NI 43-101 TECHNICAL REPORT

# **ON THE**

# **GLENCORE BUCKE PROPERTY**

# LARDER LAKE MINING DIVISION, NORTHEASTERN ONTARIO

FOR

SURGE EXPLORATION INC.



Prepared by:



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**JMK Exploration Consulting** 

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## 1. EXECUTIVE SUMMARY

At the request of Surge Exploration Inc. ("Surge"), the author has completed a geological review of the Glencore Bucke Property (the "Property") and prepared this technical report (the "Technical Report") in compliance with NI 43-101, Companion Policy NI43-101CP, and Form 43-101F1.

The author has prepared this report to provide a summary of scientific and technical data on the Property, including historical exploration activities, and has made recommendations concerning future exploration and development of the Property. This Technical Report is based on exploration and Property information supplied to the author by Surge, a review of geological and exploration information available in the public domain, and personal observations made on the Property by the author.

The Property is situated approximately 6 km east-northeast of the town of Cobalt, Ontario. Highway 567 and a municipal road cross the Property. The Property is bounded by UTM NAD83 Z17T coordinates 604385E to 604790E, and 5251760N to 5252165N and is covered by National Topographic System (NTS) map sheet 31M/5. The Property consists of 1 patented mining claim covering an area of approximately 16.2 ha.

The Glencore Bucke Property is located within the Cobalt embayment in the Southern Province of the Canadian Shield. The Property is underlain by a Nipissing Diabase sill, which in turn is underlain by Huronian sediments of Proterozoic age. The sediments in turn unconformably overlie early Archean metavolcanics and metasediments.

In 1981, Teledyne leased mining claim 585 ("Glencore Bucke Property") from Falconbridge Nickel Mines Ltd., as the company recognized the significant exploration potential that the Property had due to the possible southern extensions of the Cobalt Contact veins on mining claim T43819 that projected southward onto the Property. In the same year, Teledyne completed 36 diamond drill holes totalling 10,903 ft (3,323.3 m) on the Property, and delineated two mineralized zones, named the Main Zone and Northwest Zone, measuring 500 ft (152.4 m) and 200 ft (70.0 m) in length respectively (Bresee, 1982). Based on the surface drill program completed by Teledyne, historical reserves of 60,000 tons in the geologically inferred category, and 15,000 tons in the probable category, at an average grade of 0.45% Co, 3.0 oz/t Ag was estimated (Linn, 1983). The historical reserve estimate contains categories that are not

consistent with current CIM definitions. A qualified person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves. No attempt was made to reconcile the historical reserve calculations as reported by Teledyne Tungsten. Surge is not treating the historical reserve estimate as a current mineral resource or mineral reserve.

On August 31<sup>st</sup>, 2017, LiCo Energy Metals Inc. entered into a property purchase agreement on with Glencore Canada Corp. ("Glencore") to acquire a 100% interest on the Glencore Bucke Property. In the fall of 2017, LiCo Energy Metals Inc. ("LiCo") completed 21 diamond drill holes totalling 1,913.50 m on the Property. LiCo's Phase 1 diamond drill program was designed to confirm and extend the existing known mineralized zones on the Property. The program tested the Main Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 45 m. Due to the nature of the mineralization, drill holes were closely spaced apart, generally at 10 m along sections, and 12.5 m between sections on average.

Significant cobalt intersections from the Phase 1 diamond drilling program completed by LiCo include:

- GB17-04 that intersected 1.62% Co, 7 ppm Ag over 0.50 m from 16.25 to 16.75 m.
- GB17-06 that intersected 0.25% Co, 12 ppm Ag over 1.75 m from 22.50 to 24.25 m.
- GB17-06 that intersected 4.45% Co, 34.2 ppm Ag over 0.30 m from 44.40 to 44.70 m.
- GB17-07 that intersected 1.11% Co, 17.6 ppm Ag over 2.00 m from 98.5 to 100.50 m.
- GB17-10 that intersected 0.55% Co, 0.8 ppm Ag over 5.00 m from 28.00 to 33.00 m.
- GB17-13 that intersected 0.46% Co, 132.5 ppm Ag over 0.90 m from 77.60 to 78.00 m.
- GB17-13 that intersected 0.55% Co, 16.9 ppm Ag over 0.60 m from 100.80 to 101.40 m.
- GB17-15 that intersected 0.55% Co, 2.1 ppm Ag over 0.90 m from 27.50 to 28.40 m.
- GB17-15 that intersected 8.42% Co, 136 ppm Ag over 0.30 m from 62.40 to 62.70 m.
- GB17-18 that intersected 0.43% Co, 86.8 ppm Ag over 0.90 m from 80.10 to 81.00 m.
- GB17-19 that intersected 0.75% Co, 111.1 ppm Ag over 0.60 m from 46.00 to 46.60 m.
- GB17-20 that intersected 0.44% Co, 19.4 ppm Ag over 4.05 m from 60.25 to 64.30 m.
- GB17-21 that intersected 0.73% Co, 50.0 ppm Ag over 0.60 m from 69.70 to 70.30 m.

Significant copper-lead-zinc mineralization was also intersected. The mineralization is associated within or adjacent to the cobalt-silver bearing veins, and as separate zones within

the metavolcanics and metasediments. These zones deserve some further investigation as to their possible economic potential. Significant copper-lead-zinc intersections include:

- GB17-03 that intersected 1.03% Cu, 0.02% Zn, 0.069% Pb over 2.50 m from 38.50 to 41.00 m.
- GB17-15 that intersected 0.90% Cu, 0.26% Zn, 0.47% Pb over 20.20 m from 42.50 to 62.70 m.
- GB17-21 that intersected 1.25% Cu, 0.04% Zn, 0.05% Pb over 6.10 m from 67.50 to 73.60 m.

The aforementioned intervals represent core lengths, and not true widths.

On March 5<sup>th</sup>, 2018, LiCo announced that it had formally completed its obligations to Glencore under the Mineral Property Acquisition Agreement dated August 31<sup>st</sup>, 2017.

On May 8<sup>th</sup>, 2018, Surge announced that it had entered into an option agreement with LiCo, whereby Surge can earn an undivided 60% interest in the Glencore Bucke Property and the adjacent Teledyne Cobalt Property. Under the terms of the agreement, Surge will pay LiCo the sum of \$240,000 and issue 1,000,000 fully paid and non-assessable common shares in the capital of Surge upon TSX Venture Exchange approval. In addition, Surge shall incure an aggregate of \$1,536,000 in exploration expenditures on the Property on or before two years from the date of the agreement. Upon Surge having exercised the option in full, Surge will have earned an undivided 60% interest in the Property, and the parties will enter in a commercially reasonable and definitive joint venture agreement.

It is recommended that a two-phase exploration program be completed on the Glencore Bucke Property. The program should be designed to expand on the results generated from LiCo's first phase of drilling, along strike to the south, and to explore for additional mineralized zones that may be located within proximity to the known veins, with the intent of completing a 43-101 compliant resource estimate upon completion of the Phase 2 diamond drilling program. The aggregate expenditure of the work programs proposed is estimated to be \$1,679,040.

# 2. INTRODUCTION AND TERMS OF REFERENCE

# 2.1 Introduction

At the request of Surge, the author has prepared this Technical Report to provide a summary of scientific and technical data on the Glencore Bucke Property ("Property"). This Technical Report provides a summary and description of results from exploration work carried by previous operators on the Property.

# 2.2 Terms of Reference

The author was retained by Surge to carry out an independent technical review of the Property. The review commenced January 25<sup>th</sup>, 2018 and continued through to May 8<sup>th</sup>, 2018.

The author's assignment consisted of:

- Reviewing and summarizing historical exploration data generated on the Property prior to Surge's acquisition of the Property;
- Summarizing and interpreting drill results from LiCo's recently completed Phase 1 diamond drilling program.
- 3) Preparing a technical report on the Property; and
- 4) Making recommendations for future exploration activities on the Property.

# 2.3 Sources of Information

The historical exploration information was mostly gathered from the Ontario government databases and from documents provided by LiCo and Surge.

For geographical reference purposes, all UTM locations used in this Technical Report are using NAD83 Zone 17N datum. Tenure information presented in this Technical Report was valid on the MNDM website on March 19<sup>th</sup>, 2018. Other online database sites providing basic geographic information used for this Technical Report, such as topographic contours, digital elevation models, drainage systems and roads (http://geogratis.cgdi.gc.ca/).

