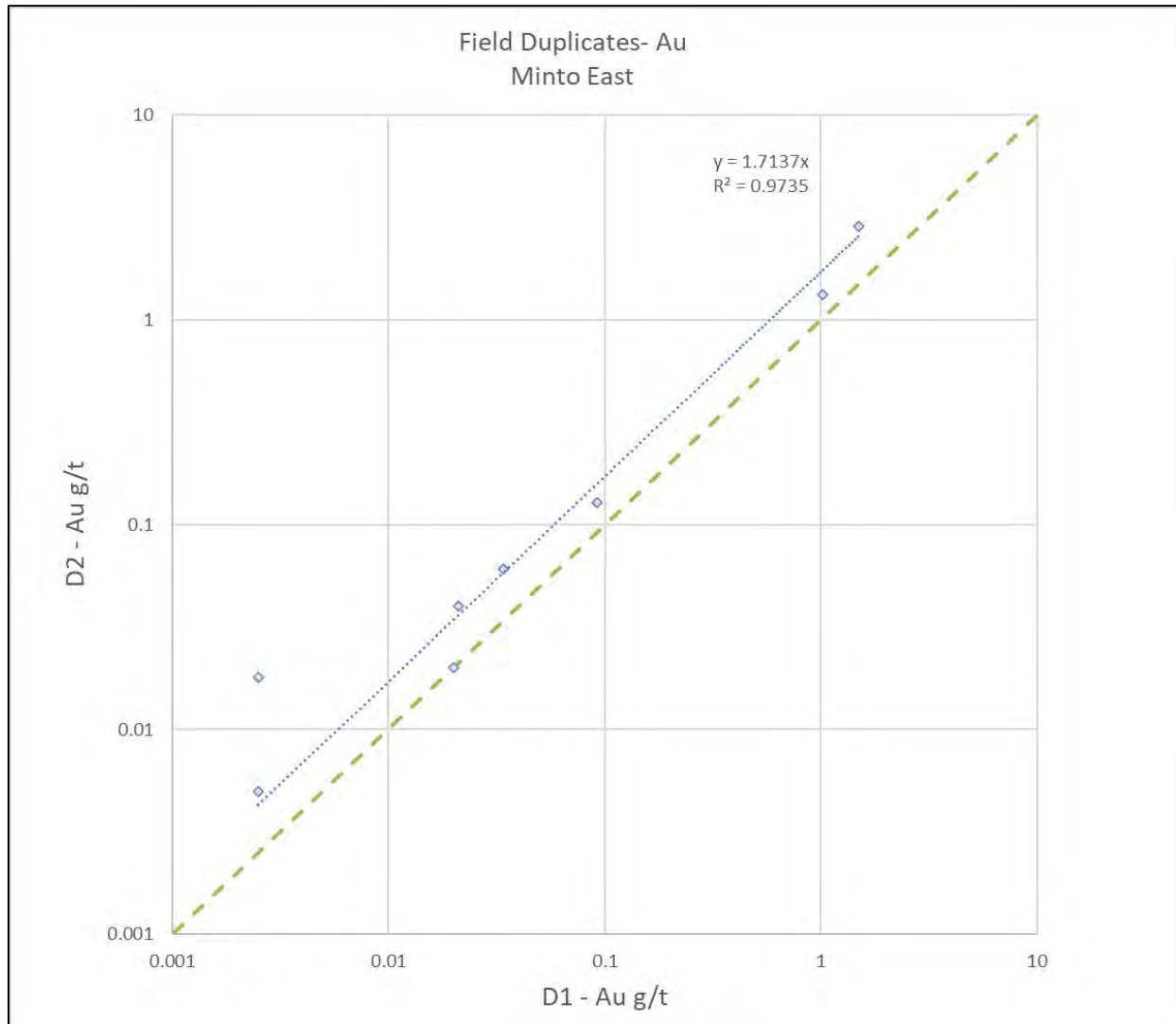
Table 11-13: Field Duplicate Analysis for Minto East g

Metal	% less than 10% HARD	LR slope	LR R-Squared
Cu	38%	1.044	0.9969
Au	13%	1.714	0.9730
Ag	75%	1.049	0.997

Source: MMTS (2021)

Figure 11-19 shows the gold results for the field duplicates Minto East. The clear bias to the duplicate pairs is evident with the best fit line significantly above the 1:1 line shown in green.

Figure 11-19: Au Field Duplicates in Minto East



Source: MMTS (2021)

MMTS has been provided with a database that includes 736 pulp duplicates and 280 coarse duplicates in drilling in Minto East, with samples prepared and inserted by the primary laboratory. MMTS has reviewed these duplicate pairs and finds no concerning results.

11.4 Minto North QAQC

MMTS has been provided with the QAQC database by MintoEx. The total number of QAQC samples is presented in Table 11-14 and represents 17% of the total assay database in Minto North, which is adequate. The distribution of blanks and standards to area and year is approximate and is done by majority of samples and minimum year on certificate.

Table 11-14: Summary of QAQC Samples in Minto North

Year	Assays	Blanks	CRMs	Field Duplicates	Pulp Duplicates	Coarse Duplicates	Total QAQC Samples	% QAQC
2009	3,730	237	229		230	250	946	20%
2011	581	33	34		17		84	13%
2012	1,318	80	88		37		205	13%
2016	29	2	1				3	9%
2020	1,284	54	52	21	13	18	158	11%
Total	6,942	406	404	21	297	268	1,396	17%

Source: MMTS (2021)

11.4.1 Blanks

The results of the analyses of the 406 samples of blank material in the Minto North assay stream is given in Table 11-15. The overall 1.2% failure rate is indicative of minor contamination issues at the laboratory, and all failures are before 2011.

Table 11-15: Minto North Blanks Results for Cu

Year	Blanks	Fails	% Fail
2009	237	5	2.1%
2011	33	0	0.0%
2012	80	0	0.0%
2016	2	0	0.0%
2020	54	0	0.0%
Total	406	5	1.2%

Source: MMTS (2021)

The overall failure rates in Minto North for gold are 0.7%, all in 2009, and there are no failures for silver.

11.4.2 Certified Reference Materials

The results of analysis of 325 entries of 10 CRMs with more than 15 samples each are presented in Table 11-16. An overall failure rate of 6.2% is shown with more samples failing high than low, confirmed by the overall small positive error.

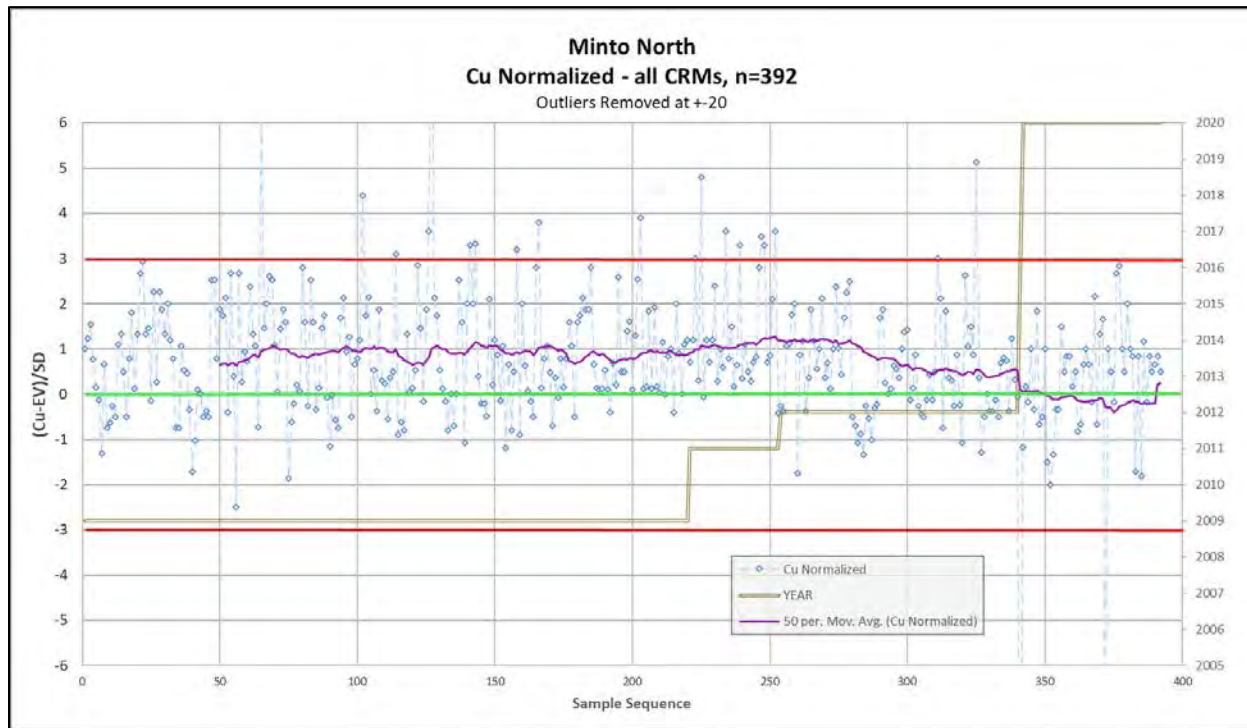
Table 11-16: Minto North CRM Results for Cu

CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Cu EV (pct)	Cu Avg (pct)	% Error	CV Cu
N-CGS-23	2011	2011	19	0	6	31.6%	0.182	0.193	6.0%	3.3%
N-CM-16	2012	2012	39	0	1	2.6%	0.184	0.190	3.5%	4.4%
N-CM-20	2012	2012	24	0	0	0.0%	0.316	0.321	1.5%	3.1%
N-CGS-18	2009	2009	96	0	5	5.2%	0.319	0.330	3.5%	3.1%
N-CGS-15	2009	2009	31	0	6	19.4%	0.451	0.468	3.8%	8.5%
N-CGS-11	2009	2009	17	0	0	0.0%	0.683	0.704	3.1%	1.4%
N-Capstone Minto Standard 1	2009	2012	22	0	0	0.0%	1.135	1.129	-0.5%	1.8%
N-Capstone Minto Standard 2	2009	2012	17	0	0	0.0%	2.815	2.785	-1.1%	1.8%
N-SM-04	2020	2020	41	2	0	4.9%	3.800	3.721	-2.1%	15.9%
N-Capstone Minto Standard 3	2009	2012	19	0	0	0.0%	5.335	5.258	-1.4%	2.2%
Total			325	2	18	6.2%			2.0%	

Source: MMTS (2021)

The normalized process control chart is presented in Figure 11-20 for all Cu CRM entries with outliers removed at ± 20 and shows the small positive error until year 2020 where the 50-sample moving average line approximates the expected value.

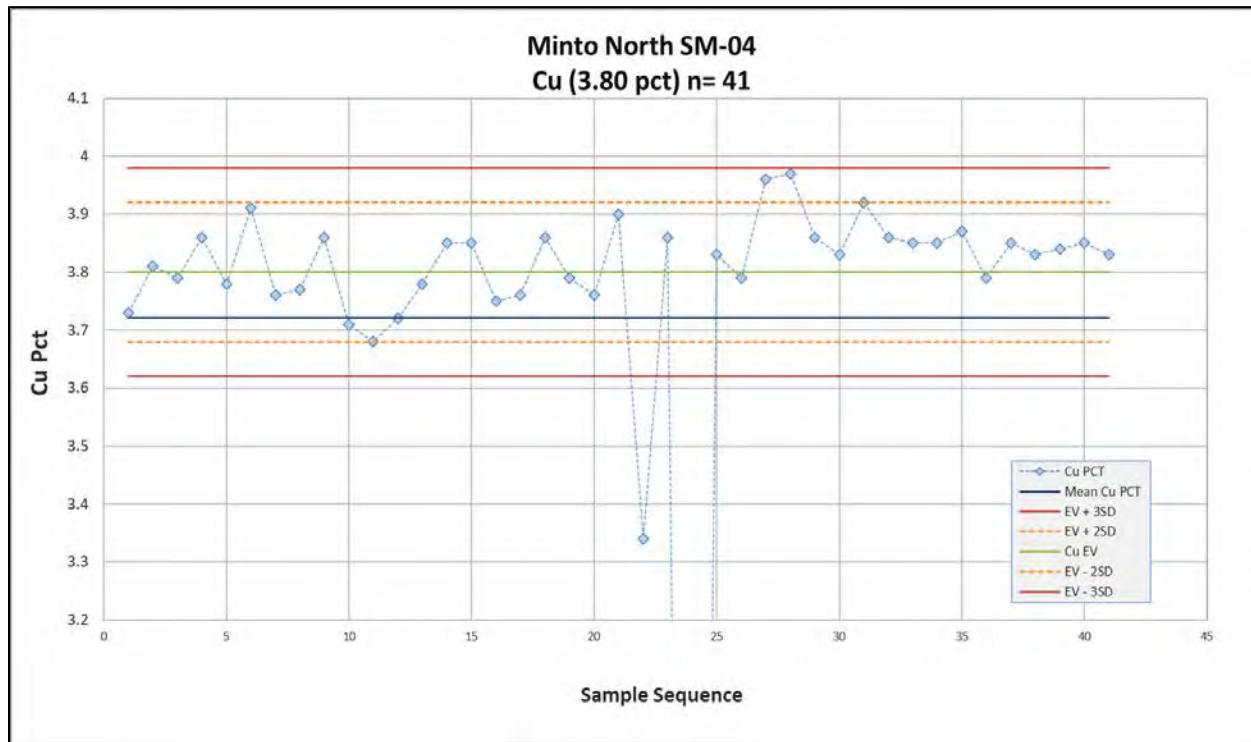
Figure 11-20: Cu Normalized Process Control Chart – Minto North



Source: MMTS (2021)

Figure 11-21 shows the process control chart for 41 samples of SM-04 in Minto North and shows the lower mean is greatly influenced by two low failures, with one potentially mislabeled.

Figure 11-21: Process Control Chart for SM-04 (Cu=3.8%) Minto North



Source: MMTS (2021)

Table 11-17 shows the results of analysis of 324 sample of CRMs with greater than 15 entries for drilling in Minto North. The failure rate is 3.4%, with a small positive overall error of 0.5%.

Table 11-17: Minto North CRM Results for Au

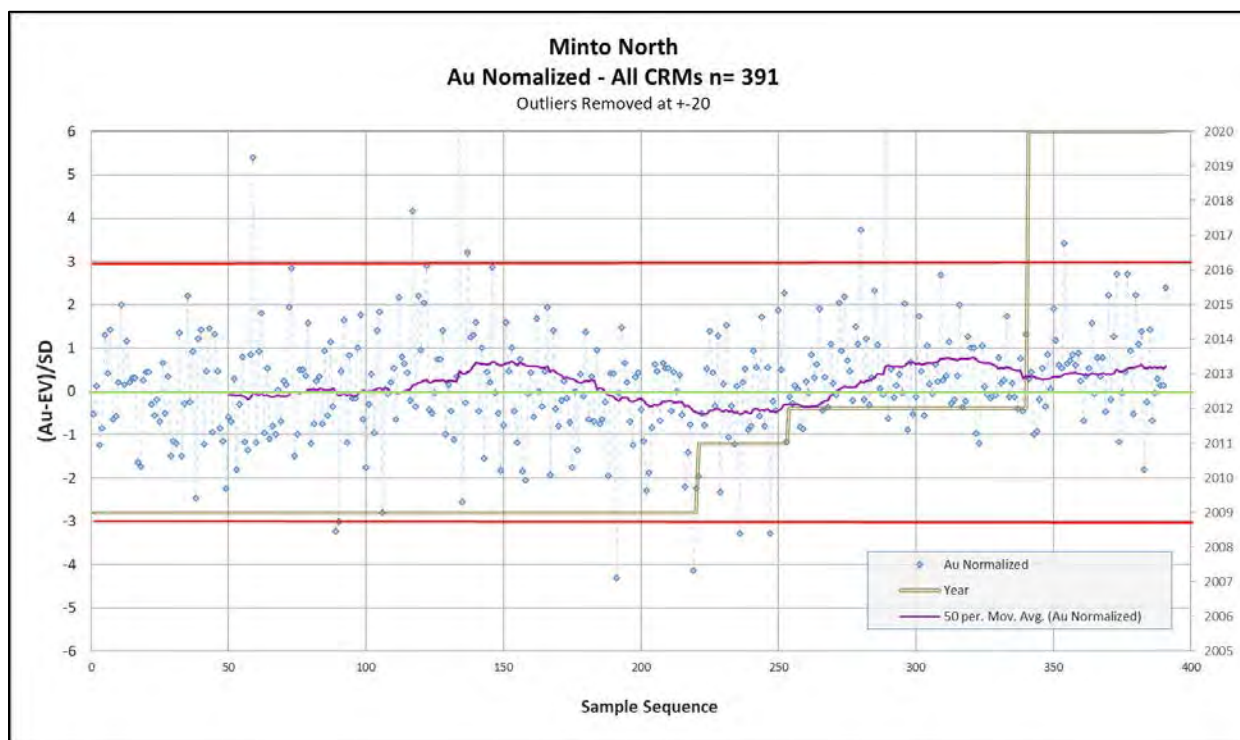
Standard	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Au EV (g/t)	Au Avg (g/t)	% Error	CV Au
N-CGS-23	2011	2011	19	2	0	10.5%	0.218	0.211	-3.4%	12.3%
N-CM-20	2012	2012	24	0	1	4.2%	0.274	0.292	6.6%	8.6%
N-CM-16	2012	2012	39	0	0	0.0%	0.294	0.303	2.9%	9.0%
N-CGS-18	2009	2009	96	1	1	2.1%	0.297	0.294	-1.1%	9.2%
N-Capstone Minto Standard 1	2009	2012	22	0	1	4.5%	0.425	0.435	2.3%	5.0%
N-CGS-15	2009	2009	31	1	2	9.7%	0.57	0.571	0.1%	14.1%
N-CGS-11	2009	2009	17	0	0	0.0%	0.73	0.724	-0.8%	4.9%
N-SM-04	2020	2020	41	1	0	2.4%	1.352	1.353	0.0%	16.4%

Standard	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Au EV (g/t)	Au Avg (g/t)	% Error	CV Au
N-Capstone Minto Standard 2	2009	2012	17	0	0	0.0%	1.57	1.604	2.2%	4.4%
N-Capstone Minto Standard 3	2009	2012	18	1	0	5.6%	2.23	2.212	-0.8%	5.0%
Total	2009	2020	324	6	5	3.4%			0.5%	

Source: MMTS (2021)

The normalized process control chart shown in Table 11-17 shows the overall reasonable results for the Au CRMs in Minto North with slight positive error observed in the 50-sample moving average line.

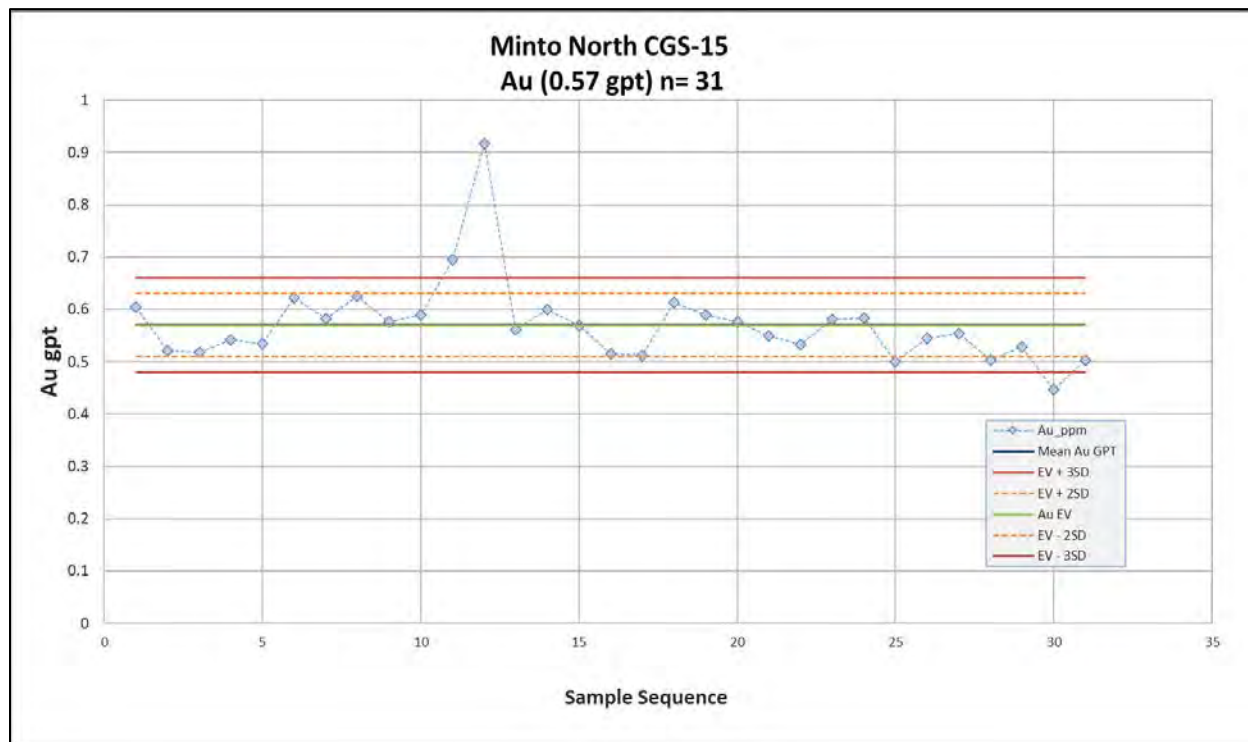
Figure 11-22: Au Normalized Process Control Chart – Minto North



Source: MMTS (2021)

The process control chart for CGS-15 with an expected value of 0.57 g/t is presented in Figure 11-23 where the mean is seen to approximate the expected value, although three failures are observed, and a slight declining trend is present towards the end of the process.

Figure 11-23: Process Control Chart for CGS-15 (Au=0.57) Minto North



Source: MMTS (2021)

The results of analysis of 67 entries of CRMs with more than 8 samples is given in Table 11-18 and shows a failure rate of 4% with overall slight negative error.

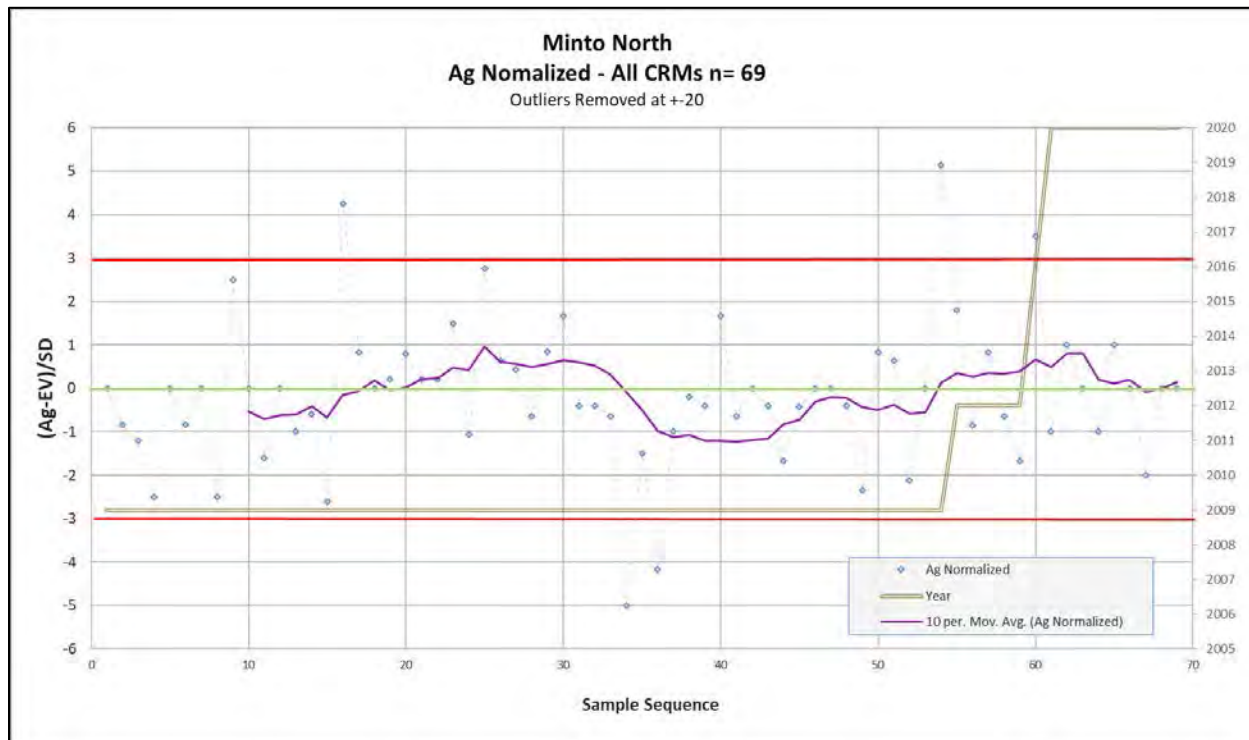
Table 11-18: Minto North CRM Results for Ag

CRM	Used From	Used To	Total Entries	Low Fails	High Fails	% Failed	Ag EV (g/t)	Ag Avg (g/t)	% Error	CV Ag
CM-36	2020	2020	9	0	0	0%	2	2.0	-1.1%	4.9%
Capstone Minto Standard 1	2009	2012	22	2	0	9%	3.9	3.8	-1.5%	5.7%
Capstone Minto Standard 2	2009	2012	17	0	0	0%	9.4	9.2	-2.2%	5.3%
Capstone Minto Standard 3	2009	2012	19	0	0	0%	18.4	18.4	0.0%	4.1%
Total			67	2	0	3%			-1.2%	

Source: MMTS (2021)

The normalized process control chart for silver in Minto North is given in Figure 11-24 with outliers removed at ± 20 . The 10-sample moving average line in purple shows reasonable agreement with the expected value about the 0 axis.

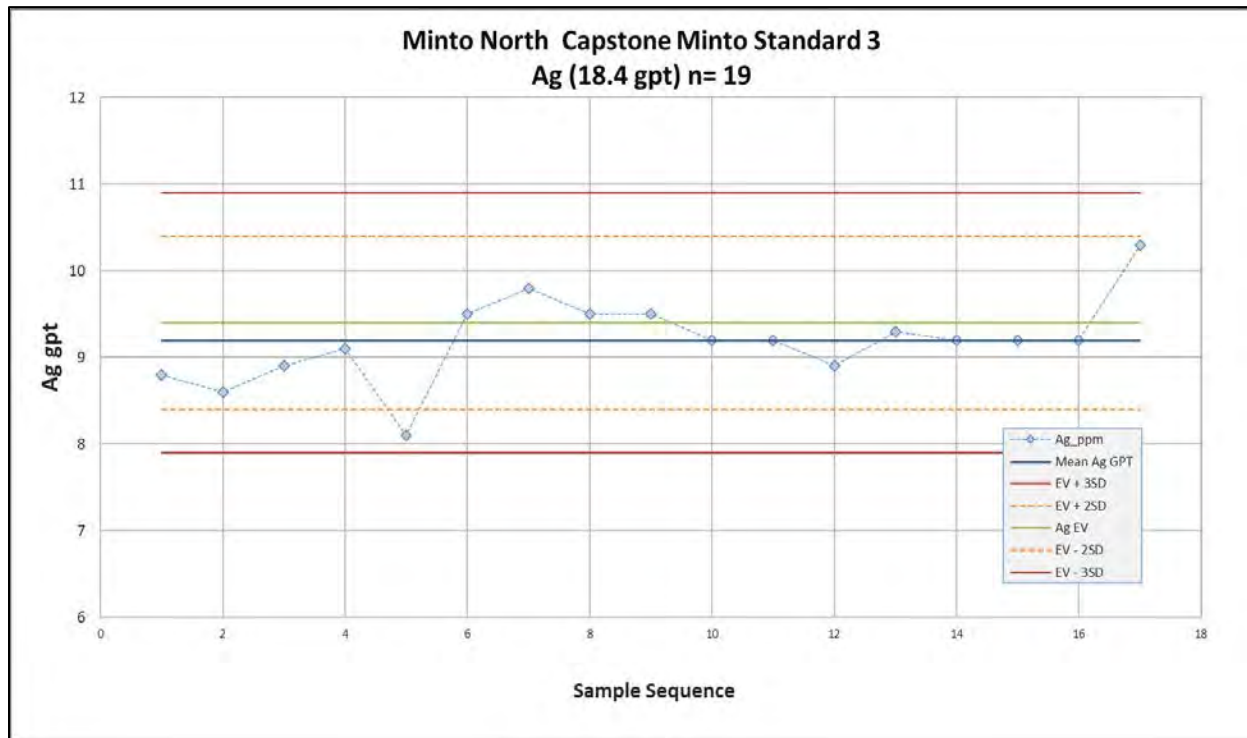
Figure 11-24: Ag Normalized Process Control Chart – Minto North



Source: MMTS (2021)

Figure 11-25 shows the process control chart for Capstone Minto Standard 3 used in Minto North drilling between 2009 and 2012 and shows a mean near the expected value of 18.4 g/t and no failures.

Figure 11-25: Process Control Chart for Capstone Minto Standard 3 (Ag=18.4 g/t) in Minto North



Source: MMTS (2021)

MMTS finds the performance of the CRM samples in Minto North to be acceptable.

11.4.3 Duplicates

The results of analysis of the 21 pairs of field duplicates from 2020 drilling in Minto North is presented in Table 11-19 and shows no significant bias with respect to the slope and R-squared values of the linear regression, with one outlier removed. The HARD results show less optimal correlation with no element coming near the desired 70% less than 10% hard for field duplicate pairs. This result is considered to be primarily due to both the heterogeneity of the deposit and the small sample size used for the duplicate pairs and not necessarily due to bias sampling.

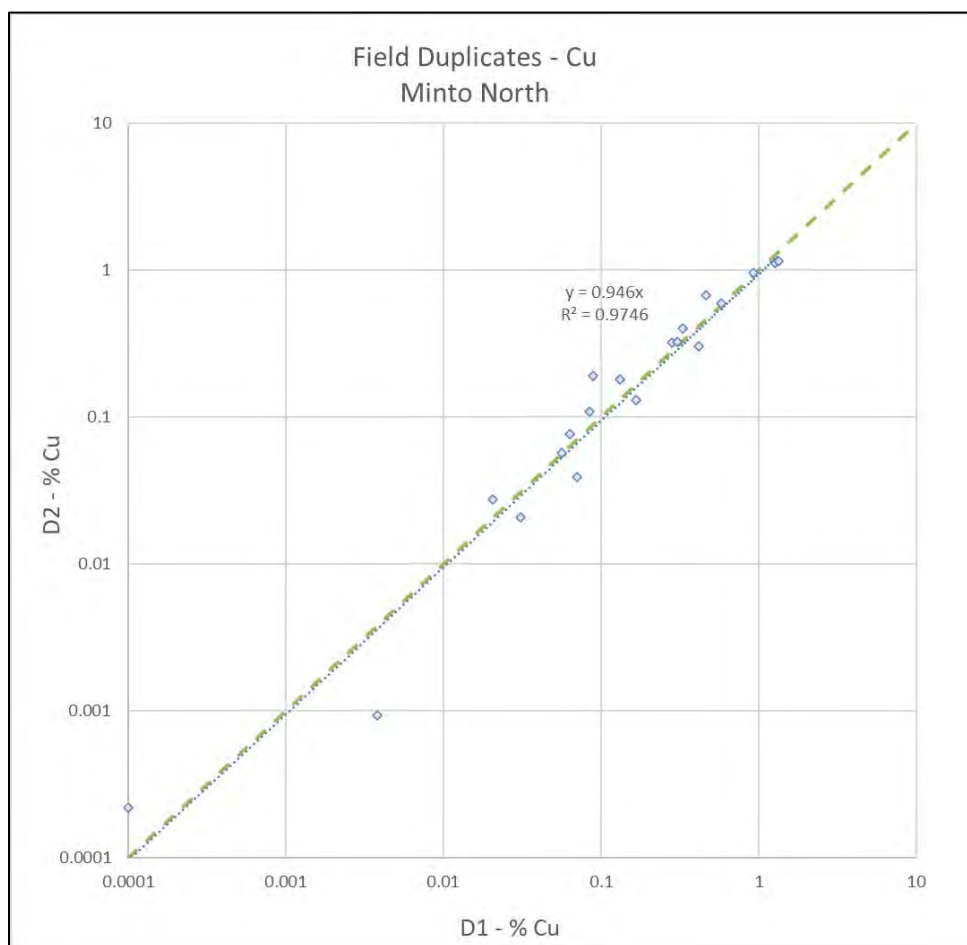
Table 11-19: Field Duplicate Analysis for Minto North

Metal	% less than 10% HARD	LR Slope	LR R-Squared
Cu	43%	0.946	0.9746
Au	48%	0.948	0.9510
Ag	29%	1.002	0.9250

Source: MMTS (2021)

The scatter plot of Cu field duplicates as shown in Figure 11-26 shows acceptable correlation and no significant bias with one outlier removed.

Figure 11-26: Cu Field Duplicates in Minto North



Source: MMTS (2021)

MMTS has been provided with a database that includes 297 pulp duplicates and 268 coarse duplicates in drilling in Minto North, with samples prepared and inserted by the laboratory. MMTS has reviewed these duplicate pairs and finds no concerning results.

11.5 QAQC Conclusions and Recommendations

1. The analysis of the small sample set of field duplicates in Minto East implies potential significant low bias to the gold samples in the assay database. It is suggested that Minto investigate this finding with re-assay of core and check assays;
2. CRM and check assay results from 2019 and 2020 indicate that there may be a negative bias to silver values. It is recommended to continue to monitor this potential bias; and
3. There is a possible high bias in the copper results in years 2009 through 2011 indicated by the CRM results. It is recommended further check assays of pulps and quarter-core samples be conducted to investigate.

12 DATA VERIFICATION

12.1 Site Visit

Sue Bird, P. Eng. of MMTS visited the Minto mine site from February 2nd through February 5th, 2021. During the site visit the core sample storage, preparation and security was discussed and viewed. The mineralization and geology were discussed with the site geologists, with the rock library and representative core made available. The insertion of standards, duplicates, and blanks was confirmed, as was the protocol for handling of failures. The general mine site was toured, and drillhole locations underground have been verified where possible. The geology and mineralization and ore/waste contacts were also observed during the underground tour. The Processing Plant was toured and the metallurgical recovery and blending of Potentially Oxidized material (POX) discussed.

12.2 Data Audit

MMTS has been provided with two databases, the resource database and the QAQC database, exported from the main assay database which includes imports of all available historic databases and certificates.

The resource database provided to MMTS was reviewed for accuracy against historic drill logs for drilling prior to 2005 and laboratory certificates for drilling in 2005 and later, or when available. Prior to resource modeling, systematic findings were identified and corrected as appropriate involving both historic data and 2005 and later. After resource modelling, 213 findings in the post 2005 data were discovered during routine certificate checks, and although the erroneous data was used in the resource model it is not considered material with respect to the outcome of this study. A summary of findings enumerated by area follows this discussion.

MMTS reviewed all available drill logs to verify the historic data and made corrections supported by drill logs or certificates. The total number of corrections prior to resource modeling affected 7,591 assay intervals.

12.3 Drill Log Checks

A total of 3,656 changes were made to intervals referencing historic drill logs. There were transcription errors affecting all three elements. Most errors involved gold values and stemmed from inappropriate rounding in the database. One common error resulted in a high frequency of gold values rounded to the ones place, which resulted in a high instance of zero and integer values for gold in g/t. Another rounding error involved data originally reported in ounces per ton (opt) to the thousandths place being rounded to the hundredths place before conversion to grams per tonne, resulting in errors of up to 0.17 g/t. An additional set of corrected errors involved a series of duplicate assays conducted in 2011 which had been given the same numbers as some historic samples and erroneously updated into the main assay database, overwriting the historic data. Historic data that is believed to be erroneous and not correctable due to missing historic drill logs is not used. Another series of 3,935 corrections was made to silver assays with results

that had been erroneously exported from fire assay with gravimetric finish (FA-GRA) test results in precedence to ICP or other test results when the assay value detected at the ICP test was less than the detection limit of the gravimetric test. These assay intervals were changed using the 2008 database provided by Minto and spot checked to confirm accuracy.

12.4 Certificate Checks

A total of 8,509 assay sample values were checked for Cu, Ag and Au against certificate values, comprising 7.6% of the 111,748 non-historic assays in the database. These samples were selected exclusively from the 863 certificates that include samples in the mineralized domains. The checked samples came from 459 of these certificates, meaning that 53% of certificates with samples in mineralized domains were considered. The checks are not random, as potential errors could be identified by sorting in increments of detection limits, or assays near or above over limits, and all of these potential errors were investigated.

Multiple findings were discovered and appear to result from main database import and export issues. These findings do not affect copper assays and fall into three broad categories relating to:

- Silver assays with incorrectly reported below detection limit values or inappropriately exporting gravimetric test results in preference to ICP;
- Gold assays reported as 10 g/t, when the initial test result on the certificate is >10 g/t and there is an overlimit value on the certificate which is not exported from the database; and
- Importing data from more than one certificate but only providing one certificate number for checks which does not include all the recorded assay values, meaning that assay values for silver or gold cannot be verified by certificate checks.

A total of 213 errors were identified post modeling, affecting silver and gold, as described above, in 2.5% of intervals checked. The 2.5% rate should not be extrapolated to the entire database because of the non-random nature of the checks.

Not all certificates are available. MintoEx made multiple attempts to obtain copies of missing certificates, however the laboratories were not able to produce all requested certificates. The assay database was flagged to identify errors not corrected before modeling and missing certificates or drill logs in support of resource classification.

The total number of assays intervals and the results of auditing by MMTS is presented by area in Table 12-1.

Table 12-1: Summary of Data Audit by Area

Area	Years	Intervals in Resource Database	Intervals Presented Without Issue	Pre-Modeling Correction	Used Subject to Validation	Known Errors Not Used	Post-Modeling Correction	Missing Certificate or Drill Log
Copper Keel, Ridgetop and 119	1971-2001	1,925	0	1,925	0	0	0	0
	2005-2020	79,965	75,828	1,704	0	0	181	2,252
	Total	81,890	75,828	3,629	0	0	181	2,252
Minto East	1971-2001	4,365	0	1,770	2,242	353	0	2,595
	2005-2020	20,846	18,720	2,107	0	0	19	425
	Total	25,211	18,720	3,877	2,242	353	19	3,020
Minto North	1971-2001	47	0	14	33	0	0	33
	2005-2020	6,942	6,931	0	0	0	11	0
	Total	6,989	6,931	14	33	0	11	33

Source: MMTS (2021)

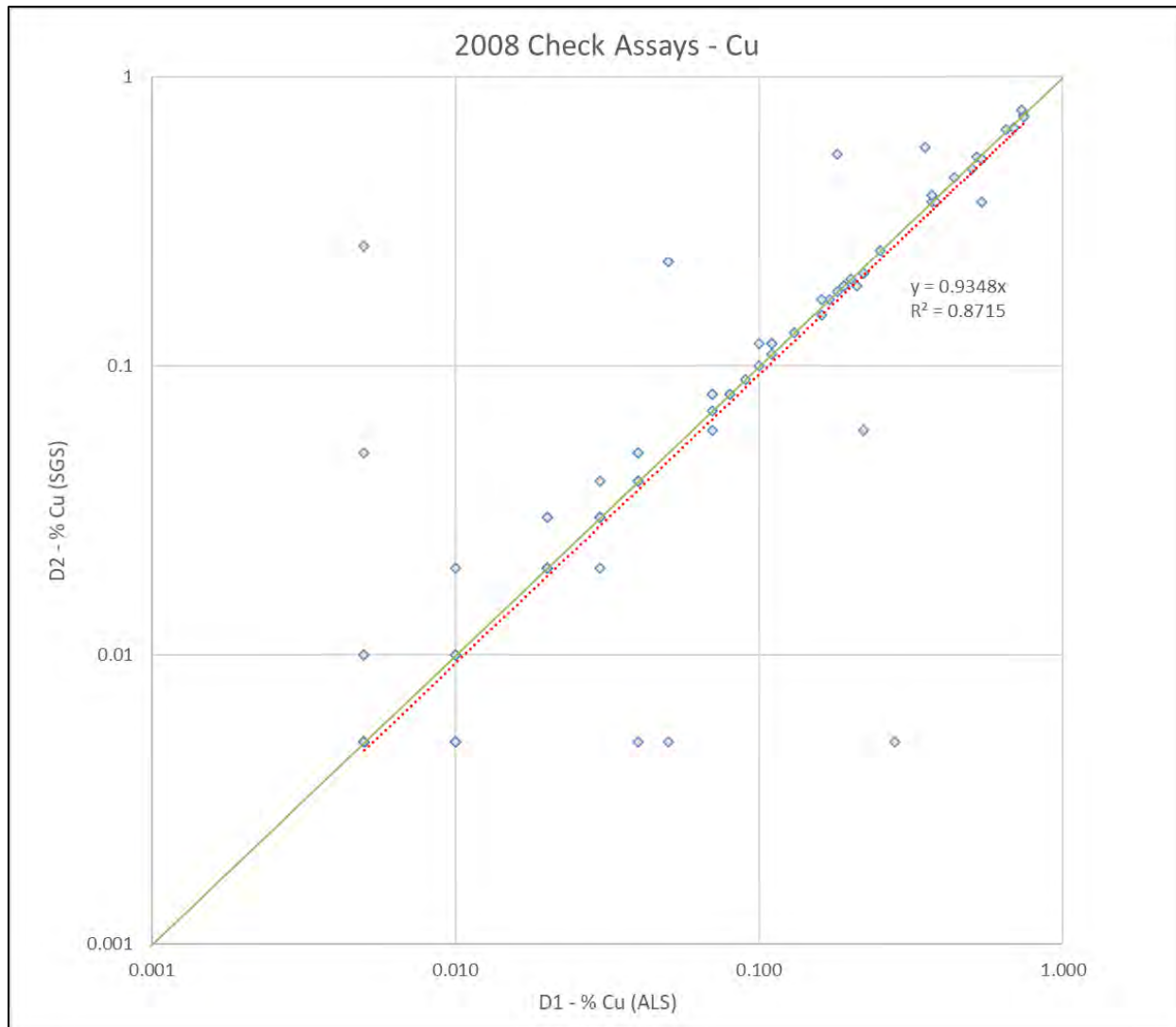
12.4.1 Check Assays

MintoEx has provided MMTS with data and certificates of check assays from drilling in years 2008, 2011-2012 and 2020. In addition, the assay database includes check assays from drilling in years 2005, 2007 and 2010. However, no certificates are available from these check assays and hence, they are not considered here.

12.4.2 2008 SGS Check Assays

A set of 168 samples from hole 08SWC270 in the main Minto pit that has been mined out, with original assays by ALS-Chemex in April 2008, were assayed at SGS in August 2008. The scatter plot of duplicate pairs is given in Figure 12-1 and shows a slight bias with the linear regression having a slope below 1 and a lower R-squared value of 0.8715. Analysis of the paired data also show 85% with less than 10% Half Absolute Relative Difference (HARD) which is less than the expected 90% for pulp duplicates.

Figure 12-1: 2008 Check Assays - Cu



Source: MMTS (2021)

Results for gold are not presented as 97% have grade below 0.25 g/t and are therefore not very applicable. Results for silver are similarly not presented as the maximum grade of the ALS results is 3.8 g/t with detection limit of 0.2 g/t, and the SGS test has a detection limit of 1 g/t, resulting in all SGS values being 0.5, 1, 2 or 3 g/t, making paired comparison inappropriate.

12.4.3 2011-2012 Bureau Veritas Check Assays

The QAQC duplicates database includes a set of 479 duplicates with initial assays at the primary lab, ALS, and check assays performed on pulps submitted to the Bureau Veritas lab in Richmond, BC, with 31 pairs in Minto North and the remainder nearly equally split between Minto East and Copper Keel, Ridgetop and 118. The analyses of the pairs are presented by area in Table 12-2 and show slopes close to 1:1 and reasonable R-Squared values for the linear regressions. The criteria for pulp duplicates are that 90% of pairs have less than 10% HARD, which is only met for copper in Minto East and Minto North samples and silver in Minto North. However, the other pairs are reasonable with respect to the mineralogy at Minto.

The results for Copper Keel, Ridgetop and 118 indicate the ALS results are somewhat higher than the BV results for copper and gold.

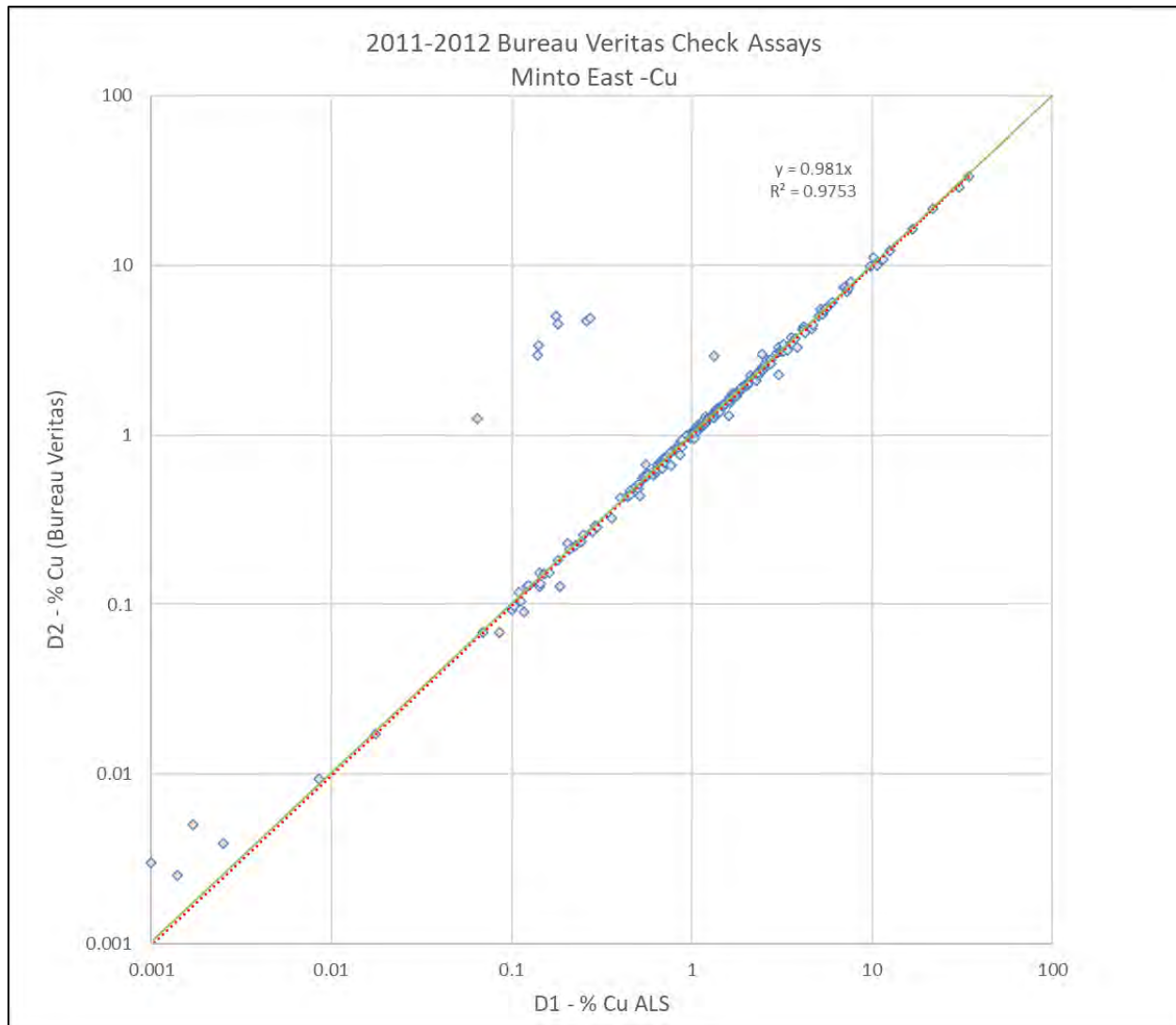
Table 12-2: Bureau Veritas Check Assays 2011-2012 Results by Area

Area	Sample Pairs	Element	% less than 10% HARD	LR Slope	LR R-Squared
Copper Keel, Ridgetop and 118	223	Cu	87%	0.950	0.9520
		Au	72%	0.966	0.8955
		Ag	65%	1.043	0.9834
Minto East	225	Cu	91%	0.981	0.9753
		Au	85%	0.989	0.9634
		Ag	75%	1.046	0.9963
Minto North	31	Cu	95%	0.999	0.9987
		Au	73%	0.972	0.9729
		Ag	91%	1.08	0.9979

Source: MMTS (2021)

The scatter plot of 225 duplicate pairs for copper in Minto East is presented in Figure 12-2 and shows acceptable results with a few outliers.

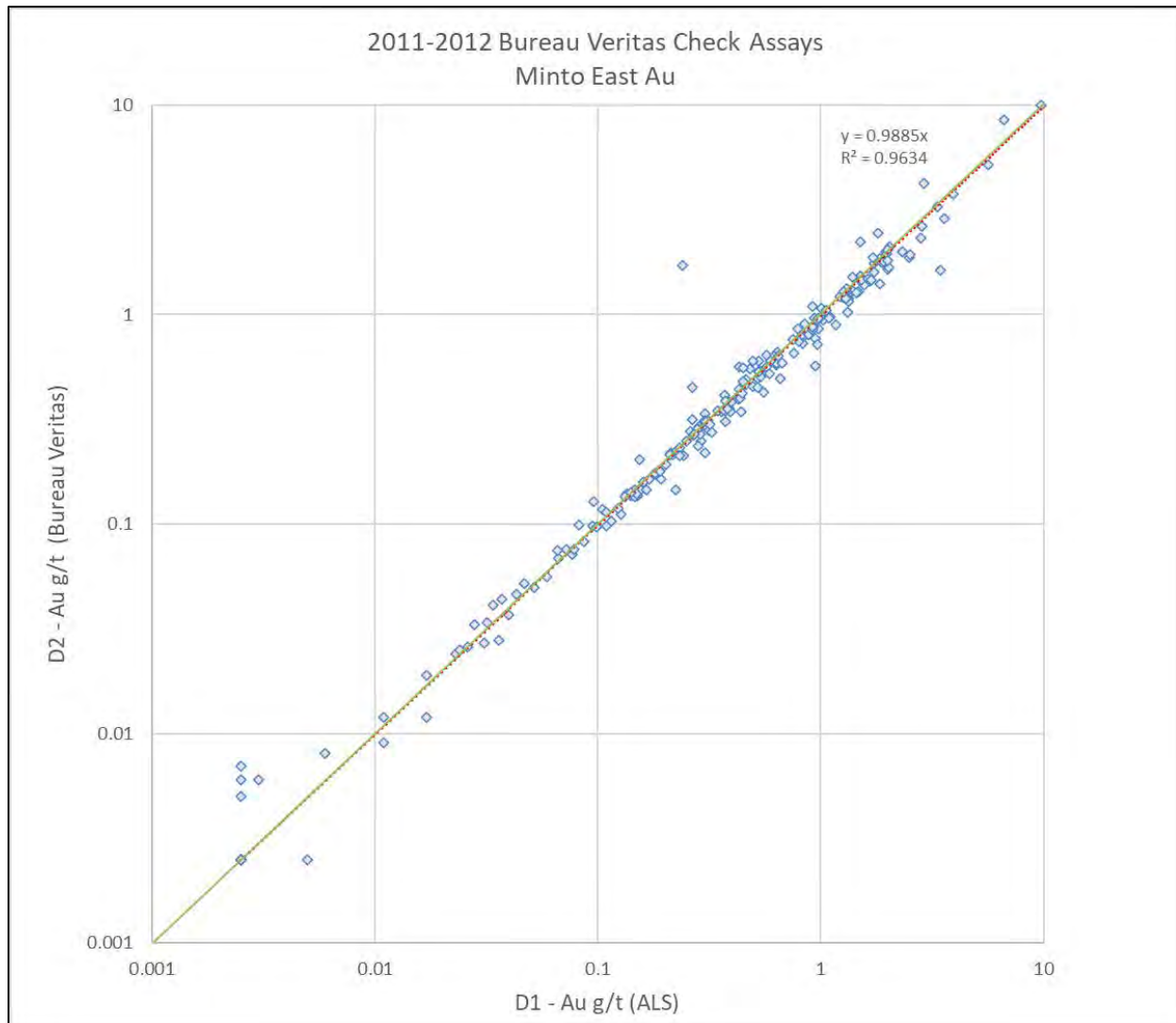
Figure 12-2: Scatter Plot 2011-2012 Bureau Veritas Check Assays - Copper in Minto East



Source: MMTS (2021)

The scatter plot for gold in Minto East is given in Figure 12-3 with one outlier removed and shows good agreement to a 1:1 slope and acceptable R-Squared value.

Figure 12-3: Scatter Plot 2011-2012 Bureau Veritas Check Assays - Gold in Minto East



Source: MMTS (2021)

12.4.4 2020 SGS Check Assays

Minto had experienced a high failure rate of blanks at the primary laboratory, ALS, and submitted a batch of 70 samples total to include 43 quarter core samples from the affected intervals, and QAQC samples. A total of 10 different ALS certificates were affected, from 10 different holes, one hole in Minto North, and the remainder are in Copper Keel, Ridgetop and 118. The results of the 42 quarter-core duplicate analysis are presented in Table 12-3 and show that the results for copper and gold are acceptable with respect to the slope of the best fit line, R-squared values

and % less than 10% HARD. There are two outliers for gold removed from this analysis. The results for silver give a higher than 1 best fit slope, even when the results are filtered to exclude the samples below detection limit. The SGS ICP test has a lower detection limit of 2 g/t for Ag while the ALS test reports to 0.2 g/t. The higher trend of the silver SGS results is not of great concern at the moment but is something that should be monitored.

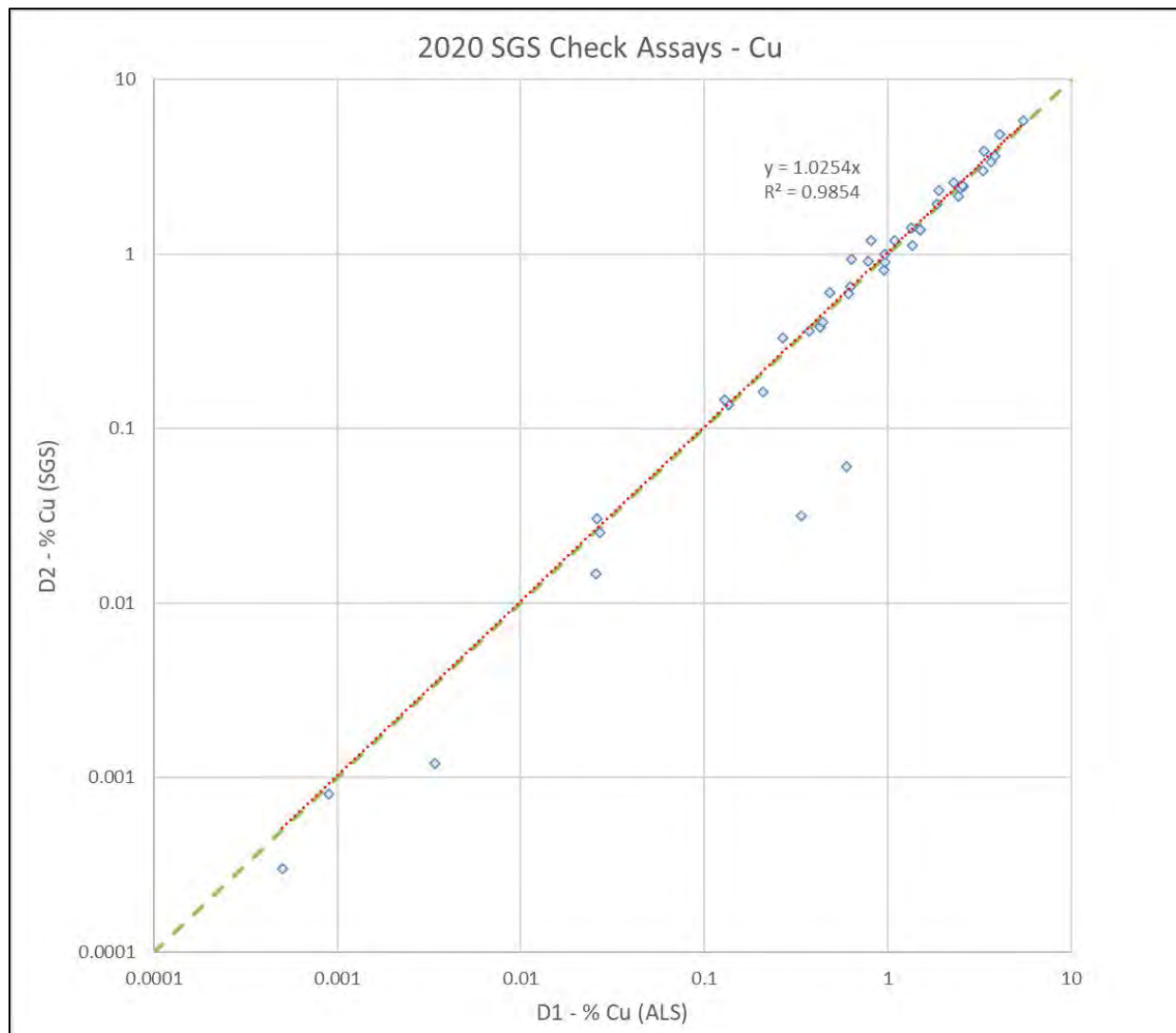
Table 12-3: SGS Check Assay 2020 Results

Metal	% less than 10% HARD	LR Slope	LR R-Squared
Cu	78%	1.025	0.9854
Au	65%	1.009	0.9381
Ag	52%	1.166	0.9832

Source: MMTS (2021)

The scatter plot of copper assay values from duplicate pairs by ALS and SGS are presented in Figure 12-4.

Figure 12-4: SGS Check Assays 2020 - Copper



Source: MMTS (2021)

12.5 Conclusions and Recommendations

MMTS concludes and recommends the following from the data verification analyses:

1. Further attention must be paid to the importing and exporting of assays from the main database for the purpose of resource modeling as described in Section 12.1 to ensure that the most appropriate test result is exported with respect to the assay value and range of test detection limits;
2. It is recommended that Minto correct the data in the main assay database to reflect the corrections made by MMTS to the resource database. These corrections have been made available to Minto; and
3. Check assays results from 2019 and 2020 indicate that there may be a negative bias to silver values. It is recommended to continue to monitor this potential bias.

The QP concludes that the assay database is acceptable for resource estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The processing plant at the Minto Mine was constructed in 2006-2007 and commercial production was declared in October 2007 after a four-month commissioning period. The processing plant ran continuously until it was placed on care and maintenance in October 2018, following discontinuation of mining operations. The plant was down for approximately 1 year before the recommissioning of milling facilities commenced in September 2019, with the resumption of processing mineralized material in October 2019.

Over the years, many metallurgical testing programs on the Minto mineralized material have been undertaken. In addition, many plant trials have been conducted. These have been used to optimize circuit performance and provide guidelines for operating the plant and making equipment modifications. In addition to on site testing, there has been a significant amount of work by outside organizations. The testwork completed during construction and early commissioning are summarized in Table 13-1.

Table 13-1: Summary of Metallurgical Testwork

Orebody	Samples	Summary Comments
Minto North	83 samples of quarter core combined to form a single master composite.	KM 2420 testwork report completed by G&T in June 2009. Rougher flotation kinetics completed with Paos of 156 to 273 µm. A single locked cycle test was completed to assess the effect of cleaner recirculation loads.
Ridgetop, Area 118	A master composite generated representing upper and lower zones of each orebody. In addition, 12 variability samples per orebody.	KM 2351 testwork report completed by G&T in May 2009. At a primary grind size of 200 µm two-dimensional copper sulphide liberation was 55 to 65% for Area 118 and Ridgetop. No sensitivity to primary grind size up to 250 µm for Area 118 and 200 µm for Ridgetop.
Area 2	A master composite was derived for zones L, M, N, O, P and Q from the individual samples.	KM 1966 testwork report completed by G&T in June 2007. Variability tests completed at various grind sizes. Gold recovery was lower for the coarse primary grind sizes. Regrind size of 100 µm for the rougher/scavenger concentrate was tested. Locked cycle test indicated a drop in final concentrate grade of 3% for the same overall recovery when the regrind state was removed.

Orebody	Samples	Summary Comments
Minto Main Phases I, II and IV composites	Three composites for phase I, II and IV tested.	KM 1867 testwork report completed by G&T October 2006. Effect of primary grind size investigated on the Phase I composite. Copper recovery was not sensitive to coarser grind however gold recovery traduced by 5 - 10%with greater than 200 µm primary grind.
Minto Main	2 composites based on 23 core samples.	KM 1810 testwork report completed by G&T in April 2006. Report recommends primary grind size greater than 150 µm and a regrind of 60 µm for the rougher/scavenge r concentrate.
Minto Main		KM 1742 testwork report completed by G&T in November 2005. Single test completed with a primary grind size of 281 µm. Not sufficient data for determining the effect of coarser primary grind sizes on overall recovery.
Minto Main (South)	Two composite samples less oxidized than samples in KM 1937 testwork campaign.	KM 2024 testwork report completed by G&T in August 2007. The flotation response was considerably more variable to increased grind sizes in comparison to the Minto Main Pit ore testwork.
Minto Main (South) Partially Oxidized	Composite sample generated for Minto Main (South) pit ore.	KM 1937 testwork report completed by G&T in April 2007. Sample contained 20% non-sulphide copper as compared to 8% for non- partially oxidized Minto Main (South) ore for testwork campaign KM 2024. Addition of a sulphidizing agent improved overall copper recovery by 2 -4%.
Minto North	Minto North composite sample.	KM 1937 testwork report completed by G&T in March 2007. Varied primary and regrind sizes tested. Copper recovery was not sensitive to primary grind size however gold recovery reduced by 3% at 270 µm grind size. The optimum copper concentrate grade and recovery occurred with a rougher/scavenge r concentrate regrind size of 79 µm.

Source: SRK (2009)

The mineralized material at the Minto Mine is normally a combination of chalcopyrite and bornite with minor amounts of chalcocite. Typically, pyrite is a minor constituent of the mineralized material and therefore the cleaner circuit relies on dilution cleaning and no pyrite depression is utilized. Table 13-2 summarizes the operations data from 2010 to 2020. The data was gathered from year end MD&A reports by Capstone for the years 2010 to 2018, except for the oxide copper grade and oxide ratio, which were composited from the daily production reports. It should also be noted that the gold produced value for 2018 is a calculation using the tonnes processed, feed grade and stated gold recovery.

The production data for 2019 to 2020 was collected from operating data, verified by the site personnel. The restart in 2019 was conducted by MintoEx which is currently owned by a private company and so the information was not released publicly.

Table 13-2: Historical Copper and Gold Recoveries and Concentrate Grades

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Mill Feed Tonnes (k DMT)	915.05	1258.31	1341.58	1402.26	1438.74	1387.96	1491.27	1439.37	906.79	104.53	629.08
Feed Grade (%Cu)	2.22	1.52	1.34	1.31	1.37	1.38	2.21	1.37	1.31	2.26	1.33
Feed Grade (g/t Au)	0.93	0.60	0.58	0.52	0.56	0.49	1.23	0.79	0.44	0.86	0.50
Copper Mlbs Produced	40.45	37.10	35.90	37.26	40.54	36.37	69.33	36.00	23.00	5.00	17.13
Gold Produced (k oz)	22.3	18.3	18.6	18.4	19.9	16.1	39.5	21.7	7.8	2.4	7.4
Copper Recovery (%)	90.30	87.90	90.50	92.30	93.20	86.20	95.20	82.60	87.50	95.06	93.14
Gold Recovery (%)	81.10	75.50	74.00	78.40	77.50	73.60	67.00	59.30	61.10	75.70	73.47
Concentrate Produced (k DMT)	47.07	45.95	43.42	46.30	50.25	45.70	70.35	37.37	27.37	6.44	22.15
Copper in Concentrate (%)	39.00	36.60	37.50	36.50	36.60	36.10	44.70	43.70	38.10	34.90	35.08
Gold in Concentrate (g/t)	14.70	12.40	13.30	12.30	12.30	10.97	17.47	18.00	8.80	10.63	10.39
Tails Copper Grade (%)	0.23	0.19	0.13	0.10	0.10	0.20	0.11	0.24	0.17	0.12	0.09
Tails Gold Grade (g/t)	0.19	0.15	0.16	0.12	0.13	0.13	0.43	0.33	0.17	0.22	0.14
Copper Oxide Grade		0.06	0.05	0.03	0.03	0.11	0.04	0.16	0.07	0.03	0.03
Oxide Ratio		3.69%	3.58%	2.59%	2.10%	8.25%	1.63%	11.52%	5.36%	1.22%	1.95%

In 2011, tonnage increased from approximately 2,800 tpd to approximately 3,500 tpd. During this time, operations treated historically problematic stockpiles. These stockpiles contained oxidized copper minerals that is referred to as Partially Oxidized (POX). The increase in tonnage and the treatment of problematic stockpiles resulted in recovery dropping from about 95% to approximately 87%. There have been similar recovery decreases in 2015, 2017, and 2018. These decreases are also attributed to the processing of POX.

Various mill design initiatives have been pursued to enable the recovery to be improved when processing POX mineralized material. These process improvements include the use of alternate reagents such as sodium sulphide and a collector aimed at recovering oxide minerals, AM 28.

Copper grades in the final copper concentrate at Minto are relatively high, due to the presence of bornite in the feed, which has a higher proportion of copper. Copper grades in the final copper concentrate typically ranged from 35% to 41%, but have been as high as 44.7% in 2016, which also happened to be the year with the highest copper and gold produced at the Minto Mine. It should be noted that since chalcopyrite is typically the most important copper mineral for extraction purposes, sulphide copper concentrate grades are typically in the range of 25 – 30% Cu. Copper recoveries, to final copper concentrates, ranged from 82.6% to 95.2% in the years 2010 to 2020. The main cause of the variable recovery is believed to be related to POX zones.

There are currently 10 deposits that make up the known mineralized material at the Minto Mine. These deposits are:

- Copper Keel Main;
- Copper Keel North;
- Copper Keel West;
- Copper Keel South;
- Ridgetop;
- Minto North;
- Minto North 2;
- Minto East 2;
- A2; and
- 118.

Of these deposits, the Copper Keel Main, Minto North, A2 and 118 have been mined in the past. Ridgetop presents a significant challenge due to high percentage of oxide copper in this deposit.

13.2 Recovery Formula

Operating data for October 2019 to January 2021 was analyzed to develop recovery formulas for copper and silver. The gold recovery formula was provided by Minto Mine personnel due to the lack of gold data in the daily metallurgical database.

The copper recovery formula is based on total copper grade and the ratio of oxide copper to total copper. The data examined included oxide ratios from zero to fifteen percent. When the equation was compared to previous operating data, it held up well up to a 30% oxide ratio, but is untested above that (there is not enough data to verify the equation above this). It is important to comment that the equation tends to underpredict recovery when the oxide ratio is above 30%, but the available data is insufficient to include. The equation developed is:

$$\text{Copper Recovery (\%)} = 95.5 + 1.07 * (\text{Cu}_{\text{tot}} \%) - 113 * (\text{Oxide Ratio})$$

Where:

$\text{Cu}_{\text{tot}}\%$ is total copper grade in percent (2% = 2)

Oxide ratio is the ratio of oxide copper (in percent) to total copper (in percent)

In cases where there is low oxide ratio and higher total copper grades, the recovery formula is capped at 98%. Currently, Minto Mine is not processing material that is considered POX (> 20% Oxide ratio) due to the poor recovery results from processing that material.

The data analyzed suggested that the silver recovery formula was based solely on the silver grade in grams per tonne without an oxide modifier. The silver recovery formula is also capped, this time at 85%.

$$\text{Silver Recovery (\%)} = 69.4 + (1.9 * \text{Silver Grade})$$

The gold recovery formula, based on the gold assay in grams per tonne is:

$$\text{Gold Recovery (\%)} = 62.01 + (20.99 * \text{Gold Grade})$$

13.3 Partially Oxidized (POX) Testwork

There has been a lot of testwork performed on site and in commercial labs to improve the recovery of oxidized mineralized material. The lab testwork has identified that the recovery can be increased through sulphidization using sodium sulphide or the use of an oxide collector, AM28. In the plant, the use of these methods has proven difficult to maintain, due to high reagent consumption which is not supported by the current plant infrastructure (i.e. requires upgrades to the reagent mixing, pumping, distribution, and control systems).

It is important to note that the POX material is a collection of different mineralization, characterized by an acid soluble copper assay greater than 20% of the total copper assay. Consequently, some specific types of POX material will recover better than others due to differences in mineralization.

There are several opportunities that can be investigated for processing oxidized copper mineralization which could include further investigation of flotation options or the recovery that could be achieved by leaching and SXEW for oxidized zones.

13.4 Metallurgical Assumptions

The assumptions for metallurgical recoveries and concentrate grades are based on the recovery formulas discussed in Section 13.2. The concentrate grades used were 35% Copper which is the current concentrate grade target for the operation. The values can be found in Table 13-3.

Table 13-3: Recovery and Concentrate Grade Estimates

Parameter	Unit	Concentrates Zone 1
Cu Recovery	%	$95.5 + (1.07 * Cu_{tot} \%) - (113 * \text{Oxide Ratio})$
Au Recovery	%	$62.01 * (20.99 * \text{g/t Au})$
Ag Recovery	%	$69.4 + (1.9 * \text{g/t Ag})$
Concentrate Grade		
Cu	%	35

14 MINERAL RESOURCE ESTIMATE

14.1 Minto Mineral Resource

The total Mineral Resource statement for the Minto deposit with an effective date of March 31, 2021 is listed in Table 14-1. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. Mineral Resources were estimated using the 2019 CIM Best Practice Guidelines and are reported using the 2014 CIM Definition Standards.

Inverse distance squared (ID^2) has been used for Cu, Au and Ag estimation with capping and outlier restriction implemented to reduce the effect of high-grade outliers and reduce the coefficient of variation (C.V.).

The base case cut-off grade within the “reasonable prospects of eventual economic extraction” constraining pit is an NSR of CA\$35/t and for underground of CA\$70/t.

