PTARMIGAN SILICA PROJECT CARIBOO MINING DIVISION NTS 093/H10 and 11 BRITISH COLUMBIA, CANADA NI 43-101 Technical Report



Prepared for WEST OAK GOLD CORP September 26, 2024 Prepared by Chris M. Healey, P. Geo Principal Geologist, Healex Consulting Ltd Engineers and Geoscientists British Columbia Member #36477 Permit to Practice: 1000498

# Table of Contents

1	Su	mmary	1
1.1		Project Location, Description and Ownership	1
1.2		History	3
1.3		Development and Regulatory Status	4
1.4		Geology, Alteration and Mineralization	4
1.5		Exploration	5
1.6		Sample Preparation, Security and Analysis	5
1.7		Data Verification	5
1.8		Conclusions and Recommendations	6
1.9		Summary of Risks	6
2	Int	roduction	8
2.1		Purpose of Report and Terms of Reference	8
2.2		Sources of Information	8
2.3		Site visits and Scope of Personal Inspections	8
3	Re	liance on Other Experts	8
4	Pre	operty Description and Location	9
4.1		Location and Description	9
4.2		Tenure and Ownership	9
	4.2.1	Tenure	9
	4.2.2	Ownership	9
4.3		Permitting, Environmental Liabilities and Other Issues	10
4.4		Surface Rights	10
5	Ac	cessibility, Climate, Local Resources, Infrastructure and Physiography	11
5.1		Access	11
5.2		Climate	11
5.3		Property Infrastructure	12
5.4		Physiography and Vegetation	12
5.5		Flora and Fauna	14
5.6		Surface Rights and Local Resources	14
6	His	story	15
6.1		Historic Mining Activities	15
6.2		Ownership History of the Ptarmigan Silica Project	15
6.3		Exploration and Development Work Undertaken	15
7	Ge	ological Setting and Mineralization	16
7.1		Regional Geological Setting	16
7.2		Geological Sequences	16
	7.2.1	Proterozoic-Hadrynian Miette/Kazu Group	16
	7.2.2	Proterozoic and/or Lower Cambrian Gog and Cariboo Groups	17
	7.2.3	Ordovician-Mississippian Black Stuart Group	18
7.3		Local Geology	19
7.4		Structural Geology	23
8	De	posit Types	24
9	Ex	ploration	24

9.1	Historical Exploration and Production	24
9.2	Recent Exploration	25
10	Drilling	26
11	Sample Preparation, Security and Analysis	26
12	Data Verification	26
13	Mineral Processing and Metallurgical Testing	27
14	Mineral Resource Estimates	27
15	Mineral Reserve Estimates	27
16	Mining Method	27
17	Recovery Methods	27
18	Project Infrastructure	27
19	Market Studies and Contracts	27
20	Environmental Studies, Permitting and Social or Community Impact	28
21	Capital and Operating Costs	28
22	Economic analysis	28
23	Adjacent Properties	28
24	Other Relevant Data and Information	28
25	Interpretation and Conclusions	29
26	Recommendations	30
27	References	32
28	Date and Signature Page	33
	Certificate and Date	34

# List of Tables

Table 1.1	Abbreviations and Acronyms	1
Table 1.2		5
Table 1.3	Recommended Budget	6
Table 4.1	· · · ·	9
Table 5.1		12
Table 9.1	Results from the 2010 sampling program	25
Table 12.1	Data Verification Samples	26
Table 26.1	Recommended Budget	30

# List of Figures

Figure 1.1	Property location	2
Figure 1.2	Generalized claim location map	3
Figure 1.3	Ptarmigan Silica Property with claims	4
Figure 5.1	Map of Structural Elements of East-Central BC	13
Figure 7.1	Geology of the Ptarmigan claims	18
Figure 7.2	Stratigraphic Correlation Chart	19
Figure 12.1	Location Map for Verification Samples	27

List of Plates

Plate 5.1	View of the Rocky Mountain Trench from the International Space Station	14
Plate 7.1	Typical quartzite exposure on a 20-30 m high ridge on the property	20
Plate 7.2	Highway Department quarry adjacent to Highway 16	21
Plate 7.3	Sample PT-01	21
Plate 7.4	Location of sample PT-02	22
Plate 7.5	location of sample PT-03	23

#### 1.0 Summary

In August 2024, Healex Consulting, Ltd. ("Healex Consulting"), of Nanaimo, British Columbia, was engaged by West Oak Gold Corp ("West Oak"), based in Vancouver, British Columbia to prepare this technical report (the "Technical Report") on the Ptarmigan Silica Project in the Cariboo Mining Division, British Columbia, Canada (the "Ptarmigan Silica Project" or the "Project") in accordance with the reporting requirements of National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101"). Chris M. Healey, P.Geo., Principal Geologist for Healex Consulting, is the sole author (the "Author") of this Technical Report. The effective date of this Technical Report September 26, 2024.

The Ptarmigan Silica Project is an early-stage exploration project and as such mineral resources cannot be estimated or declared at this time. There has been no recent exploration work on the property. This Technical Report provides an assessment of the exploration potential of this conceptual target.

Abbreviation	Term				
°C	degrees Celsius				
CN Rail	Canadian National Railway				
EA	Environmental Assessment				
ha	hectare				
ICP-ES	inductively coupled plasma emission				
	spectrometry				
km	kilometer				
MINFILE	BC Geological Survey Mineral File				
mm	millimeter				
NoW	Notice of Work				
MTO	BC Mineral Titles Online				
NSR	Net Smelter Return				
UTM	Universal Transverse Mercator				

Table 1.1 provides a brief list of terms and abbreviations used in this Technical Report.

## Table 1.1 Abbreviations and Acronyms

## 1.1 Project Location, Description and Ownership

The Ptarmigan Silica Project is an early exploration stage project located adjacent to the Fraser River, approximately 120 km ESE of Prince George, British Columbia. The Project area is crossed by Highway 16, providing excellent access to the property. A full range of mining services are available in Prince George. The mineral tenure consists of 2 mining claims for a total area of 2280.3 hectares. The claims were located on May 17, 2024, and are, at the effective date of this

report, good to May 17, 2025. The property is the subject of an option agreement with West Oak Gold Corp.



Figure 1.1 shows the general location of the Project.

# Figure 1.1 Property location

The Author visited the Ptarmigan Silica Project on August 27, 2024 and collected three samples for data verification.

### 1.2 History

Previous work on the property is limited to a Department of Highways quarry and an exploration program carried out in 2010. The author has not been able to locate any production information for the quarry. The Ptarmigan Group carried out a mapping and sampling program on the project area in 2010 (Childs 2011).