## 2.4 Details of Personal Inspection of the Property

The author initially visited the Property on June 27<sup>th</sup> and again on August 18<sup>th</sup>, 2017, a requirement for the completion of LiCo's 43-101 Technical Report dated September 7<sup>th</sup>, 2017. The site visit included traverses of the Property as well as a search for historical drill collars. No collars were found during the site visits. Several trenches and pits were located on the eastern portion of the Property. The author supervised LiCo's Phase 1 diamond drilling program and is familiar in all aspects with the exploration work completed by LiCo. During the Phase 1 diamond drilling program, several old casings were located. The author was last on the Property on November 8<sup>th</sup>, near the completion of the Phase 1 diamond drilling program.

#### 2.5 Units and Currency

This Technical Report uses both the Imperial and Metric Systems (System International or "SI") as systems of measure and length. Conversions from the Metric System to the Imperial System are provided below and quoted where practical. Many of the geologic publications and more recent work assessment files now use the SI system but older work assessment files almost exclusively refer to the Imperial System. Metal and mineral acronyms in this Technical Report conform to mineral industry accepted usage.

Conversion factors utilized in this Technical Report include: 1 inch = 2.54 centimetres (cm); 1 pound (lb.) = 0.454 kilograms (kg); 1 foot (ft) = 0.3048 metres (m); 1 mile (mi) = 1.609 kilometres (km); 1 acre (ac) = 0.405 hectares (ha); and, 1 sq. mile = 2.59 square kilometres.

Table 1 lists the common abbreviations that are used in this Technical Report. Dollars are expressed in Canadian currency (\$) unless otherwise noted. Unless otherwise mentioned, all coordinates in this Technical Report are provided as UTM datum NAD83, Zone 17N.

Abbreviation	Unit or Term
Ag	silver
ASL	above sea level
As	arsenic
Au	gold
Bi	bismuth
Ga	billion years
С	Celsius
cm	centimetre
Со	cobalt
CRM	certified reference material
Cu	copper
ft <sup>2</sup>	square foot
ft <sup>3</sup>	cubic feet
0	degree (degrees)
ddh	diamond drill hole
ft	foot (feet)
g	gram
GIS	Geographic Information System
g/t	gram per tonne
ha	hectare
	inch
km	kilometre
km²	square kilometres
Μ	metre
mm	millimetre
Ма	Million years
MNDM	Ministry of Northern Development and Mines
NI 43-101	Canadian National Instrument 43-101
NSR	Net Smelter Royalty
oz	ounce(s), Troy ounce(s)
%	percent
Pb	lead
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
SG	specific gravity
ton	short ton (2,000 pounds)
Т	metric tonne (1,000 kg) (2,204.6 pounds)

# Table 1: Abbreviations

# **3. RELIANCE ON OTHER EXPERTS**

The information, conclusions and recommendations contained herein are based on a review of hard copy data, information that were available in the public domain, and personal observations during the Phase 1 drill program completed by LiCo.

Some relevant information on the Property presented in this Technical Report is based on data derived from reports written by geologists and/or engineers who may or may not be "qualified persons" (as defined in NI 43-101). The author has made every attempt to accurately convey the content of those reports, but cannot guarantee either the accuracy, validity, or completeness of the data contained within those files. However, it is believed that these reports were written with the objective of presenting the results of the work performed, without any promotional or misleading intent.

Land tenure information for mining claims has been obtained from the MNDM web site, which contains a disclaimer as to the validity of the provided information.

# 4. PROPERTY DESCRIPTION AND LOCATION

# 4.1 Location

The Property is situated approximately 6 km east-northeast of the town of Cobalt, Ontario. Highway 567 and a municipal road cross the Property.

The Property is bounded by UTM NAD83 Z17T coordinates 604385E to 604790E, and 5251760N to 5252165N and is covered by National Topographic System (NTS) map sheet 31M/5.

# 4.2 Mineral Dispositions

On August 31<sup>st</sup>, 2017, LiCo Energy Metals Inc. entered into a property purchase agreement on with Glencore Canada Corp. ("Glencore") to acquire a 100% interest in patented mining claim 585 (now known as the Glencore Bucke Property), claim covering an area of approximately 16.2 ha (approximately 1 unit).

As per the agreement, LiCo will have pay Glencore the sum of \$150,000 on the approval date and pay Glencore the sum of \$350,000 within six months after the closing date of the agreement. In addition, prior to the closing date during the acquisition period, LiCo shall incur \$250,000 in exploration expenditures on the Property. Prior to the commencement of commercial production, LiCo shall entre into an off-take agreement with Glencore for all ores and/or concentrates produced from the Property and/or the Teledyne Cobalt Property. The offtake agreement shall be on such terms and conditions as are commercially reasonable and at prevailing market prices. A 3.5% NSR calculated on a guarterly basis on all products extracted from, processed and sold that originate from mining operations on the Property from and after commercial production. One half (1/2) of the royalty can be purchased for \$1,000,000 payable to Glencore or its assignee. The purchase agreement also includes an back-in option, from and after the closing date, subject to Glencore or an affiliate, determining that a discovery of one or more bodies having a minimum in-situ value of \$100,000,000 or more from which minerals can be feasibly extracted, LiCo grants Glencore or its nominated affiliate an irrevocable, sole and exclusive right and option to acquire from the Purchaser a 51% interest in the Property and all Property rights, free and clear of all burdens of any nature or kind. Once the back-in option is exercised, a joint venture will be formed and a management committee established with representatives of both companies.

On March 5<sup>th</sup>, 2018, LiCo announced that it had formally completed its obligations to Glencore under the Mineral Property Acquisition Agreement dated August 31<sup>st</sup>, 2017, and currently owns 100% of the subject Property.

On May 8<sup>th</sup>, 2018, Surge announced that it had entered into an option agreement with LiCo, whereby Surge can earn an undivided 60% interest in the Glencore Bucke Property and the adjacent Teledyne Cobalt Property. Under the terms of the agreement, Surge will pay LiCo the sum of \$240,000 and issue 1,000,000 fully paid and non-assessable common shares in the capital of Surge upon TSX Venture Exchange approval. In addition, Surge shall incure an aggregate of \$1,536,000 in exploration expenditures on the Property on or before two years from the date of the agreement. Upon Surge having exercised the option in full, Surge will have earned an undivided 60% interest in the Property, and the parties will enter in a commercially reasonable and definitive joint venture agreement.

The Property is subject to a back-in provision, production royalty, and an off-take agreement in favor of Glencore Canada Corp.

There are two surface rights owners, one being a private residence, and the other the City of Temiskaming Shores. Claim details are provided in Table 2 and shown in Figures 1 and 2. Access to the northern half of the Property is provided through private property where an agreement has been arranged between LiCo and the land owner. Permission to access the southern half of the Property has been arranged between LiCo and the City of Temiskaming Shores. LiCo has been informing the City of Temiskaming Shores of any planned exploration activities within their Property. Highway 567 bisects the subject Property.

The author has not sought a formal legal opinion with regard to the ownership status of the claims comprising the Property and has in all aspects of tenure relied on materials made available on the MNDM's website (http://www.mci.mndm.gov.on.ca/claims/clm\_mdvcl.cfm), the Land Registry Office located in the City of Temiskaming Shores, and by LiCo. The author expresses no opinion as to the ownership status of the Property.

	Claim Number	Township	Township Parcel Number		Comments
	585 Bucke		928 SEC SST; PT LT 14 CON 1	61357-0014 (LT)	MRO being N1/2 of NE1/4 of S1/2
			6228 SEC SST; PT LT 14 CON 1	61357-0049 (LT)	MRO being S1/2 of NE1/4 of S1/2

#### **Table 2: Patented Claim Details**

#### 4.3 Environmental Liabilities and Permitting

There are no known environmental liabilities on the Property.

The Ontario Mining Act requires exploration plans and permits for exploration to be undertaken on Crown Lands. Once the application has been received, the MNDM circulates the exploration plan and permit to the Environmental Registry and to Aboriginal communities whose traditional lands may be impacted by the work. The processing periods for exploration plans is 30 days, and 50 days for exploration permits. Consultations with the affected Aboriginal communities identified by the MNDM are recommended. No exploration plan or permit is required to complete exploration work on patented mining claims.

