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BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geological, Geochemical

TOTAL COST: 5,473.40

AUTHOR(S): Andris Kikauka **SIGNATURE(S):** A. Kikauka

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): **YEAR OF WORK:** 2015

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5583816

PROPERTY NAME: Longworth

CLAIM NAME(S) (on which the work was done): Snow 1022943

COMMODITIES SOUGHT: silica

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 093H 038

MINING DIVISION: Cariboo **NTS/BCGS:** 093H 14/W 093H.093

LATITUDE: 54 ° 00 ' 25.8 " **LONGITUDE:** 121 ° 32 ' 40.2 " **(at centre of work)**

OWNER(S):
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OPERATOR(S) [who paid for the work]:
1) same 2)

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PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Silurian Nonda Formation quartzite layers are 100 to 200 meters wide and occur intermittently over a 20 kilometer strike length. The quartzite strikes northwest dips steeply northeast. Metamorphism of the pure sandstone layers has resulted in metamorphic quartz veins that exhibit sigmoidal (en echelon) patterns. Impurities in quartzite include limonite, calcite and muscovite. The quartzite beds exhibit minor faulting and folding

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 14815

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TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping	1:5,000 10 hectares		2,250.00
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock	10 rock samples, whole rock ME-ICP06		3,223.40
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	5,473.40

NTS 093H 14/W, TRIM 093H.093
LAT. 53 58' 43" N
LONG. 121 29' 30" W

GEOLOGICAL, & GEOCHEMICAL REPORT ON LONGWORTH MINERAL PROPERTY

LONGWORTH SILICA MINERAL OCCURRENCES SINCLAIR MILLS, B.C.

Cariboo Mining Division

by

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4199 Highway 101,
Powell River, BC V8A 0C7

April 27, 2016

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SUMMARY

The Longworth property is located about 80 kilometers east-northeast of Prince George, BC. The Longworth silica property consists of a total area of approximately 1,197.8 hectares (2,958.6 acres) located approximately 8 km (5 miles) east of CNR rail siding near Sinclair Mills and about 20 km (12 miles) east-southeast of McGregor, BC (Fig 1, 2). Nonda Formation quartzite is exposed on the southwest flank of Bearpaw Ridge. The quartzite beds exhibit minor faulting and folding. Quartzite bedding trends parallel to northwest trending ridge axis (sub-vertical dip), with jointing trends perpendicular and parallel to ridge axis (sub-vertical dip). The Nonda Fm quartzite outcrops intermittently over a 20 km strike length at approximately 1,250-1,550 m elevation (Fig 4). The Longworth mineral property features 4 zones (each zone approximately 300 to 800 m strike length) of high purity silica zones referred to as 'Snow, Rain, Long & Doll' (Fig 3, 3B). Lower Silurian Nonda Fm white coloured quartzite is approximately 100-400 meters wide, trends northwest, dips steeply to the northeast, and outcrops prominently where numerous localized topographic highs occur on southwest facing slopes. Impurities in quartzite includes rare limonite, calcite and muscovite along fractures and joints. Quartzite in the central portion of the Snow Zone exhibits rare 0.3-0.5 meter wide pure white, northeast trending quartz veins with en echelon pattern (sigmoidal) strain shadows. These minor quartz veins exhibit sigmoidal strain shadows (also known as ladder veining). The observed sigmoidal texture is the result of deep burial re-crystallization subjected to extension-shortening stress-strain regime. Quartz veining is interpreted as syngenetic in origin whereby pure sandstones are subjected to metamorphism and partial melting (i.e. metamorphic quartz), and not the result of distal source hydrothermal quartz veins.

The writer performed fieldwork consisting of geochemical sampling and geological mapping on Longworth silica October 14-18, 2015. Technical work is recorded in this assessment report, and reported as MEM Event number 5583816. Geochemical sampling was carried out on exposed surface bedrock within the Snow Zone, located in close proximity to historic surface sampling and trenching performed by Consolidated Silver Standard Mines Ltd in 1986. A total of 10 rock chip samples were collected from surface outcrop from an area of approximately 150 X 500 meters covering the Snow Zone. Rock samples were analyzed by ALS Minerals, North Vancouver, BC, using modified Prep 31: a special zirconia ring pulverization disc was used versus chrome steel pulverization disc, in order to minimize iron contamination, and finished using whole rock analysis fused bead lithium borate fusion method (ME-ICP-06). Major oxide analysis results of 10 rock chip samples taken from the Longworth Snow Zone are listed as follows:

Table 1: Snow Zone 2015 Rock Chip Sample ME-ICP06 Geochemical Analysis Results:

Sample ID	% SiO2	% Fe2O3	% CaO	% MgO	% Al2O3	% Na2O	% K2O	% LOI	%Total
901	98.9	0.04	0.03	0.04	0.44	0.03	0.14	0.21	99.85
902	99.1	0.02	0.02	0.01	0.14	0.03	0.04	0.08	99.45
903	99.5	0.02	0.01	0.01	0.13	0.04	0.04	0.09	99.85
904	99.4	0.04	0.01	0.01	0.11	0.04	0.03	0.04	99.7
905	99.3	0.02	0.01	0.01	0.13	0.05	0.04	0.06	99.63
906	99.2	0.02	0.01	0.01	0.12	0.05	0.03	0.11	99.56
907	99.6	0.03	0.01	0.01	0.27	0.01	0.06	0.23	100.24
908	99.9	0.03	0.01	0.01	0.14	0.06	0.04	0.07	100.27
909	99.8	0.03	<0.01	0.01	0.17	0.01	0.05	0.15	100.23
910	98.7	0.03	0.01	0.02	0.4	0.07	0.13	0.18	99.56

Table 2: Average values from 10 Rock Chip Samples, Snow Zone, Geochemical analysis by ALS Minerals Whole Rock ME-ICP06:

%SiO2	%Fe2O3	%CaO	%MgO	%Al2O3	%Na2O	%K2O	%LOI	%TOTAL
99.34	0.028	0.012	0.014	0.205	0.039	0.06	0.122	99.834

The relatively high SiO2 content (98.7-99.9 % SiO2) compares favourably with other silica producers such as Moberly, Hunt and HCJ Properties near Golden, BC. Impurity compounds of interest (Al2O3, MgO, CaO, Fe2O3) approach specifications required for producing ferrosilicon alloy. Manufacturers of glass and fiberglass have listed specifications for the purity of silica as follows:

Table 3: Minimum and Maximum Values Specified for Silica Used in Glass & Fiberglass:

Silica	99.1 % minimum
Calcium Carbonate	0.3 % maximum
Magnesium Carbonate	0.3 % maximum
Iron Oxides	0.3 % maximum
Aluminum Oxides	0.3 % maximum

Based on the range of relatively high purity %SiO2 and relatively low impurity values such as MgO, CaO, Na2O, K2O and Fe2O3, it is possible that the Longworth quartzite silica is suitable for use as a raw material for ferrosilicon production as well as other high purity uses. Based on favourable geochemical analysis results from rock chip sampling on the Snow Zone in 2015, MGX Minerals is planning further evaluation of commercial applications for Longworth silica. A program of core drilling, geochemical analysis (in order to determine grade and tonnage), and Longworth Snow Zone 2.5 kilometer access trail improvement is recommended.

1.0 Introduction

This technical report has been prepared on behalf of MGX Minerals Inc, and describes property history and recent geological and geochemical fieldwork performed on the Longworth Silica mineral occurrence in October, 2015.

British Columbia has not been a major producer of silica. Some quartz, especially from veins, has been used as a flux in smelter operations. The Gypo quartz vein near Oliver produced about 600,000 tonnes of quartz up to 1968 when the main mining operations ceased. Most of this material was used in the building industry and to produce ferrosilicon. In more recent years a significant amount of production has taken place from the Moberly Mountain and Hunt deposits, in quartzite of the Mount Wilson Formation, near Golden. Silica sand from the Moberly Mountain deposit is sold for a variety of uses. Quarrying was begun in 1980 and the 1984 production was 85,000 to 90.000 tonnes. The Hunt deposit has produced intermittently since 1980 at approximately 30,000 tonnes per Year, with much of the product being shipped to a ferrosilicon plant in Wenatchee, Washington. Some of the fines have been used by cement producers in British Columbia and Alberta.

2.0 Location, Access, Infrastructure, & Physiography

The property is located on NTS map sheet 093H/14W and on TRIM map sheet 093H093. The Longworth Silica occurrence is located at latitude 53°58' 48" N and longitude 121°29' 30" W. The property covers a series of northwest trending ridges of relatively pure quartzite that are located between Bearpaw Ridge to the NE and the CNR rail line to the SW.

The Longworth property is located in the Cariboo Mining Division of central British Columbia, Canada. The Longworth Silica property encompasses a 2 X 8 kilometer area aligned with northwest trending topography, located roughly 85 km east-northeast of Prince George, B.C., and approximately 30 km northwest of the property lies the community of Upper Fraser, while the community of Sinclair Mills is located roughly 10 km west of the property (Fig. 1).
From Prince George the property can be accessed by travelling east on Highway 16 for approximately 30 km, and then north and westward for 50 km on Upper Fraser Road (Fig. 1, 2). Upper Fraser Road crosses Fraser River at McGregor and continues southeast for 30 km to Longworth, running parallel to Fraser River. From Upper Fraser Road, property access is by way of logging roads and internal access was by 4WD vehicle on logging road and 1.8 km trail that starts at 593,950 E, and 5,985,390 N, elevation 1,090 meters (Fig. 3).

The CNR main cross Canada rail line runs parallel to Upper Fraser Road and is located less than 4 km from the Property (Fig 1, 3, & 3B). Roughly 75 km northwest of the property, the main 500 kV transmission lines from the Peace River Hydro Power Project run through the region.

Topography in the Prince George region is characterized by rolling hills separated by swamps. The most prominent topographical feature on the Longworth Silica Property is 1,840 meter elevation Bearpaw Ridge which flattens to 1,650 meters elevation to the northwest. The Property is situated on the southwestern flank of Bearpaw Ridge; topography on the Property ranges from 1,060 m in the southwest corner to 1800 m in the northeast. Vegetation on top of and along the flanks of Bearpaw Ridge consists predominantly of tall spruces, along with some alder. Shrubs, including Devil's Club, are abundant along drainages. The climate in the region is temperate, reaching extremes of 34 degrees C in summer and -50 degrees C in winter. Precipitation is variable and dependent on elevation. Mean annual precipitation ranges from 44 to 90 cm. Snow can be expected in late October or early November and remains until April or May. Total accumulations of snowfall in the region averages 240 cm, with higher accumulations on Bearpaw Ridge due to its elevation. Topography is moderate except locally steep, NW trending cliffs with maximum dimensions of 5 m (16.5 ft) in height occur in the vicinity of the Longworth property Snow, Rain, Long and Doll Zones. Elevations on the claim block range from 960 to 1,800 meters (3,149-5,094 feet).