In May 2024, Cronin Exploration Inc. staked two mining claims, covering 2280 hectares, and subsequently optioned the claims to West Oak. On September 26, 2024, West Oak Gold Corp entered into an option agreement with Cronin Exploration Inc., pursuant to which Cronin granted West Oak the sole and exclusive right to acquire the Property, subject to a 2% NSR Royalty. The option is exercisable by West Oak by making a cash payment of \$15,000 to Cronin and issuing to Cronin 1,3000,000 common shares in the capital of West Oak within five days of the date of execution.

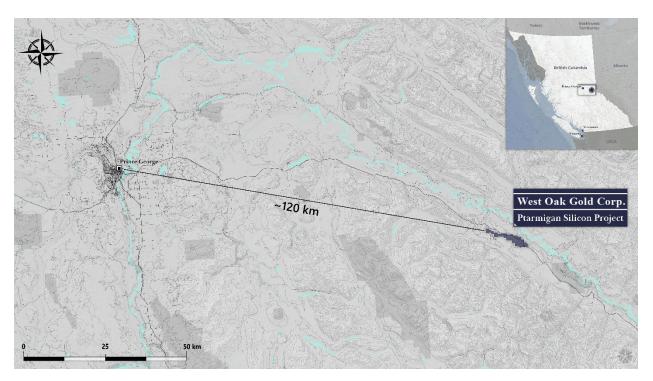


Figure 1.2 Generalized claim location map

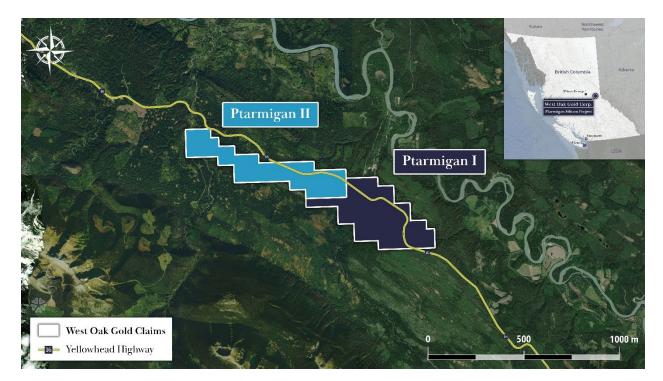


Figure 1.3 Ptarmigan Silica Property with claims

# 1.3 Development and Regulatory Status

There have been no site development activities on the Project

# 1.4 Geology, Alteration and Mineralization

The property is located within the Rocky Mountain Trench, on the western flank of the Rocky Mountains, and the Fraser River valley. The area is underlain by metasedimentary rocks of the Cariboo Group. Intrusive rocks are rare, and comprise a few dykes of rhyolite porphyry, diabase and diorite.

Proterozoic (Hadrynian or Windermere) to Jurassic rocks occur in various structural zones of the Rocky Mountains. Mesozoic rocks, other than some Triassic strata at Intersection Mountain, are restricted to a small area in the Foothills NE of the property. Upper Palaeozoic (Carboniferous and Devonian) strata outcrop in the Front Ranges and on the southern end of the Wallbridge Thrust Sheet within the Main Ranges. Relatively complete sequences of Ordovician and Cambrian strata dominate the Wallbridge and Sir Alexander Thrust sheets of the eastern Main Ranges. In the western Main Ranges Proterozoic Miette Group strata underlie the Forgetmenot Zone and Proterozoic to Silurian rocks are found in the Mount Robson synclinorium near the Trench.

The Proterozoic Miette Group (and its lateral equivalent the Kaza Group), comprising the lowest sequence of sedimentary rocks, is separated from the overlying Gog Group by an abrupt change in sedimentary regime and probably a discontinuity (Aitken 1969). The dominantly quartzitic sandstones of the Gog and its lateral equivalent Cariboo Group are in turn overlain conformably by mainly carbonate and shale units of Middle Cambrian to Middle Ordovician age, and perhaps younger. These grade to a shale facies in the northwest. Shale, carbonate and volcanic rocks at

least partly of Silurian age outcrop locally. The thickness of the Proterozoic and lower Palaeozoic rocks is in the order of 12,000 m.

Upper Palaeozoic strata of Middle (?) Devonian to Permian age comprise a sequence of about 1300 m of sallow water shelf carbonates, interrupted by two somewhat deeper water shale and argillaceous carbonate units (Devonian Fairholme Group and Lower Carboniferous Banff Formation), and terminated by sandstone, chert and cherty carbonate of the Pennsylvanian-Permian(?) Ishbel Group. Only the basal part of the Mesozoic succession outcrops in the area. Other than the dominantly carbonate Whitehorse formation, Mesozoic strata consist of siltstone, silty shale and fine-grained sandstone, and in the late Jurassic, form a part of an elastic wedge sequence derived from uplift in the western Rocky Mountains (Price and Mountjoy 1970).

# 1.5 Exploration

Other than a brief exploration program carried by The Ptarmigan Group in 2010, there has been no exploration for high quality silica on the property.

## **1.6** Sample Preparation, Security and Analysis

Three data verification samples were collected by the author on his August 28, 2024 site visit. They remained in his sole possession until they were delivered to Purolator Courier service in Nanaimo, BC, for transportation to MSALABS in Langley, BC. The samples were prepped using MSALABS PRP-910 method, which includes drying, crushing 1 kg to 2 mm, taking a 250 g split which is then pulverized to 95% -75µg. The resulting splits were then analyzed using MSALABS WRA-310 code, a whole rock analysis, with ICP-ES finish for 13 parameters plus LOI.

## 1.7 Data Verification

Three samples were collected by the author for data verification, as shown in table 1.2:

	UTM	Zone 10			
Sample #	East	North	Elev	%SiO <sub>2</sub>	%Fe <sub>2</sub> O <sub>3</sub>
PT-01	637643	5948282	839	98.68	0.42
PT-02	632896	5949895	841	98.44	0.29
PT-03	635883	5949307	831	99.52	0.25

## Table 1.2 Data Verification Samples

The analytical results confirm the presence of high purity silica in the quartzite units. As well, the very low iron oxide contents are very positive for the potential for development of a high quality silica facility.

## 1.8 Conclusions and Recommendations

The Author considers that the geological setting to be appropriate for the objectives of this Technical Report. The geological setting appears to confirm that the there is very likely a significant presence of high silica quartzites units within the boundaries of the property. However, there is a risk that exploration will not result in discovery of an economic mineral resource within the project area.

It is recommended that exploration of the Ptarmigan Silica Project be continued, and that exploration be conducted in phases with each successive phase being dependent upon the results of the previous phase.