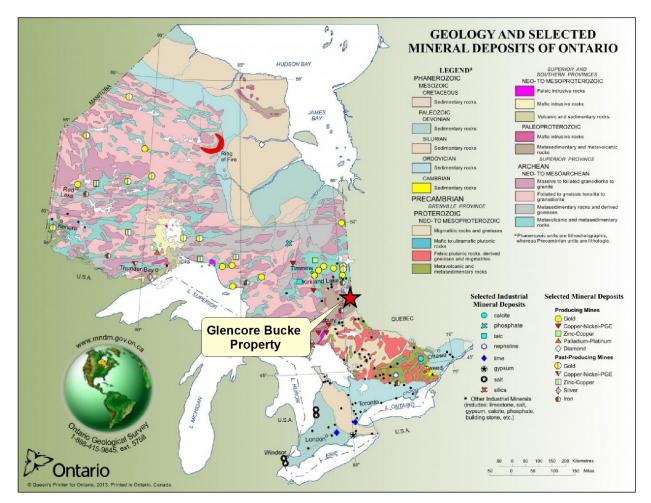


Figure 1: Location of the Glencore Bucke Project, Ontario

# 5. ACCESS, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

#### 5.1 Accessibility

The Property is situated approximately 6 km east-northeast of the town of Cobalt, Ontario in Bucke Township. Highway 537, a well-maintained highway, and a municipal road, provide access through the Property (Figure 2).

#### 5.2 Climate

The Property is under the influence of a moist boreal climate. The mean January temperature is -16.4°C; the mean July temperature is 18.1°C. The annual precipitation is approximately 785.1

mm (http://climate.weatheroffice.gc.ca). The beginning of permanent snow cover varies from year to year, sometimes starting in November and lasting until late April.

## 5.3 Local Resources and Infrastructure

Highway 567, a secondary highway, bisects the Property. Highway 11B is located approximately 4 km to the northwest of the Property. The Ontario Northland Railway, operated by the Ontario Northland Transportation Commission, a provincial Crown agency of the government of Ontario, services Cobalt and the City of Temiskaming Shores.

Local resources on the Property consist of mixed deciduous and coniferous trees. An electrical power line is located nearby and can service the Property.

A refinery, currently on care and maintenance, is located approximately 1 km to the southwest. It was permitted to process silver-cobalt arsenide concentrates.

Most supplies and services can be found in Temiskaming Shores, Ontario, a City with a population of approximately 10,500.

# 5.4 Physiography

The local terrain consists of gently rolling to steep ledges and cliffs. Typical vegetation on the Property consists of a boreal forest with a mixture of coniferous and deciduous trees, including poplar, birch, pine, spruce, alders, and willows. The elevation of the Property is approximately 210 m above sea level and the maximum topographical relief is generally less than 25 m.

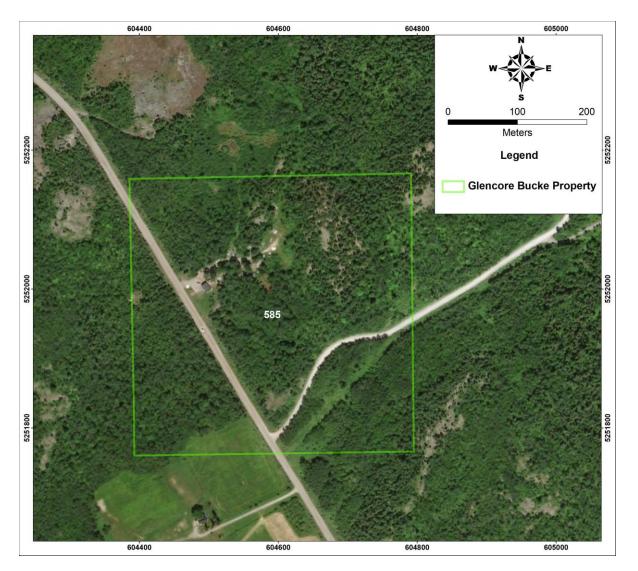


Figure 2: Tenure of the Glencore Bucke Property (patented mining claim 585)

## 6. HISTORY

At the time of writing this Technical report, limited historical information on the Property was available through online searches of assessment files through MNDM's Assessment File Research Imaging (AFRI) database. It is recommended that the Resident Geologist's Office in Kirkland Lake be visited to locate additional historical reports that may pertain to the Property that may not be accessible online.

#### 6.1 Historical Mineral Exploration

In 1981, Teledyne Canada Ltd. leased the Property and completed 36 surface diamond drill holes totalling 10,903 ft (3,323.3 m), outlining two separate vein systems containing significant cobalt and silver values. The two zones are known as the Main Zone, which measured 500 ft (152.4 m) in length, and the Northwest Zone, which measured 200 ft (70.0 m) in length (Bresee, 1982). The Main Zone had a north-south strike, which Teledyne hypothesized was the southern extension of the #3 vein from the Cobalt Contact Mine Property located to the north on claim T43819, and the North-West Zone, located in the northwest corner of the Property, had a north-south strike (Bresee, 1982).

Significant results of the diamond drilling program are provided in Table 3. The author was not able to verify the historical assays as there were no assay certificates provided in the historical report completed by Teledyne Canada Ltd.

Figure 3 displays the historical drill hole locations and traces projected to surface. Note that collar locations were derived from a historical report completed by Teledyne Canada Ltd. During the site visits completed in the summer months of 2017, no casings were located. Drill logs indicate that the casings were left in the hole. The coordinates of the drill holes were calculated by using the position of patented mining claim 585 as shown by the MNDM. During the Phase 1 diamond drilling program completed by LiCo, the author was able to locate and survey several historical casings, along with a survey pin (Iron Bar) in the northwest corner of the Property. It is the author's opinion that several of the historical casings had been removed sometime after the completion of Teledyne's diamond drilling program.

Based on the surface drill program completed by Teledyne, historical reserves of 60,000 tons in the geologically inferred category, and 15,000 tons in the probable category, at an average grade of 0.45% Co, 3.0 oz/t Ag was estimated (Linn, 1983). The historical reserve contains categories that are not consistent with current CIM definitions. A qualified person has not done

sufficient work to classify the historical estimate as current mineral resources or mineral reserves. No attempt was made to reconcile the historical reserve calculations as reported by Teledyne Tungsten. Surge is not treating the historical reserve estimate as a current mineral resource or mineral reserve.

DDH	Sample Width (ft)	Sample Width (m)	Co (%)	Ag (oz/ton)	Other Assay	
T-7	2.0	0.61	0.032	0.90	0.98% Pb	
T-9	13	3.96	0.13	-	-	
	5.5	1.68	0.51	-	-	
	or 13.0	3.96	0.32	-	-	
	0.5	0.15	0.5	-	-	
T-10	0.8	0.24	0.29	0.36	-	
T-11	1.5	0.46	0.096	54.47	-	
	or 4.5	1.37	-	26.70	-	
T-12	0.3	0.09	0.022	2.03	-	
	or 5.0	1.52	-	0.56	-	
	1	0.30	0.18	1.60	0.60% Cu	
T-13	0.5	0.15	10.8	0.73	-	
	or 5.0	1.52	2.275	0.25	-	
T-14	0.6	0.18	0.67	0.07	-	
	0.6	0.18	0.58	2.50	1.20% Pb	
	1	0.30	1.58	25.56	0.30% Bi	
	or 3.2	0.98	0.63	7.60	-	
T-15	0.3	0.09	0.195	3.16	-	
	0.3	0.09	0.295	5.38	0.24% Cu	
T-16	3.0	0.91	0.32	-	-	
T-17	0.4	0.12	0.85	0.04	-	
	or 5.0	1.52	0.12	-	-	
T-18	2.0	0.61	0.16	2.20	-	
	0.8	0.24	1.01	11.27	4.12% Bi	
	3.3	1.00	2.12	1.87	-	
	4.0	1.22	0.115	1.35	2.10% Cu	
T-19	0.4	0.12	0.88	0.33	-	

