

**National Instrument 43-101 Technical Report  
for the Rogers Creek Copper-Gold Project,  
Southwestern British Columbia, Canada**

NTS 092G/J Pemberton – Lillooet Mining Division  
Latitude 50°03'45" North and Longitude 122°23'40" West  
543340mE and 5545755mN (UTM NAD83 Z10)

**Report Prepared for:**



**CASCADE COPPER**

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**Report Effective Date:** 21 March 2022

**Report Issue Date:** 26 September 26 September 2022

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**Project Number: 643.22.00**

## DATE AND SIGNATURE PAGE

The Report, “National Instrument 43-101 Technical Report for the Rogers Creek Copper-Gold Project, Southwestern British Columbia, Canada”, with a Report Issue Date of 26 September 2022 and a Report Effective Date of 21 March 2022, was authored by the following:

“signed original on file”

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Principal Geoscientist  
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Stephen Wetherup (BSc., P.Geo)  
Consulting Geologist  
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Dated: 26 September 2022

## CERTIFICATE OF QUALIFIED PERSON

**Scott Jobin-Bevans (PhD, P.Geo.)**

I, Scott Jobin-Bevans (P.Geo.), do hereby certify that:

1. I am an independent consultant of Caracle Creek International Consulting Inc. (Caracle) and have an address at Av. Hacienda Macul 6047, Peñalolen, Santiago, Chile.
2. I graduated from the University of Manitoba (Winnipeg, Manitoba) with a B.Sc. Geosciences (Hons) in 1995 and from the University of Western Ontario (London, Ontario) with a Ph.D. (Geology) in 2004.
3. I am a member, in good standing, of Association of Professional Geoscientists of Ontario, License Number 0183 (since June 2002).
4. I have practiced my profession continuously for more than 20 years, having worked mainly in mineral exploration but also having experience in mine site geology, mineral resource and reserve estimations, preliminary economic assessments, pre-feasibility studies, due diligence, valuation, and evaluation reporting. I have authored, co-authored, or contributed to numerous NI-43-101 reports on a multitude of commodities including nickel-copper-platinum group elements, base metals, gold, silver, vanadium, and lithium projects in Canada, the United States, China, Central and South America, Europe, Africa, and Australia.
5. I have read the definition of “Qualified Person” set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.
6. I am responsible for the preparation of all sections in the report titled, “National Instrument 43-101 Technical Report for the Rogers Creek Copper-Gold Project, Southwestern British Columbia, Canada” (the “Technical Report”), issued 26 September 2022 and with a Report Effective Date of 21 March 2022.
7. I have not visited the Rogers Creek Project.
8. I am independent of Cascade Copper Corp. applying all of the tests in Section 1.5 of NI 43-101 Form 43-101F1 and Companion Policy 43-101CP.
9. I am an independent geological consultant with Caracle Creek International Consulting Inc. and have had no prior involvement in the Project that is the subject of the Technical Report.
10. I have read NI 43-101, Form 43-101F1 and confirm the Technical Report has been prepared in compliance with that instrument and form.
11. As of the Effective Date of the Technical Report, to the best of my knowledge, information and belief, the Sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed at Santiago, Chile this 26<sup>th</sup> day of September 2022.

*“signed”*

---

Scott Jobin-Bevans (PhD., PMP, P.Geo.)

## CERTIFICATE OF QUALIFIED PERSON

**Stephen Wetherup (BSc., P.Geo)**

I, Stephen Wetherup (BSc., P.Geo), do hereby certify that:

1. I am an independent consultant of Wetherup Geological Consulting and have an address at 9253-164<sup>th</sup> Street, Surrey, BC, Canada
2. I graduated from the University of Manitoba (Winnipeg, Manitoba) with a B.Sc. Geosciences (Hons) in 1995.
3. I am a member, in good standing, of Association of Professional Engineers and Geoscientists of British Columbia, License Number 27770.
4. I have practiced my profession continuously for over 20 years as an exploration geologist on projects mainly in North America from grassroots exploration to advanced drilling campaigns. I have authored, co-authored, or contributed to numerous NI-43-101 reports on a multitude of commodities including copper-gold-molybdenum, gold, silver and base metal projects in Canada, Asia, Central and South America, and Europe.
5. I have read the definition of “Qualified Person” set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.
6. I am responsible for the preparation of sections 2.6, 3, 12, 25, and 26 of the report titled, “National Instrument 43-101 Technical Report for the Rogers Creek Copper-Gold Project, Southwestern British Columbia, Canada” (the “Technical Report”), issued 26 September 2022 and with a Report Effective Date of 21 March 2022.
7. I visited the Rogers Creek Copper-Gold Project for the Issuer on 8 March 2022 for the Issuer.
8. I am independent of Cascade Copper Corp. applying all of the tests in Section 1.5 of NI 43-101 Form 43-101F1 and Companion Policy 43-101CP.
9. I am an independent geological consultant assisting Caracle Creek International Consulting Inc. and visited the Project previously, on 12 September 2015 and 26 and 27 May 2012 for a previous operator/owner.
10. I have read NI 43-101, Form 43-101F1 and confirm the Technical Report has been prepared in compliance with that instrument and form.
11. As of the Effective Date of the Technical Report, to the best of my knowledge, information and belief, the Sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed at Surrey, BC, Canada this 26<sup>th</sup> day of September 2022.

*“signed”*

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Stephen Wetherup (BSc., P.Geo)

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## 1.0 SUMMARY

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At the request of Canadian private company Cascade Copper Corp. (“Cascade”, the “Company”, or the “Issuer”), Caracle Creek International Consulting Inc. (“Caracle” or the “Consultant”), a private Canadian geological consulting company, has prepared this technical report as a National Instrument 43-101 (“NI 43-101”) Technical Report (the “Report”) on the Rogers Creek Copper-Gold Project (“Rogers Creek”, or the “Project”, or the “Property”), located in southwestern British Columbia, Canada.

### 1.1 Purpose of the Technical Report

This Report was prepared as an NI 43-101 Technical Report in support of the listing requirement for the Company’s “Going-Public” Transaction on the Canadian Securities Exchange (“CSE”). The Project will be Cascade’s “Qualifying Property” for obtaining a listing on the Canadian Securities Exchange.

### 1.2 Assignment Agreement

On 22 April 2022, Cascade entered into an Assignment Agreement with Tocvan and C3 Metals whereby Tocvan assigned, with the consent of C3 Metals, 100% of Tocvan’s legal and beneficial ownership of all mineral interests in and to the Project to Cascade. Prior thereto, the Project was sold from C3 Metals to Tocvan pursuant to a purchase and sale agreement dated 29 September 2021. Subsequent to completion of the sale to Tocvan in 2021, C3 Metals was estopped from transferring legal title to the Project to Tocvan because outstanding work assessments in the amount of \$80,000.00 were not completed and the register of mines under the Minerals Tenure Act (RSBC 1996, chapter 292) was therefore legally restricted from approving and registering the transfer of the Project into the name of Tocvan notwithstanding that Tocvan acquired 100% of all legal and beneficial interests in the Project. Work is currently underway to update the assessments to allow the Project to be registered in the name of Cascade.

Pursuant to the Assignment Agreement, C3 Metals, Tocvan, and Cascade agreed to the assignment and transfer of 100% of Tocvan’s interest in the Project to Cascade in consideration for the issuance of 5,000,000 common shares of Cascade to Tocvan on the basis that C3 Metals shall take all necessary legal action under the Minerals Tenure Act to the transfer the Project directly to Cascade for the sum of \$1.00 immediately after the outstanding work assessments on the Project are current.

### 1.3 Previous NI 43-101 Technical Reports

This Report is the current NI 43-101 Technical Report on the Property prepared for the Issuer, Cascade Copper Corp.

### 1.4 Effective Date

The Effective Date of the Report is 21 March 2022.

## 1.5 Qualifications of the Consultants

Dr. Scott Jobin-Bevans (“Author”), is the Principal Geoscientist at Caracle Creek International Consulting Inc. (Canada) and Mr. Stephen Wetherup (“Co-Author”), is a Professional Geologist at Wetherup Geological Consulting.

Dr. Scott Jobin-Bevans (P.Geo., APGO #0183) and Mr. Stephen Wetherup (P.Geo., APEGBC #27770), by virtue of their education, experience, and professional association, are each considered to be a Qualified Person (“QP”), as that term is defined in NI 43-101 and specifically sections 1.5 and 5.1 of NI 43-101CP (Companion Policy). Dr. Jobin-Bevans is responsible for the preparation of all sections of the Report and Mr. Wetherup is responsible for sections 2.6 and 12.

The Author and Co-Author (together the “Authors”) employed in the preparation of the Report have no beneficial interest in Cascade and are not insiders, associates, or affiliates of Cascade Copper.

## 1.6 Personal Inspection

At the request of the Issuer and Caracle Creek, Mr. Stephen Wetherup (P.Geo, APEGBC #27770) conducted a personal inspection (site visit) of the Property on 8 March 2022, in order to satisfy the requirements of the Report and confirm access and historical infrastructure on the Property. Mr. Wetherup visited the Property on 12 September 2015 and 26 and 27 May 2012 for a previous operator/owner.

For the current site visit for the Issuer, Stephen Wetherup and Steve Orange, a local outdoorsman in the area, travelled from Squamish, B.C. and drove to the Rogers Creek Property. Access along the Rogers Creek Forestry Road was mostly clear of snow from the beginning of the road and were able to drive up the road approximately 2.5 km. At this point several large trees had fallen across the road and snow on the road became more prevalent requiring snowmobiles to continue further. Several more trees and minor boulder slide occur on the road until 5.5 km where a creek, which empties an avalanche chute, had washed out the road and made progress impossible, ending the site visit.

During the current site visit for the Issuer, the base camp area at the beginning of the Rogers Creek Road was visited where some of the historical drill core is stored, as well as a small trailer and a pile of split but unsampled core dating back to the drilling prior to 2012.

The drill core and split but un-assayed drill core were there at that time of Mr. Wetherup’s 2012 visit to the Property. The condition of the road has improved since 2012 and 2015 with very little brush on the road. The washout which stopped progress on the current site visit was considerably worse and clearly was repaired recently before being washed out again last fall. Steve Orange took photos of the core shack, located further up the road, earlier in February 2022, which shows the core shack to be in reasonable condition and the core to be accessible and protected below tarps.

It does not appear that any work, other than some clean up of most exploration equipment, has occurred on the Property since 2015.

### **1.7 Reliance on Other Experts**

The Authors have not relied on any other report, opinion or statement of another expert who is not a qualified person, or on information provided by the Issuer concerning legal, political, environmental or tax matters relevant to the Report.

### **1.8 Property Description and Location**

The early-stage Rogers Creek Copper-Gold Project straddles the Lower Lillooet River Valley, approximately 90 km northeast of Vancouver and 26 km south-southeast of Pemberton in southwestern British Columbia (Figure 4-1). The approximate geographic centroid of the Project is 50°03'45"N and 122°23'40"W (UTM coordinates 543340mE and 5545755mN, NAD83, Zone 10). The Project lies within National Topography System ("NTS") map sheets 092G/15-16 and 092J/01-02.

The Project comprise 23 contiguous mineral claims covering approximately 21,233 ha or about 212.33 square kilometres. The Project is currently being operated by Cascade, with C3 Metals holding the titles in trust pending the re-registration of the Project in the name of Cascade.

Sufficient assessment work had been filed to keep the key parts of the Project in good standing until 31 December 2021. On 11 August 2021, a claim protection order extension was granted by the Chief Gold Commissioner pushing the claim protection expiry date of all the Rogers Creek mineral claims to 31 December 2022.

### **1.9 Mineral Claim Holding Costs**

Given that the claims were recorded 21 June 2019 and that they are under claim protection until 31 December 2022, the claims currently straddle years 2 (\$5/ha) and 3 (\$10/ha) for work commitments, the required expenditures are approximately:

- \$125,000 - expenditures required to bring all claims current to 31 March 2022.
- \$284,000 - expenditures required to bring all claims current to 31 December 2022.
- \$496,000 - expenditures required to bring all claims current to 31 December 2023.

### **1.10 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

Access to the Rogers Creek Project can be easily achieved by first traveling from Vancouver, B.C. via BC Provincial Highway 99 N, approximately 150 km (2 hours drive) to the town of Pemberton, BC. From Pemberton, travel approximately 28 km east on Hwy 99 N toward Lillooet. After crossing the Birkenhead River turn right (south) onto the In-Shuck-ch Forest Service Road; the northern edge of the Project is at km

15. Turning left at kilometre 42, the Rogers Creek Forest Service Road provides access to subsidiary logging roads and ATV trails in the Rogers Creek Valley where the current focus of exploration work is located.

Temperatures in the Lillooet River valley average about 2°C in the winter and approximately 26°C in the summer, although temperatures are much colder on surrounding high-elevation mountain peaks; most rainfall occurs between October and March. Higher elevations in the Coast Mountains get heavy snowfall in the winter, which makes exploration difficult to impossible throughout the winter. The exploration season starts in April or May and in general, ceases by the end of October to mid-November.

The Village of Pemberton has a population of approximately 2,600; it has train and bus stations, a small airport, a small health unit, an elementary school, Post Office, and several lodges and motels. It primarily provides services for recreation and heavy industry. Agriculture and forestry play a minor role in the overall industrial output of the Village.

Regional topography surrounding the Rogers Creek Project is very rugged with elevations ranging from 200 m up to 2,500 m AMSL. Mountain slopes can be very steep (more than 45 degrees) restricting access to some parts of the Project.

### **1.11 History**

The Lower Lillooet River provided the first route into the interior of BC during the gold rush of the mid-19th Century. Presumably, prospectors at that time would have panned many areas along the Lillooet River itself, as well as its tributaries, such as Rogers Creek. Very little modern exploration work has ever been conducted on the Project.

Exploration work carried out on the Rogers Creek Project by previous operators (*e.g.*, Jago, 2008, 2009a, 2009b) includes:

- 1,786 line-km of helicopter-borne magnetic gradiometry and VLF-EM.
- 280 line-km of helicopter-borne radiometrics.
- Surveying, levelling, merging, and inversion modelling of 49.6 line-kilometres of Induced Polarization ground geophysics.
- 3D modelling of all geophysical and project data by Mira Geosciences Ltd. with proprietary Geoscience Analyst 3D software.
- Prospecting, mapping, and sampling, including the collection of 1,071 surface rock and channel samples, 3,298 soil samples, and 334 stream sediment samples.
- Soil sample geochemical vectoring study using “Porphyry Indicators”.
- 5,209 metres of diamond drilling including the analysis of 1,951 drill core samples.
- 5,200 m of drill core magnetic susceptibility readings totaling 1,164 readings.

- 329 resistivity/chargeability readings taken over 7 drill holes totaling ~4,055 metres.
- Limited surface and drill hole (4 holes) alteration mapping and logging.
- Collection of 626 TerraSpec Halo alteration readings on all available core (557 readings) and limited outcrop (69 readings). Analysis, interpretation, and modelling of data by an alteration specialist.

### **1.12 Geology and Mineralization**

The Canadian Cordillera comprises five morpho-geological belts that record Mesozoic accretion of the allochthonous Insular and Intermontane superterranes to North America. From west to east these are the Insular, Coastal, Intermontane, Omineca, and Foreland belts. The Rogers Creek Project is located within the Coastal Mountain Belt of British Columbia.

The Coast Belt in southern BC is divided into southwestern and southeastern parts, based on the distribution of plutonic rocks, terranes and structures (Crickmay, 1930). The Rogers Creek Property is located along the border between the two parts of the Coast Belt.

The Rogers Creek Project is centred on the Miocene-aged ( $16.7 \pm 2.7$  Ma; (Armstrong, unpublished)) Rogers Creek Intrusive Complex, which intrudes through the older metamorphosed Jurassic and Cretaceous rocks typical of the Coastal Belt into overlying and coeval Miocene Crevasse Crag volcanic flows and pyroclastic rocks (Journey and Monger, 1997). The Rogers Creek Intrusive Complex and the coeval Crevasse Crag volcanic rocks are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc.

The Rogers Creek Intrusive Complex and the coeval Crevasse Crag volcanic rocks are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc. Reconnaissance and detailed mapping suggest the Rogers Creek Pluton to be more complex than the single, homogenous granodiorite body overlain by a narrow sliver of coeval pyroclastic rock as illustrated on most BC Geological Survey (“BCGS”) maps.

Porphyry related alteration and mineralization has been identified in four major areas or “Targets” on the Rogers Creek Project:

- Target I – Cu-Au-Mo
- Target II – Au-Cu
- Target III – Au
- Target IV – Cu-Mo-Au

### **1.13 Deposit Types**

Exploration in southwestern British Columbia has traditionally focused on mesothermal gold, polymetallic vein, and skarn type deposit models and has given little consideration to systematic regional evaluation of Tertiary intrusions for potential large-scale porphyry or epithermal deposits. The Rogers Creek Project is

being explored for porphyry-style copper, gold, and molybdenum mineralization associated with intrusive activity that is part of the post-accretionary Tertiary age Cascade Magmatic Arc. Several very large porphyry deposits occur within the Cascade Magmatic Arc in neighbouring southeast Alaska and Washington and in similar age magmatic belts around the world.

The geology and tectonic setting of the Rogers Creek Project bears a compelling similarity to the continental arc environment presented by Sinclair (2007) for giant porphyry style and associated deposits. Exploration requires identifying alteration and mineralization zonation patterns and syn-magmatic structures that may have controlled emplacement of the intrusive bodies and focused migration of mineralizing fluids. Porphyry deposits are large low-grade deposits characterized by disseminated sulphides within pervasively altered host rock making them an excellent target for IP geophysical surveys.

#### **1.14 Exploration**

As of the Effective Date of the Report, the issuer has not performed any exploration work on the Rogers Creek Project. Historical exploration work completed on the Property is described in Section 6.

#### **1.15 Drilling**

As of the Effective Date of the Report, the issuer has not performed any drilling on the Rogers Creek Project. Historical drilling completed on the Property is described in Section 6.

#### **1.16 Sample Preparation, Analyses and Security**

The surface and core sampling procedures in this section were extracted from historical report summaries for work completed on the Rogers Creek Property by past operators (ARIS Database, 2022). The surface and drill core sample acquisition and handling procedures in the Report were extracted from McDonough (2011) and directly verified with the previous Exploration Manager of the Rogers Creek Project (from 2010 to 2020), Mr. Shannon Baird, a Qualified Person as defined by NI 43-101.

Based on the Author's examination of the sampling and assay methods, and the QA/QC protocols implemented by recent explorers, the Author is of the opinion that the historical data and information collected is of good quality, adequate for this stage of exploration on the Property and for the purposes of the Report.

#### **1.17 Data Verification**

The Authors have reviewed historical data and information regarding past exploration, development work, and historical mining on the Property as provided by Cascade Copper and available in the public domain. The Authors were provided a comprehensive historical digital geological database from Cascade Copper for the purpose of reviewing the Project and preparing the Report. The Rogers Creek digital database included technical and assessment reports, maps, figures, assay data, assay certificates and location data detailing the historical work conducted on the Project by previous companies and geological consultants. Cascade

Copper was entirely cooperative in supplying the Authors with all the information and data requested and there were no limitations or failures to conduct the verification.

Mr. Stephen Wetherup (P.Geo., APEGBC #27770) conducted a personal inspection (site visit) of the Property on 8 March 2022, in order to satisfy the requirements of the Report and confirm access and historical infrastructure on the Property. Mr. Wetherup visited the Property on 12 September 2015 and 26 and 27 May 2012 for a previous operator/owner.

It does not appear that any work, other than some clean up of most exploration equipment, has occurred on the Property since 2015.

It is the Author's opinion that the information and data that has been made available and reviewed by the Authors is adequate for the purposes of the Report as described in Section 2.1.

### **1.18 Mineral Processing and Metallurgical Testing**

As of the Effective Date of the Report, the issuer has not performed any mineral processing or metallurgical test work with respect to the Rogers Creek Project.

### **1.19 Mineral Resource Estimates**

There are no current mineral resource estimates on the Property.

### **1.20 Mineral Reserve Estimates**

There are no current mineral reserve estimates on the Property.

### **1.21 Adjacent Properties**

There are no significant, active claims adjacent to the Rogers Creek Project. Torr Resources Corporation holds the Inferno, Inferno South and Red Mountain claims near the southwest corner of the Project, near Target IV.

### **1.22 Other Relevant Data and Information**

The Author is not aware of any additional information or explanations necessary to make the Report understandable and not misleading.

### **1.23 Interpretation and Conclusions**

The objective of the Report was to prepare an independent NI 43-101 Technical Report, capturing historical information and data available about the current Property that comprises the Rogers Creek Cu-Au Project, and making recommendations for future work.

Exploration in southwestern British Columbia over the last hundred years has largely focused on mesothermal gold, polymetallic vein, and skarn type deposit models. The documented work history around these intrusions is usually restricted to limited programs following up, re-visiting, re-sampling, and, in some cases, upgrading known occurrences that were already identified by previous workers. Additionally, there is little record of any significant, systematic, regional evaluation of these Tertiary intrusions for their large-scale porphyry or epithermal potential.

The Rogers Creek Cu-Au Project is being explored for porphyry-style Cu-Au-Mo mineralization associated with intrusions within the post-accretionary Tertiary-age Cascade Magmatic Arc. This represents a significantly younger environment than typical porphyry exploration targets in British Columbia. However, there are several very large porphyry deposits which occur in this belt in neighbouring southeast Alaska and Washington State and similar age magmatic belts worldwide that contain very large (>1 billion tonnes) copper and molybdenum deposits. Historical porphyry exploration in British Columbia has focused on older rocks of the Intermontane Belt rather than the metamorphosed and structurally imbricated, dominantly Triassic to Cretaceous age, Coast Belt. Past exploration models suggest that the Coast Belt is at too deep an erosional level to be prospective for porphyry-style mineralization. Instead, previous work in the area has targeted volcanogenic massive sulphide-style or epithermal-style gold mineralization. Work carried out in the 1990s has recognized very young Miocene intrusions within the Coast Belt rocks, forming part of the Cascade Magmatic Arc. This geological setting for porphyry-style mineralization, coupled with the discovery of Cu, Au, and Mo mineralization within these intrusions, provides a compelling geological model for exploration.

Since the initial discovery at Rogers Creek, Wallbridge Mining, Miocene Metals, Carube Copper, and TocVan Ventures have been able to acquire and maintain a dominant land position which covers a significant extent of this prospective Miocene-aged magmatic complex.

To date, historical airborne geophysical surveys, regional stream sediment sampling, soil sampling, mapping, and prospecting have been completed which were successful in narrowing attention to three priority exploration targets, Targets I, II, and III, within the Rogers Creek Valley where drilling has confirmed the presence of porphyry style alteration and mineralization. Prospecting and mapping along roads on the southwest part of the Property have identified an additional mineralized target, Target IV.

Work to date has advanced the Property from a small showing discovered on a logging road in 2007 to an advanced exploration stage project, with evidence for a large mineralized system. This has validated the initial working hypothesis that there is considerable potential to discover significant mineralization within the Miocene age intrusions of the Cascade Magmatic Arc in southwestern BC, which have seen very little modern exploration.

Little work has been carried out in Targets III and IV. Potential in Target III appears to be for high level epithermal gold mineralization, while Target IV is a copper-molybdenum target. Both Targets are currently



ranked to be of lower priority to Targets I and II, however Target IV presents a very intriguing area for future exploration.

Despite being sporadically worked on for the last 15 years, most of the Rogers Creek Project is still at a relatively early stage of exploration. Given the geology and alteration, there exists potential for porphyry, epithermal, and skarn copper-molybdenum-gold deposits on the Project. The presence of a multitude of intrusive dikes of varying phases and composition suggests that extensional structures and associated hydrothermal activity is relatively widespread on the Project. Previous exploration programs captured a significant amount of information and insight into the geology, alteration, and mineralization and can be used as a base to model and expand upon.

The Rogers Creek Project's strong copper-gold potential is supported by exploration drilling. Drill intersections suggest a potential exists for expansion on known intercepts laterally and at depth and that there are multiple copper-gold intercepts within many drill holes suggesting a widespread system that can probably be used to vector towards a higher-grade "porphyry centre".

#### **1.24 Risks and Uncertainties**

Risks and uncertainties which may reasonably affect reliability or confidence in future work on the Project relate mainly to the reproducibility of exploration results (*i.e.*, exploration risk) in a future production environment. Exploration risk is inherently high when exploring in porphyry and epithermal vein systems, however these risks are mitigated through the completion of surface geological and structural mapping, trenching, and sampling programs, and high density (closely spaced drill holes) drilling programs, and mineral processing and metallurgical test work.

#### **1.25 Recommendations**

It is the Authors' opinion that additional exploration expenditures are warranted on the Rogers Creek Cu-Au Project. The Authors have prepared a cost estimate for a recommended two-phase work program to serve as a guideline for the Project. A budget estimate for the recommended work programs is provided in Table 1-1. These recommendations total approximately CAD\$900,000 (including 10% contingencies).

The recommended Phase 1 program (CAD\$320,000), which includes a high-density LiDAR and Orthophoto survey, in-depth structural analysis and modelling, ground prospecting/mapping, and deep drilling of the Target I IP anomaly (*see* Figure 26-1), is expected to be completed within about a 3-4 month period. The recommended Phase 2 program (CAD\$500,000) is contingent on the results from the Phase 1 program.

It is the Authors' opinion that the recommended work programs and proposed expenditures are appropriate for the stage of the Property and that the proposed budget reasonably reflects the type and amount of contemplated exploration activities.

Table 1-1. Recommended Phase 1 and Phase 2 exploration work programs and budget, Rogers Creek Cu-Au Project.

<b>Work Program</b>	<b>Cost Estimate (CAD\$)</b>
<b>PHASE 1</b>	
High-Density LiDAR and Orthophoto Survey on Targets I, II (~40 km <sup>2</sup> )	\$40,000
In-Depth Structural Analysis and Modeling by Specialist	\$15,000
Conversion of all Available Data into ArcGIS and a Leapfrog 3D Model	\$35,000
Ground Prospecting/Mapping (South of Target I)	\$20,000
Deep Drilling of Target I IP Anomaly (1,000 m @~\$210/m all-in)	\$210,000
<b>PHASE 1 Subtotal:</b>	<b>\$320,000</b>
<b>PHASE 2</b>	
Ground Prospecting/Mapping (Target IV)	\$10,000
8 line-km IP Survey South of Target I (inc. line cutting & ancillary costs)	\$80,000
5 line-km IP Survey at Target IV (inc. line cutting & ancillary costs)	\$50,000
Merging and Inversion of all data/information into 3D Model	\$20,000
Drilling of new Target I IP Anomalies (800 m @~\$210/m all-in)	\$170,000
Drilling of Target IV IP Anomaly (800 m @~\$210/m all-in)	\$170,000
<b>PHASE 2 Subtotal:</b>	<b>\$500,000</b>
Contingency (~10%):	\$80,000
<b>EXPLORATION TOTAL (Phase 2 contingent on success of Phase 1):</b>	<b>\$900,000</b>

Understanding the structural geology is critical to the success of the Project. A high-resolution LiDAR survey is proposed to better distinguish the near-surface structural patterns and outline potential unknown structures. In addition to improving the structural understanding, this survey could better constrain the width, extent, and characteristics of the mineralized zones and structures.

The Phase 2 recommendations, contingent on the success of Phase 1, include prospecting and mapping over the area of Target IV, IP geophysical surveys south of Target I and over Target IV, and the merging and modelling of the geophysical and geological data and information to develop drill targets. Phase 2 drilling (~1,600 m) could include testing new geophysical targets developed over Target I and Target IV areas.

## 2.0 INTRODUCTION

At the request of Canadian private company Cascade Copper Corp. (“Cascade”, the “Company”, or the “Issuer”), Caracle Creek International Consulting Inc. (“Caracle” or the “Consultant”), a private Canadian geological consulting company, has prepared this technical report as a National Instrument 43-101 (“NI 43-101”) Technical Report (the “Report”) on the Rogers Creek Copper-Gold Project (“Rogers Creek”, or the “Project”, or the “Property”), located in southwestern British Columbia, Canada (Figure 2-1). The Report has been prepared in accordance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators’ National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1 (30 June 2011 and amendments 25 February 2016).



Figure 2-1. Country-scale location of the Rogers Creek Copper-Gold Project (orange star), southwestern British Columbia, Canada (base map: en.wikipedia.org; Cascade Copper, 2022).

## **2.1 Purpose of the Technical Report**

This Report was prepared as an NI 43-101 Technical Report in support of the listing requirement for the Company’s “Going-Public” Transaction on the Canadian Securities Exchange (“CSE”). The Project will be Cascade’s “Qualifying Property” for obtaining a listing on the Canadian Securities Exchange.

