Technical Report and Mineral Resource Estimate on the Troilus Gold-Copper Project Quebec, Canada

Mineral Resources Effective Date: 02 October 2023

Prepared by

AGP Mining Consultants Inc.
#246-132K Commerce Park Drive
Barrie, ON L4N 0Z7 Canada

Qualified Persons:
Paul Daigle, P. Geo, géo.
Ryda Peung, P.Eng.

IMPORTANT NOTICE

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Above mean sea level	amsl
Acre	ac
Ampere	A
Annum (year)	a
Billion	B
Billion tonnes	Bt
Billion years ago	Ga
British thermal unit	BTU
Centimetre	cm
Cubic centimetre	cm3
Cubic feet per minute	cfm
Cubic feet per second	ft3/s
Cubic foot	ft3
Cubic inch	in3
Cubic metre	m3
Cubic yard	yd3
Coefficients of Variation	CVs
Day	d
Days per week	d/wk
Days per year (annum)	d/a
Dead weight tonnes	DWT
Decibel adjusted	dBa
Decibel	dB
Degree	°
Degrees Celsius	°C
Diameter	ø
Dollar (American)	US$
Dollar (Canadian)	C$
Dry metric ton	dmt
Foot	ft
Gallon	gal
Gallons per minute (US)	gpm
Gigajoule	GJ
Gigapascal	GPa
Gigawatt	GW
Gram	g
Grams per litre	g/L
Grams per tonne	g/t
Greater than	>

Hectare (10,000 m2)	ha
Hertz	Hz
Horsepower	hp
Hour	h
Hours per day	h/d
Hours per week	h/wk
Hours per year	h/a
Inch	"
Kilo (thousand)	k
Kilogram	kg
Kilograms per cubic metre	kg/m3
Kilograms per hour	kg/h
Kilograms per square metre	kg/m2
Kilometre	km
Kilometres per hour	km/h
Kilopascal	kPa
Kilotonne	kt
Kilovolt	kV
Kilovolt-ampere	kVA
Kilovolts	kV
Kilowatt	kW
Kilowatt hour	kWh
Kilowatt hours per tonne (metric ton)	kWh/t
Kilowatt hours per year	kWh/a
Less than	<
Litre	L
Litres per minute	L/min
Megabytes per second	Mb/sec
Megapascal	MPa
Megavolt-ampere	MVA
Megawatt	MW
Metre	m
Metres above sea level	masl
Metres Baltic sea level	mbsl
Metres per minute	m/min
Metres per second	m/s
Metric ton (tonne)	t
Microns	µm
Milligram	mg
Milligrams per litre	mg/L
Millilitre	mL
Millimetre	mm
Million	M
Million bank cubic metres	Mbm3

Million tonnes	Mt
Minute (plane angle)	'
Minute (time)	min
Month	mo
Ounce	oz
Pascal	Pa
Centipoise	mPa·s
Parts per million	ppm
Parts per billion	ppb
Percent	%
Pound(s)	lb
Pounds per square inch	psi
Revolutions per minute	rpm
Second (plane angle)	"
Second (time)	sec
Specific gravity	SG
Square centimetre	cm2
Square foot	ft2
Square inch	in2
Square kilometre	km2
Square metre	m2
Thousand tonnes	kt
Three-Dimensional	3D
Tonne (1,000 kg)	t
Tonnes per day	t/d
Tonnes per hour	t/h
Tonnes per year	t/a
Tonnes seconds per hour metre cubed	ts/hm3
Total	T
Volt	V
Week	wk
Weight/weight	w/w
Wet metric ton	wmt

Abbreviations and Acronyms

Absolute Relative Difference	ABRD
Acid Base Accounting	ABA
Acid Rock Drainage	ARD
Alpine Tundra	AT
Atomic Absorption Spectrophotometer	AAS
Atomic Absorption	AA
British Columbia Environmental Assessment Act	BCEAA
British Columbia Environmental Assessment Office	BCEAO
British Columbia Environmental Assessment	BCEA
British Columbia	BC
Canadian Dam Association	CDA
Canadian Environmental Assessment Act	CEA Act
Canadian Environmental Assessment Agency	CEA Agency
Canadian Institute of Mining, Metallurgy, and Petroleum	CIM
Canadian National Railway	CNR
Carbon-in-leach	CIL
Caterpillar's® Fleet Production and Cost Analysis software	FPC
Closed-circuit Television	CCTV
Coefficient of Variation	CV
Copper equivalent	CuEq
Counter-current decantation	CCD
Cyanide Soluble	CN
Digital Elevation Model	DEM
Direct leach	DL
Distributed Control System	DCS
Drilling and Blasting	D&B
Environmental Management System	EMS
Flocculant	floc
Free Carrier	FCA
Gemcom International Inc.	Gemcom
General and administration	G&A
Gold equivalent	AuEq
Heating, Ventilating, and Air Conditioning	HVAC
High Pressure Grinding Rolls	HPGR
Indicator Kriging	IK
Inductively Coupled Plasma Atomic Emission Spectroscopy	ICP-AES
Inductively Coupled Plasma	ICP
Inspectorate America Corp.	Inspectorate
Interior Cedar – Hemlock	ICH
Internal rate of return	IRR
International Congress on Large Dams	ICOLD
Inverse Distance Cubed	ID3

Land and Resource Management Plan	LRMP
Lerchs-Grossman	LG
Life-of-mine	LOM
Load-haul-dump	LHD
Locked cycle tests	LCTs
Loss on Ignition	LOI
Metal Mining Effluent Regulations	MMER
Methyl Isobutyl Carbinol	MIBC
Metres East	mE
Metres North	mN
Mineral Deposits Research Unit	MDRU
Mineral Titles Online	MTO
National Instrument 43-101	NI 43-101
Nearest Neighbour	NN
Net Invoice Value	NIV
Net Present Value	NPV
Net Smelter Prices	NSP
Net Smelter Return	NSR
Neutralization Potential	NP
Northwest Transmission Line	NTL
Official Community Plans	OCPs
Operator Interface Station	OIS
Ordinary Kriging	OK
Organic Carbon	org
Potassium Amyl Xanthate	PAX
Predictive Ecosystem Mapping	PEM
Preliminary Assessment	PA
Preliminary Economic Assessment	PEA
Qualified Persons	QPs
Quality assurance	QA
Quality control	QC
Rhenium	Re
Rock Mass Rating	RMR ‘76
Rock Quality Designation	RQD
SAG Mill/Ball Mill/Pebble Crushing	SABC
Semi-autogenous Grinding	SAG
Standards Council of Canada	SCC
Stanford University Geostatistical Software Library	GSLIB
Tailings storage facility	TSF
Terrestrial Ecosystem Mapping	TEM
Total dissolved solids	TDS
Total Suspended Solids	TSS
Tunnel boring machine	TBM
Underflow	U/F

Valued Ecosystem Components	VECs
Waste rock facility	WRF
Water balance model	WBM
Work Breakdown Structure	WBS
Workplace Hazardous Materials Information System	WHMIS
X-Ray Fluorescence Spectrometer	XRF

Forward Looking Statements

This Technical Report, including the economics analysis, contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 and forward-looking information within the meaning of applicable Canadian securities laws. While these forward-looking statements are based on expectations about future events as at the effective date of this Report, the statements are not a guarantee of Troilus' future performance and are subject to risks, uncertainties, assumptions, and other factors, which could cause actual results to differ materially from future results expressed or implied by such forward-looking statements. Such risks, uncertainties, factors, and assumptions include, amongst others but not limited to metal prices, mineral resources, mineral reserves, capital and operating cost forecasts, economic analyses, smelter terms, labour rates, consumable costs, and equipment pricing. There can be no assurance that any forward-looking statements contained in this Report will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements.

1 SUMMARY

1.1 Introduction

Troilus Gold Corporation (Troilus) is a Canadian exploration company with its corporate office located in Montreal, Canada. The Troilus Gold Property (Property) is divided into two Projects: the Troilus Gold Project (Project), covering the previous Troilus Mine, and the Troilus Frotêt Project. The mineral rights to the Property cover a total area of approximately 44,124.88 ha. Of this total area, 7,242 ha is 50% owned by Troilus and 50% owned by Argonaut Gold through a joint venture (JV) agreement, with the remainder of the mineral rights being 100% held by Troilus.

The Troilus Mine was originally an open pit operation producing gold, copper, and silver continuously from November 1996 to April 2009. The Troilus Mine produced over 2 million oz of gold and approximately 70,000 t of copper. After the mine ceased production in 2009, the 20,000 t/d mill processed low grade stockpiles until the end of June 2010. Following this, the mill was sold and shipped to Mexico and the main camp facilities were dismantled in late 2010. A significant amount of site infrastructure was left in place after the mine closure and disposition of some of the key assets.

This Technical Report (Report) was prepared on behalf of Troilus, by AGP Mining Consultants Inc. (AGP). The purpose of the Report is to present the results of the Mineral Resources of the four principal deposits of the Troilus Gold Project. This Report was prepared in compliance with the Canadian disclosure National Instrument 43-101 (NI 43-101) and in accordance with the requirements of Form 43-101 F1.

The effective date of the Mineral Resources for this report is 2 October 2023.

1.2 Location and Ownership

The Troilus Project is located in central Quebec and is situated approximately 170 km north of Chibougamau. The mineral rights to the Property cover a total area of approximately 44,124.88 ha. Of this total area, 7,242 ha is 50% owned by Troilus and 50% owned by Argonaut Gold through a joint venture (JV) agreement, with the remainder of the mineral rights being 100% held by Troilus.

The mineral rights to the Troilus Gold Project are comprised of a single Mining Lease (Bail Minier) and 293 mineral claims (Titres Miniers), totalling 16,185.09 ha. The mineral rights to the Troilus Frotêt Project are comprised of 520 mineral claims, totalling 27,939.79. All mineral rights are in good standing.

1.3 Accessibility, Local Resources, Infrastructure and Climate

The Troilus Project is easily accessible by road from Chibougamau, Quebec, along Highway 167 and the Route du Nord, that begins approximately 18 km northeast of Chibougamau. The Route du Nord is a maintained all-weather dirt road and is open year-round. The Project site follows the Route du Nord for approximately 108 km, to the turn off east along the Troilus Mine Road for roughly 44 km. The drive is typically 2 hours.

The region where the Property is situated has a Continental Subarctic climate characterized by long cold winters and short mild summers. Exploration and mining activities may be carried out all year round.

The nearest town to the Property is Mistissini, a Cree community located approximately 90 km southeast of the site. Chibougamau, with a population of approximately 7,500 (est. 2016), is the largest town in Nord-du-Quebec, and offers most services, supplies and fuel required for the Project. Chibougamau is a well-established mining town and has a well-developed local infrastructure, services, and a mining industry workforce. The Property is connected to the provincial hydroelectric grid via a 137 km 161 kV power line. Water on the Property is abundant and available for exploration activities. Troilus maintains an 80-person camp (accommodation and kitchen), including but not limited to: permanent and semi-permanent buildings for: administration, exploration, core logging and sampling; garage; electrical transformer station; tailings treatment plant, etc.

1.4 History

Prior to 1985, the Project area was subject to regional exploration by Falconbridge Ltd. (now Glencore) and Selco Mining Corp. The Government of Quebec also conducted an airborne survey over large area of the eastern portion of the Frotêt-Evans belt.

In 1987, mineralization in the Project area was discovered by Kerr Addison and by 1993 a positive feasibility study was issued. The mine started commercial production in October 1996 and operated continuously up to April 2009 and the mill continued to process stockpile material up to June 29, 2010.

From 1995 to 2010, approximately 69.6 million tonnes (Mt) averaging 1.00 g/t Au and 0.10% Cu of ore was mined and 7.6 Mt of lower grade mineralization had been stockpiled. A total of approximately 230.4 Mt had been excavated including 18.4 Mt of overburden and 134.7 Mt of waste rock.

1.5 Geology and Mineralization

The Troilus Gold deposit lies within the eastern segment of the Frotêt-Evans Greenstone Belt (FEGB), in the Opatica Subprovince of the Superior Province in Quebec. The FEGB is largely dominated by tholeiitic basalts and magnesian basalts that occur in association with felsic and intermediate calc-alkaline pyroclastic rocks, lava flows, and local ultramafic layers. Syn- to post-deformational gabbroic to monzogranitic plutonic rocks occur throughout the greenstone belt.

The main mineralized zones at the Troilus Property occur around the margins of the Troilus Diorite, and comprise the Z87 Zone, J Zone, X22 Zone, and the SW Zone. Other significant targets near these zones include: the northern continuity of the J Zone, the Allongé Zone; the northeastern continuity of the SW Zone, and the Gap Zone.

Troilus is primarily an Au-Cu deposit, but contains minor amounts of Ag, Zn and Pb, as well as traces of Bi, Te, and Mo. Gold-copper mineralization at the Troilus deposit comprises two distinct styles, disseminated and vein-hosted. Gold mineralization is spatially correlated with the presence of sulphides, even though the sulphide content does not directly correlate with gold and copper grade. The matrix of the diorite breccia, the diorite and the felsic dykes represent the main host rocks for the mineralized intervals.

1.6 Deposit

The mineralized zones of the Troilus Project are known as Archean porphyry-type deposits. Other interpretations of the deposits include superimposed, structurally controlled, “orogenic” gold deposits.

1.7 Exploration

Since the formation of Troilus, exploration activities have been focussed on developing the principal mineralized zones: Z87, J, X22 and SW Zones. Troilus has also been active at various exploration targets along strike of these zones to the northeast (Allongé, Carcajou), between (Gap Zone), and the southwest (Beyan, Cressida). Regional exploration targets include the Testard Target and the Pallador and Rocket Targets.

In 2018 and 2019, field mapping and prospecting work supported Troilus’ team to improve the understanding of the lithological and structural controls on gold mineralization across the property and confirmed the overall potential for extending the current known limits of the main mineralized zones. In 2018, Troilus retained SRK Consulting (Canada) Inc. (SRK) to conduct a structural geology investigation at the Project. The study focused on the exposed geology in the Z87 Zone open pit and the J Zone open pit.

In June 2020, Troilus completed a preliminary field exploration program applying the regional structural and geological models to areas along strike, and south, of the known deposits. In 2020 and 2021, Troilus completed two high-resolution magnetic geophysical surveys. Initial results have led to the discovery of several areas of interest that have been actively explored between 2020 and 2023. These targets include: the Beyan target and Cressida target, situated approximately 8 km and 14 km, respectively, southwest and along strike of the SW Zone of the Troilus Gold Project; the Testard and Freegold-Bullseye target situated approximately 10 km south of the SW Zone; and the Pallador target situated approximately 35 km south of the Troilus mine.

Each of these target areas have been subject to, in varying degrees, geological mapping and prospecting programs, ground geophysical surveys and exploration drill hole programs.

1.8 Drilling

Since 1986, there have been several drilling programs completed on the Property by previous owners. There was no drilling on the property from 2008 to 2017 and Troilus’ drill programs were completed from 2018 to 2023. Most of the 2018 and 2019 drill holes targeted the Z87 and J Zones at depth and along strike. Initial drilling in 2019 led to the discovery off the SW Zone that has largely been the focus of drill programs in 2021 and 2022.

The resource drill hole database contains 1,492 surface drill holes totalling approximately 449,168 m mainly in the Z87, J, X22 and SW Zones, and includes exploration and geotechnical drill holes.

AGP considers the drilling was undertaken in accordance with industry standards and best practices without any major adverse aspects that could have materially impacted the accuracy and reliability of the resource estimate.

1.9 Sample Preparation, Analyses and Security

AGP reviewed the QA/QC program and is of the opinion it is in accordance with standard industry practice and CIM Exploration Best Practice Guidelines. Troilus personnel have taken all reasonable measures to ensure the sample analysis completed is accurate and precise. AGP considers the assay results and database acceptable for use in the estimation of mineral resources.

AGP is of the opinion that the preparation and analyses are satisfactory for this type of the deposit and that the sample handling and chain of custody meet or exceed industry standards.

1.10 Data Verification

AGP received the database containing all drill holes for the Z87 Zone, J Zone, X22 Zone, and SW Zone in a Leapfrog project that included, but not limited to, collar, survey assay and lithology and assay files.

An export of the Geotic database was received for data validation and QA/QC review. AGP verified approximately 7.5% of the data from the 2021 and 2022 drill programs (approximately 13,000 records out of 175,000) and included data across all three zones. The gold, copper, silver assay values, and density values, were compared to the laboratory certificates provided to Troilus by ALS. No errors were found.

AGP is of the opinion the database is representative and adequate to support the resource estimates for the Troilus deposits. AGP is satisfied that the core descriptions, sampling procedures, and data entries were conducted in accordance with industry standards.

1.11 Mineral Processing and Metallurgical Testing

Samples from the Z87, J and Southwest (SW) pits were submitted to various testing facilities for metallurgical testing during 2019 and 2023 in support of the current studies.

Troilus selected drill core samples for the testing programmes which were submitted for comminution testing. The results indicate that the samples tested are of above average hardness and abrasiveness.

Three composite samples (high, medium, and low grade) were tested from each of the J4 and J5 zones, respectively. Bottle roll direct cyanidations were performed at three crush / grind sizes. The tests were conducted for 72 hours (h) at both low (200 mg/L) and high (1,000 mg/L) NaCN concentrations. Direct cyanidation at the crush size of 2 mm explored the amenability of the samples to vat and heap leaching. At this coarse size, gold extractions were generally too low to offer an economically viable processing strategy. Extending the duration may render the heap leach route more attractive. Gold extractions for the P_{80} 75 µm from these tests were moderately high, however, silver and copper extractions were low indicating that these metals will not contribute much to revenues in a cyanidation only plant.

Gold extraction is shown to be sensitive to grind size and somewhat sensitive to grade. Testwork indicated that additional grinding will improve gold extraction.

In 2022, three composite samples, designated as J-Zone, South-West (SW) Zone and 87 Zone, each weighing approximately three tonnes were submitted to Eriez to investigate the recovery of gold, copper, and silver using Eriez column flotation technology.

The objective of the Eriez pilot program was to maximize metal recovery performance using a gravity concentration and flotation circuit and to define optimum operating conditions for use in future studies for each of the three deposits. Additional objectives included the production of sufficient final concentrate to allow chemical characterization and the production of other intermediate products for additional testing. Due to the low copper grades of the deposits, large feed samples were required so that sufficient material was available for closed circuit cleaner operation.

The following conclusions can be drawn from the latest metallurgical testwork completed:

- J Zone, SW Zone, and Zone 87 all had good GRG values with coarse GRG as predicted by gravity recovery modelling.
- J Zone, SW Zone, and Zone 87 all performed well in the flotation testwork. The optimum grind size selected was P_{80} 75µm for the primary mill and P_{80} 20µm for the regrind mill.
- Further treatment of the flotation tails is not required or justifiable economically due to low flotation tails grades.

1.12 Mineral Resources

The Mineral Resources for the Project include the four principal mineralized zones: Z87, J, X22 and SW Zones. The mineral resources were prepared and disclosed in accordance with the CIM Definitions for Mineral Resources and Mineral Reserves (2014). The QP responsible for the mineral resource estimates is Mr. Paul Daigle, P.Geo., géo., Principal Resource Geologist for AGP. The effective date of these mineral resource is 2 October 2023.

The Mineral Resources were prepared using interpreted mineralized domains based on a gold equivalent (AuEQ) of greater than 0.3 g/t AuEQ at each of the four zones. The blocks models for each deposit all use a block model matrix of 5m x 5m x 5m and gold, copper and silver grades were estimated using ordinary kriging interpolation method on capped composite values. Table 1-1 presents a summary of the Mineral Resources for the Troilus Project.

Table 1-1: Mineral Resources Amenable to Open Pit, Reported at a 0.3% AuEQ Cut-off Grade

		Grade				Contained Metal		
Class	**Tonnes (Mt)**	**Au (g/t)**	**Cu (%)**	**Ag (g/t)**	**AuEQ (g/t**	**Au (Moz)**	**Cu (Mlb)**	**Ag (Moz)**
All Zones								
Indicated	508.2	0.57	0.07	1.09	0.69	9.32	729.46	17.79
Inferred	80.5	0.57	0.06	1.47	0.69	1.49	115.41	3.81

Notes:
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
Summation errors may occur due to rounding.
Open pit mineral resources are reported within optimized constraining shells.
Open pit cut-off grade is 0.3 g/t AuEQ; underground cut-off grade is 0.9% AuEQ.
AuEQ equivalents were calculated as follows:
Z87 Zone AuEQ = Au grade + 1.5628 * Cu grade + 0.0128 * Ag grade
J Zone AuEQ = Au grade + 1.5107 * Cu grade + 0.0119 * Ag grade
X22 Zone AuEQ = Au grade + 1.5628 * Cu grade + 0.0128* Ag grade
SW Zone AuEQ = Au grade + 1.6823 * Cu grade + 0.0124 * Ag grade
Metal prices for the AuEQ formulas are: $US 1,850/ oz Au; $4.25/lb Cu, and $23.00/ oz Ag; with an exchange rate of US$1.00: CAD$1.30.
Metal recoveries for the AuEQ formulas are:
Z87 Zone 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery
J Zone 93.1% for Au recovery, 89.3% for Cu recovery and 88.9% for Ag recovery
X22 Zone 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery
SW Zone 85.7% for Au recovery, 91.5% for Cu recovery and 85.6% for Ag recovery
Capping of grades varied between 2.00 g/t Au and 35.00 g/t Au; between 0.1% cu and 3.0 %Cu, and between 4.50 g/t Ag and 55.00 g/t Ag; on raw assays.
The density (excluding overburden and fill) varies between 2.65 g/cm3 and 2.93 g/cm3 depending on lithology for each zone.

AGP is not aware of any information not already discussed in this report, which would affect their interpretation or conclusions regarding the subject property. AGP is required to inform the public that the quantity and grade of reported Inferred resources in this estimation must be regarded as conceptual in nature and are based on limited geological evidence and sampling. The geological evidence is sufficient to imply, but not verify, geological grade or quality of continuity. For these reasons, an Inferred resource has a lower level of confidence than an Indicated resource. It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. The rounding of values, as required by the reporting guidelines, may result in apparent differences between tonnes, grade, and metal content.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

1.13 Conclusions and Recommendations

The Troilus Gold Project is made up of four principal mineralized zones: Z87 Zone, J Zone, X22 Zone, and SW Zone. The Z87 Zone and J Zone were subject to open pit mining operations between 1996 to 2010. It has been established that there are still significant open pit and underground mineral resources in these, and adjacent zones. The X22 Zone has been recently discovered and developed in

2023 and is situated adjacent to the southwest of Z87 Zone. The SW Zone, situated approximately 2.5 km southwest of the Z87 Zone, has been the focus of several drill campaigns since 2019 and has been established as a significant deposit for the Project. The gold grades within the interpreted mineralized domains are continuous and may still be open along strike and at depth.

The mineralized zones on the Property occur around the margins of the Troilus Diorite and comprise the Z87 Zone, J Zone, and X22 Zone. The SW Zone lies along strike and southwest of the Z87 Zone. Other important mineralization discovered on the Property to date include: the northern continuity of the J Zone, in the Allongé Target and Carcajou Target; and the north-western continuity of the SW Zone, toward Z87 Zone, the Gap Zone; and to the southwest of the SW Zone, in the Beyan and Cressida Targets. Additionally, Troilus has also investigated several regional exploration targets on the Property that include: the Testard Target, the Freegold-Bullseye Target, and the Pallador Target.

The Project is primarily a gold-copper deposit, but contains minor amounts of Ag, Zn and Pb, as well as traces of Bi, Te, and Mo. The gold and copper mineralization at the Troilus deposit comprises two distinct styles, disseminated and vein hosted. Gold mineralization is spatially correlated with the presence of sulphides, even though the sulphide content does not directly correlate with gold and copper grade. The matrix of the diorite breccia, the diorite and the felsic dykes represent the main host rocks for the mineralized intervals.

AGP concludes that further development of the mineralized zones is warranted and recommended.

AGP recommends:

- delineation drilling to continue on all four mineralized zone of the Project to define the limits of each zone along strike (approximately 6,000 m)
- that the twinning of historic, pre-2018, drill holes, be targeted with more current drill information (approximately 3,000 m)
- recommended that bulk density and assay analysis for silver be completed for the initial drilling at Z87 Zone (approximately 4,000 samples)

The estimated budget for this development work is estimated to be $CAD 2.2 million.

2 INTRODUCTION

Troilus Gold Corp. (Troilus) is a Canadian exploration company with its corporate office located in Montreal, Canada. Troilus is focused on the development of the Troilus Gold Project (Project) located in central Quebec, situated approximately 170 km north of Chibougamau. The mineral rights for the Property are divided into two Projects: the Troilus Gold Project (Project) and the Troilus Frotêt Project. The mineral rights to the Property cover a total area of approximately 44,124.88 ha. Of this total area, 7,242 ha of this land package is 50% owned by Troilus and 50% owned by Argonaut Gold through a joint venture agreement, with the remainder of the mineral rights being 100% held by Troilus

The Troilus Mine was originally an open pit mining operation producing gold, copper, and silver continuously from November 1996 to April 2009. The Troilus Mine produced over 2 million oz of gold and approximately 70,000 t of copper. After the mine ceased production in 2009, the 20,000 t/d mill processed low grade stockpiles until the end of June 2010. Following this, the mill was sold and shipped to Mexico and the main camp facilities were dismantled in late 2010. A significant amount of site infrastructure was left in place after the mine closure and disposition of some of the key assets.

2.1 Issuer and Purpose

This Technical Report (Report) was prepared on behalf of Troilus, by AGP Mining Consultants Inc. (AGP).

The purpose of the Report is to present the results of the Mineral Resources of the four principal deposits of the Troilus Project. This Report was prepared in compliance with the Canadian disclosure National Instrument 43-101 (NI 43-101) and in accordance with the requirements of Form 43-101 F1.

2.2 Qualified Persons

The list of Qualified Persons (QPs) responsible for the preparation of this Report and the sections under their responsibility are provided in Table 2-1.

Table 2-1: Qualified Persons

Qualified Person	Position	Responsibilities
Paul Daigle, P. Geo., géo.	Principal Resource Geologist, AGP	All Sections, except
Ryda Peung, P.Eng.,	Lead Process Engineer, Lycopodium	Section 1.11 and 13.0

2.3 Site Visits and Scope of Personal Inspection

Mr. Daigle conducted a site visit on 5 October to 7 October 2022 for two days. The site visit included inspection of the drill core logging, sampling, and core storage facilities. A review was made of the logging and sampling procedures and included a review of selected drill core. Selected drill collars were located and recorded to compare with the surveyed drill hole collar locations. Mr. Daigle made a previous site inspection in February 2020.

Mr. Daigle was accompanied on site by:

- Kyle Frank, géo. - Troilus Exploration Manager.
- Nicolas Guest, géo. - Troilus Chief Geologist.
- Konstantin De Maack, stagiaire - Troilus Project Geologist.
- Nicholas Robert-Potvin - Troilus Project Geotechnician.

2.4 Effective Dates

The final drill hole database was received on 31 August 2023. The effective date of the Mineral Resources for this report is 2 October 2023.

2.5 Information Sources and References

All units of measurement in this report are in metric and all costs are expressed in United States dollars (USD) unless otherwise stated. Contained gold and silver are expressed as troy ounces (oz). All material tonnes are expressed as dry tonnes (t) unless stated otherwise.

Lists of the main units of measure and abbreviations used throughout this report are presented in Sections 2.7 and 2.8, respectively.

2.6 Previous Technical Reports

The Troilus Mine and Troilus Project has been the subject of several technical reports. The previous NI 43-101 technical reports filed on SEDAR are summarized in Table 2-2 below:

Table 2-2: Summary of Previous Technical Reports

Reference	Date	Company	Name
Balint et al., 2003	Apr 24, 2003	Inmet Mining Corp.	Technical Report on the Mineral Resource and Mineral Reserve Estimates at the Troilus Mine, Québec
RPA, 2014	Jun 30, 2014	Copper One Inc.	Technical Report on the Troilus Gold-Copper Mine Mineral Resource Estimate, Quebec, Canada,
RPA, 2016	Jun 30, 2016	Sulliden Mining Capital Inc.	Technical Report on the Troilus Gold-Copper Mine Mineral Resource Estimate, Quebec, Canada,
RPA, 2017	Nov 20, 2017	Pitchblack Resources Ltd.	Technical Report on the Troilus Gold-Copper Mine Mineral Resource Estimate, Quebec, Canada
RPA, 2019a	Jan 1, 2019	Troilus Gold Corp.	Technical Report on the Troilus Gold-Copper Mine Mineral Resource Estimate, Quebec, Canada
RPA, 2019b	Dec 20, 2019	Troilus Gold Corp.	Technical Report on the Troilus Gold-Copper Mine Mineral Resource Estimate, Quebec, Canada
AGP, 2020a	Aug. 27, 2020	Troilus Gold Corp.	Technical Report and Mineral Resource Estimate on the Troilus Gold-Copper Project, Quebec, Canada
AGP, 2020b	Oct. 14, 2020	Troilus Gold Corp.	Preliminary Economic Assessment of the Troilus Gold Project, Quebec, Canada

All other technical reports and information used in this report are listed in Section 27.0 References.

2.7 Units of Measure

Table 2-3: Units of Measure

Unit	Abbreviation
Above mean sea level	amsl
Ampere	A
Billion	B
British thermal unit	BTU
Cubic centimetre	cm^3
Cubic feet	ft^3
Cubic inch	in^3
Cubic yard	yd^3
Day	d
Days per year (annum)	d/a
Decibel	dB
Degree	°
Diameter	Ø
Dollar (Canadian)	C$
Foot	ft
Gallons per minute (US)	gpm
Gigapascal	GPa
Gram	g
Grams per tonne	g/t
Hectare (10,000 m^2)	ha
Horsepower	hp
Hours per day	h/d
Hours per year	h/a
Kilo (thousand)	k
Kilograms per cubic metre	kg/m^3
Kilograms per square metre	kg/m^2
Kilometres per hour	km/h
Kilotonne	kt
Kilovolt-ampere	kVA
Kilowatt hour	kWh
Kilowatt hours per year	kWh/a
Litre	L
Megabytes per second	Mb/sec
Megavolt-ampere	MVA
Metre	m
Metres Baltic sea level	mbsl
Metres per second	m/s

Unit	Abbreviation
Acre	ac
Annum (year)	a
Billion tonnes	Bt
Centimetre	cm
Cubic feet per minute	cfm
Cubic feet per second	ft^3/s
Cubic metre	m^3
Coefficients of variation	CVs
Days per week	d/wk
Dead weight tonnes	DWT
Decibel adjusted	dBa
Degrees Celsius	°C
Dollar (American)	US$
Dry metric tonne	dmt
Gallon	gal
Gigajoule	GJ
Gigawatt	g
Grams per litre	g/L
Greater than	>
Hertz	Hz
Hour	h
Hours per week	h/wk
Inch	“
Kilogram	kg
Kilograms per hour	kg/h
Kilometre	km
Kilopascal	kPa
Kilovolt	kV
Kilowatt	kW
Kilowatt hours per tonne (metric ton)	kWh/t
Less than	<
Litres per minute	L/min
Megapascal	MPa
Megawatt	MW
Metres above sea level	masl
Metres per minute	m/min
Metric ton (tonne)	t

Unit	Abbreviation
Microns	ųm
Milligrams per litre	mg/L
Millimetre	mm
Million bank cubic metres	Mbm^3
Minute (plane angle)	‘
Month	mo
Pascal	Pa
Parts per billion	ppB
Pound(s)	lb(s)
Revolutions per minute	rpm
Second (time)	sec
Square centimetre	cm^2
Square inch	in^2
Square metre	m^2
Three dimensional	3D
Tonnes per day	t/d
Tonnes per year (annum)	t/a
Total	T
Week	wk
Wet metric ton	wmt

Unit	Abbreviation
Milligram	mg
Millilitre	mL
Million	M
Million tonnes	Mt
Minute (time)	min
Ounce	oz
Parts per million	ppM
Percent	%
Pounds per square inch	psi
Second (plane angle)	“
Specific gravity	SG
Square foot	ft^2
Square kilometre	km^2
Thousand tonnes	kt
Tonne (1,000 kg)	t
Tonnes per hour	t/h
Tonnes seconds per hour metre cubed	ts/hm^3
Volt	V
Weight per weight	w/w

2.8 Terms of Reference (Abbreviations & Acronyms)

Table 2-4 shows Terms and Abbreviations used in this study. Table 2-5 shows the Conversions for Common Units.

Table 2-4: Terms of Reference

Unit	Abbreviation/Acronym
Absolute Relative Difference	ABRD
Acid Base Accounting	ABA
Acid Rock Drainage	ARD
Alpine Tundra	AT
Atomic Absorption Spectrophotometer	AAS
Atomic Absorption	AA
British Columbia	BC
British Columbia Environmental Assessment Act	BCEAA
British Columbia Environmental Assessment Office	BCEAO
British Columbia Environmental Assessment	BCEA
Canadian Dam Association	CDA
Canadian dollar	$CAD
Canadian Environmental Assessment Act	CEA Act

Unit	Abbreviation/Acronym
Canadian Environmental Assessment Agency	CEA Agency
Canadian Institute of Mining, Metallurgy, and Petroleum	CIM
Canadian National Railway	CNR
Carbon-in-leach	CIL
Caterpillar's ® Fleet Production and Cost Analysis software	FPC
Closed-circuit Television	CCTV
Coefficient of Variation	CV
Copper	Cu
Copper Equivalent	CuEq
Counter-current decantation	CCD
Cyanide Soluble	CN
Digital Elevation Model	DEM
Direct Leach	DL
Distributed Control System	DCS
Drilling and Blasting	D&B
Environmental Management System	EMS
Flocculant	floc
Free Carrier	FCA
Gemcom International Inc.	Gemcom
General and Administration	G&A
Gold	Au
Gold Equivalent	AuEQ
Heating, Ventilating, and Air Conditioning	HVAC
High Pressure Grinding Rolls	HPGR
Indicator Kriging	IK
Inductively Coupled Plasma	ICP
Inductively Coupled Plasma Atomic Emission Spectroscopy	ICP-AES
Inspectorate America Corp.	Inspectorate
Interior Cedar-Hemlock	ICH
Internal Rate of Return	IRR
International Congress on Large Dams	ICOLD
Invers Distance cubed	ID3
Inverse Distance Squared	ID2
Land and Resource Management Plan	LRMP
Lerchs-Grossman	LG
Life-of-Mine	LOM
Load-haul Dump	LHD
Locked Cycle Tests	LCTs
Loss on Ignition	LOI
Metal Mining Effluent Regulations	MMER

Unit	Abbreviation/Acronym
Methyl Isobutyl Carbinol	MIBC
Metres East	mE
Metres West	mW
Metres North	mN
Metres South	mS
Mineral Deposits Research Unit	MDRU
Mineral Titles Online	MTO
Nation Instrument 43-101	NI 43-101
Nearest Neighbour	NN
Net Invoice Value	NIV
Net Present Value	NPV
Net Smelter Price	NSP
Net Smelter Return	NSR
Neutralization Potential	NP
Northwest Transmission Line	NTL
Official Community Plans	OCPs
Operator Interface Station	OIS
Ordinary Kriging	OK
Organic Carbon	org
Potassium Amyl Xanthate	PAX
Predictive Ecosystem Mapping	PEM
Preliminary Assessment	PA
Preliminary Economic Assessment	PEA
Qualified Person	QP
Quality Assurance	QA
Quality Control	QC
Quality Assurance and Quality Control	QA/QC
Rhenium	Re
Rock Mass Rating	RMR
Rock Quality Designation	RQD
SAG Mill/Ball Mill/Pebble Crushing	SABC
Semi-autogenous Grinding	SAG
Silver	Ag
Silver Equivalent	AgEq
Standards Council of Canada	SCC
Stanford University Geostatistical Software Library	GSLIB
Tailings Storage Facility	TSF
Terrestrial Ecosystem Mapping	TEM
Total Dissolved Solids	TDS
Total Suspended Solids	TSS

Unit	Abbreviation/Acronym
Tunnel Boring Machine	TBM
Underflow	U/F
Valued Ecosystem Components	VECs
Waste Rock Facility	WRF
Water Balance Model	WBM
Work Breakdown Structure	WBS
Workplace Hazardous Materials Information System	WHMIS
X-ray Fluorescence Spectrometer	XRF

Table 2-5: Conversions for Common Units

Metric Unit	Imperial Measure
1 hectare	2.47 acres
1 metre	3.28 feet
1 kilometre	0.62 miles
1 gram	0.032 ounces (troy)
1 tonne	1.102 tons (short)
1 gram/tonne	0.029 ounces (troy)/ton (short)
1 tonne	2,204.62 pounds
Imperial Measure	**Metric Unit**
1 acre	0.4047 hectares
1 foot	0.3048 metres
1 mile	1.609 kilometres
1 ounce (troy)	31.1 grams
1 ton (short)	0.907 tonnes
1 ounce (troy)/ton (short)	34.28 grams/tonne
1 pound	0.00045 tonnes

3 RELIANCE ON OTHER EXPERTS

AGP has followed standard professional procedures in preparing the content of this report. Data used in this report has been verified where possible, and this report is based upon information believed to be accurate at the time of completion considering the status of the Troilus Project and the purpose for which the report is prepared. AGP has no reason to believe the data was not collected in a professional manner.

AGP has not verified the legal status or legal title to any claims and the legality of any underlying agreements that may exist concerning the Property. Troilus supplied the list of mineral rights and mineral claim maps presented in this report. AGP has examined the Québec Ministère des ressources naturelles de forêts (MRNF) online GIS website (GESTIM) to correlate these mineral rights. The GESTIM website was most recently viewed on 20 July 2023 found here:

- https://gestim.mines.gouv.qc.ca/MRN_GestimP_Presentation/ODM02101_login.aspx

The QP's have also referenced several sources of information on the property, including past reports by consultants to Troilus, digital geological maps, and other documents listed in the reference section of this report. Therefore, in authoring this report, the QPs have reviewed the work of the other contributors and find this work has been performed to normal and acceptable industry and professional standards.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Location and Description

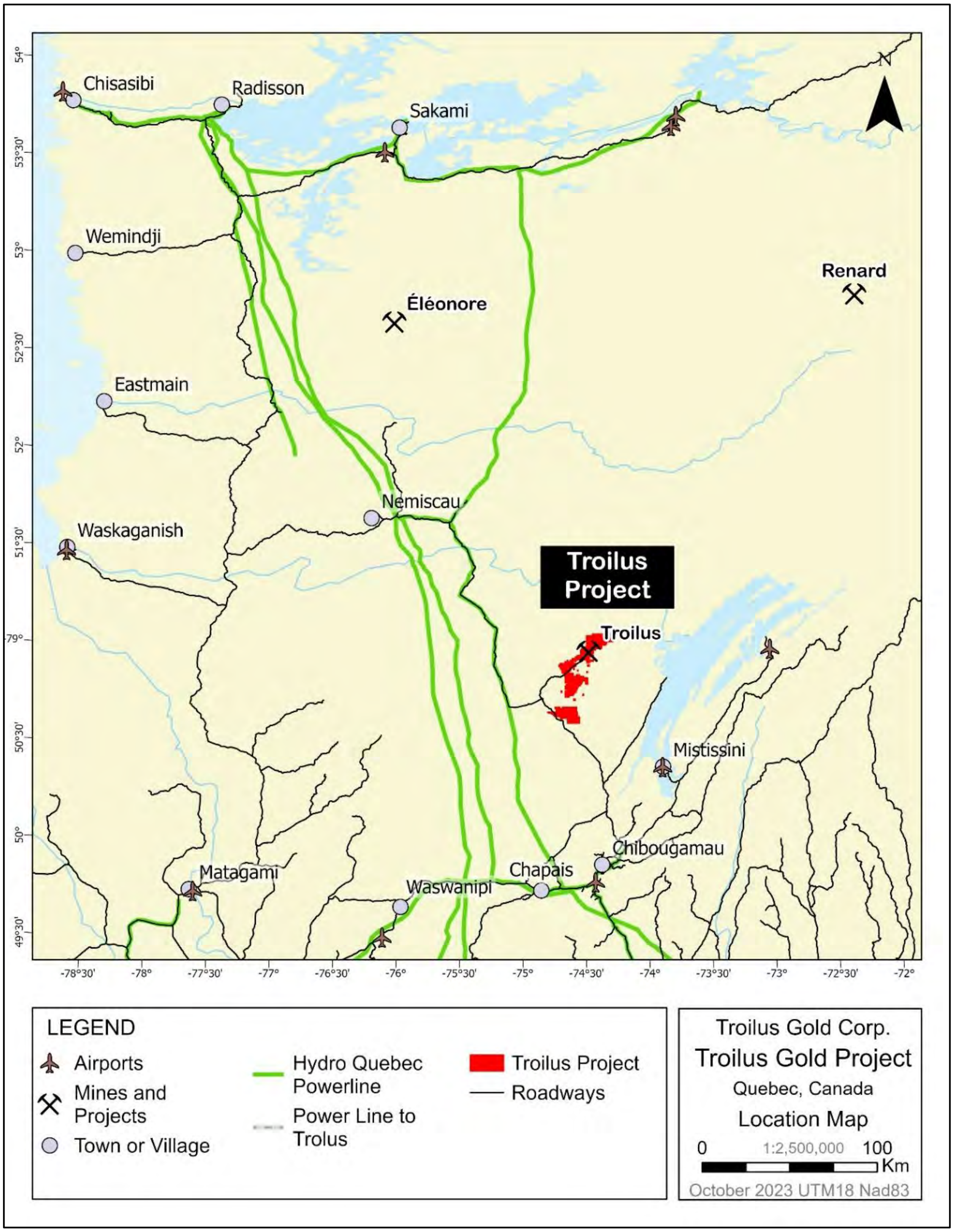
The Troilus Gold Property (Property) is divided into two Projects: the Troilus Gold Project (Project) and the Troilus Frotêt Project. The mineral rights to the Property cover a total area of approximately 44,124.88 ha. Of this total area, 7,242 ha is 50% owned by Troilus and 50% owned by Argonaut Gold through a joint venture (JV) agreement, with the remainder of the mineral rights being 100% held by Troilus.

The Property is located:

- On 1:250,000 scale Mapsheets NTS 023O (Lac Mesgouez) and 023J (Lac Assinica).
- On 1:50,000 scale Mapsheets 32J/15 (Lac Troilus), 32J/16 (Lac Bueil), 32O/01 (Lac Miskittenau), and 32O/02 (Lac Montmort).
- At approximately 51°00’ North and 74°30’ West.
- At approximately 538000 E; 4650400 N, Zone 18U (NAD83 datum) Universal Transverse Mercator (UTM) coordinates.
- At approximately 600 km north of Montreal.
- At approximately 170 km by road north of Chibougamau.
- In the Province of Quebec.
- In the Administrative Region Nord-du-Québec.
- Within the Wildlife Reserve (Réserve Faunique) Lacs Albanel Mistassini et Waconichi.
- Approximately 45 km west of Lac Mistassini.
- Approximately 9 km northeast of Lac Troilus

Figure 4-1 below shows the Property location in Quebec.

Figure 4-1: Location Map, Central Québec

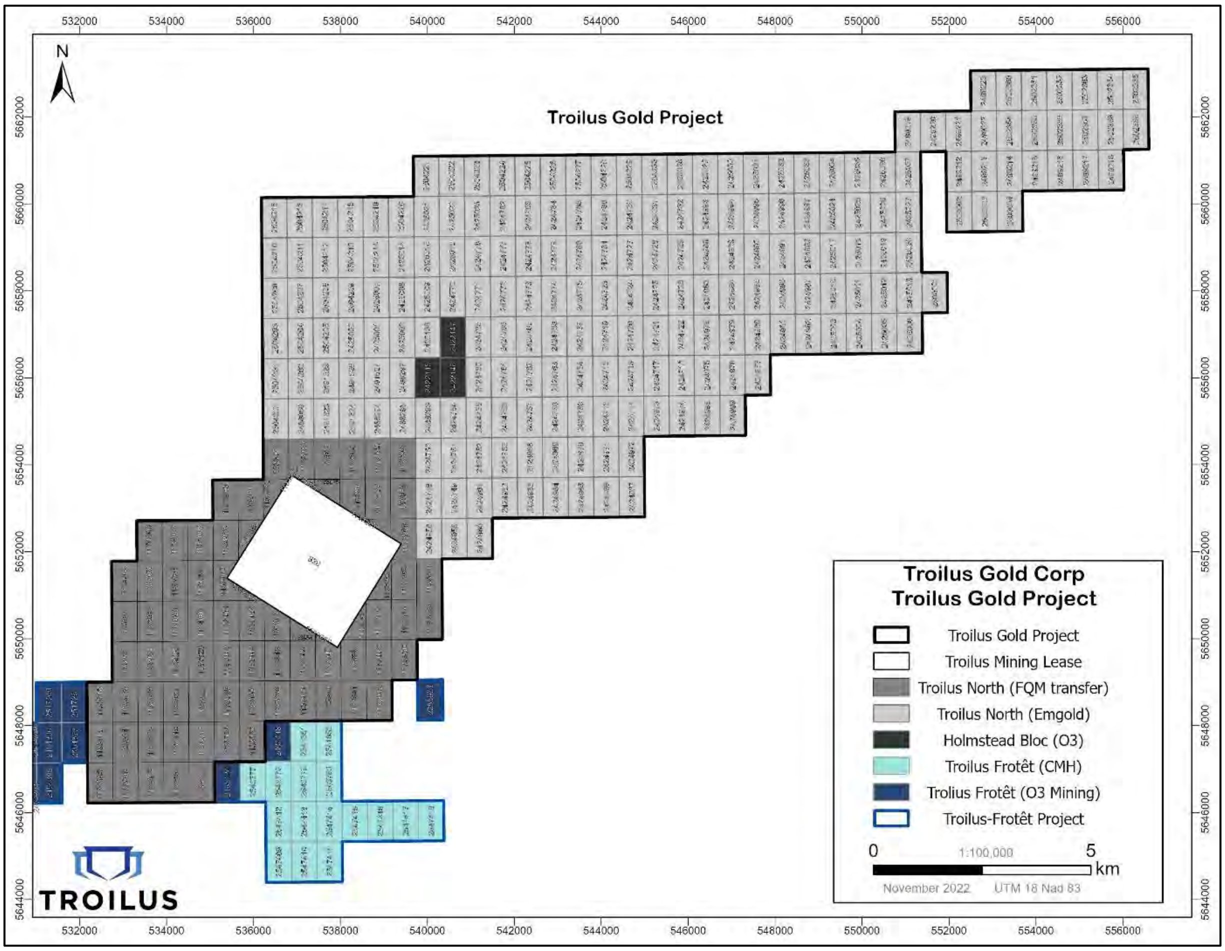


Source: Troilus (2023)

The mineral rights to the Troilus Gold Project is comprised of a single Mining Lease (Bail Minier) and 293 mineral claims (Titres Miniers), totalling 16,185.09 ha. The mineral rights to the Troilus Frotêt Project are comprised of 520 mineral claims, totalling 27,939.79. All mineral rights are in good standing.

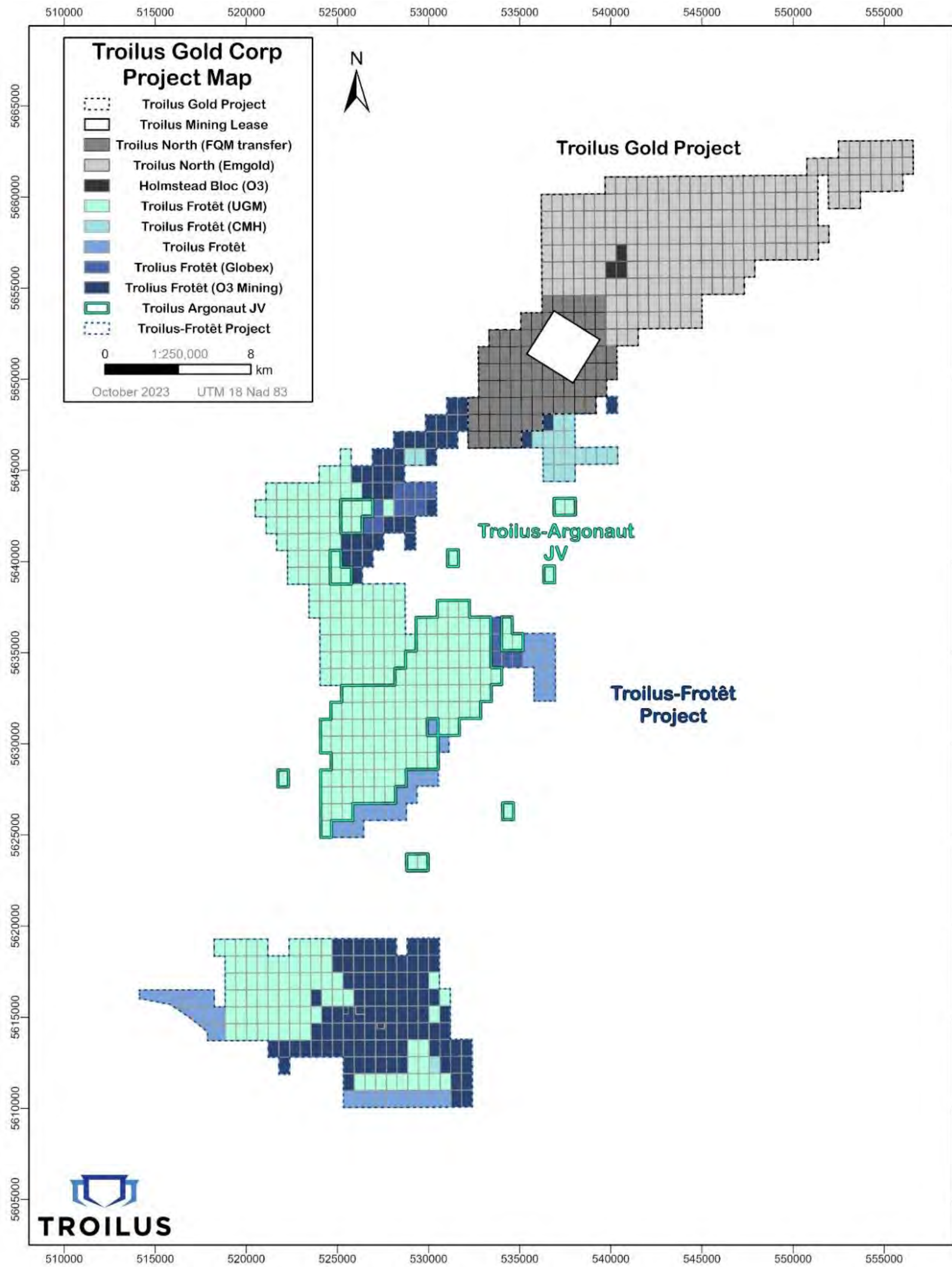
Figure 4-2 presents the mineral rights map for the Troilus Gold Project. Figure 4-3 presents the mineral rights map over both of the Projects.

Figure 4-2: Mineral Rights Map – Troilus Gold Project



Source: Troilus (2023)

Figure 4-3: Mineral Rights – Troilus Projects



Source: Troilus (2023)

Table 4-1: Summary of Mineral Rights for the Troilus Gold Property

Mineral Rights	Mineral Claim Number*	Count	Expiry Date	Area (ha)
Mining Lease (Bail Minier)	BM 829	1	Mar 2026	835.46
Mineral Claims Troilus Gold Project	2422145 – 2422147	3	Feb 2025	162.38
	2424713 – 2425732, 2424748 – 2424786, 2424958 – 2425037, 2488059	20 39 80 1	Mar 2025	7576.17
	1133905 – 1134008, 1133913 – 1133926, 1133929 – 1133930, 1133936 – 1133980, 1133982 – 1133985, 1133998 – 1134008, 2488138, 2488294 – 2488297	5 14 2 45 4 12 1 4	Apr 2025	4149.31
	2491523 – 2491527	5	May 2025	270.67
	2499212 – 2499223, 2500001 – 2500004	12 4	Aug 2025	865.30
	2502354 – 2502365	12	Sep 2025	648.80
	2504200 – 2504230	31	Oct 2025	1677.01
	Subtotal Troilus Gold Project	**294**		**16,185.09**
	Subtotal Troilus Frotêt Project	**520**		**27,939.79**
	TOTAL	**814**		**44,124.88**

NOTES: list shows groupings of sequential mineral claim numbers

Table 4-2: Summary of Mineral Rights for the Troilus Frotêt Property

Mineral Rights	Mineral Claim Number*	Count	Expiry Date	Area (ha)
Mineral Claims (Troilus Frotêt Project)	2335740-2335741 2464724 -2464727 2543555-2543556 2543570-2543572 2543574-2543580 2543582 2543629-2543637 2543777-2543780	2 4 2 3 7 1 9 4	Sep 2024	1740.66
	2255903 1 2544110 1	1 1	Oct 2024	108.56
	2468129 2468134 2547409-2547418	1 1 10	Nov 2024	651.17
	2323689-2323692 2323697-2323698 2323700 2529164-2529169 2548537-2548539 2471376-2471379	4 2 1 6 3 4	Dec 2024	971.43
	2472351-2472355	5	Jan 2025	271.79

Mineral Rights	Mineral Claim Number*	Count	Expiry Date	Area (ha)
	1117913-1117917	5	Feb 2025	4518.32
	1117920-1117925	6		
	1117927-1117935	9		
	1117937-1117945	9		
	2513581-2513582	2		
	2513585-2513586	2		
	2513590	1		
	2513601-2513602	2		
	2513609-2513611	3		
	2555505-2555514	10		
	2555517-2555519	3		
	2555532-2555536	5		
	2555545-2555546	2		
	2555552-2555554	3		
	2555612-2555613	2		
	2555619-2555620	2		
	2555627-2555629	3		
	2555636-2555637	2		
	2555837-2555846	10		
	2556135-2556137	3		
	2424552	1	Mar 2025	1085.45
	2485089	1		
	2560654-2560655	2		
	2560662-2560663	2		
	2560668-2560669	2		
	2560673-2560681	9		
	2560806-2560808	3		
	1134209-1134213	5	Apr 2025	271.33
	2491363-2491374	12	May 2025	1739.99
	2492967-2492986	20		
	2498979-2498980	2	Jul 2025	163.02
	2499048	1		
	2336277-2336279	3	Aug 2025	1140.66
	2336281-2336286	6		
	2336288-2336290	3		
	2499783-2499791	9		
	2509780	1	Jan 2026	545.40
	2510218-2510219	2		
	2510277-2510279	3		
	2510296-2510298	3		
	2510302	1		
	2513583-2513584	2	Feb 2026	1581.52
	2513587-2513589	3		
	2513591-2513600	10		
	2513603-2513608	6		
	2513612-2513615	4		
	2531557-2531559	3		
	2532014	1		
	2534955-2534957	3	Mar 2026	491.26
	2535212-2535217	6		
	2515566-2515593	28	Apr 2026	2154.27

Mineral Rights	Mineral Claim Number*	Count	Expiry Date	Area (ha)
	2515595-2515602	8		
	2561837-2561841	5		
	2562429	1		
	2404418	1	May 2026	3320.80
	2517219-2517230	12		
	2517248-2517261	14		
	2517428-2517438	11		
	2517606-2517609	4		
	2517736-2517739	4		
	2518154-2518156	3		
	2539222	1		
	2539523-2539533	11		
	24497-24513	17	Jun 2026	3588.07
	2351879	1		
	2539742-2539743	2		
	2540669-2540670	2		
	2540576-2540578	3		
	2540922-2540923	2		
	2540925-2540938	14		
	2540955-2540958	4		
	2540993	1		
	2541129-2541134	6		
	2541166-2541172	7		
	2541191-2541193	3		
	2567480-2567484	4		
	2166908-2166910	3	July 2026	2508.39
	2166913	1		
	2166945	1		
	2166947-2166949	3		
	2334393	1		
	2334395-2334396	2		
	2335604	1		
	2541682-2541684	3		
	2541697-2541701	5		
	2541851-2541852	2		
	2454371-2454374	4		
	2454378-2454397	20		
	2454415	1		
	2542307-2542309	3	Aug 2026	1087.70
	2542783 - 2542799	15		
	2456839-2456840	2		
	Subtotal Troilus Frotêt Project	**520**		**27,939.79**

NOTES: list shows groupings of sequential mineral claim numbers

4.2 Project Ownership

On May 2, 2016, a wholly owned subsidiary of Sulliden Mining Capital Inc., 2507868 Ontario Inc. (Sulliden Sub) entered into the Agreement with First Quantum to purchase a 100% interest in the

Project, subject to a sliding scale NSR royalty. First Quantum had acquired the Troilus Mine as part of the takeover of Inmet Mining Corp. (Inmet) in March 2013.

To exercise the option under the Agreement, three cash payments of $100,000 were made to First Quantum and over $1,000,000 was spent by Troilus and its predecessors on engineering and technical studies to evaluate the economic viability of the Project. In addition, Troilus agreed to take on the existing liabilities of the Project.

On October 31, 2017, Pitchblack Resources Ltd. (Pitchblack), Sulliden Sub, and 2513924 Ontario Inc. (251 Ontario) entered into an amalgamation agreement. The amalgamation agreement closed on December 20, 2017, and Pitchblack was renamed Troilus.

Pursuant to the amalgamation agreement, Sulliden Sub, 251 Ontario, and a Pitchblack wholly owned subsidiary were amalgamated to form one wholly owned subsidiary of Pitchblack. Every four existing Pitchblack shares were consolidated into one new common share of Troilus.

On April 12, 2018, Troilus formally exercised its option to acquire the Troilus property from First Quantum and title was transferred to Troilus. The 81 claims and BM 829 previously owned by First Quantum Minerals Inc. are subject to a 1% royalty to Sandstorm Gold Royalties acquired through the acquisition of Nomad Royalty Company

On December 5, 2018, Troilus announced that it had completed the acquisition of the Troilus North Project from Emgold. As consideration for the acquisition, Troilus issued Emgold 3,750,000 common shares and paid Emgold $250,000 in cash. The shares were subject to a four-month statutory hold period.

The 209 claims acquired from Emgold Mining (formerly known as the Troilus North project) are subject to the following underlying royalties:

- 1% NSR to Emgold Gold Corporation that Troilus has the right to purchase for $1,000,000

On November 11, 2019, Troilus announced that it had completed the acquisition of three claims from O3 Mining Inc. (Holmstead Claims, Figure 4-2). As consideration for the acquisition of these three claims, Troilus has issued 300,000 common shares and granted a 2% NSR to O3 Mining Inc. on these three claims. Troilus will have the right to repurchase 1% of the NSR at any time for $1,000,000. In addition, the three claims acquired from O3 Mining Inc. are subject to a 2% NSR to an individual, half of which can be purchased for $1,000,000.

On April 28, 2020, Troilus announced that it had completed the acquisition of a further 627 Claims from O3 Mining Inc. As consideration for the acquisition of the additional O3 Mining Inc. claims, the Company issued 1,700,000 common shares and granted a 2% NSR to O3 on the O3 Mining Inc. claims. Subsequent to the Sayona acquisition of certain of these claims in November 2022, the remaining 135 claims acquired from O3 Mining Inc. are subject to the following royalties:

- 2% NSR royalty to O3 Mining Inc., half of which can be purchased for $1,000,000, subject to the terms of the Buy Back agreement entered into between Troilus and 9474-9454 Québec Inc., a subsidiary of Sayona
- 2% NSR royalty granted to Inco Limited (now Vale) on seven of the 135 claims

On July 21, 2020, Troilus announced that it had completed the acquisition of 91 claims from Globex Mining Enterprises Inc. (Globex) as consideration for the acquisition of the Globex claims Troilus issued 350,000 common shares and granted a 2% Gross Metals Royalty (GMR) to Globex on the Globex claims. Subsequent to the Sayona acquisition of certain of these claims in November 2022, the remaining 15 claims acquired from Globex Mining Enterprises are subject to the following royalty:

- 2% GMR (Gross Metal Sales) to Globex Mining Enterprises, 1% of which can be purchased by the Corporation at any time for $1,000,000, subject to the terms of the Buy Back agreement entered into between Troilus and 9474-9454 Québec Inc.

In July 2020, Troilus also announced that it had completed the acquisition of 21 claims from 9219-8845 Qc. Inc. dba Canadian Mining House (CMH). As consideration for the acquisition of the CMH claims Troilus paid cash consideration of CAD$69,000 and granted a 1% NSR to CMH on the CMH claims. Subsequent to the Sayona acquisition of certain of these claims in November 2022, the remaining 19 claims acquired from CMH are subject to a 1% NSR and Troilus has the right to repurchase a 0.5% NSR on the CMH claims at any time for CAD$500,000 and to purchase the remaining 0.5% NSR on at any time for CAD$1,500,000 subject to the terms of the Buy Back agreement entered into between Troilus and 9474-9454 Québec Inc.

4.3 Mineral Tenure – Quebec

In Quebec, the Mining Act (Loi sur les mines) regulates the management of mineral resources and the granting of exploration rights for mineral substances during the exploration phase. It also deals with the granting of rights pertaining to the use of these substances during the mining phase. The Mining Act establishes the rights and obligations of the holders of mining rights to ensure maximum development of Québec's mineral resources (website: Quebec Mining Act).

In Quebec, mineral claims have pre-established positions and a legal survey is not required. A map designated claim is valid for two years and can be renewed indefinitely, subject to the completion of necessary expenditure requirements. The map designated mineral claims are approximately 54 ha but may be smaller due to where other rights supersede the claim. Each claim gives the holder the exclusive right to explore for mineral substances, except sand, gravel, clay, and other unconsolidated deposits, on the land subject to the claim. The claim also guarantees the holder's right to obtain an extraction right upon the discovery of a mineral deposit. Ownership of the mining rights confers the right to acquire the surface rights.

Mining Leases (Baux Miniers) are initially granted for a 20-year period. The mining lease can be renewed for additional ten-year periods.

4.4 Surface Rights

In addition to the surface rights covering the mining lease, there are surface right leases covering a number of areas with roads and infrastructure. The surface rights renewal fee for the mining lease totals more than $60,000 per year.

Troilus has complete access to all of the Property.

4.5 Royalties and Encumbrances

4.5.1 Royalties

The Royalties specifically affecting the Project are presented below.

The 81 claims and BM 829 previously owned by First Quantum Minerals Inc. are subject to a 1% royalty to Sandstorm Gold Royalties acquired through the acquisition of Nomad Royalty Company.

The 209 claims acquired from Emgold Mining (formerly known as the Troilus North project) are subject to the following royalty (in Canadian dollars):

- 1% NSR to Emgold Mining Corporation that the Company has the right to purchase for $1,000,000

The 3 claims acquired from O3 Mining Inc. in November 2019 are subject to the following royalties:

- 2% NSR to O3 Mining Inc., half of which can be purchased for $1,000,000.
- 2% NSR to an individual, half of which can be purchased for $1,000,000.

The 135 claims acquired from O3 Mining Inc. in April 2020 are subject to the following royalties:

- 2% NSR to O3 Mining Inc., half of which can be purchased for $1,000,000, subject to the terms of the Buy Back agreement entered into between Troilus and Sayona Mining Ltd.; and
- 2% NSR granted to Inco Limited (now Vale) on seven of the 135 claims.

The 19 claims acquired from Canadian Mining House in July 2020 are subject to the following royalty:

- 1% NSR to Canadian Mining House, 0.5% of which can be purchased for $500,000 and 0.5% of which can be purchased by the Company for $1,500,000, subject to the terms of the Buy Back agreement entered into between Troilus and Sayona Mining Ltd.

The 15 claims acquired from Globex Mining Enterprises in July 2020 are subject to the following royalty:

- 2% GMR to Globex Mining Enterprises, 1% of which can be purchased by the Company at any time for $1,000,000, subject to the terms of the Buy Back agreement entered into between Troilus and Sayona Mining Ltd.

The Bullseye claims acquired through the acquisition of UGM that are subject to a 50% joint venture agreement with Argonaut Gold are subject to the following royalties:

- 13 claims in NTS 032J15 totaling 704.34 hectares are subject to a 2% NSR to O3, half of which can be purchased at any time for $500,000. UGM acquired the claims from O3.

Under the joint venture agreement with Argonaut, in the event that either party's participating interest is diluted to 10% or less (a "Diluted Participant"), the other party shall have the right to cause the Joint Venture to redeem the participating interest held by the Diluted Participant in exchange for a royalty interest equal to 2% net smelter return (NSR) royalty, half of which can be purchased from the date of issue of the NSR for $1,000,000.

The 100% owned Pallador claims acquired through the acquisition of UGM are subject to the following royalties:

- Seventy-one (71) claims, in NTS 032J15 totaling 4,182.33 hectares, on the Dileo-Nord property acquired through the UGM amalgamation are subject to a 1% NSR royalty to Soquem half of which can be purchased at any time for $500,000. UGM acquired the claims from Soquem, subject to the terms of the Buy Back agreement entered into between Troilus and Sayona Mining Ltd.
- 55 claims totaling 2,999.31 hectares in NTS 32J10, acquired through the UGM amalgamation are subject to a 1% NSR to Geotest Corporation (0.5%) and Wayne Holmstead (0.5%). UGM acquired the claims from Geotest/Holmstead.

4.5.2 Encumbrances

In 2007, the site restoration work began by Inmet with the re-vegetation of areas no longer used by Troilus (Figure 4.5.1 to Figure 4.5.4). The dismantling, cleaning, and grading work has largely been completed. Fertilization and seeding work is ongoing, particularly in the tailings area. A water treatment plant has been functional since the end of 1998, after initial operation revealed suspended solid control problems. It uses a new technology (ACTIFLO) based on polymer addition and agitation followed by high-speed sand assisted lamellar decantation and reduces suspended solids to concentrations below 15 ppm, the monthly average regulation limit. The length of time the water treatment plant will be required for is unclear.

The first version of the mine restoration plan was filed with the Ministère des Ressources Naturelles et des Forêts (MRNF) in 1996, followed by a first revision in 2002 and a second revision five years later in 2007.

The current mine restoration plan was produced by Genivar Inc. (Genivar) in November 2009 (Genivar, 2009). This restoration plan took into consideration the previous versions, however, was a completely new plan including the recent additional studies updating the information regarding the hydrology and hydrogeology, the acid rock drainage, the Phase 1-type site characterization, and the progressive restoration work carried out in 2007, 2008, and 2009. The Cree Nation of Mistissini (the Mistissini Cree) community was consulted throughout the process. The closure plan for the Troilus Mine was approved by the Quebec Ministry of Sustainable Development, Environment and Parks (Certificate of Authorization No. 3214-14-025) pursuant to modifications made 3 November 2010 and 23 May 2012.

Surface and groundwater water samples are taken at regular intervals at a number of different monitoring sites on the property and annual reports summarizing the results are submitted to the MRNF and the Ministère de l'Environnement et de la Faune (MDDEP).

Genivar (2009) estimated that the site restoration work would be completed in 2012 and that the post-restoration monitoring program would continue until 2016. AGP notes that the site restoration work is ongoing and may take longer than anticipated. AGP recommends that Troilus re-assess the timing and costs related to site restoration and monitoring and recommends an environmental expert be retained to review ongoing monitoring and site restoration work.

Figure 4-4: Troilus Z87 (foreground) and J Open Pits and Waste Dumps (looking northwest)

Source: Troilus (2023)

Figure 4-5: Troilus Z87 Zone Open Pit (looking south)

Source: Troilus (2023)

Figure 4-6: Troilus J Zone Open Pit (looking north)

Source: Troilus (2023)

Figure 4-7: Troilus J Zone Open Pit (looking northwest)

Source: Troilus (2023)

4.6 Permits

No permits are required to conduct exploration activities on the Property other than a permit for tree cutting pertaining to the installation of drill roads and drill setups. The permit for tree cutting is issued by MRNF.

4.7 Environmental Liabilities

AGP is unaware of any environmental liabilities or other factors and risks that may affect access, title or ability that would prevent Troilus from conducting exploration activities on the Property.

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

5.1 Accessibility

The Project is located 170 km by road, north of Chibougamau. From Chibougamau, the Property is easily accessed by driving 23 km east and northeast along 3e Rue and Highway 167, turning north on Route du Nord for approximately 108 km: and turning east and northeast along the mine access road (R1047) for roughly 44 km. Highway 167 is paved and in good condition. The Route du Nord and mine access road are well maintained year-round. The drive from Chibougamau is typically 2 hours.

There are regular scheduled flights to Chibougamau from Montreal.

5.2 Climate

The region where the Property is situated has a Continental Subarctic climate (Dfc; Köppen climate classification) characterized by long cold winters and short mild summers. Mean temperatures range from -20°C in January to 16°C in July. Mean annual precipitation ranges from 51 mm in February to 106 mm in August (Mistissini; worldclimate.com).

Exploration and mining activities may be carried out all year round.

5.3 Local Resources and Infrastructure

The nearest town to the Property is Mistissini, a Cree community located approximately 90 km southeast of the site. There are limited services available at Mistissini. In June 2018, Troilus opened an office at Mistissini that provides a forum for exchanging information and liaising with the Cree on a variety of social, environmental, and economic aspects of the Project, and the potential for future training, employment, and business opportunities.

Chibougamau, with a population of approximately 7,500 (est. 2016), is the largest town in Nord-du-Quebec, and offers most services, supplies and fuel required for the Project. Chibougamau is a well-established mining town and has a well-developed local infrastructure, services, and a mining industry workforce. In October 2018, Troilus opened an exploration office in Chibougamau.

The Property is connected to the provincial hydroelectric grid via a 137 km 161 kV power line. Water on the Property is abundant and available for exploration activities.

Politically, the Quebec province is very supportive of mining. The Quebec government has demonstrated a will to encourage the development of natural resources through expeditious permitting, title security, and financial incentives.

Troilus maintains local infrastructure around the historic mine site. The key current infrastructure includes:

- An 80-person camp; accommodation and kitchen.

- Exploration office building.
- Core logging and sampling facility.
- Outdoor core storage area.
- Garage for snow removal and road maintenance contractor.
- Garage for site restoration employees.
- Electrical transformer station.
- Drinking water tank and pump house.
- Tailings water treatment plant.
- Several tailings water pump houses.
- Gatehouse and gate.

5.4 Physiography

The Project area is primarily covered by black spruce forests, swamps, and lakes. The vertical relief in the area is moderate, between 370 m and 500 mASL. The historic Troilus Mine is situated on the western flank of a 500 m tall hill at a mean altitude of 375 mASL. Overburden consists of a thick layer (greater than 10 m) of fluvio-glacial till. Outcrops are sparse and very large boulders sitting on surface are common.

In addition to the surface rights covering the mining lease, there are surface rights leases covering several areas with roads and infrastructure. The extent of the surface rights was sufficient to operate the mine in the past, however, additional surface rights may be required as mineral resources are added to the current Project.

5.5 Sufficiency of Surface Rights

Troilus has sufficient surface rights to access and conduct exploration activities on the Property.

6 HISTORY

Initial exploration in the area began in 1958 following the discovery of many erratic blocks containing copper and nickel anomalies. Some occurrences of copper and zinc were discovered between 1958 and 1967, including a massive sulphide deposit at Baie Moléon discovered by Falconbridge Ltd. in 1961.

In 1971, the Lessard deposit was discovered by Selco Mining Corp. near Lac Domergue. It was geologically similar to Baie Moléon, consisting of massive sulphides. Following this discovery, an electromagnetic (EM) and magnetic geophysical survey was carried out over the Troilus and Frôtet Lake area; however, this survey did not lead to any new significant discoveries.

The Baie Moléon and Lessard discoveries, located southwest of the Troilus deposit, improved the geological understanding of the Frotêt-Evans greenstone belt, and opened the area to further exploration for base metal deposits.

In 1983, the results of a new airborne INPUT survey carried out over a large area of the eastern portion of the Frôtet-Evans belt were published by the Government of Quebec. Some exploration work was conducted following this survey; however, no important discoveries were made.

6.1 Exploration and Development, 1985 – 2010

Table 6-1 presents a summary of the exploration and development history of the Troilus Mine from 1985 to 2010.

Table 6-1: Summary of the History of the Troilus Mine (1985 – 2010)

Date	Description
1985	Kerr Addison Mines Ltd. (Kerr Addison) stakes over 1,500 claims in the Troilus area.
1987	Kerr Addison stakes Troilus Mine area and discovers gold and copper.
1988	Minnova Inc. (Minnova) options 50% interest from Kerr Addison and becomes operator.
December 1991	Kilborn Inc Pre-Feasibility Study is negative (7,500 t/d).
February to May 1993	Metall Mining Corporation (Metall) acquires 100% interest in Troilus.
August 1993	Kilborn-Met-Chem-Pellemon Feasibility Study is positive (10,000 tpd).
September 1994	Metallgesellschaft AG sold its entire 50.1% interest in Metall through the public sale of its shares.
Late 1994	Construction commenced.
May 4, 1995	Metall changed its name to Inmet Mining Corp (Inmet).
1995	44 km access road from Route du Nord and a 137 km power line and two substations were completed.
October 1996	Construction completed.
November 1996	Production at the Troilus Mine starts.
April 1997	Mill achieves 10,000 t/d.
April 1998	Met-Chem 15,000 t/d mill expansion Feasibility accepted.
1999	Mill achieves 15,000 t/d.
2002	Mill achieves 16,000 t/d.
2004	Met-Chem 20,000 t/d mill expansion Feasibility accepted.

Date	Description
2005	Mill achieves 20,000 t/d.
2007	Underground ramp stopped at 519.1 m from portal on 22 January 2007.
2008	Mining at J4 pit (now J Zone pit) completed in May 2008.
2008	Dumping waste backfill at south end of J4 pit begins in April 2008.
2009	Mining at Z87 pit completed, last truck load on 13 April 2009.
2010	Mill stopped on 29 June 2010.
2010	Mill sold and shipped to Mexico in September 2010.
2010	Camp sold on 19 November 2010 and subsequently dismantled.

6.1.1 Ownership History, 1985 – 1993

Kerr Addison staked two large blocks of claims in 1985 and 1987 that included the Project area. In 1988, Minnova became operator in a 50%-50% joint-venture with Kerr Addison.

In February 1993, Metall acquired Minnova's interest and, in May 1993, Metall purchased all of Kerr Addison's mining properties. On May 4, 1995, Metall changed its name to Inmet.

Inmet was acquired by First Quantum in March 2013. On 8 April 2014, Copper One entered into a definitive purchase agreement with FQM (Akubra) Inc., a wholly owned subsidiary of First Quantum, to acquire a 100% interest in the past producing Troilus Mine, however, the purchase was not completed.

6.1.2 Kerr-Addison and Minnova, 1985 – 1993

In 1985, Kerr Addison acquired a large block of claims following a geological mapping program by the Quebec Ministry of Natural Resources that indicated good potential for gold and base metal mineralization. More geochemical, geophysical, and geological work was carried out by Kerr Addison in 1985 and 1986. Drilling began in 1986 with 24 holes totalling 3,590 m, which led to the discovery of Zone 86 (Z86).

In 1987, more claims were added to the property to the north of the Z86 drilling, where the former Troilus Mine is currently located. A large gold float dispersion train was found by prospecting and 26 diamond drill holes totalling 4,413 m were completed. Hole KN-12, collared immediately up-ice from a glacial float dispersion train, intersected significant gold-copper mineralization over great widths, which turned out to be part of Z87, named after the year of its discovery.

In 1988, 27 diamond drill holes totalling 6,567 m were completed. Initial drill testing of a nearby weak horizontal loop electromagnetic (HEM) anomaly intersected anomalous gold-copper mineralization in what was later confirmed to be J4 in 1991. The J4 name originates from its location on the "J" exploration grid. On October 1, 1988, a 50-50 joint-venture was formed between Kerr Addison and Minnova. Minnova became the operator.

Between 1989 and 2005, fourteen drilling programs comprising 887 diamond drill holes for a total of 159,538 m were carried out on the property. The drilling outlined five main areas of gold mineralization (Z87/Zone 87 South (Z87S), Z87 Deep, J4, J5, and Southwest (SW)), and several isolated gold intersections.

In 1991, a semi-permanent camp, which could accommodate 30 to 50 people, was set up between Z87 and J4. During 1991, a bulk sample of approximately 200 t, averaging 2.3 g/t Au was taken from the centre of Z87 and approximately 100 t were treated at the pilot plant of the Centre de Recherche Minérale du Québec in Quebec City as part of a pre-feasibility study. The remaining 100 t were treated at the pilot plant of SGS Lakefield Research Limited (Lakefield) as part of the 1993 feasibility study.

In 1992, an orientation Induced Polarization Survey (IP) carried out over Z87 and J4 produced strong IP anomalies. The IP survey covered the entire Property and was also useful in planning of a condemnation drilling program in areas where the infrastructure and stockpiles were planned.

Between December 1992 and March 1993, a drilling program comprising 181 holes totalling 24,239 m was carried out to complete the feasibility study. The purpose of the drilling was to define Z87 and J4 as well as to test other IP anomalies.

6.1.3 Metall and Inmet, 1993 – 2005

In February 1993, Metall acquired Minnova's interest and, in May 1993, purchased all of Kerr Addison's mining property interests. In August 1993, a positive feasibility study was completed based on a 10,000 t/d open pit operation (Kilborn, 1993). In September 1993, the Coopers & Lybrand Consulting Group from Toronto, Ontario, audited the feasibility study and found no significant problems.

From August 1994 to April 1995, Mineral Resources Development Inc. (MRDI) from San Mateo, California, reviewed the reserves of both the feasibility and post-feasibility studies for financing purposes. Other kriging parameters were tested, and a check assay program was carried out on the 1992 to 1993 data set.

In May 1995, Metall changed its name to Inmet. Financing of the project was completed in June 1995. Later that year, the refurbishing of the 44 km access road from the Route du Nord and a 137 km power line and two substations were completed.

The construction of the mill complex, and all facilities was completed in the fall of 1996, and milling started in November 1996. In April 1997, after some fine tuning, the mill capacity reached 10,000 t/d.

In April 1998, Inmet approved a 15,000 t/d mill expansion feasibility study by Met-Chem Canada Inc. (Met-Chem). Modifications to the mill started in December 1998, and the full 15,000 t/d capacity was achieved in 1999.

New sampling and assay protocols for the blastholes and future diamond drilling campaigns were proposed by Francis Pitard in January 1999 (Pitard, 1999). As a result, significant modifications to the Troilus assay laboratory were completed during the fall of 1999 and it became fully operational in May 2000, after a six-month implementation and adjustment period.

In 2004, Inmet approved another mill expansion feasibility study by Met-Chem to increase mill capacity to 20,000 t/d. Modifications to the mill were completed in December 2004 and the full 20,000 t/d capacity was reached in 2005. In 2010, the mine was shut down as Inmet's direction shifted to other assets.

6.2 Historic Production, Troilus Mine, 1996 – 2010

The Troilus Mine was a conventional open pit that operated on a continuous, year-round basis. The mill had a nominal capacity of 20,000 t/d with a flow sheet consisting of a gravity recovery and flotation circuit. There was a permanent on-site camp with dining, sleeping, and recreational facilities for up to 450 workers, which has since been dismantled. Security personnel patrolled the site on a regular basis. When the former Troilus Mine was in operation, bus transportation was provided for the workforce several times per week to and from Chibougamau and Mistissini.

The mine started commercial production in October 1996 and operated continuously up to April 2009 and the mill continued to process stockpile material up to 29 June 2010.

From 1995 to 2010, approximately 69.6 Mt averaging 1.00 g/t Au and 0.10% Cu of ore was mined and 7.6 Mt of lower grade mineralization had been stockpiled. A total of approximately 230.4 Mt had been excavated including 18.4 Mt of overburden and 134.7 Mt of waste rock.

The overall mill recovery averaged 83% for gold and 89% for copper. The Troilus Mine produced over two million oz of gold and almost 70,000 t of copper. The mill processed the low-grade stockpile material from 2009 up until June 29, 2010. The production history up to the end of the mine life in 2010 is summarized in Table 6-2.

Table 6-2: Historical Production, Troilus Mine, 1996 – 2010

Description	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	1995 - 2010
Overburden (000 t)	3,449	5,080	3,235	967	1,949	552	63	203	843	1,702	347	0	0	0	0	0	18,390
Waste Rock (000 t)		988	8,840	13,052	12,073	14,370	13,441	14,912	11,279	10,344	11,452	9,787	6,951	6,999	212	0	134,700
Stockpile (000 t)		118	865	1,423	1,144	61	1,081	8	261	468	888	371	167	784	0	0	7,639
Ore Mined (000 t)		629	3,798	4,176	4,959	4,913	5,901	5,943	5,923	6,045	6,929	6,670	6,463	5,599	1,692	0	69,640
Total Excavated (000t)	3,449	6,814	16,737	19,618	20,126	19,895	20,485	21,065	18,307	18,559	19,616	16,828	13,582	13,382	1,904	0	230,367
Mill Head (g/t Au)		1.35	1.44	1.34	1.26	0.9	1.1	1.08	1.03	0.95	0.94	0.86	0.87	0.95	0.83	0.52	1.03
Mill Head (%Cu)		0.157	0.163	0.138	0.125	0.104	0.156	0.132	0.108	0.092	0.076	0.051	0.054	0.106	0.11	0.08	0.11
Gold Recovery		80.7	85.56	86.43	85.64	82.78	83.6	83.05	83.01	80.63	81.79	82.45	81.72	84.02	84.00	81.00	83.09
Copper Recovery		81.4	89.41	89.71	89.81	89.87	91.75	90.22	89.42	86.78	89.68	86.9	87.63	93.39	92.00	89.00	89.13
Au (oz)*		12,941	139,888	146,970	168,364	122,532	162,578	164,602	164,061	149,028	159,545	147,876	138,391	151,297	135,200	37,900	2,001,173
Cu (t)*		471	5,158	4,915	5,416	4,786	7,836	6,817	5,791	4,814	4,444	2,881	2,772	5,707	5,900	2,000	69,708

Note: *Recovered metal after milling and smelter and refining adjustments

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

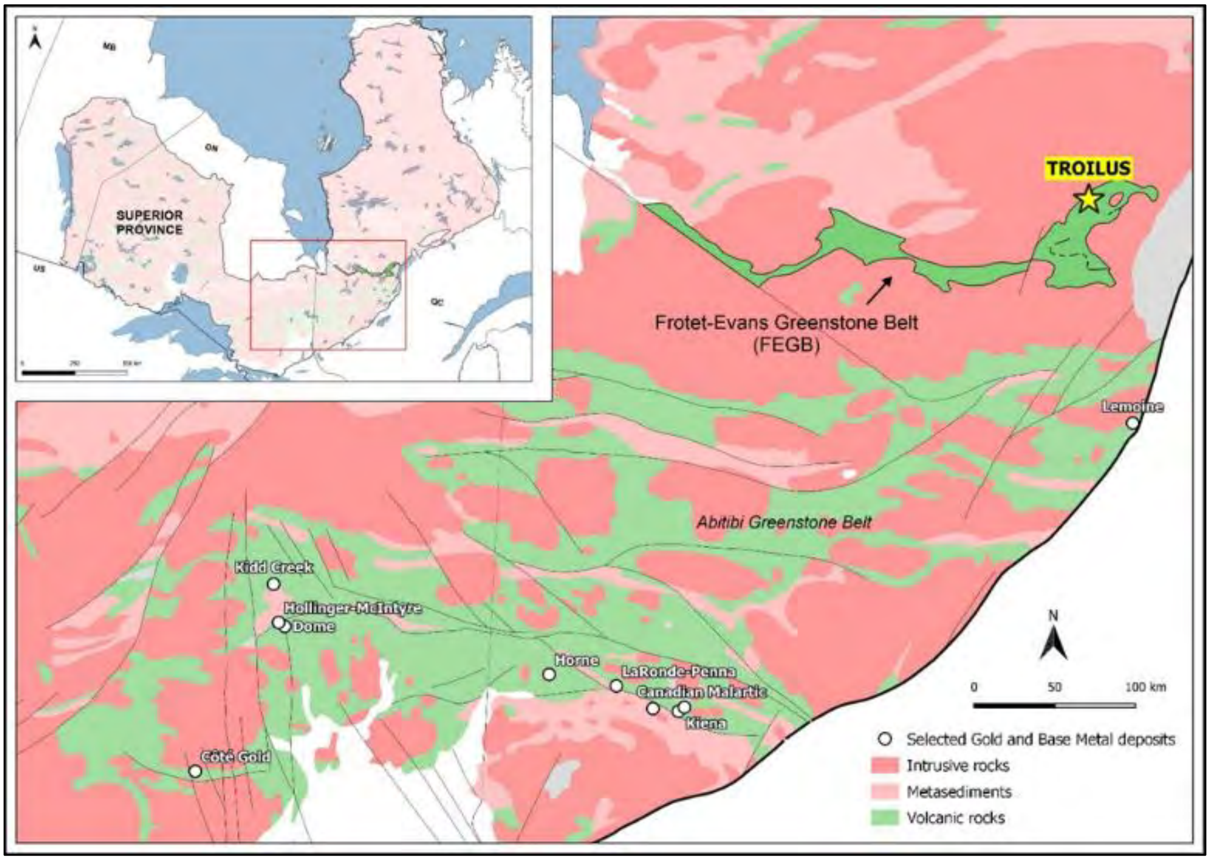
The Troilus Gold deposit lies within the eastern segment of the Frotêt-Evans Greenstone Belt (FEGB), in the Opatica Subprovince of the Superior Province in Quebec. Figure 7-1 presents the Regional Geology of the FEGB.

The FEGB is centrally located in the Opatica Subprovince and extends for 300 km between James Bay, in the west, and Lake Mistissini, in the east, with variable widths, up to 45 km in its eastern extents (Carles, 2000). Its volcanic rocks define an east-west, fault-bounded trending synformal structure (Simard, 1987; Davis et al., 1995). The FEGB volcano-sedimentary sequence can be broadly divided in two similar domains, west and east. Detailed subdivisions have been made by Brisson et al., (1997a, b and 1998a, b, c), and Morin (1998 a, b, c) in a series of geological mapping initiatives developed throughout the greenstone belt by the Ministry of Natural Resources of Quebec. Boily and Dion (2002) divided the FEGB in four distinctive segments: (1) Evans-Ouagama, (2) Storm-Evans, (3) Assinica, and (4) Frotêt-Troilus. Figure 7-2 shows the eastern Frotêt-Troilus domain (Simard, 1987) and which has received primary focus for development due to its larger economic potential.

The FEGB is largely dominated by tholeiitic basalts and magnesian basalts that occur in association with felsic and intermediate calc-alkaline pyroclastic rocks, lava flows, and local ultramafic layers. Syn- to post-deformational gabbroic to monzogranitic plutonic rocks occur throughout the greenstone belt.

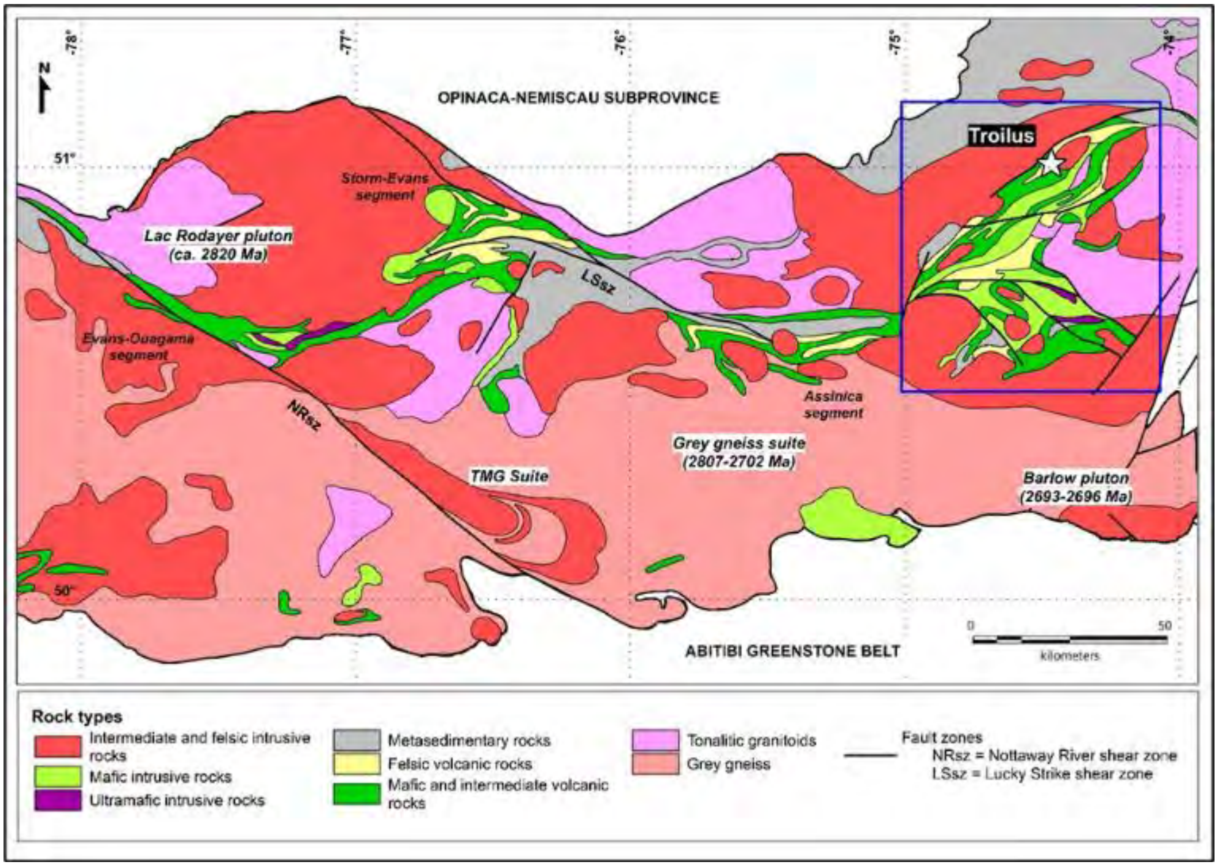
The few published U-Pb dates in zircon constrained the age of the FEGB between 2793 Ma and 2755 Ma (Pilote et al., 1997 in Boily and Dion, 2002). The circa 2793 Ma age is coincident with the dates obtained for the Troilus diorite.

Figure 7-1: Regional Geology Map – Frotêt-Evans Greenstone Belt



Source: Troilus (2019)

Figure 7-2: Regional Geology Map – FEGB in Central Quebec



Source: Troilus (2019)

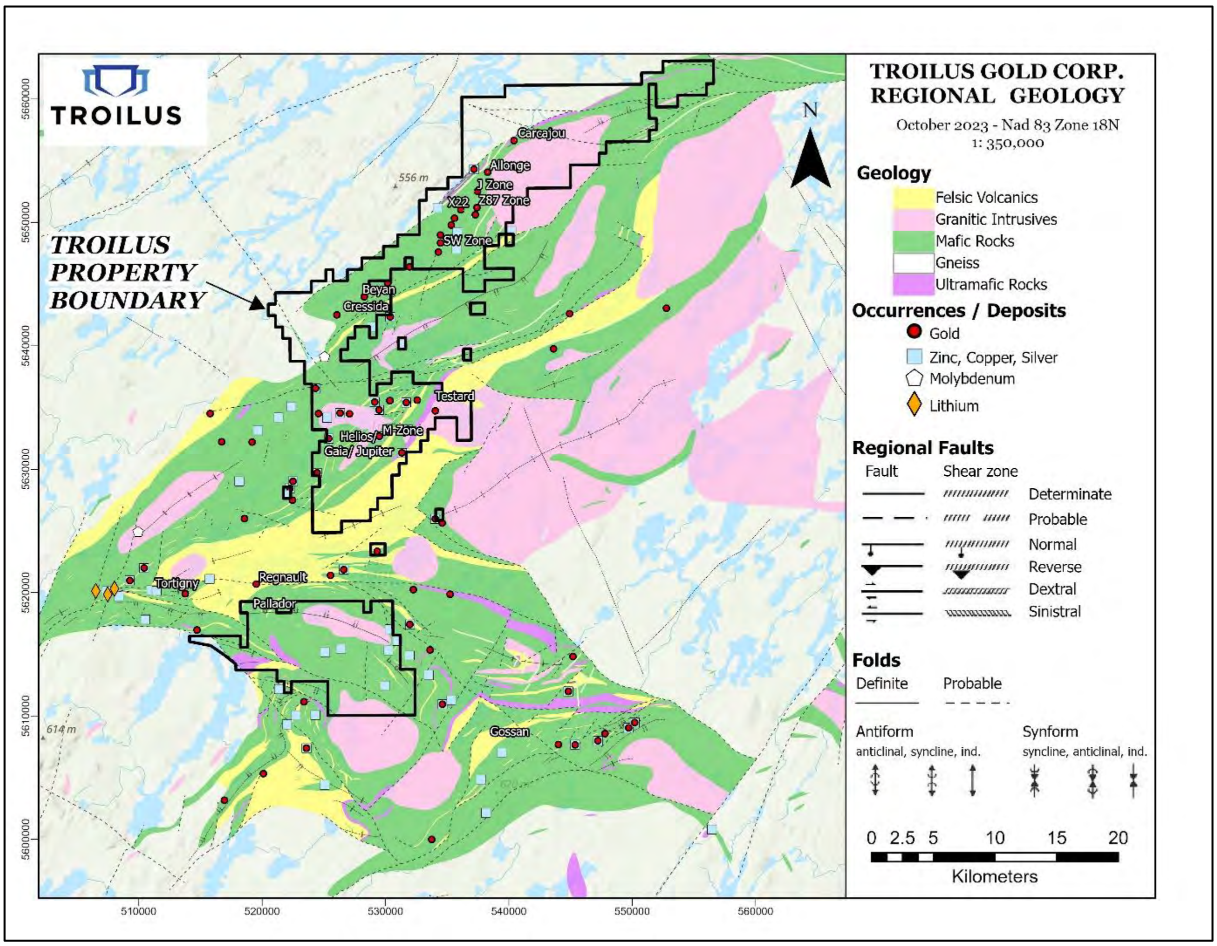
The Troilus Gold Deposit is situated in the Frotêt-Troilus domain in the east of the FEGB (Figure 7-3). It is characterized by a complex and variable volcano-magmatic history, dominated by mafic volcanic rocks and coeval, cogenetic mafic intrusions, intermediate to felsic volcanic rocks and associated pyroclastic rocks. Minor epiclastic sedimentary rocks and ultramafic units are locally observed.

The domain is divided in two structural regions, north and south, with the limit between them defined by the axial trace of the Frotêt Anticline (approximately E-W direction). The rocks are variably deformed and are affected by a strong regional foliation. Sub horizontal mesoscopic to megascopic folds are common, affecting both regional foliation and primary layering. The main regional structures observed in the northern structural domain are: (i) Troilus Syncline; (ii) La Fourche and Dionne dextral fault zones; and (iii) Parker inverse fault zones (Gosselin, 1996). The Troilus deposit is hosted in the northern overturned limb of the Troilus syncline. The Troilus syncline is characterized as an isoclinal fold of northeast-southwest strike. The associated axial plane is parallel to the main foliation in the region, which strikes northeast and has a moderate to steep dip towards the northwest (Fraser, 1993). The La Fourche and Dionne fault zones locally cut and segment the Troilus Syncline and correspond to important deformation corridors with an interpreted dextral sense movement. They are characterized by local centimetric to metre-scale isoclinal folds that affect the main regional schistosity, forming a crenulation cleavage. A locally pronounced, sub horizontal stretching lineation can be observed in places. The Parker fault zones represent a complex array of inverse faults, that are oriented predominantly parallel to bedding and the main regional foliation. The southern domain shows a more complex structural style with a series of major folding systems cut by several fault zones. Faults, axial fold planes and the main schistosity have an overall west-northwest- east-southeast to northwest-southeast direction.

The regional metamorphic grade in the Troilus area varies from greenschist facies in the internal sectors of the belt to lower-amphibolite facies near the felsic intrusions and the borders of the belt (Gosselin, 1996). The higher metamorphic grade is apparent adjacent to boundaries of intrusions and margins of the greenstone belt.

The Troilus region contains many occurrences of gold, base metal, and molybdenite mineralization, with the Troilus gold deposit being the largest. The three largest base metal volcanogenic massive sulphide (VMS) occurrences are the Lessard, Tortigny, and Baie Moleon deposits.

Figure 7-3: Regional Geology Map – Troilus Gold Project in the FEGB



Source: Troilus (2023)

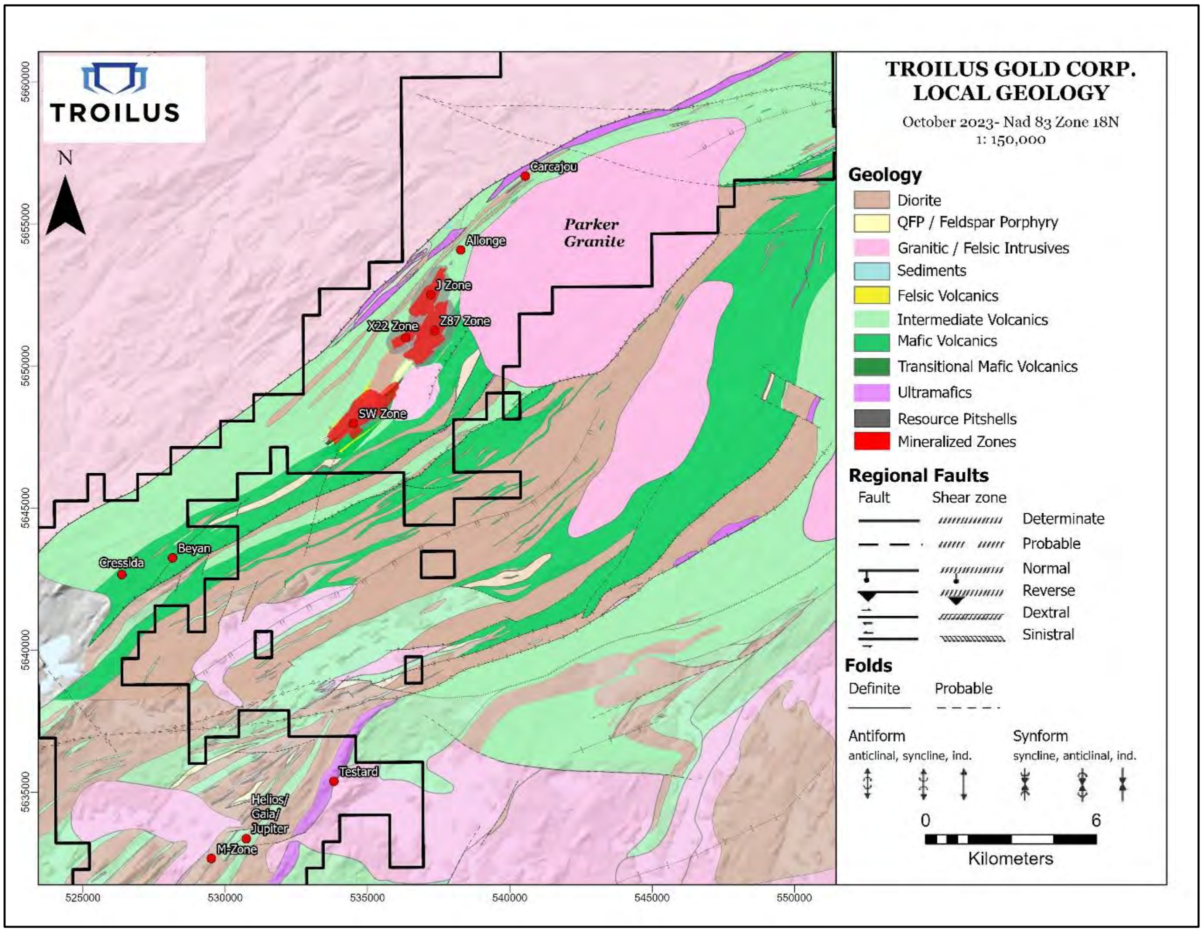
7.2 Project Geology

The Troilus deposit is located in the northeastern region of the Frotêt-Troilus domain and is hosted by volcanic and hypabyssal intrusive rocks of the Troilus Group in a region of intense deformation, known as the Parker domain (Gosselin, 1996). It is located within the overturned northern limb of the Troilus isoclinal syncline, which was transposed by a series of northeast to southwest striking thrust fault zones, parallel to the main regional foliation and to the volcanic bedding.

The Troilus Group on the Property is represented by a thick volcanic sequence, predominantly mafic to intermediate in composition. Synvolcanic magmatism is marked by a series of gabbro and ultramafic sills (Figure 7-4). Figure 7-5 shows the main lithotypes which comprise the Troilus deposit region are a metadioritic pluton with brecciated margins mafic to intermediate flows and volcanoclastic rocks, which are crosscut by multiple generations of felsic dykes. Late-stage dykes of mafic composition and syn to post-tectonic granitic plutons crosscut all these rock types. The lithological contacts and a penetrative foliation steeply dip to the northwest.