Quartzite weathers prominently and the Longworth silica deposit is well exposed at 1,250-1,550 meter elevation, as a series of NW trending ridge crests within relatively low valley bottom topography. A series of northeast trending, cross-cutting fracturing/jointing has resulted in some small scale offsets (in the order of several meters) of geologic contacts.

The nearest towns are Sinclair Mills and McGregor on Upper Fraser Road where the CNR rail line with sidings can provide transportation link to markets. The nearest population center with significant services is Prince George which has suitable infrastructure to support mining and mineral processing.

3.0 Property Status

The Longworth silica property consists of a total area of approximately 1,197.8 hectares (2,958.6 acres) located approximately 8 km (5 miles) east of CNR rail siding near Sinclair Mills and about 20 km (12 miles) east-southeast of McGregor, BC (Fig 1, 2).

Property status data obtained from MTO website indicates the Longworth property is registered 100% to Jared Lazerson (Free Miner Certificate number 249963) on behalf of MGX Minerals Inc. The Longworth silica claims consists of fifteen (15) mineral tenures (listed below) located within the Cariboo Mining Division (Figure 2).

Table 4: Longworth Property List of MTO Mineral Tenures

Tenure number	Claim Name	Issue Date	Good To Date	Area in hectares
1022782	Silver Standard Silica #2	2013/oct/03	2015/dec/31	380.36
1022943	Snow	2013/oct/11	2015/dec/31	38.01
1022944	Rain	2013/oct/11	2015/dec/31	114.08
1022945	Snowjob	2013/oct/11	2015/dec/31	76.03
1022946	Big Snow	2013/oct/11	2015/dec/31	38.01
1022947	Lookout	2013/oct/11	2015/dec/31	19.01
1023010	Ultra	2013/oct/12	2015/dec/31	95.02
1023011	Sinclair Silica	2013/oct/12	2015/dec/31	19.01
1023075	Silicon 11	2013/oct/15	2015/dec/31	152.16
1023094	$$$Silicapitrd	2013/oct/16	2015/dec/31	19.01
1023096	Max'ssilica	2013/oct/16	2015/dec/31	19.01
1023101	Realrain1&2	2013/oct/16	2015/dec/31	19.01
1023102	Silicastarridge	2013/oct/16	2015/dec/31	19.01
1023103	Silex	2013/oct/16	2015/dec/31	19.01
1023122	Superflux	2013/oct/17	2015/dec/31	57.03

The total area of the mineral tenures that comprise the property is 1,197.8 hectares (2,958.6 acres). Details of the status of tenure ownership for the Longworth Silica property were obtained from the Mineral-Titles-Online (MTO) electronic staking system managed by the Mineral Titles Branch of the Province of British Columbia. This system is based on mineral tenures acquired electronically online using a grid cell selection system. Tenure boundaries are based on lines of latitude and longitude. There is no requirement to mark claim boundaries on the ground as these can be determined with reasonable accuracy using a GPS. The Longworth silica claim has not been surveyed. The mineral tenures comprising the Longworth Silica mineral property are shown in Figure 2. The claim map shown in Figure 2 was generated from GIS spatial data downloaded from the Government of BC GeoBC website. These spatial layers are the same as those incorporated into the Mineral-Titles-Online (MTO) electronic staking system that is used to locate and record mineral tenures in British Columbia.

4.0 Longworth Silica Property History

High purity quartzite was discovered in the Sinclair Mills and Longworth area in the 1970's by Consolidated Silver Standard Ltd. The Longworth tenures were first staked in 1974 by Consolidated Silver Standard Mines Limited (Silver Standard) for production of ferrosilicon and silicon metal. In 1981 Silver Standard carried out a two week blasting and sampling program; however, no assessment report was filed (Quartermain, 1986).

In 1981 and 1982, the British Colombia Geological Survey Branch collected samples from four of the southeastern tenures and published analytical results for eight samples, which returned SiO2 values between 98.76% and 99.40% (Foye, 1987). In 1985, Silver Standard carried out another program of blasting, trenching and sampling. In addition to the geochemical analysis of these samples, some material was also sent to the University of British Colombia Metallurgical Engineering Lab for thermal shock testing. The samples yielded favourable results, with some exceeding Silver Standard's metallurgical grade specifications for raw quartzite, SiO2 99.5%, Al2O3 0.25%, Fe2O3 0.10%, CaO nil, and L.O.I, 0.20% (Quartermain,1986). Some of these samples were collected from within MGX's current tenures (Rain and Snow Zones).
In 2007, Card JM Resources Inc staked 38 tenures surrounding the Silver Standards Longworth tenures. In 2008, a vertical drill hole was drilled to a depth of 100.6 m on Tenure 559360, then logged and assayed. Three composite samples (roughly 100 ft. each) yielded silica values between 97.90% and 98.83% (Duncan and Childs, 2008).

The Longworth Silica Property, was acquired by Zimtu Capital Corp. (Zimtu) in 2013 covering zones of high purity Nonda Formation quartzite. Dahrouge Geological Consulting (Dahrouge) and Zimtu carried out prospecting and sampling on the Longworth mineral property in 2014. Quartzite outcrops were mapped and 2 surface samples were collected from the property. In 2014, Dahrouge and Zimtu conducted a prospecting program within the Longworth Silica Property. A total of 2 hand samples were examined and collected from the northern end of the Longworth Silica Property along Bearpaw Ridge. The samples were collected from within outcrops of Nonda Formation white quartzite.

5.0 Regional Geology

The region is dominated by Upper Proterozoic and Paleozoic sedimentary and metamorphic rocks separated by a series of northwest-southeast trending faults. In general, the Upper Proterozoic succession is represented by a clastic-dominated sequence on a carbonate shelf environment lying directly on top of Archean and Proterozoic crystalline basement (Lickorish, 1993). This sediment sequence is related to Upper Proterozoic rifting along the western North American margin (Lickorish and Simony, 1995). Overlying the Proterozoic clastics, the Paleozoic deposits, which thicken westwards from southwest Alberta to northeastern British Colombia, represent the shallow water carbonates passing to the west to deep water slope and basinal facies of the Canadian Cordillera passive margin (Pyle and Barnes, 2003).
Lithological units and stratigraphy in the area of Longworth Silica are described as follows:

Miette Group

The oldest rocks in the area are that of the Proterozoic Miette Group. The Miette Group can be divided in three separate units (Lickorish, 1993). The lowermost unit is made up of recrystallized dolomite and limestone. The middle unit is comprised of a thick package (2 km) of coarse sandstone and conglomerate, with minor slate. The uppermost unit of the Miette Group is a thin package of black argillites (Taylor, 1971). The metamorphosed equivalent of the Miette Group was classified as the Misinchinka Group by Stott and Taylor (1979), and generally consist of quartzite, schist, slate and phyllite metamorphosed to greenschist grade.

Gog Group

Overlying the Miette Group is the Lower Cambrian Gog Group, which consists of 1 – 2 km of thick-bedded quartzites with minor interbedded shale and limestone (Lickorish, 1993). Similar to the Miette Group, the Gog Group can be sub-divided into three distinct units, with the lower quartzites of the McNaughton Formation being separated from the upper quartzites of the Mahto Formation by the middle shale and limestone unit of the Mural Formation.

Kaza Group

The Kaza Group, which is more prominent in the Kaza Mountain area roughly 150 km southeast of Prince George, is comprised of alternating gritty micaceous quartzites and schists, regionally metamorphosed to greenschist facies (Sutherland Brown, 1963). Although reported to be roughly 3.5 km thick, only 1.75 km is exposed at Kaza Mountain itself.

Cariboo Group

The Cariboo Group, with an estimated thickness of 3 km, is comprised of phyllites, micaeous quartzites, and limestones. It is divided into six separate formations, the Issac (grey phyllites), Cunningham (medium-grey thickly bedded limestone), Yankee Bells (light grey-green phyllites and minor fine quartzites), Yank's Peak (thick bedded pure quartzite with minor phyllite interbeds), Midas (dark grey to black phyllite, slate and argillite) and Snowshow Formation (coarse and fine clastics with minor carbonates) (Sutherland Brown, 1963).

Kechika Group

The Late Cambrian to Early Ordovician, Kechika Group, consists of calcareous shale with light-grey to brown weathering, and limestone interbeds. It's lateral facies change represents a change in deposition from a platform to a broad gently dipping ramp (Pyle and Barnes, 2003). This formation thickens westward (400 – 1200 m) from the McDonald Platform to the Kechika Trough.

Skoki Formation

The Skoki Formation, locally recorded up to 1,000 m thick, is typically thick-bedded to massive, and consists of grey weathering dolostone, limestone and shale (Pyle and Barnes, 2003). In the Wilcox Pass area, Pyle and Barnes (2003) recognised two members of the Skoki Formation. The lower Sikanni Chief member is a 126 m thick succession of medium grey thin to thick bedded dolostone with discontinuous chert beds and stringers. The Upper Keily Member is a dark grey mottled massive lime mudstone. Overall, the Skoki Formation represents a shallow water platform succession and conformably overlies the Kechika Group.

Nonda Formation

The Nonda Formation, also a shallow water succession, consists of medium grey weathering, siliceous dolostone, dolomitic siltstone, sandstone and quartzite, with rare limestone beds. It is massive to thick-bedded, and is recorded as 335 m thick (Pyle and Barnes, 2003). The relatively pure white quartzite that occurs within the Nonda Fm is approximately 100-300 meters in width and laterally extensive in the Longworth area. The continuity of the quartzite is

intermittent over a 20 kilometer strike length, and appears to have repeated sequence in areas of complex parallel northwest trending faults, and terminates to the southeast in a regional north trending fault.

Slide Mountain Group

The Slide Mountain Group, is represented in the region by the Mississippian Antler Formation. It is comprised of dark green-grey fine-grained basalt pillow lavas and thinly interbedded cherts and argillite. It has a thickness of 1 km at it's type locality, Slide Mountain, but has been reported to be thicker at Palmer Mountain (Sutherland Brown, 1963).

TABLE 5: STRATIGRAPHIC UNITS OF LONGWORTH AREA

LITHOLOGY LEGEND Age Group-Formation Description

Lower Carboniferous Slide Mountain Antler conglomerate, pillow basalts, bedded chert

Silurian – Nonda Fm dolostone, dolomitic siltstone, sandstone, quartzite

Middle Ordovician - Skoki dolostone, limestone, shale

Late Cambrian to Early Ordovician Kechika - calcareous argillites and argillites

Late Proterozoic to Ordovician?* Cariboo Snowshoe clastics with minor carbonates
Midas phyllite, slate, argillite Yanks Peak quartzite with minor phyllite Yankee Bell phyllites and minor quartzite
Cunningham limestone Issac phyllites

Late Proterozoic Kaza - micaceous quartzites and schists

Late Proterozoic to Early Cambrian Gog Mahto quartzite Mural shale and limestone McNaughton quartzite

Late Proterozoic Misichinka unnamed quartzite, schist, slate, phyllite (metamorphosed equivalent of Miette Group)

Proterozoic Miette Upper argillites Middle sandstone, conglomerate, slate Lower recrystallized dolomite and limestone
*Sutherland Brown (1963)

The Longworth Silica Property lies within the western margin of the Foreland Belt east of the the Rocky Mountain Trench. The Foreland Belt is fault-bounded to the Omineca Belt to the west, which covers the Prince George area. The rocks in this area have been folded and faulted during Mesozoic orogenic activity, with sheets of Proterozoic and Paleozoic rocks being thrust imbricated in an eastward direction.