### **2.1.1 Assignment Agreement**

On 22 April 2022, Cascade entered into an Assignment Agreement with Tocvan and C3 Metals whereby Tocvan assigned, with the consent of C3 Metals, 100% of Tocvan’s legal and beneficial ownership of all mineral interests in and to the Project to Cascade. Prior thereto, the Project was sold from C3 Metals to Tocvan pursuant to a purchase and sale agreement dated September 29, 2021. Subsequent to completion of the sale to Tocvan in 2021, C3 Metals was estopped from transferring legal title to the Project to Tocvan because outstanding work assessments in the amount of \$80,000.00 were not completed and the register of mines under the Minerals Tenure Act (RSBC 1996, chapter 292) was therefore legally restricted from approving and registering the transfer of the Project into the name of Tocvan notwithstanding that Tocvan acquired 100% of all legal and beneficial interests in the Project. Work is currently underway to update the assessments to allow the Project to be registered in the name of Cascade.

Pursuant to the Assignment Agreement, C3 Metals, Tocvan, and Cascade agreed to the assignment and transfer of 100% of Tocvan’s interest in the Project to Cascade in consideration for the issuance of 5,000,000 common shares of Cascade to Tocvan on the basis that C3 Metals shall take all necessary legal action under the Minerals Tenure Act to the transfer the Project directly to Cascade for the sum of \$1.00 immediately after the outstanding work assessments on the Project are current.

## **2.2 Previous NI 43-101 Technical Reports**

This Report is the current NI 43-101 Technical Report on the Property prepared for the Issuer, Cascade Copper Corp.

## **2.3 Effective Date**

The Effective Date of the Report is 21 March 2022.

## **2.4 Qualifications of the Consultants**

Dr. Scott Jobin-Bevans (“Author”), is the Principal Geoscientist at Caracle Creek International Consulting Inc. (Canada) and Mr. Stephen Wetherup (“Co-Author”), is a Professional Geologist at Wetherup Geological Consulting.

Dr. Scott Jobin-Bevans (P.Geo., APGO #0183) and Mr. Stephen Wetherup (P.Geo., APEGBC #27770), by virtue of their education, experience, and professional association, are each considered to be a Qualified Person (“QP”), as that term is defined in NI 43-101 and specifically sections 1.5 and 5.1 of NI 43-101CP

(Companion Policy). Dr. Jobin-Bevans is responsible for the preparation of all sections of the Report and Mr. Wetherup is responsible for sections 2.6 and 12.

The Author and Co-Author (together the “Authors”) employed in the preparation of the Report have no beneficial interest in Cascade and are not insiders, associates, or affiliates of Cascade Copper.

The results of the Report are not dependent upon any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings between Cascade and the Consultants. The Consultants are being paid a fee for their work in accordance with normal professional consulting practices.

## **2.5 Personal Inspection (Site Visit)**

At the request of the Issuer and Caracle Creek, Mr. Stephen Wetherup (P.Geo, APEGBC #27770) conducted a personal inspection (site visit) of the Property on 8 March 2022, in order to satisfy the requirements of the Report and confirm access and historical infrastructure on the Property. Mr. Wetherup visited the Property on 12 September 2015 and 26 and 27 May 2012 for a previous operator/owner.

For the current site visit for the Issuer, Stephen Wetherup and Steven Orange, a local outdoorsman in the area, travelled from Squamish, B.C. and drove to the Rogers Creek Property (Figure 2-2 and Figure 2-3). Access along the Rogers Creek Forestry Road was mostly clear of snow from the beginning of the road and were able to drive up the road approximately 2.5 km. At this point several large trees had fallen across the road and snow on the road became more prevalent requiring snowmobiles to continue further. Several more trees and minor boulder slide occur on the road until 5.5 km where a creek, which empties an avalanche chute, had washed out the road and made progress impossible, ending the site visit.

During the current site visit for the Issuer, the base camp area at the beginning of the Rogers Creek Road was visited where some of the historical drill core is stored, as well as a small trailer and a pile of split but unsampled core dating back to the drilling prior to 2012.



Figure 2-2. Selection of photos for the personal inspection of the Property (from Stephen Wetherup). (A) Unloading the snowmobiles at 2.5 km along Rogers Creek Forestry Road. (B) Wash-out at creek crossing at 5.5 km along Rogers Creek Forestry Road – a newer bridge is intact but the side bank washed out. (C) Looking northward from creek washout showing access road has been eroded and slightly undercut by wash-out. (D) Trailer parked at the base of Rogers Creek Forestry Road, staging area. (E) Bagged and tagged split drill core samples not sent to the lab, from historical drilling. (F) Sample tag from unsplit drill core sample. (G) Historical drill core boxes in good condition but no metal tags for labelling boxes/drill holes. (H) Split core in good condition with abundant pyrite veinlets and disseminated pyrite. The tags and blocks were easily legible.

The drill core and split but un-assayed drill core were there at that time of Mr. Wetherup’s 2012 visit to the Property. The condition of the road has improved since 2012 and 2015 with very little brush on the road. The washout which stopped progress on the current site visit was considerably worse and clearly was repaired recently before being washed out again last fall. Steve Orange took photos of the core shack, located further up the road, earlier in February 2022 (Figure 2-3), which shows the core shack to be in reasonable condition and the core to be accessible and protected below tarps.

It does not appear that any work, other than some clean up of most exploration equipment, has occurred on the Property since 2015.

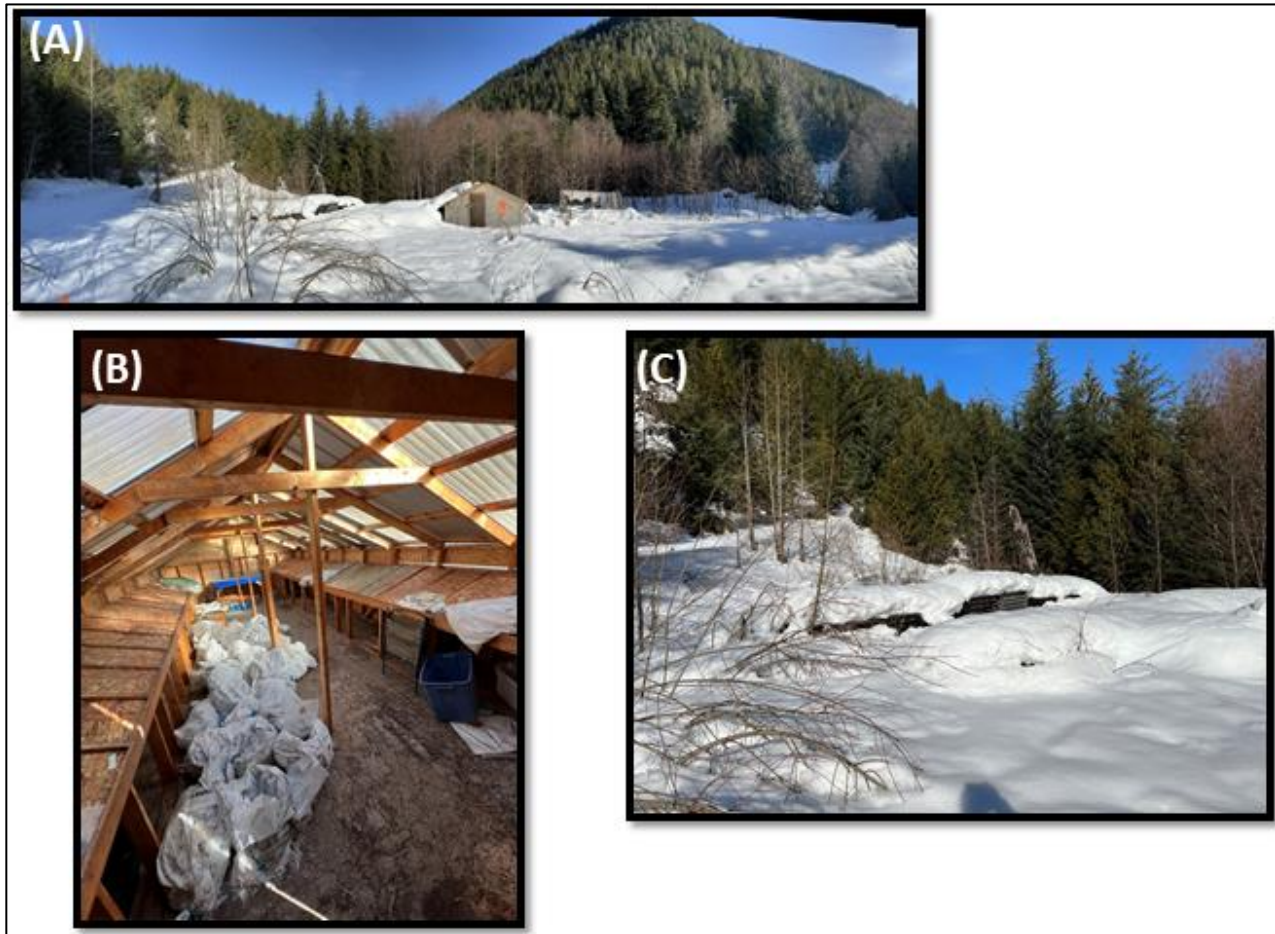


Figure 2-3. Selection of photos for the personal inspection of the Property (from Stephen Wetherup and Steven Orange). (A) Core shack and storage, late February 2022; (B) Interior of core shack, late February 2022; (C) Core storage area by the core shack, late February 2022.

## 2.6 Sources of Information

The Report is based in part on internal Company technical reports, production reports, previous studies, maps, published government reports, Company letters and memoranda, electronic database, and public information as cited throughout the Report and listed in Section 27. The “Rogers Creek Mineral Database

Inventory” provided to the Authors consists of approximately 25 historical reports and dozens of maps and figures that summarize all known historical exploration and prospecting work on the Project. These reports and maps were reviewed for the purposes of the Report.

Publicly available technical data is located through the BCGS online geoscience database data which includes historical data and information on exploration reports, prospecting reports, assay results, MapInfo GIS files, geophysical reports, drilling data, and reconnaissance reports by previous operators on or in the area of the Property, since 1984.

Most of the background information for the Report was extracted from historical NI 43-101 Technical Reports prepared for previous operators (*i.e.*, McDonough, 2011; Wood, 2013; Fowler, 2018) , from data collected by Wallbridge Mining, Miocene Metals, Carube Copper, and Tocvan Ventures personnel, and contractors under the direct supervision of these aforementioned companies.

The mining lands system in British Columbia is accessed online through the Mineral Titles Online system and title searches can be completed through this portal.

Technical reports and press releases published by previous explorers on the Property were located on SEDAR, the official site providing online access to most public securities documents and information filed by issuers with the thirteen provincial and territorial securities regulatory authorities of Canada ("Canadian Securities Administrators" or "CSA").

The Authors reviewed data and information provided by Cascade Copper and a personal inspection was completed by Co-Author and Qualified Person Stephen Wetherup. Company personnel and related consultants were actively consulted post and during report preparation and during the Property visits.

## **2.7 Units of Measure and Abbreviations**

Table 2-1 identifies many of the terms and units used in the Report and Table 2-2 lists many of the abbreviations and initialisms used in the Report; neither of these lists is exhaustive . All units in the Report are based on the International System of Units ("SI"), except for units that are industry standards, such as troy ounces for the mass of precious metals.

Assay and analytical results for trace elements and precious metals are stated in metric units, as per standard Canadian and international practice, including metric tonnes (tonnes, t) and kilograms (kg) for weight, kilometres (km) or metres (m) for distance, hectares (ha) for area, percentage (%) for copper and other base metal grades, and gram per metric tonne (g/t) for precious metal grades. Gold ("Au") and silver ("Ag") are quoted in grams per metric tonne (g/t), parts per million ("ppm"), or parts per billion ("ppb"); 1 g/t is the equivalent to 1 ppm or 1000 ppb.



Table 2-1. Terms and units used in the Report.

Measurement Type	Unit	Abbreviation	SI Conversion
Area	acre	acre	4,046.86 m <sup>2</sup>
Area	hectare	ha	10,000 m <sup>2</sup>
Area	square kilometre	km <sup>2</sup>	(100 ha)
Area	square mile	mi <sup>2</sup>	259.00 ha
Concentration	grams per metric ton	g/t	1 part per million
Concentration	troy ounces per short ton	oz/ton	34.2855 g/t
Length	foot	ft	0.3048 m
Length	metre	m	SI base unit
Length	kilometre	km	SI base unit
Length	centimetre	cm	SI base unit
Length	mile	mi	1,609.34 km
Mass	gram	g	SI base unit
Mass	kilogram	kg	SI base unit
Mass	troy ounce	oz	31.10348 g
Mass	metric ton	T, tonne	1000 kg
Time	million years	Ma	Million Years
Temperature	degrees Celsius	°C	Degrees Celsius
Temperature	degrees Fahrenheit	°F	°F=°C x 9/5 +32

Table 2-2. Abbreviations and initialisms used in the Report.

Abbreviation	Name/Initialism
Ag	Silver
Approx.	Approximately
Au	Gold
cm	centimetre
Corp.	Corporation
DDH	Diamond Drillhole
E	East
EM	Electromagnetic
g/t	Grams per tonne; 31.1035 grams = 1 troy ounce
Ga	Billion Years
ICP-MS	Inductively coupled plasma mass spectrometry
Inc.	Incorporation
IP	Induced Polarization
kg	Kilogram = 2.205 pounds
km	Kilometre = 0.6214 mile
lb	pound; 1lb = 0.453kg
Ltd.	Limited
m	Metre = 3.2808 feet

Abbreviation	Name/Initialism
Ma	Million years old
Mag	Magnetics
MDI	Mineral Database Inventory
mm	Millimetre
N	North
Ni	Nickel
NSR	Net Smelter Royalty
NTS	National Topographic System
oz	Troy ounce (12 oz to 1 pound)
Pb	Lead
PGM	Platinum Group Metals
ppb	Parts per billion
ppm	Parts per million
qtz	Quartz
S	South
UTM	Universal Transverse Mercator
VLF	Very Low Frequency
W	West
CSE	Canadian Securities Exchange

The currency used is Canadian Dollars ("CAD" or "CDN"), unless specified otherwise. Unless otherwise stated, coordinates are given in NAD83 projected coordinate system (EPSG:26910; suitable for North America from North America - 126°W and 120°W), UTM Zone 10N.

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### **3.0 RELIANCE ON OTHER EXPERTS**

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The Report has been prepared by Caracle Creek International Consulting Inc. for Cascade Copper Corp. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Caracle at the time of preparation of the Report.
- Assumptions, conditions, and qualifications as set forth in the Report.

The Authors have not relied on any other report, opinion or statement of another expert who is not a qualified person, or on information provided by the Issuer concerning legal, political, environmental or tax matters relevant to the Report.

Except for the purposes legislated under provincial securities laws, any use of the Report by any third party is at that party's sole risk.

## 4.0 PROPERTY DESCRIPTION AND LOCATION

### 4.1 Property Location

The early-stage Rogers Creek Copper-Gold Project straddles the Lower Lillooet River Valley, approximately 90 km northeast of Vancouver and 26 km south-southeast of Pemberton in southwestern British Columbia (Figure 4-1). The approximate geographic centroid of the Project is 50°03'45"N and 122°23'40"W (UTM coordinates 543340mE and 5545755mN, NAD83, Zone 10). The Project lies within National Topography System ("NTS") map sheets 092G/15-16 and 092J/01-02.

The Project is currently being operated by Cascade, with C3 Metals holding the titles in trust pending the re-registration of the Project in the name of Cascade.

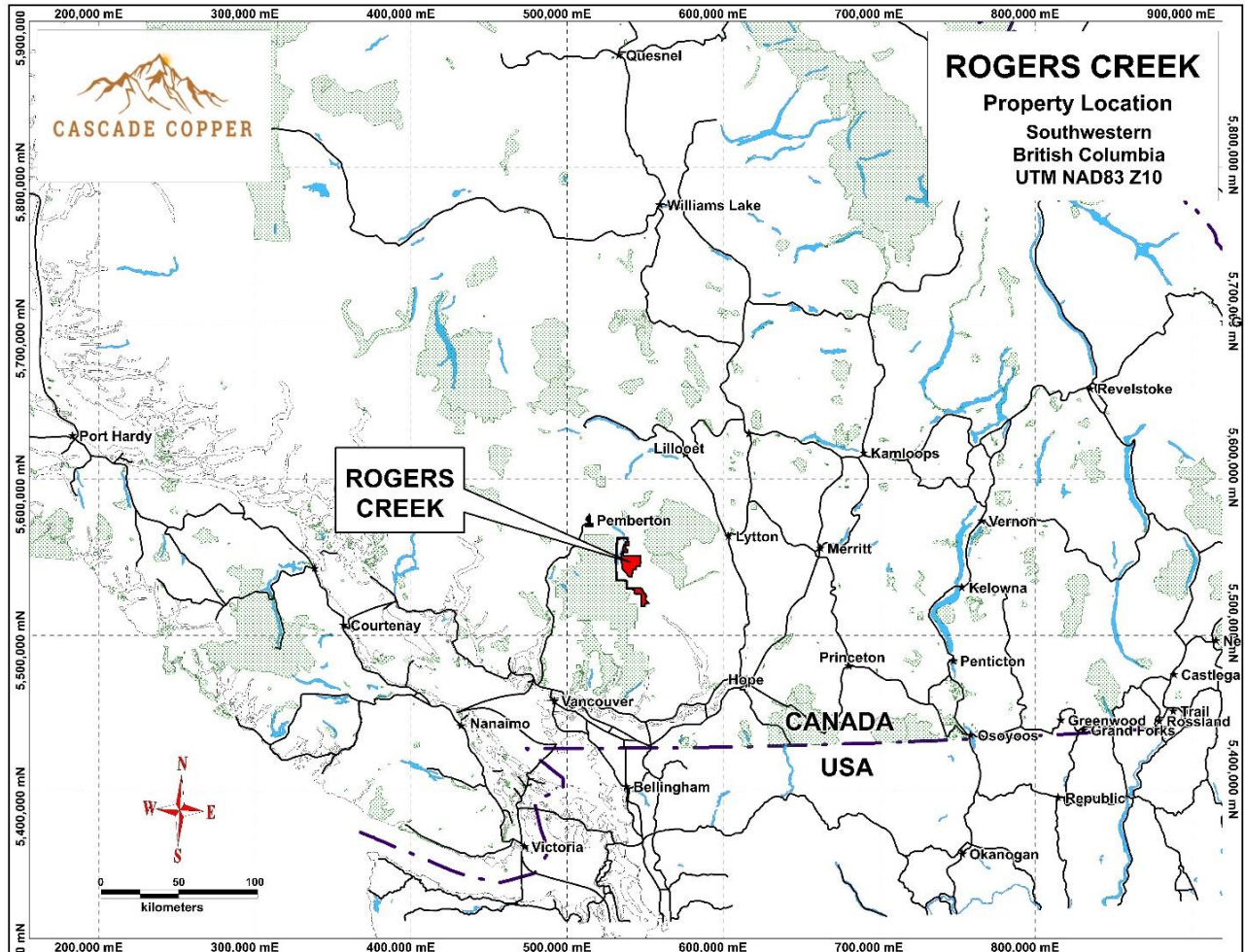


Figure 4-1. Rogers Creek Copper-Gold Project location map within southwestern British Columbia, Canada (Cascade Copper, 2022).

## 4.2 Land Tenure

The Project comprise 23 contiguous mineral claims covering approximately 21,233 ha or about 212.33 square km (Figure 4-2). The Project is currently held by C3 Metals Inc. and is being optioned and explored by Cascade Copper Corp. Table 4-1 provides a description of the current mining claims that comprise the Rogers Creek Copper-Gold Project and that are the subject of the Report.

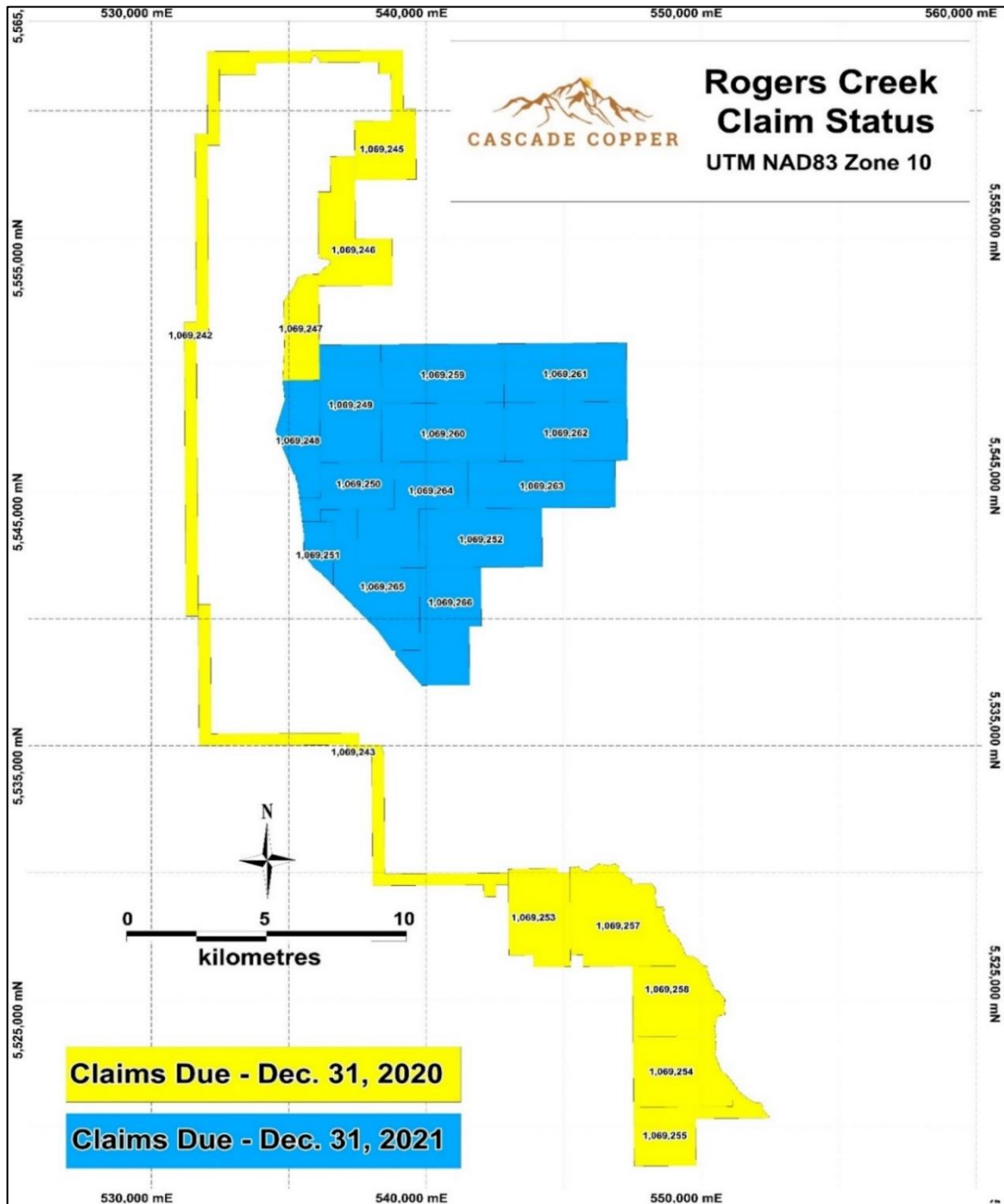


Figure 4-2. Location of the optioned Rogers Creek mineral claims. On 11 August 2021, a claim protection order extension was granted by the Chief Gold Commissioner pushing the claim protection expiry date of all the Rogers Creek mineral claims to 31 December 2022 (Cascade Copper, 2022).

Sufficient assessment work had been filed to keep the key parts of the Project in good standing until 31 December 2021. On 11 August 2021, a claim protection order extension was granted by the Chief Gold Commissioner pushing the claim protection expiry date of all the Rogers Creek mineral claims to 31 December 2022.

Table 4-1. Summary of active mineral claims on the Rogers Creek Copper-Gold Project.

Tenure Number	Claim Name	NTS	Area (hectares)	Claim Holder <sup>1</sup>	Recorded Date	Work Due Date*
1069242	RC-001	092J	1,036.04	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069243	RC-002	092G	1,018.56	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069245	RC-003	092J	1,034.25	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069246	RC-004	092J	869.63	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069247	RC-005	092J	538.73	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069248	RC-006	092J	642.86	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069249	RC-007	092J	1,036.58	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069250	RC-008	092J	580.85	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069251	RC-009	092J	290.55	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069252	RC-010	092J	1,037.56	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069253	RC-011	092G	873.94	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069254	RC-012	092G	958.31	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069255	RC-013	092G	729.44	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069257	RC-014	092G	1,394.23	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069258	RC-015	092G	957.80	C3 Metals Inc.	21-Jun-2019	31-Dec-2020
1069259	RC-016	092J	1,036.30	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069260	RC-017	092J	1,036.80	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069261	RC-018	092J	1,036.22	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069262	RC-019	092J	1,036.73	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069263	RC-020	092J	995.67	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069264	RC-021	092J	1,016.66	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069265	RC-022	092J	1,037.95	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
1069266	RC-023	092G/J	1,038.22	C3 Metals Inc.	21-Jun-2019	31-Dec-2021
			<b>21,233.88</b>	<b>hectares</b>		

<sup>1</sup>C3 Metals holds the Project in trust for Cascade pending registration of the Project in the name of Cascade; \*work due dates extended to 31 December 2022 (see Section 4.2)

#### 4.2.1 Mineral Claim Holding Costs

In British Columbia, a mineral claim holder is required to perform assessment work and document this work to maintain the title as outlined in the regulations of the British Columbia Ministry of Energy and Mines. The amount of work required is \$5.00 per hectare for the first two years, \$10.00 per hectare for the third and fourth years, \$15.00 per hectare for the fifth and sixth, and \$20.00 per hectare thereafter. Alternatively, the claim holder may pay twice the equivalent amount to the British Columbia Government as “Cash in Lieu” to maintain title to the claims.

Given that the claims were recorded 21 June 2019 and that they are under claim protection until 31 December 2022, the claims currently straddle years 2 (\$5/ha) and 3 (\$10/ha) for work commitments, the required expenditures are approximately:

- \$125,000 - expenditures required to bring all claims current to 31 March 2022.
- \$284,000 - expenditures required to bring all claims current to 31 December 2022.
- \$496,000 - expenditures required to bring all claims current to 31 December 2023.

### **4.3 Property and Title in British Columbia June**

Information in this section and its sub-sections is available online through Government of British Columbia website, and specifically the Ministry of Energy, Mines and Low Carbon Innovation which is largely responsible for the mining sector. The Ministry of Environment and Climate Change Strategy, the Environmental Assessment Office and the Ministry of Forests, Lands, Natural Resource Operations and Rural Development provide for additional oversight of mining operations through their respective mandates. Applicable legislation and regulation in British Columbia includes the:

- Mineral Tenure Act (MTA);
- Land Act;
- Mines Act (and accompanying Health, Safety and Reclamation Code for Mines in BC);
- Mineral Land Tax Act;
- Mineral Tax Act;
- Environmental Assessment Act; and
- Environmental Management Act.

Rights to mineral resources on public lands are generally held by the Crown. The ownership of lands and minerals situated in a province generally belong to the province. Each provincial government exercises administration and control of ownership and disposition of most mining rights and lands through provincial legislation.

#### **4.3.1 Mineral Title**

Prior to 1 June 1991, registrations in respect of a mineral claim or mining lease were manually recorded on, or attached to, the original application document for a mineral claim or the original lease document for a mining lease. From June 1991 to 11 January 2005, all records were entered into a computer database, maintained by the Gold Commissioner's Office.

On 12 January 2005, the British Columbia mineral titles system was converted to an online registry system, MTO, and ground-staking of claims was eliminated in favour of map-staking based on grid cells. Claims recorded prior to 12 January 2005 are referred to as legacy claims. Claims acquired through map staking are referred to as cell claims. From and after the date of changeover to map-staking, claim holders could convert legacy claims to cell claims, or maintain the original legacy claim. Legacy claims vary in size and shape, depending on the regulations that were in force at the time of staking and recordation. Cell claims can consist of 1–100 cells which range from 21 ha in southern British Columbia to 16 ha in the north.

A mineral claim is valid for one year and can be extended for as many as 10 years from the application date or on a year-to-year basis. The extension period depends on whether the claimholder has opted to undertake work on the property or make payment in lieu.

To keep claims in good standing in accordance with the MTA, a minimum value of work or cash-in-lieu is required annually. The minimum value of work required to maintain a legacy or cell mineral claim for one year is currently set at \$5/ha for the first and second anniversary years, \$10/ha for the third and fourth anniversary years, \$15/ha in the fifth and sixth anniversary years, and \$20/ha for each subsequent anniversary year. The cash-in-lieu required to maintain a mineral claim for an anniversary year is double the value of the work commitment requirement.

A mining lease is required if the claim holder wishes to produce more than 1,000 t of ore in a year from each unit in a legacy claim (typically 25 ha) or each cell in a cell claim. The holder of a mineral claim may obtain a mining lease for that claim if certain requirements are met (surveying if required, payment of fees, and posting of notices).