Table 14-1: Minto Mineral Resource Estimate – Total Open Pit and Underground

Type	Class	Cut-off	Tonnes (000t)	In situ Grades				Metal		
		CA\$/t milled		NSR (CA\$/t milled)	Cu (%)	Au (gpt)	Ag (gpt)	Cu (000lb)	Au (000oz)	Ag (000oz)
Open Pit	Indicated	\$35	3,480	79.40	1.16	0.36	3.33	88,915	40	372
	Inferred		1,986	70.41	1.04	0.28	3.01	45,566	18	192
Underground	Indicated	\$70	7,612	133.46	1.59	0.61	5.40	267,632	149	1,320
	Inferred		11,027	112.63	1.34	0.53	4.83	324,539	189	1,712
Total	Indicated	Varies	11,092	116.50	1.46	0.53	4.75	356,548	189	1,693
	Inferred		13,013	106.18	1.29	0.49	4.55	370,104	207	1,903

Source: MMTS (2021)

Notes to Table 14-1, Table 14-2 and Table 14-3:

- Resources are reported using the 2014 CIM Definition Standards and were estimated using the 2019 CIM Best Practices Guidelines.
- Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- Metal prices of US\$1500/oz Au, US\$18/oz Ag, US\$3.10/lb Cu.
- The following NSR calculations are used to determine cut-off grades: for open pit: $NSR = CA\$61.688 * Cu\% + CA\$21.384 * Augpt + CA\$0.0599 * Aggpt$, for Underground: $NSR = CA\$68.946 * Cu\% + CA\$37.842 * Augpt + CA\$0.0862 * Aggpt$.
- For the NSR calculations: a currency exchange rate of 0.76 US\$ per \$CA; 95% payable Cu, 77% payable Au and Ag; offsite costs (refining, transport and insurance) of US\$240.39/dmt; and royalties as described in Section 19.
- The following equations are used for metallurgical recovery: $RecCu = 95.5\% + 1.07 * CU\% - 113 * TCu / AscCu$ to a Maximum of 95%, $RecAu = 20.99 * Augpt + 62.01$; $RecAg = 100 * (0.694 + 0.019 * Aggpt)$ both to a maximum of 85%.
- The Mineral Resource has been confined by a “reasonable prospects of eventual economic extraction” pit or underground shape using the 130% base case NSR for the Ridgetop open pit and the 100% NSR case for the Area 118 pit and a confining shape for the underground.
- Mining costs are CA\$3.70/t for open pit, CA\$41.03/t for underground, Processing costs are CA\$19/t.



9. Pit slope angles are assumed at 45°.
10. The specific gravity of the deposit has been assigned based on domain as between 2.578 and 2.849 based on sg measurements in the Minto deposit.
11. Numbers may not add due to rounding.

Table 14-2: Minto Mineral Resource Estimate – Indicated

Type	Cut-off	Area	ROM	In situ Grades					Metal		
	(CA\$)		tonnes	NSR (CA\$/t)	Cu (%)	Au (gpt)	Ag (gpt)	Ox Ratio	Cu (000lbs)	Au (oz)	Ag (oz)
Open Pit	\$35	Ridgetop	3,470,507	\$79.40	1.16	0.36	3.33	0.27	88,654	40,269	371,559
		118	9,256	\$82.66	1.28	0.16	2.38	0.23	262	48	708
		Open Pit	3,479,763	\$79.40	1.16	0.36	3.3	0.27	88,915	40,317	372,268
Underground	\$70	Minto East	661,607	\$126.35	1.44	0.70	5.9	0.09	20,995	14,956	124,826
		Minto North	1,278,414	\$123.91	1.51	0.51	4.8	0.04	42,541	21,102	198,933
		Copper Keel/Ridgetop	5,525,394	\$137.79	1.65	0.63	5.5	0.06	200,396	112,165	982,380
		118	146,892	\$85.49	1.14	0.17	3.0	0.07	3,700	805	14,263
		UG	7,612,307	\$133.46	1.59	0.61	5.4	0.06	267,632	149,028	1,320,437

Source: MMTS (2021)

Table 14-3: Minto Mineral Resource Estimate – Inferred

Type	Cut-off	Area	ROM	In situ Grades					Metal		
	(CA\$)		tonnes	NSR (CA\$)	Cu (%)	Au (gpt)	Ag (gpt)	Ox Ratio	Cu (000lbs)	Au (oz)	Ag (oz)
Open Pit	\$35	Ridgetop	1,914,650	70.00	1.03	0.29	3.02	0.30	43,608	17,544	185,903
		118	71,450	81.36	1.24	0.21	2.75	0.26	1,958	486	6,317
		All Open Pit	1,986,100	\$70.41	1.04	0.28	3.0	0.30	45,566	18,030	191,221
Underground	\$70	Minto East	4,440,833	\$115.04	1.33	0.61	5.7	0.09	129,967	86,865	810,968
		Minto North	56,083	\$137.03	1.56	0.77	5.6	0.05	1,927	1,385	10,079
		Copper Keel/Ridgetop	6,286,103	\$111.88	1.35	0.49	4.3	0.06	186,563	99,839	869,042
		118	243,653	\$82.30	1.13	0.11	2.8	0.27	6,082	828	21,542
		Subtotal-UG	11,026,672	\$112.63	1.34	0.53	4.8	0.08	324,539	188,917	1,711,632

Source: MMTS (2021)

The following factors, among others, could affect the Mineral Resource estimate: commodity price and exchange rate assumptions; pit slope angles; assumptions used in generating the LG pit shell, including metal recoveries, and mining and process cost assumptions.

The QP is not aware of any environmental, permitting, legal, title, taxation, socioeconomic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

14.2 Key Assumptions and Data used in the Resource Estimate

The total sample database contains results from 1,454 drillholes for a total assayed length of 162,835.80 m. A summary of the drillholes within the Minto block models by is provided in Table 14-4.

Table 14-4: Summary of Drillhole and Assays used in the Minto Resource

Year	Copper Keel, Ridgetop and 118			East			North			All Areas		
	DH	Length (m)	Interval (m)	DH	Length (m)	Interval (m)	DH	Length (m)	Interval (m)	DH	Length (m)	Interval (m)
1971	7	1,122.88	698.83							7	1,122.88	698.83
1972	12	1,812.23	1,451.46							12	1,812.23	1,451.46
1973	10	1,193.89	300.39	75	11,164.78	3,241.90				85	12,358.67	3,542.29
1974	35	7,569.83	2,180.31	70	10,641.54	3,714.14	1	213.36	36.3	106	18,424.73	5,930.75
1984							1	121.92	9.15	1	121.92	9.15
1989							2	106.68	9.15	2	106.68	9.15
1993				8	959.81	316.28				8	959.81	316.28
1994	15	1,794.36	360.88	1	100.89	41.63	1	198.12	16.15	17	2,093.37	418.66
1995	2	162.61	25.27	2	193.55	28.94				4	356.16	54.21
1996				4	548.18	176.22				4	548.18	176.22
1999				2	318.22	27.80	1	79.55	7.62	3	397.77	35.42
2001				5	554.28	280.12				5	554.28	280.12
2005	2	113.69	8.07	39	4,878.35	1,820.01				41	4,992.04	1,828.08
2006	88	19,824.63	15,381.31	24	3,424.43	1,413.26				112	23,249.06	16,794.57
2007	91	21,456.13	13,954.43	7	1,505.72	774.86				98	22,961.85	14,729.29
2008	117	23,412.65	16,062.51	1	385.00	130.74				118	23,797.65	16,193.25
2009	99	15,023.40	11,554.25	6	2,220.50	1,337.88	91	12,484.54	5,767.67	196	29,728.44	18,659.80
2010	123	34,453.61	19,224.36	38	10,836.25	6,026.39				161	45,289.86	25,250.75
2011	88	28,976.72	17,787.07	30	12,408.32	7,903.64	3	1341.50	976.58	121	42,726.54	26,667.29
2012	29	10,111.00	5,509.05	37	14,959.40	8,143.38	13	3,508.55	1,937.85	79	28,578.95	15,590.28
2014	19	3,026.00	2,110.75							19	3026.00	2,110.75
2015	32	4,460.20	2,761.40	1	329.40	117.04				33	4,789.60	2,878.44

Year	Copper Keel, Ridgetop and 118			East			North			All Areas		
	DH	Length (m)	Interval (m)	DH	Length (m)	Interval (m)	DH	Length (m)	Interval (m)	DH	Length (m)	Interval (m)
2016	17	1,150.50	578.07				1	125.50	36.53	18	1276.00	614.60
2017	42	3,967.15	2,259.50	4	1,421.50	445.87				46	5,388.65	2,705.37
2018	13	2,625.30	699.34	12	1,194.00	337.21				25	3,819.30	1,036.55
2019	5	1,910.60	138.77							5	1,910.60	138.77
2020	66	13,514.80	2,827.09	31	1,861.75	645.05	31	5,609.50	1,243.31	128	20,986.05	4,715.45
Total	912	19,7682.20	115,873.10	397	79,905.87	36,922.36	145	23,789.22	10,040.31	1,454	301,377.30	162,835.80

Source: MMTS (2021)

14.3 Geologic Modelling

Geological modeling at Minto consisted of creating 3D solids for mineralized domains and major waste types, and creating surfaces estimating the depth of overburden and the depth of oxidation.

14.3.1 Mineralized Zones

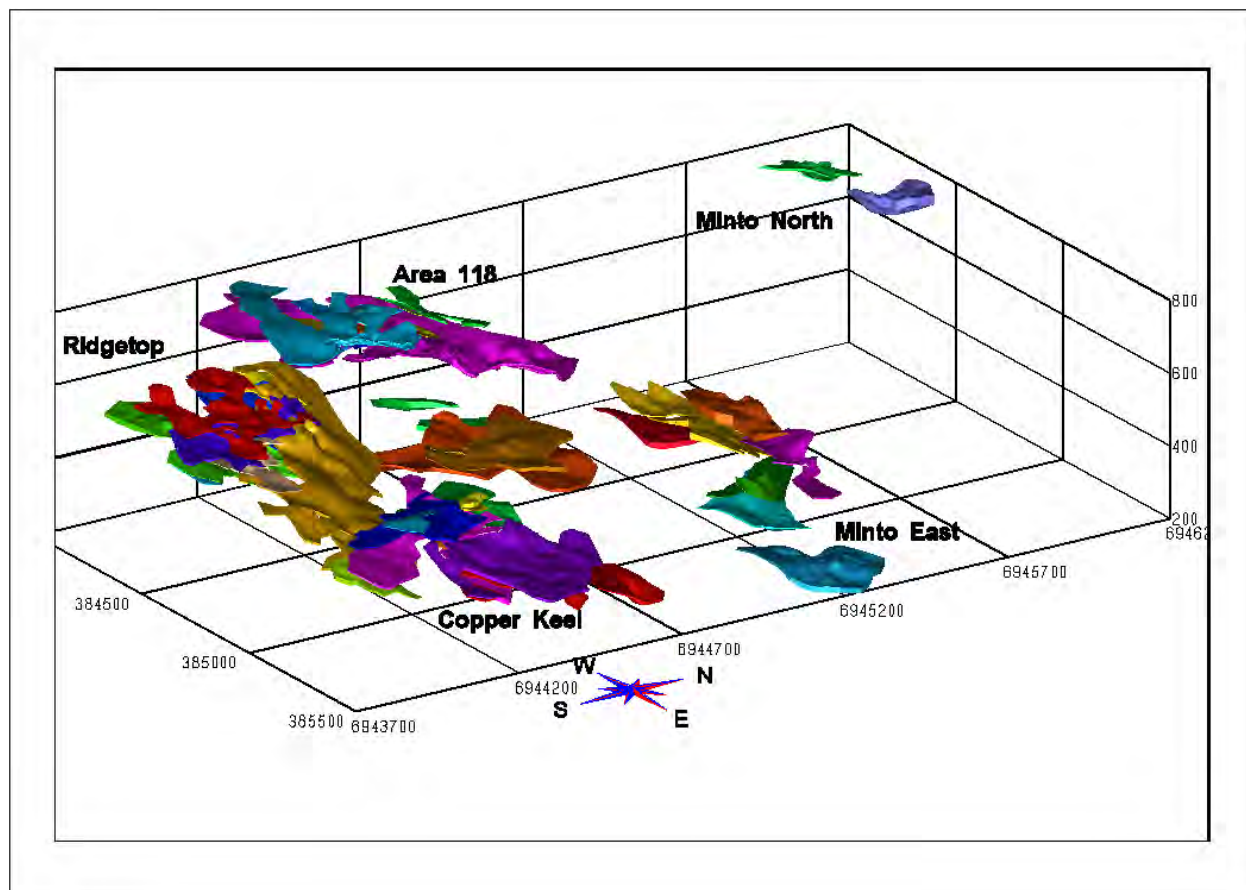
Wireframes of mineralized zones have been created by manual tagging and grouping of assay intercepts into domain shapes which are congruent with the geological interpretations of the deposit, target Cu grade equal or greater than approximately 0.5%, and have true thickness of approximately 3 meters or greater.

The cut-off values have been occasionally lowered to 0.3% Cu and/or true thickness of 1 to 2m. This has been done to provide continuity of mineralized solids, to include internal dilution in the interpolations, and to let the data be used to limit the extent of the domains wherever possible rather than estimating a distance and thickness to extrapolate the wireframes.

The tagged intercepts were then used with the Implicit Modelling Tool in MineSight (MSIM®) to create footwalls and hanging walls for the development of mineralized solids. The surfaces have been clipped to a maximum of 50 m from an outer boundary intercept, or halfway to an adjacent unmineralized drill intercept.

A total of 17 domains for Copper Keel, 12 domains for Ridge Top, 3 domains for Minto North, 8 domains for Minto East 2, and 9 domains for Area 118 have been created, as illustrated in Figure 14-1.

Figure 14-1: Domains Used for Interpolation



Source: MMTS (2021)

14.3.2 Depth of Oxidation

A surface estimating the depth of oxidation has been used to delineate oxidized portions of the Ridge Top, Copper Keel, and Area 118 areas. The surface targets the lowest depth in each drill hole at which the acid soluble copper is greater than 20% of the total copper.

The surface is typically 50meters below topography, but occasionally deeper where oxidation follows faulting.

14.3.3 Overburden

A surface estimating the depth of over-burden has used to limit the mineralized zones near the topography. The surface targets the depth of drill hole casing used, or the logged depth of overburden, whichever is deeper.

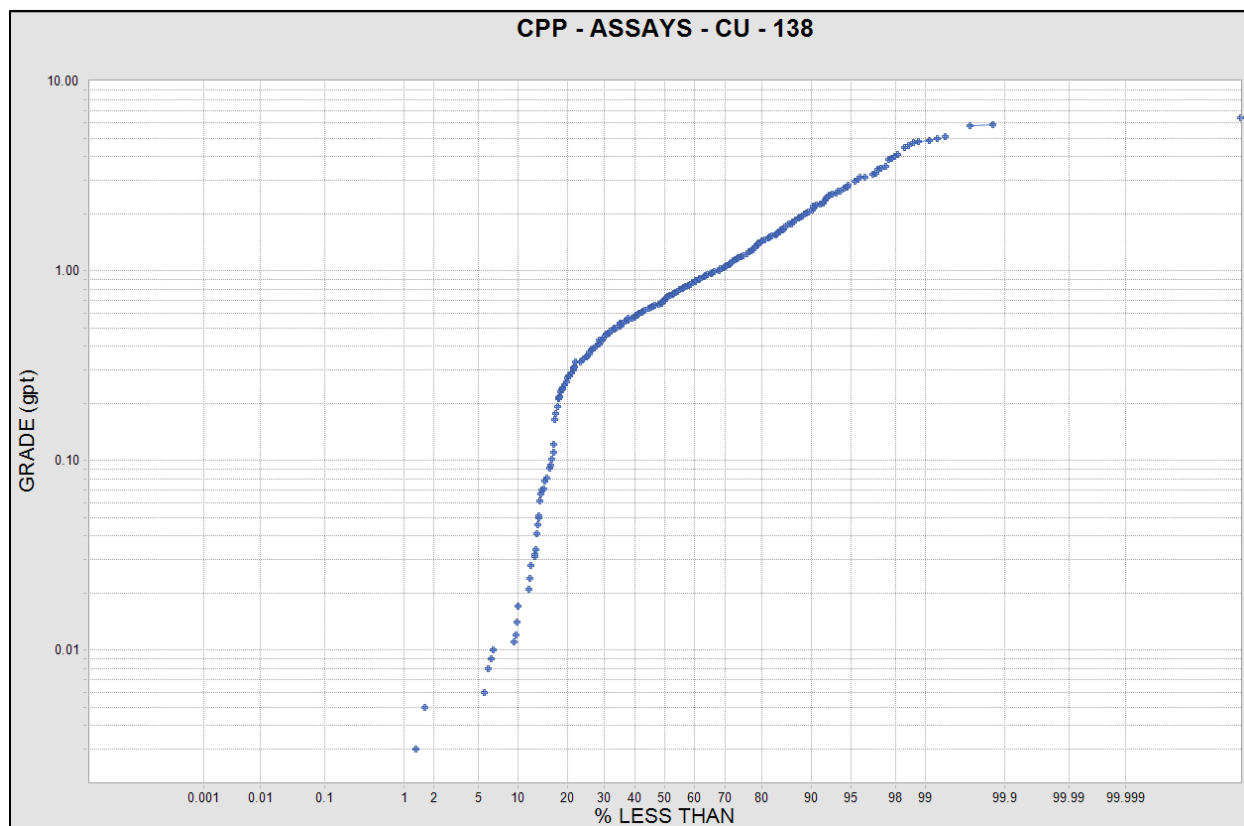
14.3.4 Waste Types

A conglomerate zone limits mineralization in the east and has varying geotechnical properties and sg has also been modelled. It overlays Copper Keel, Area 118, and Ridgetop has been modelled to aid open pit mine planning.

14.4 Assay Statistics and Capping

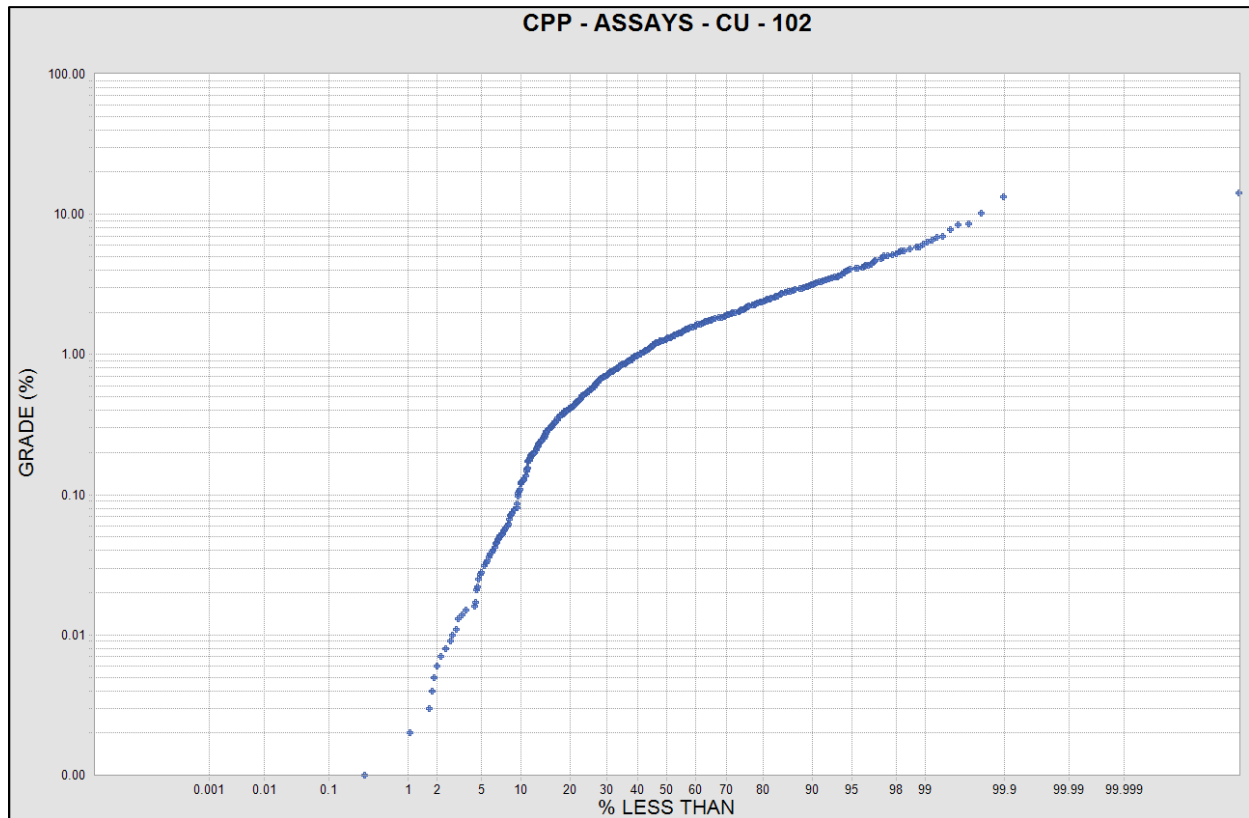
The assay statistics were examined using boxplots, histograms, and cumulative probability plots (CPPs). Figure 14-2 through Figure 14-5 are examples of the CPPs for Cu for the Ridgetop, Copper Keel, Minto East and 118 areas respectively. Figure 14-6 are the CPPs for Au in the Minto North, which has generally higher Au grades.

Figure 14-2: CPP of Cu Assay Grades - Ridgetop



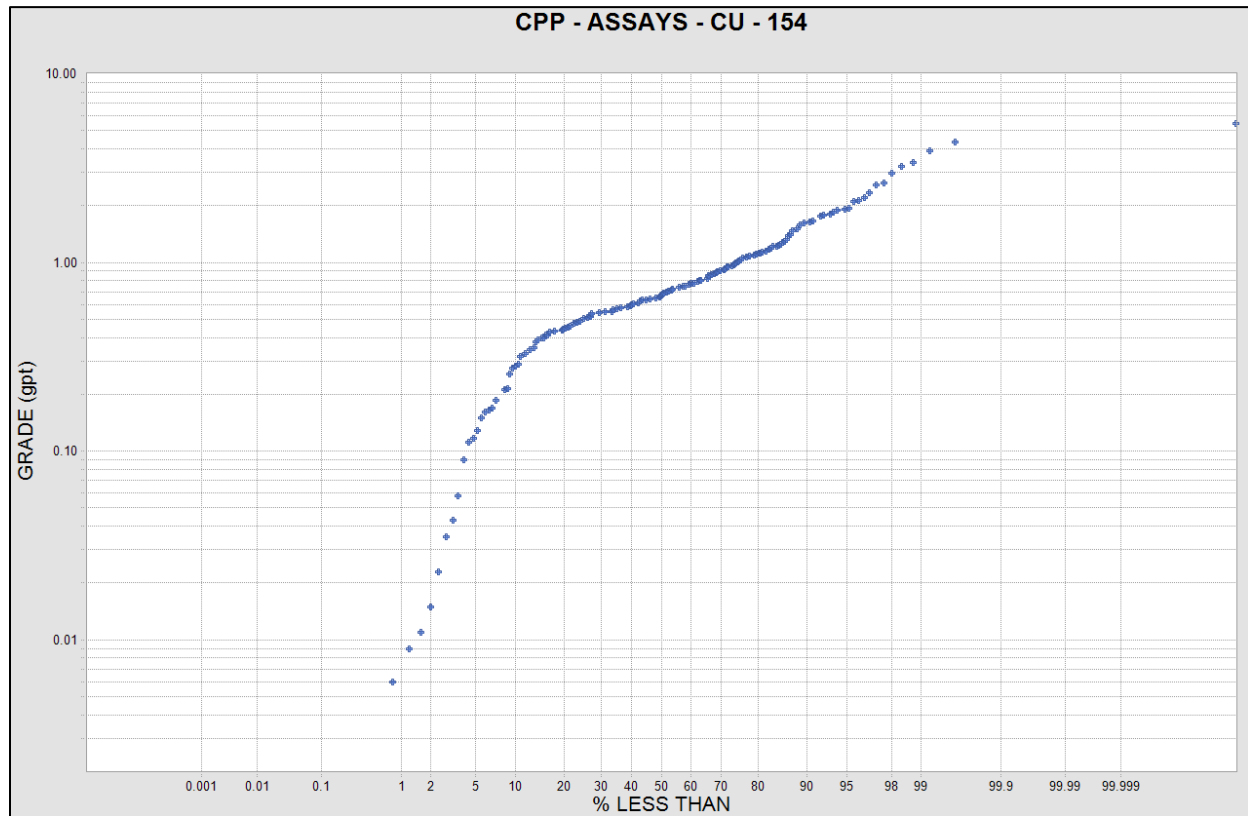
Source: MMTS (2021)

Figure 14-3: CPP of Cu Assay Grades - Copper Keel



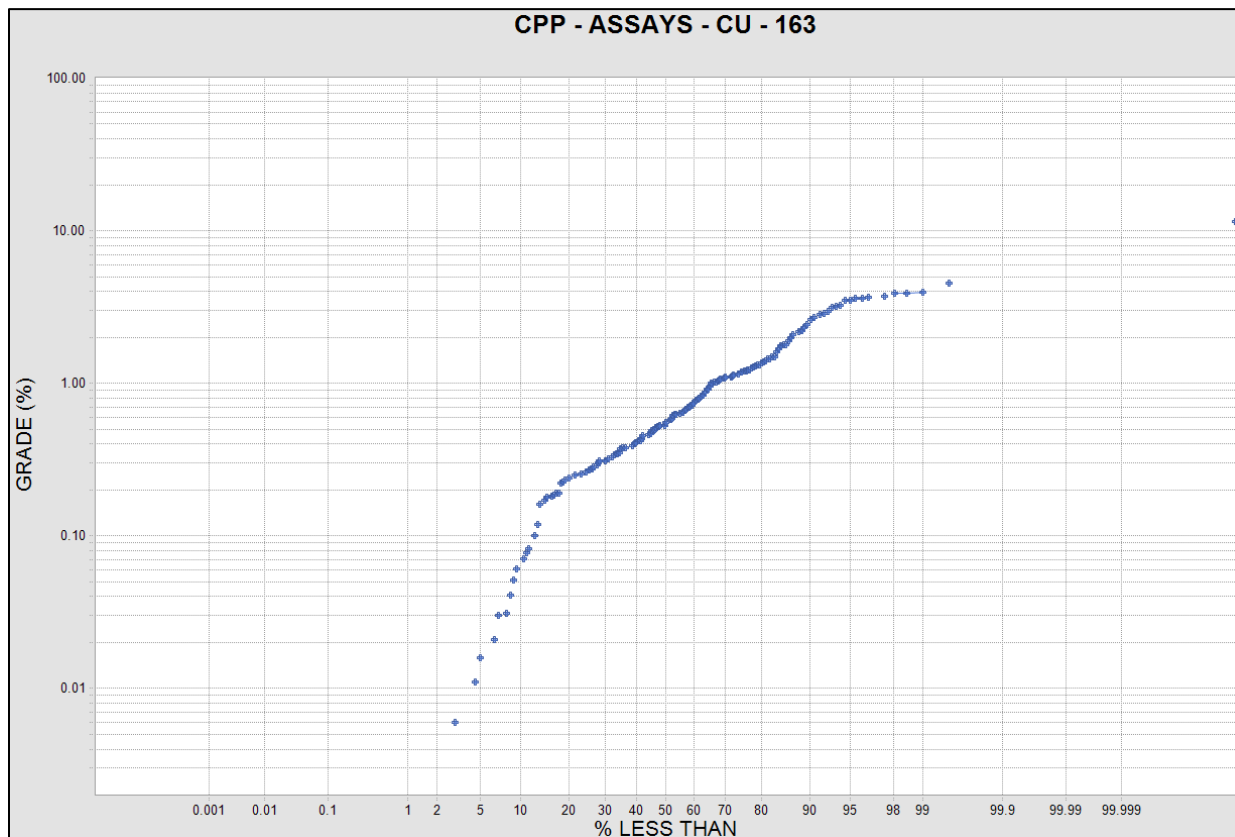
Source: MMTS (2021)

Figure 14-4: CPP of Cu Assay Grades - Minto East



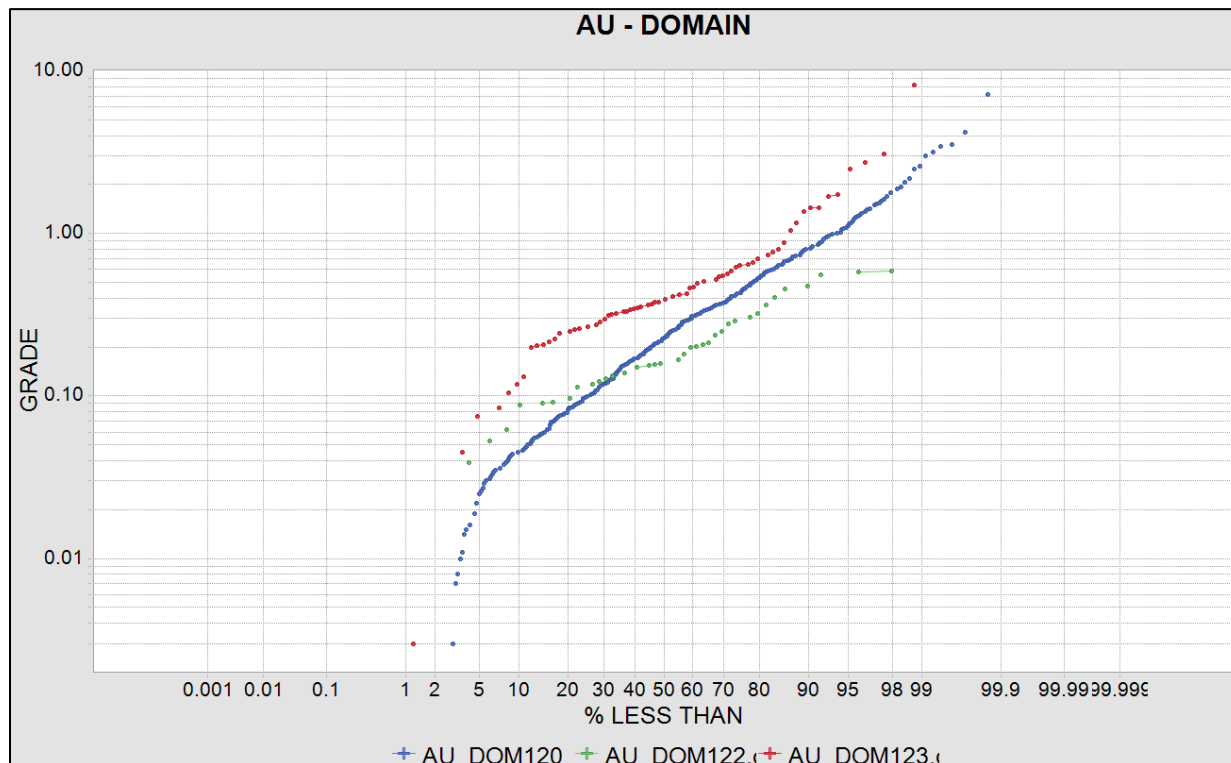
Source: MMTS (2021)

Figure 14-5: CPP of Cu Assay Grades - Area 118



Source: MMTS (2021)

Figure 14-6: CPP of Au Assay Grades - Minto North



Source: MMTS (2021)

The capping values for each area and domain are provided in Table 14-5 through Table 14-8. Also provided in these tables are the Outlier Restriction values used to restrict the higher grade composite values during interpolation. The distance that composites grades above the value in the table are allowed to influence surrounding blocks is limited to 5m. The Outlier Restriction values have been selected using CPPs of the composites as well as adjusted in order to ensure that the final modelled grades match the de-clustered composite data.

Assay and composite statistics for the capped grades are summarized in Table 14-9 through Table 14-17 by area and domain for both Cu and Au. These tables illustrate that the composited grades is equal to or very close to the assay grade and therefore compositing has not introduced a bias. Also illustrated by the CPPs and the assay statistics is that the grade distribution is generally log normal and the Coefficient of Variation (C.V.) is equal to or below 2.0, meaning that interpolation by linear methods is acceptable.

Table 14-5: Summary of Capping and Outlier Restriction – Ridgetop Copper Keel

Domain	CAPPING				OUTLIER GRADE			
	CU	ASCU	AU	AG	CU	ASCU	AU	AG
	(%)	(%)	(gpt)	(gpt)	(%)	(%)	(gpt)	(gpt)
101	5	1	2	20	-	2	1.2	10
102	10	0.3	20	40	-	3	2	25
103	-	2	3	30	-	3	2	20
104	-	0.7	0.5	3	1.2	-	1.2	1.5
105	-	1	1	10	-	-	0.05	5
106	-	0.1	3	20	-	1	1	10
107	-	4	3	20	-	-	2.5	10
108	-	3	3	10	-	-	2	5
109	10	0.3	5	30	-	3	3	20
110	10	0.3	12	30	10	10	10	25
111	-	1	1	7	-	10	10	-
113	5	0.2	2	20	-	1	3	15
114	7	0.3	3	20	4.5	-	-	20
115	7	0.3	4	30	6	-	4.5	20
117	10	0.2	1	15	-	-	-	10
118	1.5	0.03	0.4	6	-	-	-	5
119	6	0.2	4	40	-	-	-	30
131	6	3	5	30	3	3	-	30
132	2	0.3	1	4	3	-	3	4
133	10	2	10	30	-	-	-	-
134	4	2	0.8	20	3	3	3	30
135	8	4	3	30	5	5	5	20
136	5	2	1.4	-	-	-	-	-
137	5	0.2	0.5	-	-	-	-	4
138	5.5	2	7	-	3	3	3	20
139	4	0.2	2	40	1	1	1	10
140	6	0.2	-	6	-	-	-	-
141	3	0.5	0.4	-	-	-	-	-
142	1.5	0.4	0.5	5	-	-	-	-

Source: MMTS (2021)

Table 14-6: Summary of Capping and Outlier Restriction – Minto East

Domain	CAPPING				OUTLIER GRADE			
	CU	ASCU	AU	AG	CU	ASCU	AU	AG
	(%)	(%)	(gpt)	(gpt)	(%)	(%)	(gpt)	(gpt)
150	20	0.5	10	70	6	0.3	4	-
151	3	0.2	2	10	1.6	0.1	1	-
152	10	0.2	5	50	5	0.1	4	-
153	6	0.2	2	15	2.5	0.1	1	-
154	5	0.2	2	12	2.5	0.1	2	-
155	8	2	3	30	2.5	1	2	-
156	2	0.1	1	10	3	0.1	0.8	-
157	6	0.4	2	50	1.8	0.5	1.5	-

Source: MMTS (2021)

Table 14-7: Summary of Capping and Outlier Restriction – Area 118

Domain	CAPPING				OUTLIER GRADE			
	CU	ASCU	AU	AG	CU	ASCU	AU	AG
	(%)	(%)	(gpt)	(gpt)	(%)	(%)	(gpt)	(gpt)
160	6	2	5	40	3	0.3	0.35	8
161	6	0.1	5	30	2	0.09	0.3	3.5
162	2	0.2	1	4	2	0.13	0.4	4
163	10	2	10	30	4	1.8	0.65	7
164	4	1	0.8	20	1	2	0.6	4
165	8	1	3	30	1	2	0.5	3
166	5	0.1	1.4	999	2	0.02	0.2	2
167	5	0.2	0.5	9999	1	0.08	0.3	3
168	5.5	0.2	7	999	3	0.15	0.7	4

Source: MMTS (2021)

Table 14-8: Summary of Capping and Outlier Restriction – Minto North

Domain	CAPPING				OUTLIER GRADE			
	CU	ASCU	AU	AG	CU	ASCU	AU	AG
	(%)	(%)	(gpt)	(gpt)	(%)	(%)	(gpt)	(gpt)
120	10	0.2	5	40	7	-	4	20
121	10	0.2	5	40	7	-	4	20
122	1	0.2	0.6	30	3	-	0.5	10
123	10	0.2	4	4	4	-	4	10

Source: MMTS (2021)

Table 14-9: Summary Statistics of Capped Assays and Composites – Ridgetop – Cu

SOURCE	PARAMETER	DOMAIN												
		131	132	133	134	135	136	137	138	139	140	141	142	131-142
ASSAYS	Num Samples	287	12	285	164	806	218	60	592	189	11	13	78	2715
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (%)	0.01	0.007	0.002	0.001	0.001	0.01	0.037	0.001	0.001	0.02	0.32	0.01	0.001
	Max (%)	6	2	10	4	8	4.72	5	5.5	4	6	3	1.5	10
	Wtd. Mean (%)	1.25	0.93	1.08	0.93	1.37	0.99	0.95	1.01	0.68	1.68	1.05	0.43	1.10
	Wtd. CV	0.94	0.58	0.92	0.82	0.89	0.84	1.01	0.84	0.84	1.03	0.72	0.59	0.93
COMPS	Num Samples	183	7	186	92	482	155	35	359	122	8	8	64	1701
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (%)	0.167	0.471	0.002	0.016	0.002	0.01	0.06	0.001	0.001	0.671	0.438	0.193	0.001
	Max (%)	4.923	1.502	5.846	3.248	6.433	4.72	3.509	4.665	3.02	4.06	2.032	1.051	6.433
	Wtd. Mean (%)	1.25	0.93	1.08	0.93	1.37	0.99	0.95	1.01	0.68	1.68	1.05	0.43	1.10
	Wtd. CV	0.84	0.36	0.73	0.62	0.73	0.75	0.89	0.67	0.68	0.71	0.56	0.47	0.78
DIFFERENCE (%)		0.0%	0.0%	0.0%	0.0%	0.0%	-0.3%	0.0%	-0.1%	0.0%	0.0%	0.0%	0.0%	-0.1%

Notes for Tables 14-9 through 14-7:

Num = number, wtd = weighted, CV = co-efficient of variation

Source: MMTS (2021)

Table 14-10: Summary Statistics of Capped Assays and Composites – Ridgetop – Au

SOURCE	PARAMETER	DOMAIN												
		10	0	11	0	12	5	3	22	5	0	0	2	93
ASSAYS	Num Samples	287	12	285	164	806	218	60	592	189	11	13	78	2715
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (gpt)	0.001	0.002	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.002	0.021	0.001	0.001
	Max (gpt)	5	0.681	10	0.8	3	1.4	0.5	7	2	0.15	0.4	0.5	10
	Wtd. Mean (gpt)	0.50	0.30	0.42	0.11	0.35	0.15	0.10	0.36	0.17	0.07	0.07	0.08	0.31
	Wtd. CV	1.67	0.77	1.57	1.40	1.73	1.19	1.21	1.55	1.21	0.60	0.98	1.56	1.79
COMPS	Num Samples	183	7	186	92	482	155	35	359	122	8	8	64	1701
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (gpt)	0.001	0.008	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.03	0.021	0.001	0.001
	Max (gpt)	3.124	0.56	10	0.664	3	1.4	0.42	5.002	1.295	0.103	0.222	0.5	10
	Wtd. Mean (gpt)	0.50	0.30	0.42	0.11	0.35	0.15	0.10	0.36	0.17	0.07	0.07	0.08	0.31
	Wtd. CV	1.50	0.59	1.29	1.24	1.59	1.12	1.11	1.31	1.00	0.33	0.64	1.41	1.59
DIFFERENCE (%)		0.0%	0.0%	0.0%	0.0%	0.0%	-0.3%	-0.1%	-0.1%	0.0%	0.1%	0.3%	0.0%	-0.1%

Source: MMTS (2021)

Table 14-11: Summary Statistics of Capped Assays and Composites – Copper Keel - Cu

SOURCE	PARAMETER	DOMAIN																	
		101	102	103	104	105	106	107	108	109	110	111	113	114	115	117	118	119	101-119
ASSAYS	Num Samples	258	853	221	11	34	64	30	18	160	265	53	160	291	404	104	82	361	3369
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (%)	0.005	0.001	0.005	0.48	0.009	0.005	0.051	0.03	0.001	0.001	0.016	0.004	0.005	0.005	0.005	0.019	0.001	0.001
	Max (%)	5	10	8.89	2.78	3.6	6.68	8.34	9.83	10	10	7.91	5	7	7	10	1.5	6	10
	Wtd. Mean (%)	1.3151	1.4789	1.6024	1.3591	1.2025	0.7993	2.2723	2.1303	1.8387	1.2871	0.7169	1.1756	0.8753	0.6956	0.8028	0.5784	1.3847	1.2177
	Wtd. CV	0.6198	0.8054	0.8005	0.5841	0.7264	1.3974	0.7242	1.3954	0.9236	1.0921	1.19	0.6806	0.9793	1.0096	1.496	0.5845	0.9661	0.9674
COMPS	Num Samples	155	468	130	8	22	40	16	9	82	140	37	106	200	259	65	55	183	1975
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (%)	0.049	0.001	0.009	0.686	0.231	0.005	0.292	0.095	0.003	0.001	0.162	0.011	0.005	0.01	0.151	0.18	0.001	0.001
	Max (%)	3.784	6.767	7.89	2.78	2.987	6.195	5.163	7.15	5.305	10	2.764	3.647	5.183	5.202	7.075	1.399	4.522	10
	Wtd. Mean (%)	1.31	1.48	1.60	1.36	1.20	0.80	2.27	2.13	1.82	1.28	0.72	1.18	0.88	0.6956	0.8028	0.5784	1.3402	1.2129
	Wtd. CV	0.52	0.69	0.59	0.45	0.60	1.27	0.54	0.83	0.71	1.01	0.80	0.57	0.88	0.8436	1.2408	0.4918	0.8702	0.8285
DIFFERENCE (%)		-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-1.1%	-0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-3.3%	-0.4%

Source: MMTS (2021)

Table 14-12: Summary Statistics of Capped Assays and Composites – Copper Keel - Au

SOURCE	PARAMETER	DOMAIN																	
		101	102	103	104	105	106	107	108	109	110	111	113	114	115	117	118	119	101-119
ASSAYS	Num Samples	258	853	221	11	34	64	30	18	160	265	53	160	291	404	104	82	361	3369
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (gpt)	0.002	0.001	0.002	0.002	0.002	0.002	0.514	0.002	0.002	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001
	Max (gpt)	2	7.77	3	0.5	1	3	3	2.73	5	8.21	1	2	3	4	1	0.4	4	8.21
	Wtd. Mean (gpt)	0.4153	0.483	0.5627	0.1569	0.2654	0.2105	1.3494	0.8516	0.8424	0.6901	0.1913	0.3431	0.3272	0.2471	0.2038	0.0825	0.6781	0.4495
	Wtd. CV	0.8627	1.1244	0.9471	0.9884	0.8299	2.1208	0.5521	0.8699	0.981	1.3985	0.7023	1.0188	1.4383	1.2783	1.0729	0.9392	1.087	1.2938
COMPS	Num Samples	155	468	130	8	22	40	16	9	82	140	37	106	200	259	65	55	183	1975
	Num Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (gpt)	0.032	0.002	0.005	0.002	0.043	0.002	0.642	0.051	0.002	0.001	0.058	0.002	0.005	0.002	0.022	0.02	0.001	0.001
	Max (gpt)	1.591	6.044	2.822	0.5	0.857	2.149	2.593	2.22	3.18	4.529	0.481	1.751	2.743	1.976	1	0.38	3.294	6.044
	Wtd. Mean (gpt)	0.42	0.48	0.56	0.16	0.27	0.21	1.35	0.85	0.83	0.69	0.19	0.34	0.33	0.2471	0.2038	0.0825	0.6563	0.4477
	Wtd. CV	0.76	0.98	0.84	0.98	0.73	1.77	0.41	0.77	0.83	1.24	0.56	0.93	1.33	1.105	0.9814	0.8658	0.9779	1.1543
DIFFERENCE (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-1.1%	-0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-3.3%	-0.4%

Source: MMTS (2021)

Table 14-13: Summary Statistics of Capped Assays and Composites – Minto East – Cu

SOURCE	PARAMETER	DOMAIN							
		150	151	152	153	154	155	156	157
ASSAYS	Num Samples	461	115	46	27	251	515	154	48
	Num Missing	0	0	0	0	0	0	0	0
	Max (%)	20	3	10	6	5	8	2	6
	Wtd mean (%)	1.51	0.53	1.83	1.56	0.79	0.65	0.47	0.76
	Weighted CV	1.18	0.92	1.03	0.72	0.78	1.22	0.64	1.53
COMPS	Num Samples	223	72	20	21	144	348	102	37
	Num Missing	0	0	0	0	0	0	0	0
	Max (%)	7.664	1.976	4.909	4.24	4.475	7.79	1.467	6
	Wtd mean (%)	1.5082	0.5315	1.8276	1.5639	0.7885	0.6502	0.4693	0.7615
	Weighted CV	0.9043	0.7858	0.7591	0.6182	0.6427	1.0526	0.5461	1.1422
	Difference (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: MMTS (2021)

Table 14-14: Summary Statistics of Capped Assays and Composites – Minto East - Au

SOURCE	PARAMETER	DOMAIN							
		150	151	152	153	154	155	156	157
ASSAYS	Num Samples	460	114	46	20	243	508	154	46
	Num Missing	0	0	0	7	7	7	0	2
	Max (gpt)	10	2.5	10	1.12	1.99	3.6	0.98	5.64
	Wtd mean (gpt)	0.8706	0.227	0.9171	0.5328	0.2484	0.199	0.0966	0.3034
	Weighted CV	1.1082	1.1301	1.2297	0.5276	1.1394	1.3192	1.597	1.8977
COMPS	Num Samples	295	78	28	12	182	447	130	39
	Num Missing	0	0	0	13	13	14	0	4
	Max (gpt)	5.276	0.866	4.018	0.808	1.652	3.493	0.98	2.249
	Wtd mean (gpt)	0.871	0.227	0.917	0.533	0.249	0.199	0.097	0.303
	Weighted CV	0.907	0.773	0.938	0.406	1.034	1.184	1.552	1.437
	Difference (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: MMTS (2021)

Table 14-15: Summary Statistics of Capped Assays and Composites – Area 118 – Cu

SOURCE	PARAMETER	DOMAIN								
		160	161	162	163	164	165	166	167	168
ASSAYS	Num Samples	825	119	175	201	48	9	7	26	22
	Num Missing	0	0	0	0	0	0	0	0	0
	Min (%)	0.001	0.001	0.002	0.001	0.02	0.21	0.3	0.002	0.01
	Max (%)	5.4	2.15	2	10	2.09	1.51	1.97	1.25	3.35
	Wtd mean (%)	0.5941	0.6071	0.5888	0.9105	0.6004	0.7257	1.0249	0.5435	0.8036
	Weighted CV	0.8375	0.6223	0.7627	1.1553	0.7531	0.625	0.4666	0.732	0.8663
COMPS	Num Samples	552	78	119	113	32	5	5	16	13
	Num Missing	0	0	0	0	0	0	0	0	0
	Min (%)	0.005	0.005	0.019	0.005	0.13	0.215	0.3	0.006	0.207
	Max (%)	4.94	1.75	1.969	4.616	1.803	1.39	1.97	1.11	3.35
	Wtd mean (%)	0.593	0.607	0.589	0.911	0.600	0.726	1.025	0.544	0.8037
	Weighted CV	0.705	0.548	0.683	0.985	0.629	0.616	0.436	0.510	0.6571
	Difference (%)	-0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: MMTS (2021)

Table 14-16: Summary Statistics of Capped Assays and Composites – Area 118 – Au

SOURCE	PARAMETER	DOMAIN								
		160	161	162	163	164	165	166	167	168
ASSAYS	Num Samples	825	119	175	201	48	9	7	26	22
	Num Missing	0	0	0	0	0	0	0	0	0
	Min (gpt)	0.001	0.002	0.002	0.001	0.001	0.02	0.005	0.002	0.002
	Max (gpt)	1.3	0.65	0.82	1.15	0.8	0.324	0.12	0.302	1.455
	Wtd mean (gpt)	0.0938	0.0734	0.1063	0.0866	0.1116	0.0996	0.0481	0.1047	0.1775
	Weighted CV	1.1361	1.433	1.1636	1.9079	1.4816	0.9635	0.5825	0.8796	1.1209
COMPS	Num Samples	552	78	119	113	32	5	5	16	13
	Num Missing	0	0	0	0	0	0	0	0	0
	Max (gpt)	0.001	0.001	0.001	0.001	0.001	0.051	0.005	0.002	0.016
	Max (gpt)	0.776	0.616	0.644	1.15	0.783	0.324	0.12	0.302	1.455
	Wtd mean (gpt)	0.091	0.070	0.101	0.083	0.112	0.100	0.048	0.105	0.1775
	Weighted CV	1.014	1.455	1.142	1.859	1.231	0.931	0.573	0.682	1.012
	Difference (%)	-3.0%	-4.4%	-5.6%	-3.8%	0.1%	-0.1%	-0.2%	0.0%	0.0%

Source: MMTS (2021)

Table 14-17: Summary Statistics of Capped Assays and Composites – Minto North – Cu and Ag

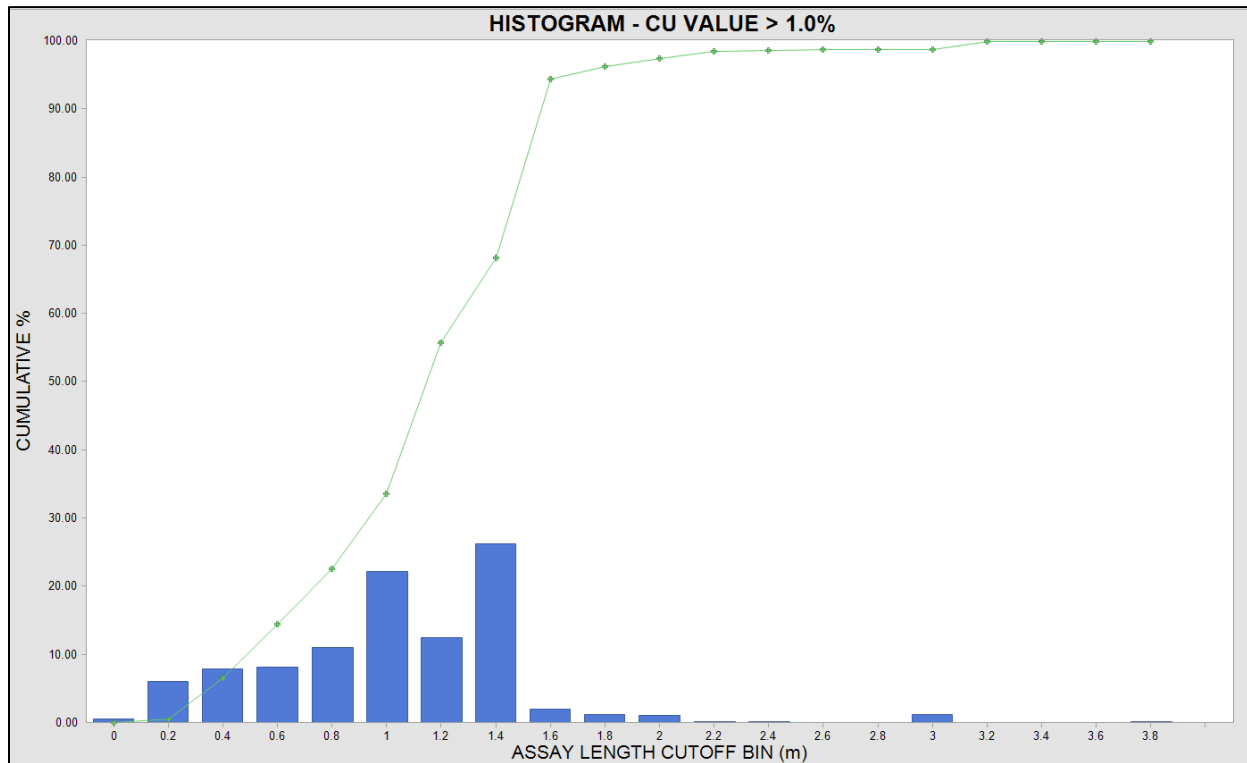
SOURCE	PARAMETER	DOMAIN					
		CU			AU		
		120	122	123	120	122	123
ASSAYS	Num Samples	689	49	83	689	49	83
	Num Missing	0	0	0	0	0	0
	Min	0.001	0.123	0.002	0.001	0.038	0.002
	Max	10.25	3.03	13.85	10	0.898	8.46
	Wtd mean	1.22	0.59	1.11	0.36	0.24	0.66
	Weighted CV	1.00	0.79	1.63	1.63	0.75	1.67
COMPS	Num Samples	348	40	59	348	40	59
	Num Missing	0	0	0	0	0	0
	Min	0.001	0.157	0.184	0.001	0.061	0.088
	Max	8.229	3.03	6.139	3.863	0.762	5.506
	Wtd mean	1.2199	0.5949	1.106	0.3593	0.235	0.658
	Weighted CV	0.8426	0.7905	1.1413	1.2361	0.7196	1.2392
	Difference (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: MMTS (2021)

14.5 Compositing

Assay sample lengths varied across the drill programs but are generally between 1.0 and 3.0 m. A histogram of the assay intervals with assayed Cu is shown in Figure 14-7, illustrating that over 95% of the assays with Cu greater than 1% have an assay length of less than 2m. A base composite length of 2.0 m was used to ensure assay sample splits are minimized, as well as to reduce the C.V. For the Nearest Neighbour modelling, a composite length of 4m is used to conform to the block size and align with potential selective mining unit. Assay data have been coded with a domain value prior to compositing. The domain code was honoured during compositing. Any interval within a domain that was less than 1.0 m was composited with the interval above it.

Figure 14-7: Histogram of Assay Lengths



Source: MMTS (2021)

14.6 Specific Gravity Assignment

Model blocks were assigned the mean specific gravity by domain. Where there is no sg data within a domain, it is given the mean value of 2.68. the sg assignment by domain is summarized in Table 14-18. The specific gravity outside domains is also assigned based on the mean sg and is given in Table 14-19. The sg in overburden is assumed to be 2.0.

Table 14-18: Summary of SG within Mineralized Domains

Ridgetop - Cu Keel				Minto East		Area 118		Minto North	
Domain	sg	Domain	sg	Domain	sg	Domain	sg	Domain	sg
101	2.756	131	2.648	150	2.68	160	2.672	120	2.672
102	2.68	132	2.68	151	2.68	161	2.683	122	2.683
103	2.694	133	2.744	152	2.68	162	2.667	123	2.667

Ridgetop - Cu Keel				Minto East		Area 118		Minto North	
Domain	sg	Domain	sg	Domain	sg	Domain	sg	Domain	sg
104	2.57	134	2.674	153	2.68	163	2.669		
105	2.6	135	2.675	154	2.68	164	2.578		
106	2.73	136	2.599	155	2.68	165	2.58		
107	2.66	137	2.748	156	2.68	166	2.69		
108	2.633	138	2.753	157	2.68	167	2.81		
109	2.849	139	2.664			168	2.78		
110	2.759	140	2.725						
111	2.761	141	2.63						
113	2.691	142	2.653						
114	2.707								
115	2.714								
117	2.683								
118	2.68								
119	2.736								

Source: MMTS (2021)

Table 14-19: Summary of SG outside Domains by Zone

Zone	sg
Overburden	2
Conglomerate	2.7
Oxide	2.65
Sulfide	2.7

Source: MMTS (2021)

14.7 Block Model Interpolations

The block model uses 4 x 4 x 4 m blocks with the extents of each of the models summarized in Table 14-20. This block size has been chosen based on the expected Selective Mining Unit (SMU). The models are “block percent models” with the percent of the block with up to two domains and the domain code stored. Interpolations are done for each of the domains within the block, with the weighted average grade and total domain percent for the block calculated.

MineSight© software was used for geostatistical investigations and interpolations, as well as for the “reasonable prospects of eventual economic extraction” pit and to generate the resource statement.

Table 14-20: Summary of Block Model Extents

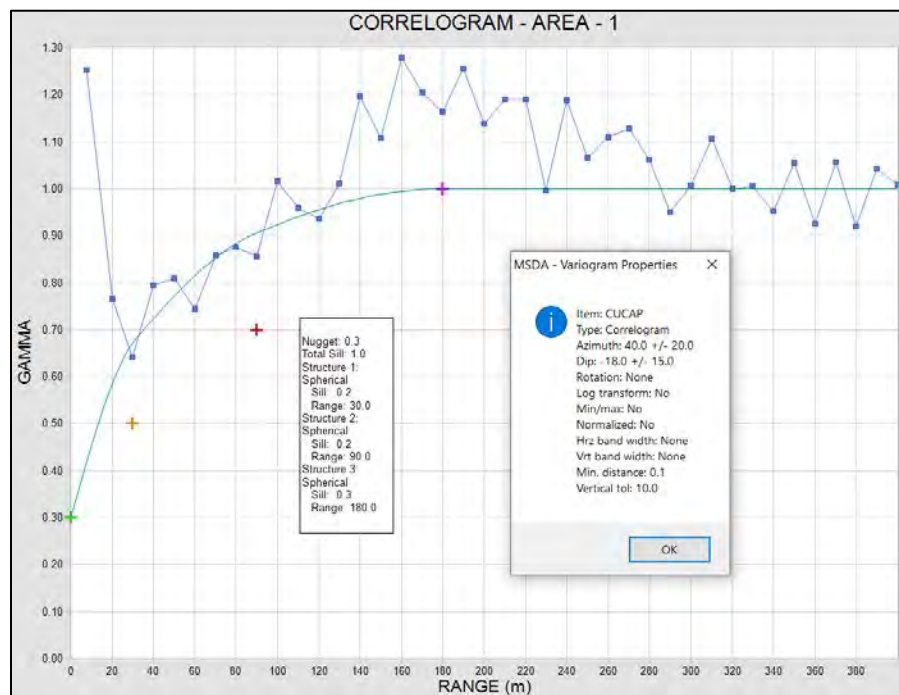
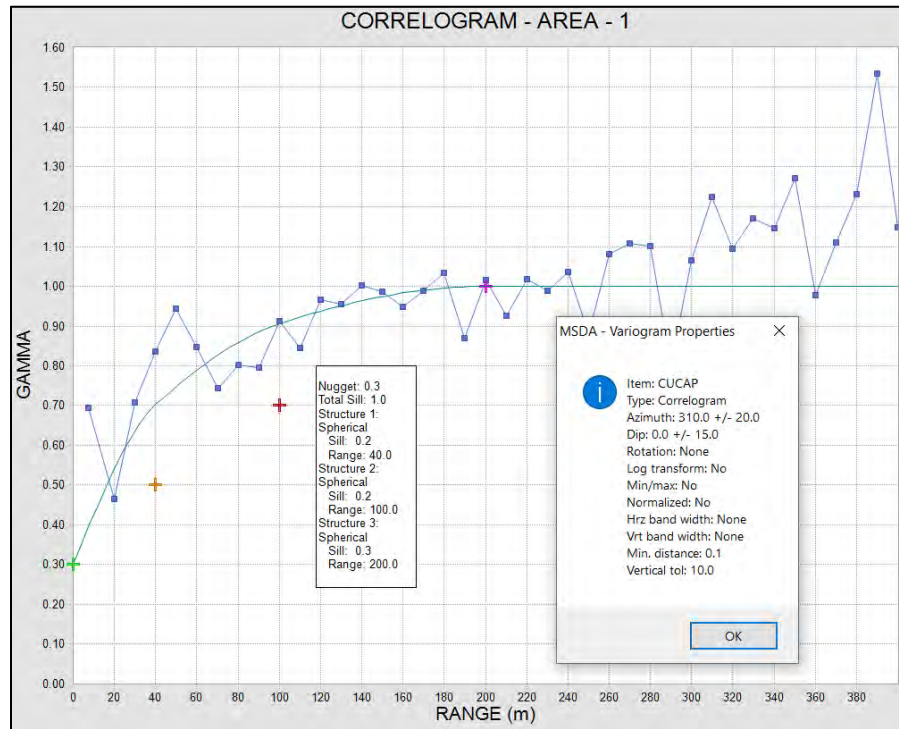
Deposit	Orientation	Minimum	Maximum	Size	Distance	Number
Minto North	Easting	384,080	384,800	4	720	180
	Northing	6,945,780	6,946,080	4	300	75
	Elevation	700	980	4	280	70
Minto East	Easting	384,800	385,920	4	1,120	280
	Northing	6,944,800	6,945,300	4	500	125
	Elevation	280	880	4	600	150
Ridgetop-Cu Keel	Easting	384,380	386,500	4	2,120	530
	Northing	6,943,180	6,944,880	4	1,700	425
	Elevation	380	1,000	4	620	155
Area 118	Easting	384,000	385,400	4	1,400	350
	Northing	6,943,800	6,945,000	4	1,200	300
	Elevation	660	980	4	320	80

Source: MMTS (2021)

14.8 Variography

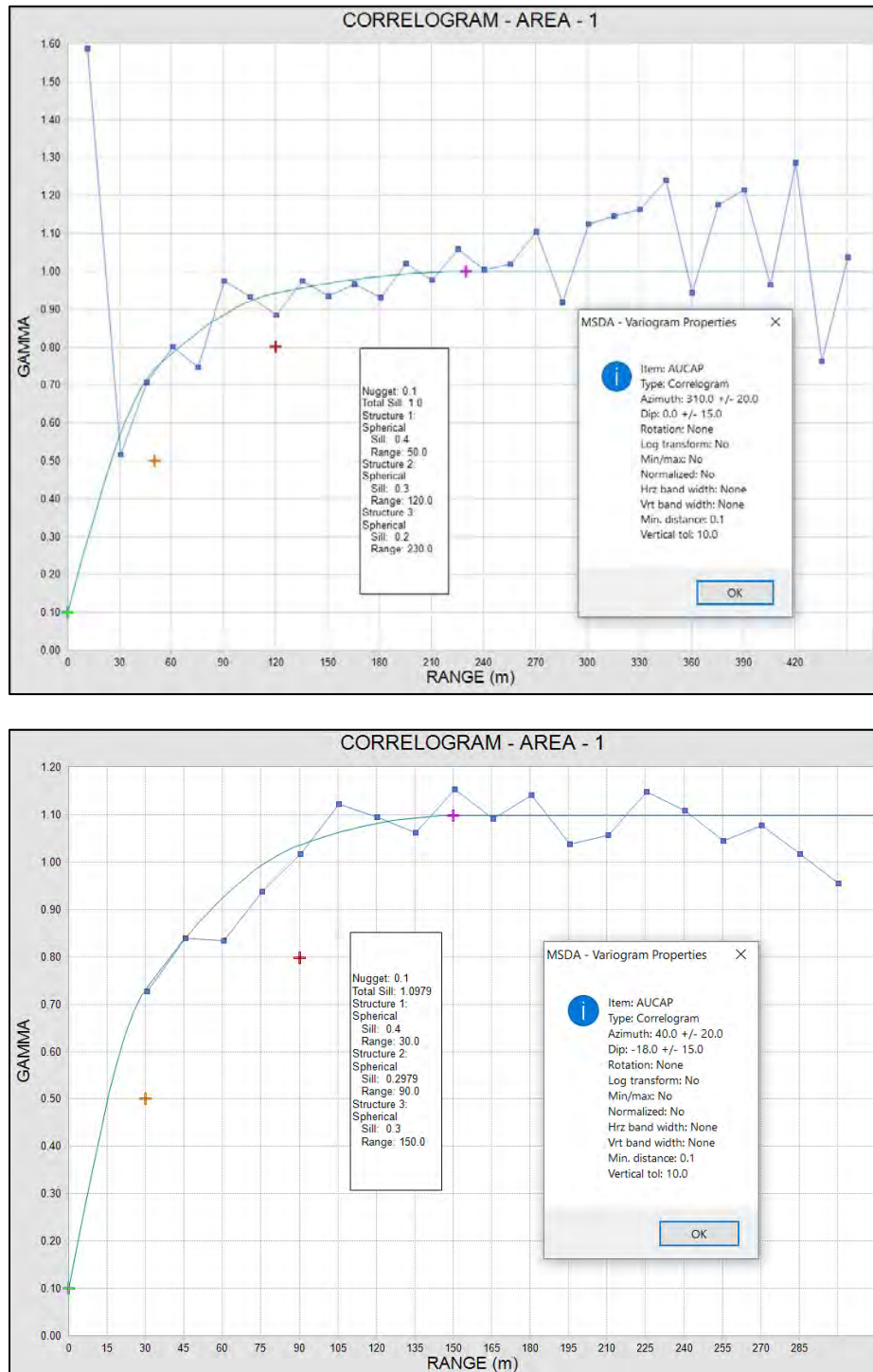
Variograms were created where possible in order to help define appropriate search parameters and drillhole spacing requirements for Classification. Correlograms were created by combining domains of the same approximate orientation and within domains having sufficient data. It is considered that, due to the similarity of the mineralization style throughout the deposit, that the search parameters based on the variography is similar, with only the orientation changing to match the orientation of the domain. Figure 14-8 and Figure 14-9 illustrate correlogram models for Cu and Au respectively for a group of domains having similar orientation within the Copper Keel area.

Figure 14-8: Correlogram Model in the Major and Minor Orientation for a Group of Domain in Copper Keel – Cu



Source: MMTS (2021)

Figure 14-9: Correlogram Model in the Major and Minor Orientation for a Group of Domain in Copper Keel – Au



Source: MMTS (2021)

14.9 Interpolation Search Criteria

The search orientations are oriented with the domain solid as summarized in Table 14-21 through Table 14-25. In some case when the domain orientation changed, it was split and given an ICode code in order to change the search orientation within the domain. For example, Domain 101 in Copper Keel is split into 3 “ICodes”, denoted as 1011, 1012, 1013, as summarized in the tables. The GSLib-Minesight rotation parameters are used in which Rot1 is the rotation about the y-axis (azimuth), Rot2 is the orientation about the x-axis (Plunge with down as negative) and Rot3 denotes rotation about the z-axis (using the righthand rule).

The interpolation of Cu, Au, Ag and acid soluble Cu (ASCu) has been completed in each domain and area. The interpolation used ID² in 4 passes. Table 14-26 provides the sample selection criteria for each of the 4 interpolation passes and Table 14-27 summarizes the search distances used.

Table 14-21: Summary of Search Orientation by Domain (ICode) – Ridgetop

ICode	Rot1	Rot2	Rot3
131	330	0	-22
132	320	0	-25
133	307	0	-25
134	335	0	-45
135	310	0	-35
136	320	0	-15
137	325	0	-25
138	330	0	-25
139	330	0	-25
140	325	0	-15
141	350	0	-30
142	335	0	-7

Source: MMTS (2021)

Table 14-22: Summary of Search Orientation by Domain (ICode) – Copper Keel

ICode	Rot1	Rot2	Rot3
1011	40	-15	-10
1012	15	-30	-10
1013	15	10	-10
102	130	0	20

ICode	Rot1	Rot2	Rot3
103	0	0	0
104	270	-5	0
105	0	0	0
106	0	-15	-5
107	0	0	0
108	320	-10	0
1091	100	-15	5
1092	210	-15	10
1101	60	-5	-5
1102	40	-15	0
1103	340	-15	-15
1104	340	-5	-5
111	80	-15	0
113	40	-25	0
114	345	-15	-5
115	315	0	-10
117	260	0	-10
118	40	0	20
119	285	0	-8

Source: MMTS (2021)

Table 14-23: Summary of Search Orientation by Domain (ICode) – Minto East

ICode	Rot1	Rot2	Rot3
150	290	0	-8
151	280	0	15
152	255	0	0
153	305	0	-50
1541	325	0	-18
1542	278	0	-22
155	260	0	-20
156	250	0	-15
157	185	0	-5
151	280	0	15
152	255	0	0
1541	325	0	-18
1542	278	0	-22

Source: MMTS (2021)

Table 14-24: Summary of Search Orientation by Domain (ICode) – Area 118

ICode	Rot1	Rot2	Rot3
160	120	0	10
161	215	0	-25
1621	90	0	13
1622	104	0	-26
163	110	0	4
164	70	0	18
165	70	0	30
166	88	0	17
167	90	0	12
168	95	0	15

Source: MMTS (2021)

Table 14-25: Summary of Search Orientation by Domain (ICode) – Minto North

ICode	Rot1	Rot2	Rot3
120	60	0	15
121	45	0	-5
122	60	0	12
123	45	0	5

Source: MMTS (2021)

Table 14-26: Summary of Sample Selection Search Criteria by Interpolation Pass

Parameter	Criteria			
	Pass 1	Pass 2	Pass 3	Pass 4
Minimum # Composites	9	9	6	1
Max. Number of composites	12	12	12	9
Max composites/ DH	3	3	3	3
Max / Quadrant	6	6	6	na

Source: MMTS (2021)

Table 14-27: Summary of Search Distance by Interpolation Pass and Area

Area	Pass 1	Pass 2	Pass 3	Pass 4
Ridgetop	20	40	80	80
	20	40	80	80
	5	8	12	12
Copper Keel	40	80	160	200
	30	60	120	180
	10	15	15	20
Minto East	20	40	80	80
	20	40	80	80
	5	8	12	12
Area 118	20	40	80	80
	20	40	80	80
	5	8	12	12
Minto North	25	50	100	200
	20	40	80	180
	5	10	15	20

Source: MMTS (2021)

14.10 Classification of Mineral Resources

Blocks were assigned a preliminary Classification of Inferred if they had been interpolated with a Cu value. They were then assigned a preliminary value of Indicated based on the average distances to at least two drillholes, the furthest distance to a drillhole and the minimum number of drillholes used in the interpolation, as summarized in Table 14-28. Areas of isolated blocks of Indicated were then removed to assure continuity of Classification.