Phase 1					
Detailed mapping	\$20,000.00				
Channel sampling	\$10,000.00				
Airborne magnetometer	\$20,000.00				
Preliminary metallurgical testing	\$10,000.00				
Supervision	\$5,000.00				
Report writing	\$5,000.00				
subtotal	\$70,000.00				
Contingency @ 10%	\$7,000.00				
Total	\$77,000.00				

The recommended budget for phases 1 and 2 is shown in table 1.3

Phase 2					
Drilling - 500 m	\$150,000.00				
Assays	\$20,000.00				
Metallurgical testing	\$20,000.00				
Permitting	\$10,000.00				
Field geologist	\$25,000.00				
Technical Report update	\$20,000.00				
subtotal	\$245,000.00				
Contingency @ 10%	\$24,500.00				
Total	\$269,500.00				

#### Table 1.3 Recommended Budget

## 1.9 Summary of Risks

There is a risk that exploration will not result in discovery of an economic mineral resource within the project area. In addition, it should be noted that the Project does have risks that are similar in nature to other mineral exploration projects in general, i.e., risks common to exploration and mining projects which include:

- \* Future commodity demand and pricing;
- \* Environmental and political acceptance of the project;
- \* Variance in capital and operating costs;
- \* Mine and mineral processing recovery.

#### 2.0 Introduction

## 2.1 Purpose of Report and Terms of Reference

In August 2024, Healex Consulting, Ltd. ("Healex Consulting"), of Nanaimo, British Columbia, was engaged by West Oak Gold Corp ("West Oak"), based in Vancouver, British Columbia to prepare this technical report (the "Technical Report") on the Ptarmigan Silica Project in the Cariboo Mining Division, British Columbia, Canada (the "Ptarmigan Silica Project" or the "Project") in accordance with the reporting requirements of National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101"). Chris M. Healey, P.Geo., Principal Geologist for Healex Consulting, is the sole author (the "Author") of this Technical Report. The effective date of this Technical Report September 26, 2024.

The Ptarmigan Silica Project is an early-stage exploration project and as such mineral resources cannot be estimated or declared at this time. There has been no recent exploration work on the property. This Technical Report provides an assessment of the exploration potential of this conceptual target.

This Technical Report has been prepared for the purpose of summarizing all of the available information on the property West Oak has designated as the Ptarmigan Silica Project. Additionally, this Technical Report is intended to provide a baseline of scientific, technical and exploration information on which future exploration and possible development may be based. The Ptarmigan Silica Project has the potential to contain economic high quality silica resources. The recommended phase 1 and 2 exploration plans are designed to identify the presence, quantity and quality of any high-silica quartzites that could be present in the property subsurface.

## 2.2 Sources of Information

Published reports, maps, and other available information have been evaluated and reviewed in the preparation of this Technical Report. Reports and publications referred to in the report at listed in Section 27 (References).

## 2.3 Site Visits and Scope of Personal Inspections

The Author, Chris M. Healey, P.Geo., visited the property on August 27, 2024. During that time, the Author was able to verify ground access conditions, as well as to collect three data verification samples.

#### 3.0 Reliance on Other Experts

The Author did not rely on any other experts in the writing of this Technical Report.

#### 4.0 Property Description and Location

#### 4.1 Location and Description

The Ptarmigan Silica Project is an early exploration stage project located adjacent to the Fraser River, approximately 120 km ESE of Prince George, British Columbia. The Project area is crossed by Highway 16, providing excellent access to the property. A full range of mining services are available in Prince George. The mineral tenure consists of 2 mining claims for a total area of 2280.3 hectares. The claims were located on May 17, 2024, and are, at the effective date of this report, good to May 17, 2025. The property is the subject of an option agreement with West Oak Gold Corp.

The centre of the property is located at approximately 53° 40'N, 120° 56' W.

# 4.2 Tenure and Ownership

## 4.2.1 Tenure

The Ptarmigan Silica Project consists of two mining claims covering 2280.3 hectares. Most mineral tenures in British Columbia are administered by the Mineral Titles Branch of the Ministry of Energy and Mines. The claims are recorded with the Province of British Columbia in the name of Cronin Exploration. Mineral claims for exploration work can be acquired on eligible land by means of an online staking registry. The ground is staked on a web-based mapping application by selecting 'cells' within a province-wide grid which parallels the lines of latitude and longitude. Since the lines of latitude and longitude converge with an increase in latitude, the cells vary in size from 21 ha in the south of the province to 16 ha in the north. Individual claims can consist of up to 100 contiguous cells. A map of the claims is shown as Figure 1.3, and individual claims and identifications are listed below in Table 4.1. Annual assessment work must be carried out and reported to the BC Geological Survey.

Claim name	Claim #	Hectares	Recording date	good to date	assessment work required
Ptarmigan I	1112985	1245.85	2024-05-17	2025-05-17	\$6,229.25
Ptarmigan II	1112986	1034.45	2024-05-17	2025-05-17	\$5,172.25
	Total	2280.3			\$11,401.50

#### Table 4.1 List of Ptarmigan Silica Project claims

The Author has verified by a search of BC Mineral Titles Online (MTO) records that the mining claims are considered active by the BC Government. Assessment work in the amount of \$11,401.50 is required to be expended before May 17, 2025 to keep the claims in good standing.

#### 4.2.2 Ownership

5.0 On September 26, 2024, West Oak Gold Corp entered into an option agreement with Cronin Exploration Inc., pursuant to which Cronin granted West Oak the sole and exclusive

right to acquire the Property, subject to a 2% NSR Royalty. The option is exercisable by West Oak by making a cash payment of \$15,000 to Cronin and issuing to Cronin 1,3000,000 common shares in the capital of West Oak within five days of the date of execution.

# 5.1 Permitting, Environmental Liabilities and Other Issues

The project is located entirely on public land that is administered by the provisions of the BC Mines Act. Surface access to the mining claims and work involving casual use and no mechanical disturbance, such as surface geologic mapping, geochemical sampling and minor geophysical surveys, is a right associated with mining claims. Permits are required for any exploration activities involving mechanical disturbance such as road building, major geophysical surveys such as IP, drilling and/or trenching. For such work, a Notice of Work ("NoW") is required under the Mines Act. Although not specifically required under the Mines Act, NoW applicants are encouraged to engage with indigenous groups with potential interest in the proposed project area at an early stage. This should happen prior to initiating any formal regulatory or permitting process with the provincial government. Both regulators and Indigenous groups are increasingly viewing early engagement by proponents as a best practice.

An Environmental Assessment (EA) has not been completed for the Project but will be required prior to development activities. The author is not aware of any specific environmental issues or liabilities related to the Project.

## 4.4 Surface Rights

Surface rights on the project lands are reserved for the Crown.

#### 6.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography

Although located in a major transportation corridor, the project area is not close to any developed residential areas. The closest community is the village of McBride, located approximately 60 km to the southeast. The closest substantial urban centre is Prince George, located approximately 125 km by road, to the northwest.