Unpatented mineral claims must generally be converted into mineral leases before production-level activities and resource extraction can occur. To convert an unpatented mineral claim to a mineral lease in British Columbia, the claimholder must register an application for a mining lease with the province's mineral titles registry and pay a prescribed fee. The claimholder must then post a notification in the province's Gazette and in a newspaper circulating within the area of the claim, and the BC government requires that the mineral claims be surveyed by a land surveyor.

Mineral leases are generally granted for terms that may range from 10–30 years. The initial term of a mineral lease cannot exceed 30 years. A lessee can renew for a period of a maximum of 30 years if the lessee complies with the Mineral Tenure Act.

#### **4.3.2 Surface Rights**

The holder of a mineral claim or mining lease issued under the Mineral Tenure Act does not have exclusive possession of the surface or exclusive right to use the surface of the land. However, the holder of such claims and leases does have the right to access the lands for the purpose of exploring for minerals and to use the surface for mining activities (exploration, development, and production).

The surface of a mineral claim or mining lease may either be privately owned or owned by the Crown. The Mineral Tenure Act provides for a recorded claim holder to use, enter, and occupy the surface of a claim for the exploration and development or production of minerals, including the treatment of ore and concentrates, and all operations related to the exploration and development or production of minerals and the business of mining, subject to production limits. Permits are required before undertaking most exploration or mining activity.



A recorded claim holder must give surface owners of private land and leaseholders of Crown land notice before entering for any mining activity. A recorded holder is liable to compensate the surface owner for loss or damage caused by the entry, occupation, or use of the area for exploration and development or production of minerals.

### **4.3.3 Environmental Regulations**

The Environmental Assessment Act provides a mechanism for reviewing proposed major projects in British Columbia, including major mining projects, to assess their potential impacts. The Environmental Assessment Office (EAO) manages the assessment of proposed major projects as required by the Environmental Assessment Act.

Certain large-scale project proposals must undergo an Environmental Assessment (EA) and obtain an EA certificate before they can proceed; an application must be prepared for an EA certificate which identifies and assesses any potential effects that may result from the proposed project, and ways to mitigate any adverse effects where possible. Federally, this information is compiled into an Environmental Impact Statement (EIS). Under a joint EA process, the proponent submits one document that meets the requirements of both governments.

If the project is allowed to proceed, an EA certificate is issued and is subject to compliance and reporting requirements. The EA certificate specifies a deadline by which the project must have substantially commenced and is generally at least three years and not more than five years after the issue date of the Certificate. Once the project has substantially started, the EA certificate remains in effect for the life of the project unless suspended or cancelled for breaches of the conditions. Proponents may apply to amend their EA certificate as project circumstances change.

### **4.3.4 Water Regulations**

All water in British Columbia is owned by the Crown on behalf of the residents of the province. There are authorized uses of water outside of the licensing system, such as the use of groundwater for domestic purposes. All other ground or surface water uses, including for mining, require a license.

The Ministry of Forests, Lands, Natural Resource Operations & Rural Development (“FLNRORD”) authorizes licenses and approvals, and holders must comply with provincial, local and in some cases federal regulations. Separate licenses are required for all non-domestic uses of surface and ground water. The license contains the terms of use, including the quantity that can be taken, the purpose for which the water will be used, and the time of year that water can be harvested. Water licenses are subject to a compulsory review after a 30-year period.

### **4.3.5 Provincial Government Royalties**

Under the Mineral Tax Act in British Columbia, operators pay tax at the following rates:

- 13% of net revenue proceeds derived from operations of a mine for the current fiscal year.
- 2% of net current proceeds derived from the operations of a mine for the current fiscal year.

The owners of mineral lands under the Mineral Land Tax Act also pay an annual tax on mineral lands regardless of whether minerals are produced from that land. The tax amount depends on the size of the mineral lands. In British Columbia, the rate ranges between C\$1.25/ha (up to 20,235 ha) and C\$4.94/ha (over 404,686 ha).

#### **4.3.6 Indigenous Peoples**

The status of Indigenous land rights and land holdings must be considered when acquiring mineral rights in Canada. "Indian Reserve" lands under the Indian Act are subject to a unique federal regulatory process. Over the past few decades, Canada has entered into modern treaties with many Indigenous groups which transferred mineral rights ownership in certain prescribed lands in consideration of surrender of title on broader areas of Crown lands. Extracting minerals from these treaty lands typically requires the consent of the rights-owning Indigenous group.

### **4.4 Exploration Permitting in British Columbia**

In British Columbia, a permit under the Mines Act is required for exploration activities involving mechanical disturbance (e.g., drilling). The application is called a "Notice of Work" ("NOW"). A NOW application must be completed and submitted via the virtual FrontCounter BC ("vFCBC") system.

#### **4.4.1 Indigenous Early Engagement**

Applicants are encouraged to engage with Indigenous groups with potential interest in their proposed project area early – prior to initiating any formal regulatory or permitting process with the provincial government. NOW applicants who choose to engage early with Indigenous groups may benefit from an expedited provincial consultation process, and may realize other relationship, reputational and/or project benefits. Ultimately, this is a decision each NOW applicant must make based on their own specific circumstances.

#### **4.4.2 Archaeological Considerations**

The Heritage Conservation Act protects all heritage (archaeological) resources in British Columbia that predate 1846 – whether they have been discovered or not, and whether they are on public or private lands. In addition, section 10(1) of the Mines Act requires mining and exploration proponents to prepare a plan for the conservation of cultural heritage resources. The chance find procedure required to be submitted with every NOW application is an important way for the provincial government to ensure that as-yet undiscovered heritage resources in BC are not lost if they are accidentally discovered. Ground disturbing activities, including many exploration activities, have the potential of unearthing artifacts (such as stone tools), sites (such as pit houses or burial sites) or other heritage resources. Significant legal penalties may apply to those who contravene the Heritage Conservation Act, including fines and potential imprisonment.

#### **4.4.3 Reclamation Bonds**

All NOW applicants are required to post a reclamation security bond before issuance of any Mines Act permit or authorization. This bond is intended to cover the cost of site reclamation, maintenance, and closure should a proponent abandon a project without completing required reclamation, necessitating the provincial government to step in and undertake the required reclamation program with seizure of the security bond. Each reclamation bond is held by the provincial government until the mines inspector is satisfied that reclamation requirements have been met, at which point the bond is returned if the permittee requests closure of their permit.

#### **4.4.4 Types of Exploration Permits**

There are three types of NOW authorizations for which applicants can apply. While applicants do not need to be certain of the precise locations of activities beyond Year 1, you should be certain of the geographic area within which all future work will fall (if it changes later, a permit amendment will be required). This is important for consultation with Indigenous groups and referral to other reviewers, who will want to understand the entire area within which you propose to work. It is also pertinent for mine inspections and other processes, to properly assess the entire area within which you propose to work, and screen for overlaps with other land uses.

The most suitable option depends on how long you anticipate working in the area and how certain you are of location and timing for your proposed activities. The three options are:

##### ***One-Year Authorization (Site Specific)***

A one-year authorization allows applicants to undertake proposed exploration activities over the course of a single year. Exact locations, proposed disturbance, and timber cutting for each proposed activity must be identified both on maps and in the text of your NOW application. At the end of the year, you will need to submit an annual summary that outlines the activities (including reclamation) completed during the authorization period. This authorization will not extend beyond one year without a permit amendment.

##### ***Multi-Year Authorization (Site Specific)***

A multi-year authorization allows applicants to carry out proposed exploration activities over a period of two to five years. You will need to identify the exact locations, proposed disturbance and timber cutting for each proposed activity over the entire authorization period. At the end of each year, you are required to submit an annual summary outlining the activities (including reclamation) completed during that year. If the proposed activities or locations change, you will need to obtain a permit amendment.

##### ***Multi-Year Area-Based (MYAB) Authorization***

A MYAB authorization allows you to move exploration activities within a certain overall 'work area' over a period of two to five years. For the first year, activities, locations, proposed disturbances and timber cutting must be identified in a 'year 1 mine plan' with consistent maps (showing the overall work area), and reclamation costs for this work. For the subsequent years of the authorization, the NOW application does

not require exact locations, disturbances, and timber volumes to be mapped, but the work proposed to be completed in those years must be described in the NOW application in sufficient detail for the mines inspector and reviewers to understand.

#### **4.5 Current Permits**

No current permits are issued for the Project.

#### **4.6 Royalties, Agreements and Encumbrances**

Adhering to the Assignment Agreement, the Project is subject to a 2.0% Net Smelter Return royalty (“NSR”), payable from production on the Project to C3 Metals, of which 1.0% can be purchased back by Cascade Copper Corp. for CDN\$1,000,000.

Additionally, the Rogers Creek Project “main block” claims are subject to an underlying 2.5% NSR (Poirier Royalty) payable to the original Vendor (Mr. Gary Poirier), of which 1.25% of the NSR may be purchased by C3 for CDN\$1,250,000 at the time of a production decision. If Commercial Production is achieved on the Project, Cascade will assume rights to the Poirier Royalty terms.

#### **4.7 Communication and Consultation with the Community**

During exploration activities and permit applications, previous operators notified, consulted, and negotiated with the relevant First Nations bands in the area with a high rate of success and understanding. The Rogers Creek Project is situated in the traditional lands of the In-Shuck-ch FN and the Sto:lo First Nation, in the watersheds of the Lower Lillooet, Pitt, and Stave Rivers.

Cascade Copper and its predecessors have a long standing and amicable working relationship with the local First Nations and are currently in the process of negotiating and conveying a statement of intent to perform exploration activities and will follow-up and conduct consultation activities with the appropriate First Nations through meetings, site visits, and monthly bulletins. Consultation activities with the First Nations may include:

- Meetings and traditional knowledge workshops;
- Meetings with the First Nation leaders;
- Participating in mining workshops and community gatherings;
- Project update bulletins;
- Site visits; and
- Aiding local band members by providing assistance when needed.

Cascade Copper’s hiring and contracting policy is to hire and train First Nation and local community members or service providers when possible.

#### **4.8 Environmental Liabilities**

To the Author’s knowledge, there are no known environmental liabilities associated with the Project. No significant factors or risks associated with the Project that may affect access, title, or the ability to perform work are known to the Author, however, several actionable items should be followed to assure a smooth process moving forward (see Table 25-1 and Table 25-2).

#### **4.9 Fraser Institute Survey**

The Author recognizes the 2020 Fraser Institute Annual Survey of Mining Companies report (the “2020 Fraser Institute Survey”) as a reasonable source for the assessment by peers in the mining industry of the overall political risk facing an exploration or mining project in British Columbia. Each year, the Fraser Institute sends a questionnaire to selected mining and exploration companies globally. The Fraser Institute survey is an attempt to assess how mineral endowments and public policy factors such as taxation and regulatory uncertainty affect exploration investment.

The 2020 Fraser Institute Survey is globally regarded as an independent report-card style assessment to governments on how attractive their policies are from the point of view of an exploration manager or mining company and forms a proxy for the assessment by industry of political risk in specific political jurisdictions from the mining industry’s perspective.

Of the 77 jurisdictions surveyed in the 2020 Fraser Institute Survey, British Columbia ranked 17<sup>th</sup> for investment attractiveness, 41<sup>st</sup> for policy perception, and 10<sup>th</sup> for best practices mineral potential.

#### **4.10 Other Significant Factors and Risks**

The Author is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the Property.

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## **5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

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### **5.1 Accessibility**

Access to the Rogers Creek Project can be easily achieved by first traveling from Vancouver, BC via BC Provincial Highway 99 N approximately, 150 km (2 hours drive) to the town of Pemberton, BC. From Pemberton, travel approximately 28 km east on Hwy 99 N toward Lillooet. After crossing the Birkenhead River turn right (south) onto the In-Shuck-ch Forest Service Road; the northern edge of the Project is at km 15. Turning left at kilometre 42, the Rogers Creek Forest Service Road provides access to subsidiary logging roads and ATV trails in the Rogers Creek Valley where the current focus of exploration work is located. The In-Shuck-ch Forest Service Road is a well maintained gravel logging road, drivable by car, which provides access to several communities of the In-Shuck-ch and Sto:lo First Nation within the Lillooet River Valley. The Rogers Creek Forest Service Road requires the clearance of at least a half-ton pickup truck. Access to higher alpine elevations on the Project is by helicopter based out of Whistler or Pemberton.

### **5.2 Climate**

Temperatures in the Lillooet River valley average about 2°C in the winter and approximately 26°C in the summer, although temperatures are much colder on surrounding high-elevation mountain peaks; most rainfall occurs between October and March. Higher elevations in the Coast Mountains get heavy snowfall in the winter, which makes exploration difficult to impossible throughout the winter. The exploration season starts in April or May and in general, ceases by the end of October to mid-November.

### **5.3 Local Resources**

The Village of Pemberton has a population of approximately 2,600; it has train and bus stations, a small airport, a small health unit, an elementary school, Post Office, and several lodges and motels. It primarily provides services for recreation and heavy industry. Agriculture and forestry play a minor role in the overall industrial output of the Village.

### **5.4 Infrastructure**

A high-tension power line extends through the western side of the Rogers Creek Property following the Lower Lillooet River with a recently built substation located at the entrance to the Rogers Creek Project and could easily be extended to Target I. Rogers Creek is a large tributary that runs through the Project and could be utilized for future exploration and development.

Land uses on the Project include recreational activities (hunting, fishing, and hiking), mineral exploration, and forestry.

No usable mining infrastructure currently exists within the Project boundaries, nor is planned for the Project's current stage, however, a wooden framed core shack was erected by Miocene near Target II in 2010. The Author is not qualified to assess on-site suitability for infrastructure development, however, there potentially exists sufficient surface area within the current claims to utilize in potential future tailings, waste disposal, heap leach pad areas, and processing plants.

## **5.5 Physiography**

Regional topography surrounding the Rogers Creek Project is very rugged with elevations ranging from 200 m up to 2,500 m AMSL. Mountain slopes can be very steep (more than 45 degrees) restricting access to some parts of the Project. Geological structures seem to have a major influence on topography as they form valleys within the homogenous igneous rocks found on the Property. In areas with mafic meta-sedimentary lithologies, slopes are generally not as steep as in the Intrusive Complex. Valleys are filled with talus and fluvial sediments derived from erosion of adjacent ridges. Slopes are often covered by talus and vegetation. At lower elevations, vegetation consists of cedar and fir trees and undergrowth typical of the temperate rainforest in southwest BC. Stunted spruce and pine can be found at higher elevations.

Temperatures in the Lillooet River valley average about 2°C in the winter and approximately 26°C in the summer, although temperatures are much colder on surrounding high-elevation mountain peaks; most rainfall occurs between October and March. Higher elevations in the Coast Mountains get heavy snowfall in the winter, which makes exploration difficult to impossible throughout the winter. The exploration season starts in April or May and in general, ceases by the end of October to mid-November.

## 6.0 HISTORY

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The Lower Lillooet River provided the first route into the interior of BC during the gold rush of the mid-19th Century. Presumably, prospectors at that time would have panned many areas along the Lillooet River itself, as well as its tributaries, such as Rogers Creek.

Very little modern exploration work has ever been conducted on the Project. Limited work was carried out by Placer Development, and Noranda Exploration on two small claim groups covering parts of the Property in the mid-1980s. In Assessment Report Number 12079, Boyce (1984) describes minor geochemical work including the collection of 16 stream sediment samples, 25 soil samples and 10 rock outcrop (grab) samples. Several “modest” Au, Ag, As and Pb anomalies were identified, which, given the small area covered, is of only general relevance to the objectives of the current exploration program.

In Assessment Report 14119, Wilson (1986) describes the collection of 123 soil samples which defined an open-ended silver, zinc and lead anomaly and erratically distributed gold anomalies potentially indicating the presence of gold and base metal veining associated with a porphyry environment.

In 2007, Mr. Gary Poirier located a copper showing while excavating a logging road on the north side of the Rogers Creek Valley. He staked an initial claim group covering the showing and surrounding area. Wallbridge Mining Company Ltd. carried out an initial site visit in the fall of 2007 and subsequently acquired the project and expanded it via claim staking activities. Since then it has had a significant amount of modern exploration conducted via various operators.

There are not any significant historical mineral resource and/or mineral reserve estimates on the Property and there has been no production from the Property.

### 6.1 Historical Exploration

A summary of all historical exploration work conducted on the Project is presented in Table 6-1. Exploration work carried out on the Rogers Creek Project by previous operators (*e.g.*, Jago, 2008, 2009a, 2009b) includes:

- 1,786 line-km of helicopter-borne magnetic gradiometry and VLF-EM.
- 280 line-km of helicopter-borne radiometrics.
- Surveying, levelling, merging, and inversion modelling of 49.6 line-kilometres of Induced Polarization ground geophysics.
- 3D modelling of all geophysical and project data by Mira Geosciences Ltd. with proprietary Geoscience Analyst 3D software.
- Prospecting, mapping, and sampling, including the collection of 1,071 surface rock and channel samples, 3,298 soil samples, and 334 stream sediment samples.



- Soil sample geochemical vectoring study using “Porphyry Indicators”.
- 5,209 metres of diamond drilling including the analysis of 1,951 drill core samples.
- 5,200 m of drill core magnetic susceptibility readings totaling 1,164 readings.
- 329 resistivity/chargeability readings taken over 7 drill holes totaling ~4,055 metres.
- Limited surface and drill hole (4 holes) alteration mapping and logging.
- Collection of 626 TerraSpec Halo alteration readings on all available core (557 readings) and limited outcrop (69 readings). Analysis, interpretation, and modelling of data by an alteration specialist.

The sections that follow provide summaries of the significant historical exploration work programs conducted by previous operators.

Table 6-1. Summary of historical exploration activities on the Rogers Creek Project (1984- 2019).

Year	Operator	Work Performed	Description	Report Reference
1984	Placer Development Ltd.	Soil-Rock-Stream Sampling	Collection and analysis of 16 stream sediments, 25 soil samples, and 10 rock samples.	Boyce, R.A., 1984. Geochemical Report for Assessment Credit: Cloud Claims; Assessment Report No. 12079
1986	Noranda Exploration Ltd.	Soil Sampling	Collection and analysis of 123 soil samples.	Wilson, R.G., 1986. Report on the Geology and Geochemistry of the RC1 and RC2 Claims.
2008	Wallbridge Mining Company Ltd.	Soil-Rock Sampling	Phase 1 - Initial recon visit - sampling and assaying of discovery site (12 soils, 13 rocks)	Smyth, C.P., 2008. 2008 Report on the Rogers Creek Property, Southwestern British Columbia
2008	Wallbridge Mining Company Ltd.	Soil-Rock Sampling	Phase 2 - Follow-up sampling/mapping over the Mag high and low (346 soils, 76 rocks)	Smyth, C.P., 2008. 2008 Report on the Rogers Creek Property, Southwestern British Columbia
2008	Wallbridge Mining Company Ltd.	Airborne Geophysics	Phase 3 - 1506 L-km helicopter-borne magnetic gradiometry and VLF-EM survey by CMG Ltd.	CMG Airborne, 2008. Report on a Helicopter-Borne Magnetic Gradiometer & VLF-EM Survey, Rogers Creek, Project 2008-004
2009	Wallbridge Mining Company Ltd.	Soil-Rock-Silt-HMC Sampling	Collection and Analysis of 307 soils, 670 rocks, 150 stream sediments, and 73 heavy mineral concentrates	Jago, B.C., 2009a. 2009 Technical Report on the Rogers Creek Property, British Columbia
2009	Wallbridge Mining Company Ltd.	Line Cutting	A 41 km long grid was cut in preparation for an induced polarization survey	Jago, B.C., 2009a. 2009 Technical Report on the Rogers Creek Property, British Columbia
2009	Wallbridge Mining Company Ltd.	Soil-Rock-Silt Sampling	Collection and Analysis of 216 soils, 119 rocks, 14 stream sediments	Jago, B.C., 2009a. 2009 Technical Report on the Rogers Creek Property, British Columbia
2009	Wallbridge Mining Company Ltd.	Induced-Polarization Survey	IP-Survey over Target Areas I and II at resolutions of 25m and 50m over 41 L-km by Abitibi Geophysics	Berube, P., 2009. Resistivity-IP Survey - Abitibi Logistics and Interpretation Report for Wallbridge Mining Company Ltd, Rogers Creek Property, British Columbia

Year	Operator	Work Performed	Description	Report Reference
2009	Wallbridge Mining Company Ltd.	Magnetic Susceptibility	Collection of magnetic susceptibility data for surface rocks and drill core	Jago, B.C., 2009a. 2009 Technical Report on the Rogers Creek Property, British Columbia
2009	Wallbridge Mining Company Ltd.	Magnetic Inversion	Inversion of airborne magnetic data obtained by CMG Ltd. in 2008 by Mira Geosciences	Phillips, N., 2009. Unconstrained Magnetic Modelling, Rogers Creek Property, British Columbia, Mira Geoscience Project No. 3343
2009	Wallbridge Mining Company Ltd.	Diamond Drilling	Drilling of 2,122.75 metres to follow up on IP survey and surface sampling results	Jago, B.C., 2009a. 2009 Technical Report on the Rogers Creek Property, British Columbia
2010	Miocene Metals Ltd.	Prospecting with Soil-Rock-Silt Sampling & Assaying	Collection and Analysis of 1124 soils, 58 surface rocks, 43 stream sediments, structural mapping & prospecting	Garcia, J.S., 2012a. Report on the 2010 Geochem Survey and Mapping Activities for Rogers Creek Project, Southwestern British Columbia
2010	Miocene Metals Ltd.	Diamond Drilling	Drilling of 1,024.39 metres (2 holes) targeting a deep IP anomaly and an open-ended gold in soil anomaly	Garcia, J.S., 2011. 2010 Report on the Drilling Activities for Rogers Creek Project, Southwestern British Columbia
2010	Miocene Metals Ltd.	Airborne Geophysics	A 280 L-km helicopter-borne magnetic gradiometry and VLF-EM & radiometric survey by CMG Ltd. over Target IV	CMG Airborne, 2010. Report on a Helicopter-Borne Magnetic Gradiometer & VLF-EM and Radiometric Survey, Rogers Creek Property South, Project 2010-001
2011	Miocene Metals Ltd.	Prospecting with Soil-Rock-Silt Sampling & Assaying	Collection and Analysis of 580 soils, 65 rock channel samples, 47 surface rocks, 38 stream sediments, structural mapping & prospecting	Garcia, J.S., 2012b. Report on the 2011-2012 Geochem Survey and Mapping and 2011 Diamond Drilling Activities for Rogers Creek Project, Southwestern British Columbia
2011	Miocene Metals Ltd.	Diamond Drilling & Core Assaying	Drilling of 2,062 metres (3+2 holes, Targets II & I, respectively) targeting a disseminated copper mineralization & IP anomaly (702 Samples)	Garcia, J.S., 2012b. Report on the 2011-2012 Geochem Survey and Mapping and 2011 Diamond Drilling Activities for Rogers Creek Project, Southwestern British Columbia
2012	Miocene Metals Ltd.	Prospecting with Soil-Rock-Silt Sampling (un-assayed)	Collection and Analysis of 532 soils, 13 surface rocks, and 239 core samples. All 2012 samples are in storage in Pemberton awaiting assay	Garcia, J.S., 2012b. Report on the 2011-2012 Geochem Survey and Mapping and 2011 Diamond Drilling Activities for Rogers Creek Project, Southwestern British Columbia
2013	Miocene Metals Ltd.	Physical Property Measurements and Review of Drill Core	Magnetic susceptibility measurements, and chargeability and resistivity measurements were collected from drill core, and a review of the geological logging was carried out with particular emphasis on structure and alteration	Baird, S.J., 2014. Assessment Report on the 2013 Rogers Creek Exploration Activities - July 2014, Southwestern British Columbia

Year	Operator	Work Performed	Description	Report Reference
2015	Miocene Metals Ltd.	Alteration and Geological Mapping & Core Review	Caracle Creek International Consultants reviewed selected drill holes and field outcrops with Carube Copper Corp	Baird, S.J., 2016. Assessment Report on the 2015 Rogers Creek Exploration Activities - Sept 2016, Southwestern British Columbia
2015	Miocene Metals Ltd.	Induced-Polarization Survey	6 L-km ground IP-Survey by SJ Geophysics on Target Area I at 25m resolution over 2 lines located north of the IP-Survey performed in 2009 by Abitibi Geophysics.	Baird, S.J., 2016. Assessment Report on the 2015 Rogers Creek Exploration Activities - Sept 2016, Southwestern British Columbia
2015	Miocene Metals Ltd.	Assaying of Soils Taken in 2012	169 Soil samples collected in 2012 from Target Areas I and IV were submitted for analysis with ALS Chemex.	Baird, S.J., 2016. Assessment Report on the 2015 Rogers Creek Exploration Activities - Sept 2016, Southwestern British Columbia
2016	Carube Copper Corp.	Mira Geosciences Data Compilation and Modelling	Compilation, merging, inversion, and modelling of all available data on the property with final integration into Geoscience Analyst for viewing.	Baird, S.J., 2017. Assessment Report on the 2016 Rogers Creek Exploration Activities - Dec 2017, Southwestern British Columbia
2016	Carube Copper Corp.	Geochemical Interpretation and Vectoring	Compilation and interpretation of all surface geochemical data for "porphyry cap indicators" by Rampton Resource Group to assist with vectoring towards hidden/buried porphyry deposits	Baird, S.J., 2017. Assessment Report on the 2016 Rogers Creek Exploration Activities - Dec 2017, Southwestern British Columbia
2016	Carube Copper Corp.	Recon & Soil Sampling	Reconnaissance along newly built logging roads and collection of 42 Soil samples (including 2 QA/QC) submitted for analysis.	Baird, S.J., 2017. Assessment Report on the 2016 Rogers Creek Exploration Activities - Dec 2017, Southwestern British Columbia
2019	Tocvan Ventures Corp.	Induced-Polarization Survey	2.6 L-km ground IP-Survey by SJ Geophysics on Target Area I at 25m resolution over 1 line located 200m north of the IP-Survey performed in 2015 by SJ Geophysics. The 2015 and 2019 survey data were merged and inverted into a 3D model.	Malek, C. and Pandur, K., 2020. Assessment Report on the August-September 2019 Rogers Creek Exploration Activities - Feb 2019, Southwestern British Columbia
2019	Tocvan Ventures Corp.	TerraSpec Alteration Study	Collection of 626 TerraSpec Halo alteration readings on all available core (557 readings) and limited outcrop (69 readings) along logging roads. Analysis and modelling of data by an alteration specialist.	Malek, C. and Pandur, K., 2020. Assessment Report on the August-September 2019 Rogers Creek Exploration Activities - Feb 2019, Southwestern British Columbia

### **6.1.1 Wallbridge Mining (2007-2009)**

Initial work on the property consisted of mapping and rock and soil sampling over the site of the original logging road discovery showing and the adjacent magnetic low seen on the regional magnetic maps. Rock grab samples of outcrop were collected along logging roads and B horizon soils were collected from upslope of the roads to avoid contamination (Jago, 2008 and 2009a).

After the initial due diligence work and realizing the high potential of the project, Wallbridge secured an option agreement on the Rogers Creek Project in early 2008 and commenced a major field program including ~1,506 line-km of airborne magnetic gradiometer and VLF-EM surveys flown over the northern two-thirds of the project by CMG Ltd. (CMG), of Rockwood, Ontario (Jago, 2009b).

Results of the airborne survey (Figure 6-1) provided definition of the magnetic feature evident on the regional magnetic maps and defined a circular 6 x 2 km ovoid magnetic feature “Caldera Structure” covering Target Areas I and II (Figure 6-2), which is centred on two ~1.6 km diameter magnetic lows, and which is the locus of the original discovery showing and anomalous silt, soil, and rock samples.

A 41 line-km DCIP survey was completed over Targets I and II during the summer of 2009 by ABITIBI Geophysics Ltd. of Val D’Or, Quebec. The survey defined several significant chargeability and resistivity features and helped to focus an initial 3 hole drilling program (Holes WRC-001-003) on the western margin of Target I that was completed in the fall of 2009.

### **6.1.2 Miocene Metals (2010-2014)**

The 2010 summer exploration program consisted of surface mapping and prospecting conducted along roads, streams, grid lines, and slopes in selected areas. Collection and analysis of 1,217 soil, 43 stream sediment, and 58 surface rock samples was completed (McDonough, 2011).

The field areas were readily accessible using ATVs and 4-wheel drive trucks along a well-developed logging road network. A crew of 5 to 8 persons utilized a temporary three trailer camp with two semi-permanent wooden structures established on a private lot off-property in the Lillooet River valley near the Skookumchuck hot springs.

High-priority target testing in 2011 of previously identified mineralized areas with 3 drill holes in Target II and another 2 drill holes in Target I for a total of 5 drill holes totaling 2,062.0 metres.

Prospecting with mapping and sampling were also carried out in 2011 and 2012, targeting previously defined areas as follows; From June to November 2011, prospecting, geologic mapping, and sampling generated 65 rock channel samples, 47 rock grab samples, 38 silt samples, and 580 soil samples. From May to June 2012 and Aug 2012 prospecting, geologic mapping, and sampling generated 532 soils, 13 rock, and 239 core samples. All collected samples were stored in Pemberton, B.C., for future analysis.