	Sample Sample					
DDH	Width	Width	Co (%)	Ag (oz/ton)	Other Assay	
	(ft)	(m)		(02/ (01))	noody	
T-20	1.2	0.37	2.10	1.92	0.94% Cu	
	or 4.0	1.22	0.85	0.75	-	
T-21	0.3	0.09	1.16	0.02	-	
	1.4	0.43	0.41	-	-	
T-22	4.0	1.22	0.85	-	-	
	0.3	0.09	3.75	0.33	-	
	or 2.7	0.82	0.66	-	-	
	or 5.3	1.62	0.38	-	-	
	0.8	0.24	2.04	0.87		
T-23	4.5	1.37	0.23	-	-	
	0.8	0.24	2.76	0.08	-	
	or 9.0	2.74	0.62	-	-	
	0.6	0.18	0.90	7.09	-	
	10.5	3.20	-	-	1.17% Zn	
T-24	1	0.30	0.64	0.09	-	
	0.3	0.09	1.70	0.46	-	
	or 1.3	0.40	0.48	-	-	
T-25	0.3	0.09	2.10	0.20	-	
	or 1.3	0.40	0.69	-	-	
T-26	0.4	0.12	0.44	0.27	-	
T-27	0.4	0.12	0.05	0.49	1.52% Cu	
T-28	4.5	1.37	-	1.82	2.80% Cu	
	or 15.5	4.72	-	0.81	1.43% Cu	
	0.5	0.15	0.18	0.53	1.70% Cu	
T-29	6.2	1.89	-	0.65	0.42% Cu	
	0.5	0.15	0.019	0.93	1.35% Cu	
T-30	0.7	0.21	1.5	0.19	-	
	or 2.4	0.73	0.66	-	-	
	1.5	0.46	1.68	0.08	-	
T-31	0.5	0.15	0.19	-	-	
T-32	0.7	0.21	0.165	0.36	-	
T-33	1.6	0.49	0.48	-	-	
T-34	2	0.61	0.3	-	-	

DDH	Sample Width (ft)	Sample Width (m)	Co (%)	Ag (oz/ton)	Other Assay
T-36	0.5	0.15	0.39	-	-
	0.4	0.12	1.68	0.10	-
	or 1.7	0.52	0.4	-	-
T-37	1.3	0.40	0.62	1.28	-
	0.4	0.12	1.64	190.30	-
	or 1.9	0.58	0.36	41.00	-
	0.6	0.18	-	0.53	-
T-39	0.4	0.12	0.27	2.60	3.10% Cu
	0.6	0.18	7.00	32.69	-
	or 5.0	1.52	1.04	4.61	-
T-40	0.3	0.09	0.98	0.09	-
	or 2.3	0.70	0.22	-	-
	2.5	0.76	0.47	5.18	-
	or 4.5	1.37	-	3.43	-
T-41	0.2	0.06	0.32	2.11	6.15% Cu
	0.4	0.12	0.215	1.87	-
	0.4	0.12	-	1.19	-

 0.4
 0.12
 1.19

 \* Note: Intervals reported in Table 3 represent core lengths and not true widths.

\*\* table after Bresee (1982).



Figure 3: Teledyne Canada Ltd. diamond drill holes projected to surface.

In the fall of 2017, LiCo completed 21 diamond drill holes totalling 1,913.5 m of NQ core on the Glencore Bucke Property. Project Management for the program was provided by the author, and Project Supervision was provided by Dwayne Melrose, at the time a Director and Technical Advisory Chair for LiCo.

LiCo's Phase 1 diamond drill program was designed to confirm and extend the existing known mineralized zones on the Property. The program tested the Main Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 45 m. Due to the nature of the mineralization, drill holes were closely spaced apart, generally at 10 m along sections, and 12.5 m between sections on average (Figure 4, 5).

Significant results from the Phase 1 diamond drilling program completed by LiCo include drill hole GB17-07 that intersected 7.64% Co over 0.26 m from 99.79 to 100.05 m, drill hole GB17-

10 that intersected 0.55% Co over 5.00 m from 28.00 to 33.00 m, and drill hole GB17-15 that intersected 8.42% Co over 0.30 m from 62.40 to 62.70 m. Significant copper mineralization was also intersected, such as 0.90% Cu over 20.20 m from 42.50 to 62.70 m in diamond drill hole GB17-15, and 1.25% Cu over 6.10 m from 67.50 to 73.60 m in diamond drill hole GB17-21. The aforementioned intervals represent core lengths, and not true widths. Diamond drill hole information is provided in Table 4, and significant results are provided in Table 5.

DDH	Easting	Northing	Elev (m)	Azm	Dip	Length (m)
GB17-01	604453.60	5252143.52	244.87	270	-45	60
GB17-02	604463.62	5252143.90	244.9	270	-45	65
GB17-03	604473.53	5252144.57	244.9	270	-45	78
GB17-04	604454.16	5252130.92	245.2	270	-45	50
GB17-05	604463.89	5252131.35	244.94	270	-45	65
GB17-06	604474.06	5252132.11	245.1	270	-45	75
GB17-07	604525.62	5252134.41	244.77	270	-45	117
GB17-08	604464.61	5252118.74	245.29	270	-45	65
GB17-09	604474.49	5252119.50	245.13	270	-45	75
GB17-10	604526.51	5252121.96	244.79	270	-45	125
GB17-11	604505.94	5252133.41	244.48	270	-45	100
GB17-12	604536.86	5252121.96	244.9	270	-45	135
GB17-13	604526.65	5252109.57	244.94	270	-45	105
GB17-14	604526.99	5252109.61	245.09	270	-60	87
GB17-15	604516.79	5252109.54	245.22	270	-45	87
GB17-16	604527.96	5252097.22	245.57	270	-45	105
GB17-17	604528.08	5252097.18	245.3	270	-60	75
GB17-18	604517.65	5252096.68	245.45	270	-45	105
GB17-19	604532.36	5252085.17	246.36	270	-45	106.5
GB17-20	604550.41	5252083.31	247.81	270	-45	130
GB17-21	604550.49	5252083.31	247.74	270	-52	103

Table 4: Phase 1 Diamond Drill Hole Details, Glencore Bucke Property

DDH	From (m)	To (m)	Core length (m)	Co (%)	Ag (ppm)	Cu (ppm)	Zn (ppm)	Pb (ppm)
GB17-01	18.00	21.00	3.00	0.31	1.5	41	27	4
GB17-02	39.37	39.67	0.30	0.42	707	2100	136	21900
GB17-03	27.15	28.90	1.75	0.27	0.6	4	27	2
GB17-03	31.25	31.5	0.25	0.39	6.3	619	33	27
GB17-03	38.50	41.00	2.50	0.03	12.2	10251	204	689
GB17-04	16.25	16.75	0.50	1.62	7	994	3493	28
GB17-06	22.50	24.25	1.75	0.25	12	288	132	6
incl.	23.25	23.75	0.50	0.58	28.9	714	39	6
GB17-06	44.40	44.70	0.30	4.45	34.2	460	2600	159
GB17-07	99.79	100.05	0.26	7.64	9.1	441	44	16
GB17-10	28.00	33.00	5.00	0.55	0.8	7	32	2
GB17-10	81.00	83.30	2.30	0.11	17.6	5334	696	208
GB17-13	77.60	78.50	0.90	0.46	132.5	14614	1759	2059
incl.	77.60	78.00	0.40	0.79	221	24000	3670	3840
GB17-13	100.50	102.00	1.50	0.32	98.8	8124	417	6588
incl.	100.80	101.40	0.60	0.55	16.9	4970	376	6110
GB17-15	27.50	28.40	0.90	0.55	2.1	29	126	18
incl.	27.80	28.10	0.30	0.92	2.9	40	208	29
GB17-15	42.50	62.70	20.20	0.17	19.9	8983	2638	4747
incl.	62.40	62.70	0.30	8.42	136	1280	884	447
GB17-18	80.10	81.00	0.90	0.43	86.8	5177	133	662
GB17-19	46.00	46.60	0.60	0.75	111.1	689	44	6745
incl.	46.00	46.30	0.30	1.33	208	1210	59	12400
GB17-20	60.25	64.30	4.05	0.44	19.4	9863	116	30
incl.	62.80	64.00	1.20	1.42	48.8	19362	127	60
GB17-21	67.50	73.60	6.10	0.08	18.1	12545	378	463
incl.	69.70	70.30	0.60	0.73	50	13070	312	378

Table 5: Diamond Drilling Highlights, LiCo Energy Metals Inc.

