# TECHNICAL REPORT ON THE LEMARCHANT PROPERTY, CENTRAL NEWFOUNDLAND, CANADA

Prepared For: Canterra Minerals Corporation Prepared By: David T.W. Evans, M.Sc., P.Geo. (Independent Qualified Person)

Report Date: September 7, 2023

# **Date and Signature Page**

This report, entitled *Technical Report Lemarchant Property, Central Newfoundland, Canada,* was prepared and signed by the author:

"Original signed and stamped by"

David T.W, Evans, M.Sc., P.Geo. Date Signed

September 7, 2023



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#### 1.0 SUMMARY

This Technical Report documents exploration work completed by Canterra Minerals Corporation ("Canterra") on its 100%-owned Lemarchant Property (the "Property") located in central Newfoundland, ("NL") Canada. This report is authored by Mr. David Evans, M.Sc., P.Geo., an independent Qualified Person as defined under NI 43-101. This report provides an update to the 2018 Technical Report prepared for NorZinc Ltd. ("NorZinc"); formerly Canadian Zinc Corporation ("Canadian Zinc"), entitled "NI 43-101 TECHNICAL REPORT AND UPDATED MINERAL RESOURCE ESTIMATE ON THE LEMARCHANT DEPOSIT SOUTH TALLY POND PROPERTY, CENTRAL NEWFOUNDLAND" (Cullen et al., 2018). It does not include an update or review of the Mineral Resources or metallurgical studies of the NorZinc report.

This report covers exploration work completed in 2022 by Canterra on its Lemarchant Property. The exploration target is volcanogenic massive sulphide ("VMS") mineralization. The Lemarchant Deposit is similar to other central Newfoundland VMS deposits including the nearby Duck Pond Deposits (mined from 2007-2015 by Teck Resources Limited "Teck") and the Buchans Deposits (mined from 1926 – 1984 by Asarco Incorporated "Asarco").

The Property is located 110km southwest of the town of Grand Falls-Windsor and 35km south of the community of Millertown. A series of gravel resource roads link the Property to Millertown. The Property consists of 35 claims in a single exploration licence (026920M) located southwest of the past-producing Duck Pond Mine. The Property is in part subject to underlying agreement to the property vendors. Under the agreement, there is a 2.0% Net Smelter Royalty ("NSR") payable to Sandstorm Gold Ltd.

The Millertown area has been explored intermittently since the early 1900's for precious metal-rich polymetallic volcanogenic massive sulphide (VMS) deposits. In the Project area most of the historic exploration work was completed by Noranda Inc. ("Noranda") and its various partners between 1973 and 1998. This work led to the discovery of the Duck Pond and Boundary VMS Deposits and numerous other VMS prospects through prospecting, geochemical and geophysical surveys including the Lemarchant, Rogerson Lake, Higher Levels, Spencers Pond and Beaver Lake prospects. Noranda completed a limited amount of drilling in each of these areas including 14 holes at Lemarchant.

Paragon acquired the project in 2006 and discovered the Lemarchant massive sulphide mineralization in 2007. Between 2007 and 2011, Paragon completed 60 diamond drill holes totalling 21,259 metres at the Lemarchant Deposit. An initial NI 43-101 Mineral Resource Estimate was completed by Paragon in 2012 (Fraser et. al., 2012) with the following results:

- Indicated Mineral Resource of 1.24 million tonnes grading 5.38% Zn, 0.58% Cu, 1.19% Pb, 1.01 g/t Au and 59.17 g/t Ag (15.40% ZnEQ) using a 7.5% Zn equivalent grade cut-off.
- Inferred Mineral Resource of 1.34 million tonnes grading 3.70% Zn, 0.41% Cu, 0.86% Pb, 1.00 g/t Au and 50.41 g/t Ag (11.97% ZnEQ) using a 7.5% Zn equivalent grade cut-off.

Canadian Zinc acquired Paragon in September 2012, and following a corporate re-organization on September 11, 2018, changed its name to NorZinc Ltd. NorZinc focused on further defining the Lemarchant Deposit and completed ground magnetic, EM geophysical, and an orientation gravity survey over the Lemarchant Deposit. NorZinc completed 28,674.7 metres of diamond drilling in 91 drill holes and eight drill hole extensions resulting in the discovery of the Northwest Zone, additional mineralization updip of the Main zone, and further definition of the Lemarchant Deposit.

NorZinc also completed additional metallurgical work on the Lemarchant Deposit. The testing was completed by Thibault & Associates Inc. of Fredericton, NB and included mineralogical and grindability studies, dense media separation (DMS) and flotation test work. Canterra has not verified the results of this work. Two metallurgical samples, one from the massive sulphide-barite zone and one from the footwall zone were utilized for the metallurgical program. Results of the testing were favourable; grade and recovery results are as follows:

- Copper concentrate grade of 33.49% Cu at 79.5% recovery containing 2041 g/t Ag (44.0%) and 19.55 g/t Au (19.5%)
- Lead concentrate grade of 69.56% Pb at 82.42% recovery containing 282 g/t Ag (7.08%) and 25.80 g/t Au (4.46%)
- Zinc concentrate grade of 61.20% at 91.46% recovery containing 132 g/t Ag (17.09%) and 0.46 g/t Au (4.46%)
- Silver and gold recovery of 68.22% and 84.23%, respectively and reported to the three concentrates

In 2018, NorZinc undertook a scoping test to assess the ability to produce a high-grade barite (BaSO<sub>4</sub>) concentrate from the Lemarchant massive sulphide flotation tailings. Test results showed that selective barite flotation of the Lemarchant base metal tailings and using a two-stage cleaning would provide a grade of 97.75% barite. Canterra has not verified the results of this work.

In 2018, Mercator Geological Services Ltd. of Dartmouth, Nova Scotia completed an updated NI 43-101 and CIM Standards compliant Mineral Resource Estimate. The revised estimate was based on all drilling available to date for the project. Seventy-four diamond drill holes were used in generating the geological model with 31 of the drill holes (10,000 metres) included in the resource estimate. As of September 20<sup>th</sup>, 2018, the Lemarchant Deposit contained on indicated resource of 2,420,000 tonnes grading 12.40% (Zn Eq.) and an inferred resource of 560,000 tonnes grading 9.31% (Zn Eq.). Canterra has not verified this resource and does not consider it current.

In November 2021, Canterra acquired the Lemarchant, Boomerang, Tulks East, Long Lake and Victoria Mine properties from NorZinc Ltd. A summary of the work completed on the Lemarchant Property by Canterra is provided in Section 9.