Regional mapping by the Geological Survey of Canada (Muller and Tipper, 1968), at a scale of 1 inch to 4 miles covering the area north and east of Prince George, has been superseded by that of Struik (1994). Struik (1989) indicates there are two strike-slip fault trends in the region One trend follows the McLeod Lake Fault Zone at approximately 160°. Movement along this feature is interpreted as mid-Tertiary. The other set includes the older northern Rocky Mountain Trench fault system, which trends approximately 140°. Glacial deposits of various types, exceeding 100 m in places, cover much of the area around Prince George, Upper Fraser and Longworth. As a result, outcrop exposure on the property is scarce and is limited to the high ridges of Bearpaw Ridge which run in a northwest direction, roughly parallel to the Fraser River. The Longworth Silica Property is underlain by Nonda Fm folded sequence of Lower Silurian carbonates, volcanics and quartzites. The primary target for high purity silica on the Property is the Silurian quartzite, which has been recorded in bands approximately 100-300 meters in width along the western flank of the Bearpaw Ridge, reaching a thickness of up to 400 m (Foye, 1987). It is described as pure, massive and homogenous, and is composed of well-sorted and well-rounded quartz grains averaging 0.5 mm in diameter (Quartermain, 1986). The carbonates and volcanics are comprised of dolostone, calcareous shale and volcanic greenstone fragmentals and flows. Brachiopods and corals occur in the carbonates of Bearpaw Ridge (Quartermain, 1986). Bedding in the area has been reported as trending northwest and steeply dipping (70-80°) to the northeast. The quartzite bands are slightly folded and faulted, and trace a synformal structure which opens to the northwest (Foye, 1987).

6.0 2015 Field Program

6.1 Scope & Purpose

The 2015 geological mapping and geochemical sampling was carried out in order to evaluate mineral potential of the Snow Zone, a 200 X 400 m area (elongated northwest), located in the northwest portion of Longworth Silica property in the area where quartzite is well exposed on a west-flanking low relief ridge (sub-ordinate to Bearpaw Ridge). The rock sample geochemical ICP analysis determines purity and physical features of quartzite and interpretation of results in order to serve as a guide for exploration drilling, leading to exploitation and production of SiO2 by way of open pit mining methods. Geological mapping of bedrock structural features such as faults, fractures and jointing serves as a guide to geotechnical aspects of exploration and development.

6.2 Methods and Procedures

A total of 10 rock chip samples were taken across 3 meter intervals along exposures of bedrock of the Snow Quartzite Zone. Rock chip samples were taken with rock hammer and chisel and consist of acorn to walnut sized bedrock pieces for a total weight ranging from 1.0 to 2.0 kgs. Sample material was placed in marked poly ore bags and shipped to ALS Minerals, North Vancouver.

ALS Minerals crushed better than 70% passing a 2 mm screen split and pulverized rock chip samples. A split of 250 grams is pulverized to better than 85% passing a 75 micron screen. The sample pulp is analyzed using ALS Minerals ME-XRF-06 (XRF-26) Li borate flux major oxide whole rock geochemical analytical methods.

Geological mapping was carried out over 2 hectares of exposed quartzite in an approximate area of 200 X 550 meters (11 hectares). Geological structure such as bedding and fracture orientation as well as lithology changes were noted and mapped at a scale of 1:5,000 (Fig 5).

6.3 Property Geology, & Geochemistry

Bedrock geology of the area surrounding Longworth Silica quartzite occurrence has been mapped by the Geological Survey of Canada (Map 1424A). The Longworth mineral property covers high purity silica occurrences referred to as the Snow, Rain, Long & Doll Zones (Fig 3, 3B).

Bedrock observed on the Snow Zone ridge located in the northwest part of the Longworth mineral property consists of the relatively pure quartzite member of Lower Silurian Nonda Formation.

Quartzite weathers prominently and is exposed on the flank of a segmented ridge. Numerous cliff exposures are present, with some cliff walls greater than 5 meters (16.4 feet) high. The crude bedding in the quartzite trends NNW and dips steeply. A series of NE trending fractures/joints are perpendicular to the quartzite beds

The following lithologies are present on the Longworth mineral tenures.

Snq Silurian Nonda Fm Quartzite
Sn Silurian Nonda Fm Limy Shale, Shale, Limestone, Dolostone
Snv Silurian Nonda Fm Greenstone, Andesitic Fragmental & Flows, Dolostone
Sns Silurian Nonda Fm Greenstone Dykes & Sills

Geological mapping identified quartzite bedding striking northwest and dipping steeply northeast. The dominant structure appears to be fractures that are oriented perpendicular to bedding, generally striking northeast and dipping steeply northeast (Fig 6). The Nonda Formation quartzite unit is extensive throughout the local area and forms a resistant unit located at 1,250-1,550 meters elevation. High purity quartzite (Snq) hosted in the Nonda Formation occurs as outcrop with relatively strong topographic relief on the Snow Zone covering an area of approximately 450 meters strike length, and 200 meters wide (Fig 5, 6). The Snow Zone white quartzite has an approximate width of 200 meters, and may be a near surface mineral deposit that is suitable for quarry type open pit excavations with minimal waste rock.

Geochemical sampling was carried out on exposed surface bedrock within the Snow Zone, located in close proximity to historic surface sampling and trenching performed by Consolidated Silver Standard Mines Ltd in 1986. A total of 10 rock chip samples (300 cm interval length)

were collected from surface outcrop from an area of approximately 150 X 500 meters covering the Snow Zone (Fig 6, 7). Rock samples were analyzed by ALS Minerals, North Vancouver, BC, using modified Prep 31: normal chrome steel crushing jaw crusher and special zirconium ring pulverization discs versus chrome steel pulverization discs to minimize iron contamination, and finished using whole rock analysis fused bead lithium borate fusion method (ME-ICP-06). Descriptions of rock chip samples from Longworth Snow Zone are listed as follows:

Table 6: Snow Zone 2015 Rock Chip Geological Mapping Descriptions:

Sample ID	MTO tenure	Easting NAD 83	Northing NAD 83	Elev (m)
901	1022946	595536	5985389	1546
902	1022946	595566	5985378	1553
903	1022946	595624	5985333	1564
904	1022946	595660	5985316	1571
905	1022946	595720	5985259	1569
906	1022946	595746	5985225	1546
907	1022946	595626	5985269	1545
908	1022946	595569	5985321	1544
909	1022946	595524	5985356	1523
910	1023010	595557	5985442	1524

Sample ID	Sample Type	Lithology	Bed Strike	Bed Dip	Width (cm)	Joint Strike	Joint Dip
901	outcrop	quartzite	138	88 NE	300		
902	outcrop	quartzite	119	82 NE	300		
903	outcrop	quartzite			300	35	80 NW
904	outcrop	quartzite			300	39	78 NW
905	outcrop	quartzite			300	41	86 NW
906	outcrop	quartzite			300	140	82 NE
907	outcrop	quartzite			300	35	82 NW
908	outcrop	quartzite			300		
909	outcrop	quartzite			300	37	80 NW
910	outcrop	quartzite	143	86 NE	300		

MGX Minerals submitted these rock chip samples from exposed surface bedrock of the Snow Zone to ALS Minerals for ME-ICP-06 lithium borate fusion whole rock geochemical analysis.

Result of significant element oxides from the Snow Zone are listed in the following table:

Table 7: Snow Zone 2015 Rock Chip Geochemical Analysis Results

Width & Sample ID	% SiO2	% Fe2O3	% CaO	% MgO	% Al2O3	% Na2O	% K2O	% LOI	%Total
3 m 901	98.9	0.04	0.03	0.04	0.44	0.03	0.14	0.21	99.85
3 m 902	99.1	0.02	0.02	0.01	0.14	0.03	0.04	0.08	99.45
3 m 903	99.5	0.02	0.01	0.01	0.13	0.04	0.04	0.09	99.85
3 m 904	99.4	0.04	0.01	0.01	0.11	0.04	0.03	0.04	99.7
3 m 905	99.3	0.02	0.01	0.01	0.13	0.05	0.04	0.06	99.63
3 m 906	99.2	0.02	0.01	0.01	0.12	0.05	0.03	0.11	99.56
3 m 907	99.6	0.03	0.01	0.01	0.27	0.01	0.06	0.23	100.24
3 m 908	99.9	0.03	0.01	0.01	0.14	0.06	0.04	0.07	100.27
3 m 909	99.8	0.03	<0.01	0.01	0.17	0.01	0.05	0.15	100.23
3 m 910	98.7	0.03	0.01	0.02	0.4	0.07	0.13	0.18	99.56

The relatively high range of SiO2 (98.7 to 99.9% SiO2), and relatively low impurity values such as MgO, CaO, Na2O, K2O, Al2O3 and Fe2O3 suggest that the Longworth quartzite silica is suitable for use as a raw material for ferrosilicon production and other various end uses.

Table 8: Average values from 10 Rock Chip Samples from Snow Zone, Geochemical analysis by ALS Minerals Whole Rock ME-ICP06:

%SiO2	%Fe2O3	%CaO	%MgO	%Al2O3	%Na2O	%K2O	%LOI	%TOTAL
99.34	0.028	0.012	0.014	0.205	0.039	0.06	0.122	99.834

The average values obtained from 10 rock chip samples from the Snow Zone is significant because of the low iron, calcium, magnesium, sodium and potassium values combined with relatively pure silica. MGX is planning further evaluation of commercial applications for Longworth silica.

7.0 Discussion of Results

The Longworth silica deposit has potential to contain several million tonnes of near surface high purity quartzite in the range of 99.0-99.5% SiO2. In order to assess marketability and technical requirements of quartzite, further metallurgical testing is required to determine the viability of using the raw material for production of ferrosilicon. Additional metallurgical testing would include thermal shock testing of large, 20-25 cm (3-4 kilogram) sized pure quartzite blocks. A program of core drilling is proposed to determine the vertical extent of the quartzite to a depth of 50-100 meters and covering the 200 X 450 meter surface area of the Snow Zone. Ideally, 50-100 meter deep exploration drill holes should be spaced at 50 meter intervals, with -60 degree dip, and azimuth directed in a southeast direction in order to cut the dominant fracture/jointing

pattern. Core samples in the order of 3 meter interval lengths should be reported with whole rock geochemical analysis and composite samples of 20 meter length should be applied for metallurgy test runs.