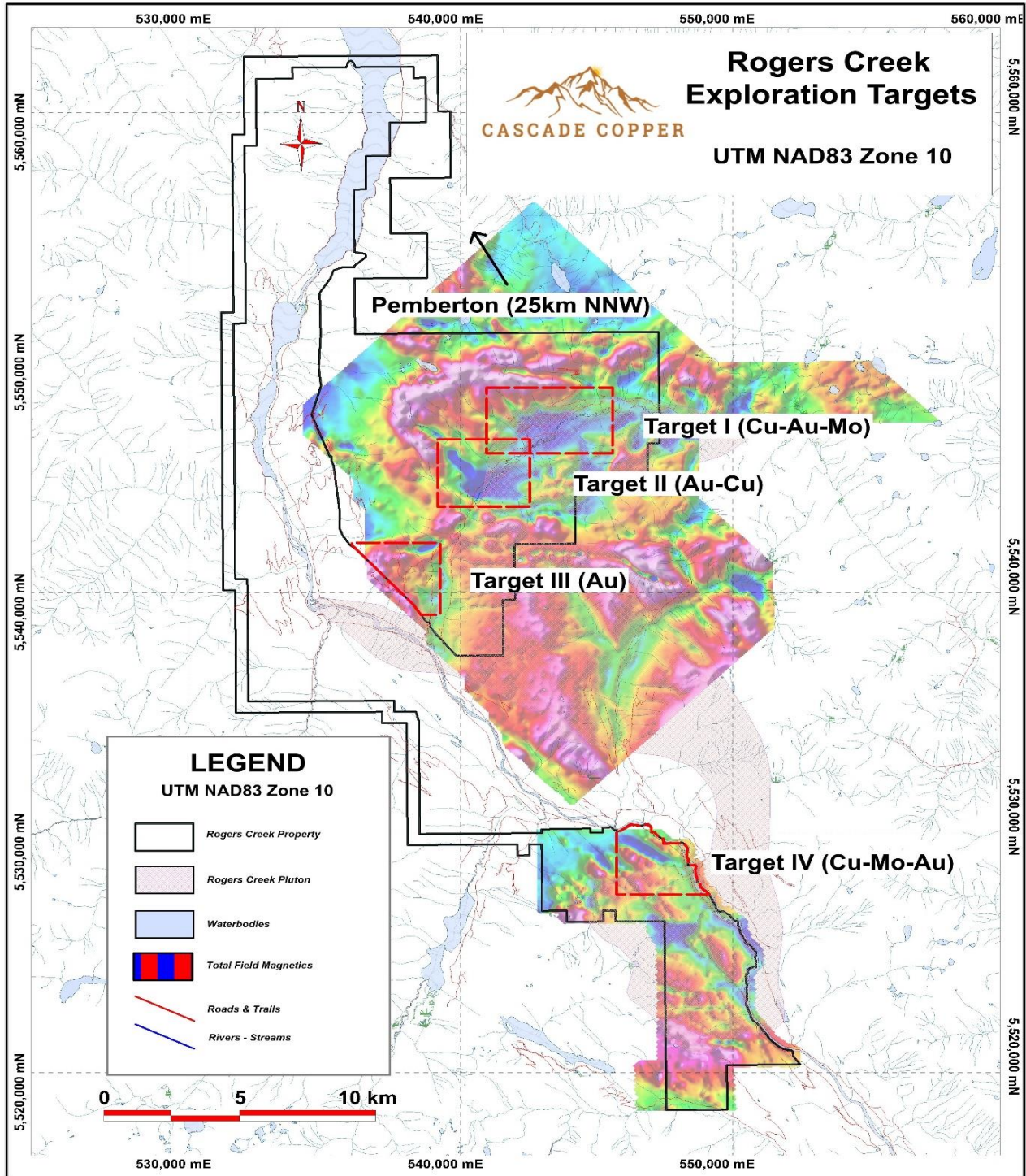


Figure 6-1. Target areas for the Rogers Creek Project overlain on total field magnetics (Cascade Copper, 2022).

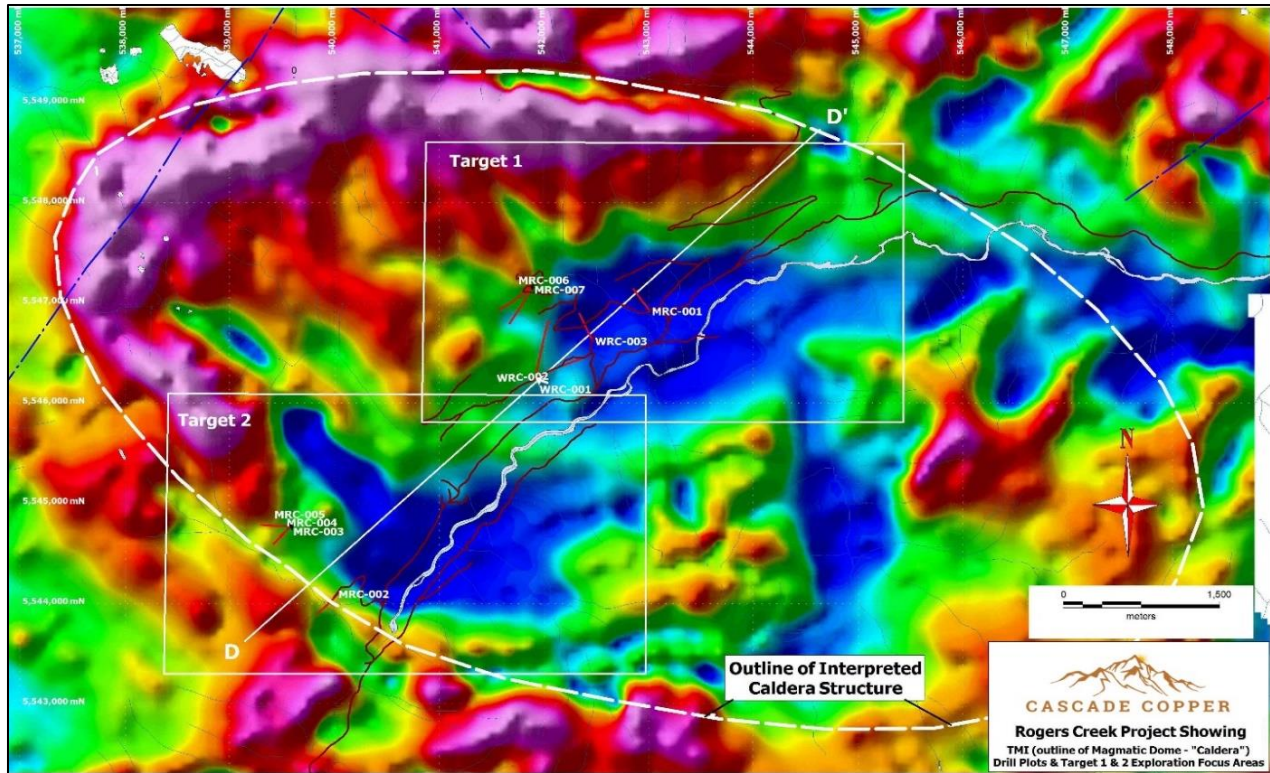


Figure 6-2. Drill hole collar trace locations overlain on total field magnetics and the outline of the interpreted caldera (Cascade Copper, 2022).

Work conducted during 2013 consisted of a general review of all historical drill core and included collection of magnetic susceptibility readings and chargeability/resistivity readings from the core. A GDD SCIP portable drill core sample survey meter was used to collect chargeability and resistivity readings on all existing Rogers Creek drill core at an average interval of 10-12 metres. Magnetic susceptibility measurements were taken using a GDD handheld KT-9 magnetic susceptibility meter. A minimum of 4-5 readings were taken per box of core and then averaged internally within the instrument and entered into a database (McDonough, 2011).

### 6.1.3 Carube Copper (2015-2018)

During September 2015, SJ Geophysics Ltd. of Surrey, British Columbia was contracted by Carube to acquire 6 line-km of Volterra-2DIP data on the Target Area I of the Rogers Creek Project just northwest of the existing survey targeting a deep-seated copper-gold porphyry system.

During August and September 2015, Stephen Wetherup, working for Caracle Creek International Consulting, was contracted by Carube to conduct a 3-day study on the Rogers Creek Project focusing on alteration to help vector towards and target a deep-seated copper-gold porphyry system. The core review study was conducted over 2-days in August 2015 and an outcrop review was performed on 12 September 2015.

Of the 532 soils, 13 rock, and 239 core samples collected by Miocene in 2012 and put into storage, 169 soils Targets I and IV were prioritized in 2015 and submitted for 48-element ICP-MS and PGM-ICP23 gold analysis to ALS Laboratories of North Vancouver, British Columbia. Additionally, 19 pulps were selected from previously assayed samples with ALS Laboratories for reanalysis at AGAT Laboratories as a check and balance between laboratories.

Between January and April 2016, Mira Geosciences Ltd. (Mira) of Vancouver, British Columbia was contracted by Carube to level and merge the new 6 line-km of Volterra-2DIP data surveyed in 2015 with the existing 41 line-km DCIP survey data from 2009. Following successful merging, Mira was contracted to compile, clean up, and integrate all existing property data and merge it in to a single, usable 3-dimensional format that can be imported and manipulated within their Geoscience Analyst 3D software with capability of being exported to other GIS and 3D formats. The airborne magnetic and radiometric data was also modeled and input into the model. In addition, all surface sample data, downhole geochemical, geological, and geophysical data, and geographical data were also incorporated for easy comparison.

Following the review and interpretation of all geochemical surface data by consultant Vern Rampton from Rampton Resource Group between June and August 2016, prospecting along gaps in soil data and open anomalies took place in conjunction with collection and analysis of 42 soil samples (including QA/QC) in September and October 2016, respectively. The soil samples were submitted for 48-element ICP-MS and PGM-ICP23 gold analysis to ALS Laboratories of North Vancouver, British Columbia. No significant rock samples were encountered worthy of analysis.

#### **6.1.4 Tocvan Ventures Corp. (2019-2021)**

Work on the Rogers Creek Project was carried out by First Geolas Consulting on behalf of Tocvan Ventures Corp in two phases from late August to early September 2019 and mid to late September 2019. The purpose of Phase 1 was to evaluate and interpret the alteration characteristics of historical drill core and limited surface exposures on the Project. A total of 626 TerraSpec Halo readings were collected (69 from outcrop and 557 from historical drill core). Phase 2 was a ground based induced polarization-resistivity survey (IP survey) conducted by SJ Geophysics. The one line, 2.6 line-km survey aimed to expand on the “open-ended” chargeability anomaly modeled from the 2015 IP survey. SJ Geophysics also performed leveling and inversion of the combined 2015 and 2019 surveys to better define the northern extent of the anomaly.

An ASD TerraSpec Halo VIS-NIR-SWIR spectrometer rented from Reflex in Vancouver was used to collect the alteration data. All the historical drill core other than two holes, MRC-001 and WRC-003 were systematically scanned box by box using the TerraSpec Halo and visually recording clay alteration and depth, describing the alteration and lithological features, and recording spectral data. Exposed outcrop in road cuts from various locations in Target I and II were also scanned with the TerraSpec. All the spectral data collected was supplied to Kim Heberlein to perform a more advanced interpretation of the spectral data.

## 6.2 Results

Work to date has identified four main “Target Areas” (Figure 6-1) within the Miocene aged Rogers Creek Pluton based on geophysics, geochemistry, and the presence of alteration and/or mineralization. Most work to date has focused on Target Areas I and II, centred by two magnetic lows within a circular magnetic feature (Figure 6-2) over the northwestern part of the intrusion.

Structurally controlled zones of mineralizing retrograde sericite-chlorite after potassic alteration have been identified in several widespread areas. A-, B-, D-, veins have been verified throughout Targets I and II. Multiple, large mono- to polymictic breccia pipes (syn- to post mineral) have been mapped with crosscutting late base metal veins. Porphyritic dykes have been mapped in structurally controlled fault zones adjacent to fragmental breccias flows.

### 6.2.1 Surface Sampling

To date, at least 1,071 surface rock grab and channel samples, 3,398 soil samples, and 334 silt and heavy mineral stream sediment samples (Figure 6-3) have been collected and assayed for multi-element ICP and gold within the Rogers Creek Project by various operators. Some of these samples returned highly elevated copper, molybdenum, and gold values associated with porphyry-related veining that warrant the continued systematic exploration for a potentially buried “porphyry centre”.

#### 6.2.1.1 Targets I and II

Streams draining Targets I and II (Figure 6-4) returned silt samples containing up to 464 ppb gold, 835 ppb silver and 73 ppm copper versus background values of approximately 2.5 ppb gold, 20 ppb silver, and 15 ppm copper. Quartz-sulphide veins on the periphery and cutting Target I breccia returned gold and silver values up to 23.1 g/t gold, 232 g/t silver, 0.69% copper, and 81.4 ppm molybdenum. The strong stream and rock geochemistry is reflected in the broad distribution of gold (>25 ppb Au) and copper (>100 ppm Cu) soil anomalies within the 6 x 2 km area encompassing Targets I and II and to a lesser extent Target III, with a dominant gold signature.

Soil sampling has defined multiple gold- and copper-in-soil geochemical anomalies (> 25 ppb Au and >100 ppm Cu, respectively) particularly along the western (up to 0.242 g/t Au) and northern margins (up to 0.542 g/t Au) of the magnetic low, which also is flanked on the northern margin by several chalcopyrite occurrences. Soil sampling in Target II delineated an open-ended, north-northwest trending soil anomaly over a 200 x 1,200 m area, defined by gold-in-soil values of between 25 and 542 ppb gold and copper-in-soil values between 100 and 1,115 ppm copper (Figure 6-4).

Mapping, prospecting, and surface sampling within the Target II soil geochemical anomaly located gold/copper mineralization within an 80 x 100 m area. The mineralization, hosted by silica-sericite-chlorite altered biotite+/-hornblende granodiorite, consisted of up to several percent disseminated chalcopyrite and lesser pyrite with rare chalcopyrite and pyrite veins up to 1 cm wide.



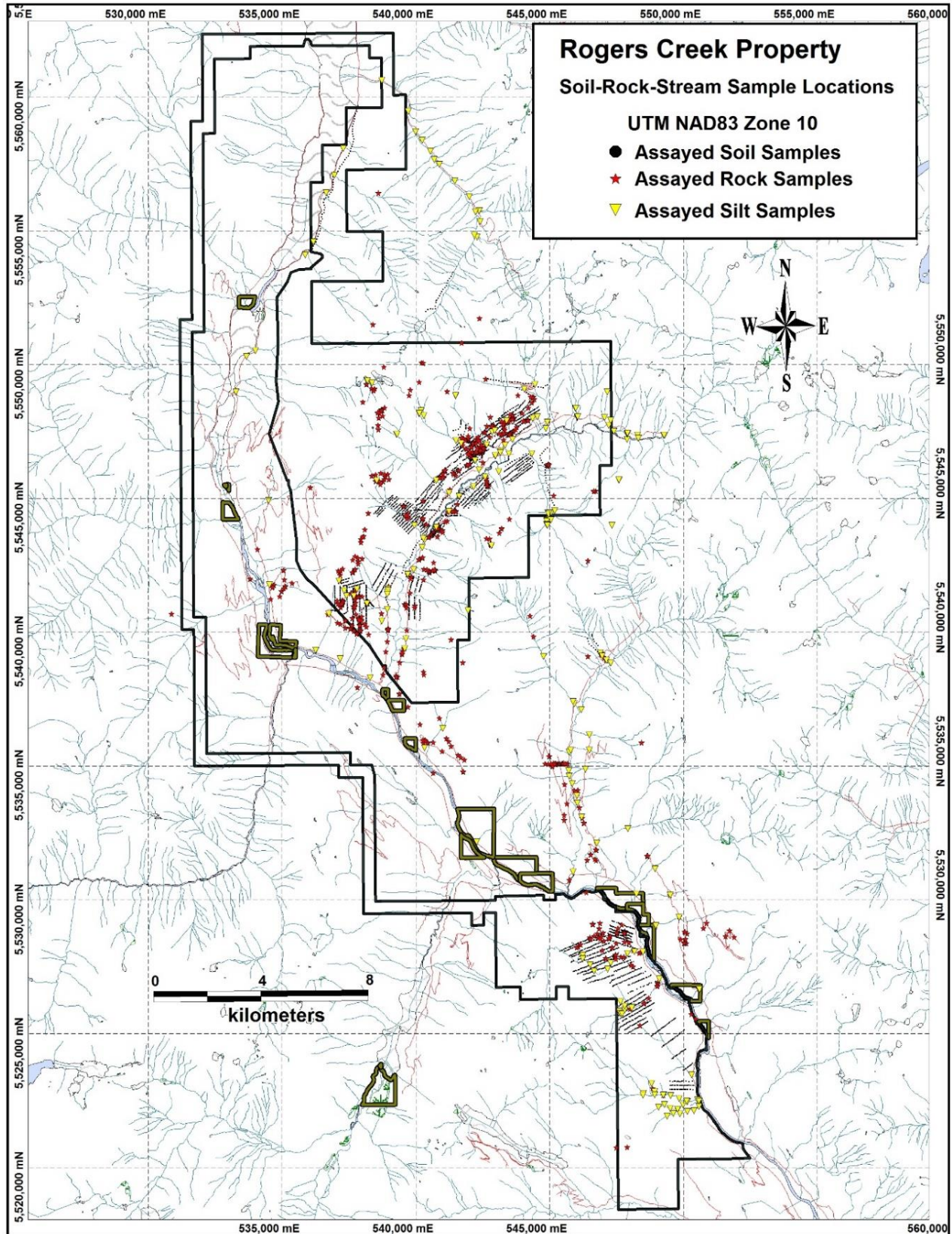


Figure 6-3. Overview location map of all assayed historical surface samples (Cascade Copper, 2021).

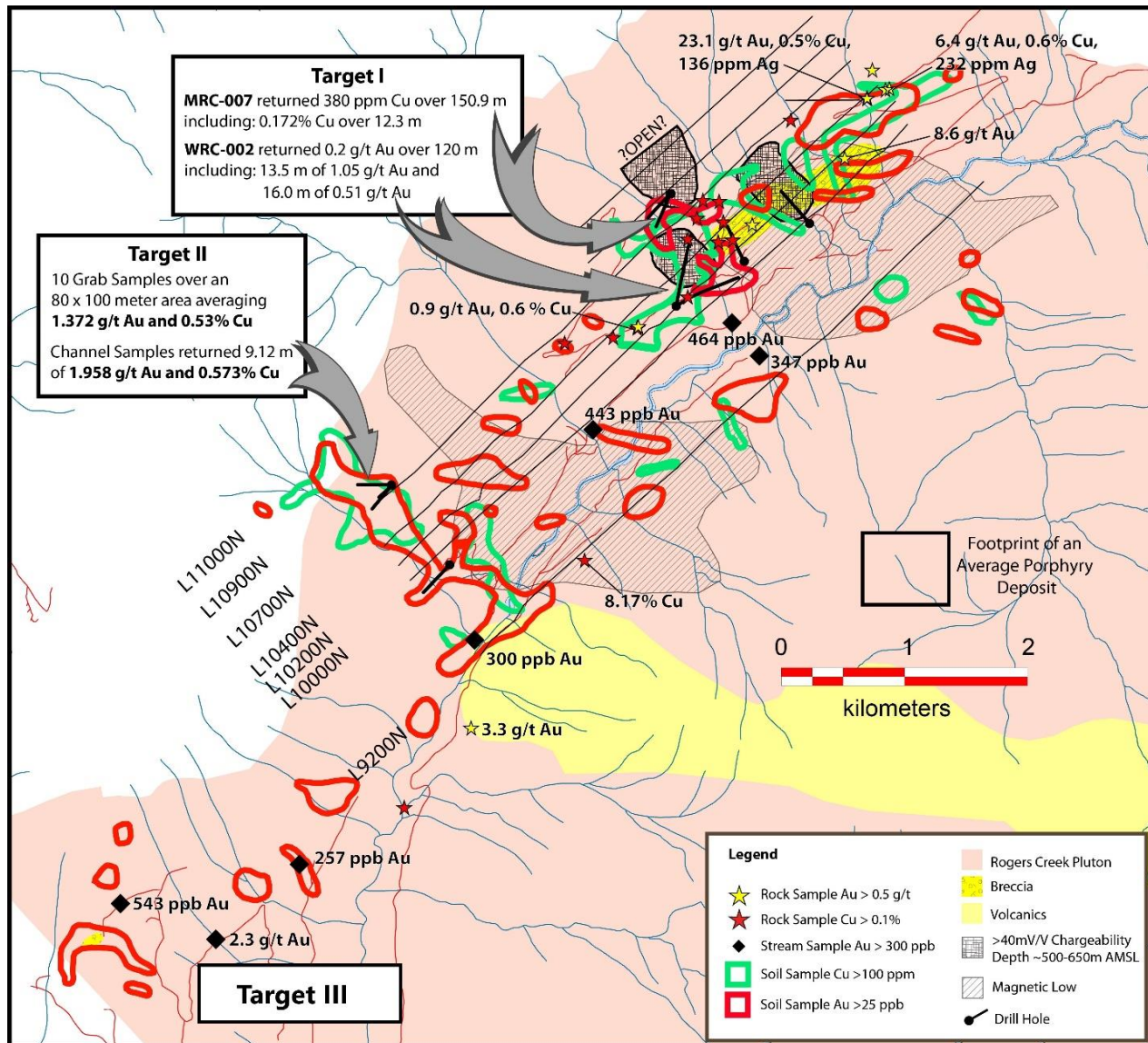


Figure 6-4. Mineralized zones over target areas I, II, and III (Cascade Copper, 2022).

An initial 10 rock grab samples, excluding one crosscut by a pyrite-chalcopyrite vein which returned 3.72% Cu, 15.75 g/t Au, and 91.9 g/t Ag, averaged 1.372 g/t Au, 0.53% Cu, and 11.97 g/t Ag. Target II highlight samples included:

- Sample K881055: 3.72% Cu, 15.75 g/t Au and 91.9 g/t Ag.
- Sample K881054: 0.72% Cu, 4.91 g/t Au and 25.8 g/t Ag.
- Sample K881053: 0.79% Cu, 2.19 g/t Au and 21.6 g/t Ag.
- Sample K880323: 0.82% Cu, 0.836 g/t Au and 8.95 g/t Ag.

Channel sampling of the Target II surface mineralization returned 9.12 m of 1.958 g/t Au, 0.573% Cu and 13.7 g/t Ag, confirming the results of the rock grab samples.

Occurrences of copper and gold mineralization have also been found along a logging road between Targets I and II, where chalcopyrite and bornite mineralization is exposed in narrow "A" and "D" vein assemblages, along fault planes, within chloritic hydro-fractures, and a fluid exsolution pipe. Selective rock grab samples returned up to 6,850 ppm copper with weakly to moderately anomalous gold and silver values.

### **6.2.1.2 Target III**

At Target III, a 200 m diameter zone of hematite and clay/sericite/tourmaline-altered breccia was located in an area of anomalous Au-in-silt values (up to 2.3 g/t Au) and zones of intense silica and potassic alteration. Stream sediment samples with anomalous gold (*see* Figure 6-4) were recovered from streams that drain roughly east-west and north-northeast trending structures. These host zones of intense quartz-sericite-pyrite alteration up to 5 m wide that have returned up to 0.82 g/t Au. This target has not been drill-tested.

### **6.2.1.3 Target IV**

Target IV, located about 18 km south of the original discovery area in Target I (*see* Figure 6-1) and consists of surface showings of copper-molybdenum mineralization found during prospecting along new logging roads, as well as soil geochemical anomalies defined by limited follow-up work. Molybdenite and chalcopyrite are observed on fractures and joint planes with values up to 0.34% Cu, 3.84 g/t Au, 75 g/t Ag, and 241 ppm Mo in rock grab samples.

## **6.2.2 Geophysical Surveys**

### **6.2.2.1 Airborne Geophysics**

#### **2009 Wallbridge Airborne Magnetism Survey**

Results of the airborne magnetism survey directed over the northern "main block" of Rogers Creek (*see* Figure 6-1) by Wallbridge provided definition of the magnetic feature evident on the regional magnetic maps and defined a circular 6 x 2 km ovoid magnetic feature "Caldera Structure" covering Target Areas I and II (*see* Figure 6-2), which is centred on two ~1.6 km diameter magnetic lows, which is the locus of the original discovery showing and anomalous silt, soil, and rock samples (Jago, 2009b).

#### **2010 Miocene Airborne Magnetism Survey**

Results of the airborne magnetism survey conducted by Miocene in 2010 (*see* Figure 6-1) covering Rogers Creek South block where Target IV is located provided definition of interesting NW-SE "arc parallel" structures being intersected by NNE-SSW "transpressional" structures creating large zones of magnetic lows at the intersections. These zones were interpreted as possible zones of magnetite destruction or phyllic alteration related to a porphyry system and follow-up inversion and 3D modelling was recommended (Garcia, 2011a).

### **6.2.2.2 Ground Geophysics**

Induced polarization-resistivity surveys are particularly suited for exploration of porphyry systems by the detection of disseminated sulphide mineralization. Under ideal circumstances, high chargeability anomalies correspond to disseminated metallic sulfides (pyrite+/-chalcopyrite) halos typically surrounding porphyry centres.

#### **2009 Wallbridge IP Survey and Inversion**

The survey revealed the start of a large “open ended” chargeable body >30mV/V and corresponding low resistivity in the centre of the survey lines that comes near surface. It also shows that the IP bodies likely extend further into the hill and additional lines should be surveyed farther uphill and the data merged to test this theory.

#### **2015 Carube IP Survey**

Two 3 line-km Volterra-2DIP survey lines totaling 6 line-km (L10900N and L11100N) were added to the northwest above the existing 2009 survey in the Target I area of the Rogers Creek Property targeting a deep-seated copper-gold porphyry system represented by the large chargeable anomaly found in 2009. The new lines confirmed and expanded on the uphill (inward and deeper), “open- ended” IP anomaly from the 2009 survey above Line L10700N as well as cover a promising large anomalous copper-gold geochemical zone.

The survey revealed a new, large “open ended” chargeable body of 30 to >40 ms (Figure 6-5) and corresponding low resistivity in the centre of the survey lines that comes near surface. It also shows that the 2009 IP bodies did extend uphill. This data has been combined with the 2009 raw survey data, levelled, and then modelled as a single unit confirming the target IP body in 3-dimensions.

#### **2019 Tocvan IP Survey and Inversion**

In 2019, Tocvan aimed to expand on the large and significant high chargeability anomaly detected in 2009 and 2015 IP surveys over Target I by adding an additional IP line 200 m to the northwest. The 2019 survey data was combined with the 2015 survey data and SJ Geophysics completed a geophysical inversion to estimate the 3D distribution of the subsurface physical properties (density, resistivity, chargeability, and magnetic susceptibility). The 2019 survey data and the resulting 3D model show a strong high chargeability anomaly approximately 1,000 x 500 m in horizontal dimensions and between approximately 300 m and 600 m below topography (Figure 6-5). Notably, there has been no drilling to test of this anomaly since it was first detected in 2015.