Lemarchant Deposit Mineral Resource Estimate at 4.0% Zn Eq. Cutoff Effective September 20, 2018									
Catagory	Toppos	Zn (%)	Pb (%)	Cu (%)	Au (g/t)	Ag (g/t)	Zn Eq.	BaSO4	
Category	Tonnes	(/0)	(/0)	(/0)	(8/1)	(8/4)	(/0)	(/0)	
Indicated	2,420,000	6.15	1.60	0.68	1.22	64.04	12.40	23.53	
Inferred	560,000	4.68	1.08	0.45	1.06	44.67	9.31	13.11	

Table 1. 2010 Resource Estimate Lemarchant Deposit (nom Cullen et al., 2010).	Table 1.	2018	Resource	Estimate	Lemarchant	Deposit	(from	Cullen	et al.,	2018).
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Mineral Resource Estimate Contained Metal									
Zn Pb Cu Au Ag Ba									
Category		(M lbs)	(M lbs)	(M lbs)	(K oz)	(M oz)		(tonnes)	
Indicated		328.1	85.3	36.3	0.95	5.0		570,000	
Inferred		57.8	13.3	5.6	0.19	0.8		73,000	

# Geology

The Property area is underlain by rocks of the Victoria Lake Supergroup which consists of a structurally complex, collage of bimodal Cambrian to Ordovician arc-related magmatic, volcanic and sedimentary rocks. The Victoria Lake Supergroup is divided in to six lithotectonic volcanic–sedimentary assemblages that host numerous base metal-bearing VMS deposits, showings and extensive alteration zones, and several gold prospects and occurrences. The Tally Pond Group is the most eastern volcanic–sedimentary assemblages in the Victoria Lake Supergroup, and is host to the Duck Pond, Boundary and Lemarchant deposits. The Tally Pond Group consists of Cambrian-aged volcanic, volcaniclastic and sedimentary rocks that extend from Victoria Lake in the southwest to Burnt Pond in the northeast. The volcanic and sedimentary rocks are obscured in most areas by thick surficial deposits, so map patterns are not well constrained.

The Property is located immediately southwest of Teck's past producing Duck Pond Copper-Zinc Mine with production of 5.1 million tonnes averaging 3.6% Cu, 6.3% Zn, 1.0% Pb, 64 g/t Ag and 0.9 g/t Au for both the Duck Pond and Boundary Deposits as reported in the provincial mineral occurrence database ("MODS"). The Lemarchant Deposit is located 20 km southwest of the Duck Pond mine site.

The Lemarchant Deposit area is hosted by a north-striking sequence of bimodal submarine volcanic rocks (basalts and rhyolites) of the Tally Pond Group. The mineralization is hosted within a 4,000 metre long and 700-metre-wide sequence of moderate to intensely altered rhyolite breccias, massive rhyolite flows and lesser felsic tuffaceous horizons. The footwall to the semi-massive to massive sulphide mineralization is characterized by a well-developed, barium-enriched base metal stringer system, with moderate to intense quartz-sericite-chlorite to quartz-chlorite alteration. The mineralization is cut-off to the east by the Lemarchant fault, an east-verging thrust fault that potentially repeats the mineralized horizon at depth in a lower felsic horizon. Steeply dipping east-west trending faults further displace the stratigraphy and mineralized zones.

The Lemarchant Deposit consists of two stratiform massive to semi-massive sulphide zones and underlying stringer zones termed the Main Zone (section 100+50N to 104+50N) and the Northwest Zone (section 105+00N to 107+00N). The Main Zone mineralization is located approximately 120 to 210 metres below surface, dips gently to the east, and is truncated by the Lemarchant fault down dip. The Northwest Zone is located approximately 300 to 350 metres below surface, dips gently to the west, and is truncated by gabbroic intrusion(s) to the east and by faults to the west. The massive sulphides zones vary in thickness from less than 1 metre to 30.4 metres and are generally underlain by a sequence of intensely altered and barium-enriched felsic volcanic rocks.

The Lemarchant mineralization is characterized by high-grade, zinc-lead-copper semi-massive to massive sulphides with significant precious metal (gold, silver) contents, massive mineralized barite intervals, and an underlying footwall stringer sulphide zone.

Academic studies by Gill and Piercey (2015), Lode (2016), and Cloutier (2017) provide valuable insights into the geology and genesis of the Lemarchant Deposit. These studies provide useful exploration tools or vectors to locating additional mineralization and/or new exploration targets.

# Exploration

During 2022, Canterra conducted a data review and targeting exercise on the Lemarchant Deposit. Available historic data covering the Lemarchant Property (including diamond drill data, airborne magnetic data & EM, DCIP & MT, Ground EM, Downhole EM, Ground Gravity, Till/Soil samples and 3D modeling of structures were reviewed and integrated. The data revealed several targets with potential expansion of resources at Lemarchant. The targeting was based primarily on an updated structural interpretation of the project area using airborne magnetic data which was then integrated with soil geochemical and drillhole data and reviewed in the context of other available geophysics. Four priority targets are summarised as follows:

- Target 1 a possible anticline, with a core of rhyolite and felsic tuff (Bindons Pond Formation), overlain by mafic rocks (Lake Ambrose Formation) dipping to the west or east. Traces of sphalerite and chalcopyrite have been identified in historic drillholes, the stratigraphic setting is like the Main Zone deposit but is largely untested by drilling.
- Target 2 a possible extension of the Main Zone deposit, which is inferred to have has been displaced by a fault. Although the area has been drill tested, mineralization appears to increase in grade and thickness up-dip towards the west, suggesting that thicker, higher-grade mineralization may be present at shallow depths to the west.
- Target 3 a downthrown graben (?) with possible deeper extensions of the Main Zone deposit.
- Target 4 a possible northern extension of the Northwest Zone, where very little drilling has been carried out, particularly testing for deeper mineralization within felsic volcanics (Bindons Pond Formation).

During the summer of 2022, Simcoe Geoscience ("Simcoe") of Toronto, Ontario conducted an IP survey covering four sections over the Lemarchant Project. Two anomalous zones were identified across the four sections (L14E, L15E, L16E, L17E):

- AZ-7 This zone trends almost north-south and extends over all the lines and is located on the western side of the property grid. It covers six (6) first-priority targets with the strongest chargeability observed in this zone.
- AZ-8 This zone is located on the eastern side of the property grid and extends from L14E to L16E with an approximately north-south trend. It covers a broad area hosting four (4) first-priority targets.