8.0 Conclusion

Reviewing available data, the writer offers the following interpretations & conclusions. The Longworth quartzite is a significant silica resource, comparing favourably in size with other deposits in BC e.g. Moberly Mountain, Hunt, & HCJ.

Access to the property is relatively good with a reasonable access road connecting Longworth Silica. There is good infrastructure in the form of a paved highway, CNR rail line and major powerline all of which are located in close proximity to the property.

Silurian Nonda Formation sandstone, shale, carbonate sedimentary sequence and intercalated volcanic rocks have been subjected to regional metamorphism (heat and pressure from deep burial during Cretaceous orogeny events, and subsequent erosion) has resulted in recrystallization of the sediments into quartzite, greenstone and other metamorphic equivalents. The Longworth property features exposed Nonda Formation silica bearing quartzite lithology that follows a segmented ridge crest that strikes northwest, and dips sub-vertically. Quartzite exposed along the crest of the ridge is accessible by logging roads to 1,150 m elevation, and a 2 km foot trail to 1,500 m elevation (Snow Zone). The orientation of the deposit along the crest of a ridge is an ideal open pit mining scenario with a relatively low stripping ratio. High purity quartzite located on the Longworth property Snow Zone has been mapped over a strike length of 450 metres and a maximum width of about 200 metres.

9.0 Recommendations

Future exploration and development of Longworth Silica should be focused on defining the extensions of known quartzite formations of primarily the Snow Zone and secondarily of the Rain Zone. In order to outline exploration and development of Longworth property zones of high purity quartzite, geochemical data should be collected from the Snow, Rain, Long and Doll Zones, and can be used to interpret economics of projected cost vs benefit preliminary economic analysis of mining, mineral processing and marketing. Core drilling, geological mapping, and geochemical sampling is also recommended. In order to provide vehicle (light truck) access to the Snow Zone site, a 2.5 kilometer distance of temporary access trail to the site, as opposed to helicopter access, is warranted.

Further metallurgical testing for use in ferrosilicon production and other end uses is warranted. Silicon production for the Aluminum or chemical market is another possible end use. The SiO2-reactivity test, also known as the Hanover drum test measures the thermal stability of quartz, and tests for the reducing agents is an important one for choosing the right material; improper material will reduce the effectiveness of the processing. For a feasible furnace operation, it is very important that the SiO_2 is stable in the lower furnace part. This property is tested by the Hanover drum test.

10.0 References

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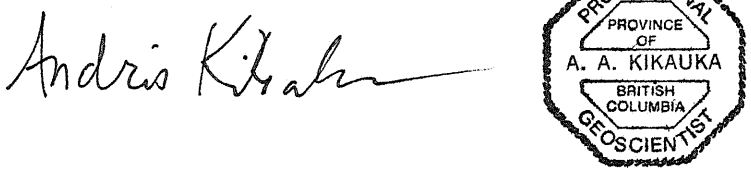
CERTIFICATE AND DATE

I, Andris Kikauka, of 4199 Highway, Powell River, BC am a self-employed professional geoscientist. I hereby certify that:

1. I am a graduate of Brock University, St. Catharines, Ont., with an Honours Bachelor of Science Degree in Geological Sciences, 1980.
2. I am a Fellow in good standing with the Geological Association of Canada.
3. I am registered in the Province of British Columbia as a Professional Geoscientist.
4. I have practiced my profession for twenty five years in precious and base metal exploration in the Cordillera of Western Canada, U.S.A., Mexico, Central America, and South America, as well as for three years in uranium exploration in the Canadian Shield.
5. The information, opinions, and recommendations in this report are based on fieldwork carried out in my presence on the subject property during which time a technical evaluation consisting of geological mapping, surveying, geochemical rock sampling of mineralized zones carried out Oct 14-18, 2015.
6. I have a direct interest in the Longworth Property and MGX Minerals Inc. The recommendations in this report cannot be used for the purpose of public financing.
7. I am not aware of any material fact or material change with respect to the subject matter of this Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
8. This technical work report supports requirements of BCEMPR for Exploration and Development Work/Expiry Date Change.

Andris Kikauka, P. Geo.,



April 27, 2016

ITEMIZED COST STATEMENT-
LONGWORTH MINERAL TENURES:
1022782, 1022943, 1022944, 1022945, 1022946, 1022947, 1023010, 1023011, 1023075, 1023094, 1023096, 1023101, 1023102, 1023103 & 1023122
FIELDWORK PERFORMED OCT 14-18, 2015,
WORK PERFORMED ON MINERAL TENURES 1022943
CARIBOO MINING DIVISION, NTS 93H 14W (TRIM 093H 093)

FIELD CREW:

A. Kikauka (Geologist) 4 days (surveying, mapping)	**$ 2,100.00**

FIELD COSTS:

Mob/demob/preparation	**588.60**
Meals and accommodations	**415.00**
Truck mileage & fuel	**705.00**
Li Borate Fusion ICP AES geochemical analysis (10 rock samples)	**514.80**
Report	**1,150.00**
Total=	**$ 5,473.40**

ALS Canada Ltd.
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North Vancouver BC V7H 0A7
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Appendix A

To: **MGX MINERALS INC**
303-1080 HOWE STREET
VANCOUVER BC V6Z 2T1

Finalized Date: 22-DEC-2015
This copy reported on
27-APR-2016
Account: MGXMIN

CERTIFICATE VA15188829

Project: Longworth

This report is for 10 Rock samples submitted to our lab in Vancouver, BC, Canada on 4-DEC-2015.

The following have access to data associated with this certificate:

ANDRIS KIKAUKA	JARED LAZERSON	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
PUL-33	Pulverise in Tungsten Carbide
SPL-21	Split sample - riffle splitter

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	ICP-AES

To: **MGX MINERALS INC**
ATTN: ANDRIS KIKAUKA
303-1080 HOWE STREET
VANCOUVER BC V6Z 2T1

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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To: **MGX MINERALS INC**
303-1080 HOWE STREET
VANCOUVER BC V6Z 2T1

Finalized Date: 22-DEC-2015
Account: MGXMIN

Project: Longworth

CERTIFICATE OF ANALYSIS VA15188829

Sample Description	Method	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOR	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
901		0.60	98.9	0.44	0.04	0.03	0.04	0.03	0.14	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.21
902		0.70	99.1	0.14	0.02	0.02	0.01	0.03	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.08
903		0.68	99.5	0.13	0.02	0.01	0.01	0.04	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.09
904		0.98	99.4	0.11	0.04	0.01	0.01	0.04	0.03	0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.04
905		0.92	99.3	0.13	0.02	0.01	0.01	0.05	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.06
906		0.70	99.2	0.12	0.02	0.01	0.01	0.05	0.03	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.11
907		0.72	99.6	0.27	0.03	0.01	0.01	0.01	0.06	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.23
908		0.74	99.9	0.14	0.03	0.01	0.01	0.06	0.04	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.07
909		0.74	99.8	0.17	0.03	<0.01	0.01	0.01	0.05	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.15
910		0.60	98.7	0.40	0.03	0.01	0.02	0.07	0.13	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.18

***** See Appendix Page for comments regarding this certificate *****

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To: **MGX MINERALS INC**
303-1080 HOWE STREET
VANCOUVER BC V6Z 2T1

Finalized Date: 22-DEC-2015
Account: MGXMIN

Project: Longworth

CERTIFICATE OF ANALYSIS VA15188829

Sample Description	Method / Analyte / Units / LOR	TOT-ICP06 Total % 0.01
901		99.85
902		99.45
903		99.85
904		99.70
905		99.63
906		99.56
907		100.24
908		100.27
909		100.23
910		99.56

***** See Appendix Page for comments regarding this certificate *****

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To: **MGX MINERALS INC**
303-1080 HOWE STREET
VANCOUVER BC V6Z 2T1

Finalized Date: 22-DEC-2015
Account: MGXMIN

Project: Longworth

CERTIFICATE OF ANALYSIS VA15188829

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:			
CRU-31	LOG-22	ME-ICP06	OA-GRA05
PUL-33	SPL-21	TOT-ICP06	WEI-21

ALS Minerals

Appendix B

WHOLE ROCK GEOCHEMISTRY

ME- ICP06 and 0A- GRA05

ANALYSIS OF MAJOR OXIDES BY ICP- AES

ME- ICP06

SAMPLE DECOMPOSITION

Lithium Metaborate/Lithium Tetraborate ($LiBO_2$ /Li2 B_4 O_7) Fusion* (FUS-LI01)

ANALYTICAL METHOD

Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES)

A prepared sample (0.200 g) is added to lithium metaborate/lithium tetraborate flux (0.90 g), mixed well and fused in a furnace at 1000°C. The resulting melt is then cooled and dissolved in 100 mL of 4% nitric acid/2% hydrochloric acid. This solution is then analyzed by ICP-AES and the results are corrected for spectral inter-element interferences. Oxide concentration is calculated from the determined elemental concentration and the result is reported in that format.

ELEMENT	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT
Aluminum	Al_2O_3	%	0.01	100
Barium	BaO	%	0.01	100
Calcium	CaO	%	0.01	100
Chromium	Cr_2O_3	%	0.01	100
Iron	Fe_2O_3	%	0.01	100
Magnesium	MgO	%	0.01	100
Manganese	MnO	%	0.01	100
Phosphorus	P_2O_5	%	0.01	100
Potassium	K_2O	%	0.01	100
Silicon	SiO	%	0.01	100
Sodium	Na_2O	%	0.01	100
Strontium	SrO	%	0.01	100
Titanium	TiO_2	%	0.01	100

***NOTE:** For samples that are high in sulphides, we may substitute a peroxide fusion in order to obtain better results.

ME- ICP06 and OA- GRA05

OA- GRA05, ME- GRA05

SAMPLE DECOMPOSITION

Thermal decomposition Furnace or TGA (OA-GRA05 or ME-GRA05)

ANALYTICAL METHOD

Gravimetric

If required, the total oxide content is determined from the ICP analyte concentrations and loss on Ignition (L.O.I.) values. A prepared sample (1.0 g) is placed in an oven at 1000°C for one hour, cooled and then weighed. The percent loss on ignition is calculated from the difference in weight.