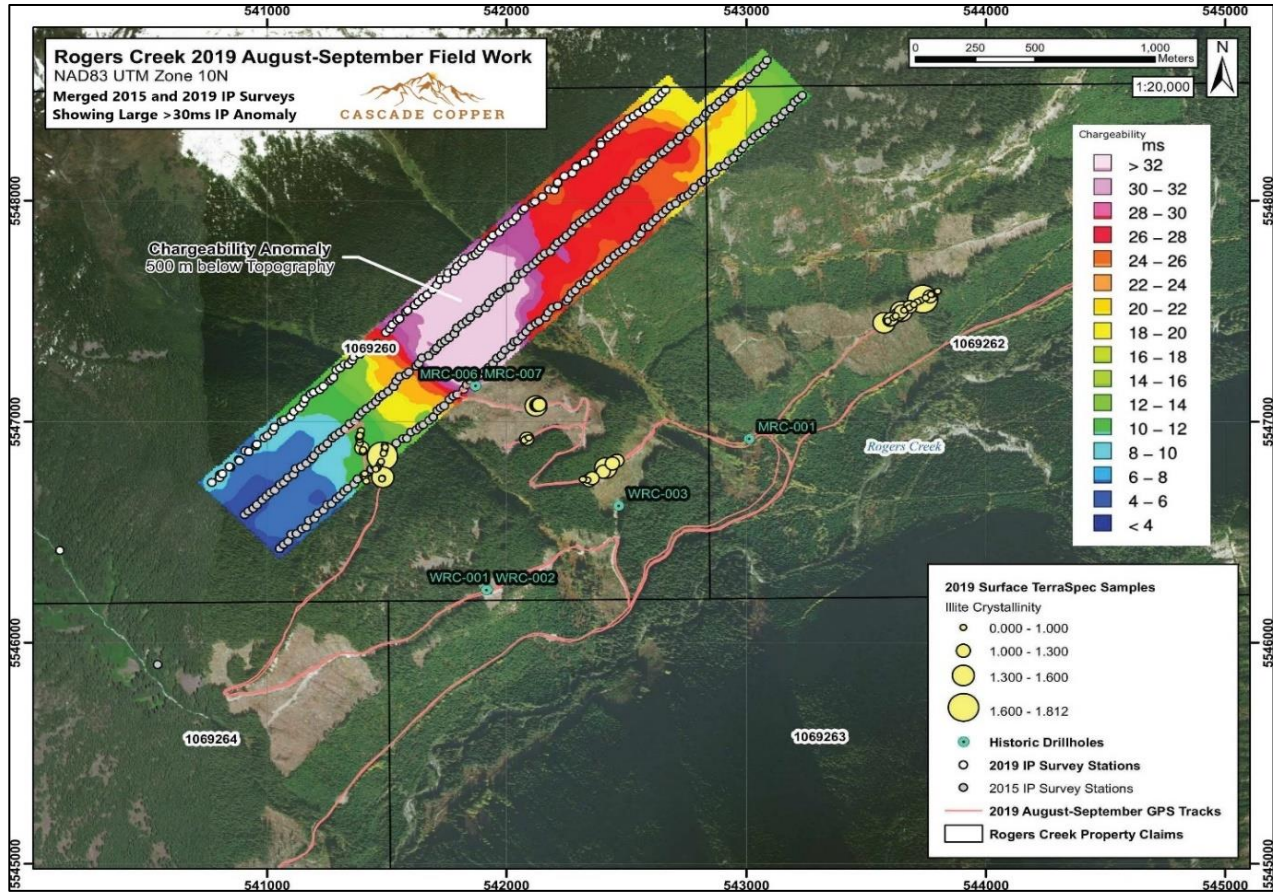


Figure 6-5. Merged 2015 and 2019 IP geophysical data showing large chargeability anomaly (Cascade Copper, 2022).

### 6.2.3 Alteration and Vectoring Studies

#### 6.2.3.1 Caracle Creek Alteration Study

The 2015 Caracle Creek alteration study of outcrop throughout Targets I and II and all available drill core confirmed previous interpretations of an early potassic event being overprinted by a retrograde mineralizing chlorite-sericite event. It has also revealed several new insights into possible origins, relative heat and timing of the “breccias” and other features as well as several new observations such as a possible “pebble dyke” system within drill hole WRC-003.

#### 6.2.3.2 Rampton Group 2016 Geochemical Vectoring Study

The 2016 Rampton Resources Group geochemical vectoring study was undertaken to assist in delineating drill targets. Contoured plots were created for a total of 40 elements to determine the location and area of anomalous (>90th and 95th percentiles) enhanced (>75th percentile) and depleted (<25th percentile) zones for each element. These plots, when compared, could determine the relationships between elements and what these relationships might mean relative to rock lithologies, alteration, and hosted mineralization.

A total of 8 geochemical (soil) zones, with each zone having unique association between elements, were determined. The three main zones of interest residing over the chargeability and soil anomalies were Zone

4, correlating to Target I, Zone 2, correlating to Target II, and Zones 7/8, located on the south side of the Rogers Creek Valley.

Element associations in Zone 2 (Target II) are suggestion of a vein or stockwork system trending NNW. The Cu and Au plots suggest a vein system containing meaningful values of Cu and Au. At the northern end of Zone 2, plots for numerous porphyry indicators, including Se, Sn, and W suggest the possible presence of a subsurface porphyry there or to the north of the sampled ground. This zone merits exploration to test for economic grade Au and Cu vein-type mineralization.

Zone 4 (Target I) appears to be highly mineralized demonstrated by numerous plots. Broad NNW trending bands of high values for Zn, Pb, and Ag suggest silver-rich base metal mineralization within most of Zone 4. The presence of high values for elements with affinity for porphyries such as In, W, Sn, Bi, and Tl are present as broad bands showing high values. The extent and location of highs for certain porphyry indicators suggest the presence of Ag- rich base metal veining being replaced by porphyry dyke and other porphyry bodies as one moves northward and to depth in this Zone. The element association also suggest the possibility of Cu-Au porphyries at depth in various locations at the north end of Zone 4 or even to the north beyond the zone's present definition. The presence of base metals here indicates the porphyries may be at depth.

The soil geochemistry of Zones 7 and 8 dramatically differ from those north of the river. Porphyry indicators such as W, Sn, Bi, Se, Tl, and In all suggest the presence of a subsurface porphyry under a portion of Zones 7 and 8, the configuration of other elements such as Hg and As also point to a subsurface porphyry. The high soil values for Mo indicate a Mo rich porphyry in contrast to those north of the river where higher Au values are expected to complement Cu.

### **6.2.3.3 *Tocvan TerraSpec Halo Clay Alteration Study***

The systematic collection of spectral data from the historical drill core successfully characterized the alteration features observed on the Rogers Creek Project. The limited surface spectral data from outcrop were constrained to Target I and highlight specific areas of anomalous alteration features. Alteration associated with porphyry style mineralization is reasonably well understood and quantifying the alteration, particularly the illite-muscovite-sericite seen on the Project can aid and vector future exploration. Measured white mica on the Project is predominantly muscovitic to low Al composition (phengitic). High Al (paragonitic) illite is rare and associated with gypsum and/or Fe carbonate. Illite crystallinity ranges from illite-smectite to highly crystalline illite. The white mica crystallization index, calculated by Kim Heberlein, is the ratio of depths of the 2200 nm AlOH feature over the 1900 nm water feature where values increase with crystallinity and thus are indicative of temperature of formation. The outcrop spectral data shows highly crystalline illite in outcrop throughout Target I (see Figure 6-5).

Highly crystalline illite was detected only in drill holes MRC-006, MRC-007, and WRC-002 near the chargeability anomaly. Within the drill holes, particularly at depth in drill hole WRC-002, the highly crystalline illite is spatially associated with the chargeability anomaly.

The white mica crystallization index and smectite content detected by the spectral analysis show perhaps the most attractive relationship with the chargeability anomaly. The degree of crystallization in white mica is related to temperature of formation, with higher crystallinity associated with higher temperature. Drillholes MRC-006 and MRC-007 have consistently higher white mica crystallinity (temperature) near the chargeability anomaly and the bottom ~200 m of the drill holes record lower white mica crystallinity values suggesting a move away from the source.

Increased smectite was detected in the drill holes surrounding the zone of highly crystalline white mica. Smectite typically occurs in zones peripheral to an illite/sericite zone in porphyry systems. Such zonation of the illite-smectite series is indicative of a decreasing temperature with increasing distance from the centre of a hydrothermal system. The distribution of smectite content in the historical drill holes and outcrop samples shows an intriguing relationship with the chargeability anomaly and provide an intriguing vector a potential “porphyry centre”.

#### **6.2.4 Data Compilation/Interpretation and 3D modelling**

The magnetic low defining Target I was shown by field work to largely coincide with a recessively weathering, 1.6 km diameter magnetic low centred immediately to the north of Rogers Creek at the intersection of a number of regional and local fault sets. Based on outcrop exposures along logging road networks, the magnetic low was shown to be occupied by a polymictic breccia pipe similar to other porphyry deposits world-wide. The breccia pipe is largely clast-supported with a marginal phase of in-situ brecciated Rogers Creek granodiorite that is transitional into a hydrothermally altered clast- and locally matrix-supported breccia dominated by feldspar-phyric rock clasts and rock flour matrix with rare malachite-stained (i.e. Cu mineralized) rock clasts. Zones of intense argillic (clay) alteration are centred on vertical faults.

Propylitic (pyrite-carbonate-epidote) alteration extends up to 1,000 m beyond the margins of the magnetic low and breccia pipe and may contain up to several percent pyrite ± chalcopyrite mineralization. Intense phyllic (quartz-sericite-pyrite) alteration is confined to the extent of the magnetic low and overprints an earlier phase of potassic (K-feldspar-biotite) alteration, which has largely only been seen in drill core but is exposed along “Copper Road” within a Cu-mineralized fluid exsolution pipe.

Structurally controlled zones of mineralizing retrograde sericite-chlorite after potassic alteration have been identified in several widespread areas. A-, B-, and D-veins have been verified throughout Targets I and II. Multiple, large mono- to polymictic breccia pipes (syn- to post-mineral) have been mapped with crosscutting late base metal veins. Porphyritic dykes have been mapped in structurally controlled fault zones adjacent to fragmental breccia flows. Coeval andesitic volcanic and volcanoclastic rocks have been discovered at high elevations, most likely emplaced during intrusion of the main stage Rogers Creek pluton or a slightly later cupola phase.

Mapping and prospecting within Target II revealed that it is cored by a second magnetic low (~1.5 km diameter) and located about 2 km south-west of Target I. Outcrop is very scarce within the margins of the magnetic low with only a few scattered hornblende granodiorite outcrops exposed north of Rogers Creek.

#### **6.2.4.1 Mira Geosciences 2016 Compilation and 3D Modelling**

The 2009 and 2015 IP survey data merging and re-evaluation revealed a new, large “open ended” chargeable body of >30ms and a corresponding low resistivity in the centre of the survey lines and crossing several survey lines that comes near surface. The IP data integrated with all other available Project data with modeled, however, Geoscience Analyst only provides snapshots of the viewer screen of the exported 3D model. Figure 6-6, shows a snapshot of the modeled data including moderate chargeability (30 mV/V) and low to moderate resistivity (30 milli SI) isosurfaces, airborne magnetics modelled isosurfaces, and all surface rock/soil/stream samples on a 20m DEM surface. A full integrated database was generated and packaged for easy viewing in Analyst or individual file export to other 3D software packages.

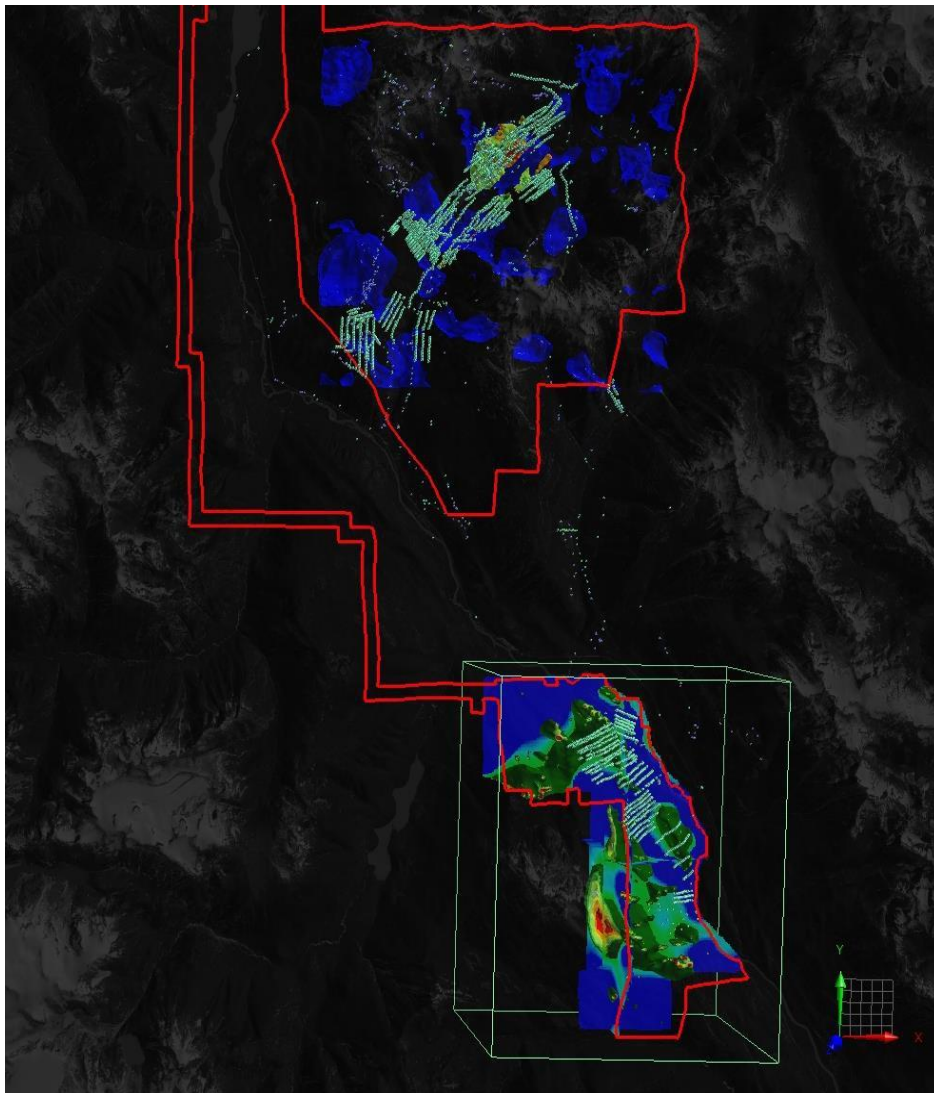


Figure 6-6. Mira Geosciences integrated Rogers Creek Project data compiled in 3D model (Cascade Copper, 2022).



### 6.2.5 Historical Drilling

There are records of two (2) operators in the Rogers Creek database that have carried out diamond drilling programs focused within Targets I and II (see Figure 6-2). The results of each drilling program is recorded and extracted from various historical reports. A total of 10 holes have been drilled on the project by past operators Wallbridge Mining (Jago, 2009a; 2,122.75 m in 3 holes) and Miocene Metals (Garcia 2011b; Garcia, 2012b; 3,086.4 m in 7 holes) (Table 6-2).

Table 6-2. Historical drilling by previous operators on the Rogers Creek Cu-Au Project.

Drill Hole	Easting (m) UTMNAD83	Northing (m) UTMNAD83	Elevation (m)	Total Depth (m)	Azimuth	Dip	Operator
WRC-001	541,922	5,546,242	785	849.8	50	-50	Wallbridge
WRC-002	541,917	5,546,239	785	851	10.5	-45	Wallbridge
WRC-003	542,469	5,546,621	758	422	331	-45	Wallbridge
MRC-001	543,011	5,546,922	721	582.3	315	-60	Miocene
MRC-002	540,053	5,544,116	717	442.1	225	-45	Miocene
MRC-003	539,574	5,544,765	1,212	344.4	220	-50	Miocene
MRC-004	539,574	5,544,764	1,212	196.6	225	-50	Miocene
MRC-005	539,561	5,544,773	1,212	393.3	270	-50	Miocene
MRC-006	541,868	5,547,161	1,117	515	224	-50	Miocene
MRC-007	541,870	5,547,162	1,117	612.7	200	-50	Miocene
				<b>5,209.10</b>			

#### 6.2.5.1 Drilling Results – Wallbridge (2009)

In 2009, Wallbridge Mining drilled 3 NQ holes (WRC-001 to -003) for a total of 2,122.75 m on Target I at Rogers Creek, targeting IP responses and mineralization observed in surface outcrop on the western edge of the breccia pipe. In 2010, Miocene Metals drilled 2 holes in Targets I and II for a total of 1,024 m and an additional five holes totaling 2,062 m drilled in 2011 (Table 6-3).

#### **WRC-001**

WRC-001, was drilled to test copper anomalies identified in soil samples from 2008 as well as a zone of potassic alteration with associated copper mineralization found in bedrock mapping in 2009 and a strong chargeability anomaly at depth identified by the 2009 IP Survey. The drill hole intersected a fault at 430 m down-hole depth. Mineralization was encountered from 390 m to 430 m and was characterized by disseminated pyrite and minor chalcopyrite. With increasing depth, alteration selvages around quartz-sulphide veins become wider and more intense. The alteration assemblages were characterized by carbonate, chlorite, and minor amounts of sericite.

Mineralization between 408 m and 415 m returned assay values of 0.105% Cu. Between 422 m and 424 m, the core graded 0.107% Cu and 131 ppm Mo. Other anomalous zones were intersected between 461.69 m and 462.55 m (0.20% Cu) and 505.76 m and 508 m (191 ppm Mo) (Figure 6-6).

**WRC-002**

WRC-002 targeted the same structure as WRC-001 as well as a different portion of the buried IP-response. The weakly mineralized structure identified at approximately 400 m depth in WRC-001 was intersected at approximately 600 m depth at a low angle. It contained an interval of 120 m of 0.2 g/t Au between 598.0 m and 718.0 m down-hole depth. Values within this zone include 0.53 g/t Au over 16 m from 613 m to 629 m, including 4.24 g/t Au over 1.5 m from 627.5 m to 629 m, and 1.53 g/t Au, 0.130% Cu, and 11.2 g/t Ag over 7.5 m from 704.5 m to 712 m, including 4.37 g/t Au, 0.130% Cu, and 20.0 g/t Ag over 1.5 m from 710.5 m to 712 m (Figure 6-6). Veins show increasingly intense alteration ranging from propylitic alteration near surface to intense phyllic alteration, which appears to be associated with dense sets of quartz-sulphide veins just below the intersection with the fault tested by WRC-001. The mineralization occurs in widely spaced quartz-sulphide-anhydrite veins which carry copper and molybdenum.

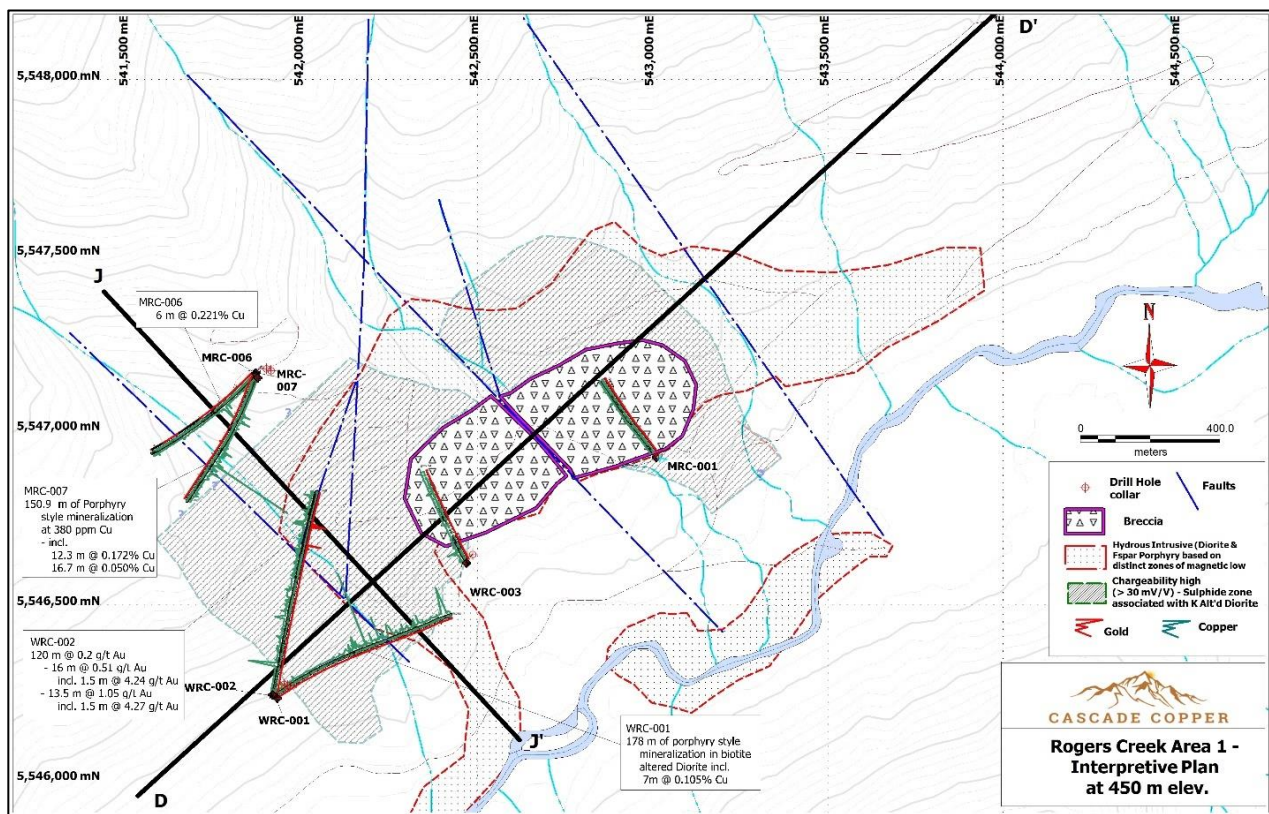


Figure 6-6. Rogers Creek Target I drill hole profile results (Cascade Copper, 2022).

**WRC-003**

WRC-003 was drilled to establish a spatial and temporal relationship between the granodiorite host rock, breccia formation, and vein-related mineralization observed in outcrop. The hole was expected to collar in

Target I propylitic-altered breccia but instead intersected strongly phyllic-altered granodiorite. The breccia often contains barren pyrite mineralization and, along the margins of the breccia pipe, late quartz-sulphide veins that carry significant amounts of silver and lead at surface. In general, mineralization is restricted to anomalous copper and gold values over a core length of ~90 m, but largely outside the contact between the Rogers Creek granodiorite and Target I breccia pipe. Maximum values include 0.16% Cu over a 1.5 m (53.0 m to 54.50 m downhole depth) and 0.202 g/t Au over 1.5 m (30.5 m to 32.0 m downhole depth).

#### **6.2.5.2 Drilling Results – Miocene Metals (2010)**

In summer 2010, Miocene Metals Limited completed two diamond drill holes (MRC-001 and -002) on the Rogers Creek Project that totalled 1,024.39 m (Garcia, 2011b).

##### ***MRC-001***

MRC-001 was drilled in Target I area and collared approximately 600 m to the northeast of WRC-003 to test the breccia body along strike. Argillic altered phreatomagmatic breccia was encountered. Sporadically distributed “D” veins provided minor, narrow, mineralized intersections with elevated copper and silver concentrations further down hole.

##### ***MRC-002***

MRC-002 drill tested the southern end of the Cu-Au soil geochemical anomaly as it was defined in 2010. Unfortunately, MRC-002 was terminated early due to a fire-related ban on drilling that year. The hole intersected 35 m of granodiorite followed by quartz diorite to the end of the hole at 442 metres. The quartz diorite is intruded by granodiorite, feldspar porphyry, and mafic dikes.

Mineralization consists of late stage stockworks with associated quartz-epidote veins that contain variable amounts (0.5 to 1.0%) of pyrite, chalcopyrite, and molybdenite. Sulphides are disseminated throughout the host rock. Alteration grades down hole from phyllic to propylitic suggesting that the hole is on the edge of the porphyry system.

#### **6.2.5.3 Drilling Results – Miocene Metals (2011)**

In October-November 2011, Miocene Metals Limited completed five diamond drill holes (MRC-003 to -007) on the Rogers Creek Project that totalled 2,062.0 m (Garcia, 2012b).

##### ***MRC-003-004-005***

Shallow drilling at Target II with holes MRC-003, 004, and 005 (totaling 933.4 m) was designed to test for continuity below the surface mineralization that is discovered in 2011 and exposed at surface (330° trending body of hornblende-diorite 80m by ~100 m wide), mineralized with disseminated and veinlet chalcopyrite across 13 m width and averaging 0.49% Cu and 1.42 g/t Au. These holes intersected only weakly anomalous gold and copper values but demonstrate that altered and mineralized host rock of the

surface showing, and related structures continues to the north beneath the northern extent of the copper and gold soil geochemical anomaly (Figure 6-7).

### ***MRC-006 and -007***

At Target I, drill holes MRC-006 and MRC-007 were drilled to test IP anomalies in the area north of the mineralization encountered in drill holes WRC-001 (scattered copper mineralization over 178.45 m, including 0.105% Cu over 7.0 m) and WRC-002 (0.2 g/t Au over 120 m including 1.05 g/t Au over 13.5 m and 0.51 g/t Au over 16.0 m) drilled by Wallbridge in 2009 (Figure 9). The mineralization in these holes is interpreted as being part of an outer pyritic shell that typically occurs on the margins of a buried porphyry system.

Both MRC-006 and MRC-007 intersected elevated copper and gold concentrations within sparsely disseminated pyrite-chalcopyrite mineralization and porphyry-style alteration (propylitic and chloritic/argillic) assemblages along substantial core lengths (up to 150 m). As in holes WRC-001 and WRC-002, alteration assemblages and the intensity of Cu-Au mineralization are consistent with intersections in the outer pyritic halo of a buried porphyry system. Interestingly, it was noted that the intensity of the mineralized stockwork and alteration in MRC-006 appeared to be increasing in the last two core boxes of the drill hole (Figure 6-8).

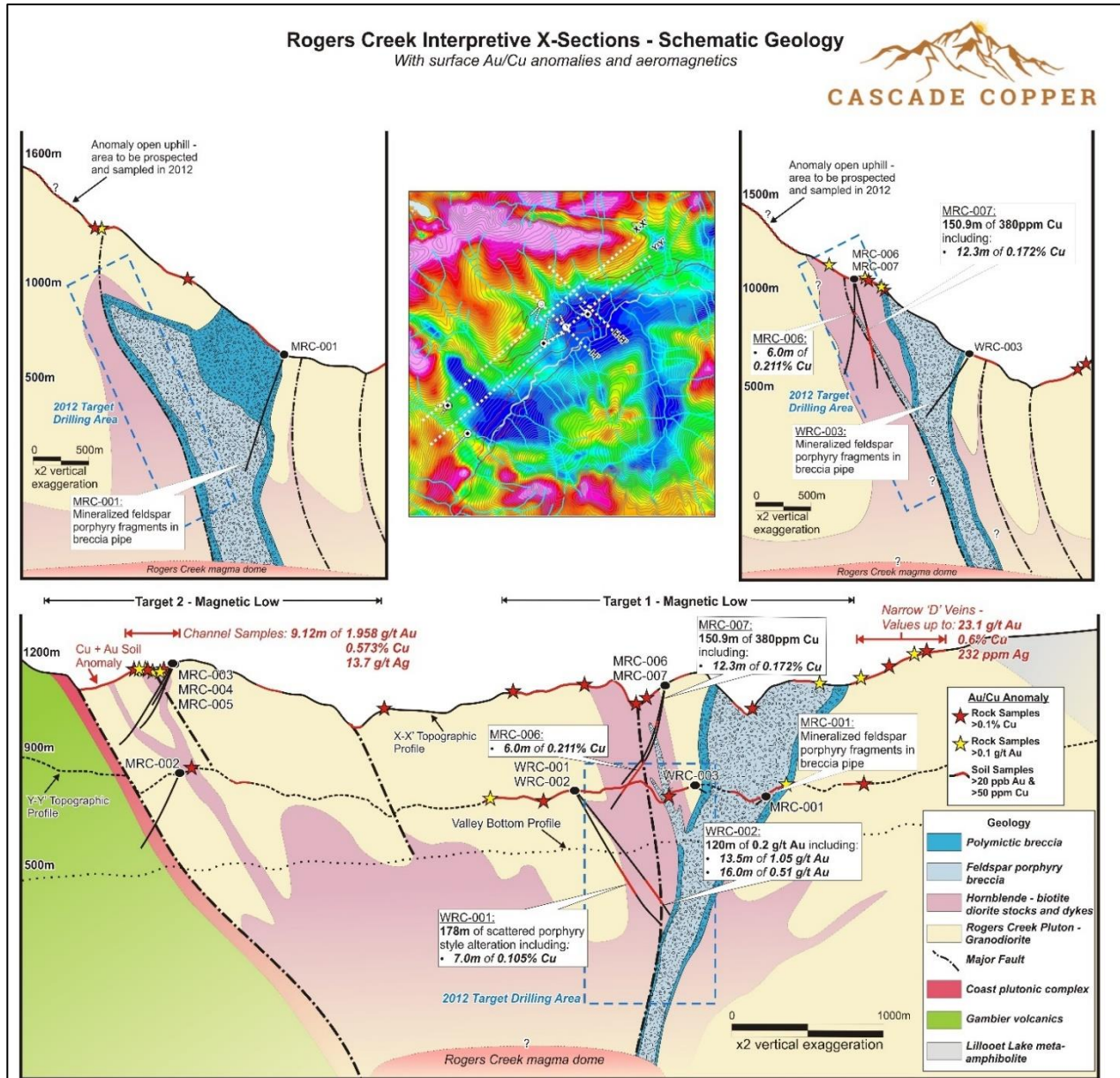


Figure 6-7. Interpretive drill hole and geological cross-section, Rogers Creek Project (Cascade copper, 2022).

The most significant mineralization was observed in Hole MRC-007 (the last hole in the 2011 program), which intersected 380 ppm Cu over 150.9 m from 345.60 to 496.50 m, including:

- 0.071% Cu over 3.0 m from 200.4 to 203.7 m.
- 0.089% Cu over 8.0 m from 222.0 to 230.0 m.
- 0.05% Cu over 16.7 m from 363.0 to 379.7 m.
- 0.172% Cu over 12.3 m from 422.2 to 434.2 m.
- 0.067% Cu over 6.0 m from 447.0 to 453.0 m.