Two other possible anomalies were identified in the western part of the grid but are not well-defined due to sparse data.

# Conclusions

The Lemarchant Property is located in a known mining district and is underlain by volcanic rocks that are known to host massive sulphide mineralization. Previous exploration work at the Lemarchant Deposit has outlined a significant massive sulphide body with potential for further expansion at depth and along strike. The deposit is currently defined as two stratiform massive to semi-massive sulphide zones, identified as the Main Zone and Northwest Zone.

The Main Zone massive sulphide mineralization is located approximately 120 to 210 metres below surface, dips gently to the east, and is truncated down dip by the Lemarchant thrust fault. The Northwest Zone is located approximately 300 to 350 metres below surface, dips gently to the west, and is truncated by gabbroic intrusion(s) to the east and by thrust faults to the west. The massive sulphides zones vary in thickness from less than 1 metre to 30.4 metres and are underlain by a sequence of intensely altered and barium-enriched felsic volcanic rocks. The Main Zone mineralization remains open up-dip and to the south, whereas the Northwest Zone mineralization remains open to the north and down-dip. Potential offset of the stratigraphy along east-west structures in both these areas should be considered. The Lower Felsic Block, north of the Main Zone between Section 105 to 108N contains strongly altered felsic volcanic rocks with local massive sulphide mineralization (LM08-24 EXT) and warrants further drill testing.

# Recommendations

Based on positive results of work completed to date at the Lemarchant Deposit, additional exploration is warranted to further assess dip and strike extensions of the deposit that remain open at present. The recommended work program for the immediate Lemarchant Deposit area consists of a combination of step-out drilling to further define the extent of the deposit plus local infill drilling to better define the existing Mineral Resource area and to potentially upgrade certain Inferred Mineral Resources to the Indicated Mineral Resource category.

Drill testing of other prospects within the Lemarchant Property is also warranted on a priority-assessed basis.

A two-phase work program and budget is recommended, with commitment to Phase 2 expenditures being contingent on substantively positive results being returned from Phase 1.

The Phase 1 program consists of 10,000 metres of diamond drilling in approximately 40 drill holes to further define the dip and strike extensions of existing Lemarchant Deposit mineralization, upgrade certain Inferred Mineral Resources to Indicated Mineral Resource status and to begin investigation of the nearby SW Lemarchant and Bindons Pond prospects, as well as follow up of IP and EM targets previously identified. Time Domain Electromagnetic surveying (TDEM) and ground gravity geophysics of the latter prospects is also included to facilitate drill target definition. An estimated budget of \$3.0million (CDN) applies to the Phase 1 program.

The Phase 2 program reflects 10,000 metres of additional core drilling in 20 to 25 holes to expand Mineral Resource category upgrading at the Lemarchant Deposit. In addition, metallurgical studies required to support a Pre-feasibility level study of the Lemarchant Deposit should be completed, with associated assessment of other mineralized zones having potential for contributing to near-term future Mineral Resources. Provision for development of an updated NI 43-101 Mineral Resource Estimate for the Lemarchant Deposit, inclusive of any nearby, newly defined deposit areas is also included, along with a contingency for completion of detailed down-hole or grid geophysical surveying in drilling target areas. An estimated budget of \$2.6 million (CDN) applies to the Phase 2 program.

#### 2.0 INTRODUCTION

#### 2.1 Scope of Reporting

This Technical Report documents exploration work completed by Canterra on its 100%-controlled Lemarchant Property located in central Newfoundland, Newfoundland and Labrador, Canada. Cantarra is listed on the Toronto Stock Exchange (TSX) trading under the symbol CTM. This report updates previous Technical Reports prepared for Paragon Minerals Corporation (Fraser et al., 2012) and NorZinc (Cullen et al., 2018).

Canterra acquired the Lemarchant Property from NorZinc in November 2021. This report documents exploration work completed on the Lemarchant Project by Canterra and makes recommendations regarding continued exploration of both this deposit area and nearby exploration targets. Specifically, it covers work completed by Canterra in 2022.

This report was prepared in accordance with Canadian Securities Administrators NI 43-101 and associated Form 43-101 F-1.

#### 2.2 Responsibility of Author

Mr. David Evans, M.Sc., P.Geo., an independent consulting geologist is responsible for compiling this report. Mr. Evans based on his education and relevant work experience is an independent Qualified Person as defined by NI 43-101.

#### 2.3 Site Visit

Mr. Evans, accompanied by Mr. Konrad Chrzastowski, P.Geo, Project Manager, Canterra, completed a site visit and core review of the Lemarchant Deposit in September 2021. No additional drilling or trenching has been completed on the Property since that visit.

#### 2.4 Information Sources

Information contained in this report is based on data collected by Canterra from 2022 to 2023 and from the previous Technical Reports entitled "NI43-101 Technical Report and Mineral Resource on the Lemarchant Deposit, South Tally Pond VMS Project, central Newfoundland" (Fraser et al., 2012) prepared for Paragon and "NI 43-101 TECHNICAL REPORT AND UPDATED MINERAL RESOURCE ESTIMATE ON THE LEMARCHANT DEPOSIT SOUTH TALLY POND PROPERTY, CENTRAL NEWFOUNDLAND, CANADA" (Cullen et al., 2018) prepared for NorZinc.

Other sources of data include historical reports by previous operators including assessment reports filed with the Newfoundland and Labrador Department of Industry, Energy and Technology ("DIET"), and various government publications.

Gold (Au) and silver (Ag) values are reported as grams per metric tonne ("g/t") or parts per billion (ppb). Historic Au and Ag values are presented as originally reported and converted to g/t if required. Base metal (copper (Cu), lead (Pb) and zinc (Zn) values are presented in parts per million (ppm) or weight percent (%). Currency is reported as Canadian (CDN) dollars unless otherwise noted.

All map coordinates are given as Universal Transverse Mercator (UTM) Projection, North American Datum 1983 (NAD83), Zone 21 coordinates, unless otherwise stated. Distances and dimensions are expressed in metres (m) or kilometres (km), unless otherwise stated.

# 3.0 RELIANCE ON OTHER EXPERTS

The independent author (hereafter referred to as "author") has relied on information provided by Canterra concerning the legal status of claims that form the Lemarchant Property. Efforts were made by author to review the information provided for obvious errors and omissions; however, the author shall not be held liable for any errors or omissions relating to the legal status of claims described in this report.