METHOD CODE	PARAMETER	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT
OA-GRA05	Loss on Ignition (Furnace)	LOI	%	0.01	100
ME-GRA05	Loss on Ignition (TGA)	Moisture	%	0.01	100
		LOI	%	0.01	100

Appendix C Rock Chip Sample Description and Geochemical Analysis Results:

Sample ID	MTO tenure	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type
901	1022946	595536	5985389	1546	outcrop
902	1022946	595566	5985378	1553	outcrop
903	1022946	595624	5985333	1564	outcrop
904	1022946	595660	5985316	1571	outcrop
905	1022946	595720	5985259	1569	outcrop
906	1022946	595746	5985225	1546	outcrop
907	1022946	595626	5985269	1545	outcrop
908	1022946	595569	5985321	1544	outcrop
909	1022946	595524	5985356	1523	outcrop
910	1023010	595557	5985442	1524	outcrop

Sample ID	Lithology	Bed Strike	Bed Dip	Width (cm)	Joint Strike	Joint Dip
901	quartzite	138	80 NE	300		
902	quartzite	119	82 NE	300		
903	quartzite			300	35	80 NW
904	quartzite			300	39	78 NW
905	quartzite			300	41	86 NW
906	quartzite			300	140	82 NE
907	quartzite			300	35	82 NW
908	quartzite			300		
909	quartzite			300	37	80 NW
910	quartzite	143	84 NE	300		

Sample ID	% SiO2	% Fe2O3	% CaO	% MgO	% Al2O3	% Na2O	% K2O	% LOI	%Total
901	98.9	0.04	0.03	0.04	0.44	0.03	0.14	0.21	99.85
902	99.1	0.02	0.02	0.01	0.14	0.03	0.04	0.08	99.45
903	99.5	0.02	0.01	0.01	0.13	0.04	0.04	0.09	99.85
904	99.4	0.04	0.01	0.01	0.11	0.04	0.03	0.04	99.7
905	99.3	0.02	0.01	0.01	0.13	0.05	0.04	0.06	99.63
906	99.2	0.02	0.01	0.01	0.12	0.05	0.03	0.11	99.56
907	99.6	0.03	0.01	0.01	0.27	0.01	0.06	0.23	100.24
908	99.9	0.03	0.01	0.01	0.14	0.06	0.04	0.07	100.27
909	99.8	0.03	<0.01	0.01	0.17	0.01	0.05	0.15	100.23
910	98.7	0.03	0.01	0.02	0.4	0.07	0.13	0.18	99.56

Appendix C Rock Chip Sample Description and Geochemical Analysis Results:

Sample ID	MTO tenure	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type
901	1022946	595536	5985389	1546	outcrop
902	1022946	595566	5985378	1553	outcrop
903	1022946	595624	5985333	1564	outcrop
904	1022946	595660	5985316	1571	outcrop
905	1022946	595720	5985259	1569	outcrop
906	1022946	595746	5985225	1546	outcrop
907	1022946	595626	5985269	1545	outcrop
908	1022946	595569	5985321	1544	outcrop
909	1022946	595524	5985356	1523	outcrop
910	1023010	595557	5985442	1524	outcrop

Sample ID	Lithology	Bed Strike	Bed Dip	Width (cm)	Joint Strike	Joint Dip
901	quartzite	138	80 NE	300		
902	quartzite	119	82 NE	300		
903	quartzite			300	35	80 NW
904	quartzite			300	39	78 NW
905	quartzite			300	41	86 NW
906	quartzite			300	140	82 NE
907	quartzite			300	35	82 NW
908	quartzite			300		
909	quartzite			300	37	80 NW
910	quartzite	143	84 NE	300		

Sample ID	% SiO2	% Fe2O3	% CaO	% MgO	% Al2O3	% Na2O	% K2O	% LOI	%Total
901	98.9	0.04	0.03	0.04	0.44	0.03	0.14	0.21	99.85
902	99.1	0.02	0.02	0.01	0.14	0.03	0.04	0.08	99.45
903	99.5	0.02	0.01	0.01	0.13	0.04	0.04	0.09	99.85
904	99.4	0.04	0.01	0.01	0.11	0.04	0.03	0.04	99.7
905	99.3	0.02	0.01	0.01	0.13	0.05	0.04	0.06	99.63
906	99.2	0.02	0.01	0.01	0.12	0.05	0.03	0.11	99.56
907	99.6	0.03	0.01	0.01	0.27	0.01	0.06	0.23	100.24
908	99.9	0.03	0.01	0.01	0.14	0.06	0.04	0.07	100.27
909	99.8	0.03	<0.01	0.01	0.17	0.01	0.05	0.15	100.23
910	98.7	0.03	0.01	0.02	0.4	0.07	0.13	0.18	99.56

Appendix D Photos Snow Zone in background (looking SE)

Snow Zone Sample 902 looking west, Fraser River in background

MINFILE Record Summary
MINFILE No 093H 038

Appendix E

File Created: 24-Jul-85 by BC Geological Survey (BCGS)
Last Edit: 24-Feb-89 by David G. Bailey(DGB)

SUMMARY

Name	LONGWORTH, NONDA QUARTZITE, SNOW, RAIN, LONG, DOLL	**NMI**	
		Mining Division	Cariboo
		BCGS Map	093H093
Status	Prospect	**NTS Map**	093H14W
Latitude	53° 58' 48" N	**UTM**	10 (NAD 83)
Longitude	121° 29' 30" W	**Northing**	5982350
		Easting	598914
Commodities	Silica	**Deposit Types**	R07 : Silica sandstone
Tectonic Belt	Foreland	**Terrane**	Ancestral North America

Capsule Geology

The Longworth prospect is located about 80 kilometres east of Prince George. The claims were staked originally in 1974 and blasting, trenching and sampling has been completed on the property

The prospect is hosted by a folded sequence of sedimentary and volcanic rocks which underlie Bearspaw Ridge. They are all, or in part, Lower Silurian in age and equivalent to the Nonda Formation.

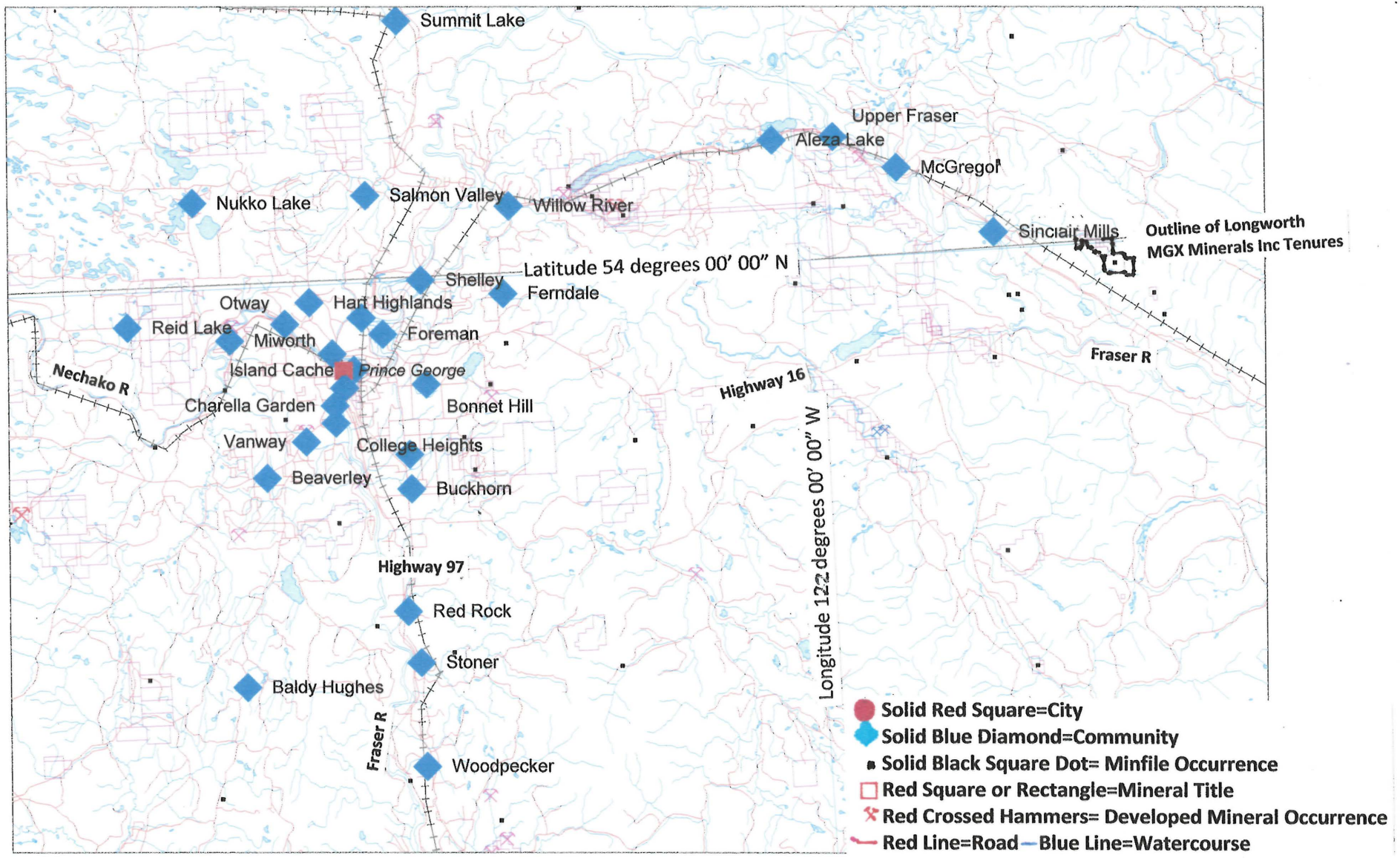
At least four northwest trending bands of quartzite have been mapped along the western flank of Bearpaw Ridge. Thicknesses reach up to about 400 metres. The main quartzite band outlines a synformal structure open to the northwest. Rare bedding observed in outcrop dips 70 to 80 degrees east. The quartzite is very pure, massive and homogeneous. It is composed of extremely well-rounded and well- sorted quartz grains, averaging 0.5 millimetre in diameter, which are cemented by silica. The quartzite is pinkish white to buff on fresh surfaces and weathers grey to white. Impurities include muscovite in cavities, limonite on microfractures, minor calcite and possible hydrocarbons. Eight chip samples collected in 1982 by the Geological Survey Branch averaged 99.5 per cent silica (Open File 1987-15).

Consolidated Silver Standard Mines Ltd. evaluated the property in 1985 for the production of ferrosilicon and silicon metal. They took 42 samples of which 28 had the required chemical specifications, SiO2 was from 98.84 to 99.80 per cent and 16 samples had acceptable thermal shock results (Open File 1987-15).