As in hole MRC-006 (Figure 6-8), the abundance of mineralized fractures with altered selvages appeared to be increasing from 432 m to the end of the hole.



Figure 6-8. Stockwork-Boxwork veining at the end of drill hole MRC-006 (Garcia, 2012b).

Table 6-3. Summary of historical diamond drill hole core assay results, Rogers Creek Project.

Drill Hole	From (m)	To (m)	Length (m)*	Cu (%)	Au (g/t)	Mo (ppm)	Ag (g/t)
<b>WRC-001</b>	<b>408</b>	<b>415</b>	<b>7</b>	<b>0.105</b>	<b>0.011</b>	<b>95</b>	<b>1.4</b>
	422	424	2	0.107	0.011	131	1.2
	461.69	462.55	0.86	0.202	0.042	10	3.8
<hr/>							
<b>WRC-002</b>	<b>598</b>	<b>718</b>	<b>120</b>	<b>0.027</b>	<b>0.204</b>	<b>13.37</b>	<b>2.14</b>
incl.	613	629	16	0.021	0.528	15.25	1.38
	627.5	629	1.5	0.028	4.24	3.08	3.28
	704.5	712	7.5	0.13	1.535	96.54	11.23
<hr/>							
<b>WRC-003</b>	<b>11</b>	<b>90.5</b>	<b>79.5</b>	<b>0.023</b>	<b>0.009</b>	<b>5.05</b>	<b>1.32</b>
incl.	30.5	32	1.5	0.014	0.202	15.55	0.73

Drill Hole	From (m)	To (m)	Length (m)*	Cu (%)	Au (g/t)	Mo (ppm)	Ag (g/t)
	53	54.5	1.5	0.158	0.012	20.2	1.94
	104	105.5	1.5	0.021	0.136	7.49	2.73
<b>MRC-001</b>							
	<b>415</b>	<b>417</b>	<b>2</b>	<b>0.016</b>	<b>0.061</b>	<b>5.97</b>	<b>125</b>
	420.78	421.78	1	0.079	0.05	4.6	52.6
<b>MRC-002</b>							
	<b>152.5</b>	<b>156.5</b>	<b>4</b>	<b>0.01</b>	<b>0.071</b>	<b>1.19</b>	<b>0.32</b>
<b>MRC-003</b>							
	<b>61</b>	<b>73.5</b>	<b>12.5</b>	<b>0.041</b>	<b>0.03</b>	<b>58.27</b>	<b>0.6</b>
incl.	61	69.1	8.1	0.054	0.034	88.84	0.8
incl.	68.2	69.1	0.9	0.347	0.011	791	5.65
<b>MRC-004</b>							
	<b>60</b>	<b>73.5</b>	<b>13.5</b>	<b>0.03</b>	<b>0.051</b>	<b>1.37</b>	<b>0.3</b>
<b>MRC-005</b>							
	<b>291.8</b>	<b>300.5</b>	<b>8.7</b>	<b>0.052</b>	<b>0.074</b>	<b>17.93</b>	<b>0.67</b>
<b>MRC-006</b>							
	<b>175.5</b>	<b>233.5</b>	<b>58</b>	<b>0.034</b>	<b>0.023</b>	<b>5.3</b>	<b>4.3</b>
incl.	189	216	27	0.062	0.008	7.9	2.1
incl.	192	201	9	0.155	0.016	1.6	5
<b>MRC-007</b>							
	<b>200.4</b>	<b>203.7</b>	<b>3.3</b>	<b>0.071</b>	<b>0.022</b>	<b>4.36</b>	<b>4.27</b>
	222	230	8	0.089	0.01	2.04	1.49
<b>MRC-007</b>							
	<b>345.6</b>	<b>496.5</b>	<b>150.9</b>	<b>0.038</b>	<b>0.009</b>	<b>2.73</b>	<b>0.93</b>
incl.	363	379.7	16.7	0.045	0.008	2.17	0.75
	422.2	434.3	12.1	0.172	0.017	5.61	2.82
	447	453	6	0.067	0.01	3.4	1.84

\*drill hole lengths are interpreted as core intervals and are not true widths.

## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

The Canadian Cordillera comprises five morpho-geological belts that record Mesozoic accretion of the allochthonous Insular and Intermontane superterrane to North America. From west to east these are the Insular, Coastal, Intermontane, Omineca, and Foreland belts. The Rogers Creek Project is located within the Coastal Mountain Belt of British Columbia (Figure 7-1).

The Coast Belt includes the Coast and Cascade Mountains and extends from south of the British Columbia – Washington State border, some 1,500 km northward up to the southern border of the Yukon Territory and beyond. The Coastal Mountain Belt is made up mostly of 185- to 50-million-year-old granitoid rocks, plus scattered remnants of older, deformed sedimentary and volcanic rock into which the granitic bodies have intruded. The last 40 million years, however, have been shaped by magmatism related to development of the Cascade Magmatic Arc (Figure 7-2), formed by subduction of the Juan de Fuca Plate beneath the North American Plate (Monger and Journeay, 1994).

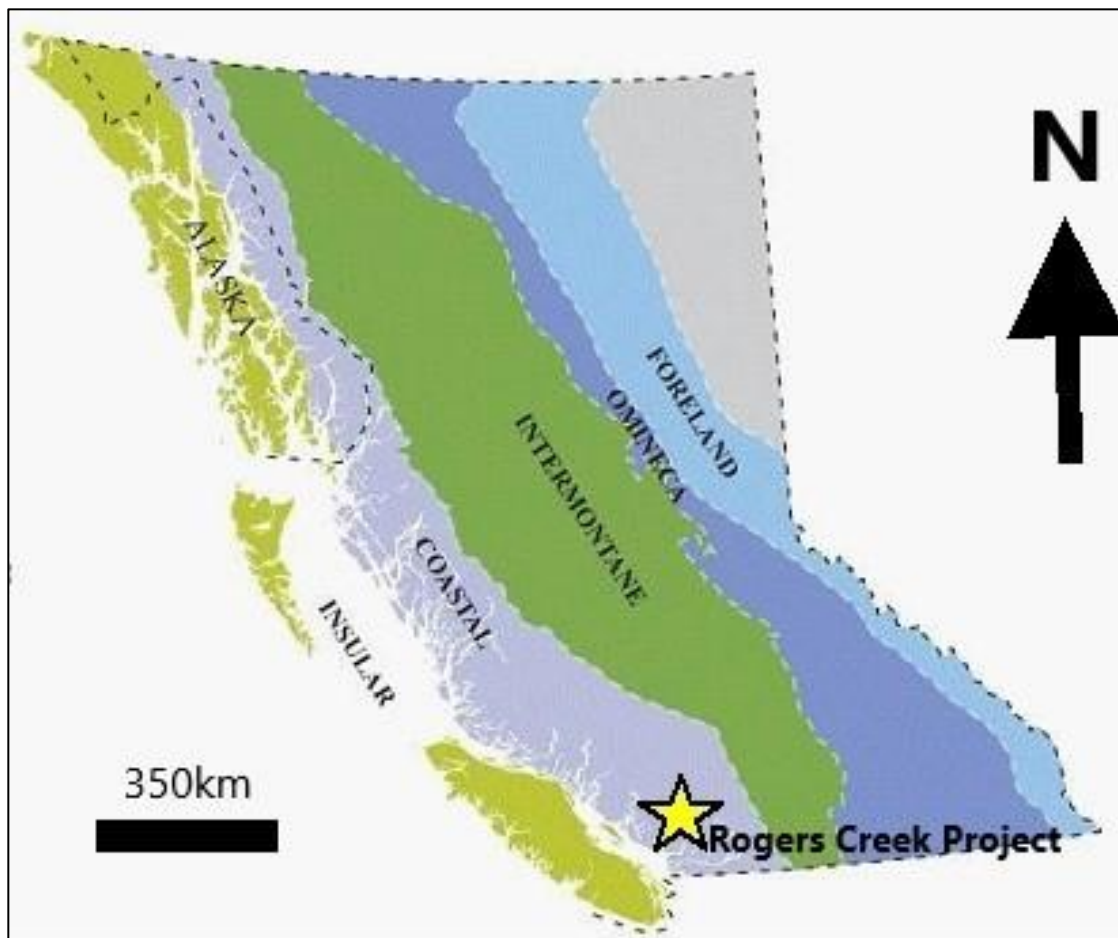


Figure 7-1. Geological subdivisions of the Cordilleran Belt in British Columbia, Canada and the location of the Rogers Creek Project (Cascade copper, 2022).



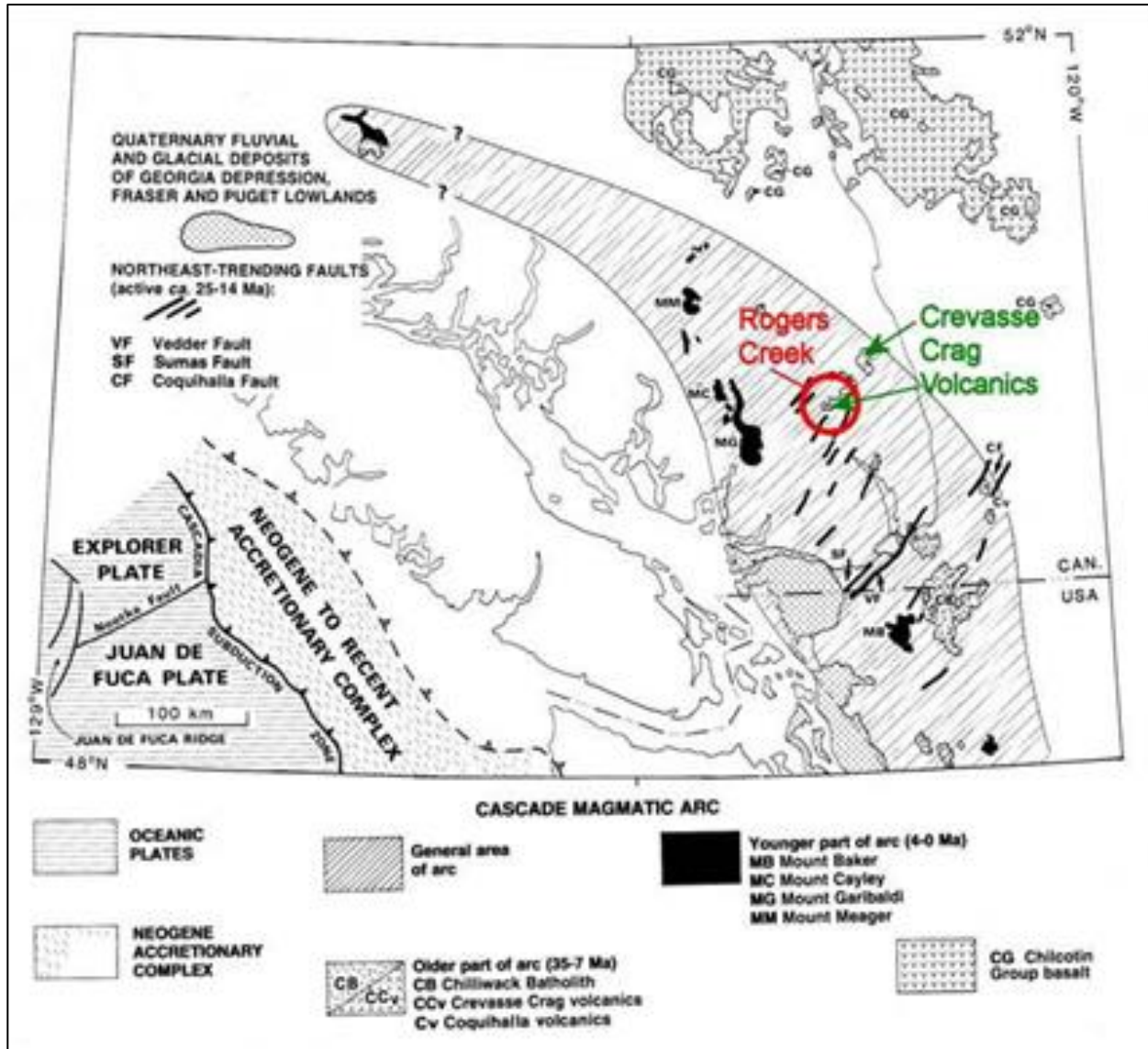


Figure 7-2. Tertiary to Recent features formed during Cascade Magmatic Arc Development (Monger and Journeay, 1994).

### 7.1 Regional Geology

The Coast Belt in southern BC is divided into southwestern and southeastern parts (Figure 7-3) based on the distribution of plutonic rocks, terranes and structures (Crickmay, 1930). The Rogers Creek Property is located along the border between the two parts of the Coast Belt (Figure 7-3).

The southwestern Coast Mountains feature mainly Middle Jurassic to mid-Cretaceous plutons (ca. 165–91 Ma) which intrude supracrustal sequences of the Middle Triassic to Middle Jurassic Wrangellia and Harrison Lake terranes and the overlapping Jurassic- Cretaceous volcanic and sedimentary rocks. The western boundary is the western limit of Middle Jurassic intrusions that possibly were localized along pre-and syn-plutonic faults. The eastern boundary is delineated by the high-grade, internal, metamorphic thrust nappes

of the Coast Belt Thrust System that are derived in large part from basinal strata (Bridge River terrane) characteristic of the south-eastern Coast Mountains.

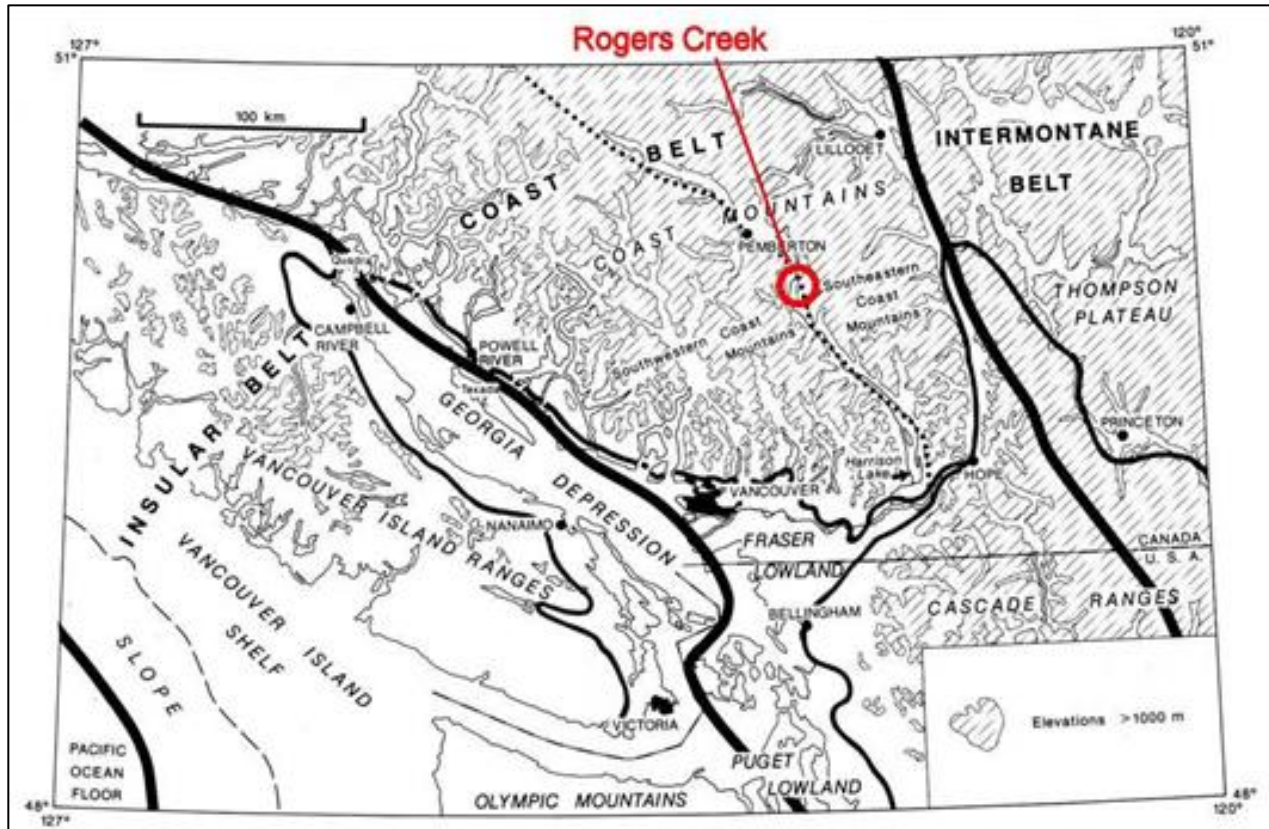


Figure 7-3. Rogers Creek Project and morphological belts in southern BC and northwest USA (Monger and Journeay, 1994).

Rocks (Harrison terrane and Gambier Group) characteristic of the eastern part of south-western Coast Mountains are also internally imbricated along west-directed thrust faults of the external part of the Coast Thrust Belt System, below nappes featuring high-grade metamorphism to the east. Thus, the south-western Coast Mountains occupy a plutonic-dominated crustal block that acted as a foreland buttress during early Late Cretaceous (91–97 Ma) west-directed thrusting centred in the south-eastern Coast Mountains (Crickmay, 1930; Monger and Journeay 1994).

The southeastern Coast Mountains feature mid-Cretaceous through early Tertiary (103–47 Ma) plutonic rocks, emplaced within (mainly) Bridge River, Cadwallader, and Methow Terranes. This part of the Coast Mountains was the site of the most intense deformation and highest-grade metamorphism in Late Cretaceous to early Tertiary time. All three terranes in the south-eastern Coast Mountains appear to be founded on oceanic crust.

During the last 40 million years the Coast Range has been affected by magmatism related to development of the Cascade Magmatic Arc, formed by subduction of the Juan de Fuca Plate beneath the North American Plate (Monger and Journeay, 1994).

Post-accretionary plutonism in southwest British Columbia can be divided into an early and a late phase, with the late phase being the current focus of economic interest. During Late Cretaceous through Middle Eocene, there was extensive plutonism related to subduction of the Farallon Plate beneath North America. Plutons were emplaced along active, crustal-scale, strike-slip structures along the length of the northwest Cordillera, dominantly along the eastern margin of the Coastal Belt overprinting the Intermontane Superterrane.

Late Eocene through Pliocene (and present) plutonism of the Cascade Magmatic Arc is related to subduction of broken remnants of the Farallon Plate, including the Juan de Fuca Plate, beneath North America. Cascade plutons were emplaced along the older, crustal scale, Eocene structures and in particular the intersection of these with much younger arrays of steep northeast trending cross-structures (see Figure 7-2).

The Cascade Magmatic Arc, which includes Cu-Mo mineralized Miocene-age, calc-alkalic intrusions, is best understood from its exposure in the Cascade Mountains of Washington where it intrudes volcanic and sedimentary rocks and is easier to identify than where it intrudes similar older (Cretaceous) crystalline rocks in the Coast Mountains of British Columbia.

## 7.2 Property Geology

The Rogers Creek Project is centred on the Miocene-aged ( $16.7 \pm 2.7$  Ma; (Armstrong, unpublished)) Rogers Creek Intrusive Complex, (Figure 7-4) which intrudes through the older metamorphosed Jurassic and Cretaceous rocks typical of the Coastal Belt into overlying and coeval Miocene Crevasse Crag volcanic flows and pyroclastic rocks (Journeay and Monger, 1997). The Rogers Creek Intrusive Complex and the coeval Crevasse Crag volcanic rocks are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc.

The Rogers Creek Intrusive Complex and the coeval Crevasse Crag volcanic rocks are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc. Reconnaissance and detailed mapping suggest the Rogers Creek Pluton to be more complex than the single, homogenous granodiorite body overlain by a narrow sliver of coeval pyroclastic rock as illustrated on most BC Geological Survey (“BCGS”) maps (Figure 7-4; Table 7-1). Although the pluton is dominantly granodiorite, there is variation between biotite and more hornblende-rich phases. Traverses along the western slope of the Rogers Creek valley near the western contact of the pluton mapped a porphyritic andesitic contact phase, and discrete feldspar-, biotite-, or hornblende-phyric syenitic bodies. Syenite, diorite, porphyritic granodiorite, and monzonite phases have also been mapped.



Table 7-1. Lithological description of rock units within the Rogers Creek Project (see Figure 7-4).

Unit	Rock_class	Rock_type	Tectonic Environment	Comments
eK	plutonic	quartz-diorite, diorite	arc-related plutons	Spatially associated with Upper Jurassic-Lower Cretaceous arc volcanics of the Gambier Group; interpreted as sub-volcanic roots to a west-facing arc; linked to subduction of Farallon Plate along the outboard margin of Wrangellia
ICE		icefield/glacier		
IKG	volcanic / sedimentary	crystal tuff, volcanoclastic sandstone, phyllite, lapilli tuff, flow-banded rhyolite, quartz and feldspar-phyric rhyolite, andesite, volcanic breccia	continental arc volcanics and clastics	Valanginian-Hauterivian arc-related volcanics; comprises both lower sub-alkaline and upper calc-alkaline suites; part of a west(?) facing arc sequence formed in an extensional or transtensional setting; host to important base-metal deposits
IKS	plutonic	hornblende- and biotite-hornblende quartz-diorite	arc-related plutons	Post-kinematic plutons; locally contain magmatic epidote; part of a NW-trending, eastward-younging continental arc; related to subduction of the Farallon Plate; deeper level equivalents include foliated metaplutonic suites of the Cascade Metamorphic Cor
M	plutonic	hornblende-biotite granodiorite	arc-related plutons	RODGER'S CREEK PLUTON: calc-alkaline plutons; part of a NW-trending, eastward-younging post-accretionary arc; related to subduction of Farallon Plate; emplacement locally controlled by NE-trending Miocene faults; source to calc-alkaline arc volcanics of the Pemberton Belt
MCC	metamorphic	pelitic schist, amphibolite, quartzite, phyllite, minor chert, limestone and ultramafic rock	metamorphosed accretionary wedge	Poly-metamorphic core of Coast Belt Thrust System; derived from oceanic rocks of Bridge River Complex and overlying Cayoosh Assemblage; tectonically buried and metamorphosed in early Late Cretaceous(105-90 Ma) and Late Cretaceous (90-84 Ma) time
mK	metamorphic	biotite-hornblende granodiorite gneiss, biotite-hornblende-quartz diorite gneiss	arc-related plutons	Deformed and metamorphosed pre- and syn-orogenic I-type plutons of the southeastern Coast Belt; intruded during thrust imbrication and eastward underplating of paleocontinental margin; high-pressure phases record 35-40 km of crustal thickening
mJ	plutonic	biotite-hornblende quartz-diorite	arc-related plutons	Terrane-stitching calc-alkaline/alkaline I-type plutons; intruded across boundaries of previously amalgamated terranes of the Coast and Intermontane belts; exhumed roots to coeval arc volcanics of the Harrison Lake and Bowen Island groups
MPv	volcanic	basaltic andesite, andesite, dacite flows, volcanic breccia, tuff, plagioclase-phyric flows	continental arc volcanics	CREVASSE CRAG COMPLEX: non-marine calc-alkaline continental arc volcanics; part of Pemberton Volcanic Belt; related to eastward subduction of the Farallon Plate; ascent of magmas and eruption of volcanic centers controlled by NE-trending, Miocene faults
MSL	metamorphic	mafic-intermediate-felsic meta-volcanic schist and gneiss, pelite, conglomerate	metamorphosed island arc assemblage	Thrust nappes in imbricate zone of Coast Belt Thrust System; protolith wholly or in part derived from Peninsula and Billhook Creek formations; metamorphosed in early Late Cretaceous (84-105 Ma).
MST	metamorphic	pelite, garnet-biotite, staurolite, kyanite and sillimanite schist, amphibolite, meta-pillow basalt, siliceous schist, phyllite, meta-sandstone	metamorphosed accretionary wedge	Poly-metamorphic core of Coast Belt Thrust System; derived from oceanic rocks of Bridge River Complex and overlying Cayoosh Assemblage; tectonically buried and metamorphosed in early Late Cretaceous(105-90 Ma) and Late Cretaceous (90-84 Ma) time
PTr	plutonic / metamorphic	diorite, amphibolite	island arc	Undivided Permian-Triassic plutons and metamorphosed equivalents; spatially associated with (possibly basement to) Late Triassic plutons and volcanics of the Mount Lytton Complex-Nicola arc, and Late Triassic volcanics of the Lillooet Lake Assemblage
Q	sedimentary	sand, silt, gravel, till	glacial/fluviol/acustrine	Undivided surficial deposits including; glacial drift, alluvium, glaciofluvial-lacustrine sediments, till, colluvium, landslide deposits
TrL	volcanic	basalt-andesite flows, breccia, tuff, carbonate	island arc	Island arc tholeiites; green to purple, commonly amygdaloidal, pillowed and massive volcanic flows, flow breccia and tuff; may include lenses of Carboniferous limestone; stratigraphically overlain by Late Triassic clastics; basement to Harrison Lake arc

The central portion of the Rogers Creek Pluton is overlain, at the current erosional level, by a slightly younger, flat-lying suite of potentially coeval flows and pyroclastic rocks. Little mapping has been carried

out on the volcanics and field relationships are poorly known. The Miocene age volcanic rocks include sub-aerial basalt and andesite, with andesitic flows overlying volcanic breccia at its base. Samples of volcanic breccia float demonstrate that Rogers Creek granodiorite intruded these breccias consistent with the Rogers Creek Pluton intruding its overlying volcanic equivalent. The northern and western contact of the Rogers Creek Pluton with Jurassic and Cretaceous metavolcanic, metasedimentary, and intrusive rocks is complex and poorly characterized due to relatively little mapping.

In the northern lobe of the Rogers Creek Pluton, a 1.6 km diameter polymictic breccia pipe, is exposed in outcrop and has been intersected by drilling. It is also delineated by a strong magnetic low in the airborne data. Two pipes may be indicated, but this is uncertain. The northeast trending pipe consists of in situ brecciated Rogers Creek granodiorite, whereas the western one consists of mostly clast-supported mono-to polymictic breccia locally cut by quartz-sulphide and quartz-malachite veins and containing rare fragments with Cu-staining. The unit is also cut by a late set of mafic dikes. The breccia matrix usually is chloritic but shows in some places weak to moderate clay, hematite, tourmaline, and sericite alteration. Propylitic to phyllic alteration extends up to 100 m beyond the margins of the breccia pipe and may contain up to several percent of pyrite ± chalcopyrite mineralization.

Initial mapping and interpretation suggest that a younger mineralizing hornblende-diorite phase had intruded the Rogers Creek pluton and generally coincided with large geochemical halos and metal showings. However, subsequent work including site visits and consultation with BCGS personnel followed by reanalysis of the core, thin sections, and geochemistry, indicates the darker rock previously identified as a distinct hornblende-diorite phase is merely a darker, slightly more hornblende rich variety of the main intrusive affected by a mineralizing event associated with the retrograde chlorite-sericite alteration of the mostly biotite +/- hornblende granodiorite that was previously altered in a pro-grade event introducing excess biotite. These alteration zones, which are associated with the copper-gold mineralization on the Project seem to be mainly focused around the major arc-parallel structural corridors with trans-tensional splays.

### **7.3 Mineralization**

Porphyry related alteration and mineralization has been identified in four major areas or “Targets” on the Rogers Creek Project (Figure 7-5). The following occurrences have been explored by previous workers on the Project.