The author has assumed, and relied on the fact, that all the information and existing technical documents listed in the reference section of this report are accurate and complete in all material aspects. While these information sources were carefully reviewed, the author cannot guarantee their accuracy and completeness. The author reserves the right but will not be obligated to revise this report and conclusions if additional information becomes known subsequent to the date of this report.

The author has reviewed claim status information using the Mineral Rights Inquiry form as posted on the DIET website as of August 22, 2023 (https://licensing.gov.nl.ca/mrinquiry/sfjsp?interviewID=MRISearch). Copies of the Licence Report can be downloaded (Appendix I). Operating licenses, permits, and work contracts were not reviewed. The author has not reviewed or verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on, and believes it has a reasonable basis to rely upon, Mr. Christopher Pennimpede, CEO Canterra, to have conducted the proper legal due diligence.

All statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this report.

# 4.0 PROPERTY DESCRIPTION AND LOCATION

The Lemarchant Property is in central Newfoundland, approximately 110 road kilometres southwest of the town of Grand Falls-Windsor (Figure 1). The Property is located on NTS map sheet 12A/10 (Lake Ambrose) centered at approximately 521000E / 5375000N UTM NAD83 Zone 21N.

The Property consists of one map-staked mineral license (35 claims) covering 875 hectares (Table 1, Figure 2). The mineral license is 100%-owned by Canterra.

Mineral Registered Licence Holder		NTS	Claims	Area (Ha)	Licence Issued	Anniversary Date
026920M	Canterra	12A/10	35	875	1999/01/29	2024/01/29

Table 2. Mineral Licenses – Lemarchant Property.

The Lemarchant property is subject to underlying agreement with prior vendors

 The South Tally Pond Block (Lemarchant) was optioned by Paragon from Altius Resources Inc. ("Altius") in 2006 of which a portion of the block is subject to an underlying agreement with Noranda Inc. (now Glencore Canada Corporation ("Glencore")). The option agreement with Altius was successfully completed in 2012 and remains subject to the underlying Noranda Agreement. Under the Noranda Agreement, there is a 2.0% Net Smelter Royalty ("NSR") payable to Glencore. Upon commencement of commercial production, Glencore is entitled to a cash payment of \$2,000,000 and retains the right to purchase the concentrate.

In 2017, Glencore contributed its underlying South Tally Pond interest to BaseCore Metals LP, a 50:50 joint venture limited partnership with the Ontario Teachers' Pension Fund (Glencore News Release, December 5, 2017)

In 2022, Glencore and JV Partner OTPF sold the royalty package containing the underlying Lemarchant royalty to Sandstorm Gold Ltd. (Glencore New Release, July 12, 2022)



Figure 1. Location Map - Lemarchant Property.



Figure 2. Mineral License Map - South Tally Pond Property.

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

The project is accessed via a network of seasonal gravel resource roads which originate at Millertown, a community of 87 people (2021 census), located 35 km to the north. The Millertown area is an active logging area, and the roads are generally well-maintained. At the Property scale combination of new and abandoned forest access roads provide good access to much of the area. Travel on most of the older roads is mainly restricted to all-terrain vehicles.

Newfoundland has a typical northern Atlantic climate with short summers and long, but relatively mild winters. The average seasonal temperatures for central Newfoundland range from 17C in summer to -6C in winter. Mean yearly precipitation ranges from 700 to 900 mm per year with the mean annual snowfall between 275 and 325 cm.

There is no current infrastructure within the Project area other than a network of logging roads. There is abundant fresh water and relatively flat land available for potential mine infrastructure. Electrical power for any future operation may have to initially come from diesel generation, however, a 3-Phase power line services the former Duck Pond Mine. Central Newfoundland has a relatively long mining and forestry history, including the former Duck Pond base metal mine which closed in 2015. Grand Falls-Windsor, with

a population of 13,853 (2021Census), is the major service center located approximately 135 km by road to the northeast. Gander International Airport is approximately 100 km east of Grand Falls-Windsor.

The mineral exploration season generally runs from May until late November (freeze-up). Diamond drilling, lake sediment sampling and geophysical surveys continue through the winter months. The former Duck Pond mine which closed in 2015 operated year-round.

The area is generally heavily forested (dominated by balsam fir and black spruce) with numerous intervening bogs, ponds and lakes. Logging operations over the past 100 years have resulted in vast areas of immature growth. Recent logging activities have produced large clear-cut areas over portions of the Lemarchant Property. Topography is fairly moderate with elevations ranging from about 180 m to 400 m. Extensive glacial till results in a paucity of bedrock exposure except along the generally linear, northeast-trending ridges.

# 6.0 HISTORY

The following descriptions of historical exploration work are based largely upon the work of Fraser et al. (2012) and Cullen et al. (2018).

The South Tally Pond Property and surrounding area has been intermittently explored for base metals since the late 1960's with most of the work focussing on the Duck Pond and Boundary deposits. Relatively limited exploration work was undertaken outside of these two areas, other than at the Lemarchant, Rogerson Lake, Spencers Pond and Gills Pond prospects. Limited drilling in each of these areas was generally confined to broad spaced drilling (>100 metre spacing). Outside of these four prospect areas only sporadic drilling has occurred, primarily as initial testing of short strike length airborne electromagnetic ("EM") conductors.

Most of our understanding of historical exploration work in the South Tally Pond property area is based on reports by Collins (1989, 1990, 1991, 1992, 1993 and 1994), Collins and Squires (1991), Coulson (1992), MacKenzie (1985), MacKenzie and Robertson (1986), Podolsky (1988), Rogers and Collins (1989), Rogers and Squires (1988) and Reid (1979, 1980a, 1980b, 1981, 1982, 1983 and 1984) and Noranda (1998). More recent work by Paragon at the Lemarchant Deposit is documented in the initial NI43-101 Technical Report by Fraser et al. (2012).

The following two sub-sections are divided into 1) regional exploration work completed on the South Tally Pond Property outside of the South Tally Pond Block, and 2) exploration work completed within the South Tally Pond Block. A summary of the exploration and development history of the Duck Pond and Boundary deposits owned by Teck Resources Limited (Teck) is included in the Regional Exploration discussion below, but these do not form a part of the current South Tally Pond Property as defined in this Technical Report.

#### 6.1 Regional Exploration

The Lemarchant area has been explored for base metal mineralization since the late 1960's. Initial exploration work (prospecting and geochemistry) by Asarco during the 1960's and 1970's included a regional airborne EM survey in 1966; and drill testing (3 holes) relatively long strike length EM conductors in the Beaver Lake and Rogerson Lake areas. This drilling intersected thick sequences of black, graphitic shale.