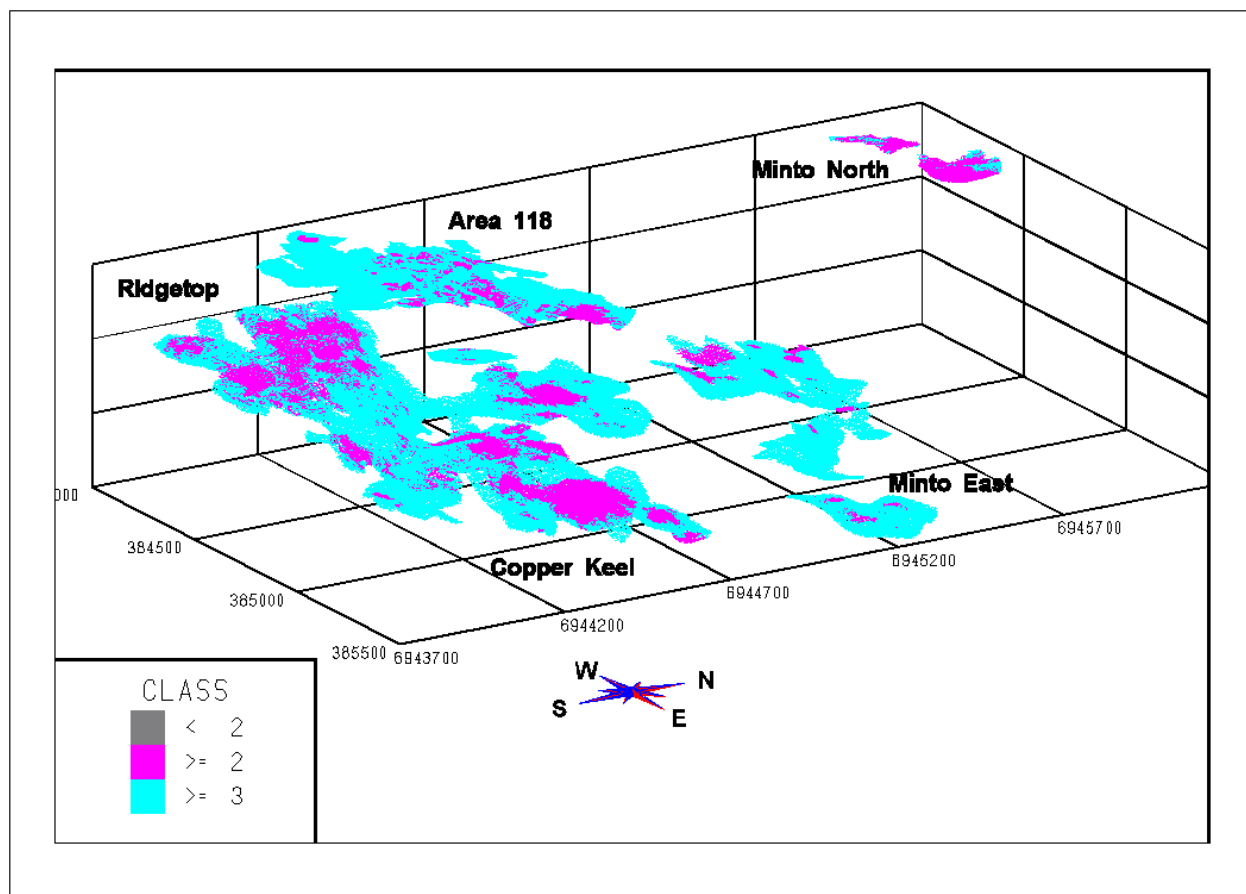
Table 14-28: Classification Parameters

Area	Avg. Distance to 2 DHs (m)	Distance to Furthest DH (m)	Number of DHs
Ridgetop / Copper Keel	55	70	3
Minto East	30	42	3
Area 118	55	70	3
Minto North	80	90	2

Source: MMTS (2021)

Figure 14-10, is a 3D image illustrating the final block Classification and the drillhole density.

Figure 14-10: Illustration of Classification (2=Indicated, 3=Inferred)



Source: MMTS (2021)

14.11 Model Validation

The capping, outlier restrictions, modelling methods, and search parameters were chosen so that the final interpolated grades closely match the de-clustered composite data (using a nearest-neighbour or NN model) while showing appropriate smoothing.

In order to perform appropriate validations, a NN model was created in order to compare the de-clustered composites to the modelled grades.

14.11.1 Global Grade Validation

Resource validation to ensure there was no global bias compared NN grades to those of the final grade interpolation at zero cut-off. Table 14-29 summarizes this comparison by domain, illustrating that the difference in all grades by domain is within 10% overall with lower grades for the ID² model. This is accompanied by increased tonnage for similar overall metal content.

Table 14-29: Summary of Model Grade Comparison with De-Clustered Composites by Domain

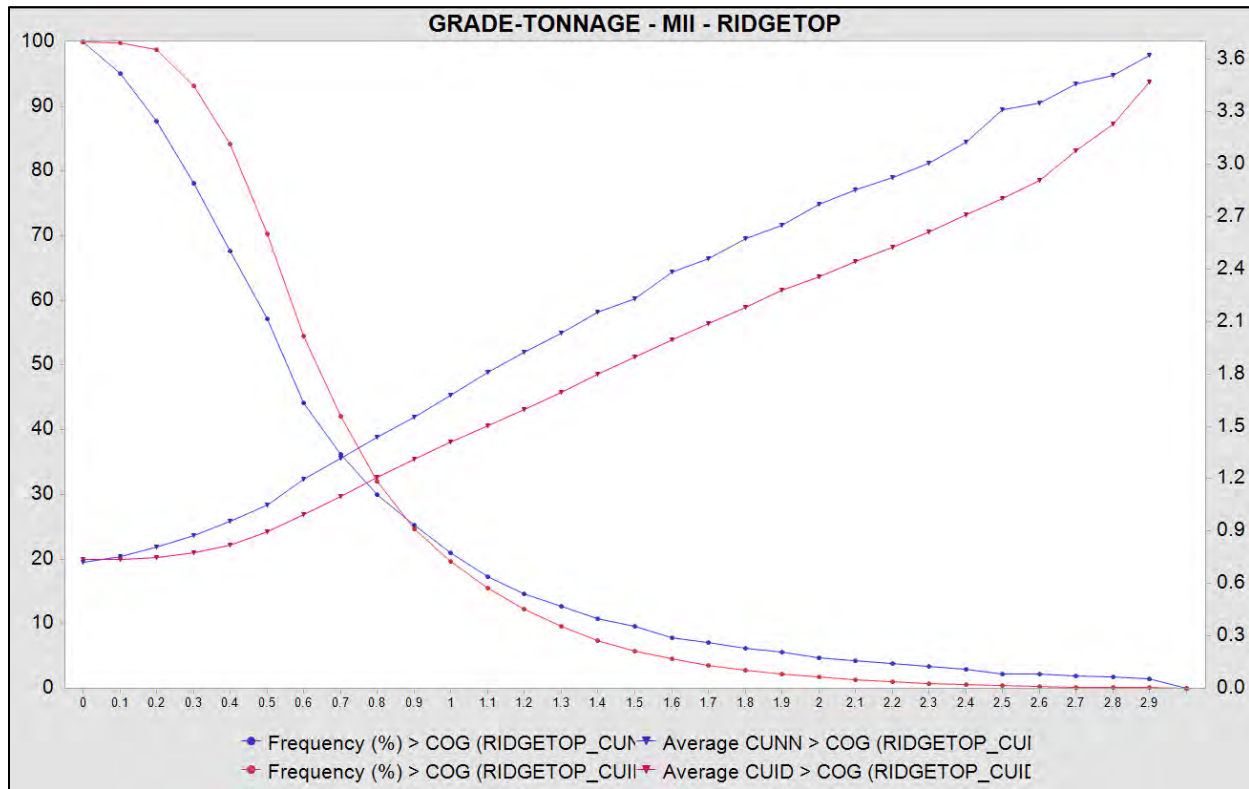
Area	Method	In situ Grade			
		Cu (%)	Au(gpt)	Ag (gpt)	AsCu (%)
Ridgetop / Cu Keel	ID ²	0.9988	0.3361	3.22	0.11
	NN	1.009	0.371	3.500	0.111
	Difference	-1%	-10%	-9%	-1%
Minto East	ID ²	0.8791	0.365	3.63	0.0738
	NN	0.969	0.369	3.800	0.080
	Difference	-10%	-1%	-5%	-9%
Area 118	ID ²	0.8791	0.365	3.63	0.0738
	NN	0.969	0.369	3.800	0.080
	Difference	-10%	-1%	-5%	-9%
Minto North	ID ²	1.0635	0.3765	3.76	0.0562
	NN	1.100	0.372	4.110	0.056
	Difference	-3%	1%	-9%	1%

Source: MMTS (2021)

14.11.2 Grade-Tonnage Curves

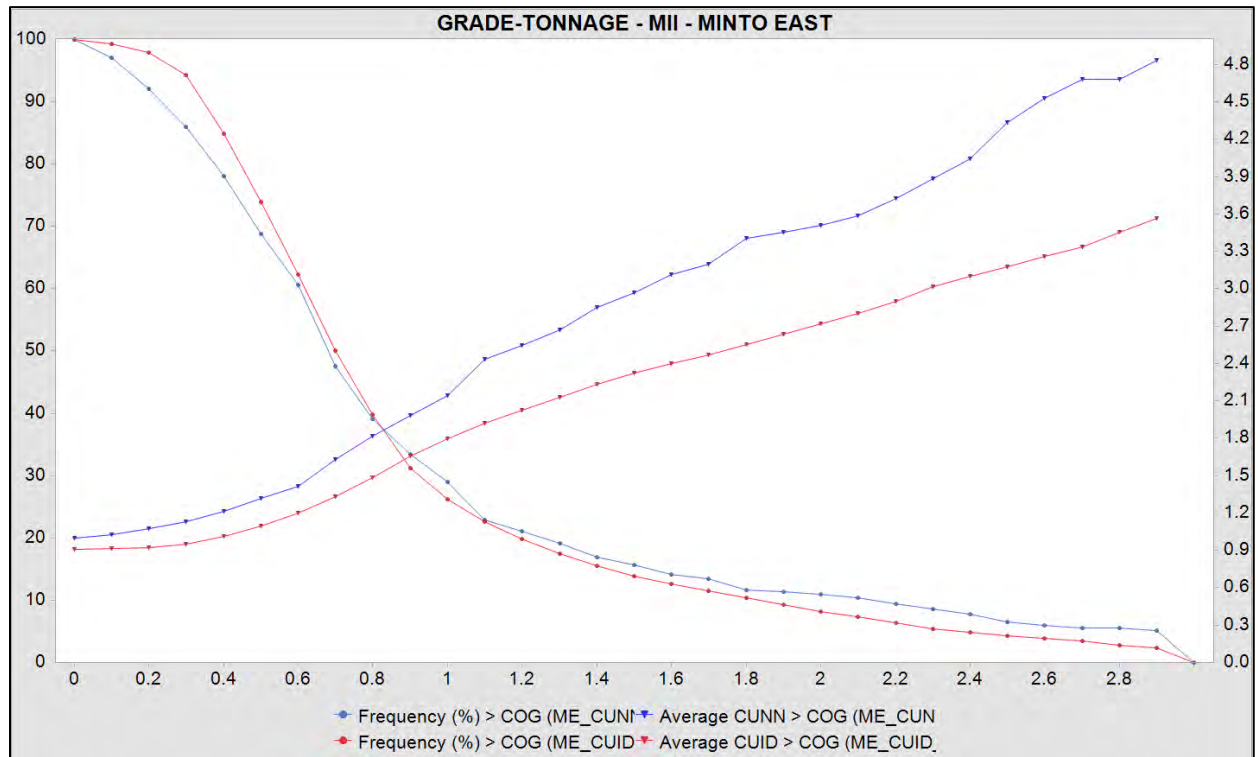
Grade-tonnage curves were created to compare the interpolated grades with de-clustered composite grades. Figure 14-11 through Figure 14-14 illustrate this comparison, showing increased smoothing (reduced grades and increased tonnage) compared to the uncorrected NN grade curves, but a similar distribution.

Figure 14-11: Grade-Tonnage Curve Comparison for Cu – Ridgetop- Cu Keel



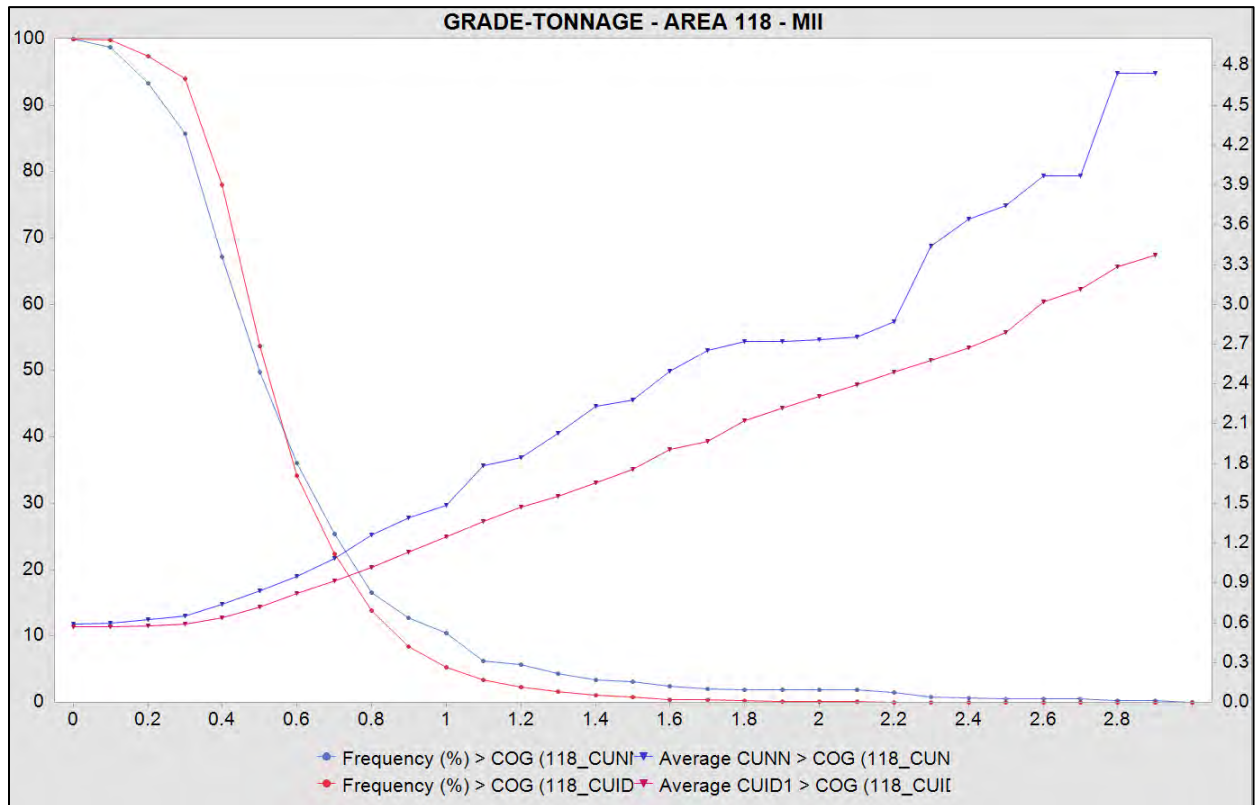
Source: MMTS (2021)

Figure 14-12: Grade-Tonnage Curve Comparison for Cu – Minto East Model



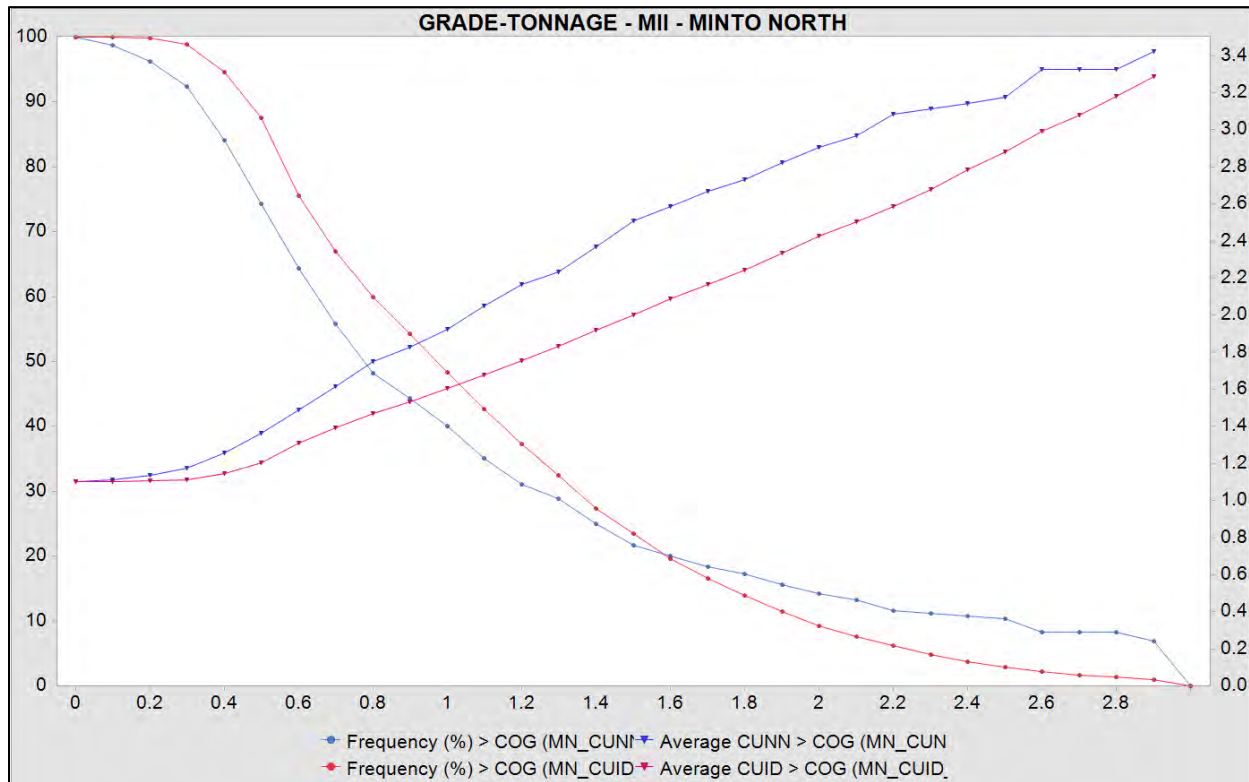
Source: MMTS (2021)

Figure 14-13: Grade-Tonnage Curve Comparison for Cu – Area 118 Model



Source: MMTS (2021)

Figure 14-14: Grade-Tonnage Curve Comparison for Cu – Minto North Model

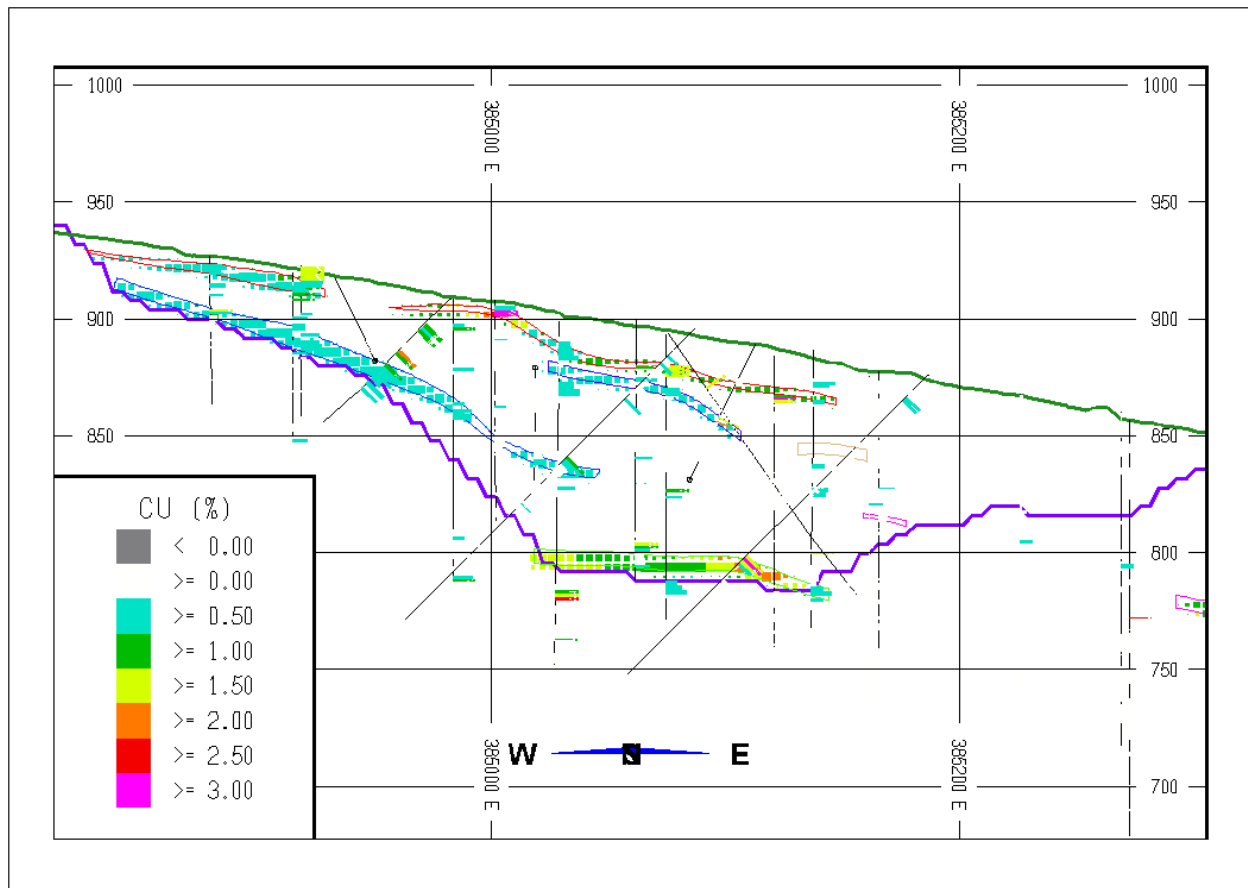


Source: MMTS (2021)

14.11.3 Visual Comparisons

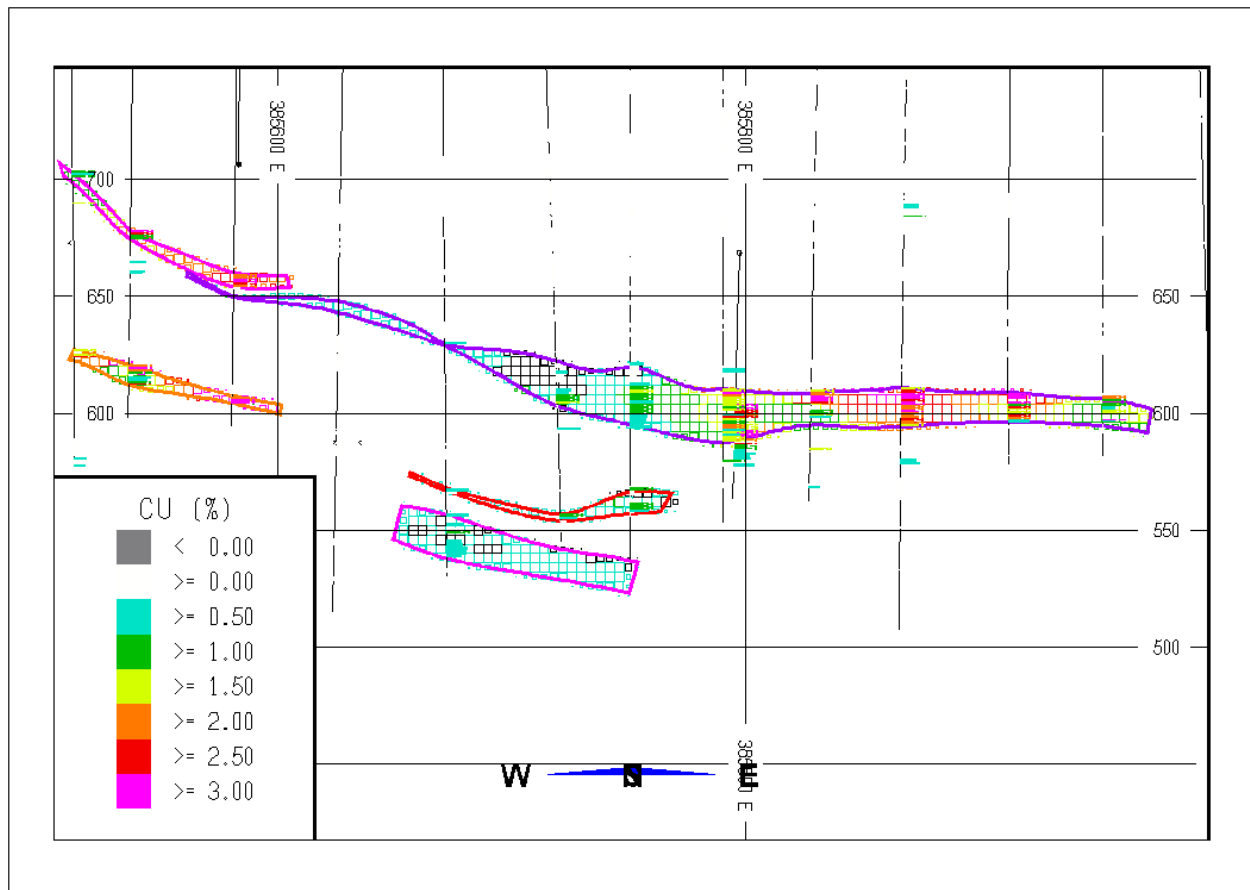
Further validation on local grade estimation has been done through visual comparisons of the modelled grades with the assay and composite grades in section, plan and through three-dimensional checks. Figure 14-15 to Figure 14-19 illustrate the block grades and composite grades through each area. Modelled ID² grades show similar grade distributions and values throughout the model to that of the drillhole data. On all sections, the drillhole data shown is ± 10 m of the section.

Figure 14-15: Cu Grade - Model Compared to Assays – Section 6943640N - Ridgetop (resource pit in purple)



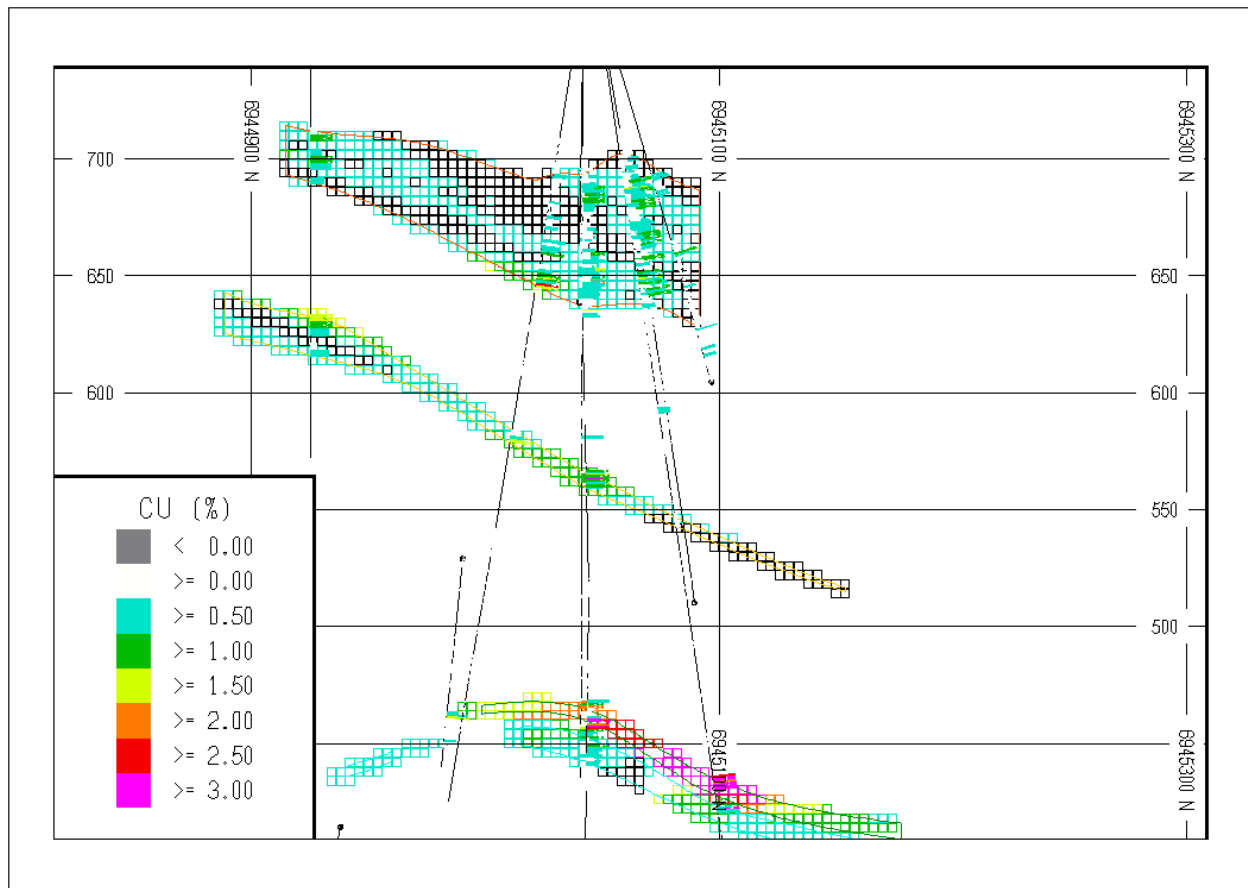
Source: MMTS (2021)

Figure 14-16: Cu Grade - Model Compared to Assays – 6944012 N - Copper Keel



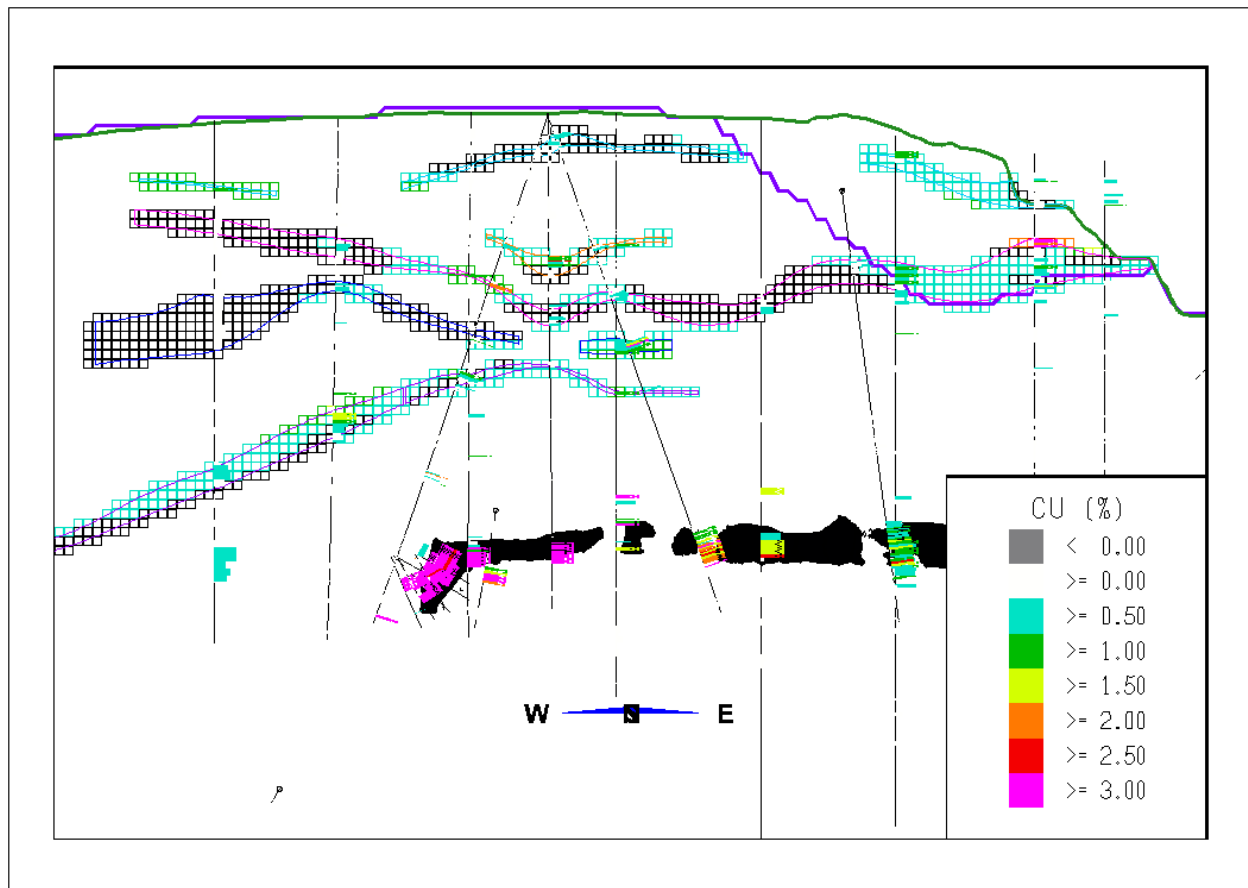
Source: MMTS (2021)

Figure 14-17: Cu Grade - Model Compared to Assays – 385260 E – Minto East



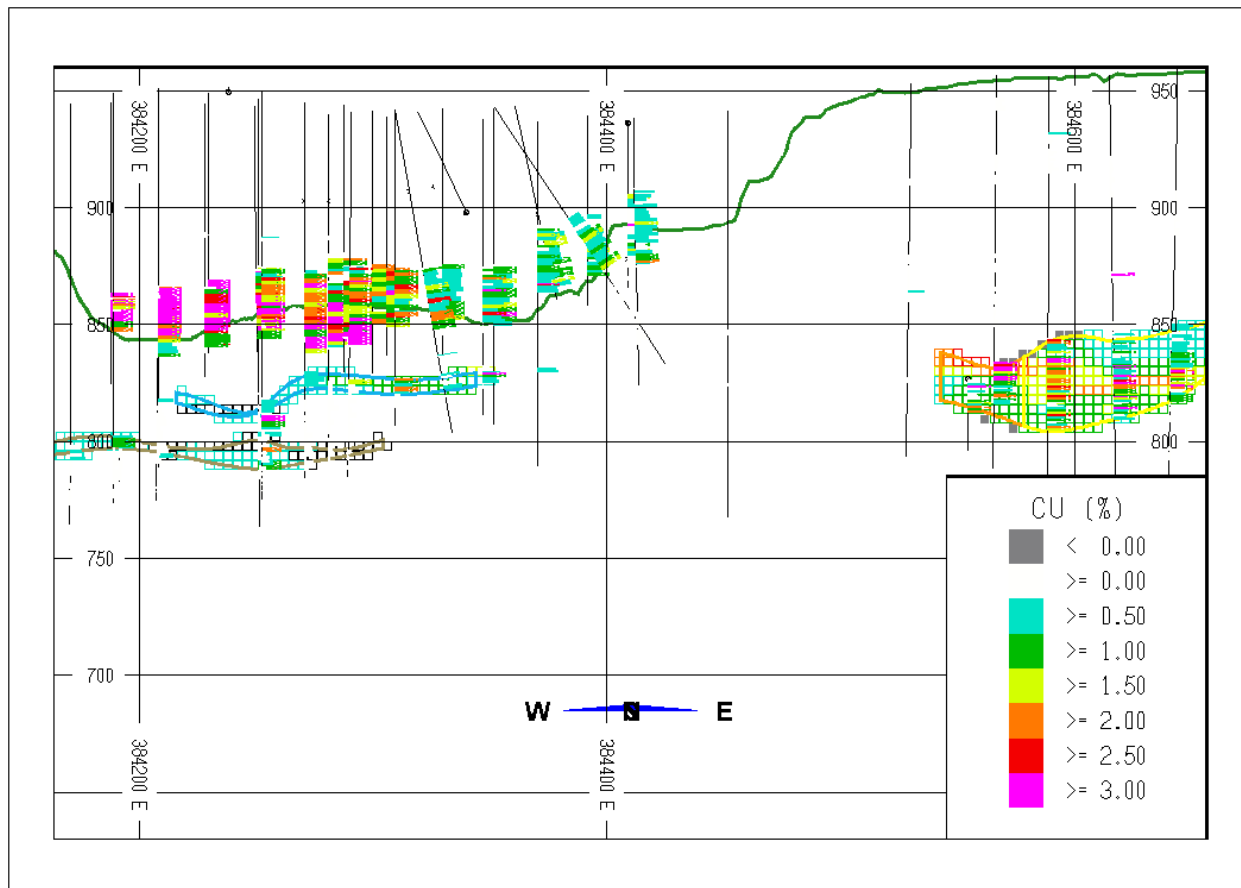
Source: MMTS (2021)

**Figure 14-18: Cu Grade - Model Compared to Assays – 6944340 N - Area 118
(resource pit in purple, stopes in black)**



Source: MMTS (2021)

Figure 14-19: Cu Grade - Model Compared to Assays – 6945948N - Minto North



Source: MMTS (2021)

14.12 Reasonable Prospects of Eventual Economic Extraction

Open pits in the Area 118 and Ridgetop are created using Lerchs–Grossmann (LG) pit optimization, which has been done on a series of pits with varying price assumptions. The base case price, cost, smelter terms, foreign exchange and recoveries are summarized in Table 14-30. Underground resources are created using grade shells at a series of NSR cut-offs using the underground base case inputs also summarized in the table below.

Table 14-30: Summary of Base Case Economic Inputs

Parameter	Units	Value
Gold Price	US\$/oz	\$1,500.00
Copper Price	US\$/lb	\$3.15
Ag Price	US\$/oz	\$18.00
Forex	(\$US:\$CA)	0.76
Gold, Silver Payable	%	77
Cu Payable	%	95.0
Total Offsite cost	US\$/dmt	240.39
Cu Offsites	\$/lb	0.35
Royalty	%	See Section 19
Open Pit		
Net Smelter Cu Price (CA\$)	\$/lb	\$2.798
Net Smelter Au Price (CA\$)	\$/g	\$21.384
Net Smelter Ag Price	\$/g	\$0.0599
Underground		
Net Smelter Au Price (CA\$)	\$/g	\$3.127
Net Smelter Cu Price (CA\$)	\$/lb	\$68.946
Net Smelter Ag Price (CA\$)	\$/g	\$0.0862
Copper Process Recovery	%	95.5+1.07*CU*-113*ASCu/TCu, Max 95%
Gold Process Recovery	%	20.99*Augpt + 62.01, Max 85%
Silver Process Recovery	%	100*(0.694 + 0.019*Aggpt), Max 85%

Source: MMTS (2021)

The resulting NSR equation in Canadian dollars for open pit is:

$$\text{NSR} = (\text{RecovCu} * 61.688 + \text{RecovAu} * 21.384 + \text{RecovAg} * 0.0599)$$

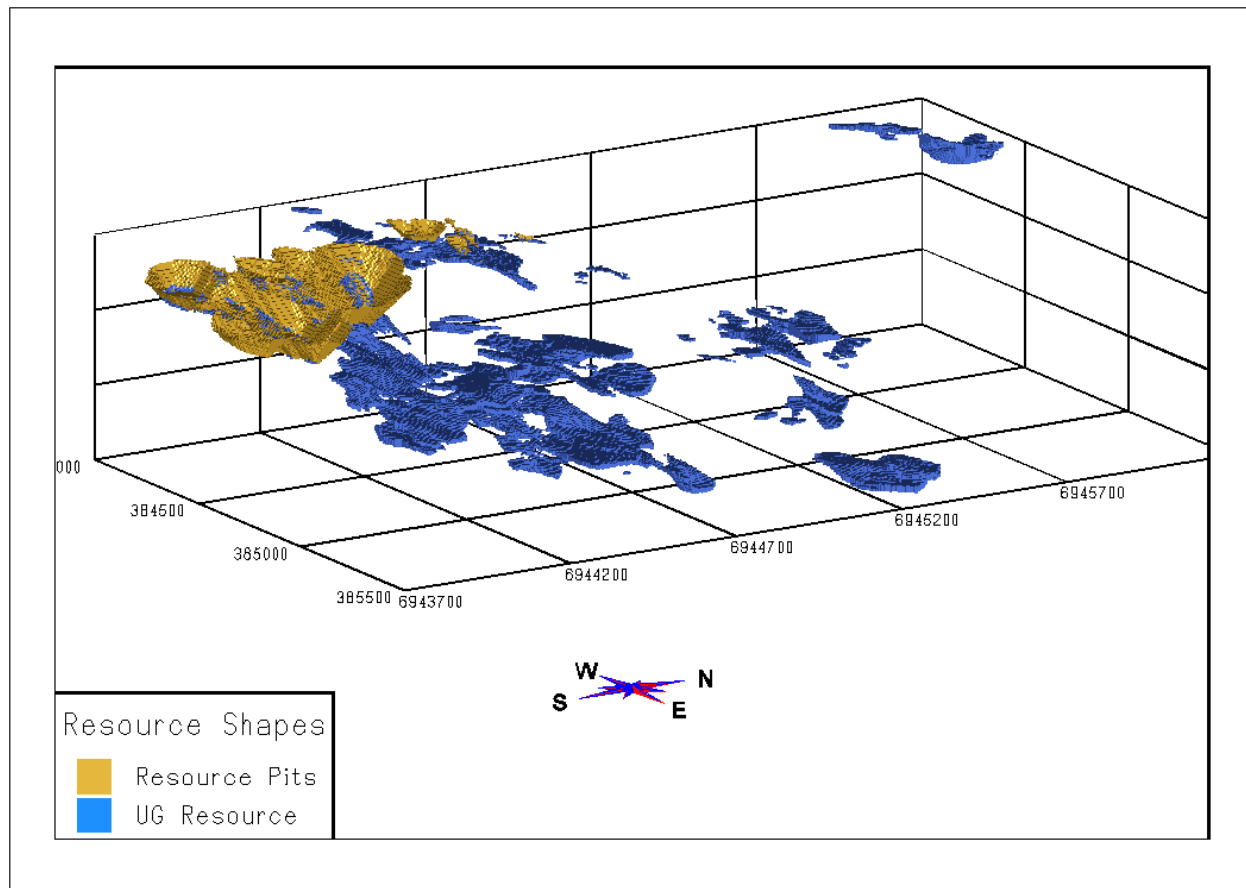
The resulting NSR equation in Canadian dollars for underground resources is:

$$\text{NSR} = (\text{RecovCu} * 68.946 + \text{RecovAu} * 37.842 + \text{RecovAg} * 0.0862)$$

The resource pit case chosen is the 130% NSR pit case for Ridgetop and the 100% case for Area 118. Cut-offs used for open pit and underground resource are CD\$35/t and CD\$70/t respectively, which is appropriate considering the above smelter terms, prices, a Processing cost of CD\$19.00/t, open pit mining costs of CD\$3.70/t mined and underground mining costs of CD\$41.03.

The resulting pit shape for “reasonable prospects of eventual economic extraction” is illustrated in Figure 14-20 with the AuEq grade for all blocks above cut-off.

Figure 14-20: 3D View of the Resource Pit and Underground NSR of Blocks Above US\$70/t



Source: MMTS (2021)

For the LG pit optimizations the costs given in Table 14-31 were used. Constant pit slopes at 45° were used for the resource pit.

Table 14-31: Costs Used for Lerchs-Grossmann Resource Pit

Cost	Units	Value
Mineralized Mining Costs	/tonne	\$3.70
Waste Mining Costs	/tonne	\$3.70
Processing Costs + G&A Costs	/tonne of mineralization	\$19.00

Source: MMTS (2021)

14.13 Factors That May Affect the Mineral Resource Estimate

Areas of uncertainty that may materially impact the Mineral Resource estimate include:

- Commodity price assumptions;
- Metal recovery assumptions; and
- Mining and processing cost assumptions.

There are no other known factors or issues known to the QP that materially affect the estimate other than normal risks faced by mining projects in the province in terms of environmental, permitting, taxation, socio-economic, marketing, and political factors.

14.14 Sensitivity of the Resource to Cut-off Grade

The following two tables summarize the sensitivity of the resource estimate to the cut-off grade for the open pit and underground resource respectively, with the base case cutoff highlighted. The resource has an effective date of March 31, 2021.

Table 14-32: Sensitivity of the Open Pit Resource to Cut-off Grade

Class	Cut-off	ROM	In situ Grades					Metal		
	(CA\$)	Tonnage	NSR (CD\$)	Cu (%)	Au (gpt)	Ag (gpt)	Ox Ratio	Cu (000lbs)	Au (oz)	Ag (oz)
Indicated	\$30	3,593,064	\$77.93	1.14	0.352	3.3	0.271	90,150	40,699	377,484
	\$35	3,479,763	\$79.40	1.16	0.360	3.3	0.269	88,915	40,317	372,268
	\$40	3,306,644	\$81.59	1.19	0.373	3.4	0.267	86,747	39,644	364,335
	\$50	3,030,770	\$85.13	1.24	0.394	3.6	0.266	82,843	38,421	350,433
	\$60	2,716,294	\$89.49	1.30	0.421	3.8	0.271	77,906	36,810	331,479
	\$70	2,406,170	\$94.26	1.37	0.453	4.0	0.272	72,523	35,033	310,632
Inferred	\$30	2,092,360	\$68.51	1.01	0.273	2.9	0.302	46,740	18,336	196,587
	\$35	1,986,100	\$70.41	1.04	0.282	3.0	0.297	45,566	18,030	192,221
	\$40	1,801,556	\$73.78	1.09	0.300	3.2	0.284	43,249	17,398	183,314
	\$50	1,625,320	\$77.17	1.14	0.319	3.3	0.278	40,746	16,688	173,060
	\$60	1,403,366	\$81.85	1.20	0.347	3.5	0.281	37,222	15,675	159,107
	\$70	1,172,462	\$87.64	1.29	0.380	3.7	0.282	33,220	14,343	140,986

Notes to Table 14-32 and Table 14-33:

1. Resources are reported using the 2014 CIM Definition Standards and were estimated using the 2019 CIM Best Practices Guidelines.
2. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
3. Metal prices of US\$1500/oz Au, US\$18/oz Ag, US\$3.10/lb Cu.

4. The following NSR calculations are used to determine cut-off grades: for open pit: $NSR = CA\$61.688 * Cu\% + CA\$21.384 * Augpt + CA\$0.0599 * Aggpt$, for Underground: $NSR = CA\$68.946 * Cu\% + CA\$37.842 * Augpt + CA\$0.0862 * Aggpt$.
 5. For the NSR calculations: a currency exchange rate of 0.76 US\$ per \$CA; 95% payable Cu, 77% payable Au and Ag; offsite costs (refining, transport and insurance) of US\$240.39/dmt; and royalties as described in Section 19.
 6. The following equations are used for metallurgical recovery: $RecCu = 95.5\% + 1.07 * CU\% - 113 * TCu / AscCu$ to a Maximum of 95%, $RecAu = 20.99 * Augpt + 62.01$; $RecAg = 100 * (0.694 + 0.019 * Aggpt)$ both to a maximum of 85%.
 7. The Mineral Resource has been confined by a "reasonable prospects of eventual economic extraction" pit or underground shape using the 130% base case NSR for the Ridgetop open pit and the 100% NSR case for the Area 118 pit and a confining shape for the underground.
 8. Mining costs are CA\$3.70/t for open pit, CA\$41.03/t for underground, Processing costs are CD\$19/t.
 9. Pit slope angles are assumed at 45°.
 10. The specific gravity of the deposit has been assigned based on domain as between 2.578 and 2.849 based on sg measurements in the Minto deposit.
 11. Numbers may not add due to rounding.
- Source: MMTS (2021)

Table 14-33: Sensitivity of the Underground Resource to Cut-off Grade

Class	Cut-off	ROM	In situ Grades					Metal		
	(CA\$)	Tonnage	NSR (CD\$)	Cu (%)	Au (gpt)	Ag (gpt)	Ox Ratio	Cu (000lbs)	Au (oz)	Ag (oz)
Indicated	\$50	10,233,402	\$114.31	1.37	0.505	4.6	0.06	310,142	166,290	1,526,402
	\$60	8,645,083	\$125.26	1.50	0.564	5.1	0.06	286,037	156,817	1,412,274
	\$70	7,612,307	\$133.46	1.59	0.609	5.4	0.06	267,632	149,028	1,320,437
	\$80	6,657,351	\$142.07	1.69	0.656	5.7	0.06	248,525	140,424	1,229,146
	\$90	5,800,054	\$150.67	1.79	0.702	6.1	0.06	229,179	130,936	1,136,716
	\$100	5,107,757	158.21	1.88	0.745	6.4	0.06	211,420	122,394	1,053,917
Inferred	\$50	17,303,413	\$93.01	1.12	0.412	3.9	0.08	426,484	229,320	2,173,181
	\$60	13,356,991	\$104.31	1.25	0.477	4.4	0.08	366,798	204,776	1,896,074
	\$70	11,026,672	\$112.63	1.34	0.533	4.8	0.08	324,539	188,917	1,711,632
	\$80	8,224,963	\$126.80	1.49	0.624	5.6	0.08	270,157	164,920	1,471,175
	\$90	5,972,347	\$143.77	1.68	0.726	6.4	0.07	221,082	139,324	1,232,083
	\$100	4,884,361	\$154.72	1.80	0.798	7.0	0.07	193,548	125,279	1,097,172

Source: MMTS (2021)

The following factors, among others, could affect the Mineral Resource estimate: commodity price and exchange rate assumptions; pit slope angles; assumptions used in generating the LG pit shell, including metal recoveries, and mining and process cost assumptions.

The QP is not aware of any environmental, permitting, legal, title, taxation, socioeconomic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

14.15 Risk Assessment

A description of potential risk factors is given in Table 14-34 along with either the justification for the approach taken or mitigating factors in place to reduce any risk.

Table 14-34: List of Risks and Mitigations/Justifications

#	Description	Justification/Mitigation
1	Classification Criteria	Based on Variography
2	Geologic Model	Interpolation confined to solids based on geology and grade
3	Metal Price Assumption	Based on 3 year historic
4	Capping	CPP, swath plots and grade-tonnage curves show model validates well with composite data throughout the grade distribution
5	Processing and Mining Costs	Same costs are used as for the mine planning pits, and are therefore conservative for a "reasonable prospect of eventual economic extraction" assessment
6	Previous underground mining	Accounted for in modelled shapes

Source: MMTS (2021)

15 MINERAL RESERVE ESTIMATE

Mineral resources are not mineral reserves and have not demonstrated economic viability. There is no certainty that all or any part of the mineral resources would be converted into mineral reserves. Mineral reserves can only be estimated as a result of an economic evaluation as part of a preliminary feasibility study or a feasibility study of a mineral project. Accordingly, at the present level of development, there are no mineral reserves at the project.

16 MINING METHODS

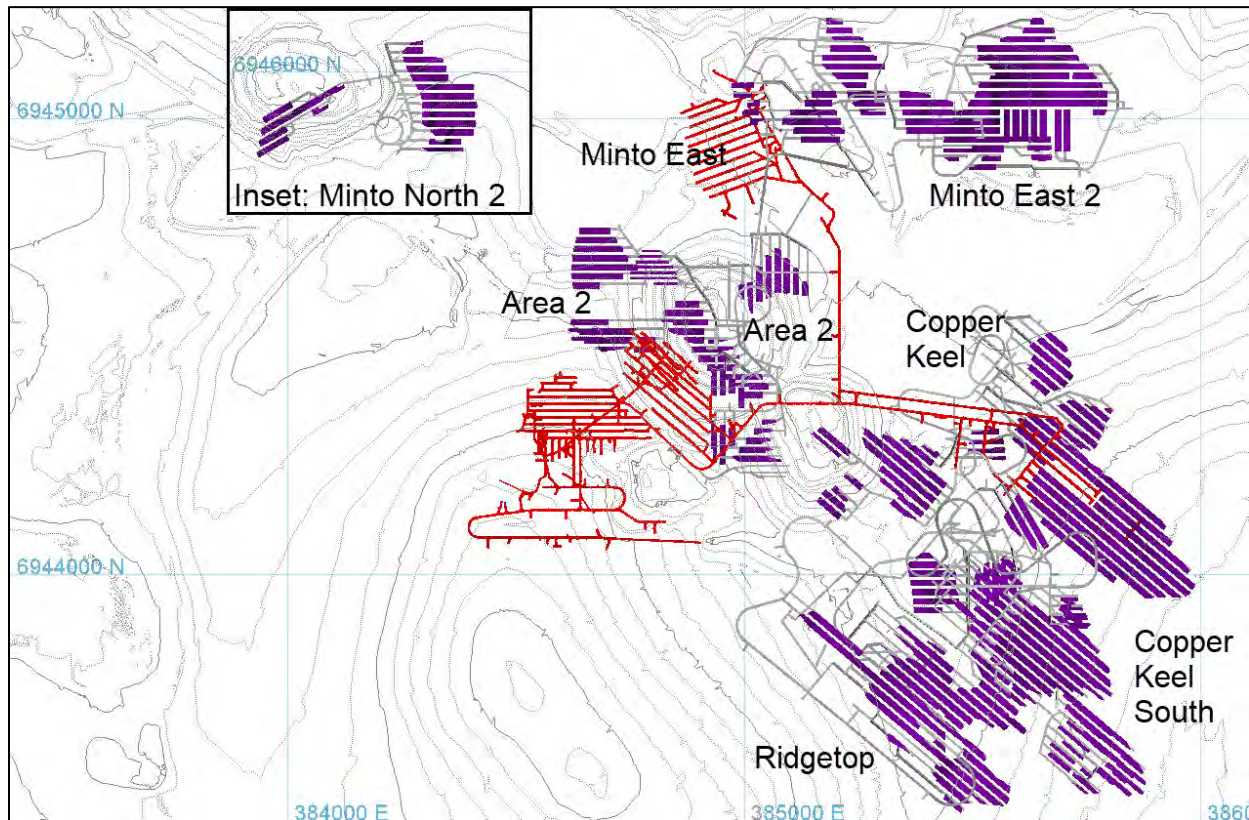
Minto utilizes both underground and open pit mining methods to extract the mineralized material for mineral processing. In the past, the operation performed mostly open pit mining using a standard truck and shovel fleet, which was contractor operated. Since the restart of operations in 2019, Minto has undertaken only underground mining, using a ramp access system with longhole upper cut retreat mining with standard rib and pillar support. Currently underground mining has taken place in Copper Keel Main Zone and Minto East. Development activities are taking place in Copper Keel West and South. Underground access is planned for Minto North 2 via a side wall portal from the Minto North Pit. Two additional portals are planned for Copper Keel and Ridgetop. Ridgetop and 118 will be developed as an open pit access.

16.1 Introduction

This section describes the mining methods used in both open pit and underground operations at the Minto mine. Current and future underground mining of Minto East, Copper Keel, Minto North 2, Ridgetop and Minto East 2 are covered in the underground section. The Ridgetop and 118 deposits are covered in the open pit section. Historically, both open pit and underground mining methods have been successfully implemented at the operation and future mining is based on this historical experience.

Figure 16-1 below shows an overview of the current mine workings (red), and the proposed underground development (grey) and planned longhole stopes (purple):

Figure 16-1: Plan View of UG Mining Areas



16.2 Underground Mining Methods

All the underground mineralized zones can be described as lenses of foliated metamorphic rocks bounded at their hanging wall and footwall contacts by undeformed granodiorite host rock. The metamorphic zones are typically 5 m to 30 m thick. These zones typically dip at 20° to 35°. Typical depths are 200 m to 250 m below surface, with vertical thickness of 5 m to 25 m.

The mineralized zones bifurcate, which means that a mineralized zone can contain a significant amount of waste, or that thinner zones can merge with larger zones. A bifurcating geometry complicates geological modelling and may increase internal dilution. In Copper Keel, the footwall can undulate, and the operation has undertaken drilling to better delineate the footwall contact.

The width and dip of mineralized zones are locally variable. The change in thickness might be as much as an order of magnitude over less than 30m in horizontal distance. At least some of the irregularity in the geometry and thickness of the mineralized zones is due to small-scale and large-scale structural displacements.

This study utilizes the current method of underground extraction of longhole upper cut retreat mining with rib pillars. This method is considered appropriate for the modelled geology.

16.3 Underground Geotechnical Characterization and Design Parameters

16.3.1 Underground Rock Mass Characterization

Geotechnical characterization was carried out by Golder Associates Ltd (Golder) and Minto's Mine Technical Department for the Area 2, Minto East and Copper Keel underground areas. High-level geotechnical characterization for Minto North was done for the PEA by JDS based on review of core photographs and available drilling data.

Rock mass characterization for the underground mine areas was most recently assessed by Golder (2015). In addition to the Golder work, previous geotechnical core logging and laboratory testing programs for Minto were completed by SRK (2009) and underground mapping has been carried out by Minto. Summaries of rock mass quality and strength are contained in Table 16-1 below.

Table 16-1: Average Rock Mass Quality per Deposit

Deposit	Zone	Avg. Depth (m)	Average Q'		UCS (MPa)
			Ore	HW	Ore
Area 118	N/A	177	21.1	21.4	125
M-Zone	N/A	60	12.1	12.0	125
Area 2	Lower	164	19.4	21.7	100
	Upper	122			
Copper Keel	Lower	331	17.8	13.9	109 ^a
	Upper	264			
Minto East	N/A	290	15.1	10.5	150 ^b
Minto East 2	N/A	398	Assumed same as Minto East		

Notes:

^a Updated per Golder Associates (7/27/2020)

^b Updated per Golder Associates (1/8/2021)

Source: Golder (2015)

Review of available drillhole data and core photos from Minto North indicate similarly good rock mass quality and intact rock strength.

Rock structure has been characterized using mapping in the underground development to date and in the open pits. Major faults and joints set have been mapped.

16.3.2 Performance of Existing Underground Excavations

Overall underground development and stopes have behaved well at Minto with very little overbreak or pillar stability issues. Mining in Copper Keel encountered adverse conditions in one area that resulted in significant overbreak. Based on review of the CMS data, the overbreak was controlled by a major fault structure as well as potentially adversely oriented joint set(s). Outside of this zone, no significant geotechnical issues have been encountered in the underground for Area 2, Minto East or Copper Keel.

Two instances of pillar breakthrough between stopes occurred in an Area 118 stope where a fault structure(s) intersected a pillar causing it to ravel. Pillars were successfully re-established for these areas either by narrowing the subsequent stope blasts or leaving a mid-stope pillar. The mining method allows for flexibility to adapt to changing conditions by leaving wider pillars or mid-stope pillars where conditions require adjustment.

16.3.3 Underground Mine Geotechnical Design Criteria

Stope spans for future mining areas were designed using a combination of empirical analysis, numerical modelling and experience in the Minto underground to date. Empirical and numerical analyses were carried out by Golder to assess the Area 118, Area 2, Minto East and Copper Keel zones. Permissible stope and pillar widths were estimated for the range of mining heights and depths in each deposit. Maximum stope widths and minimum pillar widths are summarized below for each deposit in Table 16-2.

Table 16-2: Stope and Pillar Width Criteria

Deposit	Min. Pillar Width (m)	Max Pillar Height (m)	Max. Stope Width (m)
Minto North	6	25	14
Minto East 2	6	25	14
Ridgetop	6	25	14
Copper Keel	6	25	14

A Ground Control Management Plan (GCMP) was developed and implemented in 2013 and has been used for all underground development to date. The plan is updated annually and the most recent update was completed in July 2020. Ground support patterns from the GCMP were assumed for the PEA.

16.3.4 Hydrogeological Assessment

A detailed hydrogeological assessment to define the potential inflows to the underground workings has not been completed. Inflows encountered to date in the Minto South underground area have been associated with discrete water-bearing faults and with un-grouted core drillholes.

This was also noted in faulted areas in Copper Keel Main zone. No unmanageable inflows have been intersected and a standard sump and pump dewatering system has been used. In addition, grouting programs are deployed where required. The average total discharge rate from the mine is currently 2,000 m³/day.

16.4 Underground Mine Planning Criteria

16.4.1 Dilution and Underground Mining Recovery

In the Minto deposits the mineralization is located in lenses with a clean break between the hanging wall and the stoping zone. Pillars left between the stopes contain economic material. As a result, dilution is only expected to result from overbreak in the hanging wall and footwall and has been modelled as back dilution and mucking dilution. A mining recovery of 95% has been modelled for all stope and development material that is trucked to the mill.

Table 16-3: Estimated Dilution

Zone	Excavation Type	Back Dilution (m)	Mucking Dilution (m)	Dilution (%)
Copper Keel	Longhole Stope	0.3	0.2	5.6%
Minto East	Longhole Stope	0.3	0.2	4.5%
Ridgetop	Longhole Stope	0.3	0.2	6.6%
Minto North	Longhole Stope	0.3	0.2	3.9%
Average		0.3	0.2	5.3%

16.4.2 Net Smelter Return

Economic analysis for mine planning uses Net Smelter Return (NSR) as a cut-off criteria for break-even mill feed/waste rock selection and is calculated for each block in the 3D block models. Metallurgical recoveries used for the NSR calculations are based on historical performance and are detailed in Section 13. Inputs for NSR are shown in Table 16-4.

Table 16-4: NSR Input Parameters

Open Pit Optimization Input	Unit	Value
Metal Prices		
Cu Price	US\$/lb	3.10
Au Price	US\$/oz	1,500
Ag Price	US\$/oz	18.00
Exchange Rate	C\$:US\$	0.76
Recovery to Cu Concentrate		
Cu Recovery	%	95.0%
Au Recovery	%	75.0%
Ag Recovery	%	75.0%
Concentrate Grade		
Cu	%	34.0%
Au	g/t	variable with Cu
Ag	g/t	variable with Cu
Moisture Content	%	8%
Smelter Payables		
Cu Payable	%	95%
Min. Cu deduction	% Cu/tonne	1%
Au Payable	%	77%
Min. Au deduction	g/t concentrate	1.0
Ag Payable	%	77%
Min. Ag deduction	g/t concentrate	30.0
Treatment & Refining Costs		
Cu TC	US\$/dmt con	62.00
Cu RC	US\$/payable lb	0.062
Au RC	US\$/payable oz	5.00
Ag RC	US\$/payable oz	0.40
Transport Costs		
Transport Costs	US\$/wmt	123.10
	US\$/dmt	133.81
Royalties		
Royalties - Cu	%	1.5%
Royalties - Au	%	1.5%
Royalties - Ag	%	1.5%
Wheaton - Au	price cap US\$/oz	1,000
Wheaton - Ag	price cap US\$/oz	4.29

Open Pit Optimization Input	Unit	Value
Operating Costs		
Underground Mining Cost	C\$/tonne mined	41.03
Processing Cost	C\$/tonne milled	19.00
G&A	C\$/tonne milled	18.08

Notes:

Recovery formula for Copper calculated as:

$$\text{Recovery} = 0.955 + (0.0107 \times \text{Total Copper Grade}) - (1.13 \times \text{Oxide Ratio})$$

Where Oxide Ratio is defined as the ratio of Oxide Copper to Total Copper Grade

For more information regarding recovery formula, please see Section 13.2.

These parameters differ slightly from those used in the economic model due to subsequent, more detailed estimation work but the differences are not considered material to the PEA results.

16.4.3 Cut-off

The economic stope material is identified from the 3D block model utilizing Maptek Vulcan™ stope optimizer software, using an NSR cut off. Cut off parameters can be seen in Table 16-5.

Table 16-5: Underground Cut-off Parameters

Estimated Operating Costs	Units	Cost
Underground Mining Cost	\$/t	41.03
Milling Cost	\$/t	19.00
G&A Cost	\$/t	18.08
Total	\$/t	78.11

Notes:

These parameters differ slightly from those used in the economic model due to subsequent, more detailed estimation work but the differences are not considered material to the PEA results.

16.4.4 Mine Design

Historically the M-zone, Area 118, Area 2 and Minto East zones were all mined using a longhole upper cut retreat mining method. The currently active Copper Keel zone is mined in the same manner.

The mining method requires a series of parallel sill drifts to be developed along the strike of the deposit, following the footwall contact. From these 6 m wide and 4.3 m high sill drifts, a top-hammer longhole machine drills rings of 3" diameter up-holes into the deposit, drilling to the hanging wall contact. To provide adequate void space for blasted muck when initiating a new

stope, a 1.8 m x 1.8 m inverse raise is drilled. The raise is composed of six 6-inch diameter reamed holes, which are left unloaded, surrounded by a pattern of eleven 3½-inch diameter blast holes. Generally, each stope is initiated with one or more rings of blast holes on either side of the inverse raise; subsequent blasts increase the number of rings fired simultaneously to take advantage of the void space in each block.

After drilling is completed, the rings are loaded, blasted, and then mucked out from the sill drift, which serves as a draw point. The average blast size is 3,000 t. Mucking is via remote-controlled load-haul-dump machines (LHDs). All stopes are non-entry so that no personnel are exposed to the unsupported ground of the open stope. The mineralized material is trucked to surface via the mine ramp.

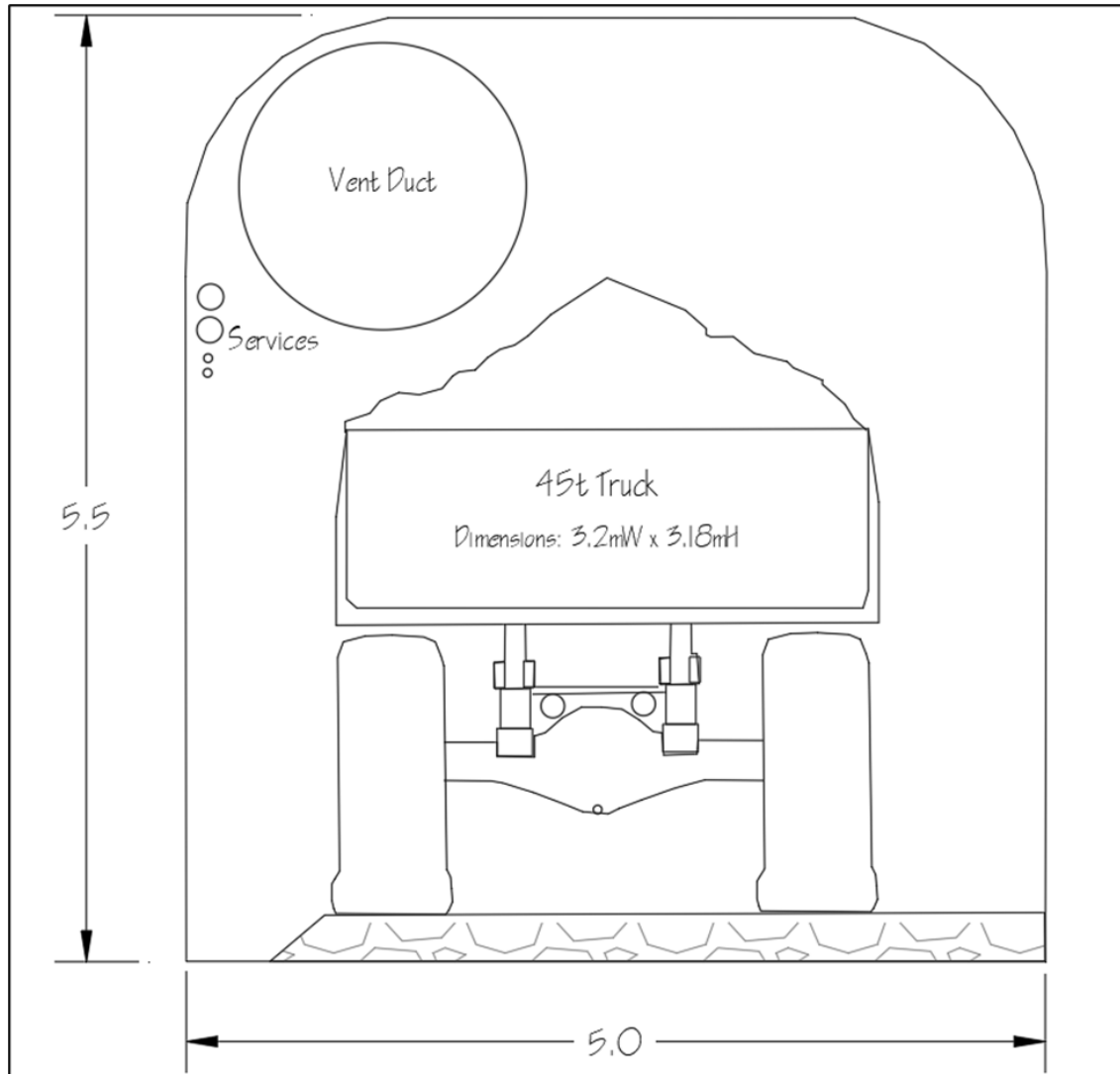
Production drift centerlines are spaced 20 m apart. From each 6 m wide sill drift, drill holes are fanned out to blast a 14 m wide stope. Rib pillars with 6 m width separate neighboring stopes and support the hanging wall. For the Area 2 zone, production drift centerlines were 20 m apart and stope and pillar widths were varied based on the thickness (stope and pillar height). Historically typical stope widths were 15 m and pillar widths were 5 m.

The mining method does not use backfill. Small quantities of development waste are sometimes placed in completed stopes to reduce waste haulage requirements to surface. For purposes of this study all excavated material is assumed to be hauled to surface.

16.4.4.1 Underground Access

The main ramp of the Minto Underground extends to the currently active Copper Keel zone. The upper ramp is 5.0 m wide and 5.0 m high; the ramp below the 690 level has been driven at dimensions of 5.0 m wide and 5.5 m high to provide additional clearance between vent ducting and haul trucks, shown in Figure 16-2. This access is currently used for all mineralized material and waste haulage, personnel/equipment access, and services. It is also used as an exhaust airway. Additional ramps to surface have been proposed for both Copper Keel and Ridgetop. This will assist with both haulage and ventilation of the mine. Minto North will be accessed via a single ramp collared from the Minto North eastern pit wall. Ramps and access development will be driven at a maximum +/- 15% grade.

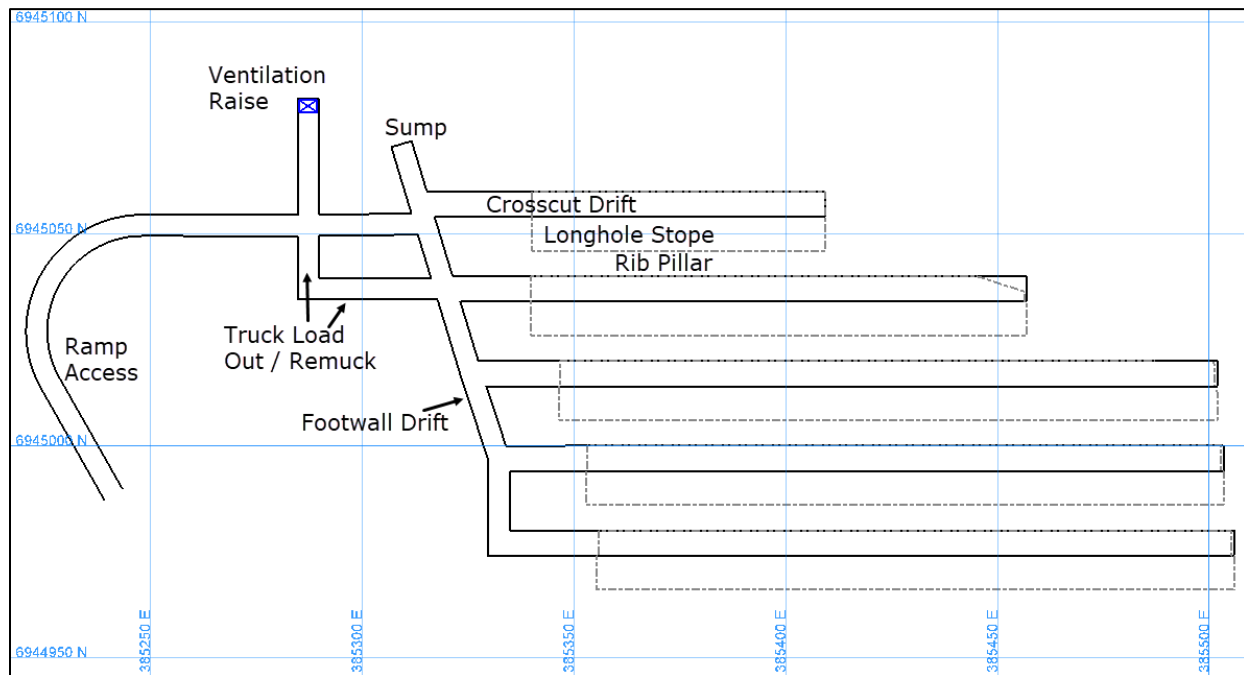
Figure 16-2: Typical Ramp/Access Drift Profile



Re-muck bays are typically developed every 150 m along the decline to improve the efficiency of the development cycle; they are designed to hold two rounds of development muck. The re-muck bays have the same dimensions as the decline and are generally 15m in length. Once they are no longer needed for development, they are repurposed as equipment storage, pump stations, drill bays, service bays, etc.