Note: Intervals reported in Table 5 represent core lengths and not true widths.

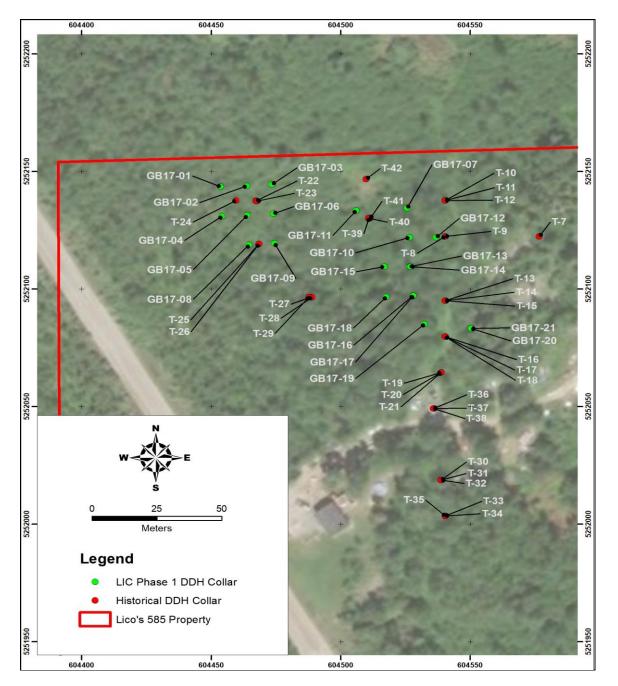


Figure 4: Location of historical diamond drill holes

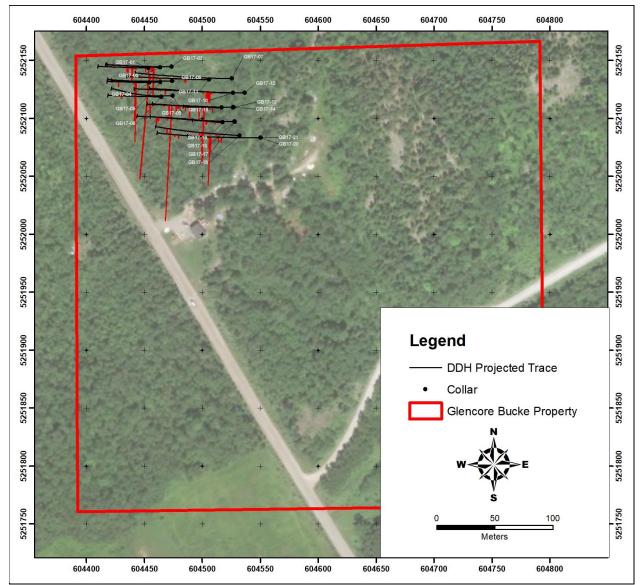


Figure 5: Projections of LiCo's Phase 1 Diamond Drill Holes to Surface with Co assays

# 7. GEOLOGICAL SETTING AND MINERALIZATION

#### 7.1 Regional Geology

The regional geology can be summarized as consisting of Archean metavolcanics and metasediments that can be summarized as a steeply dipping sequence of mafic to felsic volcanics, intercalated with cherty and sulphidic interflow sediments, along with intrusions of mafic to ultramafic dykes and sills (Figure 6). The Archean rocks have been unconformably overlain by Huronian sedimentary rocks of Proterozoic age that were deposited between 2,220

and 2,500 Ma. The Huronian sedimentary rocks are commonly found filling paleo-valleys or troughs in the Archean basement. Nipissing Diabase dykes and sills, dated at 2,219 Ma, intrude the Huronian and older rocks (Bennett, Dressler, & Robertson, 1991). The youngest rocks in the area are late Precambrian diabase and later olivine diabase dykes, dated at 2,454 Ma and 1,238 Ma respectively (Osmani, 1991). The Middle and Late Precambrian rocks have been faulted and locally folded adjacent to the faults.

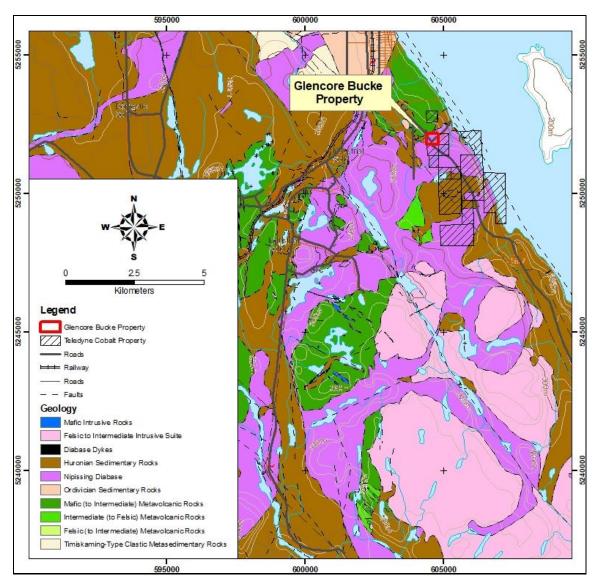


Figure 6: Regional Geology of the Cobalt Area, Ontario (after OGS MRD 282).

# 7.2 Property Geology

The Property is underlain by an undulating gabbroic intrusive sill (Nipissing Diabase), which in turn is underlain by Huronian Supergroup sedimentary rocks that include Gowganda Formation feldspathic quartzites, siltstones, and conglomerates. The Proterozoic-aged sediments in turn, unconformably overlie Archean metavolcanics and metasediments (Figure 7).

The Nipissing Diabase is a generally homogeneous unit, typically medium grained and massive, becoming finer grained near the lower contact. The Nipissing Diabase dips to the south, exposing the lowermost rocks of its stratigraphy at the northern extent of the Property, and going southward rocks of higher stratigraphy are exposed at surface due to current level of erosion.

Fine grained massive to bedded quartzites and siltstones, along with pebble to boulder conglomerates of the Gowganda Formation comprise the Huronian Supergroup sediments. Occasionally the quartzites and siltstones contain isolated pebbles, usually comprised of granite, quartz, metasediments, or metavolcanics. The conglomerates can be either matrix or clast supported, with clasts ranging from granite, quartz, metasediments, and metavolcanics.

Archean metavolcanics are described as green, fine to medium grained massive mafic volcanics with lesser amounts of intercalated metasediments.

# 7.3 Mineralization

Silver and cobalt mineralization on the Property is hosted within steeply dipping quartz and calcite veins, and as disseminations adjacent to the veins within the Huronian sedimentary rocks, and also within the Archean metavolcanics and interflow metasediments. Cobalt and silver mineralization also occurs as massive veinlets ranging from less than 1 mm to approximately 10 to 15 cm in core length.

Significant base metal mineralization is also present consisting of sphalerite, galena, and chalcopyrite associated with sulphide zones within the Archean metavolcanics and interflow metasediments, but also within quartz and calcite veins in the Archean metavolcanics and Huronian sedimentary rocks.

### 8. DEPOSIT TYPES

The Proterozoic-aged veins hosting the mineralization in the Cobalt Camp are referred to as five-element veins, containing Ni, Co, As, Ag, and Bi. Most of the silver deposits in the Cobalt Camp are located proximal to the Huronian-Archean unconformity and are spatially associated with the Nipissing diabase sills. The majority of the historical silver production from the Cobalt Camp has been within 200 m of the contacts of the diabase, and due to this association, it is postulated that the emplacement of the diabase provided favourable sites of structural permeability for vein formation, and served as a heat source for the hydrothermal fluids to remobilize the Ni, Co, As, Ag, and Bi directly from the underlying Archean metavolcanics and metasedimentary rocks into structures that either predated, or accompanied vein development (Smyk & Watkinson, 1990).

Mineralization in the Cobalt Camp is typically discontinuous along the structure with high-grade "ore pockets" commonly occurring near vein intersections, or at the intersections of veins with late, shallow-dipping shear zones, and at lithological contacts.