#### 6.1 Access

Highway 16 (the Yellowhead Highway) crosses the property on the northeastern edge, providing excellent access to the project area. A major rail line follows the Rocky Mountain Trench and is operated by CN Rail. Via Rail provides regular passenger service through the Jasper-Prince Rupert service.

#### 6.2 Climate

Climate conditions allow for year-round operations. The Köppen Climate System classifies the climate for McBride as continental, with no dry season and a warm summer (*Dfb*) with an average precipitation of about 730 mm (27.7 inches) annually. The annual average high temperature is 10.6°C (51.1° F), and the average low is -0.8°C (30.6° F). July is the hottest month, with average high temperatures 22.3°C (72.1° F) and January has the coldest temperatures, with lows averaging -10.7°C (12.7° F).

Table 5.1 summarizes climatic data for McBride, British Columbia, located within the Rocky Mountain trench approximately 60 km to the southeast.

				Climate	data fo	r McBri	de						[hide]
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	10.5	12.5	19.5	27.0	33.0	33.5	34.5	33.5	30.5	24.5	15.0	7.5	34.5
	(50.9)	(54.5)	(67.1)	(80.6)	(91.4)	(92.3)	(94.1)	(92.3)	(86.9)	(76.1)	(59.0)	(45.5)	(94.1)
Mean daily	-2.6	1.4	5.9	12.8	17.6	20.7	22.3	22.1	17.1	9.6	2.2	-1.8	10.6
maximum °C (°F)	(27.3)	(34.5)	(42.6)	(55.0)	(63.7)	(69.3)	(72.1)	(71.8)	(62.8)	(49.3)	(36.0)	(28.8)	(51.1)
Daily mean °C (°F)	-6.7	-3.2	0.6	5.7	10.1	13.5	15.2	14.6	10.6	4.9	-1.1	-5.0	4.9
	(19.9)	(26.2)	(33.1)	(42.3)	(50.2)	(56.3)	(59.4)	(58.3)	(51.1)	(40.8)	(30.0)	(23.0)	(40.8)
Mean daily	-10.7	-7.8	-4.8	-1.4	2.5	6.1	8.1	7.1	4.0	0.2	-4.3	-8.2	-0.8
minimum °C (°F)	(12.7)	(18.0)	(23.4)	(29.5)	(36.5)	(43.0)	(46.6)	(44.8)	(39.2)	(32.4)	(24.3)	(17.2)	(30.6)
Record low °C (°F)	-40.0	-31.0	-31.0	-15.5	-5.5	-1.5	0.0	-0.5	-6.0	-13.0	-31.5	-38.0	-40.0
	(-40.0)	(-23.8)	(-23.8)	(4.1)	(22.1)	(29.3)	(32.0)	(31.1)	(21.2)	(8.6)	(-24.7)	(-36.4)	(-40.0)
Average precipitation mm (inches)	53.4 (2.10)	27.1 (1.07)	44.2 (1.74)	39.9 (1.57)	52.1 (2.05)	73.7 (2.90)	101.8 (4.01)	68.7 (2.70)	73.9 (2.91)	72.8 (2.87)	53.5 (2.11)	42.1 (1.66)	703 (27.7)
Average rainfall	10.4	6.3	21.8	30.9	50.3	73.7	101.8	68.7	73.9	67.1	21.7	6.2	532.6
mm (inches)	(0.41)	(0.25)	(0.86)	(1.22)	(1.98)	(2.90)	(4.01)	(2.70)	(2.91)	(2.64)	(0.85)	(0.24)	(20.97)
Average snowfall	43.0	20.8	22.4	9.0	1.8	0.0	0.0	0.0	0.0	5.7	31.8	35.9	170.4
cm (inches)	(16.9)	(8.2)	(8.8)	(3.5)	(0.7)	(0.0)	(0.0)	(0.0)	(0.0)	(2.2)	(12.5)	(14.1)	(67.1)
Average precipitation days (≥ 0.2 mm)	10.9	7.8	12.1	12.7	16.9	19.2	21.1	16.1	17.3	18.6	13.8	10.4	176.8
Mean monthly sunshine hours	51.2	85.5	136.7	179.5	222.7	203.9	215.5	208.3	175.8	89.9	45.7	39.5	1,654.3
Percent possible sunshine	20.4	30.9	37.2	42.8	45.3	40.2	42.3	45.4	46.0	27.3	17.6	16.8	34.3
				Source	: Environ	ment Ca	anada <sup>[17]</sup>	]					

https://en.wikipedia.org/wiki/McBride, British Columbia

Table 5.1Climate Data for McBride, BC

## 6.3 Property Infrastructure

There is no existing infrastructure on the Ptarmigan Silica Project specific to development and quarrying operations. Highway 16 (the Yellowhead Highway) follows along the northeast margin of the property, giving excellent access to the project area. Within the property, there are several old cut trails, which are largely overgrown. Most of these could be readily cleared to allow access to all-terrain vehicles. There are no major electricity transmission lines in the project area.

# 6.4 Physiography and Vegetation

The project is located entirely within the Rocky mountain Trench. The Trench is both visually and cartographically a striking physiographic feature extending approximately 1,600 km (1,000 mi) from Flathead Lake, Montana, to the Liard River, just south of the British Columbia–Yukon border near Watson Lake, Yukon (Wikipedia). The trench bottom is 3–16 km (1.9–9.9 mi) wide and is 600–900 m (2,000–3,000 ft) above sea level. The general orientation of the Trench is an almost straight 150/330° geographic north vector and has become convenient as a visual guide for aviators heading north or south.

Although some of its topography has been carved into U-shaped glacial valleys, it is primarily a byproduct of geologic faulting. The Trench separates the Rocky Mountains on its east from the Columbia Mountains and the Cassiar Mountains on its west. It also skirts part of the McGregor Plateau area of the Nechako Plateau sub-area of the Interior Plateau of British Columbia. It is up to 25 km (16 mi) wide, if measured peak-to-peak, and varies in valley relief, but is clearly visible by air and satellite/remote sensing and is easily discernible to those ascending any of the mountains or ridges lining it.

The Trench is drained by four major river basins: the Columbia, Fraser, Peace and Liard. Two reservoirs of the Columbia River Treaty fill much of its length today - Lake Koocanusa and Lake Kinbasket.

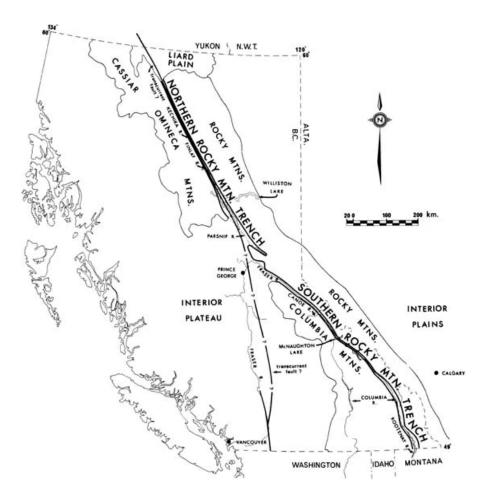


Figure 5.1 Map of Structural Elements of East-Central British Columbia (Campbell et al 1987)



Plate 5.1 View of the Rocky Mountain Trench from the International Space Station

Elevations within the project area range from  $\pm 630$  m at the level of the Fraser River, 750 – 820 m at Highway 16 and up to 900 m along the highest quartzite ridges. The three data verification samples were located at elevations of approximately 830 - 840 m.