For each mining zone a footwall drift is established and the stope crosscuts are then extended from the footwall drift along strike of the stopping horizon. A typical stopping area layout is shown in Figure 16-3.

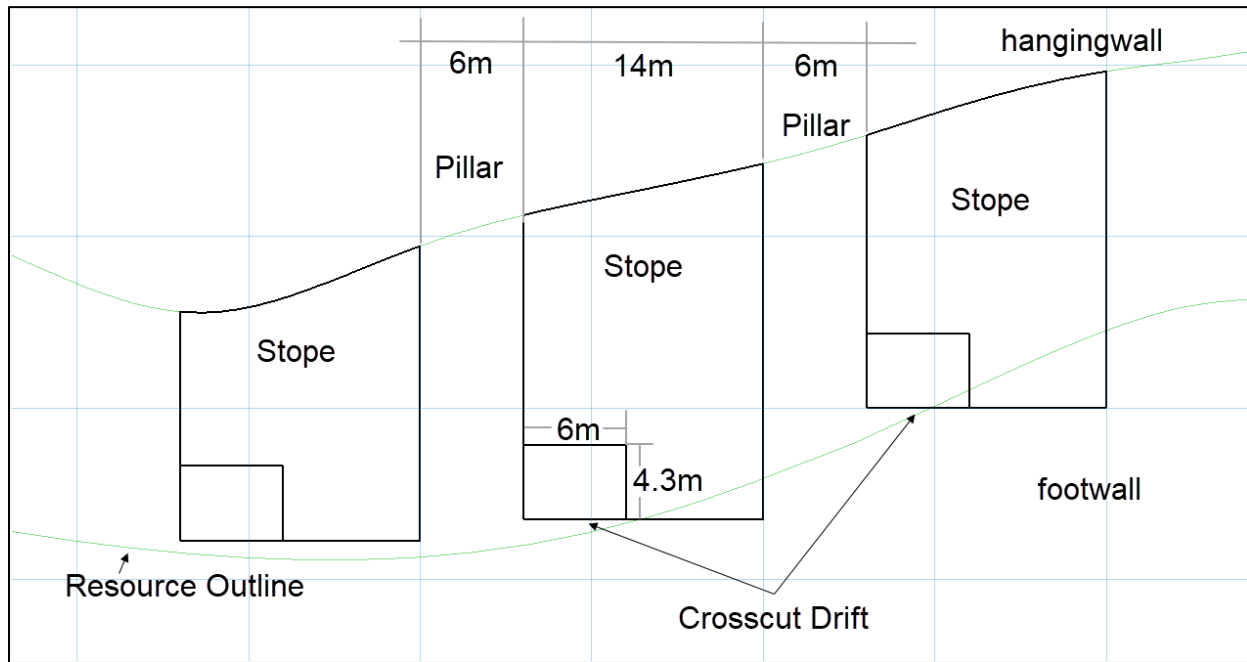
Figure 16-3: Typical Level Layout



16.4.4.2 Stope Layout

The 6.0 m(w) x 4.3 m(h) crosscut drift has typically been designed on the down-dip side of the stope to better manage dilution and increase mining recovery. Longhole stopes have been designed at 14 m wide with a 6 m rib pillar between stopes. A typical stope is shown in Figure 16-4 below.

Figure 16-4: Typical Stope Layout for Minto North (Section View)



16.4.5 Material Handling

Currently, a combination of five 10-yard LHD units and six 42-45 t trucks are used for mineralized material and waste haulage. The broken mineralized material from the stopes is mucked by LHDs to re-muck bays, or loaded directly onto trucks, which carry the mineralized material from the mine to a small stockpile adjacent to the portal. The surface mining fleet then hauls the UG mineralized material to a larger stockpile area by the mine crusher on a daily basis.

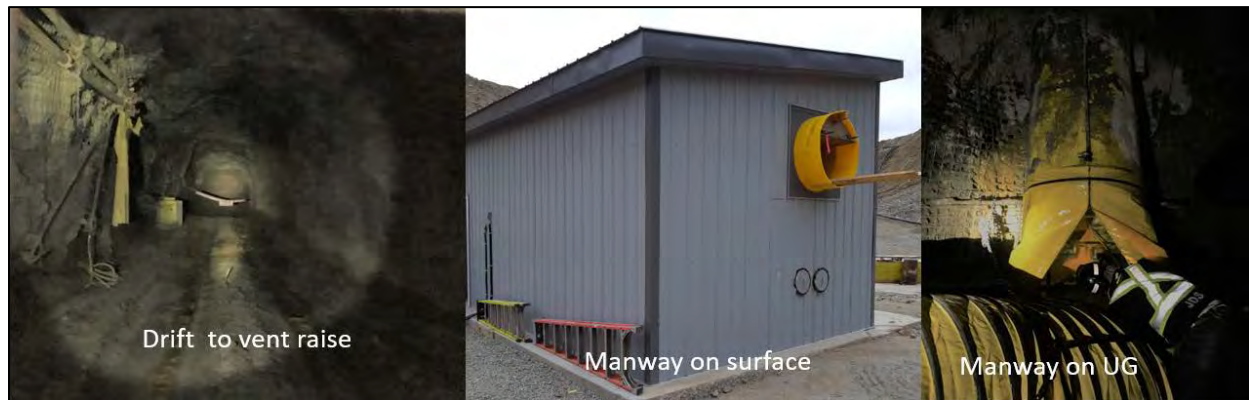
Waste rock from development headings is either hauled to surface in the same manner or trammed to a mined-out stope and dumped there. Development rounds are sampled and assayed and waste rock is moved to the appropriate waste dump as outlined in the Waste Rock and Overburden Management Plan (WROMP). The protocols for segregation and placement of waste materials are consistent with the protocols for surface mining.

16.4.6 Underground Mine Services

16.4.6.1 Ventilation

A 300 hp fan is currently installed on top of a 3 m x 5 m raise to provide fresh air from surface to the 760 m elevation. This raise also has a 2 m emergency escapeway installed. Air is circulated through Copper Keel and exhausted by the ventilation raise at Minto East as noted below:

Figure 16-5: Vent Raise and Escapeway at Minto East



To accommodate a larger equipment fleet, the minimum air requirement based Natural Resources Canada guidelines for diesel engines is 650 kcfm and 220 kcfm for Copper Keel and Minto North respectively.

Copper Keel, Minto East and Ridgetop Ventilation

The ventilation system has been split into two stages. The first stage comprises of upgrading the current system to meet equipment ventilation requirements in accordance with Natural Resources Canada.

Stage one will be to upgrade the installed fans at the fresh air raise and escape way. The ventilation requirements at the fresh air raise and escape way are 600 kcfm and 16.1 in w.g and 480 kcfm and 7.4 in w.g, respectively. To achieve these parameters, Howden 11200-AMF-6600 and 12300-AMF-7300 fans were selected.

To maintain acceptable air speed in the ramp between the fresh air raise and Minto East access, vent tubing will be required. Two parallel 1.72 m plastic hardline ducting extending 1,300 m from the fresh air raise / ramp intersection to Minto East access with 150 hp fans on each line, will keep air speed in the ramp below 4.3 m/s.

The Howden fan, 10150-AMF-500, currently installed at the fresh air raise will be relocated underground to the top of the Copper Keel 11- vein escapeway. This will pull air down the Copper Keel decline ramp then up the ventilation raises and exhaust out the escape raise.

Stage two is scheduled to occur in year 4. Once the portals and ventilation raises have been established at Ridgetop and Copper Keel portals fresh air will be pushed down both raises and exit out their respective portals. At Copper Keel Fresh Air Raise (CK FAR) the Howden fan from CK-110 will be relocated to the top of CK FAR. This will provide 160 kcfm and 3.6 in w.g.

At Ridgetop Fresh Air Raise (RT FAR), air will be pushed down the raise with two 150 hp Hurley fans in parallel, several of these fans are currently on-site. The two fans will produce 110 kcfm and 1 in w.g.

Figure 16-6: Minto East Exhaust Air Flow

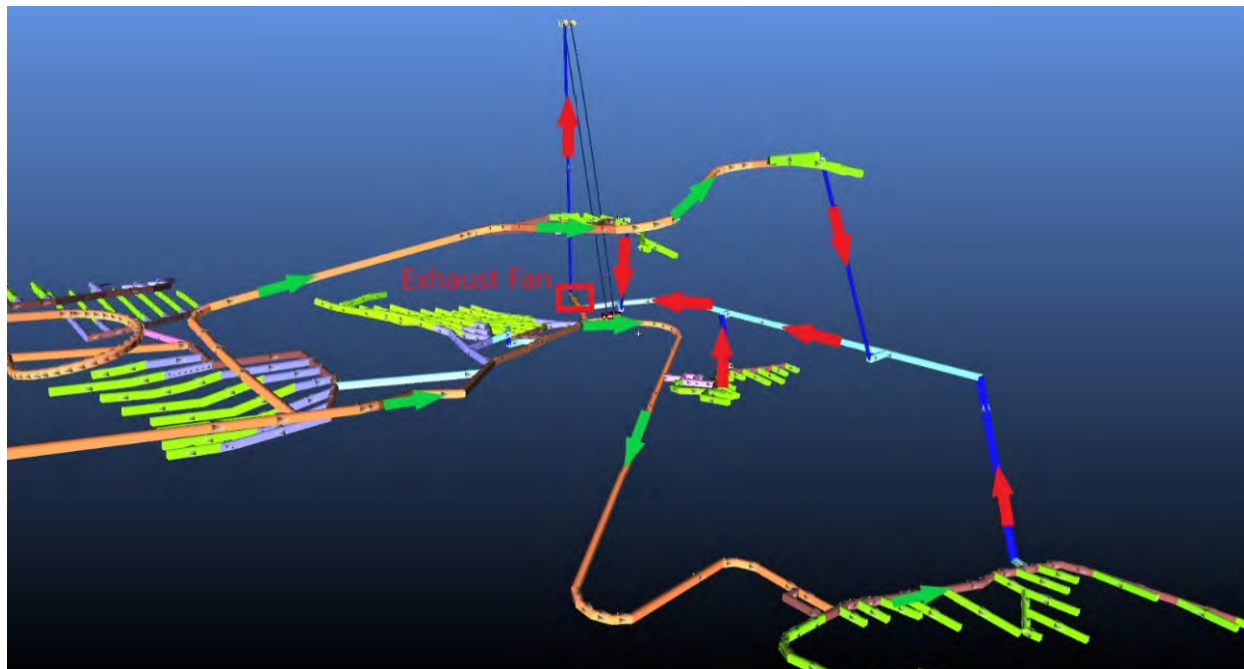


Figure 16-7: Copper Keel Air Flow

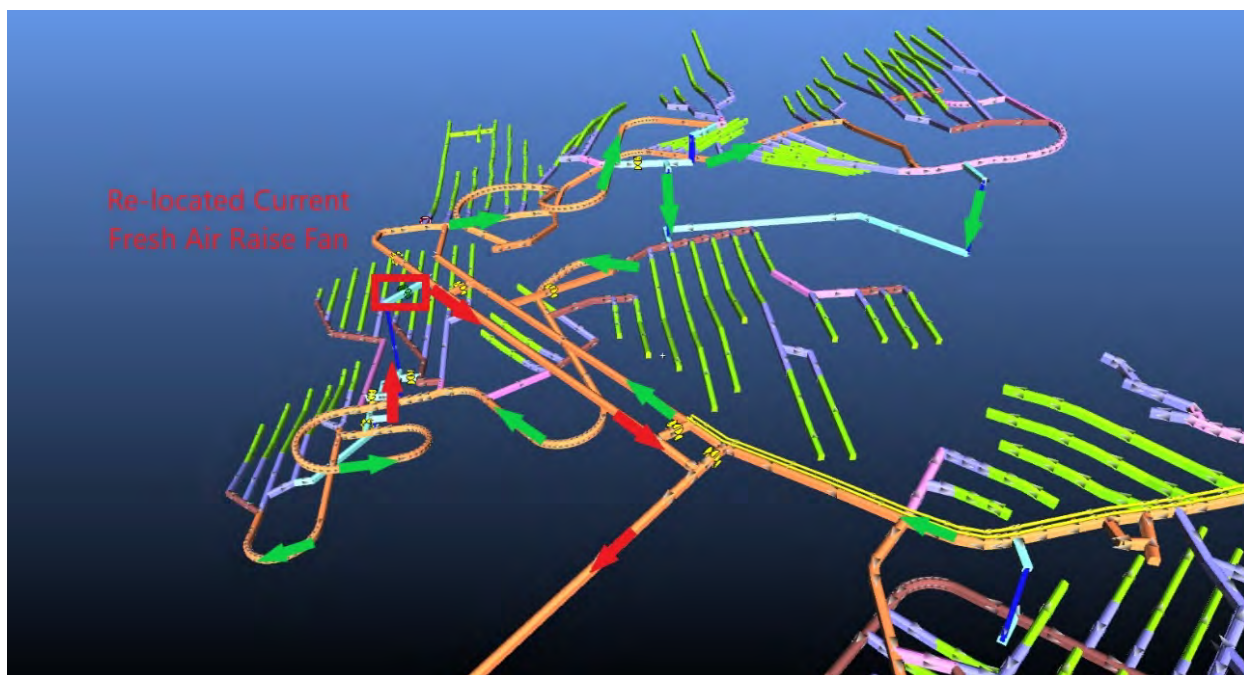


Figure 16-8: Ridgetop Fresh Air Raise Air Flow

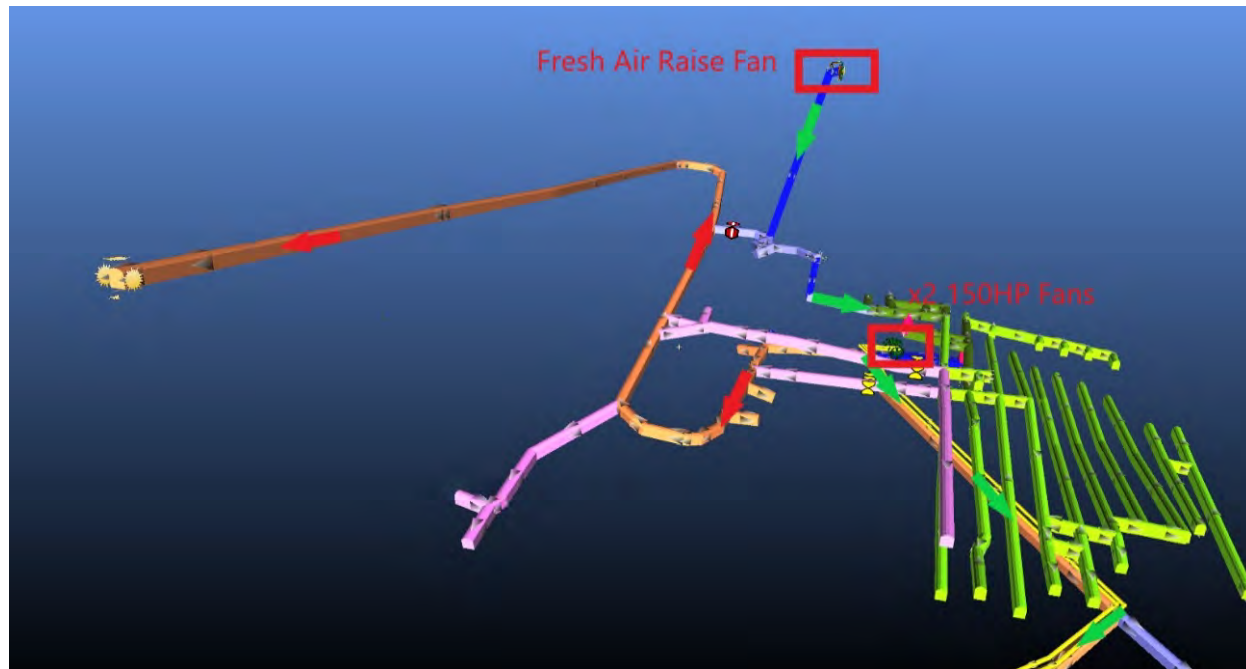
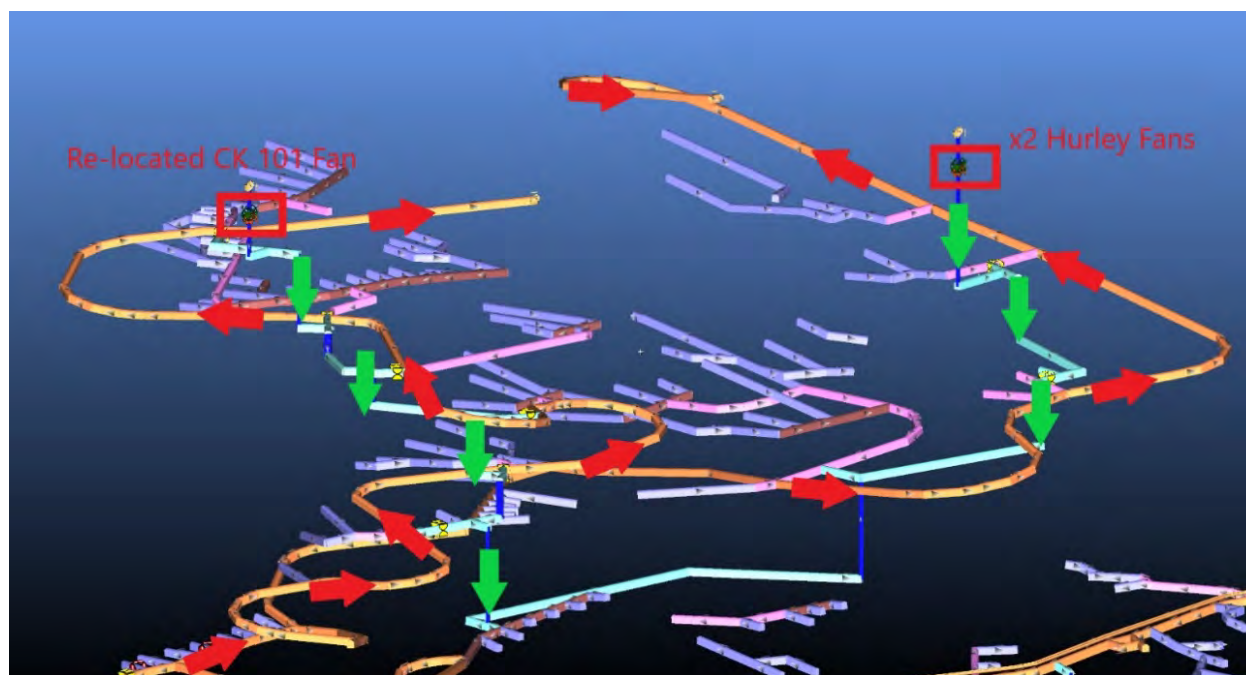


Figure 16-9: Copper Keel and Ridgetop Fresh Air Raise 2 and 3 Air Flow



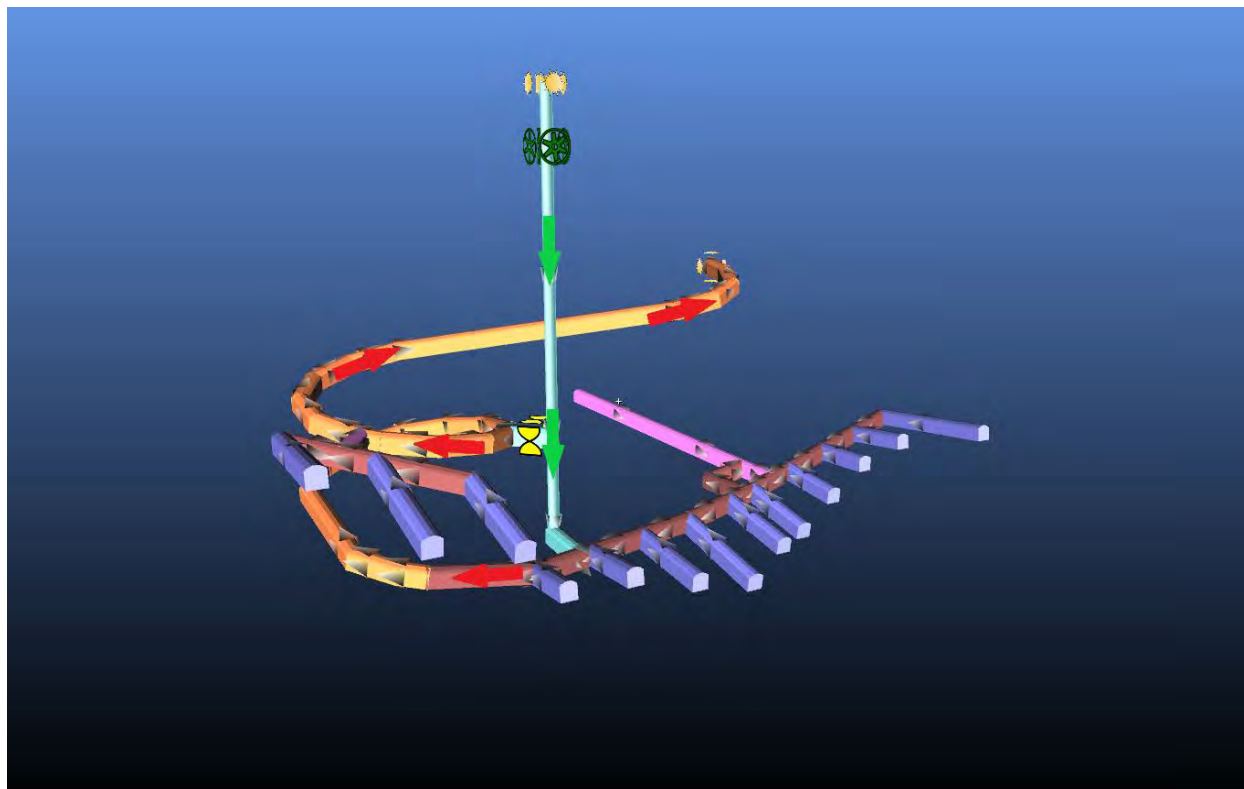
Minto North

The ventilation system for Minto North will push air down the escape way and exhausts out the portal. The ventilation requirement at the fresh air raise is 220 kcfm and 0.8 in w.g.

The LHDs, mine trucks, drills, bolters and other equipment will have enough ventilation to operate at a mining rate of 3,500 tpd mineralized material and waste.

During the winter months, the mine utilizes a heated ventilation system to prevent water from freezing. The mine air heating system uses propane heaters to heat the intake air. A propane farm is located on surface next to the mine air heater at the fresh air raise.

Figure 16-10: Minto North Air Flow (Ventsim)



16.4.6.2 Electrical Power

In addition to fixed installations such as fans, pumps and compressors, production drilling equipment (jumbos and bolters) run on electric power while stationary. The mine is supplied by a 4,160 V cable that runs down the decline. This is reduced to 600V, the operating voltage of all mobile equipment, at several substations. The Atlas Copco GA-315 compressor is directly

connected to the 4,160 V supply; all other fixed installations are supplied by the 600 V three-phase AC. Refuge stations are supplied with single phase 120 V power.

16.4.6.3 Water Underground

Water Supply

Inflow to the mine through faults and un-grouted core drill holes is generally sufficient to supply the mine with water for drilling and dust control. The mine currently recirculates water through a network of sumps. There are no issues regarding shortage of service water supply to date.

Dewatering

Water currently collects into three sumps, from which pumps send water to the main dirty water sump at 760 L. This is a two-stage clean/dirty sump that removes most suspended solids before water is pumped to a final settling sump near the portal. This portal sump either discharges out to the permanent heat-traced line on surface and on to the Area 2 Pit Tailings Management Facility or returns water underground to supply the mine feed storage tank.

For the mining of Copper Keel, Area 2 and Minto East, three main collections sump will need to be established. All three of these sumps will tie into the current dewatering system.

As Copper Keel and Ridgetop portals are established, each decline will manage the water produced from their respective areas. At the portals, a similar setup to existing portal will be established. Water from the underground will either be discharged to the Tailings Management Facility or return water for underground supply.

From the Copper Keel decline, there will be two main collection sumps. These sumps will pump water out of the mine to Copper Keel Portal.

From the Ridgetop decline, there will be two main collection sumps. These sumps will pump water out of the mine to Ridgetop portal.

Minto North will have a sump at the portal where mine discharge water will be sent to the Tailings Management Facility or return water for underground supply. At the bottom of Minto North decline, there will be a main collection sump to pump water up the decline to Minto North Portal.

16.4.6.4 Compressed Air

Minto currently has three compressors, all of which are installed along the main ramp at approximately the 720-level:

- 2x Sullair 7509/A (350 cfm at 125 psi, 100hp); and
- 1x Atlas Copco GA-315 (1811 cfm at 125 psi, 350hp).

All three compressors are tied into the network of 4" compressed air lines that run throughout the mine. The larger Atlas Copco unit runs only when production drilling is active, as the longhole drills represent a substantial portion of the mine's compressed air requirement.

16.4.7 Communications

Both refuge stations are equipped with telephones connected to the mine's internal communications network; external phone numbers are also reachable. These phones are connected via a fiber optic network that runs throughout the Minto underground workings. An analog emergency communication system (Femco phone) is also installed inside and outside the refuge stations, the base of the fresh air raise at the 760 level, the surface muster station adjacent to the portal, the electrical cut-out adjacent to the 630-level access, and the Contractor shop on surface.

16.4.8 Blasting

An electric central blasting system runs throughout the Minto underground operations; it is activated from a blasting box located at the Minto South Portal muster station. This typically fires a single electric blasting cap, which is used to initiate the network of non-electric caps that time and fire each hole in a blast. The mine is completely cleared of personnel for both production and development blasting. Prior to blasting, a locked gate is put into place at the portal, preventing entry to the Minto underground workings until the shift supervisor or a designate verifies that concentrations of post-blast gases have been diluted to safe levels.

16.4.9 Explosive Storage and Handling

Emulsion is used for both longhole production and development blasting. A bulk emulsion product known as "Dyno Titan RU", formulated for underground usage and having high viscosity, is used to load most blasts. This product is delivered via one of two dedicated mobile loading units – one for development rounds and a larger unit for longhole stope blasts.

To provide a backup if the mobile loading unit is out of service, MintoEx stocks a product known as Dyno SL, which is a cartridge emulsion designed to be manually loaded using a portable pneumatic unit. In development, a perimeter blasting product (Dynosplit D) is used to reduce over-break in the back, and Dyno AP (a cartridge emulsion) is used in wet lifter holes.

The Minto underground operation has two magazines, one for detonators and one for bulk and packaged explosives. Both magazines are equipped with concrete floors and lockable gates. The powder magazine is large enough to store and handle 1.5 t totes of emulsion used by the development loader. The larger longhole loading unit is parked on surface at Dyno Nobel's office / shop / silo complex. Non-electric caps are used to time and sequence blast holes in both production and development blasts.

16.4.10 Fuel Storage and Distribution

Haul trucks, LHDs, and service vehicles are fueled at a 50,000 litre EnviroTank fuel station installed on surface. Bolters and jumbo drills are generally fueled underground by a service vehicle. All underground personnel are trained in site-wide spill prevention and spill response protocols outlined in Minto Mine's Spill Contingency Plan (Minto, 2016a).

16.4.11 Transportation of Personnel and Materials Underground

All mine supplies and personnel access the underground via the main access ramp. Two personnel vehicles are used to shuttle employees from surface to the underground workings and back during shift changes. Supervisors, engineers, geologists, and surveyors use diesel-powered trucks as transportation underground. Mechanics and electricians use the mechanics' truck and maintenance service vehicles. A boom truck with a 10-t crane is used to move supplies, drill parts, and other consumables from surface to active underground workings.

16.5 Mine Safety

16.5.1 General Mine Health & Safety

Minto Mine and the development and production contractor, emphasize safety in all duties at the mine; this philosophy is shared by senior management and supervisors. Minto's safety program includes the following:

- Zero Harm Safety System and associated safety card, used and checked daily by supervisors;
- A central system for tracking incident reports and the corrective actions arising from them;
- Safe work procedures (SWPs) for routine tasks that present a risk of injury;
- Job hazard assessments (JHAs) for non-routine tasks; these are used as the basis for SWPs if a job becomes routine;
- Routine job observations and workplace inspections by supervisory and technical personnel; and
- COVID-19 Protocols and response plan.

16.5.2 Emergency Response

Two portable refuge stations are equipped with compressed oxygen cylinders, CO₂ scrubbers, potable water, first aid equipment, emergency lighting, emergency food rations and chemical toilets. They are also equipped with a digital telephone line and a backup analog telephone (Femco). Each refuge station is equipped to supply oxygen to 18 people for 72 hours.

The fresh air raise from surface to 760-level is equipped with ladders and serves as the mine's main escape way. A sub-level escape way with ladders connects the Area 2 ramp and the 710-level. At Minto East, a raise with ladders was developed as a secondary escapeway, completed by April 2018.

All underground personnel are required to carry Ocenco M-20 self-contained self-rescuer (SCSR) devices, which provide oxygen from a compressed gas cylinder for 15 to 20 minutes (up to 32

minutes if the user is resting). In addition to the personal devices, six devices with longer performance durations of 60 minutes are available in two caches located near active mining faces. These caches also contain first aid supplies, an oxygen therapy unit, water, food, flashlights, and blankets.

A mine-wide stench gas warning system is installed at the surface fan to alert underground workers in the event of an emergency. Minto has an emergency response team trained in underground mine rescue techniques. Details are contained in Minto's Emergency Response Plan (Minto, 2016b).

16.5.3 Fire Suppression

Fire extinguishers are provided and maintained in accordance with regulations and best practices at electrical installations, pump stations, wash bays, and refuge stations. Every vehicle carries at least one fire extinguisher of adequate size and proper type. Heavy equipment is equipped with central fire suppression systems. For the use of the mine's emergency response team, a trailer containing a foam sprayer, hoses, an inflatable bulkhead, and other firefighting supplies is parked near the fresh air raise.

16.6 Underground Mine Equipment

MintoEx utilizes a combination of owned, leased and contractor equipment. Table 16-6 shows the current underground equipment and peak requirements, for the two underground operations.

The equipment list was developed based on the scheduled quantities of work and estimated from first principle cycle times and productivities. Also taken into account was an effective working time of 9.4 hours per shift and an 80% mechanical availability. Other efficiency factors are built into the individual equipment cycle times.

The current fleet will be utilized, rebuilt and replaced as required according to the mine plan, and new equipment leased when required.

Table 16-6: List of UG Equipment Requirements

Equipment	Equipment Description	Current On-Site	Copper Keel, Ridgetop, Minto East	Minto North	Comments
Truck (45t/25m ³)	Caterpillar - AD45B	6	7	2	
LHD (14t/5.4m ³)	Caterpillar - R1700G/1700K	5	6	2	
Jumbo - 2 Boom	Atlas Copco - Boomer 282/Sandvik	2	3	1	
Longhole Drill	Stopemate/EH Stopemaster	3	3	1	
Explosives Truck	Getman - A64-ExC 2-500	1	2	0	Shared
Bolter	MacLean - 982	3	3	1	

Equipment	Equipment Description	Current On-Site	Copper Keel, Ridgetop, Minto East	Minto North	Comments
Scissor Lift	MacLean - SL2	2	2	0	Shared
Boom Truck	Getman - A64	1	1	0	Shared
Backhoe	MineCat - MC100	1	1	0	Shared
Telehandler	Caterpillar - TH514D	2	2	0	Shared
Utility Vehicle	MineCat - MC100	1	1	0	Shared
Transmixer	MacLean - TM3 6 m ³	1	1	0	Shared
Mobile Rock Breaker	MacLean RB3	0	1	0	Shared
Grader	Caterpillar - 135H Grader	1	1	0	Shared
Mechanics Truck	MineCat UT99	2	2	0	Shared
Fuel/Lube Truck	Getman - A64Lube	0	1	0	Shared
Electrician Truck	MineCat - UT99	1	1	0	Shared
Personnel Carrier	MineCat - UT99	2	2	0	Shared
Supervisor Truck	MineCat - UT99	2	2	0	Shared
Crew Van / Ambulance	MineCat - UT99	1	1	0	Shared

16.7 Underground Mining Personnel

The mining employees at the Minto underground operation were divided into two categories: salaried personnel, and hourly labour.

The personnel requirement estimates were based on the following:

- A 3,600 tpd production rate; and
- A crew rotation of two shifts per day with two crews working on site and two crews off.

A mining contractor performs the underground work via contractor labour. The labour and personnel requirements described in this section show current staffing for 2021 in operations and will be adjusted according during the various phases of development.

Hourly personnel were estimated based on production and development rates, operation productivities, and maintenance requirements. Personnel productivities were estimated for all main activities by developing cycle times for each operation.

Total operating personnel are listed in Table 16-7 (excluding technical staff which are part of engineering and covered in the site G&A budget).

Table 16-7: List of Total Underground Operational Manpower

Domain	Peak	2021	2022	2023	2024	2025	2026	2027	2028
Mine Captain	2	2	2	2	2	2	2	2	2
Mine Rescue/Safety Officer/Trainer	1	1	1	1	1	1	1	1	1
Mine Supervisor/Shift Boss	8	4	8	8	8	4	4	4	4
Maintenance Master Mechanic	2	2	2	2	2	2	2	2	2
Jumbo Operator	12	8	12	12	12	8	8	8	8
Production Drill Operator	16	12	16	16	16	16	16	16	12
Blaster	8	4	8	8	8	4	4	4	4
Drill & Blast Nipper	8	4	8	8	8	4	4	4	4
LHD Operator	32	24	32	32	32	24	24	24	24
UG Truck Driver	36	20	32	36	36	28	28	28	24
Electrician	8	4	8	8	8	4	4	4	4
Development Service	8	8	8	8	8	8	8	8	8
Ground Support/Bolter/Shotcrete	16	8	16	16	16	12	12	12	8
Utility Vehicle Operator	0	0	0	0	0	0	0	0	0
Services Nipper	8	4	8	8	8	8	8	8	8
Lube/PM Mechanic	4	4	4	4	4	4	4	4	4
HD Mechanic	12	8	12	12	12	12	12	12	8
Drill Mechanic	2	2	2	2	2	2	2	2	2
Overhaul Mechanic	2	2	2	2	2	2	2	2	0
Welder	2	2	2	2	2	2	2	2	2
Total	187	123	183	187	187	147	147	147	129

16.8 Open Pit Mining Methods

In the past, open pit mine development and production was performed by contractor (Pelly Construction Ltd.). Engineering and planning were completed internally by Minto personnel. Open pit development of the Ridgetop and 118 deposits consider a similar arrangement; mining will be conducted using contract equipment, under the guidance of Minto technical staff.

16.8.1 Deposit Characteristics for Open Pit Mining

The Ridgetop pit shares a similar geological setting to the deposits previously mined at Minto. Copper mineralization is contained in a series of sub-horizontal stacked, foliated migmatitic lenses. These lenses are characterized by sharp contacts with the surrounding host rock. These deformed and migmatized metamorphic zones are highly variable in the content of their mineralization.

The western regions of the proposed Ridgetop pits are anticipated to contain 1 m to 5 m of soil overburden, deepening to the east to from 5 m to 15 m on the east side and with a maximum depth of 12 m at the northeast portion of the Ridgetop pit. The bedrock at Ridgetop is generally weathered to a depth of approximately 45 m to 70 m below current ground surface.

16.8.2 Open Pit Geotechnical Characterization and Design Parameters

Geotechnical characterization and open pit design criteria for the Area 2, Area 118 and Ridgetop open pits were initially characterized by SRK (2009). Additional geotechnical characterization was carried out for the Ridgetop pit by JDS (2018). Mining of the Area 2 and Area 118 open pits has been completed with no significant geotechnical issues. No mining has occurred to date at Ridgetop.

16.8.2.1 Open Pit Rock Mass Characterization

Rock mass quality at Ridgetop can be separated into three separate zones based intensity of weathering: heavily weathered, moderately weathered, and slightly weathered to fresh rock. The average depths to top of the heavily weathered, moderately weathered and slightly weathered to fresh bedrock are summarized in Table 16-8 along with their average intact rock strength (UCS) and rock mass rating (RMR) according to the Bieniawski (1989) criteria. Overburden soils are generally shallow across the Ridgetop area, consisting of coarse colluvium and/or weathered in-place rock. Based on the (SRK, 2014) investigation the overburden soil depth is typically a few meters or less except at the northeast corner of the Ridgetop pit where the maximum depth of approximately 12 m occurs.

Table 16-8: Rock Mass Quality for Ridgetop

Domain	Avg. Depth (m)	Avg. UCS (MPa)	Avg. RMR ₈₉
Heavily Weathered	10	45	58
Moderately Weathered	26	76	66
Slightly Weathered to Fresh	52	95	67

Source: JDS (2018)

The available information suggests that structural conditions in Ridgetop are similar to those observed in the Area 2, Stages 2 and 3 pits. As such, the dominant structural trend for Ridgetop is anticipated to be NW-SE striking and moderate to steeply northeast dipping. Dominant, steeply and moderately dipping joint sets are likely to impact bench stability for the SW sector and have been accounted for in the slope design parameters. Slopes with dip directions between 010° and 060° azimuth will be susceptible to planar type displacements if bench face and inter-ramp slope angles are over steepened.

16.8.2.2 Open Pit Geotechnical Design Criteria

Pit slope design recommendations for the Ridgetop pit are summarized in summarized in Table 16-9 with the design sectors shown on Figure 16-11.

Table 16-9: Recommended Ridgetop Pit Slope Design Parameters

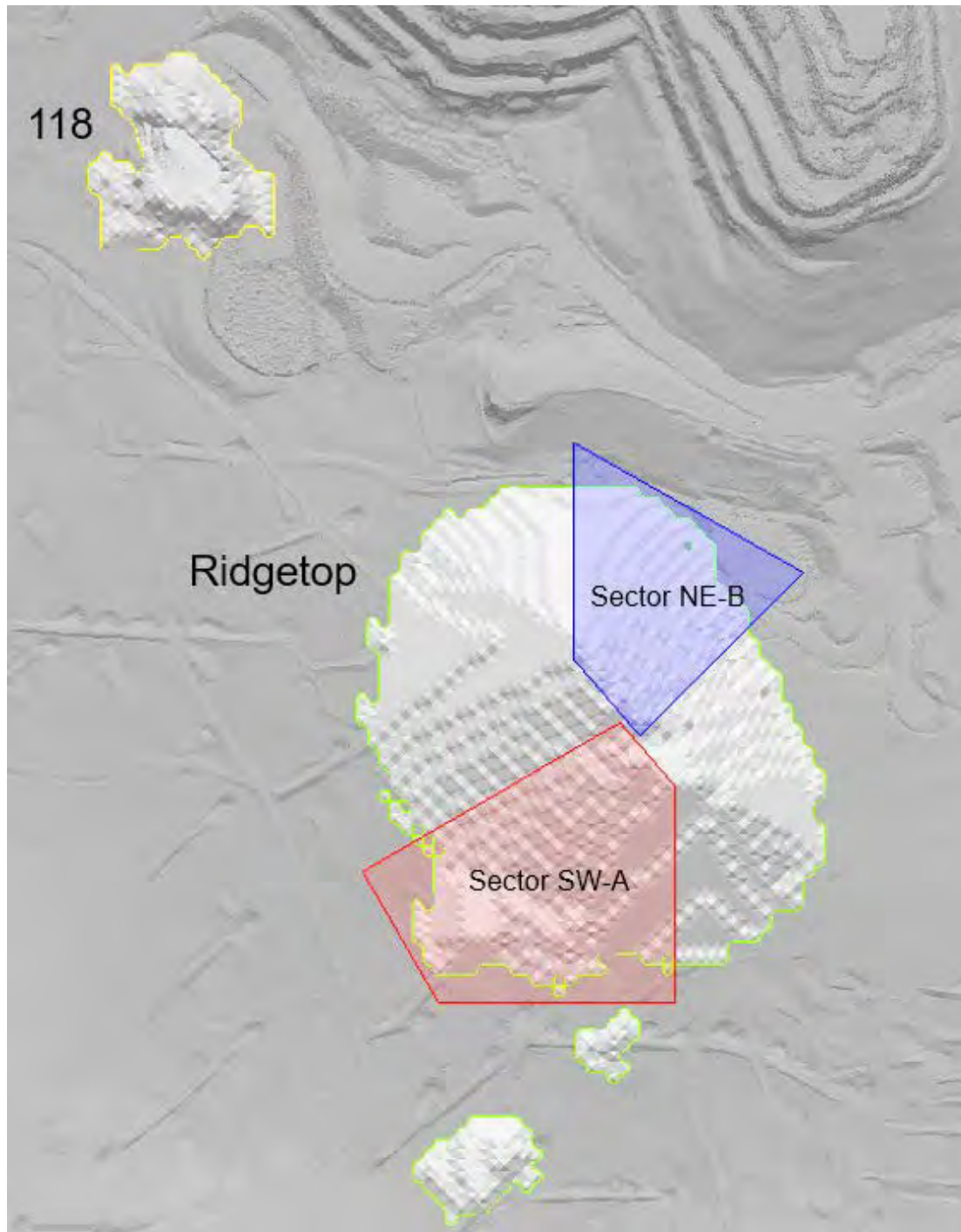
Pit Sub-sector	Wall Dip Direction		Interramp Slope Angle (°)	Bench Face Angle (°)	Max. Bench Height (m)	Min. Bench Width (m)
	From	To				
Soil Overburden	000°	360°	30°	30°	15	10*
SW-A	010°	060°	49°	65°	24	10
NE-B	180°	225°	51°	68°	24	10
All other areas	NA	NA	53°	72°	24	10.5
Conglomerate	NA	NA	44°	65°	12	7

Notes:

* A 10 m wide step out or bench is recommended to be left where overburden soils exceed 10 m in depth (Sector NE-A).

Source: JDS (2018)

Figure 16-11: Ridgetop Pit Slope Design Sectors



Notes:

* A 10 m wide step out or bench is recommended to be left where overburden soils exceed 10 m in depth (Sector NE-A).

Source: JDS (2018)

A small open pit is also planned at Area 118. The pit has a maximum depth of approximately 30 m with the upper approximately 10 m consisting of overburden soils and completely weathered bedrock. Recommendations for the Area 118 pit slopes include:

- 35° continuous, overall slope angle for the overburden soils;
- 7 m wide catch bench at the contact of the overburden soils with the bedrock beneath;
- 65° bench face angle for bedrock with a maximum bench height of 24 m; and
- Due to the shallow depth of the pit, more than one bench in rock is not expected.

16.8.2.3 Open Pit Haul Road Designs

Haul roads at Minto are typically designed to accommodate Caterpillar 777 haul trucks in dual or single lane configurations. Road widths are based on the requirements of Yukon WCB regulation 15.43(1)(a):

- Not less than three times the widest haulage vehicle used where dual lane traffic exists; or
- Not less than two times the widest haulage vehicle used where only single lane traffic exists.

Berms are designed to be 75% of the trucks' tire height, as per Yukon WCB regulation 15.43(1)(b). Allowance is typically made for an approximately one-meter-wide ditch on one side of the road, where conditions dictate. Design grade is 10%. Grade limits are applied to the inside corner of a turn. The haul road design parameters are summarized in Table 16-10 below.

Table 16-10: Haul Road Design Criteria

Parameter	Units	Dual Lane Width	Single Lane Width
Truck operating width	m	6.1	6.1
Road surface width	m	18.2	12.1
Tire height	m	2.6	2.6
Berm height	m	1.9	1.9
Berm width	m	4.6	4.6
Ditch width	m	1.0	1.0
Total road width in-pit (one berm, one ditch)	m	23.7	17.7
Total road width ex-pit (two berms, one ditch)	m	28.3	22.3

16.8.3 Open Pit Optimization

Datamine NPV Scheduler™ software was used to generate a series of nested shells using the Lerchs-Grossman Algorithm. As discussed in Section 16.4.2, an NSR was used in mine optimization. Due to the presence of POX material within the open pit areas, copper recovery was calculated as a function of the block oxide ratio. Optimization input parameters are summarized in Table 16-11.

Table 16-11: Open Pit Input Parameters

Open Pit Optimization Input	Unit	Value
Metal Prices		
Cu Price	US\$/lb	3.10
Au Price	US\$/oz	1,500
Ag Price	US\$/oz	18.00
Exchange Rate	C\$:US\$	0.76
Recovery to Cu Concentrate		
Cu Recovery	%	Variable see Note
Au Recovery	%	75.0%
Ag Recovery	%	75.0%
Concentrate Grade		
Cu	%	34.0%
Au	g/t	variable with Cu
Ag	g/t	variable with Cu
Moisture Content	%	8%
Smelter Payables		
Cu Payable	%	95%
Min. Cu deduction	% Cu/tonne	1%
Au Payable	%	77%
Min. Au deduction	g/t concentrate	1.0
Ag Payable	%	77%
Min. Ag deduction	g/t concentrate	30.0
Treatment & Refining Costs		
Cu TC	US\$/dmt con	62.00
Cu RC	US\$/payable lb	0.062
Au RC	US\$/payable oz	5.00
Ag RC	US\$/payable oz	0.40

Open Pit Optimization Input	Unit	Value
Transport Costs		
Transport Costs	US\$/wmt	123.10
	US\$/dmt	133.81
Royalties		
Royalties - Cu	%	1.5%
Royalties - Au	%	1.5%
Royalties - Ag	%	1.5%
Wheaton - Au	price cap US\$/oz	1,000
Wheaton - Ag	price cap US\$/oz	4.29
Operating Costs		
Open Pit Mining Cost (Contract Mining)	C\$/tonne mined	3.70
Processing Cost	C\$/tonne milled	19.00
G&A	C\$/tonne milled	18.08
Mining Parameters		
Production rate Mill	tpd milled	4,000
Production rate Mill	tpa milled	1,460,000
External Mining Dilution	%	6
Mining Recovery	%	95
Discount rate	%	8
Slope angles (overall)	Deg.	see Section 16.8.2.2

Notes:

Recovery formula for Copper calculated as:

$$\text{Recovery} = 0.955 + (0.0107 \times \text{Total Copper Grade}) - (1.13 \times \text{Oxide Ratio})$$

Where Oxide Ratio is defined as the ratio of Oxide Copper to Total Copper Grade

For more information regarding recovery formula, please see Section 13.2.

A series of nested shells and their respective Net Present Value (NPV) were generated by varying the revenue factor (price factor) applied to the base case value. The results were analyzed to select the ultimate pit for each deposit.

The optimization software produces both a best case (i.e., mine out shell 1, the smallest shell, and then mine out each subsequent shell from the top down before starting the next shell) and a worst case (mine each bench completely to final limits before starting the next bench) scenarios. These provide a bracket for the range of possible outcomes.

The results of the open pit optimization evaluation for Ridgetop are summarized in Table 16-12 and Figure 16-12, while the results for 118 are summarized in Table 16-13 and Figure 16-13. Note that the NPV in this optimization summary does not take into account capital expenditures and is used only as a guide in shell selection and determination of the mining shapes. For both deposits, the revenue factor 1 shell was selected as the ultimate pit shape. Phasing was not considered due to the short duration of open pit mine life.

Table 16-12: Overall Results of the Ridgetop Pit Optimization

LG Shells			Total Mill Feed					Material			Cashflows		
Pit	Revenue Factor	Life	Mill Feed	NSR	Cu	Cu	Au	Waste	Strip Ratio	Total	TCF	NPV Best	NPV Worst
(#)		(yrs)	(Mt)	(\$/t)	(%)	M lbs	(g/t)	(Mt)	(w:o)	(Mt)	(C\$M)	(C\$M)	(C\$M)
Pit 1	42%	0.0	0.00	147.07	2.31	0.03	0.21	0.0	1.6	0.0	0.0	0.0	0.0
Pit 2	44%	0.0	0.01	88.65	1.43	0.19	0.02	0.0	0.4	0.0	0.3	0.3	0.3
Pit 3	46%	0.0	0.02	105.53	1.70	0.74	0.03	0.1	2.7	0.1	1.2	1.2	1.2
Pit 4	48%	0.0	0.02	109.29	1.76	0.92	0.04	0.1	3.0	0.1	1.5	1.5	1.5
Pit 5	50%	0.0	0.03	102.44	1.65	1.11	0.03	0.1	2.6	0.1	1.8	1.8	1.8
Pit 6	52%	0.0	0.03	100.86	1.62	1.24	0.04	0.1	2.4	0.1	2.0	2.0	2.0
Pit 7	54%	0.0	0.04	98.77	1.59	1.36	0.03	0.1	2.3	0.1	2.2	2.2	2.2
Pit 8	56%	0.0	0.04	98.08	1.58	1.38	0.03	0.1	2.3	0.1	2.2	2.2	2.2
Pit 9	58%	0.0	0.04	98.12	1.58	1.46	0.04	0.1	2.3	0.1	2.3	2.3	2.3
Pit 10	60%	0.0	0.05	97.02	1.56	1.64	0.04	0.1	2.4	0.2	2.5	2.5	2.5
Pit 11	62%	0.0	0.05	96.77	1.55	1.74	0.04	0.1	2.5	0.2	2.6	2.6	2.6
Pit 12	64%	0.0	0.05	97.23	1.56	1.85	0.04	0.1	2.7	0.2	2.7	2.7	2.7
Pit 13	66%	0.0	0.06	95.88	1.54	1.96	0.04	0.2	2.7	0.2	2.8	2.8	2.8
Pit 14	68%	0.0	0.06	94.85	1.52	2.01	0.04	0.2	2.6	0.2	2.9	2.9	2.9
Pit 15	70%	0.0	0.06	94.38	1.51	2.02	0.04	0.2	2.6	0.2	2.9	2.9	2.9
Pit 16	72%	0.0	0.06	94.30	1.51	2.07	0.04	0.2	2.7	0.2	2.9	2.9	2.9
Pit 17	74%	0.0	0.06	94.20	1.51	2.14	0.04	0.2	2.7	0.2	3.0	3.0	3.0
Pit 18	76%	0.0	0.07	94.09	1.51	2.19	0.04	0.2	2.9	0.3	3.0	3.0	3.0
Pit 19	78%	0.0	0.07	94.61	1.52	2.27	0.04	0.2	3.1	0.3	3.1	3.1	3.1
Pit 20	80%	0.0	0.07	94.01	1.51	2.38	0.05	0.2	3.3	0.3	3.1	3.1	3.1

LG Shells			Total Mill Feed					Material			Cashflows		
Pit	Revenue Factor	Life	Mill Feed	NSR	Cu	Cu	Au	Waste	Strip Ratio	Total	TCF	NPV Best	NPV Worst
(#)		(yrs)	(Mt)	(\$/t)	(%)	M lbs	(g/t)	(Mt)	(w:o)	(Mt)	(C\$M)	(C\$M)	(C\$M)
Pit 21	82%	0.0	0.07	93.87	1.50	2.39	0.05	0.2	3.3	0.3	3.1	3.1	3.1
Pit 22	84%	0.1	0.07	93.32	1.50	2.43	0.05	0.2	3.3	0.3	3.2	3.1	3.1
Pit 23	86%	0.1	0.08	91.81	1.47	2.57	0.05	0.3	3.4	0.3	3.2	3.2	3.2
Pit 24	88%	0.1	0.08	90.00	1.44	2.69	0.05	0.3	3.5	0.4	3.3	3.3	3.3
Pit 25	90%	0.7	1.01	84.11	1.26	28.10	0.28	8.3	8.2	9.3	10.9	10.1	10.1
Pit 26	92%	0.7	1.06	83.39	1.25	29.16	0.28	8.6	8.1	9.6	11.2	10.4	10.3
Pit 27	94%	0.7	1.07	83.15	1.25	29.49	0.28	8.6	8.1	9.7	11.3	10.4	10.4
Pit 28	96%	0.7	1.09	82.75	1.24	29.79	0.28	8.7	8.0	9.8	11.3	10.5	10.4
Pit 29	98%	0.8	1.10	82.42	1.24	30.00	0.28	8.7	7.9	9.8	11.4	10.5	10.4
Pit 30	100%	0.8	1.14	81.49	1.22	30.74	0.27	8.9	7.8	10.0	11.4	10.5	10.4
Pit 31	102%	0.8	1.16	81.54	1.22	31.23	0.27	9.1	7.8	10.2	11.4	10.5	10.4
Pit 32	104%	0.8	1.16	81.41	1.22	31.37	0.27	9.1	7.8	10.3	11.4	10.5	10.3
Pit 33	106%	0.8	1.17	81.31	1.22	31.60	0.27	9.2	7.8	10.3	11.3	10.5	10.3
Pit 34	108%	0.9	1.26	80.39	1.21	33.57	0.26	9.9	7.8	11.1	10.9	10.1	9.8
Pit 35	110%	0.9	1.34	80.26	1.21	35.84	0.26	10.8	8.0	12.2	10.4	9.6	9.2
Pit 36	112%	0.9	1.36	80.26	1.21	36.26	0.26	11.0	8.1	12.4	10.3	9.5	9.1
Pit 37	114%	1.0	1.40	79.66	1.20	37.15	0.25	11.4	8.1	12.8	10.0	9.2	8.7
Pit 38	116%	1.0	1.43	79.58	1.20	37.75	0.25	11.6	8.1	13.0	9.7	8.9	8.4
Pit 39	118%	1.0	1.43	79.53	1.20	37.80	0.25	11.6	8.1	13.1	9.7	8.9	8.4
Pit 40	120%	1.0	1.43	79.49	1.20	37.88	0.25	11.7	8.1	13.1	9.6	8.9	8.3

Figure 16-12: Ridgetop Deposit Pit Optimization - Overall Summary

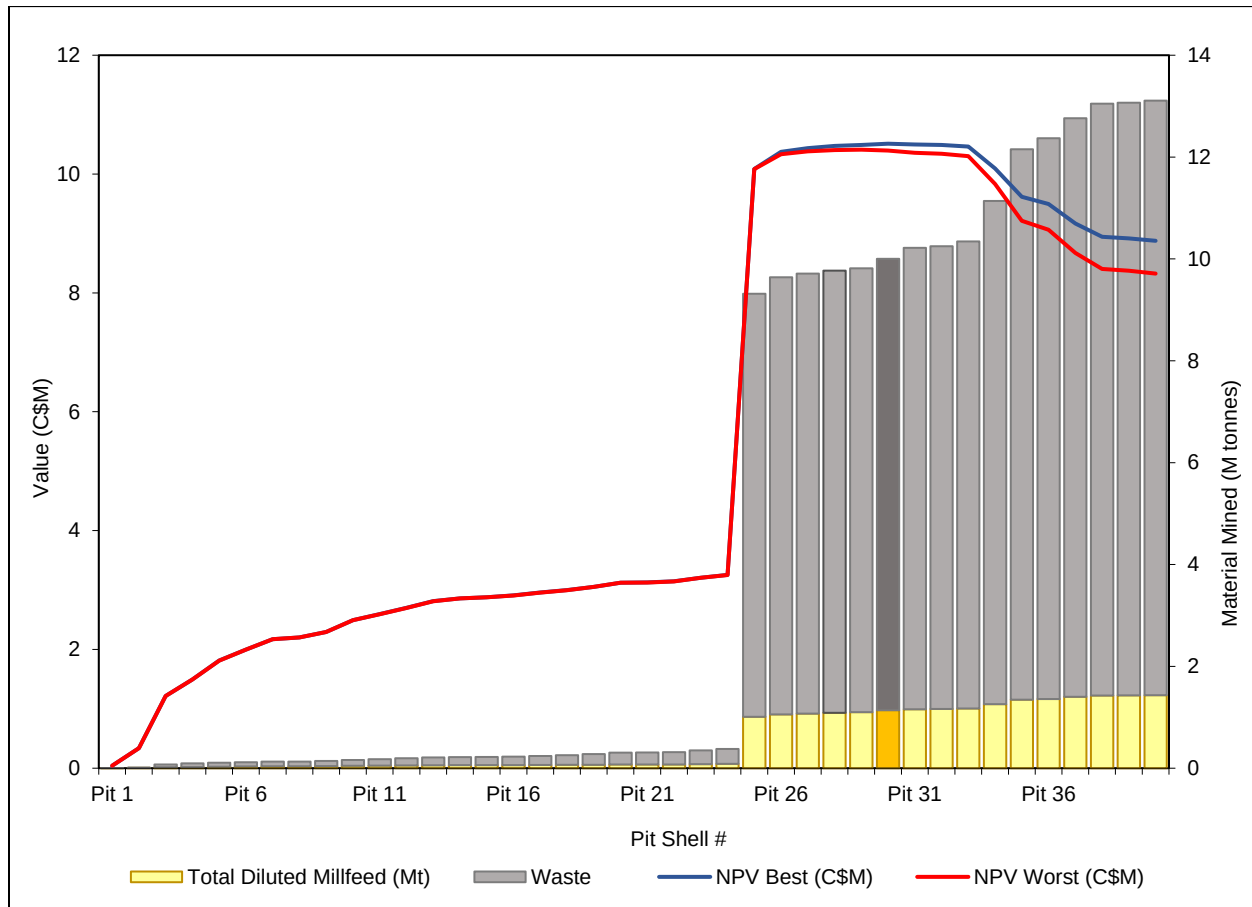
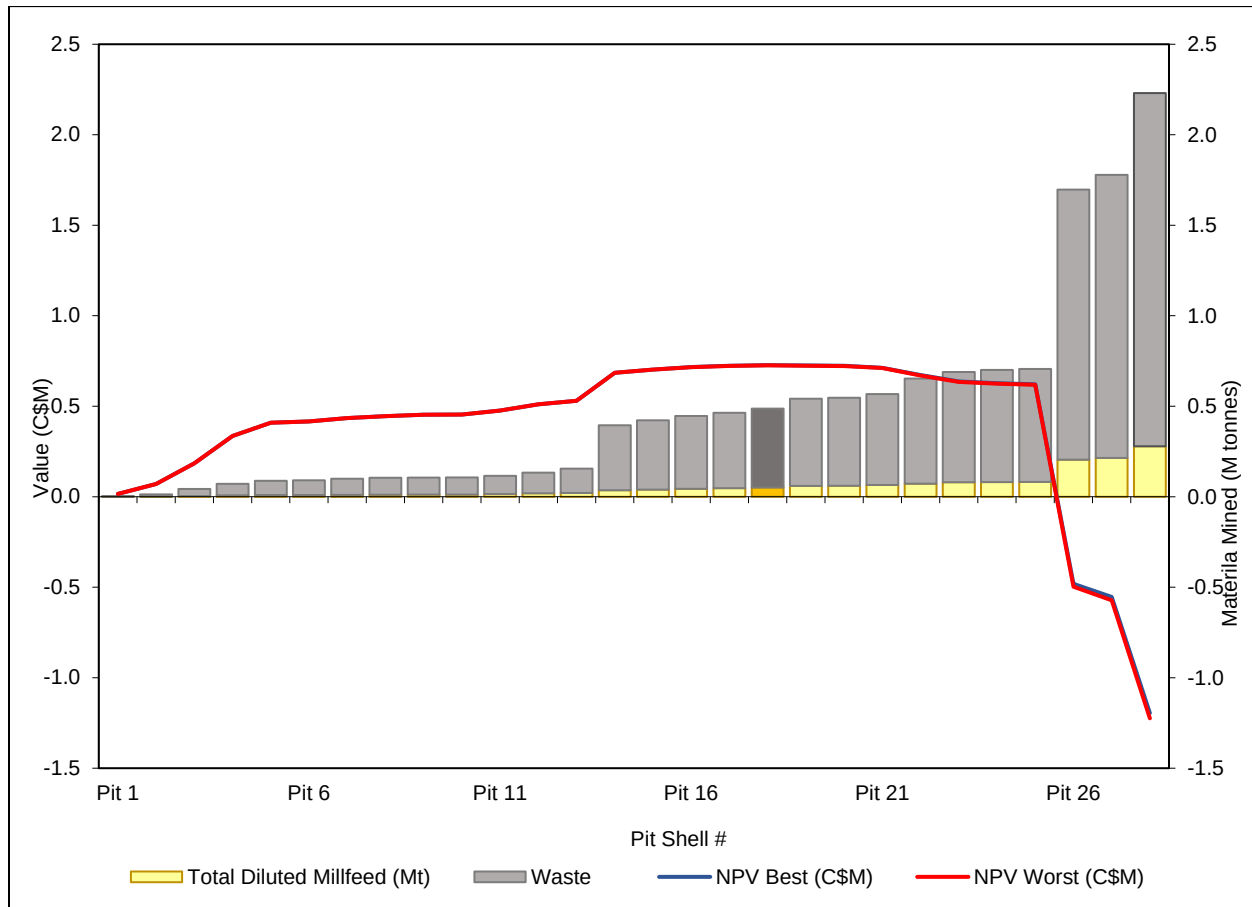


Table 16-13: Overall Results of the 118 Pit Optimization

LG Shells			Total Mill Feed					Material			Cashflows		
Pit	Revenue Factor	Life	Mill Feed	NSR	Cu	Cu	Au	Waste	Strip Ratio	Total	TCF	NPV Best	NPV Worst
(#)		(yrs)	(Mt)	(\$/t)	(%)	M lbs	(g/t)	(Mt)	(w:o)	(Mt)	(C\$M)	(C\$M)	(C\$M)
Pit 1	0.58	0.0	0.00	180.77	2.89	0.01	0.10	0.0	16.6	0.0	0.0	0.0	0.0
Pit 2	0.60	0.0	0.00	125.80	1.91	0.06	0.35	0.0	8.6	0.0	0.1	0.1	0.1
Pit 3	0.66	0.0	0.00	121.91	1.83	0.16	0.40	0.0	9.6	0.0	0.2	0.2	0.2
Pit 4	0.68	0.0	0.01	117.31	1.76	0.29	0.39	0.1	8.6	0.1	0.3	0.3	0.3
Pit 5	0.70	0.0	0.01	115.24	1.73	0.36	0.39	0.1	8.4	0.1	0.4	0.4	0.4
Pit 6	0.72	0.0	0.01	114.96	1.73	0.37	0.38	0.1	8.4	0.1	0.4	0.4	0.4
Pit 7	0.78	0.0	0.01	113.31	1.71	0.40	0.35	0.1	8.4	0.1	0.4	0.4	0.4
Pit 8	0.80	0.0	0.01	112.02	1.69	0.41	0.35	0.1	8.4	0.1	0.4	0.4	0.4
Pit 9	0.82	0.0	0.01	108.44	1.64	0.43	0.34	0.1	7.9	0.1	0.5	0.5	0.5
Pit 10	0.84	0.0	0.01	108.01	1.63	0.43	0.33	0.1	7.9	0.1	0.5	0.5	0.5
Pit 11	0.86	0.0	0.01	99.49	1.51	0.48	0.29	0.1	7.0	0.1	0.5	0.5	0.5
Pit 12	0.88	0.0	0.02	90.60	1.38	0.57	0.24	0.1	6.1	0.1	0.5	0.5	0.5
Pit 13	0.90	0.0	0.02	89.68	1.37	0.63	0.24	0.1	6.4	0.2	0.5	0.5	0.5
Pit 14	0.92	0.0	0.04	96.43	1.46	1.16	0.29	0.4	9.9	0.4	0.7	0.7	0.7
Pit 15	0.94	0.0	0.04	94.45	1.43	1.25	0.28	0.4	9.7	0.4	0.7	0.7	0.7
Pit 16	0.96	0.0	0.04	91.43	1.39	1.33	0.26	0.4	9.2	0.4	0.7	0.7	0.7
Pit 17	0.98	0.0	0.05	88.26	1.34	1.41	0.25	0.4	8.7	0.5	0.7	0.7	0.7
Pit 18	1.00	0.0	0.05	86.70	1.32	1.48	0.24	0.4	8.6	0.5	0.7	0.7	0.7
Pit 19	1.02	0.0	0.06	83.12	1.27	1.66	0.22	0.5	8.1	0.5	0.7	0.7	0.7
Pit 20	1.04	0.0	0.06	82.65	1.26	1.68	0.22	0.5	8.1	0.5	0.7	0.7	0.7

LG Shells			Total Mill Feed					Material			Cashflows		
Pit	Revenue Factor	Life	Mill Feed	NSR	Cu	Cu	Au	Waste	Strip Ratio	Total	TCF	NPV Best	NPV Worst
(#)		(yrs)	(Mt)	(\$/t)	(%)	M lbs	(g/t)	(Mt)	(w:o)	(Mt)	(C\$M)	(C\$M)	(C\$M)
Pit 21	1.06	0.0	0.06	80.56	1.23	1.75	0.21	0.5	7.8	0.6	0.7	0.7	0.7
Pit 22	1.08	0.0	0.07	80.16	1.22	1.93	0.21	0.6	8.1	0.7	0.7	0.7	0.7
Pit 23	1.10	0.1	0.08	77.10	1.18	2.07	0.20	0.6	7.7	0.7	0.6	0.6	0.6
Pit 24	1.12	0.1	0.08	76.87	1.17	2.10	0.20	0.6	7.7	0.7	0.6	0.6	0.6
Pit 25	1.14	0.1	0.08	76.63	1.17	2.11	0.20	0.6	7.6	0.7	0.6	0.6	0.6
Pit 26	1.16	0.1	0.20	65.37	1.02	4.62	0.10	1.5	7.3	1.7	-0.5	-0.5	-0.5
Pit 27	1.18	0.1	0.21	65.18	1.02	4.82	0.10	1.6	7.3	1.8	-0.6	-0.6	-0.6
Pit 28	1.20	0.2	0.28	62.38	0.98	6.01	0.09	2.0	7.0	2.2	-1.2	-1.2	-1.2

Figure 16-13: 118 Deposit Pit Optimization – Overall Summary



16.8.4 Mineralized POX Material Within Ridgetop Pit

As discussed in Section 13, the mineralized POX material within the Ridgetop Pit is impacted by low recoveries due to its oxide ratio. Further testwork and changes to process are required to improve the recovery of oxidized material therefore, a portion of POX material is not included as mill feed in mine planning.

To examine the impact of improved recoveries, the selected shell was evaluated using an average recovery of 85% (Table 16-14). The material above this revised cut-off is referred to as “Waste POX” and will be stockpiled separately such that it may be reclaimed for use as mill feed should improved recovery of oxide material be realized prior to closure.

Table 16-14: Ridgetop Summary of Material

Item	Unit	Value
Mill Feed		
POX	Mt	0.17
Cu grade	%	1.33%
Au grade	g/t	0.18
Ag grade	g/t	2.61
Ox Ratio	%	31%
Sulfide	kt	0.97
Cu grade	%	1.21%
Au grade	g/t	0.29
Ag grade	g/t	2.45
Ox Ratio	%	4%
Total Mill Feed	Mt	1.14
Cu grade	%	1.23%
Au grade	g/t	0.27
Ag grade	g/t	2.48
Ox Ratio	%	8%
Waste		
Waste POX	Mt	0.33
Cu grade	%	1.00%
Au grade	g/t	0.15
Ag grade	g/t	2.1
Ox Ratio	%	62%
Waste Other	Mt	8.53
Total Waste	Mt	8.86
Strip Ratio	w:o	7.80
Total Material	Mt	10.00

16.9 Open Pit Schedule

Contractor mining will be implemented to extract mineralized material from the open pits over a two-year period. Mining rates have been limited by vertical advance of a maximum 10 benches per year. Table 16-15 summarizes the annual open pit production.

Mining of the open pits have been timed such that they may be available for use as tailings storage. Open pit material will be used to supplement underground mill feed at a rate of

approximately 400 tpd. Mineralized material mined in surplus of this daily feed rate will be stockpiled and rehandled as required.

Table 16-15: Open Pit Mine Production Schedule

Item	Units	Total	2021	2022	2023	2024	2025
RIDGETOP							
Total Mill Feed	Mt	1.14		0.20	0.94		
Mill Feed NSR	\$/t	81.49		80.09	81.78		
Mill Feed Cu	%	1.22%		1.27%	1.22%		
Mill Feed Au	g/t	0.27		0.08	0.31		
Mill Feed Ag	g/t	2.48		2.05	2.57		
Mill Feed Oxide Ratio	%	8%		16%	6%		
Waste	Mt	8.86		5.43	3.43		
Strip Ratio	w:o	7.8		27.4	3.7		
118							
Total Mill Feed	Mt	0.05			0.05		
Mill Feed NSR	\$/t	91.45			91.45		
Mill Feed Cu	%	1.38%			1.38%		
Mill Feed Au	g/t	0.29			0.29		
Mill Feed Ag	g/t	3.35			3.35		
Mill Feed Oxide Ratio	%	10%			10%		
Waste	Mt	0.42			0.42		
Strip Ratio	w:o	8.7			8.7		
OPEN PIT TOTAL							
Total Mill Feed	Mt	1.19		0.20	0.99		
Mill Feed NSR	\$/t	81.89		80.09	82.25		
Mill Feed Cu	%	1.23%		1.27%	1.22%		
Mill Feed Au	g/t	0.27		0.08	0.31		
Mill Feed Ag	g/t	2.51		2.05	2.60		
Mill Feed Oxide Ratio	%	8%		16%	6%		
Waste	Mt	9.28		5.43	3.85		
Strip Ratio	w:o	7.8		27.4	3.9		

16.10 Open Pit Mine Equipment

It is expected that the open pits will be developed utilizing contractor equipment and labour. An estimate of equipment size and requirement has been included but may change depending on the selected contractor's available equipment fleet.

Open pits are mined in 8 m benches. Due to the size of the pits and potential for congestion, the vertical advance rate was limited to ten benches per year.