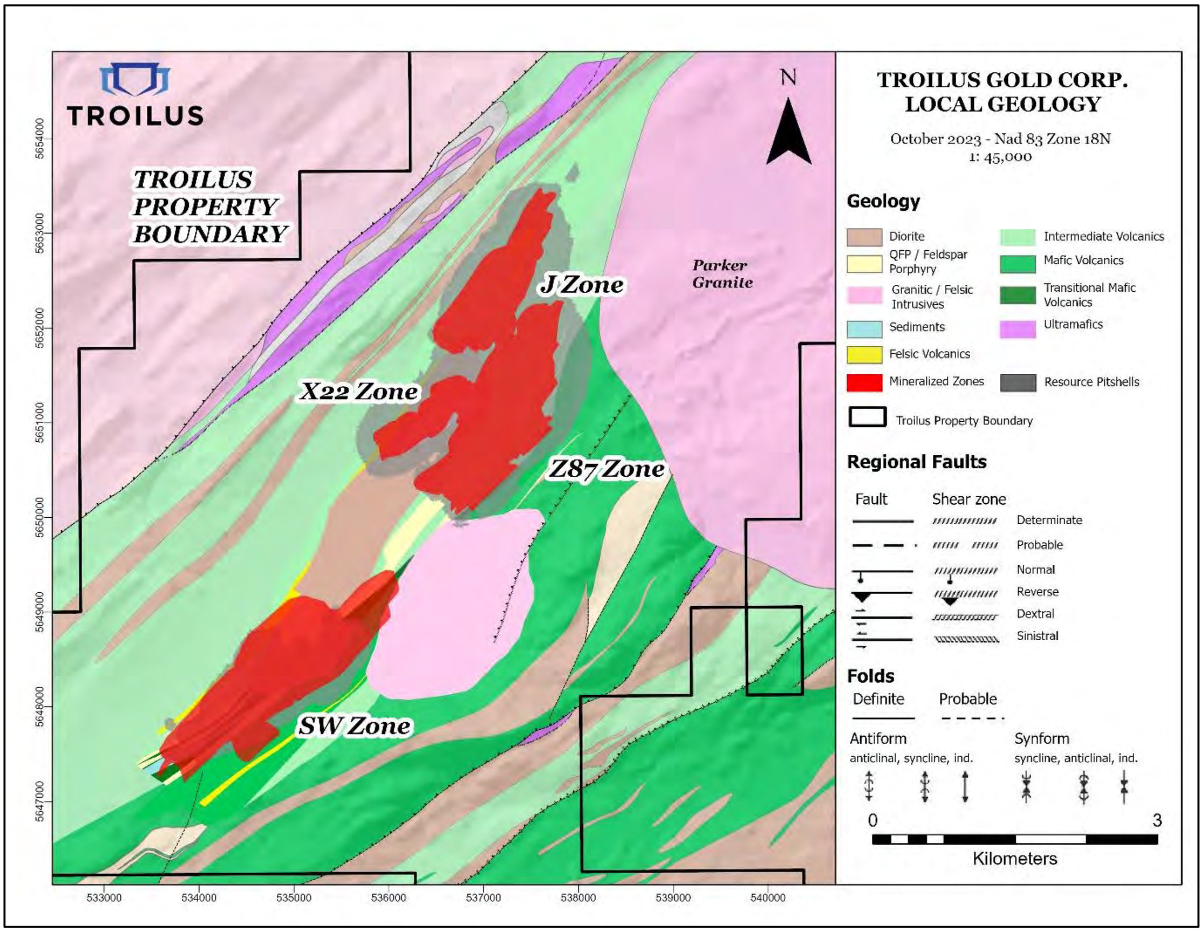
The following descriptions for the main lithologies, alteration, mineralization, and structural features are based mostly on descriptions and lithogeochemical studies of diamond drill holes drilled from 2018 to 2022 by Troilus Gold, as well as contributions from the works of Brassard (2018), Brassard & Hylands (2019), Diniz (2019), Laurentia Exploration (2018), and SRK (2018)

Figure 7-4: Property Geology Map – Troilus Gold Project



Source: Troilus (2023)

Figure 7-5: Property Geology Map – Troilus Gold Project



Source: Troilus (2023)

7.2.1 Deposit Lithologies

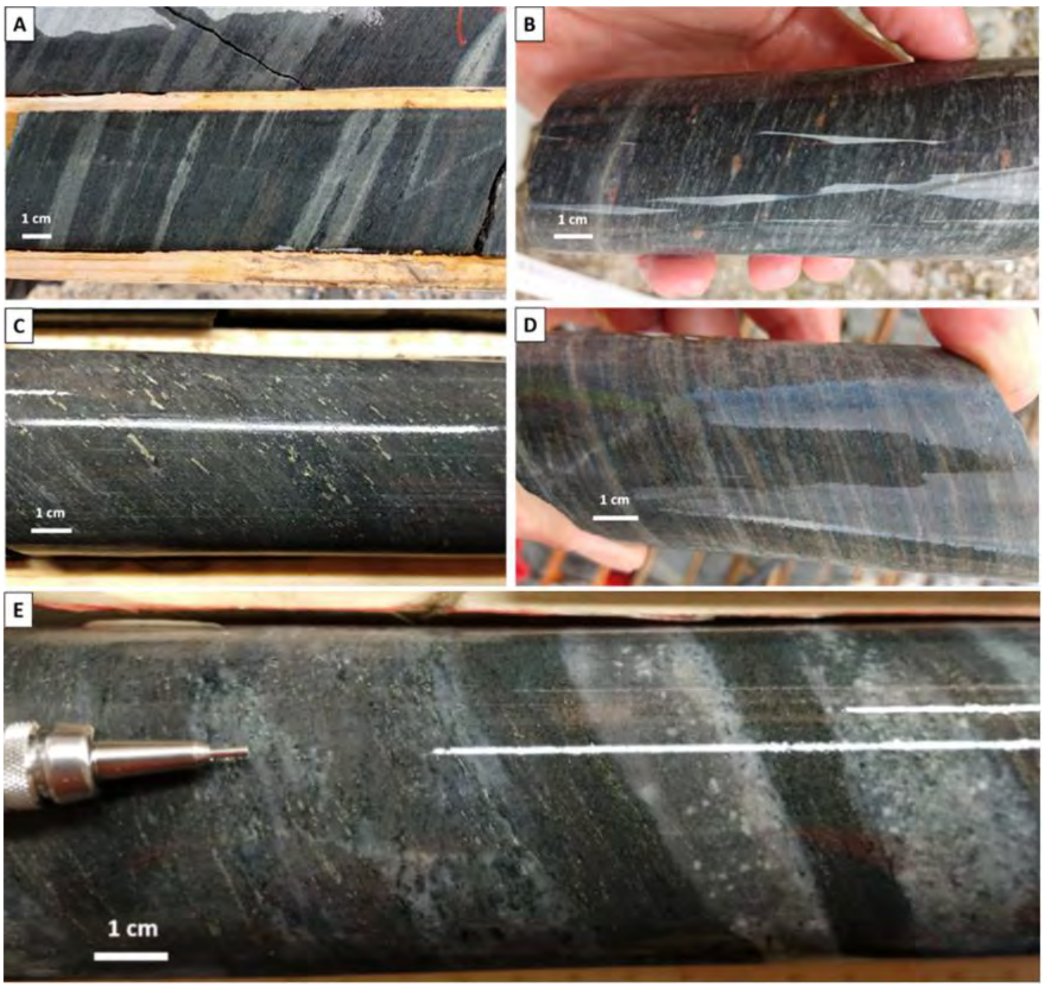
87 and J Zones - Mafic to Intermediate Volcanic Sequence

Dominantly occurring throughout the entire Property, and surrounding the Troilus deposit region, is a thick sequence of volcanic rocks of variable composition (Figure 7-6). The lower footwall region is dominated by mafic volcanics, essentially represented by massive and/or pillow basalts. The primary volcanic textures are rarely identified, being completely transposed by a strong regional foliation. This tholeiitic basalt sequence is overlain by a comparatively thin layer of transitional basalt. This unit is commonly pillowed and can also be seen intercalated within the overlying intermediate volcanic package. These relationships demonstrate the gradational transition from tholeiitic/transitional mafic volcanics to calc-alkaline intermediate volcanics.

The intermediate volcanics present as a sequence of banded / laminated and porphyritic to thick medium-grained flows with intercalated volcaniclastic, tuffaceous and volcanic breccia horizons. The banded / laminated volcanics display quartz-feldspar-rich bands and layers that are dominant over light-green amphibole layers. Porphyritic flows contain both feldspar and amphibole phenocrysts, the latter of which can be multiple centimetres in length and resemble lapilli when deformed. The J zone is host to a series of thicker, more medium-grained flows, which can resemble a finer-grained diorite. Garnet and quartz-rich intervals of volcaniclastic rocks occur toward the top of the sequence, as well as amorphous quartz-bands that could represent exhalative horizons.

The contact between the volcanic sequence and the diorite intrusion in the Z87 and J zones region is difficult to identify and appears to be gradational, with fine to very fine grained and laminated rocks, affected and transposed by intense deformation and hydrothermal alteration.

Figure 7-6: Z87 Zone and J Zone Drill Core Photographs; showing mafic to intermediate volcanic sequence



Source: Troilus (2019)

A. Mafic to intermediate volcanics; footwall of Z87 South

B. Volcaniclastic rocks, quartz-feldspar-garnet rich; hanging wall of J zones

C. Laminated intermediate volcanic rock, mineralized, hanging wall of J zones (J5 sequence)

D. Intermediate, laminated volcanics, Allonge Zone (northern continuity of J zones)

E. Volcanic breccia with porphyritic clasts and amphibole-rich matrix

Diorite and Brecciated Diorite

The dioritic unit forms an elongated body oriented in the northeast-southwest direction with a six-kilometre strike length and a one-kilometre width, surrounded by the volcanic sequence. It comprises a pale to greenish-grey rock, composed predominantly of medium to coarse grained crystals of plagioclase and hornblende.

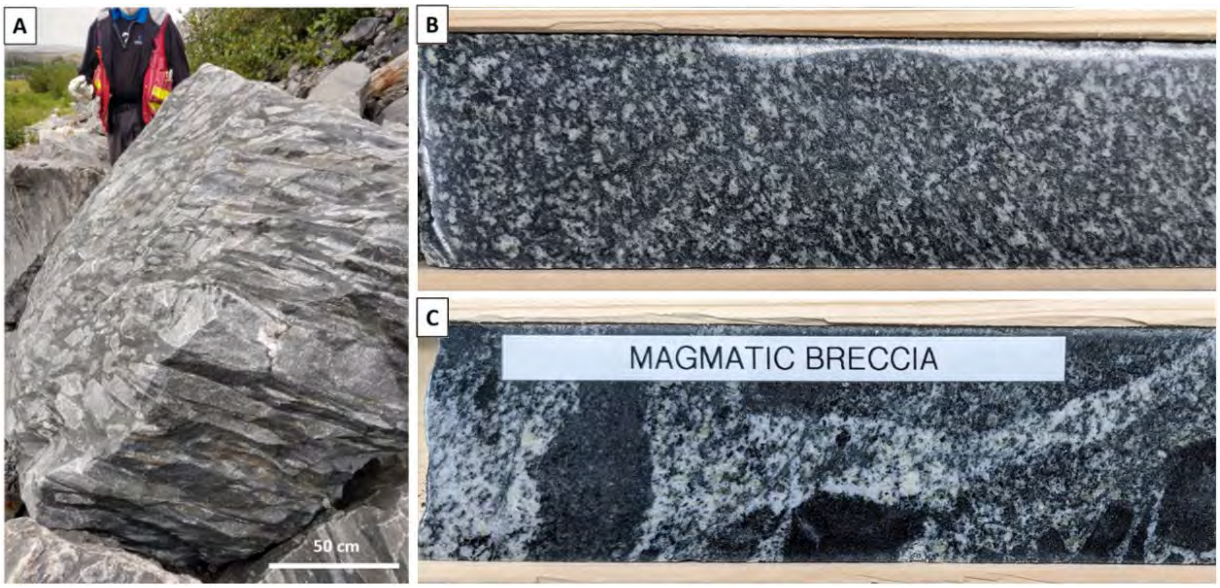
The Z87 hanging wall transitions from massive to fractured to brecciated diorite, which has been locally observed in drill core, as well as boulders and outcrops around the historic open pits (Figure 7-7). Breccia fragments vary in size from less than one centimetre to over ten centimetres in diameter, are commonly rounded, and are usually elongated parallel to the main foliation and lineation. In less-deformed portions, the fragments are mostly subangular in shape. The matrix is amphibolitic, being primarily composed of fine-grained amphibole and biotite, and minor epidote, quartz, and feldspar grains.

The mapped surface contact between the metadioritic pluton and the surrounding volcanic sequence is projected from drill cores, and it is described as a gradational contact. The outer margins of the metadiorite grade into the fine grained intermediate to mafic laminated rock.

The plutonic nature of this unit was first postulated by Carles (2000), which stated that “well-developed igneous textures” (coarse grained phases) and the absence of extrusive features would suggest a plutonic nature, possibly emplaced at shallow depth. The fine-grained diorite could also locally be the result of grain size reduction during deformation. An analysis of the litho-geochemistry dataset available for the Troilus deposit (Carles, 2000; Larouche 2005) shows several distinct compositions among diorite samples that are associated with the observations of variable textures. These observations strongly suggest a polyphase intrusive history for the Troilus Dioritic suite, yet a more comprehensive and detailed study is required (Diniz, 2019).

U-Pb zircon dating for the diorite yielded an age of 2791 Ma±1.6 Ma (Goodman et al., 2005), making it the oldest age-dated rock unit in the Troilus region.

Figure 7-7: Z87 Zone Photographs; showing diorite and brecciated diorite



Source: Troilus (2019)

A. Brecciated diorite: block on the waste pile located north of the Z87 pit. Note the elongated aspect ratio of the dioritic fragments, parallel to the penetrative foliation.

B. Typical coarse-grained diorite

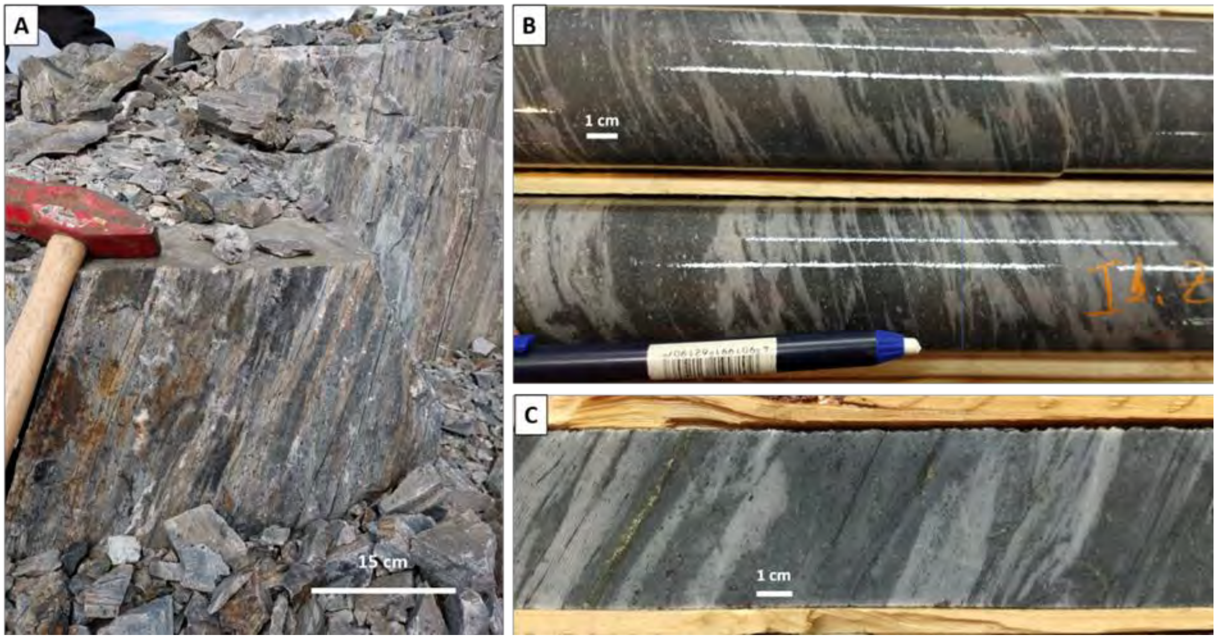
C. Magmatic breccia

Felsic Dykes

Felsic dykes crosscut the volcanic sequence, diorite, and brecciated diorite, with sharp contacts transposed parallel to the foliation. They occur predominantly around the margins of the dioritic intrusion, consisting of several discontinuous bodies, elongated parallel to subparallel to the main foliation. The felsic dykes are typically porphyritic with feldspar and lesser quartz phenocrysts that are commonly destroyed when the rock is highly sericitized and sheared (Figure 7-8).

Two main decametre-thick felsic dykes occur at Z87, comprising the footwall and hanging wall of the main mineralized zone. In the J zone, the felsic dykes occur mainly in the immediate hanging wall, are discontinuous, and occur in an anastomosing pattern, up to ten metres thick. The southwest end of the Z87 Zone is dominated by felsic dykes, up to several metres thick, occurring in an anastomosing and locally stockwork-like pattern.

Figure 7-8: Z87 Zone Photographs; showing felsic dykes



Source: Troilus (2019)

A. Felsic dykes in outcrop, Z87 pit; massive to slightly laminated

B. Porphyritic felsic dyke showing sericite alteration overprint; apparently transposed by the main foliation, Z87 Zone

C. Mineralized massive felsic dyke showing silicification and sericite alteration, Z87 Zone

They are variably affected by biotite alteration and by overprinting muscovite alteration. The latter forms a stockwork, probably corresponding to fracture networks. Increasing muscovite alteration may have reduced the competency of the felsic lithology resulting in it being preferentially deformed. Zones of intense muscovite alteration are strongly foliated, and give a banded texture, which can lead to confusing the dykes with a felsic tuff.

Magmatic zircons in one large felsic dike in the footwall zone of the Z87 zone orebody have been dated and yielded an age of 2782 Ma±6 Ma (Dion et al., 1998 in Goodman et al., 2005; Pilote et al., 1997 in Carles, 2000).

Granitic Intrusions

The Troilus deposit is located in the vicinity of major granitic intrusions: to the east (the Parker pluton) and to the south (the Parker Junior pluton). Pegmatite, granite dykes, and large granite bodies are observed in drill core, and in the Z87 and J open pits. They are present over intervals measuring a few centimetres to over 100 m in thickness. The main granite bodies are observed at depth to the northeast of, and below the Z87 gold trend. They are referred to as the footwall granite.

These intrusive units generally overprint the regional foliation at the sample / core scale. The foliation is observed to be contorted around the granitic bodies at the regional scale. This suggests the granite bodies were emplaced after the formation of the foliation in a late-to post-tectonic timing and their emplacements warped the pre-existing foliation while the rocks remained ductile. A preliminary U/Pb age date of 2698 Ma was determined for titanite from the Parker granite (Goodman et al., 2005).

7.3 Structural Geology

The Troilus deposit is hosted in a zone of intense deformation and experienced upper-greenschist to lower-amphibolite metamorphic conditions. At least two regional phases of deformation are recognized in the Troilus deposit region.

7.3.1 Deformation Phase D1

The main deformation features at Troilus correspond to a west-northwest to east-southeast ductile flattening event referred to here as D1. The main planar structure is a pervasive and ubiquitous foliation, S1. It affects most lithological units at Troilus, except for the post-tectonic granitic bodies. It is oriented N60°E on average, and dips 55° to 70° towards northwest, being slightly steeper in the J zones when compared to the Z87 and Z87S.

Local variations in the foliation orientation could be related to the foliation deforming in proximity to the competent Parker and Parker Junior intrusions. The intensity of the foliation also varies among the different lithologies. Coarse grained diorite is mostly unaffected to weakly foliated. The foliation is stronger in zones of biotite or muscovite alteration, suggesting the deformation is enhanced in altered, auriferous, and less competent zones.

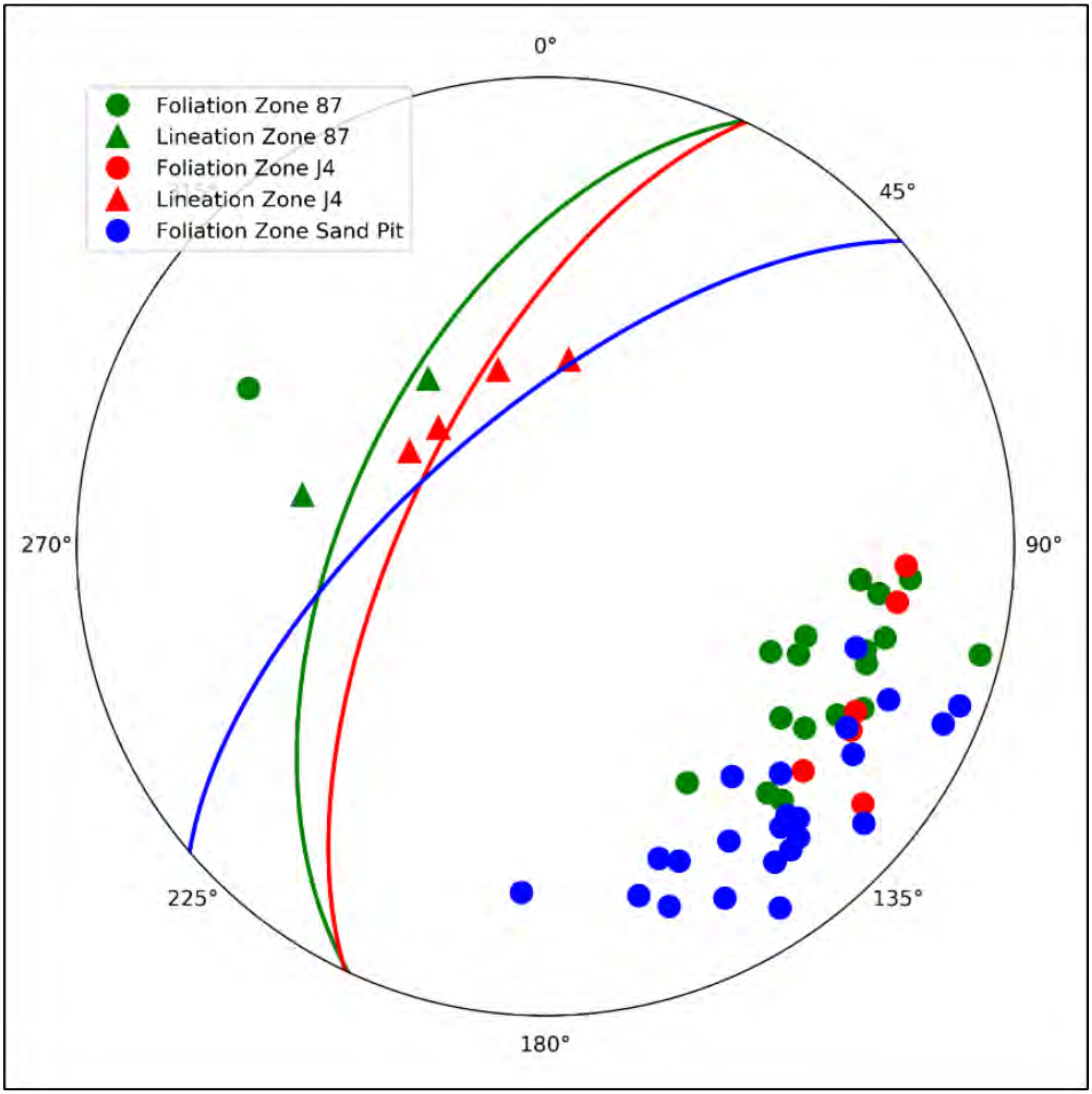
Pre-D1 planar features such as veins, veinlets, and stockworks are variably transposed parallel to the S1 foliation. Similarly, bedding or volcano-sedimentary layering, and geological contacts are transposed parallel to the S1 foliation.

Tight isoclinal F1 folds are associated with an axial planar S1 foliation, and some of these F1 folds can be rootless, illustrating that strong transposition occurred during D1. Fold axes are subparallel to the stretching lineation indicating a strong transposition. This orientation is likely to produce a downdip plunge of gold mineralization parallel to the stretching lineation. The intensity of the deformation and the tight and isoclinal nature of the folds hamper the observation of F1 fold hinges but folding in the Troilus deposit is probably ubiquitous at various scales.

A down-dip stretching lineation oriented -60°/322°Az within the foliation is observed to affect diorite breccia fragments. Biotite and amphibole are preferentially oriented parallel to this lineation. The X: Z stretching ratio from breccia fragments is estimated at 6:1 and the Y: Z flattening ratio is estimated at 3:1, illustrating a strong flattening perpendicular to the foliation combined with a moderate stretching component along the lineation.

Figure 7-9 presents the stereonets of main planar and linear structures at the Troilus Gold Project.

Figure 7-9: Stereonet of the Main Planar and Linear Structures – Troilus Gold Project



Source: Troilus (2018)

7.3.2 Deformation Phase D2

At the deposit scale, the second phase of deformation, D2, is marked by northeast-southwest striking, steep-dipping shear zones, identified in the Z87, SW, and Z86S zones. These shear zones are at a low angle with the S1 foliation and crosscut the S1 foliation and quartz veins.

On a regional scale, this second deformation phase also corresponds to important deformation corridors with an interpreted dextral sense movement, La Fourche and Dionne fault zones (Simard, 1987; Gosselin, 1993; Gosselin, 1996), which locally cut and segmented the Troilus Syncline (F1 fold). The zones are characterized by local centimetric to metric isoclinal folds that affect the main regional schistosity, forming a crenulation cleavage. Locally a pronounced sub-horizontal stretching lineation can be observed. The Parker fault zones may also have been formed during D2 and represent a complex array of inverse faults, oriented mainly parallel to bedding and to the main regional foliation, occurring in the north-northwest border of the region, marking the contact zone with the granite-gneiss terrane. A high angle stretching lineation verging to the southeast is normally observed (Gosselin, 1993).

7.3.3 Late NNE-SSW Brittle Faults

A series of sulphide-bearing brittle faults are present on the north wall of the Z87 pit. These faults are thin fault zones (less than 0.5 m in width) characterized by a strong muscovite alteration, silicification, and the presence of sulphides. These faults are oriented subparallel to the foliation and are regularly spaced in the pit, with one every 20 m to 50 m. They are commonly present at the contact between felsic dykes and the breccia. Down-dip slickensides, reverse displacement of pegmatite dykes, and sub-horizontal to moderate northwest dipping quartz tension veins all indicate a reverse movement. The presence of muscovite, quartz, and sulphides suggests that these are sericitic faults zones that were interpreted as hosting part of the gold mineralization at Troilus, as described in Goodman et al. (2005). No significant increase in gold grade was associated with these fault zones in drill core however, suggesting they are not a significant host of the gold at Troilus. Their brittle nature, and the crosscutting relationship with pegmatite dykes indicate these faults are probably part of a possible younger D3 deformation phase.

7.3.4 Fractures

Three main fracture orientations are mapped in the deposit area (SRK, 2018). The first set, oriented at azimuth 025° and dipping at -65° west, is subparallel to the regional foliation and represents the major fracture system in the Z87 pit area. The other two sets (035°/25° and 320°/85°) cut the regional foliation almost at a right angle. The combined effect of these fractures has induced local instability in the Z87 pit. Faulting is observed locally in the pit. The main orientations of the faults are 240°/-55° and 160°/-60°. These two fault orientations do not cause any overall wall stability concerns but may create problems locally.

7.4 Mineralization

The main mineralized zones at the Troilus Property occur around the margins of the Troilus Diorite, and comprise the Z87 Zone, the J Zone, and the SW Zone. Other important mineralized zones discovered to date include the northern continuity of the J Zone, named the Allongé Zone, and the southwestern margin of the metadiorite.

Troilus is primarily an Au-Cu deposit, but contains minor amounts of Ag, Zn and Pb, as well as traces of Bi, Te, and Mo. Gold-copper mineralization at the Troilus deposit comprises two distinct styles, disseminated and vein-hosted. Gold mineralization is spatially correlated with the presence of sulphides, even though the sulphide content does not directly correlate with gold and copper grade. The main host rocks of the disseminated mineralization are the mafic to intermediate flows and tuffs.

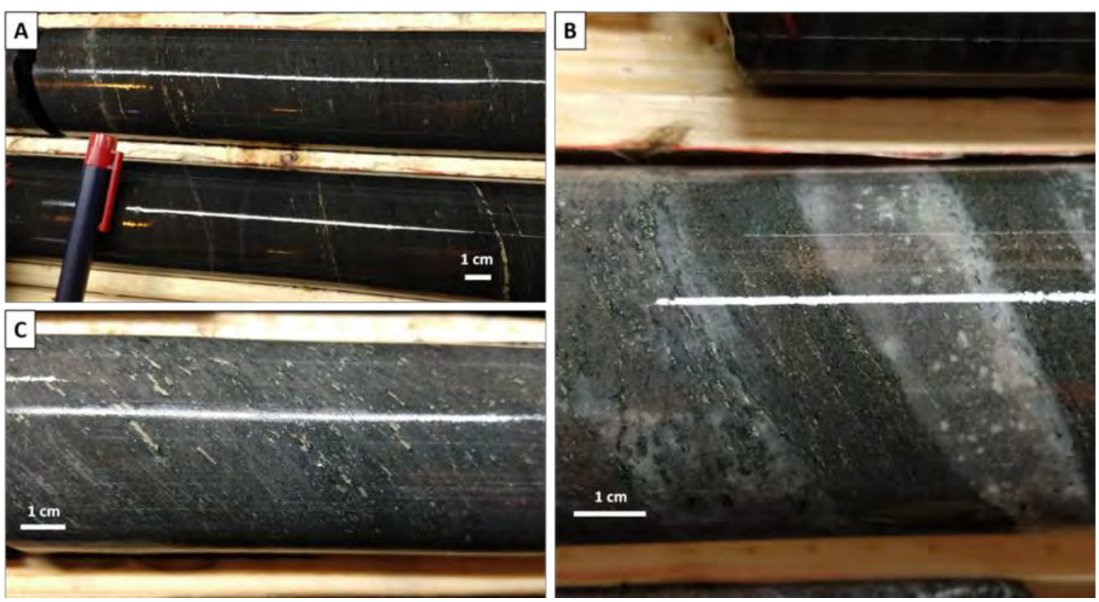
Vein-hosted gold-copper mineralization is found within the volcanic rocks as well as the felsic dykes and diorite pluton.

7.4.1 Type 1 – Disseminated Mineralization

Disseminated mineralization (Figure 7-10) comprises most the deposit's gold and copper content (>90%, Goodman et al., 2005). Gold and copper are predominantly associated with fine grained disseminated sulfides and/or millimetre wide sulfide streaks and stringers parallel to the main foliation, comprising between 1 % by weight and 5% by weight of the rock. The most abundant sulfides are pyrite, chalcopyrite, and pyrrhotite, with minor amounts of sphalerite, predominantly in the SW Zone. There are trace amounts of bornite, galena, and arsenopyrite locally.

The gold generally occurs as electrum, containing up to 15% by weight silver (Goodman et al., 2005). It is found between sulphide grain boundaries, usually chalcopyrite and pyrrhotite. Petrographic studies undertaken by M.Sc. students at the University of Western Ontario revealed a simplified mineral paragenesis of euhedral pyrite followed by subhedral pyrrhotite, electrum and possible gold-silver telluride and bismuth compounds, and lastly anhedral chalcopyrite and bornite mineralization. This mineralization style is found across each of the zones, and mainly occurs pervasively throughout the mafic to intermediate volcanic rocks, but it is also observed in the brecciated margins of the diorite and, more recently (2022), within and around shear zones in massive diorite. It is generally associated with biotitic-chloritic alteration. There are metric-scale intervals of strong sericitization with greater amounts of coarser grained pyrite, but these do not appear to be related to gold or copper mineralization.

Figure 7-10: Z87 Zone and J Zone Photographs; showing disseminated mineralization



Source: Troilus (2019)

A. Disseminated pyrite in a fine grained, biotite-rich intermediate volcanic rock- J Zone

B. Intermediate volcanic breccia; fine sulfides disseminations in the amphibole-biotite-rich matrix - Z87 Zone

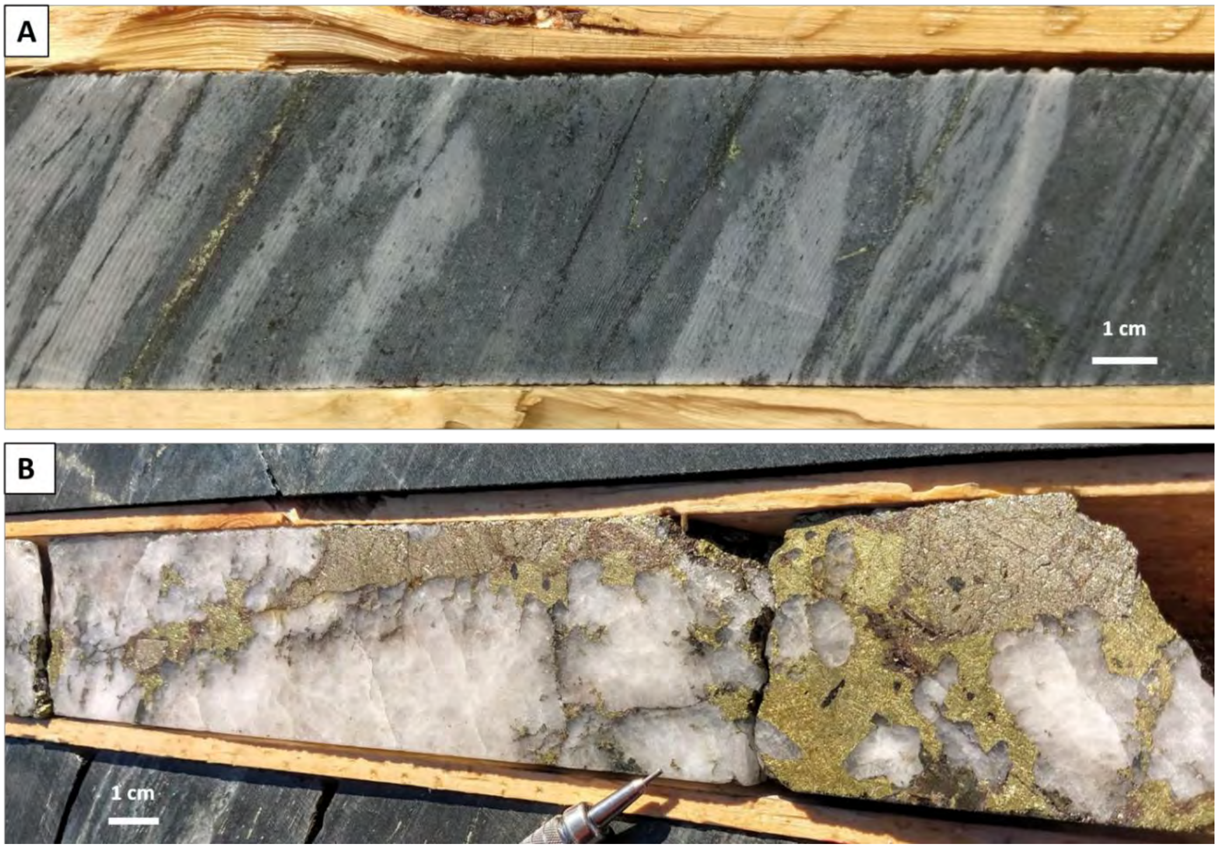
C. Disseminated medium grained pyrite in volcanic laminated rock - J5 zone J Zone

7.4.2 Type 2 – Vein-hosted Mineralization

This mineralization style is characterized by gold bearing veins, with gold mineralization restricted to the veins and veinlets, and is classified as gold-only, since copper mineralization is rare and erratic (Carles, 2000). This type of mineralization is reported to be hosted in all rock types occurring within the mineralized envelope in the Troilus deposit (Figure 7-11).

Several generations of gold-bearing veins have been identified and described by Goodman et al. (2005), and Larouche (2005), the latter especially focused on J zone. With regards to grade and abundance, the most significant are quartz-chlorite (±tourmaline) veins. These veins occur in silicified wall rocks to sericitized high strain zones which cut the main foliation and the margins of felsic dykes, and within 1 m to 15 m wide shear zones in the diorite pluton. Gold-bearing millimetre-to centimetre wide veinlets are locally present as swarms parallel or subparallel to spaced cleavage in the silicified rocks. The veinlets contain free gold and minor amounts of sulphide. Much of the gold is fine grained and contains up to 20% silver, however, gold grains can be up to greater than 1,000 µm in size. Gold is also observed within fractures on the boundaries of coarse euhedral pyrite grains. Locally, a second set of gold bearing quartz veinlets cut the first. These carry fine grained gold (greater than 95%) and minor pyrite, chalcopyrite, sphalerite, galena, and Te- and Bi-bearing minerals, including tellurobismuthite (Bi2Te3), calaverite (AuTe2), and hessite (Ag2Te). Although volumetrically much less significant than the main disseminated mineralization, the veinlets can contain grades greater than 50 g/t Au over a one metre interval. Coarse grained gold recovered by a gravity circuit in the mill accounted for about 30% of the gold produced. Presumably much of this coarse gold was derived from the veins. High grade shoots related to the veinlet zones are oriented 40° clockwise from the main disseminated mineralization.

Figure 7-11: Z87 Zone and J Zone Photographs; showing vein-hosted mineralization



Source: Troilus (2019)

A. Millimetric Py-Po-rich veinlet in an altered felsic dike (sericitization and silicification) - Z87 Zone

B. Atypical very high-grade quartz veins, up to over 1-m thick; remobilized pyrite-chalcopyrite-pyrrhotite - J Zone

7.4.3 Alteration

Gold mineralization at Troilus is associated with various types of alteration described below.

Biotite

An early, pervasive, weak to strong biotite alteration affects the diorite, breccia, and felsic dykes. The matrix of the breccia is preferentially altered. This alteration style is widespread in the deposit and can extend up to tens of metres away from the main gold zones. Sulphide content in drill core increases with biotite alteration intensity, suggesting a genetic link between the two. The biotite is transposed parallel to the foliation, indicating alteration occurred prior or during the main deformation event. The foliation intensity increases in strongly biotite altered intervals, due to the lower competency of the biotite-bearing rocks.

Muscovite

The vein-hosted mineralization is spatially related to a strong sericitization within the high strain zones, better developed in the felsic dykes, reaching up to several centimetres (Carles, 2000). Sericitization is also present in the amphibolite and the matrix of the breccia. A weak to strong muscovite alteration is present in some felsic dykes and varies in texture from pervasive to stockwork. It also locally alters the diorite and the breccia. Gold mineralization can be present in muscovite altered rocks, but sulphide content does not increase with the presence of muscovite alteration. Muscovite stockwork-like textures are locally transposed by the main foliation, indicating muscovite alteration occurred after biotite alteration but prior or during the main deformation event. Zones of higher foliation intensity, and thus of higher deformation, occur in strongly muscovite-altered rocks, probably due to the lower competency of these lithologies compared to unaltered rocks. The most highly deformed and sericitized parts of the rock are commonly surrounded by a silicified envelope that could reach several metres in width.

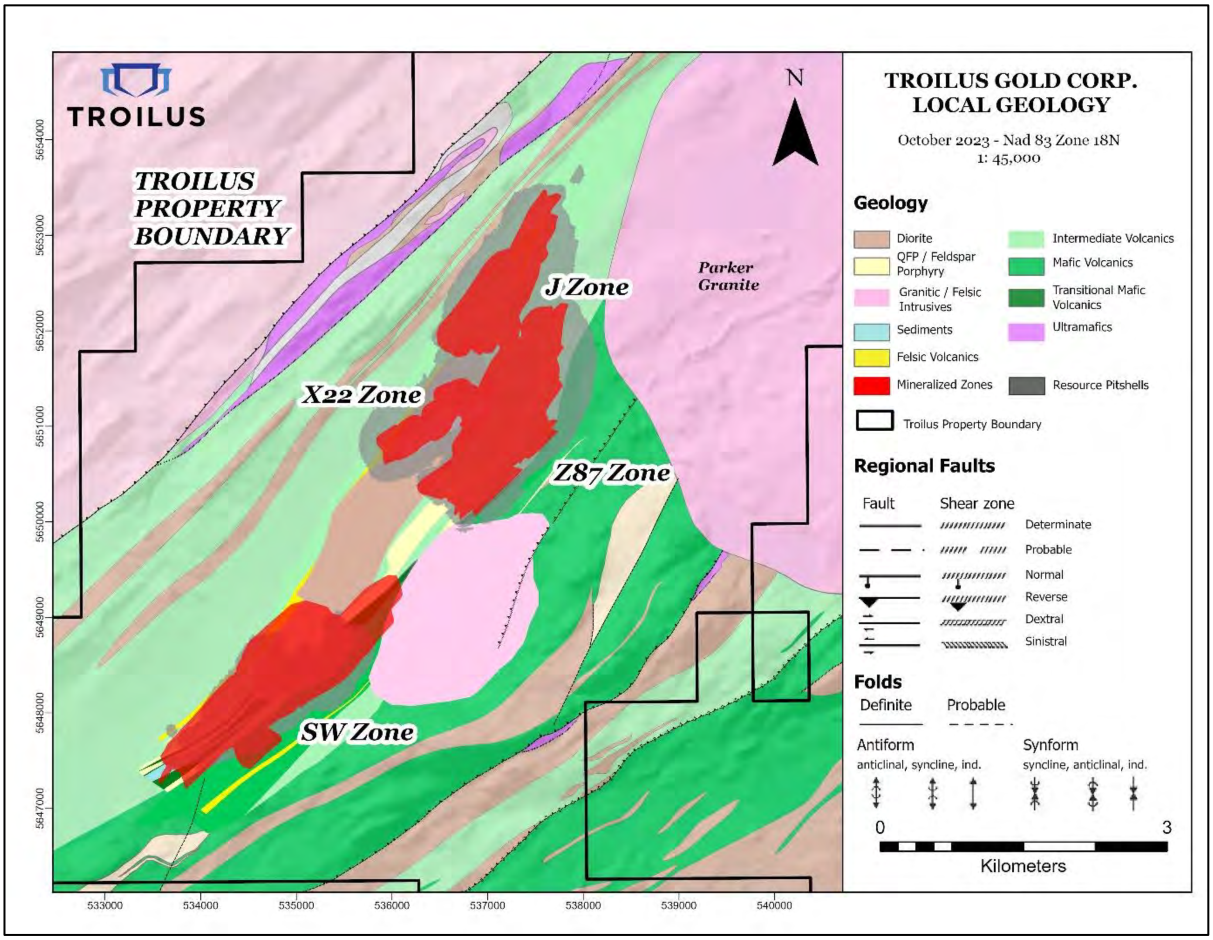
Calcic Metasomatism

A syn-deformation epidote-amphibole alteration occurs both pervasively and as veins in the deposit area. It consists of pervasive calcium-rich minerals such as calcium amphiboles, epidote, or calcite occurring in two metre- to ten metre intervals in drill core, or in discrete layers or bands measuring less than 20 cm. Veins of quartz, calcite, epidote, grossular garnet, and diopside may also be locally present. Gold mineralization is present locally in calc-silicate altered rocks, however, barren calc-silicate altered rocks also occur. Calc-silicate bands and veins can be parallel to the foliation, folded by the main deformation event, or can crosscut the foliation, all indicating that calc-silicate alteration occurred during the main deformation event.

7.5 Mineralized Zones

The four principal deposits of the Troilus Gold Project are the: Z87, J, X22 and SW Zones. Figure 7-12 presents the location map of these deposits

Figure 7-12: Principal Mineralized Zones – Troilus Gold Project



Source: Troilus (2023)

7.5.1 Z87 Zone

The main pit of the Troilus Mine, operated by Inmet from 1996 to 2010, was developed in the Z87 orebody. The mineralization in the Z87 occurs as a series of anastomosing lenses, extending for approximately 1,300 m along strike from 12,900N to 14,200N with variable thickness and locally reaching over 100 m wide. With increasing depth, individual mineralized lenses coalesce to form a single sheet-like body that was approximately 40 m thick on average (Fraser, 1993).

The long axis in the Z87 is oriented N35°E with the orebody dipping to 55° to 65° northwest, from southwest- to northeastern portions, respectively. Detailed studies of Z87 blasthole data and diamond drill intersections revealed the presence of higher-grade shoots, which plunge to the west-northwest at ~55°. This primary plunge is controlled by the D1 stretching lineation. A secondary enriched trend has been identified and corresponds to the intersection of D2 shearing and the S1 fabric, which plunges at ~30° to the southwest.

In Z87, the peak of enrichment in gold and copper overlap but are not exactly coincident. A metal zonation is observed, associated with the sulfide content. The structural footwall is enriched in a chalcopyrite-pyrrhotite assemblage, with copper more abundant than gold. This zone grades into an intermediate pyrite-chalcopyrite zone, which comprises the main ore zone of the deposit and contains gold and copper. The structural hanging wall is dominated by pyrite and is gold-rich relative to copper. The variable gold and copper relationship may also be due to the cross-cutting nature of D2 structures, which are believed to control "stage 2" mineralization. The sulfide assemblage may also reflect a zonation in temperature between a higher temperature footwall zone dominated by chalcopyrite and pyrrhotite that transitioned towards a lower temperature pyrite dominant hanging-wall zone. The origin of this zonation is unknown but could either be primary and directly linked to the genesis of the deposit, or secondary when the deposit was metamorphosed during the regional deformation event, or possibly by the heat induced during emplacement of the nearby granitic plutons.

7.5.2 J Zone

The J Zone orebody hosts two parallel mineral zones formerly known as J4 zone and J5 zone. J4 is the smaller of the two formerly mined open pits along with the main Z87 zone. Like other zones at Troilus, mineralization in the J Zone is associated with feldspar porphyry dykes, as they help to focus strain and fluid flow during mineralizing processes. Unique to the J zone is the impact of more massive flows and diorite dykes within the intermediate volcanic package, which help in the development of structural traps, similar to the feldspar porphyry dykes.

Locally, feldspar porphyry dykes can produce more pronounced fold patterns than is typical of rocks at Troilus. The hinges of these folds contain some of the highest grades in the J Zone.

The main mineralized intervals in the J Zone are characterized by sulfide stringers and fine sulfide disseminations along the foliation occurring within very fine-grained, biotite-rich, and silicified intermediate volcanic rocks. Pyrite is the main sulfide, and it is intrinsically associated with gold mineralization.

Compared to Z87 Zone, the J Zone has a lower copper grade, more free-gold, and dips more steeply at ~65° to the northwest. Higher-grade ore "shoots" are parallel to the stretching lineation. Mineralized trends are observed parallel to the S1 fabrics, as well as in cross-cutting shear zones. At least one of these cross-cutting structures extends in to the Z87 pit.

7.5.3 X22 Zone

The X22 Zone is situated adjacent to the west of the Z87 Zone and approximately 200 m southwest of the J Zone. The X22 Zone is the only economic zone hosted entirely within the Troilus intrusion. Mineralization is dominantly constrained to a more felsic (tonalitic) section of the intrusion that lies along a D2 structural corridor. Zones of Au-Cu enrichment are located at intersection with D1 structures and are associated with broader biotite and silica alteration, with more discrete albite alteration and shear hosted sericite alteration. Sulfides are both disseminated and vein-hosted, and are primarily pyrite, pyrrhotite and chalcopyrite, with lesser sphalerite, galena and molybdenite. A network of shear and extensional veins containing variable amounts of quartz, carbonate, sulfide minerals, biotite and tourmaline is also present in the mineralized zones. The tonalite often displays blue quartz phenocrysts when highly strained and altered.

Mineralization is most well-developed near the footwall contact of the tonalitic body. Locally, felsic porphyry dykes are host to high grades (>10 g/t Au). The northern-most mineralization in X22 is Cu-poor relative to the rest of the zone and is associated with these felsic dykes. The southern extent of X22 Zone is host to relatively abundant massive sulfide veins containing grades in excess of 100 g/t Au. The southern "tip" of the stretched ellipsoidal tonalitic body is an affective low-pressure trap for mineralizing fluids, as it contains the highest grades in X22 Zone. Mineralization dips at ~55° to the west, with higher grade "shoots" oriented parallel to the D1 stretching lineation. The tonalite itself is also stretched parallel to this lineation.

7.5.4 Southwest Zone (SW Zone)

The SW Zone is situated approximately 3 km southwest of the Z87 Zone.

As observed in all main mineralized zones on the Property, the SW Zone lithological sequence is comprised by a dominantly mafic volcanic footwall, and a more intermediate to felsic hanging wall. This volcanic package is intruded by syn-volcanic dioritic and felsic rocks. Disseminated gold-copper mineralization is found within the upper portion of the mafic footwall rocks and the overlying intermediate volcanic hanging wall. Vein-hosted gold mineralization, as previously described, is found principally within and around the felsic dykes and diorite.

The footwall mafic volcanic sequence in the SW zone represents a homogeneous package, composed of dark green, amphibole-rich, fine-to locally coarse-grained rocks. Locally, it contains sericite and sulfide-rich metric to decametric intervals, laminated/banded, occurring mainly within the upper part of the sequence. These intervals are normally anomalous in Au, Zn, Ag, S. The dominant sulfide is pyrrhotite.

Intrusive felsic rocks occurring in the SW Zone comprise mainly two different lithotypes: (i) rhyolitic felsic dykes ("Feldspar Porphyry" or "Felsic Dykes") and (ii) younger dacitic felsic dykes ("Intermediate Feldspar Porphyry"). They share similar compositional and textural characteristics and are often mistaken due to the lithological similarities and alteration pattern. Both the felsic dykes and intermediate feldspar porphyry units show porphyritic textures, with felspar phenocrysts dispersed in a quartz-rich groundmass. Intense silica and sericite alteration are commonly observed in both units.

Felsic dykes are thinner and occur as "arrays" of several dykes, crosscutting the sequence, and often concentrated in the contact zone between mafic footwall and more intermediate to felsic hanging wall.

The intermediate feldspar porphyry defines a continuous unit, tens of meters thick, occurring immediately above the mafic footwall sequence. It hosts an important part of the mineralization found in the eastern domain of the SW Zone. It is generally lower grade, and relatively copper-poor compared to the mineralized intervals observed in the magnetite-rich breccia occurring in the hanging wall and footwall of the unit.

A magnetite-rich and highly silicified transitional basalt (the "Southwest Breccia") represents the main host rock for gold and copper mineralization at the SW Zone. The unit varies texturally from medium-sized pillows with thin selvages, intervals of subangular lapilli tuff, and containing 1 to 20 cm subangular xenoliths of both epidote and a porphyritic felsic rock. The presence of these fragments locally and the volcanic textures exhibited are informally referred to with the structural term, 'breccia'.

Sulfides and quartz are often filling fracturing and locally forming stockwork-like textures within the magnetite-rich silicified fragments. High-grade zones are copper-rich and reach up to 10 m to 20 m thick.

Intermediate Feldspar Porphyry dykes occur intercalated with the brecciated, sulfide and magnetite-rich intervals.

The SW Zone is defined by two key mineralized zones: the 'Main Zone' and the 'West Zone'. The Main and West Zone are predominantly differentiated by gold content and have been interpreted to represent opposite limbs of a major regional syncline that has likely been subjected to a primary, regionally emplaced phase of gold bearing mineralization (first major gold event). The Main Zone distinguishes itself from the West Zone having clearly been highly altered by a secondary / later gold and copper bearing event, which is characterized by dark silica (quartz) flooding, brecciated (fractured) fragments, and intense fracture-filling chalcopyrite (main source of copper) and pyrite, pervasive magnetite, as well as free gold.

Higher grade intervals appear associated with the highly altered Main Zone resulting from local, focused structural controls and fluid traps acting as a conduit for alteration / mineral deposition.

The SW Zone and Z87 show important similarities in terms of host rocks, mineralization style and geochemistry, as summarized below:

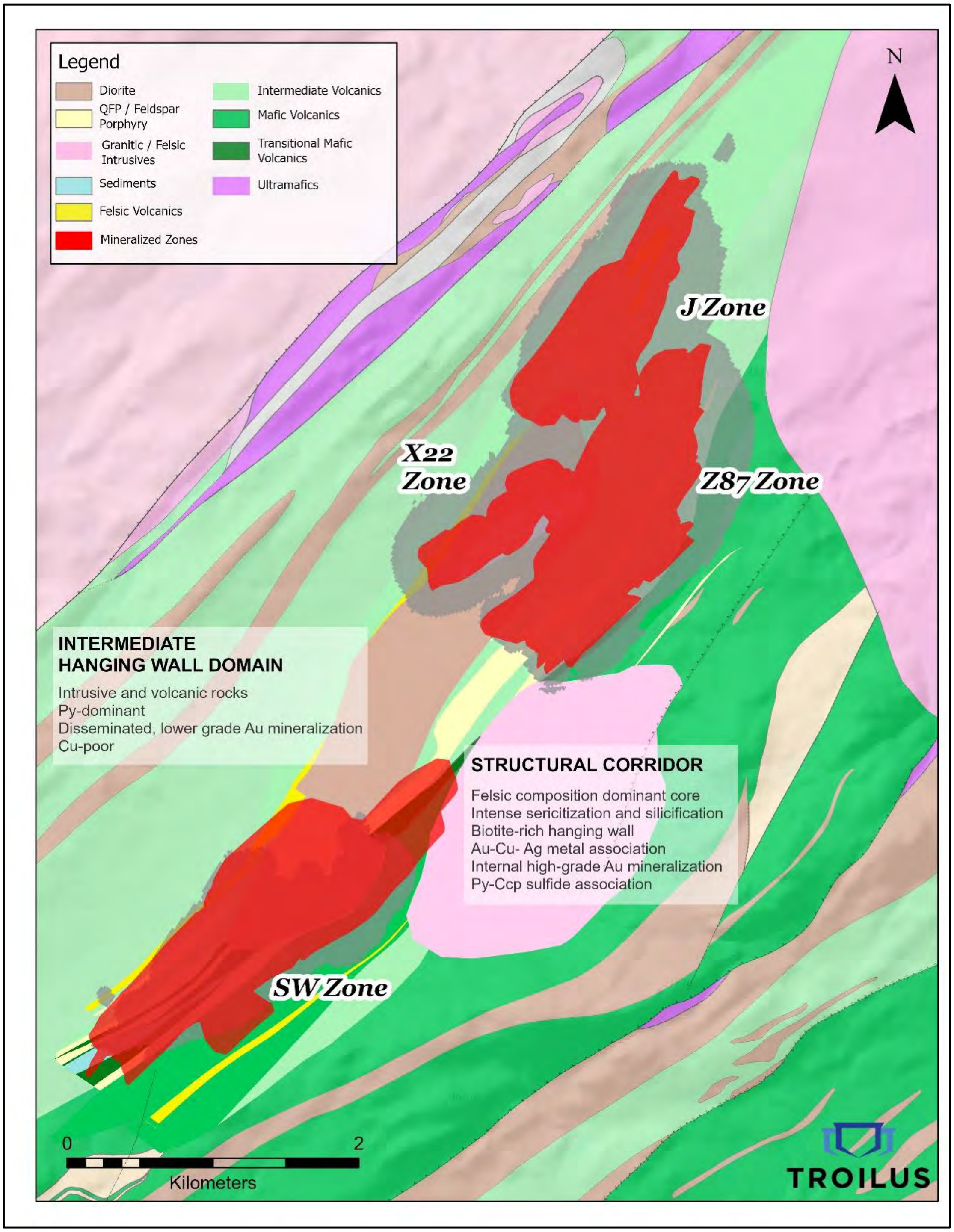
- Similar Au-Cu-Ag metal association.
- High-grade Au associated with chalcopyrite (filling micro-fracturing and in sulfide margins).
- Zoning: Pyrite-rich hanging wall, Pyrite-Chalcopyrite core zone, Pyrite-Pyrrhotite foot wall.
- Similar host rocks:
  - brecciated intermediate volcanic hanging wall higher grade, Au-Cu association.
  - cross-cutting felsic dykes.
  - least altered, medium to coarse-grained diorite in the hanging wall, with strongly silicified and sericitized shear zones with vein-hosted gold.
  - amphibolite-grade mafic volcanic foot wall.

Both zones are located within the same structural corridor represented by the eastern limb of the interpreted Troilus syncline, comprising an intensely altered and deformed sequence, with a dominantly felsic "core", separating two distinct domains: a mafic-dominant footwall, and the intermediate volcanic/intrusive package in the hanging wall.

The similarities between the two zones reinforce the potential to expand mineralization towards the underexplored 1.5 km linear trend that separate Z87 and SW Zone, the "Gap Zone".

Figure 7-13 presents a schematic and simplified representation of the different domains hosting mineralization on the Property. It also highlights a structural corridor that links the Z87 Zone and SW Zone marked by similar mineralization style, host rocks and geochemical signature.

Figure 7-13: Simplified Geology Map of the Mineralized Zones, highlighting the structural corridor



Source: Troilus (2023)

7.6 Prospects/Exploration Targets

7.6.1 Allongé and Carcajou

The Allongé target is situated adjacent to the northeast, along strike, of the J Zone; and the Carcajou target is situated 5 km northeast of Allongé.

The geology of Allongé and Carcajou is typical of the north-eastern portion of the J Zone, it consists predominantly of laminated and strongly foliated intermediate volcaniclastic rocks with subordinate intermediate porphyritic flows, metre to decametre-scale quartz-feldspar porphyry dykes (QFP), and undeformed granitic-tonalitic dykes of the Parker pluton in the footwall. The mineralization style is the same as in the J Zone; gold is associated with pyrite disseminations and stringers concordant with the foliation throughout the volcanic package. Gold mineralization is also found within QFPs and within thin shear zones. Mineralization is not associated strongly with any alteration minerals, though the host rocks are pervasively weakly silicified and sericitized. Very tight, localized folds occur throughout the volcanic sequence, generally with quartz veins along the axial planes. These folds occur throughout the deposit, particularly in the Southwest Zone. Amphibolite-grade metamorphism increases in intensity towards the southwest of the zone, and there are locally thin intervals with pre- to syn-deformational rounded amphibole porphyroblasts.

7.6.2 Beyan and Cressida

The Beyan Target and Cressida Target are situated approximately 7 km and 10 km, respectively, on strike southwest of the SW Zone.

Beyan Zone is characterized from SE to NW: an amphibolitized bimodal volcanic sequence, a mafic intrusive complex, an intermediate volcaniclastic sequence (like the one observed in the J4 Zone) and finally a mafic volcanic sequence.

The bimodal volcanic sequence also contains sedimentary layers and small stratabound exhalative horizons including chert and iron formation (oxide and sulphide variety). The volcanic rocks are intruded by mafic, dioritic, and locally ultramafic sills and felsic dykes (QFP and FP). Basalt commonly displays pillowed and variolitic textures with the inter-pillow material being replaced by silica and carbonates. Rhyolitic flows are characterized by aphanitic to porphyritic textures (quartz eyes), and when sheared they develop a strong schistosity marked by sericite. The volcanic sequence shares some similarities with the mine sequence, including the intermediate banded ash tuff that can be traced to the J4 Zone. The main difference is the absence of a major diorite intrusion (Troilus diorite). Some diorite dykes are observed at Beyan, but they are usually limited in width.

The intermediate banded ash tuff hosts the main mineralization zone at Beyan, it exists in a stratabound and stratiform lens with disseminated to semi-massive sulphides (pyrrhotite, pyrite with minor sphalerite, chalcopyrite and arsenopyrite). Alteration assemblages include a proximal strong silica-sericite ± fuschite, carbonate and tourmaline alteration zone sometimes with aluminosilicate porphyroblasts, garnet-biotite-amphibole ± chlorite and carbonate alterations. The silica-sericite zone is usually spatially associated to quartz-carbonate veins. The mineralized zone appears to follow the regional foliation S1 and stratigraphy (NE-SW). The mineralized horizon corresponds to a high chargeability and low resistivity zone located in between two more competent mafic units of basalt and gabbro. This difference in competency, porosity, and potentially chemical reactivity more likely played an important role in focusing the gold-bearing hydrothermal fluids.

Other gold-bearing mineralization corresponds to small sedimentary intervals with arsenopyrite grains in the bimodal volcanic sequence, sulphide-rich iron formations, cherty horizons, and smoky quartz-carbonate veins in mafic units (locally with visible gold). When parallel to the main foliation the quartz veins display evidence of boudinage, while crosscutting veins display evidence of folding. Arsenopyrite appears to be a good indicator for gold mineralization to the SE of the intermediate banded ash tuff.

Cressida lies along strike from Beyan, and the geology is very similar. The primary host of gold mineralization is an intermediate banded ash tuff as observed in Beyan, averaging 40 – 60 m thick and steeply dipping to the northwest. It is bounded to the northwest by a thick package of basalt in gradational contact with the unit. Also in gradational contact to the southeast is the bimodal volcanic sequence as described in Beyan, but predominantly consisting of amphibolitized massive basalt flows with thin felsic horizons. A thinly bedded biotite rich and graphitic sedimentary unit ranging from 1 m to 10 m thick is responsible for the second thin highly conductive IP anomaly to the southeast of the main ore zone. This unit contains up to 30% pyrrhotite and pyrite locally, and strongly resembles the unit observed in the southwestern margins of the Southwest Zone. Interbedded within this unit are the volcaniclastic unit, and 1 m to 2 m thick cherty intervals with significant amounts of grunerite, resembling a silicate facies iron formation. This unit is in gradational contact with amphibolitized basalt to the southeast with significant amounts of carbonate veining. There are some thin unaltered and undeformed mafic-intermediate porphyritic sills intruding the volcaniclastic unit and basalt, appearing more commonly in the northeast and pinching out to the southwest.

Gold mineralization at Cressida occurs primarily within the volcaniclastic intermediate ash tuff, in a stratabound and stratiform pyritic lens 10 m to 30 m thick consisting of disseminated bands of fine-medium grained euhedral pyrite. The pyrite content is approximately 1% to 5% within this zone, with 5 m to 10 m intervals reaching up to 25% and rare 20 m to 30 cm massive pyrite lenses. Increasing pyrite content is spatially associated with silica-sericite ± fuchsite-carbonate alteration. Garnet and aluminosilicate porphyroblasts are common, but not necessarily associated with any mineralization. There is trace pyrrhotite locally within the zone as well. Within the bimodal volcanic unit, there are rare thin intervals of arsenopyrite. The interbedded sedimentary-volcaniclastic-iron formation unit to the southeast contains large amounts of pyrrhotite, and locally minor amounts of pyrite ± arsenopyrite ± sphalerite. Thin concordant and discordant quartz-epidote-carbonate ± calc-silicate and quartz-only veins within the volcaniclastic unit do not appear to be related to gold mineralization.

7.6.3 Testard

The Testard Target is situated approximately 16 km south-southeast of the Troilus Project site.

The geology of the Testard Gold Zone exists from east to west of a sequence of intermediate lapilli and block tuff in contact with an ultramafic sill, the contact which represents the regional S0-S1 is oriented NE-SW. Both lithologies are crosscut by a pre- to syn-deformation tonalitic stock (Testard stock). Two generations of shear-zones have been mapped at Testard. The first one corresponds to a major ductile deformation zone linked to D1 and oriented NE-SW that follows the eastern margin of the ultramafic sill. The second generation of shear-zones are more discrete and are oriented E-W, they are interpreted to have formed during the second regional deformation event D2. They consist of brittle to ductile shear-zones that crosscut all lithologies. The contact between the tonalite and the ultramafic sill appear very prospective for gold, silver and locally copper with trace molybdenum and zinc as suggested by the polymetallic nature of the mineralization at the Lac Dauphin showing The previously known gold mineralization at the Testard main showing is hosted within quartz-carbonate-tourmaline veins within a shear-zone at the contact between the tonalite and a mafic-ultramafic dyke oriented northeast to southwest and located 400 m to the east from the main tonalite-ultramafic contact.

7.6.4 Freegold-Bullseye

The Freegold-Bullseye Target is situated approximately 18 km south-southwest of the Troilus Project site.

The Freegold Zone is characterized by a complex network of D1 and D2 deformation zones and by numerous precious and base metal showings highlighting the high economic potential of the zone.

The Freegold Zone is a high-grade gold zone controlled by an east to west D2 shear zone which crosscut magnesian basalts of the Crochet member of the Châtillon Formation (Simard, 1981; Gosselin, 1996) to the west and a microgabbro to the east. Proximal to the mineralization the host rock is strongly silicified and sericitized while the distal alteration is chloritic. The altered zones are also characterized by pyrite, chalcopyrite, and small crystals of tourmaline. Field observation in stripped outcrops show that the east-west shear is in fact a sequence of anastomosed and ‘en-relais’ east to west shear zones. The mineralization is contained in quartz veins and massive sulphide veins which contain quartz-pyrite-pyrrhotite-chalcopyrite ± visible gold, they often display a brecciated texture with clasts of quartz. The mineralized zones are usually centimeter to decimeter wide but can locally reach a meter. Boudinaged quartz veins parallel to the main shear and mineralized veins are also observed, but they seem to be more continuous and more present to the east within the microgabbro. Best values from the channel samples at Freegold Zone include 19.3, 16.45, 10.85, 9,72, 7.8, 5.73, 5.42 and 4.5 g/t Au with 42 samples over 0.1 g/t Au. The samples are gold rich compared to silver with trace amounts of copper, bismuth, and cobalt.

7.6.5 Pallador

The Pallador Target is situated approximately 37 km southwest of the Troilus Project site.

The geology of the Pallador area consists mostly of a sequence of mafic, intermediate, and felsic volcanic rocks with small horizons of sedimentary rocks intercalated with mafic and ultramafic sills. The area is also characterized by polyphase intrusive bodies such as the Regnault intrusive complex which hosts gold mineralization, and by felsic intrusions of granodioritic to tonalitic composition. This zone is characterized by major east to west and northwest to southeast shear zones and by a complex structural pattern which highlight the presence of multi-kilometric folds. Field observations and data obtained so far indicate that the area has the potential to host different styles of mineralization including gold-silver, copper-zinc, polymetallic (W-Bi-Mo-Cu-Zn with trace Au and Ag) and rare metals (Li-Ta-Sn-Be-Cs-Rb) hosted in lithium-caesium-tantalum (LCT) pegmatites sampled from boulders.

8 DEPOSIT TYPES

The Troilus deposit is better known as an example of an Archean porphyry-type deposit as interpreted in the pioneering work of Fraser (1993). It is frequently cited as such, for example, Robert and Poulsen, 1997; Poulsen, 2000; Sinclair, 2007; Mercier-Langevin et al., 2012; Katz, 2016.

Other interpretations for its genesis include superimposed structurally controlled "orogenic" gold, proposed by Carles (2000) and Goodman et al., (2005). Table 8-1 presents a summary of the main geological characteristics that supported these two models (Diniz, 2019).

Table 8-1: Summary of Mineral Rights for the Troilus Gold Property

Model	Timing	Host Rocks	Sulphides and Metal Associations	Texture/Style	Alteration	References
Au-Cu Porphyry-type	Single stage pre-deformation, pre-metamorphism	In situ hydrothermal breccia, amphibolite, and felsic dykes	Au-Cu zoning; Cu-rich footwall (ccp+po) Intermediate Main ore zone: Au-Cu (py+ccp); Au-rich hanging wall (py)	Disseminated and stringers along the foliation	Main stage potassic alteration (biotite), zoning outwards to a propylic alteration; and phyllic analogous sericitic alteration	Fraser (1993), Larouche (2005)
Multi-stage syn-deformational	Early, pre-peak metamorphism and late, post-peak metamorphism	Early stage restricted to magmatic breccia and amphibolite, Late-stage veins in the breccia, amphibolite, and felsic dykes	Early-stage Au-Cu (py+ccp+po) Late Au-only mineralization (py mainly, sph-gn locally)	Early disseminated and stringer zones Late Qtz-Chl-Tur veins	Main biotic alteration (early stage) Late stage sericitic alteration and silicification halo around quartz veins	Carles (2000), Goodman et al. (2005) Brassard and Hylands (2019)

*modified from Diniz (2019)

Note: py – pyrite; ccp – chalcopyrite; po-pyrrhotite; gn – galena; sph – sphalerite; tur - tourmaline

The genetic model proposed by Fraser (1993) is based on similarities between Troilus and typical Phanerozoic porphyry deposits. The author interpreted that the biotite-rich zone that accompanied the bulk of mineralization at Troilus would be analogous to the typical potassic hydrothermal alteration core of porphyry deposits being that biotite, the main indicator mineral for this alteration, also occurs in the felsic dykes. Sericite would be the second most common potassium-rich mineral, largely dominant in the felsic dykes.

In Z87, this zone would be centered in the footwall dike and would grade outwards into a propylitic zone, defined by a gradual decrease in biotite and amphibole content, and increase in albite, epidote, and calcite. The alteration zoning would be asymmetric, being better developed towards the hanging wall. Associated with the asymmetrical alteration, a metal zoning marks a footwall dominated by biotitic alteration, and chalcopyrite-pyrrhotite assemblage, being copper-rich, whereas towards the hanging wall, gold would prevail over copper, and would be associated with potassium decrease and sodium increase, and pyrite would be the main sulfide. The in-situ hydrothermal breccia marked the transition, intermediate zone. In addition to what was proposed by Fraser (1993), Boily (1998) suggested that the observed sericitic-quartz association would represent an equivalent of typical phyllic alteration of a porphyry mineralizing system.

Larouche (2005) supports the magmatic-hydrothermal genetic model for the Troilus deposit, although presenting a slightly different chronology of alteration and copper and gold mineralization events. The felsic dykes would have intruded the amphibolite and diorite, followed by brecciation of the host rocks by hydraulic fracturing, and potassic alteration and gold-copper mineralization development. The potassic zone and the mineralization would have been subsequently superimposed by the propylitic alteration, forming late epidote-calcite-quartz veinlets. A final hydrothermal event would have released fluids via felsic dykes, originating a sericitic alteration, better developed in the felsic dykes, and mainly associated with gold mineralization.

Carles (2000) later supported by Goodman et al., (2005), suggested that the Troilus deposit is the result of two superimposed unrelated and structurally controlled mineralization events. The earliest event would be responsible for the introduction of disseminated Au-Cu mineralization in association with biotitic alteration and would be restricted to the mafic rocks (amphibolite, the matrix of the breccia and biotite-rich zones in the metadiorite), only occurring in the margins of the felsic dykes. In the Z87 the mineralization related to this stage would be restricted to a corridor bounded by the felsic dykes. Carles (2000) suggested that the “early stage” mineralization would represent an amphibolite-metamorphic-grade example of “orogenic” gold deposits. Carles (2000) also argued that the potassium enrichment would represent a typical characteristic of lode gold deposits in amphibolite facies conditions, according to Groves (1993).

The vein-hosted mineralization would be part of a second mineralizing event, or stage, and it is interpreted as a typical “orogenic” gold type by Carles (2000) and Goodman et al., (2005). It would have been caused by hydrothermal fluids focused into the wall rocks of the felsic dykes, and within deformation zones. Gold would have been either remobilized from previous stage concentrations or introduced from a new source and would have precipitated along with quartz-sulfide veins accompanied by sericitic alteration (Goodman et al., 2005).

8.1 Discussion – Current Genetic Models

The close spatial relationship between gold and copper mineralization and the porphyritic intrusions in the Troilus deposit are also described in a series of other large Archean gold deposits. Some of these deposits, such as the Canadian Malartic and the McIntyre, share, at least in part, similarities with porphyry and/or intrusion-related gold deposits and could be genetically related to the porphyritic intrusive host rocks (De Souza et al., 2017; Mason and Melnik; 1986, Melnik-Proud 1992; Brisbin 1997 in Dubé et al., 2017). At the same time, a strong structural control of the main ore zones is observed, commonly associated with hydrothermal alteration typical of greenstone-hosted gold deposits (Groves, 1998, Poulsen, 2000; Dubé and Gosselin, 2007), which led to the interpretation that, at least in part, gold had been introduced to the system syn-main deformation phases.

Two distinct styles of mineralization are described in the Troilus deposit in terms of metal content, hydrothermal alteration, and host structures. This combination of mineralization style represents evidence of multiple stages of gold mineralization, an early magmatic-hydrothermal event followed by syn-deformational gold input and remobilization. The Troilus deposit is still poorly understood, and most of the current interpretations lack clear evidence to determine whether the age and nature of the distinct styles of mineralization (Diniz, 2019). However, it seems that at least the disseminated style of mineralization observed in Troilus, associated with a strong biotitic alteration, would have formed by magmatic-hydrothermal processes (Diniz, 2019).

9 EXPLORATION

The early exploration and development of the Project is described in Section 6. Since the acquisition of the Troilus Project, Troilus compiled historical exploration and drilling data and carried out several field mapping and prospecting programs on the Troilus Gold Project and the Troilus Frotêt Project areas.

9.1 Exploration Review (Pre-2018)

A review of all the litho-geochemical data by Inmet indicated that a large halo with gold values greater than 200 ppb is present around Z87 and J Zones. Compilation of drillhole data for holes drilled away from the Troilus deposit has shown that there are multiple holes with gold values greater than 200 ppb over 10 m. Systematic drilling of all these zones was undertaken by previous owner companies between 1997 and 2004. Some exploration drilling was completed during this period around the old mine; however, mineralization of the continuity and grade of the main zones was not found.

In 2000, a 500 m long anomalous gold envelope, named the SW Zone, with similar characteristics to Z87 was discovered at the southwest end of the Troilus diorite. Several drillholes were drilled in early 2005 using Ingersoll Rand DML downhole hammer drill rigs (DML) to investigate the potential of having near surface mineralized material that could be mined and trucked to the Troilus mill.

9.2 Troilus (2018 to Present)

Field mapping and prospecting work in 2018 and 2019 provided support for the Troilus team to improve the understanding of the lithological and structural controls on gold mineralization across the Property and confirmed the overall potential for extending the current known limits of the main mineralized zones.

The field exploration programs on the north-eastern half of the Property (formerly Troilus North), were to evaluate the overall mineralization potential along the trend from the known deposits and to the northeast. The field exploration included geological mapping, soil geochemistry sampling and channel sampling.

In 2019 and 2020, field mapping and prospecting work focused on the Beyan gold zone, which corresponds to the SW extension of the Troilus Gold corridor, as well as at Testard in the southern part of the Troilus Frotêt property. This led to the discovery of numerous high grade gold showings and mineralized boulders confirming the potential of the Troilus Gold corridor to host gold mineralization to the southwest and of the potential to find high-grade gold mineralization along other major structures (for instance Testard).

In 2021, after completing the purchase of Urban Gold, prospecting and field mapping focused on the Bullseye-Freegold area and it continued at Beyan, extending the work done in 2020 to the south and southwest to the Cressida target. A soil geochemistry survey was completed at both targets. The other zones worked were in the central and southern part of the belt including the Bullseye-Freegold and

Testard zones. After the completion of the field campaign, two drilling programs were completed during the winter at the Cressida Target and Testard Target.

In 2022, results from the previous programs led to work being initiated at Cressida and Freegold-Bullseye Targets including completing a higher resolution soil geochemistry survey, field mapping, prospecting and a second drilling program at Cressida. The field mapping and prospecting also focused on the Freegold and the newly outlined Pallador areas with some targeted traverses in the south and east of the Troilus Frotêt property. At the Pallador Target, a five-drill hole program was completed. These drill holes tested a soil anomaly that coincides with high-grade boulder samples. At the Testard Target, a single drill hole was completed, also targeting a high-grade gold anomaly. A large scale till sampling survey was completed that focused-on counting of gold grains in the southern part of the Troilus Frotêt property in 2022.

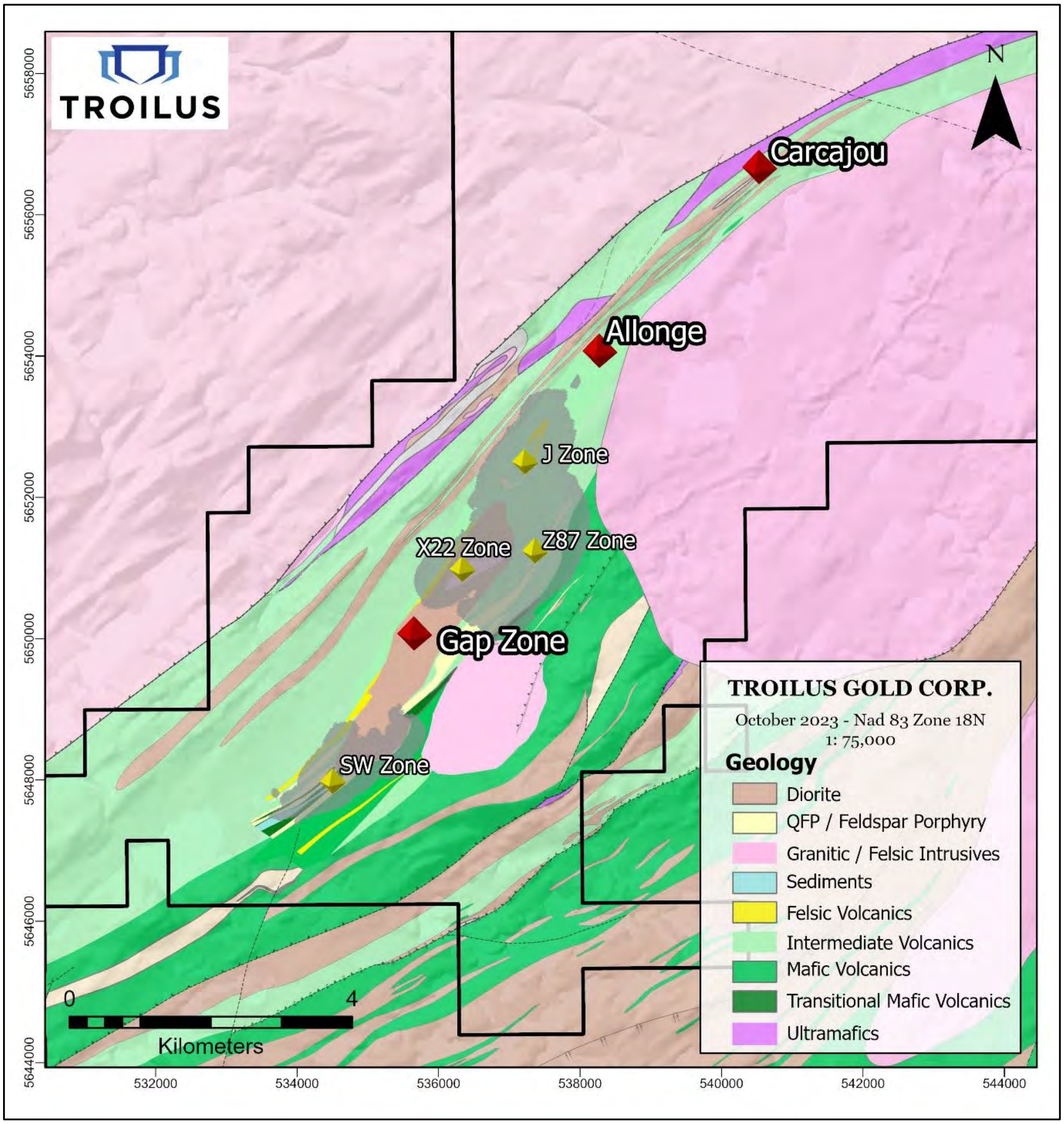
In early 2023, ground IP surveys were completed on two grids and an airborne VTEM survey was flown in the Pallador area. A mapping and sampling program was completed in the Pallador area. An additional two drill holes were completed to test the IP anomalies. Mapping and sampling program also focused to the northeast of the Troilus Gold property around the Parker granite.

9.2.1 Troilus Gold Property

Allongé and Carcajou Targets

The Allongé target is situated adjacent to the northeast of the J Zone, with the Carcajou target a further 5 km northeast along strike (Figure 9-1). Prospecting done by Inmet in the 1980s on the Holmstead showing, located between Allongé and Carcajou, reported two grab samples over 5 g/t Au, situated 1 km east of the north-northeast trending Lac Allongé. The Carcajou showing reported a grab sample of 8 g/t Au.

Figure 9-1: Location Map of Exploration Targets – Troilus Gold Project



Source: Troilus (2023)

Troilus conducted a prospecting and mapping program in the Allongé Zone in late 2018, collecting 172 samples for assay. Highlights included a 110 g/t Au grab sample found 1 km along strike from the J Zone pit and 4.33 g/t Au from channel sampling 1.8 km northeast of the J Zone, among other high-grade samples. The success of this surface exploration led to the planning of an 11-hole; 1,995 m diamond drill program undertaken in March 2019. The holes were planned on three sections each spaced 500 m apart, extending 1.5 km northeast of the J Zone. Wide lenses of low-grade gold mineralization were intercepted, extending the known mineralized corridor to the northeast by 1 km. The most promising results were found in drillholes TLG-ZJ4N19-122 and TLG-ZJ4N19-123, with 0.47 g/t Au over 22 m and 0.33 g/t Au over 66 m, respectively. The holes further to the north were terminated by the Parker pluton, and only reported sporadic low-grade gold assays.

A 12-hole, 2,857 m diamond drill program was conducted in the summer of 2021 by Troilus across four claims with the aim of extending mineralization in the J Zone further to the northeast. Four holes were drilled in Allongé totalling 1,452 m and eight holes were drilled in Carcajou totalling 1,405 m. All four holes in Allongé intercepted several lenses of gold mineralization between 0.3 - 0.5 g/t over 1 – 16 m. Notably, hole ALG-21-003 returned one result of 8.6 g/t over 1 m in a pyritic shear zone. The drilling at Carcajou intercepted the same intermediate volcanic package present in the J Zone but hit significantly more barren granite of the Parker pluton than expected. As a result, only one hole, CAR-21-006, returned any gold assays above 0.3 g/t.

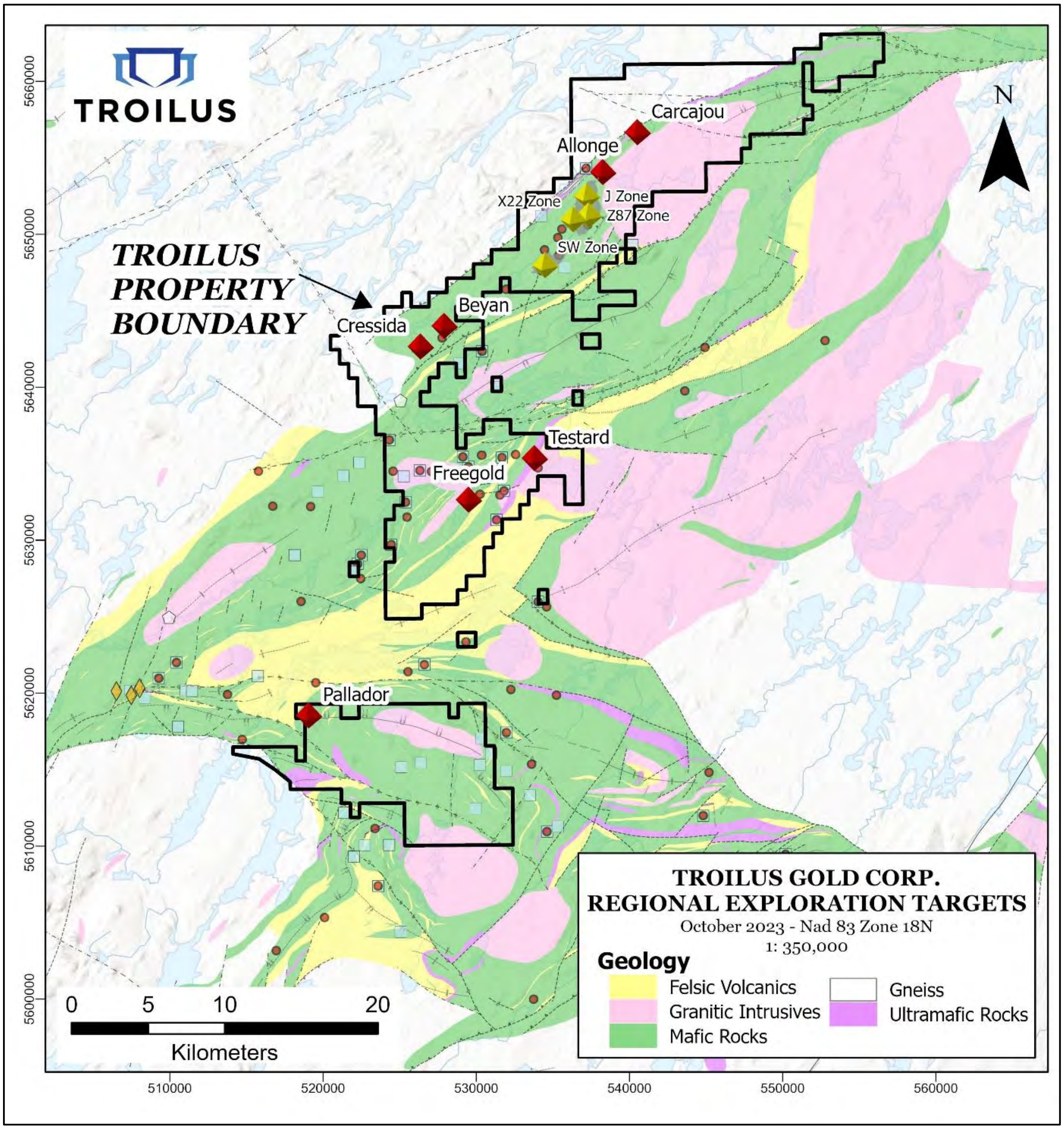
9.2.2 Troilus Frotêt Property

Following a major compilation of historical data and based on field observation, Troilus re-evaluated the potential of the entire Frotêt-Troilus segment of the Frotêt-Evans greenstone belt by acquiring a major land position called Troilus-Frotêt Property (Figure 9-2).

Several types of mineralization are present on the Property including:

- Volcanogenic Massive Sulphide (VMS).
- Orogenic gold and shear-hosted polymetallic (Au-Cu-Ag-Zn-Mo) quartz veins.
- Lithium and rare metals (Ta, Sn, Rb, Cs, Be, Mo) bearing pegmatites.
- Multi-element (Mo-Bi-W-Ag-Cu-Zn) quartz viens.

Figure 9-2: Location Map of Exploration Targets – Troilus Frotêt Project



Source: Troilus (2023)

In June 2020, Troilus completed a preliminary field exploration program applying a new regional structural and geological model to the recently expanded Troilus-Frotêt property. This property is situated to the south of the main mineralized zones of the Troilus deposit.

During the summers of 2020 and 2021, Troilus completed two airborne high-resolution magnetic geophysical surveys that covered a total of 23,000 line-km and 4,768-line km respectively over the entire Troilus Frotêt area (Figure 9-3).

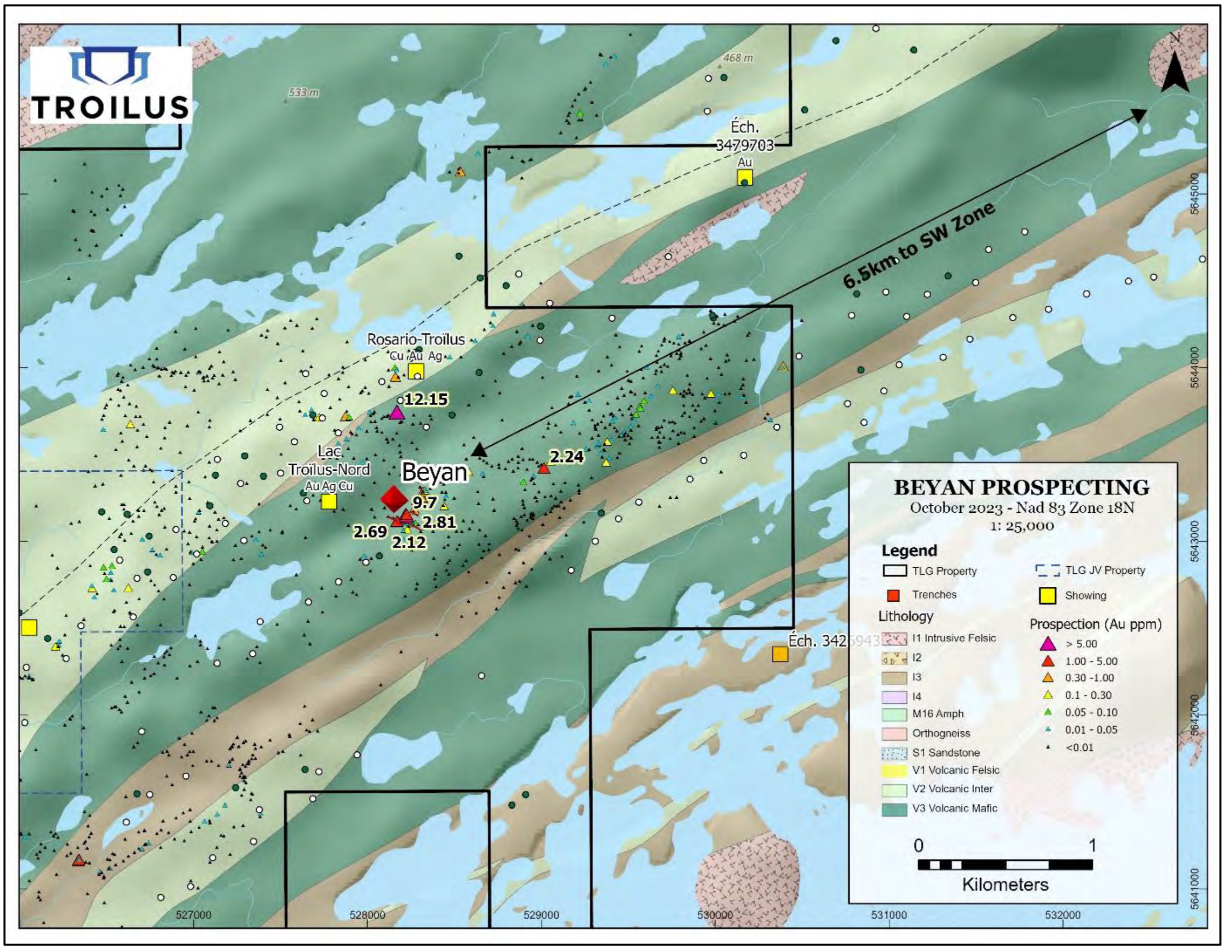
The airborne surveys were carried out by Prospectair Geosurveys Inc., based in Gatineau, Quebec. Troilus also completed several B-horizons soil geochemistry surveys on the Troilus-Frotêt property for a total of 9,780 samples. The soil surveys were carried out by SL Exploration. During the field seasons 2021 and 2022, the Troilus exploration team proceeded with surface mapping and prospecting of targeted areas of its 1,420 km^2 property, leading to the discovery of numerous gold-silver and base metals mineralization zones.

Beyan Target

Initial bedrock mapping and boulder tracing along the Route de la Mine North Block claims, situated approximately 8 km southwest and along strike of the SW Zone led to the discovery of the Beyan Gold Zone near the Rosario-Troilus (best values of 3.5% Cu, 1% Zn, 12.5 g/t Au, and 161.7 g/t Ag in channel samples) and Lac Troilus-Nord showings (11.4 g/t Au and 0.94% Cu over 0.5 m) (Figure 9-3). To date, 25 outcrop grab samples have returned anomalous gold values greater than 0.1 g/t Au with the best results returning 9.7 g/t Au and 32.5 g/t Ag. A total of 14 grab samples from the Beyan Gold Zone have been collected from outcrop and can be traced on strike over 225 m. This gold zone is part of a larger gold-bearing boulder field, identified by Troilus, characterized by several boulders containing gold and silver values up to 2 g/t Au and 4.9 g/t Ag. These boulders were found over a distance of 2.5 km.

On the Beyan Zone, the Troilus geological team opened four trenches, totalling 400 m, perpendicular to the regional stratigraphy to gather more information on the geology and structure of the zone. Field observation and mapping showed that the Beyan Zone is characterized from SE to NW: an amphibolitized bimodal volcanic sequence, a mafic intrusive complex, an intermediate volcaniclastic sequence, similar to that observed in the J Zone, and finally a mafic volcanic sequence.

Figure 9-3: Troilus Frotêt Project – Beyan Target



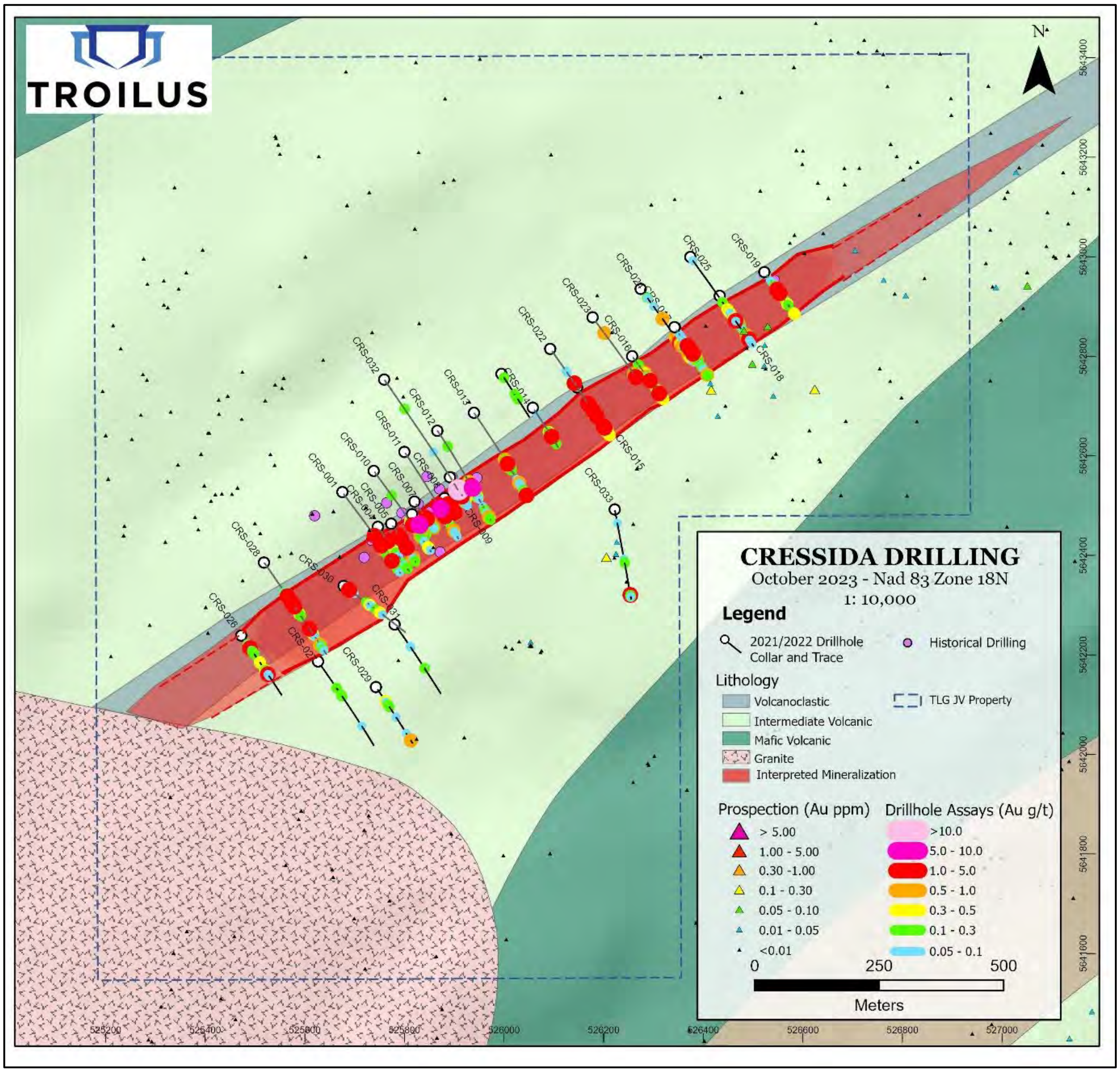
Source: Troilus (2023)

Cressida Target

The Cressida claim block is situated approximately 14 km southwest of the Troilus deposit and 2.5 km southwest of the Beyan Gold Zone (Figure 9-4). The claim block consists of five mineral claims held under a 50:50 joint venture agreement with Argonaut Gold Ltd. (Argonaut Gold), with Troilus being the operator.

Geological mapping, trenching, and geophysical surveys were conducted by Muscocho Exploration Ltd. in the late 1980s and followed up by two diamond drill programs totalling 2,416 m over 31 drillholes. The programs targeted two parallel highly conductive magnetic anomalies identified by VLF-EM surveys. They returned high grade gold values including 0.22 ounces per ton (oz/t) (7.5 g/t) over 1.8 m and 1.65 oz/t (56.6 g/t) over 0.47 m, inside a wider envelope of lower grade mineralization up to 0.99 g/t Au over 44.57 m. However, no follow up work was done to extend the 300 m strike length of the target.

Figure 9-4: Troilus Frotêt Project – Cressida Target

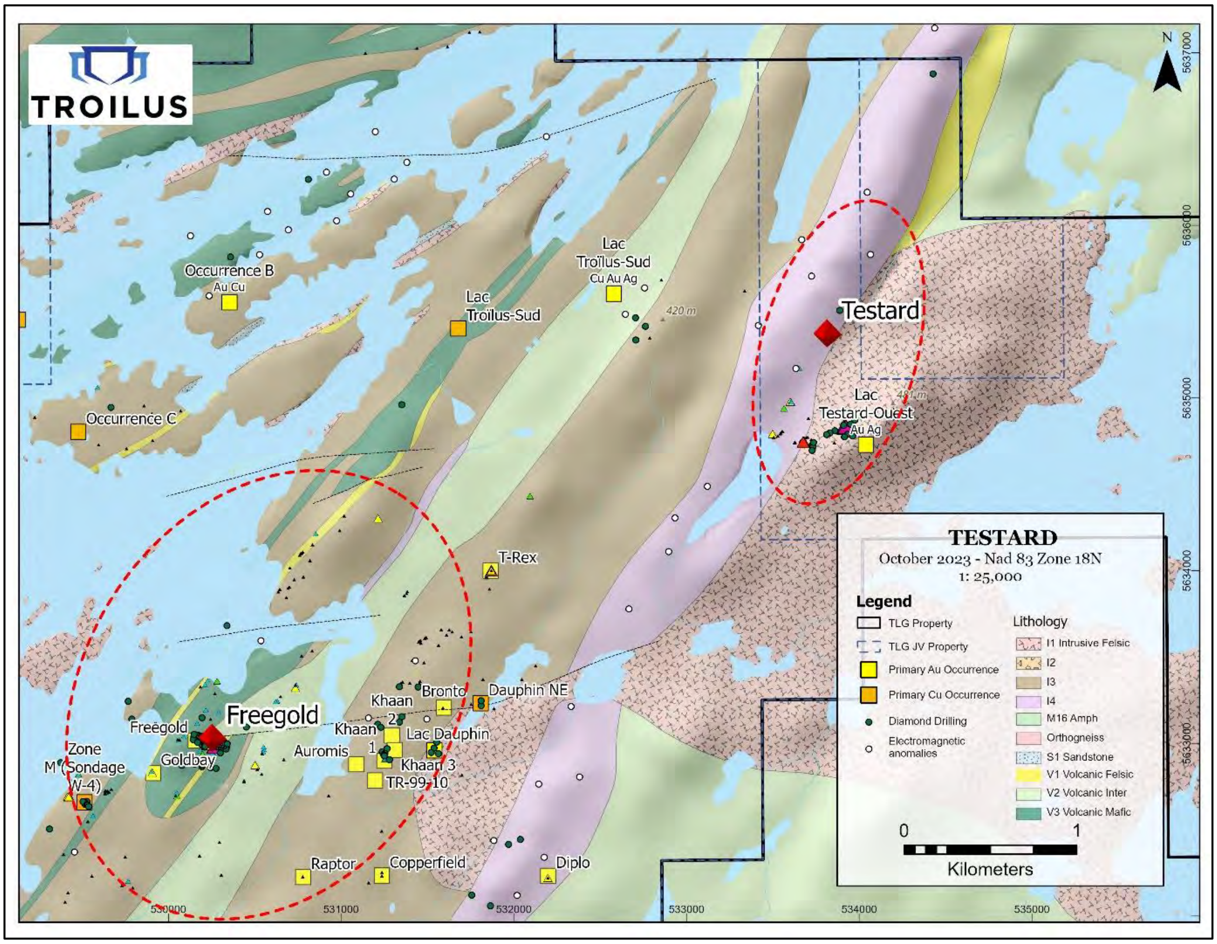


Source: Troilus (2023)

Testard Target

The Lac Testard-Ouest (Testard) showing (Figure 9-5), was discovered in 1989 by prospecting by Flanagan McAdam & Company (GM47325). The discovery was followed by a 16-hole, 1,328 m drill program conducted by Muscocho Explorations Limited, which confirmed the presence of mineralized quartz veins at depth and along strike from the surface showing (GM47326).

Figure 9-5: Troilus Frotêt Project – Testard Target and Freegold Target



Source: Troilus (2023)

In early 2020, Troilus acquired the Testard claim area and completed a surface mapping, prospecting, and outcrop stripping program over the course of that summer.

Outcrop sampling returned significantly high gold grades within the Frotêt-Evans Greenstone Belt with values returning up to 203 g/t Au, 2,440 g/t Ag and 4.37% Cu. Structural field mapping and interpretation of the airborne magnetic and IP data led to a new geological and structural model for the area on which the Testard drill program was built. The drill program aimed to test different structures in the area that had the potential to carry gold mineralization, while also testing extensions of the high-grade mineralization below surface at the main showing.

Freegold-Bullseye Target

The claims from the Freegold-Bullseye zone were acquired during the acquisition of Urban Gold in 2021, the claims of this zone are held under a 50:50 joint venture agreement with Argonaut Gold, with Troilus being the operator (see Figure 9-6). The geology consists of NE-SW-trending volcano-sedimentary sequences, intercalated with mafic and ultramafic sills and intruded by the tonalitic

Testard and Lac Troïlus-Sud stocks. The geologic setting is primarily prospective for gold, silver, and base metals over several different deposit styles including orogenic gold (Au, Ag, Cu) and volcanogenic massive sulphide (Cu, Zn, Au, Ag).

Historically the area was worked for gold and base metals mineralization, more specifically the eastern shore of the Troilus Lake. The Lac Dauphin showing (Au-Ag-Cu-Zn-Mo) was discovered by Dauphin Iron Mines Ltd. in 1958. The Troilus Freegold showing was discovered in 1966 - 1967 by Troilus Mines Ltd. This zone, which contains visible gold, represents one of the most worked showings of this part of the belt. It was drilled during multiple campaigns, and resources were estimated by SOQUEM in 1999 at 15,880 t grading 16.45 g/t Au (SOQUEM Inc. used the GM 56807 and 57907 for the estimate which is not 43-101 compliant, source SIGEOM website). Located nearby, the M-Zone represents a vein hosted copper-rich type of mineralization. In 1999, SOQUEM completed a major stripping campaign in the area, especially east and north of Troilus Freegold zone. As suggested by Bellavance (1999) following the exploration work performed by SOQUEM Inc. in 1998 and 1999, gold would preferentially occur in an east-west-trending and ~1.5 km wide deformation corridor. This corridor has been historically highlighted by multiple exploration and drilling programs that were accomplished since the 1950s, and the discovery of several gold and copper occurrences such as Freegold Zone, M Zone, the Lac Dauphin showing, among others.

In 2019, prospecting work led by Laurentia Exploration on behalf of Urban Gold led to the discovery of new Au-Cu-Ag (Zn) showings confirming the potential of the Freegold-Bullseye Zone.

In 2021, a prospecting, stripping, and channelling campaign was carried out by Troilus with Dahrouge Geological Consulting Ltd. from mid-September to mid November 2021, which included a structural interpretation of the area. This led to the development of a new model for gold mineralization and the discovery of new prospective zones.

The Freegold area is characterized by a complex network of D1 and D2 deformation zones and by numerous precious and base metal showings highlighting the high economic potential of the zone.

The M Zone showing (E-529400 m, N-5632655 m) was drilled in 1996 and 1997 by Muscocho Exploration Ltd. with interesting intercepts such as 3.00% Cu and 37.5 g/t Ag over 5.1 m (DDH W-2); 2.00% Cu and 31.21 g/t Ag over 3.0 m (DDH W-4); and 2.52% Cu and 26.5 g/t Ag over 3.7 m (DDH W-6) (GM20679; GM57907). In 2019, Urban Gold returned and drilled along IP anomalies without finding these intercepts. Urban Gold noted that the locations of the historical drillholes were not found. The drillholes completed by Urban Gold near the historical M Zone (DDH UTB-19-10, -13, and -14) have shown a wide variety of rock types such as gabbro, basalt, and felsic to intermediate volcaniclastics. Old blast holes near the drilled zone were found during this program. These holes exposed a silicified shear zone at the contact between a gabbro and a basalt oriented at N300 with a steep dip. The shear and mineralized vein appear to be emplaced preferentially along the contact between the two lithologies, the vein is mineralized with chalcopyrite and pyrite with malachite and azurite alterations.

The Lac Dauphin showing (or TRM-99-02; E-531531 m, N-5632929 m) was discovered in 1958 by Dauphin Iron Mines LTD and corresponds to a NE-SW shear zone at the contact between tonalite of the Testard stock and a strongly sheared and altered mafic rock. Best values were returned by channel sampling and consists of up to 3.2 g/t Au, 64.8 g/t Ag, and 0.51% Cu over 3 m (GM 57907), 6 g/t Au, 257 g/t Ag, 6.64 % Cu and 1.895 % Zn over 50 cm (sample C553928) and 6.55 g/t Au, 100 g/t Ag over

50 cm including 0.48 % Cu and 0.7 % Zn (sample C553881). The shear-zone follows the contact with the tonalite which changes direction and at this inflexion point a secondary shear develops within the tonalite, and a decametric mineralized quartz vein with tension veins follows this second-order shear. Whereas the less competent mafic rock has been mylonitized and completely metasomatized and has been transformed into a chlorite-carbonate-fuchsite schist at the contact with the tonalite. Mineralization in the veins consists of disseminated to massive chalcopyrite, pyrite, and sporadic molybdenite, sphalerite, bornite, malachite and native silver.