In 1975, Labrador Mining and Exploration Co. Ltd. completed 6 diamond drill holes targeting regional airborne conductors in the Harpoon Brook area (Tuffy, 1975). These drill holes intersected relatively thick sequences of graphitic shale and weakly altered felsic volcanic rocks.

The bulk of the exploration work in the area was undertaken by Noranda Inc. ("Noranda") and its various partners beginning in 1973. Exploration including three systematic airborne surveys (1974, 1979 and 1988), geological, geochemical and geophysical surveys (mainly during 1981 to 1983 and 1989 to 1992) were completed by Noranda throughout the Tally Pond and South Tally Pond areas culminating in the discovery of Duck Pond and Boundary base metal deposits and several other significant prospects (Moose Pond, Spencers Pond, Rogerson Lake, Beaver Lake and Higher Levels prospects).

In 1980, the Boundary Deposit was discovered by drill testing coincident EM, gravity and till geochemistry anomalies. Between 1980 and 1985, 21 short drill holes intersected massive sulphides of variable thickness (1-20 metres) within three separate, near-surface massive sulphide zones; the North, South and Southeast zones (MacKenzie, 1988; Belleau and Pelz, 2005).

From 1985 to 1987, Noranda continued exploration to the southwest of the Boundary Deposit (in an area of coincident massive sulphide float, till anomalies and airborne EM conductors) which resulted in the discovery of the Duck Pond Deposit (Noranda, 1998; Belleau and Pelz, 2005). Early drill results from the Duck Pond Deposit included 2.7% Cu, 6.1% Zn, 0.4% Pb, 28.4 g/t Ag and 0.7 g/t Au over 10.64 metres (DP-86-85) and 2.1% Cu, 10.2% Zn, 1.2% Pb, 46.8 g/t Ag and 0.6 g/t Au over 20.25 metres (DP-87-95) (Noranda, 1998; Belleau and Pelz, 2005). Drilling from 1987 to 1991 led to the definition of the Upper Duck Deposit, the discovery of the stratigraphically lower Sleeper Zone (450 metres depth) and the Lower Duck Deposit (750 metres depth).

In 1986, Esso Minerals Canada Ltd. ("Esso") staked claims in the Gill's Pond area following the discovery of base metal massive sulphides at Duck Pond. Esso completed line-cutting, prospecting, geological mapping and ground EM surveys in the Gill's Pond area (O'Sullivan, 1987). From the work, Esso concluded that the south-east strike extension of the host Duck Pond-equivalent felsic volcanic rocks were present in the Gills Pond area.

In 1987, Esso optioned the property to Rio Algom Exploration Inc. ("Rio Algom") and between 1988 and 1989, Rio Algom completed line-cutting, ground geophysics surveys (Mag, VLF, EM) and diamond drilling. A total of 29 drill holes, totaling 5,482 metres were completed (Thicke, 1988, 1989, 1990). Most of the

drill holes were shallow (<150m) and successfully intersected altered felsic volcanic rocks (sericite, chlorite, carbonate, silica, pyritization, etc.).

In 1998, Noranda completed a pre-feasibility study on the Duck Pond and Boundary Deposits including a non-NI43-101 compliant "diluted mineable ore reserves" of 4.2 million tonnes grading 3.2% Cu, 5.5% Zn, 57g/t Ag and 0.9g/t Au, including approximately 500,000 tonnes at the Boundary Deposit (Noranda, 1998; Belleau and Pelz, 2005).

In 1999, Thundermin Resources Inc. ("Thundermin") and Queenston Mining Inc. ("Queenston") acquired a 100% interest in the Duck Pond property from Noranda and carried out infill and definition drilling consisting of 9,300 metres in 26 drill holes at the Duck Pond Deposit and 3,000 metres in 82 drill holes at the Boundary Deposit. Based on the new drill results, Thundermin and Queenston completed a revised reserve estimate and bankable feasibility study for the Duck Pond and Boundary deposits, including a pre-NI 43-101 measured and indicated mineral resources of 5.1 million tonnes averaging 3.6% Cu, 6.3% Zn, 1.0% Pb, 64 g/t Ag and 0.9 g/t Au for both the Duck Pond and Boundary deposits (MRDI, 2001). MRDI also reported an additional inferred resource of 1.1 million tonnes grading 2.6% Cu, 5.6% Zn, 1.2% Pb, 58 g/t Ag, and 0.6 g/t Au. Both referenced Mineral Resources are historic in nature and a qualified Person as defined under NI 43-101 has not classified these in accordance with that instrument and the CIM Standards.

In 2002, Aur Resources Limited ("Aur") acquired all Thundermin and Queenston interests in the Duck Pond property. Aur completed a revised feasibility study in 2003 (AMEC, 2003) and made a positive production decision in December 2004 (Belleau and Pelz, 2005). The Duck Pond Deposit achieved commercial production in April 2007. Teck purchased Aur in late 2007 and took over ownership and operatorship of the Duck Pond Mine.

In 2004, Rubicon Minerals Corporation ("Rubicon") optioned the Harpoon property from local prospectors. Rubicon completed data compilation, prospecting and minor trenching. The trenching by Rubicon exposed pyritic shale/mudstone in contact with mafic volcanic rocks that bear a similar appearance to the immediate hangingwall rocks to massive sulphide mineralization at the nearby Lemarchant Deposit.

In December 2006, Paragon Minerals Corporation acquired the Harpoon property as part of the Rubicon Plan of Arrangement, whereby all the Rubicon Newfoundland assets were transferred to Paragon.

From 2007 to 2011, Paragon completed airborne electromagnetic (EM) and magnetic geophysical surveying (2,016.6 line km in 2007 and 1,231.4 line km in 2011), prospecting and reconnaissance till sampling (167 samples) over the Harpoon, Gill's Pond and South Tally Pond Extension blocks (Copeland, 2007; Copeland, 2008; Copeland and Devine, 2011). Paragon completed diamond drill testing of three regional target areas on the Harpoon Block including the Cookstown prospect (1 drill hole; 209.4 metres), Duck West prospect (1 drill hole; 443.9 metres) and Beaver Lake prospect (3 drill holes; 871.0 metres) (Devine, 2011; Copeland et al., 2011).