## 6.5 Flora and Fauna

Consisting primarily of forest, the northern part of the Trench is mostly undeveloped and sparsely inhabited by humans. Common tree species in this region are white and black spruce, subalpine fir and lodgepole pine. Animals common in the northern half of the Trench include wapiti, grizzly and black bears, caribou, moose and wolves.

#### 6.6 Surface Rights and Local Resources

Surface rights on the project lands are reserved for the Crown.

### 7.0 History

Previous work on the property is limited to the Department of Highways quarry and an exploration program carried out in 2010.

#### 7.1 Historic Mining Activities

Other than a Department of Highways quarry, there have been no mining or quarrying activities on the property.

#### 7.2 Ownership History of the Ptarmigan Silica Project

Approximately ten mining claims were held in the project area between April 2010 and June 2013. These were explored by the Ptarmigan Group and subsequently abandoned. The area was restaked by Cronin Exploration in May 2024, and subsequently optioned to West Oak.

#### 7.3 Exploration and Development Work Undertaken

There have been no recent exploration activities on the property.

## 8.0 Geological Setting

The property is located within the Rocky Mountain Trench, on the western flank of the Rocky Mountains, and the Fraser River valley. The area is underlain by metasedimentary rocks of the Cariboo Group. Intrusive rocks are rare, and comprise a few dykes of rhyolite porphyry, diabase and diorite.

#### 8.1 Regional Geological Setting

Proterozoic (Hadrynian or Windermere) to Jurassic rocks occur in various structural zones of the Rocky Mountains. Mesozoic rocks, other than some Triassic strata at Intersection Mountain, are restricted to a small area in the Foothills NE of the property. Upper Palaeozoic (Carboniferous and Devonian) strata outcrop in the Front Ranges and on the southern end of the Wallbridge Thrust Sheet within the Main Ranges. Relatively complete sequences of Ordovician and Cambrian strata dominate the Wallbridge and Sir Alexander Thrust sheets of the eastern Main Ranges. In the western Main Ranges Proterozoic Miette Group strata underlie the Forgetmenot Zone and Proterozoic to Silurian rocks are found in the Mount Robson synclinorium near the Trench.

The Proterozoic Miette Group (and its lateral equivalent the Kaza Group), comprising the lowest sequence of sedimentary rocks, is separated from the overlying Gog Group by an abrupt change in sedimentary regime and probably a discontinuity (Aitken 1969). The dominantly quartzitic sandstones of the Gog Group and its lateral equivalent Cariboo Group are in turn overlain conformably by mainly carbonate and shale units of Middle Cambrian to Middle Ordovician age, and perhaps younger. These grade to a shale facies in the northwest. Shale, carbonate and volcanic rocks at least partly of Silurian age outcrop locally. The thickness of the Proterozoic and lower Palaeozoic rocks is in the order of 12,000 m.

Upper Palaeozoic strata of Middle (?) Devonian to Permian age comprise a sequence of about 1300 m of sallow water shelf carbonates, interrupted by two somewhat deeper water shale and argillaceous carbonate units (Devonian Fairholme Group and Lower Carboniferous Banff Formation), and terminated by sandstone, chert and cherty carbonate of the Pennsylvanian-Permian(?) Ishbel Group. Only the basal part of the Mesozoic succession outcrops in the area. Other than the dominantly carbonate Whitehorse formation, Mesozoic strata consist of siltstone, silty shale and fine-grained sandstone, and in the late Jurassic, form a part of an elastic wedge sequence derived from uplift in the western Rocky Mountains (Price and Mountjoy 1970).

#### 7.2 Geological Sequences:

#### 7.2.1 Proterozoic-Hadrynian Miette/Kaza Group

The Miette Group forms a thick succession of fine to coarse clastic rocks northeast of the Rocky Mountain Trench and include the oldest strata known in this part of the Rocky Mountains (Campbell et al 1973). The Miette Group in this area is divided into three informally-named map units; the lower, middle and upper Miette. The lower and middle Miette are dominantly argillaceous sequences which form reasonably distinct and continuous units. The upper Miette locally contains carbonate rocks overlain by quartzite and shale at the top of the section immediately below the Gog Group.

The Kaza Group is the lateral equivalent of the Miette Group and occurs on the western side of the Rocky Mountain Trench. Predominant rock types are brown weathering feldspathic and micaceous quartzite, silver-green phyllite and schist and schistose granule conglomerate. The quartzite is thick-bedded forming 60-90 m thick units relatively free of phyllite.

#### 7.2.2 Proterozoic and/or Lower Cambrian Gog and Cariboo Groups

The Cariboo and Gog groups are interpreted to be lateral equivalents, with the Gog Group lying to the east of the Rocky Mountain Trench and the Cariboo Group to the west (Struik, L.C. 1988). The Project area lies at the meeting of the two groups. As a result, geological information for the project area appears to use the terms interchangeably. The two main rock units encountered, which are interpreted to be juxtaposed, are referred to as the Cariboo Group, Yanks Peak Formation and the Gog Group Mural formation (Young 2003 and Pashulka 2010).

Conglomeratic quartzite which forms a distinct member at the base of the Gog Group strongly contrast with the upper Miette argillite, This contact represents a marked and abrupt change in sedimentary facies and basin palaeogeography. The contact is believed to be unconformable.

The Gog Group is a sequence dominated by quartzite which overlies the Miette Group. The Gog Group thickens northwestward from 1200 – 1500 m in the Jasper area to a maximum of about 2400 m in the Mount Robson area. Greatest thicknesses are generally attained in the most wester ranges of the Rocky Mountain, where the unit consists of shale and siltstones as well as sandstone.

The Cariboo Group conformably overlies the Kaza Group on a gradational contact (Holland 1954). The Cariboo Group is divided into seven formations which are from oldest to youngest: Isaac, Cunnigham, Yankee Belle, Yanks Peak, Midas, Mural and Dome Creek (Hein et al 1994). Thickness can reach up to 2500 m, but thickness variations are poorly understood due to complexities of structure, and erosion below an Ordovician unconformity.