The production drilling in the mine can be completed efficiently utilizing one rotary drill with 165 mm diameter bit. A top-hammer drill with 114 mm diameter bit would be used for secondary blasting requirements and wall control.

The load and haul fleet were selected based on production requirement and bench geometry. A 11 m³ diesel hydraulic excavator will act as the primary loading unit, supported by a 7 m³ front-end loader (FEL). The FEL may also be used for stockpile rehandle as required.

The haulage fleet was selected to compliment the loading fleet and resulted in the final selection of trucks with a payload of 91 t. Haulage profiles were estimated annually for each material type (waste, mill feed, or mineralized stockpile) in order to calculate cycle times which were then used to determine operating hours and unit requirements.

Support and auxiliary equipment selection was made considering the size of primary haulage fleet, the duration of mining activity, as well as the roads which would be in operation at any given time.

The auxiliary fleet is comprised of track dozers, graders, and water trucks.

Table 16-16: Expected Open Pit Contract Equipment Requirements

Equipment Type	No. of Units
Drill (152-229 mm, Rotary, D50KS)	1
Drill (64-127 mm, TH, DX800)	1
Shovel (11 m ³ , 6020/PC2000)	1
FEL (13.0 m ³ , 993K)	1
Haul Truck (90.7 t, 777G/HD785)	4
Track Dozer (600 hp, D10/D375)	2
Grader (4.9 m, 16M/GD825)	1
Water Truck (773)	1

16.11 Mine Schedule

The objective of the mine schedule is to maintain high grade underground feed to the mill that allows for deferral of processing lower grade open pit material. Mine development is categorized into two types: Capital and Operating. Capital development occurs initially to sustain a production rate of 3,600 tpd from underground. Capital development also includes development which provides long-term access to a number of deposits and exploration platforms. Operating development is in-stope development.

Capital development was scheduled to:

- Provide access for trackless equipment;
- Provide ventilation and emergency egress;
- Establish the mineralized material and waste handling systems; and
- Install mining services.

The underground stope designs and open pit designs for the deposits are planned to optimize grade and tonnage to the mill. The underground will be mined at 3,600 tpd with the open pit material making up the remaining mill capacity.

The associated grades are summarized in Table 16-17 for both OP and UG.

Table 16-17: LoM Underground Production and Development Plan

Item	Units	Totals	2021	2022	2023	2024	2025	2026	2027	2028
TOTAL UNDERGROUND MINE PRODUCTION										
Mineralized Tonnes	tonnes	9,705,658	1,044,527	1,314,000	1,314,000	1,314,000	1,314,000	1,314,000	1,314,000	777,131
NSR Grade	\$/t	113.7	123.7	127.5	126.4	122.0	116.4	100.6	96.1	88.3
Cu Grade	%	1.35	1.53	1.55	1.46	1.39	1.35	1.24	1.15	1.05
Au Grade	g/t	0.58	0.52	0.61	0.72	0.72	0.65	0.43	0.47	0.44
Ag Grade	g/t	4.95	4.95	5.42	6.15	6.00	5.12	4.03	3.29	4.39
Production Rate	t/day	3,600	2,862	3,600	3,600	3,600	3,600	3,600	3,600	2,123
TOTAL LATERAL DEVELOPMENT										
Lateral Dev. Capital	m	19,423	2,418	3,681	3,003	5,324	2,035	1,583	1,183	194
Lateral Dev. Operating	m	38,260	2,625	4,374	5,589	3,529	6,700	5,448	7,511	2,483
Total Lateral Metres	m	57,682	5,043	8,055	8,593	8,854	8,735	7,032	8,694	2,677
Metres Per Day	m/day	24	14	22	24	24	24	19	24	7
TOTAL VERTICAL DEVELOPMENT										
Vertical Dev. Capital	m	1,533	49	387	318	126	233	107	298	15

Table 16-18: Underground Mine Production by Mining Zone

Item	Units	Totals	2021	2022	2023	2024	2025	2026	2027	2028
UNDERGROUND MINE PRODUCTION BY ZONE										
Mineralized Tonnes – Copper Keel	tonnes	4,010,698	1,044,527	836,554	547,850	18,976	405,956	372,251	649,462	135,124
Mineralized Tonnes – Minto East	tonnes	2,271,230			301,533	859,078	343,410	29,450	166,765	570,994
Mineralized Tonnes – Area 2	tonnes	1,297,502		116,882	308,219	106,212	352,076	323,930	19,169	71,013
Mineralized Tonnes – Ridgetop	tonnes	1,279,531					212,558	588,369	478,605	
Mineralized Tonnes – Minto North	tonnes	846,697		360,564	156,398	329,734				
Mineralized Tonnes – TOTAL	tonnes	9,705,658	1,044,527	1,314,000	1,314,000	1,314,000	1,314,000	1,314,000	1,314,000	777,131

Table 16-19: LoM Production and Mill Feed Schedule Summary by Year

Item		Units	Totals	2021	2022	2023	2024	2025	2026	2027	2028
UNDERGROUND MINE PRODUCTION											
POX	Mineralized Material	Mt	1.55		0.05	0.16	0.12	0.47	0.19	0.11	0.45
	Cu Grade	%	1.36%	1.53%	1.55%	1.51%	1.41%	1.21%	1.23%	1.14%	1.05%
	Au Grade	g/t	0.57	0.52	0.60	0.72	0.70	0.56	0.41	0.47	0.46
	Ag Grade	g/t	4.93	4.95	5.40	6.27	5.97	4.94	3.99	3.30	3.60
Sulfide	Mineralized Material	Mt	8.15	1.04	1.26	1.16	1.20	0.84	1.12	1.20	0.33
	Cu Grade	%	1.36%	1.53%	1.55%	1.51%	1.41%	1.21%	1.23%	1.14%	1.05%
	Au Grade	g/t	0.57	0.52	0.60	0.72	0.70	0.56	0.41	0.47	0.46
	Ag Grade	g/t	4.93	4.95	5.40	6.27	5.97	4.94	3.99	3.30	3.60
Total Underground	Mineralized Material	Mt	9.71	1.04	1.31	1.31	1.31	1.31	1.31	1.31	0.78
	Cu Grade	%	1.36%	1.53%	1.55%	1.51%	1.41%	1.21%	1.23%	1.14%	1.05%
	Au Grade	g/t	0.57	0.52	0.60	0.72	0.70	0.56	0.41	0.47	0.46
	Ag Grade	g/t	4.93	4.95	5.40	6.27	5.97	4.94	3.99	3.30	3.60
OPEN PIT MINE PRODUCTION											
POX	Mineralized Material	Mt	0.17		0.08	0.09					
	Cu Grade	%	1.32%		1.23%	1.39%					
	Au Grade	g/t	0.18		0.13	0.22					
	Ag Grade	g/t	2.61		2.42	2.77					
Sulfide	Mineralized Material	Mt	1.02		0.12	0.89					
	Cu Grade	%	1.22%		1.29%	1.21%					
	Au Grade	g/t	0.29		0.05	0.32					
	Ag Grade	g/t	2.49		1.81	2.59					

Item		Units	Totals	2021	2022	2023	2024	2025	2026	2027	2028
Total Open Pit	Mineralized Material	Mt	1.19		0.20	0.99					
	Cu Grade	%	1.23%		1.27%	1.22%					
	Au Grade	g/t	0.27		0.08	0.31					
	Ag Grade	g/t	2.51		2.05	2.60					
	Waste	Mt	9.28		5.43	3.85					
	Strip Ratio	W:O	7.82		27.4	3.9					
	Total Material	Mt	10.47		5.63	4.84					
MILL FEED SCHEDULE											
Underground Direct	Direct Feed	Mt	9.14	1.04	1.31	1.16	1.20	1.13	1.31	1.20	0.78
	Cu Grade	%	1.35%	0.17%	0.37%	0.19%	0.18%	0.28%	0.29%	0.15%	0.15%
	Au Grade	g/t	0.57	0.06	0.16	0.09	0.09	0.14	0.11	0.06	0.06
	Ag Grade	g/t	4.94	0.57	1.40	0.79	0.78	1.04	0.95	0.43	0.66
Underground Stockpiles	Stockpile Rehandle	Mt	0.57						0.15	0.26	0.16
	Cu Grade	%	1.30%						1.33%	1.33%	1.22%
	Au Grade	g/t	0.76						0.83	0.83	0.56
	Ag Grade	g/t	5.12						5.59	5.59	3.97
Open Pit Direct	Direct Feed	Mt	0.45		0.15	0.30					
	Cu Grade	%	1.23%		3.96%	1.69%					
	Au Grade	g/t	0.24		0.16	0.45					
	Ag Grade	g/t	2.37		5.67	3.63					
Open Pit Stockpiles	Stockpile Rehandle	Mt	0.74				0.26	0.33			0.15
	Cu Grade	%	1.23%				1.21%	1.21%			1.33%
	Au Grade	g/t	0.30				0.32	0.32			0.19
	Ag Grade	g/t	2.60				2.59	2.59			2.64

Item	Units	Totals	2021	2022	2023	2024	2025	2026	2027	2028
Total Mill Feed	Total Mineralized Feed	Mt	10.89	1.04	1.46	1.46	1.46	1.46	1.46	1.09
	Cu Grade	%	1.34%	0.17%	0.73%	0.50%	0.37%	0.49%	0.39%	0.47%
	Au Grade	g/t	0.54	0.06	0.16	0.17	0.13	0.18	0.18	0.15
	Ag Grade	g/t	4.68	0.57	1.82	1.38	1.11	1.39	1.41	1.43
STOCKPILE BALANCE										
Underground POX Stockpile	Rehandle to Mill	Mt	5.69					1.46	2.59	1.64
	Material to Stockpile	Mt	0.57		0.16	0.12	0.18		0.11	
	Added Cu Grade	%	1.30%		1.13%	1.18%	1.60%		1.17%	
	Added Au Grade	g/t	0.76		0.77	0.97	0.80		0.44	
	Added Ag Grade	g/t	5.12		5.21	6.30	5.44		3.23	
	Stockpile Closing Balance	Mt			0.16	0.27	0.46	0.31	0.16	
	Closing Cu Grade	%			1.13%	1.15%	1.33%	1.33%	1.22%	
	Closing Au Grade	g/t			0.77	0.86	0.83	0.83	0.56	
	Closing Ag Grade	g/t			5.21	5.68	5.59	5.59	3.97	
Open Pit POX Stockpile	Rehandle to Mill	Mt	0.15							0.15
	Material to Stockpile	Mt	0.15	0.05	0.09					
	Added Cu Grade	%	1.33%	1.23%	1.39%					
	Added Au Grade	g/t	0.19	0.13	0.22					
	Added Ag Grade	g/t	2.64	2.42	2.77					
	Stockpile Closing Balance	Mt		0.05	0.15	0.15	0.15	0.15	0.15	
	Closing Cu Grade	%		1.23%	1.33%	1.33%	1.33%	1.33%	1.33%	
	Closing Au Grade	g/t		0.13	0.19	0.19	0.19	0.19	0.19	
	Closing Ag Grade	g/t		2.42	2.64	2.64	2.64	2.64	2.64	

Item		Units	Totals	2021	2022	2023	2024	2025	2026	2027	2028
Open Pit Sulphide Stockpiled	Rehandle to Mill	Mt	0.59				0.26	0.33			
	Material to Stockpile	Mt	0.59			0.59					
	Added Cu Grade	%	1.21%			1.21%					
	Added Au Grade	g/t	0.32			0.32					
	Added Ag Grade	g/t	2.59			2.59					
	Stockpile Closing Balance	Mt				0.59	0.33				
	Closing Cu Grade	%				1.21%	1.21%				
	Closing Au Grade	g/t				0.32	0.32				
	Closing Ag Grade	g/t				2.59	2.59				

17 PROCESS DESCRIPTION / RECOVERY METHODS

17.1 Introduction

The processing plant at the Minto Mine was constructed in 2006-2007 and commercial production was declared in October 2007, after a four-month long commissioning period. The processing plant operated continuously until it was placed on care and maintenance in October 2018, following discontinuation of mining operations. The operation was acquired by the current owners, Pembridge Resources, and the processing plant was recommissioned in October 2019.

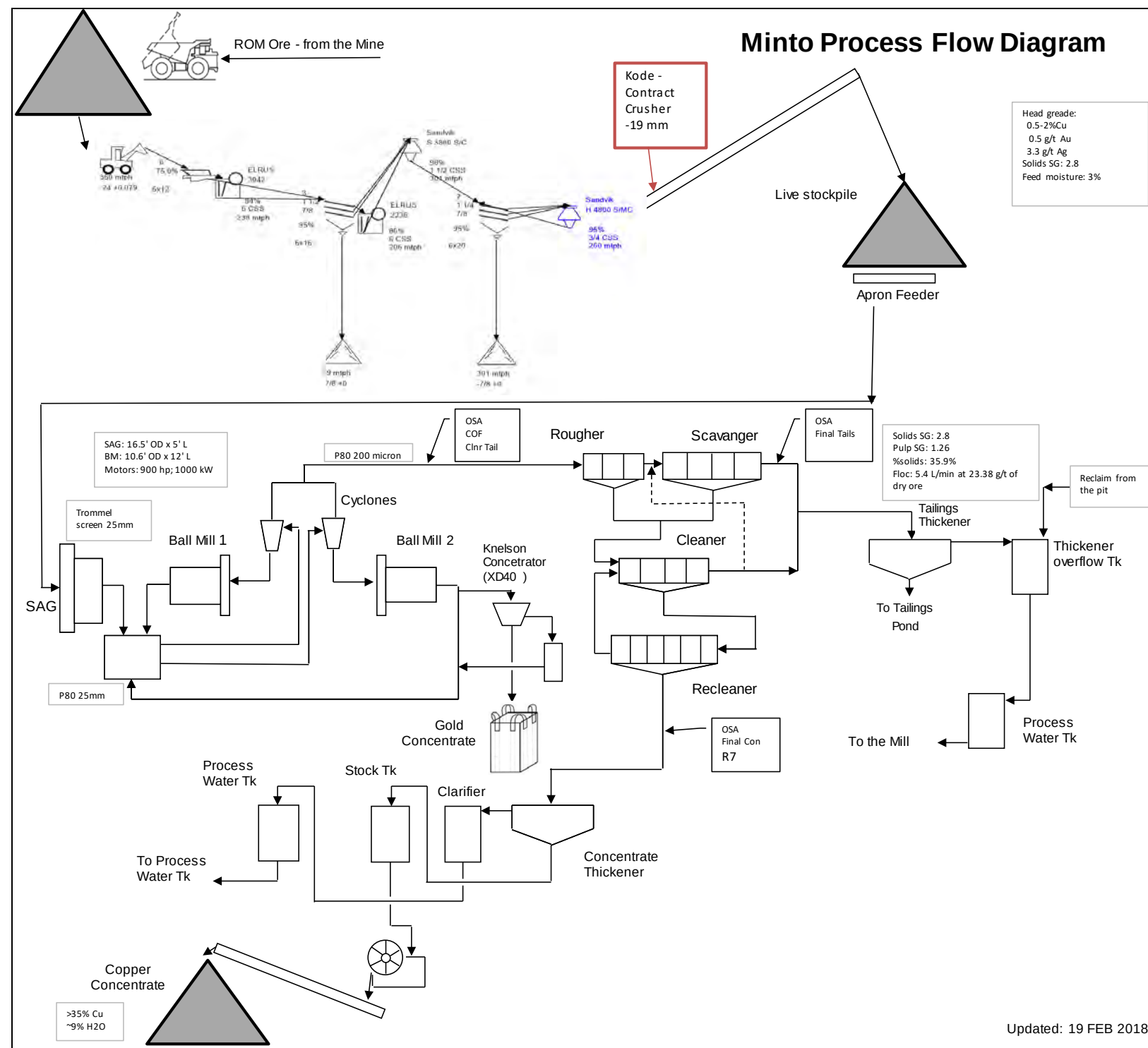
The Minto process plant design incorporates standard industry comminution, flotation and dewatering circuits to produce a final copper concentrate product. The plant was designed to achieve an availability of 92% and has demonstrated the capacity to process an average of 4,000 dry metric tpd with a peak operation at 4,400 tpd sustained over a few days.

Figure 17-1: Coarse Mill Feed to the Process Plant



Source: Minto (2018)

Minto Process Flow Diagram



Source: Minto (2018)

17.2 Process Plant Description

17.2.1 Crushing

Currently, at the Minto Mine, crushing is performed through a contract with Kode Contracting. Under the current contract, Minto is responsible for feeding into the contractor's crushing circuit, which will then crush 4,000 tpd of mineralized material to the target P_{100} of 19 mm. Prior to feeding into the circuit, Minto Mine employees remove any large pieces of metal from the mineralized material with an excavator.

The contract crushing circuit consists of an ELRUS 3042 Jaw Plant, 2 Cedar Rapids MVP 450 cone crushers, an Elrus 6x20 Screen Plant and the associated conveyor belts to move rock through the circuit. The mineralized material produced by the contract crushing plant is then conveyed by the Minto Mine stacking conveyor to the coarse mineralized material stockpile.

The Minto crushing plant, which is currently not operational, consists of a Westpro, 40"X50" jaw crusher powered by a 300 HP motor and an Elrus (Sandvik) S4800 cone crusher powered by a 300 HP motor. This circuit was sized to produce 3,000 tpd of the mineralized material at the original mill feed size of approximately 115 mm.

17.2.2 Grinding

The grinding circuit at the Minto Mine consists of a 16.5-foot diameter by 5-foot-long Semi-Autogenous Grinding (SAG) grinding mill powered by a 900 HP motor, two 12.5' diameter by 10' long overflow type ball mills, each with a 900 HP motor and two sets of 3 – 15 inch cyclones.

Material is fed to the SAG mill from the SAG feed conveyor, a 36" wide by 137-foot-long belt with a tonnage control system. The SAG mill is operated at a solids density of 77% Solids and uses a mixture of 5" and 3" steel grinding balls to reduce the particle size from a P_{80} of 12.7 mm to a P_{80} of 1.7 mm. The SAG Mill discharge slurry is then pumped to the cyclone feed pumpboxes for each of the ball mill circuits.

In the Ball Mill circuit, the SAG discharge slurry is combined with the Ball Mill discharge and water is added to achieve a density of 55% solids. The slurry is then pumped to the cyclones. The cyclone underflow is fed to the ball mill for further grinding at a density of 70% solids. The cyclone overflow from both mills is combined and fed to the rougher flotation circuit.

The grinding circuit produces a flotation circuit feed with particle size P_{80} of 250 μm and has a solids density of approximately 35% solids.

17.2.3 Flotation

The flotation circuit is comprised of 4 groups of flotation cells: Rougher, Scavenger, Cleaner and Re-cleaner.

Rougher flotation is conducted using three 1,350 ft³ tank cells each powered by a 75 HP motor. The rougher concentrate is pumped to the Cleaner circuit.

The rougher tailing is pumped to the Rougher-Scavenger circuit, a bank of four 500 ft³ flotation cells, each powered by a 40 HP motor. The Rougher-Scavenger concentrate is pumped to the cleaner circuit. The Rougher-Scavenger tailing is the final tailing from the flotation plant and is pumped to the tailings building.

The Cleaner circuit consists of a bank of four 350 ft³ tank cells each powered by a 25 HP motor. The Rougher concentrate, Rougher-Scavenger concentrate, and the Re-Cleaner tailings are combined in the Cleaner circuit feed. The cleaner concentrate is pumped to the Re-cleaner circuit. The Cleaner circuit tailings are gravity fed to the Rougher-scavenger circuit.

The Cleaner concentrate is pumped to a series of six 100 ft³ Re-Cleaner cells, each with a 15 HP motor. The re-cleaner concentrate is gravity fed to the concentrate thickener and dewatering circuit. The Re-Cleaner tailings are pumped to the Cleaner circuit.

Figure 17-3: Cleaner Circuit in the Plant



Source: Minto (2019)

The final product from the flotation circuit is a 35% Copper flotation concentrate.

17.3 Precious Metals Recovery

Currently, precious metals are recovered to the flotation concentrate as a by-product of flotation.

The Minto milling circuit includes a centrifugal “Knelson” concentrator which is currently not operational. The centrifugal concentrator works to concentrate gold by the difference in density between gold and the host rock, typically referred to as gravity separation. When operating, the Knelson concentrator will discharge a gold concentrate which will be pumped to the concentrate thickener.

The Knelson concentrator is located in the circulating load of the ball mill as is typical for this type of recovery device.

17.4 Concentrate Dewatering

The concentrate travels by gravity to an Outotec 9.4 m diameter Supaflo high-rate thickener. The concentrate is thickened to approximately 70% solids density. The concentrate is pumped to a 55 m³ stock tank prior to filtering.

The concentrate is pumped from the concentrate stock tank to a Larox 30 m² ceramic filter with 10 discs for a total filter area of 300 m². The dewatering rate averages 25-30 t/h with a typical product moisture content of 7 - 8 %.

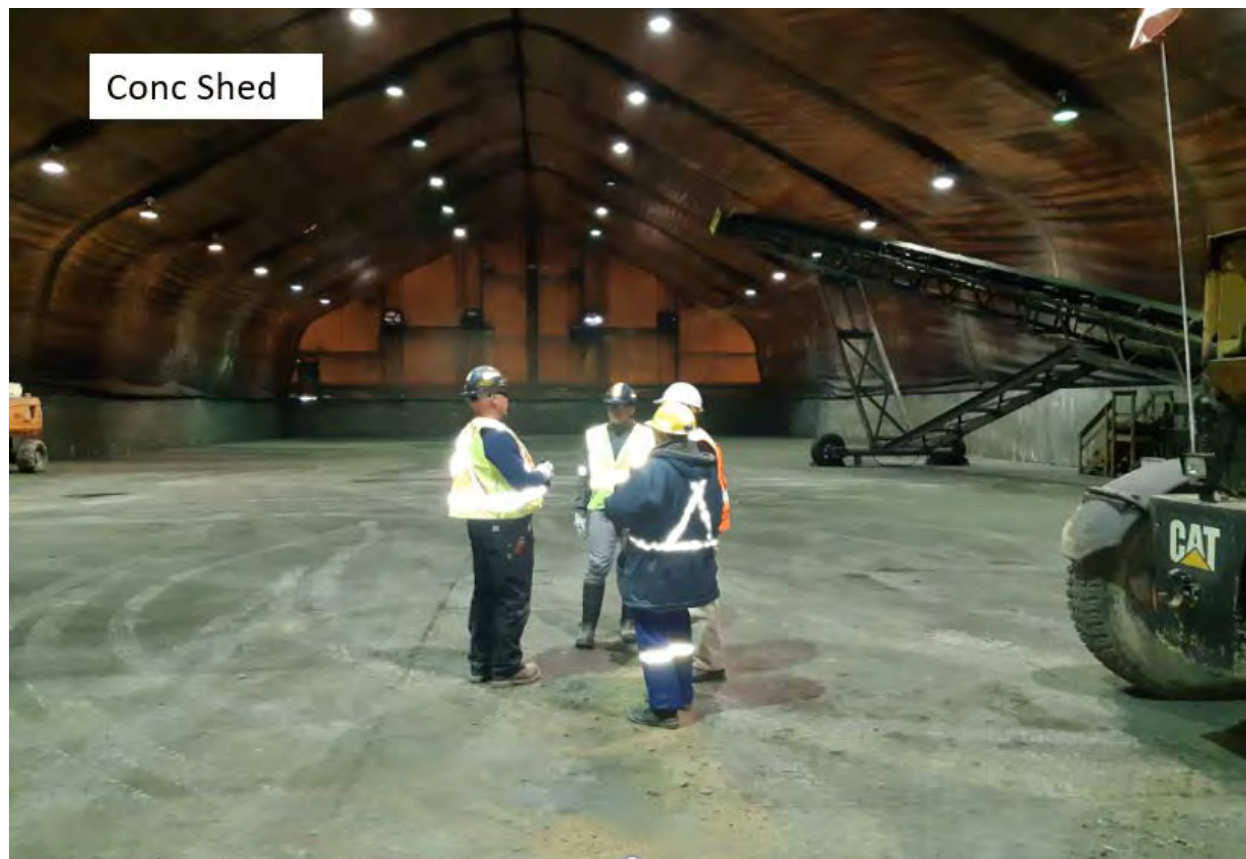
The filter cake is transported to a concentrate storage shed via a 24” by 38’ long concentrate discharge conveyor powered by a 15 HP motor. The concentrate storage shed has a capacity for storing 18,000 t of flotation concentrate.

The concentrate is loaded into 25 or 50 t trucks and transported to Skagway, Alaska from which it is shipped to market. The road to access site crosses the Yukon river and concentrate transport is halted 2x per year for approximately 6 weeks each while the crossing is switched from summer to winter operation and vice versa.

17.5 Tailings

The flotation tailings reports to the tailings thickener, which moderately thickens the tailings prior to discharging into the Minto pit. The amount of thickening is governed by the level of the process water tank. If the tank is low, then the tailings will be thickened to direct the thickener overflow water to the process water tank. When the process water tank level is adequate, the tailings thickener underflow will be pumped faster reducing the thickener overflow.

Figure 17-4: Concentrate Storage Facility



Source: Minto (2018)

17.6 Plant Consumables

17.6.1 Water

Water used for mineral processing is provided from the mill pond, tailings thickener, and the water storage dam. After processing is complete, water exits the mill through concentrate, tailings, and the mill pond. Water extracted from the dry-stack tailings facility is sent to the water treatment plant where the water is treated and released into the environment.

Seepage water is pumped back up to the Main Pit where they are discharged into the water stored in the Main Pit.

The current plan is to process excess water through the Water Treatment Plant for several months each spring, summer and fall and then discharge the treated water into Minto Creek.

17.6.2 Power

Power is supplied to the mine site from the local power grid. The mill typically consumes 4.5 MW in the summer months and 6 MW in the winter months. The difference in power consumption between the summer and winter months is assumed to be used to generate heat for the buildings since there is no significant change in process from summer to winter. The processing plant typically uses approximately 24.84 kWh/t of mineralized material fed to the mill.

17.6.3 Reagents and Grinding Media

The reagent and grinding media consumptions can be found in Table 17-1.

Table 17-1: Typical Process Plant Consumables Rates

Item	Unit	Amount
SAG Mill Balls	kg/t	0.255
Ball Mill Balls	kg/t	0.680
Flotation Collector (PAX)	kg/t	0.162
Frother (MIBC)	kg/t	0.015
Lime	kg/t	0.019
Concentrate Flocculant (Quadra 4330)	kg/t	0.004
Tailings Flocculant (Polyclear A2501)	kg/t	0.010
Nitric Acid	l/t	0.017
Antifreeze	kg/t	0.320
Thickening Aid/Defoamer	kg/t	0.001

17.7 Process Controls

The process plant is operated from a central control room that overlooks the SAG Mill, Ball Mill 1, and Re-Cleaner circuits. The control system utilizes a Wonderware Human Machine Interface (HMI). The process plant contains a high level of automation allowing the circuits to be run by small crew of operators.

17.8 Plant Design Criteria

Table 17-2: Process Design Criteria

Criteria	Description	Units	Design
Plant Throughput		tpd	4,000
		Mt/a	1.46
Crusher Availability		%	70
Crusher Throughput		t/h	238
Crusher Selection		Size	C411/CH840i
		Number	1/1
Mill/Flotation Availability		%	92
Mill Throughput		t/h	181.2
Physical Characteristics	BWI	kWh/t	16
Primary Grind Size	P ₈₀	µm	250
Head Grade (Ave/Max)		% Cu	1.34
		% Oxide Copper	0.10
		g/t Au	0.54
		g/t Ag	6.68
Flotation Recovery	Copper	%	88.2
(Average Au recovery in Cu Concentrate	Gold	%	73.3
	Silver	%	82.1
Concentrate Grade	Copper	%	35
Cu Circuit Residence time	Roughers	mins	17
	Rougher Scavenger	mins	9
	Cleaner	mins	62
	Re-Cleaner	mins	44
Cu Concentrate Filtration Rate		kg/m ² /h	465
Concentrates Thickening Flux		t/m ² /h	0.4
Tailings Thickening Flux		t/m ² /h	1.25
Tailings Thickener Underflow Density		% w/w	35 - 60

17.8.1 Process Plant Personnel

Table 17-3: Process Plant Personnel

Position	Staff/Hourly	Quantity
Process Plant		
Operations & Maintenance		
Mill Director	Staff	1
Mill General Foreman	Staff	1
Mill Shift Foreman	Staff	4
Grinding Mill Operators	Hourly	4
Control Room Operators	Hourly	4
Flotation Operators	Hourly	4
General Labourers (Shared)	Hourly	4
Maintenance Superintendent	Staff	2
Maintenance Planner	Staff	1
Maintenance Supervisor (Electrical, Site Services, Mechanical)	Staff	6
Maintenance (Mechanical)	Hourly	8
Maintenance (Electrical and Instrumentation)	Hourly	5
Maintenance (Site Services)	Hourly	8
Maintenance (Seasonal)	Hourly	2
Subtotal - Operations & Maintenance		54
Process Technical Services		
Senior Metallurgical Engineer	Staff	2
Assay Technicians	Hourly	2
Sample Preparation	Hourly	2
Subtotal - Process Technical Services		6
Total Process Plant Personnel		60

18 PROJECT INFRASTRUCTURE AND SERVICES

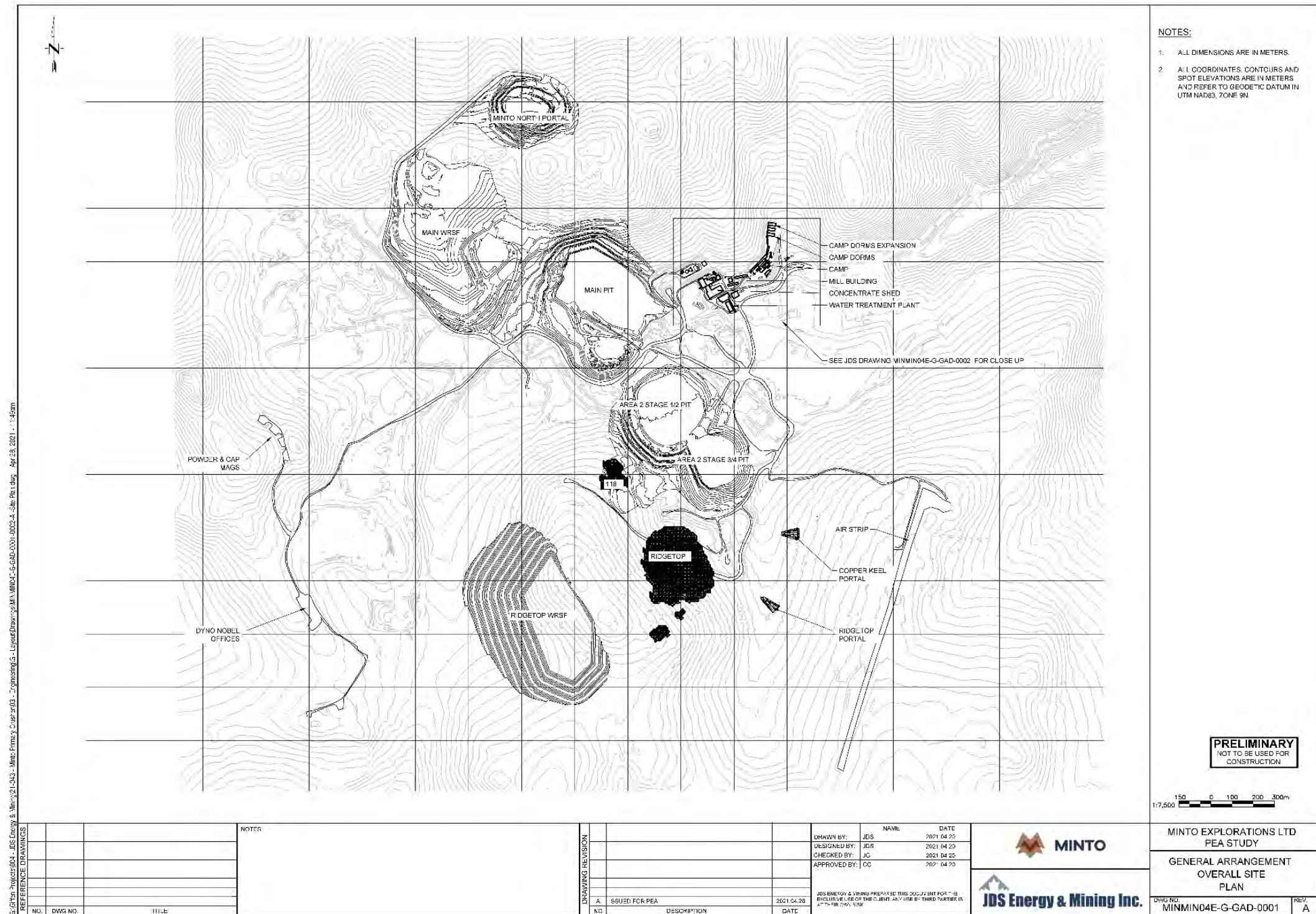
18.1 General Site Arrangement

The Minto mine was originally constructed in 2007. Limited new infrastructure will be required to support the continued operation of the Mine, and the Project will continue to make use of the existing infrastructure including the processing plant, site access and airstrip, camp facilities, maintenance and storage facilities along with bulk fuel storage and explosive storage.

Existing infrastructure to be expanded include the Mine Waste management facilities along with the tailings facilities. Additional camp facilities and power supply facilities will also be included, to meet the increase project demand.

The site layout has been designed to minimize any additional land disturbance beyond the existing operations, while maintaining operational efficiency. The existing infrastructure will be utilized to the maximum extent possible. An overview of the site layout (that includes proposed Ridgetop and 118 open pits and waste rock storage facility) is shown in Figure 18-1.

Figure 18-1: Site Layout



18.2 Site Access

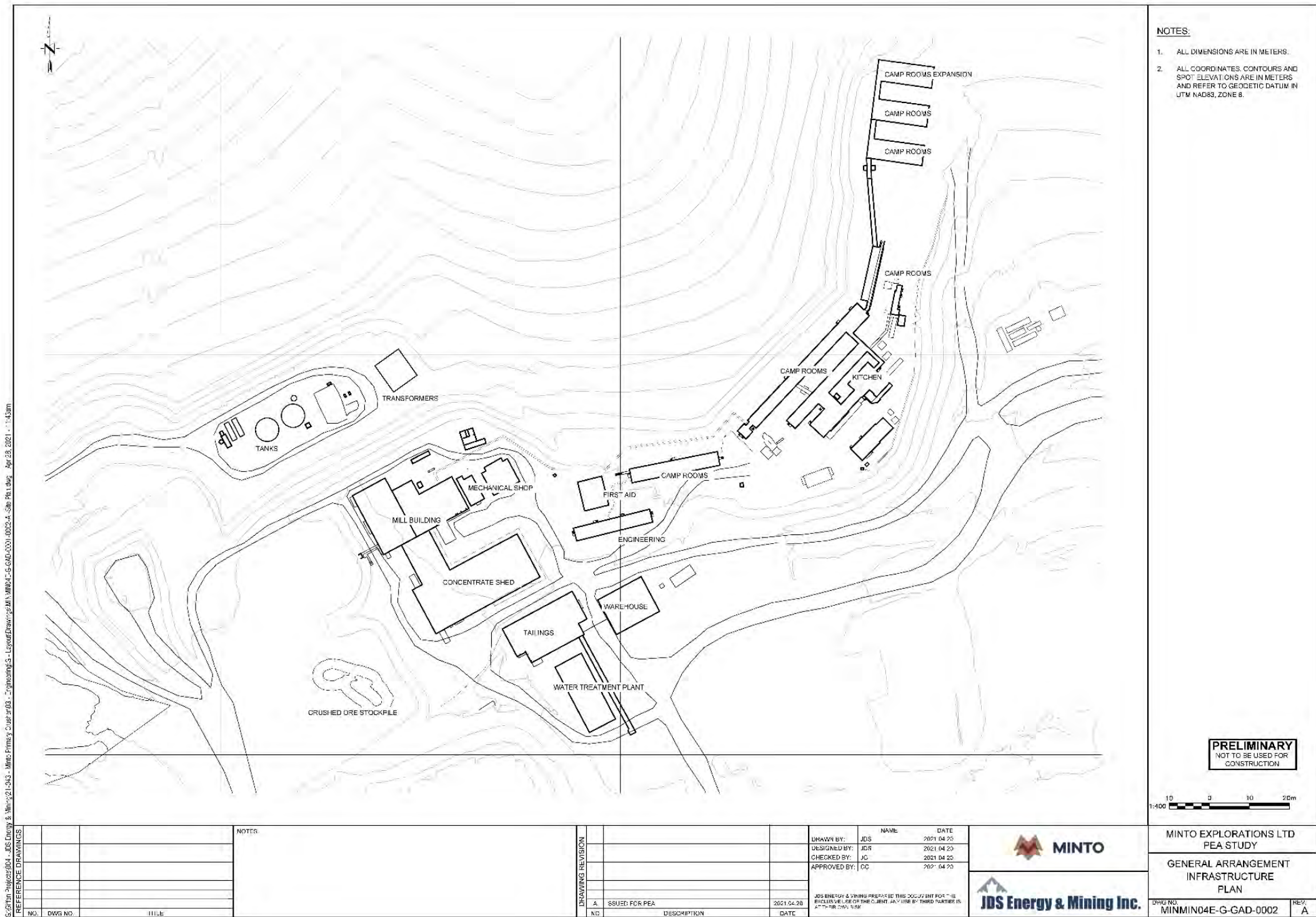
The site is accessed via existing airstrip year round. There is also an access road, which connects the site to Carmacks and Whitehorse. The road crosses the Yukon river, where an ice bridge or ferry crossing connect to the site during the winter and summer months respectively. During spring breakup and Autumn freeze up, there are 6 and 8 week periods where the site is only accessible by air.

18.3 Buildings and Structures

The Minto site has been an operating mine since 2007 and has a very well developed and operating infrastructure. An overview of the buildings and structures are provided in Figure 18-2. The existing on-site infrastructure on the site include:

- Process building;
- Filter Plant building;
- Concentrate storage shed;
- Crusher and crusher conveyor;
- Assay lab;
- Mill warehouse;
- Mechanics & Electricians shops;
- On site roads;
- Airstrip;
- River ferry and landing site; and
- Fire engine and medical area.

Figure 18-2: Site Infrastructure



18.3.1 Camp and Camp Services

The existing workforce camp at the Minto Mine consists of eight single-story modular housing units capable of housing a total of 160 people. Renovations are planned to upgrade an additional 35 rooms, that were previously used by the site, which are currently not in use, bringing the total to 195 rooms. An additional 40 dorm rooms will be mobilized to site, to make up the additional rooms required to support the LoM plan.

Selkirk Towers housing units consist of individual sleeping rooms with their own bathrooms in each room. Capstone and Minto housing units consist of individual sleeping rooms with common showers, washrooms, and recreation areas. The building houses the kitchen and dining hall originally designed for a 60-person camp. A separate building has been provided to serve as a gym and other recreation facilities is provided as extension of the housing buildings. Most of the buildings are connected by interior corridors except some of the outlying buildings. Domestic and fire water are provided from a well and storage tank system located in the camp area. Sewage is directed to septic tanks connected to two septic fields that are currently operating at maximum capacity. Power for the camp is provided from the main sub-station via a transformer located in the camp area.

Figure 18-3: Camp and Infrastructure



Source: Minto (2021)

18.3.2 Fuel Storage

Diesel fuel is stored in diesel storage facility located just north of the process plant. Two, large tanks have a combined storage capacity of 3.2 million litres; sufficient for supplying open pit and underground mine equipment for several weeks as is required during freeze-up and break-up of the Yukon River. There are also twelve propane tanks across the site with a total capacity of 1.1 million litres.

Figure 18-4: Substation and Fuel Storage



Source: Minto (2021)

18.3.3 Concentrate Building

Concentrate storage shed on site is capable of holding 18,000 t of concentrate. Shipping from site stops in the fourth quarter, while the Yukon River freezes up and the ice bridge is built across the Yukon River and in the second quarter for spring break-up. Fall freeze-up and spring break-up periods last 6 to 8 weeks.

18.3.4 Warehouse and Mechanics Shop

The warehouse and mechanics shop are located beside the process plant. In addition, the contract mining company have set up an onsite workshop to maintain its mining fleet.

Figure 18-5: Warehouse Buildings



Source: Minto (2021)

18.3.5 Sewage Treatment Plant

The sewage treatment plant has the capacity to treat all sewage waste on the site, and tanks and piping flushed with clean water. Sewage is directed to septic tanks connected to two septic fields. The sewage treatment plant is currently operating at approximately 50% capacity and can accommodate the increase in camp capacity required to support the project.

Figure 18-6: Sewage Treatment Plant



Source: Minto (2021)

18.3.6 Explosives Plant Site

The ANFO facility is located at the production plant and powder magazine storage area. The explosives storage facility is run by the explosive's contractor, Dyno Nobel. The explosive magazine is located south west region of the mine site and is isolated from any main infrastructure.

18.3.7 Dry-Stack Tailings Building

The historic Dry-stack tailings building currently hold all the equipment required for 13.5 m diameter tailings thickener and five Lasta pressure filters used for dry-stack tailings. Once dry-stack tailings operations were completed in mid-2012, the pressure filters were decommissioned. The tailings thickener will be operational until the end of the mine life.

18.4 Power

Power is currently being supplied to the mine site from a 32 km, 34 kV power line from Minto Landing. The power supplier is the Yukon Energy Corporation. The current demand of the Minto Mine is approximately 6 MW in winter and 4.5 MW in summer.

The current mine's power is distributed from a YEC owned substation at 5 kV. The current system configuration utilizes a main switch room in the mill with two smaller switch rooms in the tailings building. Load capacity is based on the existing main transformer. The transformer has two temperature rise rating of 55c and 65c at 30c operating temperature. In this operating condition the transformer maximum MVA at 55c temperature rise is 6.6 MVA and 7.5 MVA at 65c temperature rise.

Previously, Minto was powered by diesel-power generators and continues to utilize these generators during electrical service disruptions. The current site power demand operates near the limit of what currently can be provided through the existing YEC substation and an additional 2 MW of diesel power are planned to meet the increased needs of the underground operation.

18.5 Water Management

18.5.1 Mill Pond and Water Storage Dam

The mill pond is located beside the process plant and has a capacity of 6,500 m³ of water storage capacity. The water storage dam is located approximately 1.5 km up the mine access road (down valley from the main Minto mill and camp site) and has a storage capacity of 270,000 m³ of water storage capacity. Both mill pond and water storage dam provide water to the process plant.

18.5.2 Water Treatment

The water treatment plant has an inflow capacity of 250 m³/hr. The RO (Reverse Osmosis) system can then create 210 m³/hr of clean water that can be discharged to the environment. The balance of 40 m³/hr will be discharged back to the source as this is the concentrated brine carrying the target elements identified in the Permit.

Figure 18-7: Reverse Osmosis Plants for Water Treatment



Source: Minto (2021)

18.6 Waste Rock Management

During the metal leaching and acid rock drainage investigations (for Phase IV Waste Management Strategy), a small portion of drill core samples from future Area 2 Stage 2 Pit were identified as having NP:AP<3. Due to large portion of the samples with NP:AP>3, it was concluded at that time that bulk disposal of waste rock was appropriate and that no allowance for separate NP:AP<3 material was required.

After Phase IV was under way, operational monitoring of Area 2 Rock in 2012 indicated that the portion of waste rock with NP:AP<3 was higher than anticipated from pre-production testing. To minimize the long-term risk of development of acidic leaching conditions and associated high metal loadings, the mine adapted the waste rock management strategy to include on-site classification, and separate storage of waste rock with NP:AP>3 and NP:AP<3.

For future Phase V/VI two independent methods were used to estimate saturated storage volumes that should be reserved for waste rock storage:

1. Review of production data from Area 2 Pit:
 - Based on samples collected and analyzed (on-site) from every blast hole beginning in August 2012; and
 - These indicated that roughly 17% of the waste rock assessed had NP:AP<3.
2. Creation of sulphur block model for Area 2 Stage 2, Ridgetop North, and Ridgetop South (previous designs):
 - Estimate sulphur grades for all rock within the pit shells and calculate the volume of rock that was both below ore grade for copper and higher than 0.3% total sulphur (rock with lower than 0.3% sulphur was found to correlate well with rock with NP:AP>3); and

- Indicated that roughly 13% of the waste rock assessed had NP:AP<3.

For this PEA an approach similar to point #2 above was used (using the sulphur block model). From these PEA level checks it seems that the Area 118 waste as well as portions of the underground waste have expected NP:AP ratios that may be greater than 3. The bulk of the waste rock therefore is expected to be able to be placed within surface storage locations. The waste rock strategy for this PEA that has been adopted is:

1. Deposition of waste rock that has an NP:AP ratio less than 3:1 within the pits (Main Pit, Area 2 pits, Minto North and Ridgetop); and
 2. Stockpiling of the remainder of the waste rock in the new Ridgetop Waste Rock Storage facility (located immediately west of the Area 118 and Ridgetop ultimate pit):
- Table 18-1 shows a summary of the waste rock tonnages and the new Ridgetop Dump is shown on Figure 18-1.

Table 18-1: PEA Waste Rock Tonnages

Deposit	Waste (t)
Open Pit (OP)	
Ridgetop	8,863,000
118	417,000
Subtotal OP	9,280,000
Underground (UG)	
Minto East	564,000
Minto North	131,000
Copper Keel	1,453,000
Ridgetop	319,000
Subtotal UG	2,467,000
Total	11,747,000

Source: SRK (2021)

Typically, the waste rock storage facilities have been designed using maximum 10 m bench heights, 10 m bench widths, and overall slopes of 3.5H:1V, with inter-bench operations slopes of 2.5H:1V or shallower.

Test pitting was completed in 2013 over most of the proposed Ridgetop waste rock storage facility footprint. This test pit information along, with the available site permafrost mapping, was considered when proposing the PEA Ridgetop waste footprints.

18.7 Tailings Management Facility

Mine development started in 2007, and at that time, tailings deposition consisted of filtered tailings deposited onto a dry-stack facility. The mine subsequently expanded and is currently operating under their Phase V/VI and have applications in for Phase VII mine plans. When the Phase IV water license was received, tailings deposition transitioned from dry stack tailings to thickened (50 to 60% solids by weight) hydraulic placement of tailings directly into the Main Pit. Since this time, and to current (2021), reclamation has started on the dry stack facility, and the Main Pit as well as the Area 2 pits have been the primary areas used for active tailings deposition.

To accommodate the mine plans, outlined in this PEA, additional storage capacity will be needed for storage of tailings water (operational and surge capacity) and waste rock with a neutralization potential to acid potential ratio value of less than 3 (NP:AP < 3). The latter (waste rock) discussed further in Section 18.6.

At least three physical tailings characterization campaigns have been carried out specifically focused towards understanding the tailings performance as it relates to the design of tailings deposition at the site (EBA 1997, Klohn Crippen Berger 2013, SRK 2012a and 2012b). This includes indicator properties (grain size distribution and Atterberg Limits), consolidation tests, settling tests, specific gravity, and strength and saturated hydraulic conductivity tests. In addition, there has also been characterization of the in-situ dry-stack tailings specifically to evaluate strength characteristics of the material (SRK 2012a and 2012b). The tailings can be classified as sand and silt with a trace of low plasticity clay.

Although the tailings deposition changed from dry-stack placement to hydraulically placed tailings into the Main Pit and Area 2 pits over the period of operations to date, the actual tailings physical properties have not notably changed and therefore the available database of information is seen to remain valid. Additional updated tailings characterization is expected to be carried out by Minto in 2021 however, for this PEA, the historic and available tailings information where used. Table 18-2 provides an overview of the tailings properties used for this PEA.

Table 18-2: Adopted PEA Tailings Properties

Physical Property	Value	Source
Tailings Specific Gravity (SG)	2.72	Tailings Physical Characterization Testing – Specific Gravity (KCB 2013)
Tailings Solids Content (Gravimetric)	55% (55 - 60%)	Tailings Physical Characterization Testing – Settling Test (KCB 2013).
Tailings Dry Density ¹	1.2 t/m ³ (1.1 – 1.3 t/m ³)	Tailings Physical Characterization Testing – Settling Test (KCB 2013).
Waste Rock Unit Weight	2.0 t/m ³	General. Assuming waste unit weight of 20 kN/m ³ .

Notes:

1. Calculated tailings dry unit weight is also 1.2 t/m³ (assuming 55% solids content and 2.72 S_G)

Source: SRK (2021)

Cyclone tailings is a new tailings management method proposed as part of this PEA to help optimize in-pit tailings storage volumes on site. The cyclone tailings would segregate the tailings slurry feed into two streams. These would be:

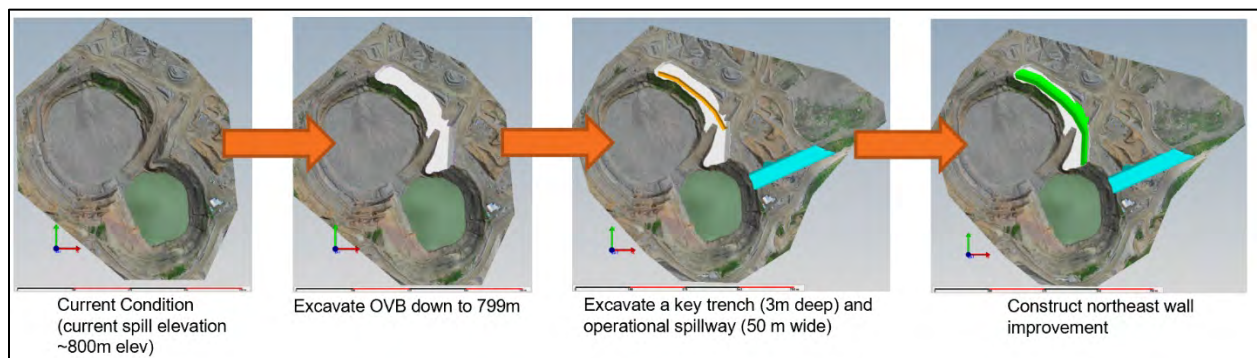
- Underflow – coarse and relatively dry tailings that can be used as a construction medium (PEA assumed density = 1.5 to 1.6 t/m³); and
- Overflow - very low solids content containing all the fines (PEA assumed density = 1.1 to 1.2 t/m³).

Preliminary review of Minto tailings grain size distribution suggested an underflow / overflow ration split (by mass) of 40% / 60% is likely to be attainable. Due to uncertainties in the exact tailings cyclone splits, sensitivities checks were done (example, also checked 30% / 70% splits) to ensure that proposed plans were still feasible. Additional testing to confirm exact tailings cyclone equipment and the expected underflow and overflow split is expected to be carried out on site in 2021 and will be incorporated by Minto into future tailings management plans.

Overall for this PEA the proposed tailings management approach includes:

1. **Continued Tailings Deposition into the Area 2 Pit.** This includes initial testing for tailings cyclones to help maximize in-pit storage volumes. This is done in two stages. The first stage includes utilizing the existing Area 2 pit as is, and the second (future) stage requires foundation improvement and construction of a containment dam 'plug' over the northeastern edge of the Area 2 pit. This northeast wall improvement is required for this second stage of tailings deposition at the Areas 2 pits. This is done to raise tailings deposition in the Area 2 pits up to elevation 802m (crest of northeast wall improved up to the 805m elevation). Figure 18-8 shows an overview of the proposed improvements to the northeast Area 2 pit walls proposed for this PEA.

Figure 18-8: Overview of Proposed Improvement to NE Wall of Area 2 Pits



Source: SRK (2021)

2. **Additional tailings deposition within Main Pit.** Engineering interventions in the form of the Phase 1 (crest elevation 812m) main pit containment dam has been proposed to be constructed to increase the capacity of the Main Pit. A Phase 2 raise to the Main Pit containment dam (raised to a crest elevation of 822m) is then proposed for later in the mine line as part of this PEA to further increase the capacity for tailings storage at the Main Pit. This second raise, for this PEA, is proposed to be completed from an centerline raise using the underflow of the cyclone tailings. As part of the Main Dam raise the vent raise around the location of this dam will need to be extended to ensure that it is not covered by the downstream dam fill.

The PEA proposed Main Pit dam has the following main characteristics (Table 18-3).

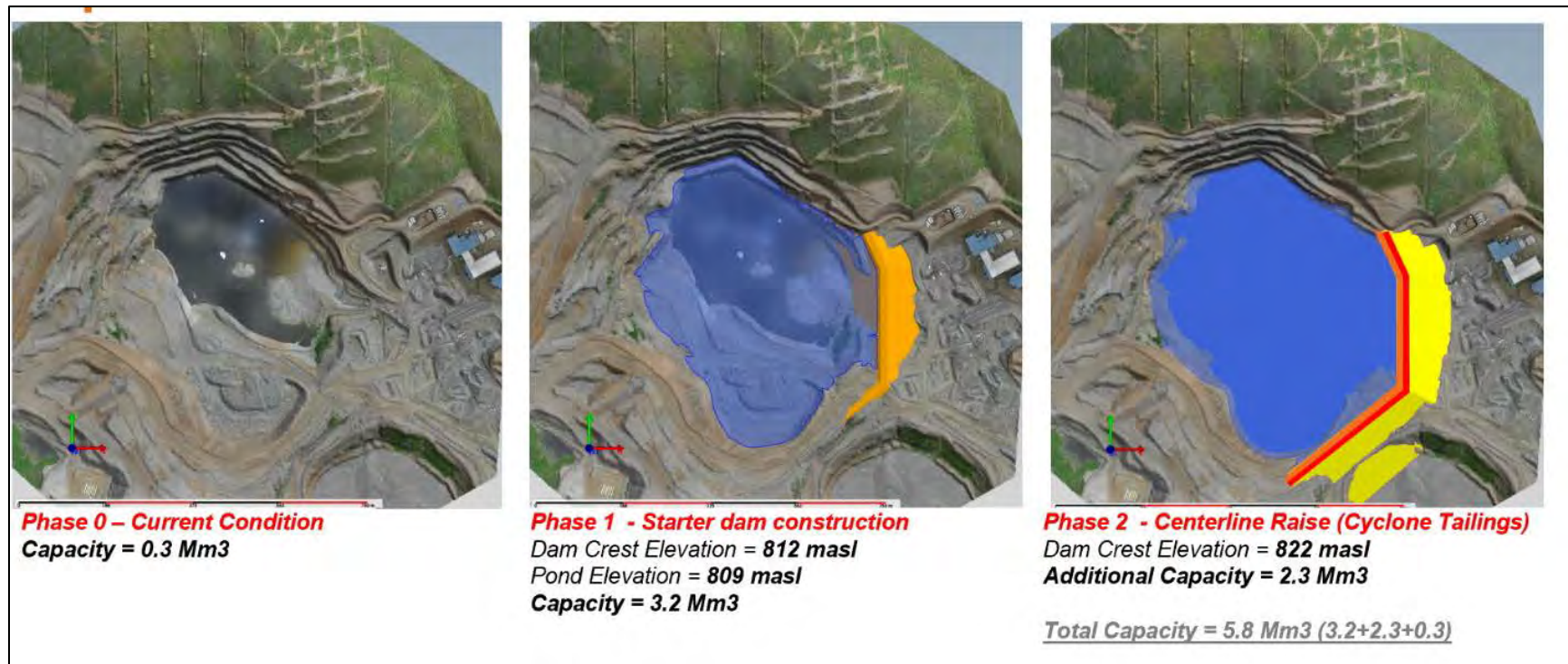
Table 18-3: Adopted PEA Tailings Properties

Main Pit Dam Element	Value
Overall	
Upstream Slope	2.5H:1V
Downstream Slope	3.0H:1V
Crest Width	14.5m
Phase 1 (downstream starter dam)	
Crest Elevation	812 masl
Top of Low Permeability Core	811 masl
Full Supply Level (assumed)	809 masl
Phase 2 (centerline cyclone raise)	
Crest Elevation	822 masl
Top of Low Permeability Core	821 masl
Full Supply Level (assumed)	819 masl

Source: SRK (2021)

Figure 18-9 presented an overview of the Main Pit dam raises and tailings deposition stages.

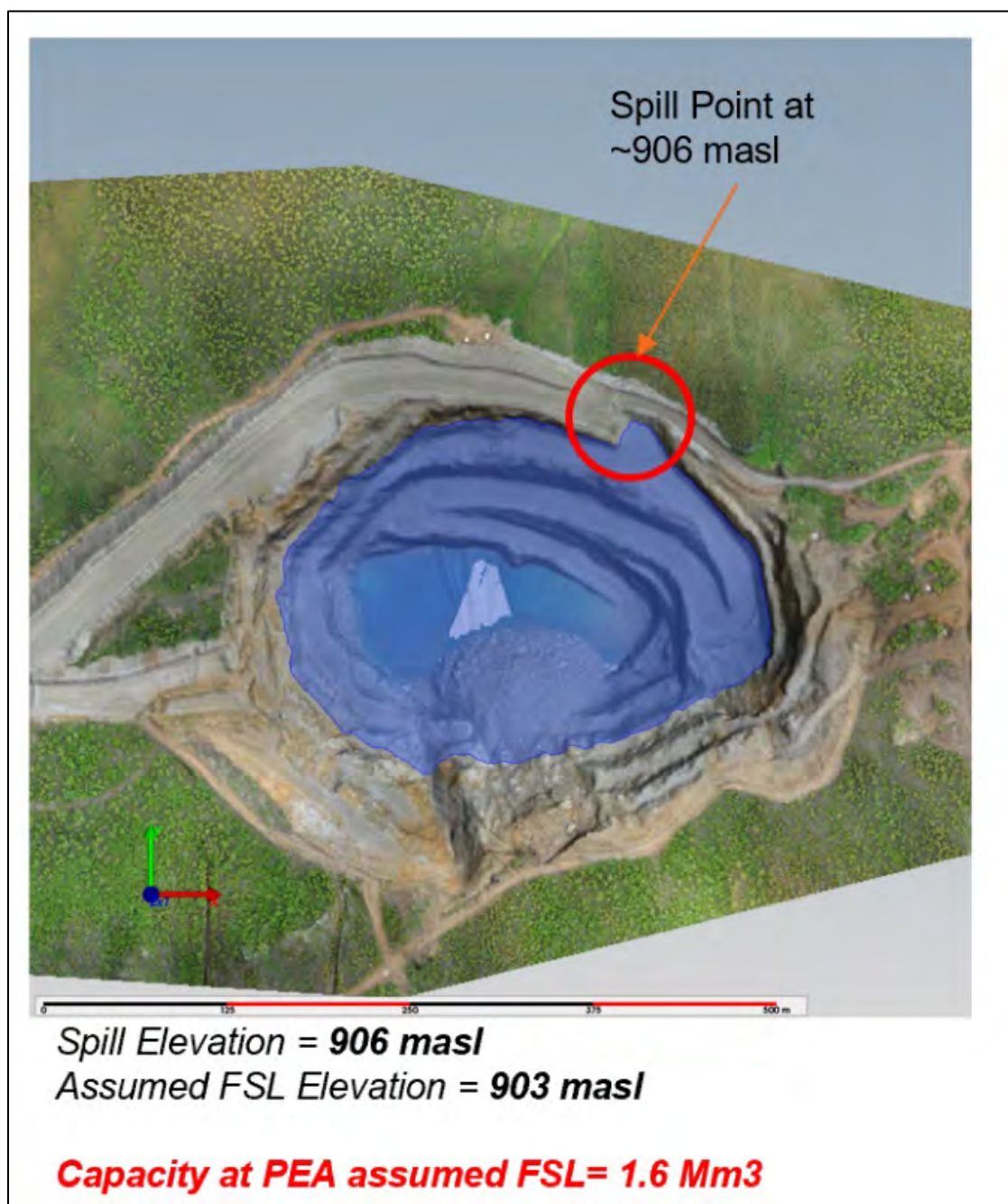
Figure 18-9: Overview of PEA Phases of the Main Pit Tailings Management



Source: SRK (2021)

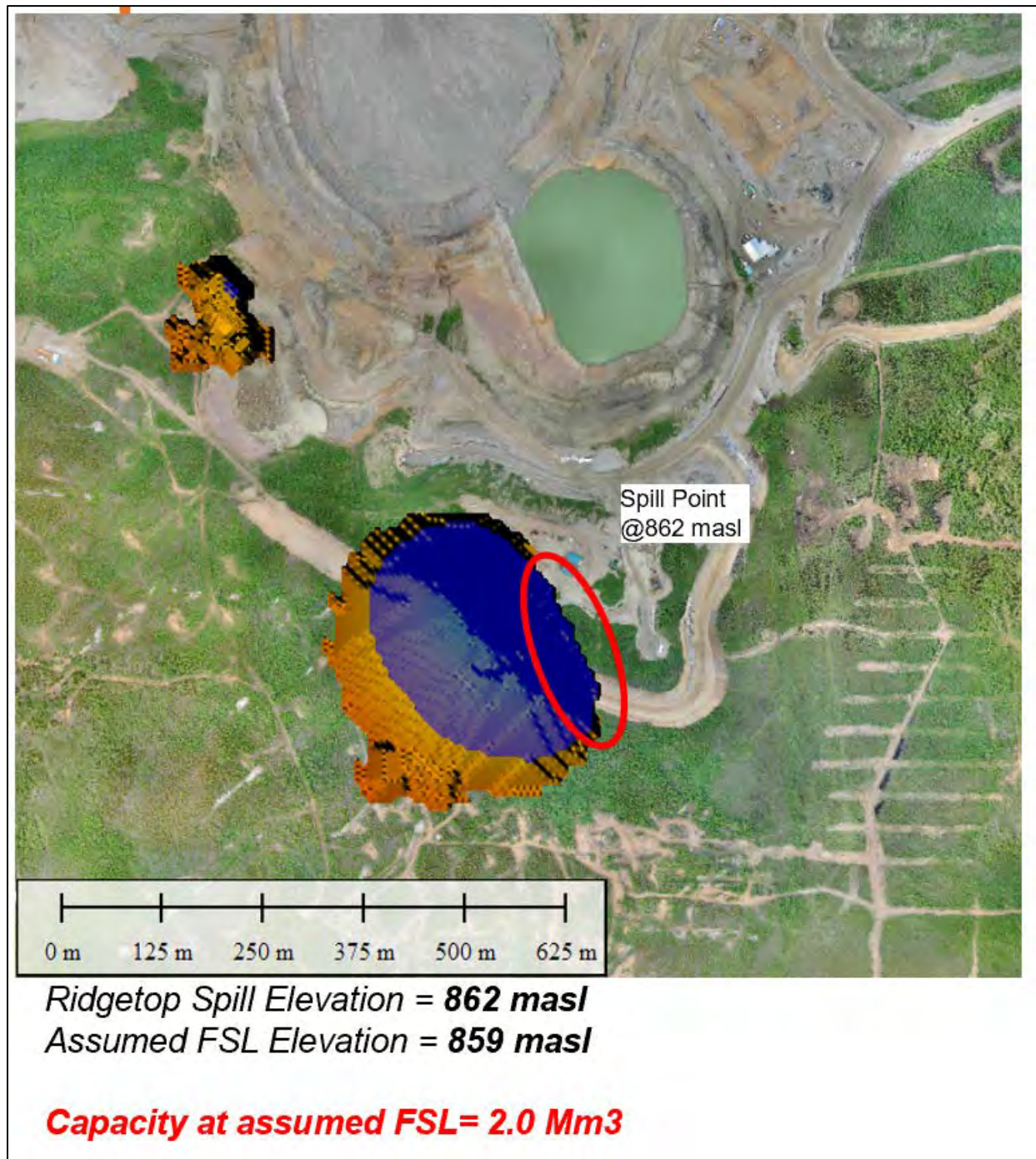
3. **Tailings Deposition in the Mined Out Minto North Pit.** See Figure 18-10 below.

Figure 18-10: Overview of Available Storage in Mined out Minto North Pit



Source: SRK (2021)

Figure 18-11: Overview of Available Storage in Mined out Ridgetop Pit



Source: SRK (2021)

During operation two spillways will also be required to be constructed. This will be a spillway from the Main Pit toward the Area 2 pits, and then a spillway from the Area 2 pits that would be set up to passively discharge to the ENE of the site. During operation these spillways are not planned to be used but they are put in place in case extreme precipitation events are experienced on site. For Closure the Area 2 spillway would be relocated to be directed more to the north and down the main Minto Valley (i.e., long term would not have any spillway discharging behind / to the south of the dry stack).

19 MARKET STUDIES AND CONTRACTS

19.1 Market Studies

The Minto copper concentrate is considered highly desirable by smelters due to its high copper grade and its low contaminant levels. These attributes enable the Minto concentrate to be sold at favorable smelter terms.

19.2 Copper Concentrate Sales

The copper concentrate is marketed and sold to metal traders, rather than to a particular smelter. The treatment and refining charges and deductions are comparable to standard international smelter charges, with a cost discount provided due to the premium quality of the concentrate. No deleterious penalty elements are included in the concentrate. This study assumes that long-term treatment charges will be US\$59.50/dmt of concentrate and refining charges will be US\$ 0.0595/lb of payable copper.

19.3 Precious Metal Price Contract

MintoEx sells most of its gold and all of its silver production to Wheaton Precious Metals. Under the terms of the agreement Minto receives 65% of the gold value up to a maximum of US\$1,250/oz for the first 2 years (commencing in 2021) and then 50% of the gold value up to a maximum of US\$1000/oz thereafter. The terms of the agreement state that if MintoEx produces in excess of 30,000 ounces of payable gold in any one twelve-month period (Excess Amount), Wheaton shall be entitled to purchase only 50% of that Excess Amount. Wheaton pays MintoEx US\$4.29/oz silver in 2021 and increases the payable amount by \$0.039/oz per year over the mine life.

19.4 Metal Prices

The precious metal markets are highly liquid and benefit from terminal markets around the world (London, New York, Tokyo, and Hong Kong). Historical gold and prices to the first quarter of 2021 are shown in Figure 19-1, Figure 19-2 and Figure 19-3.

For the project economic evaluation, with the current upward trend in metal prices, the selected long-term price was slightly higher than the current 3-year trailing average for all three commodities. The first 2 years of the project evaluation used higher prices coinciding closely with the 6-month and 2-year trailing averages. The selected Metal Prices of the three commodities used in the economic evaluation of the project compared to the trailing 3-year average are highlighted in Table 19-1.

Table 19-1: Project Evaluation Commodity Prices

Commodity		2021	2022	2023-LoM	3-year Trailing Avg
Copper	US\$/lb	3.40	3.25	3.10	2.88
Gold	US\$/oz	1850	1625	1550	1515
Silver	US\$/oz	24.00	21.00	18.50	18.25

Figure 19-1: Historical Copper Price



Figure 19-2: Historical Gold Price

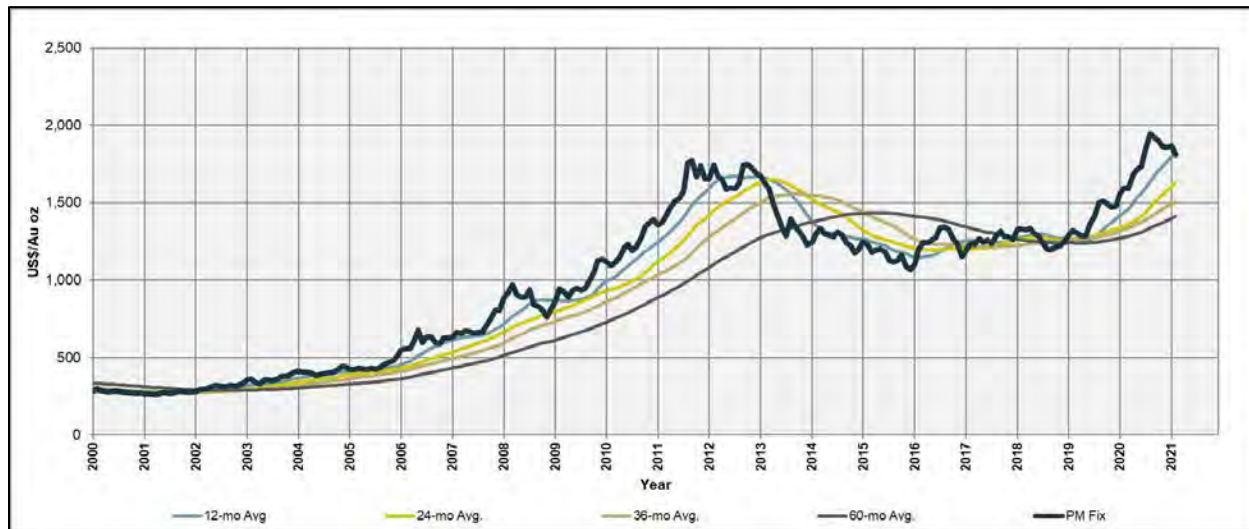
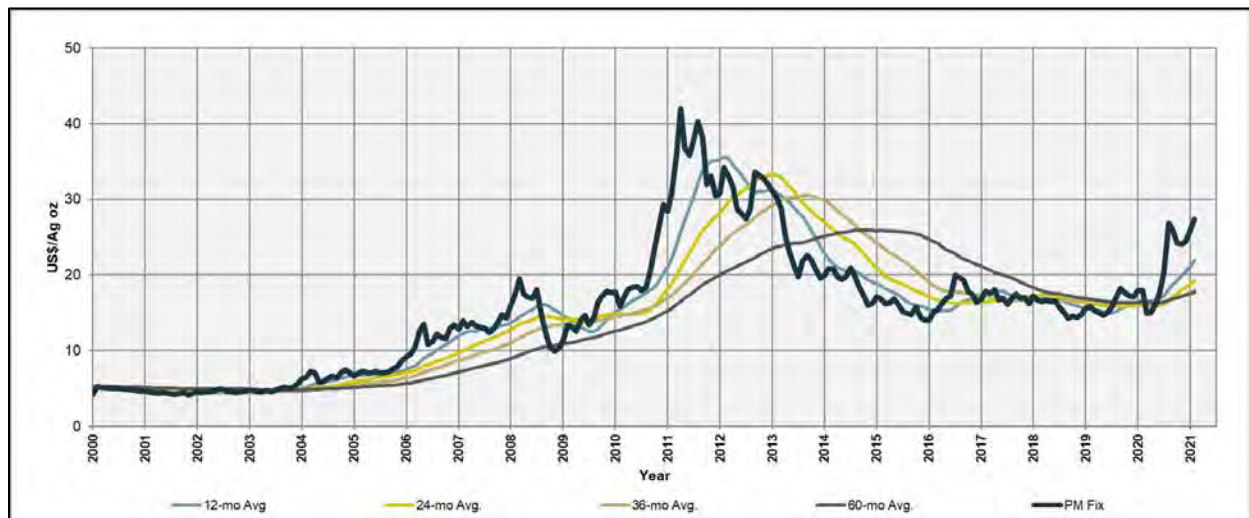


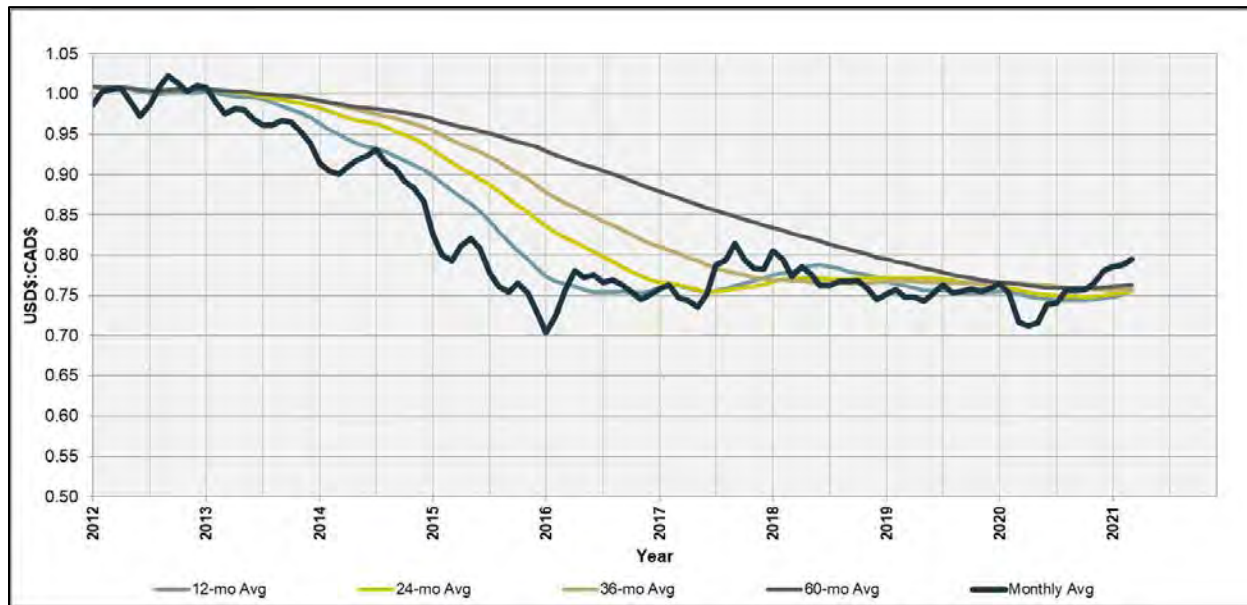
Figure 19-3: Historical Silver Price



19.5 Currency Exchange

Historical USD:CAD exchange rate to the first quarter of 2021 is shown in Figure 19-4. The three-year trailing average exchange rate is currently 0.76 and was used for the project economic evaluation.