Bibliography

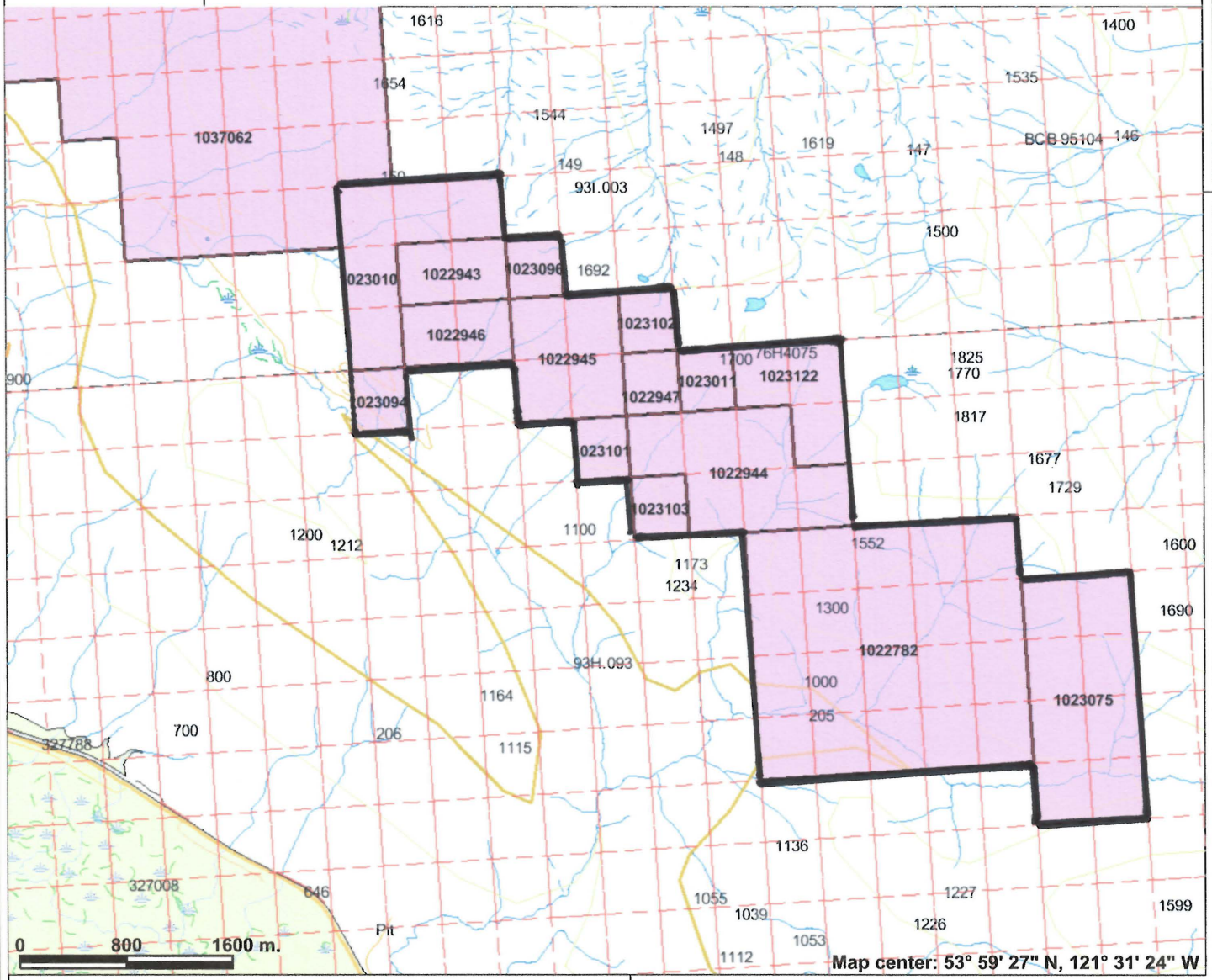
EMPR AR 1965-274
EMPR FIELDWORK 1982, p. 196
EMPR ASS RPT *14815
EMPR OF 1987-15, pp. 13-15
EMPR PF (Consolidated Silver Standard Mines Ltd. Annual Report 1988)
EMPR EXPL 1986-C342,343
GSC P 72-35, p. 89
GSC MAP 1424A

Fig 1 Longworth Silica Property General Location



NTS 093H 13/E, 093H 14/W, & 093I 04/E
BCGS 093H.093, 093I.003 Cariboo M.D.

Fig 2 MTO Tenure Location



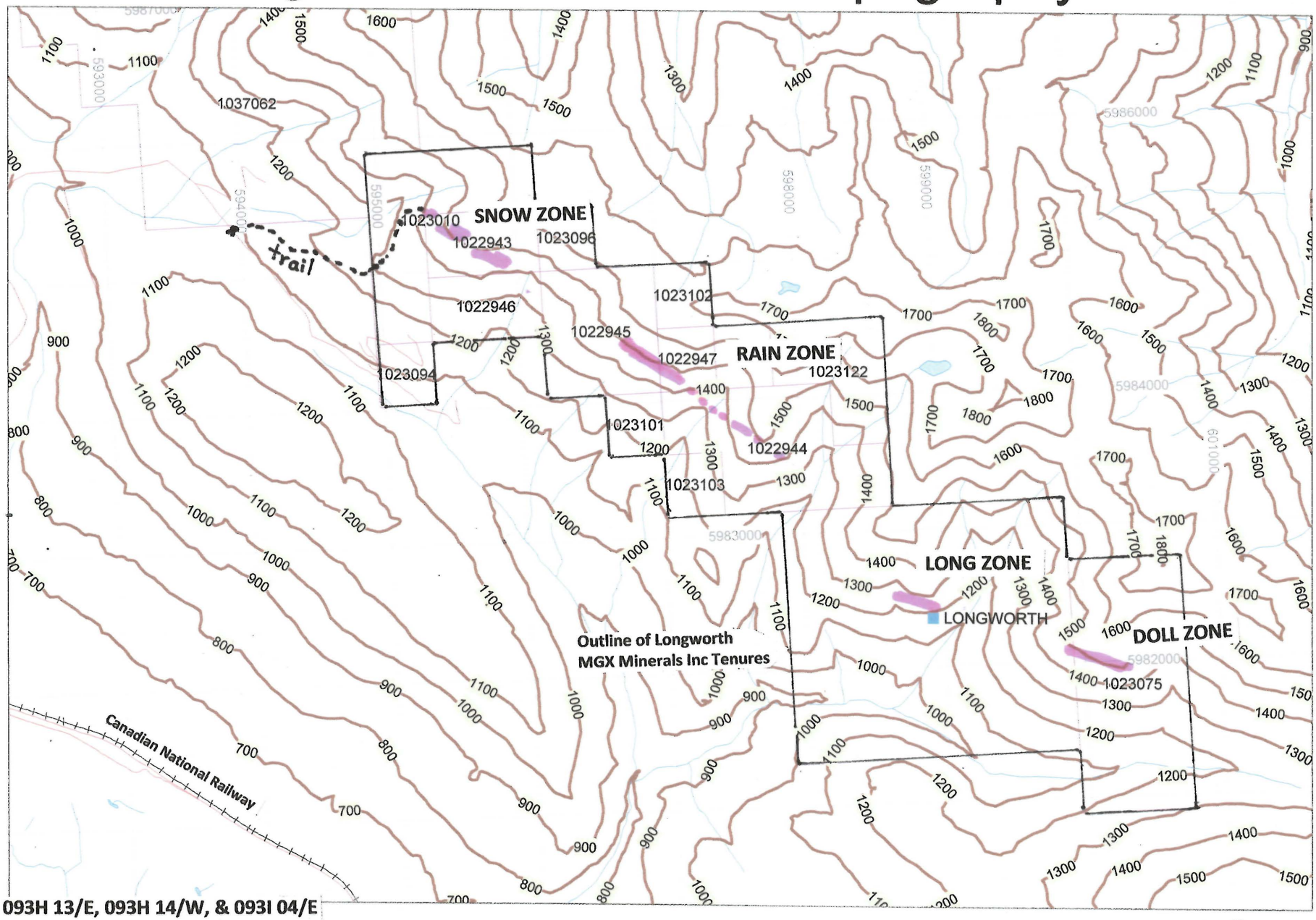
Legend

- Indian Reserves
- National Parks
- Conservancy Areas
- Parks
- Federal Transfer Lands
- MTO Grid (MTO)
- Mineral Tenure (current)
- Mineral Claim
- Mineral Lease
- Mineral Reserves (current)
- Placer Claim Designation
- Placer Lease Designation
- No Staking Reserve
- Conditional Reserve
- Release Required Reserve
- Surface Restriction
- Recreation Area
- Others
- First Nations Treaty Related Lands
- First Nations Treaty Lands
- Survey Parcels
- BCGS Grid
- Contours (1:250K)
- Contour - Index
- Contour - Intermediate
- Areaof Exclusion
- Areaof Indefinite Contours
- Transportation - Points (TRIM)
- Helipad
- Transportation - Lines (TRIM)

Scale: 1:44,865

Notes: NTS 093H 13/E, 14/W,
093I 04/E
BCGS 093H.093, 093I.003
Cariboo Mining Division

Fig 3 Claim Location & Topography



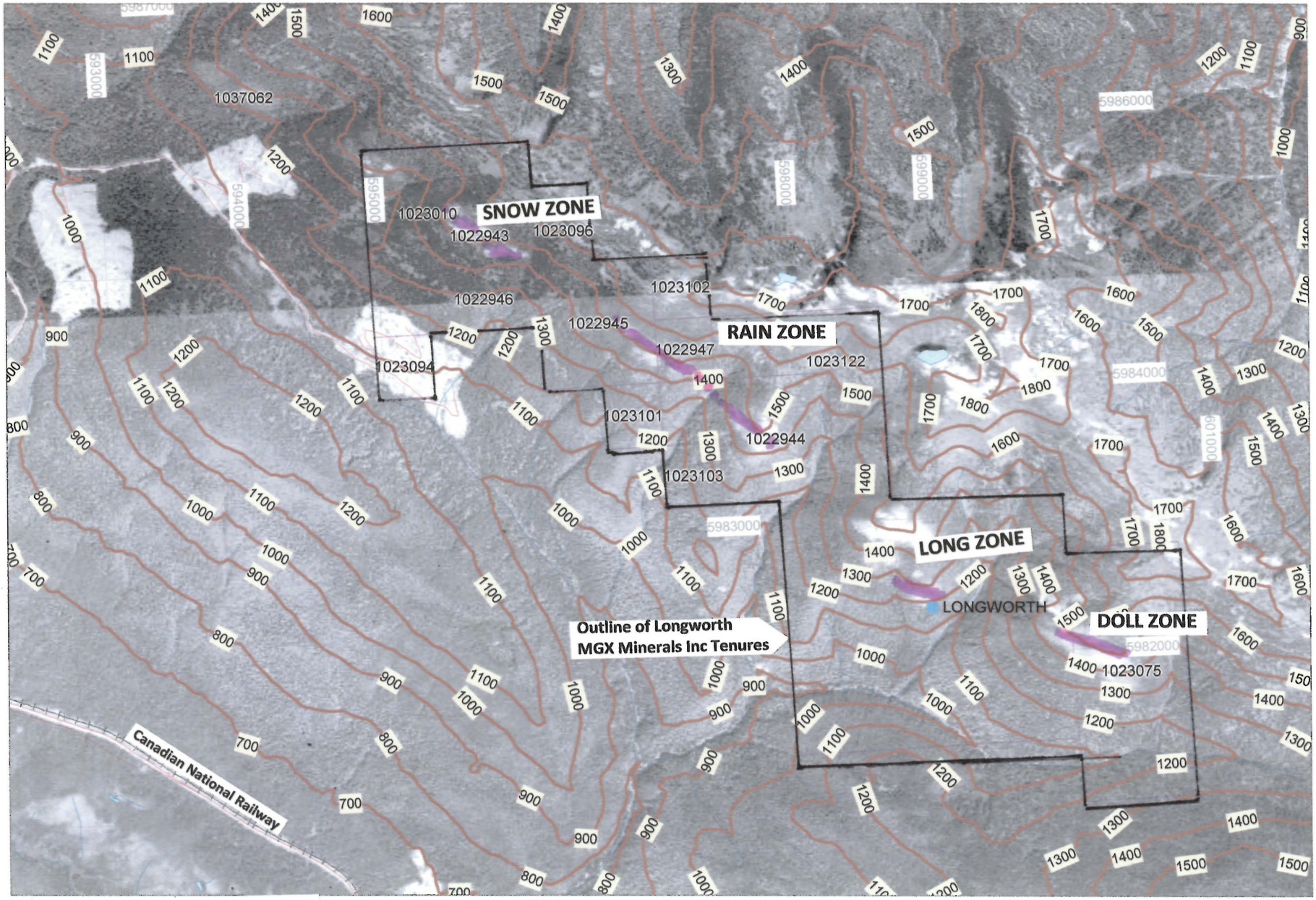
NTS 093H 13/E, 093H 14/W, & 093I 04/E
BCGS 093H.093, 093I.003 Cariboo M.D.