- i. **Issac Formation**: The Isaac Fm comprises phyllite, calcareous phyllite, limestone and minor quartzite. The Isaac Fm is considered to be upper Proterozoic, like the Upper Miette.
- ii. **Cunningham Formation**: The Cunnigham Fm consists of limestone, dolostone marble and minor phyllite.
- iii. **Yankee Belle Formation**: The Yankee Belle Fm comprises slate or phyllite, quartzite, siltite, limestone and sandy limestone.
- iv. Yanks Peak Formation: The Yanks Peak Fm comprises quartzite, siltite, slate, phyllite and minor calcareous sandstone. White coarse grained orthoquartzite is characteristic of the Yanks Peak Fm in the Cariboo Terrane. The Yanks Peak Fm has thicknesses reported up to 580 m. The lower contact is conformable with the Yankee Belle Fm. In most places it is gradation but locally sharp. The quartzite member is generally white and can be light grey to black, brown or pink. The quartzite is mostly medium- to coarse-grained. The grains are subrounded and sorted to well-sorted.

The matrix is mainly quartz with minor sericite and muscovite. Bedding is characteristically thick and indistinct. Cross-bedding occurs locally. Measured thicknesses of the quartzite unit range from 60 - >300 m. In the project area, the Yanks Peak quartzite is interpreted to have been deposited in a shallow marine basin (Campbell 1973).

- v. **Midas Formation**: The Midas Fm consists of slate, phyllite, siltite and quartzite. The lower contact is conformable and gradational over about a one meter interval with the underlying Yanks Peak Fm. This formation is interpreted to be early Lower Cambrian.
- vi. **Mural Formation**: The Mural Fm consists mainly of limestone and lesser amounts of dolostone. Locally it an also include shale. The lower contact with the Midas Fm is conformable and mainly sharp. This formation is assigned to the Lower Cambrian age.
- vii. **Dome Creek Formation**: This uppermost member of the Cariboo Group includes a sequence of dark shale, siltstone and minor limestone.

#### 7.2.3 Ordovician – Mississippian Black Stuart Group

The Black Stuart Group covers a wide range of ages and lithologies, and its contact with the Dome Creek Fm appears to be a major unconformity (Struik 1988). Exposures are limited. Lithologically, the Black Stuart Group is divided into three informal units: chert-carbonate' black pelite, which both overlies and underlies the chert-carbonate unit; and sandstone.

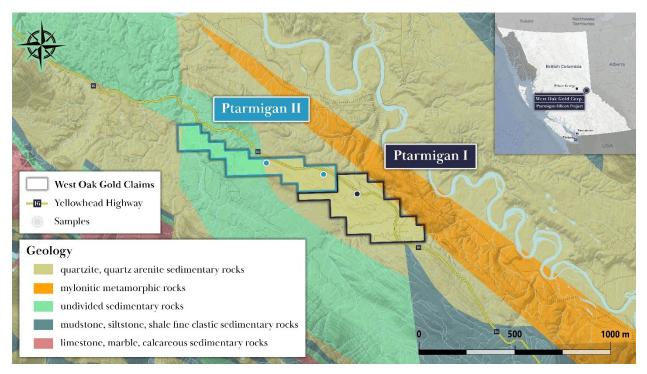


Figure 7.1 Geology of the Ptarmigan Claims

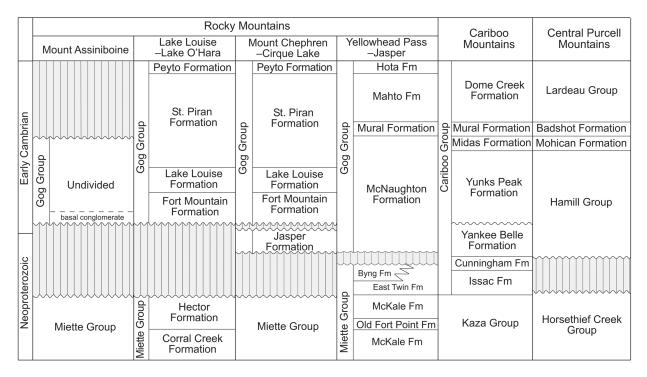


Figure 7.2 Stratigraphic Correlation Chart (Desjardins et al 1994)

## 7.3 Local Geology

The main rock type exposed on the property is quartzite of the Yanks Peak Group. The quartzite forms prominent ridges paralleling the orientation of the two mining claims.

The prominent quartzite layers on the property are quite pure and typically weather white. The sedimentary quartz grains are generally well rounded and well sorted and the rock is well indurated due to the development of secondary silica cement. Quartz grains typically average from 0.5 to 1.0 mm in diameter (Childs et al 2011). Government mapping suggests that the Ptarmigan quartzites are equivalent to the Lower Cambrian and/or Hadrynian Yanks Peak Formation in the Caribou Mountains to the west.

Iron oxide staining is common on exposed fractures, as noted in the Dept of Highways quarry (see Figure 12.1 for quarry location). The Author noted the presence of minor veinlets of pyrite in exposures in the quarry, which explains this staining.



Plate 7.1 Typical quartzite exposure on a 20-30m high ridge on the property

The general strike of the quartzites is N60°W with dips typically 45° to 60° to the southwest. Where exposed, the structurally underlying unit is a phyllite. Typically there is a 3-5 meter transition zone where the phyllite is interbedded with quartzite. The overlying unit is not exposed.

The quartzite is well exposed in a Highways Department quarry is located along Highway 16 (see plate 7.2).



Plate 7.2 Highways Dept quarry adjacent to Hwy 16

Three samples were collected during the site visit:

**PT-01** This sample was collected from the Highway Dept quarry, UTM Zone 10, 637643E 5948282N. This is adjacent to two samples collected in 2010 (#20 and 21), which contained 95.92 and 96.58% SiO<sup>2</sup> respectively. The sample was a white quartzite, which was clean, well-sorted, with medium well-rounded grains. Minor iron staining occurs on the weathered surfaces, which relates to minor pyrite veining noted in the same location.



Plate 7.3 Sample PT-01

**PT-02** This sample was collected adjacent to 2010 samples 10 and 11 (97.91 and 98.80 % SiO<sup>2</sup>). Its location is UTM Zone 10 632896E 5949895N. The sample is clean white quartzite, with well-rounded medium quartz grains. Iron staining is absent. The host is a thick-bedded massive quartzite with several sets of cross-cutting white quartz veins.



Plate 7.4 Location of Sample PT-02

**PT-03** This sample was collected adjacent to 2010 sample 5 (98.68 % SiO<sup>2</sup>. Its location is UTM Zone 10 635883E 5949307N. The sample is clean white quartzite, with well-rounded medium quartz grains. Iron staining is absent.