Figure 19-4: Historical Foreign Exchange Rate (USD:CAD)



19.6 Other Significant Contracts

In addition to the concentrate sales and metal price guarantees noted above, MintoEx has several contracts for the supply of goods and services to the mine. The contracts terms and rates are within industry norms. A summary of some of the main contracts is noted below.

- Yukon Energy Corporation (YEC); Minto agrees to purchase power from YEC on an annual offtake amount;
- Dyno Nobel Canada Inc.: explosive and accessory supply, storage, transportation and placement of explosives and accessories;
- Mabou Mining: underground contract mining labour services;
- Major Drilling: exploration drilling services;
- Amalgamated Mining & Tunnelling Inc.: mining equipment financing;
- Kode Contracting: contract crushing of mill feed;
- Port of Skagway: use of concentrate storage and port loading;
- Great Northern Oil Diesel Supply: transport and supply of diesel fuel;

- Sodexo Camp Services: lodging and catering;
- Canadian Lynden Transport Co.: concentrate haulage from Minto Mine to Skagway; and
- Cobalt Construction Inc.: provide surface mill feed and haulage services.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACTS

20.1 Environmental Assessment and Licencing

As a quartz mining project, the construction, operation, modification, and decommissioning of the Minto Mine have been subject to a series of environmental and socio-economic assessments (Section 20.1.1). These assessments precede and advise licencing requirements (see Section 20.1.2) which authorize mining activities and guide the regulation of those activities.

The environmental and socio-economic assessment regime has evolved in Yukon since the initial mine proposal was submitted in 1994. The Minto Project was originally submitted to the Department of Indian Affairs and Northern Development in December 1994, and a “positive determination” was made under the Environmental Assessment Review Process Guidelines Order (EARPGO). In January 1995 EARPGO was replaced by the *Canadian Environmental Assessment Act* (CEAA). Project assessments related to the Type B Water Use Licence (WUL) for construction of the Big Creek bridge, and a Land Use permit for access road construction were conducted. In April 2003, under the Devolution Transfer Agreement with the federal government, the Yukon Government (YG) took over management of resources in Yukon, including environmental assessment of development projects under the *Yukon Environmental Assessment Act* (YEAA). Mirror environmental regulations were created and, as of November, 2005, YG subsequently conducted assessments under the *Yukon Environmental and Socio-Economic Assessment Act* (YESAA), administered by the Yukon Environmental and Socio-Economic Assessment Board (YESAB). Any activities requiring environmental assessment are now conducted in accordance with legislation governing YESAA (website at <http://www.yesab.ca>).

The process for YESAB comprises the review of a proposed project towards recommending whether the project may proceed, proceed with conditions, or not proceed. If recommended to proceed (typically with multiple conditions), the proposal will move to the Decision Body(s), which is the Department of Energy, Mines and Resources (EM&R) for a quartz mining licence or permit for surface exploration, and the YG Minister of Executive Council Office for issuance of Type A or B Water Licences under the *Yukon Waters Act* (YWA). For Minto Mine, Selkirk First Nation (SFN) is also a Decision Body as the lands are “Category A” so SFN owns the surface and subsurface rights and can regulate certain related matters.

20.1.1 Environmental Assessments

Previous environmental assessment activities undertaken for the Minto Mine are listed in Table 20-1.

Table 20-1: Past Environmental Assessments for Minto Mine

Filed By/Activity	Period	Sources
Minto Explorations Ltd. Barge, bridge, road/culverts construction	1995 to 1996	CEAA Screening Type B Water Licence WUL MS95-013 Land Use and Quarry Permit YA5F045
Minto Explorations Ltd. Minto Mine development, operation and closure	1997 to 1998	Government and company reports, 1996. DIAND EARP Screening and Decision Report Water Licence QZ96-006
Minto Explorations Ltd. Minto Mine development, operation and closure Cumulative effects assessment	1999	Company report on Cumulative Effects, 1999. Quartz Mining Licence QML-9902.
Minto Explorations Ltd. Minto Mine development, operation and closure licence amendments – expiry extensions and temporary closure modifications Mining and milling rate increase, Minto Project	2004 to 2006	Government and company reports, 2004. YG Development Assessment Branch YEAA Screening WUL MS04-227 Amendment WUL QZ96-006 Amendment Quartz Mining Licence QML-0001 and Amendments
Minto Explorations Ltd. Mining and milling rate increase, Minto Project	2008	Company Reports, 2008. YESAA DO Assessment 2008-0117 Quartz Mining Licence QML-0001 Amendment
Minto Explorations Ltd. Water management and milling rate amendments, Minto Project	2009 to 2010	Company Reports, 2009 YESAA DO Assessment 2009-0206 Quartz Mining Licence QML-0001 Amendment WUL QZ96-006 Amendment
Minto Explorations Ltd. Minto Mine expansion – Phase IV Mining and milling rate increase, Minto Project	2010 to 2012	Company Reports, 2010 YESAB Project Proposal 2010-0198 Quartz Mining Licence QML-0001 Amendment WUL QZ96-006 Amendment
Minto Explorations Ltd. Air emissions permit renewal, Minto Mine	2012	YESAB Project Proposal 2012-0001 Air Emissions Permit Renewal 60-30
Minto Explorations Ltd. Minto Mine expansion – Phase V/VI	2013 to 2014	Company Reports, 2013 YESAB Project Proposal 2013-0100 Quartz Mining Licence QML-0001 Amendment WUL QZ96-006 Amendment

Source: Ensero (2021)

20.1.2 Regulatory Approvals

Several government agencies, both federal and territorial, are involved in reviewing, assessing, authorizing, and monitoring Minto Mine. The major instruments or authorizations and their attendant assessment and amendment histories are summarized below and include: Type A WUL, issued by the Yukon Water Board (YWB); and a Quartz Mining Licence issued by the EM&R, Yukon Government. Minto also holds a Type B WUL from the YWB for activities related to the operation and maintenance of the bridge, culverts, barge landing and flood control structures along the Minto Mine access road.

20.1.2.1 Type A WUL

In February 1997, Minto submitted a Type A WUL application (QZ96-006). The YWB convened a public hearing into the application in May 1997, and after its deliberations issued a Type A WUL in April 1998, pursuant to the YWA and Regulations for mine and milling operations. The expiry date for the initial Type A WUL was June 30, 2006. This licence has subsequently been amended several times and has been extended, as discussed below in Section 20.1.3 - Amendments and Current Licencing.

20.1.2.2 Yukon Quartz Mining Licence

In 1999, *Yukon Quartz Mining Act* (YQMA) was amended, and Section 139 of the Act required that all development and production activities related to quartz mining in Yukon be carried out in accordance with a licence issued by the Minister. In June 1999, the company filed an application with Department of Indian and Northern Development (DIAND) Minerals for a Yukon Quartz Mining Licence, which included a cumulative effects assessment for the Project to ensure that the provisions of CEAA were met. DIAND issued Yukon Quartz Mining Licence QLM-9902 in October 1999 with a licence expiry date of June 30, 2006. This licence has subsequently been amended and extended (see chronology of amendments in the following section).

20.1.2.3 Type B WUL

In August 1995, the company submitted a Type B WUL application, which was filed with the YWB for construction of the Yukon River barge landing sites, the Big Creek Bridge, and Minto Creek road culvert installations. In October 1995, a land use and quarry permit application for the access road construction was filed with DIAND Land Resources.

An integrated CEAA screening of the Type B water and land use applications was completed and a positive determination was made in August 1996. Type B WUL MS95-013 and Land and Quarry Permit YA5F045 were issued in August 1996 and the initial 16 km of the Minto Mine access road, barge landings and Big Creek Bridge were installed in September and October 1996.

20.1.3 Amendments and Current Licencing

20.1.3.1 Type A Water Licence

WUL QZ96-006 was amended (Amendment #1) to revise the decommissioning requirements for the Project, and to request the submission of an interim plan as the project was not yet

constructed. Minto Mine is still subject to the WUL, but it has been amended and is now QZ14-031.

In addition to the WUL, the federal Metal and Diamond Mining Effluent Regulations (MDMER) under the *Fisheries Act* currently apply to the Minto Mine. Generally, the Type A WUL is considered more restrictive than the MDMER; however, Environment and Climate Change Canada requires separate reporting for effluent discharge and water monitoring.

As the Type A WUL (QZ96-006), Type B WUL (MS95-013), and Yukon Quartz Mining Licence (QML-9902) were set to expire in June 2006, and in recognition of project development delays, licence amendment applications to extend the licences to June 30, 2016 were filed with the YWB and YG, EM&R in October 2004. YWB completed a YEAA screening of the Type B application and subsequently issued the amended Type B WUL (MS04-227) in February 2005. YG Development Assessment Branch completed a YEAA screening of the Type A WUL and Yukon Quartz Mining Licence using the previous EARPGO screening and issued their screening report in March 2005.

YWB issued the amended Type A WUL (QZ04-064) in September 2005 (Amendment #2) and YG EMR issued amendments to Yukon Quartz Mining Licence QLM 0001, Amendment No. 05-001 in December 2005 and Amendment No. 05-002 to change the mill rate to 2,500 tpd in October 2006. The Type A WUL was further amended on April 6, 2006 (Amendment #3) following an application by Minto to address an apparent inconsistency in the original licence regarding the milling of sulphide ore.

In July 2008, Minto submitted a proposal to YESAB that outlined a proposed increase to the mining and milling rates. The Mayo District Office (DO) issued a recommendation that the project proceed, and YG EM&R, as the decision body, released a decision document that concurred with the assessment recommendations. Subsequently, QML-0001 was amended to increase the milling rate (and associated mining rate) to 3,200 tpd on July 24, 2008.

In response to exceptional precipitation received in the site area in late August 2008 and at the risk of imminent release of water from the Water Storage Pond (WSP) that would not meet water licence discharge standards, Minto applied on August 25, 2008 to YWB for an emergency amendment to WUL QZ96-006 under Section 21 (4), c.19 of the YWA. The application to release 350,000 m³ of water from the WSP using the MDMER effluent discharge criteria was approved, and Amendment #4 to the WUL was issued on August 26, 2008.

The melting of significant snowpack accumulations in the winter of 2008/2009 required the retention of freshet runoff in the open pit (Main Pit) and prompted concern about the stability of the South Pit wall, should additional summer precipitation events need to be directed there as well. As a result, Minto applied again for an amendment to the WUL QZ96-006 under the same provision in June of 2009, to allow the release of water and create additional capacity for such an event. On June 26, 2009, the YWB approved Amendment #5, which authorized the release of 300,000 m³ of water from the site, subject to the same MDMER criteria as previously applied, with additional monitoring requirements.

On August 3, 2009, Minto received an Inspector's Direction from YG EMR to empty the Main Pit of accumulated runoff water prior to October 15, 2009. Subsequently, Minto, in order to remain compliant with both the Inspector's Direction and with its WUL, applied for another amendment to WUL QZ96-006, again under the emergency provision of the Yukon Waters Act. The YWB

approved this amendment (Amendment #6) and Minto was permitted to release an additional 705,000 m³ of water from the Minto Mine site, provided it met amended discharge standards.

Minto applied for an additional amendment (WUL Application #QZ09-094) to WUL QZ96-006 in November of 2009 to authorize changes to the Water Management Plan (WMP) and effluent discharge standards. A minor milling rate increase and other housekeeping items were also included; this application was approved as Amendment #7.

In August of 2010, a proposal for the mine expansion known as Phase IV was submitted for environmental assessment (YESAB #2010-0198). Assessed activities included mining of Phase IV zones, underground mining of Area 2 and Area 118, the development of an exploration decline, new waste management practices, and construction of the Mill Valley Fill Extension. The Mayo DO issued its evaluation report in February 2011 and decision documents were issued in March 2011. YG EMR issued an updated QML in May 2011 and approved a number of operational plans related to Phase IV mining. An application for a WUL amendment was submitted in September 2011; a public hearing was held in July 2012, and Amendment #8 to the WUL was issued in October 2012.

Subsequently, in December of 2012, QML-0001 was amended to increase the milling rate to 4,200 tpd and the mining rate to a maximum of 2.5 Mt/a.

In July 5, 2013, a proposal for the mine expansion known as Phase V/VI was submitted for environmental assessment (YESAB #2013-0100). Assessed activities included mining of Minto North and Ridgetop deposits, additional underground deposits, updates to waste rock management practices, construction of the Main Pit Dam, Mill Valley Fill Extension Stage 2 and changes to water management. The Mayo DO issued its evaluation report in April 2014 and decision documents were issued in June 2014. YG EMR issued a renewed and updated QML in December 2014. An application for a WUL amendment was submitted in July 2014, a public hearing was held in March 2015, and QZ14-031 was issued in August 2015, authorizing the Proposed Phase V/VI activities and extending the expiry of the licence until either June 12, 2040 or the date that Minto Explorations' rights or interests in the associated claims expire.

In February of 2018, Minto submitted an amendment application to YWB and EMR for the proposed Phase VII Expansion. The amendment was to expand production zones to Minto East 2 Underground and Minto North Underground and to approve the Reclamation and Closure Plan (now version 2020-01). The QML Amendment was approved in March of 2018, and the Type A WUL Amendment is still pending. The application was posted for public comment on March 15, 2020.

Examples of other relevant instruments that govern the Project include:

- SFN Cooperation Agreement;
- MDMER of the federal *Fisheries Act*;
- Mining Land Use Permit;
- Fish Collection Permits;
- Waste Management Permits;

- Air Emissions Permit;
- Commercial Dump Permit;
- Land Treatment Facility Permit; and
- Special Waste Permit.

Minto has submitted several operational plans including, but not limited to, the following:

- General Site Plan;
- Site Characterization Plan;
- Mine Development and Operations Plan;
- Underground Mine Development and Operating Plan;
- Main Waste Rock Dump Design Plan;
- Reclamation Overburden Dump Plan;
- Dry Stack Tailings Storage Facility Design and Management Plans;
- Engineering Plans and a Construction Quality Assurance Manual for the Water Storage Dam;
- Waste Management Plans;
- Waste Rock and Overburden Management Plans;
- Tailings Management Plan;
- Water Management Plan;
- Environmental Monitoring, Surveillance, and Reporting Plan;
- Aquatic Effects Monitoring Plan;
- Groundwater Monitoring Plan;
- Operational Adaptive Management Plan;
- Physical Monitoring Plan;
- Spill Contingency Plan;
- Heritage Resource Protection Plan;

- Sediment and Erosion Protection Plan;
- Explosives Management Plan;
- Vegetation Metal Uptake Monitoring Plan;
- Wildlife Protection Plan;
- Emergency Response Plan; and
- Reclamation and Closure Plan.

20.1.4 Environmental Conditions

Prior to mine construction, environmental conditions were compiled, assessed, and referenced in earlier environmental assessments (Section 20.1.1). Further assessments were deemed necessary for the future expansions, including assessments of the south branch of the McGinty Creek drainage north of Minto Creek, as the Minto North deposit is located just within its catchment area. The McGinty Creek drainage, particularly the south branch, has been the subject of biophysical studies since the 1970s, partly as a control to studies of Minto Creek. More extensive investigations in McGinty Creek drainage were initiated by Minto in 2009.

The environmental conditions in the Minto Mine area were presented as part of the environmental assessment and licencing process associated with the 1996 WUL application. Updates to these conditions have been compiled and presented in project proposals for numerous mine expansion applications and key licence amendments. Most recently, these conditions were compiled in the Minto Mine Site Characterization Plan (SCP, 2017). This document is currently being updated for submission under the QML by October 31, 2021.

Table 20-2 below summarizes existing environmental and socio-economic conditions in the Minto Mine area.

Table 20-2: Summary of Environmental and Socio-economic Conditions in the Minto Mine Area

Project Area Attribute Description	Project Area Attribute Description
Region:	Yukon
Topographic map sheet:	NTS 115 I/10, 115 I/11
Geographic location name code:	Minto Project
Latitude:	62° 36' N
Longitude:	137° 15' W
Drainage region:	Yukon River
Watersheds:	Yukon River, Big Creek, Wolverine Creek, Dark Creek, McGinty Creek, and Minto Creek.
Nearest community:	Pelly Crossing, Yukon, approx. 33 km north on Klondike Highway.

Project Area Attribute Description	Project Area Attribute Description
Access:	Klondike Highway, Barge crossing on Yukon River at Minto Landing, Minto Mine access road. Airstrip on site.
Traditional territory:	Northern Tutchone, Selkirk First Nation peoples. Traditionally used for hunting, trapping and fishing.
Surrounding land status:	Selkirk First Nation settlement lands and federal Crown land.
Special designations:	Lhutsaw wetland habitat protection area located approx. 17 km NE of Minto Landing (outside the Project area).
Ecoregion:	Yukon Plateau (Central) - Pelly River ecoregion.
Study area elevation:	Rolling hills above mine site at 1131 to 600 m at the Yukon River Valley bottom.
Site climate:	Temperature ranges from -43.2°C (November 2006) to 30.3°C (July 2009). Mean annual temperature of -1.8°C . Mean annual rainfall is 174mm.
Vegetation communities:	Riparian, black spruce, white spruce, paper birch, lodgepole pine, buck brush/willow and ericaceous shrubs, feather moss, sedge, sagewort, grassland, mixed forest (aspen, balsam, and sub-alpine). Discontinuous permafrost is present on site. Site has been subject to recent forest fires.
Wildlife species:	Moose, caribou, Dall sheep, mule deer, grizzly and black bear, varying hare, beaver, lynx, marten, ermine, deer mouse, fox, mink, wolverine, least weasel, wolf, squirrel, porcupine, coyote, muskrat, otter and wood frog. Bird species include: spruce, blue, ruffed, and sharp-tail grouse, waterfowl, raptors, and a variety of smaller birds.
Fish species:	In the Yukon River, Chinook, Coho, and chum salmon, rainbow trout, lake trout, least cisco, Bering cisco, round whitefish, lake whitefish, inconnu, Arctic grayling, northern pike, burbot, longnose sucker and slimy sculpin; In Big Creek, Chinook and chum salmon, Arctic grayling and whitefish species; In Wolverine Creek, Chinook salmon, Arctic grayling, and slimy sculpin; In Minto Creek (lower reaches only), Chinook salmon, slimy sculpin, round whitefish, Arctic grayling, longnose sucker, burbot; In McGinty Creek (lower reaches only), slimy sculpin, Arctic grayling
Known heritage resources:	East side of Yukon River in the vicinity of Minto Landing four historic sites designated KdVc-2 (Minto Landing), KdVc-3 (MintoEx Resort), KdVc-4 (Old Tom's Cabin), and KdVD-1 (Minto Creek).
Registered trapline concessions	Several Registered Trapping Concessions (RTCs) are held in the project area. Trapper access to the project area has been identified and will be maintained in accordance with the Cooperation Agreement. Compensation agreements have been negotiated with the RTC #146 & #145 trap line holders of the trapping areas impacted by the mine and access road.
Registered outfitting concessions	Two outfitting concessions fall within the project area. Registered Outfitting Concessions #13 is held by Tim Mervyn (Mervyn Outfitting) and #14 is held by Curt Thompson (Trophystone Safaris).

Source: Ensero (2021)

The Minto Mine property lies in the eastern portion of the Dawson Range, which is part of the Klondike Plateau Physiographic Region, an uplifted surface that has been dissected by erosion. The area was largely unglaciated during the last ice age and topography consists of deep and narrow valleys, rounded rolling hills, and ridges with relief of up to 600 m (2,000 ft.). The highest

elevation on the property is 975 m (3,200 ft.) above sea level, compared to lower elevations in the region with elevations of 460 m (1,500 ft.) along the Yukon River.

The Minto Mine is near the height of land with relatively gentle slopes and smooth ridges that often have spines of bedrock outcrops (tors) at their crests left from long periods of weathering. Broad ridges are typically mantled with felsenmeer (fields of angular, frost-heaved, in situ rock fragments). Below the ridge crests, bedrock exposures are limited or negligible. The Project area lies in a zone of extensive discontinuous (50–90%) permafrost and is included in the western portion of the Yukon plateau central ecozone. North-facing slopes in the area are commonly underlain by permafrost. Valley-bottom deposits and upland soils usually contain ice-rich horizons. Well-drained uplands may have permafrost-free soils.

As the ecoregion is largely unglaciated, the dominant parent materials are stony residual materials along ridge tops and summits, coarse colluvium on upper slopes, and silty colluvium and loess, rich in organic matter, on lower slopes and floors of main valleys. Muck is usually capped with peat and underlain by permafrost. In the Minto Mine area, much of the colluvium on ridge slopes is coarse sand derived from decomposition of the largely granitic bedrock in the area. Overburden of relic soils that predate the last glaciation includes lacustrine deposits overlain by colluvium and organic silt in some upper valleys, some of which was exposed during excavation on the south side of the pit.

The mine development area is in the transition from the forested to non-forested (alpine) zone. Below the treeline (elevation ~1,000 m) the vegetation patterns reflect the discontinuous distribution of permafrost with stunted black spruce woodlands on cold, north-facing sites and mixed (aspen, white spruce, minor birch) forests on warm, south-facing slopes. The area has been burned over by several wildfires, the latest of which was in 2010 (Minto Landing to lower Minto Creek area). Many of the burnt trees have blown down and natural regeneration of pine and alder is occurring over much of the property and the Project area.

The climate of the region is continental with short, warm summers and very cold winters. Annual precipitation ranges from 300 to 500 mm. Mean annual temperatures are near –5°C with mean mid-winter temperatures of –23°C to –32°C, in summer from +10°C to +15°C and extremes in the lower valleys ranging from –60°C to +35°C.

The area is drained by tributaries of the Yukon River. The rate of runoff is controlled by almost total vegetation cover and moderate slope gradients. Infiltration rate is expected to be high in areas of thicker colluvium. However, permafrost and seasonally frozen soils inhibit vertical percolation.

Topography in the Dawson Range is moderate and active geomorphological processes in the study area are typically limited to include slow mass movement (solifluction) and some minor gully erosion. Although there are no reports of large-scale active natural landslides in the Minto Project area, smaller scale instabilities have recently been documented in the Minto Creek catchment area, downstream of the mine site. Substantial sediment loading in lower Minto Creek in the absence of effluent discharge from the site was observed throughout the open water months of 2011. This prompted a targeted water quality survey and an aerial investigation of the creek and tributaries in spring of 2012 to identify the source(s) of the sediment. Two areas were identified in tributaries on the southern side of the Minto Creek catchment, below the area of control of the mine, where soil materials had slumped and discharged a significant amount of material into the creek channel. Although ground investigations were not conducted, it is

suspected that these instances may be related to thawing of frozen ground conditions or may simply be small-scale instability of fine textured (lacustrine) soils.

20.2 Water Management and Effluent Discharge

20.2.1 Water Management History

Minto, in its original Water Use Licence (WUL) application submitted in 1996, outlined a water management plan (WMP) based on the limited baseline information and project projections available for the Minto Mine at the time.

The 1996 Type A WUL (QZ96-006) was based on limited baseline information and project projections. Subsequent baseline and operational data initiated in 2005 showed that actual conditions were not adequately represented by those conditions. In 2006 Minto initiated numerous progressively intensive measures to obtain compliance related to effluent discharge, which were coupled with planning initiatives to revise the water management strategy for the site. In 2008 and 2009, Minto applied for (and received) three emergency amendments to the Water Use Licence pertaining to water management and effluent discharge (see Section 20.1). In 2009, Minto submitted a revised Water Management Plan with proposed changes to the effluent quality standards as the basis of the application for Amendment #7 to the Water Use Licence, and in 2010 was able to consistently meet revised effluent discharge standards but only at low discharge rates, utilizing a new water treatment plant. Additional changes to water management strategies and limits were authorized through approvals of the Phase IV and Phase V/VI expansion plans by the Yukon Water Board in 2012 and 2015 respectively.

Water management, including inventory storage and treatment options, in combination with tailings storage and management, continues to present current and future challenges for Minto operators. These challenges are centered primarily around effluent flow rate restrictions and water and tailings storage capacity at the site. Minto is preparing to add additional treatment capacity to ensure sufficient water treatment to remove 4,000 m³ per day which is sufficient to relieve short term water and tailings storage capacity challenges. See Section 18 for a discussion of tailings storage strategies and capacities.

20.2.2 Current Water Management Plan

Minto has prepared a WMP which details how water will be managed at the Minto Mine during Phase VII of the mine development. The WMP was developed in conjunction with the Waste Rock and Overburden Management Plan and the Tailings Management Plan. This section provides a summary of the water management approach and strategies currently employed and proposed for Minto Phase VII and future activities associated with the mine schedule.

20.2.2.1 Water Management Strategy

The Minto Mine Site has a positive water balance; therefore, it is necessary to release water from site to prevent accumulation of excess water. The primary objective of the water management strategy is to control the release of water from site in a way that minimizes potential effects to the water quality in the aquatic receiving environment. Water Use Licence QZ14-031 now governs water management on the site, and protection of the receiving environment is defined in the WUL

as meeting operational water quality objectives (WQO) in lower Minto Creek. This is accomplished through treatment and management strategies that achieve effluent quality standards (EQS) in mine water discharged from the site to the receiving environment. These WQO and EQS values are presented in Table 20-3 below. Operational water quality objectives were determined through extensive evaluation and consultation with stakeholders in consideration of:

- Federal water quality guidelines (CCME);
- BC MOE water quality guidelines; and
- Site specific water chemistry and biological community and usage considerations.

Effluent quality standards are generally developed by adjusting the WQO on a watershed area contribution basis (i.e., 3:1).

Table 20-3: Minto Creek Operations Water Quality Objectives and Effluent Quality Standards in Water Use Licence QZ14-031

Parameter	Unit	Water Quality Objectives	Effluent Standards
pH	pH Units	6.0 - 9.0	6.0 – 9.0
Ammonia - N	mg/L	0.25	0.75
Nitrite - N	mg/L	0.06	0.18
Nitrate - N	mg/L	9.1	27.3
Aluminum (dissolved)	mg/L	0.1	0.3
Arsenic (dissolved)	mg/L	0.005	0.015
Cadmium ¹ (dissolved)	µg/L	$e^{(0.736(\ln(\text{hardness}))-4.943)}$	$3 * e^{(0.736(\ln(\text{hardness}))-4.943)}$
Chromium (dissolved)	mg/L	0.001	0.003
Copper (dissolved), for [DOC] @ W2 >10 mg/	mg/L	0.02	0.06
Copper (dissolved), for [DOC] @ W2 ≤10 mg/L	mg/L	0.013	0.039
Iron (dissolved), mg/L	mg/L	1.1	3.3
Lead (dissolved)	mg/L	0.004	0.012
Molybdenum (dissolved)	mg/L	0.073	0.219
Nickel (dissolved)	mg/L	0.11	0.33
Silver (dissolved)	mg/L	0.0001	0.0003

Parameter	Unit	Water Quality Objectives	Effluent Standards
Selenium (dissolved)	mg/L	0.002	0.006
Zinc (dissolved)	mg/L	0.03	0.09

Notes:

¹ Hardness measurement at WQO Station

² DOC: dissolved organic carbon

Source: Ensero (2021)

WUL QZ14-031 also contains specific requirements for meeting specific biological assay requirements.

The strategies for managing the mine water inventory can be summarized as follows:

- The site water balance is used to define mine water inventory targets and targets for volumes to be released to Minto Creek. Regular tracking of the mine water inventory allows the mine operations to determine if the inventory is on target and if and when water must be released from site;
- Runoff from developed mine areas (mine water) is collected and stored in the Main Pit Tailings Management Facility (MPTMF) and the Area 2 Pit Tailings Management Facility (A2PTMF). Mine water is used for processing;
- Release of mine runoff (discharge of effluent) can be accomplished in two ways:
 - Release of unlimited amounts of effluent if the quality meets the water quality objectives for lower Minto Creek provided there is no effect of erosion/sedimentation in the receiving environment; or
 - Release of effluent that meets the EQS limits (above) at a rate that is controlled by receiving environment flow rates.

20.2.2.2 Annual Operational Water Balance

Table 20-4 shows a summary of the annual operational water balance for Minto Mine. The annual water balance shows that runoff yields approximately 950,000 m³ of water in a year under average precipitation conditions. Operational demand account for approximately 590,000 m³. This leaves an excess volume of about 360,000 m³, which can either be stored on site or be released to Minto Creek as natural creek flow rates allow.

In a 1 in 100 dry year, the runoff volume would not be sufficient to cover the operational water demand, while a 1 in 200 wet year would yield approximately 890,000 m³ of excess runoff. The strategy for managing the excess surface runoff and mine water inventory is to divert and release clean runoff to Minto Creek to the greatest extent possible.

Table 20-4: Annual Operational Water Balance Summary for Minto Mine Phase VII

Water Balance Component	Unit	1:100 Dry Year	Average Annual Precipitation	1:200 Wet Year
Water Input				
Annual site-wide runoff	m ³ /year	290,000	950,000	1,480,000
Operational Water Demand				
Water to tailings pores	m ³ /year	530,000	530,000	530,000
Water to waste rock pores*	m ³ /year	60,000	60,000	60,000
Water in Excess of Operational Demands				
Water to store on site or discharge	m ³ /year	-300,000	360,000	890,000

Notes:

*Actual values are dependent on pit production and range from 0 to 200,000 m³/year. DOC: dissolved organic carbon.

Source: Ensero (2021)

20.2.2.3 Diversion of Clean Runoff

Sub-catchments considered to be largely undisturbed (i.e., consistently produce clean/discharge-compliant runoff) include the WSP and W35 catchments and performance monitoring of the W15 catchment has regularly shown similar water quality. All of these sub-catchments represent opportunities for diversion of clean runoff away from contaminant loading sources. The WSP reservoir and related infrastructure, the tailings diversion ditch, and the W15 infrastructure together permit water from the respective catchments to be managed as clean runoff when water quality allows.

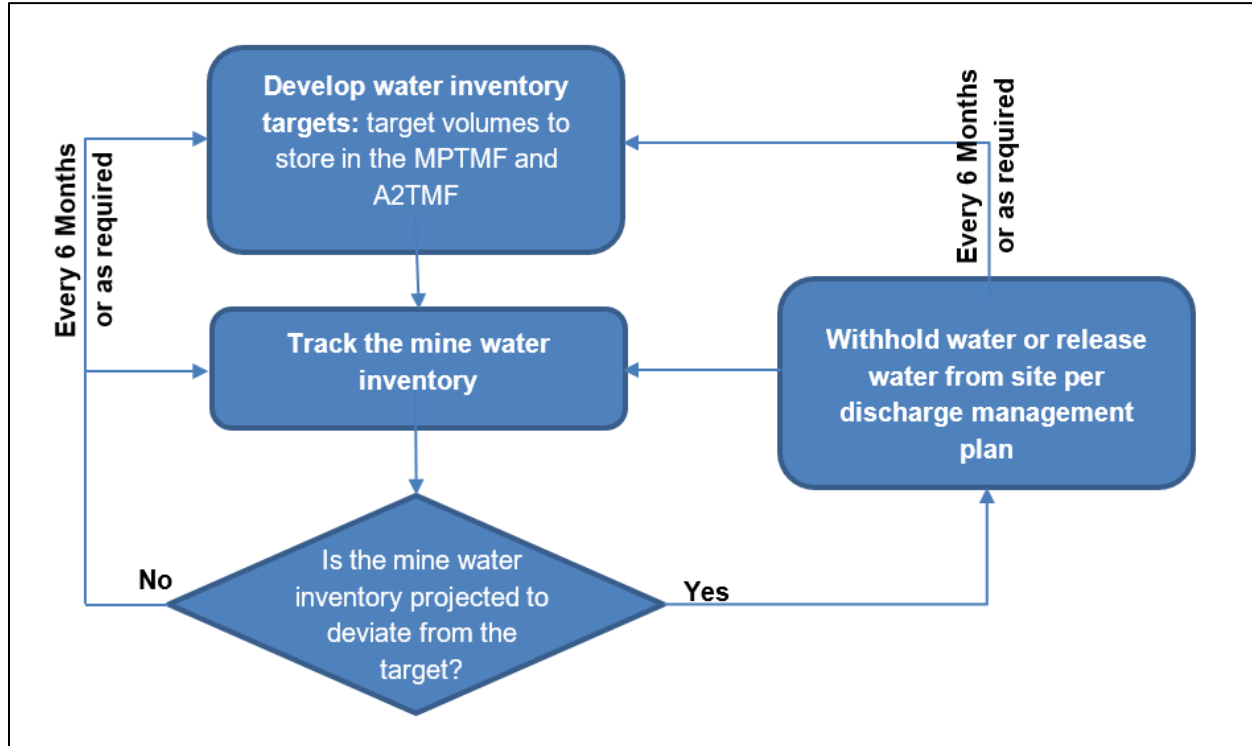
20.2.2.4 Operating Principle

The primary objective of the WMP is to manage the release of water from site and, by extension, manage the inventory of mine water stored in the MPTMF and the A2PTMF. The mine operation must have sufficient water to operate but must avoid storing excess mine water.

During operations, water collected at the Minto Mine is segregated on the basis of clean runoff and mine water. Clean runoff is diverted around the active mining areas to the WSP, and mine water is contained in the MPTMF and A2PTMF. Runoff is classified as 'clean' if the water meets the water quality limits defined in the water licence. Runoff that does not meet water quality limits is categorized as 'mine water'. During operations, clean runoff is intended to be released from the WSP to Minto Creek as natural creek flow allows, while mine water is used for processing of milling processes and for sub-aqueous deposition of tailings and waste rock.

Figure 20-1 shows a diagram of the workflow for the water management plan:

Figure 20-1: Water Management Plan Workflow



Source: Ensero (2021)

20.2.2.5 Defining Mine Water Inventory Target

The mine water inventory target is defined based on the following considerations:

- As a guiding principle, a minimum of 600,000 m³ of free water, or one year of operational water demand, should be stored on site at all times. This water inventory will ensure that the operation has adequate supply of water and that the mine water reservoir has sufficient residence time to allow for proper settling and management of suspended solids;
- Storage capacity to hold a minimum of 1,000,000 m³ of mine water runoff must be available on October 31st of each year (per Water Use Licence condition). This storage capacity is estimated to represent water that would report to the MPTMF or the A2PTMF in a 1 in 200 wet year (approximately 1,400,000 m³ of site-wide runoff minus approximately 400,000 m³ diverted); and
- Climatic variability. The water and load balance model developed for the Minto site will be used to evaluate the mine water inventory targets against a range of precipitation and runoff events (dry and wet years).

The inventory targets are used by water operators as a basis for deciding whether to release additional water from site or to scale back water release. Inventory targets are updated every 6 months or as required.

20.2.2.6 Water Treatment

Water treatment is required if:

- Water stored in the WSP does not meet water quality limits prescribed in the water licence;
- Flows in Minto Creek are too low to accommodate material discharge volumes from the Mine Site; and/or
- Mine water stored in the MPTMF or the A2PTMF is to be released to Minto Creek and it does not meet water quality limits prescribed in the water licence.

The WSP is intended as a clean water reservoir where discharge compliant water is stored and monitored prior to release to Minto Creek. However, storm events, seepage losses from the mill valley or other events may cause the concentrations of certain water quality parameter to exceed water quality limits. Mine water stored in the MPTMF or the A2PTMF will likely require treatment, and where WTP water meets WQO then it would be released directly (not via WSP).

20.2.2.7 Monitoring and Reporting

Monitoring of quality and quantity of water on the Minto Mine site follows the existing environmental monitoring program for the site, which is largely detailed in the Environmental Monitoring, Surveillance and Reporting Plan (Attachment 10), which is submitted as part of the Water Use License application for Phase VI. This program specifies locations, frequencies, and categories of sample and data collection at water quality, hydrometric and meteorological stations. Sampling is in part conducted to satisfy requirements of the WUL, QML, and MDMER and in part for operational purposes. All data required for the water management is collected through the environmental monitoring programs or required by the WUL.

Monthly mine water inventory tracking reports are prepared and submitted to Minto's environmental manager and senior management. The reporting format provides an account of the mine water inventory, status, and operation of diversion structures and water treatment plant. Reporting is also required by the current water use licence and results of the monitoring are submitted to stakeholders and regulators on a monthly, quarterly, and annual basis. Water quality monitoring results are compared on an ongoing basis with the Operational Adaptive Management Plan (AMP), and periodic investigation and mitigative actions are required if AMP thresholds are exceeded.

20.3 Rehabilitation and Closure Planning

20.3.1 History

A Decommissioning and Reclamation Plan for the Minto Project was filed with the Yukon Water Board in April 2001 in accordance with WUL QZ96-006. This plan included cost estimates for

closure activities. A review of the 2001 plan by YG Water Resources guided the preparation of an Interim Care and Maintenance & Interim Closure Plan, which was required in Part G – Decommissioning and Reclamation of WUL QZ96-006 and was filed with the Yukon Water Board in November 2003. The Interim Plan addressed two scenarios:

- Continued care and maintenance of project infrastructure; and
- Closure issues related to the decommissioning of existing site developments at the Minto mine and reclamation of the site, including reclamation and security costs associated with the then dormant property.

The 2003 plan presented closure scenarios based on existing conditions in the construction phase at the time. The submission of a detailed closure plan was also required under QML-0001, Section 14.1 (the QML requires updating of closure plans every 2 years and must include closure cost estimates that calculated site liability for the current condition and for points in time two years later and at the end of active mining activities.)

Both the 2001 and 2003 interim plans for the initial construction and care and maintenance activities were drawn upon in the preparation of the Detailed Decommissioning and Reclamation Plan (DDRP) for full site development, which was submitted in November 2006 and approved by YG in June 2007 under the QML-0001. A program was presented for site management and monitoring both during implementation of closure and after decommissioning and reclamation measures are completed. Decommissioning and reclamation cost estimates were provided, and financial security requirements were reviewed, leading to the provision of security to YG based on approved closure cost estimates.

The first update to this DDRP was submitted in September 2009. The updated DDRP addressed the long-term physical and chemical stability of the site, including reclamation of surface disturbances, and the unanticipated water quality and water quantity issues at the Minto Mine. Revised closure cost estimates for interim and final closure scenarios were also submitted and reviewed, and the security held with YG was adjusted accordingly. Section 14.3 of QML-0001 required a subsequent DDRP update in 2011. This update reflected the Phase IV Expansion proposal and related closure strategies that were presented as part of the environmental assessment review under YESAA in 2010 and 2011. A review process under the QML occurred resulting in the approval of the DDRP in September 2011.

As part of the WUL amendment application for the Phase V/VI expansion activities, and in response to and in accordance with the release of Yukon Government's document *Reclamation and closure planning for quartz mining projects: plan requirements and closure costing guidance (2013)*, Minto prepared and issued a revised plan entitled Reclamation and Closure Plan (RCP) version 5.0, in June 2014. This plan advanced key concepts related to passive water treatment, water collection and conveyance, and waste cover design in the context of the proposed Phase V/VI development activities. This version of the RCP also included a dedicated Closure AMP intended to manage residual uncertainty in the closure plan and to guide closure management activities in response to monitoring results and established proactive thresholds. This version of the RCP was updated in August of 2014 (version 5.1) with closure cost estimates. YG approved the RCP version 5.1 (submitted August 2014) – September 19, 2014 (upon issuance of the amendment for Minto North).

The issuance of the amended WUL for Phase V/VI was conditioned upon the provision of an updated RCP, which was submitted as required as a licence amendment request in August of

2016 (version 2016-01). The 2016-01 update advanced the Closure AMP in detail, included an updated water and load balance model, and advanced some closure designs from conceptual to preliminary. This plan was further updated in February 2017 (version 2017-01) to include the final closure water quality objectives and associated revised closure management strategies. This advancement was the culmination of a number of years of work with SFN and their advisors through a Bilateral Technical Working Group. Closure cost estimates, as required, were also updated in the 2016-01 version of the RCP and these estimates for the proposed closure measures formed the basis of financial security requirements still in place. YG approved the RCP version 2016-01 (submitted August 2016) – approval was not provided, as it was superceded by version 2018-01.

The Yukon Water Board reviewed the 2016-01 and 2017-01 versions of the RCP and issued information requests related to the plan in late 2017. In February of 2018, as part of a WUL amendment application for Phase VII Expansion activities, Minto provided an updated RCP (version 2018-01) that addressed closure measures for all remaining and proposed site infrastructure and facilities, and that also addressed YWB information requests. YG approved the RCP version 2018-01 (submitted February 2018) – June 13, 2018 (approval letter with updated Schedule C).

The 2018-01 RCP also added detail to the required plan for any temporary closure at the mine. This plan was implemented on October 11, 2018 - due to economic conditions – the site owners put Minto mine into temporary closure while exploring the sale of the property. Mining and milling operations ceased, the site was carefully mothballed, and by the end of 2018 to majority of staff had been laid off with only a small crew retained to execute the care and maintenance activities. In June 2019 the property was sold, with the new operating company announcing the re-opening of June 6, 2019. The first day of the resumption of mining activities was September 2, 2019.

Per the QML conditions for RCP updates, the RCP was again revised in November 2020 (version 2020-01). This revision further addressed additional information requests from the ongoing YWB review and included a substantially updated and expanded Closure Adaptive Management Plan, updates to the reclamation research program on passive water treatment, details regarding transition triggers between closure phases and the attainment and application of specific closure and post-closure water quality objectives. Closure cost estimates were also updated.

20.3.2 Closure Philosophy

For the Minto Project, the closure goal is to return the mine site and affected areas to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment over the long term and that support traditional activities and are protective of human health and safety. Closure principles guide the selection of closure objectives. Four core closure principles are applicable to the Minto Project include:

- Physical stability;
- Chemical stability;
- No long-term active care requirements; and
- Future land use (including aesthetics, values, human health and safety).

Minto intends to implement an environmentally sound and technically feasible reclamation and closure plan for the Minto mine. Closure planning and the implementation must be undertaken with appropriate environmental care while respecting local laws, agreements with SFN, and the public interest, while ensuring that environmental standards are achieved. Necessary environmental protection measures have been adopted in the development of Minto's RCP to ensure that a healthy environment exists after mine closure. This approach is consistent with Minto's corporate policies.

A principal tenet of the philosophy followed during the development of the RCP was to work towards an eventual passive closure scenario, with minimal management required to achieve long-term chemical and physical stability of reclaimed mine components. This involved an assessment of the key mine components that require mitigation based on the current understanding of materials contained within these components. Mitigation measures have been incorporated into elements of the RCP to address public health and safety issues and environmental concerns. Post-closure monitoring and inspections will be used to evaluate mitigation measure performance to ensure that this objective is met. Once the effectiveness of each mitigation measure is assured, then management of the site can be safely reduced to a level that is consistent with closure objectives. It is anticipated that final determination of the effectiveness of closure measures will be the subject of review and concurrence with regulatory agencies, SFN and the public.

Minto has entered into a Cooperation Agreement with SFN. All activities at the site including closure measures are guided by this agreement. Therefore, a strong working relationship with SFN forms a foundation for this document. To that end, meetings with SFN related to closure issues have been ongoing since the first version of the RCP, and their comments on closure and other issues raised during ongoing dialogue were considered in the ongoing development of the RCP. This dialogue continues, and parties continue to work towards refinement of reclamation issues in the ongoing closure planning discussions.

20.3.3 Current Reclamation and Closure Plan

The current RCP has been specifically scoped to fulfill the requirements of the EMR and YWB guidance document Reclamation and Closure Planning for Quartz Mining Projects: Plan Requirements and Closure Costing Guidance released August 2013. In addition, Minto has taken into consideration requirements concerning closure plan submissions in both of the project's primary regulatory instruments – Quartz Mining Licence QML-0001, and WUL QZ14-031. This plan was developed based on the approved mine plan at the time of preparation (2020), which differs from the mine plan being evaluated in this PEA. However, the closure goals, objectives, and proposed mitigation measures in RCP version 2020-01 are reasonably expected to apply to the PEA mine plan on a planning basis, and if/when approved, the RCP will be updated to reflect the new mine plan.

The RCP version 2020-01 addresses the long-term physical and chemical stability of the site and includes reclamation of surface disturbances. It includes a program for site monitoring and management during closure implementation and after completion of decommissioning and reclamation. The RCP calls for a systematic approach to decommissioning and closure at the Minto mine site and incorporates reassessment of progressive closure and reclamation activities where possible during site operations for use during final closure.

Table 20-5 below outlines the Project development schedule from current status through the proposed completion of Phase VII activities, to the completion of post closure two (PCII) that was submitted in RCP 2020-01. This mine schedule will be updated in the next version of the RCP.

Table 20-5: Project Schedule

Year	Summary of Mining Activities
2020	Underground mining from the Minto East deposit is completed while mining commences in Copper Keep deposit. Milling continues throughout the year.
2021	Underground mining from Copper Keel continues throughout the year. Minto East underground mining is completed. Minto North underground development and Minto East 2 underground deposit begins later in the year. Milling continues throughout the year.
2022 to 2024	Underground mining from Copper Keel, Minto East 2 and Minto North deposits continues. Milling continues throughout the year.
Year	Summary of Closure Activities (Projections only)
Year 0	Milling continues until mid year. Active closure begins.
Year 1 to 3	Active closure period continues (total duration expected three years) with Post-Closure I beginning mid-Year 3.
Year 3 to 8	Post-Closure I period continues (total duration expected five years but will be performance based).
Year 8 to 18	Post-Closure II period continues (total duration of Post-Closure II is ten years).

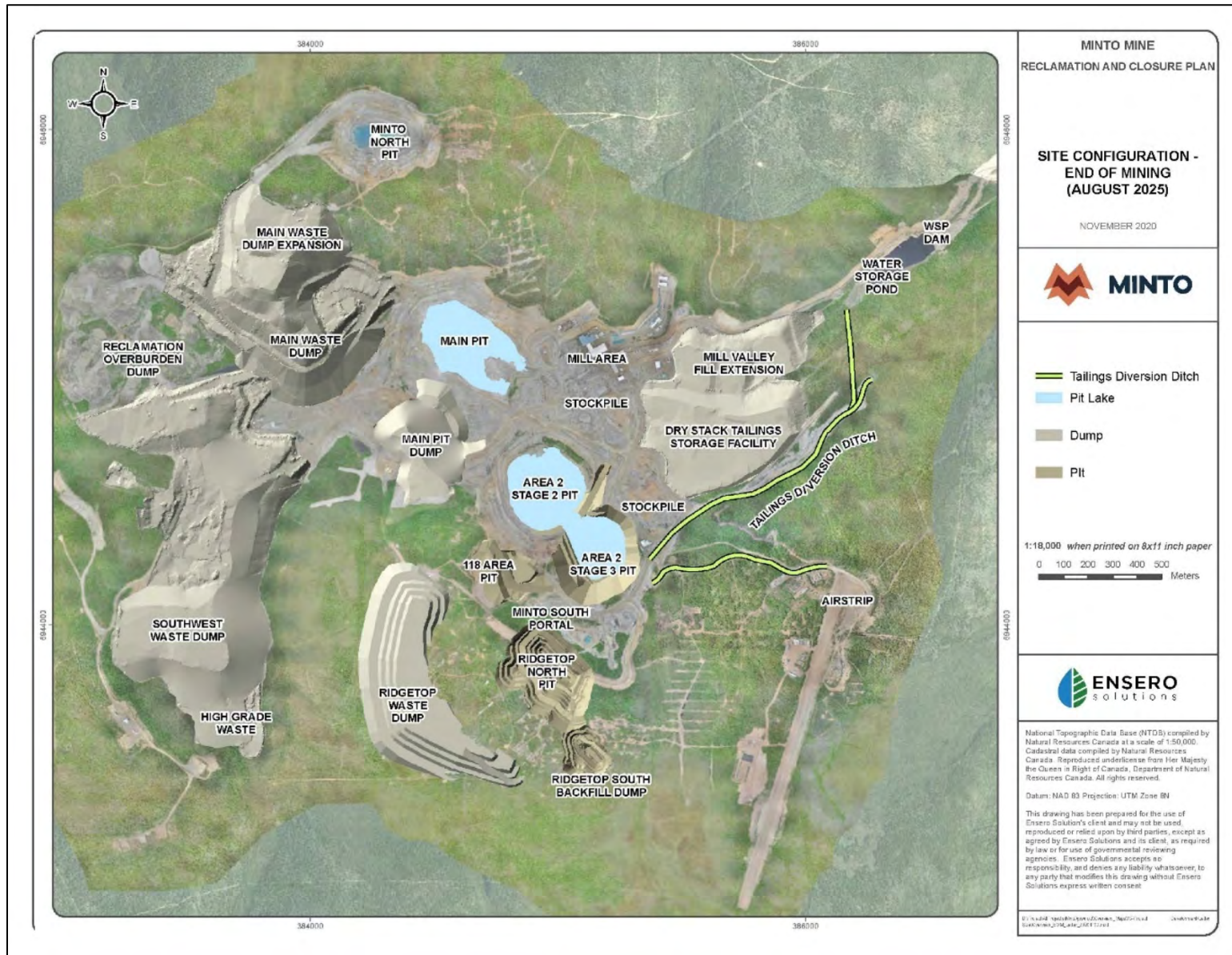
Notes:

Ridgetop mining was not included in this table in the RCP, but the document anticipated those activities also in 2022.

Source: Ensero (2021)

As shown in Table 20-5 above, closure at the Minto Mine has been categorized into three primary closure periods which are Active Closure (AC; Years 1 to 3), Post Closure I (PCI; Years 3 to 8) and Post Closure II (PCII; Years 8 to 18). It should be noted that dates are only estimates as the criteria for moving from phase to phase is based on specific thresholds, not dates. Figure 20-2 shows the expected site configuration at the end of mining activities.

Figure 20-2: Site Configuration End of Mining (August 2025)



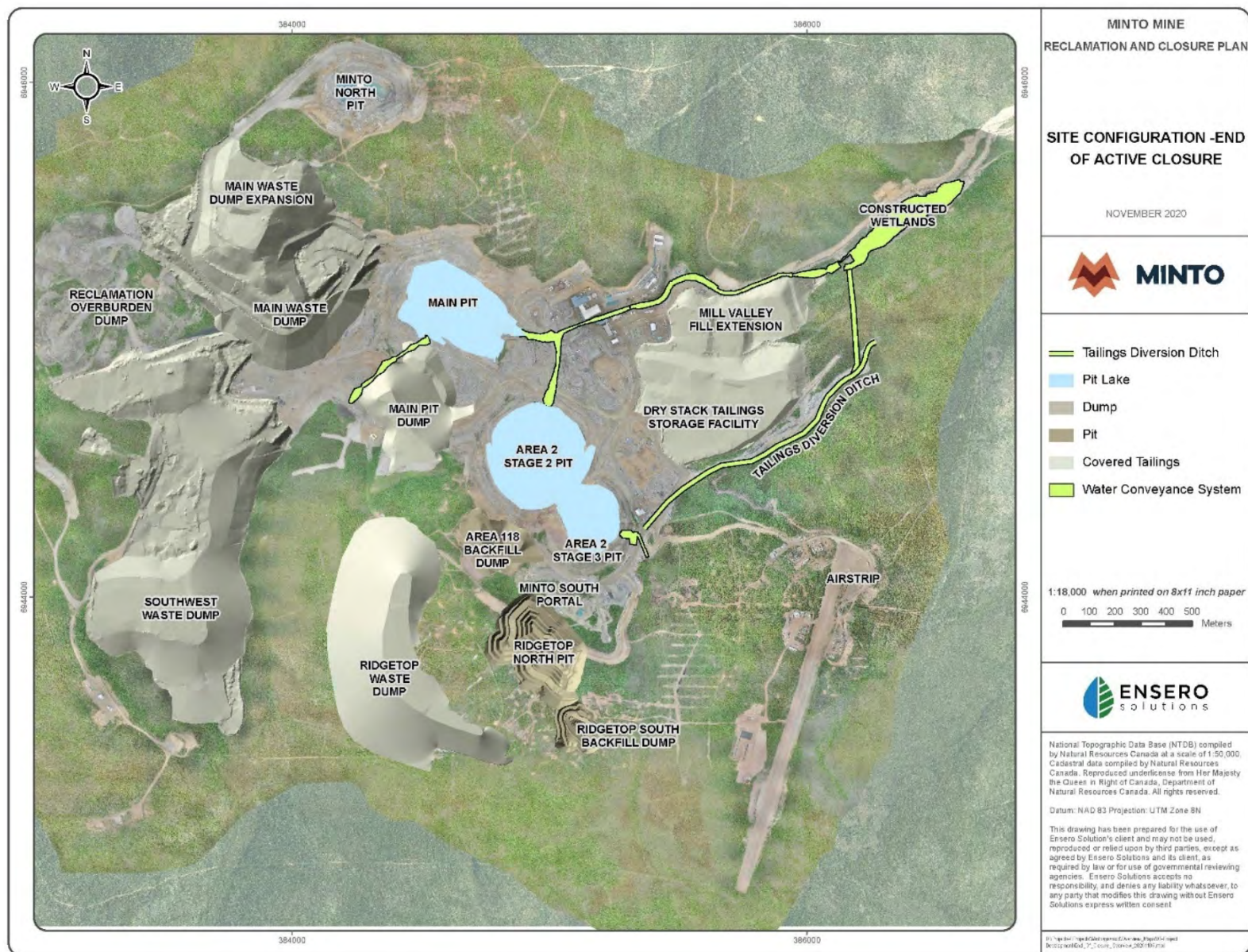
The AC period includes the implementation and construction of the large majority of the selected closure measures. Closure measures completed during this period are primarily traditional in nature, and include, but are not limited to demobilization and demolition, recontouring, soil placement, closure water conveyance construction, and revegetation measures. This will apply to waste rock dumps, tailings, stockpile pads, laydown areas and the mill complex and camp areas. Minto is progressively reclaiming areas including both seeding and tree planting. These activities will enable optimal strategies to be in place for AC activities. Personnel requirements will vary with the nature of particular activities but will decline once the major decommissioning and reclamation tasks are completed. This phase will also see construction of the passive Constructed Wetland Treatment System (CWTS) and partial decommissioning of the Water Storage Pond Dam. During the AC period, operational water quality objectives/effluent standards will still apply. Where required to manage site water inventory, active treatment is expected to be the primary means of water treatment. The AC period is expected to span three years but may be completed sooner as is dependent on the effectiveness of closure measures being completed. The expected site configuration at the end of active closure is shown in Figure 20-3.

During active closure, the existing camp and offices will be used to support the closure workforce, with unused facilities and site trailers, demolished or dismantled as required. A limited number of facilities are to be maintained on site to support post-closure activities and will remain on site. These facilities are expected to consist of: a camp and kitchen trailer, an office trailer, the water treatment system facility, and mechanic/equipment warehouse to store supplies and equipment. A limited equipment fleet will also be expected to be maintained on site during the 'open period' when people are at site through to the end of Post-Closure I to allow for as needed repairs and maintenance, as well as to maintain the main site access road and airstrip.

The workforce during closure will vary depending on activities that are in progress at a particular point in time. Based on the 3-year, 7 month per year closure duration, and the total estimated man-hours calculated by the closure cost estimate, the average operational workforce (equipment operators and labourers) during closure is estimated to be approximately 15 to 20 workers. A similar number of personnel is estimated to be required for support (project management, field support staff, and camp support staff).

The PCI period is intended to provide time for the closure measures to establish and assessments to be completed on the performance of the chosen closure measure(s). During this period, maintenance of soil covers will be ongoing as vegetation begins to establish (beyond the progressive reclamation efforts). Water conveyance features will be commissioned along with the passive CWTS. The CWTS is expected to take two years to reach design performance. A pump back system will be established from the CWTS to the water treatment plant as there is potential that water quality will not meet effluent standards without active treatment in the initial stages. During PCI, operational water quality objectives/effluent standards will still apply. Passive treatment will be commissioned over the first two years of PCI and will become the primary water treatment system utilizing active treatment as required to meet operational water quality objectives and manage site water inventory. During PCI, the site will be occupied by a small contingent of staff for a five-month period during open water season. For purposes of costing for this plan, the PCI period spans five years, but facilities may advance into PCII as closure criteria/expected performance of the closure measures are met. This may result in a reduced or extended PCI duration. Water quality has been identified as a key indicator of reclamation performance and therefore water quality must meet the Post Closure Water Quality Objective attainment criteria for a period of three consecutive years prior to advancing from PCI to PCII.

Figure 20-3: Site Configuration End of Active Closure



Source: Ensero (2020)

The PCII period is intended as a confirmatory period which will monitor the closure measures to determine if they are performing as expected. PCII is primarily a monitoring phase with maintenance activities as required. During PCII the closure water quality objectives will apply, and passive treatment will be the primary water treatment onsite. During PCII, the site will be monitored a minimum three times per year and will be occupied once every five years for two weeks per visit by a small number of staff. The two-week visit is intended to complete any maintenance as required based on findings of site inspections. The PCII period spans ten years after which Minto has costed for a visit once every ten years over ninety years.

The post-closure periods will require significantly less personnel and there will not be a full-time presence required. The post-closure workforce will consist of water treatment and environmental staff, and a limited number of equipment operators to complete reclamation repairs and site maintenance.

The estimates for reclamation and closure liability have been prepared in accordance with the costing guidance from YG EMR in the document *Reclamation and Closure Planning for Quartz Mining Projects: Plan Requirements and Closure Costing Guidance* (YG, 2013). The guidance document requires liability estimates for three separate conditions:

1. Current status (i.e., Year 0);
2. Peak Liability within the next two-year period; and
3. End-of-Mine (EOM) Life.

For the Minto Mine, the peak liability is expected to occur following mining of the Ridgetop Pit in 2022. The Year 0 liability estimate was prepared to represent conditions at the site as of August 2020, prior to mining at Ridgetop. The end-of-mine life closure liability occurs in 2025 following completion of all open pit and underground mining, as well as the milling of all stockpiles by mid-2025.

Closure implementation is estimated to take 3 years for both liability estimates with construction occurring between April and September each year. The site is estimated to be access by air during the spring, and by barge following spring break-up. Two years of interim care and maintenance is assumed to be required after mining ceases and prior to implementation of the final closure plan for the Year 0 and Peak Liability estimates. These costs are not included in the EOM estimate as the closure plan would be finalized at the end-of-mining. The Post-Closure I and Post-Closure II periods have durations of 5 years and 10 years, respectively, estimated for the cost purposes. During Post-Closure I, site access is maintained by air during the spring, and by barge following spring break-up. During Post-Closure II, site maintenance is assumed to be required every 5 years with the site accessed by barge and work completed in one month. Site access for monitoring events and geotechnical inspections when no barge is in place are assumed to be completed by helicopter. During Post-Closure II, the geotechnical inspection completed by helicopter will also be used to determine the maintenance requirements to be completed during the next summer.

Costs have also been allocated for on-going site maintenance past the Post-Closure II period into perpetuity. Routine site inspections and maintenance were assumed to be completed every 10 years, with access to the site established by barge. During these 10 year maintenance events, costs were allocated for passive treatment maintenance, site grading, as well as maintenance of the access road (including Big Creek Bridge).

Table 20-6 summarizes the reclamation and closure liability for the Year 0 scenario, peak two-year liability scenario, and the EOM scenario. The costs are presented in 2020 Canadian Dollars.

Table 20-6: Reclamation and Closure Liability Cost Summary

Description of Cost	Year 0	Peak	EOM
Closure Implementation			
Direct Costs	\$18,167,000	\$21,084,000	\$17,148,000
Care & Maintenance Costs to the End of Implementation	\$10,246,000	\$10,392,000	\$4,049,000
Indirect costs	\$19,659,000	\$20,760,000	\$17,079,000
<i>Cost Inflation</i>	\$3,302,000	\$5,762,000	\$4,593,000
Sub-total - Implementation Costs	\$51,375,000	\$57,998,000	\$42,869,000
Post-Closure NPV	\$15,320,000	\$14,754,000	\$14,267,000
Total Financial Security	\$66,695,000	\$72,752,000	\$57,137,000

Source: Ensero (2021)

Approval of the Type A Water Use Licence in 2015 included a requirement for issuance of a higher security amount than Minto's estimate, so in accordance with that requirement, Capstone placed a surety bond of approximately CAD \$72M with the appropriate regulatory agencies. While this surety bond is outstanding, Capstone will act as an indemnitor to the surety bond provider and MintoEx will indemnify Capstone for environmental liabilities at the Mine.

MINTO MINE

RECLAMATION AND CLOSURE PLAN

MILL AND ANCILLARY FACILITIES RECLAMATION MEASURES

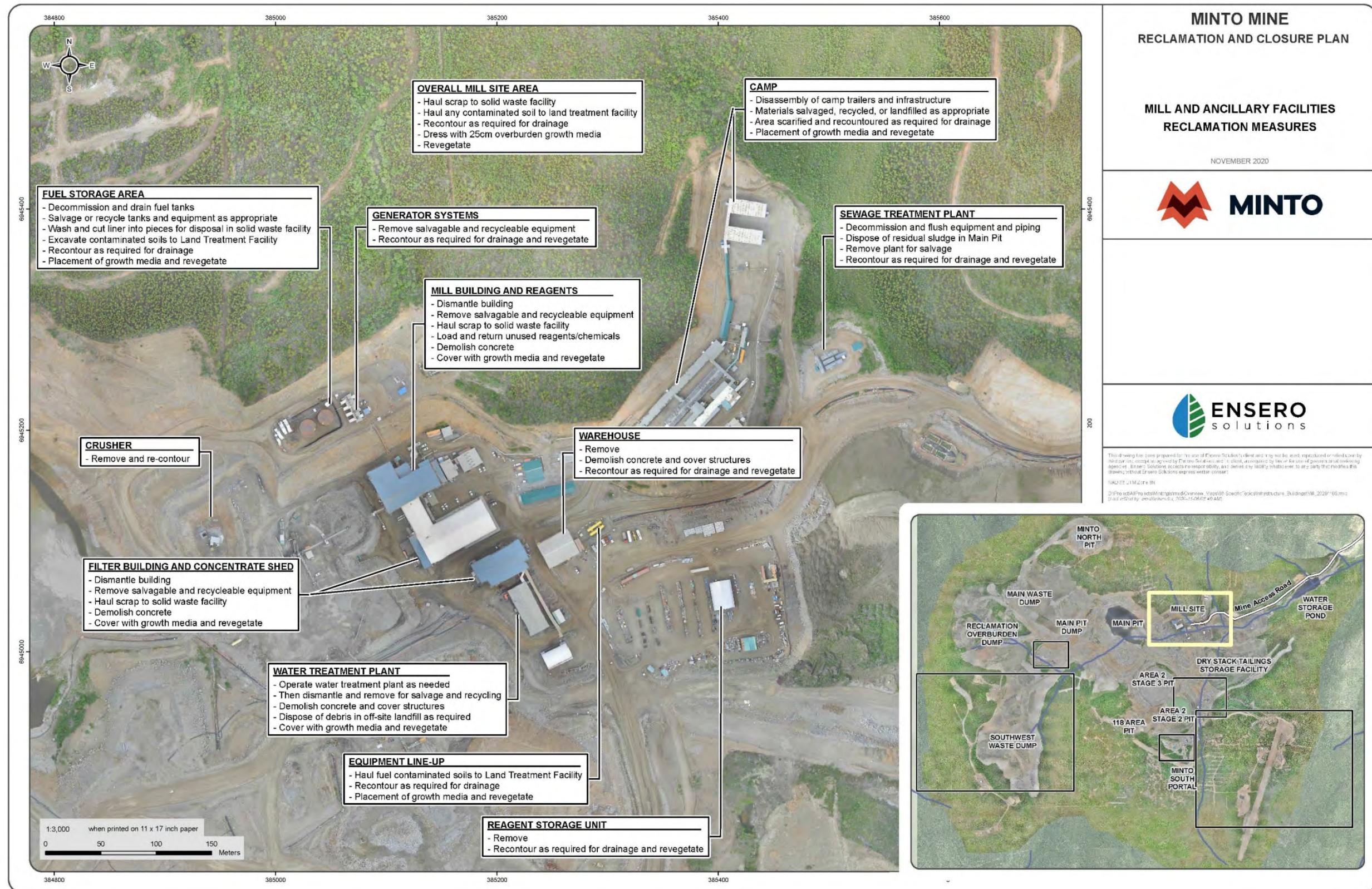
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MINTO | NI 43-101 PRELIMINARY ECONOMIC ASSESSMENT TECHNICAL REPORT

20.4 First Nations and Community Relations

20.4.1 Selkirk First Nations

The Minto Mine is located within a block of Category A land (SFN R-6A) held by the SFN. As the landowner, SFN is Minto's primary stakeholder. As the claims were staked long before designation of this block, the YG Quartz Mining Act regulatory regime applies to the Minto claims. MintoEx has pursued consultation and community engagement with the SFN, as well as project regulators and other stakeholders.

On May 29, 1993, the Government of Canada, the YG, and Yukon First Nations as represented by the Council of Yukon Indians (now the Council of Yukon First Nations) signed the Umbrella Final Agreement (UFA) after approximately 20 years of negotiation. The UFA provided a comprehensive land claim agreement for all Yukon First Nations and an outline for community based social wellbeing, political autonomy, and economic independence.

On July 21, 1997, the SFN became the fifth First Nation to sign a comprehensive land claim agreement. The Selkirk First Nation Final Agreement and the Selkirk First Nation Self Government Agreement (SFN FA and SFN SGA) was negotiated by SFN, YG and the Government of Canada. Through the SFN FA, the SFN was allocated 1,830 sq. miles of land over which the SFN has ownership and control. Of this land total, 930 sq. miles are Category A Settlement Lands, of which the SFN has the ownership of the surface and subsurface, including minerals, oil, and gas, and exclusive fish and wildlife harvesting rights. The balance of the land allocation is 900 sq. miles of Category B, on which SFN has ownership of surface only, and a small amount of land, (2.62 sq. miles) in the form of site-specific parcels.

Three years before the start of the land claims negotiations, the Minto and DEF mineral claims were staked by two competing exploration syndicates. These claims were extensively explored between 1971 and 1974 and feasibility studies were completed in 1975-76, but thereafter, activities ceased. Ownership was somewhat restructured in 1984 and 1989, which resulted in limited exploration in 1989, after which the property became dormant again. In 1993, MintoEx purchased the claims for the purposes of initiating mining in the area and was active until 1999. During this time, SFN signed the SFN FA, which placed the MintoEx claims within Category A Settlement Lands. Recognizing that, pursuant to SFN FA, the SFN were afforded the rights to exercise certain powers over land use and environmental protection.

MintoEx claims continue to lie within SFN Category A Settlement Lands (Parcel R-6A), where both surface and mineral rights are reserved for SFN. However, under the SFN FA, certain rights are reserved, including:

- All rights to mines (opened and unopened) and minerals (including precious and base metals) within settlement land are ceded to the Crown except on Category A lands, where mines and minerals are owned fee simple by SFN excepting pre-existing rights such as those that form the Minto Mine property (SFN FA, Chapter 5.4.2);
- Where pre-existing rights lie within Category A land, such as the Minto mineral claims, the government will continue to administer those rights as though they were still Crown Land (SFN FA, Chapter 5.6.2) except that any royalties collected from those mineral rights will be paid to SFN (SFN FA, Chapter 5.6.3);

- A 30 m right of way within land parcels R-6A, R-40B and R-44A covering the existing access road from Minto Landing to the project, with the right to construct, maintain, upgrade and use the right of way and road for as long as the company holds its mineral rights (SFN FA); and the right of YG to grant a surface lease over the mineral rights, subject to the consent of SFN, not to be unreasonably withheld (SFN FA). If any of the claims are allowed to lapse, they could not be re-staked, and the surface and mineral rights would revert to the SFN; and
- In September 16, 1997, MintoEx and the SFN entered a Cooperation Agreement concerning the Minto Project with respect to the development of the Minto Mine. This agreement was amended November 4, 2009. In addition to establishing cooperation with respect to permitting and environmental monitoring, this confidential document deals with other economic and social measures and communication between Selkirk First Nation and the company. This agreement will continue to guide SFN involvement in the project as mine expansion planning and development proceeds.