SCALE 1 : 40,000

1 0 1 2 3
KILOMETERS

Solid Blue Square = Minfile Occurrence
Pink = High Purity Quartzite, Nonda Fm
Contour Interval = 100 m
Red Line=Road Blue Line=Watercourse

Fig 3B Claim Location, Orthophoto & Topography



NTS 093H 13/E, 093H 14/W, & 093I 04/E
BCGS 093H.093, 093I.003 Cariboo M.D.

SCALE 1 : 40,000

1 0 1 2 3
KILOMETERS

Solid Blue Square Dot= Minfile Occurrence
Pink = High Purity Quartzite, Nonda Fm
Contour Interval = 100 m
Red Line=Road Blue Line=Watercourse

N

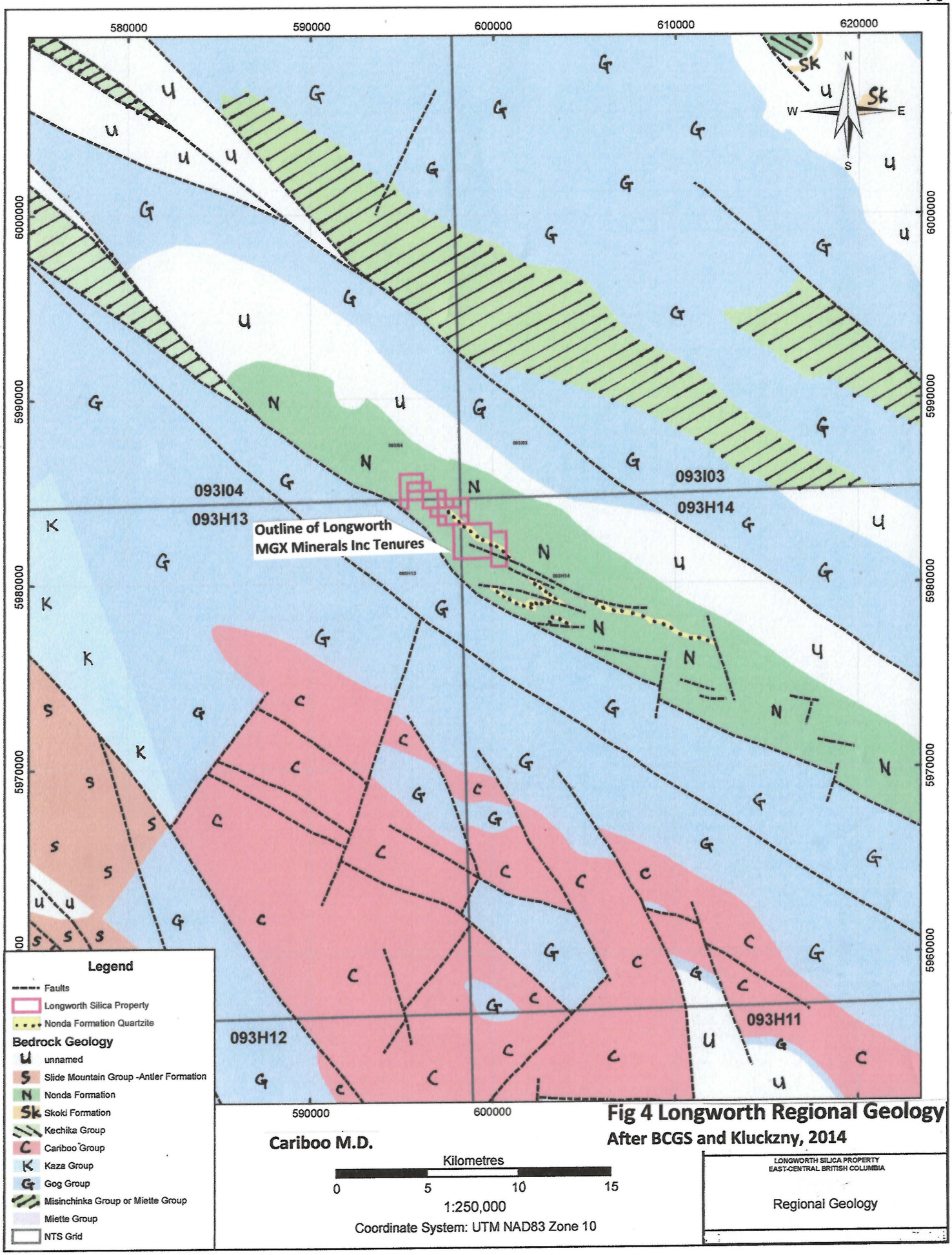
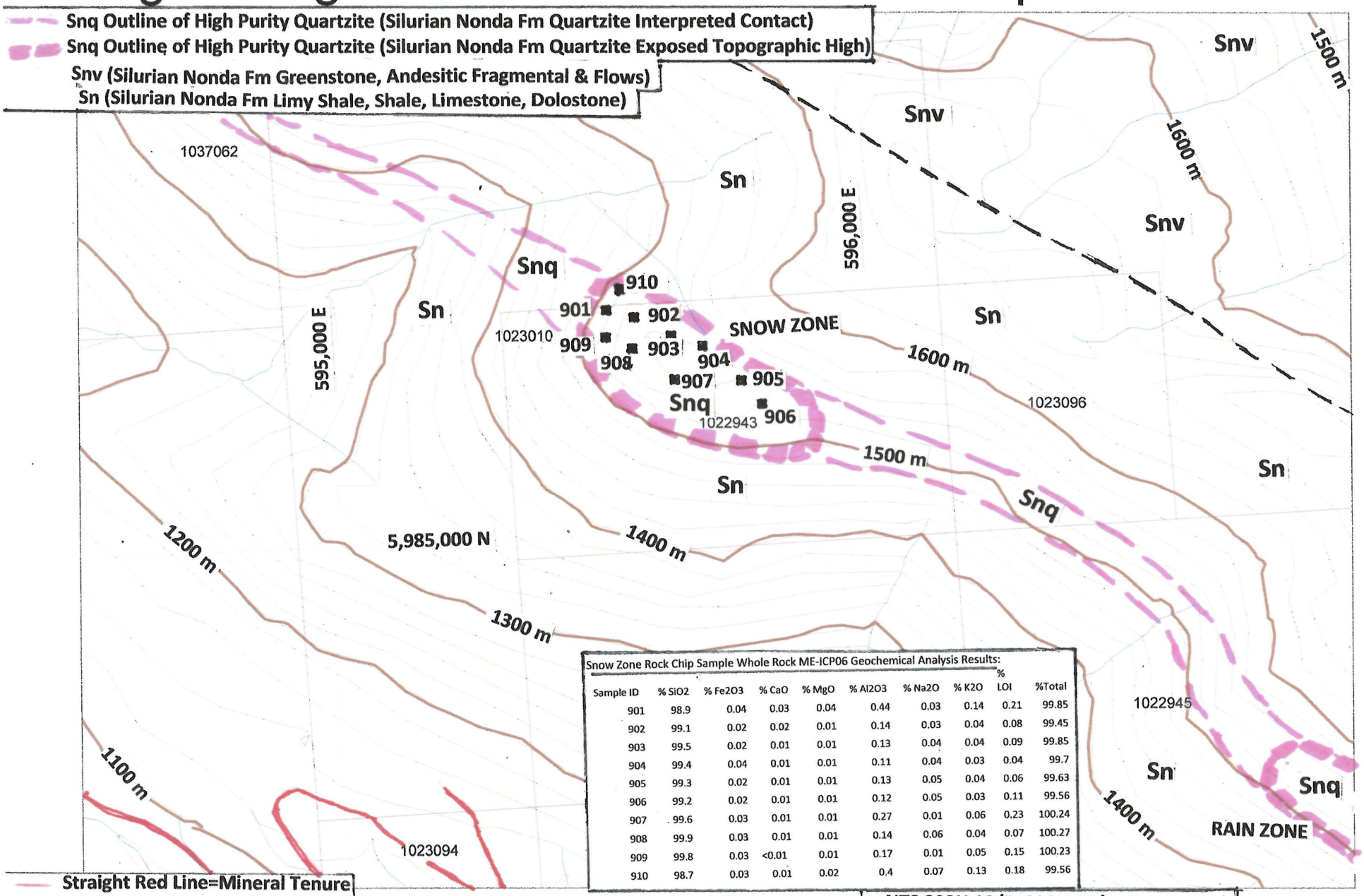