Pallador Target

The Pallador zone is located just south from the Regnault deposit (Kenorland-Sumitomo JV ground) and 35 km south from the Troilus mine. The area was worked in 2002 by SOQUEM which carried out an exploration program for Pt-Pd mineralization in mafic-ultramafic sills (GM 59962) which included mapping, trenching, sampling together with IP and magnetic surveys. This led to the recognition of a PGE-enriched zone of 40 m wide by 550 m long with values above 100 ppb Pd-Pt

In 2018, Urban Gold conducted a 4-hole drilling program to test some EM inputs and they intercepted intervals with low-grade Cu and Zn mineralization typical of a VMS system (GM71292).

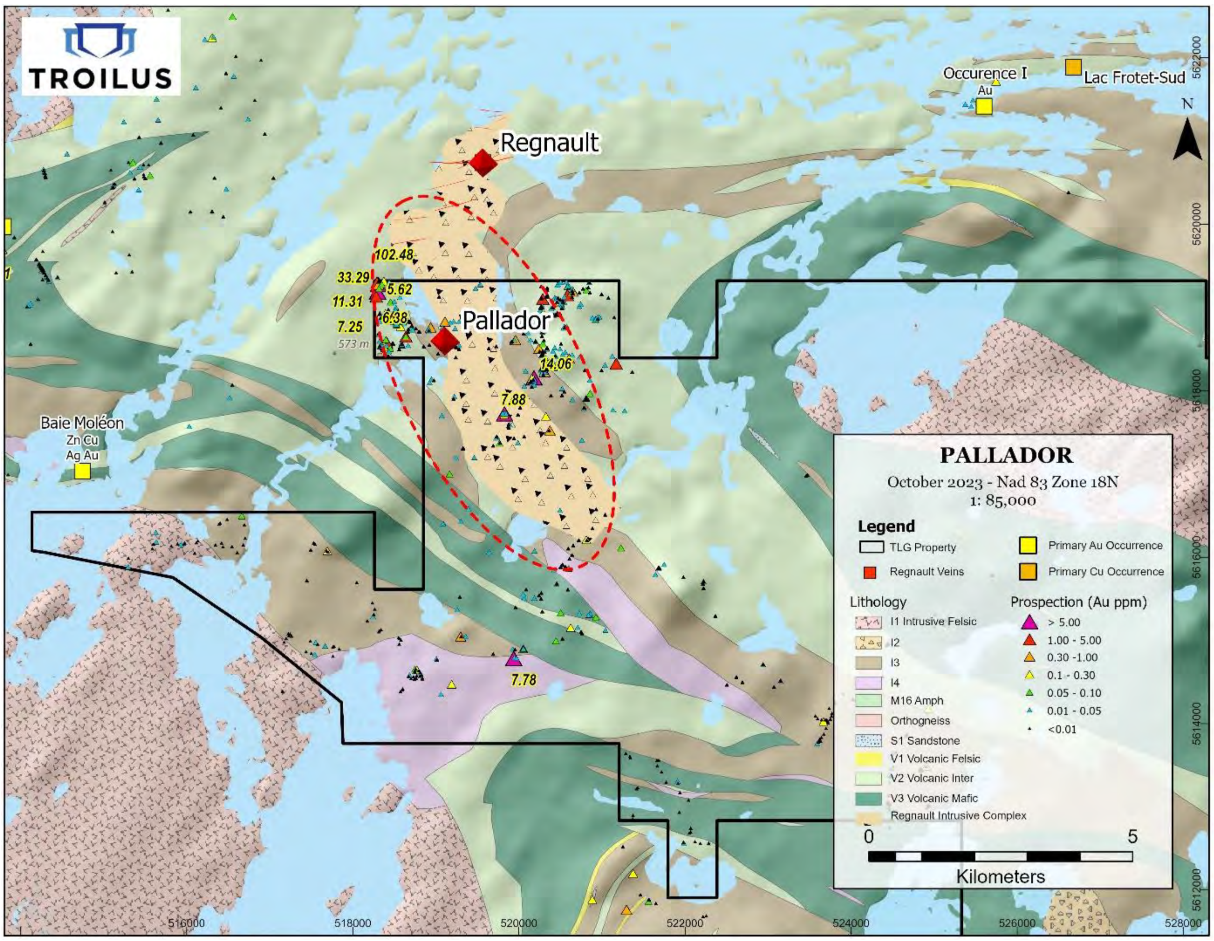
In 2020, after the discovery of the Regnault gold prospect by Kenorland (discovery hole 20RDD007 with 29.08 m @ 8.47 g/t Au and 12.23 g/t Ag, including 11.12 m @ 18.43 g/t Au and 25.93 g/t Ag), Prospectair Geosurveys Inc. conducted a high-resolution airborne magnetic survey of the area for Urban Gold. This survey was followed by a prospecting and soil sampling campaign led by Laurentia Exploration leading to the discovery of numerous gold-bearing boulders and outcrops (Figure 9-6). Using rock and soil assays, Urban Gold decided to do an IP survey in the northwest part of the property and during the winter 2020 – 2021 drilled 10 holes for a total of 2,454.5 m. The drillholes located in the east intercepted gold mineralization near surface and at depth with the highest result being 4.75 g/t Au over 2.05 m including 19.24 g/t Au over 0.5 m with native gold grains in drill hole UPR-21-09 from 240.95 m.

Between 2020 and 2022, soils surveys were conducted totalling 2,637 samples as the grids were established around anomalies in subsequent years. The most prominent anomalies of gold in soil originate from an area referred to as Rocket. Soil anomalies coincide with boulders of gabbro containing up to 5% pyrite and returning results up to 32.2 g/t Au and 25.4 g/t Au. As a result, a 5-hole drill program was conducted in 2022 to test the geology below the pervasive cover and target interpreted magnetic features proximal to the up-ice origin of the mineralized boulder fields. The highest results returned 2.45 g/t Au over 1 m and 4.43 g/t Au over 1 m from the same drill hole (RCK-22-004). Mineralization was associated with sheared and silicified gabbro containing intermittent quartz veining and up to 5% pyrite locally.

In 2022, a potentially new volcanic massive sulphide (VMS) trend was also discovered in the Pallador sector. The Copper Bay showing (0.44% Cu, 0.33% Zn, 2.6 g/t Ag) and Branphil showing (3.94% Cu, 8.4 g/t Ag, 35 ppb Au) are situated roughly 750 m apart on a 1,200 m conductor that was followed up using beep-mat and VLF. The conductor was locally excavated by hand for sample collection and the Branphil showing was stripped by portable excavator and washed to expose approximately 600 m^2 of bedrock. Channel samples were collected across the mineralized horizon.

In 2023, an airborne VTEM survey totalling 248-line kilometres (line km) was flown over the Copper Bay-Branphil trend and is inclusive of other showings in the area (Rhyolite and Monique). These surveys were used to generate drill targets in their respective areas. In September 2023, a two drill holes were completed, totalling 635 m, to test chargeability anomalies at Rocket. Drilling intersected the same highly magnetic gabbro encountered in the 2022 drilling at approximately 1 km along strike to the northwest. The best result from this drilling was 2.93 g/t Au over 1 m from a locally sheared gabbro with disseminated and vein-hosted pyrite. In the winter of 2023, ground IP surveys were completed on two grids in the Pallador area totalling 30.025- and 16.15-line km over Rocket and Copper Bay-Branphil, respectively.

Figure 9-6: Troilus Frotêt Project – Pallador Target

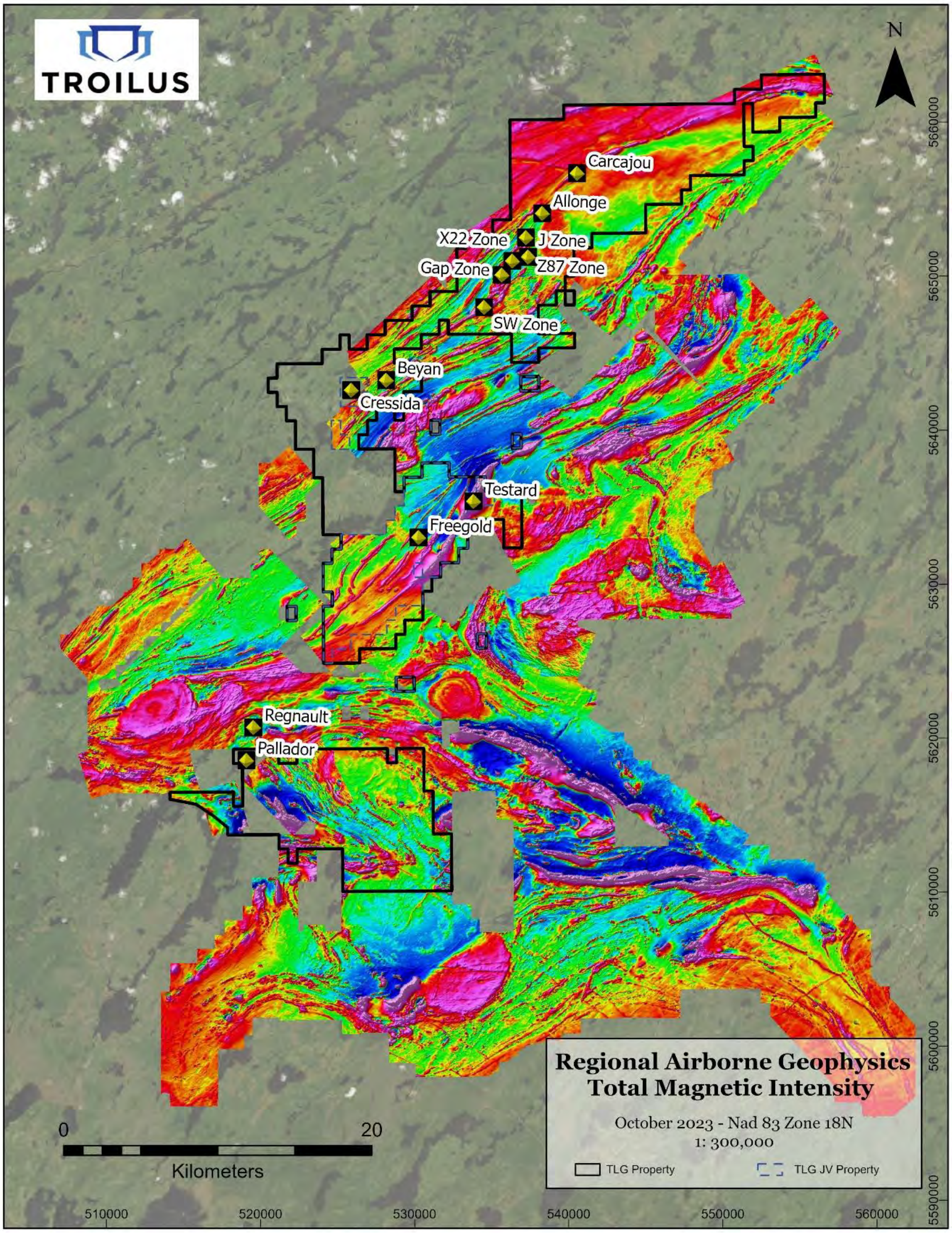


Source: Troilus (2023)

9.3 Geophysical Surveys

During the summers of 2020 and 2021, Troilus completed two airborne high-resolution magnetic geophysical surveys that covered a total of 23,000 line-km and 4,768-line km respectively over the entire Troilus Frotêt area (Figure 9-7).

Figure 9-7: Regional Airborne Geophysical Survey – Total Magnetic Intensity



Source: Troilus (2023)

In the Fall and Winter of 2020-2021, several ground geophysical surveys were conducted along the Troilus trend. These surveys were IP and Polar L Dipole P and were completed at Carcajou, Southwest (which included parts of the Gap Zone) and Beyan-Cressida. These same geophysical surveys were also completed at Testard.

Table 9-1 provides the technical specifications of the ground geophysical surveys in 2020 to 2021.

Table 9-1: Summary of Technical Specifications for Geophysical Surveys, 2020 – 2021

Target	Fieldwork	Survey Length	Period
Carcajou	Line cutting IP, PLDP (a=25m, n=1 to 20)	105.075-line km 34.025-line km	Nov 1-21, 2020
Southwest	Line cutting IP, PLDP (a=25m, n=1 to 20) IP, PLDP (a=55m, n=1 to 10)	105.075-line km 34.025-line km 35.05-line km	Oct 16-30, 2020
Beyan	Line cutting IP, PLDP (a=25m, n=1 to 20) IP, PLDP (a=50m, n=1 to 10)	105.075-line km 34.025-line km 35.05-line km	Phase I: 22 Sep – 15 Oct, 2020 Phase II: Feb 16-28, 2021
Testard	Line cutting IP, PLDP (a=25m, n=1 to 10)	22.45-line km 20.045-line km	Oct 16-30, 2020

In 2023, an airborne VTEM survey totalling 248-line kilometres was flown over the Copper Bay-Branphil trend and is inclusive of other showings in the area, for example, Rhyolite and Monique. Ground IP surveys were also completed on two grids in the Pallador sector totalling 30.025- and 16.15-line km over Rocket and Copper Bay-Branphil showings, respectively.

9.4 Petrology, Mineralogy, and Research Studies

In 2019, Troilus engaged Dr. Neil Banerjee of Western University in a research agreement. Since the onset of the agreement, Dr. Banerjee has had multiple geology students work on the Troilus deposit. Under Dr. Banerjee, Tavis Enno has completed an undergraduate thesis on the Troilus deposit titled, "Alteration and Mineralization of the Southwest Zone at the Troilus Gold-Copper Project, Quebec: Implications for a Revised Genetic Model" and is currently working on a master's thesis. Mac Valliant completed a research project titled, "Petrographic and Geochemical Analysis of the Troilus Gold-Copper Deposit, Quebec" and Adrienne Iannicca completed a research project titled, "Fluid Inclusion Study and Gas Analysis of Quartz-Carbonate Veins from the Troilus Gold-Copper Deposit".

In 2020, Troilus engaged Ultra Petrography and Geoscience Inc. to complete a petrographic report on 13 samples taken across the Troilus deposit.

9.5 Exploration Potential

Within the Freegold-Bullseye block there are several gold-in-soil anomalies that exist ~5.5 km southwest of Testard along the same prospective corridor. Anomalies coincide with D1 and D2 structural trends, as interpreted from airborne magnetics. This area is referred to as Katana and the source of these anomalies has yet to be thoroughly investigated.

10 DRILLING

10.1 Drilling Summary

Since 1986, there have been several drilling programs completed on the Property. There was no drilling on the Property from 2008 to 2017, and Troilus' drill programs were completed from 2018 to 2023. Table 10-1 summarizes the diamond drilling programs completed on the Property to date.

Troilus completed 91 drillholes totalling 37,510 m in 2018; 87 drillholes totalling 38,172 m from 2019; 43 drillholes totalling 21,185 m in 2020; 193 drillholes totalling 84,112 m in 2021; and 161 drillholes totalling 78,775 m in 2022; and 115 drill holes totalling 38,780 m in 2023. Most of the 2018 and 2019 drillholes targeted the Z87 Zone and the J Zone at depth and along strike. 2020 and 2021 were mainly focused on developing the Southwest Zone (SW Zone). Drilling in 2022 was focused on SW Zone and additional drilling at Z87. Drilling in 2023 was primarily focused on the southwest extension of the Z87 Zone, that is, development of the X22 Zone; and in the Connector area between the J Zone and the Z87 Zone.

Table 10-1: Summary of Drilling

Year	Contractor	Core Size	No. Holes	No. Metres
1986-1989	Morissette Diamond Drilling	BQ (36.5 mm)	698	134,068
1990	Morissette Diamond Drilling	NQ (47.6 mm)		
	Benoit Diamond Drilling			
	Chibougamau Diamond Drilling			
1991-1993	Benoit Diamond Drilling	NQ		
	Chibougamau Diamond Drilling			
1995	Benoit Diamond Drilling	NQ ("KN" holes)		
	Morissette Diamond Drilling	BQ ("TN" holes)		
1997	Chibougamau Diamond Drilling	NQ ("KN" holes); BQ ("TN" holes)		
1999	Forages Mercier	NQ		
2000	Chibougamau Diamond Drilling	NQ (Z87 and J4 Zones); BQ (elsewhere)		
2002	Chibougamau Diamond Drilling	NQ		
2003-2005	Forages Mercier	NQ		
2007	Forages Mercier	NQ		
2018	Chibougamau Diamond Drilling	NQ	90	37,342
2019	Chibougamau Diamond Drilling	NQ	87	37,899
2020	Chibougamau Diamond Drilling	NQ	17	6,038
2021	Chibougamau Diamond Drilling	NQ; HQ (TLG-ZSW21-212-GT); BTW (GZ)	193	84,112
2022	Chibougamau Diamond Drilling	NQ; BTW (GZ)	161	78,775
2023	Chibougamau Diamond Drilling	NQ	115	38,780

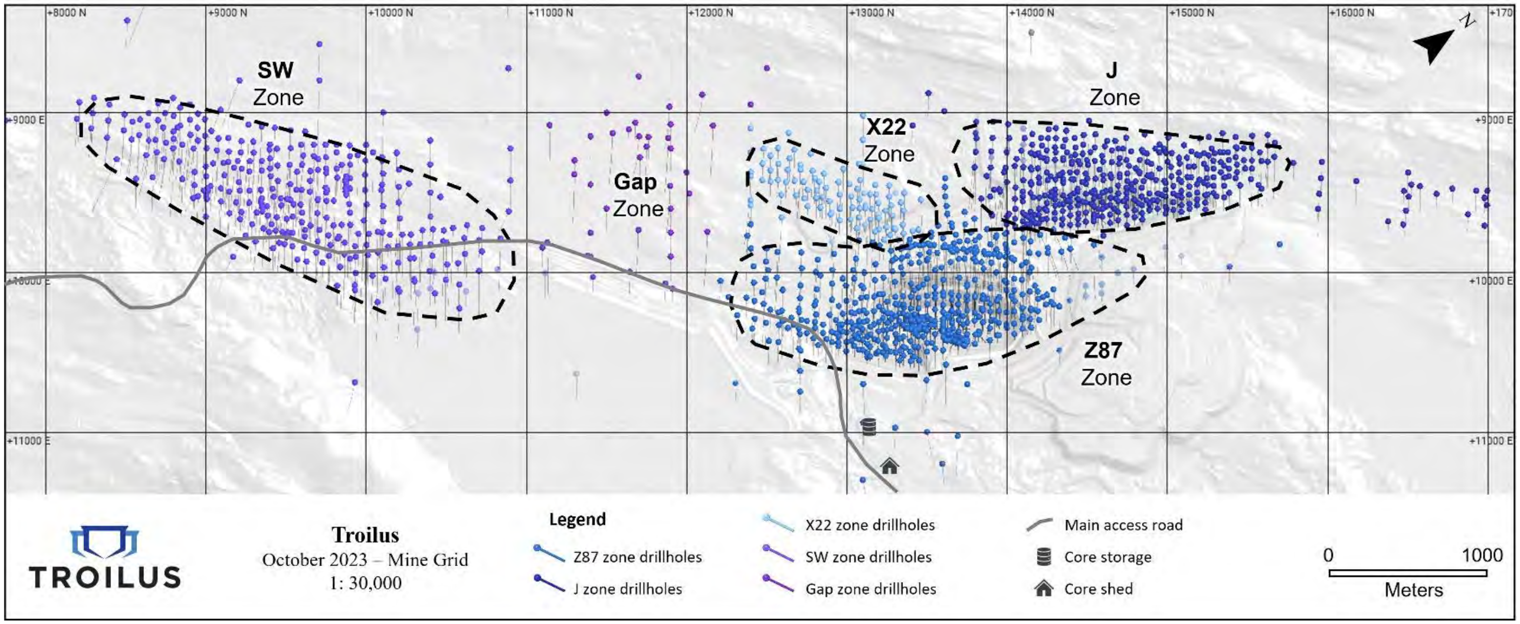
Notes: Inside Diameter – 36.4 mm; NQ – 47.6 mm; HQ – 63.5 mm; BTW – 42 mm

Figure 10-1 illustrates the drilling completed on the four mineralized zones of the Project, that are included in the resource drill hole data base.

Figure 10-2 presents the drill hole locations on the Z87 Zone, J Zone, and X22 Zone.

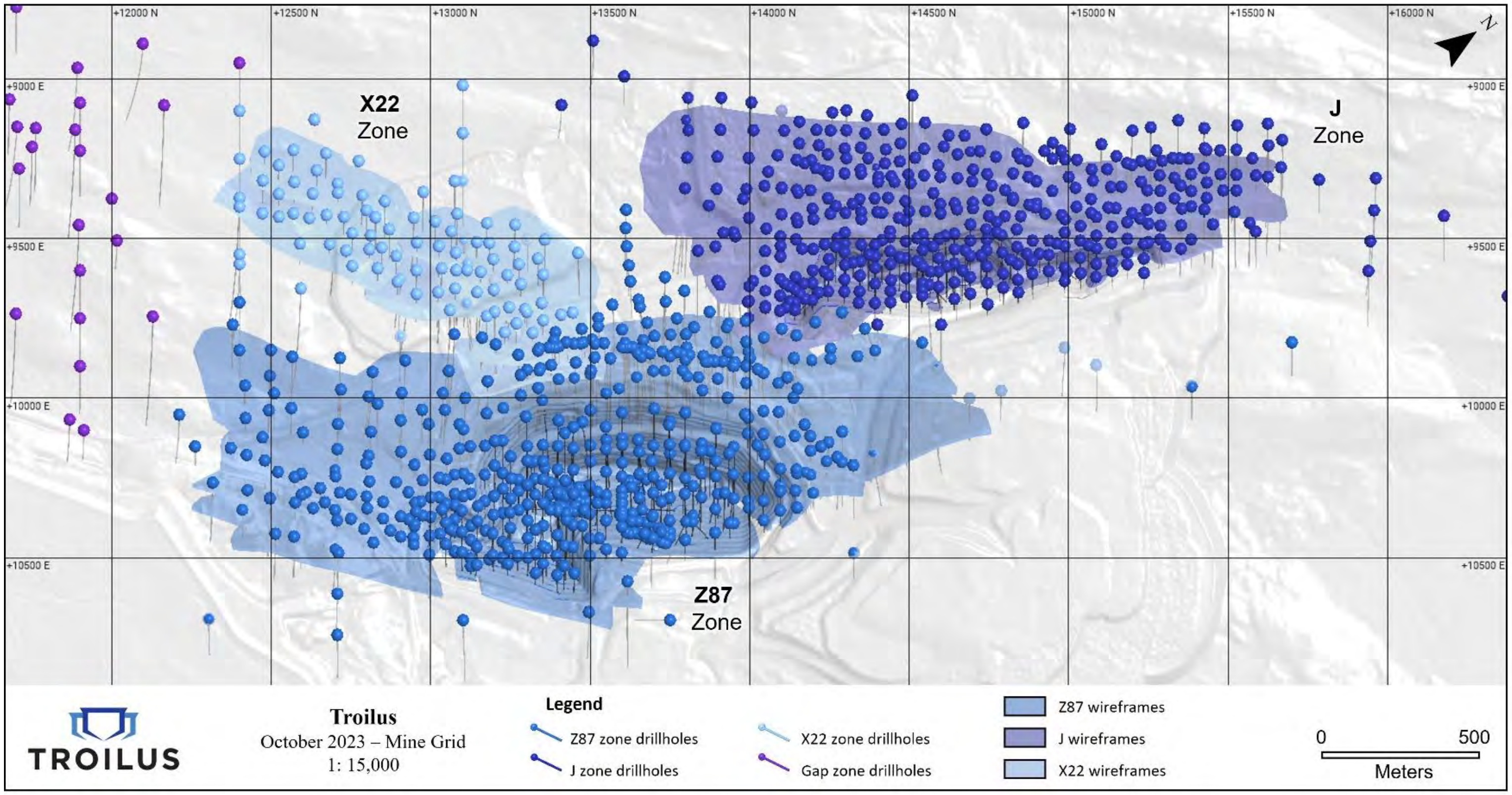
Figure 10-3 presents the drill hole locations on the SW Zone.

Figure 10-1: Drill Hole Map – Troilus Gold Project



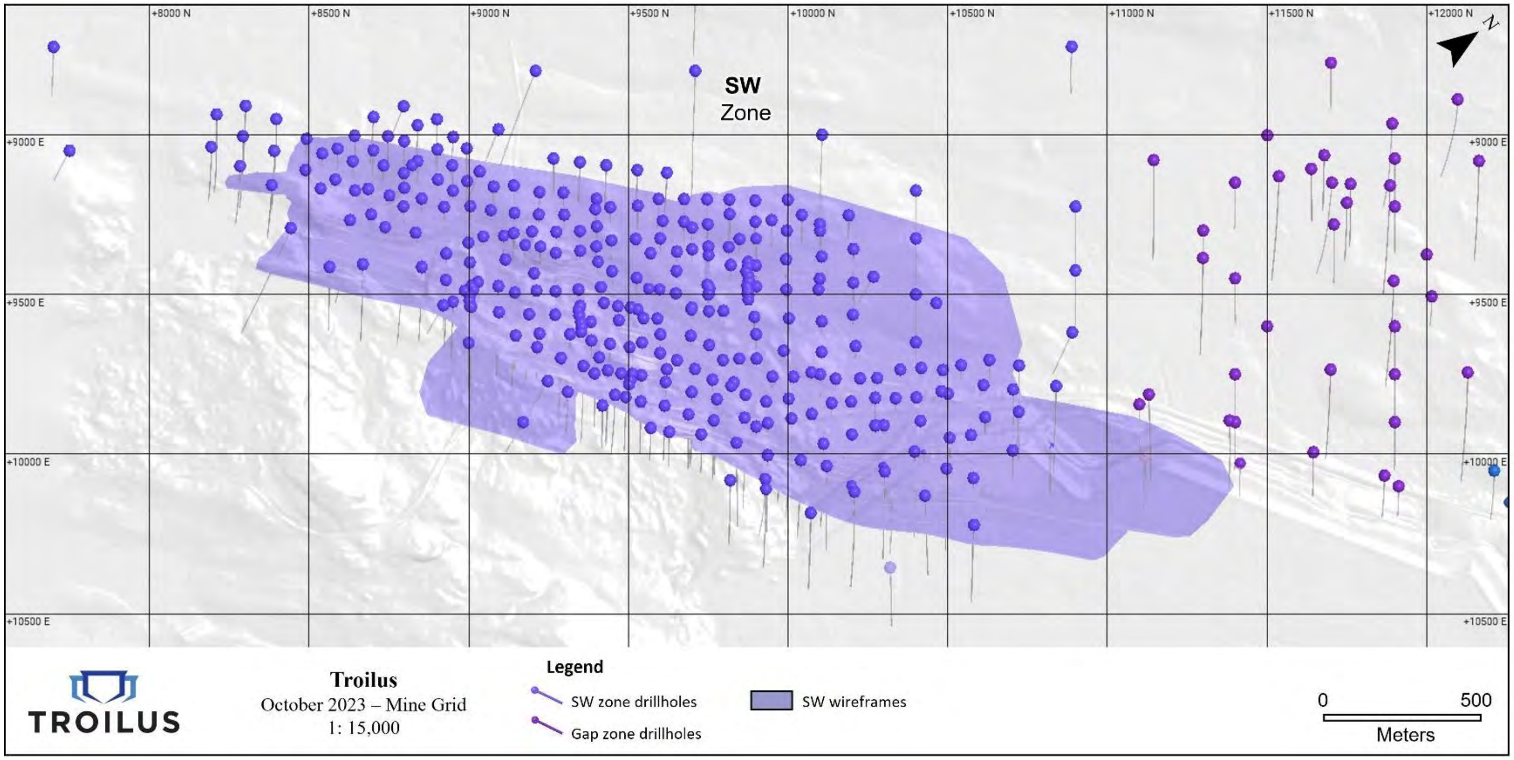
Source: Troilus (2023)

Figure 10-2: Drill Hole Location Map – Z87 Zone, J Zone and X22 Zone



Source: Troilus (2023)

Figure 10-3: Drill Hole Location Map – SW Zone



Source: Troilus (2023)

10.2 Drill Methods and Logging, 2018 - 2023

Troilus completed its own drilling on the Property between 2018 and 2020. Troilus contracted Chibougamau Diamond Drilling Ltd. (Forages Chibougamau Ltée), based in Chibougamau, Quebec. All drill core was NQ size diamond drill core.

Drill rigs were set up with siting stakes and marked with the azimuth and dip. Collar coordinates were initially measured using hand-held GPS units measuring in NAD83 Datum and converted to mine grid. Once a set of drill holes, or program, is completed, drill hole collars were surveyed using a differential GPS by M. Paul Roy, a professional land surveyor based in Chibougamau. Coordinates for the drill collars are delivered in UTM NAD83 and Mine Grid. In 2021, Troilus was using the Arrow 100 series high-accuracy GPS from EOS Positioning Systems, internally. Every hole is surveyed with this GPS upon completion of the hole by Troilus personnel.

10.2.1 Downhole Surveys

From 2018 to December 2021, drillholes were surveyed downhole using either a Reflex or EZ Gyro device. A multi-shot survey was carried out from the end of each hole (Reflex by 3 m increments, EZ GYRO by 30 m increments).

From January 2022, Troilus switched instruments to the Devico DeviGyro Overshot Xpress. A single-shot test is taken daily for each hole, and a continuous test is taken at the end of every hole, at 3 m intervals. If the single-shot test determines that the hole is deviating substantially, more tests would be taken daily to monitor the progression of the hole.

10.2.2 Drill Core Logging

Troilus maintains Standard Operating Procedures for all aspects of core handling, logging, sampling, and storage. AGP has reviewed these procedures and found they meet or exceed industry practice.

Drill holes completed by Troilus are labelled as:

$$TLG-<zone><year>-<number>;\ for\ example\ TLG-Z8718-001$$

All drill core collected was placed in 1.5 m long, three-row wooden core boxes. Metreage is marked by drillers using wood blocks with the metre depth marked in black marker every three metres. Drill core boxes are marked on the left edge and top with the drill hole number and core box number. The drill core is transported to the core logging and sampling facility by the drillers, where it was laid out on steel sawhorses/trestles or tables.

Troilus personnel then align and rough log the drill core where metreage is reviewed and recorded for core recovery and Rock Quality Designation (RQD). In general, core recovery is high (> 95%) with little core loss. Drill core is moved to the core logging tables (Figure 10-4) where Troilus geologists log lithology, veins, mineralization, texture, veins, and faults/fractures directly on computer to the Geotic database. All drill logs are vetted by Troilus managers before being finalized in the Geotic database. Drill core is marked using grease pencils where: red – sample interval, orange lithology contact, yellow – mineralization and white – alteration.

The Troilus geology personnel maintains a diamond drill core reference suite, or witness samples, of the main lithological units and alteration products on the property in order to maintain consistency in lithology nomenclature.

The core was then marked up for sampling in one or two-metre intervals. Earlier 2018 drill holes were broken up into more varied lengths. Sample tags are placed in the core box at the base of the sample interval and stapled to stay in the box.

Prior to sampling, all core is photographed wet and dry as part of the standard logging procedure. A special frame with white cover and lights is used to for the camera to maintain consistency in the photographs (Figure 10-5). A whiteboard is used to label the drill hole number, from and to, and core box number in the photograph.

Figure 10-4: Core Logging Tables

Source: AGP (2020)

Figure 10-5: Core Photo Set-up; fan is used to dry core.

Source: AGP (2020)

10.2.3 Drill Core Sampling

The sampling facility is adjoined to the logging area and is accessed by a garage door inside the building. Troilus has three core saws: two for the NQ drill core and one for PQ drill core.

Once the drill core has been marked up for sampling, it is stationed next to the sampling room, in the same facility, where the drill core is split by core saw. One half core is placed in the sample bag, the other is returned to the core box. The sample bag contains a copy of the sample tag and is marked with the sample number on the bag in permanent black marker.

The sample bag is sealed by zip tie and then placed with other sample bags in a larger white rice bag. The rice bags hold approximately 10 samples. The rice bags are reviewed by Troilus personnel and marked with the sample numbers and client code before the rice bag is sealed by zip tie and orange flagging tape. Rice bags are placed in wood prefabricated crates (on palettes) and is covered with a plywood cover and screwed closed and strapped. Once enough crates are filled (approximately 30 rice bags) the transport company, Groupe Transcol Inc. (Transcol), based in Chibougamau, is called in for pick up and transport directly to ALS Global in Sudbury.

The core saw is cleaned after each sample and the sampling room is cleaned every night. Core boxes of the sampled core are kept on temporary racks outside the sampling room for temporary storage until they are moved to the exterior core storage area. Here, the core boxes are tagged with aluminium tags with the drill hole number, from and to, and core box Number. The aluminium tag is stapled to the end of the core box. Drill core is stored on site in covered metal core racks outside the core logging facility.

10.3 Previous Drill Methods and Logging

In the earlier drilling programs on the Property, before 1990, AQ (27 mm) and BQ (36.5 mm) size core was used and, in the early 1990s, NQ (47.6 mm) drill core was used (Evans, 2019b).

From 1986 to 1996, all casings were left in the ground. From 1997 to 1999, all casings from "KN" holes drilled during that period and located in the Z87 Zone and J4 Zone areas were removed, while casings for other "KN" holes and all "TN" holes were left in place. Between 2000 and 2005, all casings for "KN" holes were removed after completion and those for "TN" holes were partly left in the ground.

From 1986 to 2002, acid dip tests and Tropari instruments were used systematically. In 2003, a Reflex Multishot digital survey started to be used. The collars of all holes drilled in the vicinity of the Troilus deposit were surveyed using the mine grid coordinate system. For exploration holes outside the mine area, cut line grid coordinates were converted to the mine grid system. The elevations for these holes were estimated from topographic maps.

Drill holes prior to 1990 were converted to the metric system and verified by Inmet prior to inserting them into the database.

10.3.1 Drill Core Logging

Drill core logging was done for major and minor lithologies, alteration type, and mineralization. Over the years, the lithological naming conventions evolved, generally from volcanic origins to more intrusive origins.

RQD measurements were systematically taken during the 1991 drilling campaign. In following drill programs, RQD was done only on a few holes selected on each section drilled. In 2005, RQD measurements were again systematically collected.

10.3.2 Drill Core Sampling

Since 1986, a consistent sample protocol was employed at Troilus prior to shipping samples for analysis.

From 1986 to 1997, drill core was split, with half of the core placed in wood boxes that were tagged with Dymo tape and the remaining half sent to the laboratory for assaying (Evans, 2019b). All core samples were marked, tagged, placed in plastic bags, sealed, and temporarily stored in the secure core shack. When sufficient samples were accumulated, they were shipped by truck to the assay laboratory.

Before 1990, sample lengths in the earlier programs were not constant and depended on mineralization and geology, such as dykes, contacts, etc. (Evans, 2019b). In the subsequent programs, it was found that the mineralization was very diffuse throughout the geological units and systematic 1 m sample intervals were taken, regardless of the geology, within known mineralized zones; and up to 2 m sample intervals in surrounding intrusive rocks. Drill core samples were split into two parts with a hydraulic splitter: one half of the core was sent for assay and the other half was put back in the core boxes for future reference, metallurgical work, or additional check assaying. Since the mineralization consisted essentially of disseminated pyrite and given that there was not a good correlation between pyrite abundance and gold grade, the logging geologists found it virtually impossible to visually estimate gold grades.

From 1999 to 2002, most of the Z87 diamond drill core samples were three metres in length and most of the J4 Zone samples were 2.5 m in length. For the 2002 J4 Zone drilling, the mine laboratory adjusted the protocol to a 2.5 m length. In 2004, all sample lengths were reduced to two metre lengths.

In 1999, a new sampling and metallic sieve-based assay protocol was introduced. This protocol included increasing the sample length to three metres and was applied to all samples located within mineralized zones. This was done systematically, without considering geological contacts or dykes. The sample length for samples located outside the mineralized zones was set at two metres. Starting in 1999, whole core was sent for assay and a 10 cm to 20 cm length of core was retained as a witness of the interval.

The drill core for holes drilled up to 1996 was stored outside in core racks at the Opemiska Mine site in the town of Chapais but are now destroyed. The more recent core (post-1997) is stored in racks and pallets at the Project site.

10.4 Geotechnical and Hydrological Drilling

There has been a total of four pit-slope investigative geotechnical drill campaigns since Troilus acquired the project in 2018. The programs were carried out by WSP and included Packer testing and geotechnical logging. During these programs, there were dedicated geotechnical drill holes that were planned by WSP, as well as exploration drill holes planned by Troilus, that were logged geotechnically by WSP personnel, in addition to work done by Troilus geologists.

In 2020, five dedicated geotechnical holes were drilled, totaling 2,160 m, that focussed on the pit walls of the J Zone and the Z87 Zone. In 2021, nine dedicated geotechnical holes were drilled, totaling 2,281 m, focussed on the pit walls of the J, Z87 and SW Zones. In 2023, five dedicated geotechnical drill holes were completed, totaling 1,602 m, that focussed on the pit walls of the J Zone and X22 Zone.

In 2023, two surface geotechnical campaigns took place, which investigated the ground conditions below planned future infrastructure. In total, 56 drill holes were drilled, that totalled 470 m.

10.5 Metallurgical Drilling

In 2019, four dedicated drill holes, totalling 945 m, were completed entirely for metallurgical testwork. All four of these drill holes were in the J Zone.

10.6 Summary of Drill Intercepts

10.6.1 Z87 Zone

Initial drilling in 2018 began at the Z87 Zone with the focus on mineralization at depth. A southern extension of the Z87 Zone was discovered in a later drill campaign in late 2019. The Z87 South Zone has now been incorporated into the Z87 Zone.

Initial drilling in 2018 began at the Z87 with the focus on mineralization at depth. In 2019, extensions both to the north and south of Z87 were discovered. The Z87 South Zone and Z87 North Zone were both later incorporated into Zone 87. From 2020 to 2023, drilling mainly focused on infilling previously unexplored ground between the three former zones, as well as upgrading resources in the southern portion of Z87. In 2022, the J-87 Connector was discovered, which is the zone between Z87 and J Zone. Drilling targeted Z87 hanging-wall mineralization and discovered a mineralized, D2 structure oblique to dominant mineralization at Troilus. The structure runs from the southern tip of the existing J4 pit, to the centre of the western wall of the existing Z87 pit.

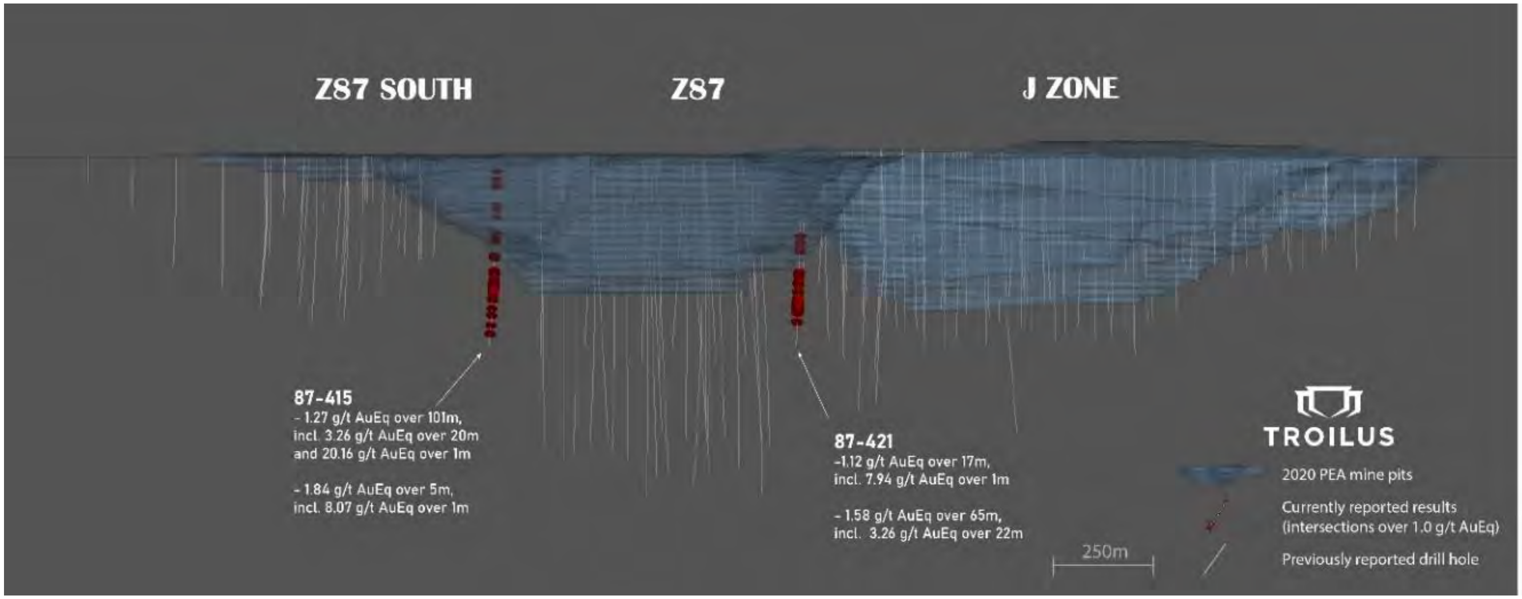
Table 10-2 lists selected drill hole intercepts with significant values. Figure 10-6 shows a cross-section of the 87 Zone at 13925 N.

Table 10-2: Summary of Significant Drill Intercepts – Z87 Zone

DH No	Section		From (m)	To (m)	Width (m)	Au (gpt)	Cu (%)
TLG-Z8718-001	13650N		464	509	45	1.7	0.21
		including	472	477	5	6.09	0.54
TLG-Z8718-005	13750N		439	529	90	1.02	0.12
		including	458	464	6	1.57	0.25
		including	472	477	5	3.03	0.57
		including	520	528	8	2.36	0.11
TLG-Z8718-010	13600N		654	688	34	1.17	0.11
		including	660	666	6	1.88	0.08
		including	679	685	6	1.74	0.30
TLG-Z8718-017	13925N		625	632	7	0.61	0.09
			643	685	42	2.61	0.08
		including	671	673	2	42.30	0.12
			686	692	6	1.34	0.03
		including	686	688	2	3.02	0.02
TLG-Z8718-035	13875N		670	674	4	0.84	0.02
			689	770	81	1.44	0.13
		including	707	710	3	8.25	0.54
		including	751	753	2	2.77	0.37
		including	755	765	10	3.23	0.30
		including	767	769	2	2.91	0.04
			775	793	18	0.81	0.03
TLG-Z8718-044W	13925N		832	899	67	1.58	0.10
		including	874	876	2	10.03	0.35
		including	881	887	6	7.54	0.17
TLG-Z8718S-133	12800N		100	116	16	0.32	0.04
			214	282	68	0.86	0.03
		including	234	282	48	1.06	0.02
		including	270	276	6	5.02	0.02
TLG-Z8718S-136	12700N		177	183	6	1.35	0.03
			207	211	4	0.79	0.04
			223	243	20	0.43	0.11
		including	235	243	8	0.69	0.22
		including	239	241	2	1.80	0.27
			79	96	17	0.71	0.06
87-22-415	13275N	including	80	88	8	1.02	0.03
			151	161	10	0.88	0.02
			347	358	11	0.84	0.02
		including	347	348	1	5.07	0.02
			366	467	101	1.13	0.10
		including	406	426	20	3.00	0.22
		including	466	467	1	20.1	0.04
87-22-421	14050N		338	355	17	1.01	0.08
			377	386	9	0.82	0.10
			415	480	65	1.32	0.19
		including	431	453	22	2.77	0.34

Troilus Press releases: 24 May 2018; 9 Jul 2018; 12 Sep 2018; 31 Oct 2018; 19 Aug 2019, 17 Aug 2022

Figure 10-6: Long Section of the Z87 Zone and J Zone; looking northwest



Source: Troilus Press Release 17 Aug 2022
Note: Z87 South Zone is now part of Z87 Zone

10.6.2 J Zone

In 2019, the drill program focussed on the extension of the mineralization at J Zone. The drill results confirmed that the mineralization agreed with previous drill campaigns. Troilus drillholes also demonstrated that mineralization continues to the northeast and to the southwest of the J Zone and at depth.

In 2020, the J4/J5 Zone were incorporated into what is now the J Zone. Drilling from 2020 to 2023 continues to grow mineralization along strike (north and south) and at depth. In 2021, mineralization was intersected to the west of the previously defined J Zone leading to approximately 150 m of mineralization expansion in this direction.

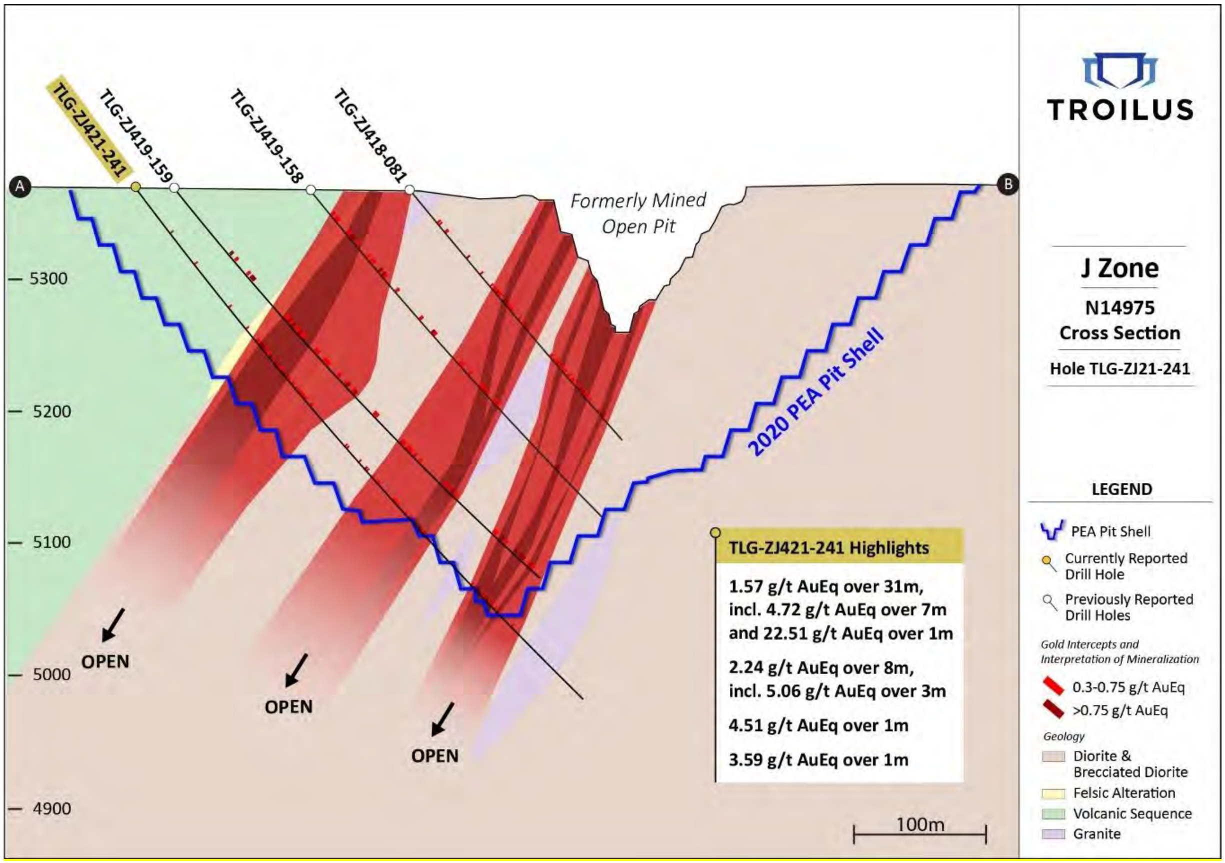
Table 10-3 lists selected drill hole intercepts in the J Zone with significant values. Figure 10-7 shows a selected cross-section of the J Zone at 14150N.

Table 10-3: Summary of Significant Drill Intercepts – J Zone

DH No	Section		From (m)	To (m)	Width (m)	Au (gpt)	Cu (%)
TLG-ZJ419-092	14150N		317	325	8.00	2.93	0.05
		including	317	319	2.00	9.61	0.10
			383	390	7.00	0.82	0.13
			397	406	9.00	1.96	0.08
		including	401	405	4.00	3.38	0.10
			422	441	19.00	0.95	0.10
		including	422	425	3.00	0.68	0.11
		including	427	433	6.00	1.06	0.10
		including	435	441	6.00	1.53	0.16
		including	439	440	1.00	5.22	0.64
TLG-ZJ21-226	14300N		93	161	68	0.71	0.27
		Including	103	112	9	0.9	0.47
		Including	118	128	10	1.08	0.39
		Including	151	159	8	1.08	0.42
TLG-ZJ21-235	14775N		102	104	2	1.54	0.06
			454	477	23	1.11	0.07
		Including	456	457	1	2.67	0.11
		Including	470	477	7	2.44	0.05
			507	510	3	1.67	0.03
TLG-ZJ21-241	14975N		146	177	31	1.5	0.05
		Including	150	157	7	4.63	0.05
		Including	150	151	1	22.4	0.04
			405	413	8	2.18	0.03
		Including	409	412	3	4.97	0.06
TLG-ZJ21-244	15075N		82	110	28	0.76	0.07
		Including	86.75	103	16.25	1.03	0.09
		Including	102	103	1	8.1	0.04
			280	311	31	2.04	0.04
		Including	299	311	12	4.35	0.04
		Including	309	310	1	27	0.03
TLG-ZJ21-251	15350N		138	154	16	1.63	0.05
		Including	148	153	5	4.07	0.06
		Including	148	149	1	14.65	0.05
			174	178	4	2.14	0.1
		Including	175	176	1	6.31	0.13

Troilus Press releases: 26 Mar 2019, 12 May 2021, 8 Jun 2021, 7 Jul 2021, 21 Sep 2021

Figure 10-7: Cross Section 14975N – J Zone; looking northeast



Source: Troilus Press Release 7 Jul 2021

10.6.3 X22 Zone

The X22 Zone is situated adjacent to the southwest of the Z87 Zone. Drilling was completed on the X22 Zone in 2022 and 2023 that included 76 drill holes, totaling 21,932 m. Zone X22 is hosted within a D2 structural corridor that overprints a tonalitic body within the Troilus diorite intrusion. Where D1 structures intersect this corridor, gold mineralization may occur.

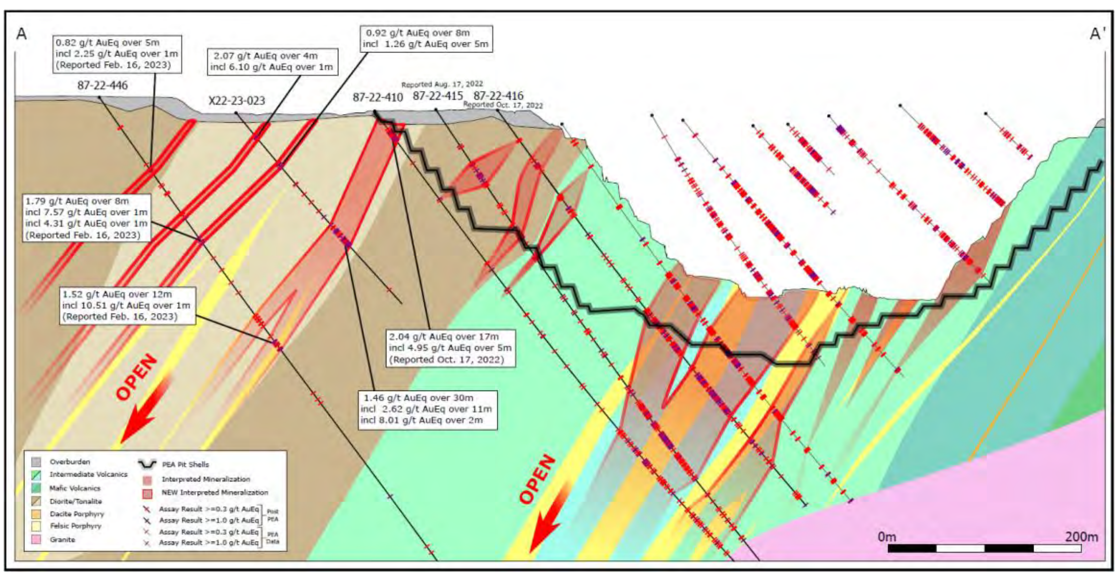
Table 10-4 lists selected drill hole intercepts in the X22 Zone with significant values. Figure 10-8 shows a cross section of the X22 Zone at 13275N.

Table 10-4: Summary of Significant Drill Intercepts – X22 Zone

DH No	Section		From (m)	To (m)	Width (m)	Au (gpt)	Cu (%)
X22-23-023	13275N		31	35	4	2.01	0.01
		Including	32	33	1	5.93	0.02
			151	181	30	1.43	0.02
		Including	170	181	11	2.54	0.05
X22-23-042	13075N		166	167	1	102.50	0.82
			287	369	82	0.70	0.10
		including	323	368	45	0.92	0.13
X22-23-074	12875N		215	226	11	0.87	0.10
		including	216.4	217.4	1	5.79	0.40
			277	308	31	0.72	0.08
		including	277	278	1	2.38	0.16
		including	286	287	1	1.52	0.35
		including	299	300	1	5.80	0.40
X22-23-071	12625N		256	258	2	4.36	0.08
		including	256	257	1	6.53	0.03
			309	389	80	1.32	0.30
		including	322	323	1	6.70	2.58
		including	379	389	10	7.63	1.51
X22-23-031	12475N		133	154	21	1.18	0.20
		including	142	148	6	2.04	0.37

Troilus Press releases: 31 Mar 2023

Figure 10-8: Cross Section 13275N – X22 Zone; looking northeast



Source: Troilus Press Release 7 Jul 2021

10.6.4 SW Zone

The SW Zone is situated approximately 2.5 km southwest of the Z87 Zone pit. In late 2019/ early 2020, the initial drilling of 8,500 m outlined a mineralized zone covering an area of 1.2 km x 0.5 m. From 2020 to 2023, Troilus completed more than 108,000 m of drilling in the SW Zone and expanded mineralization along strike, laterally and at depth. The SW Zone is now interpreted over an area of 2.5 km x 1.0 km.

Table 10-5 lists selected drill hole intercepts in the SW Zone with significant values.

Figure 10-9 shows a selected cross-section of the SW Zone at 9600 N.

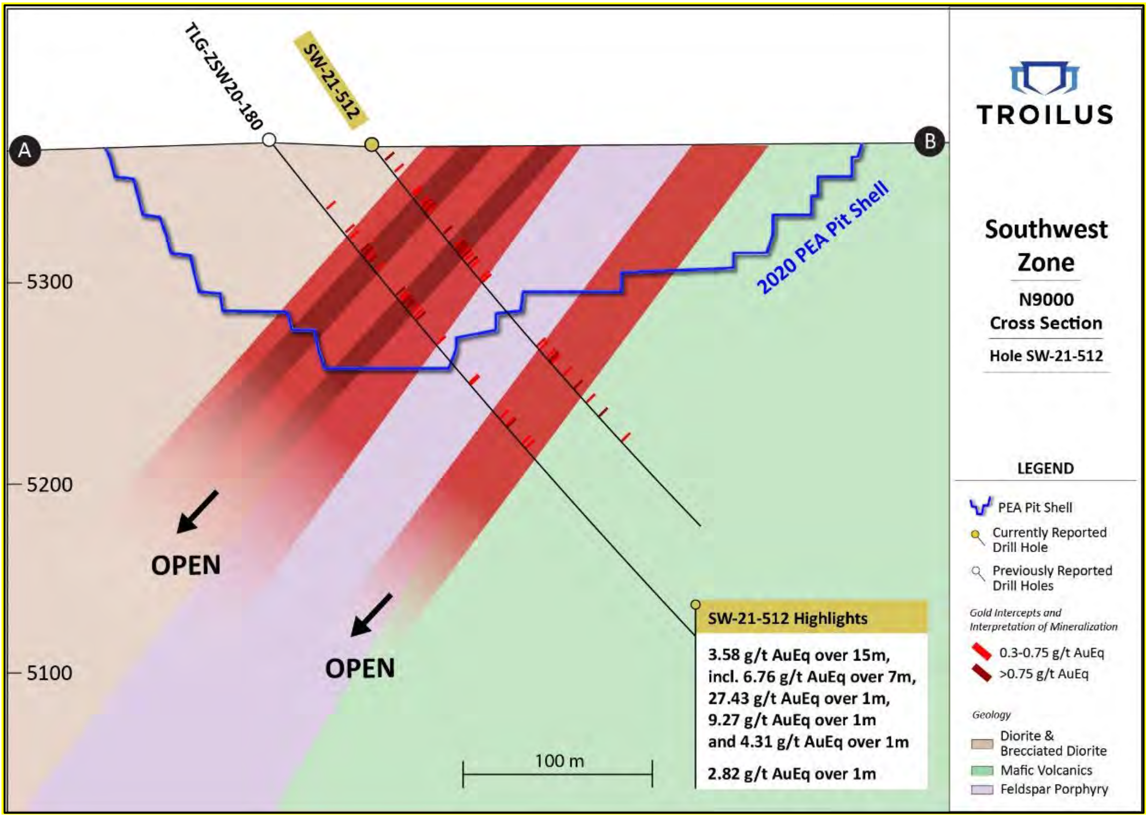
Table 10-5: Summary of Significant Drill Intercepts – SW Zone

DH No	Section		From (m)	To (m)	Width (m)	Au (gpt)	Cu (%)
TLG-ZSW20-203	9525N		439	442	3	6.54	0.077
		Including	439	440	1	17.8	0.078
			462	478	16	1.06	0.073
		Including	462	470	8	1.73	0.096
			485	506	21	1.04	0.041
		Including	488	489	1	2.52	0.064
		Including	497	498	1	2.08	0.011
		Including	504	505	1	11.15	0.117
TLG-ZSW20-204	9525N		59	66	7	1.08	0.004
		Including	61	64	3	1.6	0.002
			142	146	4	1.71	0.287
			315	324	9	1.23	0.201
		Including	315	320	5	1.8	0.304
			346	366	20	1.69	0.193
		Including	357	366	9	238	0.266
			574	575	1	3.19	0.212
			599	601	2	8.57	0.079
TLG-ZSW20-208	9700N		248	266	18	1.14	0.0169
		Including	250	257	7	2.33	0.0207
		Including	252	257	7	2.33	0.0246
		Including	265	266	1	1.38	0.01
TLG-ZSW20-214	10000N		193	208	15	0.93	0.052
		Including	196	197	1	3.07	0.016
		Including	204	207	3	1.76	0.052
SW-21-512	9030N		42	49	7	0.89	0.01
		Including	46	48	2	1.77	0.02
			71	86	15	3.51	0.04
		Including	72	79	7	6.7	0.04

DH No	Section		From (m)	To (m)	Width (m)	Au (gpt)	Cu (%)
		Including	73	74	1	27.4	0.01
		Including	78	79	1	9.22	0.03
		Including	83	84	1	4.23	0.06
SW-21-537	9075N		59	78	19	1.08	0.03
		Including	69	74	5	3.12	0.02
			261	268	7	1.16	0.02
			316	322	6	1.11	0.03
		Including	319	320	1	5.26	0.02
SW-22-360	10000N		11	26	15	3.06	0.01
		Including	13	18	5	8.25	0.02
			211	231	20	0.8	0.02
		Including	214	221	7	1.48	0.03
			240	243	3	1.18	0.01
		Including	241	242	1	2.88	0.01
			259	262	3	1.65	0.01
		Including	261	262	1	3.94	0.01
SW-22-616	9150N		2.73	9	6.27	1.26	0.01
		Including	5	6	1	2.88	0.01
			78	94	16	0.69	0.05
		Including	78	79	1	2.93	0.06
		Including	87	88	1	3.71	0.06
			427	437	10	1.35	0.03
		Including	427	428.8	1.8	2.95	0.02

Troilus Press releases: 12 Jan 2021; 9 Feb 2021; 24 Feb 2021; 16 Mar 2021; 17 Aug 2021; 20 Jan 2022; 21 Apr 2022; 4 May 2022.

Figure 10-9: Cross Section 9600 N – SW Zone; looking northeast



Source: Troilus Press Release 17 Aug 2021

10.7 Exploration Drilling

10.7.1 Allongé Zone

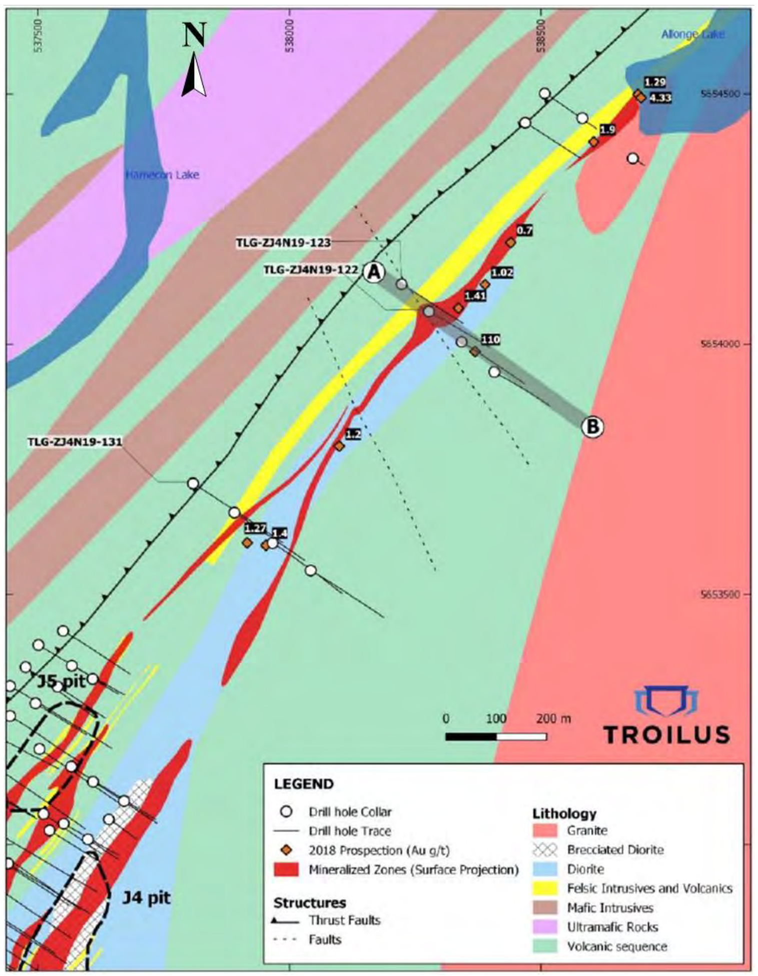
To follow up on results of surface grab samples and a single historic drill hole (KN-684), Troilus completed 12 drill holes, totalling 2,193 m, in the Allongé (previously J4N Zone) Target along three fences. This zone is situated approximately 350 m to 1400 m northeast of the J Zone. Six of the drill holes had intersections, between 2 m and 12 m of greater 0.3 gpt Au. The most significant intersections found in the Troilus drilling, approximately 900 m northeast of the J Zone (Section 16525N), and roughly 100 m northeast of the historic KN-684 drill hole. These are positive indications of gold mineralization and warrant further investigation.

Table 10-6 summarizes the significant intersections in the Allonge Target. Figure 10-10 shows the location of the Allongé Target drilling.

Table 10-6: Summary of Significant Drill Intercepts – Allongé Zone

DH No	Section		From (m)	To (m)	Width (m)	Au (gpt)	Cu (%)
TLG-ZJ4N19-122	61525N		26	48	38	0.47	0.14
		including	44	48	4	1.05	0.31
TLG-ZJ4N19-123	61525N		71	85	14	0.57	0.01
			97	105	8	0.23	0.06
			111	119	8	1.03	0.14
		including	113	115	2	2.50	0.17

Figure 10-10: Plan View – J4N or Allongé Zone



Source: Troilus (2019)

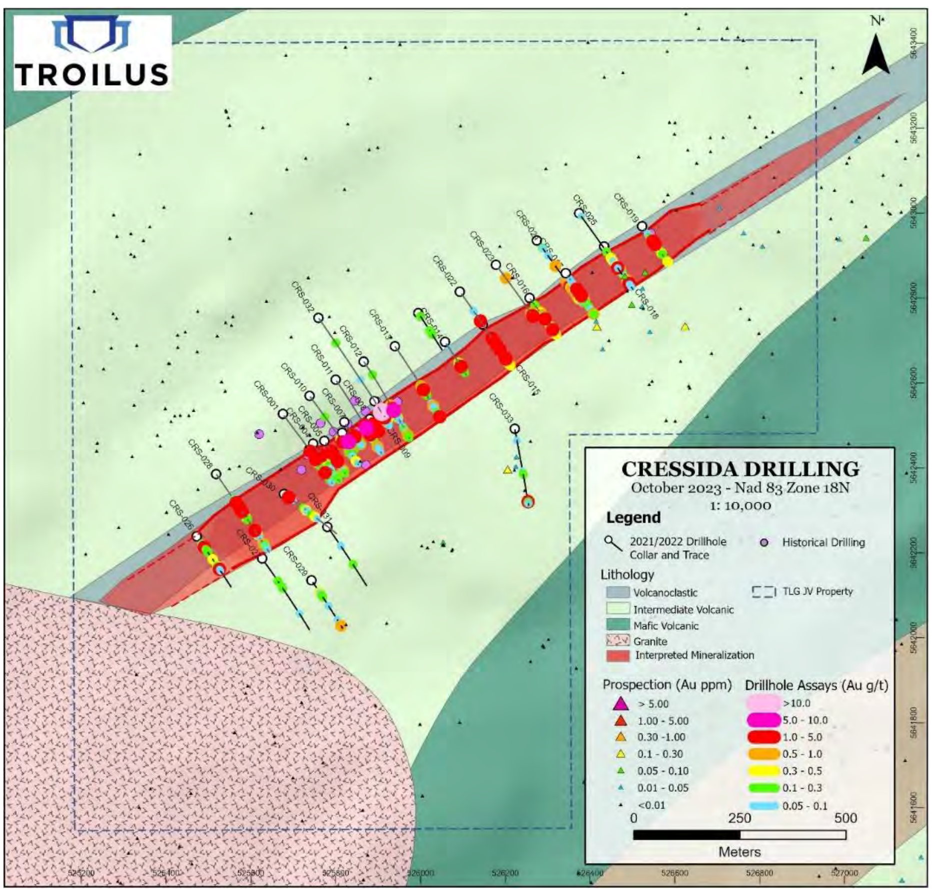
10.7.2 Cressida Target

In December 2019 and March 2020, Urban Gold carried out a four-hole drill program totalling 689 m, targeting the previously delineated ore zone. The highest results returned values of 1.02 g/t Au over 5.6 m and 0.9 g/t Au over 17.55 m, showing an economic potential of the deposit and extending the strike length to the northeast.

In 2021, soil sampling and prospecting done by Troilus across the claim block discovered anomalous gold values both 500 m to the northeast and 250 m to the southeast of the main zone.

In 2021 and 2022, a 6,070 m drill program (31 drillholes) was carried out in two phases targeting geophysical anomalies. In late 2021, the Phase 1 program totalled 4,676 m over 23 drillholes, targeting the previously identified ore zone, extending it to roughly 200 m vertical depth and approximately 950 m along the strike length. In the summer of 2022, the Phase 2 drill program targeted a highly conductive IP anomaly southeast of and parallel to the main zone. Two drill holes also tested the known mineralized trend further to the southwest and at depth. (Figure 10-11). Table 10-7 summarizes some of the highlights of the Phase 1 and Phase 2 drill campaigns.

Figure 10-11: Troilus Frotêt Project – Cressida Target



Source: Troilus (2023)

Table 10-7: Summary of Drill Results – Cressida Target

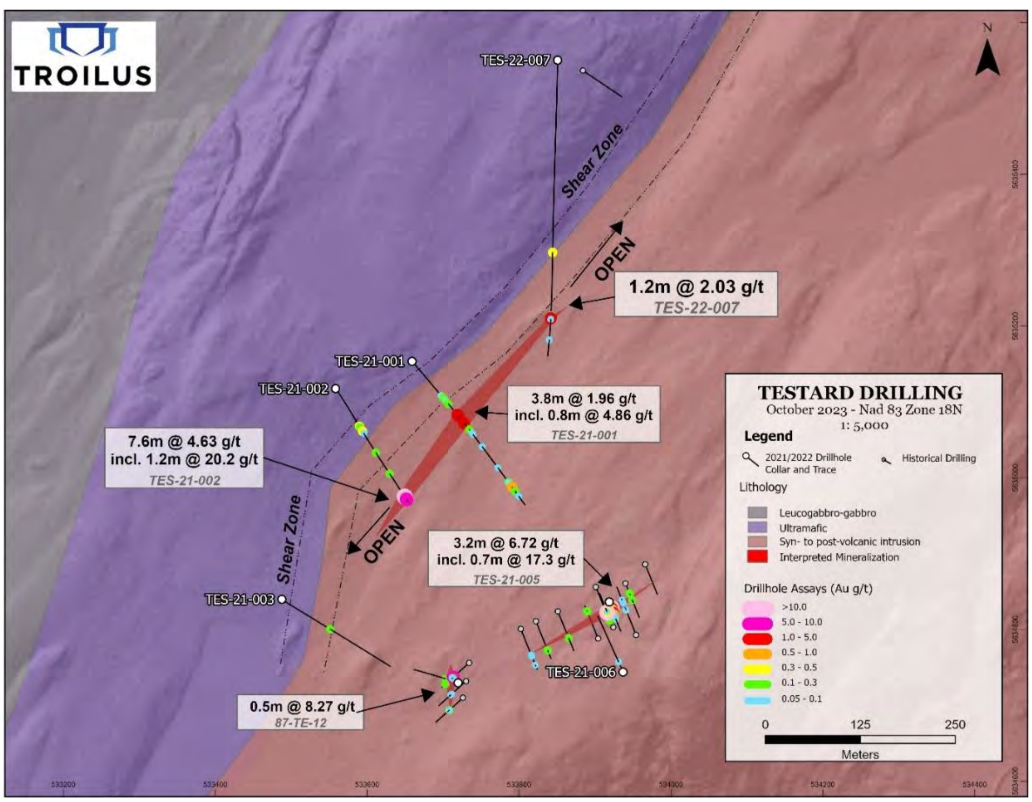
Drill Hole	From (m)	To (m)	Interval (m)	Au (g/t)
CRS-21-006	28	44	16	1.64
including	38	41	3	6.23
CRS-21-011	187	202	15	1.23
including	201	202	1	8.16
CRS-21-012	179	203	24	0.759
including	202	203	1	9.45
CRS-21-008	21	33	12	0.88
CRS-21-023	245	263	18	0.615
CRS-22-032	380	387	7	10.68
including	382	383	1	66.8

Note: drill intervals reported are down hole core lengths as true thicknesses cannot be determined with available information

10.7.3 Testard Target

In 2021, a drill hole program of six drill holes, totalling 1,280 m, was completed to target different structures in the area that had the potential to carry gold mineralization, including testing extensions of the higher-grade mineralization below surface at the main showing (Figure 10-12).

Figure 10-12: Troilus Frotêt Project – Testard Target; highlighting drilling results



Source: Troilus (2023)

Holes TES-21-001 and TES-21-002 intersected previously unknown quartz veins with high-grade gold and silver values within a strongly deformed and altered tonalite approximately 400 m northwest of the main Testard outcrop. Hole TES-22-007 is interpreted to have intersected the same structure as drill hole -001 and -002. This appears to extend the mineralized zone approximately 170 m along strike to the northeast and to an estimated vertical depth of roughly 420 m.

Best intervals in hole TES-21-002 are 4.63 g/t Au and 20.36 g/t Ag over 7.6 m, including 20.2 g/t Au and 76.9 g/t Ag over 1.2 m, and 7.12 g/t Au and 68.45 g/t Ag over 1.4 m. Hole TES-21-001 intercept highlights include 1.96 g/t Au and 19.12 g/t Ag over 3.8 m, including 2.68 g/t Au and 30.48 g/t Ag over 1.8 m and 4.86 g/t Au, 38.8 g/t Ag over 0.75 m.

Drillhole TES-21-005 targeted and intersected mineralized gold bearing structures at depth below the main showing at the contact between a tonalite and a strongly sheared mafic-ultramafic dyke. Intercept highlights include 6.72 g/t Au and 26.71 g/t Ag over 3.2 m, including 17.3 g/t Au and 75.3 g/t Ag over 0.7 m.

Table 10-8 summarizes best intercepts in contact with an ultramafic sill.

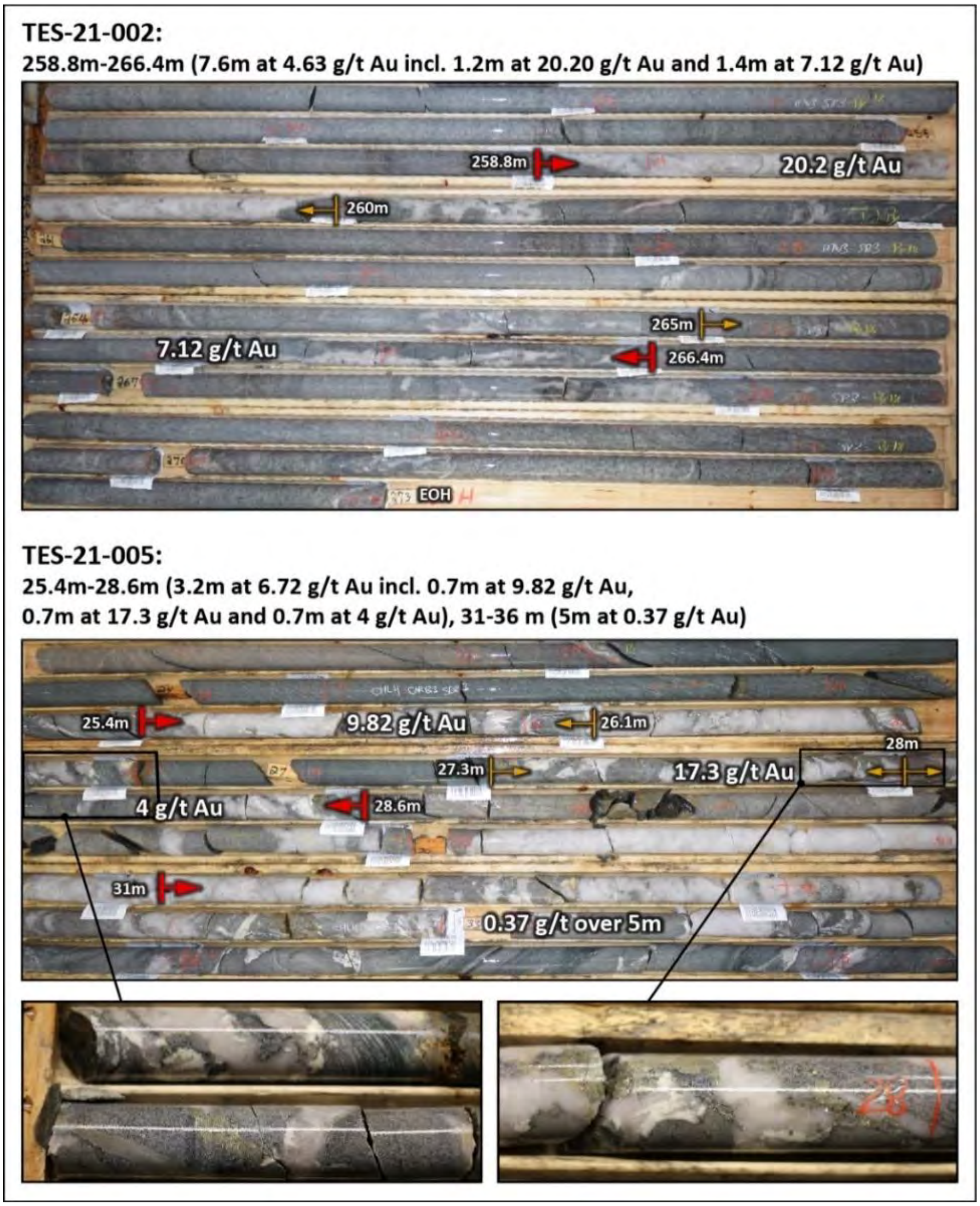
Table 10-8: Summary of Drill Results – Testard Target

Drill Hole	From (m)	To (m)	Interval (m)	Au (g/t)
TES-21-001	146.0	149.8	3.8	1.96
including	148.0	149.8	1.8	2.68
	167.3	168.0	0.8	4.86
	326.0	327.0	1.0	0.61
TES-21-002	103.6	105.0	1.5	0.50
	258.8	266.4	7.6	4.63
including	258.8	260.0	1.2	20.20
including	265.0	266.4	1.4	7.12
TES-21-005	25.4	28.6	3.2	6.72
including	25.4	26.1	0.7	9.82
including	27.3	28.0	0.7	17.30
including	28.0	28.6	0.7	4.00
	31.0	36.0	5.0	0.37
	50.0	51.0	1.0	1.02

Note: Drill intervals reported are down hole core lengths as true thicknesses cannot be determined with available information

Figure 10-13 illustrates the mineralized structures encountered consist of shear-hosted quartz-tourmaline-carbonate-albite veins contained within a sericite-silica-carbonate ± hematite and chlorite altered tonalite and chlorite-carbonate altered mafic to ultramafic dykes. Veinlets and patches of specular hematite appears to be part of a distal alteration halo within the tonalite. The best gold and silver values were obtained from veins that contain disseminated, up to 20% pyrite, with locally trace chalcopyrite, malachite and molybdenite. Different vein textures have been observed in core including laminated, extensional, and breccia-type veins. Further drilling is required to better constrain the azimuth and dip of the different mineralized trends that were intercepted.

Figure 10-13: Troilus Frotêt Project – Testard Target; core photos of TES-21-002 and TES-21-005



Source: Troilus (2022)

10.7.4 Pallador Target

In 2022, five drill holes were completed on the Pallador Target, totaling 2,240 meters to test the geology below the glacial cover and target interpreted magnetic features proximal to the up-ice origin of the mineralized boulder fields. The highest results returned values up to 2.45 g/t Au over 1 m and

4.43 g/t Au over 1 m from the same drill hole (RCK-22-004). Mineralization was associated with sheared and silicified gabbro containing intermittent quartz veining and up to 5% pyrite locally.

In September 2023, two drill holes were completed, totalling 653 m, to test chargeability anomalies at the Rocket showing. Drilling intersected the same highly magnetic gabbro encountered in the 2022 drilling at approximately 1 km along strike to the northwest. The best result from this drilling returned 2.93 g/t Au over 1 m from a locally sheared gabbro with disseminated and vein-hosted pyrite.

10.8 AGP Opinion

AGP considers the drilling was undertaken in accordance with industry standards and best practices without any major adverse aspects that could have materially impacted the accuracy and reliability of the resource estimate.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Pre-2018

11.1.1 Analytical Laboratories

Prior to 1997, samples were shipped off site to certified assay laboratories. During mining operations, from 1997 to 2007, samples were assayed on-site.

During the first drilling programs (1986 to 1991), several independent laboratories, including Swastika Laboratories (Swastika), based in Swastika, Ontario, were used for assaying the core samples. Bondar-Clegg and Chimitec (now part of ALS) were also used.

Following an extensive assaying comparison program in 1992 between several laboratories using different techniques, Swastika was retained to do most of the analyses from 1992 to 1997.

From 1997 to 2007, when Troilus was in operation, Inmet used their own laboratory set up at the mine. The mine laboratory was equipped with modern state-of-the-art equipment and staffed with highly qualified personnel.

11.1.2 Sample Preparation and Analysis

Before 1992, Bondar-Clegg and Chimitec used a half assay-ton fire assay technique with a direct coupling plasma (DCP) finish. At Swastika, it was determined that the one-assay tonne fire assay with gravimetric finish technique used by Swastika was more accurate for assaying gold than the half assay ton method used at the other laboratories. Consequently, from 1992 to 1999, all samples were assayed for gold by one-assay tonne fire assay with a gravimetric or AA finish depending on the size of the "doré bead". If the bead was visually judged too small to be weighed, then the bead was dissolved, and an AA finish was used. Copper and silver were analyzed by AA spectrometry.

Prior to assaying, the original one metre split core sample, weighing approximately 2.7 kg, was entirely crushed down to 0.25 in. Then, 350 g was pulverized to –150 mesh (105 microns) and a one-assay ton (29.17 g) fire assay was done. The rest of the sample (pulp and reject) was stored for future use.

In 1999, a new sampling and metallic sieve-based assay protocol was introduced following the studies and recommendations by Pitard (1999) (Pitard protocol) and included increasing the sample length to three metres and was applied to all samples located within mineralized zones. The Pitard protocol involved assaying a much larger sample than that used for the standard fire assay in the previous programs (1,000 g versus 30 g). This protocol was designed to reduce the Fundamental Error (i.e., error generated by sample and subsample weights), the Grouping and Segregation Error (i.e., error generated by gold segregation and the way samples and subsamples are split), the Extraction Error (i.e., error generated by poor sample recovery), and the Preparation Error (i.e., error generated by excessive loss of fines). The Pitard Protocol for assaying Troilus diamond drill core involved:

- crush the entire three metre NQ core sample (14 kg) down to 16 mesh (0.04 in.).
- split a one-kilogram sample using a rotary divider.
- pulverize the entire one-kilogram sample for no longer than 90 seconds to minimize smearing.

- screen the entire one-kilogram sample using a 150-mesh screen.
- perform as many one-AT fire assay on the +150-mesh fraction as needed to assay the whole +150 fraction.
- perform two one-AT fire assays on the –150 mesh fraction.
- the final assay value is the weighted average of the results from both fractions.

Starting in 2004, the Pitard Protocol for diamond drill core was adjusted to two metre core length (ten kilograms). The rest of the procedure remained the same. Assay data compilation from the 2004 and 2005 diamond drilling programs showed that reducing the sampling length to two metres did not increase the sampling error significantly.

11.2 11.2 Troilus, 2018 - 2020

11.2.1 Analytical Laboratories

For the drilling completed in 2018, samples were sent to the following independent certified assay laboratories, AGAT Laboratories Ltd. (AGAT), based in Mississauga, Ontario; and ALS Ltd. (ALS), based in Sudbury, Ontario. For drilling completed in 2019 and 2020, all samples were sent to ALS in Sudbury.

Both labs, AGAT and ALS, have been assessed by the Standards Council of Canada (SCC), and conform to the requirements of ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories standard; and ISO 9001:2015. The labs are recognized as an Accredited Testing Laboratory for a number of specific tests, including gold fire assaying, that are listed on the SCC website (www.scc.ca).

11.2.2 Sample Preparation and Analysis

In 2018, Troilus had their samples prepared and analyzed by AGAT and by ALS. From December 2018, Troilus only used ALS for sample preparation and analysis.

At AGAT and ALS, all samples were weighed prior to preparation and all samples were prepared by crushing the sample to 85% passing 75 microns on 500 g splits. Samples sent to ALS were prepared at their laboratory in Sudbury and the analysis was completed at the laboratory in Vancouver.

At AGAT, samples were assayed for gold by fire assay (AGAT Code: 202-552) with a 50 g charge with an Induced Coupled Plasma – Optical Emission Spectroscopy (ICP-OES) finish. Sample results greater than 3.5 ppm Au were re-analyzed with a gravimetric finish. This was changed to an Atomic Absorption (AA) finish in May 2018. A multi-element analysis was used for 23 elements (AGAT Code: 201-079). Samples underwent a sodium peroxide fusion followed by ICP-OES finish. Copper was analyzed as part of the multi-element suite; however, silver was not included.

At ALS, samples were assayed for gold by fire assay (ALS Code: Au-AA24) with a 50 g charge with an AA finish. Sample results greater than 3.5 ppm Au were re-analyzed with a gravimetric finish (ALS Code: Au-GRA22). A multi-element analysis was used for 33 elements (ALS Code: ME-ICP61). Samples underwent a four-acid digestion followed by Induced Coupled Plasma – Optical Atomic Spectroscopy (ICP-AES) finish. Copper and silver were analyzed as part of the multi-element suite.

In December 2018, Troilus retained an external consultant, Jack Stanley of jsAnalytical Laboratory Consultant Ltd., to carry out an audit of both laboratories, who concluded that both facilities were following industry standards.

For the 2019 – 2020 drill programs, all samples were sent to ALS in Sudbury for preparation and for specific gravity measurements. Prepared samples were forwarded to ALS in Vancouver for analysis.

In February 2019, Troilus requested specific gravity to be measured by ALS (Sudbury) (ALS Code: OA-GRA08).

In May 2019, a decision was made to use two metres of split NQ core and apply the metallic sieve gold assaying protocol for all core samples. A fine crushing to 70% less than 2 mm was performed. The sample was divided so that 1.2 kg to 1.5 kg was used for analysis. The sample of 1.2 kg to 1.5 kg was then pulverized to 95% passing 106 mesh. Approximately 50 g was recovered for ME-ICP61 analysis of 33 elements by four acids inductively coupled plasma atomic emission spectroscopy (ICP-AES). The remainder of the sample was screened to divide the fraction larger and smaller than 106 mesh. The portion smaller than 106 mesh was analyzed in 50 g by fire assay. The portion larger than 106 mesh was fully analyzed. The values were then combined by weighted calculation. Both results were transmitted to Troilus by a certificate certified by the laboratory.

11.3 Density Determinations

11.3.1 Z87 Zone, J Zone, X22 Zone

Between 2019 and 2023, Troilus collected density measurements from core samples throughout the Z87, J and X22 Zone. Density measurements were carried out by ALS (Sudbury) (ALS Code: OA-GRA08) on samples sent for assay analysis using water immersion (wet/dry) method.

A total of 132,983 measurements were collected from 384 drill holes, across all three zones and were found to be lithologically controlled, with little variation in lithological densities between the zone areas. Densities were assigned by mean density by lithology. Overburden was assigned a density of 2.20 g/cm^3.

Table 11-1 presents the descriptive statistics for the Z87, J and X22 Zones by lithology.

Table 11-1: Descriptive Statistics for Density by Lithology – Z87 Zone, J Zone, X22 Zone, 2018 – 2023

Lithology	Code	Count	Min	Max	Mean	Median	StDev	CV
FP	61	16386	1.97	3.50	2.73	2.71	0.08	0.03
IFP	62	114	2.64	3.04	2.82	2.75	0.11	0.04
Bas Andesite	63	15597	2.19	3.47	2.80	2.79	0.08	0.03
Mag Breccia	64	in SW Zone only			2.87			
Tonalite	65	11619	2.24	3.61	2.72	2.72	0.05	0.02
I2J	66	22252	2.02	3.79	2.79	2.79	0.05	0.02
V2	67	61833	2.06	3.67	2.76	2.75	0.06	0.02
V3	68	996	2.61	3.13	2.93	2.94	0.09	0.03
V3T	69	1074	2.22	3.25	2.87	2.88	0.11	0.04
I1B Parker	70	967	2.53	3.11	2.72	2.65	0.14	0.05
I1B Dykes	71	2145	2.07	3.42	2.64	2.62	0.06	0.02
Overburden	9				2.20			

Note: StDev – Standard Deviation; CV –coefficient of variation

11.3.2 SW Zone, 2019-2023

During the 2019-2023 drilling campaigns, Troilus collected density readings collected for all sample intervals. Density measurements were carried out by ALS (Sudbury) (ALS Code: OA-GRA08) on samples sent for assay analysis using water immersion (wet/dry) method.

A total of 112,878 density measurements were collected by Troilus from drill core during the 2019 - 2023 drill programs in the SW Zone. The density assignment for the SW Zone is based on the mean density values within each lithology. Density for Overburden was assigned the value of 2.20 g/cm^3.

Table 11-2 presents the statistics for density in the SW Zone by lithology.

Table 11-2: Descriptive Statistics for Density by Lithology – SW Zone, 2019 – 2023

Lithology	Code	Count	Min	Max	Mean	Median	StDev	CV
FP	61	2.14	3.41	2.72	2.7	0.08	0.03	2.14
IFP	62	2.15	4.63	2.76	2.74	0.09	0.03	2.15
Bas Andesite	63	2.51	3.12	2.75	2.75	0.06	0.02	2.51
Mag Breccia	64	2.08	3.59	2.87	2.87	0.10	0.03	2.08
Tonalite	65	not in SW Zone						
I2J	66	2.26	3.71	2.80	2.8	0.06	0.02	2.26
V2	67	2.43	3.26	2.75	2.75	0.07	0.02	2.43
V3	68	1.81	3.93	2.92	2.94	0.10	0.03	1.81
V3T	69	2.54	3.85	2.82	2.81	0.10	0.03	2.54
I1B Parker	70	2.43	3.24	2.76	2.75	0.12	0.04	2.43
I1B Dykes	71	not in SW Zone						
Overburden	9				2.20			

Note: StDev – Standard Deviation; CV –coefficient of variation

11.4 Quality Assurance/Quality Control (QA/QC)

Troilus follows their internal Quality Assurance and Quality Control (QA/QC) procedures to assess drilling results. Troilus maintains written Standard Operating Procedures that lay out the protocols. The protocol used for insertions of these samples were as follows:

- blank (1 in every 25 samples)
- duplicates (1 in every 12 samples)
- standards (CRM) (1 in every 25 samples)

Analytical QA/QC failures are identified as:

- any blank sample that reported >0.1 g/t Au
- any CRM result that reported with a difference >3 standard deviations from the certified mean or recommended value for the standard
- more than two sequential CRM results that reported with differences >2 standard deviations from the certified mean or recommended value, having the same positive or negative bias

Results were tracked as part of the standard QA/QC procedures. Failures were investigated and samples were re-assayed as required.

Blanks

Coarse blank materials were inserted into the sample stream at a rate of one each for every 25 samples for all drill programs. The material for the blanks came from the Parker Lake Granite, situated to the southeast of the mineralized zones. For the 2018 drilling, Troilus employed the granite material from the end of drill holes; or broken rock coming from an outcrop located well inside the Parker Lake Granite. For the 2019 and 2020 drilling, Troilus used exclusively coarse material from the Parker Lake granite outcrop.

Certified Standards

Troilus has used 14 commercially produced Certified (or Standard) Reference Materials (CRMs) throughout the drill programs since 2018. The CRMs are sourced from Ore Research & Exploration PL, based in Perth, Australia.

Table 11-3 summarized the CRMs with their 'recommended values'.

Table 11-3: Standard Reference Materials (SRMs) and Recommended Values

Troilus Number	SRM	Source	Au (gpt)	Cu (ppm)	Ag (gpt)	Year
S1	OREAS 209	Ore Research & Exploration PL	1.580	76	0.264	2018 - 2021
S2	OREAS 215		3.540	-	-	2018 - 2021
S3	OREAS 217		0.338	-	-	2018 - 2021
S4	OREAS 92		-	2294	0.700	2018 - 2019
S5	OREAS 922		-	2122	0.888	2018 - 2021
S6	OREAS 239		3.550	-	0.244	2021
S7	OREAS 235		1.590	-	0.135	2021
S8	OREAS 231		0.542	-	0.177	2021
S9	OREAS 153b		0.313	6780	1.400	2021 - 2023
S10	OREAS 254b		2.530	-	0.453	2021 - 2023
S11	OREAS 605b		1.720	50300	1015.000	2021 - 2022
S12	OREAS 620		0.685	1730	38.500	2021 - 2022
S13	OREAS 905		0.100	6380	-	2021 - 2022
S14	OREAS 506		0.364	4440	1.800	2021 - 2023

The CRMs were chosen to represent different grade ranges for gold and copper on the Project. All the CRMs are individually packaged in 30 g packets and were inserted with the drill core samples with sequential sample tags at a rate of one for every 25 samples.

The results were plotted by Troilus in chronological order on graphs depicting the 'recommended value' as well as plus/minus two and three times the standard deviation of the dataset to provide a check of the precision of the assays.

Duplicates

Duplicates were collected in through out all drilling programs since 2018. Only between July 2019 and July 2020 collection of duplicates was paused. In mid-2020, Troilus re-established the collection of duplicate sample data on the SW Zone drill program and all succeeding drill programs. The duplicate samples were conducted on the pulps and rejects returned to Troilus post analysis. The samples were nominally selected based on mineralized domains and the pulps and rejects were sent to either ALS or SGS for analysis.

11.4.1 QA/QC, pre-2018

The following is taken from RPA (2019b):

Several laboratories and assay methods were used in the course of the different drilling programs, and a number of re-assay and check assay programs were carried out over the years. Also, several studies on the heterogeneity and/or nugget effect of gold were carried out and are listed in Boily et al. (2008). From 1997 onward, Inmet operated an internal assay laboratory where gold and copper grades were reconciled with head grades from the operating mill (RPA, 2019b).

Prior to 1999, during the assaying process, each laboratory did a systematic check assay every 10 to 15 samples. All samples assaying more than 1.0 g/t Au were re-assayed from a second pulp and all *those assaying greater than 2.0 g/t Au were assayed a second time from the rejects. All assay laboratories routinely inserted in-house reference materials and certified standards.*

Since 1993, Inmet used in-house reference materials, CANMET Mining and Mineral Sciences Laboratories (Department of Natural Resources Canada) (CANMET), CRMs and blanks in each shipment to the assay laboratories. Over 20 different in-house reference materials and CRMs were used by Inmet over time. All these in-house control samples were first pulverized and bagged (35 g) and then inserted after every 50 samples using the same sequential numbers as the core samples. After approximately every 10 control samples, a CANMET CRM or a blank was inserted instead of the in-house control sample.

Results from quality control programs (reference samples, CRMs, re-assays, and duplicate assays) are used to qualify reliable assay data. There are no data on the standards used by the off-site laboratories prior to 1993 and/or the results of their quality control. However, no major problems were reported in the assays from the drilling programs and differences between the original values and the second assays and/or duplicates were judged to be acceptable.

In a report dated March 1994, the Coopers & Lybrand Consulting Group compiled the different studies on the accuracy and precision of the assays carried out by Inmet and concluded that the relative accuracy for the gold grade at Troilus is ±15%. After 1994, a number of tests and studies on the heterogeneity of gold at Troilus were carried out for Inmet by various consulting firms. Pitard (1999) reviewed this work and concluded that a target of ±15% variance in the gold assay results was achievable and that a sampling protocol modification was required to reduce sampling error to this level.

In late 1998 and early 1999, approximately 1,427 m of core from the mineralized zones from 12 holes were re-sampled and assayed in two separate programs. Independent laboratories used for the assaying included SGS Lakefield Research Ltd. (SGS) and the Centre de Recherche Minérale. This program was designed to compare the newly introduced 1,000 g screen metallic sampling and assays (Pitard Protocol) with the historical 30 g sampling assay protocol. From this program, Inmet concluded that the relative difference between the two data sets was less than 2% and that there was no overall bias between the two protocols. It was concluded that the 1,000 g screen metallic protocol reduced the sampling error and therefore provided a much better estimate of the gold contained in any given sample and improved the ability to estimate grades locally. This protocol was adopted as the sampling protocol going forward.

In 1997, external check assays at Swastika Laboratories (Swastika), based in Swastika, Ontario, and Chimitec (now part of ALS) indicated that the Troilus laboratory was underestimating gold values by approximately 10% to 15%. The Swastika and Chimitec assays were within 5%. The 1997 drilling program targeted Z87 close to the pit limits.

Following the introduction of a new sampling and assay protocol in 1999 (Pitard Protocol), modifications were made to their quality control procedures. In addition to the insertion of in-house *reference material and/or CRMs, approximately 10% of all the samples assayed were randomly selected and their rejects sent back to the laboratory to be re-assayed using the same assay protocol (duplicates).*

An internal Inmet report (Boily, 2005), based on external check assays and the mine laboratory gold reference standards, concluded that the Troilus laboratory assays were not biased.

11.4.2 QA/QC, 2018-2019

The QA/QC program included blank materials and CRMs. Four CRM's were used during all drill programs on the Property. A fifth CRM (S4) was only used in the initial seven drill holes of 2018.

Table 11-4 shows a summary of the QA/QC samples submitted during the 2018 and 2019 drilling program on the Z87 Zone and J4/J5 Zone. Table 11-6 shows a summary of the QA/QC samples submitted during the 2019-2020 drilling program on the SW Zone.

Table 11-4: Summary of Troilus QA/QC Program, 2018 – 2019

Description	2018 Number of Samples (% of database)	2019 Number of Samples (% of database)
Total Number of Samples	28,334	18,729
Number of Control Samples	6,449 (22.8%)	2,492 (13.3%)
Distribution		
Blanks	1,294 (4.6%)	829 (4.4%)
Blanks (BP)	383	829
Blanks (other)	912	-
Lab Duplicates	3,708 (13.1%)	815 (4.4%)
CRM samples	1,447 (5.1%)	848 (4.5%)
OREAS 209 (S1)	283	200
OREAS 215 (S2)	329	207
OREAS 217 (S3)	340	239
OREAS 92 (S4) *	32	-
OREAS 922 (S5)	463	202

* OREAS 92 was used for the initial seven drill holes of 2018

Blanks

For the 2018 drilling, the Parker Lake Granite material used for blanks was taken from the ends of selected drillholes, outcrop and in a few instances from silica sand from nearby Lac a la Croix (BSS). The drill holes ends were labeled:

- BP Parker Lake Granite outcrop
- B1 TLG-Z8718-002
- B2 TLG-Z8718-009
- B3 TLG-Z8718-010
- B4 TLG-Z8718-011
- B5 TLG-Z8718-020

- B6 TLG-Z8718-037
- B7 TLG-Z8718-049
- BSS silica sand (Lac à la Croix)

Results from the blanks found 11 failures out of 1294 blanks (less than 1%). The results were verified and not considered significant.

In 2018, third-party check assays are on pulps from the primary laboratory that are re-assayed by a third-party laboratory, that is, AGAT pulps were re-assayed by ALS and vice versa. In 2019, ALS was the primary laboratory and SGS was used for the third-party check assays.

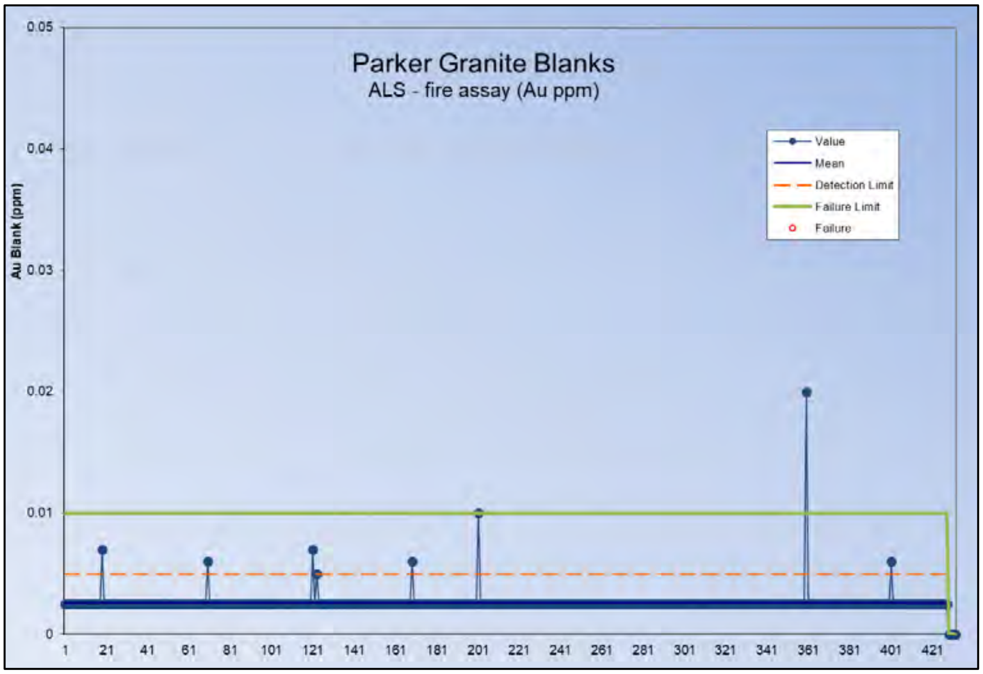
Table 11.5 shows the results of the blanks used in the 2018 – 2019 drilling. Figure 11.1 and Figure 11.2 present plots for fire assay blanks and metallic sieve assay blanks, respectively.

Table 11-5: Blanks Values, 2018 – 2019 Drilling

Troilus Number	Total	Failures	Comment
B1	158	1	
B2	122	2	
B3	194	2	
B4	21	1	
B5	255	1	
B6	97	1	
B7	40	1	
BP	428	1	ALS fire assay
BP	730	1	ALS metallic sieve
BSS	25	0	-

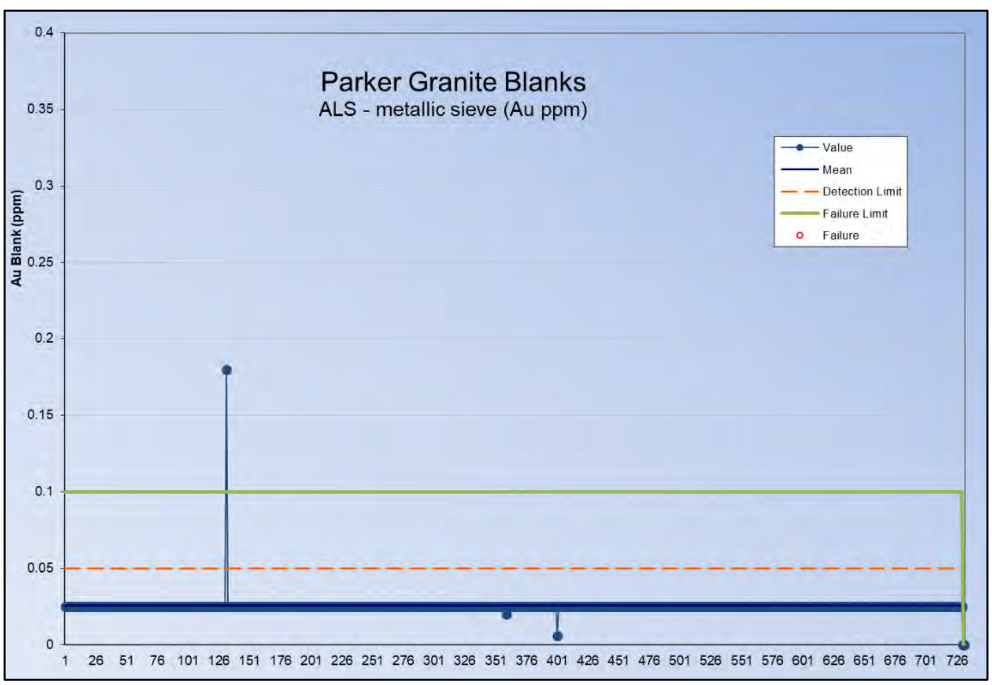
BP -Parker Granite Coarse Blank

Figure 11-1: BP Blanks (fire assay) – Gold (ppm Au); 2018-2019 Drilling



Source: AGP (2020b)

Figure 11-2: BP Blanks (fire assay) – Gold (ppm Au); 2018-2019 Drilling



Source: AGP (2020b)

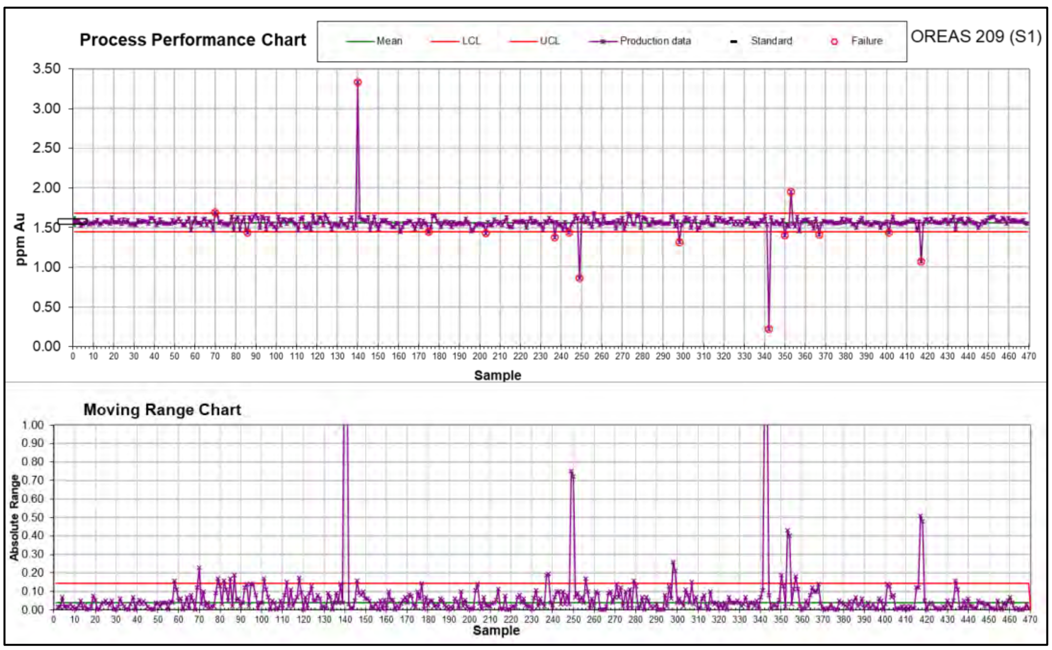
Certified Standard Materials

Table 11-3 presents the results of the CRMs used in the 2018-2019 drilling. Figure 11.3 presents accuracy plot for gold from the 2018 and 2019 drilling.