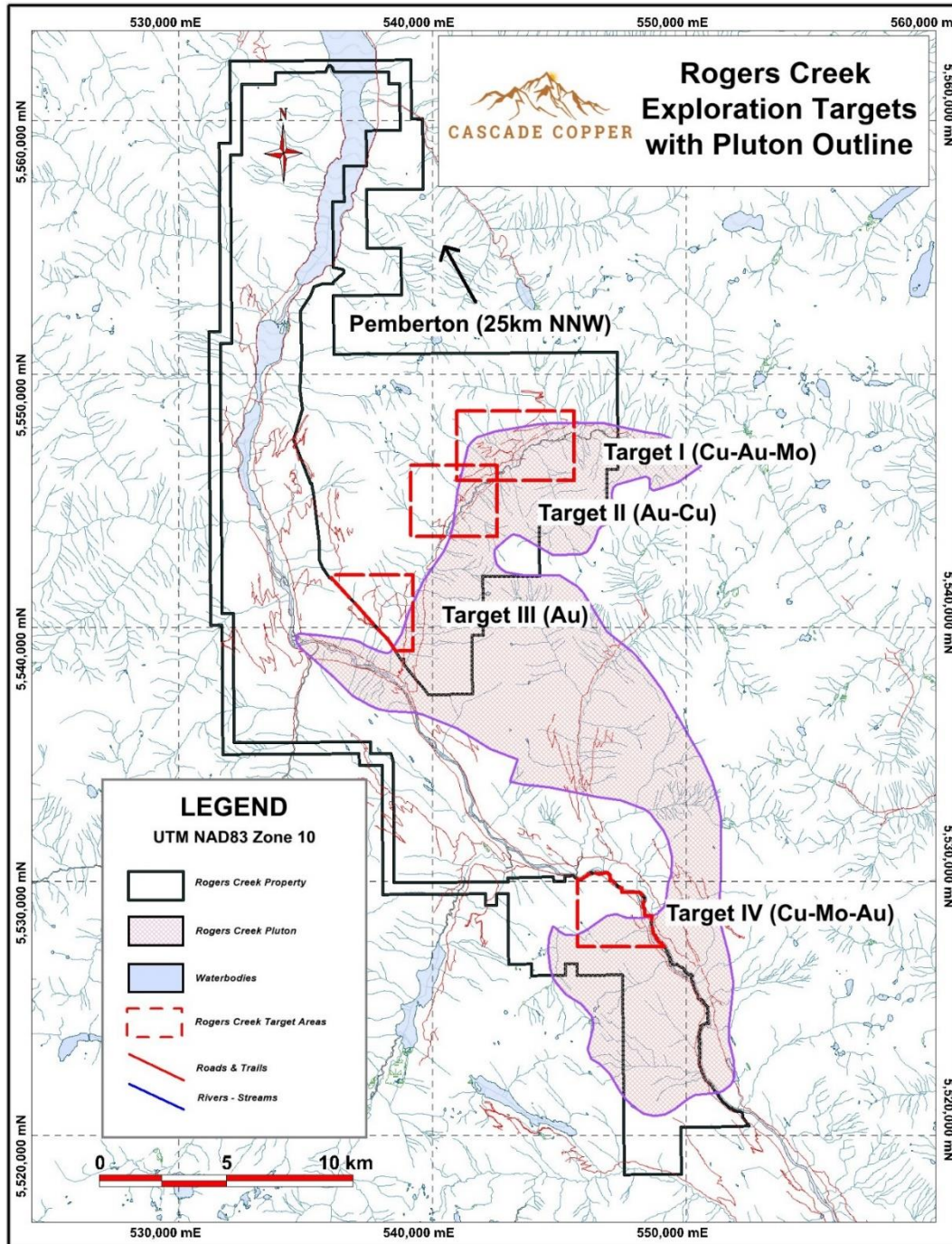


Figure 7-5. Target mineralization on the Rogers Creek Cu-Au Property, relative to the Rogers Creek Intrusive Complex (Cascade Copper, 2022).

### 7.3.1 Targets I and II

The most extensive zone of coincident alteration and mineralization potentially associated with a large hydrothermal system on the Project has been identified within Targets I and II covering a 6 x 2 km zone exhibiting widespread propylitic (pyrite-carbonate-chlorite-epidote) alteration with more localized

prograde potassic and retrograde chlorite-sericite alterations. Several stages and styles of mineralization typical of porphyry systems are present within this zone and have been observed both in surface outcrop and in drill core.

The mineralization found within Target I is cut by a large post mineral breccia pipe which overprints earlier mineralization which at surface consists of A, B and D veins associated with weak potassic alteration. Late-stage gold and silver-rich poly-metallic (quartz-sulphide; pyrite, chalcopyrite, galena, sphalerite, and tetrahedrite) and sulphide-sulphate vein assemblages that are present within the breccia pipe.

The breccia pipe is largely clast-supported with a marginal phase of in-situ brecciated Rogers Creek granodiorite that is transitional into a hydrothermally altered clast- and locally matrix-supported breccia dominated by feldspar-phyric rock clasts and rock flour matrix with rare malachite-stained (i.e. Cu mineralized) rock clasts. Alteration within the breccias is zoned from weak to moderately developed chlorite-pyrite +/- carbonate assemblages in contact breccias inward to strong pervasive clay-carbonate +/- silica alteration toward the pipe interior. Zones of intense argillic (clay) alteration are centred on vertical faults.

Earlier stage mineralization observed outside the breccia pipe consists of:

- Wide spaced quartz-pyrite-chalcopyrite +/- bornite bearing B and D-veins observed at surface in the northeastern part of Target I.
- Quartz-pyrite-chalcopyrite bearing A and B-veins observed in the southern part of Target I near the collar of WRC-001; Mineralization intersected in drill holes WRC-001 and -002 consists of fracture-controlled quartz-pyrite ± anhydrite ± calcite assemblages with accessory to major amounts of chalcopyrite and MoS<sub>2</sub>. Phyllic alteration halos are typical and where vein densities are high (WRC-002), particularly in the vicinity of 020° and 340° oriented faults, the host rock has pervasive phyllic alteration and can be enriched in gold and copper. Molybdenite mineralization occurs on the fringe of the phyllic alteration zone (WRC-001) and typically is associated with quartz-anhydrite rather than quartz-pyrite assemblages.
- Disseminated quartz-pyrite-chalcopyrite and quartz-pyrite-chalcopyrite veins and veinlets associated with zones of pervasive chlorite-sericite mineralization in the northwestern part of Target I, near the collars of MRC-006 and MRC-007. MRC-006 and MRC-007 both intersected elevated copper and gold values along substantial core lengths (up to 150 m) within sparsely disseminated, porphyry-style pyrite-chalcopyrite mineralization and alteration (propylitic and chlorite/sericite). As with WRC-001 and WRC-002, alteration assemblages and the intensity of Cu-Au mineralization are consistent with intersections in the outer pyritic halo of a buried porphyry system.
- Mineralization hosted by silica-chlorite-sericite altered hornblende diorite consists of up to several percent disseminated chalcopyrite and lesser pyrite with rare chalcopyrite and pyrite



veins up to 1 cm wide, associated with a 340o trending structural zone in the southwestern part of Target II.

The mineralization in all cases appears to be primarily controlled by northwest (320-340Az) trending structures, particularly near their intersection with 020Az "transpressional" structures. Further work is needed to better understand the detailed structural controls on mineralization.

### **7.3.2 Target III**

Only limited work has been carried out on Target III located approximately 4 km to the southwest of Target II. Target III is defined by stream sediment samples containing highly anomalous values in gold and silver, quartz-pyrite stockworks exposed along road cuts, and talus boulders of a highly clay-altered sericite/tourmaline-altered breccia. Anomalous silt samples in streams draining Target III contain up to 2.3 g/t gold and 436 ppb silver versus background values of 2.5 ppb Au and 20 ppb Ag. Limited rock sampling returned values up to 0.445 g/t Au and 436 ppm Cu in grab grab samples.

### **7.3.3 Target IV**

Target IV is located about 18 km south of the original discovery area in Target I and consists of surface showings of copper-molybdenum mineralization found during prospecting along new logging roads, as well as soil geochemical anomalies defined by limited follow-up work. Molybdenite +/- chalcopyrite are observed on fractures and joint planes with values up to 0.34% Cu, 3.84 g/t Au, 75 g/t Ag, and 241 ppm Mo in rock grab samples.

## 8.0 DEPOSIT TYPES

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Exploration in southwestern British Columbia has traditionally focused on mesothermal gold, polymetallic vein, and skarn type deposit models and has given little consideration to systematic regional evaluation of Tertiary intrusions for potential large-scale porphyry or epithermal deposits.

The Rogers Creek Project is being explored for porphyry-style copper, gold, and molybdenum mineralization associated with intrusive activity that is part of the post-accretionary Tertiary age Cascade Magmatic Arc.

Several very large porphyry deposits occur within the Cascade Magmatic Arc in neighbouring southeast Alaska and Washington and in similar age magmatic belts around the world.

McMillan et al. (1995), classified porphyry deposits in the Canadian Cordillera as pre-accretion or post-accretion. Pre-accretion deposits are Late Triassic through Middle Jurassic deposits formed within island arc rocks of the allochthonous Insular and Intermontane superterranes. Post-accretion deposits are Late Cretaceous through Miocene and are formed within the subsequent continental arc during the period of intracontinental dextral transpression. Lasmanis (1995), described another category of younger post-accretion porphyry deposits occurring within the Oligocene through Miocene Cascade Magmatic Arc.

The importance of the Cascade Magmatic Arc to gold mineralization within the 130 km long belt in the Harrison Lake-Chilliwack area was documented by Ray (1991). Nockelberg et al. (2005), referred to the Cascade-related porphyry and epithermal deposits in southwestern British Columbia as the Owl Creek Metallogenic Belt.

The Rogers Creek Project is being explored for porphyry style Cu-Au-Mo mineralization associated with Miocene aged intrusive rocks within the Cascade Magmatic Arc. Sinclair (2007), provides a thorough review of geological settings within which economic porphyry-class deposits, or deposits associated with porphyry-class deposits, may be expected to occur and these are summarized in Figure 8-1 and Figure 8-2.

The geology and tectonic setting of the Rogers Creek Project bears a compelling similarity to the continental arc environment presented by Sinclair (2007) for giant porphyry style and associated deposits. Exploration requires identifying alteration and mineralization zonation patterns and syn-magmatic structures that may have controlled emplacement of the intrusive bodies and focused migration of mineralizing fluids. Porphyry deposits are large low-grade deposits characterized by disseminated sulphides within pervasively altered host rock making them an excellent target for IP geophysical surveys.

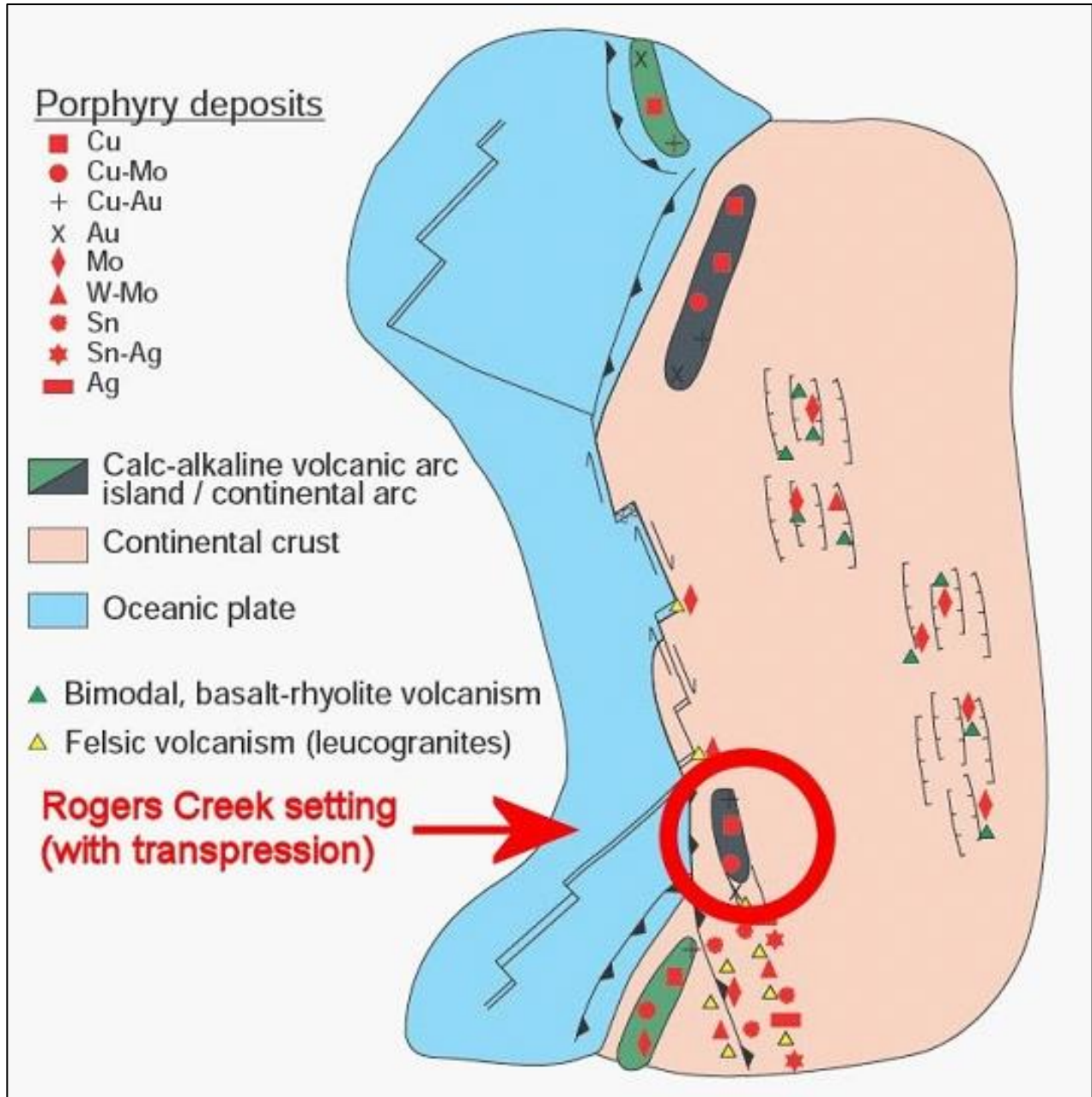


Figure 8-1. Schematic model showing the tectonic setting of porphyry deposits (Sinclair, 2007).

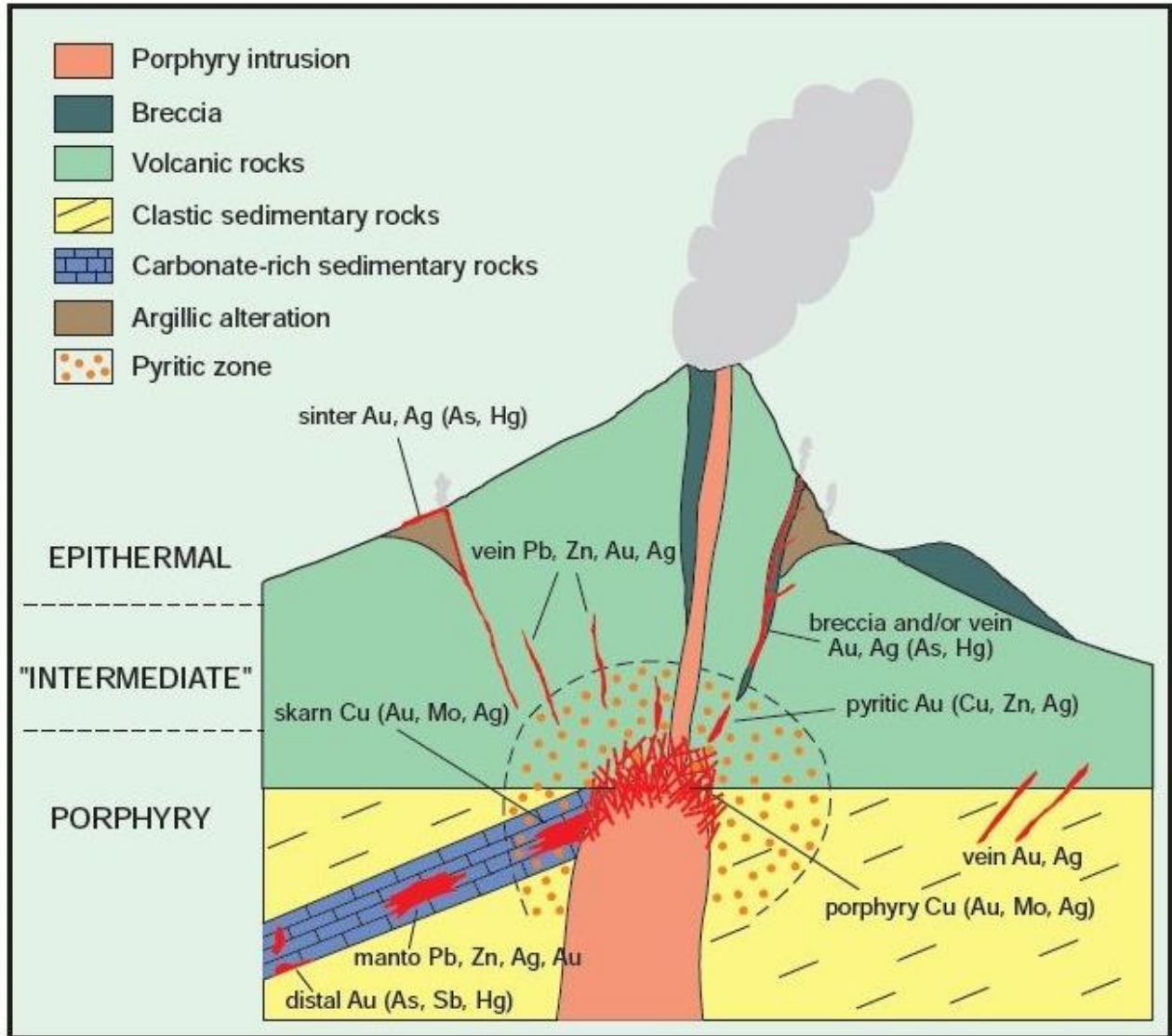


Figure 8-2. Schematic section through a porphyry system and associated mineralization (Sinclair, 2007).

### 8.1 Deposit Type Examples

The Author has not been able to verify the following information, data and mineralization presented below and it is not necessarily indicative of the mineralization on the Property that is the subject of the Report.

Several examples of Cascade Magmatic Arc deposits are listed in Table 8-1 and shown on Figure 8-3. It should be noted for the most part these are historical resources and pre-date the standards and guidelines defined in NI 43-101. These are not to be relied upon except to illustrate the potential of this deposit type.

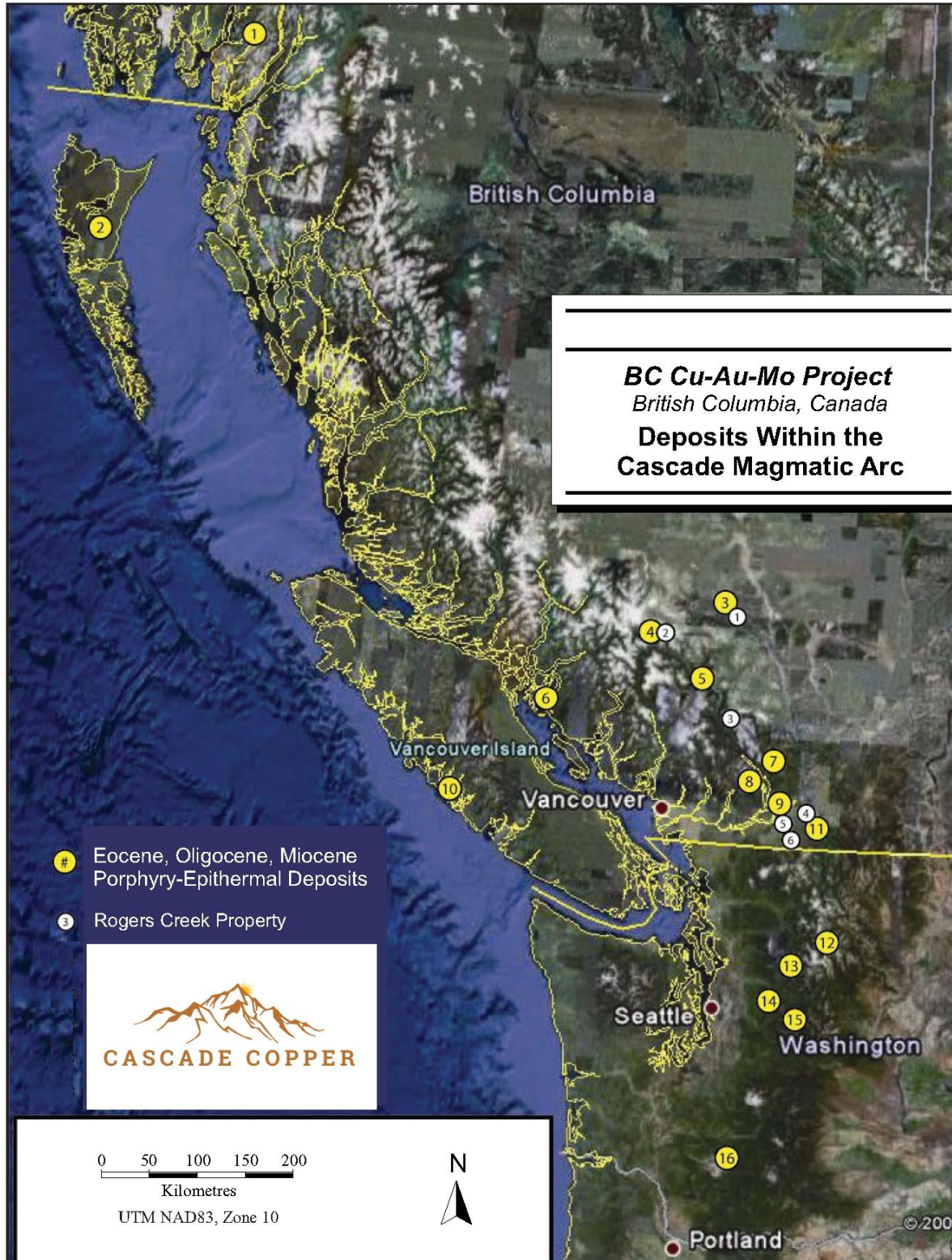


Figure 8-3. Porphyry related deposits in the Cascade Magmatic Arc (see Table 8-1) (Cascade Copper, 2022).

Table 8-1. Porphyry related deposits of the Cascade Magmatic Arc (see Figure 8-3).

Map #	Name	Resource	Age	Type	Reference
1	Quartz Hill	probably: 210 million tonnes @ 0.22 % MoS <sub>2</sub> possible: 1.1 billion tonnes @ 0.12 % MoS <sub>2</sub>	Miocene	Porphyry	Wolfe, 1995
2	Harmony	measured and indicated: 64 million tonnes @ 1.35 g/t gold (0.6 g/t gold cut-off)	Miocene	Epithermal	BC Minfile; Christie, 1988
3	Poison Mountain	Copper Creek: 280 million tonnes @ 0.261 % copper, 0.007 % Mo, 0.142 g/t gold, 0.514 g/t gold Fenton Creek: 18.3 million tonnes @ 0.31 % copper, 0.128 g/t gold	Paleocene	Epithermal	BC Minfile; Schiarizza et al., 1997
4	Salal Creek	Poor access, no estimate, widespread Mo over 5-6 kilometer area	Miocene	Porphyry	BC Minfile; Nockleberg et al., 2005
5	Owl Creek	unsubstantiated: 10-20 million tonnes @ 0.3-0.4 % copper, 0.03 % MoS <sub>2</sub>	Tertiary	Porphyry	BC Minfile; Nockleberg et al., 2005
6	Okeover	86.8 million tonnes @ 0.31 % copper, 0.008 % molybdenum (cut-off 0.2 % copper)	Tertiary	Porphyry	BC Minfile; Carter, 2006
7	Gem	15.9 million tonnes @ 0.125 % MoS <sub>2</sub> (0.10 % MoS <sub>2</sub> cut-off)	Oligocene	Porphyry	BC Minfile; Shearer, 2006
8	Doctors Point	113,600 tonnes @ 2.16 g/t gold	Oligocene	Epithermal	BC Minfile; Ray, 1991
9	Harrison Gold	Indicated: 1.845 million tonnes @ 2.79 g/t gold Inferred: 600,000 tonnes @ 2.8 g/t gold	Oligocene	Epithermal	BC Minfile; Ray, 1991
10	Catface	Indicated: 56.9 million tonnes @ 0.4 % copper Inferred: 262.4 million tonnes @ 0.38 % copper (plus ~0.014 % MoS <sub>2</sub> )	Eocene	Porphyry	BC Minfile; Simpson and Chapman, 2009
11	Giant Copper	45.373 million tonnes @ 0.47 % copper, 0.38 g/t gold, 11.19 g/t silver	Oligocene	Porphyry	BC Minfile; Robertson, 2006
12	Glacier Peak	1.7 billion tonnes @ 0.334 % copper, <0.015 % MoS <sub>2</sub> , +tungsten	Miocene	Porphyry	Lasmanis, 1995; Hollister, 1979
13	Sunrise	64.5 million tonnes @ 0.219 % copper and 0.071 % MoS <sub>2</sub>	Oligocene	Porphyry	Lasmanis, 1995; Hollister, 1979
14	North Fork	78 million tonnes @ 0.41 % copper, 0.013 % MoS <sub>2</sub> , 0.1 g/t gold, 1.4 g/t silver	Oligocene	Porphyry	Lasmanis, 1995; Hollister, 1979
15	Middle Fork	100 million tonnes @ 0.4 % copper, 0.2 % MoS <sub>2</sub>	Miocene	Porphyry	Lasmanis, 1995; Hollister, 1979
16	Margaret	to 244 metres depth: 523 million tonnes @ 0.434 % copper, 0.0175 % MoS <sub>2</sub> , 0.24 g/t gold, 1.92 g/t silver to 305 metres depth: 680 million tonnes @ 0.6 % copper equivalent	Miocene	Porphyry	Lasmanis, 1995; Hollister, 1979

The Miocene-age, Quartz Hill porphyry molybdenum deposit in southeastern Alaska panhandle was estimated in 1983 and is quoted in Wolfe (1995). The resource was estimated with a cut-off grade of 0.08% Mo. The Glacier Peak porphyry is also Miocene in age and has an estimated “mineral inventory” of 1,000 Mt grading 0.5% Cu with no stated cut-off grade. When the entire “mineralized envelope” is estimated the “mineral inventory” increases to 1,700 Mt grading 0.334% Cu and 0.015% MoS<sub>2</sub> with no stated cut-off grade (Lasmanis, 1995). The Margaret Deposit in Washington was estimated to contain 200 Mt (unclassified), to a depth of 244 m grading 0.434% Cu, 0.0175% MoS<sub>2</sub>, 0.27 g/t Au, and 1.92 g/t Ag or 680 Mt to a depth of 305 m, grading 0.6% CuEq (based on 1979 metal prices).

## **9.0 EXPLORATION**

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As of the Effective Date of the Report, the issuer has not performed any exploration work on the Rogers Creek Project. Historical exploration work completed on the Property is described in Section 6.



## **10.0 DRILLING**

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As of the Effective Date of the Report, the issuer has not performed any drilling on the Rogers Creek Project. Historical drilling completed on the Property is described in Section 6.

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## 11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

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The surface and core sampling procedures in this section were extracted from historical report summaries for work completed on the Rogers Creek Property by past operators (ARIS Database, 2022). The surface and drill core sample acquisition and handling procedures in the Report were extracted from McDonough (2011) and directly verified with the previous Exploration Manager of the Rogers Creek Project (from 2010 to 2020), Mr. Shannon Baird, a Qualified Person as defined by NI 43-101.

Based on the Author's examination of the sampling and assay methods, and the QA/QC protocols implemented by recent explorers, the Author is of the opinion that the historical data and information collected is of good quality, adequate for this stage of exploration on the Property and for the purposes of the Report.

### 11.1 Sampling Methods

According to McDonough (2011), all gossanous and sulphide-bearing rocks were sampled for analysis. Veins and stringers with and without pyrite or Cu-mineralization were sampled for geochemical analysis and mineralogical characterization of vein and alteration-halo mineralogy to develop exploration vectors. Soil samples have been acquired every 50 m along many slopes where possible.

Stream sediment and heavy mineral concentrate samples were taken initially as a reconnaissance exploration tool to determine which streams required follow-up sampling and prospecting. Reconnaissance samples generally were taken 25-50 m up-stream from the confluence of 1st and 2nd order streams whereas follow-up samples were taken at intervals of 50-200 m up-stream depending on suitable sample location sites. For stream sediments that had been washed at the sample site, 2 kg of a minimum screen (-20 mesh) fraction was submitted for analysis. Samples were dried in the laboratory at ~80°C, dry sieved at -80 and -150 mesh prior to analysis.

Samples and representatives (rocks only) were numbered and bagged in the field, sample locations were recorded using a Garmin GPSMAP 60Cx GPS, and a flag, with the sample number written on the flag that was left at the sample site.

Drill core sampling was based on visual estimates of sulphide content and sample lengths typically ranged from 0.5 to 1.0 m in well mineralized material. Shoulder samples and weakly mineralized material were sampled at up to 1.5 m intervals. Samples did not cross geological contacts. Core sample intervals were clearly marked on the core and 2 tags were placed at the end of each sample run (the third tag remained in the sample book with a record of hole number and sample interval). One tag was placed in the sample bag with the drill core sample and the other tag stayed with the remaining core after splitting. At this stage the core was then photographed in batches of 3 NQ boxes at a time for the complete drill hole (Figure 11-1).

Drill core samples delineated by the logging geologist were cut in half longitudinally along the core axis using a gas-powered diamond saw. One half of the sample was returned to the core box for reference and the other half sent to the laboratory for analyses. The reference core was cross stacked at the camp site. The core shack and storage area were considered to be secure as no road access was available while the camp was unattended and the entrance to the access road is gated.



Figure 11-1. Example of photographed core from drill hole MRC-007, boxes 40 to 41 (Shannon Baird, 2022).

## 11.2 Sample Analyses

All half drill core samples were sealed (stapled) in individual, labelled plastic bags with a unique sample tag. If a thin section was requested, a portion of the sample was retained for that purpose. A barren, granitic field blank was submitted with at least every twentieth sample, or as the last samples submitted in a batch of field samples. The sample book used to track the samples has 4 partitions with the sample number on each tag. One tag stays with the geological reference, 1 with the laboratory sample, 1 with the thin section, and the remaining part of the tag book is stored at the Cascade Copper storage unit in Pemberton, BC.