Plate 7.5 Location of Sample PT-03

#### 7.4 Structural Geology

The property is located within the Rocky Mountain Trench. The Trench is a large valley on the western side of the northern part of the Rock Mountains. The Trench is both visually and cartographically a striking physiographic feature extending approximately 1,600 km (1,000 mi) from Flathead Lake, Montana, to the Liard River, just south of the British Columbia–Yukon border near Watson Lake, Yukon. The trench bottom is 3–16 km (1.9–9.9 mi) wide and is 600–900 m (2,000–3,000 ft) above sea level. The general orientation of the Trench is an almost straight 150/330° geographic north vector and has become convenient as a visual guide for aviators heading north or south.

Although some of its topography has been carved into U-shaped glacial valleys, it is primarily a byproduct of geologic faulting. The Trench separates the Rocky Mountains on its east from the Columbia Mountains and the Cassiar Mountains on its west. It also skirts part of the McGregor Plateau area of the Nechako Plateau sub-area of the Interior Plateau of British Columbia. It is up to 25 km (16 mi) wide, if measured peak-to-peak, and varies in valley relief, but is clearly visible by air and satellite/remote sensing and is easily discernible to those ascending any of the mountains or ridges lining it.

While the northern portion of the Trench is dominated by strike-slip faulting, the southern portion (which includes the property) was created by normal faults. The Southern Rocky Mountain Trench was created mainly by Cenozoic-aged extension (normal faulting). What little strike-slip movement that is found in the southern trench is not considered significant. The extensional faulting was nonetheless substantial, having extended as deep as 13.5 km (8.4 mi). The southern trench also differs from the northern trench in that it is more sinuous and is asymmetrical in cross-section (perpendicular to its length). The western side of the Southern Rocky Mountain Trench is more subdued and irregular than the east side. During late Paleozoic to Mesozoic time, rapid sediment deposition and subsidence to the west transitioned in the area of the modern Rocky Mountain Trench into a stable continental shelf in the east. The Nevadan Orogeny destroyed the western wedge of sedimentary rocks during Jurassic to middle Cretaceous time, thrusting them up into metamorphic fold belts. Currently, strata on either side of the Southern portion of the Trench consist mainly of Precambrian and Paleozoic metasedimentary and sedimentary rocks. Within the trench are unconsolidated Cenozoic sandstones and conglomerates.

The aforementioned basement ramp along which orogeny-related thrust faulting and subsequent strike-slip and normal faulting occurred is probably associated with the ancient continental shelf of Paleozoic and Mesozoic time.

#### 8 Deposit Types

The deposit type is simply a quartzite (likely orthoquartzite) with a very high silica content. In this location, the Yanks Peak quartzite is interpreted to have been deposited in a shallow marine basin (Campbell 1973).

#### 9 Exploration

#### 9.1 Historic Exploration and Production

The property was explored in 2011 by The Ptarmigan Group. A mapping and sampling program was completed (BC Assessment File 32528, Childs et al 2011). Twenty three samples were collected and subjected to whole rock analysis. The average value returned was 95.34% SiO<sup>2</sup>. However, for the seventeen samples described as "quartzite" the average was 97.69% SiO<sup>2</sup>. Some had slightly elevated iron content and this was interpreted to be due to the presence of pyrite and other iron-rich phases. The remaining six samples, which had SiO<sup>2</sup> content ranging from 82.71 to 83.61%, were collected from sites outside the current claims.

Samples collected within current project area								
	UTM	Zone 10						
Sample #	East	North	%SiO <sub>2</sub>	comments				
1	634828	5948830	98.12	quartzite				
2	635261	5948609	97.97	quartzite				
3	635558	5948495	98.28	quartzite				
4	635413	5948452	98.28	quartzite				
5	635875	5949308	98.68	quartzite				
6	636860	5947694	97.74	quartzite				
7	636693	5947804	98.05	quartzite				
8	635800	5948241	98.18	quartzite				
9	643653	5943195	97.85	quartzite				
10	632947	5949887	98.80	quartzite				
11	633037	5949854	97.91	quartzite				
12	637812	5947822	98.54	quartzite				
13	637517	5948092	97.40	quartzite				
14	637032	5947538	97.71	quartzite				
15	639070	5947504	94.66	quartzite				
20	637653	5948299	96.58	quarry, better material?				
21	637653	5948299	95.92	quarry, better material?				

Samples collected outside current project area						
	UTM Zone 10					
Sample #	East	North	%SiO <sub>2</sub>	Comments		
16	642899	5942375	93.61	conglomerate		
17	642805	5942114	92.25	quartz vein		
18	642826	5942051	92.28	quartz pebble conglomerate		
19	642839	5941879	82.71	quartz pebble conglomerate		
22	639293	5945071	82.95	dirty ss		
23	639293	5945071	88.25	vein material, not quartzite		
		Δ	00.00			

Average 88.68

#### Table 9.1Results from 2010 sampling program

The author cautions that he has not been able to verify the validity of these samples and is not relying on their accuracy in developing conclusions about the property.

#### 9.2 Recent Exploration

There has been no recent exploration on the property.

#### 10 Drilling

There has been no drilling on the Project.

#### **11** Sample Preparation, Security and Analysis

Three data verification samples were collected by the author on his August 28, 2024 site visit. They remained in his sole possession until they were delivered to Purolator Courier service in Nanaimo, BC, for transportation to MSALABS in Langley, BC. The samples were prepped using MSALABS PRP-910 method, which includes drying, crushing 1 kg to 2 mm, taking a 250 g split which is then pulverized to 95% -75µg. The resulting splits were then analyzed using MSALABS WRA-310 code, a whole rock analysis, with ICP-ES finish for 13 parameters plus LOI.

#### 12 Data Verification

Three samples were collected by the author for data verification, as shown in table 12.1 below:

	UTM	Zone 10			
Sample #	East	North	Elev	%SiO <sub>2</sub>	$%Fe_2O_3$
PT-01	637643	5948282	839	98.68	0.42
PT-02	632896	5949895	841	98.44	0.29
PT-03	635883	5949307	831	99.52	0.25

#### Table 12.1 Data Verification Samples

The analytical results confirm the presence of high purity silica in the quartzite units. As well, the very low iron oxide contents are very positive for the potential for development of a high quality silica facility.

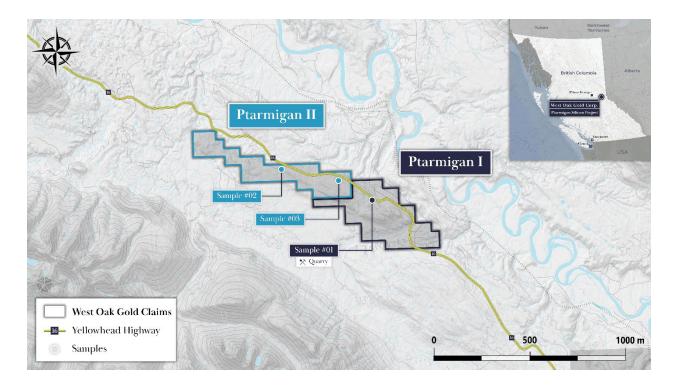


Figure 12.1 Location map for Verification Samples

#### 13 Mineral Processing and Metallurgical Testing

No mineral processing or metallurgical testing has been carried on the Project.