Table 11-3: CRM Results, 2018 – 2019 Drilling

CRM	Recommended Value	Standard Deviation	Number of Samples	Number of Failures	Percent Failure
OREAS 209 (S1) ppm Au	1.580	0.044	469	15	3.2%
OREAS 215 (S2) ppm Au	3.540	0.097	329	5	1.5%
OREAS 217 (S3) ppm Au	0.338	0.010	500	23	4.6%
OREAS 92 (S4) %Cu	0.229	0.010	32	1	3.1%
OREAS 922 (S5) %Cu	0.212	0.044	479	38	7.9%
OREAS 922 (S5) ppm Ag	0.888	0.109	328	15	4.6%

Figure 11-3: Standard OREAS 209 – Gold Accuracy Plot



Source: AGP (2020b)

11.4.3 QA/QC, 2019-2020

During the 2019 – 2020 drill program on the SW Zone, Troilus continued with the same QA/QC protocols in place: including blank sample materials and CRM's. Table 11-4 shows a summary of the QA/QC samples submitted during the drilling program.

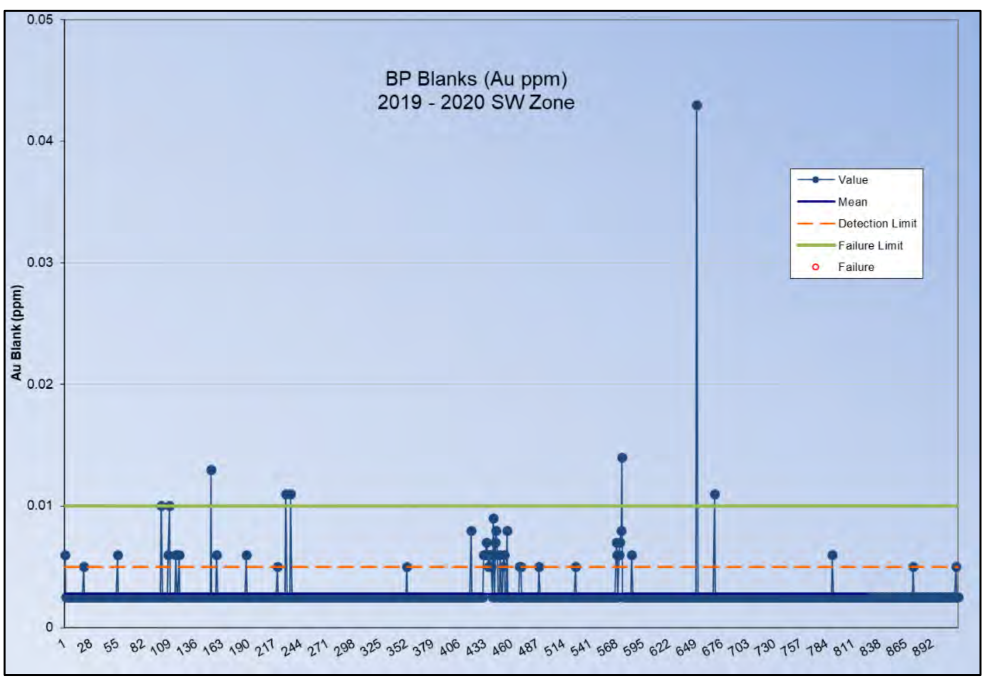
Table 11-4: Summary of Troilus QA/ QC Program, 2019 – 2020

Description	Number of Samples (% of database)
Total Number of Samples	21,268
Number of Control Samples	743 (8.7%)
Distribution	
Blanks (BP)	918 (4%)
Blanks (BP)	918
Lab Duplicates	1,701 (8%)
CRM samples	972 (5%)
OREAS 209 (S1)	227
OREAS 215 (S2)	207
OREAS 217 (S3)	240
OREAS 922 (S5)	223
OREAS 239 (S6)	45
OREAS 235 (S7)	26
OREAS 153b (S9)	2

Blanks

During the 2019 – 2020 drilling on the SW Zone, only 6 failures occurred out of 918 blank samples. The results were five samples with less than 0.015 ppm Au, and one sample at 0.043 ppm Au. These were determined not to have a significant impact on the sample batches and were ignored. Figure 11.4 presents the plots for the gold assay blanks.

Figure 11-4: BP Blanks – Gold (ppm Au); 2019 – 2020 Drilling



Source: AGP (2022)

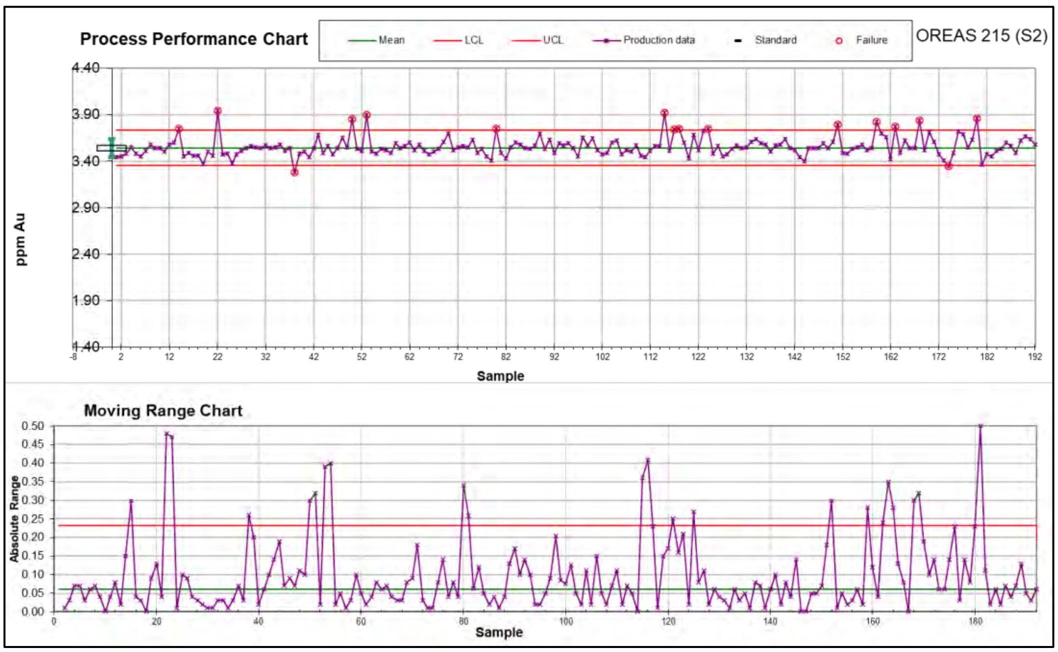
Certified Standard Materials

Table 11-5 presents the results of the CRMs used in the 2019-2020 drilling on the SW Zone. Figure 11.5 presents the accuracy plot for gold for CRM S2 (OREAS 215).

Table 11-5: CRM Results, 2019 – 2020 Drilling – SW Zone

CRM	Recommended Value	Standard Deviation	Number of Samples	Number of Failures	Percent Failure
OREAS 209 (S1) ppm Au	1.58	0.044	217	7	3.2%
OREAS 215 (S2) ppm Au	3.54	0.097	192	16	7.7%
OREAS 217 (S3) ppm Au	0.338	0.010	230	23	10.0%
OREAS 922 (S5) %Cu	0.212	0.009	210	1	0.5%
OREAS 922 (S5) ppm Ag	0.888	0.109	210	12	5.7%
OREAS 239 (S6) ppm Au	3.55	0.086	29	0	-
OREAS 935 (S7) ppm Au	1.59	0.038	14	0	-

Figure 11-5: Standard OREAS 215 (S2)– Gold Accuracy Plot



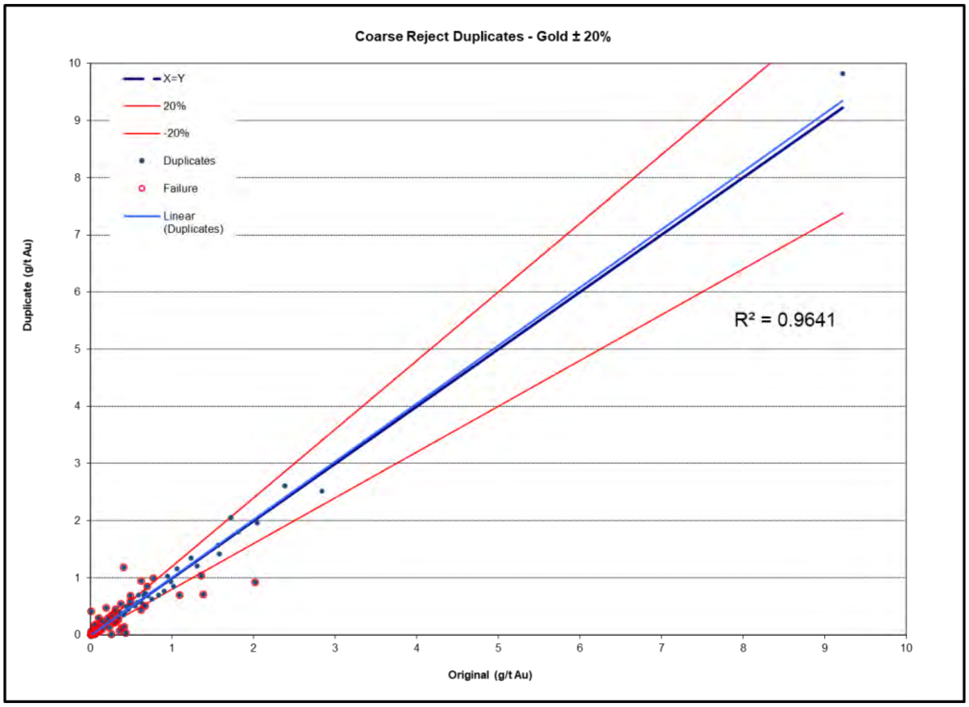
Source: AGP (2022)

Duplicates

During the 2020 drill program on the SW Zone, duplicate samples were conducted on the pulps and rejects returned to Troilus post analysis. The samples were nominally selected based on mineralized domains and the pulps and rejects were sent to either ALS or SGS for analysis.

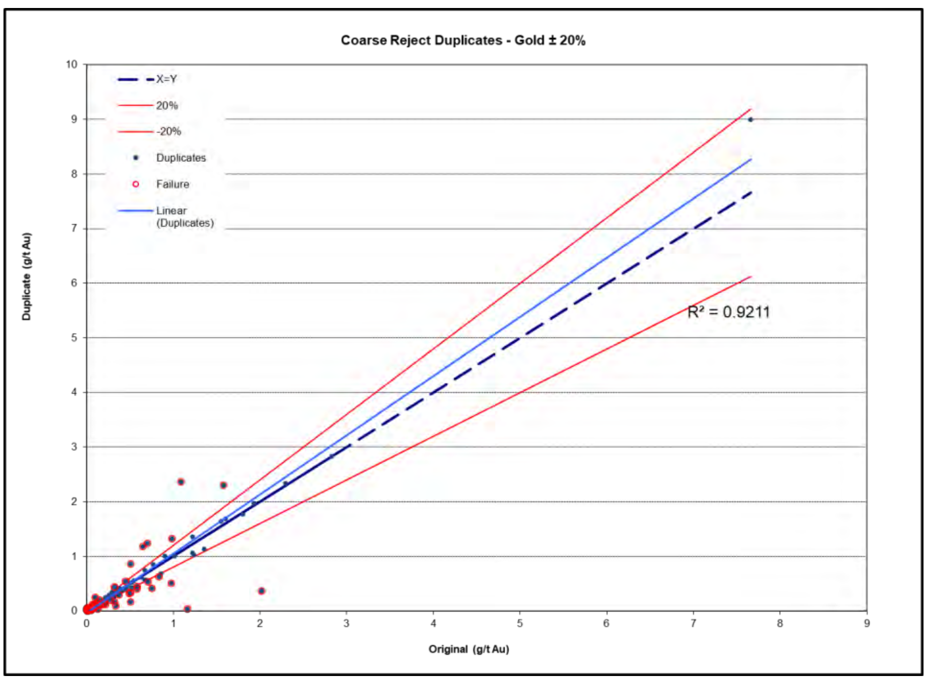
Figure 11.6 and Figure 11.7 show the duplicate control plots for samples sent to ALS and SGS, respectively.

Figure 11-6: Duplicates Control Chart (ALS Rejects) – Gold Values; 2020 SW Zone



Source: AGP (2022)

Figure 11-7: Duplicates Control Chart (SGS Rejects) – Gold Values; 2020 SW Zone



Source: AGP (2022)

11.4.4 QA/QC, 2021-2022

The analytical quality control data produced during the 2021 and 2022 drilling programs was reviewed by AGP. It should be noted that the 2021 QA/QC data includes: one drill hole from Z87 completed in 2020; and four drill holes from J Zone completed in 2020.

The QA/QC program implemented by Troilus is a continuation of the previous program initiated since 2018 for each drilling campaign for the Z87 Zone, J Zone, and SW Zone. The quality control (QC) samples included: coarse blanks, CRMs, coarse reject, and pulp duplicates.

Table 11-6 and Table 11-7 show a summary of the QC samples submitted during the 2021 and 2022 drilling programs carried out on the Project.

Table 11-6: Summary of Troilus QA/QC Program, 2021

Description	Z87 Number of Samples (% of database)	J Number of Samples (% of database)	SW Number of Samples (% of database)
Total Number of Samples	6,219	9,899	48,132
Number of Control Samples	1,197 (19%)	3,748 (40%)	6,551 (13%)
Distribution			
Blanks	307 (5%)	1,119 (11%)	2,094 (4%)
Blanks (BP)	251	716	466
Blanks (BSS)	41	403	1,628
Blanks (B0, B1, B2, B3, B4, B5)	15	-	-
Lab Duplicates	564 (9%)	1,715 (17%)	2,088 (4%)
CRM samples	326 (5%)	1,173 (12%)	2,149 (5%)
OREAS 209 (S1)		10	4
OREAS 215 (S2)	2	10	5
OREAS 217 (S3)	49	103	20
OREAS 922 (S5)	71	180	99
OREAS 239 (S6)	59	178	98
OREAS 235 (S7)	84	204	227
OREAS 231 (S8)	44	137	178

Note: Z87 Zone includes one drill hole from 2020.
J Zone includes four drill holes from 2020.

Table 11-7 Summary of Troilus QA/QC Program, 2022

Description	Z87 Number of Samples (% of database)	SW Number of Samples (% of database)
Total Number of Samples	4,246	54,556
Number of Control Samples	584 (14%)	2,889 (5%)
Distribution		
Blanks	294 (7%)	1,445 (3%)
Blanks (BSS)	294	1,444
Blanks (B0)	-	1
Lab Duplicates	-	-
CRM samples	290 (7%)	1,444 (2%)
OREAS 209 (S1)	1	-
OREAS 153b (S9)	-	626
OREAS 254b (S10)	149	729
OREAS 506 (S14)	140	89

Blanks

A total of 5,262 coarse blanks were inserted by Troilus personnel to monitor grade contamination during the 2021 and 2022 drill programs, up to May 2022. The two main blank materials used were the Parker Lake Granite (BP) and the silica sand (BSS). The quality control performance of these blank samples was reviewed by AGP. Table 11-8 hows the results of the blank samples by zone.

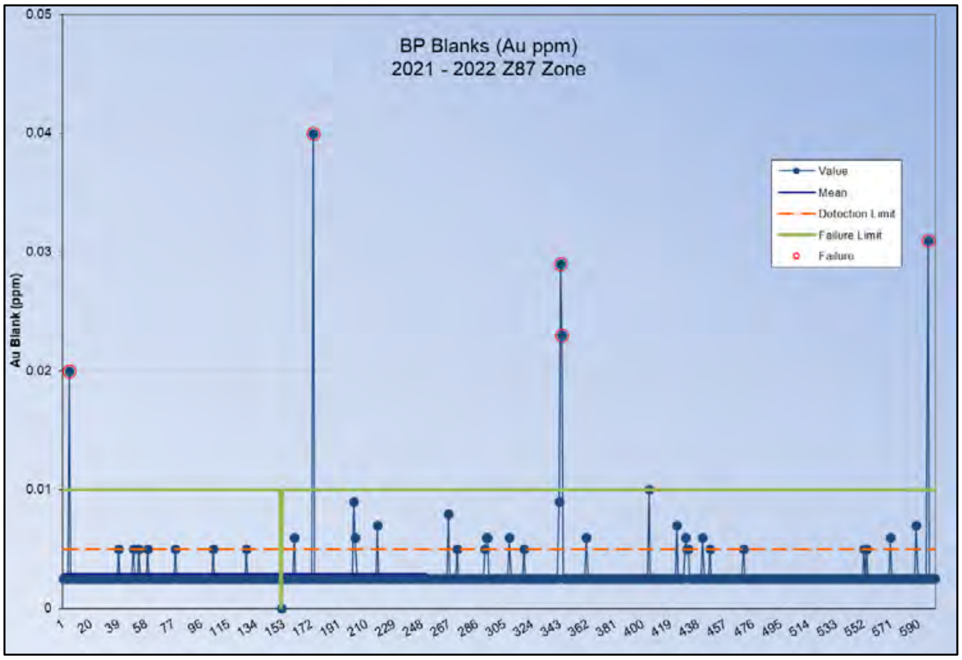
Blank materials were considered failures when the returned gold value exceeded 10 times the lower detection limit, that is, less than 0.005 ppm Au) of the analytical method. Blank material results are considered excellent since the control plots show no contamination on blank materials submitted within the mineralized samples batches

Figure 11.8 to Figure 11.10 show the results of the BP blank materials for gold for the Z87, J and SW Zone, respectively.

Table 11-8: Summary of Blanks Performance, 2021-2022 – All Zones

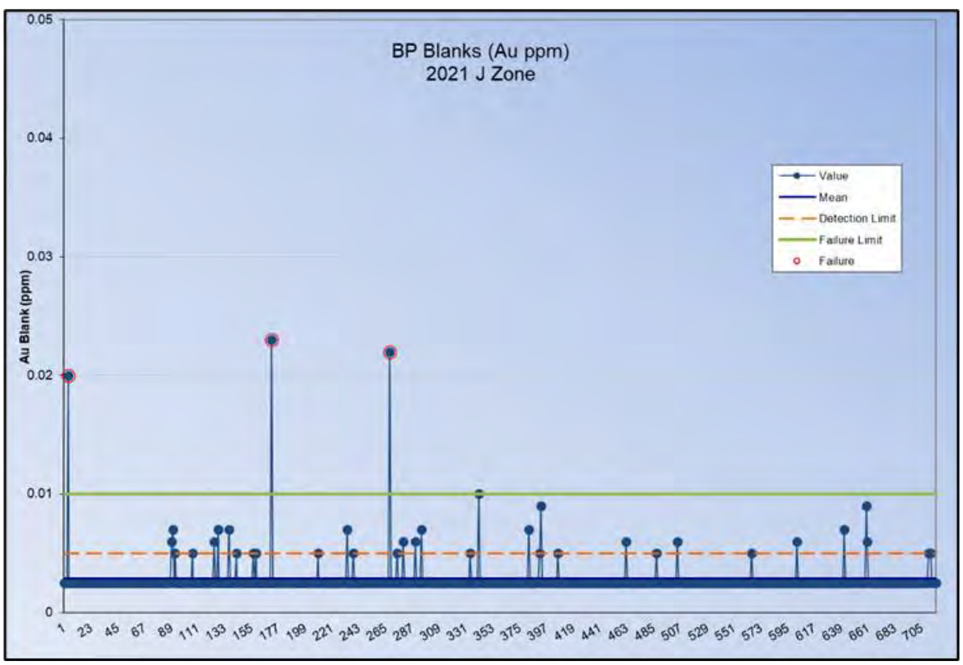
Blank Material	Code	Number of Samples	Number of Failures	Percent Failure
Z87 Zone				
Parker Lake Granite outcrop	BP	251	4	0.7 %
Silica sand (Lac à la Croix)	BSS	338	3	0.9 %
Other Blanks	B0, B1, B2, B3, B4, B5	15	0	-
J Zone				
Parker Lake Granite outcrop	BP	716	2	0.3 %
Silica sand (Lac à la Croix)	BSS	403	1	0.2 %
SW Zone				
Parker Lake Granite outcrop	BP	466	2	0.4 %
Silica sand (Lac à la Croix)	BSS	3072	20	0.7 %
Other Blanks	B0	1	0	-

Figure 11-8: BP Blanks – Gold (ppm Au); 2021 – 2022 Drilling – Z87 Zone



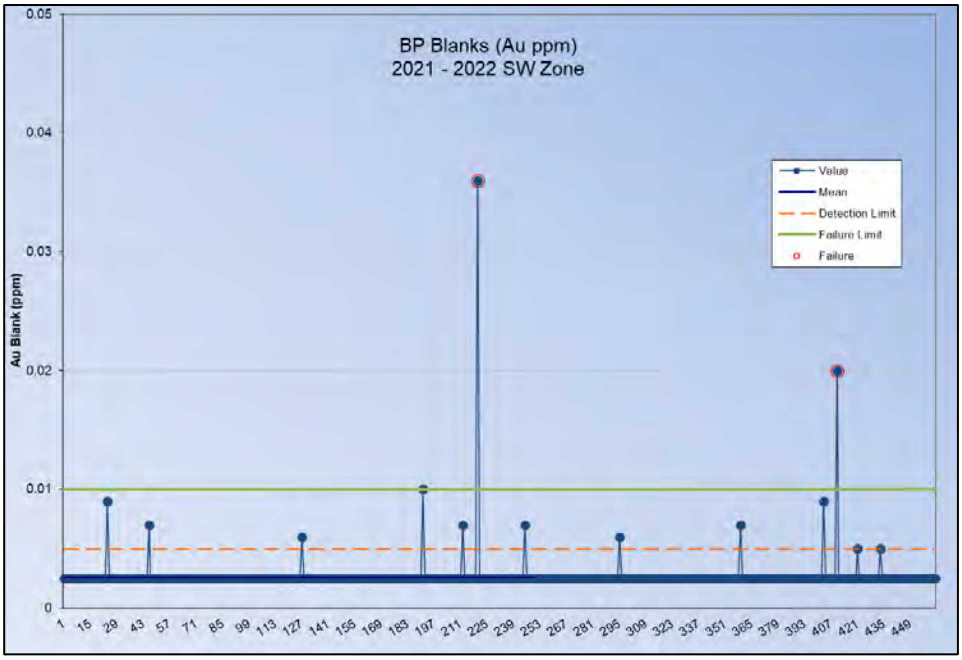
Source: AGP (2022)

Figure 11-9 BP Blanks – Gold (ppm Au); 2021 – 2022 Drilling – Z87 Zone



Source: AGP (2022)

Figure 11-10 BP Blanks – Gold (ppm Au); 2022 Drilling – SW Zone



Source: AGP (2022)

Certified Standard Materials

Table 11-9 to Table 11-11 represent the accuracy performance results of CRM as implemented by Troilus during 2021-2022 drilling programs performed on J, Z87 and SW Zones, respectively. CRMs were considered as failures when a gold or copper result exceeded three times the standard deviation (±3 SD) beyond the certified expected value. Most of CRM failure results, mainly CRM S5, are associated with the insertion of the wrong standard sample number.

Table 11-9 CRM Results of the 2021-2022 Drilling – Z87 Zone

CRM	Recommended Value	Standard Deviation	Number of Samples	Number of Failures	Percent Failure
OREAS 215 (S2) ppm Au	3.54	0.097	2	0	-
OREAS 217 (S3) ppm Au	0.338	0.010	49	2	4.1 %
OREAS 922 (S5) %Cu	0.212	0.009	71	23	32.4 %
OREAS 239 (S6) ppm Au	3.55	0.086	58	1	1.7 %
OREAS 235 (S7) ppm Au	1.59	0.038	84	1	1.2 %
OREAS 231 (S8) ppm Au	0.542	0.015	44	2	4.7%
OREAS 153b (S9) ppm Au	0.313	0.009	5	0	-
OREAS 254b (S10) ppm Au	2.53	0.061	150	9	6.0 %

Table 11-10 CRM Results of the 2021-2022 Drilling – J Zone

CRM	Recommended Value	Standard Deviation	Number of Samples	Number of Failures	Percent Failure
OREAS 209 (S1) ppm Au	1.58	0.044	10	0	-
OREAS 215 (S2) ppm Au	3.54	0.097	10	1	10.0 %
OREAS 217 (S3) ppm Au	0.338	0.010	97	5	5.2 %
OREAS 922 (S5) %Cu	0.212	0.009	181	12	6.7 %
OREAS 239 (S6) ppm Au	3.55	0.086	178	9	5.1 %
OREAS 235 (S7) ppm Au	1.59	0.038	204	5	2.5 %
OREAS 231 (S8) ppm Au	0.542	0.015	137	2	1.5 %
OREAS 153b (S9) ppm Au	0.313	0.009	151	10	6.6 %
OREAS 254b (S10) ppm Au	2.53	0.061	137	6	4.4 %

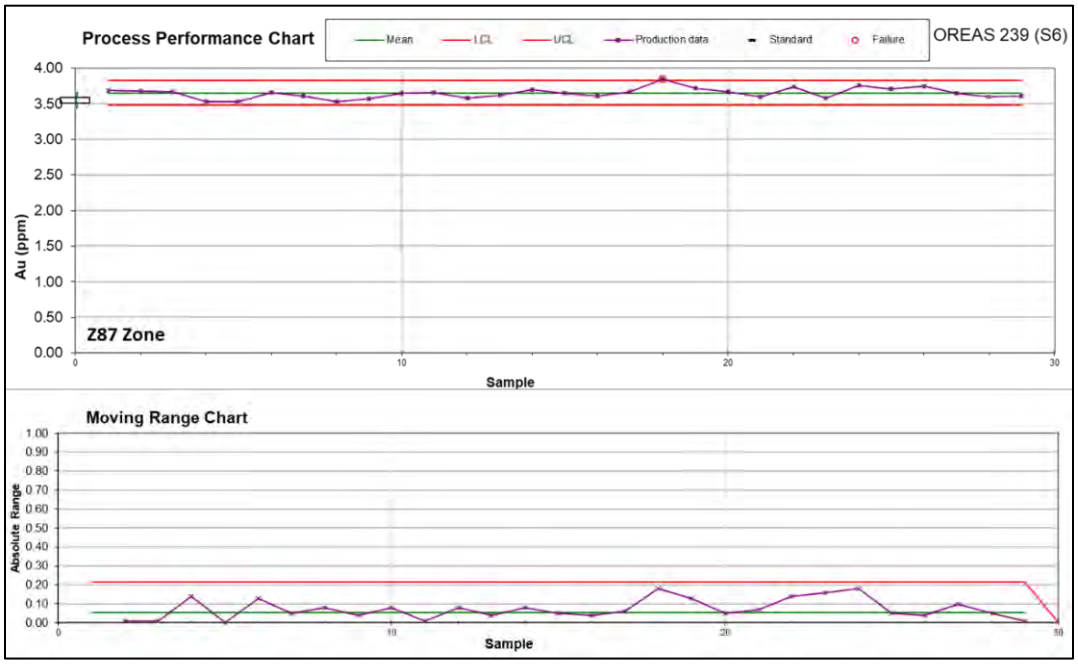
Table 11-11 CRM Results of the 2021-2022 Drilling – SW Zone

CRM	Recommended Value	Standard Deviation	Number of Samples	Number of Failures	Percent Failure
OREAS 209 (S1) ppm Au	1.58	0.044	4	1	25.0 %
OREAS 215 (S2) ppm Au	3.54	0.097	5	0	-
OREAS 217 (S3) ppm Au	0.338	0.01	20	0	-
OREAS 922 (S5) %Cu	0.212	0.009	99	4	4.0 %
OREAS 239 (S6) ppm Au	3.55	0.086	97	5	5.2 %
OREAS 235 (S7) ppm Au	1.59	0.038	227	3	1.3 %
OREAS 231 (S8) ppm Au	0.542	0.015	178	6	3.4 %
OREAS 153b (S9) ppm Au	0.313	0.009	1,402	9	0.7 %
OREAS 254b (S10) ppm Au	2.53	0.061	1,419	39	2.7%
OREAS 506 (S14) ppm Au	0.364	0.010	84	2	2.4 %

Figure 11.11 to Figure 11.13 show the control plots for gold results for CRM OREAS 239 inserted within Z87, J and SW Zones, respectively, for sample batches collected in 2021 to 2022. Overall, the results of this CRM show a good performance. Several 'failures' appear to be mislabelled blanks.

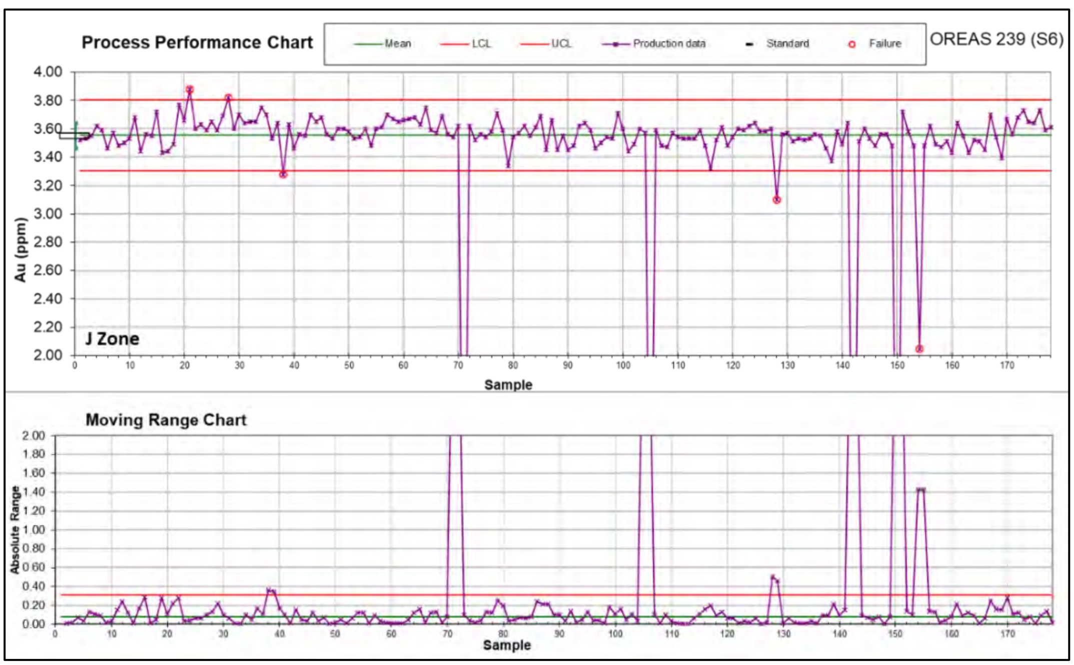
Figure 11.14 to Figure 11.16 show the control plots for the copper results for CRM OREAS 922., inserted within Z87, J and SW Zones, respectively, for sample batches collected in 2021 to 2022. Several 'failures' appear to be mislabelled blanks.

Figure 11-11 Standard OREAS 239 (S6) Control Chart – Gold Control Plot; 2021-2022; Z87 Zone



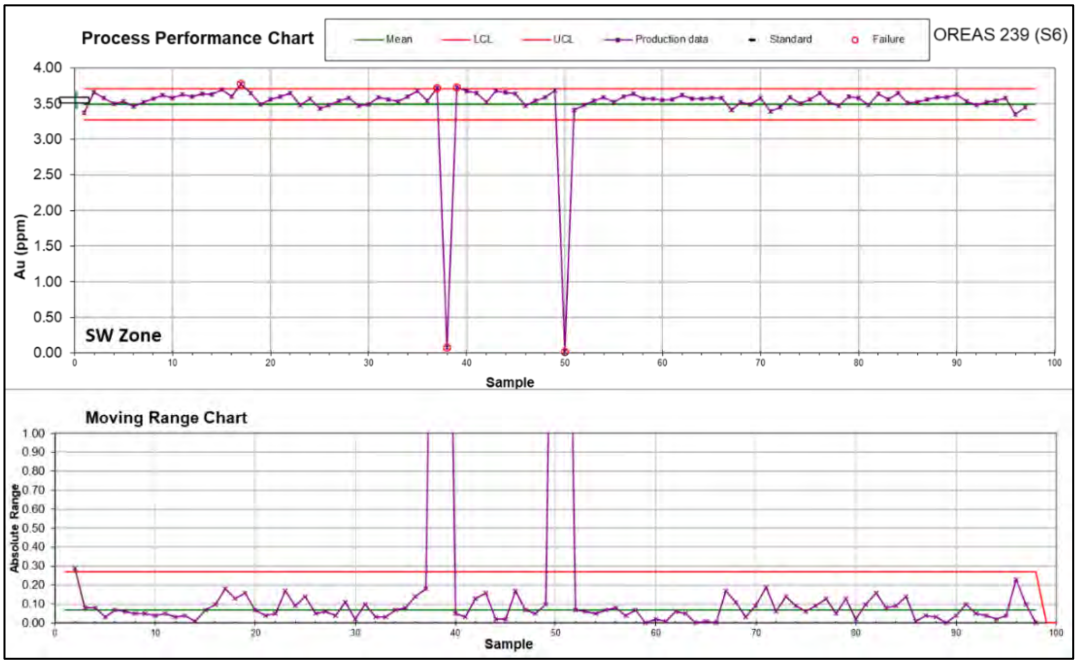
Source: AGP (2022)

Figure 11-12 Standard OREAS 239 (S6) Control Chart – Gold Control Plot; 2021-2022; J Zone



Source: AGP (2022)

Figure 11-13 Standard OREAS 239 (S6) Control Chart – Gold Control Plot; 2021-2022; SW Zone

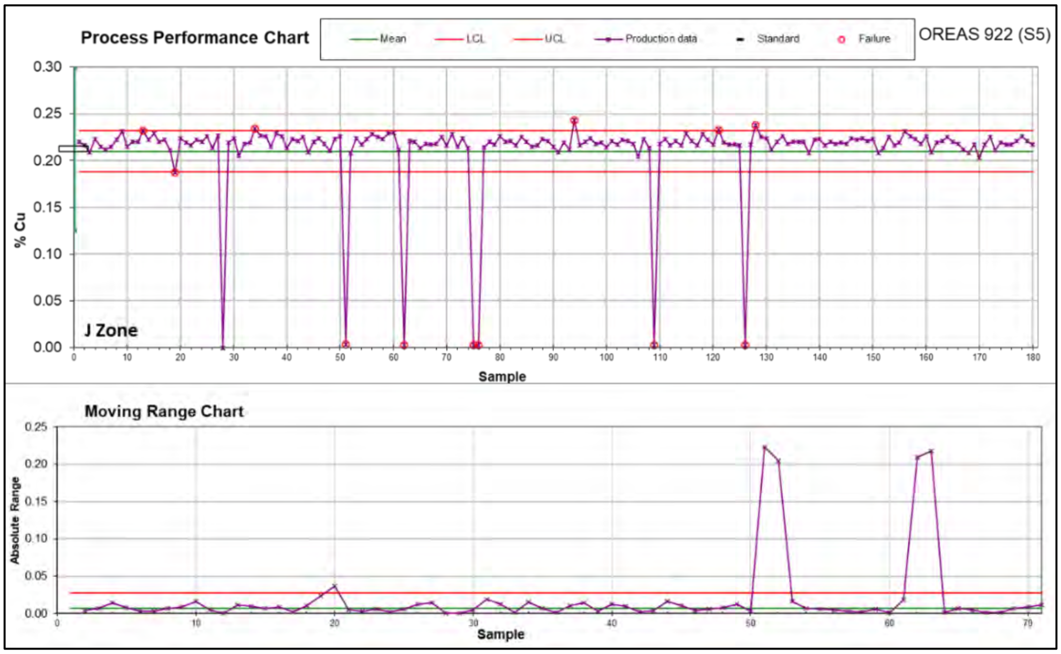


Source: AGP (2022)

Figure 11-14 Standard OREAS 922 (S5) Control Chart – Copper Control Plot; 2021-2022; Z87 Zone

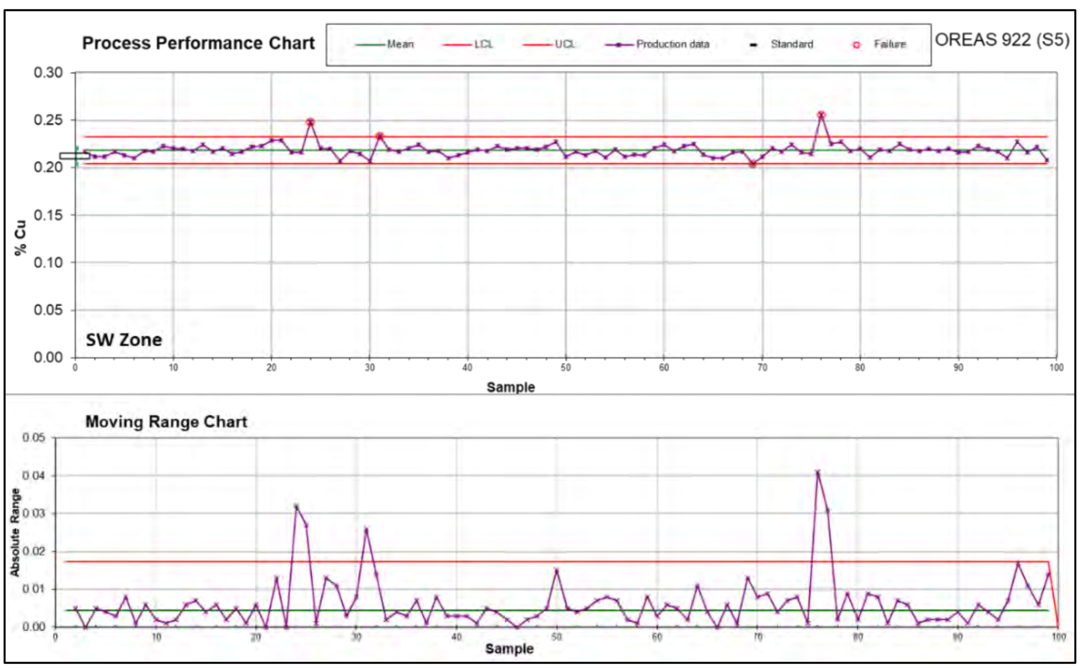
Source: AGP (2022)

Figure 11-15 Standard OREAS 922 (S5) Control Chart – Copper Control Plot; 2021-2022; J Zone



Source: AGP (2022)

Figure 11-16 Standard OREAS 922 (S5) Control Chart – Copper Control Plot; 2021-2022; SW Zone



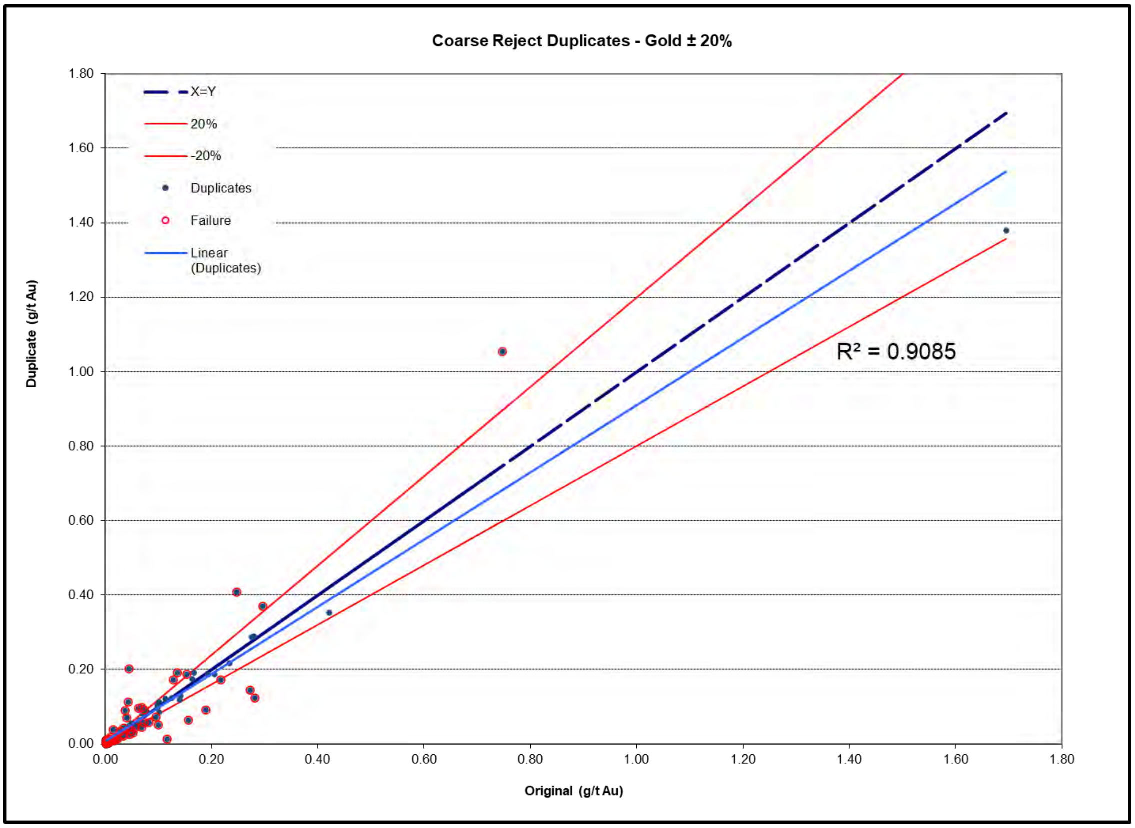
Source: AGP (2022)

Duplicates

During the 2021 and 2022 drill programs, duplicate samples were conducted on the pulps and rejects returned to Troilus post analysis. The samples were nominally selected based on mineralized domains and the pulps and rejects were sent to either ALS or SGS for analysis.

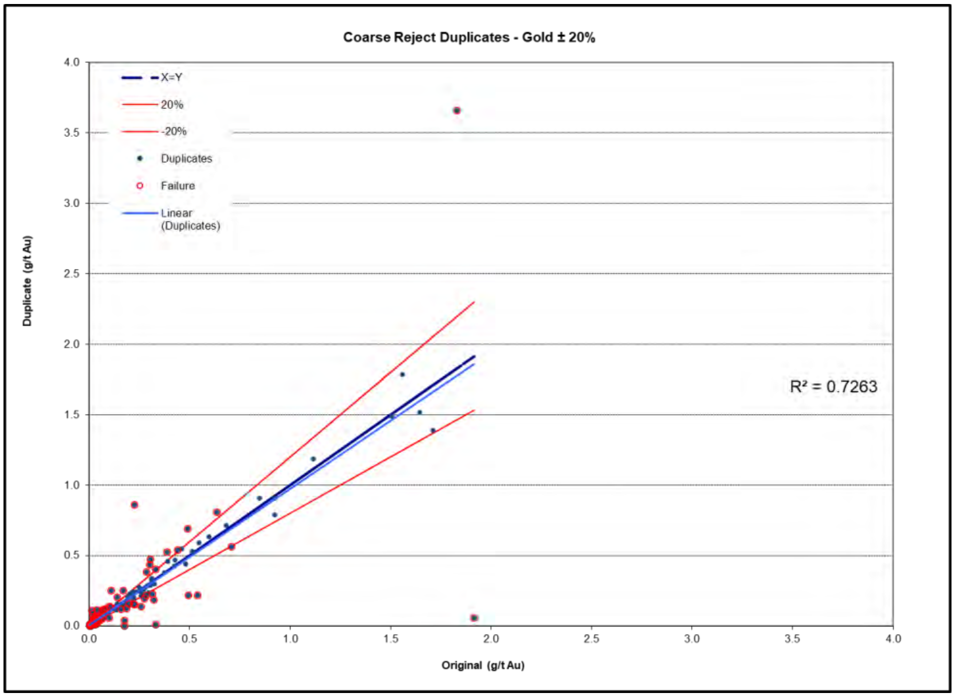
Figure 11.17 to Figure 11.19 show the duplicate control plots of Rejects sent to ALS for Z87, J and SW Zones, respectively.

Figure 11-17 Duplicates Control Chart (ALS Rejects) – Gold Values; 2021 – Z87 Zone



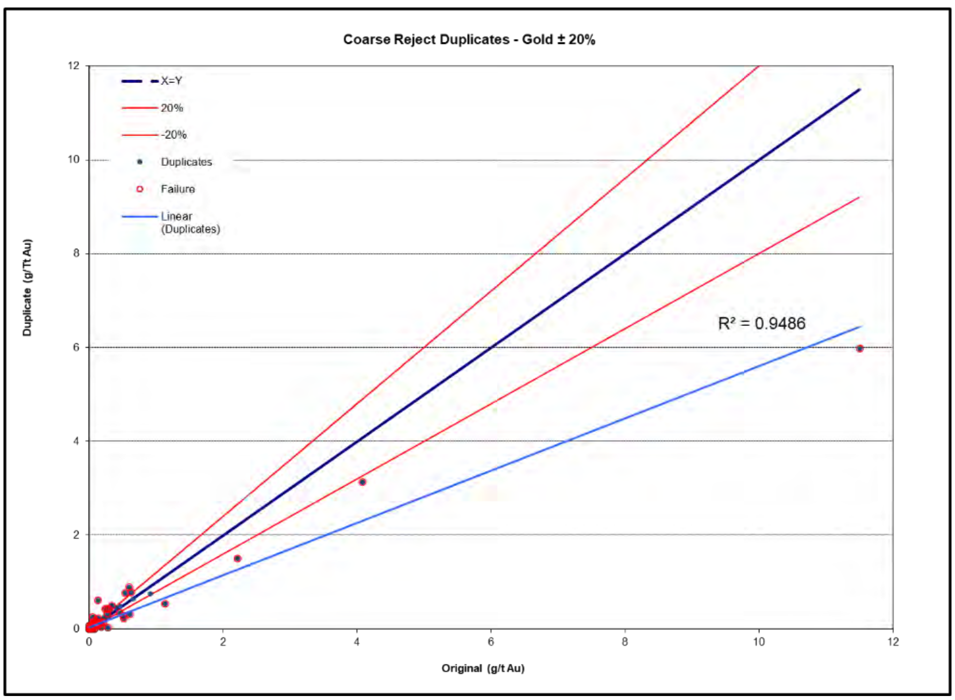
Source: AGP (2022)

Figure 11-18 Duplicates Control Chart (ALS Rejects) – Gold Values; 2021 – J Zone



Source: AGP (2022)

Figure 11-19 Duplicates Control Chart (ALS Rejects) – Gold Values; 2021 – SW Zone



Source: AGP (2022)

11.4.5 QA/QC, 2022-2023

The analytical quality control data produced during the 2022 and 2023 drilling programs, from June 2022 to 31 August 2023, was reviewed by AGP. The QA/QC program implemented by Troilus is a continuation of the previous program initiated since 2018 for each drilling campaign and includes drilling completed on the recently developed X22 Zone. The QC samples included: coarse blanks, CRMs, coarse reject, and pulp duplicates.

Table 11-14 show a summary of the QA/QC samples submitted during the 2022 and 2023 drilling programs carried out on the Project.

Table 11-14: Summary of Troilus QA/QC Program, 2022-2023

Description	All Zones Number of Samples (% of database)
Total Number of Samples	**88,707**
Number of Control Samples	18,863 (21%)
Distribution	
Blanks	12,309 (14%)
Blanks (B1)	158
Blanks (B2)	122
Blanks (B3)	194
Blanks (B4)	21
Blanks (B5)	269
Blanks (B6)	97
Blanks (B7)	40
Blanks (BP)	3,608
Blanks (BSS)	7,800
Duplicates	798 (2022),1,687 (2023); (3%)
CRM samples	4,069 (5%)
OREAS 153b (S9)	128
OREAS 254b (S10)	2,059
OREAS 506 (S14)	1,882

Blanks

A total of 12,309 coarse blanks were inserted by Troilus personnel to monitor grade contamination during the 2022 and 2023 drill programs, up to August 2023. The two main blank materials used were the Parker Lake Granite (BP) and the silica sand (BSS). The quality control performance of these blank samples was reviewed by AGP. Table 11-15 shows the results of each blank sample.

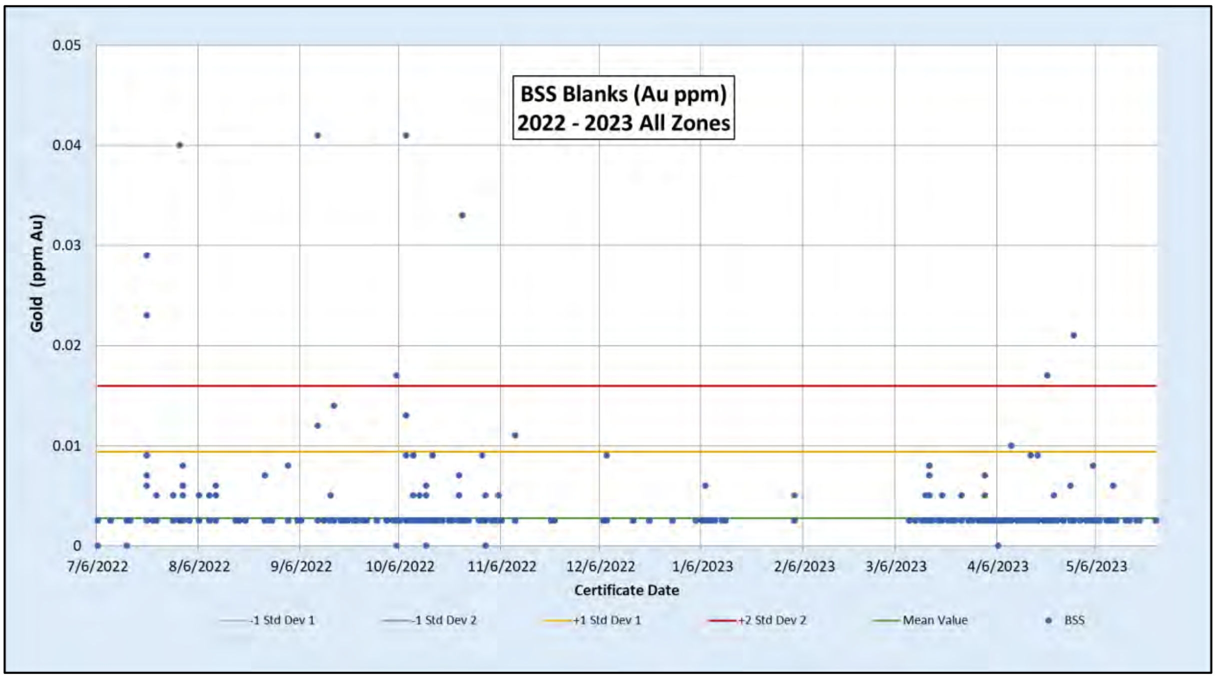
Blank materials were considered failures when the returned gold value exceeded twice the standard deviation, or greater than 0.016 ppm Au. Blank material results are considered excellent since the control plots show few failures of blank materials submitted within the mineralized samples batches.

Figure 11-20 show the results of the BSS blank material for gold.

Table 11-15: Summary of Blanks Performance, 2022-2023 – All Zones

Blank Material	Code	Number of Samples	Number of Failures	Percent Failure
Blanks (B1)	(B1)	158	1	0.6%
Blanks (B2)	(B2)	122	5	4.1%
Blanks (B3)	(B3)	194	7	3.6%
Blanks (B4)	(B4)	21	2	9.5%
Blanks (B5)	(B5)	269	9	3.3%
Blanks (B6)	(B6)	97	3	3.1%
Blanks (B7)	(B7)	40	0	0.0%
Parker Lake Granite outcrop	(BP)	3608	11	0.3%
Silica sand (Lac à la Croix)	(BSS)	7800	27	0.3%

Figure 11-20: BSS Blanks – Gold (ppm Au); 2022 – 2023 Drilling – All Zones



Source: Troilus (2023)

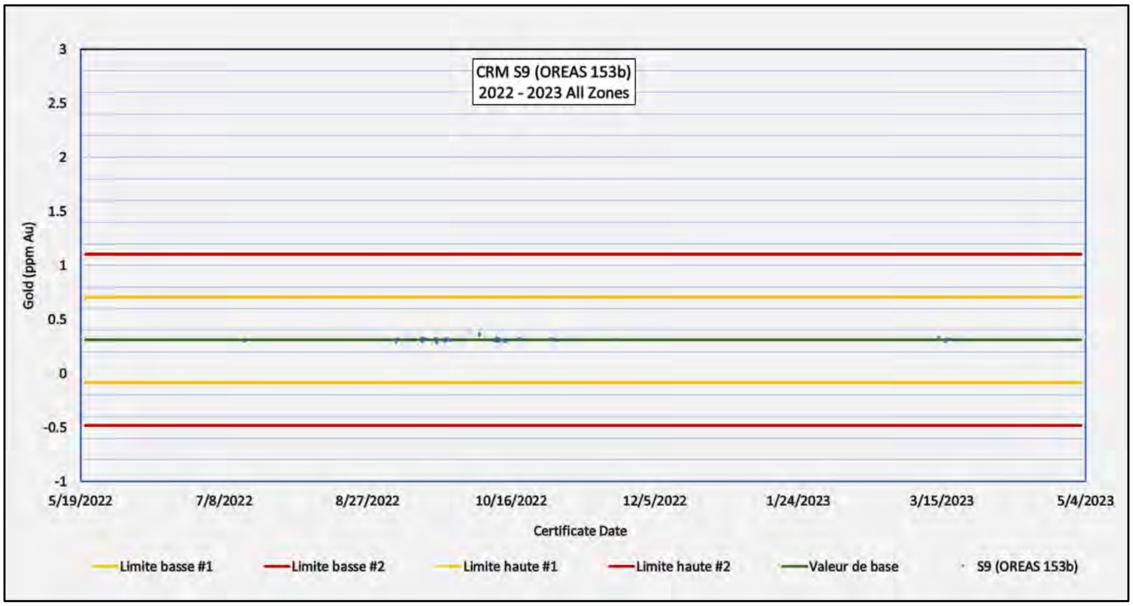
Certified Standard Materials

Table 11-16 presents the accuracy performance results of CRM as implemented by Troilus during 2022-2023 drilling programs. CRMs were considered as failures when a gold or copper result exceeded three times the standard deviation (±3 SD) beyond the certified expected value.

Table 11-16: CRM Results of the 2021-2022 Drilling – Z87 Zone

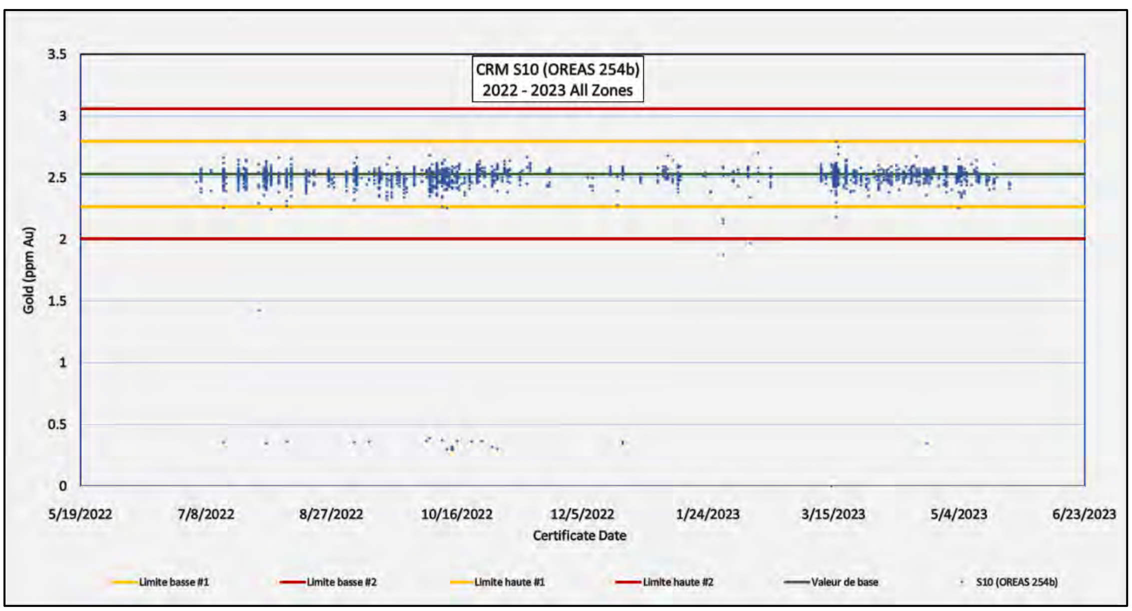
CRM	Recommended Value	Standard Deviation	Number of Samples	Number of Failures	Percent Failure
OREAS 153b (S9) ppm Au	0.313	0.009	128	3	2.3%
OREAS 254b (S10) ppm Au	2.53	0.061	2059	5	0.2%
OREAS 506 (S14) ppm Au	0.364	0.013	1882	17	0.9%

Figure 11-21: Standard OREAS 153b (S9) Control Chart – Gold Control Plot; 2022-2023– All Zones



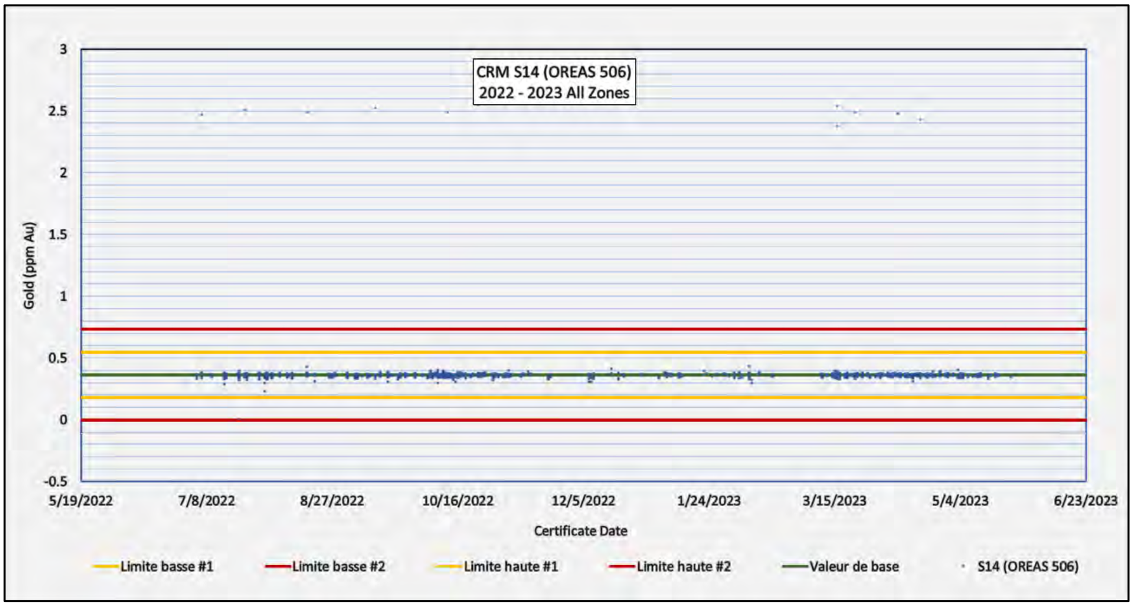
Source: Troilus (2023)

Figure 11-21: Standard OREAS 254b (S10) Control Chart – Gold Control Plot; 2022-2023– All Zones



Source: Troilus (2023)

Figure 11-21: Standard OREAS 506 (S14) Control Chart – Gold Control Plot; 2021-2022– All Zones



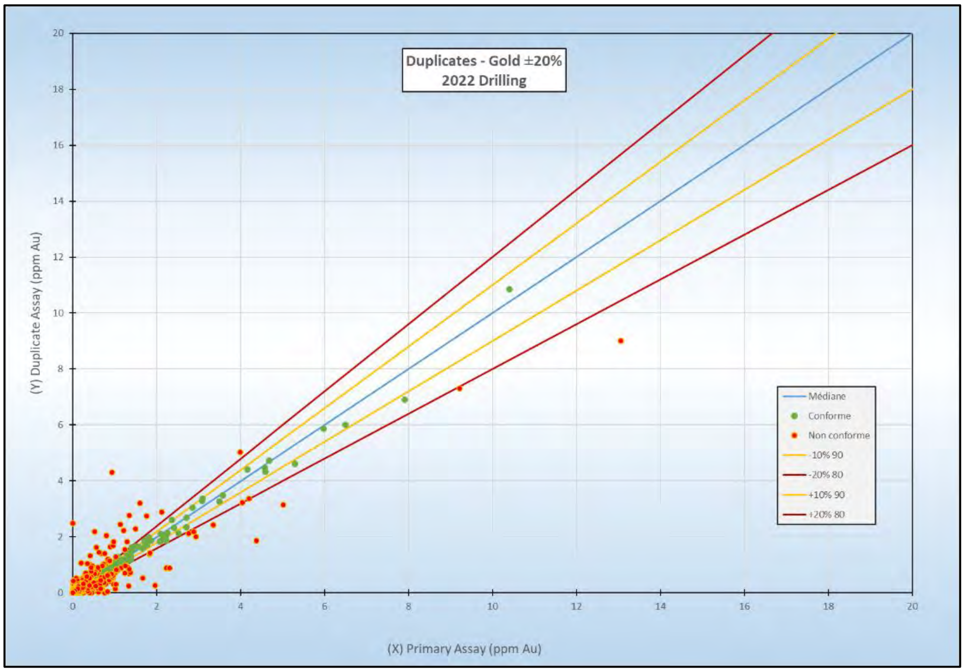
Source: Troilus (2023)

Duplicates

During the 2022 – 2023 drill programs, duplicate samples were conducted on the pulps and rejects returned to Troilus post analysis. The samples were nominally selected based on mineralized domains and the pulps and rejects were sent to either ALS or SGS for analysis.

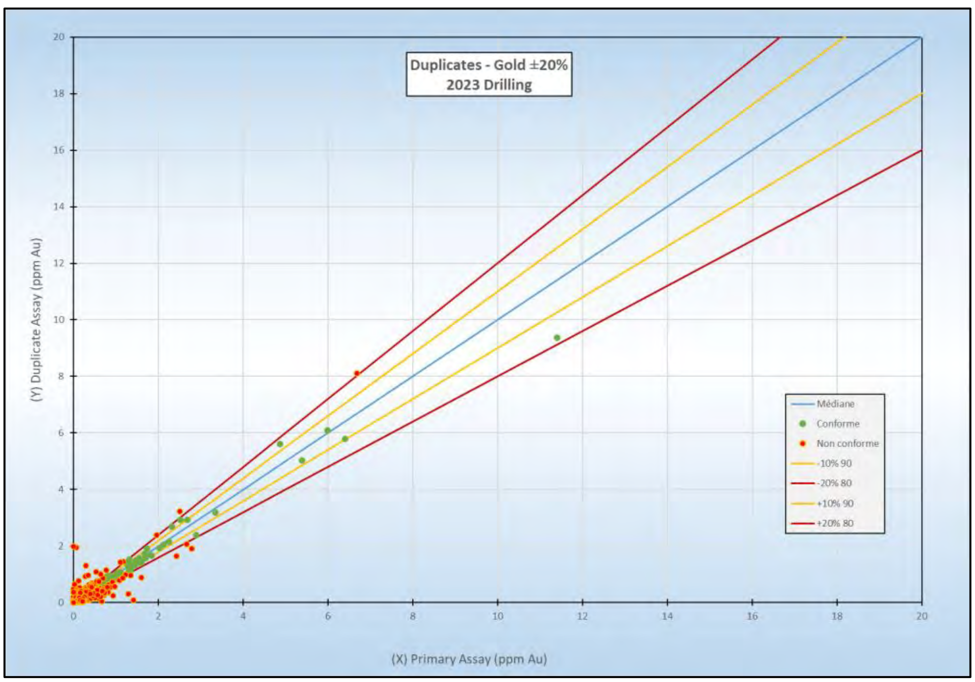
Figure 11.22 and Figure 11-23 show the duplicate control plots for the 2022 and 2023 drilling, respectively.

Figure 11-22 Duplicates Control Chart – Gold Values; 2022 Drilling



Source: Troilus (2023)

Figure 11-22 Duplicates Control Chart – Gold Values; 2023 Drilling



Source: Troilus (2023)

11.5 Databases

Troilus maintains their exploration data in a Geotic database and employs a database manager to maintain the integrity of the database. Only senior level technicians have access to the database.

11.6 Sample Security

Samples are kept secure in the core logging and sampling facility until they are shipped. Troilus maintains a strict chain of custody of their samples from core shed to the transport company to the assay laboratory.

Pulps and rejects are stored on site, near the core logging facilities, in sea containers and custom-built storage sheds between the sea containers. Core boxes are stored next to the sea containers in covered steel core racks.

11.7 QP Opinion

AGP reviewed the sample preparation, analytical and security procedures, as well as insertion rates and the performance of blanks and CRMs from Troilus 2018 to 2023 drill holes and considers that the observed failure rates are minor and that no significant bias affected the integrity of the assay data. In the opinion of the QP, the analytical results delivered by the accredited laboratory and the quality of the data for the Z87, J, X22 and SW Zones are in accordance with the industry standards and are sufficiently reliable for mineral resource estimation.

AGP reviewed the QA/QC program and is of the opinion it is in accordance with standard industry practice and CIM Exploration Best Practice Guidelines. Troilus personnel have taken all reasonable measures to ensure the sample analysis completed is accurate and precise. AGP considers the assay results and database acceptable for use in the estimation of mineral resources. AGP recommends implementing a QA/QC check at the reception of each certificate to assure the quality of the results.

It is the opinion of the QP that the preparation and analyses are satisfactory for this type of the deposit and that the sample handling and chain of custody meet or exceed industry standards.

Density measurements collected during the Troilus drilling program are acceptable and satisfactory. AGP recommends that density measurements continue to be collected for all future drill programs.

12 DATA VERIFICATION

12.1 Data Verification, All Zones

AGP received the database containing all drill holes for the Z87 Zone, J Zone, X22 Zone, and SW Zone in a Leapfrog Project that included, but not limited to, collar, survey, assay, and lithology tables. An export of the Geotic database was received for data validation and QA/QC review.

AGP verified approximately 7.5% of the data from the 2021 and 2022 drill programs (approximately 13,000 records out of 175,000) and included data across all four zones. AGP verified approximately 10% of the data from the 2023 drill program mainly from the X22 Zone. The gold, copper, silver assay values, and density values, were compared to the laboratory certificates provided to Troilus by ALS. No errors were found.

The drill holes were also checked visually for any misplaced drill hole collars, erroneous down hole surveys and for any missing or overlapping intervals. No errors were found.

12.2 AGP Site Visit

The most recent site inspection was conducted by Paul Daigle, Principal Resource Geologist with AGP, and QP for this report, from 5 October to 7 October 2022 for two days. The QP was accompanied on the site visit by

- Kyle Frank, géo., Troilus Exploration Manager
- Nic Guest, géo., Troilus Senior Project Geologist
- Konstantin de Maack, Project Geologist, stagiaire
- Nicolas Robert-Potvin, Troilus geotechnician

The site visit included an inspection of core logging and sampling facilities, core storage facilities, verifying drill hole collar coordinates, and reviewing drill core logs against selected drill core.

The QP completed a previous site inspection from 18 February to 20 February 2020, while the 2020 drill program was in progress on the SW Zone.

12.2.1 Logging and Sampling and Storage Facilities

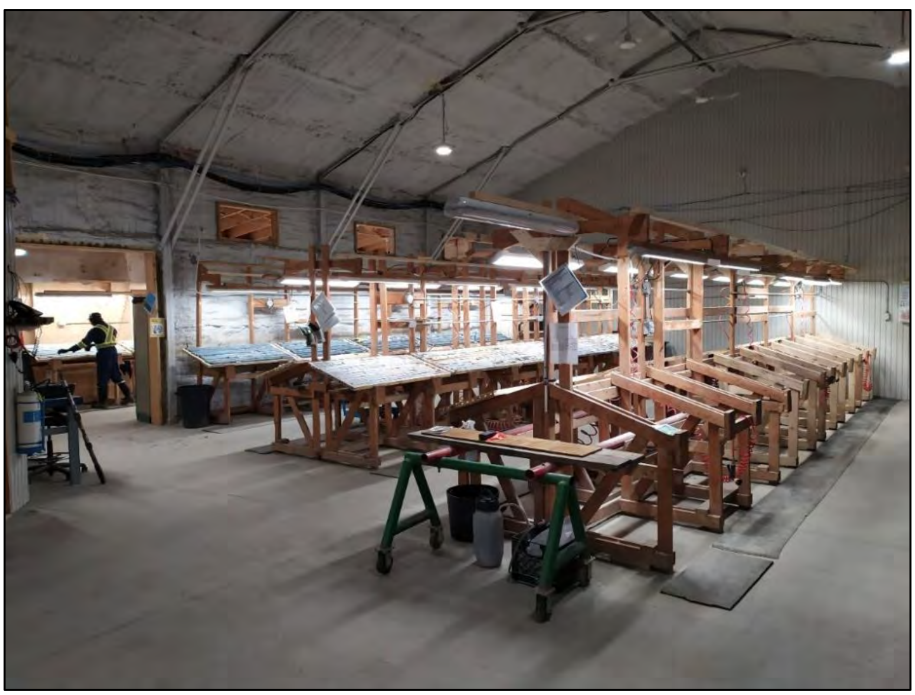
Drill core for the Project is logged, sampled, and stored temporarily in the rear of a permanent warehouse on the mine site where the front serves as a garage. This facility has a second-floor loft that serves as an office for Troilus geology personnel. The Centre Administrative is situated next to the warehouse and serves administration and additional exploration offices for the Project.

Figure 12-1 shows the warehouse used for core logging and sampling. Figure 12-2 shows the interior of the core logging facility.

Figure 12-1: Drill Core Logging and Sampling Facility

Source: AGP (2022)

Figure 12-2: Drill Core Logging and Sampling Facility



Source: AGP (2022)

The interior the core logging and sampling facility is kept clean and well-maintained. All field and sampling and CRM supplies are kept orderly and organized on shelves and in filing cabinets.

Figures 12-3 shows the Centre Administrative used for administration and exploration offices.

Figure 12-3: Core Logging Facility (centre) and Centre Administrative (right)

Source: AGP (2022)

12.2.2 Drill Hole Core Storage Area and Facilities

The core storage area is situated approximately 300 m west of the core logging facility. Core boxes are stored in tin covered steel racks. The core racks are arranged in a grid pattern and in blocks for easy access. Each block is given a block letter and number, and a record of the location core boxes is kept up to date. Boxes are stored without covers.

Figure 12.4 shows the core racks in the core storage area. Figure 12.5 shows the sea containers and rooms used for storing pulp and rejects after laboratory analysis.

Figure 12-4: Core Storage Area; Core Racks

Source: AGP (2022)

Figure 12-5: Core Storage Area; Pulp and Rejects Storage Facility

Source: AGP (2022)

12.2.3 Drill Hole Collar Locations

Several drill hole collar coordinates were verified at the Z87, J and SW Zones. The locations of the drill hole collars were measured in the field using a hand-held Global Positioning System (GPS) device (Garmin GPS map 62s) using NAD 83 datum, the same datum used by Troilus.

Drill hole collars are capped by an aluminium screw cap that is punched with the drill hole number on top. The drill hole is marked by a 2 m metal rod topped by a metal red-painted flag marked/etched with the drill hole number. In some cases, a 2 m wood stake is planted next to the metal rod, painted orange, and marked with the drill hole the drill hole number. Some wooden stakes have the drill hole number, azimuth, dip, and length written in permanent marker still visible, or with an aluminium tag stapled on with the same information. These rods make the drill hole more easily identifiable and visible above the level of snow in winter.

Figure 12-6 shows drill hole collars for J-22-333 and SW-22-577.

Figure 12-6: Drill Hole Collars for J-22-333 and SW-22-577

Source: AGP (2022)

The collar coordinates measured by AGP fell within a 9 m tolerance of those reported by Troilus. It is the QP's opinion the coordinates are acceptable, given the accuracy of the handheld GPS used to review the drill hole collar locations.

Table 12-1 presents the comparison of the AGP and Troilus drill hole coordinates in the Z87 and J Zones. Table 12-2 presents the comparison of the AGP and Troilus drill hole coordinates in the SW Zone.

Table 12-1: Comparison of Drill Hole Collar Coordinates – Z87 and J Zone

Drill Holes	Troilus Easting (m UTM)	Troilus Easting (m UTM)	AGP Easting (m UTM)	AGP Easting (m UTM	Δ Easting (m)	Δ Northing (m)
Z87-22-420	537214.4	5651828	537212	5651831	3	-3
Z87-22-428	537355.2	5651988	537353	5651990	2	-2
TLG-Z8721-265	537380.9	5651972	537378	5651973	3	-2
Z87-22-424	537319	5651874	537317	5651877	2	-3
Z87-22-259	537553.3	5651790	537551	5651791	3	-1
Z87-22-260	537598	5651802	537596	5651803	2	-1
Z87-22-261	537597.2	5651829	537597	5651829	0	1
Z87-22-262	537655.3	5651827	537652	5651827	4	0
Z87-22-410	536846.1	5651143	536849	5651151	-3	-8
Z87-22-413	536870.3	5651023	536868	5651025	3	-2
Z87-22-431	537103.5	5650526	537102	5650518	2	8
Z87-22-433	537056	5650448	537054	5650452	2	-3
Z87-22-402	536874	5650402	536872	5650403	2	-2
Z87-22-401	536916	5650389	536918	5650392	-2	-3
Z87-22-403	536912.3	5650348	536914	5650350	-2	-2
Z87-22-420	537214.4	5651828	537212	5651831	3	-3
Z87-22-428	537355.2	5651988	537353	5651990	2	-2
J-22-333	536813	5652084	536810	5652078	3	6
J-21-315	536777	5652117	536779	5652119	-2	-2
J-22-332	536752	5652168	536743	5652171	9	-3
TLG-ZJ21-287	536757	5652246	536756	5652248	2	-2
TLG-ZJ21-288	536749	5652312	536749	5652317	0	-4
TLG-ZJ21-289	536775	5652351	536774	5652353	0	-2
TLG-ZJ21-226	536848	5652358	536845	5652360	3	-3
TLG-ZJ21-225	536835	5652303	536833	5652306	2	-3
TLG-ZJ19-110	536851	5652249	536849	5652252	2	-3
TLG-ZJ20-224	536797	5652212	536795	5652214	2	-2
TLG-ZJ19-151	537016	5652434	537016	5652437	0	-3

Table 12-2: Comparison of Drill Hole Collar Coordinates – SW Zone

Drill Holes	Troilus Easting (m UTM)	Troilus Easting (m UTM)	AGP Easting (m UTM)	AGP Easting (m UTM	Δ Easting (m)	Δ Northing (m)
TLG-SW20-180	534188	5647780	534186	5647781	2	-1
TLG-SW20-214	535078	5648401	535078	5648400	-1	1
TLG-SW20-219	535284	5648740	535288	5648740	-3	0
TLG-SW21-218	535219	5648632	535220	5648631	-1	0
TLG-SW21-281	535251	5648682	535255	5648684	-4	-2
TLG-SW21-282	535189	5648561	535189	5648561	-1	0
TLG-SW21-283	535157	5648435	535157	5648436	0	-1
TLG-SW21-284	535161	5648506	535161	5648507	0	-1
TLG-SW21-512	534253	5647771	534252	5647770	1	1
SW-21-217	534121	5647736	534124	5647733	-2	2
SW-21-511	534307	5647710	534307	5647712	0	-2
SW-21-513	534130	5647813	534132	5647810	-2	3
SW-21-589	535333	5648827	535330	5648832	3	-5
SW-22-573	534890	5648057	534890	5648059	0	-3
SW-22-576	534688	5647926	534688	5647927	0	-1
SW-22-577	534692	5647824	534693	5647825	0	-1
SW-22-617	534367	5647776	534367	5647776	0	1
SW-22-621	534460	5647780	534457	5647781	3	-1
SW-22-622	534264	5647668	534263	5647671	1	-3
SW-22-623	534195	5647687	534193	5647689	2	-2
SW-22-624	534117	5647646	534119	5647646	-2	0
SW-22-630	535136	5648370	535135	5648375	1	-5

12.2.4 Drill Hole Log and Drill Core Review

A review of the drill core and drill core logs was made on selected drill core intervals in the Z87, J and SW Zones. The lithology descriptions and sample intervals in the drill logs were compared and found to be consistent. All sample tag numbers in the core boxes match with the intervals in the database.

Table 12-3 lists the selected drill core intervals examined during the site visit.

Table 12-3: Comparison of Drill Hole Collar Coordinates – SW Zone

Zone	Drill Hole	From (m)	To (m)	Interval (m)	Core Boxes
Z87	87-21-408	79.50	84.00	4.50	10
Z87	87-22-415	408.00	421.12	13.12	92-94
Z87	87-22-421	429.00	456.15	27.15	98-103
J	TLG-ZJ21-230	28.27	40.52	12.25	7-10
J	TLG-ZJ21-244	82.25	95.12	12.87	19-21
J	J-21-303	413.21	430.56	17.35	99-102
SW	TLG-ZSW20-204	315.00	314.00	322.10	73-74
SW	TLG-ZSW21-266	168.24	194.25	26.01	39-44
SW	SW-21-501	203.78	216.55	12.77	47-49
SW	SW-21-537	63.27	76.17	12.90	13-16
SW	SW-21-573	29.22	42.00	12.78	7-9
SW	SW-22-641	36.00	44.61	8.61	5-6
SW	SW-22-641	87.15	99.75	12.60	17-19

12.2.5 Independent Samples

There were no independent samples collected during the site visit. Independent samples were collected and analyzed during the February 2020 site inspection (AGP, 2020).

12.3 QP Opinion

The QP is of the opinion the database is representative and adequate to support the resource estimates for the Troilus deposits. The QP is also of the opinion the core descriptions, sampling procedures, and data entries were conducted in accordance with industry standards.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

Samples from the J, Z87 and Southwest (SW) zones were submitted to various testing facilities for metallurgical testing during 2019 and 2023 in support of the current studies. This report focuses on this more recent test work but also presents a summarized review of historical test work (preceding 2019).

Testwork results were reported in the following reports:

- *An Investigation into the Recovery of Gold and Copper from the Troilus Project, Project No. L.R. 4438, Lakefield Research, July 1993.*
- *An Investigation into the Metallurgical Response of J4 Ore – Troilus Mine, Report No. LR10484-001, Lakefield Research, January 2003.*
- *Email Re: Communition Testing, Project No. 127551, Hazen Research Inc.*
- *JKDW Test Report for Troilus Project – Tested by Corem, Job no. 20114/P3, JKTech, June 2020*
- *Evaluation of gold recovery from the cyanidation of assay core rejects associated with the Troilus Gold Project, T2530, COREM, June 2019.*
- *Comminution testing, Hazen report 12751, Hazen Research Inc., 8 May 2020.*
- *JKDW Test Report, Troilus Gold, COREM, JKTech Job No 20114/P3, Jun 2020.*
- *Solid-liquid Separation Testing Report, Thickening and Viscosity Testing, Project No 88054A, Kappes, Cassidy and Associates, June 2020.*
- *Troilus Gold Project J4 Zone and J5 Zone Composite Samples Bottle Roll Leach Testing Report of Metallurgical Testwork, Project No 9318C, Kappes, Cassidy and Associates, July 2020.*
- *Troilus Gold Project J4 Zone and J5 Zone Composite Samples Conventional and HPGR Crushed Bottle Roll Testing Report of Metallurgical Testwork, Project No 9318C, Kappes, Cassidy and Associates, July 2020.*
- *J4 2020 and J5 2020 Composite Samples Conventional and HPGR Crushed Leach Testing, Project No 9318C, Kappes, Cassidy and Associates, July 2020.*
- *Troilus Gold Project 87Op, 87UG, 87S and SW Samples Flotation and Bottle Roll Leach Testing Report of Metallurgical Testwork, Project No 9318C, Kappes, Cassidy and Associates, July 2020.*
- *Troilus Project Medium and High Pressure HPGR Crushing Report of Metallurgical Testwork, Project No 9318C, Kappes, Cassidy and Associates, November 2020.*
- *Physical and Chemical Assessments of the Troilus Deposit, T2779, COREM, May 2021.*
- *SMC Test Report for Troilus Gold Project, JKTech Job No: 21008/P10, Base Metallurgical Laboratories, July 2021.*
- *Supplemental Metallurgical Testing of the Troilus Gold Project, BL803, Base Metallurgical Laboratories, August 2022.*

- *Troilus Gold Corporation – Copper / Gold Flotation Investigation Report, MTR 22-122, Eriez Flotation, October 2023.*
- *Gravity Recoverable Gold Test Report, Project Reference: P-21076 (9232513028), Eriez Flotation (with FLSmidth), September 2021.*
- *Gravity Recoverable Gold Test Report, Project Reference: P-21102 (9232513507), Eriez Flotation (with FLSmidth), December 2021.*
- *Gravity Circuit Modelling Report for Troilus, Rev. 1, FLSmidth, March 2022.*

Historically, the J4 Zone and J5 Zone denoted the eastern and western mineralized domains of the J-Zone, respectively. Since the interpretation of the J Zone has changed since 2022, the terms J4 and J5 are now referenced as the J-Zone.

13.2 Summary of Historical Testing

13.2.1 Lakefield (1993-1994)

Five composites from the Z87 Zone and J4 Zone were subjected to metallurgical testing at Lakefield Research, Ontario in 1993. Four of the five composites were used to perform bench scale gravity and flotation testwork. The 'Pilot Plant' composite comprised of high-grade Z87 Zone material. The pilot plant flowsheet featured semi autogenous and ball mill grinding, gravity concentration and flotation (rougher flotation, regrind, three cleaner stages).

Table 13-1 summarizes the comminution test results for these five composites.

Table 13-1: Lakefield (1993) Comminution Results

Composite ID	Bond Ball Work Index (kWh/t)	Bond Rod Work Index (kWh/t)
Low 87	9.4	16.6
Medium 87	9.9	16.6
High 87	9.6	15.3
J4 Zone	8.8	15.2
Pilot Plant Comp. (Z87 Zone)	10.3	14.8

All five composites were subjected to bench scale testing that mimicked the pilot plant flowsheet. Table 13-2 summarizes the results obtained during this program.

Table 13-2 Lakefield (1993) Bench Scale Results

Composite ID	Cu Head (%Cu)	Au Head (g/t Au)	Conc. Cu Grade (%Cu)	Conc. Cu Recovery (%)	Total (Grav+Float) Au Recovery (%)
Low 87	0.058	1.06	5.0	85	87
Medium 87	0.11	0.94	10.7	79	87
High 87	0.16	1.88	17.3	91	90
J4 Zone	0.045	1.53	4.0	62	94

The J4 zone yielded a low copper recovery and concentrate grade but a gold recovery of 94%. For the three 87 composite samples, both gold and copper recoveries were acceptable at 87% and 88%

respectively, but the copper grade remained lower than the targeted 20% for a saleable product. Gravity recovery of gold was good averaging 46% for all four composites.

Subsequent testing sought to produce a higher quality concentrate, particularly for the lower grade samples. Sodium sulphite addition successfully depressed pyrite, raising copper concentrate grades to around 13% with only a small decrease in recovery.

During subsequent testing (1994), sodium sulphite (Na2SO3) and lime were employed in the regrind / cleaner circuit after the bulk sulphide rougher flotation step. These tests were conducted using 10 kg charges and higher cleaner pulp densities, which probably assisted in improving concentrate grades and recoveries for this program. In test No. 242, the 'Low 87' composite (head grade of 0.06% Cu) yielded a copper concentrate grade of 16.9% Cu at 85% copper recovery. This same flowsheet was also tested on the 'Zone 87A' composite (head grade of 0.10 - 0.13% Cu) and resulted in copper concentrate grades peaking at 29% Cu with 86% copper recovery (test No. 250C). Gold recoveries were lower but not optimized for. Nevertheless, it is possible this flotation approach combined with cyanidation of all of the flotation tails could yield both a saleable copper concentrate as well as high overall gold recoveries.

The pilot plant test runs were performed with a high-grade composite (0.19% Cu and 2.06 g/t Au). A spiral and shaking table was used to recover coarse gold from the grinding circuit. A falcon gravity concentrator was also included to recover additional coarse gold from the rougher concentrate stream. The initial runs explored various primary grind sizes but from PP10 onwards the primary grind was maintained at a P80 of 85 microns (µm).

During the final two runs the operation was stable and produced consistent results. The overall gold recovery was 88.4% of which only 21.5% was in the flotation concentrate. The concentrate Cu grade was 15.3% with 89.6% copper recovery into the concentrate. While these were acceptable results it is worth noting that the copper grade remained below the 20% threshold despite the elevated head grade of the sample used.

13.2.2 Lakefield (2003)

Lakefield Research performed bench scale gravity and flotation tests on three samples from the J4 zone in 2003. The samples were of similar gold grades (approximately 1 g/t) and copper grades of 0.023%, 0.054% and 0.096%.

Initial testing comprised of grinding followed by single pass of two stages of gravity concentration using a Knelson centrifugal concentrator, followed by a Mozely table. The Knelson and Mozely tails were combined for flotation tests.

The final concentrate mass pull ranged from 0.017 wt% to 0.039 wt% with the gravity gold recovery consistently around 32%. The final concentrate gold grades varied between 860 and 1,660 g/t.

Locked cycle flotation tests were performed on the gravity tailings using 25 g/t PAX and 25 g/t SPRI additions in the rougher stage with lime added to a pH of around 10.7. The rougher concentrate was reground to 20 µm, followed by more lime addition in the three cleaner stages. First cleaner tails reported to a scavenger step with its concentrate recycled to the first cleaner.

Copper and gold recoveries were acceptable at 83 - 93% and 83 - 86% respectively. However, the copper grade of the concentrates remained low at 5.8%, 6.5% and 16.0% for the medium, low- and higher-grade samples respectively.

Two alternative flotation and cyanidation flowsheets were explored using the medium grade composite. These tests explored cyanidation of the Cleaner 1 flotation tails and rougher flotation followed by regrinding and cyanidation of the reground rougher concentrate. Overall gold recoveries decreased to 79% and 75% respectively for these two flowsheets.

13.3 Corem & Hazen Communition Testing (2020, 2021)

13.3.1 Metallurgical Samples

Troilus selected drill core samples for the testing programmes.

13.3.2 Comminution Results

Composite samples were submitted for comminution testing by Hazen and Corem. Table 13-3 summarizes the result obtained. The results indicate that the samples tested are of above average hardness and abrasiveness.

Table 13-3: Test Results

		JK Parameters				Bond Indices kWh/t		
Sample ID	SG	SCSE kWh/t	A	B	A x b	BW	RWi	Ai
Domain 41	2.78	10.42	56.9	0.65	37.0	8.7	10.5	0.2285
Domain 41	2.81	10.21	54.3	0.72	39.1	8.5	10.9	0.1806
Domain 41	2.88	10.12	57.4	0.72	41.3	9.0	11.4	0.2374
Domain 41	2.74	9.71	54.8	0.77	42.2	8.4	10.5	0.2257
88029 A 87UG	-	-	-	-	-	9.8		0.285
88029 A 87UG	-	-	-	-	-	11.0		0.344
88029 A 87UG	-	-	-	-	-	14.7		0.547

13.4 Corem Cyanidation Testwork Program T2530 (2019)

13.4.1 Sample Description

Three composite samples (high, medium, and low grade) were tested from each of the J4 and J5 zones respectively.

13.4.2 Direct Cyanidations

Bottle roll direct cyanidations were performed at three crush / grind sizes. The tests were conducted for 72 hours (h) at both low (200 mg/L) and high (1,000 mg/L) NaCN concentrations (manually adjusted as necessary. Table 13-4 below summarizes pertinent results.

Table 13-4: Direct Cyanidation Results

Sample ID	Grind Size (µm)	Head Grade g/t			Metals Extraction %			Reagents Consumption kg/t	
		Au	Ag	Cu	Au	Ag	Cu	NaCN	CaO
TLG-ZJ418-065-27m	P100=2000 (low CN)	3.01	1.20	446	41.0	27.7	2.7		0.27
	P100=2000 (high CN)		5.00		56.3	26.1	7.5	0.70	
	P80=150				85.3	34.8	5.6	0.36	0.18
	P80=75				97.0	37.5	5.6	0.20	0.22
TLG-ZJ418-066-38m	P100=2000 (low CN)	1.15	1.32	628	42.0	22.9	2.9		0.31
	P100=2000 (high CN)				58.3	19.1	6.8	0.58	
	P80=150				86.9	23.0	4.6	0.25	0.06
	P80=75				93.9	18.7	3.7	0.16	0.12
TLG-ZJ418-065-18m	P100=2000 (low CN)	0.67	0.98	368	48.9	19.8	3.9		0.28
	P100=2000 (high CN)				58.1	14.9	7.8	0.66	
	P80=150				89.4	20.1	5.1	0.15	0.27
	P80=75				92.9	17.5	5.5	0.14	0.19
TLG-ZJ518-023-10m	P100=2000 (low CN)	1.55	1.04	822	59.6	46.7	3.5		0.26
	P80=150				78.9	32.9	4.5	0.15	0.13
	P80=75				90.0	24.9	5.2	0.15	0.18
TLG-ZJ518-023-26m	P100=2000 (low CN)	0.97	1.00	530	47.2	21.8	4.7		0.40
	P100=2000 (high CN)				47.1	32.5	8.3	0.71	
	P80=150				72.5	35.0	8.5	0.16	0.29
	P80=75				77.6	33.9	11.9	0.17	0.31
TLG-ZJ518-034-10m	P100=2000 (low CN)	0.48	1.68	1070	63.3	49.0	4.1		0.34
	P80=150				85.0	37.5	4.2	0.22	0.41
	P80=75				86.7	41.1	4.8	0.16	0.83

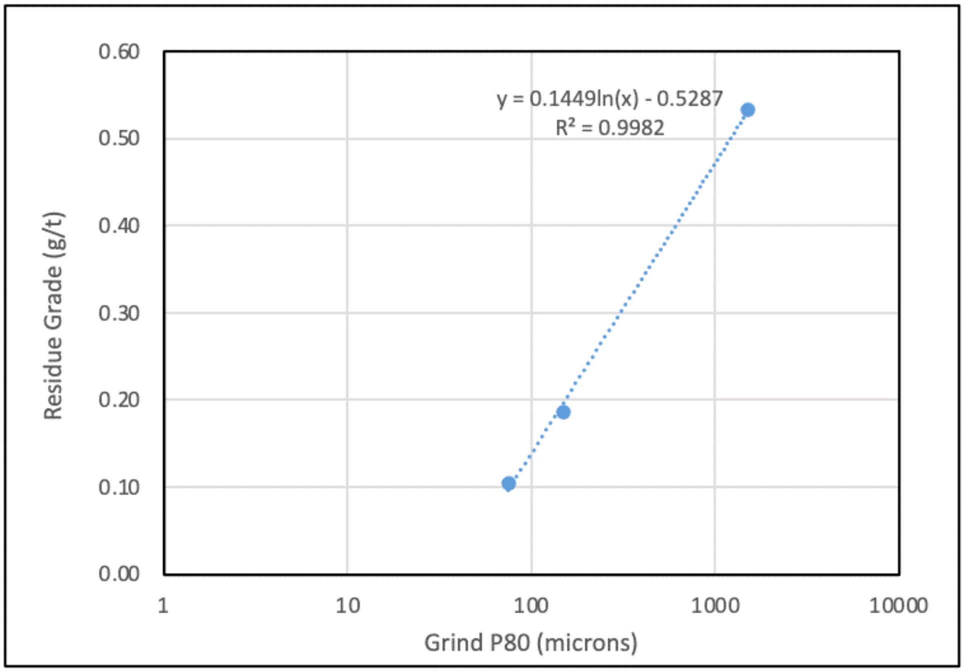
Direct cyanidation at the crush size of 2 mm explored the amenability of the samples to vat and heap leaching. At this coarse size, gold extractions were generally too low to offer an economically viable processing strategy. Extending the duration may render the heap leach route more attractive.

Silver and copper extractions were low indicating that these metals will not contribute much to revenues in a cyanidation only plant.

Both the cyanide and lime consumption rates were low at 0.16 kg/t and 0.2 kg/t respectively for the samples ground to 80% passing 75 µm. At this grind the average gold extraction was 89.7%, which is an acceptable average for these grades.

Gold extraction is shown to be sensitive to grind size and somewhat sensitive to grade. Figure 13-1 below plots the average residue for all tests at a specific grind size versus the grind size. It is clear that additional grinding will improve gold extraction. A grind optimization exercise is required to establish the optimum grind. However, more intervals are necessary as a curve fitted to three points only cannot be extrapolated reliably to smaller grind sizes.

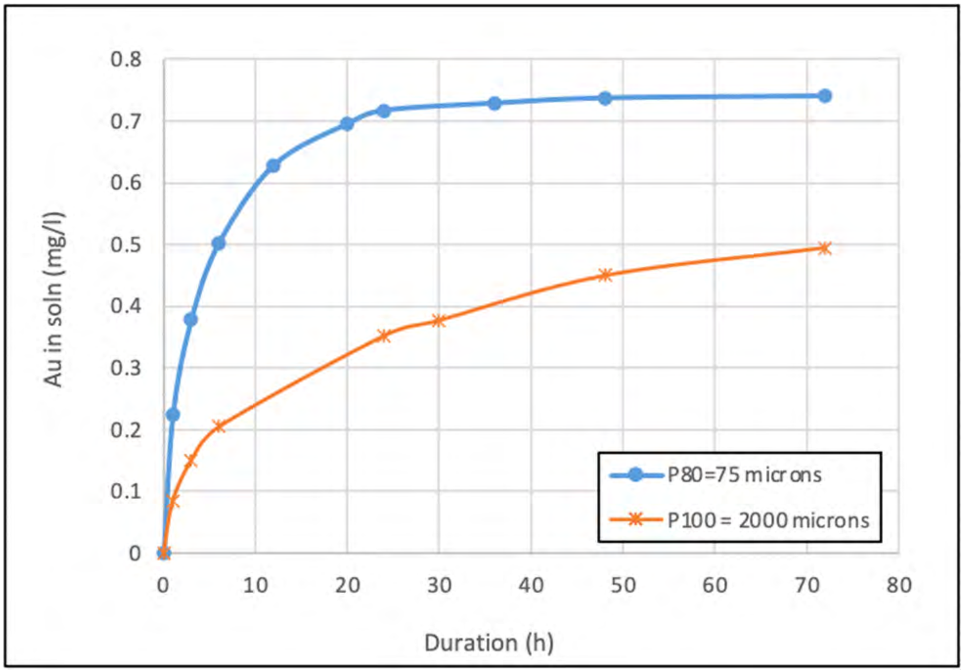
Figure 13-1: Gold Extraction vs. Grind Size for Direct Cyanidations of J4 and J5 Composites



Source: Lycopodium (2022)

Figure 13-2 presents the leach kinetics curves for all of the direct cyanidation tests performed at the two grind sizes. It is evident that leaching was not completed within 72h for the 2 mm material but that it was completed within 36 h for samples ground to a P_{80} of 75 µm.

Figure 13-2: Leach Kinetics for Direct Cyanidations of J4 and J5 Composites



Source: Lycopodium (2022)

13.5 Kappes, Cassiday & Associates Cyanidation Testwork (2020)

13.5.1 Sample Description

Kappes, Cassiday and Associates (KCA) performed cyanidation tests on composite samples from the J4 and J5 zones. These tests were primarily aimed at exploring the samples' amenability to heap leaching.

13.5.2 Direct Cyanidation of Coarse Material Samples

Bottle roll tests were performed for a duration of 10 days at a NaCN concentration of 1 g/L after crushing the samples to a P80 of approximately 6.3 mm. These tests were performed in triplicate and the results are presented in Table 13-5 below. Note that the laboratory used hydrated lime, but the numbers reported below are for 100% CaO.

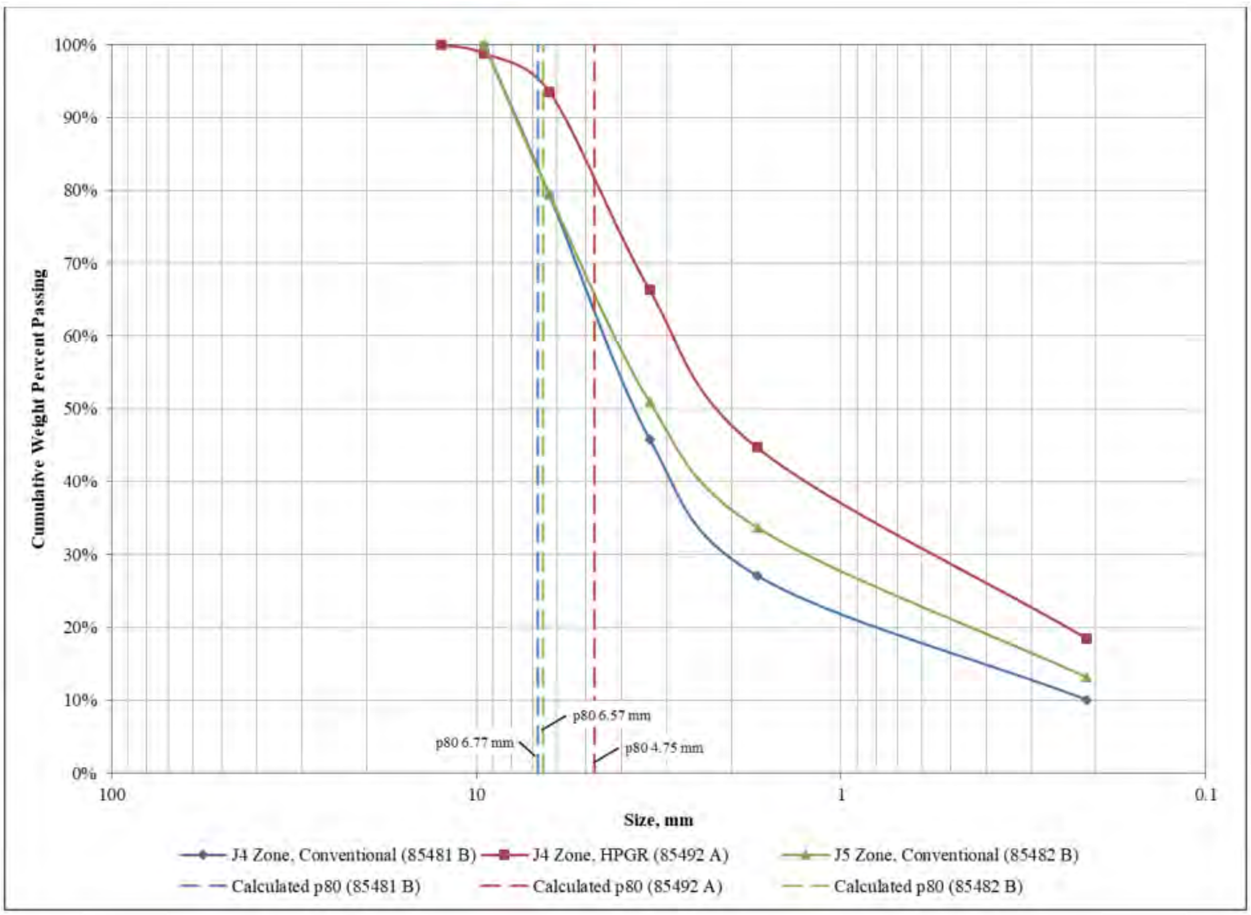
Table 13-5: Direct Cyanidation After Crushing

Sample ID	Crushed	Grind P80 µm	Gold		Silver		Consumption kg/t	
			Head g/t	Extraction %	Head g/t	Extraction %	NaCN	CaO
J4 Zone	Conventional	6.3	0.748	41	1.59	27	0.11	0.68
J5 Zone	Conventional	6.3	0.703	37	1.80	35	0.17	0.68

Both gold and silver extractions were low indicating that 10 days was not sufficient time to achieve a reasonable gold recovery. An additional test was conducted after crushing the J4 material using a HPGR (with the first pass edge product recycled for a second pass). Gold extraction improved to 53%

possibly due to additional gold exposed of fines in the HPGR product compared to that of a conventional crusher. Figure 13-3 compares the particle size distribution for the J4 and J5 composites with conventional crushing and the J4 composite with HPGR crushing.

Figure 13-3: Head Screen Particle Size Distributions for J4 and J5 Composites



Source: KCA (2020)

Based on this outcome, further bottle roll tests were performed to evaluate the effect of HPGR crushing on gold leaching versus conventional crushing. Cyanidations were performed on the first pass edge material, fist pass centre and the final product, which combined the first pass centre and the second pass of the first pass edge material. Table 13-6 presents the results obtained after conventional and HPGR crushing.

Table 13-6: Direct Cyanidation After Conventional and HPGR Crushing

Sample ID	Crushed	Description	Grind P_{80} mm	Gold		Silver		Consumption kg/t	
				Head g/t	Extraction %	Head g/t	Extraction %	NaCN	CaO
J4 2020	Conventional Crush	-	8.03	0.656	30	0.93	25	0.09	0.68
J4 2020	HPGR	1st edge	10.72	0.543	37	0.51	51	0.10	0.68
J4 2020	HPGR	1st centre	7.28	0.566	52	0.87	42	0.24	0.68
J4 2020	HPGR	HPGR prod	6.78	0.710	45	0.88	48	0.22	0.68
J5 2020	Conventional Crush		7.82	0.374	33	0.85	29	0.05	0.68
J5 2020	HPGR	1st edge	10.25	0.506	36	0.46	57	0.09	0.68
J5 2020	HPGR	1st centre	6.67	0.401	50	0.64	53	0.19	0.68
J5 2020	HPGR	HPGR prod	8.09	0.730	44	0.44	66	0.13	0.68

Copper extractions were low at around 5%. The results indicate a reasonable amenability to heap leaching and that better gold and silver extractions are achieved for the material most stressed by HPGR crushing (first pass centre material). Note that these bottle roll tests were performed for 10 days only, and that kinetic data shows that leaching was still ongoing at completion of the tests – implying that better extractions are possible at longer duration.