Sample chain of custody was maintained from the sample collection point until delivery to a representative from the analytical laboratory. Samples were packed into large rice sacks and tightly sealed using nylon tie wraps. The sacks were stored at the secured core shack until transported directly to the ALS Chemex Ltd. (ALS) laboratory by a company employee. ALS is an ISO 9001:2000 and 17025 certified service provider located in Vancouver, British Columbia. At ALS, samples were checked against requisition documents prior

to being dried, weighed, crushed, and split into 200g fractions using a Jones riffler and milled to 90%-95% passing 200 mesh.

Samples were analyzed for gold by standard lead collection fire assay fusion (FA) followed by a combination of inductively coupled plasma mass spectrometry (ICP-MS) and atomic emission spectrometry (ICP-AES). Samples were also analyzed for 47 base metals and trace elements using a 4 acid (HNO<sub>3</sub>-HClO<sub>4</sub>-HF and HCl) near total digestion and a combination of ICP-MS and ICP-AES. ICP over-limits are re-analyzed using sodium peroxide fusion acid dissolution followed by ICP-AES. On request, samples were analyzed for major element oxides and rare earth elements using lithium metaborate fusion followed by ICP-AES. ALS has a rigorous internal security and client confidentiality policy.

Assay results are downloaded from the ALS website by the Database Manager and emailed to the Exploration Manager. In 2011, ALS was not able to cope with standard assay results turnaround times required (2-3 weeks) and after a lab inspection SGS Mineral (SGS) ([www.sgs.com](http://www.sgs.com)) facilities in North Vancouver was engaged to compensate. SGS analyzed drill core samples from 5 holes at Rogers Creek (MRC-003 to MRC- 007, inclusive).

At SGS drill core samples were dried, crushed to 75% passing 2 mm, after which a 250 gram split was taken and pulverized to 85% passing 75 microns. A 20-gram pulp from each sample was then analyzed for 49 elements using SGS's ICM40B method, which utilizes Inductively-Coupled Plasma Mass Spectrometry (ICP-MS) and Inductively-Coupled Plasma Optical Emission Spectrometry (ICP-OES) and a near-total, 4 acid digestion. A 30 gram pulp split was assayed for gold by standard lead collection/fire assay fusion (FAA313). The doré bead was acid digested and analyzed for gold content using Atomic Absorption Spectrometry (AAS). Over-limit values for Ag and Cu were reconciled using SGS methods AAS42E and ICP90Q, respectively.

### **11.3 Quality Assurance and Quality Control Program**

Quality Control measures are required to ensure the reliability and trustworthiness of exploration data. This includes written field procedures and independent verifications of aspects such as drilling, surveying, sampling, assaying, data management and database integrity.

Appropriate implementation and documentation of Quality Control measures and regular analysis of Quality Control data are required to ensure accuracy and precision of analytical and project data and forms the basis for the quality assurance program implemented during exploration.

In order to standardize field procedures geologists were provided with a field handbook. For field specimens, blank samples were included with approximately every 19 rock samples sent to ALS. The blank was obtained from an un-mineralized, homogenous granodiorite located close to the field camp at Rogers Creek. At the beginning of the field survey, more than 12 blanks were submitted, with the first batch of rock samples to ensure the statistical validity of the geochemical analysis of the blank. Stream samples and

heavy mineral concentrate samples were submitted using field blanks as the last sample in each submission.

A rigorous QA/QC program was implemented for diamond drill core samples consisting of the insertion of blanks, certified reference standards, and sample (quarter-core) duplicates. Duplicates, field blanks (a local unmineralized granodiorite of known composition), and 1 of 3 commercial certified reference material (CRM) to samples (low, medium and high grade) were inserted into the core samples at a rate of one in every 20 samples. Two groups of certified reference materials were utilized and purchased from CDN Resource Laboratories Ltd., B.C., Canada:

- the first group comprised CDN-BLK-8 , CDN-CM-11A and -12.
- the second group comprised CDN-BLK-9 and CDN-CM-13,-15 and -16.

The QA/QC data was subject to statistical analysis upon receipt of results. All analyzed elements were checked to ensure that the measured results were within a 2 sigma margin of error of the reported values for the standard. If there was a discrepancy between the measured and reported values, then the laboratory was contacted. The results from the quality control analyses were stored in the field sample database.

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## 12.0 DATA VERIFICATION

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The Authors have reviewed historical data and information regarding past exploration, development work, and historical mining on the Property as provided by Cascade Copper and available in the public domain. The Authors were provided a comprehensive historical digital geological database from Cascade Copper for the purpose of reviewing the Project and preparing the Report. The Rogers Creek digital database included technical and assessment reports, maps, figures, assay data, assay certificates and location data detailing the historical work conducted on the Project by previous companies and geological consultants. Cascade Copper was entirely cooperative in supplying the Authors with all the information and data requested and there were no limitations or failures to conduct the verification.

Mr. Stephen Wetherup (P.Geo., APEGBC #27770) conducted a personal inspection (site visit) of the Property on 8 March 2022, in order to satisfy the requirements of the Report and confirm access and historical infrastructure on the Property. Mr. Wetherup visited the Property on 12 September 2015 and 26 and 27 May 2012 for a previous operator/owner.

On the current site visit for the Issuer, Stephen Wetherup, accompanied by Steve Orange a local outdoorsman in the area, travelled from Squamish, B.C. and drove to the Rogers Creek Property. Total access was impaired by a wash-out on the Rogers Creek Forestry Road and the site visit was terminated at 5.5 kilometres. During the site visit, the base camp area at the beginning of the Rogers Creek Road was visited where some of the historical drill core is stored, as well as a small trailer and a pile of split but unsampled core dating back to the drilling prior to 2012.

The drill core and split but un-assayed drill core were there at that time of Mr. Wetherup's 2012 visit to the Property. The condition of the road has improved since 2012 and 2015 with very little brush on the road. The washout which stopped progress on the current site visit was considerably worse and clearly was repaired recently before being washed out again last fall. Steve Orange took photos of the core shack, located further up the road, earlier in February 2022 (see Figure 2-2 and Figure 2-3), which shows the core shack to be in reasonable condition and the core to be accessible and protected below tarps.

It does not appear that any work, other than some clean up of most exploration equipment, has occurred on the Property since 2015.

It is the Author's opinion that the information and data that has been made available and reviewed by the Authors is adequate for the purposes of the Report as described in Section 2.1.

## **13.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

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As of the Effective Date of the Report, the issuer has not performed any mineral processing or metallurgical test work with respect to the Rogers Creek Project.

## **14.0 MINERAL RESOURCE ESTIMATES**

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There are no current mineral resource estimates on the Property.



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## **15.0 MINERAL RESERVE ESTIMATES**

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This section is not applicable to the Project at its current stage.

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## **16.0 MINING METHODS**

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This section is not applicable to the Project at its current stage.

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## **17.0 RECOVERY METHODS**

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This section is not applicable to the Project at its current stage.

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## **18.0 PROJECT INFRASTRUCTURE**

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This section is not applicable to the Project at its current stage.

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## **19.0 MARKET STUDIES AND CONTRACTS**

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This section is not applicable to the Project at its current stage.

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## **20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

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This section is not applicable to the Project at its current stage.

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## **21.0 CAPITAL AND OPERATING COSTS**

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This section is not applicable to the Project at its current stage.

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## **22.0 ECONOMIC ANALYSIS**

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This section is not applicable to the Project at its current stage.

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## **23.0 ADJACENT PROPERTIES**

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The Author has been unable to verify the following information, data, and mineralization presented below, and it is not necessarily indicative of the mineralization on the Property that is the subject of the Report.

There are no significant, active claims adjacent to the Rogers Creek Project. Torr Resources Corporation holds the Inferno, Inferno South and Red Mountain claims near the southwest corner of the Project, near Target IV.

## **24.0 OTHER RELEVANT DATA AND INFORMATION**

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The Author is not aware of any additional information or explanations necessary to make the Report understandable and not misleading.

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## 25.0 INTERPRETATION AND CONCLUSIONS

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The objective of the Report was to prepare an independent NI 43-101 Technical Report, capturing historical information and data available about the current Property that comprises the Rogers Creek Cu-Au Project, and making recommendations for future work.

Exploration in southwestern British Columbia over the last hundred years has largely focused on mesothermal gold, polymetallic vein, and skarn type deposit models. The documented work history around these intrusions is usually restricted to limited programs following up, re-visiting, re-sampling, and, in some cases, upgrading known occurrences that were already identified by previous workers. Additionally, there is little record of any significant, systematic, regional evaluation of these Tertiary intrusions for their large-scale porphyry or epithermal potential.

The Rogers Creek Cu-Au Project is being explored for porphyry-style Cu-Au-Mo mineralization associated with intrusions within the post-accretionary Tertiary-age Cascade Magmatic Arc. This represents a significantly younger environment than typical porphyry exploration targets in British Columbia. However, there are several very large porphyry deposits which occur in this belt in neighbouring southeast Alaska and Washington State and similar age magmatic belts worldwide that contain very large (>1 billion tonnes) copper and molybdenum deposits. Historical porphyry exploration in British Columbia has focused on older rocks of the Intermontane Belt rather than the metamorphosed and structurally imbricated, dominantly Triassic to Cretaceous age, Coast Belt. Past exploration models suggest that the Coast Belt is at too deep an erosional level to be prospective for porphyry-style mineralization. Instead, previous work in the area has targeted volcanogenic massive sulphide-style or epithermal-style gold mineralization. Work carried out in the 1990s has recognized very young Miocene intrusions within the Coast Belt rocks, forming part of the Cascade Magmatic Arc. This geological setting for porphyry-style mineralization, coupled with the discovery of Cu, Au, and Mo mineralization within these intrusions, provides a compelling geological model for exploration.

Since the initial discovery at Rogers Creek, Wallbridge Mining, Miocene Metals, Carube Copper, and TocVan Ventures have been able to acquire and maintain a dominant land position which covers a significant extent of this prospective Miocene-aged magmatic complex.

To date, historical airborne geophysical surveys, regional stream sediment sampling, soil sampling, mapping, and prospecting have been completed which were successful in narrowing attention to three priority exploration targets, Targets I, II, and III, within the Rogers Creek Valley where drilling has confirmed the presence of porphyry style alteration and mineralization. Prospecting and mapping along roads on the southwest part of the Property have identified an additional mineralized target, Target IV.

## 25.1 Target I

At Target I, a 2.2 km diameter polymictic breccia pipe that is well exposed in outcrop and delineated by a strong magnetic low in the airborne data was identified. In places this pipe shows intense argillic alteration and is cross-cut by poly-metallic Au, Cu, Ag and Pb veins.

Drilling and sampling indicate a strong association of pervasively and strongly mineralized rocks in the vicinity of high order structures trending north to north-west at Target I. Cascade believes that fault-zones identified along roads act as cross links between the higher order faults and thus provided a much larger surface to impregnate the surrounding rock. While these fault zones are poorly exposed, the sparse outcrop seen is extremely leached and fractured at surface as well as having developed limonitic gossans. The range of anomalous soil samples in this area as well as numerous low-resistivity and high chargeability features further suggests that the granodiorite host is intensely altered and impregnated with sulphides at depth. Identification of lower or equal order structures associated with the faults identified is essential in defining high grade portions of this mineralized system for drill testing.

## 25.2 Target II

At Target II, southwest of Target I, quartz-malachite veining has been identified within another strong magnetic low that is surrounded in part by elevated gold values in soil samples. The trend of the samples indicates a north-west striking fault zone that dips to the south-west. Surrounding outcrops of chlorite-sericite altered granodiorite are cut by poorly defined zones of copper-mineralized chloritic stringers, similar to those found on the northwestern margin of the breccia pipe at Target I. The magnetic low in this area may be related to an unroofed breccia pipe or alteration system, similar to that exposed at Target I.

## 25.3 Target III

At Target III, a 200 m diameter zone of hematite and clay/sericite/tourmaline-altered breccia has been identified in an area of anomalous Au-in-silt values and multi-generational silicification and potassic alteration events observed both within fault zones and within pervasively altered host granodiorite. Silicification may represent a cap overlying a mineralized porphyry or epithermal system at depth. Arsenic-in-soil values may give an indication for the gold potential of the area; other pathfinder elements such as bismuth as well as field observations indicate the existence of an east-west trending structure, that is responsible for the gold anomalies found in stream and rock samples from the area. Several small to moderate sized magnetic lows were indicated by the 3D magnetic inversion that seem to follow structural trends and thus may highlight zones of more intense alteration.

## 25.4 Interpretation

The review of drill core and outcrop alteration along with associated thin section work has improved the understanding of the geology and alteration patterns within this large mineralized system. The darker phase of the granodiorite previously identified as hornblende diorite, rather than being a distinct intrusive phase is now interpreted to be biotite +/- hornblende granodiorite that has been potassically altered in a

prograde event and subsequently retrograde altered to a sericite-chlorite-sulphide-magnetite assemblage during the mineralizing event. Most of these altered zones can be seen to be proximal to large scale arc-parallel and transpression faults within the valley that would have significantly focused fluid flow. It is believed that these zones are gradational into lower “high-grade” potassic cores beneath.

Work to date has advanced the Property from a small showing discovered on a logging road in 2007 to an advanced exploration stage project, with evidence for a large mineralized system. This has validated the initial working hypothesis that there is considerable potential to discover significant mineralization within the Miocene age intrusions of the Cascade Magmatic Arc in southwestern BC, which have seen very little modern exploration.

Merging and modelling of the 2009, 2015, and 2019 IP surveys with all other existing data into a 3D model has served to further strengthen the model of a buried porphyry at Rogers Creek. The initial review showed a large, open-ended, high chargeability and low resistivity anomaly present between two of the mineralizing arc-parallel structures within Target I which roughly correlate with drill holes WRC-001, WRC-002, MRC-006, and MRC-007 which, apparently just “skimmed” the edge of the large chargeability anomaly. Where the drill holes came closest and touched the edge of the anomaly appears to be where the highest copper-gold values occur along with intensified chlorite-sericite alteration zones possibly overprinting potassic prograde alteration. Target I remains the most promising and highest priority area, however, Target IV also shows significant potential, especially at the intersection of two major structures forming a large magnetic low and geochemical anomaly with “porphyry indicator” geochemistry. A more detailed manipulation and study of the new model is required to qualify the next exploration approach.

Most work to date has been focused on Target I. The last hole drilled in Target I, MRC-007, was drilled north of the limit of the IP (subsequently extended an additional 400 m north by the 2015 IP survey and another 200 m farther north in 2019) and soil geochemical coverage and intersected 158 m of 380 ppm Cu in MRC-007, including 12.3 m of 0.172% Cu, confirming that the mineralized system is open to the north beyond the limits of current geophysical and geochemical coverage. To date the mineralization intersected by drilling is consistent with that from the periphery of a porphyry mineralized system. Interpretation is complicated by the presence of a large post-mineral breccia pipe. Mineralized clasts noted within this pipe indicate it has passed through porphyry-style mineralization at depth. Further work is required to fully define the extent and geometry of what appears to be a very large mineralized system, in order to define the location of the potassic core of the system which would be expected to produce higher grade intercepts.

Work in Area II has identified copper-gold mineralization associated with a chlorite-sericite altered biotite granodiorite. Mineralization hosted by silica-chlorite-sericite altered hornblende diorite consists of up to several percent disseminated chalcopyrite and lesser pyrite with rare chalcopyrite and pyrite veins up to 1 cm wide, associated with a 340o trending structural zone in the southwestern part of Target II. The large magnetic low at the centre of Area II remains unexplained. The mineralization in all cases appears to be primarily controlled by northwest (320-340o) trending structures, particularly near their intersection with

020° "transpressional" structures. Further work is needed to better understand the detailed structural controls on mineralization.

## 25.5 Conclusions

Little work has been carried out in Targets III and IV. Potential in Target III appears to be for high level epithermal gold mineralization, while Target IV is a copper-molybdenum target. Both Targets are currently ranked to be of lower priority to Targets I and II, however Target IV presents a very intriguing area for future exploration.

Despite being sporadically worked on for the last 15 years, most of the Rogers Creek Project is still at a relatively early stage of exploration. Given the geology and alteration, there exists potential for porphyry, epithermal, and skarn copper-molybdenum-gold deposits on the Project. The presence of a multitude of intrusive dikes of varying phases and composition suggests that extensional structures and associated hydrothermal activity is relatively widespread on the Project. Previous exploration programs captured a significant amount of information and insight into the geology, alteration, and mineralization and can be used as a base to model and expand upon.

The Rogers Creek Project's strong copper-gold potential is supported by exploration drilling. Drill intersections suggest a potential exists for expansion on known intercepts laterally and at depth and that there are multiple copper-gold intercepts within many drill holes suggesting a widespread system that can probably be used to vector towards a higher-grade "porphyry centre".

After conducting a detailed review of all pertinent information, the Author's conclude that:

- The historical database is adequately complete, valid and up to date, however, there is new data that can still be compiled into a 3D model;
- There exists the likelihood of a large, buried porphyry system at depth, and at several locations;
- Additional exploration drilling would likely confirm and potentially expand the known zones, in particular at Targets I and II; and
- The Project is underexplored outside the known mineralized zones, especially at depth.

Significant opportunities that could improve the Project's advancement are presented in Table 25-1.

Table 25-1. Opportunities for the advancement of the Rogers Creek Cu-Au Project.

Opportunity	Description	Potential Benefit
Exploration potential	Potential for additional discoveries at depth and between the known occurrences by geophysics, 3D modelling, and drilling.	Potential to expand on the known zones and to discover new zones between and at depth, especially a higher-grade “porphyry centre”. Demonstrating potential of the Targets, the multiple mineralizing styles, and the overall size of the system.
Generate a 3D model	Integrate all geological, geophysical, and structural information into an updated 3D model that can be used for future exploration planning.	Potential to vector towards and discover trends or clusters of mineralization that currently remain hidden or “buried”. Better understanding of relationships to alteration and mineralization styles and their timing. Serve as predictive guide for other zones.
Independent hydroelectric power production	The Rogers Creek waterway proper is a high-volume water source with numerous large tributaries that flows all year long into the Lillooet	The Rogers Creek waterway could potentially be utilized as a source of “on-site” power production independent of provincial grid systems.

## 25.6 Risks and Uncertainties

Risks and uncertainties which may reasonably affect reliability or confidence in future work on the Project relate mainly to the reproducibility of exploration results (*i.e.*, exploration risk) in a future production environment. Exploration risk is inherently high when exploring in porphyry and epithermal vein systems, however these risks are mitigated through the completion of surface geological and structural mapping, trenching, and sampling programs, and high density (closely spaced drill holes) drilling programs, and mineral processing and metallurgical test work.

Table 25-2 identifies the significant internal risks, potential impacts, and possible risk mitigation measures that could affect the economic outcome of the Project. The list does not include the external risks that apply to all exploration projects (e.g., market fluctuations, changes in metal prices, exchange rates, availability of investment capital, change in government regulations, etc.).

Table 25-2. Potential risks and uncertainties for the Rogers Creek Cu-Au Project.

Risk	Potential Impact	Possible Risk Mitigation
Geological Model	Geological complexity: the mineralized system shows good lateral extent over several Targets, but porphyries may lay at extreme depths. Shearing and faulting may	Detailed structural mapping, LiDAR, and modelling of all available data in 3D. Careful review of the model before drilling to improve confidence in the vector and possible location of a higher-grade core.



Risk	Potential Impact	Possible Risk Mitigation
Social acceptability/Community support	Delay of the Project’s social acceptance or acceptance by First Nations.	Continue a proactive and transparent strategy to identify all stakeholders and develop a communication plan, especially with First Nations interests. Develop and sign MOU agreements and employ locals when possible. Organize information sessions, provide information on the Project, and meet with host communities.
Project area drains directly into major waterways	Potentially longer reviews by the ministry, and thus a delay in production permitting.	Early discussion with the ministry on possible mitigation measures which could include water testing, environmental meetings, and ecological reviews.

The Authors are not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the Property.

## 26.0 RECOMMENDATIONS

It is the Authors’ opinion that additional exploration expenditures are warranted on the Rogers Creek Cu-Au Project. The Authors have prepared a cost estimate for a recommended two-phase work program to serve as a guideline for the Project. A budget estimate for the recommended work programs is provided in Table 26-1. These recommendations total approximately CAD\$900,000 (including 10% contingencies).

The recommended Phase 1 program (CAD\$320,000), which includes a high-density LiDAR and Orthophoto survey, in-depth structural analysis and modelling, ground prospecting/mapping, and deep drilling of the Target I IP anomaly (Figure 26-1), is expected to be completed within about a 3-4 month period. The recommended Phase 2 program (CAD\$500,000) is contingent on the results from the Phase 1 program.

It is the Authors’ opinion that the recommended work programs and proposed expenditures are appropriate for the stage of the Property and that the proposed budget reasonably reflects the type and amount of contemplated exploration activities.

Table 26-1. Recommended Phase 1 and Phase 2 exploration work programs and budget, Rogers Creek Cu-Au Project.

<b>Work Program</b>	<b>Cost Estimate (CAD\$)</b>
<b>PHASE 1</b>	
High-Density LiDAR and Orthophoto Survey on Targets I, II (~40 km <sup>2</sup> )	\$40,000
In-Depth Structural Analysis and Modeling by Specialist	\$15,000
Conversion of all Available Data into ArcGIS and a Leapfrog 3D Model	\$35,000
Ground Prospecting/Mapping (South of Target I)	\$20,000
Deep Drilling of Target I IP Anomaly (1,000 m @~\$210/m all-in)	\$210,000
<b>PHASE 1 Subtotal:</b>	<b>\$320,000</b>
<b>PHASE 2</b>	
Ground Prospecting/Mapping (Target IV)	\$10,000
8 line-km IP Survey South of Target I (inc. line cutting & ancillary costs)	\$80,000
5 line-km IP Survey at Target IV (inc. line cutting & ancillary costs)	\$50,000
Merging and Inversion of all data/information into 3D Model	\$20,000
Drilling of new Target I IP Anomalies (800 m @~\$210/m all-in)	\$170,000
Drilling of Target IV IP Anomaly (800 m @~\$210/m all-in)	\$170,000
<b>PHASE 2 Subtotal:</b>	<b>\$500,000</b>
Contingency (~10%):	\$80,000
<b>EXPLORATION TOTAL (Phase 2 contingent on success of Phase 1):</b>	<b>\$900,000</b>

Understanding the structural geology is critical to the success of the Project. A high-resolution LiDAR survey is proposed to better distinguish the near-surface structural patterns and outline potential unknown structures. In addition to improving the structural understanding, this survey could better constrain the width, extent, and characteristics of the mineralized zones and structures.

The Phase 2 recommendations, contingent on the success of Phase 1, include prospecting and mapping over the area of Target IV, IP geophysical surveys south of Target I and over Target IV, and the merging and modelling of the geophysical and geological data and information to develop drill targets. Phase 2 drilling (~1,600 m) could include testing new geophysical targets developed over Target I and Target IV areas.

## **26.1 Drilling**

The historical diamond drilling programs on the Rogers Creek Project have served, in part, to outline areas that merit further drill testing. Specifically, further diamond drilling should focus on stepping out and deeper from drill holes MRC-006 and -007 and WRC-001 and -002 to target a potential hydrothermal source at depth.

Drillholes MRC-006 and MRC-007, completed in 2011, were collared nearly on top of the chargeability anomaly (Figure 26-1) but were drilled away from it to the southwest. Drillhole WRC-002, completed in 2009, was collared to the south of the anomaly and drilled toward and below the anomaly but ended approximately 600 m away from the bottom of the anomaly (Figure 26-1). Anomalous copper assays of the historical drill holes are spatially associated with the chargeability anomaly. Drilling should be completed to test continuity of known mineralized Targets in terms of lateral and depth extensions, to potentially discover new occurrences, and the high grade “porphyry centre” of the hydrothermal system.

Figure 26-1 shows the location for a Phase 1 deep diamond drill hole planned to be oriented at 300°Az, -40° dip and drilled for about 1,000 metres.

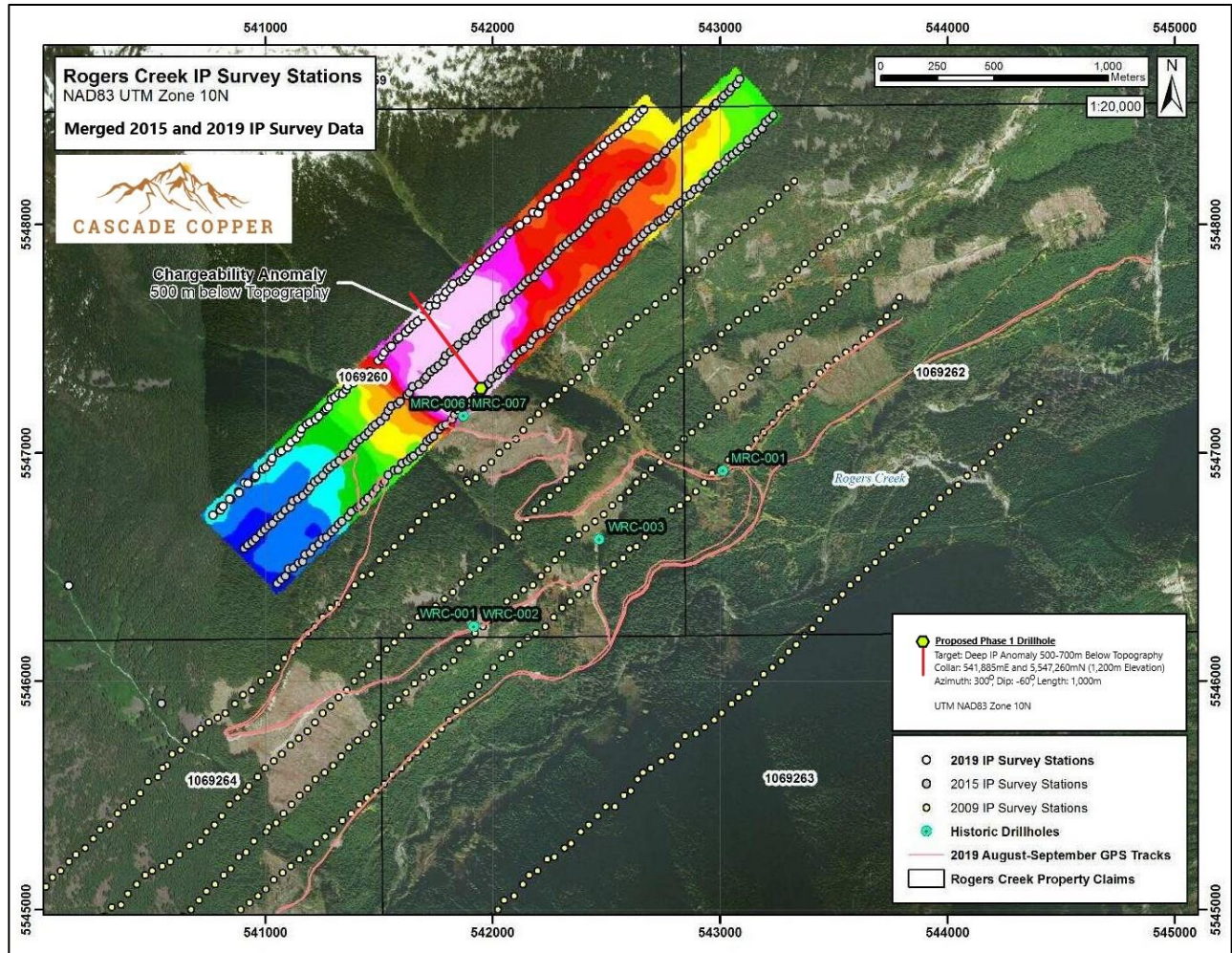


Figure 26-1. Location of planned Phase one drill hole (red trace across IP plan) targeting a historical IP anomaly in Target I area (Cascade Copper, 2022).

## 26.2 Summary

In summary, the Authors recommend the following based on available historical data, field observations, and current deposit model understandings:

- High-density LiDAR and high-resolution orthophoto survey (Targets I, II, and IV).
- On-site and an in-depth structural analysis of all existing data by a specialist with extensive knowledge of Tertiary porphyry systems. This should be completed after the LiDAR so the structural geologist can incorporate it and produce a detailed lineament analysis.
- Data compilation and integration (Phase 2). The geophysical and surface sampling data should be geospatially analyzed using modern techniques to confirm targets for future drilling.
- Prospecting and mapping could be performed on Target I south-side of Rogers Creek and on the Target IV “mag destructive” zone where the IP is complete.

- Further ground geophysics (IP) could be performed on Targets I and IV and merged.
- Merging and Inversion of all project data into a 3D model project database.
- An initial Phase 1 drilling program should be completed to test the deeper chargeability anomaly located at Target I to test the viability of newly modeled data interpretations.
- A Phase 2 drilling program could follow depending on Phase 1 results and interpretations.

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