Fig 4 Longworth Regional Geology
After BCGS and Kluckzny, 2014

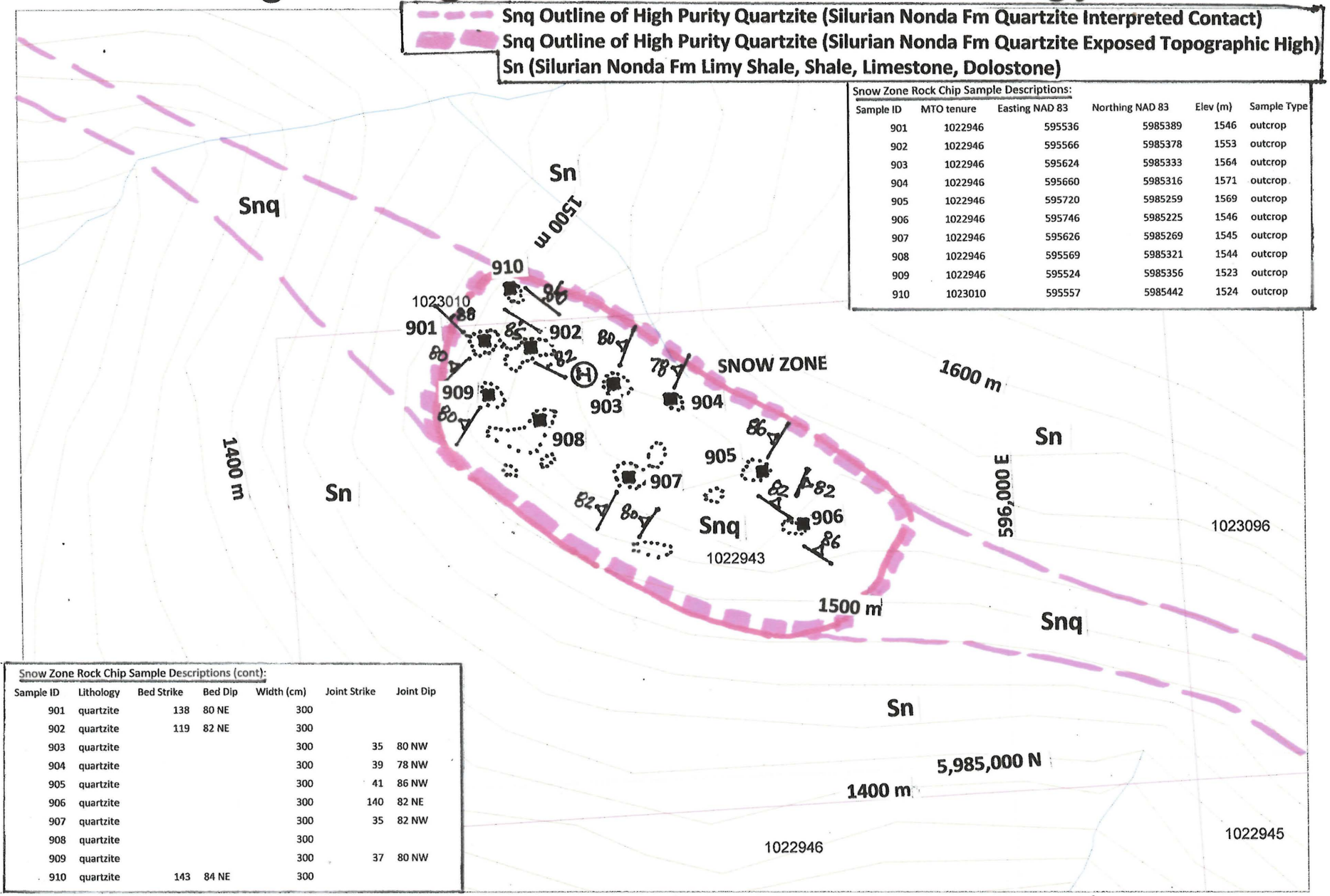
Fig 5 Longworth Snow Zone Rock Sample Locations



Snow Zone Rock Chip Sample Whole Rock ME-ICP06 Geochemical Analysis Results:

Sample ID	% SiO2	% Fe2O3	% CaO	% MgO	% Al2O3	% Na2O	% K2O	% LOI	%Total
901	98.9	0.04	0.03	0.04	0.44	0.03	0.14	0.21	99.85
902	99.1	0.02	0.02	0.01	0.14	0.03	0.04	0.08	99.45
903	99.5	0.02	0.01	0.01	0.13	0.04	0.04	0.09	99.85
904	99.4	0.04	0.01	0.01	0.11	0.04	0.03	0.04	99.7
905	99.3	0.02	0.01	0.01	0.13	0.05	0.04	0.06	99.63
906	99.2	0.02	0.01	0.01	0.12	0.05	0.03	0.11	99.56
907	99.6	0.03	0.01	0.01	0.27	0.01	0.06	0.23	100.24
908	99.9	0.03	0.01	0.01	0.14	0.06	0.04	0.07	100.27
909	99.8	0.03	<0.01	0.01	0.17	0.01	0.05	0.15	100.23
910	98.7	0.03	0.01	0.02	0.4	0.07	0.13	0.18	99.56

Fig 6 Longworth Snow Zone Geology



Snow Zone Rock Chip Sample Descriptions:

Sample ID	MTO tenure	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type
901	1022946	595536	5985389	1546	outcrop
902	1022946	595566	5985378	1553	outcrop
903	1022946	595624	5985333	1564	outcrop
904	1022946	595660	5985316	1571	outcrop
905	1022946	595720	5985259	1569	outcrop
906	1022946	595746	5985225	1546	outcrop
907	1022946	595626	5985269	1545	outcrop
908	1022946	595569	5985321	1544	outcrop
909	1022946	595524	5985356	1523	outcrop
910	1023010	595557	5985442	1524	outcrop

Snow Zone Rock Chip Sample Descriptions (cont):

Sample ID	Lithology	Bed Strike	Bed Dip	Width (cm)	Joint Strike	Joint Dip
901	quartzite	138	80 NE	300		
902	quartzite	119	82 NE	300		
903	quartzite			300	35	80 NW
904	quartzite			300	39	78 NW
905	quartzite			300	41	86 NW
906	quartzite			300	140	82 NE
907	quartzite			300	35	82 NW
908	quartzite			300		
909	quartzite			300	37	80 NW
910	quartzite	143	84 NE	300		

NTS 093H 13/E, 093H 14/W, & 093I 04/E
BCGS 093H.093, 093I.003 Cariboo M.D.

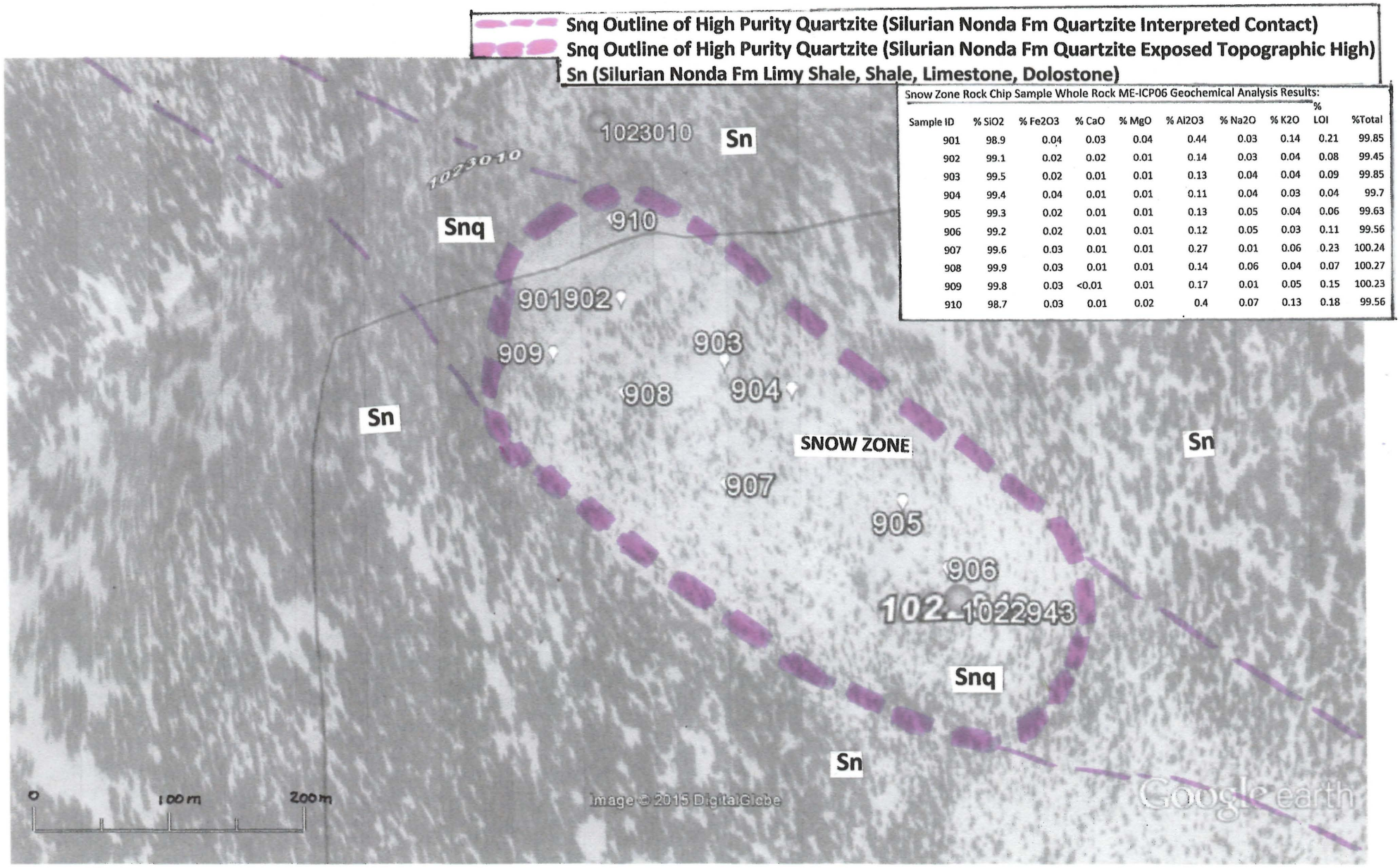
SCALE 1 : 5,000

100 0 100 200 300
METERS

Rock Chip Sample (3 m interval)
Outline of Outcrop
Bedding
Jointing

Contour Interval = 20 m
Red Line=Mineral Tenure
Blue Line=Watercourse

N



Snow Zone Rock Chip Sample Whole Rock ME-ICP06 Geochemical Analysis Results:

Sample ID	% SiO2	% Fe2O3	% CaO	% MgO	% Al2O3	% Na2O	% K2O	% LOI	%Total
901	98.9	0.04	0.03	0.04	0.44	0.03	0.14	0.21	99.85
902	99.1	0.02	0.02	0.01	0.14	0.03	0.04	0.08	99.45
903	99.5	0.02	0.01	0.01	0.13	0.04	0.04	0.09	99.85
904	99.4	0.04	0.01	0.01	0.11	0.04	0.03	0.04	99.7
905	99.3	0.02	0.01	0.01	0.13	0.05	0.04	0.06	99.63
906	99.2	0.02	0.01	0.01	0.12	0.05	0.03	0.11	99.56
907	99.6	0.03	0.01	0.01	0.27	0.01	0.06	0.23	100.24
908	99.9	0.03	0.01	0.01	0.14	0.06	0.04	0.07	100.27
909	99.8	0.03	<0.01	0.01	0.17	0.01	0.05	0.15	100.23
910	98.7	0.03	0.01	0.02	0.4	0.07	0.13	0.18	99.56

Google earth feet 1000 meters 600

NTS 093H 13/E, 093H 14/W, & 093I 04/E
BCGS 093H.093, 093I.003 Cariboo M.D.

Fig 7 Longworth Snow Zone Rock Chip Sample Locations (Google Earth)
Rock Chip Samples 901-910, October, 2015
MTO Mineral Tenures Boundaries Projected to Curved Surface