13.5.3 Column Leach Testing

Column leach tests were performed for a duration exceeding 36 days after agglomeration of conventional and HPGR crushed samples. Based on initial scouting tests the conventionally crushed material was agglomerated with 2 kg cement per tonne material while double that was used for the HPGR product. The columns used are 150 cm diameter columns and 40 to 50 kg were used per test (approximately 1.5 m height). Table 13-7 summarizes the results.

Table 13-7: Column Leach Tests After Conventional and HPGR Crushing

Sample ID	Crushed	Duration days	P_{80} mm	Gold		Silver		Consumption kg/t
				Head g/t	Extraction %	Head g/t	Extraction %	NaCN
J4 2020	Conventional	42	7.38	0.535	51	1.09	29	0.54
J4 2020	HPGR	38	7.58	0.555	59	0.9	39	0.65
J5 2020	Conventional	42	7.31	0.454	39	0.68	44	0.46
J5 2020	HPGR	38	5.68	0.479	58	0.79	51	0.4

It is again evident that the HPGR yields superior gold extraction even though the P80 sizes are similar. This could be due to an increased fines content in the HPGR product or due to micro-cracking. Comparing these results with the previous 10-day bottle rolls shows a reasonable improvement due to the extended duration of cyanide contact. Extractions approaching 60% is acceptable but not exceptional for heap leaching, hence fine grinding may still offer a better processing strategy (i.e., a conventional grind-leach plant).

Percolation rates were approximately 9,500 L/h/m^2 for the conventional column and 7,700 L/h/m^2 for the HPGR column.

KCA performed another set of column leach tests using the J4 2020 and J5 2020 composite samples. In this set of tests, the leach response of the material to different HPGR pressures were evaluated. The higher pressure applied was 130 bar and the medium pressure was set at 90 bar. The samples were agglomerated with 4 kg/t cement prior to loading the column. Table 13-8 summarizes the results from these tests.

Table 13-8: Column Leach Tests After HPGR Crushing

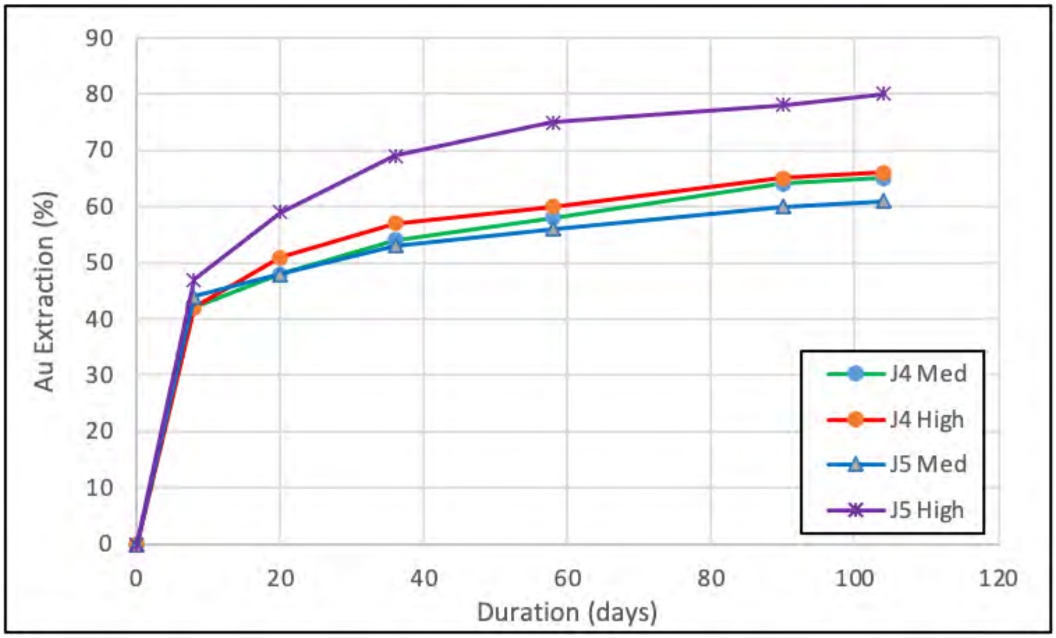
Sample ID	HPGR Pressure	Duration days	P_{80} mm	Gold		Silver		Consumption kg/t
				Head g/t	Extraction %	Head g/t	Extraction %	NaCN
J4 2020	Medium	104	7.54	0.60	65	0.92	44	1.71
J4 2020	High	104	6.16	0.66	65	0.70	83	1.68
J5 2020	Medium	104	8.58	0.67	61	1.00	42	1.09
J5 2020	High	104	7.27	1.67	80	0.73	75	1.28

The results show that an elevated pressure is beneficial, as expected, particularly with respect to silver extraction. The result for gold is inconclusive as the large improvement in extraction may be due to the head grade difference between the J5 samples tested and not due to the difference in applied pressure. The cyanide consumption recorded is higher due to the extended duration of the tests compared to the previous set. Also, cyanide consumption based on column testing is generally 3 to 4 times higher than actual field consumption. The average bulk density for the loaded column was 1.67 t/m3 and the average percolation rate was 6,965 L/h/m^2.

A heap leach extraction exceeding 60% from the head grade of approximately 0.7 g/t is typical and provides a viable exploitation strategy for this ore.

Figure 13-4 shows the kinetics of gold extraction from this set of column leach tests. It appears leaching was still ongoing even after 104 days.

Figure 13-4: Gold Extraction vs. Grind Size for Direct Cyanidations of J4 and J5 Composites



Source: Lycopodium (2022)

13.5.4 Combined Flotation and Cyanidation Tests

KCA performed a set of testwork on the 87OP, 87UG, 87S and SW composite samples to explore a flowsheet where flotation is used in conjunction with cyanidation to improve overall recoveries and to include copper as a revenue earner. The tests involved direct cyanidation using HPGR crushing, direct cyanidation after grinding to a P80 of 150 µm and cyanidation either before or after flotation of a finely ground sample (P_{80}=75 µm). All of the bottle roll cyanidations were performed at a constant 1 g/L NaCN. Table 13-9 below summarizes the results obtained. In Table 13-9, 'Leach/Flot' denotes the samples where the finely ground sample was first subjected to direct cyanidation (96 h, 1 g/L NaCN) and the residue then floated, while 'Flot / Leach' refers to the reverse, i.e. where the flotation tails where leached.

Table 13-9: Cyanidation Combined with Flotation Test Results

Sample	Process	P_{80} mm	Gold Recovery %			Silver Recovery %			Copper Recovery %		
			Leach	Float	Overall	Leach	Float	Overall	Leach	Float	Overall
87OP	HPGR	6.820	66	-	66	42	-	42	10	-	10
87OP	Milled	0.150	82	-	82	30	-	30	5	-	5
87OP	Leach / Flot	0.075	93	31	95	35	71	81	7	95	96
87OP	Flot / Leach	0.075	74	85	96	37	83	90	21	95	96
87UG	HPGR	6.520	59	-	59	51	-	51	10	-	10
87UG	Milled	0.150	85	-	85	45	-	45	6	-	6
87UG	Leach / Flot	0.075	94	41	96	27	66	75	7	97	97
87UG	Flot / Leach	0.075	69	92	98	28	78	85	28	97	98
87S	HPGR	6.770	47	-	47	37	-	37	9	-	10
87S	Milled	0.150	82	-	82	33	-	33	6	-	6
87S	Leach / Flot	0.075	89	30	92	40	87	92	6	95	97
87S	Flot / Leach	0.075	65	86	95	55	86	93	21	95	98
SW	HPGR	7.260	48	-	48	27	-	27	18	-	18
SW	Milled	0.150	86	-	86	41	-	41	35	-	35
SW	Leach / Flot	0.075	92	23	94	54	48	76	36	88	93
SW	Flot / Leach	0.075	76	76	94	33	63	75	35	89	93

The bulk flotation mass pull ranged between 4.3% and 7.9% for the samples tested. It should be noted that the overall recovery presented above does not account for any recovery losses that would be incurred during the subsequent processing of the rougher flotation concentrate in a cleaner circuit.

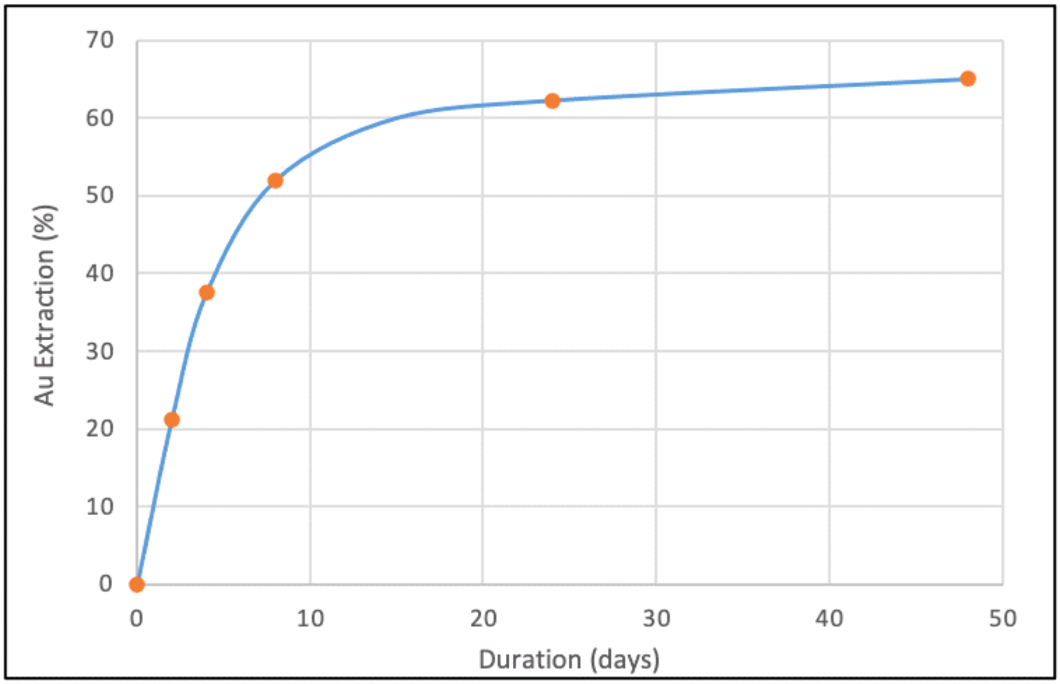
It is evident that the addition of the flotation step offers significant advantages in that it not only elevates precious metals recoveries by around 10 percentage points, but it also allows recovery of copper. Copper recoveries through cyanidation has been low (<10%) throughout all the testing programmes hence flotation is the only viable route for adding copper as a revenue stream.

The best overall recoveries were achieved with flotation followed by cyanidation. It also has the advantage of lower cyanide consumption (0.14 kg/t versus 0.76 kg/t for the leach then float tests on average).

The overall recoveries approached mid 90s with the flotation-leach flowsheet and it will likely remain above 90% when accounting for losses incurred during further processing.

Figure 13-5 below shows the combined leach kinetic curve for the four cyanidation tests on the flotation tails samples. The curve shows that most of the gold leaches within approximately 20 h. Note that the extraction number represent the stage extraction for gold recovery from the flotation tails. The flotation step recovered approximately 85% of the head feed gold in these tests, while the subsequent leaching of the flotation tails added another 11% to yield a total recovery of 96%. At the average head grade of approximately 0.8 g/t the leaching step adds approximately 0.09 g/t gold to the project. A trade-off study is required to assess whether this is sufficient value to justify the cost of a leach and carbon recovery operation.

Figure 13-5: Gold Leach Kinetics for Flotation Tails (Four Tests Combined)



Source: Lycopodium (2022)

Table 13-10 summarizes the flotation details pertaining to the four sets of flotation tests performed by KCA for this phase of their 2019 - 2020 testwork program.

Table 13-10: Details Pertaining to the Flotation Tests

Sample	Process	Con wt%	Reagent g/t			$S^=$ Recovery %	Concentrate Grade				Leach Feed Grade
			PAX	CaO	MIBC		Au g/t	Ag g/t	Cu %	$S^=$ %	Au g/t
87OP	Leach / Flot	5.4	101	-	326	62	0.42	18.6	1.77	5.91	1.104
87OP	Flot / Leach	5.1	100	82	126	99	21.0	37.9	2.04	13.57	0.207
87UG	Leach / Flot	7.9	103	-	244	72	0.29	7.7	1.80	3.46	0.940
87UG	Flot / Leach	7.3	101	82	338	99	14.9	16.5	2.26	6.2	0.100
87S	Leach / Flot	6.2	101	-	156	69	0.28	10.3	1.25	5.96	0.542
87S	Flot / Leach	6.1	101	415	311	99	7.4	20.3	1.49	11.87	0.078
SW	Leach / Flot	5.0	102	-	185	95	0.28	1.8	0.47	1.81	0.756
SW	Flot / Leach	4.3	100	302	211	96	15.4	6.0	0.95	2.81	0.220

Flotation mass pull averages around 5.7%. The average copper grade of the concentrate is low and would need to be upgraded by an order of magnitude to produce a saleable product. Sulphide recoveries into the concentrates were very good (99% for three of the four tests). It appears that the remaining 15% of the gold in the flotation tails is associated with silicates. It was also noticed in the raw data that the total sulphur and sulphide recoveries were similar, indicating that most of the sulphur is present as sulphide minerals. The copper recovery averaged 94% for the 4 bulk sulphide float tests.

At this juncture it can be concluded that the testwork supports a flowsheet consisting of fine grinding followed by bulk flotation and potentially cyanidation of the flotation tails.

13.6 Corem Cyanidation and Flotation Testwork Program T2779 (2021)

13.6.1 Sample Description

Four assay core reject samples from the Z87 Zone and SW Zone and four PQ core samples from the J Zone (domains 41/43, 42, 54; from AGP, 2019b) were delivered to Corem for continued cyanidation and flotation testwork. Table 13-11 summarizes the head grades of these samples.

Table 13-11: Head Grades of T2779 Program Samples

Sample ID	Au (g/t)	Ag (g/t)
SW	0.74	0.61
87UG	1.10	1.44
87OP	1.41	1.96
87S	0.56	1.91
Domain 41/43	0.57	1.08
Domain 42	0.58	1.12
Domain 54	0.27	1.01

13.6.2 Whole Ore Cyanidation

Whole ore cyanidations were performed to establish a baseline for comparison. These bottle roll cyanidations were performed at a high cyanide addition of 1 g/l with no aeration and at a solid density of 40% w/w. Table 13-12 summarizes the results. The gold extractions of 82% and 81% for the SW and 87UG samples at a P80 of 75 µm appears to be anomalous as these are lower than the extractions at 150 m. Apart from this result the general trend is for increased liberation as the grind becomes finer. Cyanide consumptions are high due to the high cyanide strength. The results generally shows that the ore is amenable to whole ore cyanidation as recoveries around 90% were achieved at the grind of 80% passing 75 µm.

Table 13-12: Whole Ore Cyanidation

Sample	Gold Recovery (%)			NaCN Consumed (kg/t)		
	P_{100}=2mm	P_{80}=150 µm	P_{80}=75 µm	P_{100}=2mm	P_{80}=150 µm	P_{80}=75 µm
SW	55	85	82	1.81	1.96	1.82
87UG	45	87	81	1.97	1.66	1.87
87OP	48	92	95	0.96	0.58	0.66
87S	63	86	91	2.14	1.25	1.5
Domain 41/3	52	88	94	1.6	1.7	1.76
Domain 42	82	92	93	1.62	1.55	1.71
Domain 54	71	81	89	1.42	1.67	2.33

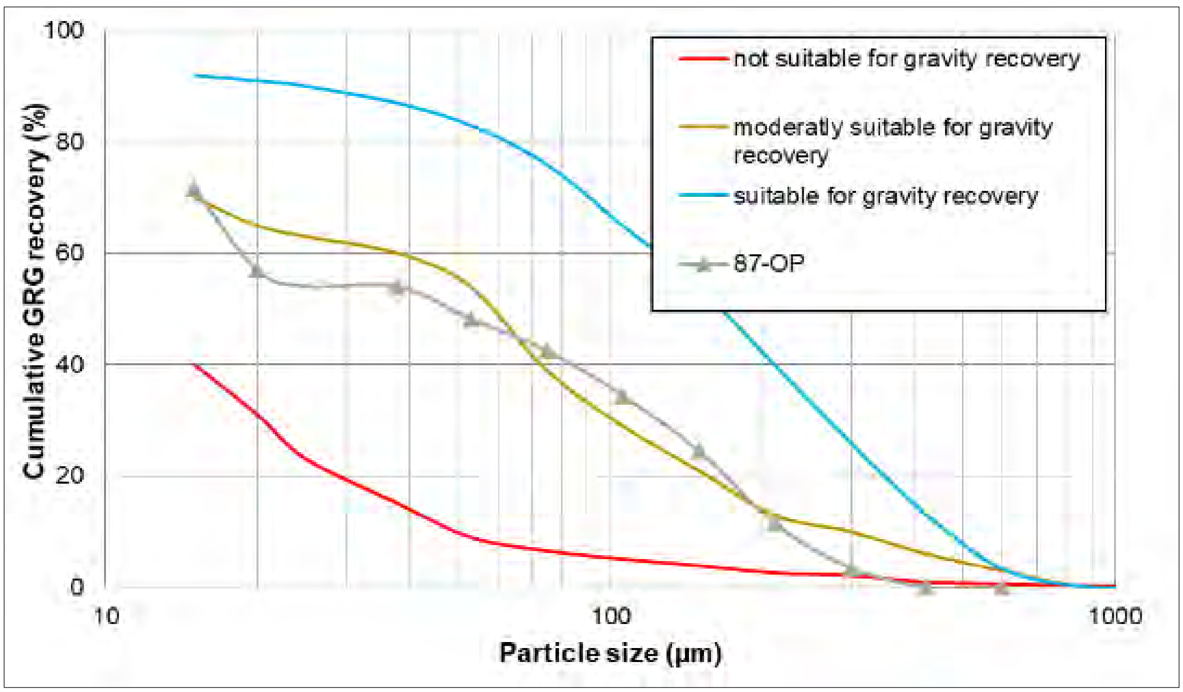
13.6.3 Gravity Concentration (E-GRG)

The E-GRG procedure involves successive stages of crushing with intermediate gravity separation. The targeted crush sizes for the three stages were 100% passing 850 µm, 50% passing 75 µm and 80%

passing 75 µm. The intermediate concentrate and tailings products were screened, and each size fraction analysed by fire assay.

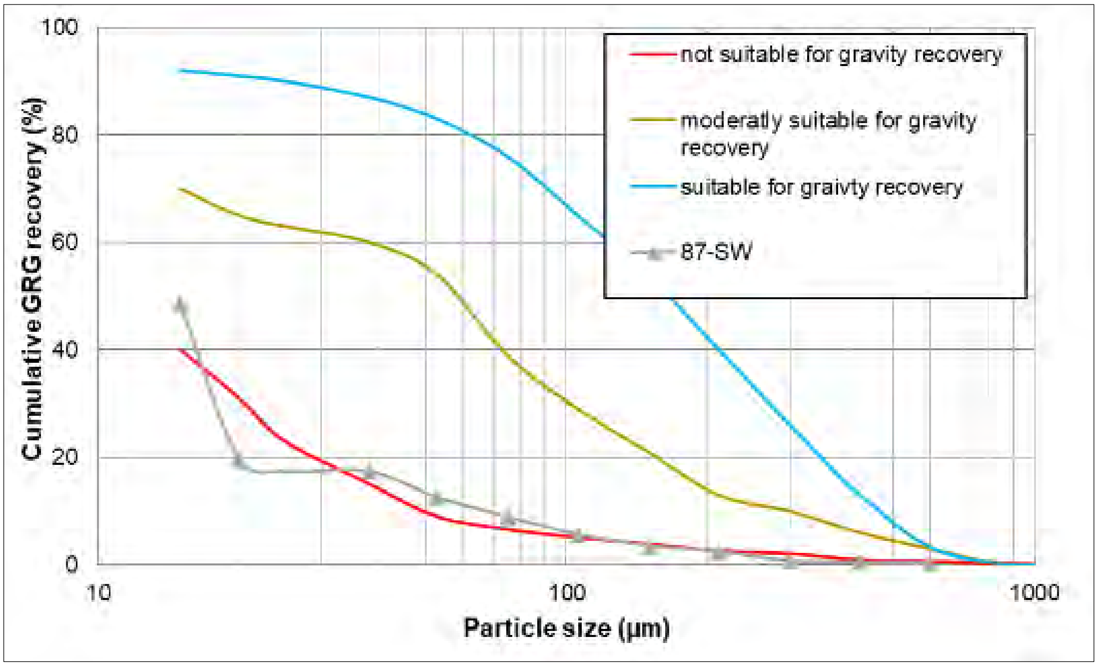
Figure 13-6 to Figure 13-9 present a selection of cumulative gold recovery versus particle size plots for the combined concentrate from all three crushing stages for a selection of the samples tested. In all the graphs the actual curve determined for the sample is compared with Laplante's curves for ores that are unsuitable, moderately suitable, and suitable for gravity only recovery. The 87OP domain showed the best response to gravity concentration and can be classified as moderately suitable, while the others are either approaching modestly suitable (42 and 41-43) or unsuitable (all other samples).

Figure 13-6: Gravity Recoverable Gold versus Particle Size from E-GRG Test (87OP)



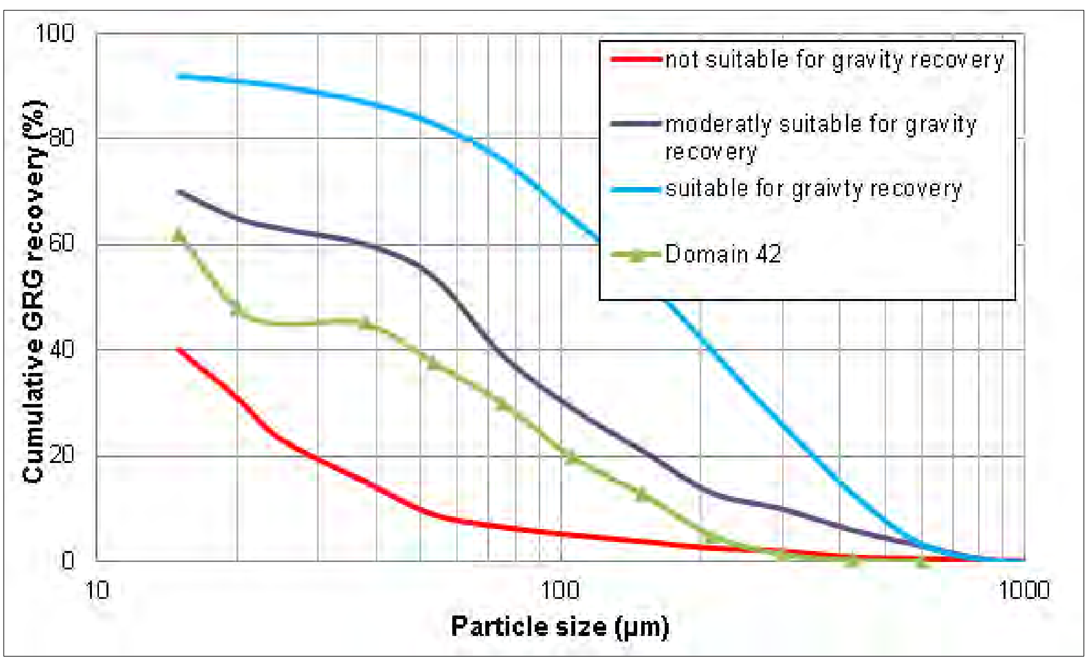
Source: Corem (2021)

Figure 13-7: Gravity Recoverable Gold versus Particle Size from E-GRG Test (SW)



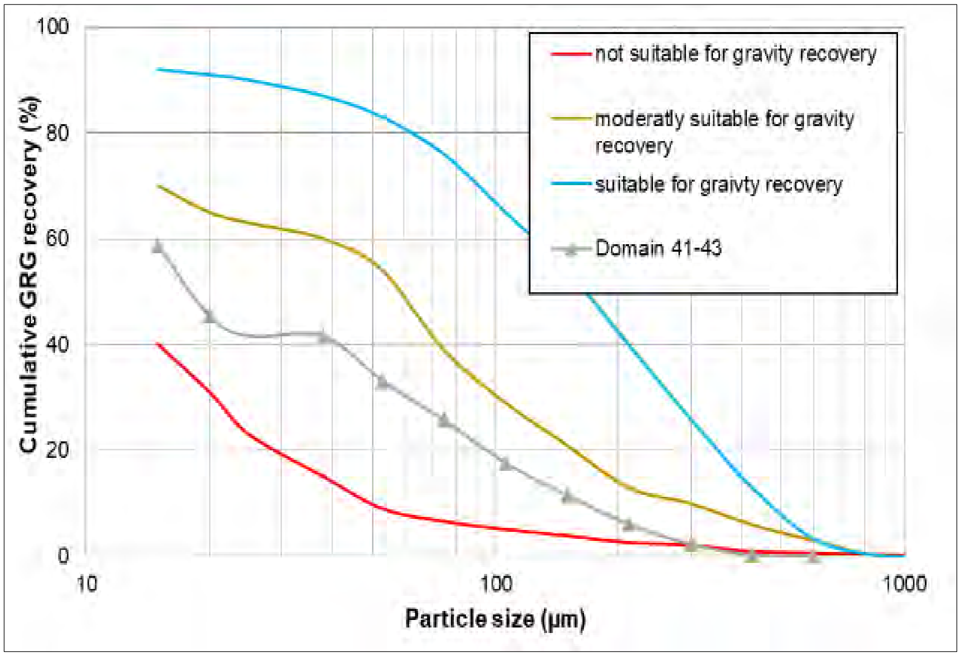
Source: Corem (2021)

Figure 13-8: Gravity Recoverable Gold versus Particle Size from E-GRG Test (Domain 42)



Source: Corem (2021)

Figure 13-9: Gravity Recoverable Gold versus Particle Size from E-GRG Test (J41-J43)



Source: Corem (2021)

13.6.4 Flotation Testing

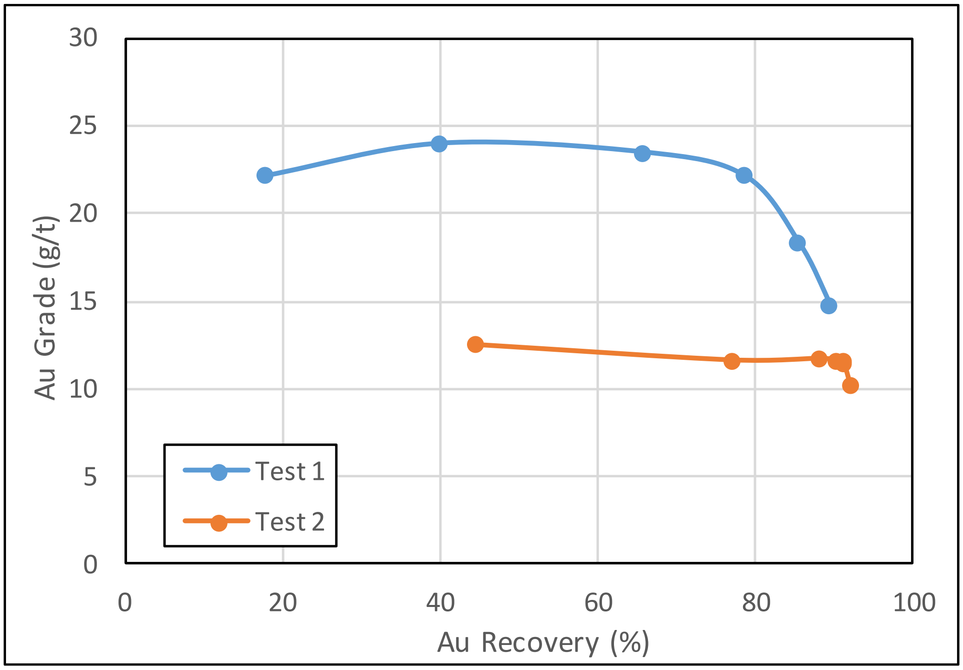
The domain J4 composite sample was used in bench scale flotation testing to evaluate two proposed reagent suites ahead of the pilot plant flotation exercise. The sample was crushed to a P_{80} of 75 µm ahead of the bulk sulphide flotation step which was performed at a slurry density of 33 %w/w solids in a 5L Denver cell. For test 1 a mix of MIBC and Aerofroth was used as frother and PAX as collector at pH = 8. For test 2 F150 was used as frother with PAX and SPRI as collector at pH =10.5. Table 13-13 summarizes the results obtained.

Table 13-13: Bench-scale Sulphide Flotation Cumulative Concentrate

	Copper		Gold		Mass Pull (%)
	Grade (%)	Recovery (%)	Grade (g/t)	Recovery (%)	
Assayed Head	0.057		0.58		
Test 1	1.28	90.3	14.79	89.6	3.5
Test 2	0.78	95.1	10.2	92.3	6.5

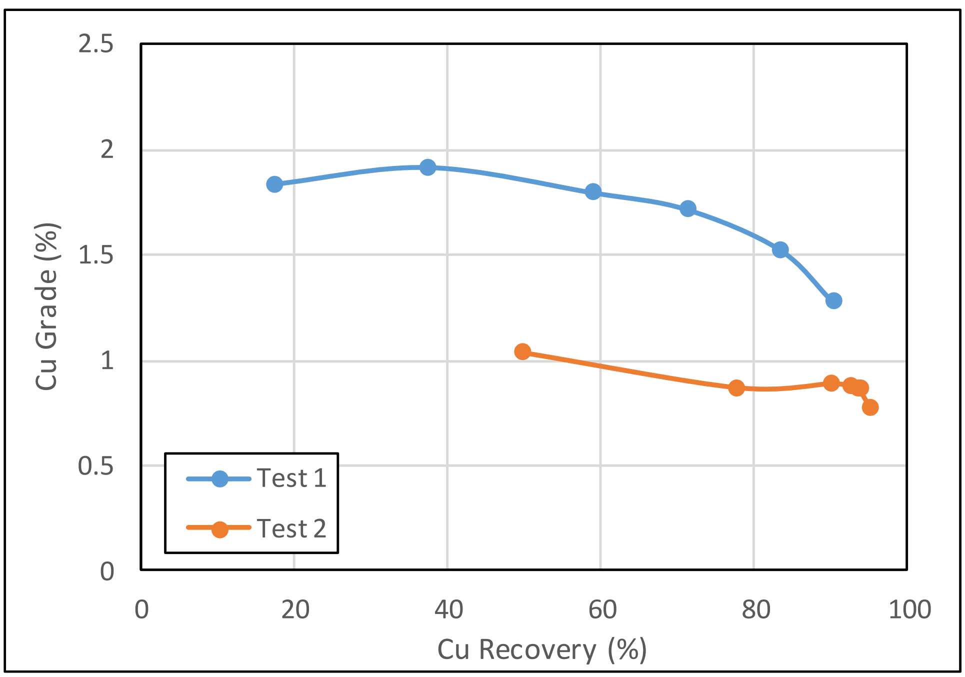
It is possible that higher recoveries would have been achieved if test 1 was extended (i.e., to the same mass pull as test 2). The conditions used in test 1 exhibited better selectivity (see Figure 13-10 and Figure 13-11 below) but test 2 conditions were selected for its superior recovery.

Figure 13-10: Gold Grade versus Recovery



Source: Corem (2021)

Figure 13-11: Copper Grade versus Recovery



Source: Corem (2021)

It should be noted that while the gold and silver recoveries were acceptable the copper grade at 1.3% demands significant upgrading before it can be classified as a saleable product (usually ~20% Cu).

13.6.5 Pilot Plant

A pilot plant, consisting of grinding to a targeted P80 of 75 µm followed by 2 passes of gravity concentration and then rougher flotation, was run on a 150 kg sample of Domain J42 sample to generate sufficient rougher concentrate for the downstream locked cycle test.

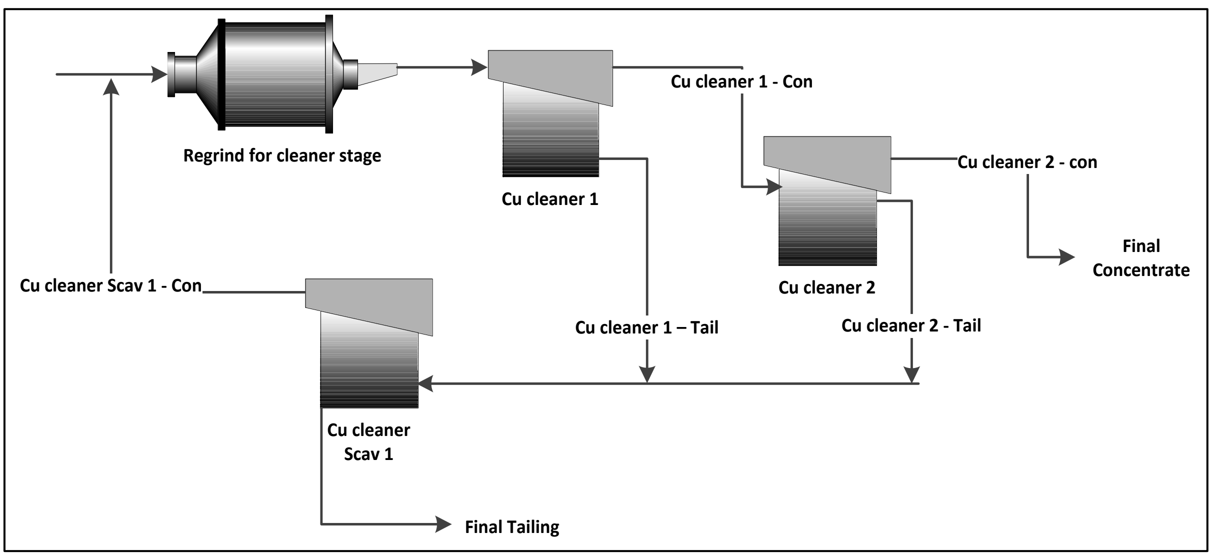
The pilot plant yielded a combined gravity concentrate at a mass pull of 0.16% containing 59.2% of the gold and 5.4% of the copper in the plant feed. The rougher flotation step recovered 67.8% of the gold and 5.4% of the copper from the gravity tailings into a 15% mass pull concentrate.

The overall gold and silver recoveries into the two concentrates were 86.9% and 88.1% for gold and copper respectively. This compares well with previous test results.

13.6.6 Locked Cycle Test

The locked cycle test was performed to evaluate whether regrinding followed by two stages of cleaner flotation and scavenging of the 1st cleaner tails could produce a high-quality copper concentrate. Figure 13-12 presents a schematic of the locked cycle procedure.

Figure 13-12: Locked Cycle Test Flowsheet



Source: Corem (2021)

Rougher concentrate (from the pilot plant) was ground to a P80 of 25 mm ahead of the 1st cleaner cell. The slurry pH was maintained at 10.5 units throughout all of the flotation circuit. A 1.25L cell was used as cleaner 2 cell and 2.5L cells were used for the cleaner 1 and cleaner 1 scavenger duties. PAX was added as collector in the first cleaner (75 g/t) and in the scavenger (35 g/t). MIBC was dosed as frother to the 1st cleaner (30 g/t) and to the other two cells (20 g/t each). The total mass of rougher concentrate processed was 3,977 grams. Table 13-14 and Table 13-15 summarize the results obtained with the LCT.

Table 13-14: Locked Cycle Test Concentrate Grades

Stream	Mass (%)	Combined Concentrates Grades for Cycles 1 to 8				
		SiO_2 (%)	Cu (%)	Fe (%)	S (%)	Au (g/t)
Cleaner 2 Concentrate	0.83	9.25	3.54	34.02	38.11	56.54
Cleaner 1 Scav Tailing	99.17	52.18	0.23	10.25	5.35	0.742
Calculated Head	100.00	51.82	0.26	10.45	5.62	1.21

The high iron and silica contents suggests recovery of pyrite and gangue (through entrainment) into the concentrates. The copper grade was low at 3.5% only indicating that optimization of the flotation circuit is necessary to produce the targeted 20% Cu content concentrate.

Table 13-15: Locked Cycle Test Recoveries

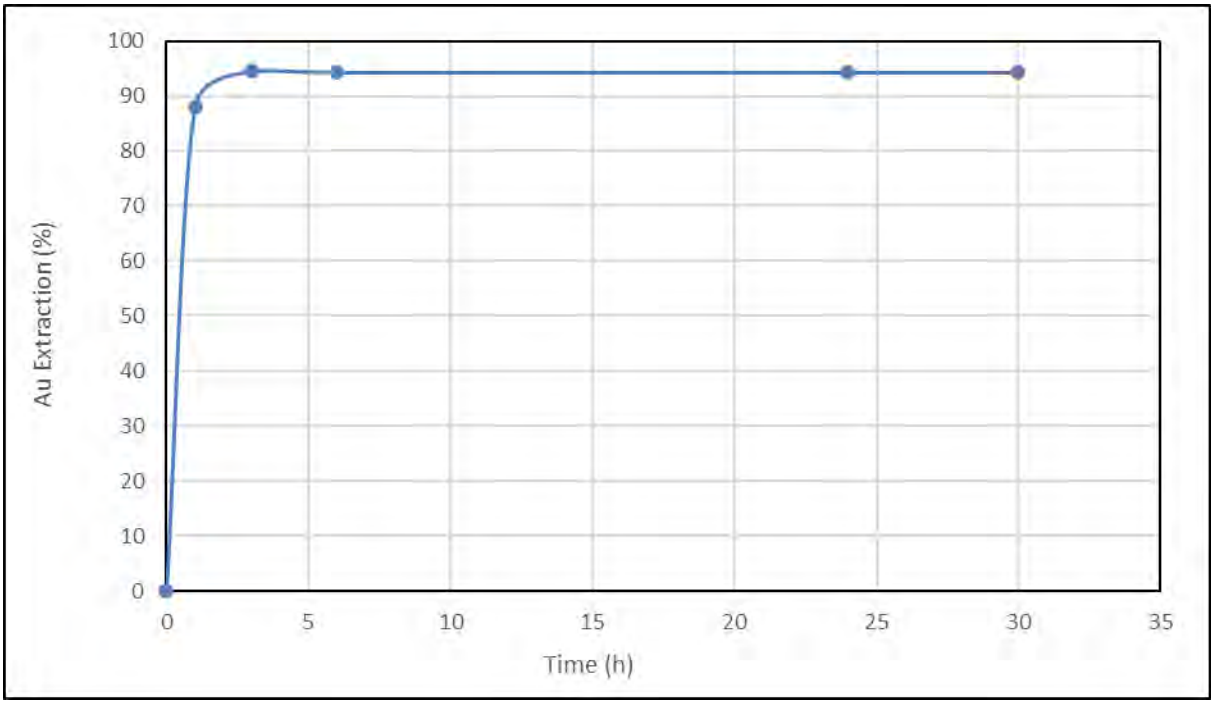
Stream	Mass (%)	Combined Recoveries for Cycles 1 to 8				
		SiO_2 (%)	Cu (%)	Fe (%)	S (%)	Au (%)
Cleaner 2 Concentrate	0.83	0.15	11.36	2.71	5.64	39
Cleaner 1 Scav Tailing	99.17	99.85	88.64	97.29	94.36	61
Calculated Head	100.00	100	100	100	100	100

Recoveries were low at only 11.4% and 39% of the feed copper and gold reporting to the combined concentrate, respectively.

13.6.7 Cyanidation of the LCT Cleaner 1 Scavenger Tailings

Intensive cyanidation of the cleaner scavenger tailings showed exceptionally fast leach kinetics (Figure 13-13). A residence time of as little as 3 h appears adequate to complete the extraction of 94.3% of the gold from this sample. Approximately 25% of the copper also leached from the cleaner scavenger tails.

Figure 13-13: Leach Kinetics for Cleaner Scavenger Tails from LCT



Source: Lycopodium (2022)

Table 13-16 summarizes the distribution of gold and copper to the various streams for the flowsheet tested by Corem in this program. Note that leached copper is assumed to be unrecoverable, hence the total recovery of copper is the sum of the recovery to the two concentrates only

Table 13-16: Gold and Copper Distribution for the Flowsheet as tested by Corem

Stream	Distribution (%)	
	Gold	Copper
Feed	100.00	100.00
Gravity Conc	59.23	5.42
Rougher Feed	40.77	94.58
Rougher Conc	27.64	82.66
Rougher Tails	13.13	11.92
LCT Conc	13.04	11.57
LCT Tails	14.60	71.10
Leached	13.74	17.88
Cyanidation Tails	0.86	53.21
Overall Recovery	**86.01**	**16.99**

Copper recovery to the final concentrate is only 11.57% possibly due to the difficulty of cleaning reground material in a conventional cell along with poor reagent control.

13.7 Pocock Solid Liquid Separation Testwork (2020)

13.7.1 Sample Description

KCA sent a sample of leached tails to Pocock for settling and viscosity testing. The as received sample, a composite of equal weights of J, Z87 and SW zones, had a P_{80} of 58 µm and a slurry pH of 8.6.

13.7.2 Sedimentation Results

A medium to high molecular weight 5% charge density anionic polyacrylamide flocculant was selected following scouting tests. Table 13-17 presents results from the settling tests performed for combinations of feed densities and flocculant additions.

Table 13-17: Beaker Settling Test Results

Feed % solids	Flocc. g/t	Rise Rate $m^3 / m^2 / h$	U/flow %w/w solids	Unit Area m^2 / tpd
15	10	7.81	63	0.183
20	10	4.21	63	0.192
25	5	2.36	63	0.204
25	10	3.64	63	0.179
25	15	2.71	63	0.203

Note that the unit area includes a 25% scale-up factor, and the rise rate includes a 0.5 factor for thickener sizing. Pocock recommends using a unit area of 0.196 m2/tpd for design purposes.

13.7.3 Viscosity Results

Table 13-18 presents the results from the settling tests performed for combinations of feed densities and flocculant additions

Table 13-18: Rheology

Solids %w/w	Coefficient of Rigidity Pa.s	Yield Value Pa	Apparent Viscosity Pa. s @ Shear Rates							
			5 / sec	25 / sec	50 / sec	100 / sec	200 / sec	400 / sec	600 / sec	1,000 / sec
65.7	0.279	35.9	5.83	2.85	2.10	1.54	1.13	0.83	0.69	0.55
64.5	0.178	21.8	3.43	1.76	1.33	1.00	0.75	0.56	0.48	0.39
63.2	0.116	14.6	2.33	1.78	0.88	0.65	0.49	0.36	0.31	0.25
60.6	0.048	7.0	1.16	0.51	0.36	0.26	0.18	0.13	0.10	0.08

A decreasing apparent viscosity with an increase in shear rate (also known as 'shear thinning') is typical of pseudo plastic non-Newtonian fluids. Pocock advises to maintain the slurry density below 65% (<30 Pa yield stress) for centrifugal pumping applications.

13.8 Base Metallurgical Laboratories Testwork (2021, 2022)

The metallurgical testing program at Base Metallurgical Laboratories was intended to support the pre-feasibility study using samples from the Eriez pilot test program. The objective of this test program was to provide supplemental testing as follows:

- Determine the chemical, mineral, and comminution properties of three samples from the Troilus Gold Project, representing three pits of the deposit.
- Determine the chemical and mineral properties of flotation products from an external lab.
- Determine the gold extraction potential of the above flotation products via cyanide leach tests.
- Conduct downstream processing and dewatering test work on the flotation concentrate samples.

Feed samples were received on June 22, 2021, Various shipments of flotation products were received in subsequent shipments between June 20, 2021, and March 28, 2022.

Extracts from the Base Met report are presented in the sections to follow. Refer to the full report for complete details

13.8.1 SMC and Bond Mill Work Index

Additional comminution test work was deemed necessary as part of a gap analysis in order to fully cover the areas that will be mined. Base Metallurgical Laboratories (Base Met) organized three samples for SMC analysis with JK Tech in July 2021. A summary of the results is represented in Table 13-19.

Table 13-19: Comminution Test Results

Sample ID	Bond Ball Work Index					RWi (kWh/t)	Abrasion Index	SMC A x b
	Closing Screen (µm)	F_{80} (µm)	P_{80} (µm)	Gpb	BWi (kWh/t)			
SW Domain	106	2,123	77	1.3	14.7	17.2	0.40	26.0
Zone 87	106	2,052	75	1.8	11.1	15.2	0.34	27.0
Zone J4/J5	106	1,869	79	1.9	11.2	13.7	0.20	30.0
Zone J4/J5	75	1,907	62	1.4	13.1			

Based on the Axb values (Table 13-19 above), these samples are classified as hard when compared to other samples in the JKTech database.

The Bond ball mill tests were performed on all samples with a closing screen size of 106 microns. The Bond ball mill work index of the samples ranged between 11.1 to 14.7 kWh/t. A Bond ball mill work index at a closing screen size of 75µm was also performed on J4/J5 Zone, resulting in a Bond ball mill work index of 13.1 kWh/t. Based on these results, the Z87 Zone and J4/J5 Zone samples would be classified as moderately soft while the SW Zone sample would be classified as moderately hard with respect to ball milling.

The Bond rod mill work index of the samples was determined to be between 13.7 kWh/t and 17 kWh/t, indicating the samples are considered moderately hard to hard with respect to rod milling.

The Bond abrasion index of the samples measured between 0.20 and 0.40, indicating the samples are moderately abrasive.

13.8.2 Chemical Content Feed Samples

There were several types of chemical analyses performed on the three composite head samples. Results are summarized in Table 13-20.

Table 13-20: Chemical Content

Sample ID	Assays			
	Au g/t	Ag g/t	Fe %	S %
SW Domain	0.66	1.6	6.0	0.92
Zone 87	0.49	1.1	2.7	0.46
Zone J4/J5	0.66	0.9	4.3	0.90

Gold in the samples measured 0.49 g/t to 0.66 g/t while silver measured 0.9 g/t to 1.6 g/t. Sulphur content was low at between 0.46% and 0.92%.

13.8.3 Mineral Content

The mineral content of the feed samples was measured by QEMSCAN. The samples were assessed using Particle Mineral Analysis (PMA) protocols on ground samples screened into four fraction sizes. A summary of the mineral content along with copper mineral distribution is shown in Table 13-21 and Table 13-22.

The samples consisted mainly of silicates, including feldspars, quartz, and biotite/phlogopite. Sulphide minerals accounted for 1.1% to 2.3% of the total sample mass, mainly iron sulphides. Copper sulphides, dominated by chalcopyrite, accounted for 0.2% to 0.3% of the samples mass. Secondary copper minerals were measured in all composites at lower concentrations. Arsenopyrite was also detected in the SW Zone.

The iron sulphide to copper ratio ranged between 3.8 to 9.0. Implementing conditions to suppress pyrite would be prudent to producing a clean concentrate.

Table 13-21: Mineral Content

Class	Mineral	Mineral Content (%)		
		SW Domain	Zone 87	Zone J4/J5
Sulphides	Chalcopyrite	0.32	0.22	0.18
	Bornite	0.02	0	<0.01
	Chalcocite / Covellite	0.01	<0.01	<0.01
	Tetrahedrite / Tennantite	<0.01	0	<0.01
	Cuprite	<0.01	<0.01	<0.01
	Galena	0.01	0.02	0.05
	Sphalerite	0.04	0.04	0.05
	Pyrite	0.83	0.57	1.15
	Pyrrhotite	1.03	0.28	0.50
	Arsenopyrite	0.05	<0.01	<0.01
	Other Sulphides	<0.01	<0.01	<0.01
Silicates, Oxides, Carbonates and Others	Iron Oxides	3.41	0.44	0.65
	Ilmenite	1.65	0.05	0.08
	Quartz	21.0	26.0	20.1
	Plagioclase Feldspar	42.0	39.9	43.4
	K-Feldspar	2.43	3.56	2.49
	Biotite / Phlogopite	11.25	10.7	16.7
	Amphibole (Actinolite)	2.09	6.31	7.15
	Chlorite	2.07	2.18	2.95
	Muscovite	6.76	5.91	1.29
	Epidote	1.36	1.96	1.81
	Pyroxene (Augite)	0.03	0.08	0.03
	Andradite	0.29	0.22	0.20
	Kaolinite (Clay)	0.08	0.05	0.03
	Calcite	1.74	0.73	0.29
	Dolomite / Ankerite	0.10	0.01	0.01
	Ti Minerals	1.08	0.47	0.41
	Apatite	0.29	0.22	0.34
	Others	0.11	0.07	0.07
	Total	**100**	**100**	**100**

Table 13-22: Copper Sulphide Distribution

Metal	Mineral	Distribution (%)		
		SW Domain	Zone 87	Zone J4/J5
Copper	Chalcopyrite	85.1	96.5	97.5
	Bornite	9.3	0	<0.1
	Chalcocite / Covellite	5.2	3.3	2.2
	Tetrahedrite / Tennantite	0.2	0	<0.1
	Cuprite	0.2	0.2	0.2
	Total	**100**	**100**	**100**

13.8.4 Mineral Liberation

The QEMSCAN PMA was performed on the feed samples ground to 67 to 80µm K_{80}, to provide a measurement of mineral liberation. For these samples, four size fractions were analyzed. The resulting data is displayed in Table 13-23.

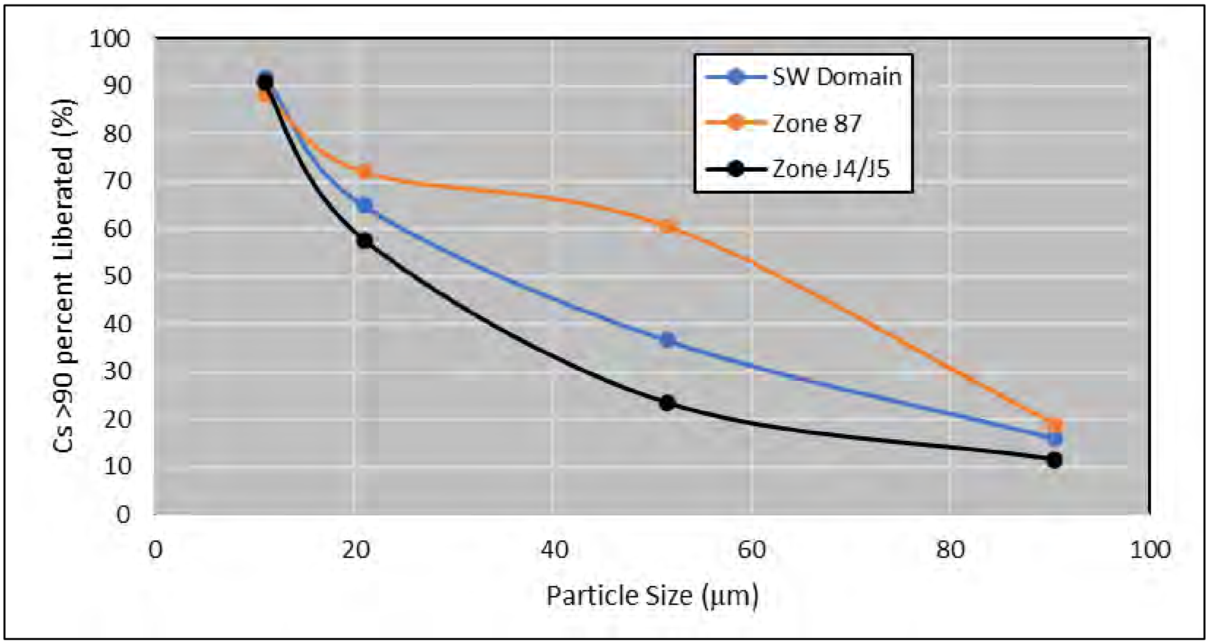
Table 13-23: Mineral Liberation Data

Mineral Status	Mineral Liberation 2D - Percent														
	SW Domain – 67µm					Zone 87 – 81µm					Zone J4 / J5 - 80µm				
	Cp	Ga	Sp	Py	Gn	Cp	Ga	Sp	Py	Gn	Cp	Ga	Sp	Py	Gn
Liberated	59	56	58	77	100	55	52	56	69	100	53	53	50	72	100
Binary – Cp		0	4	2	<1		4	2	1	<1		1	1	1	<1
Binary – Ga	0		2	<1	<1	1		2	<1	<1	<1		10	1	<1
Binary – Sp	<1	4		1	<1	1	5		<1	<1	<1	7		1	<1
Binary – Py	2	9	7		<1	2	12	2		<1	4	17	8		<1
Binary – Gn	36	12	20	19		37	16	16	27		40	6	15	23	
Multiphase	2	19	9	2	<1	3	11	23	3	<1	2	16	16	2	<1
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Copper sulphides in the three samples was between 53% and 59% liberated at between 67 µm and 80 µm K_{80}. Based on measurements of operating mines, this level of liberation is sufficient for adequate recovery to a rougher concentrate. Most of the unliberated copper sulphides were locked in binary form with non-sulphide gangue minerals.

Figure 13-14 displays the mineral release curves for copper sulphides. Typically, regrind target size would be achieved when 85% to 95% of the target minerals at a specific size have a mineral liberation value of greater than 90%. For these samples, ideal liberation values are not achieved until the particle sizes are below approximately 12 µm.

Figure 13-14: Copper Sulphide Mineral Release



Source: Base Met (2022)

13.8.5 Instensive Leach Tests – Knelson Concentrates

A single intensive leach test was performed on three gravity concentrates provided by Eriez. These samples consisted of J-Zone Knelson concentrate, 536940-N-27 Bulk Knelson concentrate and Zone 87 Knelson concentrate. The results are summarized in Table 13-24.

Tests were performed on the samples for a duration of 24 h, at pH 11, using 30,000 ppm NaCN, sparged with oxygen and with an addition of 7 g leach aid.

Table 13-24: Intensive Leach Results

Composite	Test	Assay (g/t)			Distribution (%)			CNTl Assay (g/t)			Consumption (kg/t)	
		Au	Ag	Cu	Au	Ag	Cu	Au	Ag	Cu	NaCN	Lime
J-Zone Knelson Con	1	36.2	9		98.7	97.9		0.5	0.2		2.35	0.28
536940-N-27 Bulk Knelson Con	4	16.2	9	356	97	34.5	20.3	0.5	16	1,400	6	0.22
Zone 87 Knelson Con	5	43	20	248	98.2	87.6	37.4	0.8	2.8	416	6.9	0.56

The recalculated head grades for the Knelson concentrates measured 37 g/t, 16.7 g/t, and 44 g/t gold for J-Zone, SW Zone, and Zone 87 respectively.

Gold from the Knelson concentrates was responsive to cyanide leaching, resulting in 97% to 99% of the gold leaching into solution. Silver from J-Zone Knelson concentrate leached well at 98% extraction. Silver from the 536940-N-27 Bulk Knelson concentrate, and Z87 Zone Knelson concentrate was 35% and 88% extracted to solution, respectively. NaCN consumption for the three samples ranged between 2.35 kg/t to 6.90 kg/t while lime consumption ranged from 0.22 kg/t to 0.56 kg/t.

13.8.6 Mineralogical Analysis – Rougher/Scavenger Concentrates

The mineral content and liberation of the Rougher Scavenger Concentrate samples was measured by QEMSCAN via a PMA routine, on samples screened into four fraction sizes. A summary of the results is displayed in Table 13-25, Table 13-26, and Figure 13-15 to Figure 13-17.

Copper sulphides in the concentrates, dominated by chalcopyrite, accounted for 3.3% to 7.0% of the samples. Pyrite and pyrrhotite content in these samples was very high, particularly in the J Zone R/S Concentrate. Iron sulphides in the SW Zone, Z87 Zone and J Zone R/S Concentrates measured 20%, 31% and 54%, respectively. This corresponds to Iron sulphide to copper sulphide ratios of 16, 23 and 48. At these values, producing a clean copper concentrate may prove challenging. Testing and optimization of conditions may assist to better reject pyrite and pyrrhotite from the rougher circuit.

Copper sulphide liberation in these concentrates ranged between 65% to 71 %. As mentioned in the feed mineralogy section, copper sulphide liberations of about 90 percent are required to produce a high-grade copper concentrate. Regrinding of the rougher concentrate will be required.

Pyrite minerals in these concentrates were between 86% and 91% liberated and interlocking with copper sulphide minerals were low at 2% to 3% of the total pyrite. The majority of the liberated pyrite particles were coarser than 33 µm K80 and with adequate conditions, should be rejected from the rougher concentrates.

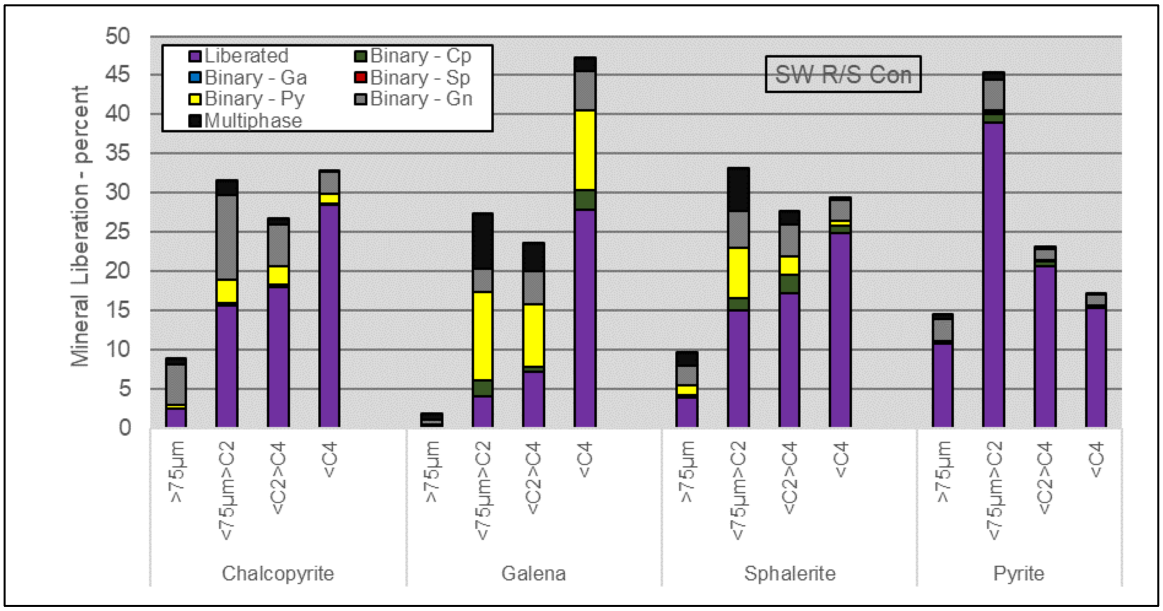
Table 13-25: Mineral Content

Class	Mineral	Mineral Content – Percent		
		SW R/S Concentrate	Zone 87 R/S Concentrate	J Zone R/S Concentrate
Sulphides	Chalcopyrite	3.15	6.98	5.90
	Bornite	0.14	<0.01	0.00
	Chalcocite / Covellite	0.05	0.04	0.04
	Tetrahedrite / Tennantite	<0.01	<0.01	0.00
	Cuprite	<0.01	0.00	0.00
	Galena	0.01	0.02	0.02
	Sphalerite	0.24	1.25	0.06
	Pyrite	10.2	11.13	42.5
	Pyrrhotite	5359	11.8	5.27
	Arsenopyrite	0.50	0.04	0.00
	Other Sulphides	0.03	0.04	0.05
Silicates, Oxides, Carbonates and Others	Iron Oxides	1.42	1.03	1.09
	Ilmenite	0.99	0.14	0.06
	Quartz	18.4	16.1	9.4
	Plagioclase Feldspar	31.0	28.3	18.2
	K-Feldspar	2.19	3.80	2.02
	Biotite / Phlogopite	9.78	4.8	5.6
	Amphibole (Actinolite)	4.18	3.90	3.02
	Chlorite	2.99	2.53	2.96
	Muscovite	4.76	4.49	0.89
	Epidote	1.61	1.00	1.35
	Pyroxene (Augite)	0.01	0.00	0.07
	Andradite	0.26	0.34	0.21
	Kaolinite (Clay)	0.08	0.08	0.05
	Calcite	1.22	1.35	0.50
	Dolomite / Ankerite	0.03	0.05	0.00
	Ti Minerals	0.71	0.36	0.36
	Apatite	0.25	0.19	0.13
	Others	0.13	0.22	0.15
	Total	**100**	**100**	**100**

Table 13-26: Mineral Liberation

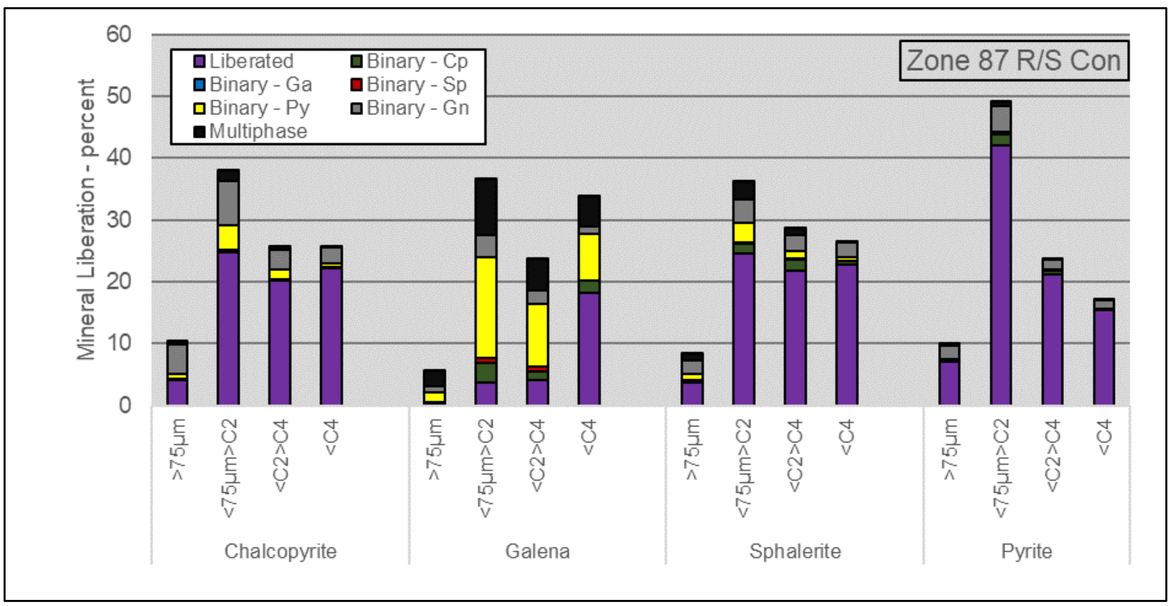
Mineral Status	Mineral Liberation 2D – Percent														
	SW R/S Con – 51µm					Zone 87 R/S Con – 44µm					J Zone R/S Con – 60µm				
	Cp	Ga	Sp	Py	Gn	Cp	Ga	Sp	Py	Gn	Cp	Ga	Sp	Py	Gn
Liberated	65	39	61	86	97	71	26	73	86	95	65	37	50	91	89
Binary – Cp		5	5	2	1		7	4	3	2		5	10	2	3
Binary – Ga	<1		0	<1	<1	<1		<1	1	<1	<1		1	<1	<1
Binary – Sp	<1	0		<1	2	1	2		<1	3	<1	<1		<1	7
Binary – Py	7	30	11		<1	7	36	6		<1	10	32	13		<1
Binary – Gn	24	13	14	10		18	8	11	9		21	9	12	6	
Multiphase	3	13	9	2	<1	3	22	6	2	<1	3	17	14	1	1
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Figure 13-15: SW-Zone Mineral Liberation by Size and Class



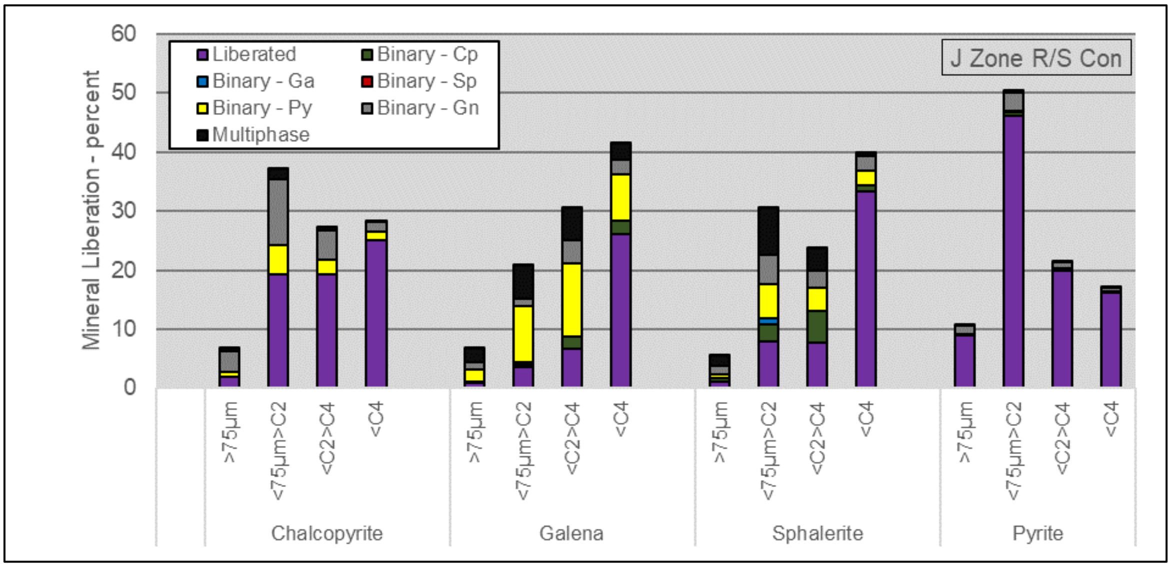
Source: Base Met (2022)

Figure 13-16: Zone 87 Mineral Liberation by Size and Class



Source: Base Met (2022)

Figure 13-17: J Zone Mineral Liberation by Size and Class



Source: Base Met (2022)

13.8.7 Cyanide Leach Test Results – Cleaner Tailings

Three additional samples were provided for cyanide leach tests. These were comprised of J-Zone cleaner tails, SW Zone final cleaner tails, and 87 zone combined tails. Two cyanide leach tests were performed on the J-Zone Cleaner Tails, evaluating oxygen versus air sparging. The remaining tests were performed with oxygen. Results are summarized in Table 13-27.

Tests were performed for a duration of 24 h, with sample points at 2, 6, 8 and 24 h. Tests were conducted at pH 10.5, using 5,000 ppm NaCN.

Table 13-27: Cyanide Leach Test Results

Composite	Test	O_2/Air Sparged	Au Leach Extraction - % Cum. Time (Hours)				24 Hr Extraction Percentage		CNT L g/t	Consumption kg/t	
			2	6	8	24	Ag	Cu	Au	NaCN	Lime
J-Zone Cleaner Tails	2	Air	91.5	90.7	92.3	91.4	33.5	12.0	0.21	10.1	4.05
J-Zone Cleaner Tails	3	O_2	92.7	90.3	93.5	93.4	50.6	11.7	0.16	9.70	4.10
SW Zone Final Cleaner Tails	6	O_2	83.3	92.0	88.1	84.0	57.2	58.6	0.05	4.80	2.05
87 Zne Combined Tails	7	O_2				94.8	64.1	65.6	0.06	21.7	2.05

Initially, two tests performed on the J-Zone cleaner tails, evaluating air versus oxygen sparging, resulted in higher overall extraction of both gold and silver and lower NaCN consumption, using oxygen.

With oxygen sparging, gold from the tailing samples were between 84% and 95% extracted to solution. Silver from the tailing samples was between 51% and 64% extracted to solution.

Cyanide consumption was high for these samples, ranging between 4.8 kg/t and 21.7 kg/t. Lime consumption ranged between 4.1 kg/t and 2.1 kg/t. Secondary copper minerals may partially contribute to the high cyanide contents.

13.8.8 Settling Test on Tailings

A series of dewatering tests were performed on tailing and concentrate samples provided by Eriez. Results are presented in Table 13-28 to Table 13-30.

Rougher tailings and cleaner tailings were received for each of the three composites. The Rougher and Cleaner tailings were combined at ratios provided by Eriez to represent final tailings. (Note that cleaner tails were not subjected to cyanidation for this test work).

Initially, flocculant scoping tests were performed on J-Zone tailings evaluating five various anionic, non-ionic, and cationic flocculants at a dosage of 20 g/t. Final density ranged between 18% and 58% solids. Settling rates ranged between 0.3 and 4.4 mm/s. Magnafloc 10 was chosen as the preferred flocculant and the remaining dewatering tests were performed using MF10.

Static settling tests followed. These were conducted in 1 L cylinders, using MF10 as the flocculant, to assess flocculant dosage at various pH levels. Overall, higher pH resulted in improved settling rates, but lower final density. The static tests were followed by dynamic settling tests, investigating various loading rates at varying flocculant dosages.

The sheared viscosity parameters of the tailing samples were determined using a Brookfield DV2T viscometer. Slurry viscosity of less than 100 cps, at a shear rate of 120.5 sec-1 is considered acceptable for pumping applications. Yield stress was measured between 18 and 89 Pa.

Table 13-28: Flocculant Scoping Tests

Sample ID	Test	pH	Initial Density % Solids	Floc	Floc Type	Dosage g/t	Final %Solids	Settling Rate mm/s
Combined Talis	F1	8.4	15	MF10	Anionic	20	54.7	3.79
		8.4	15	MF380	Cationic	20	17.6	0.30
		8.4	15	MF351	Non-Ionic	20	58.4	2.11
		8.4	15	MF156	Anionic	20	54.7	4.08
		8.4	15	AN913SH	Anionic	20	51.2	4.38

Table 13-29: Static Settling Tests

Composite	Test	Flocculent		pH	Settling Rate mm/s	Final Density % Solids
J-Zone R/S Tail +Cleaner Tails	S1	MF10	20	9.0	2.78	66.6
	S2	MF10	20	10.0	3.25	64.6
	S3	MF10	20	11.0	3.45	61.2
	S4	MF10	30	11.0	4.03	57.7
	S5	MF10	40	11.0	5.64	53.8
	S6	MF10	40	8.4	6.38	66.6
	S7	MF10	40	10.0	9.23	63.1
SW Scavenger / Cleaner Tail Blend	S8	MF10	30	9.0	5.9	67.2
	S9	MF10	30	10.0	5.5	66.4
	S10	MF10	30	11.0	5.7	67.0
	S11	MF10	20	11.0	4.3	64.3
	S12	MF10	40	11.0	5.2	63.6
87 Zone Cleaner / Scavenger Tail Blend	S13	MF10	30	9.0	5.4	65.1
	S14	MF10	30	10.0	8.2	62.1
	S15	MF10	30	11.0	8.3	60.1
	S16	MF10	20	11.0	7.8	62.7
	S17	MF10	40	11.0	7.6	60.7

Table 13-30: Dynamic Settling Tests

Test	Composite	Test	Loading Rate	Floc Dosage	U/F Density	Unsheared Yield Stress	pH	Turbidity
			$t/m^2/hr$	g/t	% Solids	Pa		FAU
D1	J-Zone R/S Tail +Cleaner Tails	D1-A	0.50	30	57.2	81	11	58
		D1-B	0.70	30	59.4	63	11	63
		D1-C	1.00	30	56.7	44	11	48
		D1-D	1.00	40	54.1	30	11	52
		D1-E	1.00	20	58.7	46	11	123
		D1-F	1.20	30	53.9	32	11	73
D2	SW Scavenger / Cleaner Tail Blend	D2-A	0.30	30	61.3	62	11	2
		D2-B	0.50	30	61.1	61	11	15
		D2-C	0.70	30	60.5	72	11	22
		D2-D	0.70	20	61.4	61	11	25
		D2-E	0.70	40	56.9	89	11	38
D3	87 Zone Cleaner / Scavenger Tail Blend	D3-A	0.70	30	60.2	18	9	342
		D3-B	0.50	30	65.3	45	11	44
		D3-C	0.70	30	59.8	40	11	47
		D3-D	1.00	30	57.5	45	11	16
		D3-E	0.70	20	61.7	35	11	6

13.8.9 Pressure Filtration – Concentrate

Final concentrate was provided for each composite. Scoping level pressure filtering tests were conducted in a 45 mm diameter cylinder. Blow times of 30, 60, and in some cases, 85 seconds were assessed. Moisture contents of 10% were achieved, but at the longest blow time and thinnest filter cake, resulting in low filter rates. About 15% moisture was achieved at quicker filtration rates. Due to the scoping level assessment and small mass provided, additional testing and optimization may be necessary. Results are presented in Table 13-31.

Table 13-31: Pressure Filtration Tests

Sample ID	Test	pH	Sample Mass	Feed Pressure	Blow Time – Sec		Cake Thickness	Cake Moisture	Filter Rate
			Grams	Psi	Total	Filter Time	Mm	%	Kg/m²/hr
J-Zone 3rd Cleaner Con	PF-1	7.8	30	80	60	10	9	17.1	822
			30	80	180	11	9	13.4	284
			30	80	300	10	8	9.2	187
			60	80	60	28	16	16.3	1939
			60	80	180	28	18	13.3	674
			60	80	300	25	19	12.4	395
			85	80	180	49	27	15.0	943
Southwest Cleaner Con	PF-2	7.6	30	80	60	2	8	12.4	796
			30	80	180	2	8	13.9	250
			30	80	300	2	7	10.0	163
			60	80	60	5	15	15.3	1841
			60	80	180	6	15	10.0	590
			60	80	300	6	15	11.5	361
87 Zone Cleaner Con	PF-3	5.9	30	80	60	2	8	11.4	819
			30	80	180	2	8	9.7	270
			30	80	300	2	8	9.1	165
			60	80	300	15	19	10.1	384
			85	80	300	21	25	11.6	542
			60	80	60	9	18	14.1	1913
			60	80	180	9	19	10.3	660

13.8.10 Minor Elements

The minor element content of the concentrates was determined via several different digestions and assay techniques. For all three composites, this analysis was conducted on the copper concentrate provided. A summary of the results is reported in Table 13-32. A review of the data revealed the following salient points:

- The SW Zone Cleaner Con, Z87 Zone Fn Con and J-Zone 3rd Cleaner Con measured 104, 131 and 111 g/t gold, respectively. Silver was measured at 309, 140 and 340 g/t, respectively, in these concentrates. Copper ranged from 14.9% to 18.1% and is generally below typically saleable copper concentrate grades. However, the gold content may reduce the need for high grade concentrates to maintain quality.
- Platinum and Palladium was measured low in the concentrates at between 0.03 g/t and 0.07 g/t.
- Mercury measured between 0.2 g/t and 13.7 g/t. Arsenic levels measured 86 to 4,200 g/t and may be approaching smelter penalties in some cases. Consultation with a concentrate marketing specialist to advise on current penalty and payment terms for minor elements is recommended.

Table 13-32: Minor Elements

Element	Units	Method	J-Zone 3rd Cleaner Con	SW Zone Cleaner Con	87 Zone Cleaner Con
Ag	g/t	AR-AA	303	309	140
As	ppm	FUS-MS-Na2O2	86	4200	544
Au	g/t	FA-AA	111	104	131
Ba	ppm	FUS-MS-Na2O2	31	37	35
Bi	ppm	FUS-MS-Na2O2	96	25	34
Ca	%	FUS-Na2O2	2.0	0.5	0.3
Cd	ppm	FUS-MS-Na2O2	64	138	158
Co	ppm	FUS-MS-Na2O2	462	1280	608
Cr	ppm	FUS-MS-Na2O2	220	190	210
Cu	%	AR-AA	14.9	18.1	16.3
F	%	FUS-ISE	0.01	<0.01	<0.01
Fe	%	AR-AA	31.5	33..8	33.5
Hg	ppm	Cold Vapour	8.7	13.7	0.2
Mg	%	FUS-Na2O2	1.38	0.14	0.1
Mn	ppm	FUS-MS-Na2O2	89	103	143
Mo	ppm	FUS-MS-Na2O2	1680	1380	775
Ni	ppm	FUS-MS-Na2O2	600	720	710
Pb	ppm	FUS-MS-Na2O2	719	1560	1560
Pd	g/t	FA-ICP	0.07	0.03	0.07
Pt	g/t	FA-ICP	0.07	0.04	0.04
S	%	LECO	38.3	39.8	39.9
Sb	ppm	AR-ICP	13	104	14
Se	ppm	FUS-MS-Na2O2	45	67	88
Si	%	FUS-Na2O2	1.49	1.00	1.28
Sr	ppm	FUS-MS-Na2O2	103	30	25
U	ppm	FUS-MS-Na2O2	1.4	1.3	1
Zn	ppm	FUS-MS-Na2O2	9120	>10000	>10000
Zn	%	AR-AA		1.37	3.1

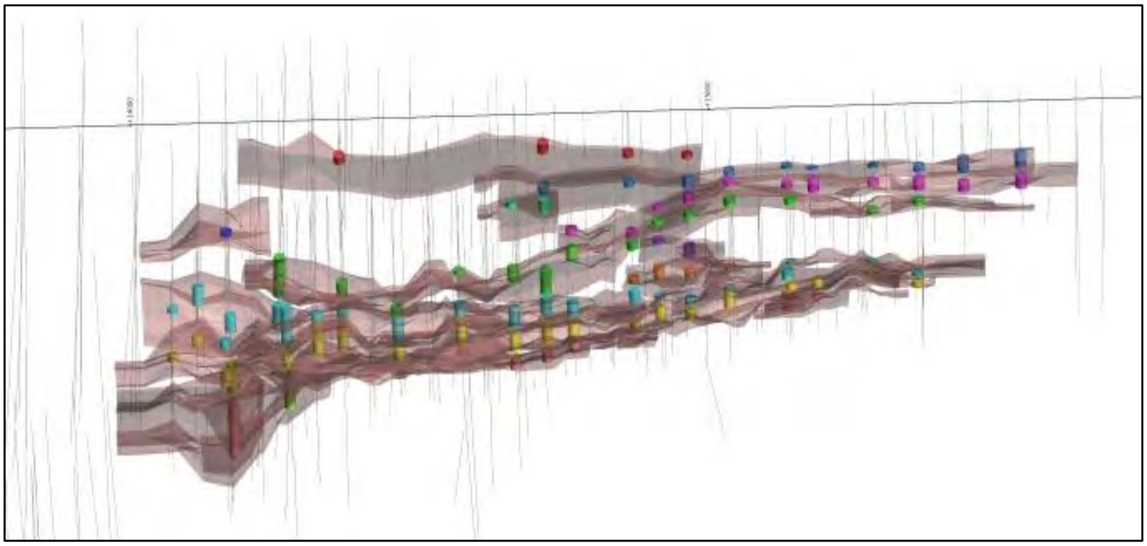
13.9 Eriez Flotation Testwork Report (2023)

13.9.1 Introduction

Three composite samples, designated as J-Zone, South-West (SW) Zone and 87 Zone, each weighing approximately three tonnes and representing the PEA resources, were submitted to Eriez to investigate the recovery of gold, copper, and silver using Eriez column flotation technology.

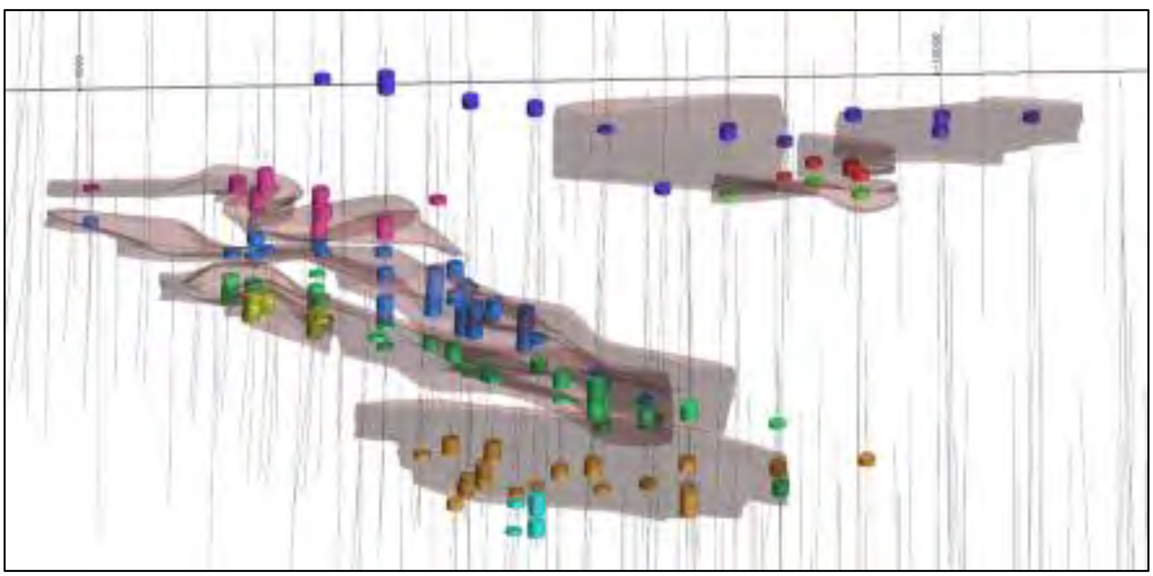
Figure 13-18 to Figure 13-20 show the sample locations against the PEA wireframes for the resource pits as well as the sample locations with the updated resource wireframes for the PFS pits. Sample selection was carried out by Troilus and reviewed by Lycopodium for the PFS phase.

Figure 13-18: J-Zone Pilot Bulk Sample Spatial Location; within PEA wireframes



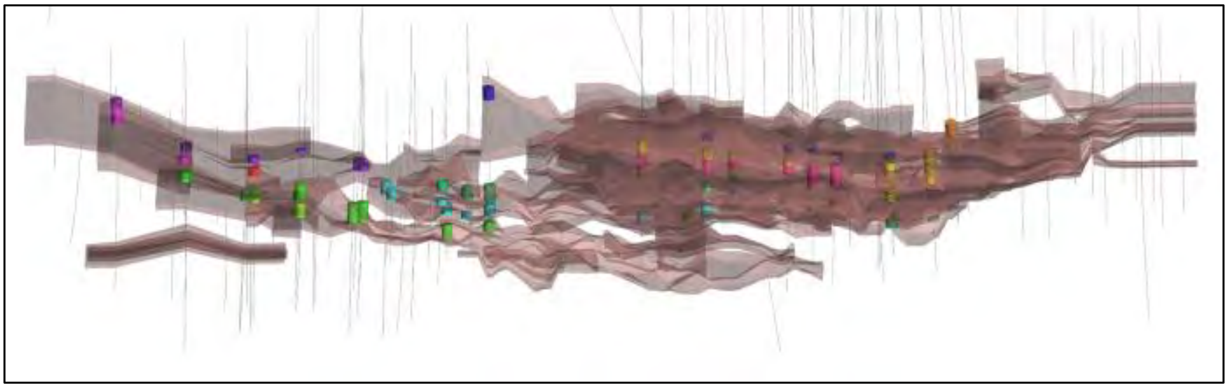
Source: Troilus (2020)

Figure 13-19: SW-Zone Pilot Bulk Sample Spatial Location; within PEA wireframes



Source: Troilus (2020)

Figure 13-20: Z87-Zone Pilot Bulk Sample Spatial Location; within PEA wireframes



Source: Troilus (2020)

The objective of the Eriez pilot program was to maximize metal recovery performance using a gravity concentration and flotation circuit and to define optimum operating conditions for use in the PFS for each of the three deposits. Additional objectives included the production of sufficient final concentrate to allow chemical characterization and the production of other intermediate products for additional testing by Base Metallurgical Laboratories. Base Metallurgical Laboratories test work is discussed in 13.8. Due to the low copper grades of the deposits, large feed samples were required so that sufficient material was available for closed circuit cleaner operation.

The Eriez test work was conducted using a combination of bench scale tests using mechanical cells to establish the optimal flotation conditions followed by pilot plant operation using a closed-circuit milling, and gravity concentration to produce a rougher / scavenger concentrate. For the rougher / scavenger circuit (R/S), a series of bench scale mechanical flotation cells tests were conducted on representative samples of each zone to establish the optimal grind size, reagent additions and operating pH and oxidation potential. Following the rougher / scavenger bench testwork, the optimum parameters were then used in the pilot circuit consisting of a ball mill operating in closed circuit with a screen, a 3” Knelson concentrator treating 20% of the ball mill discharge for gravity recovery and column rougher and scavenger cells, as seen in Figure 13-21: to Figure 13-23:. This phase of the test work produced a R/S concentrate, Knelson gravity concentrate and scavenger tailings.

Figure 13-21: Eriez Pilot Plant Ball Mill and Gravity Recovery Circuit

Source: Eriez (2023)

Figure 13-22: Eriez Pilot Plant 4" Diameter Rougher Column and 3"dia Scavenger Column

Source: Eriez (2023)

Figure 13-23: Eriez Pilot Plant 4" dia 1St Cleaner Column & 3"dia 2nd Cleaner Column & 2" 3rd Cleaner Column

Source: Eriez (2023)

Extracts of the Eriez testwork results will be presented in the sections to follow. For the complete testwork details, refer to final testwork report from Eriez.

13.9.2 J-Zone Pilot Plant Results

Following optimization of rougher and scavenger column flotation operating parameters, including feed rate, air rate and wash water rate, etc., the J-Zone ore was closed circuit ball milled and treated using the Eriez pilot column cells under steady-state conditions to generate a bulk cleaner circuit feed material. 20% of the mill product was treated via Knelson concentration.

The Knelson tailings was combined with the mill discharge, which after classification, comprised the flotation feed. Three stages of cleaning were carried out on the rougher-scavenger bulk concentrate. For the Troilus J-Zone ore sample, an overall copper recovery (based on the as-received milled feed) of 89.9%, gold recovery of 92.9%, and silver recovery of 88.8% was achieved in combined Knelson separation and rougher-scavenger-cleaners column flotation.

The flotation circuit produced 79.7% of the recovered gold and the gravity circuit produced 13.23% of the recovered gold. Based on the column flotation rougher feed with 20% mass treated by Knelson separator, the combined rougher-scavenger and cleaner circuit copper, gold and silver flotation recoveries were approximately 89.9% at a copper grade of 13.6%, 91.9% at a gold grade of 101 g/t, and 88.6% at a silver grade of 187.4 g/t, respectively. The overall KAX 51 collector, SPRI 206 collector and Na_2SO_3 depressant dosages were approximately 59 g/t, 33 g/t and 300 g/t, respectively.

A schematic of the milling, gravity and classification circuit, R/S and cleaner circuit is shown in

Selected results for the J Zone bench-scale flotation tests are presented in Table 13-33 along with the test conditions presented in Table 13-34 and Figure 13-24.

In this schematic, the cleaner circuit is open circuit (J-Zone only), however, for SW and 87 the cleaner circuit was operated in closed circuit.

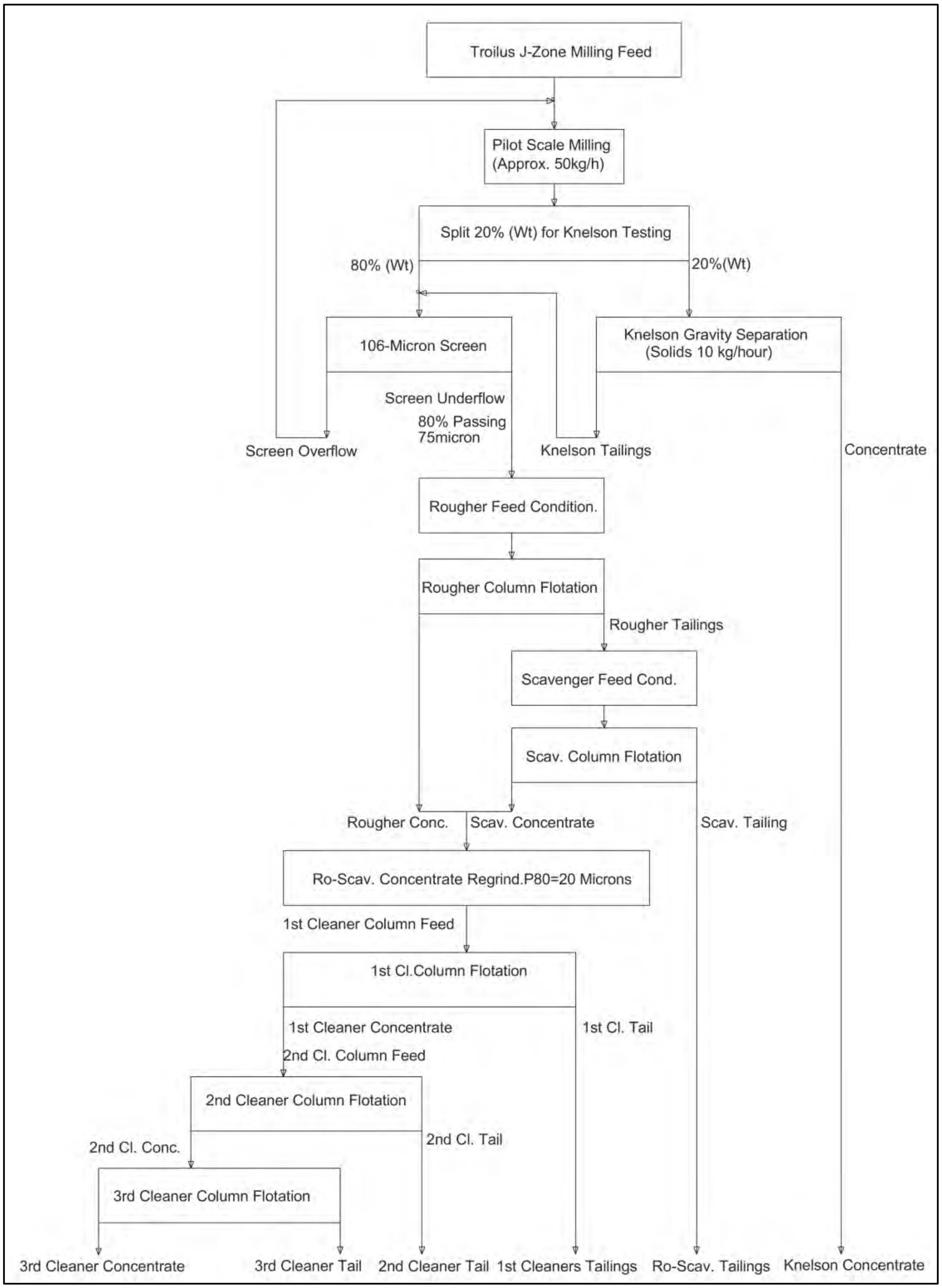
Table 13-33: J-Zone Bench-Scale Flotation Testwork at Varying Feed Particle Size

Test No.	Flotation Feed Particle Size P_{80} (µm)	Products & Tailings	Mass (%)	Assays				Float Mass Yield (%)	Float Cu Recovery (%)	Float Au Recovery (%)
				Cu (ICP) (%)	Fe (ICP) (%)	Sulf (Leco) (%)	Au (Fire Assay) (g/t)			
13	106	536940-BT-28 Ro & Scav O/F	6.79	0.76	12.07	10.86	4.77	6.79	92.68	80.66
		536940-BT-29 Scav U/F	93.21	0.00	2.86	0.02	0.08			
		Material Balanced Feed	100.00	0.06	3.48	0.76	0.40			
14	75	536940-BT-30 Ro & Scav O/F	5.72	0.917	13.89	12.8	6.10	5.72	94.63	87.07
		536940-BT-31 Scav U/F	94.28	0.003	2.86	0.03	0.05			
		Material Balanced Feed	100.0	0.055	3.487	0.757	0.40			
15	53	536940-BT-30 Ro & Scav O/F	6.18	0.87	13.31	12.03	5.71	6.18	96.63	88.24
		536940-BT-31 Scav U/F	93.82	0.00	2.84	0.01	0.05			
		Material Balanced Feed	100.00	0.06	3.49	0.76	0.40			

Table 13-34: J-Zone Bench-Scale Flotation Test Optimum Conditions

Test No.	Flotation Stage	Cond. & Flot. Percent Solids (% w/w)	pH Adjust. Lime Ca $(OH)_2$	Collector KAX 51 (g/t)	Collector SPRI 206 (g/t)	Frother Glycol (g/t)	Flot. Cell Vol. (L)	Flot. Cell Rotor Speed (rpm)	Conditioning Time (min)	Flot. Time (min)
13, 14, 15	Rougher Scavenger	~25	8.3-9.5	35 20	20 10	~15 ~10	4	1400	3	~12 ~8

Figure 13-24: J Zone Pilot Plant Flow Sheet



Source: Eriez (2023)

The bench-scale R/S test results show the copper and gold flotation recoveries increased with decreasing rougher-scavenger flotation feed particle size. Eriez considered both the flotation performance and the grinding energy consumption and determined that an 80% passing particle size of 75 µm is the optimal size for subsequent pilot column R/S flotation testwork.

Representative samples of the R/S concentrate produced in the pilot plant were bench tested at various grind sizes (P_{80} = 40, 30, 20 and 17.5 µm) to determine optimum performance. Copper grade and recovery were the parameters used to determine the optimum. Results of the bench-scale tests, summarized below in Table 13.10.3 show that a grind size of P_{80} = 20 µm produced the best recovery and concentrate grade.

Following rougher-scavenger flotation, the combined concentrate was reground to a P_{80} of 20 µm (optimal regrind size) to improve liberation of gold from pyrite. Three stage column cleaner flotation tests were then performed on the reground material.

A summary of the pilot test results is presented in Table 13-35.

Table 13-35: J-Zone Bench Scale Cleaner Flotation Test Work at Varying Feed Particle Size

Test No.	Flotation Feed Particle Size P_{80} (µm)	Products & Tailings	Mass (%)	Assays				Cu Dist %	S Dist %
				Cu (ICP) (%)	Comb % Cu	Fe (ICP) (%)	Sulf (Leco) (%)		
1	40	1st Cleaner Tail	67.39	0.02	0.02	3.91	4.10	1.03	21.53
		2nd Cleaner Tail	2.92	0.09	0.02	5.49	6.20	0.25	1.41
		3rd Cleaner Tail	1.86	0.19	0.02	6.60	7.30	0.35	1.06
		4th Cleaner Tail	1.44	0.68	0.03	9.34	8.20	0.96	0.92
		5Th Cleaner Tail	1.25	0.98	0.04	13.83	9.50	1.20	0.93
		6th Cleaner Tail	0.87	1.12	0.05	26.30	17.10	0.96	1.16
		7th Cleaner Tail	0.70	1.19	0.05	35.67	38.40	0.13	2.11
		7th Cleaner Con	23.56	4.12	1.03	37.91	38.60	95.13	70.88
		Comb Cleaner Feed	100	1.02		12.64	12.83	100	100
		Combined Col R/S + bench Cl	1.08	4.12				92.25	
2	30	1st Cleaner Tail	81.30	0.01	0.01	9.95	10.04	1.16	59.77
		2nd Cleaner Tail	2.94	0.08	0.02	11.99	11.50	0.24	2.46
		3rd Cleaner Tail	1.41	1.06	0.03	29.55	22.20	1.43	2.277
		4th Cleaner Tail	1.13	1.08	0.04	34.79	25.80	1.18	2.13
		5Th Cleaner Tail	1.06	1.14	0.06	36.78	36.60	1.17	2.82
		5Th Cleaner Con	11.63	8.48	1.04	41.88	36.10	94.83	30.55
		Comb Cleaner Feed	100	1.04		14.56	13.75	100	100
		Combined Col R/S + bench Cl	0.53	8.48				91.97	
9	20	1st Cleaner Tail	88.01	0.01	0.01	11.08	10.10	1.27	66.93
		2nd Cleaner Tail	4.74	0.55	0.04	28.35	0.60	2.51	10.92
		3rd Cleaner Tail	1.12	2.41	0.07	30.52	39.90	2.63	3.37
		4th Cleaner Tail	0.52	3.53	0.09	31.20	42.80	1.79	1.68
		5Th Cleaner Tail	0.42	5.62	0.11	31.19	43.20	2.32	1.38
		5Th Cleaner Con 3	1.00	15.44	0.26	29.42	40.20	14.98	3.03
		5Th Cleaner Con 2	1.65	16.82	0.54	29.11	40.20	27.00	5.01
		5Th Cleaner Con 1	2.53	19.35	1.03	29.30	40.30	47.51	7.68
		Comb Cleaner Feed	100	1.03		13.25	13.28	100	100
		Combined Cleaners 1 - 3	5.18	17.79				89.49	
		Combined Col R/S + bench Cl	0.24	17.79				86.79	
7	17.5	1st Cleaner Tail	78.56	0.02		9.21	8.23	1.25	48.86
		2nd Cleaner Tail	2.01	0.04		9.95	9.98	0.07	1.49
		3rd Cleaner Tail	1.37	0.07		10.70	10.60	0.09	1.10
		4th Cleaner Tail	1.19	0.11		12.50	12.50	0.12	1.12
		5Th Cleaner Tail	1.06	0.26		15.69	16.30	0.27	1.31
		6Th Cleaner Tail	1.02	0.71		22.22	17.20	0.69	1.33
		7th Cleaner Tail	0.99	1.39		31.71	42.90	1.31	3.20
		8th Cleaner Tail	0.87	3.10		31.78	41.10	2.58	2.71
		8th Cleaner Con	12.92	7.60		34.77	39.80	93.62	38.87
		Comb Cleaner Feed	100	1.05		13.21	13.23	100	100
		Combined Col R/S + bench Cl	0.59	7.60				90.79	

The optimum cleaner circuit bench-scale test conditions are summarized below in Table 13-36. A depressant, sodium sulphite (Na_2SO_3), was added to improve the copper grade in the concentrate by selectively removing pyrite. The pH was also increased to assist in pyrite rejection.

Table 13-36: J-Zone Bench Scale Cleaner Flotation Test Optimum Conditions

Test No.	Grind P_{80} µm	Cond. & Flot. Percent Solids (% w/w)	pH Adjust. Lime Ca $(OH)_2$	Na_2SO_3 Addition g/t	Collector KAX 51 (g/t)	Collector SPRI 206 (g/t)	Frother Glycol (g/t)	Flot. Cell Vol. (L)	Flot. Cell Rotor Speed (rpm)	Condit-ioning Time (min)	Flot. Time (min)
9	20	~25	11.5	400	4	2	4	4	1400	3	Var.

Following rougher-scavenger flotation, the combined concentrate was reground to a P_{80} of 20 µm (optimal regrind size) to improve liberation of gold from pyrite. Three stage column cleaner flotation tests were then performed on the reground material and operating conditions were further optimized during the pilot run. As seen in Figure 13-24 the best results were obtained with the cleaner circuit operating in open circuit.

A summary of the pilot test results is presented inTable 13-37.

Table 13-37: J-Zone Knelson & Pilot Column Rougher-Scavenger-Cleaner Flotation Results

Streams	Mass Distribution (%)	Assays				Distribution (%)		
		Cu (%)	Fe (%)	Au (mg/kg)	Ag (mg/kg)	Cu	Au	Ag
As-Received Milled Feed	100	0.06	3.38	0.50	0.85	100.00	100.00	100.00
Knelson Feed	20.00	0.06	3.38	0.50	0.85	20.00	20.00	20.00
Knelson Conc.	0.18	0.16	9.48	36.74	9.69	0.48	13.23	2.05
Knelson Tail	19.82	0.06	3.32	0.17	0.77	19.52	6.77	17.95
Cal. Knelson Untreated Ro Feed	80.00	0.060	3.38	0.50	0.852	80.00	80.00	80.00
Column Rougher Feed	99.82	0.06	3.36	0.43	0.84			
Column Ro Conc	3.47	1.59	23.00	11.15	21.44	92.66	77.51	87.43
Column Ro Tail	96.35	0.00	2.66	0.05	0.09			
Column Scav Conc	2.23	0.11	5.47	0.87	2.09	4.29	3.89	5.48
Column Scav Tail	94.12	0.00	2.59	0.03	0.05	2.57	5.36	5.04
Comb. Knelson Conc and Col. Conc	5.88			8.04		97.43	94.63	94.96
Comb.Column Ro-Scav. Conc.	5.70	1.01	16.14	7.13	13.87	96.94	81.40	92.91
Cleaners Column Flotation								
1st Cl. Feed	5.70	1.01	16.14	7.13	13.87	96.94	81.40	92.91
1st Cl. Tail	4.67	0.01	11.91	0.06	0.19	0.84	0.51	1.03
1st Cl. Conc	1.03	5.54	35.26	39.13	75.75	96.11	1.10	91.88
2nd Cl. Tail	0.37	0.36	25.74	0.37	4.39	2.20	2.82	1.90
2nd Cl. Conc	0.66	8.43	40.56	60.70	115.48	93.90	7.97	89.97
3rd Cl. Tail	0.27	0.87	37.44	1.69	10.21	3.95	2.99	3.23
3rd Cl. Conc	0.39	13.59	42.70	101.00	187.35	89.96	79.71	86.75
Comb. Knelson Conc & Column Conc	0.57	9.38	32.29	80.86	131.67	90.44	92.94	88.80

The Knelson gravity recovery from this pilot testwork was lower than predicted by the e-GRG test results. This is due to the configuration of the gravity concentrator in the pilot plant as seen is and Figure 13-24.

In this schematic, the cleaner circuit is open circuit (J-Zone only), however, for SW and 87 the cleaner circuit was operated in closed circuit.

Table 13-33: J-Zone Bench-Scale Flotation Testwork at Varying Feed Particle Size

Test No.	Flotation Feed Particle Size P80 (µm)	Products & Tailings	Mass (%)	Assays				Float Mass Yield (%)	Float Cu Recovery (%)	Float Au Recovery (%)
				Cu (ICP) (%)	Fe (ICP) (%)	Sulf (Leco) (%)	Au (Fire Assay) (g/t)			
13	106	536940-BT-28 Ro & Scav O/F	6.79	0.76	12.07	10.86	4.77	6.79	92.68	80.66
		536940-BT-29 Scav U/F	93.21	0.00	2.86	0.02	0.08			
		Material Balanced Feed	100.00	0.06	3.48	0.76	0.40			
14	75	536940-BT-30 Ro & Scav O/F	5.72	0.917	13.89	12.8	6.10	5.72	94.63	87.07
		536940-BT-31 Scav U/F	94.28	0.003	2.86	0.03	0.05			
		Material Balanced Feed	100.0	0.055	3.487	0.757	0.40			
15	53	536940-BT-30 Ro & Scav O/F	6.18	0.87	13.31	12.03	5.71	6.18	96.63	88.24
		536940-BT-31 Scav U/F	93.82	0.00	2.84	0.01	0.05			
		Material Balanced Feed	100.00	0.06	3.49	0.76	0.40			

Table 13-34: J-Zone Bench-Scale Flotation Test Optimum Conditions

Test No.	Flotation Stage	Cond. & Flot. Percent Solids (% w/w)	pH Adjust. Lime $Ca(OH)_2$	Collector KAX 51 (g/t)	Collector SPRI 206 (g/t)	Frother Glycol (g/t)	Flot. Cell Vol. (L)	Flot. Cell Rotor Speed (rpm)	Conditioning Time (min)	Flot. Time (min)
13, 14, 15	Rougher Scavenger	~25	8.3-9.5	35 20	20 10	~15 ~10	4	1400	3	~12 ~8

Figure 13-24: Figure 13-24 where a 20% portion of the ball mill discharge was fed to the gravity concentrator (3” nelson). In normal plant operation, gravity concentration is achieved by treating a portion of the circulating load (cyclone underflow) not the ball mill discharge. The pilot plant configuration treating the ball mill discharge was necessary to avoid dilution of the ball mill feed caused by the excess amount of fluidization water generated by the 3“Knelson. While the pilot plant circuit configuration is sub-optimal it did provide gravity recovery prior to flotation as intended. More details on the gravity recovery testwork will be discussed under section 13.10.