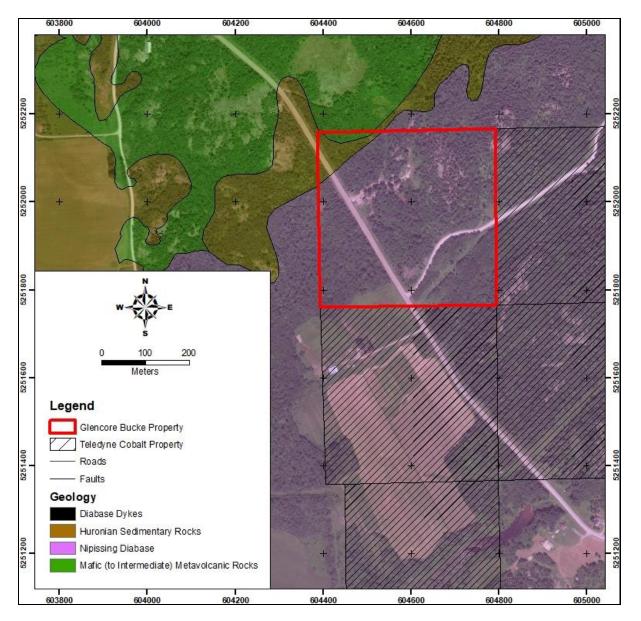


Figure 7: Property Geology (after OGS MRD 282).

#### 9. EXPLORATION

Surge has not completed any exploration activities on the Property.

#### **10. DRILLING**

Surge has not completed any drilling on the Property.

#### 11. SAMPLE PREPARATION, ANALYSES, AND SECURITY

Not applicable.

#### **12. DATA VERIFICATION**

#### **12.1 Historical Data Verification**

Historical data verification included site visits completed on June 27<sup>th</sup> and again on August 18<sup>th</sup>, 2017, a requirement for the completion of LiCo's 43-101 Technical Report on the Glencore Bucke Property dated September 7<sup>th</sup>, 2017. The author reviewed assessment files made available through MNDM's Assessment File Research Imaging (AFRI) database. It is recommended that the Kirkland Lake Resident Geologist's office be visited to locate additional historical reports that pertain to the Property.

The author has relied upon the historical information that has been reviewed and described in previous sections within this report. The author is of the opinion that the available historical information is of sufficient accuracy for the purposes of this report.

#### **12.2 Recent Data Verification**

LiCo has recently completed a Phase 1 diamond drilling program on the Glencore Bucke Property. This work program, described in Section 6 of this report, was supervised by the author. The author reviewed the assay data and monitored the QA/QC results for consistency. The author followed industry standards and protocols and is of the opinion that the data is adequately verified for the purpose of this report.

Diamond drill core was logged, then sawed in half, with one half placed in a labelled bag, and the remaining half placed back into the core box and stored. Either a standard or a blank was inserted every 20th sample. Standard material was sourced from Ore Research and Exploration Pty Ltd. The standards used were Oreas 75b, 76b and 166. Blank material was sourced from Analytical Solutions Ltd. and consisted of coarse silica >1/4" in size.

Diamond drill core, pulps, and rejects are securely stored at 134 Imperial Rd, North Bay, Ontario.

All samples were shipped to Activation Laboratories in Ancaster, Ontario, a full analytical laboratory that is ISO 17025 accredited and/or certified to 9001. Activation Laboratories is independent of the issuer.

For samples from drill holes GB17-01 through to GB17-05, the sample is coarsely crushed and a 250 g aliquot is pulverized for analysis. From here, 0.5 g of the sample was digested with aqua regia for two hours at 95° C. The sample is then cooled and then diluted with deionized water. The sample is then analyzed using an Agilent 700 series ICP for the 38 element suite. Lab QC for the digestion is 15% for each batch, 2 method reagent blanks, 6 in-house controls, 8 sample duplicates, and 5 certified reference materials. An additional 20% QC is performed at part of the instrumental analysis to ensure quality in the areas of instrument drift. If over limits for Cu, Pb, Zn, and Co are encountered, a sodium peroxide fusion, acid dissolution followed by ICP-OES is completed. For Ag over limits, a four acid digestion is completed, followed by ICP-OES. For samples from drill holes GB17-06 to GB17-21, each sample was coarsely crushed and a 250 g aliquot was then pulverized. A 0.25 g sample is digested with a near total digestion (4 acids) and then analyzed using an ICP. QC for the digestion is 14% for each batch, 5 method reagent blanks, 10 in-house controls, 10 samples duplicates, and 8 certified reference materials. An additional 13% QC is performed as part of the instrumental analysis to ensure quality in the areas of instrumental drift. If over limits for Cu, Pb, Zn, and Co are encountered, a sodium peroxide fusion, acid dissolution followed by ICP-OES is completed. For Ag over limits, a four-acid digestion is completed followed by ICP-OES.

It is the author's opinion that sufficient care was applied to ensure the integrity of the samples during collection and processing, and that the chain of custody is appropriate for the level of exploration on the project. The sample preparation and analytical methods are appropriate for the mineralization, and that the analytical data generated by Activation Laboratories can be considered reliable for the purpose of this Technical Report.

# 13. MINERAL PROCESSING AND METALLURGICAL TESTING

There has been no mineral processing or metallurgical testing completed on the Property.

#### **14. MINERAL RESOURCE ESTIMATES**

There are no mineral resources yet defined on the Property.

#### **15. MINERAL RESERVE ESTIMATES**

There are no mineral reserves yet defined on the Property.

#### **16. MINING METHODS**

Not applicable.

# **17. RECOVERY METHODS**

Not applicable.

#### **18. PROJECT INFRASTRUCTURE**

Not applicable.

# **19. MARKET STUDIES AND CONTRACTS**

Not applicable.

#### 20. ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Not applicable.

# 21. CAPITAL AND OPERATING COSTS

Not applicable.

#### 22. ECONOMIC ANALYSIS

Not applicable.

#### 23. ADJACENT PROPERTES

The Cobalt mining camp has seen considerable exploration and development since the discovery of silver in 1903 and thus there are numerous adjacent Properties. To describe each Property would be very time consuming. For the purpose of this report, the author feels that the five most relevant properties that should be summarized in this technical report are the nearby Telydyne Cobalt, Agaunico Mine Property, Cobalt Contact Property, Green Meehan, and Red Rock, and Hellens-Eplett Properties. The location of these properties are displayed in Figure 8.

#### Teledyne Cobalt Property

The Teledyne Cobalt Property is located to the south and east of the Glencore Bucke Property.

In 1953, Big Agaunico Mines Ltd. carried out a drilling program on a portion of LiCo's Teledyne Cobalt Property to locate the extension of the south-striking Agaunico cobalt-rich Vein 15. Drill holes No. 8 and No. 12 intersected 0.58% Co over 5 ft (1.5 m), and 0.46% Co over 3 ft (0.9 m) respectively. These intersections, located 350 ft (106.7 m) and 600 ft (182.9 m) south of the northern claim boundary of claim 372, confirmed the likely extension of the Agaunico cobalt zone (Vein #15) onto the Property (Cunningham-Dunlop, 1979).

In 1979, Teledyne Canada Ltd. ("Teledyne") completed six surface diamond drill holes and encountered a zone of Co mineralization that extended 640 ft (195 m) south from the claim boundary. In 1980, Teledyne completed a 10 ft (3.0 m) by 13 ft (4.0 m) access decline at a decline of -15 % for length of approximately 2,300 ft (701.0 m) to reach the mineralization encountered in their recently completed surface diamond drilling program. A total of 6,167 ft (1,879.7 m) of underground diamond drilling was completed in 22 drill holes (Bresee, 1981). The drill program confirmed the extension of the Agaunico cobalt zone onto claim 372 for a strike length of 500 ft (152.4 m). The drill program also encountered a second zone with a strike length of 450 ft (137.2 m). The most significant results included 0.644% Co over 16.9 m in diamond drill hole UT-2, 0.74% Co over 8.7 m in diamond drill hole UT-3, and 2.59% Co over 2.4 m in diamond drill hole UT-18 (Bresee, 1981). The historical reported intersections represent drill intersected widths, and not true widths. Based on the surface and underground diamond drill programs, historical reserves of 60,000 tons in the geologically inferred category, and 40,000 tons in the probable category, at an average grade of 0.45% Co, 0.6 oz/t Ag was estimated (Linn, 1983). The historical reserve estimate contains categories that are not consistent with current CIM definitions. A qualified person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves. No attempt was made to reconcile the historical reserve calculations as reported by Teledyne Tungsten. Surge is not treating the historical reserve estimate as a current mineral resource or mineral reserve.