From 1981 to 1982, Noranda completed line-cutting on the Spencer's Pond grid (372-1) to follow up on airborne EM conductors. Initial drill testing of the area was completed in 1983 with three BQ drill holes, 372-3, 4 and 5 totalling 449.2 metres (Reid, 1984). From 1990 to 1993, Noranda completed 446.6 metres of diamond drilling in 3 drill holes at Spencer's Pond (SP90-01 to 02 and SP91-03). Other work in the Spencer's Pond area included line-cutting, soil sampling and ground geophysical surveys including Magnetics, VLF-EM, HLEM, and EM-37 over the Spencers Pond grids (Noranda, 1998).

During winter 2001, Altius completed 787 metres of diamond drilling in 5 drill holes at Spencer's Pond (SP01-01 to SP01-05). All drill holes were surveyed using borehole Pulse-EM ("PEM") geophysics (Smith et. al., 2001; Barbour and Churchill, 2002). Altius also completed a geological mapping, drill core relogging, and lithogeochemical sampling on the Spencer's Pond prospect, deepening of drillhole SP01-04 and surveying the drillhole with time-domain EM (Barbour and Churchill, 2003).

In 2005, Altius compiled the existing geological and geophysical data and created 1:10,000 scale geological base map and completed 25.35 kilometres of line cutting on the Spencer's Pond grid and a southern extension of the Lemarchant grid. In late 2006, Altius completed one drillhole (SP06-01; 425 metres) that was designed to test a borehole PEM anomaly along the Spencer's Pond alteration zone (Winter et al., 2006). The drilling intersected zones of disseminated pyrite and base metal sulphides with concentrations from 1-5%. No samples were collected from the drillhole.

Between 2007 and 2012, Paragon completed limited ground exploration work (prospecting and data compilation) in the Spencers Pond area.

In 1981, Noranda completed line cutting on the Prescott and Monkstown grids respectively) following up on priority airborne conductors from the 1974 Aerodat survey. Soil sampling and ground geophysical surveys (CEM, VLF-EM, HLEM, magnetics and gravity (partial coverage) were completed from 1981 to 1982. Till sampling was successful in outlining several areas with anomalous Cu, Pb, Zn and Ag, including two sites which returned greater than 5,000 ppm Pb (Noranda, 1998; Reid, 1981). Subsequent trenching and prospecting of the till anomalies located numerous boulders of massive and banded pyrite. A heavy mineral separate of tills at one of the sites assayed 17.2% Pb.

From 1983 to 1994, Noranda completed 28 broadly spaced drill holes (3,514 metres) throughout the Rogerson Lake Prospect targeting a combination of priority airborne conductors and semi-massive to massive pyrite exposed in trenches. Several drill holes intersected stringer sulphide mineralization within strongly altered, coarse felsic pyroclastic rocks. One drillhole (MT90-01) intersected semi-massive pyrite (up to 50%) over widths up to 0.5 metres, whereas drillhole (PG90-01) intersected several banded pyrite/argillite horizons within felsic volcanic rocks that returned assays of 7.54 g/t Ag and 7.88 g/t Ag over 0.8 and 0.4 metres, respectively (Noranda, 1998). Drillhole 372-11 intersected 0.77% Zn from 30.7 to 33.2 metres within felsic volcanic rocks immediately beneath exhalative pyritic mudstone at a mafic-felsic contact.

In 2001, Altius completed a single drillhole (RL01-01) for 160.62 metres at the western end of the Rogerson Lake Prospect (Smith et al., 2001)

Between 2007 and 2012, Paragon completed limited exploration work, mainly prospecting and data compilation in the Spencers Pond area.

#### 6.2 Lemarchant Property Exploration

The following is a summary of historical work completed on the area now covered by the Lemarchant Project. The Property is host to Lemarchant Deposit (Main and Northwest zones) the Bindons Pond Prospect and significant alteration in the Lemarchant SW area (Figure 3).



Figure 3. Lemarchant Deposit location map with adjacent prospects and alteration zones.

#### 6.2.1 Lemarchant Deposit

Between 1981 and 1982 Noranda cut the Lemarchant grid to follow up on airborne electromagnetic (EM) conductors. Subsequent soil sampling and ground geophysical programs (Magnetics, VLF-EM, HLEM, and EM-37) were completed by Noranda from 1982 to 1994. Initial drill testing and trenching of the area was

completed in 1983 with two BQ drill holes (372-1 and 372-2) totalling 171.9 metres (Reid, 1984). Each of the drill holes was successful in explaining the airborne EM conductors with intersections of graphitic argillite, exhalative pyritic mudstone and stringer base-metal mineralized, footwall felsic volcanic rocks.

Following the discovery of the Duck Pond Deposit in 1987, Noranda recognized that earlier work at Lemarchant had outlined a VMS environment like Duck Pond. From 1991 to 1993 Noranda completed 2,846 metres of drilling in 12 drill holes at Lemarchant (LM91-01 to 06, LM92-07 to 08, and LM93-09 to 12). Significant historical drill results from the Lemarchant Deposit reported in Fraser et al. (2012) include:

- 7.40% Zn, 0.6% Cu, 6.3% Pb, 1515.0 g/t Ag and 11.4 g/t Au, over 0.6 metres (LM91-01);
- 5.70% Zn, 4.5% Cu, 0.33% Pb, 272.5 g/t Ag and 1.06 g/t Au over 0.3 metres (LM92-07);
- 1.53% Zn, 59.8 g/t Ag and 6.1 g/t Au over 3.8 metres (LM92-08).

In 2000, Altius Resource Inc. ("Altius") optioned a portion of the South Tally Pond Block from Noranda (which Noranda called the South Tally Pond Property) and Altius staked an additional 59 claims.

Altius completed geological mapping, re-logged drill core, and lithogeochemical sampling from 2001 to 2003 (Smith et al. 2001; Barbour and Churchill, 2002, 2003, 2004, 2005). In 2004, Altius completed 844.9 line km of airborne HTEM survey over the property. The airborne survey confirmed known conductors and outlined new conductors in all three alteration zones outside areas of previous geophysical surveying (Barbour and Churchill, 2005). In addition, Altius completed re-logging and re-sampling of 14 drill holes from the Lemarchant Deposit. Property scale geological mapping at 1:10,000 scale and a lithogeochemical sampling program resulted in better definition of the extents of the Lemarchant and Spencer's Pond area mineralization.