In terms of the flotation performance, the pilot test was a success. The J-Zone final concentrate from the third cleaner concentrate had a mass pull of 0.39%. The combined J-Zone weighted average of the flotation tails was calculated to be 0.006% Cu, and 0.035 g Au/t, 0.095 g Ag/t. The overall flotation reagent consumption for J-Zone was 59 g/t KAX 51 collector, 33 g/t SPRI 206 collector, and 300 g/t Na_2SO_3 depressant.

A brief economic analysis was conducted based on the low flotation tails to verify if further treatment is required. The results from the analysis did not justify the need to further treat the flotation tails. However, the flotation tails were still sent to Base Met for cyanidation testwork for the purpose of testwork completion.

13.9.3 SW Zone Pilot Plant Results

Whereas the J-zone material was provided as crushed coarse assay rejects, SW-zone samples required extensive crushing. To prepare the as-received sample for bench-scale flotation studies, representative samples were split, and a milling study performed using a laboratory rod mill. Bench-scale flotation tests were conducted to identify the most optimal flotation feed particle size distribution, flotation circuit configuration, and reagent scheme, as well as addition rates. Based on these results, a rougher / scavenger-cleaner column flotation circuit configuration was selected.

The optimal SW-zone rougher / scavenger feed particle size distribution determined from batch flotation testing was P_{80}= 75 µm. Additionally, the optimal cleaner circuit grind size was P_{80} = 20 µm.

Following optimization of rougher and scavenger column flotation operating parameters, including feed rate, air rate and wash water rate, etc., the SW-zone ore was closed circuit ball milled and treated using the Eriez pilot column cells under steady-state conditions to generate a bulk cleaner circuit feed material. Similar to the J-Zone, 20% of the mill product was treated for gravity gold recovery via Knelson concentration. The Knelson tailings was combined with the mill discharge, which after classification, comprised the flotation feed. Three stages of cleaning were carried out on the rougher-scavenger bulk concentrate.

For the Troilus SW-zone ore sample, an overall copper recovery (based on the as-received milled feed) of 94.0%, gold recovery of 88.3%, and silver recovery of 89.4% was achieved in combined Knelson separation and rougher-scavenger-cleaners column flotation. The combined rougher-scavenger and cleaner circuit copper, gold, and silver flotation recoveries (based on the as-received milled Knelson feed) were approximately 93.5% at a copper grade of 15.5%, 82.1% at a gold grade of 137.2 g/t, and 85.7% at a silver grade of 251.4 g/t, respectively. The overall KAX 51 collector, SPRI 206 collector and Na_2SO_3 depressant dosages were approximately 60.7 g/t, 40.3 g/t and 200 g/t, respectively.

Selected results for the SW-Zone bench-scale flotation tests are presented in Table 13-38 along with the test conditions presented in Table 13-39.

Table 13-38: SW-Zone Bench-Scale Rougher/Scavenger Flotation Testwork at Varying Feed Particle Size

Test No.	Flotation Feed Particle Size P80 (µm)	Products & Tailings	Mass (%)	Assays				Float Mass Yield (%)	Float Cu Recovery (%)	Float Au Recovery (%)
				Cu (ICP) (%)	Fe (ICP) (%)	Sulf (Leco) (%)	Au (Fire Assay) (g/t)			
1	106	536940-BT-242 Ro& Scav O/F	6.82	0.876	11.1	6.80	6.40	6.82	94.26	87.00
		536940-BT-243 Scav U/F	93.18	0.004	3.50	0.04	0.07			
		Material Balanced Feed	100.00	0.063	4.02	0.50	0.502			
2	75	536940-BT-244 Ro& Scav O/F	5.36	1.156	12.24	8.70	8.40	5.36	96.57	90.49
		536940-BT-245 Scav U/F	94.64	0.002	3.77	0.03	0.05			
		Material Balanced Feed	100.0	0.064	4.23	0.49	0.498			
3	53	536940-BT-246 Ro& Scav O/F	6.31	0.965	11.80	7.60	7.10	6.31	96.50	90.53
		536940-BT-247 Scav U/F	93.69	0.002	3.61	0.01	0.05			
		Material Balanced Feed	100.00	0.063	4.13	0.49	0.495			

Table 13-39: SW-Zone Bench-Scale Flotation Test Optimum Conditions

Test No.	Flotation Stage	Cond. & Flot. Percent Solids (% w/w)	pH Adjust. Lime Ca $(OH)_2$	Collector KAX 51 (g/t)	Collector SPRI 206 (g/t)	Frother Glycol (g/t)	Flot. Cell Vol. (L)	Flot. Cell Rotor Speed (rpm)	Condit-ioning Time (min)	Flot. Time (min)
1-3 Average	Rougher Scavenger	~25	8.3-9.5	32 15	16 10	~15 ~10	4	1400	3	~12 ~8

As with J- Zone, bench-scale test results for SW Zone show the rougher / scavenger copper and gold flotation recoveries increased with decreasing rougher-scavenger flotation feed particle size. Eriez considered both the flotation performance and the grinding energy consumption and determined that an 80% passing particle size of 75 µm is the optimal size for subsequent pilot column flotation testwork.

Representative samples of the R/S concentrate produced in the pilot plant were bench tested at various grind sizes (P_{80} = 30, 20 and 17.5 µm) to determine optimum performance. Experience with J-Zone indicated that a regrind size of P_{80} = 40 µm is too coarse, and it was not tested. Copper grade and recovery were the parameters used to determine the optimum. Results of the bench-scale tests, summarized below in Table 13-40 show that a grind size of P_{80} = 20 µm produced the best recovery and concentrate grade.

Table 13-40: SW-Zone Bench Scale Cleaner Flotation Test Work at Varying Feed Particle Size

Test No.	Flotation Feed Particle Size P_{80} (µm)	Products & Tailings	Mass (%)	Assays				Cu Dist %	Au Dist %
				Cu (ICP) (%)	Fe (ICP) (%)	Sulf (Leco) (%)	Au Fire Assay, g/t		
2	30	1st Cleaner Tail	73.89	0.02	5.41	3.03	0.20	0.88	1.45
		2nd Cleaner Tail	5.53	0.76	15.14	5.34	2.59	3.22	1.44
		3rd Cleaner Tail	2.97	0.84	20.36	15.97	4.47	1.91	1.33
		4th Cleaner Tail	3.68	0.94	30.01	26.14	6.65	2.64	2.46
		5Th Cleaner Tail	4.36	0.82	38.92	43.73	6.64	2.71	2.90
		5th Cleaner Con	9.56	12.20	34.40	44.27	94.19	88.65	90.42
		Comb Cleaner Feed	100	1.32	11.53	10.12	9.96	100	100
		Combined Col R/S + bench Cl	**0.49**	**12.20**				**86.19**	**81.3**
1	20	1st Cleaner Tail	84.66	0.01	7.97	5.59	0.18	0.88	1.55
		2nd Cleaner Tail	4.35	0.48	13.99	16.14	1.92	1.60	0.84
		3rd Cleaner Tail	0.81	1.72	25.17	19.52	8.97	1.05	0.73
		4th Cleaner Tail	0.66	1.53	33.19	38.39	10.31	0.77	0.69
		5Th Cleaner Tail	0.39	1.17	40.34	43.50	8.65	0.35	0.34
		5Th Cleaner Con	9.12	**13.76**	39.35	44.27	104.69	**95.35**	95.86
		Comb Cleaner Feed	100	1.32	11.53	10.12	9.96	100	100
		Combined Col R/S + bench Cl	**0.47**	**13.76**				**92.58**	**86.54**
4	17.5	1st Cleaner Tail	86.17	0.01	7.46	0.66		0.79	
		2nd Cleaner Tail	3.52	0.04	26.92	1.10		0.12	
		3rd Cleaner Tail	1.46	1.18	32.92	13.50		1.39	
		4th Cleaner Tail	1.21	0.99	40.12	41.80		0.96	
		5Th Cleaner Tail	1.04	3.79	39.07	42.20		3.16	
		5Th Cleaner Con	6.61	17.61	32.17	38.35		93.58	
		Comb Cleaner Feed	100	1.24	10.91	4.28		100	
		Combined Col R/S + bench Cl	**0.34**	**17.61**				**90.99**	

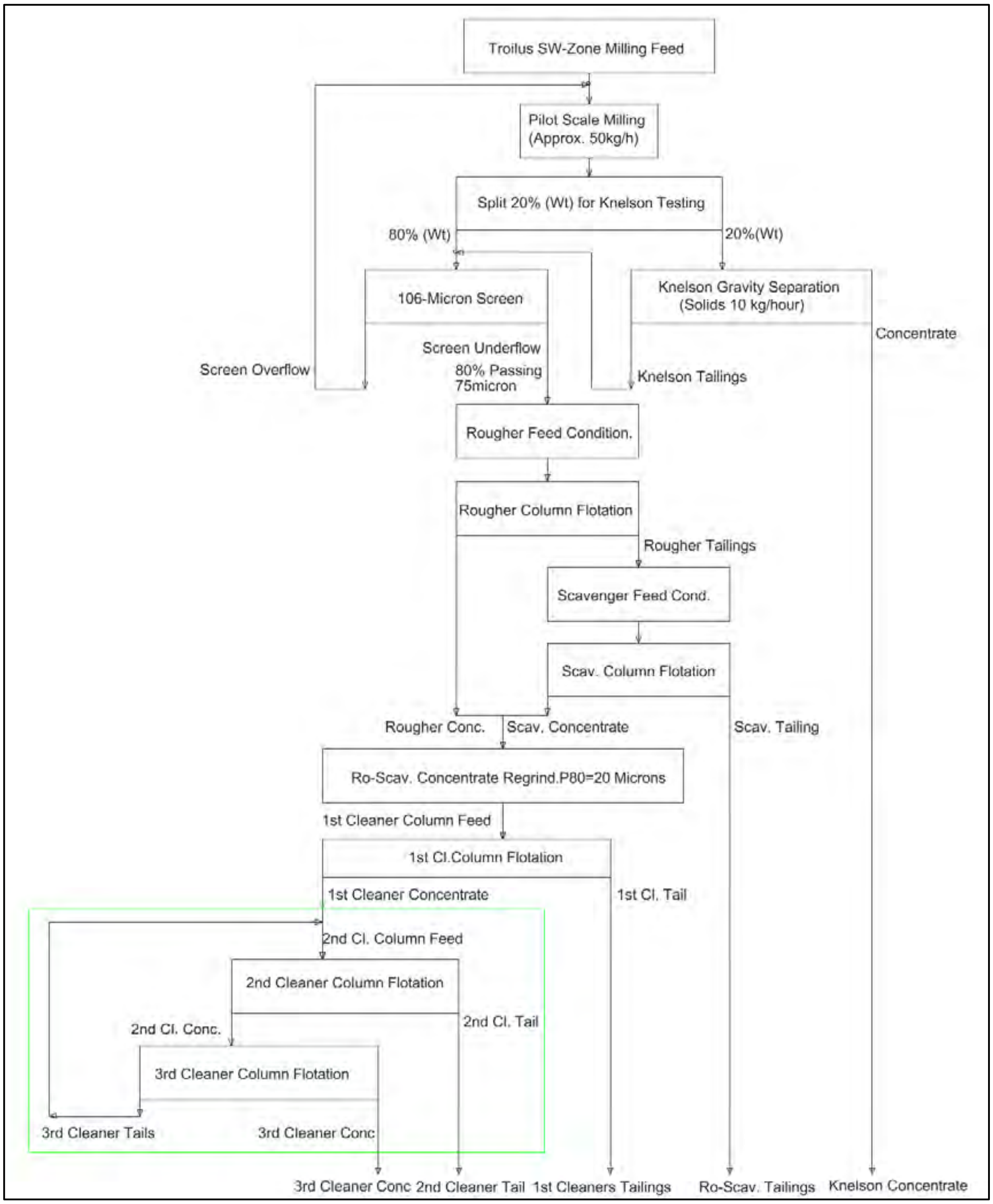
The optimum cleaner circuit bench-scale test conditions are summarized in Table 13-41. A depressant, sodium sulphite (Na_2SO_3), was added to improve the copper grade in the concentrate by selectively removing pyrite. The pH was also increased to assist in pyrite rejection.

Table 13-41: SW-Zone Bench Scale Cleaner Flotation Test Optimum Conditions

Test No.	Grind P_{80} µm	Cond. & Flot. Percent Solids (% w/w)	pH Adjust. Lime $Ca(OH)_2$	Na_2SO_3 Addition g/t	Collector KAX 51 (g/t)	Collector SPRI 206 (g/t)	Frother Glycol (g/t)	Flot. Cell Vol. (L)	Flot. Cell Rotor Speed (rpm)	Condit-ioning Time (min)	Flot. Time (min)
1	20	~25	11.5	200	2	1	2	4	1400	3	Var.

Figure 13-25 shows the test flowsheet that was followed for the pilot column cell testwork. Best results were obtained with the cleaner circuit operating in closed circuit with the 3rd cleaner tails recycled to the 2nd cleaner feed.

Figure 13-25: SW-Zone Pilot Plant Flowsheet



Source: Eriez (2023)

A summary of the pilot plant results is presented in Table 13-42.

Table 13-42: SW-Zone Knelson & Pilot Column Rougher-Scavenger-Cleaner Flotation Results

Streams	Mass Distribution (%)	Assays				Distribution (%)		
		Cu (%)	Fe (%)	Au (mg/kg)	Ag (mg/kg)	Cu	Au	Ag
Knelson Feed (Head)	20.00	0.07	3.93	0.66	1.16	20	20	20
Knelson Conc.	0.20	0.18	18.64	20.77	21.97	0.56	6.22	3.75
Knelson Tail	19.80	0.0	3.79	0.46	0.96	19.44	13.78	16.25
Cal. Knelson Untreated Ro Feed	80.00	0.07	3.93	0.66	1.16	80.00	80.00	80.00
Column Rougher Feed	99.80	0.07	3.90	0.62	1.12			
Column Ro Conc	3.73	1.62	13.76	14.75	25.37	91.76	82.84	81.25
Column Ro Tail	96.07	0.01	3.52	0.08	0.18			
Column Scav Conc	1.00	0.32	4.85	2.71	8.13	4.89	4.07	6.96
Column Scav Tail	95.08	0.002	3.51	0.05	0.10	2.79	6.87	8.04
Comb. Knelson Conc and Col. Conc	4.92			12.55		97.21	93.13	91.96
Comb.Column Ro-Scav. Conc.	4.73	1.34	11.88	12.21	21.7	96.66	86.91	88.21
Cleaners Column Flotation								
1st Cl. Feed	4.73	1.34	11.88	12.21	21.73	96.66	86.91	88.21
1st Cl. Conc	1.09	5.80	21.57	52.56	94.10	96.10	86.13	87.92
1st Cl. Tail	3.64	0.01	8.98	0.14	0.09	0.55	0.03	0.28
2nd Cl. Tail	0.69	0.2	13.62	3.92	3.76	2.62	2.39	2.23
3rd Cl. Conc	0.40	15.47	35.43	137.24	251.35	93.48	82.05	85.69
Comb. Knelson Conc & Column Conc	0.60	10.37	29.82	98.38	174.81	94.04	88.27	89.44
Combined Final Tail	99.40	0.004	3.78	0.08	0.12	5.96	11.73	10.56

As with the J-Zone composite, the SW-Zone performed well in the pilot plant. For the SW-zone ore sample, an overall copper recovery of 94.0%, gold recovery of 88.3%, and silver recovery of 89.4% was achieved in combined Kelson separation and rougher-scavenger-cleaners column flotation. The combined rougher-scavenger and cleaner circuit copper, gold, and silver flotation recoveries (based on the as-received milled Knelson feed) were approximately 93.5% at a copper grade of 15.5%, 82.1% at a gold grade of 137.2 g/t, and 85.7% at a silver grade of 251.4 g/t, respectively. The overall KAX 51 collector, SPRI 206 collector and Na_2SO_3 depressant dosages were approximately 60.7 g/t, 40.3 g/t and 200 g/t, respectively.

13.9.4 Zone 87 Pilot Plant Results

Similar to the SW zone, the Zone 87 samples required extensive crushing. To prepare the as-received sample for bench-scale flotation studies, representative samples were split, and a milling study performed using a laboratory rod mill. Bench-scale flotation tests were conducted to identify the most optimal flotation feed particle size distribution, flotation circuit configuration, and reagent scheme, as well as addition rates. Based on these results, a rougher / scavenger cleaner column flotation circuit configuration was selected.

The optimal Zone 87 rougher/scavenger feed particle size distribution determined from batch flotation testing was P_{80}= 75 µm. Additionally, the optimal cleaner circuit grind size was P_{80} = 20 µm.

Following optimization of rougher and scavenger column flotation operating parameters, including feed rate, air rate and wash water rate, etc., the Zone 87 ore was closed circuit ball milled and treated using the Eriez pilot column cells under steady-state conditions to generate a bulk cleaner circuit feed material. 20% of the mill product was treated for gravity gold recovery via Knelson concentration. The Knelson tailings was combined with the mill discharge, which after classification, comprised the flotation feed. Three stages of cleaning were carried out on the rougher-scavenger bulk concentrate.

For the Zone 87 ore sample, an overall copper recovery (based on the as-received milled feed) of 95.9%, gold recovery of 95.5%, and silver recovery of 92.8% was achieved in combined Kelson separation and rougher-scavenger-cleaners column flotation. The combined rougher-scavenger and cleaner circuit copper, gold, and silver flotation recoveries (based on the as-received milled Knelson feed) were approximately 95.1% at a copper grade of 17.4%, 87.1% at a gold grade of 145.9 g/t, and 62.6% at a silver grade of 62.6 g/t, respectively. The overall KAX 51 collector, SPRI 206 collector and Na_2SO_3 depressant dosages were approximately 51 g/t, 28 g/t and 100 g/t, respectively.

Selected results for the Zone 87 bench-scale flotation tests are presented in Table 13-43 along with the test conditions presented in Table 13-44.

Table 13-43: Z87 Zone Bench-Scale Rougher / Scavenger Flotation Testwork at Varying Feed Particle Size

Test No.	Flotation Feed Particle Size P_{80} (µm)	Products & Tailings	Mass (%)	Assays				Float Mass Yield (%)	Float Cu Recovery (%)	Float Au Recovery (%)
				Cu (ICP) (%)	Fe (ICP) (%)	Sulf (Leco) (%)	Au (Fire Assay) (g/t)			
1	75	Ro & Scav O/F	6.07	1.16	10.29	6.10	7.72	6.07	98.44	92.58
		Scav U/F	93.93	0.00	2.27	0.02	0.04			
		Cal. Feed	100.00	0.07	2.75	0.39	0.51			
2	53	Ro & Scav O/F	5.67	1.21	11.94	7.70	8.62	5.67	97.67	92.84
		Scav U/F	94.33	0.00	2.47	0.03	0.04			
		Cal. Feed	100.00	0.07	3.01	0.47	0.53			

Table 13-44: Z87 Zone Bench-Scale Rougher Scavenger Flotation Test Optimum Conditions

Test No.	Flotation Stage	Cond. & Flot. Percent Solids (% w/w)	pH Adjust. Lime Ca (OH)2	Collector KAX 51 (g/t)	Collector SPRI 206 (g/t)	Frother Glycol (g/t)	Flot. Cell Vol. (L)	Flot. Cell Rotor Speed (rpm)	Condit-ioning Time (min)	Flot. Time (min)
8-20 Average	Rougher Scavenger	~25	8.3-9.5	32	16	~15	4	1400	3	~12
				15	10	~10				~8

As with SW- Zone, bench-scale test results for Zone 87 show the rougher /scavenger copper and gold flotation recoveries increased with decreasing rougher-scavenger flotation feed particle size. Eriez considered both the flotation performance and the grinding energy consumption and determined that an 80% passing particle size of 75 µm is the optimal size for subsequent pilot column flotation testwork.

Representative samples of the R/S concentrate produced in the pilot plant were bench tested at various grind sizes (P_{80} = 30, 20 and 17.5 µm) to determine optimum performance. Experience with J-Zone and SW-Zone indicated that a regrind size of P_{80} = 40 µm is too coarse, and it was not tested. Copper grade and recovery were the parameters used to determine the optimum. Results of the bench-scale tests, summarized below in Table 13-45: show that a grind size of P_{80} = 20 µm produced the best recovery and concentrate grade.

Table 13-45: Z87 Zone Bench Scale Cleaner Flotation Test Work at Varying Feed Particle Size

Test No.	Flotation Feed Particle Size P_{80} (µm)	Products & Tailings	Mass (%)	Assays: Cu (ICP) (%)	Assays: Fe (ICP) (%)	Assays: Sulf (%)	Assays: Au Fire Assay g/t	Cu Dist %	Au Dist %
1	20	1st Cleaner Tail	73.18	0.01	9.82	5.85	0.68	0.27	2.62
		2nd Cleaner Tail	4.75	0.12	28.53	29.10	1.58	0.25	0.39
		3rd Cleaner Tail	3.71	0.63	42.54	46.30	5.66	1.02	1.11
		4th Cleaner Tail	2.57	1.20	40.04	45.70	10.23	1.34	1.38
		5th Cleaner Tail	2.31	3.85	38.14	42.30	31.44	3.89	3.84
		5th Cleaner Conc	13.47	15.92	32.37	37.80	128.0	99.23	90.66
		Comb. Cl. Feed	100.00	2.30	16.39	14.63	19.02	100.00	100.00
		Comb. Column Flot. R/S & Benchtop Cl.	0.42	15.92				91.66	
2	17.5	1st Cleaner Tail	72.76	0.01	9.85			0.39	
		2nd Cleaner Tail	4.57	0.66	23.92			1.32	
		3rd Cleaner Tail	3.90	0.81	44.00			1.37	
		4th Cleaner Tail	2.83	2.06	31.49			2.55	
		5th Cleaner Tail	2.52	3.35	40.83			3.69	
		5th Cleaner Conc	13.41	15.50	36.21			90.68	
		Comb. Cl. Feed	100.00	2.29	16.76			100.00	
		Comb. Column Flot. R/S & Benchtop Cl.	0.42	15.50				88.93	
3	37.5	1st Cleaner Tail	67.59	0.05	7.99			1.41	
		2nd Cleaner Tail	5.83	0.31	21.01			0.79	
		3rd Cleaner Tail	4.07	2.18	29.90			3.87	
		4th Cleaner Tail	3.42	2.28	37.07			3.41	
		4th Cleaner Conc	19.08	10.86	38.23			90.52	
		Comb. Cl. Feed	100.00	2.29	16.41			100.00	
		Comb. Column Flot. R/S & Benchtop Cl.	0.59	10.86				88.78	

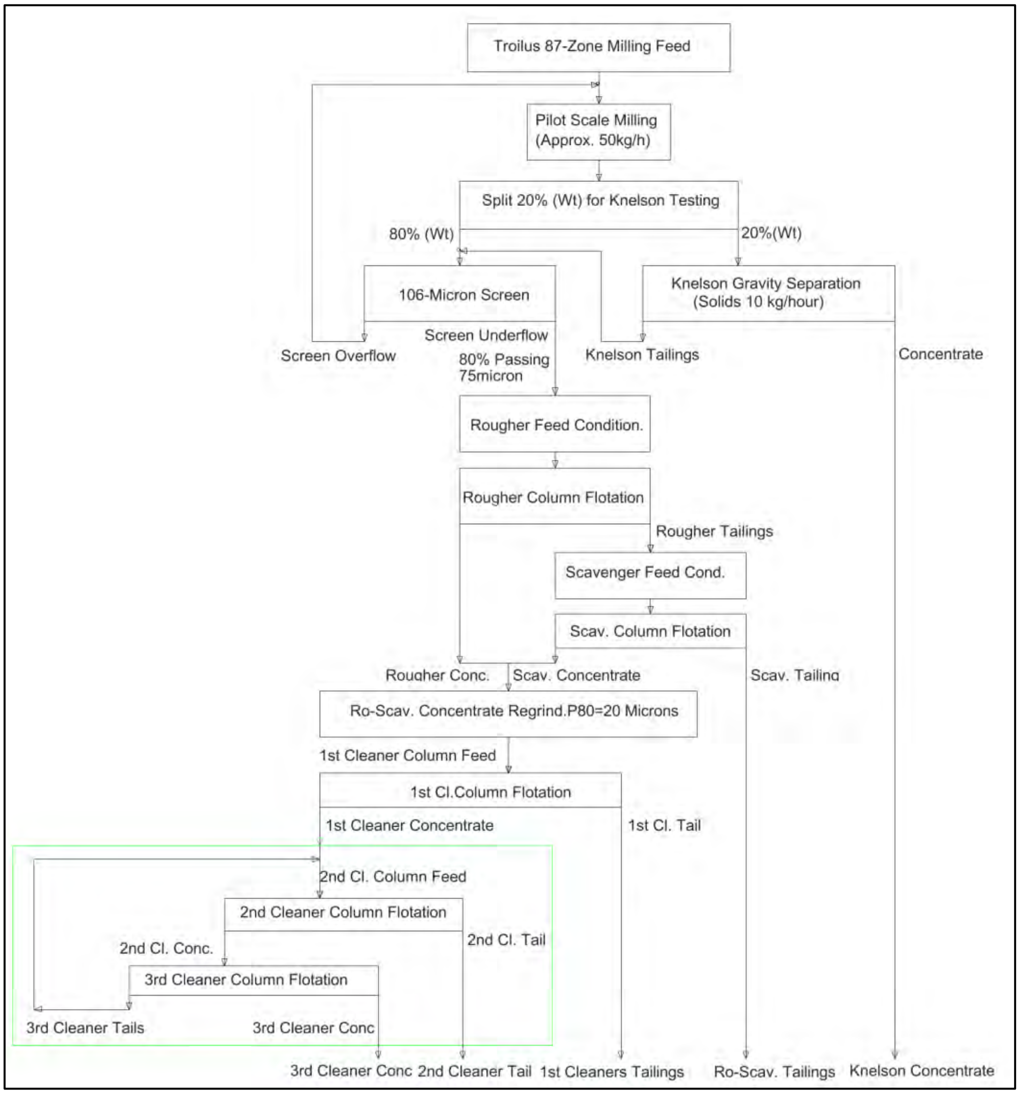
The optimum cleaner circuit bench-scale test conditions are summarized below in Table 13-46. A depressant, sodium sulphite (Na_2SO_3), was added to improve the copper grade in the concentrate by selectively removing pyrite. The pH was also increased to assist in pyrite rejection.

Table 13-46: Z87 Zone Bench Scale Cleaner Flotation Test Optimum Conditions

Test No.	Grind P_{80} µm	Cond. & Flot. Percent Solids (% w/w)	pH Adjust. Lime Ca $(OH)_2$	Na_2SO_3 Addition g/t	Collector KAX 51 (g/t)	Collector SPRI 206 (g/t)	Frother Glycol (g/t)	Flot. Cell Vol. (L)	Flot. Cell Rotor Speed (rpm)	Condit-ioning Time (min)	Flot. Time (min)
1	20	~25	11.5	200	2	1	2	4	1400	3	Var.

Figure 13-26 shows the test flowsheet that was followed for the pilot column cell testwork. Best results were obtained with the cleaner circuit operating in closed circuit with the 3rd cleaner tails recycled to the 2nd cleaner feed.

Figure 13-26: Z87 Zone Pilot Plant Flowsheet



Source: Eriez (2023)

A summary of the pilot plant results is presented in Table 13-47.

Table 13-47: Z87 Zone Knelson & Pilot Column Rougher-Scavenger-Cleaner Flotation Results

Streams	Mass Distribution (%)	Assays				Distribution (%)		
		Cu (%)	Fe (%)	Au (mg/kg)	Ag (mg/kg)	Cu	Au	Ag
Knelson Feed (Head)	20.00	0.070	3.235	0.643	0.298	20.00	20.00	20.00
Knelson Conc.	0.12	0.429	16.234	44.767	29.767	0.73	8.38	12.03
Knelson Tail	19.88	0.068	3.156	0.376	0.119	19.27	11.62	7.97
Cal. Knelson Untreated Ro Feed	80.00	0.070	3.235	0.643	0.298	80.00	80.00	80.00
Column Rougher Feed	99.88	0.070	3.219	0.590	0.262			
Column Ro Conc	2.35	2.826	19.980	24.333	10.504	94.59	89.06	83.02
Column Ro Tail	97.53	0.003	2.814	0.017	0.015			
Column Scav Conc	0.56	0.377	5.029	1.496	0.114	3.00	1.30	0.21
Column Scav Tail	96.97	0.001	2.802	0.008	0.015	1.67	1.27	4.73
Comb. Knelson Conc and Col. Conc	3.03			20.933		98.33	98.73	95.27
Comb.Column Ro-Scav. Conc.	2.91	2.356	17.109	19.948	8.509	97.59	90.36	83.24
Cleaners Column Flotation								
1st Cl. Feed	2.91	2.356	17.109	19.948	8.509	97.59	90.36	83.24
1st Cl. Conc	0.76	8.894	25.305	74.542	33.226	96.06	88.05	82.21
1st Cl. Tail	2.15	0.050	14.218	0.690	0.143	1.53	0.03	1.03
2nd Cl. Tail	0.38	0.174	20.480	1.649	1.179	0.93	2.38	1.49
3rd Cl. Conc	0.38	17.431	30.029	145.912	62.625	95.13	87.08	80.72
Comb. Knelson Conc & Column Conc	0.50	13.372	26.736	121.768	54.782	95.87	95.46	92.75
Combined Final Tail	99.50	0.003	3.115	0.029	0.022	4.13	4.54	7.25

As with the J-Zone and SW-Zone composites, the Zone 87 composite performed well in the pilot plant. For the Zone 87 ore sample, an overall copper recovery of 95.87%, gold recovery of 95.46%, and silver recovery of 92.75% was achieved in combined Knelson separation and rougher-scavenger-cleaners column flotation. The combined rougher-scavenger and cleaner circuit copper, gold, and silver flotation recoveries (based on the as-received milled Knelson feed) were approximately 95.13% at a copper grade of 17.43%, 87.08% at a gold grade of 145.9 g/t, and 80.72% at a silver grade of 62.6 g/t, respectively. The overall KAX 51 collector, SPRI 206 collector and Na_2SO_3 depressant dosages were approximately 51 g/t, 28 g/t and 100g/t, respectively.

13.10 FLSmidth Gravity Recovery Testwork and Modelling (2021, 2022)

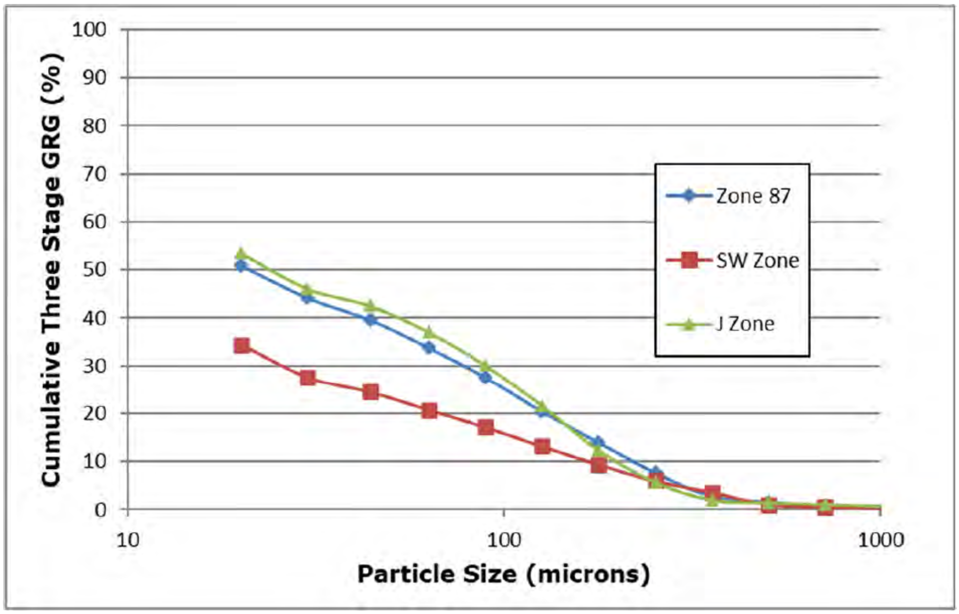
FLSmidth received three samples from Eriez for conducting the e-GRG testwork for J-Zone, SW-Zone, and Zone 87. The E-GRG testwork is based on progressive particle size reduction to allow recovery of gold while minimizing over grinding. The results are reported for the overall gold recovery and e-GRG value as a function of particle size distribution.

The overall gravity recovery results for each zone are presented in Table 13-48: and Figure 13-27:. The as tested samples were ground to a final test grind size different to that of the actual plant grind size of 75 µm, hence, a correction was done to predict the GRG at the plant cyclone overflow P_{80}.

Table 13-48: GRG Values for J-Zone, SW-Zone and Zone 87

Ore Sample	Corrected GRG (%)	Test P_{80} (µm)	As Tested GRG (%)
J-Zone	53.5	73.0	54.4
SW-Zone	34.4	80.0	34.6
Zone 87	51.0	103.0	47.1

Figure 13-27: GRG Particle Size Distribution for J-Zone, SW-Zone, and Zone 87



Source: FLS (2022)

All the concentrates from the three zones were rated on the Amira scale to be between moderate to coarse.

FLSmidth also provided gravity recovery modelling for the three ore zones (J, SW, and 87) based on the E-GRG testwork. The modelling was conducted based on four scenarios for the gravity recovery in the primary milling circuit and one scenario for the regrind circuit.

The four scenarios for the primary milling circuit are:

- 15% cyclone underflow treated by gravity.
- 29% of cyclone underflow treated by gravity.
- 45% of cyclone underflow treated by gravity.
- 90% of mill discharge treated by gravity.

Gravity recovery modelling results for the primary milling circuit are shown in Table 13-49.

Table 13-49: Gravity Recovery Modelling Results for Primary Milling Circuit

Scenario	Solids t/h Treated	No. of Units	% Circulating Load Treated	J-Zone Recovery		SW-Zone Recovery		Zone 87 Recovery		Conc Mass (kg)
				GRG	Total Au %	GRG	Total Au %	GRG	Total Au %	
1	700	2 x QS48	15	44.5	22.7	39.6	13.6	42.2	21.8	4,800
2	1,400	2 x QS70	29	58.9	30.1	52.7	18.1	56.8	29.0	5,184
3	2,100	3 x QS70	45	66.6	34.1	60.0	20.6	64.5	32.9	7,776
4	5,600	8 x QS70	90*	76.5	38.9	71.1	24.4	74.7	38.1	20,736

* 90% of mill discharge treated

Gravity recovery modelling results for the regrind circuit are shown in Table 13-50: . 150% regrind mill circulating load has been assumed and the modelling is based on treating 100% of the circulating load.

Table 13-50: Gravity Recovery Modelling Results for Regrind Circuit

Ore	Solids t/h Treated	No. of Units	% Circulating Load Treated	Gravity Feed Location	Total Au Recovery	Conc Mass (kg)
J-Zone	270	3 x QS48	100	Mill Discharge	8.9	21,600
SW-Zone	270	3 x QS48	100	Mill Discharge	7.6	21,600
Zone 87	270	3 x QS48	100	Mill Discharge	9.9	21,600

Gravity concentration is a good candidate for the Troilus project as the gravity recovery testwork results indicate good GRG values and coarse GRG.

13.11 Results Interpretation

The following describes the main results that contributed to the development of the process design criteria for the Troilus Gold Project:

- Results from the latest SMC and BWi tests conducted through Base Met and JKTech were used for the OMC comminution design. The design abrasion index value was based on an average of all available past results.
- Gravity recoveries for the different ore zones were based on the 2022 FLSmidth gravity recovery modelling in the primary milling circuit and in the regrind circuit. The corrected GRG values for scenario 2 (i.e., ~29% of mill circulating load feeding gravity) were used in the primary milling circuit. For the regrind circuit, a 50% discount on the predicted GRG were used to compensate for uncertainties in the modelling as it has not been based on testwork.
- The optimal grind sizes for primary milling and regrind circuit were selected based on bench-scale flotation testwork at varying P_{80} by Eriez.
- Flotation reagent consumption has been based on the latest pilot plant testwork for the individual ore zone
- The recovery model for Troilus has been determined based on a constant tails grade from the most recent gravity and pilot plant flotation testwork with Eriez. The same gravity recovery for gold has been applied to silver. A small % loss has been assumed for electrowinning of the

pregnant solution from gravity concentrate intensive leaching. The recovery equations were determined to be as follows:

- Au or Ag Overall Recovery % = [(HG – TG) / HG x 100] – Loss%
- Au or Ag Flotation Recovery % = [(HG – TG) / HG x 100] – Loss% - GR%
- Cu Flotation Recovery % = (HG – TG) / HG x 100.

Where:

- HG = Head grade in g/t or % (value per mine plan)
- TG = Tails grade in g/t or % (value per pilot plant testwork for individual ore zone)
- GR = Gravity recovery % (value per gravity recovery modelling for individual ore zone)
- Loss = 0.025%

13.12 Conclusions and Recommendations

13.12.1 Conclusions

The following conclusions can be drawn from the latest metallurgical testwork completed by Eriez, FLSmidth and Base Met:

- J-Zone, SW-Zone, and Zone 87 all had good GRG values with coarse GRG as predicted by FLSmidth gravity recovery modelling. The gravity recoveries are expected to be:
- J-Zone gravity Au & Ag recovery – 34%
- SW-Zone Au & Ag recovery – 22%
- Zone 87 Au & Ag recovery – 34%
- J-Zone, SW-Zone, and Zone 87 all performed well in the flotation testwork conducted by Eriez.
- The optimum grind size selected was P_{80} 75µm for the primary mill and P_{80} 20µm for the regrind mill.
- Further treatment of the flotation tails is not required or justifiable economically due to low flotation tails grades.
- J-Zone is expected to have an overall plant recovery of 93.8% Au, 91.4% Ag and 91.4% Cu, based on LOM head grade of 0.56 g Au/t, 1.12 g Ag/t and 0.07% Cu, respectively.
- Overall flotation reagent consumption for J Zone was 59 g/t KAX 51 collector, 33 g/t SPRI 206 collector, and 300 g/t Na2SO3 depressant, respectively.
- SW-Zone is expected to have an overall plant recovery of 85.7% Au, 89.3% Ag and 94.3% Cu, based on LOM head grade of 0.56 g Au/t, 1.12 g Ag/t and 0.07% Cu, respectively, respectively.
- Overall flotation reagent consumption for SW-Zone was 61 g/t KAX 51 collector, 40 g/t SPRI 206 collector, and 200 g/t Na2SO3 depressant.
- Zone 87 is expected to have an overall plant recovery of 94.8% Au, 98.0% Ag and 95.7% Cu, based on LOM head grade of 0.56 g Au/t, 1.12 g Ag/t and 0.07% Cu, respectively, respectively.
- Overall flotation reagent consumption for SW-Zone was 51 g/t KAX 51 collector, 28 g/t SPRI 206 collector, and 100 g/t Na2SO3 depressant.

13.12.2 Recommendations

Additional testwork is recommended to enhance confidence in the selected flowsheet and process design derived to date. This should include:

Comminution

- With this being a low to medium grade deposit the profit margin would be small. Hence, it is important to accurately estimate the expected energy and consumables costs associated with the grinding area. More samples would need to be tested in future phases of the project to increase the body of test results available for mill sizing and cost estimating.
- In addition to the general point raised above it is also important to conduct comminution test on a reasonable number of variability samples to assess how ore hardness varies within the ore bodies. The degree of variability and peak demand is an important factor in determining the contingency required with respect to mill sizing. This testing can be conducted in the Feasibility Study.
- Variability samples from discrete intervals should be selected from each deposit to confirm equipment sizing. Locked cycle HPGR tests should also be carried out at the feasibility stage.
- A sample of flotation concentrate needs to be subjected to jar milling tests to determine energy requirements for regrind mill sizing (usually performed by vendors).

Metallurgical

- Variability testwork should be carried out to verify the results from the bulk composite samples.
- Settling and rheology testing on flotation concentrates need to be conducted as well as filtration tests.
- Settling and rheology testing on primary ground ore prior to flotation. The testing done to date used leached slurry only.
- Gravity recovery for the regrind circuit to be further confirmed via testwork.

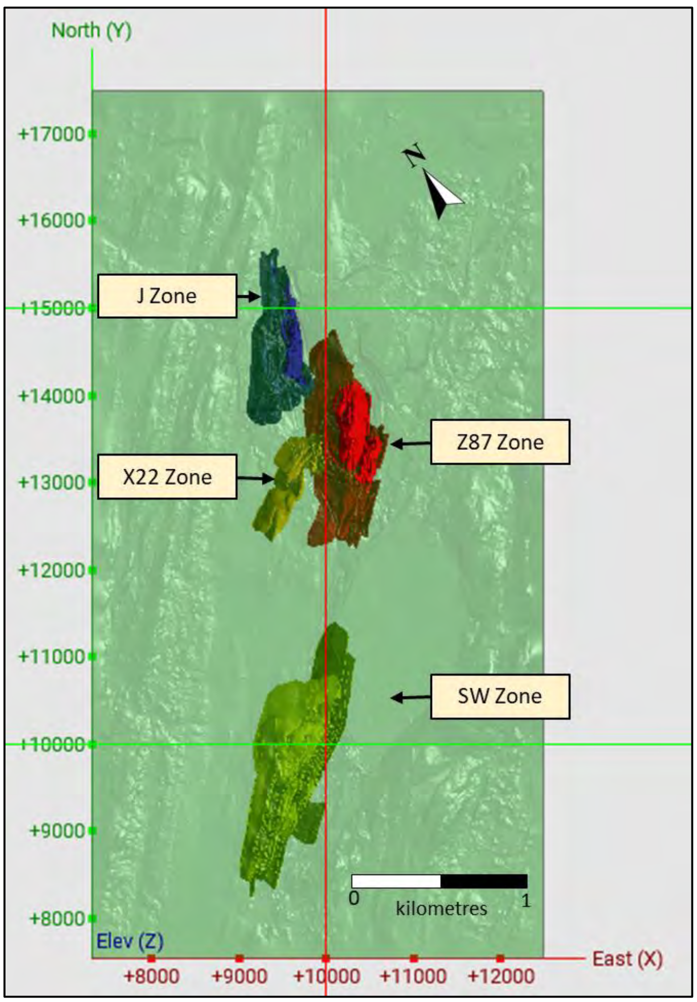
14 MINERAL RESOURCE ESTIMATES

14.1 Summary

This section discloses the mineral resources for the Project, prepared and disclosed in accordance with the CIM Standards and Definitions for Mineral Resources and Mineral Reserves (2014). The QP responsible for these resource estimates is Mr. Paul Daigle, P.Geo., Principal Resource Geologist for AGP. The effective date for these Mineral Resource is 2 October 2023. The current Mineral Resources for the Troilus Project include the Z87, J, X22 and SW Zones. The resource estimates have been prepared using interpreted mineralized domains in each of the four deposits that comprise the Project.

Figure 14-1 presents the four principal zones for the Project.

Figure 14-1: Z87, J, SW, and X22 Zones; plan view



Source: AGP (2023)

The four principal zones were estimated separately using a mine grid coordinate system, rotated approximately 55° Az from the UTM coordinate NAD83 system. The mineral resource estimates used block matrices of 5 m x 5 m x 5 m. The blocks model grades were estimated using ordinary kriging interpolation method using 2 m (All Zones) capped composite values. Metal grades were capped prior to compositing. Capping levels vary based on mineralized domain where required. Density was assigned based on lithology models.

The Mineral Resources amenable to open pit extraction are reported within optimized constraining shells for each mineralized zone at a 0.3 g/t AuEQ cut-off grade. The Mineral Resources amenable to underground extraction are reported based on a 0.9 g/t AuEQ cut-off grade within gradeshells consolidating contiguous blocks below the constraining shells.

The optimized constraining shells were developed by AGP using MineSight software and incorporates metal recovery, geotechnical parameters, and estimated costs for each mineralized zone. The mineral resources are classified as Indicated Resources or Inferred Resources in accordance with the CIM Definitions of Mineral Resources and Mineral Reserves (2014).

Table 14-1 presents the combined Mineral Resources, amenable to open pit and underground, for the Troilus Project for the mineral resources amenable to open pit and underground resources.

Table 14-1: Combined Open Pit and Underground Resources

		Grade				Contained Metal		
Class	**Tonnes (Mt)**	**Au (g/t)**	**Cu (%)**	**Ag (g/t)**	**AuEQ (g/t**	**Au (Moz)**	**Cu (Mlbs)**	**Ag (Moz)**
All Zones								
Indicated	508.3	0.57	0.07	1.09	0.69	9.32	729.50	17.79
Inferred	80.5	0.58	0.07	1.47	0.69	1.49	115.41	3.81

Notes:
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
Summation errors may occur due to rounding.

AGP is not aware of any information not already discussed in this report, which would affect their interpretation or conclusions regarding the subject property. AGP is required to inform the public that the quantity and grade of reported Inferred resources in this estimation must be regarded as conceptual in nature and are based on limited geological evidence and sampling. The geological evidence is sufficient to imply, but not verify, geological grade or quality of continuity. For these reasons, an Inferred resource has a lower level of confidence than an Indicated resource. It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. The rounding of values, as required by the reporting guidelines, may result in apparent differences between tonnes, grade, and metal content.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

14.1.1 Open Pit Resources

The mineral resources for the Troilus Project deposit amenable to open pit extraction at a 0.3 g/t AuEQ cut-off grade are: Indicated Resource of 506.2 Mt at 0.57 g/t Au, 0.07 %Cu, 1.09 g/t Ag and 0.68 g/t AuEQ; and an Inferred Resource of 76.5 Mt at 0.53 g/t Au, 0.06 %Cu, 1.12 g/t Ag and 0.65 g/t AuEQ. Table 14-2 presents the Mineral Resources amenable to open pit extraction.

Table 14-2: Open Pit Mineral Resources for the Troilus Project at a 0.3 g/t AuEQ Cut-off Grade – All Zones

		Grade				Contained Metal			
Class	**Tonnes (Mt)**	**Au (g/t)**	**Cu (%)**	**Ag (g/t)**	**AuEQ (g/t**	**Au (Moz)**	**Cu (Mlb)**	**Ag (g/t)**	**AuEQ (Moz)**
Z87									
Indicated	197.1	0.67	0.07	1.21	0.80	4.21	320.69	7.67	5.04
Inferred	37.1	0.59	0.06	1.11	0.70	0.71	50.17	1.33	0.84
JZ									
Indicated	151.9	0.50	0.06	0.96	0.61	2.45	215.71	4.71	2.98
Inferred	24.2	0.46	0.07	0.94	0.57	0.35	35.37	0.73	0.44
X22									
Indicated	59.2	0.51	0.06	1.24	0.62	0.98	79.34	2.35	1.19
Inferred	13.6	0.53	0.07	1.48	0.67	0.23	21.76	0.65	0.29
SW									
Indicated	98.0	0.50	0.05	0.94	0.60	1.59	109.91	2.94	1.89
Inferred	1.6	0.37	0.04	0.96	0.45	0.02	1.36	0.05	0.02
TOTALS – ALL ZONES									
Indicated	506.2	0.57	0.07	1.09	0.68	9.23	725.66	17.67	11.11
Inferred	76.5	0.53	0.06	1.12	0.65	1.31	108.66	2.75	1.59

Notes:

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Summation errors may occur due to rounding.

Open pit mineral resources are reported within optimized constraining shells.

Open pit cut-off grade is 0.3 g/t AuEQ.

AuEQ equivalents were calculated as follows:

Z87 Zone	AuEQ = Au grade + 1.5628 * Cu grade + 0.0128 * Ag grade
J Zone	AuEQ = Au grade + 1.5107 * Cu grade + 0.0119 * Ag grade
X22 Zone	AuEQ = Au grade + 1.5628 * Cu grade + 0.0128* Ag grade
SW Zone	AuEQ = Au grade + 1.6823 * Cu grade + 0.0124 * Ag grade

Metal prices for the AuEQ formulas are: $US 1,850/ oz Au; $4.25/lb Cu, and $23.00/ oz Ag; with an exchange rate of US$1.00: CAD$1.30

Metal recoveries for the AuEQ formulas are:

Z87 Zone	95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery
J Zone	93.1% for Au recovery, 89.3% for Cu recovery and 88.9% for Ag recovery
X22 Zone	95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery
SW Zone	85.7% for Au recovery, 91.5% for Cu recovery and 85.6% for Ag recovery

Capping of grades varied between 2.30 g/t Au and 21.00 g/t Au; between 0.06% Cu and 4.36 %Cu, and between 3.20 g/t Ag and 55.00 g/t Ag; on raw assays

The density (excluding overburden and fill) varies between 2.64 g/cm^3 and 2.93 g/cm^3 depending on lithology

14.2 Underground Resources

The mineral resources for the Troilus Project deposit amenable to underground extraction at a 0.9 g/t AuEQ cut-off grade are: an Indicated Resource of 2.1 Mt at 1.35 g/t Au, 0.09 %Cu, 1.90 g/t Ag and 1.51 g/t AuEQ; and an Inferred Resource of 4.0 Mt at 1.36 g/t Au, 0.08 %Cu, 8.21 g/t Ag and 1.58 g/t AuEQ. Table 14-3 presents the Mineral Resources amenable to underground extraction.

Table 14-3: Underground Mineral Resources for the Troilus Project at a 0.9 g/t AuEQ Cut-off Grade – All Zones

		Grade				Contained Metal			
Class	**Tonnes (Mt)**	**Au (g/t)**	**Cu (%)**	**Ag (g/t)**	**AuEQ (g/t**	**Au (Moz)**	**Cu (Mlb)**	**Ag (Moz)**	**AuEQ (Moz)**
Z87									
Indicated	0.5	1.59	0.15	0.54	1.83	0.02	1.55	0.01	0.03
Inferred	1.1	1.99	0.12	0.46	2.19	0.07	2.96	0.02	0.08
JZ									
Indicated	0.2	1.21	0.07	1.46	1.33	0.01	0.29	0.01	0.01
Inferred	1.0	1.25	0.05	0.99	1.34	0.04	1.13	0.03	0.04
X22									
-none-									
-none-									
SW									
Indicated	1.4	1.28	0.07	2.44	1.42	0.06	2.00	0.11	0.06
Inferred	1.9	1.05	0.06	16.62	1.37	0.06	2.66	1.01	0.08
TOTALS – ALL ZONES									
Indicated	2.1	1.35	0.09	1.90	1.51	0.09	3.84	0.13	0.10
Inferred	4.0	1.36	0.08	8.21	1.58	0.18	6.75	1.06	0.20

Notes:
Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability
Summation errors may occur due to rounding
Underground resources reported in 0.9 g/t AuEQ grade shells
Underground cut-off grade is 0.9 g/t AuEQ
AuEQ equivalents were calculated as follows:

- Z87 Zone — AuEQ = Au grade + 1.5628 * Cu grade + 0.0128 * Ag grade
- J4/J5 Zone — AuEQ = Au grade + 1.5107 * Cu grade + 0.0119 * Ag grade
- X22 Zone — AuEQ = Au grade + 1.5628 * Cu grade + 0.0128* Ag grade
- SW Zone — AuEQ = Au grade + 1.6823 * Cu grade + 0.0124 * Ag grade

Metal prices for the AuEQ formulas are: $US 1,700/ oz Au; $4.25/lb Cu, and $23.00/ oz Ag; with an exchange rate of US$1.00: CAD$1.30
Metal recoveries for the AuEQ formulas are:

- Z87 Zone — 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery
- J Zone — 93.1% for Au recovery, 89.3% for Cu recovery and 88.9% for Ag recovery
- X22 Zone — 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery
- SW Zone — 85.7% for Au recovery, 91.5% for Cu recovery and 85.6% for Ag recovery

Capping of grades varied between 2.30 g/t Au and 21.00 g/t Au; between 0.06% Cu and 4.36 %Cu, and between 3.20 g/t Ag and 55.00 g/t Ag; on raw assays
The density (excluding overburden and fill) varies between 2.64 g/cm3 and 2.93 g/cm3 depending on lithology.

14.3 Database

The database for the Troilus Project contains all drilling on the Property. As of 31 August 2023, the Troilus drill hole database for Z87, J, and X22 Zones contains 1,492 surface diamond drill holes with a total length of 449,168 m. The database includes regional and exploration holes considered outside of the four principal deposits. Due to the advancement of drill programs in Z87, J and X22 Zones, several drill holes are shared between Zones. Table 14-4 presents a summary of drill holes in the database and drill holes used in the estimation of mineral resources for each Mineralized Zone.

Table 14-4: Drillhole Database Summary – Troilus Project

Mineralized Zone	Number of Drillholes	Length (m)	Comments
Z87 Zone	519	159,735	
J Zone	382	104,592	
Z87 Zone / J Zone			11 drill holes are shared
X22 Zone	174	66,634	
X22 Zone / Z87 Zone			61 drill holes are shared
SW Zone	320	130,597	

14.4 Lithological Model

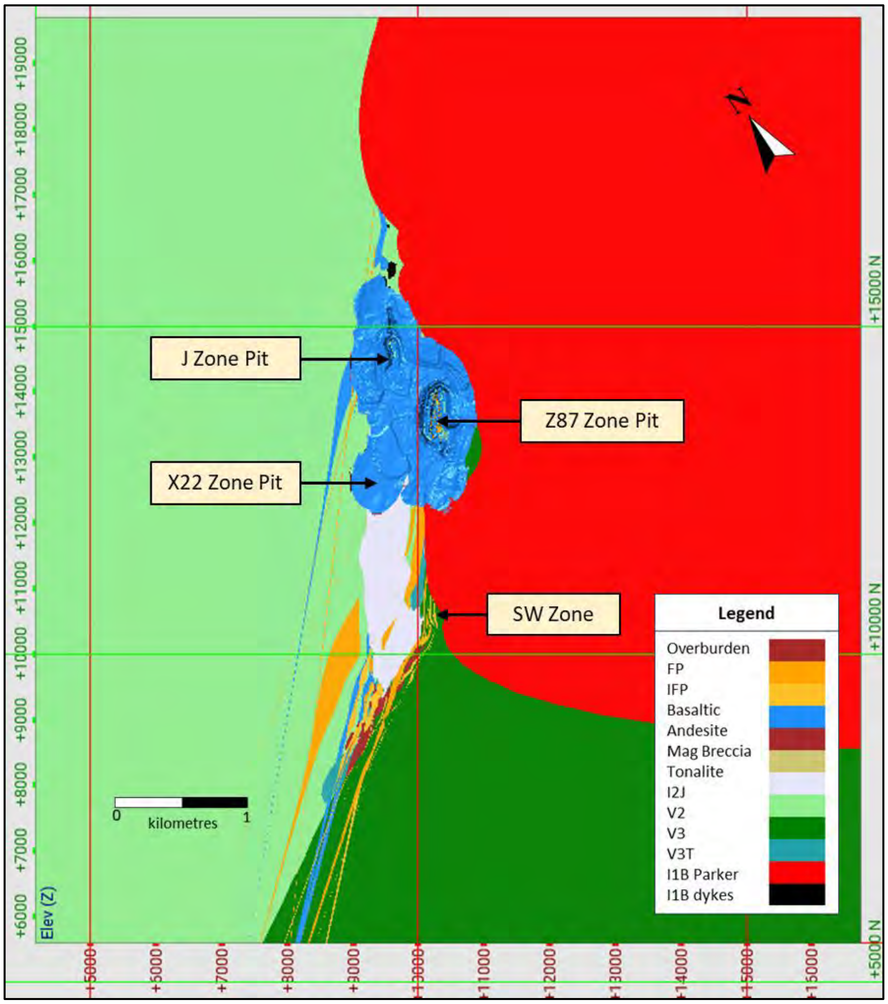
The three-dimensional wireframes model for the lithology model was interpreted by Troilus personnel using Leapfrog software. The lithology model is based on drill hole logs from all drill holes in the Troilus Project area. AGP has reviewed this model and has accepted the interpretation. The lithology model was used to code the lithology codes into the block model for the four mineralized zones and used to support the density model.

Table 14-5 presents the lithology codes used for the Project. Figure 14-2 presents a plan view of the lithology model, at 5200 m model elevation, for the four mineralized zones, with respect to the optimized pit constraint for the northern zones.

Table 14-5: Lithology Codes – Troilus Gold Project

Lithology	Lithology	Lithocode
Feldspar Porphyry	FP	61
Porphyritic Intrusive	IFP	62
Basaltic Andesite	Basaltic Andesite	63
Magnetite Breccia	Mag Breccia (only in SW)	64
Tonalite	Tonalite	65
Intermediate Volcanics	I2J	66
Mafic Volcanics (East)	V2	67
Mafic Volcanics (West)	V3	68
Mafic Volcanics (West)	V3T	69
Parker Granite	I1B Parker	70
Granitic Dykes	I1B_dykes	71
Overburden	OB	9

Figure 14-2: Lithology Model (Plan View at 5200 m Elevation); showing north deposits pit constraint

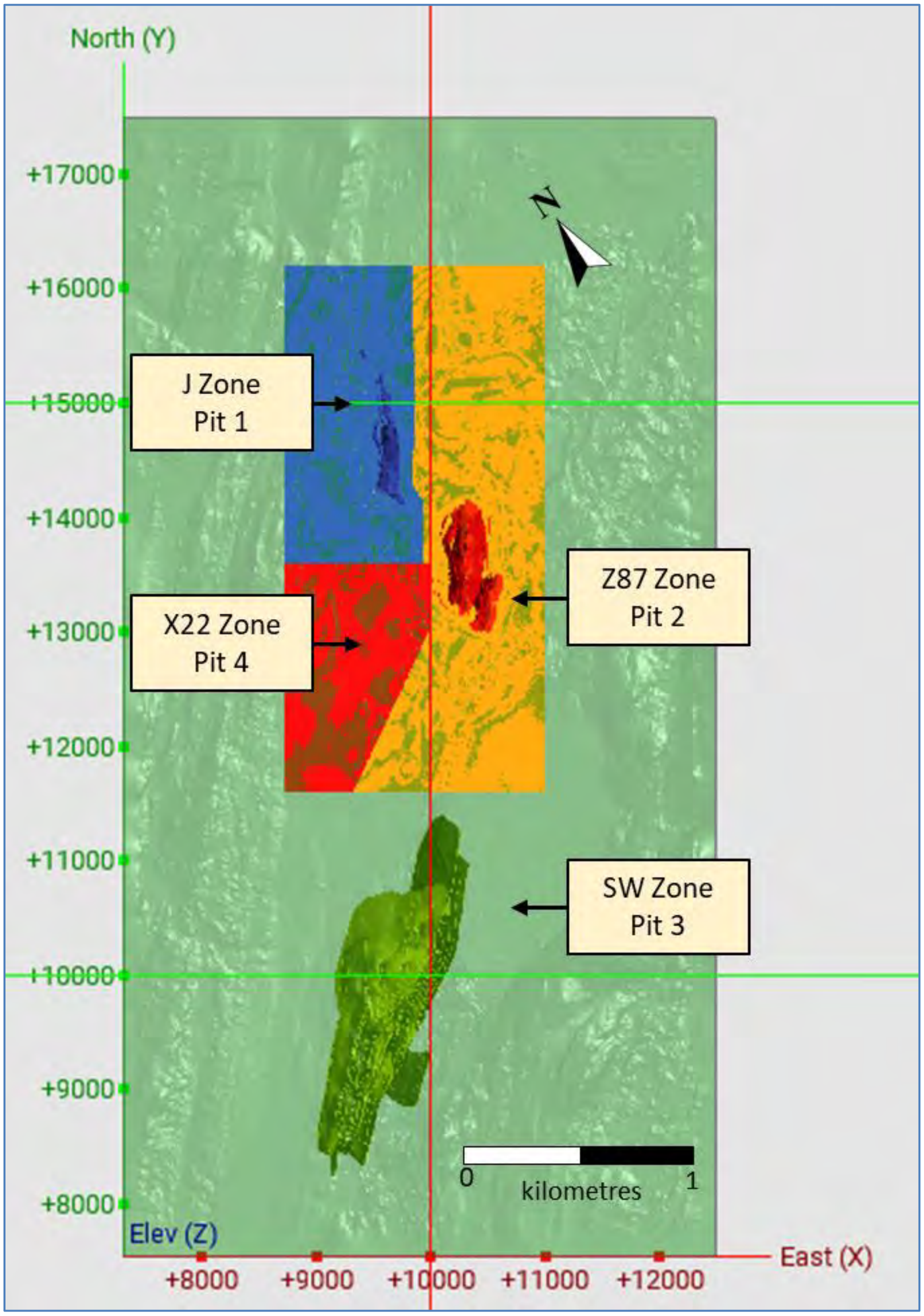


Source: AGP (2023)

14.4.1 Pit Areas

In order to differentiate between the three northern mineralized zone and avoid overlapping grade blocks within respective low-grade domains, a Pit code was populated in the models to keep the mineralized zones separated. The 'Pit Area' was coded into the block model as follows: J Zone =1, Z87 Zone = 2, SW Zone = 3 and X22 Zone = 4. Figure 14-3 shows the Pit Areas coded into the block models.

Figure 14-3: Pit Areas – Troilus Project; plan view



Source: AGP (2023)

14.4.2 Bulk Density

Z87, J and X22 Zones

A total of 132,983 density measurements were collected by Troilus from drill core during the 2019 - 2023 drill programs. The density assignment for the three northern mineralized zones is based on the mean density values within each lithology. Density for overburden was assigned the value of 2.20 g/cm^3.

Table 14-6 shows the densities assigned to each lithological domain in the SW Zone. Table 14-7 shows the descriptive statistics for the SW Zone by domain.

Table 14-6: Assigned Densities by Domain – Z87, J and X22 Zones

Lithology	Domain	Density
FP	61	2.73
IFP	62	2.82
Basaltic Andesite	63	2.80
Mag Breccia (in SW Zone only)	64	-
Tonalite	65	2.72
I2J	66	2.79
V2	67	2.76
V3	68	2.93
V3T	69	2.87
I1B Parker	70	2.72
I1B_dykes	71	2.64
Overburden	9	2.20

Table 14-7: Descriptive Statistics for Density by Lithology – Z87, J and X22 Zones

Lithology	Count	Min	Max	Mean	Median	StDev	CV
FP	16386	1.97	3.50	2.73	2.71	0.08	0.03
IFP	114	2.64	3.04	2.82	2.75	0.11	0.04
Basaltic Andesite	15597	2.19	3.47	2.80	2.79	0.08	0.03
Mag Breccia (only in SW)							
Tonalite	11619	2.24	3.61	2.72	2.72	0.05	0.02
I2J	22252	2.02	3.79	2.79	2.79	0.05	0.02
V2	61833	2.06	3.67	2.76	2.75	0.06	0.02
V3	996	2.61	3.13	2.93	2.94	0.09	0.03
V3T	1074	2.22	3.25	2.87	2.88	0.11	0.04
I1B Parker	967	2.53	3.11	2.72	2.65	0.14	0.05
I1B_dykes	2145	2.07	3.42	2.64	2.62	0.06	0.02

SW Zone

A total of 112,878 density measurements were collected by Troilus from drill core during the 2019 - 2023 drill programs in the SW Zone. The density assignment for the SW Zone is based on the mean density values within each lithology. Density for Overburden was assigned the value of 2.20.

Table 14-8 shows the densities assigned to each lithological domain in the SW Zone. Table 14-9 shows the descriptive statistics for the SW Zone by domain.

Table 14-8: Assigned Densities by Domain – SW Zone

Lithology	Lithocode	Density
FP	61	2.72
IFP	62	2.76
Basaltic Andesite	63	2.75
Mag Breccia	64	2.87
Tonalite (not in SW Zone)	65	-
I2J	66	2.80
V2	67	2.75
V3	68	2.92
V3T	69	2.82
I1B Parker	70	2.76
I1B_dykes (not in SW Zone)	71	-
Overburden	9	2.20

Table 14-9: Descriptive Statistics for Density by Lithology – SW Zone

Lithology	Count	Min	Max	Mean	Median	StDev	CV
FP	15336	2.14	3.41	2.72	2.7	0.08	0.03
IFP	13716	2.15	4.63	2.76	2.74	0.09	0.03
Basaltic Andesite	1898	2.51	3.12	2.75	2.75	0.06	0.02
Mag Breccia	13305	2.08	3.59	2.87	2.87	0.10	0.03
Tonalite (not in SW Zone)							
I2J	26858	2.26	3.71	2.80	2.8	0.06	0.02
V2	3129	2.43	3.26	2.75	2.75	0.07	0.02
V3	36157	1.81	3.93	2.92	2.94	0.10	0.03
V3T	2069	2.54	3.85	2.82	2.81	0.10	0.03
I1B Parker	410	2.43	3.24	2.76	2.75	0.12	0.04
I1B_dykes (not in SW Zone)							

14.5 Z87 Zone

14.5.1 Interpretation

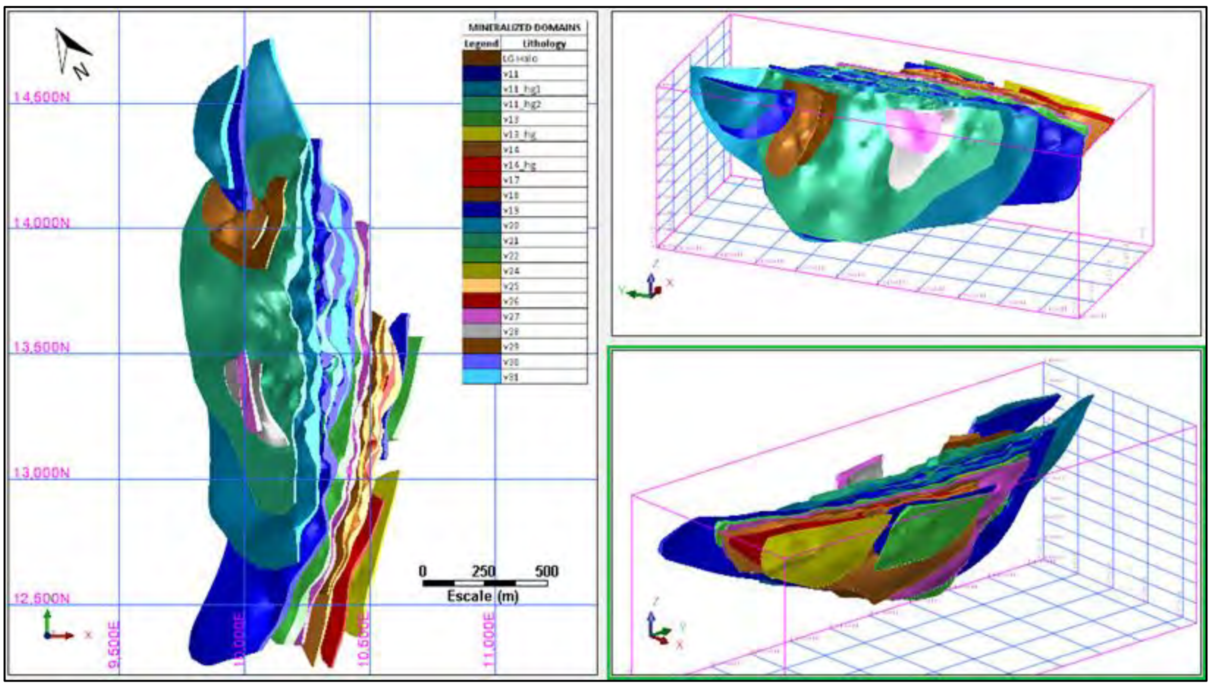
The three-dimensional (3-D) wireframes models of the Z87 Zone were interpreted by Troilus personnel using Leapfrog™ Geo software, where grades were captured using a minimum grade of 0.3 g/t AuEQ, where a minimum thickness of 5 m was applied to all zones. Several higher-grade domains were captured using a minimum grade of 1.0 g/t AuEQ. The AuEQ formula used for the gold equivalent formula from the PEA Report (AGP, 2020a) as follows:

$$AuEQ = Au\ grade + (1.2566 * Cu\ grade) + (0.0103 * Ag\ grade)$$

All mineralized domain envelopes were created above pre-mining topography and clipped to the overburden bottom surface and then, to the pit topography. A total of 22 3-D wireframes describes the mineralized domains in Z87 Zone. This includes a surrounding low-grade domain (or halo), created based on a grade greater than 0.07 g/t Au. The mineralization is disseminated and shows enrichment in what could be described as mineralized corridors without sharp boundaries. AGP considers the wireframes suitable to estimate resources. All wireframes were imported and validated into Surpac™ software.

Figure 14-4 shows the mineralized domain wireframes for the Z87 Zone. Table 14-10 summarizes the mineralized domains and domain codes.

Figure 14-4: Mineralized Zones – Z87 Zone



Source: AGP (2023)

Table 14-10: Mineralized Zones and Domain Codes – Z87 Zone

Mineralized Zone	Domain Code	Mineralized Zone	Domain Code
HG Halo	3100	v20	3200
v11	3110	v21	3210
v11_hg1	3115	v22	3220
v11_hg2	3120	v24	3240
v13	3130	v25	3250
v13_hg	3135	v26	3260
v14	3140	v27	3270
v14_hg	3145	v28	3280
v17	3170	v29	3290
v18	3180	v30	3300
v19	3190	v31	3310

14.5.2 Exploratory Data Analysis

Raw Assays

The drill hole database for the mineralized domains in the Z87 Zone, consists of 95,644 raw assay values for each metal: gold, copper, and silver. The assay values reported below detection limit were assigned half the detection limit for statistical analysis and grade estimation. Any missing values were assigned half the detection limit.

Table 14-11 to Table 14-13 presents the descriptive statistics for gold, copper, and silver, respectively, by mineralized domain in Z87 Zone.

Table 14-11: Descriptive Statistics for Au (g/t) Assays by Mineralized Domain – Z87 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	54,773	0.001	67.40	0.15	0.05	0.68	4.45
v11	10,439	0.001	154.00	0.43	0.21	1.72	4.05
v11 HG-1	6,843	0.001	103.01	1.48	0.82	3.17	2.14
v11 HG-2	2,834	0.001	23.51	1.00	0.67	1.26	1.26
v13	3,411	0.001	133.70	0.54	0.21	2.73	5.07
v13 HG	737	0.001	108.16	1.36	0.37	5.55	4.07
v14	2,878	0.001	25.94	0.46	0.22	1.13	2.46
v14 HG	1,132	0.001	87.40	1.18	0.53	3.51	2.99
v17	2,949	0.001	24.80	0.51	0.24	1.16	2.28
v18	1,750	0.001	29.07	0.47	0.19	1.25	2.68
v19	479	0.001	17.68	0.37	0.14	0.97	2.62
v20	3,537	0.001	26.00	0.42	0.22	0.85	2.02
v21	1,978	0.001	10.96	0.31	0.15	0.57	1.82
v22	185	0.002	11.45	0.47	0.17	1.11	2.38
v24	200	0.003	13.15	0.41	0.16	1.11	2.74
v25	235	0.003	5.39	0.32	0.17	0.56	1.74
v26	242	0.003	7.08	0.31	0.14	0.64	2.07
v27	123	0.003	15.35	0.57	0.19	1.51	2.66
v28	214	0.003	17.55	0.46	0.19	1.30	2.85
v29	239	0.003	3.81	0.26	0.14	0.42	1.64
v30	316	0.001	61.98	0.57	0.13	3.57	6.33
v31	150	0.001	5.24	0.34	0.19	0.62	1.82

Table 14-12: Descriptive Statistics for Cu (%) Assays by Mineralized Domain – Z87 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	54,773	-	30.00	0.02	0.01	0.13	6.31
v11	10,439	-	3.33	0.05	0.03	0.09	1.59
v11 HG-1	6,843	-	10.00	0.17	0.10	0.30	1.72
v11 HG-2	2,834	-	1.02	0.09	0.05	0.10	1.18
v13	3,411	-	11.27	0.07	0.03	0.24	3.47
v13 HG	737	0.001	1.74	0.11	0.04	0.18	1.71
v14	2,878	-	1.17	0.05	0.02	0.08	1.71
v14 HG	1,132	0.001	0.54	0.06	0.04	0.06	1.13
v17	2,949	-	2.926	0.06	0.02	0.14	2.33
v18	1,750	-	0.538	0.03	0.02	0.04	1.37
v19	479	0.001	2.00	0.02	0.01	0.10	3.94
v20	3,537	-	0.78	0.04	0.02	0.07	1.51
v21	1,978	-	1.26	0.04	0.02	0.07	1.86
v22	185	0.001	0.23	0.02	0.01	0.03	1.59
v24	200	0.001	0.43	0.04	0.03	0.04	1.14
v25	235	0.001	1.12	0.08	0.06	0.10	1.27
v26	242	0.001	0.88	0.05	0.03	0.08	1.59
v27	123	0.001	0.39	0.02	0.01	0.05	2.43
v28	214	-	0.33	0.03	0.01	0.05	1.64
v29	239	-	0.70	0.06	0.03	0.08	1.43
v30	316	0.001	2.12	0.10	0.05	0.19	1.79
v31	150	-	1.96	0.05	0.02	0.17	3.28

Table 14-13: Descriptive Statistics for Ag (g/t) Assays by Mineralized Domain – Z87 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	54,773	-	720.00	0.54	0.25	3.30	6.07
v11	10,439	-	48.00	0.86	0.30	1.48	1.72
v11 HG-1	6,843	-	145.00	1.86	1.00	4.73	2.55
v11 HG-2	2,834	-	41.00	0.96	0.40	1.98	2.06
v13	3,411	-	91.90	0.99	0.25	3.19	3.23
v13 HG	737	-	34.60	1.33	0.30	3.04	2.28
v14	2,878	-	95.11	1.11	0.50	2.69	2.43
v14 HG	1,132	-	159.5	1.76	0.90	5.33	3.03
v17	2,949	-	54.00	0.98	0.40	2.06	2.11
v18	1,750	-	23.45	0.73	0.30	1.25	1.71
v19	479	-	39.20	0.97	0.50	2.52	2.61
v20	3,537	-	259.90	1.07	0.30	6.39	6.00
v21	1,978	-	32.80	0.71	0.25	1.67	2.35
v22	185	0.10	6.20	0.78	0.40	1.05	1.33
v24	200	0.10	51.20	2.09	1.10	4.37	2.09
v25	235	0.10	6.60	0.83	0.50	0.91	1.10
v26	242	0.10	471.00	3.42	0.70	30.31	8.87
v27	123	0.10	15.66	0.82	0.25	2.19	2.67
v28	214	0.10	5.80	0.61	0.25	0.72	1.19
v29	239	-	11.90	0.87	0.50	1.21	1.39
v30	316	0.10	67.90	1.65	0.70	4.60	2.78
v31	150	0.10	29.60	0.93	0.30	2.62	2.81

In the database, for the Z87 Zone, approximately 0.83% of the gold assays are missing a silver assay. These are largely associated with the pre-2018 drilling, (‘KN- ‘drillholes). The other missing intervals were filled with half of the detection limit.

The matrix correlation for the combined low-grade and high-grade mineralized zones, indicated that gold correlates better with copper than silver although the correlation coefficient (R) is low (0.29 versus 0.24). Silver and copper show the best correlation with a R of 0.46. Despite the low correlation coefficient, AGP attempted a simple regression between copper and silver assays and as expected, the regression proved to be very poor, precluding the calculation of the missing silver assays. It was therefore decided that all missing assays and zero results will be set to zero grade during the compositing process. Table 14-14 shows the correlation matrix between gold, copper, and silver.

Table 14-14: Correlation Matrix – Z87 Zone

Column	Au (g/t)	Ag (g/t)	Cu (%)
Au (g/t)	1	0.24	0.29
Ag (g/t)	0.24	1	0.46
Cu (%)	0.29	0.46	1

Capping Analysis

The individual mineralized zones were grouped into six domains (Grouped Domains) to perform the capping analysis. Table 14-15 shows the domains, and the associated mineralized zones.

Table 14-15: Grouped Domains and Mineralized Zones within Grouped Domains – Z87 Zone

Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6
LG Halo	v11	v14	v27	v25	v30
	v11 HG-1	v14 HG	v28	v29	v31
	v11 HG-2	v17			
	v13	v18			
	v13 HG	v19			
	v20	v22			
	v21	v24			
		v26			

The coefficient of variation is considered low for a gold system and therefore aggressive outlier control was not deemed necessary. Capping levels were determine using probability plots and decile analysis (Parish, 1997). Capping of raw assays typically affected the upper 99.3 percentile (or above) of the population. Table 14-16 presents the selected gold, silver, and copper capping levels by domain.

Table 14-16: Capping Levels by Grouped Domain – Z87 Zone

Domain	Au (g/t)	Loss (%)	Cu (%)	Loss (%)	Ag (g/t)	Loss (%)
Domain 01	2.90 (236)	0.01	1.23 (4)	0.03	31.13 (11)	0.03
Domain 02	21.00 (49)	0.04	4.36 (4)	0.01	32.00 (42)	0.04
Domain 03	12.00 (23)	0.05	2.00 (2)	0.003	39.20 (6)	0.06
Domain 04	4.10 (2)	0.15	0.24 (3)	0.04	11.5 (2)	0.03
Domain 05	3.91 (1)	0.01	0.70 (1)	0.01	6.60 (1)	0.01
Domain 06	5.24 (2)	0.28	1.36 (2)	0.03	25. (2)	0.07

(x) – number of values capped

Table 14-17 to Table 14-19 present the descriptive statistics for capped gold, copper, and silver assay values by Grouped Domain, respectively.

Table 14-17: Descriptive Statistics for Capped Au (g/t) Assays by Mineralized Zone – Z87 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	54,773	0	2.90	0.13	0.05	0.09	0.30
v11	10,439	0	21.00	0.41	0.21	0.70	0.84
v11 HG-1	6,843	0	21.00	1.41	0.82	4.81	2.19
v11 HG-2	2,834	0.001	21.00	1.00	0.67	1.55	1.25
v13	3,411	0	21.00	0.49	0.21	1.65	1.28
v13 HG	737	0.001	21.00	1.10	0.37	6.80	2.61
v14	2,878	0	12.00	0.45	0.22	0.83	0.91
v14 HG	1,132	0	12.00	1.05	0.53	2.57	1.60
v17	2,949	0	12.00	0.49	0.24	0.95	0.97
v18	1,750	0	12.00	0.45	0.19	0.93	0.97
v19	479	0.001	12.00	0.36	0.14	0.59	0.77
v20	3,537	0	21.00	0.42	0.22	0.66	0.81
v21	1,978	0.001	10.96	0.31	0.15	0.32	0.57
v22	185	0.002	11.45	0.47	0.17	1.23	1.11
v24	201	0	12.00	0.40	0.16	1.09	1.04
v25	235	0.003	3.91	0.31	0.17	0.26	0.51
v26	242	0.003	7.08	0.31	0.14	0.41	0.64
v27	123	0.003	4.10	0.48	0.19	0.59	0.77
v28	214	0.003	4.10	0.39	0.19	0.39	0.62
v29	239	0	3.81	0.25	0.14	0.18	0.42
v30	316	0.001	5.24	0.36	0.13	0.49	0.70
v31	150	0.001	5.24	0.34	0.19	0.39	0.62

Table 14-18: Descriptive Statistics for Capped Cu (%) Assays by Mineralized Zone – Z87 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	54,773	0	1.23	0.02	0.01	0.00	0.04
v11	10,439	0	3.33	0.05	0.03	0.01	0.09
v11 HG-1	6,843	0	4.36	0.17	0.10	0.06	0.24
v11 HG-2	2,834	0	1.02	0.09	0.05	0.01	0.10
v13	3,411	0	4.36	0.07	0.03	0.03	0.17
v13 HG	737	0	1.74	0.11	0.04	0.03	0.18
v14	2,878	0	1.17	0.04	0.02	0.01	0.08
v14 HG	1,132	0	0.54	0.06	0.04	0.00	0.06
v17	2,949	0	2.00	0.06	0.02	0.02	0.13
v18	1,750	0	0.54	0.03	0.02	0.00	0.04
v19	479	0	2.00	0.02	0.01	0.01	0.09
v20	3,537	0	0.78	0.04	0.02	0.00	0.07
v21	1,978	0	1.26	0.04	0.02	0.01	0.07
v22	185	0	0.23	0.02	0.01	0.00	0.03
v24	201	0	0.43	0.04	0.03	0.00	0.04
v25	235	0	0.70	0.08	0.06	0.01	0.09
v26	242	0	0.88	0.05	0.03	0.01	0.08
v27	123	0	0.24	0.02	0.01	0.00	0.04
v28	214	0	0.24	0.03	0.01	0.00	0.04
v29	239	0	0.70	0.06	0.03	0.01	0.08
v30	316	0	1.36	0.10	0.05	0.03	0.16
v31	150	0	1.36	0.05	0.02	0.02	0.13

Table 14-19: Descriptive Statistics for Capped Ag (g/t) Assays by Mineralized Zone – Z87 Zone

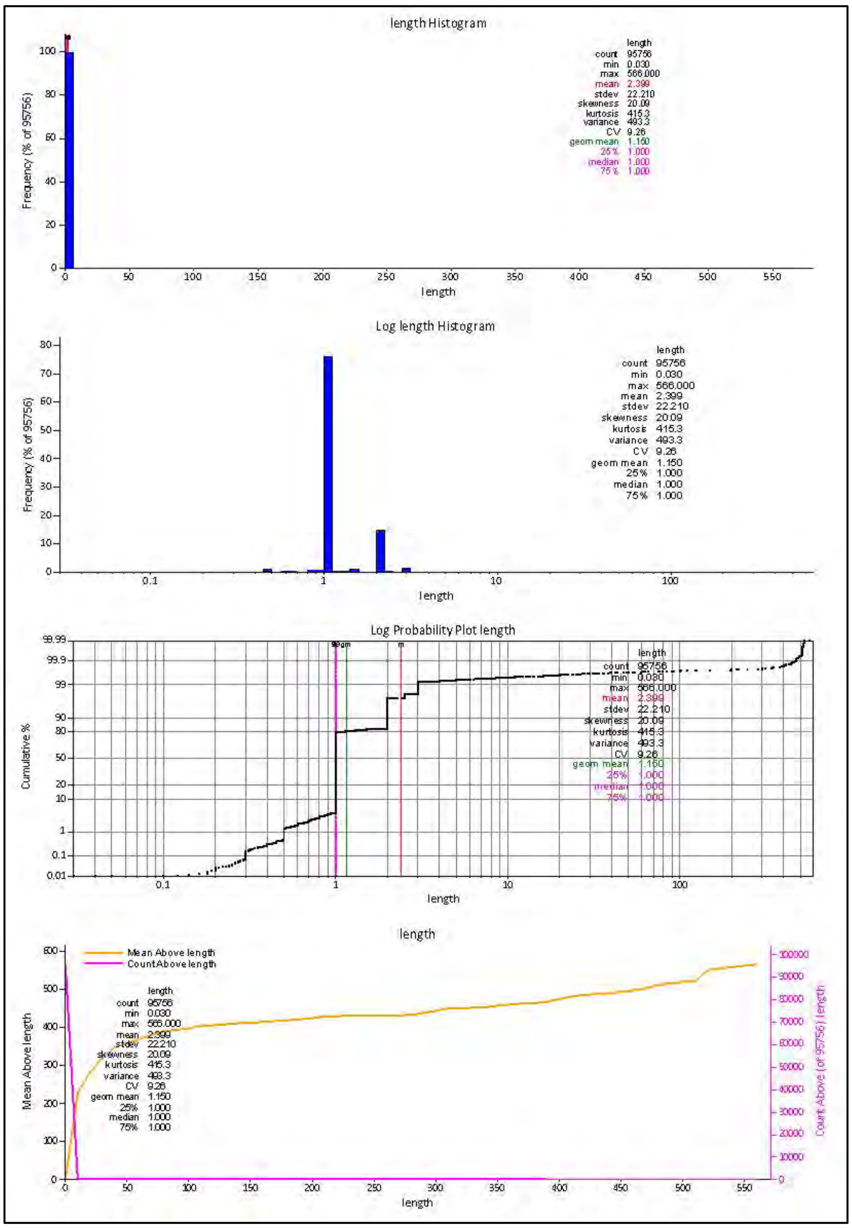
Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	54,773	0	31.13	0.53	0.25	1.07	1.03
v11	10,439	0	32.00	0.86	0.30	2.08	1.44
v11 HG-1	6,843	0	32.00	1.75	1.00	8.80	2.97
v11 HG-2	2,834	0	32.00	0.96	0.40	3.48	1.87
v13	3,411	0	32.00	0.94	0.25	4.75	2.18
v13 HG	737	0	32.00	1.33	0.30	8.91	2.99
v14	2,878	0	39.20	1.08	0.50	4.27	2.07
v14 HG	1,132	0	39.20	1.65	0.90	7.59	2.75
v17	2,949	0	39.20	0.97	0.40	3.78	1.94
v18	1,750	0	23.45	0.73	0.30	1.55	1.25
v19	479	0	39.20	0.97	0.50	6.34	2.52
v20	3,537	0	32.00	0.93	0.30	4.12	2.03
v21	1,978	0	32.00	0.71	0.25	2.77	1.66
v22	185	0.10	6.20	0.78	0.40	1.09	1.05
v24	200	0	39.20	2.02	1.10	13.82	3.72
v25	235	0.10	6.60	0.83	0.50	0.83	0.91
v26	242	0.10	39.20	1.63	0.70	13.87	3.72
v27	123	0.10	11.50	0.76	0.25	3.32	1.82
v28	214	0.10	5.80	0.61	0.25	0.52	0.72
v29	239	0	6.60	0.84	0.50	1.09	1.04
v30	316	0.10	25.70	1.52	0.70	9.03	3.00
v31	150	0.10	25.70	0.91	0.30	5.46	2.34

Composites

Drill core was sampled mostly in 1 m or 2 m intervals; with the median sample length is 1.0 m. AGP elected to composite the data in 2.0 m intervals. Composites were created within the mineralized domains, starting from the domain intersection. Composite lengths were adjusted equally across the domain intersection.

Figure 14-5 shows the statistics of the raw assays lengths used to determine the composite interval.

Figure 14-5: Statistical Analysis Plots to Determine Composite Interval – Z87 Zone



Source: AGP (2023)

Table 14-20 to Table 14-22 present the descriptive statistics for the 2 m capped composite values for gold, copper, and silver by domain, respectively, in the Z87 Zone.

Table 14-20: Descriptive Statistics for Capped Au (g/t) Composite Values by Mineralized Domain – Z87 Zone

Zone	Count	Min	Max	Mean	Median	StDev	CV
Total	64,802	0	23.65	0.32	0.09	0.75	2.34
LG Halo	38,706	0	2.895	0.11	0.05	0.23	2.03
v11	6,452	0	23.65	0.41	0.26	0.66	1.63
v11 HG-1	4,240	0	21.00	1.39	0.94	1.68	1.21
v11 HG -2	1,759	0.003	15.05	0.98	0.75	1.02	1.04
v13	2,237	0	21.00	0.49	0.25	1.15	2.34
v13 HG	450	0.001	21.00	1.0949	0.49	1.97	1.80
v14	1,823	0	7.85	0.4279	0.25	0.67	1.56
v14 HG	662	0	12.00	1.03	0.67	1.24	1.20
v17	1,949	0	12.00	0.4929	0.28	0.82	1.66
v18	1,173	0	12.00	0.4264	0.23	0.75	1.76
v19	294	0.001	6.11	0.3572	0.20	0.59	1.65
v20	2,284	0	10.52	0.39	0.24	0.62	1.57
v21	1,428	0.003	3.90	0.26	0.14	0.40	1.50
v22	121	0.003	5.78	0.44	0.19	0.80	1.80
v24	157	0	6.07	0.38	0.17	0.76	1.99
v25	161	0.003	2.90	0.24	0.14	0.38	1.57
v26	172	0.005	3.83	0.290	0.17	0.42	1.44
v27	87	0.003	4.10	0.44	0.16	0.75	1.69
v28	193	0.003	4.10	0.27	0.09	0.49	1.82
v29	202	0	1.97	0.17	0.08	0.29	1.72
v30	174	0.007	3.39	0.36	0.16	0.56	1.55
v31	78	0.012	2.77	0.33	0.21	0.44	1.34

Table 14-21: Descriptive Statistics for Capped Cu (%) Composite Values by Mineralized Domain – Z87 Zone

Domain	Count	Min	Max	Mean	Median	StDev	CV
	64,802	0	3.72	0.04	0.01	0.08	2.07
lg_halo	38,706	0	0.7294	0.02	0.01	0.03	1.83
v11	6,452	0	1.23	0.05	0.03	0.07	1.27
v11_hg1	4,240	0	2.86	0.17	0.11	0.18	1.08
v11_hg2	1,759	0.0005	0.70	0.08	0.06	0.09	1.05
v13	2,237	0	3.72	0.06	0.03	0.13	2.09
v13_hg	450	0.0005	1.11	0.10	0.04	0.15	1.44
v14	1,823	0	0.71	0.04	0.03	0.06	1.43
v14_hg	662	0	0.46	0.06	0.04	0.06	0.98
v17	1,949	0	2.00	0.06	0.03	0.11	1.95
v18	1,173	0	0.54	0.03	0.02	0.04	1.29
v19	294	0.0005	0.33	0.02	0.01	0.03	1.48
v20	2,284	0	0.45	0.04	0.02	0.05	1.36
v21	1,428	0.0001	0.60	0.03	0.01	0.05	1.67
v22	121	0.0005	0.23	0.02	0.01	0.03	1.56
v24	157	0	0.22	0.04	0.03	0.03	0.87
v25	161	0.0005	0.42	0.06	0.04	0.07	1.18
v26	172	0.0023	0.88	0.06	0.03	0.08	1.50
v27	87	0.0005	0.24	0.02	0.01	0.04	2.21
v28	193	0.0005	0.14	0.02	0.01	0.03	1.64
v29	202	0	0.60	0.04	0.02	0.07	1.74
v30	174	0.0025	0.96	0.10	0.06	0.13	1.29
v31	78	0.0010	0.33	0.04	0.02	0.06	1.44

Table 14-22: Descriptive Statistics for Capped Ag (g/t) Composite Values by Mineralized Domain – Z87 Zone

Zone	Count	Min	Max	Mean	Median	StDev	CV
Total	103,508	0	39.20	0.49	0.25	1.09	2.21
lg_halo	77,412	0	31.13	0.29	0.13	0.58	1.96
v11	6,452	0	18.50	0.88	0.50	1.13	1.29
v11_hg1	4,240	0	32.00	1.71	1.18	2.17	1.27
v11_hg2	1,759	0	32.00	1.01	0.56	1.68	1.65
v13	2,237	0	32.00	0.95	0.45	1.88	1.97
v13_hg	450	0	28.70	1.29	0.50	2.29	1.78
v14	1,823	0	39.20	1.24	0.70	2.42	1.95
v14_hg	662	0	39.20	1.92	1.05	3.30	1.72
v17	1,949	0	29.98	1.01	0.55	1.67	1.65
v18	1,173	0	23.45	0.76	0.43	1.25	1.64
v19	294	0	17.97	1.00	0.62	1.52	1.53
v20	2,284	0	32.00	0.87	0.38	1.67	1.91
v21	1,428	0	13.69	0.59	0.25	1.09	1.84
v22	121	0.10	5.50	0.83	0.50	0.93	1.12
v24	157	0	19.73	1.77	1.00	2.38	1.34
v25	161	0.10	3.75	0.65	0.48	0.68	1.04
v26	172	0.15	29.40	1.71	0.90	3.25	1.90
v27	87	0.10	11.50	0.83	0.25	1.93	2.31
v28	193	0.10	3.60	0.47	0.25	0.56	1.19
v29	202	0	5.80	0.61	0.25	0.84	1.37
v30	174	0.10	15.84	1.41	0.71	2.16	1.54
v31	78	0.10	7.38	0.76	0.43	1.05	1.39

Variography

Variograms based on AGP composite files were generated in Surpac™ Variogram Modeling Windows module by the AGP personnel, which uses bearing, plunge, and dip to describe the anisotropy.

Table 14-23 to Table 14-25 show the variogram parameters used for interpolation. Gold, copper, and silver variograms were completed independently for each one of the domains.

Table 14-23: Gold Variogram Parameters – Z87 Zone

Zone	Anisotropy	Structure	Nugget	1st Sill	1st Range	2nd Sill	2nd Range	3rd Sill	3rd Range
LG Halo	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v11	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v11 HG-1	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v11 HG-2	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v13	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v13 HG	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v14	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v14 HG	Spherical	3	0.92	0.37	22.65	0.38	32.71	0.09	81.23
v17	Spherical	3	0.92	0.37	22.65	0.38	32.71	0.09	81.23
v18	Spherical	2	0.05	0.10	83.38	0.20	152.07	-	-
v19	Spherical	2	0.05	0.10	83.38	0.20	152.07	-	-
v20	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v21	Spherical	2	0.02	0.02	32.71	0.01	115.69	-	-
v22	Spherical	2	0.05	0.10	83.38	0.20	152.07	-	-
v24	Spherical	2	0.05	0.10	83.38	0.20	152.07	-	-
v25	Spherical	2	0.06	0.02	67.11	0.03	130.48	-	-
v26	Spherical	2	0.06	0.02	67.11	0.03	130.48	-	-
v27	Spherical	2	0.06	0.02	67.11	0.03	130.48	-	-
v28	Spherical	2	0.06	0.02	67.11	0.03	130.48	-	-
v29	Spherical	2	0.06	0.02	67.11	0.03	130.48	-	-
v30	Spherical	2	0.01	0.09	89.48	0.18	216.49	-	-
v31	Spherical	2	0.01	0.09	89.48	0.18	216.49	-	-

Table 14-24: Copper Variogram Parameters – Z87 Zone

Zone	Anisotropy	Structure	Nugget	1st Sill	1st Range	2nd Sill	2nd Range	3rd Sill	3rd Range
LG Halo	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v11	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v11 HG-1	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v11 HG-2	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v13	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v13 HG	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v20	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v21	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v14	Spherical	2	0.0002	0.0002	62.67	0.0005	145.60	-	-
v14 HG	Spherical	2	0.0070	0.0105	19.40	0.0028	100.00	-	-
v17	Spherical	2	0.0070	0.0105	19.40	0.0028	100.00	-	-
v18	Spherical	2	0.0002	0.0004	23.33	0.0005	97.78	-	-
v19	Spherical	2	0.0002	0.0004	23.33	0.0005	97.78	-	-
v22	Spherical	2	0.0002	0.0004	23.33	0.0005	97.78	-	-
v24	Spherical	2	0.0002	0.0004	23.33	0.0005	97.78	-	-
v26	Spherical	2	0.0005	0.0023	60.00	0.0020	140.00	-	-
v27	Spherical	2	0.0005	0.0023	60.00	0.0020	140.00	-	-
v28	Spherical	2	0.0005	0.0023	60.00	0.0020	140.00	-	-
v25	Spherical	2	0.0005	0.0023	60.00	0.0020	140.00	-	-
v29	Spherical	2	0.0005	0.0023	60.00	0.0020	140.00	-	-
v30	Spherical	2	0.0016	0.0048	69.88	0.0064	101.27	-	-
v31	Spherical	2	0.0016	0.0048	69.88	0.0064	101.27	-	-

Table 14-25: Silver Variogram Parameters – Z87 Zone

Zone	Anisotropy	Structure	Nugget	1st Sill	1st Range	2nd Sill	2nd Range	3rd Sill	3rd Range
LG Halo	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v11	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v11 HG-1	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v11 HG-2	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v13	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v13 HG	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v20	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v21	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v14	Spherical	2	0.03	0.15	70.00	0.37	130.00	-	-
v14 HG	Spherical	2	1.35	0.78	55.00	1.55	135.00	-	-
v17	Spherical	2	1.35	0.78	55.00	1.55	135.00	-	-
v18	Spherical	2	0.50	0.10	56.05	0.79	165.28	-	-
v19	Spherical	2	0.50	0.10	56.05	0.79	165.28	-	-
v22	Spherical	2	0.50	0.10	56.05	0.79	165.28	-	-
v24	Spherical	2	0.50	0.10	56.05	0.79	165.28	-	-
v26	Spherical	2	0.15	0.16	68.83	0.28	123.09	-	-
v27	Spherical	2	0.15	0.16	68.83	0.28	123.09	-	-
v28	Spherical	2	0.15	0.16	68.83	0.28	123.09	-	-
v25	Spherical	2	0.15	0.16	68.83	0.28	123.09	-	-
v29	Spherical	2	0.15	0.16	68.83	0.28	123.09	-	-
v30	Spherical	2	0.26	0.90	125.00	2.49	220.00	-	-
v31	Spherical	2	0.26	0.90	125.00	2.49	220.00	-	-

14.5.3 Block Model

Block Model Parameters

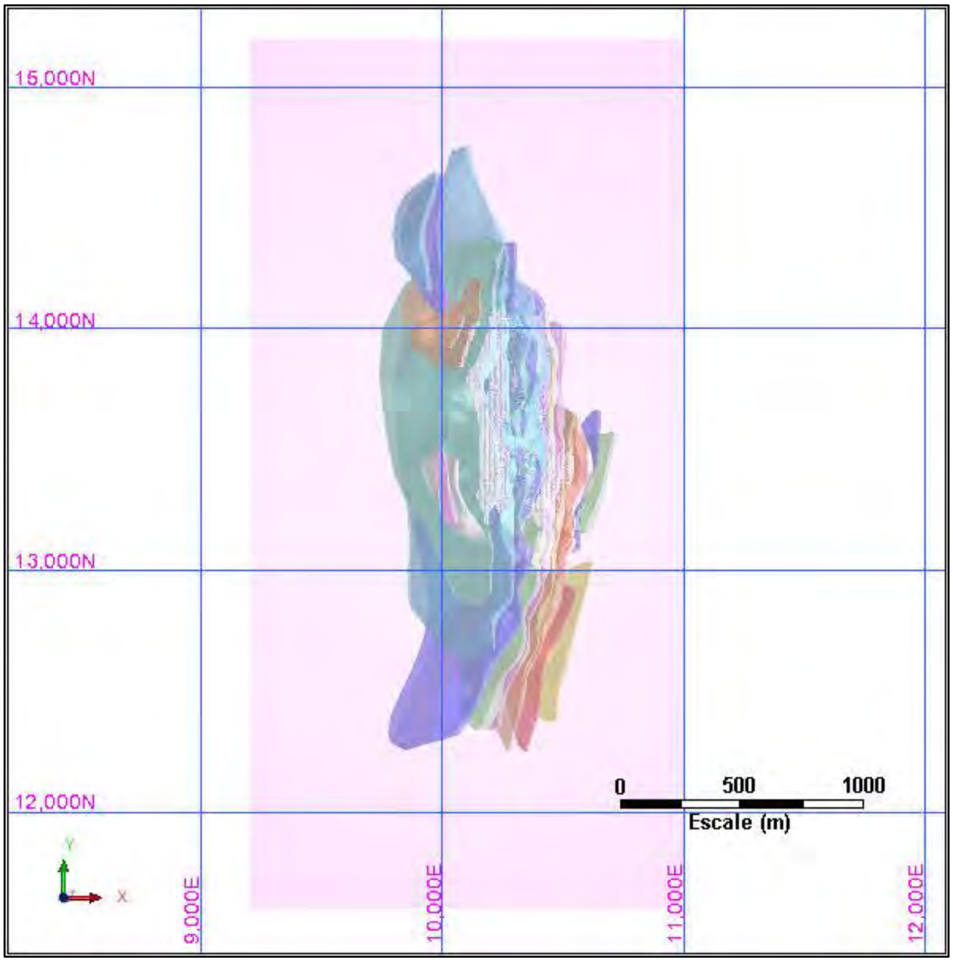
The block model for the Z87 Zone deposit was set up with a block matrix of 5 m long by 5 m wide by 5 m high and was built in Geovia Surpac resource software. The block matrix was defined based on current drill hole spacing and on engineering considerations for an open pit operation and is considered suitable this purpose. The block model is in mine grid coordinates and is not rotated. The block model is a whole block model where blocks are assigned a specific rock type code. Any block centroid within the mineralized domain wireframe was assigned that code.

Table 14-26 summarizes the block model parameters. Figure 14-6 presents the block model extents for the Z87 Zone.

Table 14-26: Block Model Parameters – Z87 Zone

Type	Y	X	Z
Minimum Coordinates	11600 mN	9200 mE	4500
Maximum Coordinates	15200 mN	11000 mE	5500
Length (m)	3600	1800	1000
Block Size (m)	5	5	5
Rotation	No rotation		
Number of Blocks	720	360	200

Figure 14-6: Block Model Extents – Z87 Zone



Source: AGP (2023)

Estimation Parameters and Interpolation Strategy

The metal grades were interpolated in three passes using the 2 m capped composites and using Geovia Surpac Dynamic Anisotropy.

The metal grades were interpolated using the Ordinary Kriging (OK) interpolation method. Variogram parameters for each metal were used in each of these passes and aligned to the domain wireframe. Inverse Distance square (ID2) and Nearest Neighbour (NN) interpolations were also completed for validation purposes.

To reduce some of the negative kriging weights, the data was subsequently de-clustered using an octant search for Pass 1 and Pass 2. The number of composites used for the interpolation was also adjusted for these passes.

Table 14-27 shows estimation parameters for each pass used to estimate metal grades.

Table 14-27: Interpolation Strategy for Dynamic Anisotropy– Z87 Zone.

	1st Running	2nd Running	3rd Running
Minimum number of samples	6	3	2
maximum number of samples	18	18	18
maximum number of samples per Drillhole	3	2	2
Maximum average distance of samples	60	120	120
Percent Partition of Original Search Ellipse Size (Au, Ag, and Cu)	60%	80%	100%
Ag (g/t) - Z87 Domain 1 (m)	78	104	130
Au (g/t) - Z87 Domain 1 (m)	70	93	116
Cu (%) - Z87 Domain 1 (m)	88	117	146
Ag (g/t) - Z87 Domain 2 (m)	81	117	146
Au (g/t) - Z87 Domain 2 (m)	49	65	81
Cu (%) - Z87 Domain 2 (m)	60	80	100
Ag (g/t) - Z87 Domain 3 (m)	116	154	193
Au (g/t) - Z87 Domain 3 (m)	57	154	193
Cu (%) - Z87 Domain 3 (m)	107	143	179
Ag (g/t) - Z87 Domain 4 (m)	99	132	165
Au (g/t) - Z87 Domain 4 (m)	91	122	152
Cu (g/t) - Z87 Domain 4 (m)	59	122	152
Ag (g/t) - Z87 Domain 5 (m)	74	98	123
Au (g/t) - Z87 Domain 5 (m)	78	104	130
Cu (%) - Z87 Domain 5 (m)	84	112	140
Ag (g/t) - Z87 Domain 6 (m)	132	112	140
Au (g/t) - Z87 Domain 6 (m)	130	173	216
Cu (%) - Z87 Domain 6 (m)	61	81	101

Table 14-28 to Table 14-30 present the search ellipses used to estimate gold by mineralized domain.