Minto and SFN share the desire to minimize adverse environmental and socio-economic impacts resulting from the Mine operation and during closure. Minto believes this can be accomplished through consultation and open communication with stakeholders that include SFN, project regulators, and others. Accordingly, Minto has continued to focus on engagement with SFN, particularly through the technical working group.

20.4.2 Tri-Partite Socio-Economic Working Group

The tri-partite socio-economic working group, comprising the SFN, YG and MintoEx, is responsible for a monitoring program of socio-economic effects, as outlined in the Decision Document for Phase IV (YESAB project #2010-0198). The scope of this program was agreed upon in 2013. The working group holds regular meetings to discuss data availability, responsibilities and reporting. The scope of this program was agreed upon in 2013 and amended in 2018. The 2014 report was submitted to all parties for final review and published in 2016. The 2015 Annual Report was published in 2018. The 2016 to 2018 Annual Report has been finalized and will be published in 2021.

Another group, also comprising SFN, YG and MintoEx representatives, was developed in order for MintoEx to update YG and the SFN on progress of the reclamation and planning processes. Discussions to date have included, but not been limited to, scope of the Reclamation and Closure Plan and proposed closure measures, operations updates, and engagement with SFN.

MintoEx has also involved other stakeholders throughout the reclamation and closure process, through technical working groups, site tours, updates, regulator meetings and reports. The groups frequently involved are: the YWB, YG EMR, YG Water Resources, Environment and Climate Change Canada and Fisheries and Oceans Canada. The main forms of engagements held since 2011, essentially since the submission of the expansion plans, includes:

- Bilateral Technical Working Group meetings;
- Community Sessions;
- Meetings between SFN leadership and senior management of MintoEx;

- Bilateral meetings with regulators; and
- Technical meetings involving multiple stakeholders.

Minto and SFN have committed a Bi-lateral Technical Working Group (BTWG) to discuss technical issues related to the Minto Mine regularly. The BTWG is comprised of Minto and SFN representatives tasked with engagement in the following areas: geotechnical, water quality, consultation, and closure and reclamation. Most recently, SFN and Minto have collaborated on the latest evolution of the Closure Adaptive Management Plan.

20.5 Metal Leaching / Acid Rock Drainage Characterization

20.5.1 Phase V/VI Characterization Methodology

The Phase V/VI mine plan introduced new components to the already permitted facilities at the Minto Mine and resulted in additional metal leaching and acid rock drainage (ML/ARD) characterization work to be undertaken, including:

- Open pit mining consisting of development of Minto North Pit (MNP), Area 2 Stage 3 Pit (A2S3), and Ridgetop (South and North pits);
- Underground mining, consisting of access to Minto East zone, Area 2/Area 118, Copper Keel and Wildfire via two portals and declines; and
- Tailings from ore processing from open pit and underground developments.

The ML/ARD geochemical characterization has been expanded and refined as part of Phase V/VI mining and processing to better understand the potential for ML/ARD associated with the new mining components. The results of Phase V/VI ML/ARD waste rock and tailings characterization program are summarized in the following sections.

20.5.1.1 Waste Rock

Sample Selection for Static Testing

Between 2007 and 2011, 108 Phase V/VI pre-production core samples have undergone acid base accounting (ABA) and multi-element determination by aqua regia digestion with ICP-MS finish as shown in Table 20-7. Between 2007 and 2008, this analysis was carried out at ALS Chemex and from 2009 to 2011 and subsequent tests (2013) were carried out at SGS (Burnaby, BC).

Area 2 Stage 3

During Phase IV pre-production characterization, 56 drill core samples from within the Area 2 Stage 2 pit shell were tested (SRK 2010a). The Phase IV pre-production testing included bulk waste, mineralized waste, and ore samples. In preparation for Phase V/VI and to expand the coverage into Area 2 Stage 3, 16 more drill core samples were tested in 2011 and 2013. All 16 samples targeted bulk waste to verify whether this large volume of waste class contained the

expected excess of neutralization potential, and therefore be suitable for disposal in upland waste dumps. Samples were selected jointly by a Minto geologist and an SRK geochemist to achieve appropriate spatial coverage within the Area 2 Stage 3 pit shell and to target bulk waste.

Minto North

In 2009, ABA testing was carried out on 18 hanging wall and five footwall samples from Minto North. The samples were selected by SRK geochemist using drill logs, summarized assay data, and collar locations for diamond drillholes (DDH) provided by Minto in 2011, 9 drill core samples were selected from intersections of the unmineralized felsic dike that cuts through the proposed Minto North Pit and tested at SGS by the same methods as were used for the 2009 Minto North samples. Dike samples were selected from available core intersections by Minto geologists and were considered to be representative of the in-pit dike material.

Ridgetop

In 2008, 16 bulk waste rock, 2 mineralized waste, and 2 ore samples from the Ridgetop deposit were tested. The selection of the 20 samples was based on similar criteria to those described for the 2009 Minto North selections. In 2010, ABA testing was conducted on 12 conglomerate samples from the Ridgetop deposit area and in 2013, 20 more bulk waste samples from within the Ridgetop pit shells were also tested. The additional sampling and testing were undertaken to improve the spatial sample coverage in the Ridgetop deposit area.

Wildfire

In 2011, 8 conglomerate samples from the Wildfire deposit underwent ABA testing. The 8 samples were selected by Minto geologists from available core samples to ensure representative coverage of the conglomerate in the Wildfire area at time when open pit mining was still being considered for a portion of the Wildfire resource.

Underground

As part of Phase IV pre-production characterization, 27 drill core samples from locations near the initial planned Phase IV underground development were tested. The results of that testing were similar in character and in variability to pre-production and operational monitoring results of pit waste rock. In 2010, the testing was carried out on drill core samples from rock along or adjacent to the alignment of the then proposed ramp. SRK had selected appropriate diamond drill hole intervals for testing. The intervals were selected from 2006 to 2009 drill holes, where the interval was within 20 m lateral distance of the ramp centreline and within 10m elevation of the ramp floor. Sample frequency was based on an approximate target of 1 sample for each 100 m length of ramp. Twenty-seven (27) samples were tested. However, the process of identifying drill core intersections of the planned workings had several drawbacks (including initial development plans being subsequently revised to locate workings remotely from the tested intervals). Because of these drawbacks, and the expected similarity of pit waste and underground waste, no pre-production testing of underground waste rock was carried out for Phase V/VI. All underground waste rock that is permanently stored in surface facilities will be subject to the same segregation protocols as pit waste rock.

Area 118

No Area 118 waste rock has been tested to determine ML/ARD characteristics. Waste rock from the Area 118 open pit is expected to have similar characteristics to Area 2 waste rock. There will be little to no waste rock brought to surface during underground mining of the Area 118 deposit, as there will be minimal quantities produced and what's produced will be used as backfill in mined-out areas.

Table 20-7: Summary of Phase V/VI Mine Rock Pre-production Static Testing

Mine Area	Material Type	Number of Samples	Year of Analysis
Area 2 Stage 3	Bulk Waste	16	2011 + 2013
Minto North	Hanging Wall	18	2009
Minto North	Footwall	5	2009
Minto North	Dyke	9	2011
Ridgetop	Bulk Waste	36	2008 + 2013
Ridgetop	Mineralized	2	2008
Ridgetop	Ore	2	2008
Ridgetop	Conglomerate	12	2010
Wildfire	Conglomerate	8	2011

Source: SRK (2013)

Sample Selection for Kinetic Testing: Humidity Cell Tests

Four (4) humidity cell tests (HCs) were started in July 2009 and 8 more HCs (including a blank and a duplicate for quality control) were started in March 2011. The objective of these tests is to evaluate the release rates of major and trace elements, under laboratory weathering conditions. A range of copper and sulphur content was targeted during sample selection in order to provide a broad indication of variation of release rates related to degree of mineralization. The sample selection for the initial 4 HCs (HC1 through HC4) was based a query of exploration ICP database (2005 - 2008), selection of list of core intervals that were both within the Phase 3 pit shell and contained less than 0.5% copper (i.e., below the ore cut-off) and summary statistics analysis. The samples for Minto North and Ridgetop HCs testing were selected based on review of assay data (where available) and targeting typical and moderately anomalous waste intervals within the expected pit limits. Table 20-8 shows the detail of sample selection for HC and their characteristics.

Sample Selection for Kinetic Testing: Field Leach Barrels

In order the predict ML/ARD under site conditions, field leach Barrel tests were constructed for Area 2 waste. The intended goal was to assess the site-based weathering that permit evaluation of rates of release of weathering products under site temperature and precipitation conditions.

The tests also provide a larger scale of testing than is typically carried out in a laboratory and provide more certainty regarding the sample characteristics and the related drainage chemistry. The mineralized waste material (sulphur greater than 0.1% and copper less than 0.5%) was identified as having a high risk for ML/ARD, and the barrel tests were proposed to evaluate samples of mineralized waste. Table 20-9 provide detail of sample selection and characteristics of the field leach barrels.

The barrels were open to the atmosphere and incident precipitation. Precipitation percolate through the rock and accumulate in the drain tube and in bottom of the barrel between sampling events. Sampling of the leachate began in June 2010 and has been carried out several times during open-water season. Samples were collected directly from the tubing by opening the ball valve and collecting samples from the volume accumulated.

Table 20-8: Phase IV/V/VI Humidity Cell Samples

HCT	Hole 10	From (m)	To (m)	Cu (%)	S (%)	Selection Characteristics	Deposit
HC1	07SWC211	83	86	0.21	0.51	-90th percentile Cu. -90th percentile S	Area 2
HC2	07SWC196	54	55	0.01	0.01	50th percentile Cu. 50th percentile S	Area 2
HC3	07SWC196	46	47	0.1	0.02	-75th percentile Cu, -50th percentile S	Area 2
HC4	07SWC211	71	74	0.01	0.08	-50th percentile Cu. -75th percentile S	Area 2
HC5	09SWC506	30	33	0.0004	<0.02	Bulk waste	Minto North
HC6	09SWC506	30	33	0.0004	<0.02	Bulk waste (dup)	Minto North
HC7	09SWC484	40	43	0.0006	<0.02	Bulk waste	Minto North
HC8	09SWC498	54	57	0.0474	0.04	Moderately anomalous waste	Minto North
HC9	07SWC258	20	23	0.0136	<0.02	Bulk waste	Ridgetop North
HC10	08SWC337	10	13	0.0145	<0.02	Bulk waste	Ridgetop North
HC11	08SWC348	12	15	0.0108	0.03	Conglomerate	Ridgetop North
HC12	08SWC370	10	13	0.0177	<0.02	Conglomerate	Ridgetop North
HC13	09SWC419	15	18	0.0047	<0.02	Bulk waste	Ridgetop South
HC14	n/a	n/a	n/a	n/a	n/a	Method blank	Method blank

Source: SRK (2013)

Table 20-9: Barrel Test Sample Selection Characteristics

Barrel 10	Targets (%)	Selection Characteristics	Cu Range (%)	S Range (%)	No. of Intervals In S Range
BAR-10	0.15	10 th percentile S amongst Mineralized Waste population with S >0.1%	0.005-0.45	0.14-0.16	292
BAR-50	0.37	50 th percentile S amongst Mineralized Waste population with S >0.1%	0.005-0.49	0.36-0.40	170
BAR-75	0.79	75 th percentile S amongst Mineralized Waste population with S >0.1%	0.005-0.49	0.74 -0.84	167
BAR-90	1.41	90 th percentile S amongst Mineralized Waste population with S >0.1o/o	0.05-0.49	1.28- 1.54	159
BAR-B	n/a	blank for quality control	n/a	n/a	n/a

Source: SRK (2013)

Testing Methods

The ML/ARD testing methods consisted of static and kinetic tests. The static testing consisted of ABA and aqua regia digestion followed by elemental determination by combination of ICP-MS and/or ICP-AES.

- The early (until 2008) static testing were carried out at ALS Chemex in North Vancouver BC. ABA analyses were carried out using the Sobek et al. (1978) procedure with sulphur speciation and additional determination of inorganic carbon content. Elemental analyses were performed according to ALS Chemex method ME-MS41 (aqua regia digestion followed by elemental determination by a combination of ICP-MS and ICP-AES); and
- The post-2008 tests were carried out at SGS CEMI in Burnaby BC. ABA analyses were carried out at CEMI according to the Sobek et al. (1978) procedure with sulphur speciation and additional determination of inorganic carbon content. Elemental analyses consisted of aqua regia digestion followed by elemental determination by ICP-MS.

The kinetic tests included laboratory-based humidity cells and field leach barrels:

- The HCs were established at SGS according to methods defined in ASTM D5744 (ASTM,2007). For each test, a one-kilogram charge of material (crushed to pass a 6.3 mm (¼") sieve) was placed in a Plexiglas cell. Each sample was subjected to consecutive 3 day cycles of moist and dry air, and the final day of the weekly cycle consisted of flushing of the sample with 500 -750 mL. The HC leachate was collected weekly then biweekly and tested for pH, conductivity, oxidation reduction potential (ORP), dissolved oxygen, sulphate, chloride, fluoride, acidity, alkalinity, and a suite of elements by ICP-MS; and
- The field leach barrels were set up on site, left open to the atmosphere and incident precipitation. Rainfall and snowmelt percolate through the rock and accumulate in the drain tube and in bottom of the barrel between sampling events. Leachate samples were collected for determination of laboratory pH and conductivity, acidity, alkalinity, anions (chloride, fluoride, and sulphate) and trace-level dissolved metals by ICP-MS/OES.

20.5.1.2 Tailings

Sample Selection for Static Testing

Residues from 4 metallurgical tests relevant to Phase V/VI were subjected to static testing. A total of 18 tailings samples were available for testing:

- Eight samples from Area 2;
- One tailings sample from Minto North;
- Five tailings samples from Area 118 and Ridgetop; and
- Three tailings samples, one each from Wildfire, Copper Keel & Minto East.

Sample Selection for Kinetic Testing

Two subaqueous tailings columns were started in September 2009 at SGS; these tests were ongoing at the time of preparation of the 2013 ML/ARD report (SRK 2013). The objective of the tests was to evaluate the porewater chemistry that would develop over a long period of contact with tailings solids under flooded water cover conditions. The two subaqueous columns consisted of:

- Column 1: was a composite of upper and lower Area 118 tails produced in G&T tests 2351-33 and 2351-34 (G&T, 2009a); and
- Column 2: was a composite of upper and lower Ridgetop tails produced in G&T tests 2351-35 and 2351-36 (G&T, 2009a).

Testing Methods

Tailings residues from metallurgical testing were submitted to ALS Chemex (Area 2 samples) and SGS (all other samples) for ML/ARD testing.

ABA testing was carried out on all samples and consisted of determination of total sulphur by induction furnace, sulphate- sulphur by hydrochloric acid leach, total inorganic carbon (TIC) by evolved gas analysis, and neutralization potential (NP) by the Sobek method (Sobek et al., 1978). Elemental analysis of tailings was by aqua regia digestion followed by determination of major and trace element content by a combination of ICP-MS and ICP-AES.

The kinetic test consisted of two subaqueous columns. The subaqueous tailings columns were constructed of 5.08 cm (2") internal diameter Plexiglas columns with an acrylic perforated disk topped with nylon mesh at the base of the column to retain the tailings solids. Approximately 2.5 kg (dry weight) of tailings were placed in each column. The columns were initially saturated by slowly adding deionized water through the bottom sampling port. Once the tailings column was saturated, an additional volume of water was gently added from the top of the column to establish a 30cm column of water above the tailings. Operation of the subaqueous column tests consists of circulation of water in the water cover using a peristaltic pump to ensure fully oxygenated conditions are maintained at the tailings interface. The columns were sampled weekly then biweekly from both bottom and side ports to determine pH, conductivity, ORP, DO, sulphate,

chloride, fluoride, acidity, alkalinity, and a suite of elements by ICP-MS. Sampling and analysis of water chemistry was later reduced to sampling and analysis once every 12 weeks. During each sampling round, the minimum amount of water required for analysis was removed then deionized water was added to the water cover each week to maintain 30 cm of water above the tailings interface.

20.5.2 Phase V/ VI Characterization Results

20.5.2.1 Waste Rock

Static Testing – Acid Base Accounting

The results of the Phase V/VI waste rock ABA testing are provided in the figures accompanying the following discussion. The results from the Area 2 and Area 118 deposits are included to allow the Phase V/VI waste rock (Area 2 Stage 3, Ridgetop, Minto North and Wildfire) to be put into the context of the operating mine.

Acid Potential

Sulphur in mine rock from the Phase V/VI deposits is dominantly in the sulphide form, as is illustrated by the strong 1:1 correlation in Figure 20-5. The Minto North, Wildfire, and Area 118 results were all clustered at the origin on the chart because they all had total sulphur below the level of analytical detection limit (DL) of <0.01%. The Area 2 samples had the highest total sulphur content, ranging from below the level of analytical DL to 4.4%. The Area 2 bulk waste samples ranged from <0.01 to 0.11%. The Area 2 Stage samples had total sulphur below the DL for all except one sample, which had 0.07% total sulphur and its sulphide was below DL. The Ridgetop mineralized waste and samples had similar total sulphur contents in the range of 0.1 to 0.4%.

The bulk waste samples had a low, narrow range, with a minimum of 0.01% and a maximum of 0.06%. The Ridgetop conglomerate samples were all below the DL except for one sample, which had 0.02% total sulphur. These data indicate low sulphur content in the waste rock.

A comparison of sulphide sulphur and copper content showed that the copper mineral chalcopyrite could account for much of the sulphide sulphur in the Area 2 and Ridgetop samples. Chalcopyrite is widely observed in Minto rocks, so it is likely the most important source of sulphur.

Neutralization Potential

To evaluate the proportion of NP that is likely to be derived from carbonate minerals, the NP values were compared with the equivalent neutralization potential total inorganic carbon (NPTIC). Figure 20-6 shows the results of this comparison for the Phase V/VI waste rock samples and indicate that NP and NPTIC are generally well correlated at higher concentrations. However, NP systematically exceeds NPTIC below approximately 30 kg CaCO₃/t, with relative differences increasing as NP decreases. This deviation is typically attributed to silicate minerals contributing a component of the neutralization that is measured in the NP titration. In two exceptional Area 2 samples, the NPTIC was approximately double the NP. This may be due to the presence of iron and manganese carbonates such as siderite which does not contribute to net neutralization (SRK 2010a).

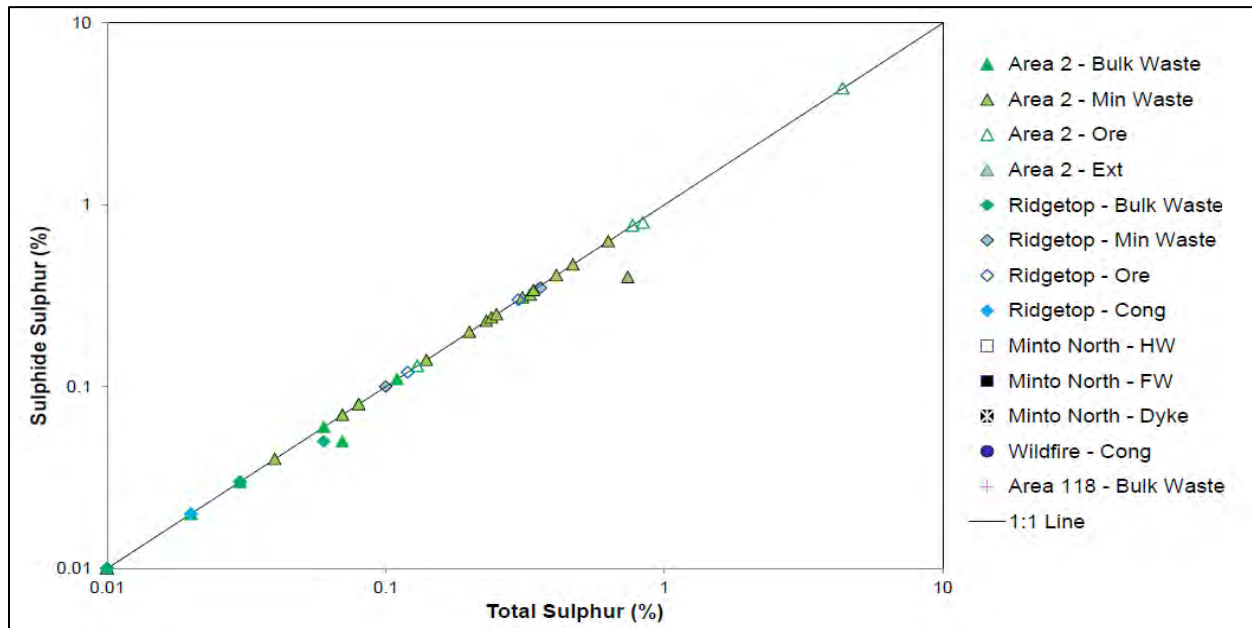
A common interpretation is that silicate minerals are insufficiently reactive to maintain circumneutral pH weathering conditions. It is assumed that only effective carbonate minerals can react quickly enough to maintain circumneutral pH, which is important for limiting leaching of trace elements like copper. However, for materials with low total sulphur such as this waste rock, silicate weathering can generate alkalinity at sufficient rates to neutralize acidity arising from sulphide oxidation.

Overall Acid Rock Drainage Potential

The 2013 permit for the Minto Mine classified rock with NP:AP ratio (NPR) greater than 3 as non-potentially acid generating (Non-PAG). It is common practice to categorize rock with an NPR between 1 and 3 as having uncertain potential for acid generation (Uncertain), and to categorize rock with an NPR ratio of less than 1 as potentially acid generating (PAG). These three categories (Non-PAG, Uncertain, and PAG) were adopted in the assessment of phase V/VI material for purposes of discussion. It should be noted that specifying an NPR of 3 as the lower limit of the Non-PAG category is conservative because theoretically the critical NPR is 2. The rationale for adopting an NPR of 3 as the lower limit of the Non-PAG category is to account for uncertainty related to interpreting ABA results. Defining Non-PAG as $\text{NPR} > 3$ provides some insurance that Non-PAG rock will not develop acidic weathering conditions within the dumps.

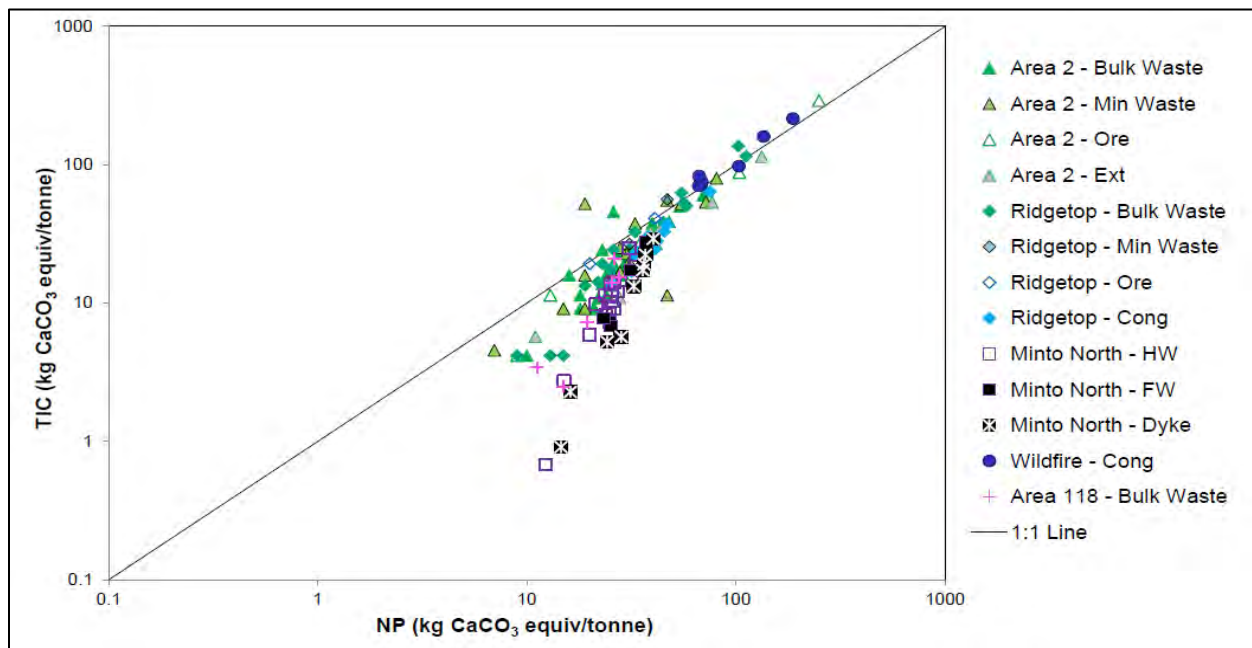
Figure 20-7 illustrates the NPTIC over NPR for the Phase V/VI waste rock samples. Of the 200 samples tested, only three Area 2 mineralized waste rock samples and one Area 2 sample were classified as PAG; four Area 2 mineralized waste samples and one Ridgeway sample were classified as Uncertain; and the remaining samples, including all of the Minto North, Wildfire, and Area 118 samples, were classified as Non-PAG. These data indicate very low potential for acid generation related to the waste rock. It was expected that mill feed and mineralized waste from the Phase V/VI deposits will display the same range of ABA characteristics as those observed for Area 2 waste rock tested during previous phases.

Figure 20-5: Sulphide Sulphur versus Total Sulphur



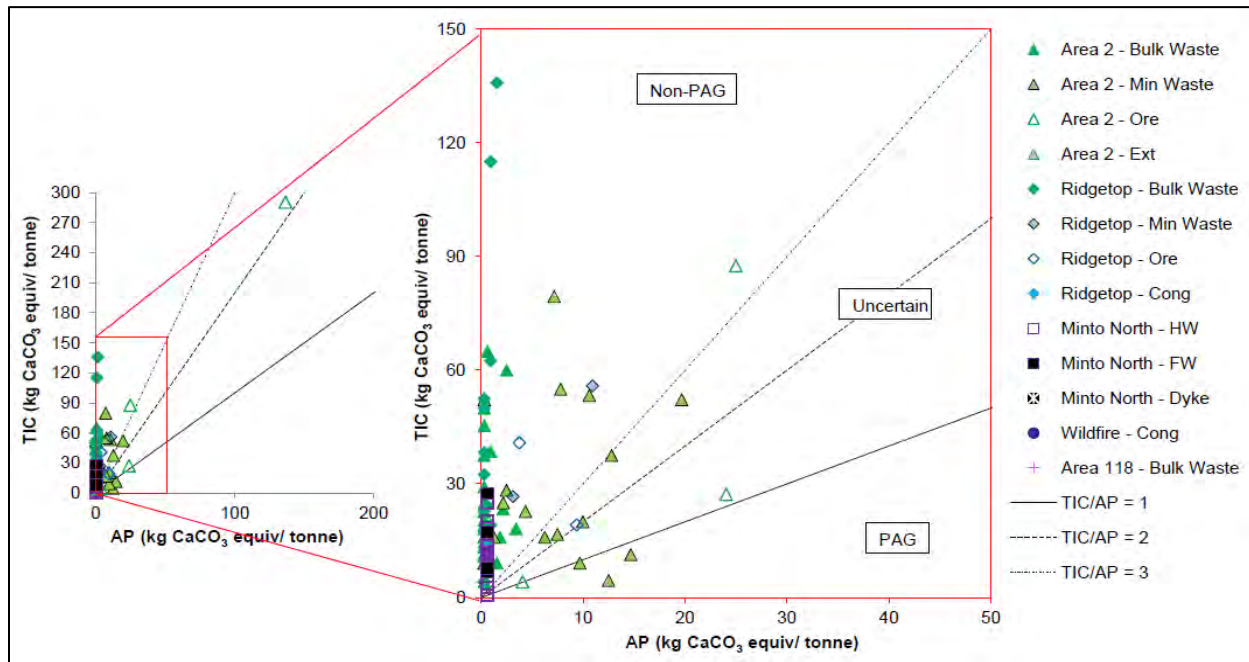
Source: SRK (2013)

Figure 20-6: Inorganic Carbon Equivalent NP versus Bulk NP



Source: SRK (2013)

Figure 20-7: Carbonate Equivalent NP versus Acid Potential



Source: SRK (2013)

Kinetic Tests Results – Humidity Cells

The test results available at the time of writing for the four Area 2 HCs, the four Minto North HCs, the five Ridgetop HCs, and the blank HC are discussed below. Only the results for pH, sulphate and copper are provided below due to space constraints, but all the results can be found in SRK (2013). For clarity, the results have been plotted separate, with the Area 2 HCs started in 2009 on separate charts from the HCs started in 2011.

Leachate pH

The leachate pH in all four of the Area 2 HCs had remained circumneutral and been stable between pH 7.0 to 8.0 for 178 weeks of testing (Figure 20-8). Historically, HC1 had marginally greater variability than the other three Area 2 cells, but since cycle 130 all four have been similar. The variability prior to cycle 130 is likely due to HC1 having the highest sulphur concentrations of the four cells.

Circumneutral leachate pH in the 7.5 to 8.0 range have remained stable throughout the duration of testing in five of the tests started in 2011 (HC7, HC8, HC9, HC10, and HC13). HC6 and HC12 had marginally greater variability and a stable range that is shifted more towards pH 7. HC5 and HC11 had notable greater variability with a wider pH range of 6.5 to 8.0. The blank cell (HC14) had somewhat similar results to HC5 and HC11, although it had greater variability and reached a lower limit below pH 6.5 consistent with operating a blank cell using deionized water.

Overall, the leachate pH results do not appear to be strongly related to the solid contents of copper and sulphur in the samples.

Sulphate

Sulphate release rates from Area 2 tests HC2, HC3, and HC4 have been below 5 mg/kg/wk and relatively stable over the duration of testing to date. HC1 initially had elevated rates (around 30mg/kg/week), but its sulphate release declined to below 5 mg/kg/wk after cycle 45 then stabilized (Figure 20-9). Sulphate release in the Minto North and Ridgeway HCs had similar results to Area 2 HC2, HC3, and HC4. All nine of them had their highest sulphate release rates (4 mg/kg/wk) during the initial flush then declined and stabilized from week 14 onwards between 0.8 and 1.5 mg/kg/wk with occasional spikes reaching 2 mg/kg/wk. The lower limit of this sulphate range corresponds to concentrations below the DL. It was noted that the source deposit of the samples did not have a distinguishable effect on the sulphate release rates. The higher rates observed from HC1 are likely due to its higher degree of mineralization (90th percentile copper and sulphur concentrations) resulting in high sulphide oxidation rates.

Copper

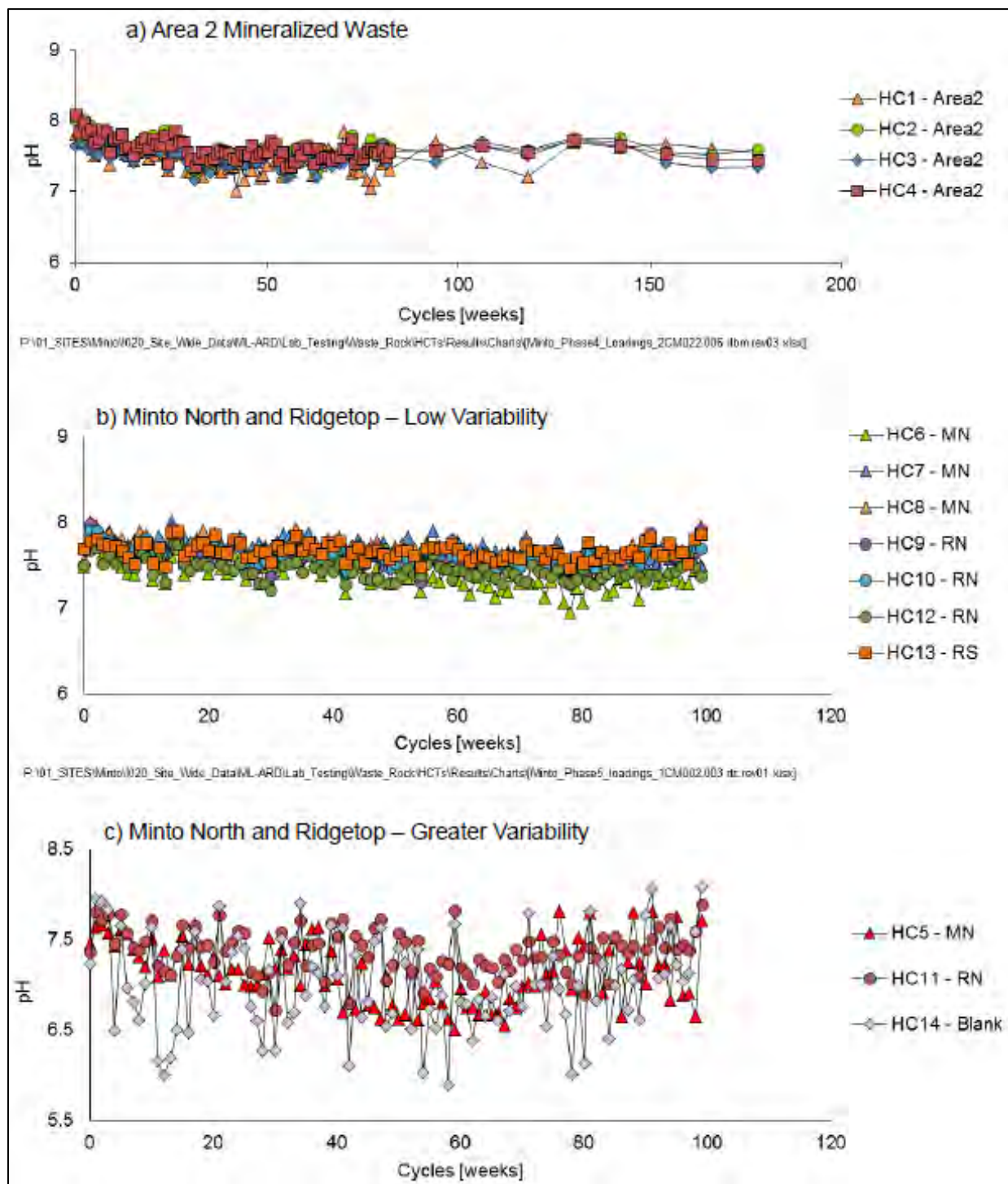
Copper release rates from the HCs appear to be related to the solid copper content of each sample. Release rates from HC1 were an order of magnitude higher than the rates from the other cells during the test (Figure 20-10). The remaining three Area 2 cells, as well as HC8, HC9, HC10, HC11, and HC12, had similar solid copper content and similar ranges and variability of copper release rates from the HCs. HC5, HC6, HC7, and HC13 had lower solid copper content and the lowest and most variable copper release rates. With the exception of HC5, HC6, HC7, and HC13, all of the cells had their high release rates during the initial flush after which they all had declining trends until around cycle 10 to 15, then stabilized.

The copper release rates from the Area 2 HCs have continued to be stable; HC1 stabilized around 0.01 mg/kg/wk, and the remaining three cells were within the 0.0001 to 0.001 mg/kg/wk range. The release rates from HC8, HC9, HC10, HC11, and HC12 declined again after cycle 80. The copper release rates from HC5, HC6, HC7, and HC13 were relatively stable for the duration of testing, but exhibited more rate variation than the other cells. These four cells had similar rates and variability: fluctuating within a range of 0.0001 to 0.001 mg/kg/wk comparable to the blank cell (HC14) indicating low level copper contamination may be affecting these waste rock cells.

The release rates of the other noteworthy trace elements such as cadmium and selenium show generally low level of release rates and below the DL in some of the cells except HC1, HC8 and HC11. The HCs with initially elevated release rates such as HC1 also subsequently decreased and stabilized (SRK, 2013).

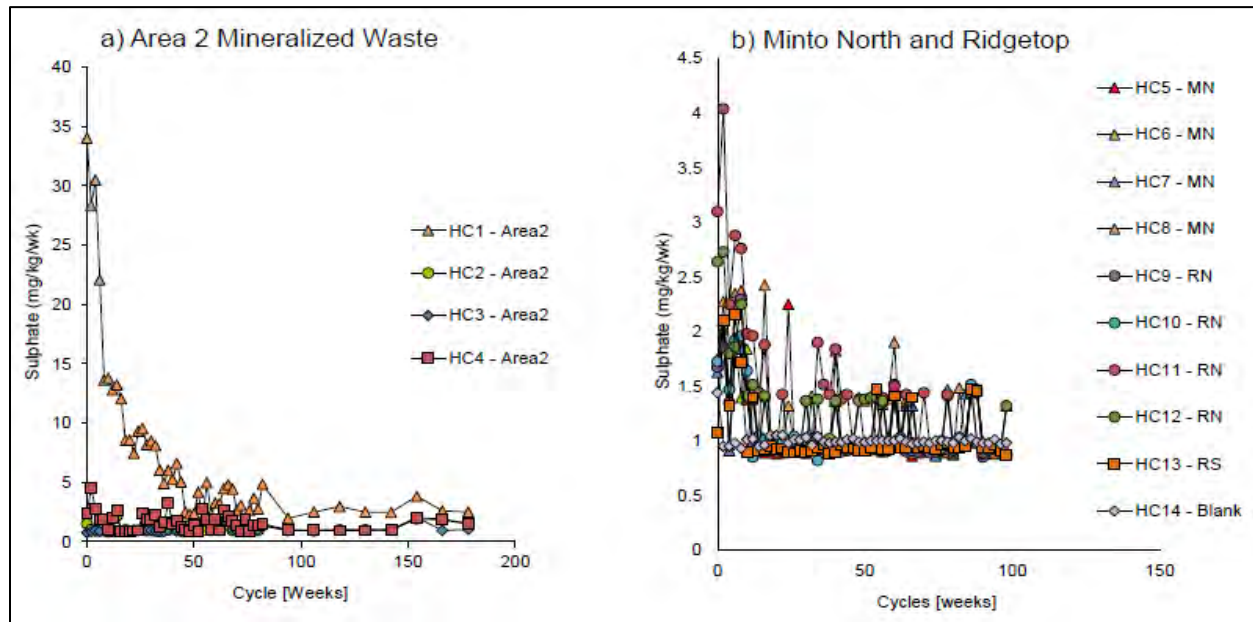
Overall, the humidity cell testing showed that the above constituents and other parameters were generally stable or declining trends over time.

Figure 20-8: Humidity Cells Leachate pH



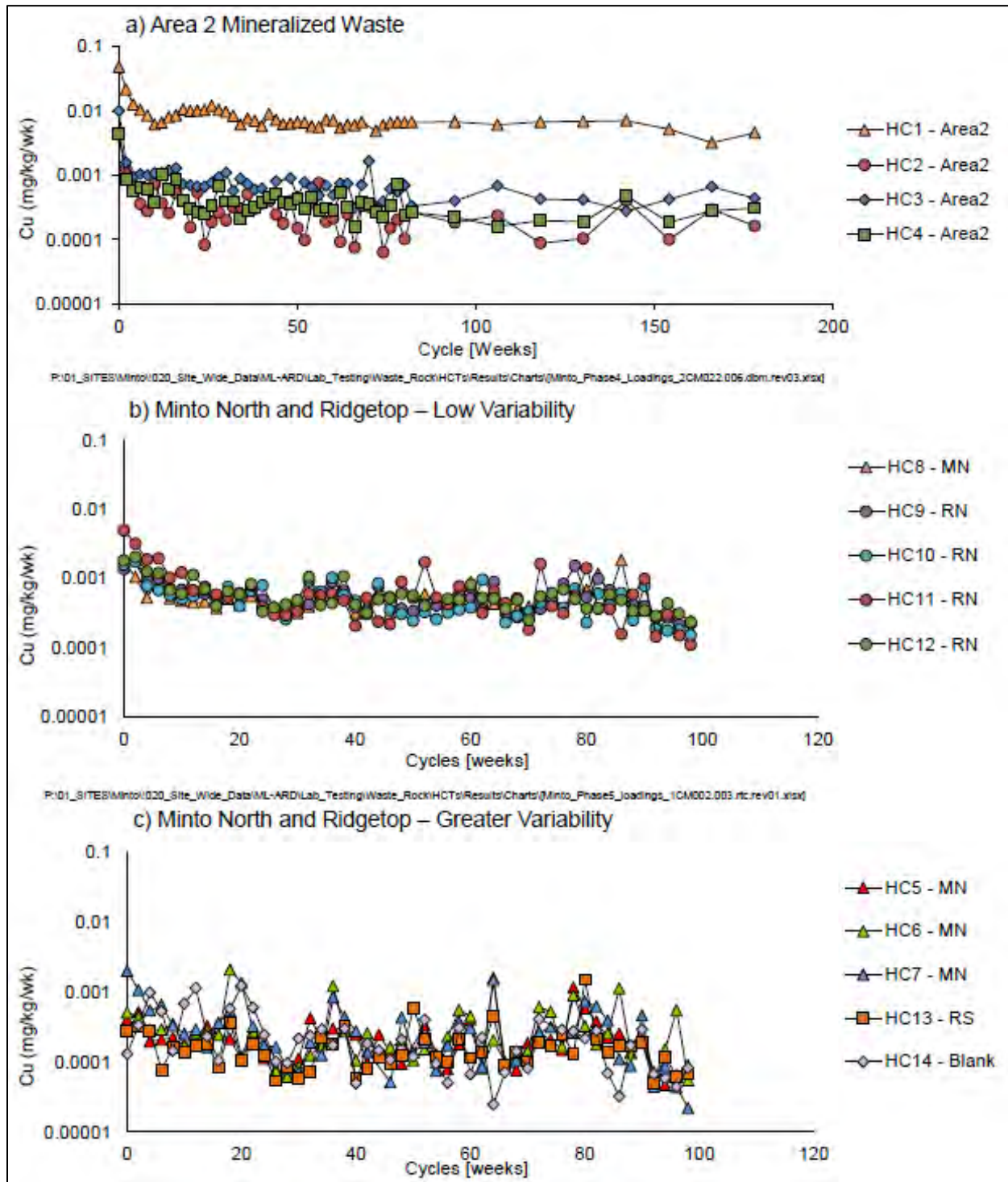
Source: SRK (2013)

Figure 20-9: Humidity Cells Sulphate Release Rates



Source: SRK (2013)

Figure 20-10: Humidity Cells Copper Release Rates



Source: SRK (2013)

Field Leach Barrels

The barrel tests targeted the more mineralized waste rock with sulphur contents greater than 0.1%. The BAR-10 barrel targeted the 10th percentile sulphur content of the more mineralized rock (0.15% S), BAR-50 targeted the 50th percentile (0.37% S), BAR-75 targeted the 75th percentile (0.79% S), and BAR-90 targeted the 90th percentile (1.4% S). The 4 waste rock and one blank field barrel tests have been sampled during the non-frozen months since 2010 and the results of the tests are discussed below. This discussion is focuses on the same constituents discussed in the humidity cell section above namely pH, sulphate and copper.

Leachate pH

The leachate pH of all the barrels have been consistently circumneutral for the duration of test (Figure 20-11). Given the target sulphur content of the samples, BAR-10 had the highest and most variable pH, between 7.5 and 8.2. The other three barrels showed similar pH values and variability and were relatively stable between 7.3 and 8.0. The blank barrel had slightly acidic leachate pH dropping from 6.7 to 5.6 reflecting the flushing of the material by incident precipitation as rainwater in equilibrium with atmospheric carbon dioxide has a pH of around 5.5.

Sulphate

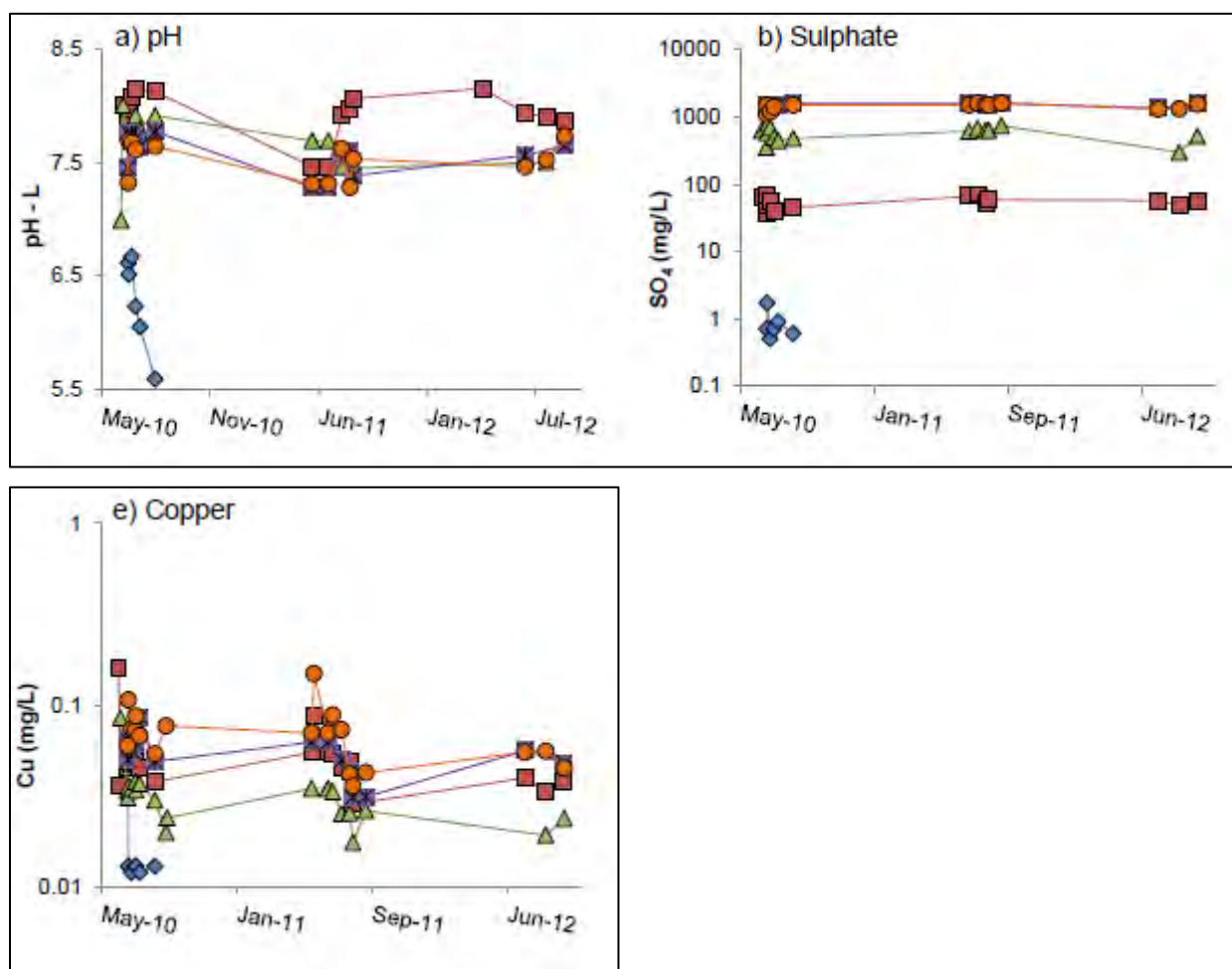
Sulphate concentrations have been very stable in all four barrels over the test period (Figure 20-11). BAR-10 had the lowest concentrations (40 to 60 mg/L); barrel 50 (BAR-50) had order of magnitude higher concentrations (400 to 800 mg/L); and barrel 75 (BAR-75) and barrel 90 (BAR-90) had the highest concentrations (1,100 to 1,600 mg/L). As expected, the blank barrel had negligible concentrations, around 1 mg/L. Since sulphate comprises a very small proportion of the solid sulphur content, most of the sulphate is likely derived from sulphide oxidation. The acid production from this sulphide oxidation was neutralized by carbonates as evidenced by the stable circumneutral leachate pH. Although BAR-90 has significantly higher solid sulphur content, its leachate sulphate concentrations were almost identical to BAR-75. This may be due to formation of gypsum. The calcium and sulphate concentrations in BAR-75 and BAR-90 leachates were consistent with gypsum solubility control. The calcium and magnesium concentrations plots (not shown here) mimicked the pattern of sulphate concentrations and support the hypothesis that sulphide oxidation products are being neutralized by calcium and magnesium carbonate minerals.

Copper

Leachate copper concentrations in the barrel appear to be loosely related to the sulphur percentile of each sample, although BAR-75 had lower concentrations than what was expected compared to BAR-10. BAR-90 had the highest copper concentrations with a median of 0.07 mg/L, BAR-75 had a median of 0.06 mg/L, and BAR-10 had a median of 0.05 mg/L. BAR-50 had the lowest concentrations with a median of 0.03 mg/L (Figure 20-11). Generally, the copper concentrations appear to decrease over the sampling period with the highest concentrations recorded around freshet and the lowest recorded in the fall. This higher freshet- lower fall pattern may reflect oxidation (but no flushing) over winter months, followed by high flush with the initial flows during the freshet. This seasonal pattern is commonly observed in full scale seepage monitoring from waste dumps (at Minto and other sites with similar seasonal climate variation). Like copper cadmium showed some correlation with the sulphur percentile of each sample. Both cadmium and selenium showed a degree of seasonal variability.

Overall, the concentrations of cadmium, selenium and other parameters show stable or declining trends within the framework of seasonal variation noted in the preceding discussion about copper.

Figure 20-11: Leachate pH, Sulphate and Copper of Field Barrels



Source: SRK (2013)

20.5.2.2 Tailings

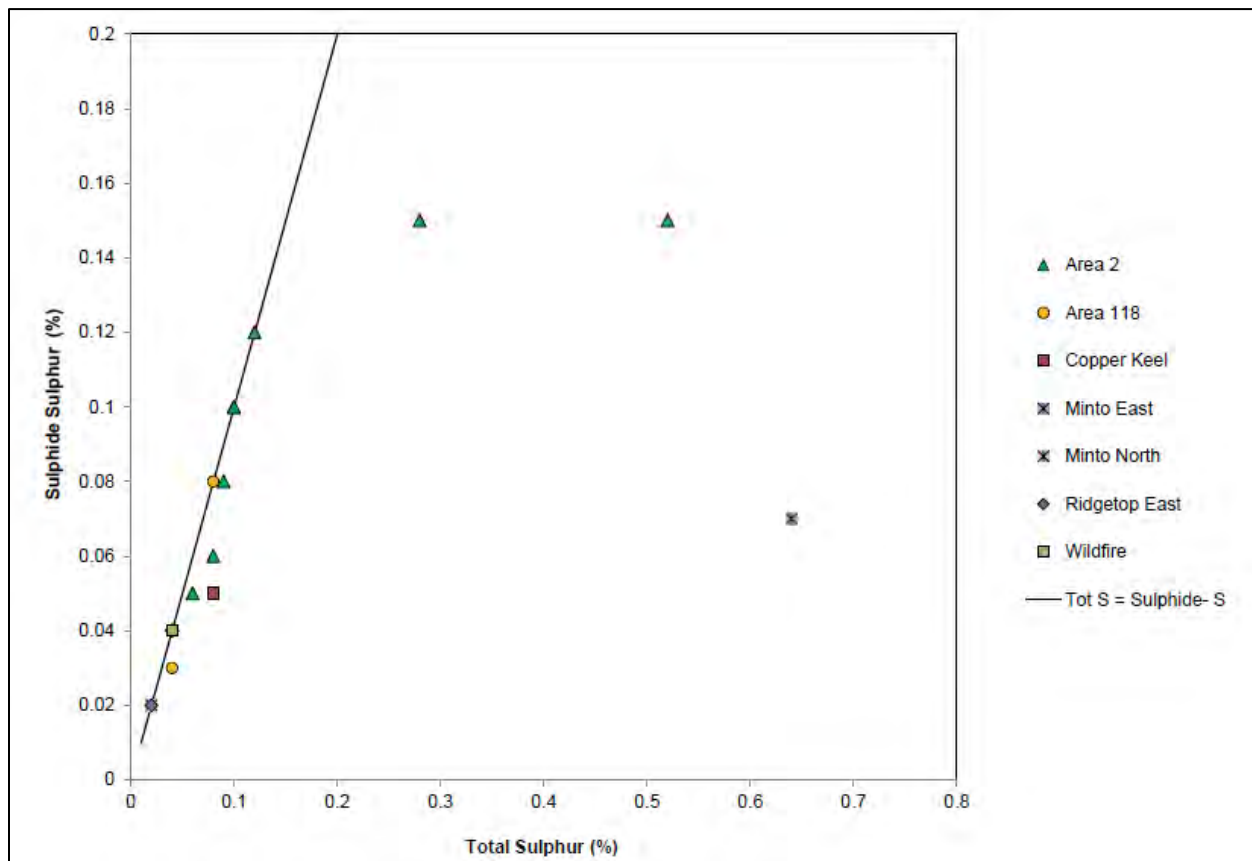
Static Tests Results – Acid Base Accounting

The results of Phase V/VI tailings static testing are discussed below. A plot of total sulphur versus sulphide sulphur content for the Phase V/VI tailings is shown in Figure 20-12. For samples with total sulphur < 0.2%, most of the sulphur is in the sulphide form. For the three samples with total

sulphur > 0.2%, total sulphur was measurably greater than sulphide sulphur due to the measurable sulphate content, which suggests that those samples may have contained a sulphate mineral such as gypsum. Figure 20-13 shows a plot of inorganic carbon equivalent neutralization (NPTIC) vs. bulk NP for Phase V/VI tailings samples. All Area 2, Minto North, and Minto East samples had NPTIC < NP, in contrast Area 118, Copper Keel, Ridgetop and Wildfire samples had NPTIC > NP. These results suggest that both silicate minerals and iron or manganese carbonates contribute to the various NP measurements in the tailings.

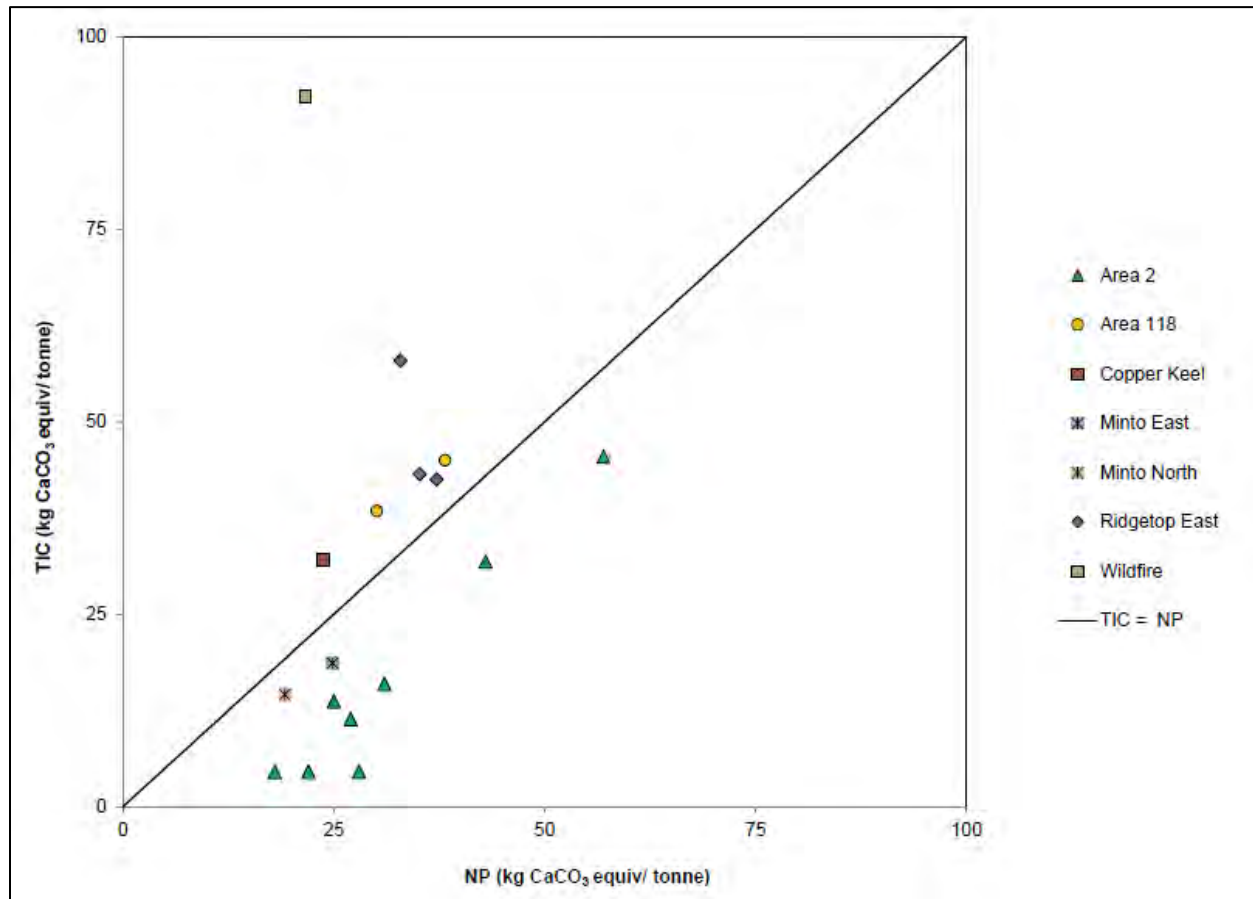
Plot of NPTIC versus AP is shown in Figure 20-14 and indicate that all tailings samples but one Area 2 sample had NPTIC:AP ratios greater than 3. The low sulphide sulphur content and the moderate neutralization potential in the tailings indicate that acidic conditions are unlikely to develop in these tailings materials (under either saturated or unsaturated storage conditions).

Figure 20-12: Total Sulphur versus Sulphide Sulphur of Tailings



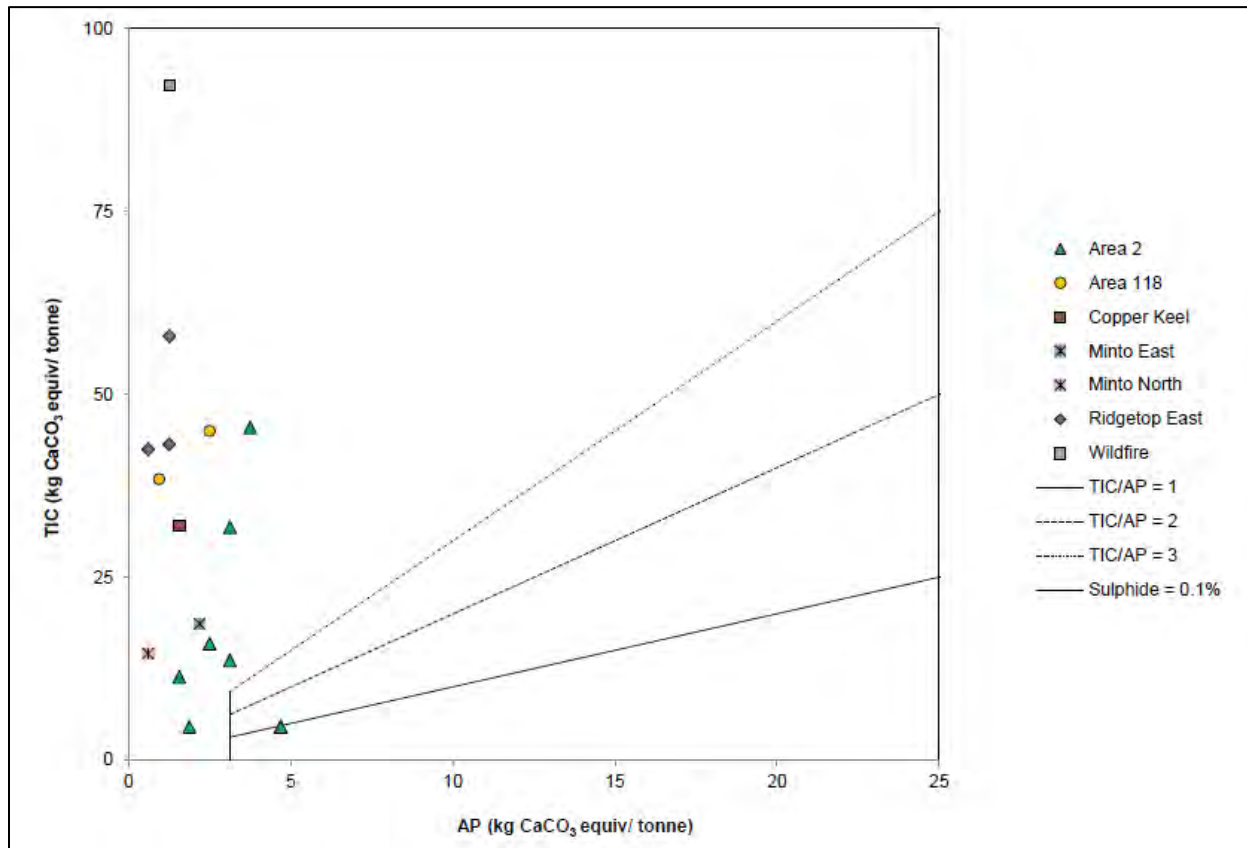
Source: SRK (2013)

Figure 20-13: Carbonate Equivalent NP versus Bulk NP of Tailings



Source: SRK (2013)

Figure 20-14: Inorganic Carbon Equivalent NP versus Acid Potential of Tailings



Source: SRK (2013)

Kinetic Tests Results – Column Tests

192 weeks of subaqueous tailings column testing was available at the time of reporting in 2013 and the major findings are discussed below with more detail (including plots) compiled in SRK (2013). The pH of tailings water cover from both Column 1 (Area 118 tails) and Column 2 (Ridgetop tails) showed an initial decline from circumneutral pH levels to slightly acidic values (between pH 5.5 and 6.5) at around week 50, followed by a return to circumneutral pH conditions for the duration of testing. The concentrations of sulphate and major cations in the cover water displayed an initial decline, and then remained within a stable range over the duration of testing. Trace element concentrations were uniformly low over time in the water cover in both columns. The manganese concentrations in the surface water in both columns over time suggest that there was a flux of manganese from the tails into the overlying water (although concentrations remain low: ~0.03 mg/L or lower).

Monitoring of water collected at the bottom port showed circumneutral pH values typically ranging from pH 7.0 to pH 8.0 for both columns during the test period. Sulphate concentrations peaked at week 6 of testing for both columns (Column 1 peak value of 67 mg/L; Column 2 peak value of

101 mg/L), before sharply declining to < 20 mg/L by Week 15 and remaining within a stable range for the duration of testing. Similarly, alkalinity concentrations for both columns peaked at week 8, then declined to long-term stable values, with Column 2 (Ridgetop tails) having the highest alkalinity concentrations over the duration of testing. Major cations showed a similar pattern, with early peaks and lower stable concentrations in latter weeks of testing. Most trace elements had comparable concentrations in both column cover water and bottom port leachate with the notable exception of barium, manganese and molybdenum which had notably elevated concentrations in bottom port water compared to cover water. The trend and likely reasons for the geochemical patterns of barium, manganese and molybdenum are provided in SRK (2013).

Over 192 weeks of testing, concentrations of most parameters in both water cover and leachate water for both tests showed early peaks followed by generally stable or declining concentrations. Variability over the mid- to late-stage test period ranged across parameters from minimal to up to order of magnitude. This degree of variability is commonly observed in both laboratory weathering tests and in full scale operational monitoring. Overall, the differences in porewater geochemistry from the two tailings samples, as represented by column bottom port leachate were minor.

20.5.3 Implications for Waste Rock and Tailings Management

20.5.3.1 Waste Rock Management

The ABA characterization of Phase V/VI waste rock has shown that Minto North waste rock is expected to have low sulphur content and moderate neutralization potential, and therefore has little to no potential to develop acid weathering conditions. The majority of the granodiorite waste rock from Area 2 Stage 3, Ridgetop North, and Ridgetop South pits is expected to be Non-PAG and suitable for bulk disposal. However, the observed release of NP:AP<3 waste rock from the Phase IV Area 2 Stage 2 Pit is expected to be repeated for the Phase V/VI pits to the south of Area 2 Stage 2. As such, the operational characterization will be necessary, along with a continuation of the waste segregation program that has been developed for Phase IV. Disposal of waste rock classified as Uncertain or PAG (based on an interim NP:AP threshold of 3) in locations where it will be saturated in the long-term (co-disposed in TMFs, or placed in mined-out voids underground) continues. The Phase IV detailed characterization of mineralized waste from within the Area 2 Pit shell has shown that a small proportion of mineralized waste rock may either be PAG or have an uncertain potential to generate ARD, and it is likely that small quantities of similar material will be encountered during mining of the other Phase V/VI, as well. However, the abundant neutralizing potential present in the bulk waste is expected to consume any acidity produced locally within the waste rock dumps.

20.5.3.2 Tailings Management

Phase V/VI tailings are expected to be similar to tailings already produced from the Minto and Area 2 mineralized materials. The results of Phase V/VI characterization indicate that there is minimal risk of acid conditions developing within the tailings due to a large excess of neutralizing potential over acid potential. Operational monitoring of the DSTSF has shown that there is a potential for neutral pH leaching of selenium, copper and other metals from the unsaturated tails, and it is expected that the Phase V/VI tails would behave similarly under unsaturated conditions. Disposal of Phase V/VI tailings as a slurry tails product in the proposed Phase V/VI Tailings

Management Facilities (TMFs) will serve to minimize neutral pH metal leaching. Two factors will be significant in considering implications for long-term loadings from Phase V/VI tailings:

- Disposal of the bulk of the tailings in a permanently saturated state will minimize oxidation of metal-bearing sulphide minerals, and subsequent leaching of soluble oxidation products; and
- Unsaturated tailings beaches in the final Main Pit TMF and Ridgetop North Pit TMF are expected to exhibit leaching characteristics similar to those of the existing unsaturated tailings in the DSTSF.

21 CAPITAL COST ESTIMATE

21.1 Capital Cost Summary

The capital cost estimate was prepared using a combination of benchmarks and first principles where applicable, with applied project experience as well as information from the existing operating site. The estimate is deemed to be at the level of an AACE Class 4 Estimate, with a target accuracy of -15 to -30% and +20 to +50%. reflective of the current level of engineering and design.

Costs are expressed in CAD\$ and do not include allowances for escalation or exchange rate fluctuations unless stated otherwise.

The scope of the capital cost estimate covers all the capitalized costs from January 1, 2021. Total life of mine capital costs are estimated to be \$184.9M. These costs are summarized in Table 21-1. The capital costs do not include an open pit mining fleet as it is accounted for in operating costs through leasing. Contingency for the project totals \$12.5M. Individual contingency rates were applied to each of the capital cost categories where applicable, with rates ranging from 0-25% where applied. This resulted in a blended contingency rate of 7.25% across the entire project, which is in-line with the scope of the expected construction activities of an operating mine.

Closure costs amount to \$23.6M and were assumed to be a mixture of progressive reclamation activities, occurring during the mine life, and end of mine activities.

Table 21-1: Capital Cost Summary

Capital Costs	Total (M\$)
Mining	\$107.0
Primary Crushing & Storage	\$3.6
Tailings & Waste Rock Management	\$16.6
On-Site Infrastructure	\$5.1
Project Indirects	\$1.7
Engineering & EPCM	\$1.7
Owner's Costs	\$13.3
Closure	\$23.6
Subtotal	\$172.4
Contingency	\$12.5
Total Capital Costs	\$184.9

21.2 Basis of Estimate

The capital estimate includes all costs to sustain the existing operating site and sustain the Underground and the extended operation. The project is a combination of an existing underground mining operation at Minto and an expansion to the adjacent areas for Copper Keel, Minto North 2, Minto East 2 and the open pit at Ridgetop. These areas require development capital for preparation of future production and/or UG or Open pit access. The estimate assumes that contractors would mobilize only once to carry out their work and are not already mobilized on site performing other work.

Sunk costs and owner's reserve accounts are not considered in the PEA estimates or economic cash flows.

The following key assumptions were made during development of the capital estimate:

- The capital estimate is based on the development schedule, execution strategy, and key dates described within the Mine Plan described in Section 16.1 of this report;
- Open Pit development will be performed by a contractor; and
- Underground development will be performed by a Contractor using equipment leased by the Operation.

The following key parameters apply to the capital estimate:

- Estimate Class: The capital cost estimate is considered a Class 4 cost estimate (-30%/+50%);
- Estimate Base Date: The base date of the capital estimate is Q1 2021. No escalation has been applied to the capital estimate for costs occurring in the future;
- Units of Measure: The International System of Units (SI) is used throughout the capital estimate; and
- Currency: All capital costs are expressed in CAD\$. A USD:CAD FX rate of 0.76 was used where applicable.

21.3 Mine Capital Cost Estimate

21.3.1 Development Capital Cost Basis of Estimate

The project is already in operation, as such the estimated capital costs (Development Capital) are primarily for the continued underground development (access, preparation and production stoping in new zones). A summary of estimated capital costs is shown in Table 21-2 below.

The capital cost estimate covers the direct field costs of executing this project, plus the indirect costs associated with design, procurement, and development efforts. These indirect costs include

construction, spare parts, first fills, freight and logistics, commissioning, vendor's representation, and Engineering support costs. Where applicable the existing operations will provide support to the construction including owner's costs and indirect costs for the capital works. The development capital estimate only includes costs beyond what the operating personnel can provide.

The Development Capital estimate assumes that UG equipment is leased and contractor labour is supplied.

21.3.2 Open Pit Mining Capital Cost Estimate

The Open Pit operation will be fully contracted, as such there are no Capital Costs considered for the Open pit. All costs associated with the production of the open pit will be carried in the operating costs.

21.3.3 Underground Capital Cost Estimate

Underground capital costs contain a mix of first principal, vendor supplied, and database quotes using local suppliers and currencies where possible. Time related costs for development or infrastructure installations have been estimated by JDS or by third party vendors and contractors.

Underground capital costs are summarized in Table 21-2.

Table 21-2: Underground Capital Costs

Capital Costs	Sustaining
	(M\$)
Surface Infrastructure	1.5
Underground Development	75.1
Underground Infrastructure	1.8
Water Management	5.1
Ventilation	6.6
Mobile Equipment	11.6
Electrical and Automation	3.8
Technical & Safety	1.5
Total Mining	107.0

21.3.4 Details of Underground Capital Costs

Detailed breakdown of the underground capital costs are summarized Table 21-3.