In December 2006, Altius optioned the South Tally Pond Block to Paragon Minerals Corporation. From 2007 to 2011, Paragon completed 21,259 metres of diamond drilling (60 holes) at the Lemarchant Deposit. The drilling outlined a massive sulphide horizon over a 500 metre strike length from section 101+00N to 106+00N. In addition to drilling, Paragon completed soil sampling (1,554 samples), grid line refurbishment (53.6 km) and new grid line-cutting (19.9 line km), airborne EM-magnetometer (175 line km), ground Titan 24 (14.4 line km), ground EM (20.725 line km), and borehole pulse EM (19 drill holes for 8,855 metres) geophysical surveys at the Lemarchant Deposit (Copeland et al., 2008a; 2008b; Copeland et al., 2009; Copeland, 2010; Copeland and Devine, 2011; and Devine et al., 2011).

In 2012, Paragon completed metallurgical testing on a composite sample from the Lemarchant Deposit and completed an initial NI43-101 resource estimate (Fraser et al, 2012). The initial NI43-101 resource estimate is as follows:

• Indicated Mineral Resource of 1.24 million tonnes grading 5.38% Zn, 0.58% Cu, 1.19% Pb, 1.01 g/t Au and 59.17 g/t Ag (15.40% ZnEQ) using a 7.5% Zn equivalent grade cut-off.

• Inferred Mineral Resource of 1.34 million tonnes grading 3.70% Zn, 0.41% Cu, 0.86% Pb, 1.00 g/t Au and 50.41 g/t Ag (11.97% ZnEQ) using a 7.5% Zn equivalent grade cut-off.

In September 2012, Paragon was acquired by Canadian Zinc Corporation (NorZinc Ltd.). Exploration work completed by NorZinc from 2012 to 2018 on the South Tally Pond Block consisted of ground electromagnetic (EM), magnetometer and gravity geophysical surveys, borehole EM geophysics (6 holes; 2,190 metres), metallurgical studies, and diamond drilling (91 drill holes plus 8 drillhole extensions; 28,675 metres). Most of this work focused on the Lemarchant Deposit. The exploration work, up to May 2017 is documented in company assessment reports filed with DIET, Newfoundland and Labrador (Vande Guchte and Marcotte, 2013; Squires and Vande Guchte, 2015; Vande Guchte, 2016; Vande Guchte and Hussey, 2017; and Hussey and Vande Guchte, 2018, Vande Guchte ,2018).

NorZinc completed additional metallurgical work on the Lemarchant Deposit as part of a larger central milling metallurgical research program to complete physical and metallurgical bench scale studies on five volcanogenic massive sulphide ("VMS") deposits located in central Newfoundland. The work program was completed as part of a collaboration agreement between NorZinc and Buchans Minerals Corporation ("Buchans Minerals") with partial funding from the Research & Development Corporation of Newfoundland and Labrador ("RDC"). For more detailed information the reader is referred to the NI43-101 Technical Report by Cullen et al. (2018). Canterra has not verified the results of this testing program.

The metallurgical program was completed by Thibault & Associates Inc. of Fredericton, NB and included mineralogical study, grindability study, dense media separation (DMS) and flotation test work. Two metallurgical samples, one from the massive sulphide-barite zone and one from the footwall zone were utilized for the metallurgical program. Closed-circuit grade and recovery performance of the Lemarchant Deposit were estimated as follows:

- Copper concentrate grade of 33.49% Cu at 79.5% recovery containing 2041 g/t Ag (44.0%) and 19.55 g/t Au (19.5%);
- Lead concentrate grade of 69.56% Pb at 82.42% recovery containing 282 g/t Ag (7.08%) and 25.80 g/t Au (4.46%);
- Zinc concentrate grade of 61.20% at 91.46% recovery containing 132 g/t Ag (17.09%) and 0.46 g/t Au (4.46%)
- Silver and gold recovery is 68.22% and 84.23%, respectively and reports to the three concentrates

Based on the metallurgical work completed, the copper concentrate from the massive sulphide is high in arsenic (2.54%) and antimony (1.18%). The lead concentrate has relatively low levels of silver and high levels of gold. The zinc concentrates were all high grade and very clean.

In 2018, a scoping test indicated that a high grade barite (BaSO<sub>4</sub>) concentrate (97.75%) could be recovered from the from Lemarchant massive sulphide flotation tailings.

In 2017, NorZinc had Mercator Geological Services Ltd. (Cullen et al., 2018) prepare a NI43-101 resource estimate for the Lamarchant Deposit (Table 3). Seventy-four diamond drill holes were used in generating the geological model with 31 of the drill holes (10,000 metres) included in the resource estimate. Canterra has not verified Mercator's modelling and does not consider the resource estimate to be current.

Lemarchant Deposit Mineral Resource Estimate at 4.0% Zn Eq. Cutoff Effective September 20, 2018									
Category	Tonnes	Zn (%)	Pb (%)	Cu (%)	Au (g/t)	Ag (g/t)	Zn Eq. (%)	BaSO4 (%)	
Indicated Inferred	2,420,000 560,000	6.15 4.68	1.60 1.08	0.68 0.45	1.22 1.06	64.04 44.67	12.40 9.31	23.53 13.11	

Table 3	. 2018 Reso	urce Estimate L	emarchant	Deposit	(from	Cullen et al.,	2018).
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Mineral Resource Estimate Contained Metal								
		Zn	Pb	Cu	Au	Ag		Barite
Category		(M lbs)	(M lbs)	(M lbs)	(K oz)	(M oz)		(tonnes)
Indicated		328.1	85.3	36.3	0.95	5.0		570,000
Inferred		57.8	13.3	5.6	0.19	0.8		73,000

1. Resource tonnages have been rounded to the nearest 10,000. Totals may vary due to rounding.

2. Price assumptions used were in USD \$1.10/lb Zn, \$1.00/lb Pb, \$3.21/lb Cu, \$1351/oz Au, and \$19/oz Ag.

3. Metal recoveries used were 91.46% Zn, 82.42% Pb, 79.50% Cu, 84.23% Au and 68.22% Ag and are based on the 2017 Central Milling Facility Assessment prepared by Thibault & Associates Ltd.