During the fall of 2017, LiCo completed a Phase 1 diamond drilling program on the Teledyne Cobalt Property that consisted of 11 drill holes totaling 2,200 m. Results from this program are discussed in a separate technical report completed for LiCo.

#### Agaunico Property

The Glencore Bucke Property adjoins the Agaunico Property on the northeast corner.

From 1905 through to 1961, the Agaunico Mine produced a total of 4,350,000 lbs. of cobalt ("Co"), and 980,000 oz of silver ("Ag") (Cunningham-Dunlop, 1979). The amount of cobalt produced from the Agaunico Mine is greater than that of any other mine in the Cobalt Mining Camp. Production ceased in 1961 due to depressed Co prices and over-supply (Thomson, 1964).

Cobalt mineralization consisted of cobaltite and smaltite hosted within steeply dipping veins and extensive disseminations within Huronian sedimentary rocks. From 1951 through to 1957, the average Co content of the ores mined at the Agaunico Mine was approximately 0.5%. In 1955, 526,000 lbs. of Co, 146,000 oz of Ag, 117,000 lbs. of nickel ("Ni"), and 81,000 lbs. of copper ("Cu") were extracted from 62,000 tons of ore (Cunningham-Dunlop, 1979).

A significant portion of the cobalt that was produced at the Agaunico Mine was located along structures (Vein #15) that extended southward towards the northern boundary of claim 372, currently under option to LiCo. Mineralization was generally located within 125 ft (38.1 m) above the Huronian/Archean unconformity. Stoping widths of up to 50 ft (15.2 m) were not unusual at the Agaunico Mine (Cunningham-Dunlop, 1979).

# Cobalt Contact

Claim T43819, which adjoins the north boundary of the Glencore Bucke Property, and hosts the past producing Cobalt Contact Mine.

Surface mineralization was first discovered on claim T43819 in 1905. Cobalt Contact Mining Company acquired the ground, sunk a shaft to a depth of 130 ft (39.6 m), and completed a considerable amount of lateral development. Cobalt Contact Mines Ltd. optioned the claims from 1924 through to 1926, deepened the shaft to 230 ft (70.1 m) and continued exploring three known veins. From 1925 through to 1928, a total of 46,689 lbs. of Co, 310,395 oz of Ag, and 9,086 lbs. of Cu was reported milled at the nearby Green-Meehan Property. From 1930 through to 1945, intermittent underground work was carried out by three separate mining companies (Thomson, 1964). The author was not able to verify total historical production figures from the Property.

# Green-Meehan

The Green-Meehan Property is located on patented claim T34622 located to the northwest of the Glencore Bucke Property.

Mineralization on the Property was discovered in 1905 which led to the sinking of the Main Shaft to a depth of 200 feet. The shaft was further deepened in 1917 to 300 ft. From 1925 through to 1928, Cobalt Contact carried out underground mining, and installed a mill. A second shaft, located 200 ft (61.0 m) northwest of the main shaft, is reported to have been sunk to a depth 85 ft (25.9 m) with no lateral development (Thomson, 1964). From 1905 through to 1939, a total of

886 lbs. of Co, 276,111 oz of Ag, and 368 lbs. of Ni was produced from the Property. Nearly all of the production was from where mineralized veins traversed Archean metavolcanics.

#### Red Rock

The Red Rock Property is located west of the Glencore Bucke Property. Three shafts are located on the claim. The No. 1 shaft is located in the northwestern part of the claim, and was sunk to depth of 110 ft (33.5 m) with over 500 ft (152.4 m) of lateral work (Thomson, 1964). The author was not able to verify historical production figures from the Property.

#### Hellens-Eplett

The Hellens-Eplett Property (also known as the Gaffney Claim) is located southwest of the Glencore Bucke Property. The earliest known work was completed by Frederick Yellowknife Mines Ltd. that completed several pits, drill holes, and a shaft to a depth 60 ft. The work targeted a calcite vein. During the 1980's, several surface diamond drilling programs were completed which led to the construction of a 10 ft (3.0 m) by 13 ft (4.0 m) access decline at a decline of -15 % for length of approximately 2,600 ft (792.5 m). Several underground diamond drilling programs were completed that intersected numerous silver veins. In 1986, Silverside Resources Inc. the owner of the Property, processed of 600 tons of silver mineralization at the Temiskaming Testing Laboratory and at Lakefield Research.

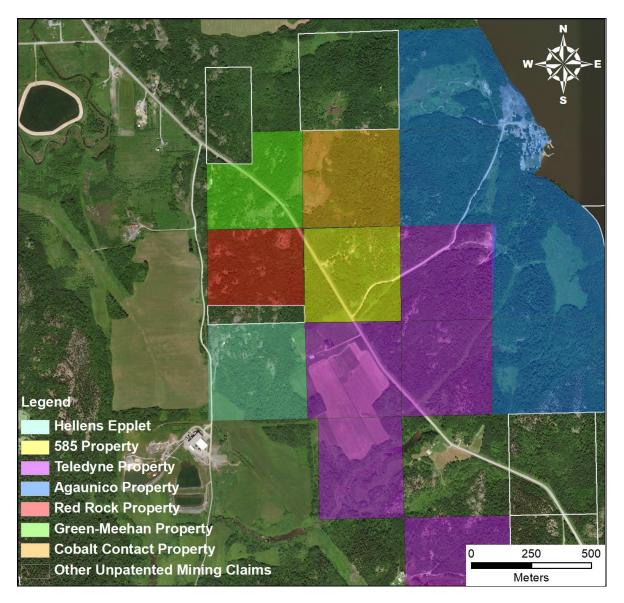


Figure 8: Adjacent Properties to the Glencore Bucke Property

# 24. OTHER RELEVANT DATA AND INFORMATION

The author is unaware of any further data or relevant information that could be considered of any practical use in this report.

## 25. INTERPRETATION AND CONCLUSIONS

The author was engaged by Surge to prepare an independent review of the geological potential of the Property and to prepare a NI 43-101 Technical Report.

The author concludes that the Property is situated over geology that is favourable for hosting Co and Ag mineralization. Teledyne's diamond drilling program conducted in 1981 on the Property discovered two separate vein systems containing significant cobalt and silver values. The two zones are known as the Main Zone, which measured 500 ft (152.4 m) in length, and the Northwest Zone, which measured 200 ft (70.0 m) in length (Bresee, 1982). The Main Zone had a north-south strike, which Teledyne hypothesized was the southern extension of the #3 vein from the Cobalt Contact Mine Property located to the north on claim T43819, and the North-West Zone, located in the northwest corner of the Property, had a north-west strike (Bresee, 1982). The two zones are separated by a distance of approximately 130 ft (39.6 m). The most southern diamond drill holes, T-33, and T-34, intersected significant cobalt mineralization, suggesting that the zone extends further southward.

The Phase 1 diamond drill program completed by LiCo in the fall of 2017 was designed to confirm and extend the existing known mineralization. The drill program was successful in confirming and extending the cobalt mineralization on the Property. The program tested the Main Zone for a strike length of approximately 55 m and the Northwest Zone for a strike length of approximately 45 m.

Significant cobalt intersections from the Phase 1 diamond drilling program include:

- GB17-04 that intersected 1.62% Co, 7 ppm Ag over 0.50 m from 16.25 to 16.75 m.
- GB17-06 that intersected 0.25% Co, 12 ppm Ag over 1.75 m from 22.50 to 24.25 m.
- GB17-06 that intersected 4.45% Co, 34.2 ppm Ag over 0.30 m from 44.40 to 44.70 m.
- GB17-07 that intersected 1.11% Co, 17.6 ppm Ag over 2.00 m from 98.5 to 100.50 m.
- GB17-10 that intersected 0.55% Co, 0.8 ppm Ag over 5.00 m from 28.00 to 33.00 m.
- GB17-13 that intersected 0.46% Co, 132.5 ppm Ag over 0.90 m from 77.60 to 78.00 m.
- GB17-13 that intersected 0.55% Co, 16.9 ppm Ag over 0.60 m from 100.80 to 101.40 m.
- GB17-15 that intersected 0.55% Co, 2.1 ppm Ag over 0.90 m from 27.50 to 28.40 m.
- GB17-15 that intersected 8.42% Co, 136 ppm Ag over 0.30 m from 62.40 to 62.70 m.
- GB17-18 that intersected 0.43% Co, 86.8 ppm Ag over 0.90 m from 80.10 to 81.00 m.