Table 14-28: Search Ellipse Parameters for Gold by Mineralized Domain – Z87 Zone

Zone	Bearing	Plunge	Dip	Major/Semi	Major/Minor
LG Halo	119	74	-25	1.75	3.75
v11	100	15	0	1.75	3.75
v11 HG-1	100	15	0	1.75	3.75
v11 HG-2	100	15	0	1.75	3.75
v13	100	15	0	1.75	3.75
v13 HG	100	15	0	1.75	3.75
v14	100	65	0	2.00	3.22
v14 HG	100	65	0	2.00	3.22
v17	100	65	0	2.00	3.22
v18	100	65	0	2.00	3.22
v19	100	65	0	2.00	3.22
v20	100	15	0	1.75	3.75
v21	100	15	0	1.75	3.75
v22	100	65	0	2.00	3.22
v24	100	65	0	2.00	3.22
v25	95	-80	10	1.00	8.2973
v26	100	65	0	2.00	3.2173
v27	90	80	0	1.98	3.2851
v28	90	80	0	1.98	3.2851
v29	95	-80	10	1.00	8.2973
v30	0	0	-80	2.12	3.2177
v31	0	0	-80	2.12	3.2177

Table 14-29: Search Ellipse Parameters for Copper by Mineralized Domain – Z87 Zone

Zone	Bearing	Plunge	Dip	Major/Semi	Major/Minor
LG Halo	100	75	-10	1.79	2.71
v11	260	80	0	1.79	2.71
v11 HG-1	260	80	0	1.79	2.71
v11 HG-2	260	80	0	1.79	2.71
v13	260	80	0	1.79	2.71
v13 HG	260	80	0	1.79	2.71
v20	260	80	0	1.79	2.71
v21	260	80	0	1.79	2.71
v14	100	60	0	2.03	4.35
v14 HG	100	60	0	2.03	4.35
v17	100	60	0	2.03	4.35
v18	100	60	0	2.03	4.35
v19	100	60	0	2.03	4.35
v22	100	60	0	2.03	4.35
v24	100	60	0	2.03	4.35
v26	100	60	0	2.03	4.35
v27	100	80	0	1.29	5.34
v28	100	80	0	1.29	5.34
v25	95	75	0	1.42	8.62
v29	95	75	0	1.42	8.62
v30	100	70	-10	1.80	4.06
v31	100	70	-10	1.80	4.06

Table 14-30: Search Ellipse Parameters for Silver by Mineralized Domain – Z87 Zone

Zone	Bearing	Plunge	Dip	Major/Semi	Major/Minor
LG Halo	127	79	-15	1.40	2.76
v11	105	70	-15	1.40	2.76
v11HG-1	105	70	-15	1.40	2.76
v11HG-2	105	70	-15	1.40	2.76
v13	105	70	-15	1.40	2.76
v13HG	105	70	-15	1.40	2.76
v20	105	70	-15	1.40	2.76
v21	105	70	-15	1.40	2.76
v14	105	65	0	2.00	5.56
v14HG	105	65	0	2.00	5.56
v17	105	65	0	2.00	5.56
v18	105	65	0	2.00	5.56
v19	105	65	0	2.00	5.56
v22	105	65	0	2.00	5.56
v24	105	65	0	2.00	5.56
v26	105	65	0	2.00	5.56
v27	100	-75	0	2.27	2.86
v28	100	-75	0	2.27	2.86
v25	100	80	0	1.96	3.46
v29	100	80	0	1.96	3.46
v30	15	0	-80	1.59	4.14
v31	15	0	-80	1.59	4.14

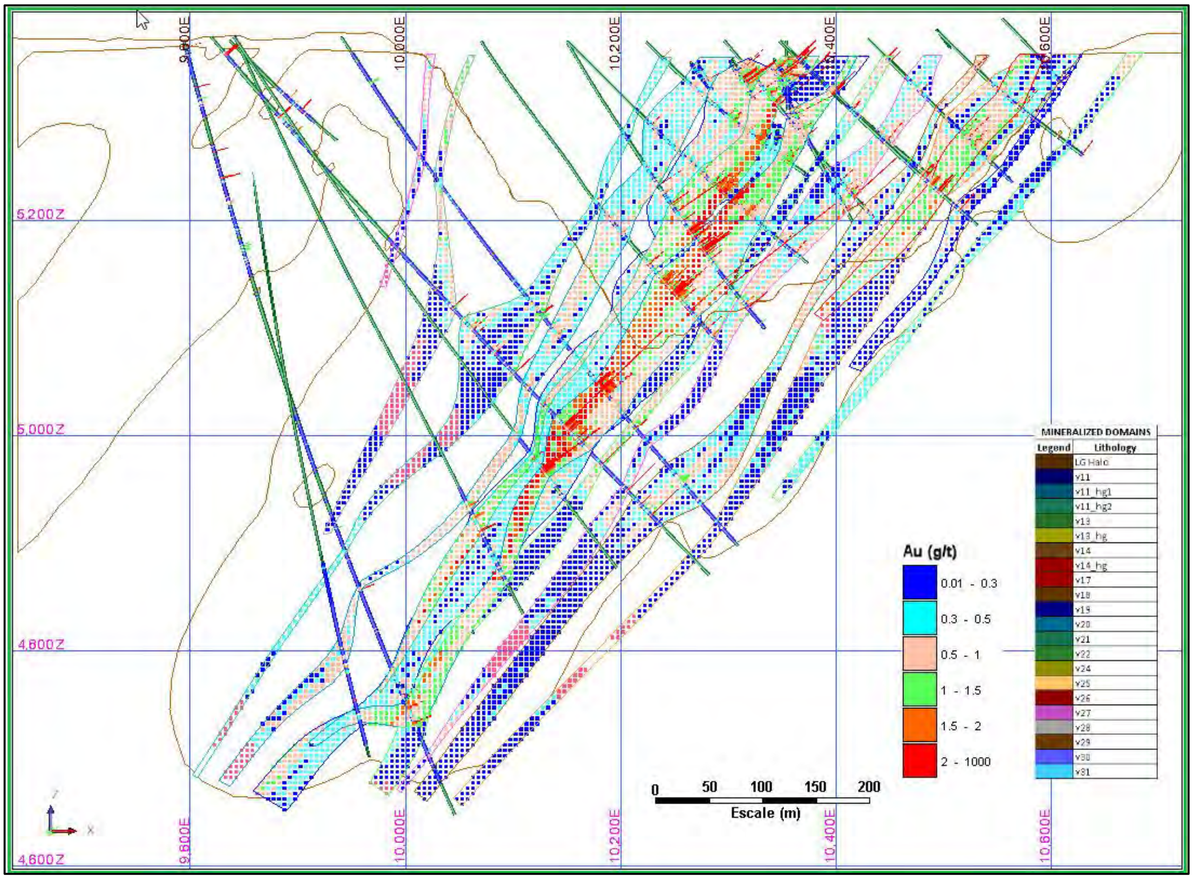
Block Model Validation

The Z87 Zone grade models were validated by the following methods:

- visual comparison of colour-coded block model grades with composite grades on sections and plans.
- comparison of the global mean block grades for OK, ID2, NN models, composite, and raw assay grades.
- comparison using swath plots to investigate local bias in the estimate.

The visual comparison of block model grades on sections and plans indicated a good correlation between drill hole grades and resource model grades (Figure 14-7).

Figure 14-7: Cross-Section (13400 mN) – Z87 Zone



Source: AGP (2023)

Table 14-31 shows the mean grade statistics for the composite values, NN, ID2, and OK models. Statistics for the gold and copper composite mean grades compare well to the raw assay grades, with a normal reduction in values due to smoothing, related to volume variance. The block model mean grade, when compared against the composites, showed a normal reduction in values. More importantly, the grade of the NN, ID2, and OK models are less than 1% of each other, indicating the methodology used did not introduce a local bias into the estimate.

Table 14-31: Global Comparison of Mean Grades in Complete Model – Z87 Zone.

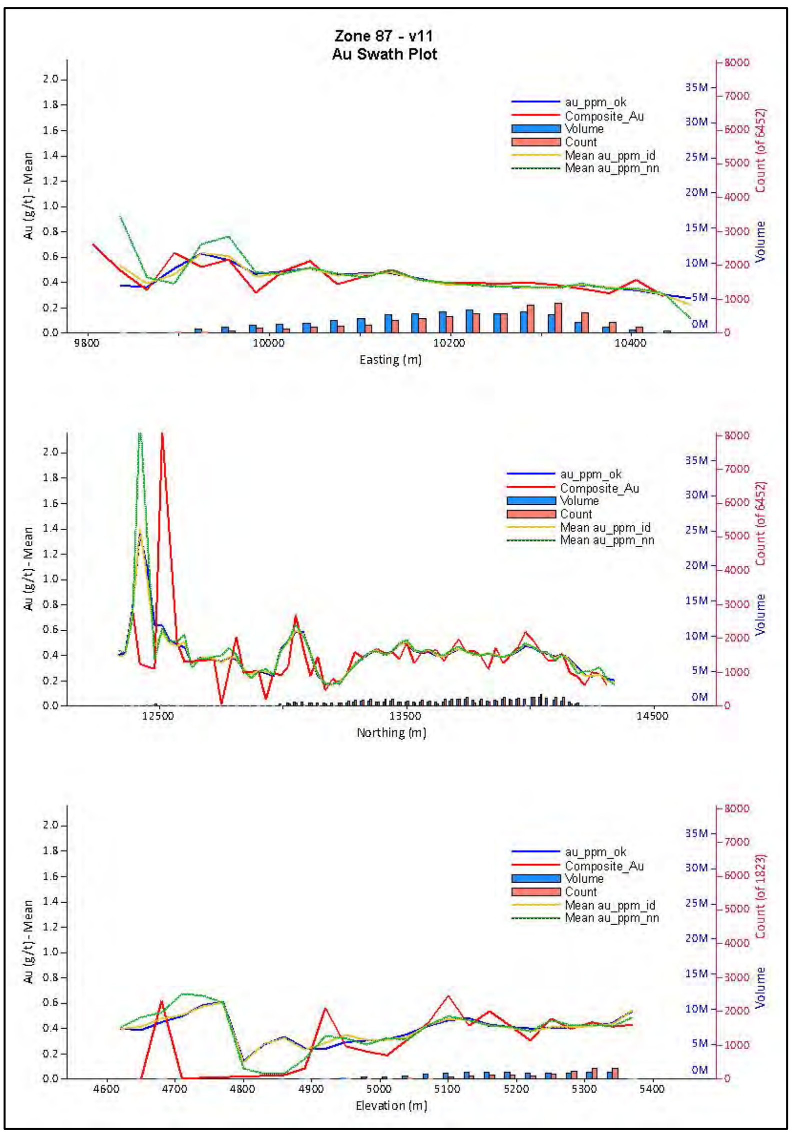
Rocktype	Au (g/t) Composite	Au (g/t) Ok	Au (g/t) ID	Au (g/t) NN	Cu (%) Composite	Cu (%) Ok	Cu (%) ID	Cu (%) NN	Ag (g/t) Composite	Ag (g/t) Ok	Ag (g/t) ID	Ag (g/t) NN
LG Halo	0.111	0.098	0.098	0.097	0.017	0.018	0.018	0.018	0.494	0.481	0.475	0.473
v11	0.406	0.396	0.396	0.409	0.054	0.054	0.055	0.056	0.295	0.892	0.893	0.914
v11 HG-1	1.386	1.311	1.305	1.306	0.168	0.141	0.140	0.142	0.881	1.488	1.469	1.483
v11 HG-2	0.984	0.844	0.849	0.852	0.085	0.088	0.089	0.087	1.708	1.443	1.413	1.440
v13	0.491	0.445	0.442	0.439	0.062	0.057	0.057	0.057	1.014	0.743	0.748	0.751
v13 HG	1.095	0.792	0.778	0.791	0.100	0.075	0.075	0.076	0.954	1.362	1.352	1.341
v14	0.428	0.379	0.381	0.388	0.044	0.048	0.048	0.050	1.288	1.035	1.035	1.071
v14 HG	1.031	0.774	0.801	0.829	0.056	0.045	0.044	0.043	1.240	1.113	1.097	1.058
v17	0.493	0.429	0.432	0.464	0.057	0.046	0.046	0.047	1.919	0.951	0.988	1.175
v18	0.426	0.343	0.344	0.334	0.029	0.028	0.028	0.028	1.012	0.663	0.662	0.677
v19	0.357	0.370	0.364	0.387	0.022	0.020	0.019	0.020	0.758	1.057	1.034	1.041
v20	0.392	0.342	0.340	0.341	0.039	0.047	0.047	0.046	0.995	1.107	1.092	1.077
v21	0.263	0.230	0.228	0.237	0.031	0.037	0.037	0.042	0.875	0.673	0.684	0.755
v22	0.444	0.430	0.454	0.475	0.021	0.021	0.021	0.023	0.588	0.773	0.797	0.897
v24	0.381	0.392	0.377	0.484	0.035	0.037	0.036	0.037	0.833	1.947	1.912	2.041
v25	0.243	0.288	0.283	0.280	0.061	0.077	0.076	0.076	1.772	0.795	0.784	0.813
v26	0.289	0.304	0.316	0.316	0.056	0.057	0.058	0.058	0.653	1.603	1.639	1.660
v27	0.444	0.451	0.451	0.457	0.018	0.017	0.016	0.017	1.708	0.694	0.734	0.842
v28	0.271	0.257	0.254	0.276	0.018	0.020	0.020	0.022	0.834	0.507	0.498	0.545
v29	0.171	0.208	0.203	0.225	0.037	0.047	0.045	0.049	0.470	0.728	0.723	0.776
v30	0.361	0.416	0.426	0.408	0.098	0.100	0.100	0.100	0.613	1.481	1.445	1.480
v31	0.332	0.333	0.326	0.335	0.040	0.038	0.038	0.039	1.405	0.795	0.795	0.803

Swath plots were used as comparison of grade profiles of the composite values, and estimated grades allow for a visual verification of an over or under estimation of the block grades at the global and local scales. A qualitative assessment of the smoothing and variability of the estimates can also be observed from the plots.

The swath plots show good agreement with the three interpolation methodologies showing no major local bias. The peaks and valleys on the block grades and composite values are well correlated.

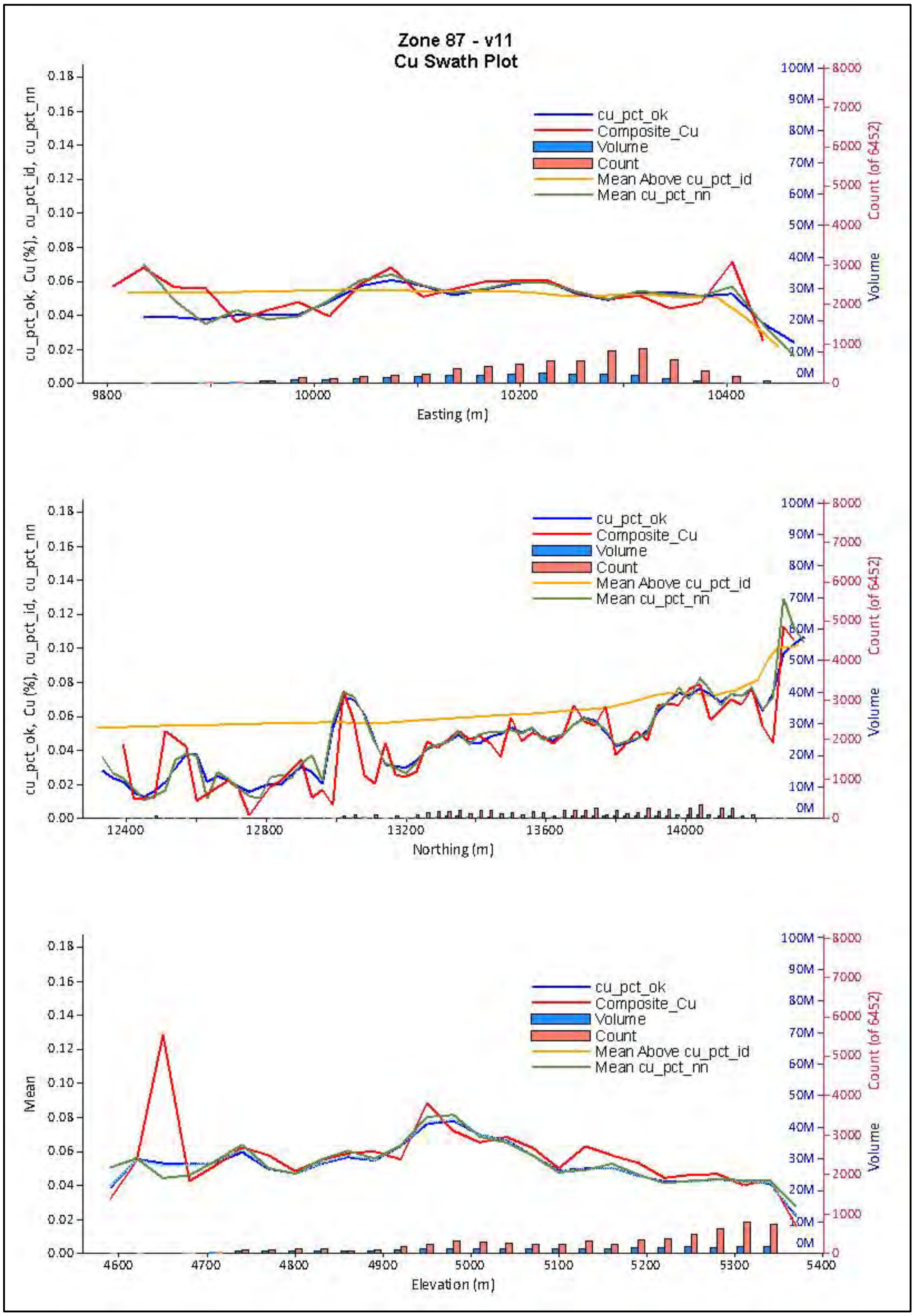
Figure 14-8 and Figure 14-9 present the swath plots for gold and copper, respectively, for domain v11. Figure 14-10 and Figure 14-11 present the swath plots for gold and copper, respectively, for domain v17.

Figure 14-8: Swath Plot for Gold, by Easting, Northing and Elevation; Domain v11 – Z87 Zone



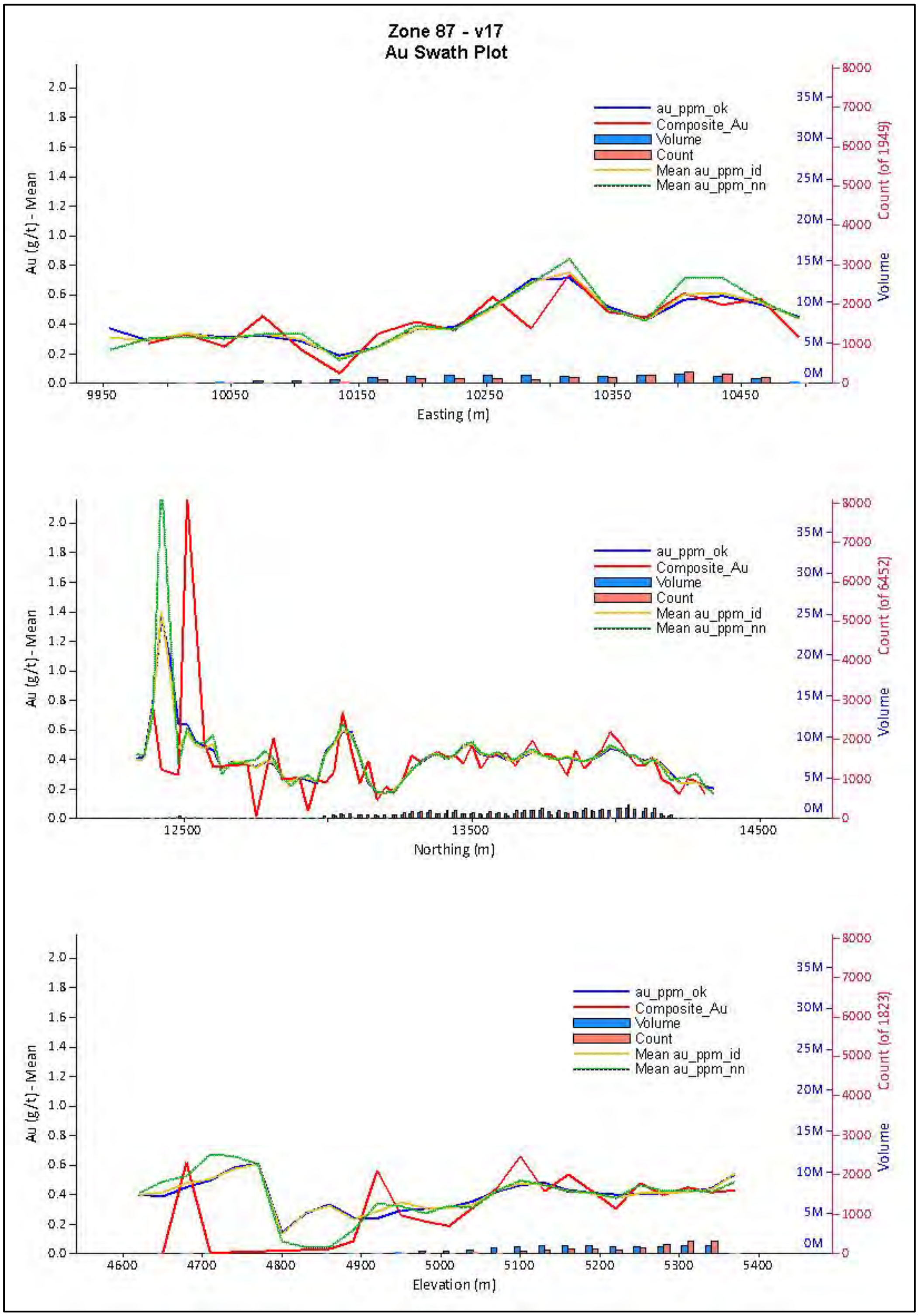
Source: AGP (2023)

Figure 14-9: Swath Plot for Copper, by Easting, Northing and Elevation; Domain v11 – Z87 Zone



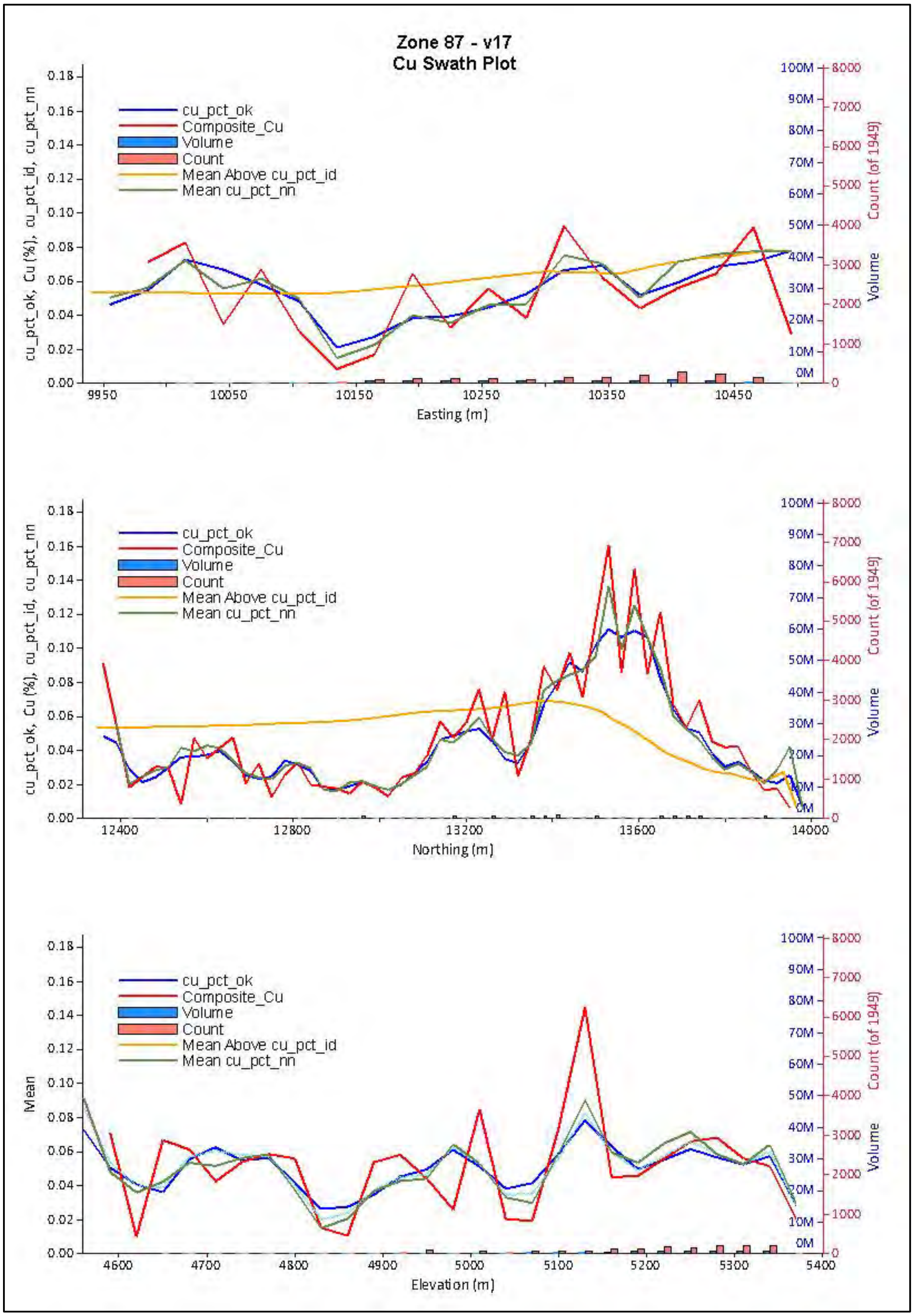
Source: AGP (2023)

Figure 14-10: Swath Plot for Gold, by Easting, Northing and Elevation; Domain v17 – Z87 Zone



Source: AGP (2023)

Figure 14-11: Swath Plot for Copper, by Easting, Northing and Elevation; Domain v17 – Z87 Zone



Source: AGP (2023)

14.6 J Zone

14.6.1 Interpretation

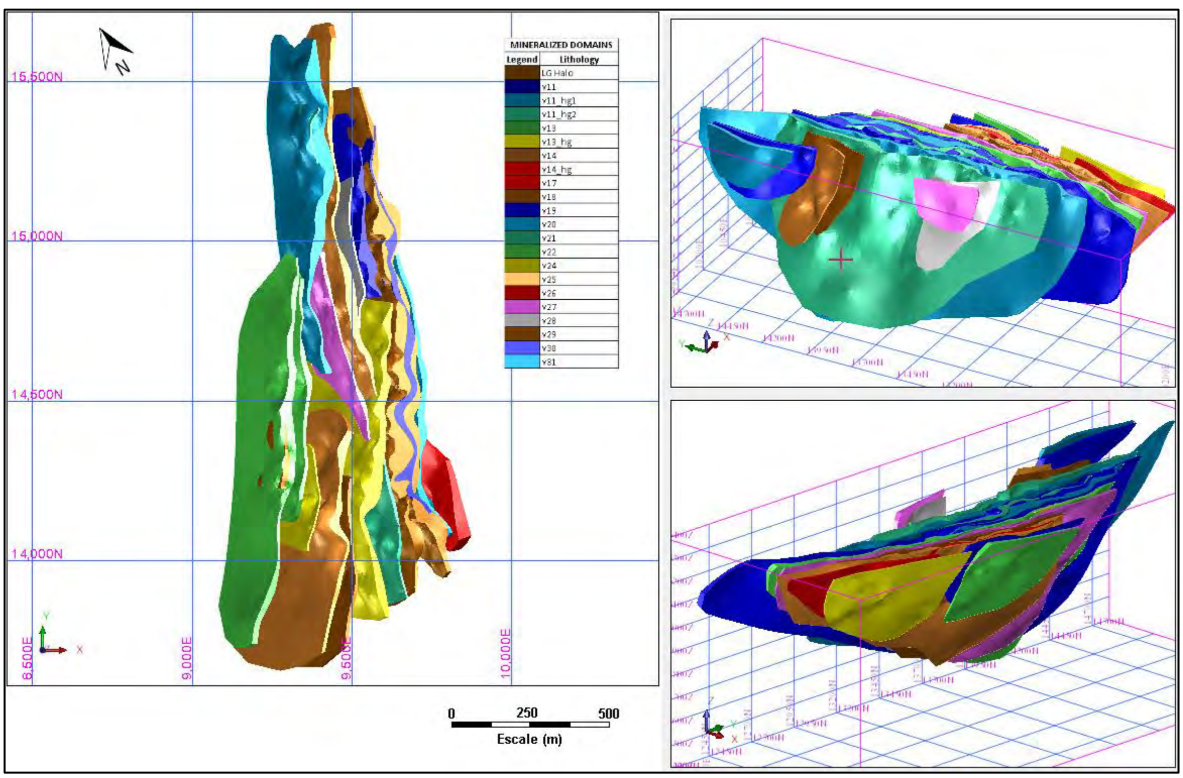
The mineralized domains at J Zone were interpreted by Troilus personnel. The interpreted wireframes were completed using Leapfrog Geo where grades were captured using a minimum grade of 0.3 g/t AuEQ with a minimum thickness of 5 m. Several higher-grade domains were captured using a minimum grade of 1.0 g/t AuEQ. The AuEQ formula used for the gold equivalent formula for the J Zone from the PEA Report (AGP, 2020a) as follows:

$$AuEQ = Au\ grade + (1.2979 * Cu\ grade) + (0.0108 * Ag\ grade)$$

All mineralized domain envelopes were created above pre-mining topography and clipped to the overburden bottom surface and then, to the pit topography. A total of 20 3-D wireframes describe the mineralized domains in the J Zone. This includes a surrounding low-grade domain (or halo), created based on grades greater than 0.07 g/t Au. The mineralization is disseminated and shows enrichment in what could be described as mineralized corridors without sharp boundaries. AGP considers the wireframes suitable to estimate resources.

Figure 14-12 shows the mineralized domain wireframes for the J Zone. Table 14-32 summarizes the mineralized domains and domain codes for the J Zone.

Figure 14-12: Mineralized Domains – J Zone



Source: AGP (2023)

Table 14-32: Mineralized Zones and Domain Codes – J Zone

Mineralized Zone	Domain Code	Mineralized Zone	Domain Code
LG Halo	2000	v07	2070
v01	2010	v08	2080
v01 HG	2015	v10	2100
v02	2020	v11	2110
v03	2030	v12	2120
v04	2040	v13	2130
v04 HG	2045	v15	2150
v05	2050	v16	2160
v05 HG	2055	v17	2170
v06	2060	v18	2180

14.6.2 Exploratory Data Analysis

Raw Assays

The drill hole database for the mineralized domains in the J Zone, consists of 45,836 raw assay values for each metal: gold, copper, and silver. The assay values reported below detection limit were assigned half the detection limit for statistical analysis and grade estimation. Any missing values were assigned half the detection limit.

Tables 14-33 to 14-35 presents the descriptive statistics for gold, copper, and silver, respectively, by mineralized domain in J Zone.

Table 14-33: Descriptive Statistics for Gold assays (g/t) by the Mineralized Domains – J Zone.

Domain	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	16,369	0	61.98	0.150	0.060	0.84	5.61
v01	8,411	0	46.06	0.494	0.270	1.26	2.54
v01 HG	2,610	0	69.88	1.284	0.701	2.65	2.06
v02	3,101	0	21.66	0.296	0.176	0.63	2.13
v03	1,830	0	15.40	0.340	0.180	0.69	2.03
v04	2,736	0	22.40	0.359	0.215	0.76	2.12
v04 HG	135	0.016	20.84	1.303	0.671	2.24	1.72
v05	847	0	5.05	0.375	0.205	0.55	1.48
v05 HG	229	0	2.86	0.580	0.468	0.54	0.93
v06	1,095	0	94.13	0.557	0.180	3.25	5.84
v07	752	0.001	5.88	0.290	0.189	0.41	1.40
v08	2,908	0	21.60	0.570	0.293	1.11	1.94
v10	855	0	8.03	0.430	0.185	0.77	1.80
v11	641	0	7.26	0.372	0.180	0.61	1.65
v12	329	0	1.385	0.206	0.158	0.19	0.90
v13	1,039	0	33.30	0.300	0.174	1.13	3.76
v15	656	0	11.80	0.538	0.196	1.26	2.34
v16	441	0	109.01	0.586	0.140	5.27	8.99
v17	401	0.001	3.78	0.185	0.099	0.35	1.88
v18	451	0	4.66	0.205	0.090	0.42	2.02

Table 14-34: Descriptive Statistics for Copper assays (%) by the Mineralized Domains – J Zone.

Domain	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	16,369	0	2.12	0.03	0.02	0.05	1.81
v01	8,411	0	2.01	0.05	0.03	0.06	1.27
v01 HG	2,610	0	1.60	0.06	0.04	0.08	1.27
v02	3,101	0	1.18	0.07	0.05	0.07	0.99
v03	1,830	0	0.37	0.05	0.04	0.04	0.86
v04	2,736	0	0.64	0.06	0.04	0.06	1.06
v04 HG	135	0.001	0.43	0.06	0.04	0.06	1.01
v05	847	0	0.77	0.06	0.02	0.09	1.55
v05 HG	229	0	0.97	0.19	0.16	0.19	1.00
v06	1,095	0.001	0.77	0.06	0.04	0.08	1.25
v07	752	0	0.66	0.07	0.05	0.07	1.09
v08	2,908	0	1.12	0.06	0.03	0.08	1.38
v10	855	0	0.99	0.07	0.04	0.10	1.38
v11	641	0	1.02	0.06	0.03	0.09	1.53
v12	329	0	0.78	0.09	0.07	0.10	1.03
v13	1,039	0	1.09	0.08	0.06	0.09	1.15
v15	656	0	0.90	0.07	0.04	0.11	1.49
v16	441	0	1.23	0.05	0.04	0.07	1.42
v17	401	0.001	0.24	0.04	0.03	0.03	0.80
v18	451	0	0.78	0.04	0.03	0.06	1.38

Table 14-35: Descriptive Statistics for Silver assays (g/t) by the Mineralized Domains – J Zone.

Domain	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	16,369	0	720.00	0.52	0.25	5.73	11.07
v01	8,411	0	206.00	0.83	0.50	2.50	3.03
v01 HG	2,610	0	24.20	1.07	0.80	1.13	1.05
v02	3,101	0	46.90	0.89	0.60	1.43	1.61
v03	1,830	0	15.40	0.66	0.30	0.90	1.37
v04	2,736	0	31.80	0.78	0.50	1.03	1.33
v04 HG	135	0	7.20	0.99	0.78	0.98	0.99
v05	847	0	15.70	1.09	0.50	1.64	1.51
v05 HG	229	0	17.30	2.83	2.15	2.90	1.03
v06	1,095	0	10.20	0.76	0.40	1.03	1.35
v07	752	0	6.30	0.56	0.25	0.60	1.08
v08	2,908	0	25.60	1.01	0.60	1.45	1.43
v10	855	0	13.90	1.12	0.60	1.66	1.48
v11	641	0	14.50	0.88	0.25	1.42	1.60
v12	329	0	7.90	0.68	0.25	0.88	1.29
v13	1,039	0	8.60	0.62	0.25	0.76	1.22
v15	656	0	18.40	1.36	0.80	1.79	1.31
v16	441	0	42.80	0.58	0.25	2.25	3.86
v17	401	0	535.00	1.80	0.25	26.71	14.81
v18	451	0	62.70	0.56	0.25	3.02	5.42

Capping Analysis

Capping analysis was carried out on each mineralized domain for gold, copper and silver by disintegration analysis, histogram, and probability plots. Capping was applied first to the raw data in several mineralized domains where necessary.

Table 14-36 presents the capping levels applied to the mineralized domains.

Table 14-36: Capping Levels by Domain – J Zone

Domain	Au (g/t)	Loss %)	Cu (%)	Loss (%)	Ag (g/t)	Loss (%)
LG Halo	2.30 (86)	15.0	0.83 (5)	6.8	12.50 (13)	11.0
v01	10.90 (13)	4.1	0.90 (2)	0.4	15.80 (6)	3.5
v01 HG	10.90 (23)	7.7	0.90 (3)	0.9		
v02	10.90 (2)	1.4	0.90 (1)	0.3		
v03	10.90 (1)	0.7				
v04					15.8 (1)	0.8
v04 HG						
v05						
v05 HG						
v06	5.84 (10)	28				
v07						
v08			0.90 (2)	0.3		
v10						
v11						
v12						
v13	10.90 (1)	7.2	0.90 (2)	0.4		
v15	6.49 (8)	3.7	0.90 (1)	0.1		
v16	4.50 (4)	48.0			5.40 (2)	19.0
v17					6.30 (2)	7.4
v18					7.8 (2)	29.0

Table 14-37 to Table 14-39 present the descriptive statistics for gold, copper, and silver by mineralized domains, respectively.

Table 14-37: Descriptive Statistics for Capped raw Gold Assays (g/t Au) by Mineralized Domain – J Zone

Mineralized Zone	Count	Min	Max	Mean	Median	Variance	StDev	CV
LG Halo	16,369	0	2.30	0.13	0.06	0.06	0.25	1.91
v01	8,411	0	10.90	0.47	0.27	0.65	0.81	1.70
v01 HG	2,610	0	10.90	1.20	0.72	2.58	1.61	1.33
v02	3,101	0	10.90	0.29	0.18	0.28	0.53	1.80
v03	1,830	0	10.90	0.34	0.18	0.42	0.65	1.90
v04	2,736	0	22.40	0.36	0.22	0.58	0.76	2.12
v04 HG	135	0.02	20.84	1.39	0.74	5.43	2.33	1.67
v05	847	0	5.05	0.37	0.20	0.30	0.55	1.48
v05 HG	229	0	2.86	0.59	0.47	0.30	0.55	0.93
v06	1,095	0	5.84	0.40	0.18	0.59	0.77	1.93
v07	752	0	5.88	0.29	0.19	0.17	0.41	1.40
v08	2,908	0	21.60	0.57	0.29	1.23	1.11	1.96
v10	855	0	7.29	0.42	0.19	0.53	0.73	1.73
v11	641	0	7.26	0.37	0.18	0.38	0.62	1.65
v12	329	0	1.39	0.21	0.16	0.03	0.19	0.90
v13	1,039	0	10.90	0.28	0.17	0.33	0.58	2.07
v15	656	0	10.90	0.55	0.20	1.60	1.27	2.31
v16	441	0	10.90	0.35	0.14	1.08	1.04	2.94
v17	401	0	3.78	0.18	0.10	0.12	0.35	1.89
v18	451	0	4.66	0.20	0.09	0.17	0.42	2.03

Table 14-38: Descriptive Statistics for Capped raw Copper Assays (%Cu) by Mineralized Domain – J Zone

Mineralized Zone	Count	Min	Max	Mean	Median	Variance	StDev	CV
LG Halo	16,369	0	0.83	0.03	0.02	-	0.04	1.55
v01	8,411	0	0.90	0.05	0.03	-	0.05	1.18
v01 HG	2,610	0	0.90	0.06	0.04	-	0.07	1.15
v02	3,101	0	0.90	0.07	0.06	-	0.07	0.97
v03	1,830	0	0.37	0.05	0.04	-	0.04	0.86
v04	2,736	0	0.64	0.06	0.04	-	0.06	1.06
v04 HG	135	0	0.43	0.06	0.04	-	0.06	1.01
v05	847	0	0.77	0.06	0.02	0.01	0.09	1.55
v05 HG	229	0	0.97	0.19	0.16	0.04	0.19	0.99
v06	1,095	0	0.77	0.06	0.04	0.01	0.08	1.26
v07	752	0	0.66	0.07	0.05	0.01	0.07	1.10
v08	2,908	0	0.90	0.05	0.03	0.01	0.07	1.36
v10	855	0	0.99	0.07	0.04	0.01	0.10	1.38
v11	641	0	1.02	0.06	0.03	0.01	0.09	1.54
v12	329	0	0.78	0.09	0.07	0.01	0.10	1.02
v13	1,039	0	0.90	0.08	0.06	0.01	0.08	1.11
v15	656	0	0.90	0.07	0.04	0.01	0.11	1.48
v16	441	0	1.23	0.05	0.04	-	0.07	1.42
v17	401	0	0.24	0.04	0.03	-	0.03	0.80
v18	451	0	0.56	0.04	0.03	-	0.05	1.19

Table 14-39: Descriptive Statistics for Capped raw Silver Assays (g/t Ag) by Mineralized Domain – J Zone

Mineralized Zone	Count	Min	Max	Mean	Median	Variance	StDev	CV
LG Halo	16,369	0	12.50	0.39	0.25	0.37	0.61	1.57
v01	8,411	0	15.80	0.80	0.50	0.92	0.96	1.21
v01 HG	2,610	0	24.20	1.08	0.80	1.29	1.13	1.05
v02	3,101	0	46.90	0.90	0.60	2.08	1.44	1.60
v03	1,830	0	15.40	0.66	0.32	0.81	0.90	1.37
v04	2,736	0	15.80	0.77	0.50	0.80	0.89	1.16
v04 HG	135	0	7.20	1.00	0.77	1.03	1.01	1.01
v05	847	0	15.70	1.09	0.50	2.70	1.64	1.51
v05 HG	229	0	17.30	2.85	2.20	8.48	2.91	1.02
v06	1,095	0	10.20	0.77	0.40	1.07	1.03	1.35
v07	752	0	6.30	0.56	0.25	0.37	0.61	1.09
v08	2,908	0	25.60	1.00	0.60	2.11	1.45	1.45
v10	855	0	13.90	1.13	0.60	2.78	1.67	1.48
v11	641	0	14.50	0.88	0.25	2.01	1.42	1.60
v12	329	0	7.90	0.68	0.25	0.76	0.87	1.28
v13	1,039	0	8.60	0.62	0.25	0.58	0.76	1.22
v15	656	0	18.40	1.39	0.80	3.27	1.81	1.30
v16	441	0	5.40	0.47	0.25	0.43	0.66	1.40
v17	401	0	6.30	0.47	0.25	0.54	0.73	1.56
v18	451	0	7.80	0.41	0.25	0.40	0.64	1.54

Composites

Composites were created within the mineralized domains, starting from the domain intersection. Composite lengths were adjusted equally across the domain intersection.

Table 14-39 to Table 14-41 show the descriptive statistics by domains for the 2 m capped composite values for the J Zone

Table 14-40: Descriptive Statistics for Capped Au (g/t) Composite Values by Mineralized Domain – J Zone

Domain	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	30,615	0	2.30	0.11	0.06	0.19	1.64
v01	5,439	0	10.90	0.47	0.31	0.64	1.36
v01 HG	1,528	0.003	10.90	1.21	0.85	1.31	1.08
v02	2,040	0	10.90	0.31	0.20	0.48	1.57
v03	1,127	0	10.90	0.36	0.21	0.63	1.74
v04	1,529	0	13.08	0.34	0.23	0.56	1.63
v04 HG	71	0.046	20.84	1.60	0.87	2.68	1.68
v05	500	0	3.24	0.39	0.25	0.46	1.19
v05 HG	120	0	2.46	0.59	0.58	0.47	0.80
v06	637	0	5.84	0.40	0.22	0.62	1.58
v07	445	0.001	3.31	0.29	0.21	0.31	1.07
v08	1,910	0	10.23	0.55	0.33	0.79	1.43
v10	546	0	6.23	0.41	0.21	0.67	1.62
v11	389	0	3.92	0.33	0.170	0.48	1.43
v12	194	0.007	0.96	0.20	0.18	0.15	0.75
v13	631	0.003	6.598	0.30	0.20	0.51	1.73
v15	405	0.001	6.49	0.49	0.23	0.85	1.75
v16	303	0	3.93	0.28	0.16	0.45	1.57
v17	267	0.003	2.34	0.19	0.11	0.27	1.39
v18	277	0	2.48	0.18	0.09	0.29	1.61

Table 14-41: Descriptive Statistics for Capped Cu (%) Composite Values by Mineralized Domain – J Zone

Domain	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	30,615	0	0.77	0.02	0.02	0.03	1.35
v01	5,439	0	0.90	0.05	0.04	0.05	1.00
v01 HG	1,528	0	0.90	0.06	0.05	0.06	1.02
v02	2,040	0	0.85	0.07	0.06	0.06	0.84
v03	1,127	0	0.34	0.05	0.04	0.04	0.79
v04	1,529	0	0.64	0.06	0.04	0.06	1.01
v04 HG	71	0.001	0.27	0.06	0.04	0.05	0.91
v05	500	0	0.64	0.06	0.03	0.09	1.38
v05 HG	120	0	0.86	0.19	0.17	0.17	0.90
v06	637	0.001	0.57	0.07	0.05	0.07	1.08
v07	445	0	0.47	0.07	0.05	0.06	0.89
v08	1,910	0	0.61	0.05	0.04	0.06	1.15
v10	546	0	0.56	0.07	0.04	0.09	1.25
v11	389	0	0.76	0.06	0.03	0.08	1.38
v12	194	0.003	0.51	0.09	0.07	0.08	0.82
v13	631	0.002	0.90	0.08	0.06	0.07	0.93
v15	405	0.000	0.83	0.07	0.04	0.10	1.33
v16	303	0	0.31	0.05	0.04	0.04	0.86
v17	267	0.001	0.17	0.04	0.03	0.03	0.68
v18	277	0	0.30	0.04	0.03	0.04	1.06

Table 14-42: Descriptive Statistics for Capped Ag (g/t) Composite Values by Mineralized Domain – J Zone

Domain	Count	Min	Max	Mean	Median	StDev	CV
LG Halo	30,615	0	11.71	0.36	0.25	0.48	1.33
v01	10,878	0	15.80	0.86	0.65	0.82	0.96
v01 HG	3,056	0	10.14	1.13	0.90	0.96	0.85
v02	2,040	0	23.85	0.93	0.70	1.07	1.16
v03	1,127	0	15.40	0.70	0.475	0.916	1.31
v04	1,529	0	10.10	0.77	0.525	0.755	0.98
v04 HG	71	0	4.05	1.06	1.01	0.84	0.79
v05	500	0	11.60	1.12	0.525	1.49	1.33
v05 HG	120	0	13.56	2.86	2.32	2.57	0.90
v06	637	0	8.85	0.82	0.546	0.95	1.17
v07	445	0	3.8	0.60	0.40	0.53	0.89
v08	1,910	0	13.95	1.05	0.725	1.26	1.20
v10	546	0	12.75	1.10	0.65	1.50	1.37
v11	389	0	10.4	0.83	0.25	1.17	1.42
v12	194	0.25	5.4	0.69	0.425	0.71	1.03
v13	631	0.10	7.3	0.64	0.50	0.60	0.94
v15	405	0.10	14.65	1.38	0.95	1.55	1.12
v16	303	0	5.20	0.48	0.25	0.59	1.22
v17	267	0	6.30	0.51	0.25	0.68	1.34
v18	277	0	4.60	0.38	0.25	0.48	1.24

Variography

Spatial analysis was performed on 2 m composites on J zone. A hard boundary was defined for zones v01, v04 and v05, separating their low-grade and high-grade domains. The mineralized domains were grouped in five different Grouped Domains. Table 14-42 presents the mineralized zoned within the Grouped Domains.

Table 14-43: Mineralized Zones within Grouped Domains – J Zone

Domain 1	Domain 2	Domain 4	Domain 5	Domain 6
v04	v02	v03	v01	LG Halo
v04_hg	v07	v06	v01_hg	
v05		v16	v08	
v05_hg		v17	v10	
v11			v15	
v12				
v13				
v18				

Experimental variograms were calculated for gold, copper, and silver and are oriented along the overall strike, dip, and across strike directions for each domain. Semi-automatic fitting was used for modelling the regionalized mineralization.

Tables 14-44 to Table 14-46 presents the variography parameters for gold, copper, and silver, by mineralized domain, respectively, in the J Zone.

Table 14-44: Variogram Parameters for Gold – J Zone

Zone	Anisotropy	Structure	Nugget	1st Sill	1st Range	2nd Sill	2nd Range	3rd Sill	3rd Range
LG Halo	Spherical	2	0.012456	0.006958	86.60	0.015935	165.96	-	-
v01	Spherical	2	0.350000	0.318047	58.89	0.087842	130.51	-	-
v01 HG	Spherical	2	0.350000	0.318047	58.89	0.087842	130.51	-	-
v02	Spherical	2	0.006625	0.005629	63.42	0.134663	127.49	-	-
v03	Spherical	2	0.153000	0.066194	26.50	0.142674	160.45	-	-
v04	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434
v04 HG	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434
v05	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434
v05 HG	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434
v06	Spherical	2	0.153000	0.066194	26.50	0.142674	160.45	-	-
v07	Spherical	2	0.006625	0.005629	63.42	0.134663	127.49	-	-
v08	Spherical	2	0.350000	0.318047	58.89	0.087842	130.51	-	-
v10	Spherical	2	0.350000	0.318047	58.89	0.087842	130.51	-	-
v11	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434
v12	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434
v13	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434
v15	Spherical	2	0.350000	0.318047	58.89	0.087842	130.51	-	-
v16	Spherical	2	0.153000	0.066194	26.50	0.142674	160.45	-	-
v17	Spherical	2	0.153000	0.066194	26.50	0.142674	160.45	-	-
v18	Spherical	3	0.190000	0.076688	29.17	0.049375	108.41	0.080	138.434

Table 14-45: Variogram Parameters for Copper – J Zone

Zone	Anisotropy	Structure	Nugget	1st Sill	1st Range	2nd Sill	2nd Range	3rd Sill	3rd Range
LG Halo	Spherical	2	0.000251	0.000488	72.30	0.000334	157.31	-	-
v01	Spherical	2	0.001000	0.001500	38.90	0.000603	146.36	-	-
v01 HG	Spherical	2	0.001000	0.001500	38.90	0.000603	146.36	-	-
v02	Spherical	2	0.006625	0.005629	63.42	0.134663	127.49	-	-
v03	Spherical	3	0.000050	0.000592	46.79	0.001134	125.72	0.001	214.670
v04	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-
v04 HG	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-
v05	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-
v05 HG	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-
v06	Spherical	3	0.000050	0.000592	46.79	0.001134	125.72	0.001	214.670
v07	Spherical	2	0.006625	0.005629	63.42	0.134663	127.49	-	-
v08	Spherical	2	0.001000	0.001500	38.90	0.000603	146.36	-	-
v10	Spherical	2	0.001000	0.001500	38.90	0.000603	146.36	-	-
v11	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-
v12	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-
v13	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-
v15	Spherical	2	0.001000	0.001500	38.90	0.000603	146.36	-	-
v16	Spherical	3	0.000050	0.000592	46.79	0.001134	125.72	0.001	214.670
v17	Spherical	3	0.000050	0.000592	46.79	0.001134	125.72	0.001	214.670
v18	Spherical	2	0.000800	0.003183	71.51	0.002348	237.60	-	-

Table 14-46: Variogram Parameters for Silver – J Zone

Zone	Anisotropy	Structure	Nugget	1st Sill	1st Range	2nd Sill	2nd Range	3rd Sill	3rd Range
LGHalo	Spherical	3	0.223322	0.060245	61.61	0.140225	126.06	0.1309	224.3680
v01	Spherical	2	0.150000	0.518475	55.34	0.592875	180.76	-	-
v01HG	Spherical	2	0.150000	0.518475	55.34	0.592875	180.76	-	-
v02	Spherical	2	0.080000	0.283249	43.92	0.811565	100.02	-	-
v03	Spherical	3	0.320000	0.202614	45.09	0.245839	112.55	0.264	157.449
v04	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605
v04HG	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605
v05	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605
v05HG	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605
v06	Spherical	3	0.320000	0.202614	45.09	0.245839	112.55	0.264	157.449
v07	Spherical	2	0.080000	0.283249	43.92	0.811565	100.02	-	-
v08	Spherical	2	0.150000	0.518475	55.34	0.592875	180.76	-	-
v10	Spherical	2	0.150000	0.518475	55.34	0.592875	180.76	-	-
v11	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605
v12	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605
v13	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605
v15	Spherical	2	0.150000	0.518475	55.34	0.592875	180.76	-	-
v16	Spherical	3	0.320000	0.202614	45.09	0.245839	112.55	0.264	157.449
v17	Spherical	3	0.320000	0.202614	45.09	0.245839	112.55	0.264	157.449
v18	Spherical	3	0.500000	0.369516	36.19	0.018476	225.14	0.868	333.605

14.6.3 Block Model

Block Model Parameters

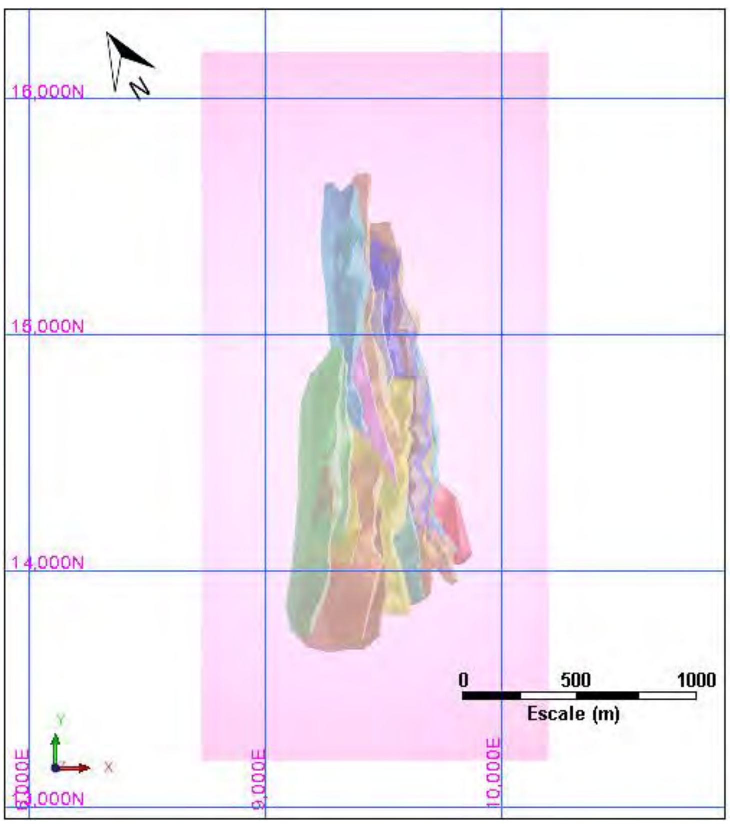
The block model for the J Zone deposit was set up with a block matrix of 5 m long by 5 m wide by 5 m high and was built using Geovia Surpac resource software. The block matrix was defined based on current drill hole spacing and on engineering considerations for an open pit operation and is considered suitable this purpose. The block model is in mine grid coordinates and is not rotated.

Table 14-47 summarizes the block model parameters. Figure 14-13 shows the block model extents over the J Zone.

Table 14-47: Block Model Parameters – J Zone

Type	Y	X	Z
Minimum Coordinates	13200 mN	8730 mE	4600 m
Maximum Coordinates	16200 mN	10200 mE	5500 m
Length (m)	3000	1470	900
Block Size (m)	5	5	5
Rotation	No rotation		
Number of Blocks	600	294	180

Figure 14-13: Block Model Extents – J Zone



Source: AGP (2023)

Estimation Parameters and Interpolation Strategy

The metal grades were interpolated in three passes using the 2 m capped composites. The metal grades were interpolated using ordinary kriging (OK) method. Variogram parameters for each metal was used in each of these passes and aligned to the domain wireframe. ID2 and NN interpolation methods were also run for validation purposes.

Each pass required different minimum and maximum number of composites with a maximum of six composites per drill hole. Three drill holes were required to populate a block in pass 1 in order to guarantee spatial continuity. Table 14-48 summarizes the estimation parameters used for each pass to estimate the metal grades

Table 14-48: Estimation Parameters for Gold, Silver, and Copper – J Zone

	1st Pass	2nd Pass	3rd Pass
Minimum number of samples	6	3	2
Maximum number of samples	18	18	18
Maximum number of samples per drill hole	3	2	2
Maximum average distance of samples	60	120	120
Percent Partition of Original Search Ellipse Size (Au, Ag and Cu)	60%	80%	100%
Ag (g/t) - Domain 1 (m)	200	267	334
Au (g/t) - Domain 1 (m)	83	110	138
Cu (%) - Domain 1 (m)	143	190	238
Ag (g/t) - Domain 2 (m)	60	190	238
Au (g/t) - Domain 2 (m)	76	102	127
Cu (%) - Domain 2 (m)	76	102	127
Ag (g/t) - Domain 3 (m)	200	267	334
Au (g/t) - Domain 3 (m)	83	267	334
Cu (%) - Domain 3 (m)	143	190	238
Ag (g/t) - Domain 4 (m)	94	126	157
Au (g/t) - Domain 4 (m)	96	128	160
Cu (%) - Domain 4 (m)	129	128	160
Ag (g/t) - Domain 5 (m)	109	145	181
Au (g/t) - Domain 5 (m)	79	105	131
Cu (%) - Domain 5 (m)	88	117	146
Ag (g/t) - LG Halo (m)	134	117	146
Au (g/t) - LG Halo (m)	100	133	166
Cu (%) - LG Halo (m)	94	126	157

Table 14-49 to Table 14-51 present the search ellipses used to estimate gold by mineralized domain.

Table 14-49: Search Ellipse Parameters for Gold by Mineralized Domain – J Zone

Zone	Bearing	Plunge	Dip	Major/Semi	Major/Minor
LG Halo	60	0	0	1.53	2.67
v01	65	82	10	1.53	2.67
v01 HG	65	82	10	1.53	2.67
v02	80	95	5	2.13	6.15
v03	-35	170	-80	2.13	6.15
v04	80	95	5	1.81	5.93
v04 HG	80	95	5	1.81	5.93
v05	80	95	5	1.81	5.93
v05 HG	80	95	5	1.81	5.93
v06	-35	170	-80	2.13	6.15
v07	80	95	5	2.13	6.15
v08	65	82	10	1.53	2.67
v10	65	82	10	1.53	2.67
v11	80	95	5	1.81	5.93
v12	80	95	5	1.81	5.93
v13	80	95	5	1.81	5.93
v15	65	82	10	1.53	2.67
v16	-35	170	-80	2.13	6.15
v17	-35	170	-80	2.13	6.15
v18	80	95	5	1.81	5.93

Table 14-50: Search Ellipse Parameters for Copper by Mineralized Domain – J Zone

Zone	Bearing	Plunge	Dip	Major/Semi	Major/Minor
LG Halo	60	100	0	1.05	3.81
v01	80	85	0	1.93	2.38
v01 HG	80	85	0	1.93	2.38
v02	80	95	5	2.13	6.15
v03	0	170	-80	2.91	5.81
v04	0	5	70	1.46	5.67
v04 HG	0	5	70	1.46	5.67
v05	0	5	70	1.46	5.67
v05 HG	0	5	70	1.46	5.67
v06	0	170	-80	2.91	5.81
v07	80	95	5	2.13	6.15
v08	80	85	0	1.93	2.38
v10	80	85	0	1.93	2.38
v11	0	5	70	1.46	5.67
v12	0	5	70	1.46	5.67
v13	0	5	70	1.46	5.67
v15	80	85	0	1.93	2.38
v16	0	170	-80	2.91	5.81
v17	0	170	-80	2.91	5.81
v18	0	5	70	1.46	5.67

Table 14-51: Search Ellipse Parameters for Silver by Mineralized Domain – J Zone

Zone	Bearing	Plunge	Dip	Major/Semi	Major/Minor
LG Halo	60	100	5	1.22	2.38
v01	65	85	0	1.22	2.38
v01 HG	65	85	0	1.22	2.38
v02	80	95	0	1.83	3.82
v03	0	160	-70	1.83	3.82
v04	-69	261	-15	1.54	3.29
v04 HG	-69	261	-15	1.54	3.29
v05	-69	261	-15	1.54	3.29
v05 HG	-69	261	-15	1.54	3.29
v06	0	160	-70	1.83	3.82
v07	80	95	0	1.83	3.82
v08	65	85	0	1.22	2.38
v10	65	85	0	1.22	2.38
v11	-69	261	-15	1.54	3.29
v12	-69	261	-15	1.54	3.29
v13	-69	261	-15	1.54	3.29
v15	65	85	0	1.22	2.38
v16	0	160	-70	1.83	3.82
v17	0	160	-70	1.83	3.82
v18	-69	261	-15	1.54	3.29

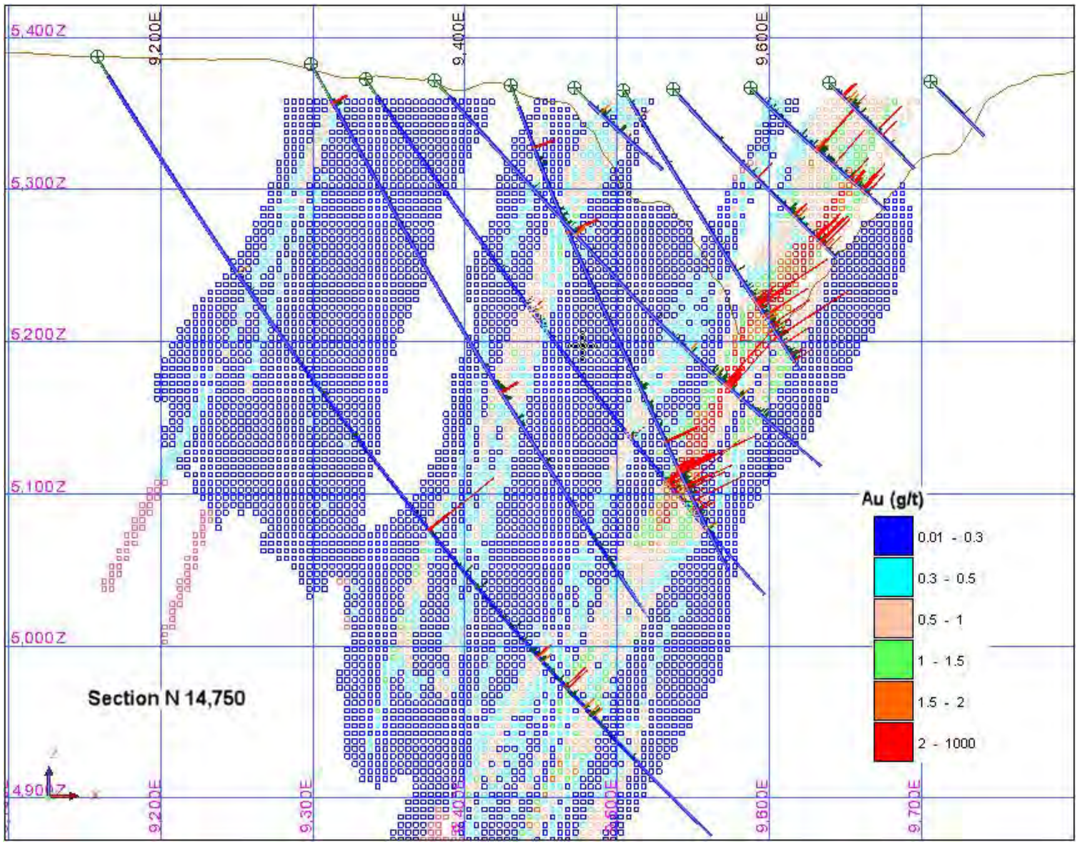
Block Model Validation

The J Zone grade models were validated by the following methods:

- visual comparison of colour-coded block model grades with composite grades on sections and plans.
- comparison of the global mean block grades for OK, ID2, NN models, composite, and raw assay grades.
- comparison using swath plots to investigate local bias in the estimate.

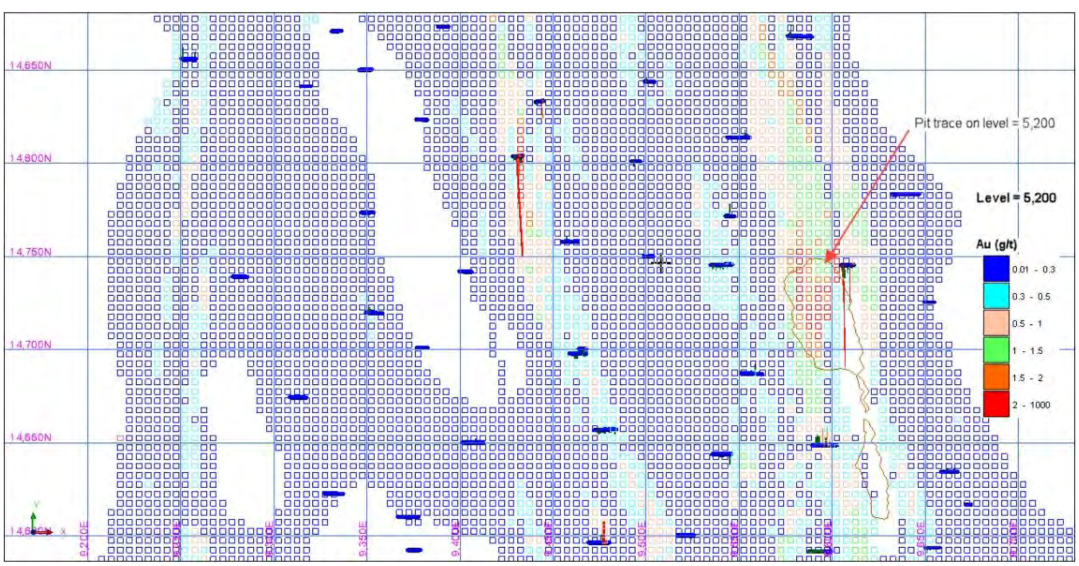
The block model grades, and the composites grades were visually inspected on plan and cross sections. Composite grades honour the block grades well within the high mineralized domains. Figure 14-14 and Figure 14-15 present a cross section (14750mN) and plan view (5200 m), respectively.

Figure 14-14: Cross Section 14750mN, showing gold grades – J Zone



Source: AGP (2023)

Figure 14-15: Plan Section 5200 m, showing gold grades – J Zone



Source: AGP (2023)

A series of validation tools were used in the block model validation, including statistical comparison of resource assay and block grade distributions, visual inspection, and comparison of block grades with assay grades and inspection of swath plots with block grades elevations and northings.

Mean Grade Comparison

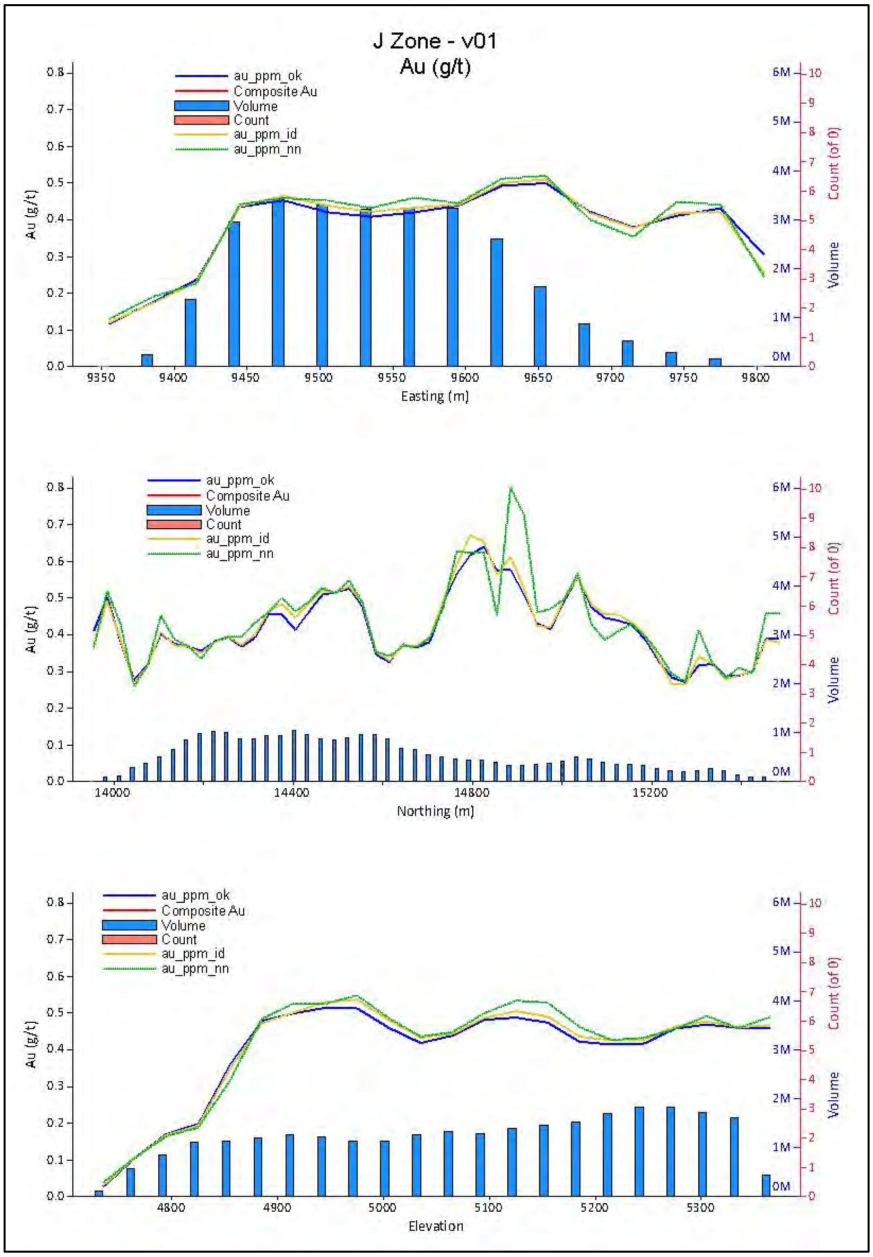
Table 14-52 presents the comparison of the mean gold, copper, and silver ordinary kriging (OK) estimated grades comparing to inverse distance powered two (ID2) interpolated mean grades and nearest neighbour (NN) assigned grade by mineralized domain. In general, the achieved mean grade is reasonable.

Table 14-52: Mean Grade Comparison – J Zone

Rock type	Au (g/t) Composite	Au (g/t) Ok	Au (g/t) ID	Au (g/t) NN	Cu (%) Composite	Cu (%) Ok	Cu (%) ID	Cu (%) NN	Ag (g/t) Composite	Ag (g/t) Ok	Ag (g/t) ID	Ag (g/t) NN
LG Halo	0.113	0.122	0.123	0.121	0.024	0.026	0.026	0.026	0.36	0.370	0.370	0.371
v01	0.473	0.427	0.435	0.442	0.046	0.042	0.042	0.042	0.86	0.833	0.841	0.853
v01 HG	1.212	1.129	1.106	1.101	0.059	0.059	0.059	0.058	1.13	1.150	1.144	1.137
v02	0.305	0.258	0.252	0.259	0.073	0.058	0.058	0.058	0.93	0.873	0.867	0.864
v03	0.362	0.343	0.337	0.330	0.049	0.051	0.051	0.051	0.70	0.724	0.722	0.717
v04	0.343	0.361	0.361	0.376	0.056	0.055	0.054	0.055	0.77	0.740	0.744	0.758
v04 HG	1.598	1.475	1.430	1.368	0.057	0.061	0.061	0.064	1.06	0.999	0.993	1.055
v05	0.389	0.261	0.265	0.287	0.062	0.065	0.066	0.072	1.12	1.107	1.135	1.233
v05 HG	0.590	0.571	0.568	0.574	0.193	0.188	0.188	0.196	2.86	2.764	2.756	2.880
v06	0.395	0.381	0.382	0.383	0.066	0.067	0.067	0.068	0.82	0.817	0.812	0.819
v07	0.290	0.286	0.282	0.292	0.066	0.067	0.066	0.068	0.60	0.591	0.583	0.624
v08	0.552	0.508	0.505	0.510	0.054	0.054	0.053	0.052	1.05	1.089	1.085	1.067
v10	0.414	0.373	0.374	0.377	0.070	0.071	0.071	0.073	1.10	1.093	1.092	1.125
v11	0.333	0.347	0.349	0.359	0.055	0.061	0.060	0.061	0.83	1.012	1.014	0.993
v12	0.203	0.172	0.171	0.174	0.092	0.090	0.088	0.087	0.69	0.698	0.704	0.694
v13	0.296	0.215	0.228	0.238	0.077	0.076	0.076	0.079	0.64	0.600	0.597	0.597
v15	0.485	0.418	0.420	0.424	0.072	0.070	0.069	0.070	1.38	1.383	1.370	1.324
v16	0.284	0.299	0.297	0.306	0.045	0.042	0.042	0.042	0.48	0.466	0.460	0.457
v17	0.191	0.190	0.190	0.187	0.043	0.043	0.042	0.043	0.51	0.502	0.503	0.510
v18	0.183	0.211	0.213	0.214	0.039	0.038	0.036	0.038	0.38	0.486	0.464	0.500

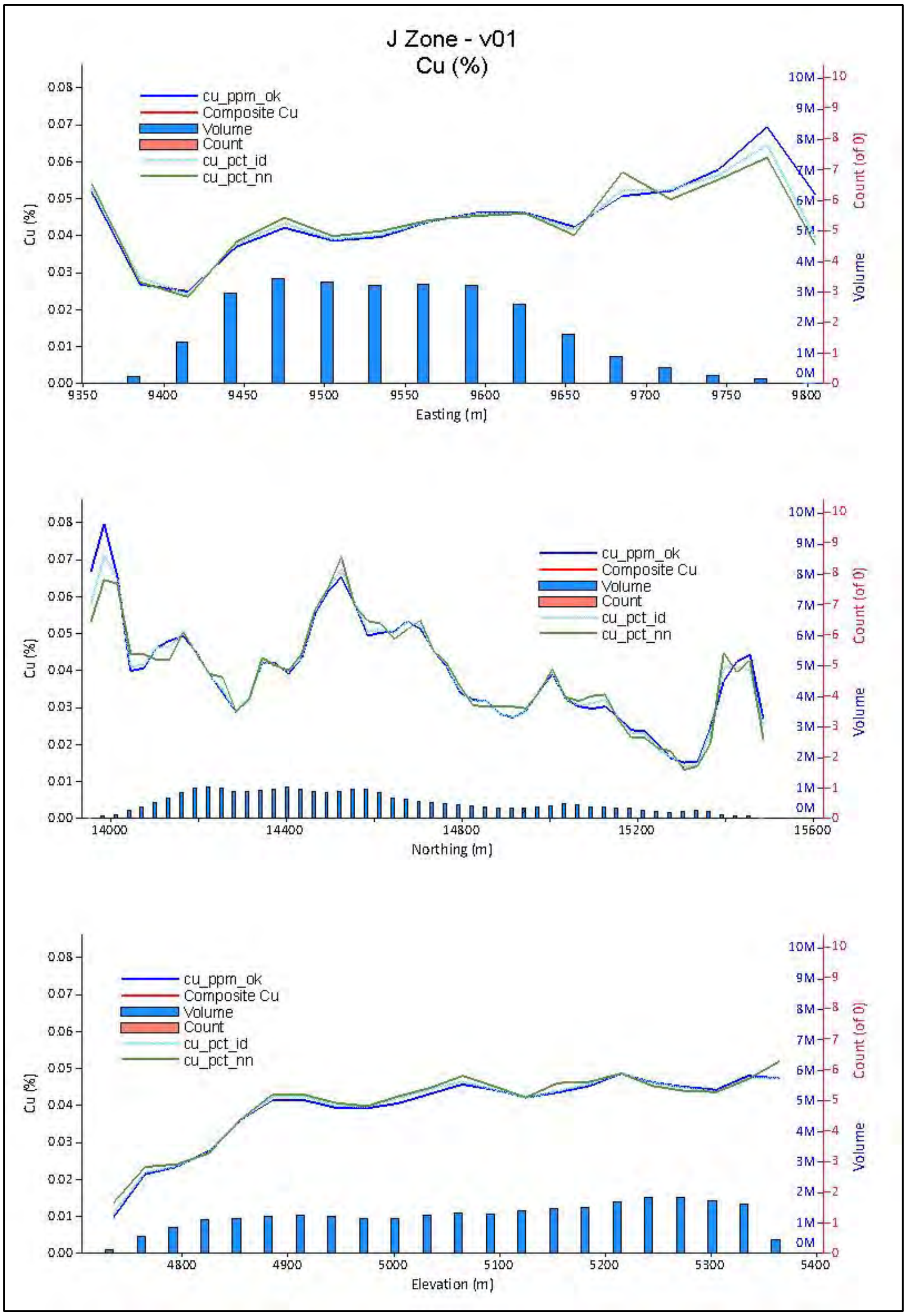
Swath plots were reviewed by northing easting and elevation. The distribution of gold, copper and silver composite values and interpolated block grades were compared to the OK, ID2 and NN grades. Variables estimated with OK and ID2 agree well in general, and no major spatial bias was observed. Figures 14-16 and Figure 14-17 present the swath plots for gold and copper, respectively, for domain v01. Figure 14-18 and Figure 14-19 present the swath plots for gold and copper, respectively, for domain v08.

Figure 14-16: Swath Plot for Gold, by Easting, Northing and Elevation; Domain v01 – J Zone



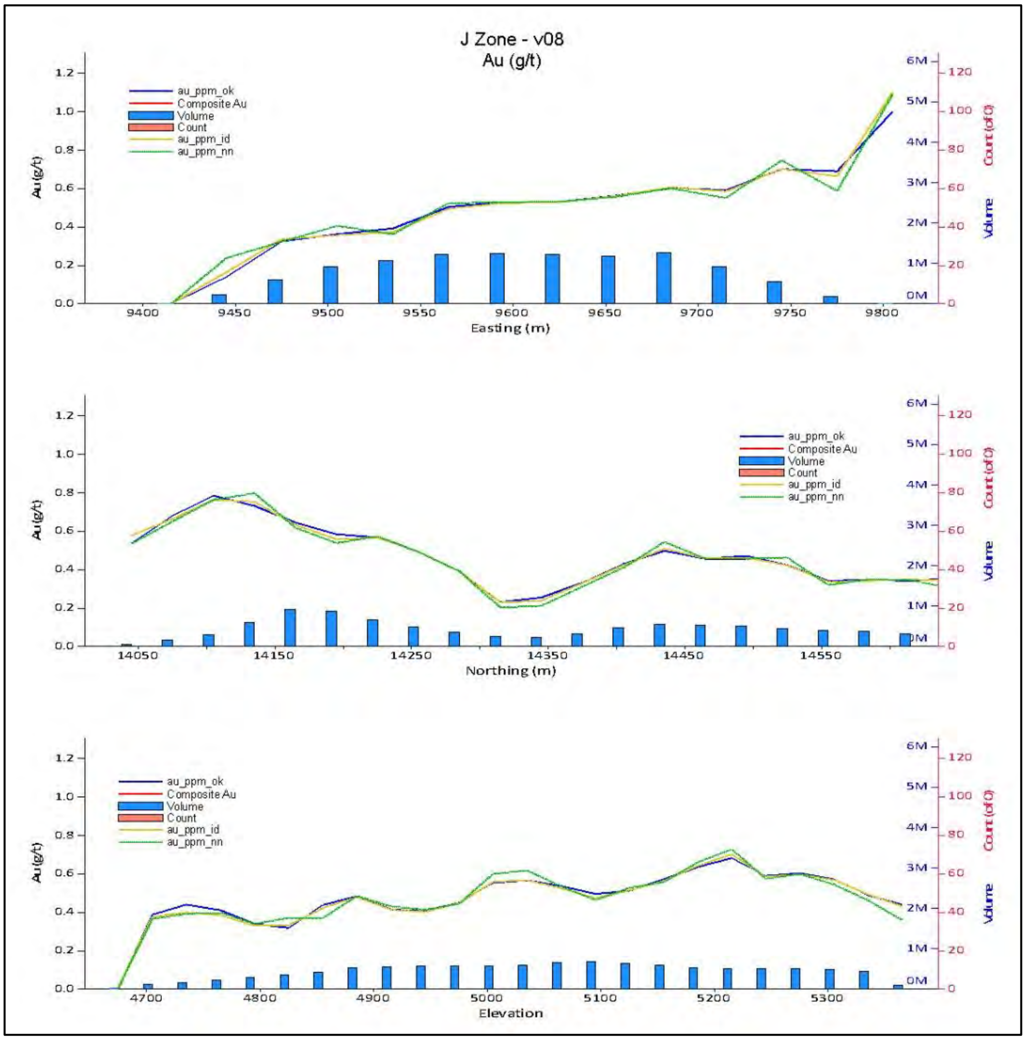
Source: AGP (2023)

Figure 14-17-: Swath Plot for Copper, by Easting, Northing and Elevation; Domain v08 – J Zone



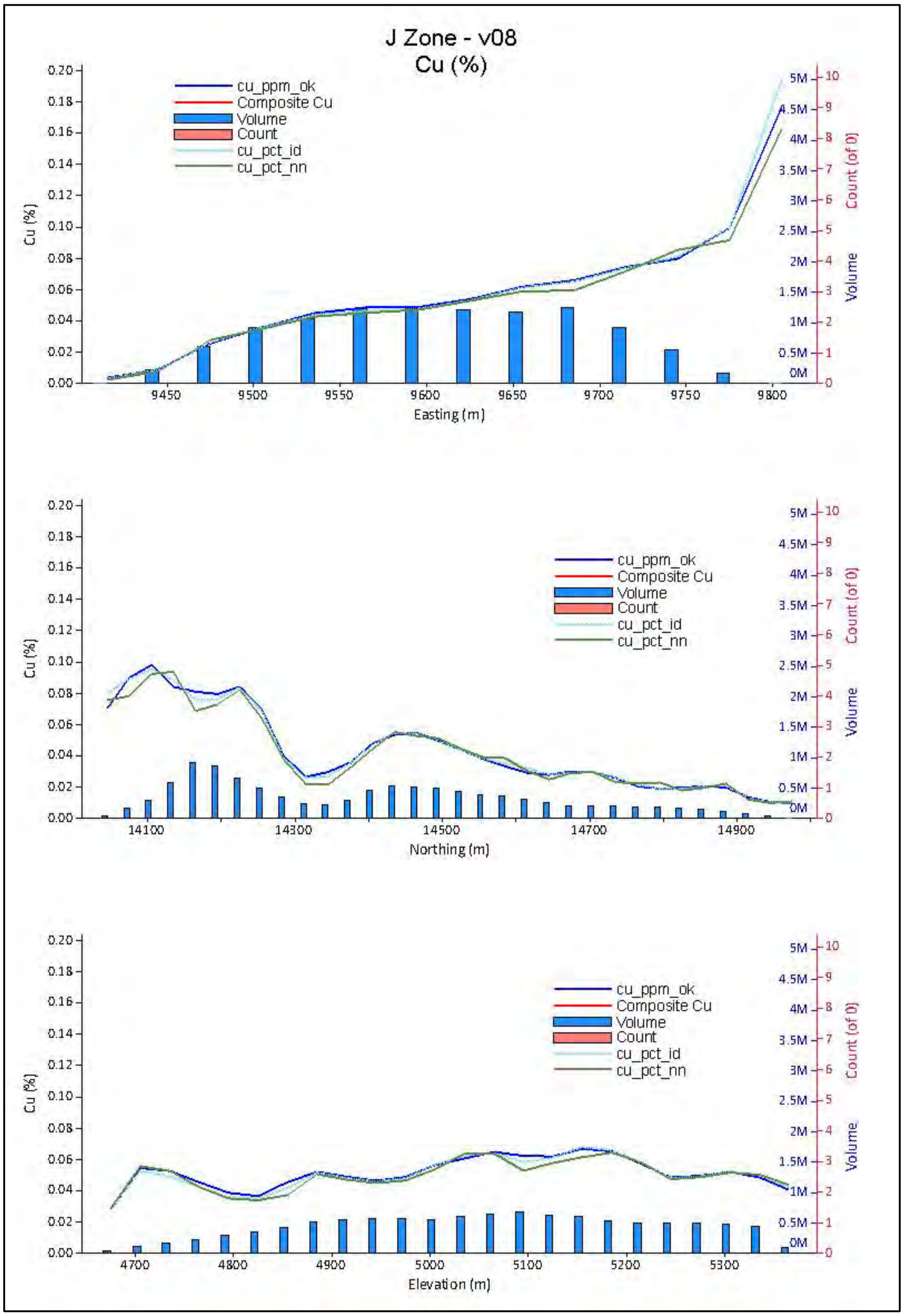
Source: AGP (2023)

Figure 14-18: Swath Plot for Gold, by Easting, Northing and Elevation; Domain v08 – J Zone



Source: AGP (2023)

Figure 14-19: Swath Plot for Copper, by Easting, Northing and Elevation; Domain v08 – J Zone



Source: AGP (2023)

14.7 X22 Zone

14.7.1 Interpretation

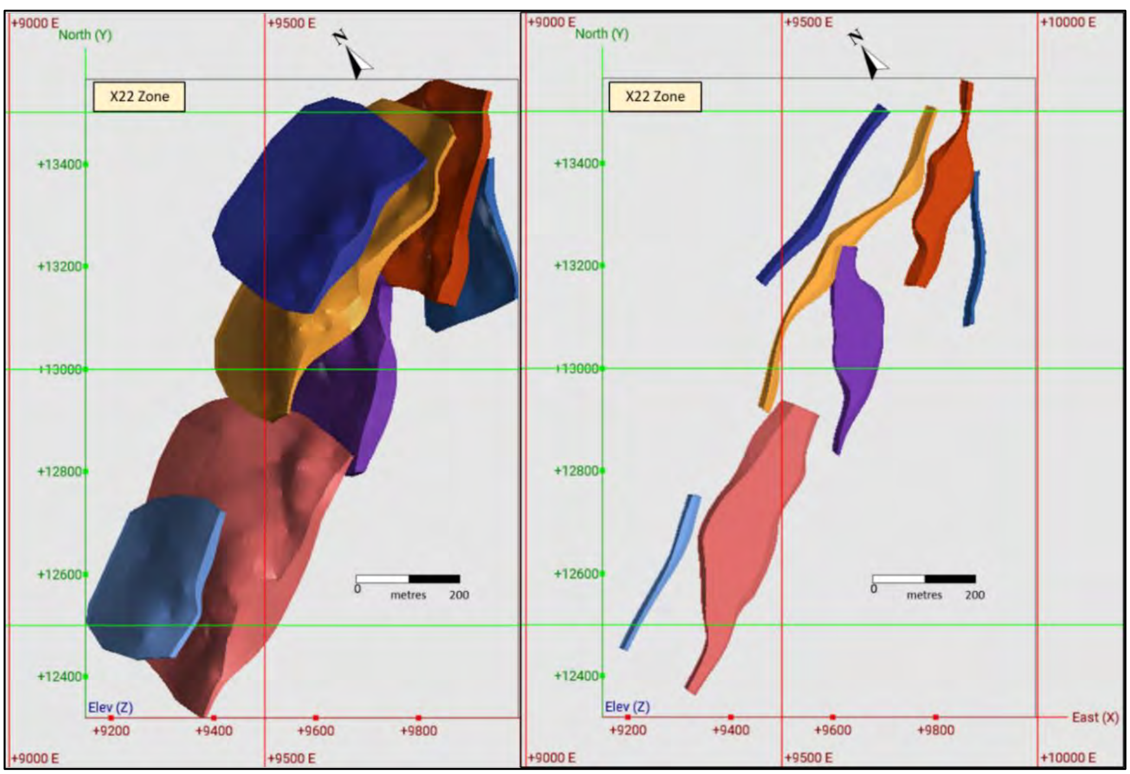
The mineralized domains at X22 Zone were interpreted by Troilus personnel. The interpreted wireframes were completed using Leapfrog Geo where grades were captured using a minimum grade of 0.3 g/t AuEQ and with a minimum thickness of 5 m. The AuEQ formula used for the gold equivalent was updated in 2023 as follows:

$$AuEQ = Au\ grade + (1.5628 * Cu\ grade) + (0.0128 * Ag\ grade)$$

All mineralized domain envelopes were created above pre-mining topography and clipped to the overburden bottom surface and then, to the pit topography. A total of seven 3-D wireframes described the mineralized domains in X22 Zone. A surrounding, low-grade, domain was created based on grades greater than 0.07 g/t Au. The mineralization is disseminated and shows enrichment in what could be described as mineralized corridors without sharp boundaries. AGP considers the wireframes suitable to estimate resources.

Figure 14-20 shows the mineralized domain wireframes for the X22 Zone in 3-D plan view and plan view section (5190 m; 20 m viewing corridor). Table 14-53 shows the mineralized domains and the Domain Code

Figure 14-20: Mineralized Zones in 3D plan view & plan view section (5200 m; 20 m viewing corridor) – X22 Zone



Source: AGP (2023)

Table 14-53: Mineralized Zones and Domain Codes – X22 Zone

Mineralized Zone	Domain Code
1401	1401
1402	1402
1403	1403
1404	1404
1405	1405
1406	1406
1407	1407
Low Grade Halo	99

14.7.2 Exploratory Data Analysis

Raw Assays

The drill hole database for the mineralized domains in the X22 Zone, consists of 16,525 raw assay values for each metal: gold, copper, and silver. The assay values reported below detection limit were assigned half the detection limit for statistical analysis and grade estimation. Any missing values were assigned half the detection limit.

Table 14-54 to Table 14-56 presents the descriptive statistics of the drill holes in the in the X22 Zone within the mineralized domains.

Table 14-54: Descriptive Statistics for Gold assays (g/t) by the Mineralized Domains – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	2285	0	126.50	0.52	0.17	3.07	5.91
1402	1731	0	11.60	0.41	0.27	0.57	1.39
1403	1301	0	23.90	0.67	0.23	1.62	2.43
1404	1135	0	133.00	0.64	0.16	5.21	8.20
1405	168	0.006	7.47	0.35	0.17	0.74	2.14
1406	274	0	15.55	0.36	0.13	1.19	3.32
1407	162	0	6.53	0.34	0.16	0.64	1.88
LG (99)	10253	0	32.40	0.10	0.03	0.59	5.88

Table 14-55: Descriptive Statistics for Copper assays (%) by the Mineralized Domains – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	2285	0	6.19	0.08	0.03	0.25	3.29
1402	1731	0	0.51	0.06	0.05	0.05	0.91
1403	1301	0	0.69	0.01	0.00	0.04	2.96
1404	1135	0	1.15	0.04	0.02	0.08	1.75
1405	168	0	0.34	0.01	0.00	0.04	2.71
1406	274	0	0.47	0.03	0.01	0.05	1.59
1407	162	0	0.72	0.05	0.03	0.09	1.75
LG (99)	10253	0	2.37	0.01	0.00	0.03	3.09

Table 14-56: Descriptive Statistics for Silver assays (g/t) by the Mineralized Domains – X22 Zone

Mineralized Zone	Count	Min	Max		Mean	Median	StDev	CV
1401	2284	0.1	883.00		2.43	0.50	21.51	8.86
1402	1728	0.1	26.90		0.75	0.50	1.32	1.75
1403	1116	0.1	46.30		0.56	0.25	2.23	3.98
1404	1119	0.1	70.20		1.11	0.28	3.77	3.40
1405	162	0.1	10.10		0.46	0.25	0.95	2.09
1406	252	0.1	12.60		0.66	0.25	1.16	1.76
1407	161	0.1	11.60		0.86	0.25	1.48	1.71
LG (99)	9703	0.1	126.10		0.39	0.25	1.73	4.45

Capping Analysis

Capping analysis was carried out on metal grades within each mineralized domain for gold, copper and silver by disintegration analysis, histogram, and probability plots. Capping was applied to metal grades where necessary.

Table 14-57 presents the selected capping levels gold and silver capping levels by domain. Descriptive statistics for capped gold and silver assay values are presented in Table 14-58 to Table 14-60, respectively.

Table 14-57: Capping Levels by Domain – X22 Zone

Domain	Au (g/t)	Loss (%)	Cu (%)	Loss (%)	Ag (g/t)	Loss (%)
1401	6.7 (12)	20.0	1.10 (16)	13.0	22.2 (23)	37.0
1402	7.2 (1)	0.6	-	-	11.5 (3)	3.0
1403	10.4 (7)	4.7	0.11 (20)	14.0	4.9 (10)	21.0
1404	4.1 (14)	45.0	0.37 (7)	5.7	8.7 (16)	21.0
1405	3.2 (1)	7.3	0.06 (9)	34.0	3.2 (2)	12.0
1406	2.7 (4)	24.0	0.23 (1)	3.1	4.4 (2)	6.4
1407	3.0 (1)	6.4	0.35 (3)	7.8	5.3 (2)	8.6
99 (LG)	3.2 (18)	14.0	0.21 (22)	5.0	11.3 (9)	6.8

(x) – number of values capped

Table 14-58: Descriptive Statistics for Capped Au (g/t) Assays by Mineralized Domain – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	2285	0	126.50	0.52	0.17	5.91	2285
1402	1731	0	11.60	0.41	0.27	1.39	1731
1403	1301	0	23.90	0.67	0.23	2.43	1301
1404	1135	0	133.00	0.64	0.16	8.20	1135
1405	168	0.006	7.47	0.35	0.17	2.14	168
1406	274	0	15.55	0.36	0.13	3.32	274
1407	162	0	6.53	0.34	0.16	1.88	162
LG (99)	10253	0	32.40	0.10	0.03	5.88	10253

Table 14-59: Descriptive Statistics for Capped Cu (%Cu) Assays by Mineralized Domain – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	2285	0	1.10	0.07	0.03	0.13	1.99
1402	1731	0	0.51	0.06	0.05	0.05	0.91
1403	1301	0	0.11	0.01	0.00	0.02	1.87
1404	1135	0	0.37	0.04	0.02	0.05	1.27
1405	168	0	0.06	0.01	0.00	0.02	1.64
1406	274	0	0.23	0.03	0.01	0.04	1.38
1407	162	0	0.35	0.05	0.03	0.06	1.38
LG (99)	10253	0	0.21	0.01	0.00	0.02	1.86

Table 14-60: Descriptive Statistics for Capped Ag (g/t) Assays by Mineralized Domain – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	2284	0.1	22.20	1.53	0.50	3.22	2.11
1402	1728	0.1	11.50	0.74	0.50	1.02	1.39
1403	1116	0.1	7.90	0.45	0.25	0.73	1.61
1404	1119	0.1	8.70	0.94	0.28	1.64	1.75
1405	162	0.1	3.20	0.40	0.25	0.53	1.31
1406	252	0.1	4.40	0.62	0.25	0.85	1.39
1407	161	0.1	5.30	0.79	0.25	1.03	1.31
LG (99)	9703	0.1	11.60	0.36	0.25	0.58	1.61

Composites

The capped assays were composited to two metre lengths for those assays captured within the mineralized domains, starting at domain boundary. Composites were adjusted across the intersection of the domain.

Table 14-61 to Table 14-63 present the descriptive statistics for the 2 m capped composite values for gold, copper, and silver by domain, respectively, in the X22 Zone.

Table 14-61: Descriptive Statistics for Capped Au (g/t) Composite Values by Mineralized Domain – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	1166	0	6.70	0.41	0.21	0.64	1.56
1402	866	0	3.91	0.41	0.30	0.41	1.01
1403	832	0	10.40	0.48	0.17	0.90	1.89
1404	608	0	3.48	0.33	0.18	0.45	1.39
1405	124	0	1.69	0.22	0.10	0.36	1.59
1406	143	0	1.66	0.25	0.15	0.32	1.29
1407	85	0	2.60	0.31	0.17	0.39	1.26
LG (99)	5579	0	2.07	0.06	0.02	0.15	2.53

Table 14-62: Descriptive Statistics for Capped Cu (%) Composite Values by Mineralized Domain – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	1166	0	1.10	0.07	0.03	0.11	1.70
1402	866	0	0.44	0.06	0.05	0.05	0.80
1403	832	0	0.11	0.01	0.00	0.02	1.90
1404	608	0	0.22	0.04	0.03	0.04	1.00
1405	124	0	0.06	0.01	0.00	0.01	1.75
1406	143	0	0.14	0.03	0.02	0.03	1.14
1407	85	0	0.28	0.04	0.03	0.05	1.23
LG (99)	5579	0	0.19	0.01	0.00	0.02	1.68

Table 14-63: Descriptive Statistics for Capped Ag (g/t) Composite Values by Mineralized Domain – X22 Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
1401	1157	0.04	22.20	1.52	0.57	2.72	1.79
1402	862	0.10	11.50	0.74	0.53	0.85	1.15
1403	688	0	5.45	0.35	0.25	0.56	1.58
1404	558	0	8.70	0.93	0.49	1.31	1.40
1405	120	0	1.85	0.27	0.25	0.37	1.39
1406	120	0.04	4.40	0.59	0.25	0.73	1.23
1407	85	0	4.20	0.75	0.38	0.87	1.17
LG (99)	4193	0	8.51	0.45	0.25	0.63	1.39

Variography

Spatial analysis was performed on 2 m capped composite gold, silver, and copper data within the mineralized domains and the variogram parameters were assigned to each mineralized domain. Table 14-64 to Table 14-66 presents the variogram parameters for the X22 Zone for gold, silver, and copper values by domain.

Table 14-64: Variogram Parameters for Gold by Domain –X22 Zone

Domain	Nugget	Structures Sill=1.0	Dip (°)	Dip Az. (°)	Pitch (°)	Major (m)	Semi-Major (m)	Minor (m)	Anisotropy
1401	0.3	0.10	58	293	70	70	75	2	Spheroidal
		0.60	58	293	70	100	125	10	Spheroidal
1402	0.3	0.10	58	293	70	70	75	2	Spheroidal
		0.60	58	293	70	100	125	10	Spheroidal
1403	0.3	0.36	58	293	155	70	75	2	Spheroidal
		0.34	58	293	155	100	125	4	Spheroidal
1404	0.3	0.07	58	293	156	70	75	2	Spheroidal
		0.63	58	293	156	91	130	5	Spheroidal
1405	0.3	0.04	58	293	0	33	36	2	Spheroidal
		0.66	58	293	0	45	62	10	Spheroidal
1406	0.3	0.10	58	293	70	70	75	2	Spheroidal
		0.60	58	293	70	100	125	10	Spheroidal
1407	0.3	0.10	58	293	70	70	75	2	Spheroidal
		0.60	58	293	70	100	125	10	Spheroidal
99 (LG)	0.2	0.07	58	293	70	70	75	2	Spheroidal
		0.73	58	293	70	70	120	5	Spheroidal

Az = Azimuth

Table 14-65: Variogram Parameters for Copper by Domain –X22 Zone

Domain	Nugget	Structures Sill=1.0	Dip (°)	Dip Az. (°)	Pitch (°)	Major (m)	Semi-Major (m)	Minor (m)	Anisotropy
1401	0.2	0.35	58	293	70	57	92	3	Spheroidal
		0.45	58	293	70	80	115	14	Spheroidal
1402	0.15	0.52	58	293	70	65	82	3	Spheroidal
		0.33	58	293	70	115	100	14	Spheroidal
1403	0.2	0.34	58	293	155	74	86	3	Spheroidal
		0.46	58	293	155	89	92	9	Spheroidal
1404	0.2	0.34	58	293	156	74	86	3	Spheroidal
		0.46	58	293	156	89	92	9	Spheroidal
1405	0.2	0.46	58	293	0	43	72	2.5	Spheroidal
		0.34	58	293	0	78	140	9	Spheroidal
1406	0.15	0.05	58	293	70	43	73	2.5	Spheroidal
		0.80	58	293	70	78	120	9	Spheroidal
1407	0.15	0.05	58	293	70	43	73	2.5	Spheroidal
		0.80	58	293	70	78	120	9	Spheroidal
99 (LG)	0.15	0.27	58	293	70	57	92	3	Spheroidal
		0.58	58	293	70	90	115	14	Spheroidal

Az = Azimuth

Table 14-66: Variogram Parameters for Silver by Domain –X22 Zone

Domain	Nugget	Structures Sill=1.0	Dip (°)	Dip Az. (°)	Pitch (°)	Major (m)	Semi-Major (m)	Minor (m)	Anisotropy
1401	0.3	0.08	58	293	70	70	60	2	Spheroidal
		0.60	58	293	70	90	95	10	Spheroidal
1402	0.3	0.10	58	293	70	70	75	2	Spheroidal
		0.60	58	293	70	100	63.6	10	Spheroidal
1403	0.3	0.28	58	293	155	50	26	2	Spheroidal
		0.34	58	312	168	60	74	4	Spheroidal
1404	0.2	0.01	58	312	168	60	83	2	Spheroidal
		0.63	58	293	156	105.5	68.64	5	Spheroidal
1405	0.3	0.70	58	293	0	33	120	2	Spheroidal
1406	0.3	0.10	58	293	70	70	75	2	Spheroidal
		0.60	58	293	70	100	125	10	Spheroidal
1407	0.3	0.10	58	293	70	70	75	2	Spheroidal
		0.60	58	293	70	100	125	10	Spheroidal
99 (LG)	0.2	0.07	58	293	70	40	62	2	Spheroidal
		0.73	58	293	70	54	120	5	Spheroidal

Az = Azimuth

14.7.3 Block Model

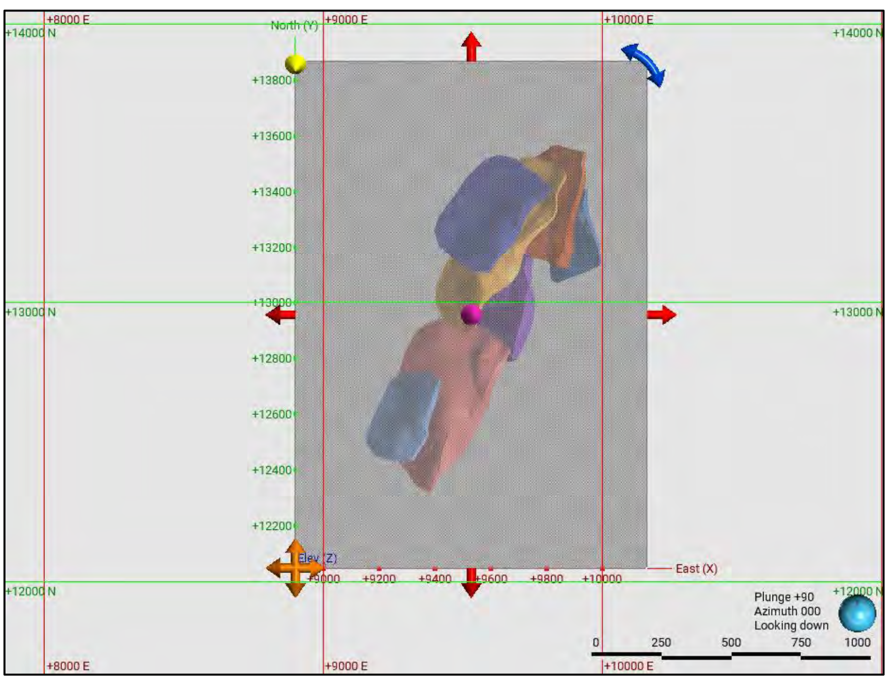
Block Model Parameters

The block model for the X22 Zone deposit was set up with a block matrix of 5 m long by 5 m wide by 5 m high and was created using Leapfrog Edge resource software. The block matrix was defined based on current drill hole spacing and on engineering considerations for an open pit operation and is considered suitable this purpose. The block model is in mine grid coordinates and is not rotated. Table 14-67 summarizes the block model parameters and Figure 14-21 presents the block model over the interpreted mineralized domains for the X22 Zone.

Table 14-67: Block Model Parameters – X22 Zone

Domain	Minimum	Maximum
Easting	8900 mE	10160 mE
Northing	12050 mN	13865 mN
Maximum Elevation	4500 m	5500 m
Rotation Angle	No rotation°	
Block Size (X, Y, Z in metres)	5 x 5 x 5	
Number of blocks in the X direction	252	
Number of blocks in the Y direction	363	
Number of blocks in the Z direction	200	

Figure 14-21: Block Model Extents – X22 Zone



Source: AGP (2023)

The block model extents cover the entire X22 Zone and is extended on all four sides beyond the interpreted mineralized domains. The block model is a whole block model where blocks are assigned a specific rock type code. Any block centroid within the mineralized domain wireframe was assigned that code.

Block model attributes in the block model includes:

- domain code
- metal grades for gold, copper, silver, and calculated gold-equivalent grades for estimated blocks
- classification
- distance to the nearest composite
- average distance of estimated composites
- number of composites used in estimation of a block
- number of drill holes used in estimation of a block
- pass number
- lithology code
- density

Estimation Parameters and Interpolation Strategy

The metal grades were interpolated in three passes using the 2 m capped composites by domain. The metal grades were interpolated using OK interpolation method. Variogram parameters for each metal was used in each of these passes and used variable orientation aligned to the mineralized domain wireframe. ID2 and NN interpolations were also run for validation purposes.