Table 21-3: Mine Capital

Item	Sustaining (M\$)
Surface Infrastructure	
Underground Portals	0.6
Portal Infrastructure	0.8
Total	1.4
Underground Development	
Lateral Development	64.3
Vertical Development	9.5
Mine Maintenance	0.5
Mine General	0.8
Total	75.1
Underground Infrastructure	
Refuge/Lunchroom	1.3
Explosive Storage	0.5
Total	1.8
Water Management	
Fresh Water Supply	0.2
Sumps	2.1
Booster Stations	2.0
Pumping Skids	0.6
Face Pumps	0.1
Total	5.0
Ventilation	
Fans and Heaters	5.2
Bulkhead and Regulators	0.1
Airlock and Firedoors	0.6
Miscellaneous / Other	0.7
Total	6.6

Item	Sustaining (M\$)
Mobile Equipment	
Equipment Rebuilds	10.9
Mobilization/Assembly/Spares	0.7
Total	11.6
Electrical and Automation	
UG Electrical Distribution	3.0
Communication Systems	0.9
Total	3.8
Technical & Safety	
Personal Protective Equipment (PPE)	1.5
Total	1.5
Underground Capital Costs	
Grand Total	107.0

Surface infrastructure includes excavation and establishment of proposed underground portals, service water, and compressors with associated concrete pads.

Underground development includes the direct cost of lateral and vertical development, including a portion of the indirect mine maintenance and mine general costs.

Design requirements for underground infrastructure were determined from design calculations for Underground facilities and explosives storage. Budgetary quotations or database costs were used for major infrastructure components. Allowances have been made for miscellaneous items. Acquisition of underground infrastructure is timed to support the mine plan requirements.

The primary refuge and lunchroom is a dual-purpose area which will serve as a daily lunchroom as well as emergency refuge chamber. The lunchroom will include items such as a latrine, washing facilities, concrete floor, concrete blocked man doors, safety equipment, fire suppression, lighting, and benches.

In addition to the water management infrastructure that is already installed, pumping equipment costs include the supply and install of all pumps for sumps, booster stations, and development faces.

Ventilation equipment costs include the supply and install of all new permanent fans, auxiliary fans, mounting equipment, and other ventilation control infrastructure.

The capital estimate for mobile equipment includes the cost of equipment rebuilds, and mobilization. Underground mining equipment quantities and costs were determined through build-up of mine plan quantities and associated equipment utilization requirements.

Mobile equipment costs have been scheduled based on the existing lease commitments of the project. These costs are incurred as part of the operating costs and not captured under equipment capital.

The existing mine fleet at Minto will continue to operate, and replacement and additions are scheduled and estimated for the LoM. The existing equipment, and remaining life assumed to be sufficient to meet the current requirements and UG expansion plans. A midlife major overhaul is budgeted for all equipment. Once the useful life of equipment is exhausted the equipment is replaced.

Electrical distribution costs include the supply and install of all level cabling, junction boxes, substations, and mine power centers. Communication costs include the extension of the existing system into new mining zones and additional radio requirements.

21.4 Surface Infrastructure Costs

Surface construction costs include the expansion of the tailings and waste facilities, and on-site infrastructure to support the increased mining requirements. These cost estimates are primarily based on material and equipment quantities from MTO's. Pricing for main infrastructure activities is derived from historical unit rates, with some factors applied for minor cost elements.

Table 21-4 presents a summary basis of estimate for the various commodity types within the surface construction estimates. Growth factors were included above neat material take-off quantities where applicable.

Table 21-4: Surface Infrastructure Basis

Description	Basis
Bulk Earthworks and Roads	Material take-offs for surface works and roads from preliminary 3D model. Unit rates from first principles based on local contractor rate sheets.
Mechanical Equipment	Vendor quotes or current site-based pricing for similar equipment.
Overland Piping	MTO's for major pipelines with supply and installation costs derived from existing pricing from similar current site projects.
Electrical	Based on Underground Load list.
Camp	Camp expansion sized according to the increased requirements based on labour demand built up from the UG and Open Pit Mine plans. Costs derived from benchmarks of similar facilities in Canada.

A summary of the surface infrastructure costs is outlined in Table 21-5. The current Mine four-year capital budget includes a provision for various non-operations costs for the existing site, which have been included within the Owner's costs.

Table 21-5: Surface Infrastructure Costs

Capital Costs	Total (M\$)
4000 – Tailings	16.6
4100 – Area 2 Pit TSF	3.4
4200 – Main Pit	11.3
4300 – Ridgetop Ultimate	0.9
4400 – North Pit	0.9
4500 – Underground	0.1
5000 – Onsite Infrastructure	5.9
5100 – Power Supply & Distribution	3.0
5300 – Water Treatment	1.0
5800 - Camp	1.1
Total	21.7

21.5 Processing Plant CAPEX

The plant capital cost estimate is limited to the refurbishment of the Minot Mine crushing circuit. Currently the Minto Mine contracts out the crushing of the mill feed. It has been determined that there are cost efficiencies associated with refurbishing the historic mill equipment which has not been used recently. No further Capital Costs are required for the Process plant within the scope of this PEA.

Table 21-6: Processing CAPEX Costs

Capital Costs	Total (M\$)
3000 – Process Plant	3.6

21.6 Indirects & EPCM CAPEX

Indirect costs are classified as costs not directly accountable to a specific cost object. Table 21-7 presents the subjects and basis for the indirect costs within the capital estimate. Indirect costs attributed to Underground and Open Pit mine development over the life of mine, such as freight, are held within the OPEX costs, in line with the operating budget of the current site.

Table 21-7: Basis for Indirect Costs

Description	Basis
Contractor Field Indirects	An allowance of a percentage of the applicable construction scope, based on previous project experience.
EPCM	An allowance of a percentage of the applicable construction scope, based on previous project experience.

Table 21-8: Indirects & EPCM CAPEX Costs

Capital Costs	Total (M\$)
7000 – Project Indirects	1.7
8000 – Onsite Infrastructure	1.7
Total	3.3

21.7 Owner's Costs

Owner's costs are the existing planned capital costs as part of the operating sites current budget. These costs are capitalized during the construction phase. Table 21-9 presents the owner's costs within the capital estimate.

Table 21-9: Owner's Costs

Capital Costs	Total (M\$)
9100 – G&A	0.6
9200 – Surface Support	0.8
9300 - Processing	2.3
9500 – Owners Costs	3.1
9600 - Finance	6.5
Total	13.3

21.8 Mine Closure & Rehabilitation

Closure costs included within the CAPEX are based on the assumption that the operation will move forward with Progressive Reclamation where appropriate as the mine continues to operate, with the remaining closure activities occurring at the end of mine life. The Costs included within the CAPEX have been developed by SRK to support an asset retirement obligation (ARO) value and are shown as lower than those referenced in Section 20.3.3 due to cost efficiencies when the Project performs this work in conjunction with, and immediately proceeding the planned mine operations. There is currently \$6M sitting in the Control Account, described in Section 20.3.3. An additional \$4M will be added to the Control Account by Minto in 2021, with the resulting \$10M applied against the overall closure costs at the end of Mine Life. The net value is shown in Table 21-10.

Table 21-10: Closure Cost Estimates

Closure Period	LoM (M\$)
Progressive Closure	2.1
Final Closure	27.5
Net Control Account Value	-6.0
Total	23.6

21.9 Contingency

Detail on the mine capital contingencies is provided in Table 21-11. Contingency was determined based on experience on similar projects, the level of detail in engineering design and associated pricing and quotes.

Table 21-11: Mine Cost Contingencies

Capital Cost Category	Contingency
	(%)
Surface Infrastructure	12
Underground Development	0
Underground Infrastructure	12
Water Management	12
Ventilation	12
Mobile Equipment	12

Capital Cost Category	Contingency
	(%)
Electrical and Automation	12
Technical & Safety	0

Contingency for Construction Costs outside of the Mine Costs were applied as outlined in Table 21-12.

Table 21-12: Contingency

Capital Cost Category	Other
	(%)
Tailings	25
On-Site Infrastructure	25
Off-Site Infrastructure	25
Indirect Costs & EPCM	25
Owner's Costs	25

22 OPERATING COST ESTIMATE

22.1 Operating Cost Summary

As the Minto Mine is currently in operations, the operating costs estimates for processing and Site G&A were prepared using historical site data and forecasted operating budget information provided by Minto Mine. Adjustments were made to the provided budget information to incorporate changes from the LoM throughput, and the change from contracted to internal crushing. The UG mining operating costs were prepared using first principles and, applying project experience. Inputs are derived from engineers, contractors and suppliers who have provided similar services to other projects.

Operating costs in this section of the report include Open Pit and Underground mining, rehandle, processing, tailings, and administration up to the production of concentrate from the site. Concentrate transportation, treatment and refining charges, and royalties are discussed in Section 23.

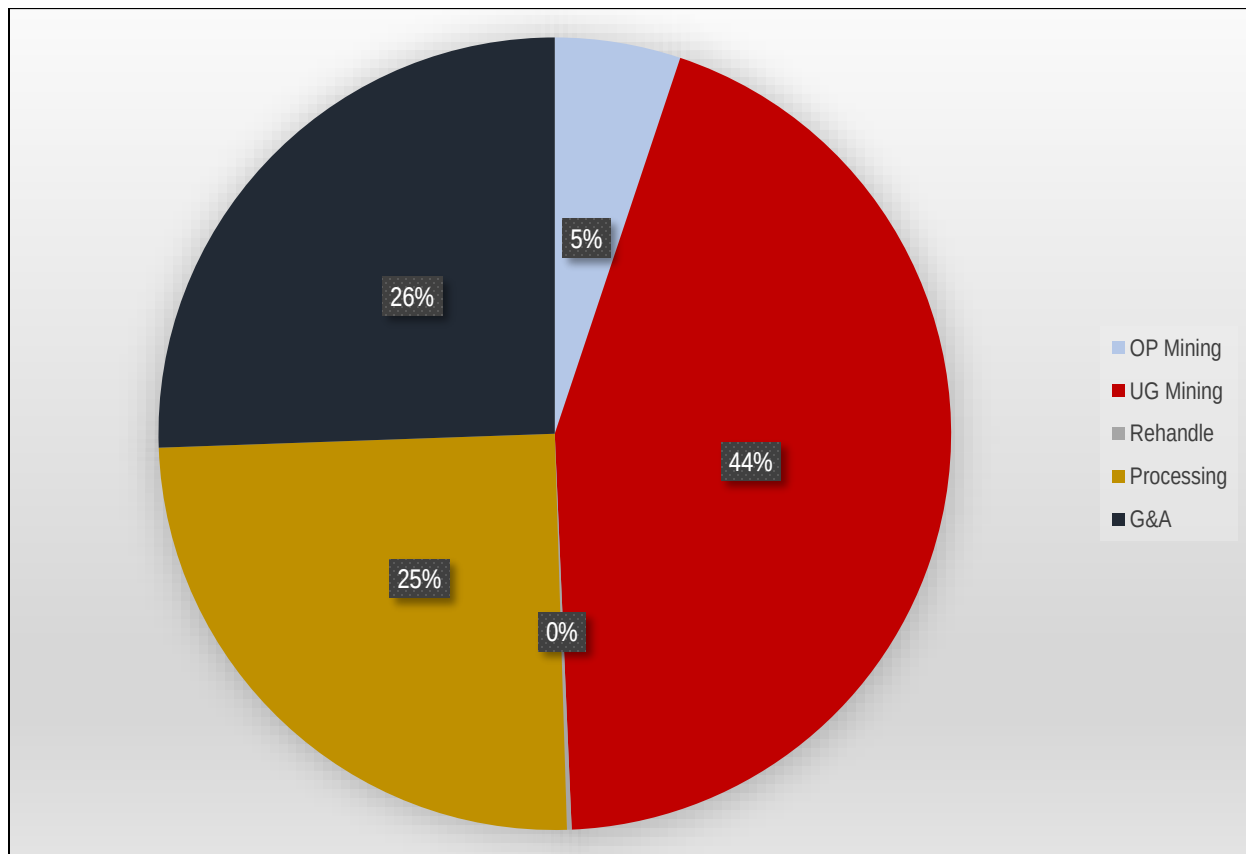
Operating costs are presented in 2021 Canadian dollars on a calendar year basis. No escalation or inflation is included. LoM operating costs are summarized in Table 22-1. Figure 22-1 shows the breakdown and distribution of the life of mine operating costs by category.

The overall LoM operation cost summary is as follows:

Table 22-1: LoM Unit Operating Costs

Area	Unit Cost	LOM M\$
Open Pit Mining (\$/t milled)	3.77	41.0
Underground Mining (\$/t milled)	32.44	353.3
Rehandle (\$/t milled)	0.14	1.5
Processing (\$/t milled)	18.30	199.3
Site Services and G&A (\$/t milled)	18.76	204.4
Total (\$/t milled)	73.40	799.6

Figure 22-1: Breakdown of Estimated Operating Costs



22.2 Basis of Estimate

22.2.1 Operating Cost Basis of Estimate

The operating cost estimate was developed from a number of sources. Cost determinations were based on fixed and variable components relating to mill throughput and plant flow sheet. The source of data used for the operating cost estimation is summarized below.

Direct Mining and Processing Costs:

- Labour Manning schedules and rates: Minto's 2020 actual and 2021 budgeted costs;
- Power cost and Consumption rates: Minto's 2020 actual and 2021 budgeted costs for Processing and G&A, from load estimate and power unit rate from Minto's contracted costs for the Underground;

- Grinding media and Liners; Minto's 2020 actual and 2021 budgeted costs and quotations for new liners;
- Reagents Consumptions and unit prices: Minto's 2020 actual and 2021 budgeted costs;
- Mining Consumables and unit rates: Minto's 2020 actual and 2021 budgeted costs;
- UG Labour productivity and hourly rates: Minto's 2020 actual and 2021 budgeted costs for mining contractors;
- UG equipment costs: Minto's actual equipment lease contracts;
- Maintenance Materials: Minto's 2020 actual and 2021 budgeted costs;
- Crushing: Based on existing contract crushing costs for 2021, and built up from first principals for 2022 onwards as Minto refurbishes the crushing circuit and takes over this scope internally;
- Tailings Filtration: Minto's 2020 actual and 2021 budgeted costs;
- Assay and Met. Lab: Minto's 2020 actual and 2021 budgeted costs; and
- Fuels.

22.2.2 Open Pit Operating Cost Estimate

It is expected that open pit mining will be conducted using contractor equipment and labour. A contractor rate of \$3.70/t mined was assumed for open pit extraction. This was verified by calculating equipment requirements from first principles and applying a 25% contractor mark-up. In addition to contract mining cost, a \$1.5M fee for contractor mobilization/demobilization has been added.

During open pit operation, allowance for additional technical support and mine dewatering has been included at \$0.08/t mined. This brings the total open pit cost to \$3.92/t mined (\$3.77/t milled), which is summarized in Table 22-2.

Upon completion of the open pits, rehandle of stockpiled material will also be completed by a contract FEL with haulage as appropriate. It is assumed that stockpiles will be positioned a maximum of 1 km from the process facilities. Total LoM rehandle cost is \$1.5M or \$0.14/t mined (\$1.16/t rehandle).

Table 22-2: Open Pit Mining Operating Cost Summary by Activity

Operating Costs	Life of Mine	Unit Cost per tonne Mined
	M\$	\$/t mined
Contractor Mining Operations	38.7	3.70
Contractor Mob/Demob	1.5	0.14
Open Pit Mining Support	0.8	0.08
Total OP Operating Cost	41.0	3.92
Contractor Mining Rehandle	1.5	0.14

22.2.3 Underground Operating Cost Estimate

Underground operating costs refer to expenses incurred including all activities directly related to the drilling, blasting, loading, and hauling of mill feed to the crushing facility and waste to the storage facility.

The UG mining operating costs include the following functional areas:

- Development - costs related to the drilling, blasting, mucking, and hauling of crosscut development mineralized material and waste;
- Production - costs related to the drilling, blasting, and mucking of longhole stope mineralized material;
- Mine Maintenance - direct costs related to the maintenance of underground fixed and mobile equipment, other maintenance costs carried in Development, Productions and Mine General; and
- Mine General - costs related to mine support activities such as supervision, technical services, shared infrastructure, support equipment, and material delivery underground.

Table 22-3: Underground Mining Operating Cost Summary by Activity

Operating Costs	Average Annual	Life of Mine	Unit Cost per tonne Mined
	M\$	M\$	\$/t
Development	14.1	112.6	11.60
Production	12.5	99.7	10.27

Operating Costs	Average Annual	Life of Mine	Unit Cost per tonne Mined
	M\$	M\$	\$/t
Mine Maintenance	0.7	5.6	0.58
Mine General	16.9	135.4	13.96
Total UG Mining OPEX	44.2	353.3	36.40

Table 22-4: Mining Operating Cost Summary by Area (excluding mine G&A)

Operating Costs	Average Annual	Life of Mine	Unit Cost per tonne Processed
	M\$	M\$	\$/t
Labour	13.4	107.0	11.02
Equipment	5.0	40.2	4.14
Material	6.7	53.7	5.54
Fuel/Propane/Power	7.8	62.6	6.45
Contractor Services	7.4	59.3	6.11
Equipment Leasing	3.8	30.5	3.14
Total UG Mining OPEX	44.2	353.3	36.40

22.3 Processing Operating Cost Estimate

The total process operating costs were developed in Canadian dollars (C\$) on an annual throughput basis based on the existing operating plant data. The current operating budget was provided by Minto, which formed a baseline for projecting the operating cost for the plant upgrade scenario. Process operating costs are summarized below.

Table 22-5: Processing OPEX

Operating Costs	Average Annual	Life of Mine	Unit Cost per tonne Processed
	M\$	M\$	\$/t
Process OPEX	24.9	199.3	18.3

22.4 Site Services and G&A Operating Costs

The basis of estimate was based on actual cost for Camp services are contracted out to Sodexo. Site Services include light vehicle maintenance, access road maintenance, barging operations, and waste management services. Technical services include mine engineering, geology, surveying, geotechnical and environmental services. Administration services include site management, health and safety, Human Resources and information technology services. Some financial administration and Human Resources costs are based on actual costs based on remote support from Calgary Alberta.

Site Services operating costs are based on the current costs at Minto. The total annual cost for site services items is estimated to be \$26M and these costs are somewhat fixed and support operations.

Site services costs include all salaried and hourly labour and the camp support costs not assigned to mine or process operations.

Table 22-6: Site Services & G&A OPEX

Operating Costs	Average Annual	Life of Mine	Unit Cost per tonne Mined
	M\$	M\$	\$/t
Site Services	2.7	21.9	2.0
Tech Services	2.8	22.7	2.1
HR/Camp/Travel	8.9	71.2	6.5
Health & Safety	2.2	17.5	1.6
Environment	1.5	12.3	1.1
IT	1.1	7.5	0.8
Warehouse/Procurement	2.9	23.2	2.1
Mine Site Admin	3.4	27.0	2.5
Total G&A OPEX	26.0	204.4	18.8

23 ECONOMIC ANALYSIS

23.1 Summary of Results

For the eight-year mine life and 10.9 Mt resources inventory, the following financial results have been calculated using the base case (consensus) metal prices in the economic model:

- CAD\$134 M Pre-Tax net present value (NPV) at 8% discount rate; and
- CAD\$111 after Tax net present value (NPV) at 8% discount rate.

Table 23-1 shows the metal prices and economic evaluation results for the Project. Payback and IRR are not applicable to the project as there is no initial capital.

This PEA Report is preliminary in nature and includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized.

Table 23-1: Financial Results Summary

Parameter	Unit	Base Case Pricing
Copper	US\$/lb	3.40 (2021) / 3.25 (2022) / 3.10 (LoM)
Gold	US\$/oz	1850 (2021) / 1625 (2022) / 1550 (LoM)
Silver	US\$/oz	24.0 (2021) / 21.0 (2022) / 18.5 (LoM)
Exchange Rate	USD:CAD	0.76
Economic Results (Pre-Tax)		
Total Cash Flow	\$M	163
NPV6%	\$M	140
NPV8%	\$M	134
NPV10%	\$M	128
Economic Results (After-Tax)		
Total Cash Flow	\$M	133
NPV6%	\$M	116
NPV8%	\$M	111
NPV10%	\$M	106

23.2 Basis of Analysis

The economic evaluation of the Project is based on the following:

- The production schedule used for the economic analysis is described in Section 16;
- Details of the capital and operating cost estimates are described in Section 21 and 22;
- Metal prices and foreign exchange assumptions are described in Section 19;
- A 1.5% NSR Royalty and a Precious Metal Price Contract as described in Section 19;
- Cash flow and financial results are in-country and specifically for the project and do not include any distributions to owners other than royalties and precious metal stream payments;
- The project is currently an operating mine. The cash flow is based on a start date of January 1, 2021;
- All equity financing;
- A payment of US\$5M made to Capstone in 2021 as part of Share Purchase Agreement;
- Future studies such as Feasibility Engineering and permitting for expansion are not included; and
- Yukon and Federal taxes only are applied, as provided.

Payback and IRR are not applicable to the project as it is an existing operating mine and there is no initial capital.

23.3 Offsite Costs

Offsite costs are calculated using the parameters in Table 23-2 which reflect current TC/RC terms.

Table 23-2: LoM Offsite Costs and Terms

	Unit	Value
Concentrate Grade		
Copper	%	35
Gold	g/t	12
Silver	g/t	108
Treatment Charge	US\$/dmt	59.50

	Unit	Value
Deductions		
Copper	%	1.0
Gold	g/t	1.0
Silver	g/t	30.0
Refining Charges		
Copper	US\$/lb	0.0595
Gold	US\$/oz	5.00
Silver	US\$/oz	0.40
Concentrate Transport (Variable)	US\$/wmt	121.00
Concentrate Transport (Fixed)	US\$/yr	1.6

23.4 Royalties and Precious Metal Price Contracts

The project is subject to a precious metal price contract as well as a 1.5% NSR royalty. Details of the precious metal contract are provided in Section 19. Over the life of the project, Minto is expected to pay a combined total of \$163M in royalties which represents 11% of the total payable metal value.

23.5 Taxes

Yukon and Federal tax have been calculated by deducting allowable depreciation amounts (based on existing tax pools and additional capital expenditures over the life of mine) and any applicable finance charges from operating income and the taxable income constitutes the cash taxes payable.

The project is not subject to any federal income taxes but is expected to pay approximately \$29M in Yukon Quartz Mining Royalties over the life of mine.

23.6 Metal Production

The metal production values indicated in Table 23-3 are a summary of the results of the production schedule, which is used in the cash flow to determine projected revenues and cashflow.

Table 23-3: LoM Metal Production

	Unit	Years 1 to 5	LoM
Total Mill Production	000s tonnes	6,885	10,893
Annual Mill Production	000s tonnes	1,377	1,405

	Unit	Years 1 to 5	LoM
Average Grades			
Copper	%	1.43	1.34
Gold	g/t	0.58	0.54
Silver	g/t	5.10	4.70
Total Payable Production			
Copper	000s lb	190,615	276,633
Gold	000s oz	88	129
Silver	000s oz	645	930
Average Annual Payable Production			
Copper	000s lb	38,123	35,691
Gold	000s oz	18	17
Silver	000s oz	129	120

23.7 Results

The combined Open Pit and Underground mined resources contain 10.9 Mt and are expected to be processed over an eight-year period. The financial results have been calculated using the base case (consensus) metal prices in the economic model and are presented in Table 23-4. The details of the annual cashflows are shown in Table 23-5 and Figure 23-1.

Table 23-4: Summary of Project Economics

Category	Unit	Value
Net Revenues	M \$	1,147
Operating Costs	M \$	800
Cash Flow from Operations	M \$	348
Total Capital Costs*	M \$	185
Net Cash Cost of Production (net of by-product credits) [#]	US\$/lb	2.20
All-in Sustaining Cost (net by-product credits) [°]	US\$/lb	2.71
Net Pre-Tax Cash Flow	M \$	163
Pre-Tax NPV_{8%}	M \$	134
Total Taxes	M \$	29
Net After-Tax Cash Flow	M \$	133
Net After-Tax NPV_{8%}	M \$	111

Notes:

* Includes sustaining, exploration, closure and reclamation capital costs.

[#] C1 formula: (Operating Costs + Refining Costs + Royalties - By Product Credits) / Payable Cu lb

[°] AISC formula: (Operating Costs + Refining Costs + Royalties + Sustaining Capital + Closure - By Product Credits) / Payable Cu lb

Table 23-5: Annual Cash Flow Model

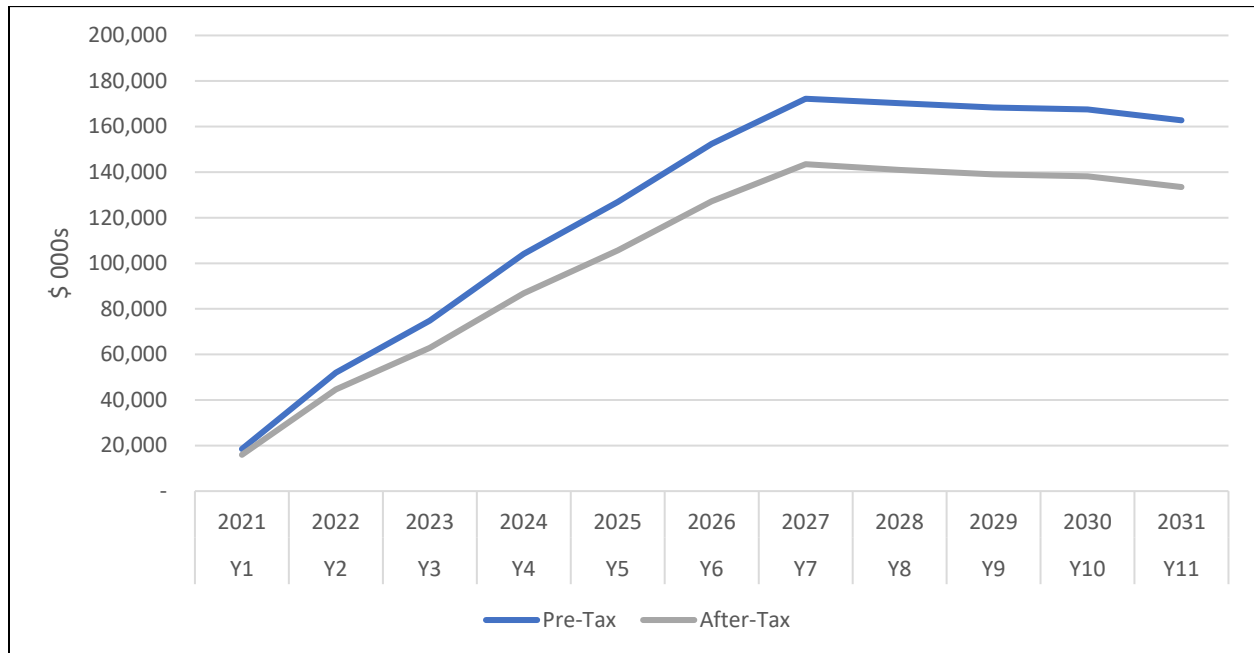
	Unit	LoM Total	Y1 2021	Y2 2022	Y3 2023	Y4 2024	Y5 2025	Y6 2026	Y7 2027	Y8 2028	Y9 2029	Y10 2030	Y11 2031
METAL PRICES & F/X RATE													
Cu	US\$/lb	3.16	3.40	3.25	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
Au	US\$/oz	1,587	1,850	1,625	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550
Ag	US\$/oz	19.39	24.00	21.00	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
USD:CAD	x:x	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
MINE SCHEDULE													
UG Resources Mined	ktonnes	9,706	1,045	1,314	1,314	1,314	1,314	1,314	1,314	777			
Cu	%	1.35%	1.53%	1.55%	1.46%	1.39%	1.35%	1.24%	1.15%	1.05%			
Au	g/t	0.58	0.52	0.61	0.72	0.72	0.65	0.43	0.47	0.44			
Ag	g/t	4.95	4.95	5.42	6.15	6.00	5.12	4.03	3.29	4.39			
Oxide Ratio	%	8%	4%	3%	6%	8%	13%	6%	8%	17%			
Contained Metal													
Cu	M lbs	289	35	45	42	40	39	36	33	18			
Au	k oz	181	17	26	30	30	27	18	20	11			
Ag	k oz	1,544	166	229	260	253	216	170	139	110			
OP Resources Mined	ktonnes	1,187		198	989								
Cu	%	1.23%		1.27%	1.22%								
Au	g/t	0.27		0.08	0.31								
Ag	g/t	2.51		2.05	2.60								
Oxide Ratio	%	8%		16%	6%								
Contained Metal													
Cu	M lbs	32		6	27								
Au	k oz	10		1	10								
Ag	k oz	96		13	83								
OP Waste Mined	ktonnes	9,280		5,428	3,852								
Total OP Mined	ktonnes	10,467		5,627	4,841								
Total Resources Mined	ktonnes	10,893	1,045	1,512	2,303	1,314	1,314	1,314	1,314	777			
Cu	%	1.34%	1.53%	1.51%	1.36%	1.39%	1.35%	1.24%	1.15%	1.05%			
Au	g/t	0.55	0.52	0.54	0.55	0.72	0.65	0.43	0.47	0.44			
Ag	g/t	4.68	4.95	4.98	4.63	6.00	5.12	4.03	3.29	4.39			
Oxide Ratio	%	8%	4%	5%	6%	8%	13%	6%	8%	17%			
Contained Metal													
Cu	M lbs	321	35	50	69	40	39	36	33	18			
Au	k oz	191	17	26	40	30	27	18	20	11			
Ag	k oz	1,640	166	242	343	253	216	170	139	110			

	Unit	LoM Total	Y1 2021	Y2 2022	Y3 2023	Y4 2024	Y5 2025	Y6 2026	Y7 2027	Y8 2028	Y9 2029	Y10 2030	Y11 2031
STOCKPILES													
Resources Added	ktonnes	1,308	-	52	843	119	181	-	113	-			
Resources Removed	ktonnes	1,308	-	-	-	265	327	146	259	311			
Balance	ktonnes		-	52	895	749	603	457	311	-			
MILL SCHEDULE													
Operating Days	days	2,829	365	365	365	365	365	365	365	274			
Resources Processed	ktonnes	10,893	1,045	1,460	1,460	1,460	1,460	1,460	1,460	1,088			
Cu	%	1.34%	1.53%	1.52%	1.45%	1.37%	1.29%	1.25%	1.18%	1.11%			
Au	g/t	0.54	0.52	0.55	0.63	0.63	0.55	0.47	0.54	0.42			
Ag	g/t	4.68	4.95	5.07	5.51	5.35	4.51	4.19	3.70	4.09			
Oxide Ratio	%	0.00%	4%	4%	5%	6%	10%	7%	9%	20%			
Contained Metal													
Cu	M lbs	321	35	49	47	44	41	40	38	27			
Au	k oz	191	18	26	30	30	26	22	25	15			
Ag	k oz	1,639	166	238	259	251	212	197	174	143			
RECOVERED AND PAYABLE METALS													
Recovery to Concentrate													
Cu	%	88.7%	92.5%	92.8%	91.6%	90.3%	86.0%	89.0%	87.0%	74.7%			
Au	%	73.6%	73.0%	73.6%	75.3%	75.3%	73.7%	71.9%	73.2%	70.9%			
Ag	%	78.4%	78.8%	79.0%	79.9%	79.6%	78.0%	77.4%	76.4%	77.2%			
Metal Recovered													
Cu	M lbs	285	33	45	43	40	36	36	33	20			
Au	k oz	141	13	19	22	22	19	16	18	10			
Ag	k oz	1,286	131	188	207	200	165	152	133	110			
Copper Concentrate													
Pull Factor		29.5	24.7	24.8	26.4	28.2	31.6	31.6	34.2	42.1			
Dry Mass	dmt	369,055	42,238	58,834	55,237	51,800	46,190	46,235	42,655	25,866			
Wet Mass	wmt	401,147	45,911	63,950	60,041	56,304	50,207	50,256	46,364	28,115			
Cu Grade	% Cu	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%			
Au Grade	g/t Au	11.8	9.4	10.1	12.6	13.4	12.9	10.7	13.4	12.6			
Ag Grade	g/t Ag	108.4	96.6	99.4	116.3	120.1	111.1	102.3	96.9	132.7			
Cu Payable													
Minimum Deduction	Units	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%			
% Payable	% payable	100.00%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			
Payable Metal	M lbs	277	32	44	41	39	35	35	32	19			
Revenues	US\$M	873.7	107.6	143.3	128.4	120.4	107.3	107.4	99.1	60.1			

	Unit	LoM Total	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Au Payable													
Minimum Deduction	g/t	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
% Payable	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			
Payable Metal	k oz	129	11	17	21	21	18	14	17	10			
Revenues	US\$M	204.1	21.2	27.8	32.0	32.0	27.4	22.3	26.4	14.9			
Ag Payable													
Minimum Deduction	g/t	30.0	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00			
% Payable	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			
Payable Metal	k oz	930	90	131	153	150	121	107	92	85			
Revenues	US\$M	18.0	2.2	2.8	2.8	2.8	2.2	2.0	1.7	1.6			
Total Payables	US\$M	1,095.8	131.0	173.9	163.2	155.1	137.0	131.7	127.2	76.6			
	C\$M	1,441.9	172.4	228.8	214.8	204.1	180.3	173.3	167.4	100.8			
TC/RC & Transport													
Treatment Charge	US\$M	22.0	2.5	3.5	3.3	3.1	2.7	2.8	2.5	1.5			
Cu Refining Charge	US\$M	16.5	1.9	2.6	2.5	2.3	2.1	2.1	1.9	1.2			
Au Refining Charge	US\$M	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0			
Ag Refining Charge	US\$M	0.4	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0			
Transportation Cost - Variable	US\$M	48.7	5.6	7.8	7.3	6.8	6.1	6.1	5.6	3.4			
Transportation Cost - Fixed	US\$M	12.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2			
Total TC/RC & Transport	US\$M	100.3	11.6	15.6	14.8	14.0	12.6	12.6	11.8	7.4			
	C\$M	132.0	15.3	20.5	19.4	18.4	16.6	16.6	15.5	9.7			
Royalties													
Wheaton - Au	US\$/oz above		1,203	1,056	775	775	775	775	775	775			
	US\$M	94.7	7.4	9.7	16.0	16.0	13.7	11.1	13.2	7.5			
Wheaton - Ag	US\$/oz above		4.29	4.33	4.37	4.41	4.45	4.49	4.52	4.56			
	US\$M	13.9	1.8	2.2	2.2	2.1	1.7	1.5	1.3	1.2			
SFN	% of NSR		1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%			
	US\$M	14.9	1.8	2.4	2.2	2.1	1.9	1.8	1.7	1.0			
Total Royalties	US\$M	123.6	11.0	14.3	20.4	20.2	17.3	14.4	16.2	9.7			
	C\$M	162.6	14.5	18.8	26.9	26.6	22.7	19.0	21.3	12.8			
Total NSR	US\$M	871.9	108.4	144.0	128.0	120.9	107.1	104.7	99.2	59.5	-	-	-
	C\$M	1,147.3	142.6	189.5	168.5	159.1	140.9	137.7	130.6	78.4	-	-	-
	C\$/tonne	80.05	136.53	129.78	115.39	109.00	96.52	94.33	89.43	71.99	0.00	0.00	0.00
OPEX													
OP Mining	C\$M	41.0	-	22.3	18.7	-	-	-	-	-	-	-	-
	C\$/t mined	3.92	-	3.96	3.87	-	-	-	-	-	-	-	-
UG Mining	C\$M	353.3	37.1	46.8	50.1	45.1	47.2	46.0	50.4	30.6	-	-	-
	C\$/t mined	36.40	35.55	35.62	38.12	34.30	35.90	35.04	38.38	39.34	-	-	-

	Unit	LoM Total	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Rehandle	C\$M	1.5	-	-	-	0.31	0.38	0.17	0.30	0.36	-	-	-
	C\$/t rehandle	1.16	-	-	-	1.16	1.16	1.16	1.16	1.16	-	-	-
Processing	C\$M	199.3	26.2	25.3	25.3	25.3	25.3	25.3	25.3	21.1	-	-	-
	C\$/t processed	18.30	25.11	17.35	17.35	17.35	17.35	17.35	17.35	19.41	-	-	-
Tailings	C\$M	0.0	-	-	-	-	-	-	-	-	-	-	-
	C\$/t processed	0.00	-	-	-	-	-	-	-	-	-	-	-
G&A	C\$M	204.4	26.6	27.2	27.2	26.5	25.9	26.0	26.0	19.2	-	-	-
	C\$/t processed	18.76	25.43	18.60	18.63	18.16	17.73	17.78	17.78	17.59	-	-	-
Total OPEX	C\$M	799.6	89.9	121.6	121.4	97.2	98.8	97.5	102.0	71.2	-	-	-
	C\$/t processed	73.40	86.09	83.27	83.12	66.59	67.65	66.78	69.88	65.42	-	-	-
Net Operating Income	US\$M	264.2	40.0	51.6	35.8	47.1	32.0	30.6	21.7	5.4			
	C\$M	347.7	52.7	67.9	47.1	61.9	42.2	40.2	28.5	7.1			
	C\$/tonne	24.26	50.45	46.51	32.27	42.41	28.87	27.55	19.55	6.56			
CAPEX													
Initial & Sustaining Capital													
Mining	C\$M	107.0	10.4	24.9	17.4	24.5	13.0	8.7	7.2	0.8	-	-	-
Site Development	C\$M	0.0	-	-	-	-	-	-	-	-	-	-	-
Mineral Processing	C\$M	3.6	3.6	-	-	-	-	-	-	-	-	-	-
Tailings and Waste Management	C\$M	16.6	-	3.2	3.3	3.3	3.3	3.3	-	-	-	-	-
On-Site Infrastructure	C\$M	5.1	4.1	1.0	-	-	-	-	-	-	-	-	-
Project Indirects	C\$M	1.7	-	0.3	0.3	0.3	0.3	0.3	-	-	-	-	-
Engineering & Project Management	C\$M	1.7	-	0.3	0.3	0.3	0.3	0.3	-	-	-	-	-
Owner Costs	C\$M	13.3	9.9	1.3	0.6	1.1	0.4	-	-	-	-	-	-
Closure	C\$M	23.6	4.3	0.6	0.4	0.6	0.4	0.9	1.0	8.2	1.9	0.8	4.7
Subtotal Pre-Contingency	C\$M	172.4	32.3	31.7	22.3	30.1	17.7	13.6	8.1	9.0	1.9	0.8	4.7
Contingency	C\$M	12.5	1.9	2.7	1.9	2.6	1.5	1.1	0.6	0.1	-	-	-
Total CAPEX	C\$M	184.9	34.2	34.4	24.3	32.7	19.3	14.7	8.8	9.1	1.9	0.8	4.7
Pre-Production	C\$M	0.0											
Sustaining	C\$M	184.9	34.2	34.4	24.3	32.7	19.3	14.7	8.8	9.1	1.9	0.8	4.7
Working Capital	C\$M	0.0											
Net Pre-Tax Cash Flow	C\$M	162.8	18.5	33.5	22.8	29.2	22.9	25.5	19.8	- 1.9	- 1.9	- 0.8	- 4.7
Cumulative Net Pre-Tax Cash Flow	C\$M	162.8	18.5	52.0	74.9	104.1	127.0	152.5	172.2	170.3	168.4	167.5	162.8
TAXES													
Income Tax	C\$M	0.0	-	-	-	-	-	-	-	-	-	-	-
Yukon Quartz Mining Royalty	C\$M	29.3	2.6	4.9	4.5	5.3	4.1	3.9	3.5	0.6	-	-	-
Total Taxes	C\$M	29.3	2.6	4.9	4.5	5.3	4.1	3.9	3.5	0.6	-	-	-
Net Post-Tax Cash Flow	C\$M	133.5	15.9	28.7	18.3	24.0	18.8	21.6	16.3	- 2.5	- 1.9	- 0.8	- 4.7
Cumulative Net Post-Tax Cash Flow	C\$M	133.5	15.9	44.6	62.9	86.8	105.7	127.2	143.5	141.0	139.0	138.2	133.5

Figure 23-1: Cumulative Cash flow Summary



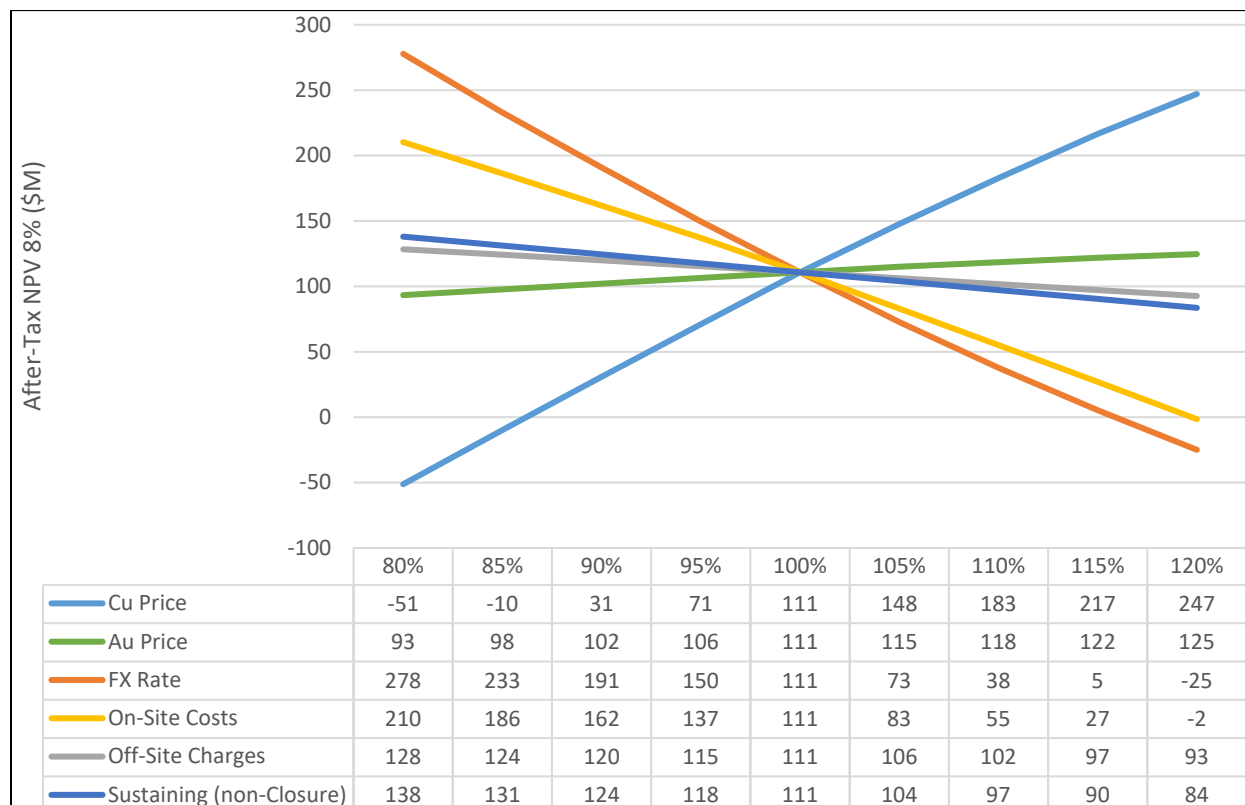
23.8 Sensitivities

Sensitivity analyses have been carried out on the following parameters:

- Metal prices (Copper and Gold);
- Exchange rate;
- Development CAPEX for expansion (non-Closure);
- Off-site operating costs (TC/RC and Transportation only); and
- On-site operating costs.

The analyses are presented graphically as financial outcomes in terms of NPV in Figure 23-2 below. These results are presented graphically only to show trends for future evaluation. At a scoping level of engineering and costing the absolute values are not deemed relevant for economic evaluation.

Figure 23-2: After-Tax Discounted NPV Sensitivities



The project is most sensitive to Copper price and USD exchange rate followed by on-site operating costs.

Copper represents approximately 87% of net revenues to the project. The current Metal prices are trending upward; however, over the last three years, monthly average Copper prices have varied from US\$2.30/lb to over US\$4.00/lb which is approximately 75% - 130% of the modeled Base Case long-term price.

Over the past three years, the CAD:USD exchange rate has ranged from 0.71 - 0.80 which is approximately 93% - 105% of Base Case value (3-year trailing average).

As an operating mine, operating costs are well established and would not be expected to vary significantly from the current estimates.

With the current high demand for copper concentrates, along with Minto's high-grade concentrate, there is potential that more favorable future treatment terms could be negotiated, lowering off-site charges.

Table 23-6 provides a range of discounted project after-tax NPV8 values for a variety of fixed Copper prices and exchange rates which highlight the range of spot values that have been seen

over the past three years. The current (May 5, 2021) Copper spot price is US\$4.5/lb at an exchange rate of 0.815 (USD:CAD).

Table 23-6: Project After-Tax NPV8 Sensitivity Based on Fixed Copper Price and FX Rate
(Gold = US\$1550/oz & Silver = US\$18.50/oz)

Exchange Rate (USD:CAD)	Copper Price (\$US/lb)									
	4.50	4.25	4.00	3.75	3.50	3.25	3.10	2.85	2.50	2.20
0.82	313	269	225	177	125	67	32	-28	-115	-193
0.80	331	288	243	196	144	86	50	-11	-99	-178
0.78	351	307	261	215	163	106	69	7	-83	-162
0.76	373	327	281	233	183	127	90	26	-65	-147
0.74	395	348	301	252	203	146	111	46	-47	-130
0.72	419	370	322	273	223	167	132	66	-28	-113
0.70	444	394	344	294	243	189	153	88	-8	-94
0.68	470	419	367	317	264	211	175	111	12	-75

24 ADJACENT PROPERTIES

No references to any adjacent properties other than general regional geology comments are used in this report. The mineral resource estimation and exploration targets described in this report are based solely on work done on the Minto Property and are not influenced in any way by any potential mineralization on adjacent properties.

25 OTHER RELEVANT DATA AND INFORMATION

The Authors are not aware of any relevant information regarding the Minto Project that has not been disclosed in this report.

26 INTERPRETATIONS AND CONCLUSIONS

It is the conclusion of the QPs that the PEA summarized in this technical report contains adequate preliminary detail and information to support a PEA-level report. Standard industry practices, equipment and design methods were used in the PEA.

Based on the assumptions used for this preliminary evaluation, the project shows positive economics.

To date, the Qualified Persons (QP) are not aware of any fatal flaws for the project.

26.1 Risks

The most significant potential risks associated with the project are uncontrolled dilution with waste rock and rock from different mineralized zones, operating and capital cost escalation, permitting and environmental compliance, unforeseen schedule delays, changes in regulatory requirements, ability to raise financing and metal price. These risks are common to most mining projects, many of which can be mitigated with adequate engineering, planning and pro-active management.

Table 26-1: Main Project Risks

Risk	Explanation/Potential Impact	Possible Risk Mitigation
Dilution	Higher than expected dilution has a severe impact on project economics. The mine must ensure accurate drilling and blasting practices are maintained to minimize dilution from wall rock and other mineralized zones, minimize secondary breaking and optimize extraction. The ability to segregate higher grade material, early in the mine life, is critical to project economics.	A well planned and executed grade control plan is necessary immediately upon commencement of mining.
Resource Modelling	Over 50% of the resource in the mine plan are classified as Inferred.	Infill drilling is recommended in order to provide a greater level of confidence in the resource and upgrade Inferred material to Measured or Indicated. Additional check assays are recommended to resolve potential assay grade bias noted in the QAQC sections.
Metallurgical Recoveries	Negative changes to metallurgical assumptions could lead to reduced metal recovery, increased processing costs, and/or changes to the processing circuit design. If the LoM metal recovery is lower than assumed, the project economics would be negatively impacted.	Additional sampling and testwork as required, particularly for POX material.
CAPEX and OPEX	The ability to achieve the estimated CAPEX and OPEX costs are important elements of project success. If OPEX increases then the NSR cut-off would increase and, all else being equal, the size of the mineable resource would reduce yielding fewer mineable tonnes.	Further cost estimation accuracy, as well as the active investigation of potential cost-reduction measures would assist in the support of reasonable cost estimates.
Permit Acquisition	The ability to secure all of the permits to build and operate the project is of paramount importance. Failure to secure the necessary permits could stop or delay the project.	Maintain close relationships with the local communities, FN's and government and a project design that gives appropriate consideration to the environment and local people as required. Maintain direct control with a clear solution.

Risk	Explanation/Potential Impact	Possible Risk Mitigation
Development Schedule	The project development could be delayed for a number of reasons and could impact project economics. A change in schedule would alter the project economics.	If an aggressive schedule is to be followed, any field work should begin as soon as possible.
Ability to Attract Experienced Professionals	The ability to attract and retain competent, experienced professionals is a key success factor for the project. High turnover or the lack of appropriate technical and management staff at the project could result in difficulties meeting project goals.	Competitive salaries and benefits identify, attract and retain critical people.

26.2 Opportunities

There are several opportunities to improve the performance of the Minto Project and are highlighted in Table 26-2.

Table 26-2: Identified Project Opportunities

Opportunity	Explanation	Potential Benefit
Expansion of the Mine	Look for opportunities to expand the mineable resource.	Increased mine life.
Optimize Mine Plan	Further optimizations of the UG and OP mine plans and sequence.	Improved project economics.
Classification Upgrade	Increasing the confidence in the metal tonnage and grade through infill drilling.	Additional resources and upgrade to indicated to eventually produce minable reserves.
Process all POX material	Improve recoveries of POX material	Increased metal recovery and expansion of mineable resources.
Concentrate Smelting	It may be possible to obtain better treatment and/or refining terms from smelters through formal negotiations.	Reduced concentrate treatment and refining costs

There are near mine and regional exploration targets that may expand the mineral resources at Minto. These near mine targets include areas around previously mined Minto North Pit, area between mined Minto North Pit and mined Main Pit as well as areas around Minto East to the north.

Currently 50% of the resources in the mine plan are classified as Inferred. Infill drilling (primarily from underground) will increase the confidence in tonnage and grade and allow for definition of a Mineral Reserve and also may lead to expanded resources.

In terms of the POX material, this makes up approximately 12% of the total defined Resource (2.8 Mt combined Indicated and Inferred Resources). Given the low recoveries with the current plant configuration, approximately 1.7 Mt is captured within the current mine plan. The Ridgetop OP would benefit most from improved POX recoveries, as the southern portion of the deposit currently is not included in the mine plan due to high POX percentage.

27 RECOMMENDATIONS

It is recommended that Minto continue with current operations and advance the project as outlined in this study. This includes expanding the underground operations, incorporating Ridgetop and 118 open pits and upgrade the Minto crushing plant to eliminate the current contract crushing circuit.

It is also recommended that environmental and permitting continue as needed to support Minto project development plans.

27.1 Geology Recommendations

27.1.1 Assay Database

With regards to the assay database, MMTS recommends the following:

1. Further attention must be paid to the importing and exporting of assays from the main database for the purpose of resource modeling as described in Section 12.1 to ensure that the most appropriate test result is exported with respect to the assay value and range of test detection limits;
2. It is recommended that Minto correct the data in the main assay database to reflect the corrections made by MMTS to the resource database, particularly for the historic data. These corrections have been made available to Minto;
3. Although it is reported that re-assays for failed CRMs in years 2008-2011 were done “when warranted”, MMTS notes multiple failures during this time and questions if the re-assays have been uploaded into the database. It is recommended Minto review the failures and the database and update as appropriate;
4. There is a possible high bias in the copper results in years 2009 through 2011 indicated by the CRM results. It is recommended further check assays of pulps and quarter-core samples be conducted to investigate;
5. The analysis of the small sample set of field duplicates in Minto East implies potential significant low bias to the gold samples in the assay database. It is suggested that Minto investigate this finding with re-assay of core and check assays; and
6. CRM and check assay results from 2019 and 2020 indicate that there may be a negative bias to silver values. It is recommended to continue to monitor this potential bias.

These recommendations regarding the assay database are expected to cost \$100k.

27.1.2 Exploration Targets / Infill Drilling

Infill drilling (primarily from underground) is recommended at a drill spacing required to upgrade the resource from Inferred to Indicated.

In addition, near mine exploration targets have been defined and expansion of the resource through exploration drilling is recommended. An exploration program has been defined that totals approximately 13,000 m of drilling that target areas near the previously mined Minto North Pit, area between mined Minto North Pit and mined Main Pit as well as areas around Minto East and areas further to the south. These exploration programs are expected to cost approximately \$2.5M.

27.2 Metallurgy Recommendations

While the metallurgical testwork is extensive, there is still not enough information to develop a strong operating plan for POX mineralization. JDS recommends that a geometallurgical inspired testwork program be conducted to investigate improved recovery options for POX material.

This testwork program would define geometallurgical zones, differentiated by mineralization (which would include secondary sulphide copper minerals as well as oxide copper minerals). Testwork would be conducted on samples from each zone to develop a workable plan to maximize copper production. The testwork would target both leaching and flotation to determine the processing options.

This program is expected to cost approximately \$750k. The program would consist of testing 50-60 samples over the various mineralogical zones:

- Define geometallurgical zones with geology;
- Mineralogical analysis on multiple samples of each geometallurgical zone to determine the definition of each zone;
- Baseline flotation test on each sample using standard mill conditions:
 - Mineralogy conducted on flotation concentrates and tailings to understand the recovery by mineral and determine if there is any pacification of sulphide minerals.
- Grind vs recovery vs reagent scheme on all samples; and
- Bottle roll leach tests on each of the samples to understand the leaching characteristics of the mineralized material.

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29 UNITS OF MEASURE, ABBREVIATIONS AND ACRONYMS

Symbol / Abbreviation	Description
'	minute (plane angle)
"	second (plane angle) or inches
°	degree
°C	degrees Celsius
3D	three-dimensions
A	ampere
a	annum (year)
ac	acre
Acfm	actual cubic feet per minute
amsl	above mean sea level
AN	ammonium nitrate
ARD	acid rock drainage
Au	gold
AWR	all-weather road
B	billion
BD	bulk density
Bt	billion tonnes
BTU	British thermal unit
BV/h	bed volumes per hour
bya	billion years ago
C\$	dollar (Canadian)
Ca	calcium
CEAA	<i>Canadian Environmental Assessment Act</i>
CIM	Canadian institute of mining and metallurgy
cm	centimetre
cfm	cubic feet per minute
cm ²	square centimetre
cm ³	cubic centimetre
Cu	copper
d	day
d/a	days per year (annum)
d/wk	days per week
dB	decibel

Symbol / Abbreviation	Description
dBa	decibel adjusted
EM&R	department of energy, mines and resources
DIAND	Department of Indian and Northern Development
DGPS	differential global positioning system
DO	District Office
DMS	dense media separation
dmt	dry metric ton
EA	environmental assessment
EARPGO	environmental assessment review process guidelines order
EIS	environmental impact statement
ELC	ecological land classification
ERD	explosives regulatory division
EWR	enhanced winter road
FEL	front-end loader
FOC	fisheries and oceans Canada
ft	foot
ft ²	square foot
ft ³	cubic foot
ft ³ /s	cubic feet per second
g	gram
G&A	general and administrative
g/cm ³	grams per cubic metre
g/L	grams per litre
g/t	grams per tonne
Ga	billion years
gal	gallon (us)
GJ	gigajoule
GPa	gigapascal
gpm	gallons per minute (us)
GSC	geological survey of Canada
GTZ	glacial terrain zone
GW	gigawatt
h	hour
h/a	hours per year
h/d	hours per day
h/wk	hours per week
ha	hectare (10,000 m ²)

Symbol / Abbreviation	Description
ha	hectare
HG	high grade
hp	horsepower
HQ	drill core diameter of 63.5 mm
Hz	hertz
ICP-MS	inductively coupled plasma mass spectrometry
ID ²	inverse distance squared
in	inch
in ²	square inch
in ³	cubic inch
IRR	internal rate of return
JDS	JDS Energy & Mining Inc.
K	hydraulic conductivity
k	kilo (thousand)
kg	kilogram
kg	kilogram
kg/h	kilograms per hour
kg/m ²	kilograms per square metre
kg/m ³	kilograms per cubic metre
km	kilometre
km/h	kilometres per hour
km ²	square kilometre
kPa	kilopascal
kt	kilotonne
kV	kilovolt
kVA	kilovolt-ampere
kW	kilowatt
kWh	kilowatt hour
kWh/a	kilowatt hours per year
kWh/t	kilowatt hours per tonne
LoM	Life of Mine
L	litre
L/min	litres per minute
L/s	litres per second
LDD	large-diameter drill
LG	low grade
LOM	life of mine

Symbol / Abbreviation	Description
m	metre
M	million
m/min	metres per minute
m/s	metres per second
m ²	square metre
m ³	cubic metre
m ³ /h	cubic metres per hour
m ³ /s	cubic metres per second
Ma	million years
MAAT	mean annual air temperature
MAE	mean annual evaporation
MAGT	mean annual ground temperature
mamsl	metres above mean sea level
MAP	mean annual precipitation
masl	metres above mean sea level
Mb/s	megabytes per second
mbgs	metres below ground surface
Mbm ³	million bank cubic metres
Mbm ³ /a	million bank cubic metres per annum
mbs	metres below surface
mbsl	metres below sea level
MDMER	Metal and Diamond Mining Effluent Regulations
mg	milligram
mg/L	milligrams per litre
min	minute (time)
mL	millilitre
mm	millimetre
Mm ³	million cubic metres
MMER	metal mining effluent regulations
MMSIM	metamorphosed massive sulphide indicator minerals
mo	month
MPa	megapascal
Mt	million metric tonnes
MVA	megavolt-ampere
MW	megawatt
NAD	North American datum
Ni	nickel

Symbol / Abbreviation	Description
NI 43-101	national instrument 43-101
Nm ³ /h	normal cubic metres per hour
NQ	drill core diameter of 47.6 mm
NRC	natural resources Canada
OP	open pit
OSA	overall slope angles
oz	troy ounce
P.Geo.	professional geoscientist
Pa	Pascal
PAG	potentially acid generating
PEA	preliminary economic assessment
PFS	preliminary feasibility study
ppb	parts per billion
ppm	parts per million
psi	pounds per square inch
QA/QC	quality assurance/quality control
QP	qualified person
RC	reverse circulation
RMR	rock mass rating
ROM	run of mine
rpm	revolutions per minute
RQD	rock quality designation
s	second (time)
SFN	Selkirk First Nation
S.G.	specific gravity
Scfm	standard cubic feet per minute
SG	specific gravity
t	tonne (1,000 kg) (metric ton)
t	metric tonne
t/a	tonnes per year
t/d	tonnes per day
t/h	tonnes per hour
TCR	total core recovery
TMF	tailings management facility
tph	tonnes per hour
ts/hm ³	tonnes seconds per hour metre cubed
US	united states

Symbol / Abbreviation	Description
US\$	dollar (American)
UTM	universal transverse mercator
V	volt
VMS	volcanic massive sulphide
WUL	water use licence
w/w	weight/weight
wk	week
wmt	wet metric ton
WRSF	waste rock storage facility
YEAA	<i>Yukon Environmental Assessment Act</i>
YESAA	<i>Yukon Environmental and Socio-Economic Assessment Act</i>
YESAB	Yukon environmental and socio-economic assessment board
YG	Yukon government
YQMA	<i>Yukon Quartz Mining Act</i>
YWA	<i>Yukon Waters Act</i>
YWB	Yukon Water Board
µm	microns
µm	micrometre

Scientific Notation	Number Equivalent
1.0E+00	1
1.0E+01	10
1.0E+02	100
1.0E+03	1,000
1.0E+04	10,000
1.0E+05	100,000
1.0E+06	1,000,000
1.0E+07	10,000,000
1.0E+09	1,000,000,000
1.0E+10	10,000,000,000

30 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

Dino Pilotto, P.Eng.

I, Dino Pilotto, P.Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
2. I am currently employed as Engineering Manager with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of BC with a B.A.Sc degree in Mining and Mineral Process Engineering (1987). I have practiced my profession continuously since 1987;

I have been involved with mining operations, mine engineering and consulting covering a variety of commodities at locations in North America, South America, Africa, and Eastern Europe;

I am a Registered Professional in the Yukon (#2527), Nunavut and BC;

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;

4. I have visited the Minto Project on many occasions since 2006 with most recent visit on October 21, 2020 ;
5. I am responsible for Sections 1 - 3, 15, 16, 19, 20.4, 21 - 22, 24 - 29 of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had prior involvement on various technical reports and engineering studies with the property that is the subject of this Technical Report;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signed Date: May 7, 2021

(Original signed and sealed) "Dino Pilotto, P.Eng."

Dino Pilotto, P.Eng.

CERTIFICATE OF QUALIFIED PERSON**Michael Levy, P.Eng.**

I, Michael Levy, P. Eng., do hereby certify that:

1. I am currently employed as Geotechnical Engineering Manager with JDS Energy & Mining Inc. with an office at Suite 900 - 999 West Hastings St., Vancouver, BC V6C 2W2;
2. This certificate applies to the technical report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
3. I am a Professional Civil Engineer (P.Eng. #2692) registered with the Association of Professional Engineers Yukon and Colorado (P.E. #40268). I am a current member of the International Society for Rock Mechanics (ISRM) and the American Society of Civil Engineers (ASCE).

I hold a bachelor's degree (B.Sc.) in Geology from the University of Iowa in 1998 and a Master of Science degree (M.Sc.) in Civil-Geotechnical Engineering from the University of Colorado in 2004. I have practiced my profession continuously since 1999 and have been involved in a numerous mining and civil geotechnical projects across the Americas;

4. I have visited the project on many occasions since 2006 with the most recent being May 23 to 25, 2016;
5. I have had prior involvement on various technical reports and engineering studies with the property that is the subject of this Technical Report;
6. I am responsible for section 16.3 and 16.8.2 of the Technical Report;
7. I have read the definition of "Qualified Person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association, and past relevant experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101;
8. I am independent of the issuer, Minto Explorations Ltd., as defined in Section 1.5 of NI 43-101;
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1; and
10. As of the effective date of the Report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: March 31, 2021

Signing Date: May 7, 2021

(Original signed and sealed) "Michael Levy, P.Eng."

Michael Levy, P.Eng.

CERTIFICATE OF QUALIFIED PERSON**Tysen Hantelmann, P.Eng.**

I, Tysen Hantelmann, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
2. I am currently employed as a Senior Mining Engineer with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of Alberta with a Bachelor of Science degree in Mining Engineering (2001) and a Master of Engineering degree in Mining Engineering (2003). I have practiced my profession continuously since 2002;

I have been involved with mining operations, mine engineering and consulting for over 100 projects covering a variety of commodities at locations in North America, Latin America, Africa, and Europe;

I am a Registered Professional in Yukon (#2631), and Alberta (#71697);

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;

4. I have not visited the Minto Project;
5. I am responsible for Sections 23 of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have no prior involvement with the property that is the subject of this Technical Report;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signing Date: May 7, 2021

(Original signed and sealed) "Tysen Hantelmann, P.Eng."

Tysen Hantelmann, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

Tad Crowie, P.Eng.

I, Tad Crowie, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
2. I am currently employed as Senior Metallurgist with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of British Columbia with a B.A.Sc. in Mining and Mineral Process Engineering, 2001. I have practiced my profession continuously since 2001;
4. I have worked in technical, operations and management positions at mines in Canada. I have been responsible for recovery optimization projects, capital improvement projects, budgeting, planning, and pilot plant operations;
5. I am a Registered Professional Mining Engineer in British Columbia (#34052);
6. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;
7. I have visited the property on two occasions with the most recent on February 2, 2021 to February 4, 2021;
8. I am responsible for Sections 13, and 17 of this Technical Report;
9. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
10. I have had no prior involvement with the property that is the subject of this Technical Report;
11. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
12. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signing Date: May 7, 2021

(Original signed and sealed) "Tad Crowie, P.Eng."

Tad Crowie, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

Carly Church, P.Eng.

I, Carly Church, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
2. I am currently employed as Engineer with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of BC with a B.A.Sc degree in Mechanical Engineering (2006). I have practiced my profession intermittently since 2006;

I have spent the last 9 years working on mining projects; where I have performed, project engineering & infrastructure design, project management, purchasing and expediting, cost estimation and project controls, economic modelling, construction planning and management for mining projects;

I am a Registered Professional Engineer in British Columbia (#46451) and the Yukon (#2749);

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;

4. I have not visited the Minto Project;
5. I am responsible for Sections 18, (except 18.5-18.7) of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had no prior involvement on various technical reports and engineering studies with the property that is the subject of this Technical Report;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signing Date: May 7, 2021

(Original signed and sealed) "Carly Church, P.Eng."

Carly Church, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

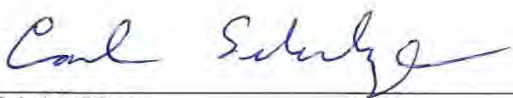
Carl Schulze, PGeo.

I, Carl Schulze, PGeo., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd;
2. I am currently employed as Senior Project Manager with Aurora Geosciences Ltd, 34A Laberge Rd, Whitehorse, Yukon Y1A 5Y9;
3. I am a graduate of Lakehead University with a Bachelor of Science Degree in Geology, 1984. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (EGBC), Lic No. 25393. I have worked as a geologist for a total of 37 years since my graduation from Lakehead University. I have worked extensively and specifically on Cordilleran intrusion-related gold deposits and mineralized zones in Yukon, Alaska and British Columbia for a minimum aggregate time of 13 years. I also served as the Resident Geologist for the Government of Nunavut from 2000 - 2002.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;
5. I have visited the Minto Project several times since 2008, with the most recent visit on February 3rd, 2021;
6. I am responsible for Sections 4-10 of this Technical Report;
7. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
8. I have had prior involvement, as lead author of a Competent Persons Report (CPR), dated June 23, 2019 for Pembridge Resources plc. on the property that is the subject of this Technical Report;
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
10. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signed Date: May 7, 2021



Carl Schulze, PGeo

CERTIFICATE OF QUALIFIED PERSON**Sue Bird, P.Eng.**

I, Sue Bird, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
2. I am currently employed as Vice Principal with Moose Mountain Technical Services (MMTS) with an office address of #210 1510 2nd Street North Cranbrook, BC V1C 3L2.;
3. I graduated with a Geologic Engineering degree (B.Sc.) from the Queen's University in 1989. I graduated with a M.Sc. in Mining from Queen's University in 1993;

I have worked as an engineering geologist for over 25 years since my graduation from university. I have worked on precious metals, base metals and coal mining projects, including mine operations and evaluations. Similar resource estimate projects specifically include those done for Desert Fox's Van Dyke Project, Artemis' Blackwater gold project, Ascot's Premier Gold Project, Spanish Mountain Gold, all in BC; O3's Marban and Garrison, gold projects in Quebec and Ontario, respectively, as well as numerous due diligence projects in the southern US done confidentially for various clients;

I am a member of the self-regulating Association of Professional Engineers and Geoscientists of British Columbia (#25007);

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;

4. I have visited the Minto Project on several occasions with most recent visit February 2-4, 2021;
5. I am responsible for Sections 11, 12, 14 and portions of Sections 1, 26, and 27 relating to the Resource estimate of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had prior involvement on various technical reports and engineering studies with the property that is the subject of this Technical Report;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signing Date: May 7, 2021

(Original signed and sealed) "Sue Bird, P.Eng."

Sue Bird, P.Eng.

CERTIFICATE OF QUALIFIED PERSON**Cheibany Ould Elemine, Ph.D., P.Geo.**

I, Cheibany Ould Elemine, P.Geo., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd;
2. I am currently employed as a Senior Geochemist with Ensero Solutions Canada Inc. with an office at Suite 410 – 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5;
3. I am a graduate of the University of Niigata (Japan) with a doctorate degree in Hydrogeochemistry (2004). I have practiced my profession continuously since 2004;

I have been involved in mining and environmental consulting services covering acid rock drainage and metal leaching, water quality assessment, waste and water management planning and mitigation, closure and reclamation planning for projects in North America, South America, and Africa;

I am a Registered Professional Geoscientist in British Columbia (#40039) and Saskatchewan;

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;

4. I have not visited the Minto Project;
5. I am responsible for Sections 20.1, 20.2 and 20.5 of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have not had prior direct involvement in any of the three studies for the property that is the subject of this Technical Report. However, I reviewed the reports pertaining to section 20.5: acid rock drainage and metal leaching characterization and summarized their contents for the purpose of this Technical Report. Sections 20.1 and 20.2 of this Technical Report were also compiled and summarized under my supervision;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signed Date: May 7, 2021



Cheibany Ould Elemine, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

Sam Amiralaei, P.Eng.

I, Sam Amiralaei, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
2. I am currently employed as a Senior Civil/Geotechnical Engineer with Ensero Solutions Canada Inc. with an office at Suite 410 – 885 Dunsmuir Street, Vancouver, British Columbia, V6C 1N5;
3. I am a graduate of the University of BC with a B.A.Sc degree in Civil Engineering (2010). I have practiced my profession continuously since 2010;

I have been involved with mine waste management engineering and mine closure planning, design and construction covering a variety of projects in North America, South America, and Europe;

I am a Registered Professional in the Yukon (#3210), Nunavut and BC;

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;

4. I have not visited the Minto Project;
5. I am responsible for Sections 20.3 of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have not had prior involvement on any engineering studies with the property that is the subject of this Technical Report. However, the work completed related to this technical report was completed (under my supervision) by individuals who have an in-depth knowledge of mine closure planning studies and environmental assessments completed to date for this project;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signing Date: May 7, 2021

(Original signed and sealed) "Sam Amiralaei, P.Eng."

Sam Amiralaei, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

John Kurylo, M.Sc., P.Eng.

I, John Kurylo, M.Sc., P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Preliminary Economic Assessment, Technical Report, Minto Yukon, Canada" (the "Technical Report") with an effective date of March 31, 2021 prepared for Minto Explorations Ltd.;
2. I am currently employed as a Senior Consultant with SRK Consulting (Canada) Inc. (SRK), with a business address at 22nd Floor, 1066 West Hastings Street, Vancouver, BC, V6E 3X2, Canada, and have worked with SRK during the preparation of this Technical Report;
3. I am a Geotechnical Engineer by profession (BASc from the University of British Columbia, and MSc from Imperial College London), and I am a registered Professional Engineer the Yukon (#2978);

I have practiced my profession for over ten years and worked on mining and civil infrastructure projects located in the United Kingdom, Europe, Central Asia, South America, Scandinavia, Africa, and North America (primarily Canada);

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the issuer, vendor, property and related companies applying all of the tests in Section 1.5 of NI 43-101;

4. I have visited the Minto Project in 2014;
5. I am responsible for Sections 18.5 to 18.7 of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had prior involvement in engineering studies with the property that is the subject of this Technical Report;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: March 31, 2021

Signing Date: May 7, 2021

(Original signed and sealed) "John Kurylo, M.Sc, P.Eng."

John Kurylo, M.Sc, P.Eng.