- GB17-19 that intersected 0.75% Co, 111.1 ppm Ag over 0.60 m from 46.00 to 46.60 m.
- GB17-20 that intersected 0.44% Co, 19.4 ppm Ag over 4.05 m from 60.25 to 64.30 m.
- GB17-21 that intersected 0.73% Co, 50.0 ppm Ag over 0.60 m from 69.70 to 70.30 m.

Significant copper-lead-zinc mineralization was also intersected. The mineralization is associated within or adjacent to the cobalt-silver bearing veins, and as separate zones within the metavolcanics and metasediments. These zones deserve some further investigation as to their possible economic potential. Significant copper-lead-zinc intersections include:

- GB17-03 that intersected 1.03% Cu, 0.02% Zn, 0.069% Pb over 2.50 m from 38.50 to 41.00 m.
- GB17-15 that intersected 0.90% Cu, 0.26% Zn, 0.47% Pb over 20.20 m from 42.50 to 62.70 m.
- GB17-21 that intersected 1.25% Cu, 0.04% Zn, 0.05% Pb over 6.10 m from 67.50 to 73.60 m.

The aforementioned intervals represent core lengths, and not true widths.

Significant risks and uncertainties that may exist is that further exploration along the projected extension of the mineralization intersected to date may not be successful in intersecting additional mineralization, and thus further diamond drilling is recommended to be separated into two phases of exploration with Phase 2 being contingent upon positive results from Phase 1.

#### 26. RECOMMENDATIONS

Subsequent to the research conducted for this Technical Report, and taking into consideration information provided by LiCo and Surge, the author recommends a two-phase exploration program:

#### Phase 1:

- Several old pits and trenches were noted by the author to the east of the current drill program completed by LiCo. These should be located, sampled, and mapped in detail. The author believes that potential remains on the Property for the discovery of parallel mineralized zones to that of the Northwest and Main zones.
- 2) A 4,000 m diamond drilling program is recommended to be completed on the Property. The program should be designed to continue to test the mineralization along strike of the Northwest and Main zones along strike to the south, as well as testing any other targets that may be generated from the surface mapping and prospecting program.

#### Phase 2:

3) Contingent upon positive results in Phase 1, a 6,000 m diamond drilling program is recommended to be completed on the Property. The program should be designed to continue to test the mineralization along strike of the Northwest and Main zones along strike to the south, along with completing infill drilling with the intent of completing a 43-101 compliant resource estimate upon its completion.

Tables 6 and 7 summarize the budget and recommendations for a Phase 1 and Phase 2 exploration programs for the Glencore Bucke Property.

# Table 6: Phase 1 Exploration Budget

Personnel costs (Geological Mapping/Prospecting)	Unit	Unit cost	Sub-Total
Project Geologist/Project Manager	5 days	\$700/day	\$3,500
Other costs	Unit	Unit cost	Sub-Total
Supplies	1	\$250	\$250
Assays	50	\$40/Sample	\$2,000
Truck Rental & Fuel	5	\$160/day	\$800
Report Writing	Unit	Unit cost	Sub-Total
Report – Geological Mapping/Prospecting	3 days	\$700/day	\$2,100
Personnel costs (diamond drilling)	Unit	Unit cost	Sub-Total
Project Manager	60 days	\$700/day	\$42,000
Geologist	60 days	\$600/day	\$36,000
Technician	60 days	\$325/day	\$19,500
Fixed contract costs	Unit	Unit cost	Sub-Total
Diamond Drilling (all inclusive)	4,000 m	\$90/m	\$360,000
Other costs	Unit	Unit cost	Sub-Total
Supplies	1	\$5,0000	\$5,000

Supplies	1	\$5,0000	\$5,000
Core shack Rental	3 months	\$800/mth	\$2,400
Diamond Saw Rental	3 months	\$600/mth	\$1,800
Assays	2,500	\$40/Sample	\$100,000
Truck Rental & Fuel	3 months	\$3,600	\$10,800
Report Writing	Unit	Unit cost	Sub-Total
Report – Diamond Drilling	10 days	\$700/day	\$7,000

 Sub-Total:
 \$593,150

 Contingency (10%):
 \$59,315

 Total:
 \$652,465

# Table 7: Phase 2 Exploration Budget

Personnel costs (diamond drilling)	Unit	Unit cost	Sub-Total
Project Manager	90 days	\$700/day	\$63,000
Geologist	90 days	\$600/day	\$54,000
Technician	90 days	\$325/day	\$29,250
Fixed contract costs	Unit	Unit cost	Sub-Total
Diamond Drilling (all inclusive)	6,000 m	\$90/m	\$540,000
Other costs	Unit	Unit cost	Sub-Total
Supplies	1	\$5,000	\$5,000
Core shack Rental	3 months	\$800/mth	\$2,400
Diamond Saw Rental	3 months	\$600/mth	\$1,800
Assays	4,000	\$40/Sample	\$160,000
Truck Rental & Fuel	3 months	\$3,600	\$10,800
Report Writing	Unit	Unit cost	Sub-Total
Report – Diamond Drilling	10 days	\$700/day	\$7,000
Report - Resource Estimate	ea	\$60,000	\$60,000

Sub-Total: \$933,250 Contingency (10%): \$93,325 Total: \$1,026,575

# 27. DATE AND SIGNATURE PAGE

This report titled "NI 43-101 Technical Report on the Glencore Bucke Property, Larder Lake Mining Division, Northeastern Ontario" for Surge Exploration Inc. dated May 8<sup>th</sup>, 2018, was prepared and signed by the following author:

Signed by:

Joerg M. Kleinboeck, P.Geo.

#### 28. REFERENCES

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Thomson, R. 1964. Preliminary report on Bucke Twp., District of Timiskaming. Description of Mining Properties.

### **CERTIFICATE OF AUTHOR**

I, Joerg M. Kleinboeck, do hereby certify that:

1. I am a consulting geologist with an office at 147 Lakeside Dr., North Bay, Ontario.

2. I graduated with the degree of Bachelor of Science (Geology) from Laurentian University, Sudbury, Ontario, in 2000. I have been a consulting geologist since 2000.

3. "Technical Report" refers to the report titled "NI 43-101 Technical Report on the Glencore Bucke Property, Larder Lake Mining Division, Northeastern Ontario.", and dated effective May 8<sup>th</sup>, 2018.

4. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (#1411).

5. I have worked as a geologist for over 18 years since my graduation from Laurentian University. I have worked within the provinces of Ontario and Quebec, within the United States of America (Utah, New Mexico), and in South America (Peru). I have been actively involved in exploration for Archean VMS and gold deposits, Ag-Co-carbonate vein deposits, Cu-Ni-PGE deposits, diamonds, kyanite deposits, and sediment-hosted Cu-Co deposits.

6. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements as a Qualified Person for the purposes of NI 43-101.

7. I am responsible for all sections of the Technical Report titled "NI 43-101 Technical Report on the Glencore Bucke Property, Larder Lake Mining Division, Northeastern Ontario", dated May 8<sup>th</sup>, 2018, and prepared for Surge Exploration Inc.

8. I am independent of LiCo Energy Metals Inc. and Surge Exploration Inc. other than providing geological consulting services.

9. I have had no prior involvement with the mineral property that forms the subject of this Technical Report besides providing geological consulting services to Lico Energy Metals Inc. I am also independent of the Property and the adjacent properties listed in Section 23.

10. I have read NI-43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that Instrument and Form.

11. As of the date of this certificate, and to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

12. I initially visited the Glencore Bucke Property on June 27<sup>th</sup>, 2017 for a period of 1 hour, and again on August 18<sup>th</sup>, 2017 for a period of 2 hours. I was also present on the Property throughout the Phase 1 diamond drilling program completed by LiCo Energy Metals Inc. in the fall of 2017.

Dated this 8<sup>th</sup> Day of May, 2018

Joerg M. Kleinboeck, P.Geo.