#### 14 Mineral Resource Estimate

There are no current Mineral Resources on the Project

#### **15 Mineral Reserve Estimates**

There are no current Mineral Reserves on the Project

#### 16 Mining Method

The Ptarmigan Silica Project is not an "advanced property" as defined by NI 43-101, therefore this section is not applicable.

#### 17 Recovery Methods

The Ptarmigan Silica Project is not an "advanced property" as defined by NI 43-101, therefore this section is not applicable.

#### **18 Project Infrastructure**

The Ptarmigan Silica Project is not an "advanced property" as defined by NI 43-101, therefore this section is not applicable.

#### **19 Market Studies and Contracts**

The Ptarmigan Silica Project is not an "advanced property" as defined by NI 43-101, therefore this section is not applicable.

Page | 27

#### 20 Environmental Studies, Permitting and Social or Community Impact

The Ptarmigan Silica Project is not an "advanced property" as defined by NI 43-101, therefore this section is not applicable.

#### 21 Capital and Operating Costs

The Ptarmigan Silica Project is not an "advanced property" as defined by NI 43-101, therefore this section is not applicable.

#### 22 Economic Analysis

The Ptarmigan Silica Project is not an "advanced property" as defined by NI 43-101, therefore this section is not applicable.

#### 23.0 Adjacent Properties

As of the effective date of this Technical Report, there are no other mining claims in the vicinity of the property.

#### 24.0 Other Relevant Data and Information

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

#### 25.0 Interpretation and Conclusions

The Author considers that the geological setting to be appropriate for the objectives of this Technical Report. The geological setting appears to confirm that the there is very likely a significant presence of high silica quartzites units within the boundaries of the property. However, there is a risk that exploration will not result in discovery of an economic mineral resource within the project area.

The results of the three data verification samples provide confirmation of this.

It is recommended that exploration of the Ptarmigan Silica Project be continued, and that exploration be conducted in phases with each successive phase being dependent upon the results of the previous phase.

In addition, it should be noted that the Project does have risks that are similar in nature to other mineral exploration projects in general, i.e., risks common to exploration and mining projects which include:

- \* future commodity demand and pricing;
- \* environmental and political acceptance of the project;
- \* variance in capital and operating costs;
- \* mine and mineral processing recovery.

#### 26.0 Recommendations

It is recommended that exploration and development of the Ptarmigan Silica Project be initiated, and that exploration be conducted in phases with each successive phase being dependent upon the results of the previous phase. The following budget is recommended for the first two phases of detailed exploration:

Phase 1				
Detailed mapping	\$20,000.00			
Channel sampling	\$10,000.00			
Airborne magnetometer	\$20,000.00			
Preliminary metallurgical testing	\$10,000.00			
Supervision	\$5,000.00			
Report writing	\$5,000.00			
subtotal	\$70,000.00			
Contingency @ 10%	\$7,000.00			
Total	\$77,000.00			

Phase 2				
Drilling - 500 m	\$150,000.00			
Assays	\$20,000.00			
Metallurgical testing	\$20,000.00			
Permitting	\$10,000.00			
Field geologist	\$25,000.00			
Technical Report update	\$20,000.00			
subtotal	\$245,000.00			
Contingency @ 10%	\$24,500.00			
Total	\$269,500.00			

#### Table 26.1 Recommended Budget

The first phase of exploration should be detailed mapping and sampling to outline the full extent of the target quartzite. Channel sampling, using a diamond saw, should also be included to identify any quality variations across the quartzite units. An airborne magnetometer (fixed wing or drone) will allow better understanding of the limits of the target units. Preliminary metallurgical testing should be performed on the channel samples to ensure that the quartzite is amenable to beneficiation to the necessary standards for the identified end users.

Given positive results from Phase 1, the second phase of work should concentrate on a drill program to allow evaluation of the potential silica resources on the property. An initial program of ten 50 m vertical diamond drill holes is recommended, using HQ core to provide a substantial

amount of material for a second phase of metallurgical testing. With this additional data, an updated NI 43-101 Technical report should be completed.

#### 27.0 References

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# **DATE & SIGNATURE PAGES**

Herewith, the report entitled "Ptarmigan Silica Project, Cariboo Minig Division, British Columbia, Canada NI 43-101 Technical Report" effective date September 26, 2024.

"Original Signed and Sealed"

Chris M. Healey, P.Geo.

Dated September 26, 2024

Healex Consulting Ltd Permit to Practice #1000498

**1160 Selkirk Drive** 

Nanaimo, British Columbia

V9R 5X4

# **CERTIFICATE & DATE – Chris M. Healey**

#### I, Chris M. Healey, P.Geo., do hereby certify that:

- I am the Principal Geologist and an owner of Healex Consulting Ltd (Permit to Practice: 1000498), a mineral exploration consulting company with an office located at 1160 Selkirk Drive, Nanaimo, British Columbia.
- 2. I am a graduate of the University of Wales (University College Swansea) in 1968 with a B.Sc. in Geology and Geography.
- 3. I am a Professional Geoscientist (P.Geo.) registered with Engineers and Geoscientists British Columbia (Registration #36477) and have been a member in good standing since 2011.
- 4. I have practiced my profession continuously since 1968 and have more than 55 years of experience investigating a wide variety of mineral deposit types, including various silica projects.
- 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"). I have previously worked on several high quality silica projects, including the Bray silica project, Arkansas, the Peace River silica project in Alberta and the JayJay granular silica project in Saskatchewan. I certify that by reason of my education, experience, independence and affiliation with a professional organisation, I meet the requirements of an Independent Qualified Person as defined in NI 43-101.
- 6. I visited the Ptarmigan Silica Project on August 27, 2024.
- I am responsible for all sections of the technical report entitled "Ptarmigan Silica Project, Cariboo Mining Division, British Columbia, Canada, NI 43-101 Technical Report" effective date September 26, 2024.
- 8. I am independent of the issuer applying all the tests in Section 1.5 of NI 43-101. I hold no direct or indirect interest in the Ptarmigan Silica Project. I have no prior involvement in the project.
- 9. As of the data hereof, I am not aware of any material fact or material change with respect to the subject matter of the report that is not disclosed in the report which, by its omission, would make the report misleading.
- 10. To the best of my knowledge, information and belief at the effective date, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical Report not misleading.
- 11. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 12. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication which the public company files on their website accessible by the public.

Dated this 26 day of September, 2024

"original signed and sealed"

Signature of Qualified Person

Chris M. Healey, P.Geo.