Each pass required the same minimum and maximum number of composites for each domain. A maximum of three composites per drill hole was used. Table 14-68 shows estimation parameters for each pass used to estimate metal grades.

Table 14-68: Estimation Parameters – X22 Zone

Pass	Min No Composites	Max No Composites	Max No. Composites per Hole	Min. No. of Drill Holes
Pass 1	4	18	3	2
Pass 2	4	18	3	2
Pass 3	3	18	3	1

Due to the sinuous nature of the interpreted mineralized domains, search ellipses were allowed a variable orientation that follow the trend of each domain. Each pass increased the search ellipse where Pass 2 was doubled that of Pass 1 and Pass 3 was approximately double that of Pass 2. Hard boundaries were kept between all domains and blocks within each domain were estimated only be composites within the domain wireframe.

Table 14.69 shows search ellipse parameters for each subdomain used to estimate metal grades.

Table 14-69: Search Ellipse Parameters for Gold, Copper, and Silver– X22 Zone

All Domains	Orientation	Major (m)	Semimajor (m)	Minor (m)	Search
Pass 1	Variable Orientation	75	50	10	Ellipsoidal
Pass 2	Variable Orientation	130	130	20	Ellipsoidal
Pass 3	Variable Orientation	200	150	30	Ellipsoidal

Block Model Validation

The block model was validated using the following methods:

- statistical comparison of resource assay and block grade distributions
- visual inspection and comparison of block grades with composite and assay grades
- inspection of swath plots with composites and block grades elevations and northings

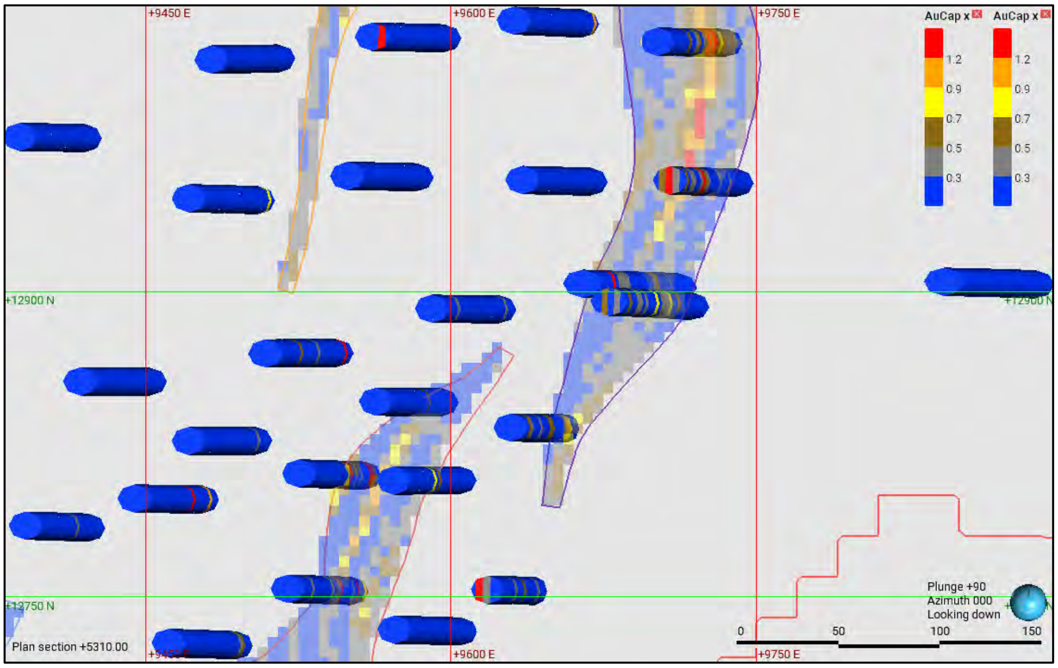
Table 14-70 shows the comparison of mean gold grades by domain for estimated blocks to the ID2 and NN interpolations and the 2 m composite values. Variables estimated with OK and ID2 generally agree with some smoothing of grades noted but no major spatial bias was observed.

Table 14-70: Comparison of Mean Gold Grades (g/t Au) – SW Zone

Domain	OK	ID2	NN	2 m Comps
1401	0.45	0.44	0.46	0.41
1402	0.43	0.42	0.41	0.41
1403	0.59	0.58	0.63	0.52
1404	0.36	0.36	0.39	0.33
1405	0.26	0.26	0.27	0.27
1406	0.26	0.26	0.41	0.25
1407	0.33	0.34	0.39	0.31
LG (99)	0.08	0.08	0.08	0.08

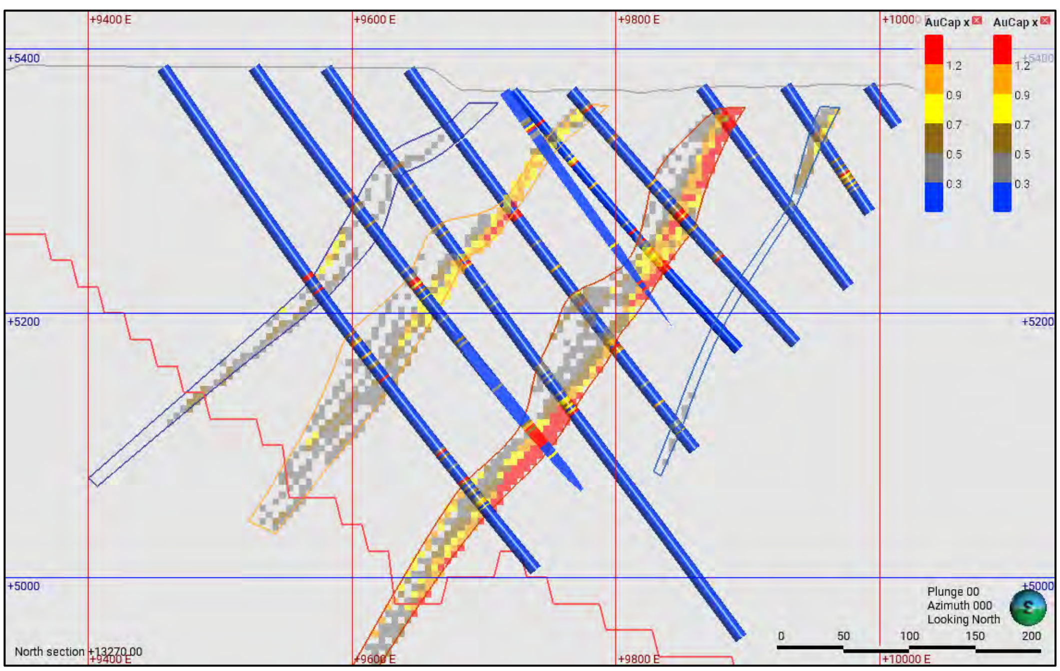
The block model grades, and the composites grades were visually inspected on plan and cross sections. Composite grades honour the block grades well within the mineralized domains. Figure 14-22 and Figure 14-23 present selected plan section and cross section views for the X22 Zone (plan view elevation 5310 m and cross section 13270mN), respectively.

Figure 14-22: Plan-section at Elevation 5310 m – X22 Zone



Source: AGP (2023)

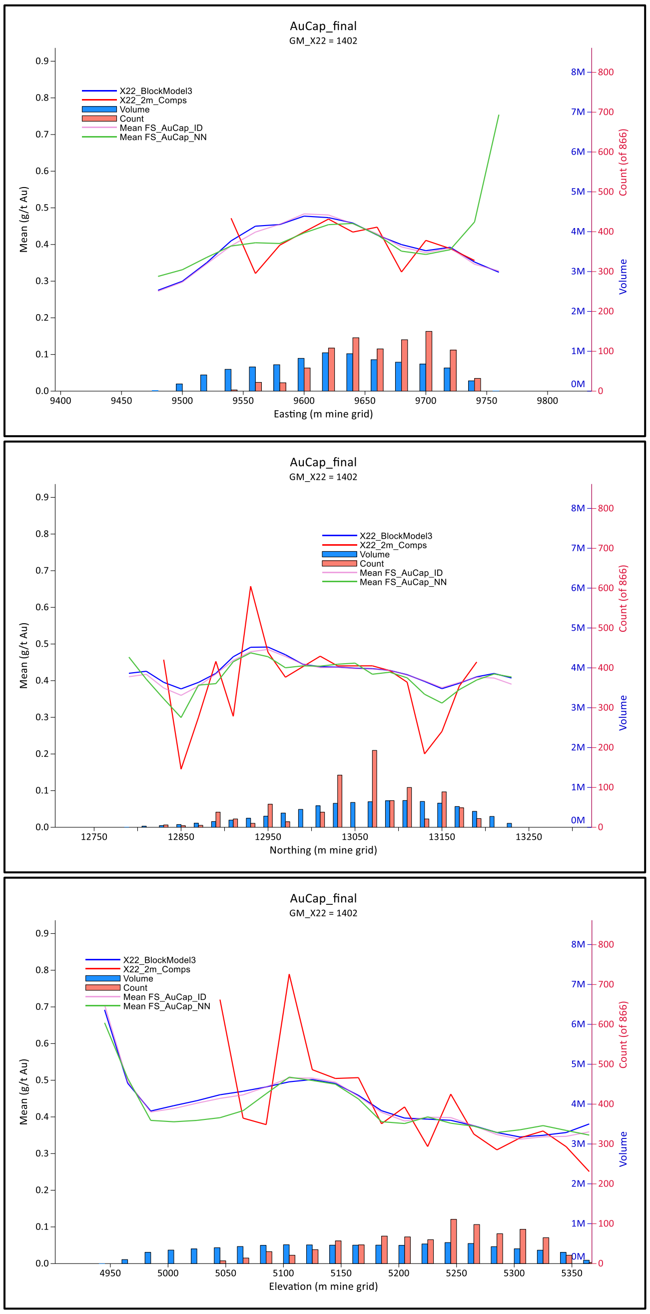
Figure 14-23: Cross-section 13270mN – X22 Zone



Source: AGP (2023)

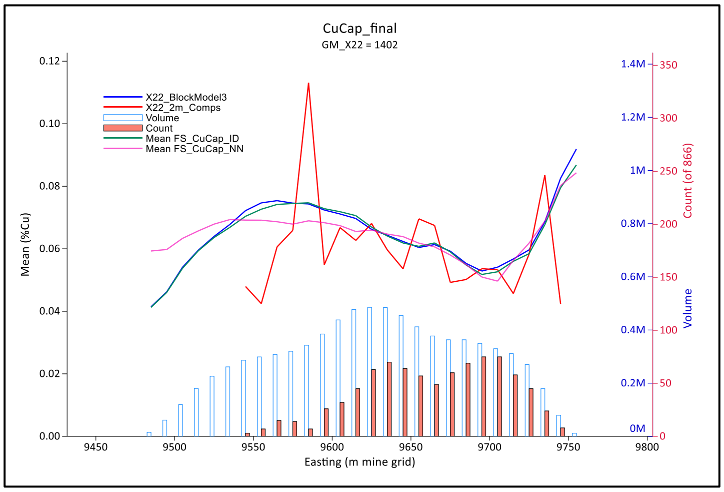
Swath plots were reviewed by northing, easting, and elevation. The distribution of gold, copper and silver composite values and interpolated block grades were compared to the OK, ID2 and NN grades. No issues were found with the distribution of interpolated grades. Figure 14-24 and Figure 14-25 present the swath plots for gold and copper, respectively, for domain 1402 by easting, northing, and elevation.

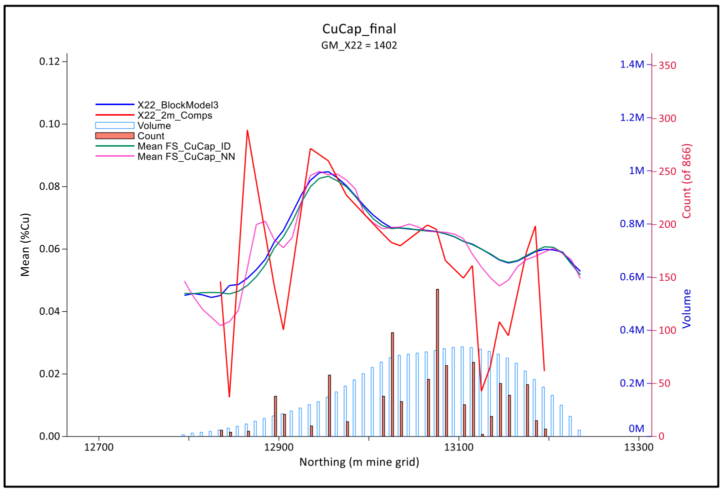
Figure 14-24: Swath Plot for Gold, by Northing and Elevation; Domain 1402 – X22 Zone

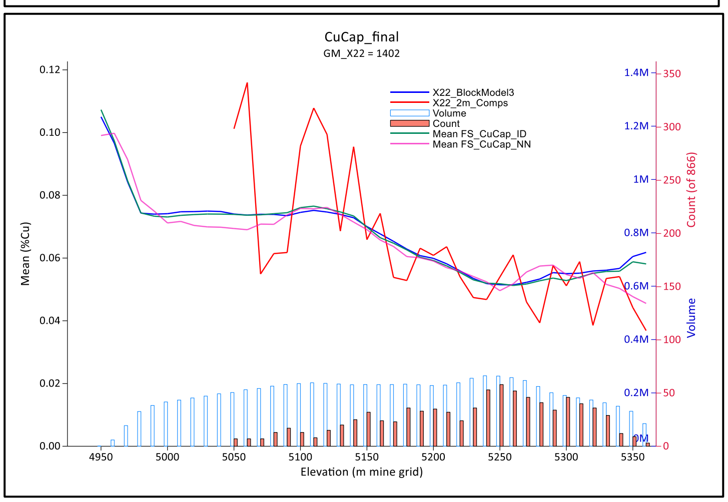


Source: AGP (2023)

Figure 14-25: Swath Plot for Copper, by Northing and Elevation; Domain 1402 – X22 Zone







Source: AGP (2023)

14.8 SW Zone

14.8.1 Interpretation

The mineralized domains at SW Zone were interpreted by Troilus personnel. The interpreted wireframes were completed using Leapfrog Geo where grades were captured using a minimum grade of 0.3 g/t AuEQ with a minimum thickness of 3.0 m applied for all domains.

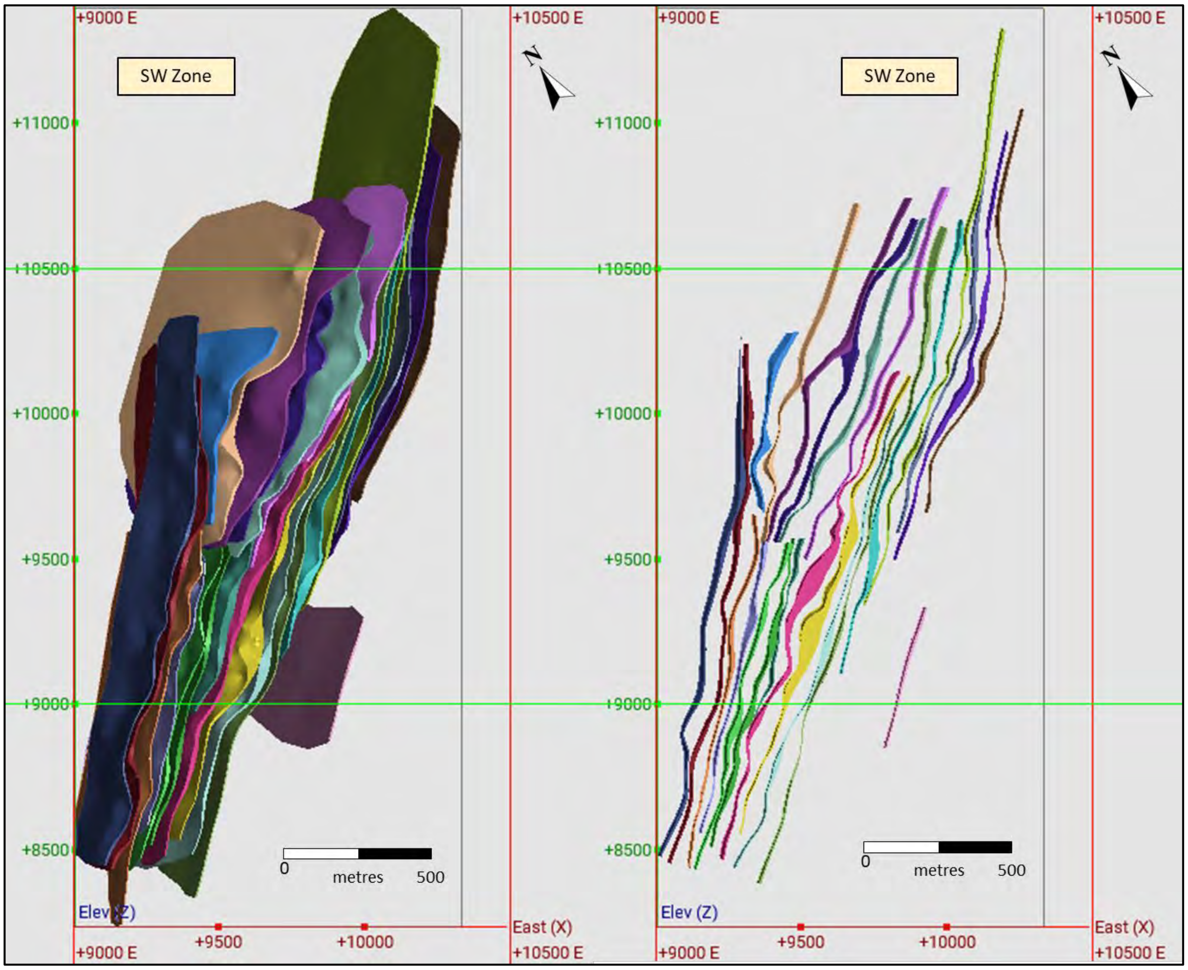
The AuEQ formula used for the gold equivalent formula for the SW Zone from the PEA Report (AGP, 2020) as follows:

$$AuEQ = Au\ grade + (1.2768 * Cu\ grade) + (0.0106 * Ag\ grade)$$

All mineralized domain envelopes were created above pre-mining topography and clipped to the overburden bottom surface and then, to the pit topography. A total of 23 3-D wireframes described the mineralized domains in SW Zone. A surrounding, low-grade domain was created based on grades greater than 0.07 g/t Au. The mineralization is disseminated and shows enrichment in what could be described as mineralized corridors without sharp boundaries. The wireframes provided were mostly intended to limit grade smearing between high grade zones into lower grade material (and vice-versa). AGP considers the wireframes suitable to estimate resources.

Figure 14-26 shows the mineralized domain wireframes for the SW Zone in 3-D plan view and plan view section (5190 m; 20 m viewing corridor).

Figure 14-26: Mineralized Zones in 3D plan view & plan view section (5190 m; 20 m viewing corridor) SW Zone



Source: AGP (2023)

14.8.2 Exploratory Data Analysis

Raw Assays

The drill hole database for the mineralized domains in the SW Zone, consists of 75,632 assay values within all mineralized domains for: gold, copper, and silver. The assay values reported below detection limit were assigned half the detection limit for statistical analysis and grade estimation. Any missing values were assigned half the detection limit.

Table 14-71 to Table 14-73 presents the descriptive statistics of the drill holes for gold, copper, and silver, respectively, in the in the SW Zone within the mineralized domains.

Table 14-71: Descriptive Statistics for Gold assays (g/t) by the Mineralized Domains – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	535	0.001	18.15	0.44	0.19	1.29	2.95
200	729	0.003	13.15	0.45	0.21	0.91	2.01
201	1364	0.003	15.10	0.34	0.16	0.86	2.56
202	2967	0.003	27.40	0.48	0.22	1.16	2.39
203	2062	0.003	46.30	0.51	0.20	1.48	2.90
204	330	0.003	4.36	0.22	0.09	0.47	2.16
205	768	0.003	8.85	0.33	0.20	0.61	1.84
206	322	0.003	10.95	0.43	0.09	1.02	2.38
207	288	0.003	6.65	0.40	0.15	0.74	1.84
208	995	0.003	2320.00	2.75	0.11	73.58	26.76
209	370	0.001	12.70	0.23	0.07	0.81	3.53
210	583	0.003	11.15	0.27	0.15	0.57	2.13
211	1263	0.003	18.10	0.39	0.15	1.03	2.62
212	774	0.003	92.00	0.48	0.18	3.34	6.94
213	41	0.008	3.49	0.50	0.17	0.79	1.56
214	381	0.003	5.04	0.36	0.18	0.55	1.53
215	827	0.001	68.00	0.51	0.17	2.61	5.14
216	505	0.001	6.79	0.40	0.16	0.76	1.92
217	467	0.003	30.60	0.51	0.11	1.82	3.56
218	633	0.001	12.15	0.33	0.11	0.88	2.63
219	310	0.001	12.45	0.34	0.07	1.03	3.00
220	346	0.001	14.75	0.37	0.06	1.18	3.15
221	495	0.001	36.20	0.43	0.11	1.82	4.25
LG (99)	58277	0.001	1690	0.111	0.032	7.151	64.16

Table 14-72: Descriptive Statistics for Copper assays (%) by the Mineralized Domains – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	535	0	0.64	0.03	0.01	0.06	2.07
200	729	0	1.26	0.05	0.01	0.12	2.30
201	1364	0	1.66	0.06	0.03	0.09	1.45
202	2967	0	1.13	0.03	0.01	0.07	2.01
203	2062	0	2.11	0.07	0.03	0.12	1.69
204	330	0	0.47	0.05	0.03	0.06	1.29
205	768	0.001	0.68	0.07	0.04	0.08	1.23
206	322	0	0.54	0.02	0.00	0.04	2.89
207	288	0	0.29	0.01	0.00	0.02	3.14
208	995	0	0.42	0.04	0.01	0.06	1.49
209	370	0	0.54	0.05	0.02	0.07	1.52
210	583	0	1.05	0.06	0.03	0.09	1.48
211	1263	0	0.96	0.05	0.03	0.08	1.50
212	774	0	0.72	0.05	0.03	0.06	1.26
213	41	0.008	0.06	0.02	0.02	0.01	0.49
214	381	0	0.48	0.05	0.02	0.06	1.38
215	827	0	2.53	0.06	0.03	0.12	2.03
216	505	0	0.62	0.05	0.02	0.07	1.52
217	467	0	0.15	0.01	0.00	0.02	1.82
218	633	0.001	0.62	0.05	0.03	0.06	1.24
219	310	0	0.59	0.02	0.00	0.04	2.68
220	346	0	0.32	0.02	0.00	0.04	2.44
221	495	0	0.43	0.01	0.00	0.04	2.70
LG (99)	58277	0	2.59	0.02	0.01	0.03	1.73

Table 14-73: Descriptive Statistics for Silver assays (g/t) by the Mineralized Domains – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	535	0.10	86.10	1.84	0.50	5.79	3.15
200	729	0.10	42.60	1.18	0.50	2.50	2.12
201	1364	0.10	73.30	1.22	0.50	2.98	2.45
202	2967	0.10	44.50	0.57	0.25	1.29	2.26
203	2062	0.10	28.30	0.92	0.25	1.83	1.99
204	330	0.20	9.60	0.90	0.50	1.09	1.21
205	768	0.20	16.80	1.16	0.60	1.63	1.41
206	322	0.10	13.70	0.72	0.25	1.64	2.27
207	288	0.10	38.50	0.75	0.25	2.43	3.26
208	995	0.05	11.90	0.68	0.25	1.06	1.55
209	370	0.10	15.80	0.94	0.25	1.67	1.78
210	584	0	19.20	1.02	0.50	1.45	1.42
211	1263	0.05	30.40	0.86	0.25	1.62	1.89
212	774	0.10	55.00	1.48	0.60	3.75	2.54
213	41	0.25	218.00	22.15	2.00	40.91	1.85
214	381	0.10	7.40	0.59	0.25	0.71	1.19
215	828	0.00	1170.00	2.74	0.50	40.73	14.87
216	505	0.10	73.00	2.35	0.60	6.45	2.74
217	467	0.20	46.90	0.88	0.25	3.32	3.77
218	633	0.10	36.40	1.12	0.50	2.16	1.92
219	310	0.20	122.00	1.31	0.25	7.29	5.57
220	346	0.10	130.00	2.10	0.25	12.06	5.75
221	495	0.10	41.90	0.61	0.25	2.13	3.48
LG (99)	58312	0	149.00	0.46	0.25	1.25	2.74

Capping Analysis

Capping analysis was carried out on metal grades within each mineralized domain for gold, copper and silver by disintegration analysis, histogram, and probability plots. Capping was applied to metal grades where necessary.

Table 14-74 presents the selected capping levels gold and silver capping levels by domain. Descriptive statistics for capped gold and silver assay values are presented in Table 14.75 to Table 14.77, respectively.

Table 14-74: Capping Levels by Domain – SW Zone

Domain	Au (g/t)	Loss %)	Cu (%)	Loss (%)	Ag (g/t)	Loss (%)
199	4.3 (5)	16.0	0.29 (4)	5.0	22.0 (4)	15.0
200	8.0 (3)	2.8	0.60 (5)	5.0	24.8 (2)	3.3
201	6.1 (7)	5.4			19.0 (3)	5.6
202	14.6 (3)	1.3	0.49 (10)	2.9	16.6 (2)	2.2
203	12.6 (2)	5.6	1.04 (3)	1.1	15.4 (4)	2.1
204	3.4 (3)	2.0				
205	7.2 (2)	1.1			12.0 (2)	0.8
206	5.0 (5)	5.9	0.12 (8)	18.0	5.0 (6)	15.0
207	5.0 (2)	1.5	0.07 (3)	19.0	7.1 (2)	25.0
208	7.57 (6)	88.0			8.0 (3)	1.5
209	2.6 (3)	19.0			10.1 (2)	2.9
210	3.0 (1)	5.2			11.2 (1)	1.3
211	7.0 (5)	5.9	0.63 (3)	0.9	20.4 (1)	0.9
212	6.5 (2)	23.0			22.5 (3)	6.8
213	3.4 (1)	0.4			55.0 (2)	27.0
214						
215	8.0 (7)	20.0	0.80 (2)	3.5	17.1 (6)	54.0
216	5.5 (3)	1.0			18.1 (12)	20.0
217	5.8 (6)	18.0			7.8 (5)	23.0
218	3.2 (7)	14.0			18.8 (1)	2.5
219	3.2 (6)	19.0	0.16 (2)	10.0	9.5 (6)	36.0
220	3.7 (7)	18.0	0.19 (6)	6.4	6.9 (9)	66.0
221	5.5 (4)	19.0	0.21 (5)	7.5	10.6 (3)	14.0
99 (LG)	4.6 (24)	33	0.74(7)	0.4	27.3 (13)	1.4

(x) – number of values capped

Table 14-75: Descriptive Statistics for Capped Au (g/t) Assays by Mineralized Domain – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	535	0.001	4.30	0.37	0.19	0.61	1.66
200	729	0.003	8.00	0.44	0.21	0.75	1.72
201	1364	0.003	6.10	0.32	0.16	0.65	2.05
202	2967	0.003	14.60	0.48	0.22	1.05	2.20
203	2062	0.003	12.60	0.48	0.20	0.90	1.86
204	330	0.003	3.40	0.21	0.09	0.43	2.05
205	768	0.003	7.20	0.33	0.20	0.57	1.72
206	322	0.003	5.00	0.40	0.09	0.83	2.06
207	288	0.003	5.00	0.40	0.15	0.69	1.75
208	995	0.003	7.57	0.32	0.11	0.77	2.41
209	370	0.001	2.60	0.19	0.07	0.34	1.83
210	583	0.003	3.00	0.25	0.15	0.36	1.43
211	1263	0.003	7.00	0.37	0.15	0.74	2.00
212	774	0.003	6.50	0.37	0.18	0.61	1.64
213	41	0.008	3.40	0.50	0.17	0.78	1.55
214	381	0.003	5.04	0.36	0.18	0.55	1.53
215	827	0.001	8.00	0.41	0.17	0.89	2.19
216	505	0.001	5.50	0.39	0.16	0.73	1.86
217	467	0.003	5.80	0.42	0.11	0.90	2.15
218	633	0.001	3.20	0.29	0.11	0.50	1.75
219	310	0.001	3.20	0.28	0.07	0.56	2.02
220	346	0.001	3.70	0.31	0.06	0.68	2.23
221	495	0.001	5.00	0.34	0.11	0.65	1.90
LG (99)	58277	0.001	8.70	0.08	0.03	0.22	2.94

Table 14-76: Descriptive Statistics for Capped Cu (%Cu) Assays by Mineralized Domain – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	535	0	0.29	0.03	0.01	0.05	1.81
200	729	0	0.60	0.05	0.01	0.10	2.03
201	1364	0	1.66	0.06	0.03	0.09	1.45
202	2967	0	0.49	0.03	0.01	0.06	1.76
203	2062	0	1.04	0.07	0.03	0.11	1.57
204	330	0	0.47	0.05	0.03	0.06	1.29
205	768	0.001	0.68	0.07	0.04	0.08	1.23
206	322	0	0.12	0.01	0.00	0.02	1.99
207	288	0	0.07	0.01	0.00	0.01	1.74
208	995	0	0.42	0.04	0.01	0.06	1.49
209	370	0	0.54	0.05	0.02	0.07	1.52
210	583	0	1.05	0.06	0.03	0.09	1.48
211	1263	0	0.63	0.05	0.03	0.08	1.43
212	774	0	0.72	0.05	0.03	0.06	1.26
213	41	0.008	0.06	0.02	0.02	0.01	0.49
214	381	0	0.48	0.05	0.02	0.06	1.38
215	827	0	0.80	0.06	0.03	0.09	1.57
216	505	0	0.62	0.05	0.02	0.07	1.52
217	467	0	0.15	0.01	0.00	0.02	1.82
218	633	0.001	0.62	0.05	0.03	0.06	1.24
219	310	0	0.16	0.01	0.00	0.03	1.87
220	346	0	0.19	0.02	0.00	0.03	2.20
221	495	0	0.21	0.01	0.00	0.03	2.20
LG (99)	58277	0	0.74	0.02	0.01	0.03	1.55

Table 14-77: Descriptive Statistics for Capped Ag (g/t) Assays by Mineralized Domain – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	535	0.10	22.00	1.57	0.50	2.98	1.90
200	729	0.10	24.80	1.15	0.50	2.16	1.87
201	1364	0.10	19.00	1.15	0.50	1.89	1.65
202	2967	0.10	15.60	0.56	0.25	0.99	1.77
203	2062	0.10	15.40	0.90	0.25	1.61	1.78
204	330	0.20	9.60	0.90	0.50	1.09	1.21
205	768	0.20	12.00	1.15	0.60	1.56	1.36
206	322	0.10	5.00	0.61	0.25	1.02	1.66
207	288	0.10	7.10	0.64	0.25	1.03	1.62
208	995	0.05	8.00	0.67	0.25	0.97	1.44
209	370	0.10	10.10	0.91	0.25	1.46	1.61
210	584	0.00	11.20	1.01	0.50	1.31	1.30
211	1263	0.05	20.40	0.85	0.25	1.49	1.76
212	774	0.10	22.50	1.38	0.60	2.67	1.94
213	41	0.25	55.00	16.25	2.00	20.50	1.26
214	381	0.10	7.40	0.59	0.25	0.71	1.19
215	828	0	17.10	1.26	0.50	2.35	1.86
216	505	0.10	18.10	1.89	0.60	3.43	1.82
217	467	0.20	7.80	0.68	0.25	1.20	1.78
218	633	0.10	18.80	1.09	0.50	1.78	1.63
219	310	0.20	9.50	0.83	0.25	1.71	2.05
220	346	0.10	6.90	0.71	0.25	1.30	1.83
221	495	0.10	10.60	0.55	0.25	1.13	2.06
LG (99)	58312	0	27.30	0.45	0.25	0.87	1.93

Composites

The assays were composited to two metre lengths for those assays captured within the mineralized domains, starting at domain boundary. Composites were adjusted across the intersection of the domain.

Table 14-78 to Table 14-80 present the descriptive statistics for the 2 m capped composite values for gold, copper, and silver by domain, respectively, in the SW Zone.

Table 14-78: Descriptive Statistics for Capped Au (g/t) Composite Values by Mineralized Domain – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	289	0.003	4.30	0.38	0.23	0.51	1.31
200	390	0.003	5.14	0.44	0.27	0.59	1.36
201	707	0.003	3.54	0.33	0.19	0.50	1.52
202	1531	0.003	14.60	0.49	0.28	0.85	1.74
203	1068	0.003	6.49	0.49	0.26	0.71	1.45
204	181	0.003	2.07	0.21	0.12	0.32	1.51
205	402	0.012	3.83	0.34	0.22	0.41	1.20
206	188	0.005	5.00	0.42	0.16	0.73	1.72
207	159	0.004	3.14	0.41	0.24	0.52	1.25
208	546	0.003	4.02	0.30	0.17	0.44	1.49
209	199	0.003	1.74	0.18	0.11	0.25	1.40
210	319	0.005	2.79	0.25	0.18	0.29	1.13
211	679	0.003	4.23	0.37	0.22	0.52	1.40
212	416	0.003	3.62	0.38	0.23	0.52	1.36
213	23	0.01	2.55	0.47	0.18	0.63	1.33
214	225	0.017	4.29	0.42	0.26	0.51	1.21
215	443	0.003	7.00	0.41	0.22	0.66	1.60
216	272	0.006	5.24	0.40	0.23	0.58	1.43
217	251	0.003	3.02	0.43	0.20	0.64	1.49
218	332	0.003	3.20	0.30	0.17	0.43	1.45
219	177	0.004	2.40	0.26	0.13	0.39	1.50
220	185	0.003	2.50	0.29	0.12	0.44	1.53
221	269	0.003	4.59	0.36	0.16	0.57	1.60
LG (99)	31134	0.001	3.15	0.07	0.04	0.13	1.83

Table 14-79: Descriptive Statistics for Capped Cu (%Cu) Composite Values by Mineralized Domain – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	289	0	0.29	0.03	0.01	0.05	1.64
200	390	0	0.52	0.05	0.01	0.10	1.90
201	707	0	0.96	0.06	0.04	0.07	1.19
202	1531	0	0.48	0.03	0.02	0.04	1.38
203	1068	0	1.01	0.07	0.03	0.10	1.42
204	181	0	0.37	0.05	0.03	0.05	1.13
205	402	0.001	0.61	0.07	0.05	0.07	1.07
206	188	0	0.12	0.01	0.00	0.02	1.72
207	159	0	0.05	0.01	0.00	0.01	1.44
208	546	0	0.41	0.04	0.02	0.05	1.29
209	199	0.001	0.40	0.05	0.02	0.06	1.34
210	319	0	0.59	0.06	0.04	0.08	1.27
211	679	0	0.40	0.06	0.03	0.06	1.14
212	416	0.001	0.72	0.05	0.03	0.06	1.22
213	23	0.012	0.04	0.02	0.02	0.01	0.32
214	225	0.001	0.28	0.05	0.03	0.06	1.12
215	443	0	0.49	0.06	0.04	0.08	1.28
216	272	0.001	0.42	0.05	0.02	0.06	1.32
217	251	0	0.13	0.01	0.01	0.02	1.47
218	332	0.001	0.47	0.05	0.04	0.05	1.01
219	177	0	0.11	0.01	0.01	0.02	1.45
220	185	0	0.15	0.02	0.00	0.03	1.78
221	269	0	0.09	0.01	0.00	0.02	1.41
LG (99)	31134	0	0.74	0.02	0.01	0.02	1.28

Table 14-80: Descriptive Statistics for Capped Ag (g/t) Composite Values by Mineralized Domain – SW Zone

Mineralized Zone	Count	Min	Max	Mean	Median	StDev	CV
199	289	0.10	22.00	1.61	0.69	2.57	1.59
200	390	0.10	17.93	1.16	0.55	1.76	1.51
201	707	0.10	15.75	1.18	0.69	1.59	1.34
202	1531	0.10	16.60	0.56	0.25	0.78	1.40
203	1068	0.10	15.06	0.89	0.42	1.36	1.53
204	181	0.20	7.40	0.95	0.60	1.02	1.08
205	402	0.20	11.35	1.18	0.70	1.35	1.14
206	188	0.10	5.00	0.60	0.25	0.82	1.36
207	159	0.20	4.85	0.64	0.25	0.84	1.30
208	546	0.10	5.77	0.67	0.38	0.77	1.13
209	199	0.20	9.65	0.90	0.51	1.16	1.29
210	319	0.20	7.25	1.03	0.63	1.18	1.15
211	679	0.13	12.30	0.85	0.48	1.16	1.36
212	416	0.10	22.50	1.38	0.65	2.33	1.68
213	23	0.25	51.93	15.14	2.06	19.19	1.27
214	225	0.10	3.95	0.63	0.39	0.59	0.94
215	443	0.05	17.10	1.30	0.63	1.94	1.48
216	272	0.20	18.10	1.98	0.68	3.28	1.66
217	251	0.20	7.80	0.67	0.25	0.96	1.44
218	332	0.10	11.50	1.10	0.60	1.41	1.28
219	177	0.18	4.50	0.66	0.25	0.88	1.34
220	185	0.20	4.70	0.67	0.25	0.93	1.39
221	269	0.10	7.70	0.55	0.25	0.94	1.70
LG (99)	31141	0	27.30	0.43	0.25	0.63	1.46

Variography

Spatial analysis was performed on 2 m capped composite gold data within the mineralized domains. The same experimental variograms were employed for copper and silver; and the variogram parameters were assigned to each mineralized domain. Table 14-81 presents the variogram parameters for the SW Zone for gold values by domain.

Table 14-81: Variogram Parameters by Domain –SW Zone

Domain	Nugget	Structures Sill=1.0	Dip (°)	Dip Az. (°)	Pitch (°)	Major (m)	Semi-Major (m)	Minor (m)	Anisotropy
199	0.4	0.4	52	280	106	150	100	20	Spheroidal
		0.2	52	280	106	200	150	40	Spheroidal
200	0.4	0.4	54	280	106	150	100	20	Spheroidal
		0.2	54	280	106	200	150	40	Spheroidal
201	0.4	0.4	68	286	106	150	100	20	Spheroidal
		0.2	68	286	106	200	150	40	Spheroidal
202	0.4	0.4	66	290	108	150	100	20	Spheroidal
		0.2	66	290	108	200	150	40	Spheroidal
203	0.4	0.4	62	290	116	150	100	20	Spheroidal
		0.2	62	290	116	200	150	40	Spheroidal
204	0.4	0.4	64	282	106	150	100	20	Spheroidal
		0.2	64	282	106	200	150	40	Spheroidal
205	0.4	0.4	66	286	106	150	100	20	Spheroidal
		0.2	66	286	106	200	150	40	Spheroidal
206	0.4	0.4	46	288	106	150	100	20	Spheroidal
		0.2	46	288	106	200	150	40	Spheroidal
207	0.4	0.4	48	282	106	150	100	20	Spheroidal
		0.2	48	282	106	200	150	40	Spheroidal
208	0.4	0.4	68	286	106	150	100	20	Spheroidal
		0.2	68	286	106	200	150	40	Spheroidal
209	0.4	0.4	62	282	106	150	100	20	Spheroidal
		0.2	62	282	106	200	150	40	Spheroidal
210	0.4	0.4	66	284	106	150	100	20	Spheroidal
		0.2	66	284	106	200	150	40	Spheroidal
211	0.4	0.4	68	290	112	150	100	20	Spheroidal
		0.2	68	290	112	200	150	40	Spheroidal
212	0.4	0.4	68	288	106	150	100	20	Spheroidal
		0.2	68	288	106	200	150	40	Spheroidal
213	0.4	0.4	64	286	106	150	100	20	Spheroidal
		0.2	64	286	106	200	150	40	Spheroidal
214	0.4	0.4	64	286	106	150	100	20	Spheroidal
		0.2	64	286	106	200	150	40	Spheroidal
215	0.4	0.4	68	286	106	150	100	20	Spheroidal
		0.2	68	286	106	200	150	40	Spheroidal
216	0.4	0.4	70	286	106	150	100	20	Spheroidal
		0.2	70	286	106	200	150	40	Spheroidal
217	0.4	0.4	48	294	106	150	100	20	Spheroidal
		0.2	48	294	106	200	150	40	Spheroidal
218	0.4	0.4	66	286	106	150	100	20	Spheroidal
		0.2	66	286	106	200	150	40	Spheroidal
219	0.4	0.4	50	292	106	150	100	20	Spheroidal
		0.2	50	292	106	200	150	40	Spheroidal
220	0.4	0.4	48	292	106	150	100	20	Spheroidal
		0.2	48	292	106	200	150	40	Spheroidal
221	0.4	0.4	52	292	106	150	100	20	Spheroidal
		0.2	52	292	106	200	150	40	Spheroidal

Domain	Nugget	Structures Sill=1.0	Dip (°)	Dip Az. (°)	Pitch (°)	Major (m)	Semi-Major (m)	Minor (m)	Anisotropy
99(LG)	0.4	0.4	52	292	106	150	100	20	Spheroidal
		0.2	52	292	106	200	150	40	Spheroidal

Note: Az – Azimuth

14.8.3 Block Model

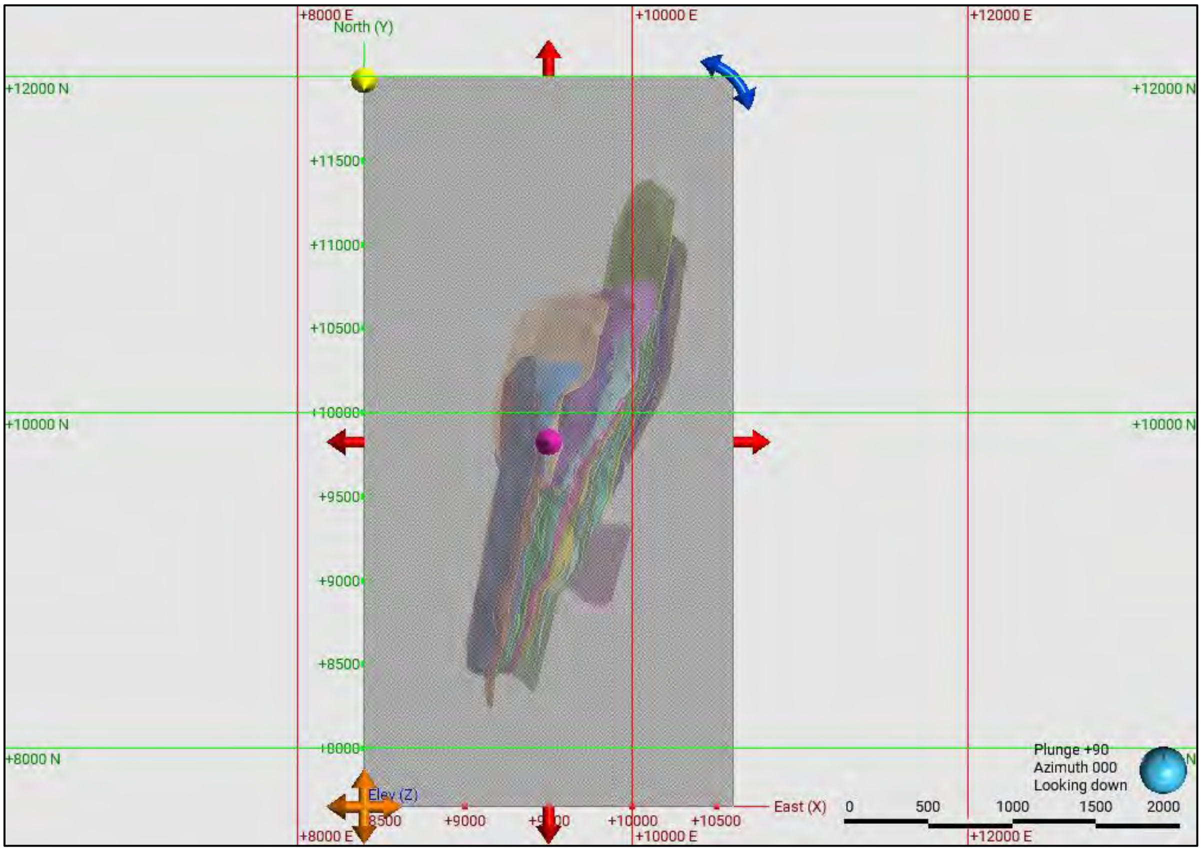
Block Model Parameters

The block model for the SW Zone deposit was set up with a block matrix of 5 m long by 5 m wide by 5 m high and was created using Leapfrog Edge resource software. The block matrix was defined based on current drill hole spacing and on engineering considerations for an open pit operation and is considered suitable this purpose. The block model is in mine grid coordinates and is not rotated. Table 14-82 summarizes the block model parameters and Figure 14-27 presents the block model over the interpreted mineralized domains for the SW Zone.

Table 14-82: Block Model Parameters – SW Zone

Domain	Minimum	Maximum
Easting	8400 mE	10600 mE
Northing	7650 mN	12000 mN
Maximum Elevation	4400 m	5500 m
Rotation Angle	No rotation°	
Block Size (X, Y, Z in metres)	5 x 5 x 5	
Number of blocks in the X direction	440	
Number of blocks in the Y direction	870	
Number of blocks in the Z direction	220	

Figure 14-27: Block Model Extents – SW Zone



Source: AGP (2023)

The block model extents cover the entire SW Zone and is extended on all four sides beyond the interpreted mineralized domains. The block model is a whole block model where blocks are assigned a specific rock type code. Any block centroid within the mineralized domain wireframe was assigned that code.

Block model attributes in the block model includes:

- domain code
- metal grades for gold, copper, silver, and calculated gold-equivalent grades for estimated blocks
- classification
- distance to the nearest composite
- average distance of estimated composites
- number of composites used in estimation of a block
- number of drill holes used in estimation of a block
- pass number

- lithology code
- density

Estimation Parameters and Interpolation Strategy

The metal grades were interpolated in three passes using the 2 m capped composites by domain. The metal grades were interpolated using OK interpolation method. Variogram parameters for each metal was used in each of these passes and used variable orientation aligned to the mineralized domain wireframe. ID2 and NN interpolations were also run for validation purposes.

Each pass required the same minimum and maximum number of composites for each domain. A maximum of three composites per drill hole was used. Table 14-83 shows estimation parameters for each pass used to estimate metal grades.

Table 14-83: Estimation Parameters – SW Zone

Pass	Min No Composites	Max No Composites	Max No. Composites per Hole	Min. No. of Drill Holes
Pass 1	4	18	3	2
Pass 2	4	18	3	2
Pass 3	3	18	3	1

Due to the sinuous nature of the interpreted mineralized domains, search ellipses were allowed a variable orientation that follow the trend of each domain. Each pass increased the search ellipse where Pass 2 was doubled that of Pass 1 and Pass 3 was approximately double that of Pass 2. Hard boundaries were kept between all domains and blocks within each domain were estimated only be composites within the domain wireframe.

Table 14-84 shows search ellipse parameters for each subdomain used to estimate metal grades.

Table 14-84: Search Ellipse Parameters for Gold, Copper, and Silver– SW Zone

All Domains	Orientation	Major (m)	Semimajor (m)	Minor (m)	Search
Pass 1	Variable Orientation	75	50	10	Ellipsoidal
Pass 2	Variable Orientation	150	100	20	Ellipsoidal
Pass 3	Variable Orientation	200	150	30	Ellipsoidal

Block Model Validation

The block model was validated using the following methods:

- statistical comparison of resource assay and block grade distributions
- visual inspection and comparison of block grades with composite and assay grades
- inspection of swath plots with composites and block grades elevations and northings

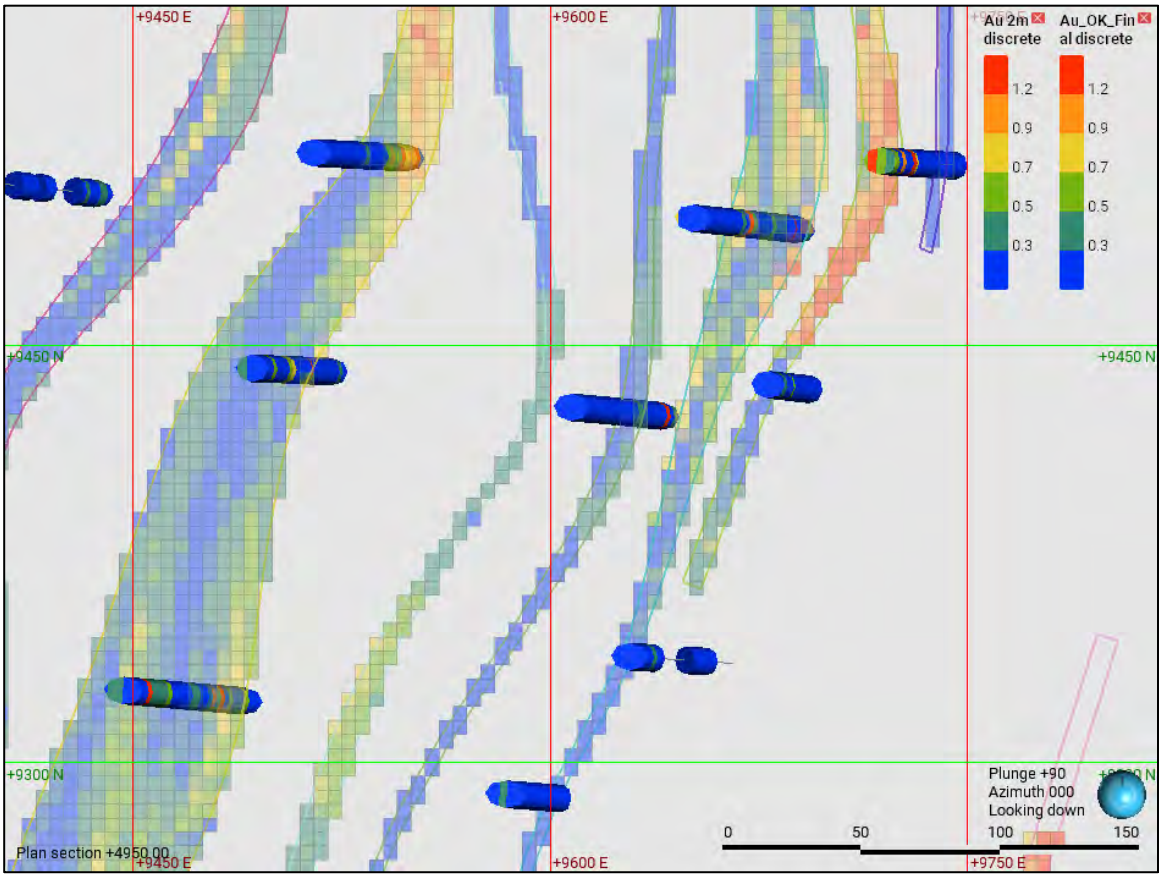
Table 14-85 shows the comparison of mean gold grades by domain for estimated blocks to the ID2 and NN interpolations and the 2 m composite values. No bias is noted.

Table 14-85: Comparison of Mean Gold Grades (g/t Au) – SW Zone

Domain	OK	ID2	NN	2 m Comps
199	0.36	0.35	0.39	0.38
200	0.39	0.39	0.42	0.44
201	0.30	0.30	0.30	0.33
202	0.46	0.46	0.48	0.49
203	0.46	0.45	0.46	0.49
204	0.23	0.24	0.19	0.21
205	0.34	0.34	0.36	0.34
206	0.39	0.38	0.34	0.42
207	0.38	0.37	0.41	0.41
208	0.31	0.31	0.30	0.30
209	0.18	0.18	0.17	0.18
210	0.25	0.25	0.25	0.25
211	0.38	0.38	0.39	0.37
212	0.36	0.35	0.39	0.38
213	0.50	0.50	0.63	0.47
214	0.36	0.36	0.35	0.42
215	0.39	0.38	0.32	0.41
216	0.36	0.36	0.36	0.40
217	0.39	0.39	0.39	0.43
218	0.26	0.26	0.30	0.30
219	0.23	0.23	0.21	0.26
220	0.26	0.26	0.25	0.29
221	0.32	0.32	0.35	0.36
99 (LG)	0.07	0.07	0.07	0.07

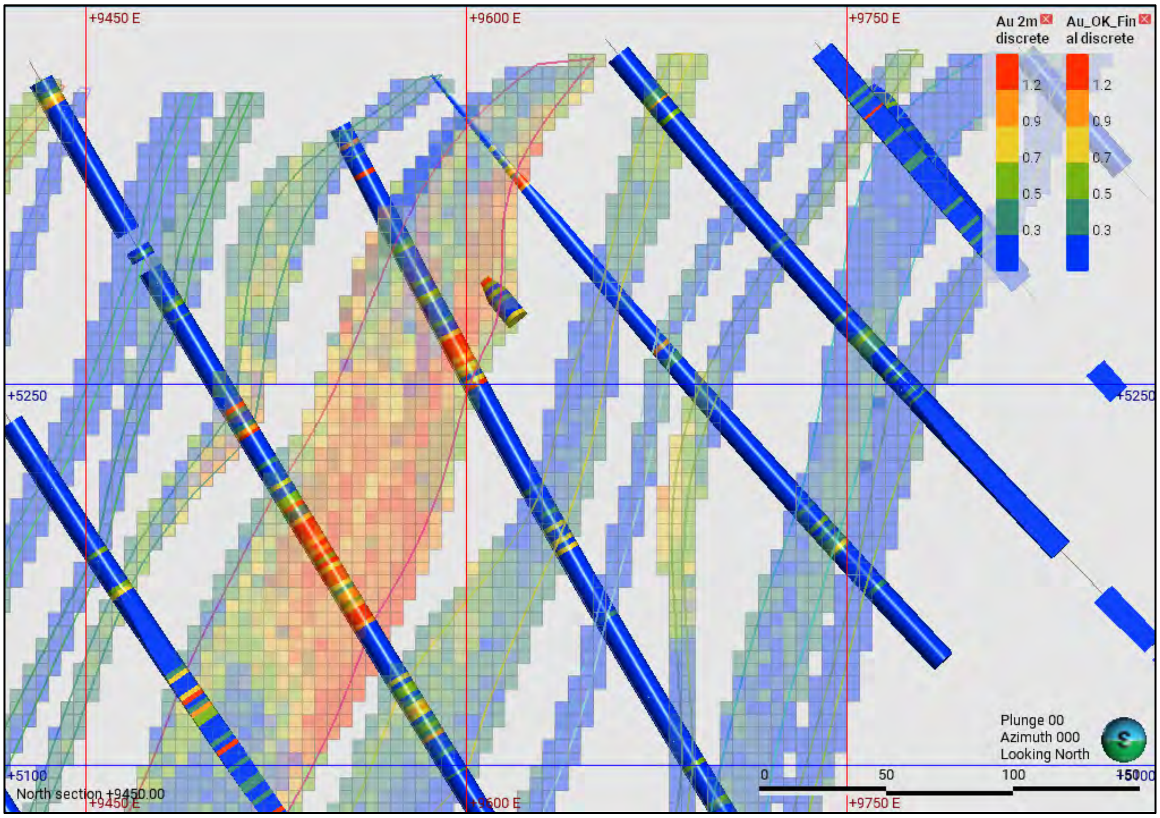
The block model grades, and the composites grades were visually inspected on plan and cross sections. Composite grades honour the block grades well within the mineralized domains. Figure 14-28 and Figure 14-29 present selected plan section and cross section views for the SW Zone (plan view elevation 4950 m and cross section 9450mN), respectively.

Figure 14-28: Plan-section Elevation 4950 m – SW Zone



Source: AGP (2023)

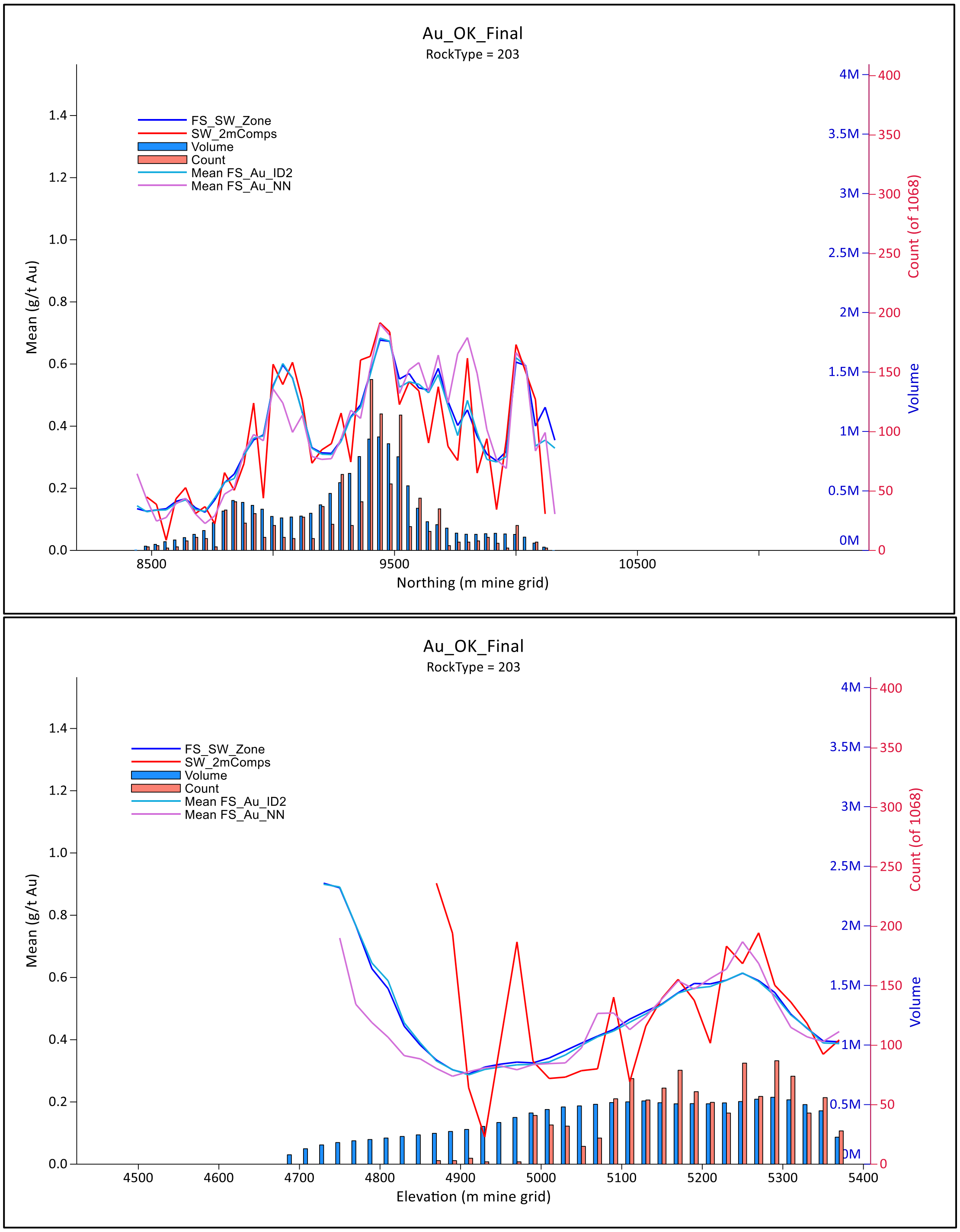
Figure 14-29: Cross-section 9450mN – SW Zone



Source: AGP (2023)

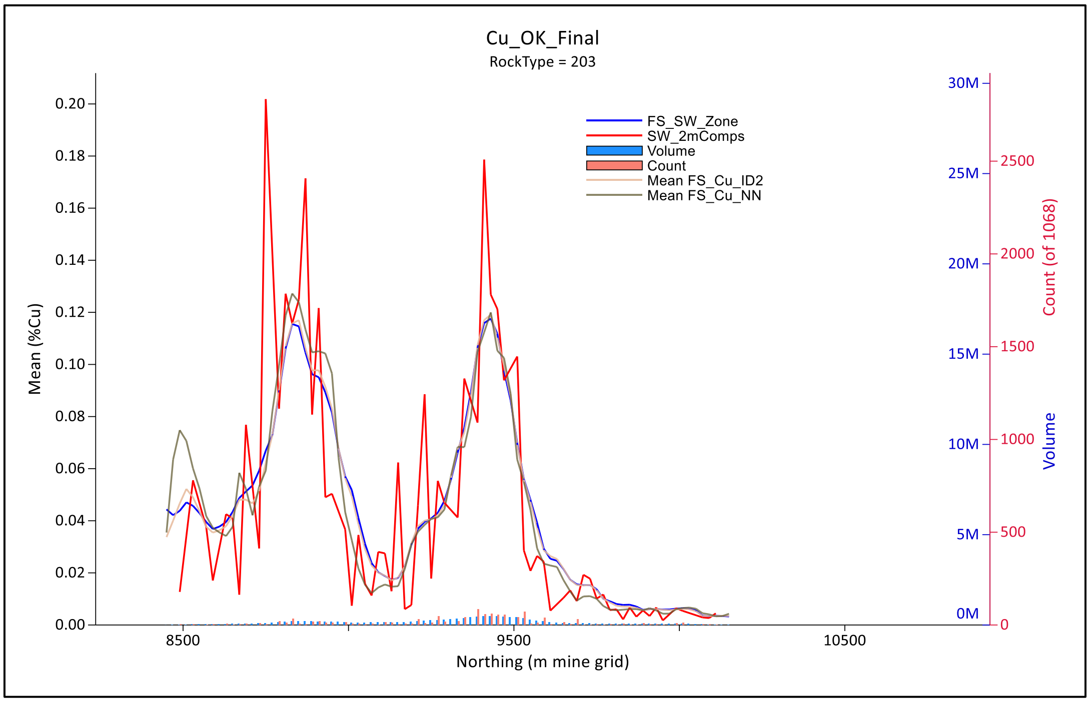
Swath plots were reviewed by northing, easting, and elevation. The distribution of gold, copper and silver composite values and interpolated block grades were compared to the OK, ID2 and NN grades. No issues were found with the distribution of interpolated grades. Figure 14.30 and Figure 14.31 present the swath plots for gold and copper for domain 203 in the SW Zone by northing and elevation, respectively.

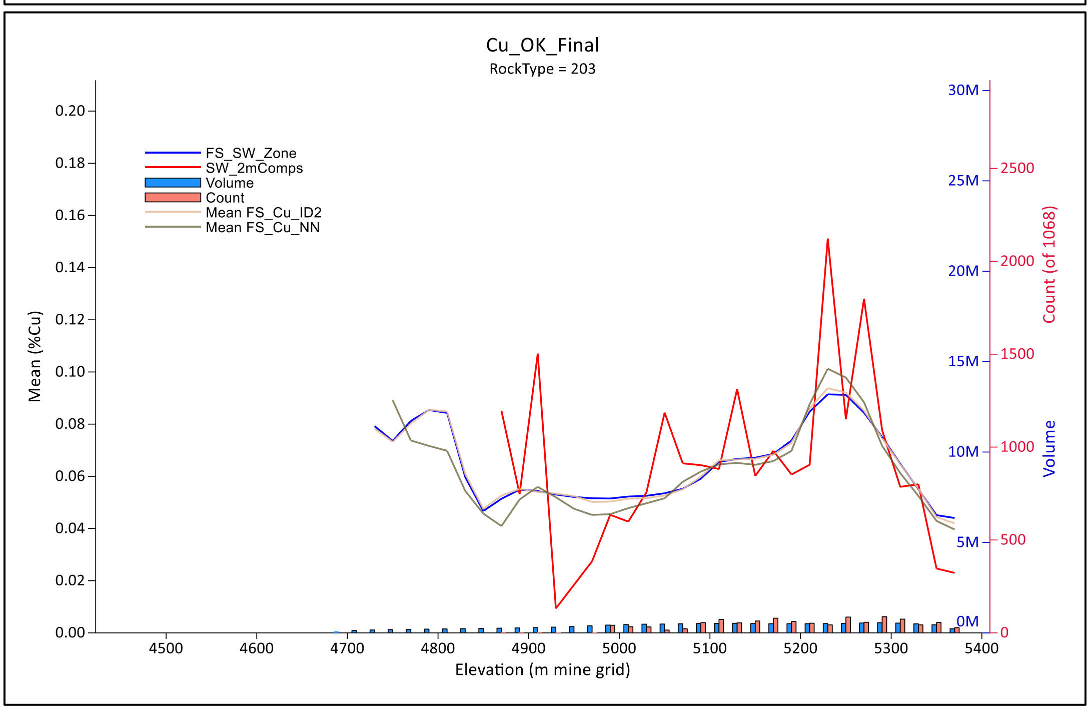
Figure 14-30: Swath Plot for Gold, by Northing and Elevation; Domain 203 – SW Zone



Source: AGP (2023)

Figure 14-31: Swath Plot for Copper, by Northing and Elevation; Domain 203 – SW Zone





Source: AGP (2023)

14.9 Mineral Resources

14.9.1 Mineral Resource Classification

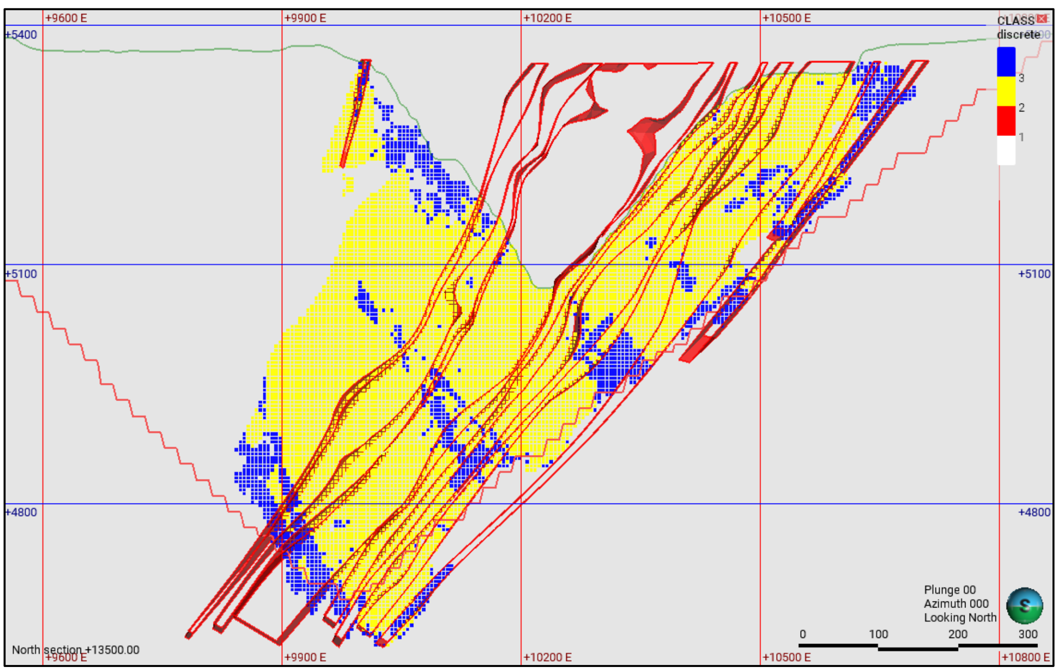
Mineral resources were classified in accordance with definitions provided by CIM (2014) Standards and Definitions. The mineral resources at the Project were classified as Inferred and Indicated mineral resources.

Z87 Zone

For the Z87 Zones, blocks interpolated in the first or second pass with a minimum of two holes, and an average distance for the composites of less than 65 m were initially classified as Indicated resources. Blocks interpolated in the second or third pass with a minimum of two drill holes and an average distance to composites greater than or equal to 65 m and less than 120 m were initially classified as Inferred resources. Any blocks interpolated in pass 3 with an average distance to composites greater than or equal to 120 m were not included in any resource categories and they were assigned a Code 4.

Figure 14-32 shows a representative cross section of classified blocks for the Z87 Zone.

Figure 14-32: Cross-section 13500mN; showing class blocks and optimized pit constraint – Z87 Zone



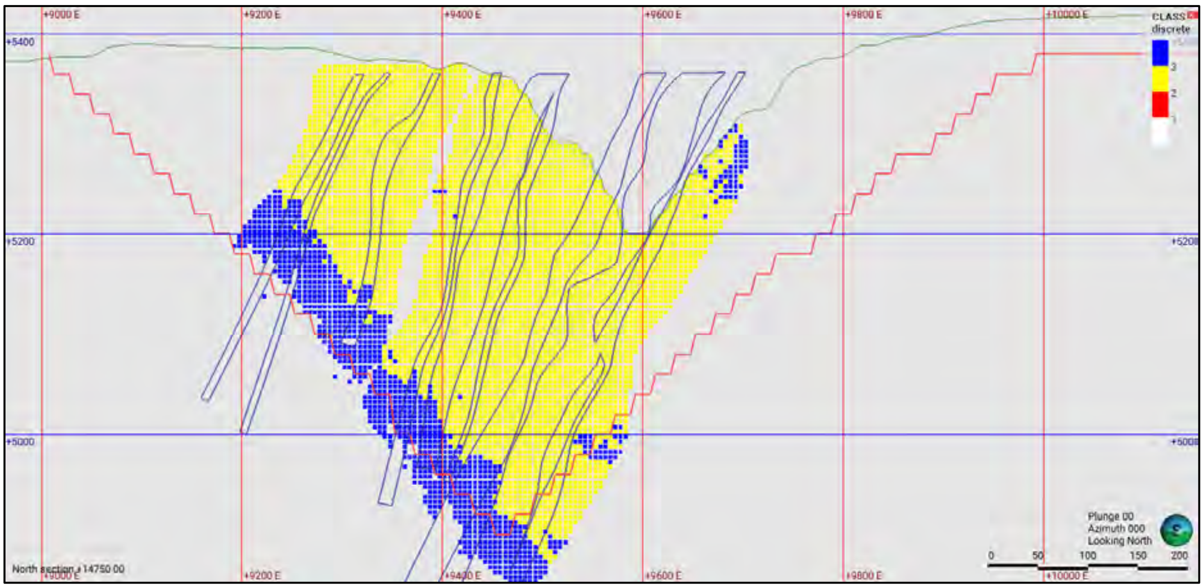
Yellow – Indicated, Blue – Inferred
Source: AGP (2023)

J Zone

For J Zone, blocks interpolated in the first or second pass with a minimum of six composites, minimum of two drill holes, and an average distance to composites of less than 60 m were classified as Indicated resources. Blocks interpolated in the first, second or third pass with a minimum of one sample per drillhole, a minimum of one drillhole, and an average distance to composites less than 120 m were classified as Inferred resources. Any blocks greater than 120 m were not included in any resource categories. The Indicated blocks were coded with the number 2 and the Inferred blocks were coded with the number 3.

Figure 14-33 shows a representative cross section of classified blocks for the J Zone.

Figure 14-33: Cross-section 14750mN; showing class blocks and optimized pit constraint – J Zone



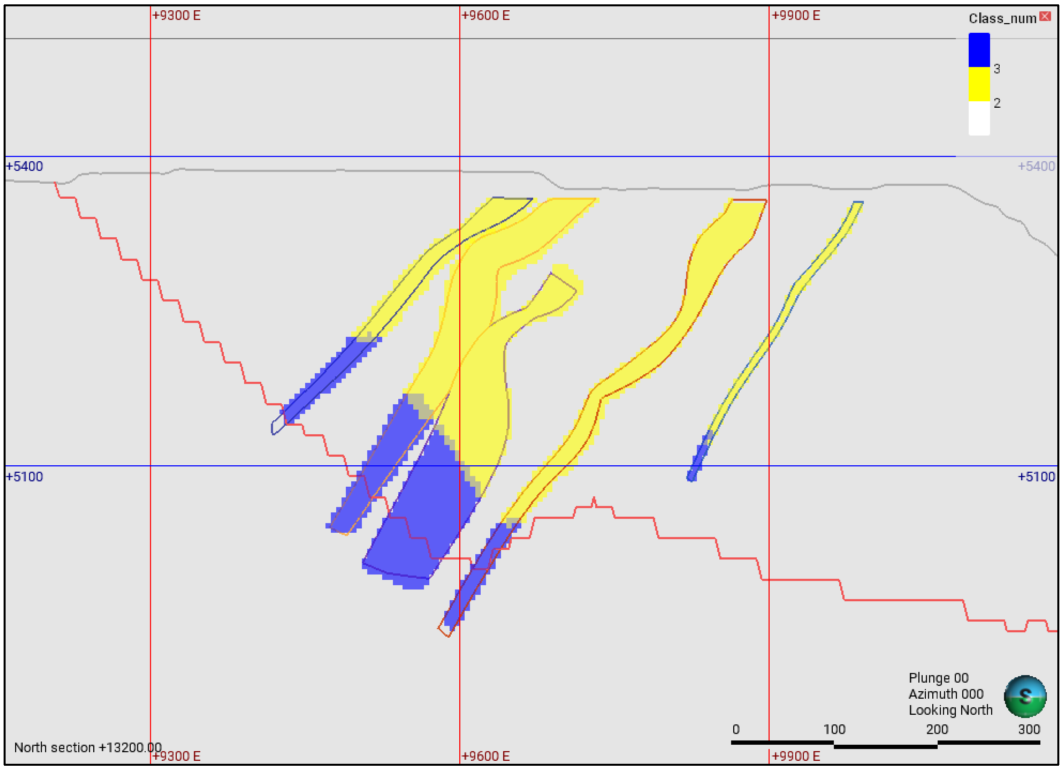
Yellow – Indicated, Blue – Inferred
Source: AGP (2023)

X22 Zone

For the X22 Zone, Blocks Interpolated with a minimum of four composite values, or two drill holes, a nearest distance of nominally 65 m or average distance of 70 m, were initially classified as Indicated mineral resources. Mineralized domains were examined zone-by-zone and consolidated contiguous blocks manually to upgrade or downgrade isolated blocks. Blocks interpolated with a minimum of two drill holes and up to a nearest distance of 120 m were classified as Inferred mineral resources.

Figure 14-34 presents a representative cross section (13200mN) showing classed blocks in the main mineralized domains and optimized pit constraint for the X22 Zone.

Figure 14-34: Cross-section 13200mN; showing class blocks and optimized pit constraint – X22 Zone



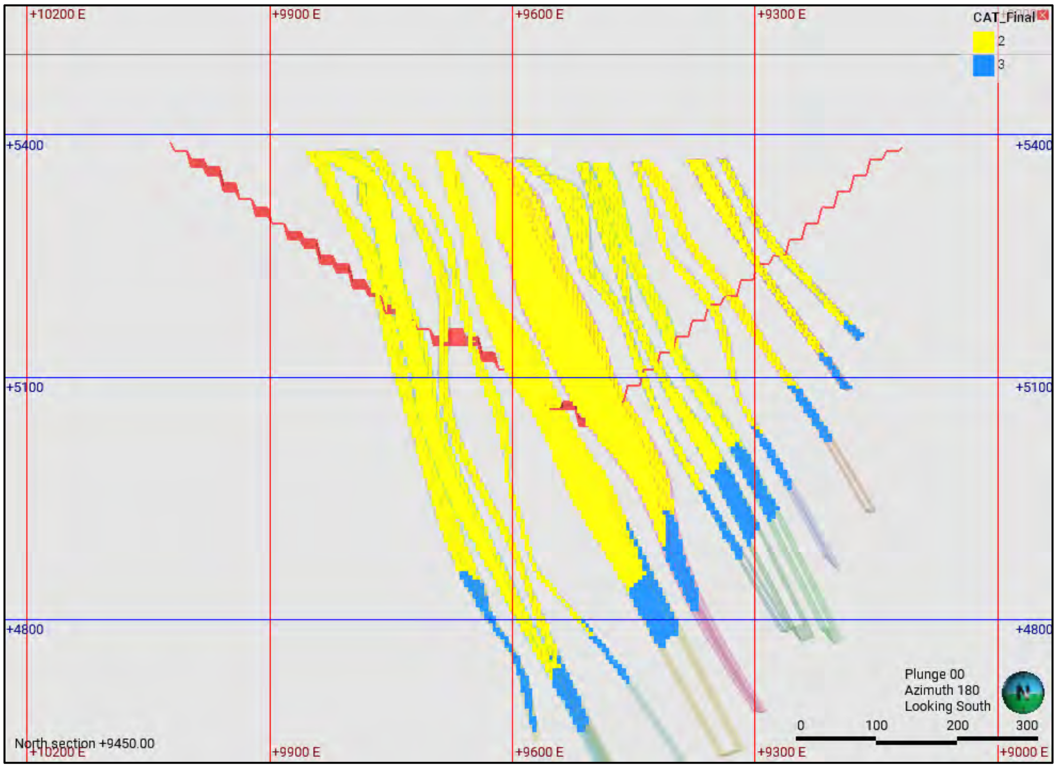
Yellow – Indicated, Blue – Inferred
Source: AGP (2023)

<u>SW Zone</u>

For the SW Zone, Blocks Interpolated with a minimum of four composite values, or two drill holes, a nearest distance of nominally 65 m or average distance of 70 m, were initially classified as Indicated mineral resources. Mineralized domains were examined zone-by-zone and consolidated contiguous blocks manually to upgrade or downgrade isolated blocks. Blocks interpolated with a minimum of two drill holes and up to a nearest distance of 120 m were classified as Inferred mineral resources.

Figure 14-35 presents a representative cross section (9450mN) of classed blocks in the main mineralized domains for the SW Zone.

Figure 14-35: Cross-section 9450mN; showing class blocks and optimized pit constraint – SW Zone



Yellow – Indicated, Blue – Inferred
Source: AGP (2023)

14.9.2 Metal Equivalent

A metal equivalent grade was used to determine cut-off grades for the Troilus Project. Metal equivalent grades are used in determining an equivalent value for a block by including the influence of other metal grades in the same block. The principal credit for the Troilus Project is gold, therefore, a gold equivalent (AuEQ) was used. The AuEQ grades were calculated based on the capped grades from the OK interpolation for all Zone. The AuEQ grades were calculated for each block after metal grade interpolations were completed using the following equations:

$$Z87\ Zone \qquad AuEq = Au\ grade + (1.5628\ x\ Cu\ grade) + (0.0128\ x\ Ag\ grade)$$

$$J\ Zone \qquad AuEq = Au\ grade + (1.5107\ x\ Cu\ grade) + (0.0119\ x\ Ag\ grade)$$

$$SW\ Zone \qquad AuEq = Au\ grade + (1.6823\ x\ Cu\ grade) + (0.0124\ x\ Ag\ grade)$$

$$X22\ Zone \qquad AuEq = Au\ grade + (1.5628\ x\ Cu\ grade) + (0.0128\ x\ Ag\ grade)$$

Table 14-86 lists the parameters used in the above formulas

Table 14-86: AuEQ Formula Parameters, by Zone

		Metal Recovery (%)			
Metal	**Metal Price ($US)**	**Z87**	**JZ**	**SW**	**X22**
Gold	1,850.00/oz	95.5	93.1	85.7	95.5
Copper	4.25/lb	94.7	89.3	91.5	94.7
Silver	25.00/oz	98.2	88.9	85.6	98.2

14.9.3 Cut-off Grade

For all Zones at the Troilus Project, AGP has determined a resource cut-off grade of 0.3 g/t AuEQ to be used for reporting of the mineral resources within constraining shells for the material amenable to open pit extraction. A resource cut-off grade of 0.9 g/t AuEQ for material that may be amenable to underground extraction was applied for contiguous blocks below the constraining shells, captured within 0.9 g/t AuEQ gradeshells. The cut-off grades are based on the parameters defined below.

14.9.4 Reasonable Prospects for Eventual Economic Extraction

The block models were exported to develop an optimized constraining shell to satisfy the Reasonable Prospects for Eventual Economic Extraction for the Project. The three northern zones were merged into a single block model and, with the SW Zone model, were exported in ASCII format and imported into Hexagon MineSight®. Table 14-87 shows the economic assumptions made to constrain the reported mineral resources.

Table 14-87: Parameters for Constraining Shells, by Zone

Parameter	Unit	Z87 Pit Area 2	X22 Pit Area 4	J Pit Area 1	SW Pit Area 3
Metal Prices					
Gold	$US/oz	1,850.00	1,850.00	1,850.00	1,850.00
Copper	$US /lb	4.25	4.25	4.25	4.25
Silver	$US /oz	25.00	25.00	25.00	25.00
Exchange	Ratio CAD/USD	1.30:1	1.30:1	1.30:1	1.30:1
Metal Recoveries (overall)					
Gold	%	96	94	93	84
Copper	%	95	94	91	87
Silver	%	98	98	90	92
Costs					
Mining Rate – OP ore	tpd	35,000	35,000	35,000	35,000
Mining Cost – OP waste	$C/t total	1.99	2.15	2.15	2.01
Mining Cost – OP ore	$C /t total	2.10	2.29	2.29	2.37
Incremental Cost waste per 10m below 5360 m	$C /10m bench	0.04	0.04	0.04	0.04
Incremental Cost ore per 10m below 5360 m	$C /10m bench	0.03	0.04	0.04	0.03
Processing Cost	$C /t mill feed	7.29	7.29	7.29	7.29
G&A Cost	$C /t mill feed	1.76	1.76	1.76	1.76
OP Slope Angles					
West	degrees	44	46	46	43
North	degrees	48-43	46	49	47
East	degrees	39	40	43	41
South	degrees	48	46	47	45

OP – Open Pit; G&A – General and Administration

For reasonable prospects for eventual economic extraction for mineral resources amenable to underground extraction, consolidated wireframes were created below the constraining shells. The consolidated wireframes were developed using net value per tonne of $C 60/t to capture contiguous blocks amenable to underground resources. The net value per tonne has processing and G&A costs of $C 9.05/t removed so is reflective of approximate underground mining costs.

14.10 Mineral Resource Statement

The mineral resources for the Troilus Project deposit amenable to open pit extraction at a 0.3 g/t AuEQ cut-off grade are: Indicated Resource of 506.2 Mt at 0.57 g/t Au, 0.07 %Cu, 1.09 g/t Ag and 0.68 g/t AuEQ; and an Inferred Resource of 76.5 Mt at 0.53 g/t Au, 0.06 %Cu, 1.12 g/t Ag and 0.65 g/t AuEQ. Table 14-88 presents the Mineral Resources amenable to open pit extraction. The effective date of the Mineral Resources is 2 October 2023.

Table 14-88: Open Pit Mineral Resources for the Troilus Project at a 0.3 g/t AuEQ Cut-off Grade – All Zones

		Grade				Contained Metal			
Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Ag (g/t)	AuEQ (g/t	Au (Moz)	Cu (Mlb)	Ag (g/t)	AuEQ (Moz)
Z87									
Indicated	197.1	0.67	0.07	1.21	0.80	4.21	320.69	7.67	5.04
Inferred	37.1	0.59	0.06	1.11	0.70	0.71	50.17	1.33	0.84
JZ									
Indicated	151.9	0.50	0.06	0.96	0.61	2.45	215.71	4.71	2.98
Inferred	24.2	0.46	0.07	0.94	0.57	0.35	35.37	0.73	0.44
X22									
Indicated	59.2	0.51	0.06	1.24	0.62	0.98	79.34	2.35	0.19
Inferred	13.6	0.53	0.07	1.48	0.67	0.23	21.76	0.65	0.29
SW									
Indicated	98.0	0.50	0.05	0.94	0.60	1.59	109.91	2.94	1.89
Inferred	1.6	0.37	0.04	0.96	0.45	0.02	1.36	0.05	0.02
TOTALS – ALL ZONES									
Indicated	506.2	0.57	0.07	1.09	0.68	9.23	725.66	17.67	11.11
Inferred	76.5	0.53	0.06	1.12	0.65	1.31	108.66	2.75	1.59

Notes:

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Summation errors may occur due to rounding.

Open pit mineral resources are reported within optimized constraining shells.

Open pit cut-off grade is 0.3 g/t AuEQ.

AuEQ equivalents were calculated as follows:

Z87 Zone AuEQ = Au grade + 1.5628 * Cu grade + 0.0128 * Ag grade
J4/J5 Zone AuEQ = Au grade + 1.5107 * Cu grade + 0.0119 * Ag grade
SW Zone AuEQ = Au grade + 1.6823 * Cu grade + 0.0124 * Ag grade
X22 Zone AuEQ = Au grade + 1.5628 * Cu grade + 0.0128* Ag grade

Metal prices for the AuEQ formulas are: $US 1,850/ oz Au; $4.25/lb Cu, and $25.00/ oz Ag; with an exchange rate of US$1.00: CAD$1.30

Metal recoveries for the AuEQ formulas are:

Z87 Zone 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery
J Zone 93.1% for Au recovery, 89.3% for Cu recovery and 88.9% for Ag recovery
SW Zone 85.7% for Au recovery, 91.5% for Cu recovery and 85.6% for Ag recovery
X22 Zone 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery

Capping of grades varied between 2.30 g/t Au and 21.00 g/t Au; between 0.06% cu and 4.36 %Cu, and between 3.20 g/t Ag and 55.00 g/t Ag; on raw assays.

The density (excluding overburden and fill) varies between 2.64 g/cm^3 and 2.93 g/cm^3 depending on lithology for each zone.

The mineral resources for the Troilus Project deposit amenable to underground extraction at a 0.9 g/t AuEQ cut-off grade are: an Indicated Resource of 2.1 Mt at 1.35 g/t Au, 0.09 %Cu, 1.90 g/t Ag and 1.51 g/t AuEQ; and an Inferred Resource of 4.0 Mt at 1.36 g/t Au, 0.08 %Cu, 8.21 g/t Ag and 1.58 g/t AuEQ. Table 14-89 presents the Mineral Resources amenable to underground extraction.

Table 14-89: Underground Mineral Resources at a 0.9 g/t AuEQ Cut-off Grade – all zones

		Grade				Contained Metal			
Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Ag (g/t)	AuEQ (g/t	Au (Moz)	Cu (Mlb)	Ag (g/t)	AuEQ (Moz)
Z87									
Indicated	0.5	1.59	0.15	0.54	1.83	0.02	1.55	0.01	0.03
Inferred	1.1	1.99	0.12	0.46	2.19	0.07	2.96	0.02	0.08
JZ									
Indicated	0.2	1.21	0.07	1.46	1.33	0.01	0.29	0.01	0.01
Inferred	1.0	1.25	0.05	0.99	1.34	0.04	1.13	0.03	0.04
X22									
-none-									
-none-									
SW									
Indicated	1.4	1.28	0.07	2.44	1.42	0.06	2.00	0.11	0.06
Inferred	1.9	1.05	0.06	16.62	1.37	0.06	2.66	1.01	0.08
TOTALS – ALL ZONES									
Indicated	2.1	1.35	0.09	1.90	1.51	0.09	3.84	0.13	0.10
Inferred	4.0	1.36	0.08	8.21	1.58	0.18	6.75	1.06	0.20

Notes:

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Summation errors may occur due to rounding.

Underground resources reported in 0.9 g/t AuEQ grade shells

Underground cut-off grade is 0.9 g/t AuEQ.

AuEQ equivalents were calculated as follows:

Z87 Zone AuEQ = Au grade + 1.5628 * Cu grade + 0.0128 * Ag grade

J4/J5 Zone AuEQ = Au grade + 1.5107 * Cu grade + 0.0119 * Ag grade

SW Zone AuEQ = Au grade + 1.6823 * Cu grade + 0.0124 * Ag grade

X22 Zone AuEQ = Au grade + 1.5628 * Cu grade + 0.0128* Ag grade

Metal prices for the AuEQ formulas are: $US 1,850/ oz Au; $4.25/lb Cu, and $25.00/ oz Ag; with an exchange rate of US$1.00: CAD$1.30.

Metal recoveries for the AuEQ formulas are:

Z87 Zone 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery

J Zone 93.1% for Au recovery, 89.3% for Cu recovery and 88.9% for Ag recovery

SW Zone 85.7% for Au recovery, 91.5% for Cu recovery and 85.6% for Ag recovery

X22 Zone 95.5% for Au recovery, 94.7% for Cu recovery and 98.2% for Ag recovery

Capping of grades varied between 2.30 g/t Au and 21.00 g/t Au; between 0.06% cu and 4.36 %Cu, and between 3.20 g/t Ag and 55.00 g/t Ag; on raw assays.

The density (excluding overburden and fill) varies between 2.64 g/cm^3 and 2.93 g/cm^3 depending on lithology for each zone.

14.11 Factors That May Affect the Mineral Resource Estimate

Factors that may affect the Mineral Resource estimates include:

- metal price and exchange rate assumptions
- changes to the assumptions used to generate the copper grade cut-off grade
- changes in local interpretations of mineralization geometry and continuity of mineralized zones

- changes to geological and mineralization shape and geological and grade continuity assumptions
- density and domain assignments
- changes to geotechnical, mining, and metallurgical recovery assumptions
- change to the input and design parameter assumptions that pertain to the conceptual pit and stope designs constraining the mineral resources.
- assumptions and ability to permit and operate the Project.
- assumptions and continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate.

It has been noted in the interpretation of the mineralized domains, mainly near surface (new hanging wall domains) in the Z87 Zone, that some of the pre-2018 drill holes contained intervals that were not sampled for silver. Within the mineralized domains, these intervals are assigned half the detection limit, but may, however, underestimate the silver grades in these locations. Additionally, there are some pre-2018 drill holes that were left unsampled near surface that now intersect interpreted mineralized domains, noted in the X22 Zone. It is recommended, where possible, that the twinning of these pre-2018 drill holes be completed to fill in these intervals with supporting data.

14.12 Comparison with the Previous Estimate

14.12.1 Mineral Resource Comparison – Z87 Zone

In the Indicated category, the new resource model shows a tonnage improvement of 112.5 Mt. The tonnage improvement was sufficiently large to offset the reduction in grade and shows an improvement of 2.06 Moz in contained gold ounces. The changes are attributed to a change in the interpreted wireframes based on most recent drilling information. Additionally, the interpolation within a low-grade halo may have contributed in part to the additional tonnage.

The consolidation of three northern deposits of the Project, the Z87, J and X22 Zones, allowed the optimized constraining shell to encapsulate the three deposits. This is an additional contributing factor to the increased tonnes in the Mineral Resources within the pit constraint.

Table 14-90 shows the comparison of Mineral Resources for gold between the October 2023 and the previous July 2020 Mineral Resources.

Table 14-90: Comparison of October 2023 vs July 2020 Mineral Resources (Gold) – Z87 Zone

	AGP (Oct 2023) within 2023 optimized shell ≥ 0.3 g/t AuEQ			AGP (Jul 2020) within 2020 optimized shell ≥ 0.3 g/t AuEQ			Differences		
Class	Tonnes (Mt)	Au (g/t)	Cont'd Au (Moz)	Tonnes (Mt)	Au (g/t)	Cont'd Au (Moz)	Tonnes (Mt)	Au Diff (g/t)	Cont'd Au (Moz)
Indicated	197.1	0.67	4.21	84.6	0.79	2.15	112.5	-0.12	2.06
Inferred	37.1	0.59	0.71	32.7	0.6	0.63	4.4	-0.01	0.08

14.12.2 Mineral Resource Comparison – J Zone

The new mineral resource for the J Zone shows an overall tonnage increase in the Indicated category of approximately 72.3 Mt, with a decrease of approximately 21.7 Mt in the Inferred category. The gold grades show a decrease due to the re-interpretation of mineralized domains based on the most recent drilling information; and on the incorporation of the low-grade halo surrounding the J Zone. The contained gold ounces have increased in the Indicated category which has been attributed improved sample support and changes in the interpreted wireframe domains.

The consolidation of three northern deposits of the Project, the Z87, J and X22 Zones, allowed the optimized constraining shell to encapsulate the three deposits. This is an additional contributing factor to the increased tonnes in the Mineral Resources within the pit constraint.

Table 14-91 shows the comparison of Mineral Resources for gold between the October 2023 and the previous July 2020 Mineral Resources.

Table 14-91: Comparison of October 2023 vs July 2020 Mineral Resources (Gold) – J Zone

	AGP (Oct 2023) within 2023 optimized shell ≥ 0.3 g/t AuEQ			AGP (Jul 2020) within 2020 optimized shell ≥ 0.3 g/t AuEQ			Differences		
Class	Tonnes (Mt)	Au (g/t)	Cont'd Au (Moz)	Tonnes (Mt)	Au (g/t)	Cont'd Au (Moz)	Tonnes (Mt)	Au Diff (g/t)	Cont'd Au (Moz)
Indicated	151.9	0.50	2.45	79.6	0.57	1.47	72.3	-0.07	0.98
Inferred	24.2	0.46	0.35	45.9	0.55	0.82	-21.7	-0.09	-0.47

14.12.3 Mineral Resource Comparison – SW Zone

There has been a large increase in mineral resources primarily due to the additional information from drill programs completed at the SW Zone since the last reported mineral resources in July 2020. This additional drilling has expanded the interpreted mineralized domains along strike and at depth of the deposit. Overall gold grade has decreased due to the new interpretation of mineralized domains, and in the incorporation of a low-grade halo surrounding mineralized domains.

Table 14-92 shows the comparison of Mineral Resources for gold between the October 2023 and the previous July 2020 Mineral Resources

Table 14-92: Comparison of October 2023 vs July 2020 Mineral Resources (Gold) – SW Zone

	AGP (Oct 2023) within 2023 optimized shell ≥ 0.3 g/t AuEQ			AGP (Jul 2020) within 2020 optimized shell ≥ 0.3 g/t AuEQ			Differences		
Class	Tonnes (Mt)	Au (g/t)	Cont'd Au (Moz)	Tonnes (Mt)	Au (g/t)	Cont'd Au (Moz)	Tonnes (Mt)	Au Diff (g/t)	Cont'd Au (Moz)
Indicated	98.0	0.50	1.59	-	-	-	98.0	0.50	1.59
Inferred	1.6	0.37	0.02	22.6	0.70	0.51	-21.0	-0.33	-0.49

15 MINERAL RESERVE ESTIMATES

This section is not applicable to this report.

16 MINING METHODS

This section is not applicable to this report.

17 RECOVERY METHODS

This section is not applicable to this report.

18 PROJECT INFRASTRUCTURE

This section is not applicable to this report.

19 MARKET STUDIES AND CONTRACTS

This section is not applicable to this report.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This section is not applicable to this report.

21 CAPITAL AND OPERATING COSTS

This section is not applicable to this report.

22 ECONOMIC ANALYSIS

This section is not applicable to this report.

23 ADJACENT PROPERTIES

There are no significant adjacent properties to Troilus Gold Project.

24 OTHER RELEVANT DATA AND INFORMATION

This section is not applicable to this report.

25 INTERPRETATION AND CONCLUSIONS

The Troilus Gold Project is made up of four principal mineralized zones: Z87 Zone, J Zone, X22 Zone, and SW Zone. The Z87 Zone and J Zone were subject to open pit mining operations between 1996 to 2010. It has been established that there are still significant open pit and underground mineral resources in these, and adjacent zones. The X22 Zone has been recently discovered and developed in 2023 and is situated adjacent to the southwest of Z87 Zone. The SW Zone, situated approximately 2.5 km southwest of the Z87 Zone, has been the focus of several drill campaigns since 2019 and has been established as a significant deposit for the Project. The gold grades within the interpreted mineralized domains are continuous and may still be open along strike and at depth.

The mineralized zones on the Property occur around the margins of the Troilus Diorite and comprise the Z87 Zone, J Zone, and X22 Zone. The SW Zone lies along strike and southwest of the Z87 Zone. Other important mineralization discovered on the Property to date include: the northern continuity of the J Zone, in the Allongé Target and Carcajou Target; and the north-western continuity of the SW Zone, toward Z87 Zone, the Gap Zone; and to the southwest of the SW Zone, in the Beyan and Cressida Targets. Additionally, Troilus has also investigated several regional exploration targets on the Property that include: the Testard Target, the Freegold-Bullseye Target, and the Pallador Target.

The Project is primarily a gold-copper deposit, but contains minor amounts of Ag, Zn and Pb, as well as traces of Bi, Te, and Mo. The gold and copper mineralization at the Troilus deposit comprises two distinct styles, disseminated and vein hosted. Gold mineralization is spatially correlated with the presence of sulphides, even though the sulphide content does not directly correlate with gold and copper grade. The matrix of the diorite breccia, the diorite and the felsic dykes represent the main host rocks for the mineralized intervals.

Between 2018 and August 2023, Troilus completed several diamond drill core programs which support the mineral resources along strike and at depth at the Z87 Zone, J Zone: X22 Zone and SW Zone. AGP is satisfied the drill programs conducted by Troilus on the Project meet industry standards and norms and that sample handling, preparation and analyses are appropriate for this style of deposit.

The Mineral Resources for the Troilus Gold Project, amenable to open pit extraction, at a 0.3 g/t AuEQ cut-off grade are: Indicated Resource of 506.2 Mt at 0.57 g/t Au, 0.07 %Cu, 1.09 g/t Ag and 0.68 g/t AuEQ; and an Inferred Resource of 76.5 Mt at 0.53 g/t Au, 0.06 %Cu, 1.12 g/t Ag and 0.65 g/t AuEQ.

The Mineral Resources for the Troilus Gold Project, amenable to underground extraction, at a 0.9 g/t AuEQ cut-off grade are: an Indicated Resource of 2.1 Mt at 1.35 g/t Au, 0.09 %Cu, 1.90 g/t Ag and 1.51 g/t AuEQ; and an Inferred Resource of 4.0 Mt at 1.36 g/t Au, 0.08 %Cu, 8.21 g/t Ag and 1.58 g/t AuEQ. The effective date of the Troilus Gold Project Mineral Resources is 2 October 2023.

The quantity and grade of Inferred Resources reported above are conceptual in nature and are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply, but not verify, geological and grade or quality continuity. For these reasons, an Inferred Mineral Resource has a lower level of confidence than an Indicated Mineral Resource and it is reasonably expected the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. AGP is unaware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

AGP concludes that further development of the mineralized zones is warranted and recommended.

26 RECOMMENDATIONS

It is recommended that delineation drilling continue on all four mineralized zone of the Project to define the limits of each zone along strike. Approximately 2,000 m of drilling is proposed for the Z87 Zone and X22 Zone and the area between the two zones; and approximately 2,000 m of drilling for the J Zone. It is also recommended for 2,000 m of infill drilling be carried out at the SW Zone to target areas of Inferred resources in order to upgrade this material.

It is also recommended that the twinning of historic, pre-2018, drill holes, be targeted with more current drill information. Specifically, targeting drill holes with unsampled intervals at shallow depth and, where possible, to replace drill holes with unanalyzed silver assays. Approximately 3,000 m of drilling is proposed for this exercise.

It is recommended that bulk density and assay analysis for silver be completed for the initial drilling at Z87 Zone (approximately 4,000 samples). The early 2018 drilling did not include these analyses at the time and will be a necessary component to support silver mineralization at depth.

The following is the estimated budget for the proposed drilling programs for the continued development of the mineral resources. The estimated budget for these proposed exploration programs would be approximately $CAD 2.2 million. Table 26-1 presents an estimated budget of the proposed exploration and development work.

Table 26-1: Estimated Budget – Geology

Description	Unit Cost ($CAD)	Estimated Cost ($CAD)
Z87 Zone, J Zone, X22 Zone, SW Zone		
Diamond Drilling (6,000 m), delineation and infill	$200/m	$ 1,200,000
Z87 Zone, J Zone,		
Twinning of pre-2018 drill holes (~3,000 m)	$200/m	$ 600,000
Re-analysis (Z87 Ag analysis, bulk density); ~ 4,000 samples	$50/sample	$ 200,000
	Subtotal	**$2,000,000**
	Contingency	**$ 200,000**
	TOTAL	**$ 2,200,000**

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Press Release 8 June 2021	J Zone, drill intercepts
Press Release 7 July 2021	J Zone, drill intercepts
Press Release 21 September 2021	J Zone, drill intercepts
Press Release 7 July 2021	X22 Zone, drill intercepts
Press Release 31 March 2023	X22 Zone, drill intercepts
Press Release 12 January 2021	SW Zone, drill intercepts
Press Release 9 February 2021	SW Zone, drill intercepts
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28 CERTIFICATE OF AUTHORS

28.1 Paul Daigle, P. Geo., géo.

I, Paul Daigle of Toronto, Canada, as one of the authors of this technical report titled "Technical Report and Mineral Resource Estimate for the Troilus Gold-Copper Project, Quebec, Canada" dated 25 October 2023, do hereby certify that, and make the following statements:

- I am a Senior Resource Geologist with AGP Mining Consultants Inc., with a business address at #246-132K Commerce Park Dr., Barrie, Ontario L4N 0Z7, Canada.
- I am a graduate of the Concordia University with a degree in B.Sc. Geology, Specialization in 1989.
- I am a member in good standing of the Ordre des géologues du Québec (No. 1632).
- I have practiced my profession in the mining industry continuously since graduation.
- My relevant experience includes over 33 years in the mining sector in the exploration and diamond drill programs, managing data, and estimating resources. I have been involved in numerous precious metal projects in similar precious metal deposits within Archean/Proterozoic greenstone belts. My most recent experience includes the Detour Gold Deposit, Canada, and the Boto Gold Project, Senegal.
- I have read the definition of "qualified person" set out in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101") and certify that by virtue 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 Troilus Gold Corp. as defined by Section 1.5 of the Instrument.
- I am responsible for all Sections of this report, except Sections 1.11 and 13, and accept professional responsibility for those sections of the Technical Report.
- I have had prior involvement with the Troilus Gold Project that is the subject of the Technical Report. I was involved with the "Technical Report and Mineral Resource Estimate on the Troilus Gold-Copper Project, Quebec, Canada" (27 August 2020) and the "Preliminary Economic Assessment of the Troilus Gold Project, Quebec, Canada" (14 October 2020).
- My most recent site visit to the Troilus Gold Project described in this report was from the 5 October to 7 October 2022 for two days.
- As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.
- I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Dated this 25th day of October 2023, in Toronto, Ontario, Canada.

"electronic signature"

Paul Daigle, P.Geo.

28.2 Ryda Peung, P.Eng.

To accompany the technical report entitled: "Technical Report and Mineral Resource Estimate on the Troilus Gold-Copper Project, Quebec Canada" dated 25 October 2023 with an effective date of 02 October 2023 (the "Technical Report").

I, Ryda Peung, P.Eng., do hereby certify that:

- I am a Lead Process Engineer with Lycopodium Minerals Canada Ltd., with a business address at 5090 Explorer Drive, Suite 700, Mississauga, ON L4W 4T9, Canada.
- I am a graduate of the University of Waterloo with a Bachelor of Applied Science degree, honours Chemical Engineering, 2008.
- I am a member in good standing with the Ontario Professional Engineers (Member Number 100136514).
- I am in the process of obtaining my membership with the Ordre des Ingénieurs du Québec with my application submitted since the 5th of September 2023, currently pending approval (Client Number 6065166).
- I have practiced my profession in the mining and metals industry continuously since graduation.
- My relevant experience includes over 15 years of design and engineering of minerals processing plants, with expertise in gold processing.
- I have read the definition of "qualified person" set out in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101") and certify that by virtue 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, Troilus Gold Corp., as defined in Section 1.5 of NI 43-101.
- I am responsible for Sections 1.11 and 13 of this report and accept professional responsibility for those sections of the Technical Report.
- I have not had any previous involvement with the Project as independent Qualified Person.
- I have not visited the Troilus project site.
- As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible for, contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible for not misleading.
- I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Dated this 25th day of October 2023, in Toronto, Ontario, Canada.

"electronic signature"

Ryda Peung, P.Eng.