4. Zinc Equivalent % = Zn% + ((Pb% \* 22.046 \* 0.8242\*1.00) + (Cu% \* 22.046 \* 0.795 \* 3.21) + (Ag g/t/31.10348 \* 0.6822 \* 19) + (Au g/t/31.10348 \* 0.8423 \* 1351))/(1.10 \* 22.046 \* 0.9146)

- 5. BaSO<sub>4</sub> % (Barite) is not included in the Zn Eq.% calculation
- 6. A full block grade cut-off of 4.0 % Zn Eq. was used to estimate Mineral Resources

7. Assay composites (1 metre) were capped at 36% Zn, 14.5 g/t Au, and 550 g/t Ag in the Mineralized domains, at 2.2% Cu, 4.6 g/t Au and 105 g/t Ag in the Upper Footwall domains, at 4.8% Zn and 8 g/t Ag in the Lower Footwall Domains and at 2% Zn, 5.2 g/t Au, and 48 g/t Ag in the Mudstone domains.

- 8. Results of an interpolated Ordinary Kriging bulk density model (g/cm<sup>3</sup>) have been applied
- 9. Mineral Resources are considered to reflect reasonable prospects for economic extraction in the foreseeable future using conventional underground mining methods
- 10. Mineral Resources do not have demonstrated economic viability.
- 11. This estimate of Mineral Resources may be materially affected by environmental, permitting, legal title, taxation, sociopolitical, marketing, or other relevant issues.

#### 6.2.2 Structural Study – Lemarchant Deposit

In September 2017, Terrane Geoscience Inc. ("TGI") completed a structural analysis of the Lemarchant Deposit (Bartsch, 2017). The primary objective of this work was to develop a 3D structural model for incorporation into a mineral resource update of the deposit.

Two principal deformation events are recognized on the property as having significantly affected the geometry of the deposit: 1) a D1 event characterized as east-verging thrust faulting that occurred in response to terrane accretion in the late Paleozoic; and 2) a D2 event represented by steeply-dipping, oblique normal faulting during later extension.

The D1 structures comprise broad ductile shear zones, pervasive S1 foliation and close to tight folds, mainly observed in the mudstone. Extensional tectonics resulted in late-stage D2 brittle faulting with strike-slip faults bisecting the deposit and leading to internal block rotation within the Northwest Zone. Syn- to post-mineralization mafic intrusions intruded along weakened stratigraphic contacts and structurally prepared D1 Lemarchant Fault, resulting in obscured structural contacts and destruction of mineralization along targeted horizons.

A 3D model of the major structures was constructed by TGI. This model outlines the basic structural framework of the deposit; however, structural complexities, specifically in the Northwest Zone remain unresolved due to limitations on the modelling imposed by the lack of downhole structural data. TGI is of the opinion that the model is suitable for mineral resource estimation purpose as it provides constraints on mineralization that are supported by both the assay and geophysical data; however, in order to increase the resolution to the point where it can provide critical insights from an exploration perspective TGI recommended that additional structural orientation data be collected.

# 6.3 Geophysical Surveys

In 2014, 2016 and 2017, ground and borehole geophysical surveys were completed by NorZinc in areas surrounding the Lemarchant Deposit (Table 4). Mr. Bob Lo, P.Eng. a consulting geophysicist from Oakville, Ontario was retained to provide survey planning, data acquisition quality control, data modeling and interpretation.

#### 6.3.1 2014 Gravity Orientation Survey

In 2014, Abitibi Geophysics Ltd. of Val-d'Or, Quebec completed sixty-two (62) gravity readings along two grid lines (103+00N and 106+00N) spaced 300 metres apart (Figure 4). The goal of this orientation gravity survey was to verify the ability of the gravity method to delineate the known Lemarchant volcanic massive sulphide deposit.

The survey was completed using a Scintrex CG-5u Autograv instrument and was tied to CSGN base station in Buchans and a local base station in Millertown. The expected Bouguer anomaly accuracy is better than 0.05 milligal (mGal) before terrain corrections. GPS data acquisition was completed using Real Time Kinematic (RTK) GPS surveying with an expected accuracy better than 5 cm in elevation and horizontal positioning.

A weak gravity anomaly of 0.20 mGal appears to be associated with the Lemarchant Main Zone mineralization below line 103+00N. The Main Zone is located at 160 to 210 metres vertical depth below

a thick sequence of mafic volcanic rocks (HW basalts) with mafic intrusive units. The mafic intrusive units (gabbro) within the HW Basalts may also be the cause for the gravity anomaly. The barite-rich Lemarchant Northwest Zone massive sulphide mineralization located under line 106+00N at approximately 300 metres vertical depth was not detected by the gravity survey. A number of other gravity highs detected in the Lemarchant gravity survey area appear to be associated with mafic intrusive units within the mafic or felsic volcanic stratigraphy.



Figure 4. 2014 Orientation Gravity Survey (from Cullen et al., 2018).

#### 6.3.2 2016 Surface EM, Borehole EM and Magnetometer surveys

Between October and December 2016, Eastern Geophysics Ltd. of Corner Brook, Newfoundland completed Pulse Electromagnetic (PEM) geophysical and magnetometer surveys over the Lemarchant North and Lemarchant SW target areas. The exploration work included line cutting and grid reestablishment along old and new ground grids in both areas as outlined in Table 4. Ground geophysical surveys including magnetometer, surface PEM and borehole PEM surveys are summarized below. Table 4. 2016 Geophysical Programs.

	Lemarchant SW	Lemarchant North	
	(Target 2)	(Target 5)	TOTAL
Gridding	31.50 line km	25.25 line km	56.75 lime km
Surface Magnetics	30.80 line km	22.55 line km	53.35 line km
Surface Pulse EM	8.70 line km	6.45 line km	15.15 line km
Borehole Pulse EM		1 hole (475m)	

Ground magnetometer surveys in the Lemarchant and Lemarchant SW grid area covered areas that were not previously ground surveyed for magnetics. The magnetic survey was completed on 100 metre spaced lines using a GEM-GSM-19 overhauser magnetic system complete with base station. Readings were continuous at 1 second intervals. The new magnetic data (Figure 5) was merged with historical magnetic data completed by Noranda in the 1980's and 1990's. The merged total field magnetic data (Figure 6) and vertical magnetic gradient (Figure 7) provides a more complete coverage over the Spencers Pond-Lemarchant area and should aid with geological interpretations.

The 2016 Pulse EM Survey was completed using an in-loop configuration, where lines are read inside the loop. This configuration is maximum coupled to flat lying conductors within the loop, but will null couple vertical conductors near the loop center. The known geology suggests that the geology and conductivity distribution are not vertical or steeply dipping. The 100 metres spaced lines were read at 25 metre station intervals. A 50 millisecond time base was used with vertical and in-line horizontal components of the secondary EM field measured. The two target areas, Lemarchant SW (Target 2) and Lemarchant North (Target 5) surveyed with Pulse EM are summarized below and illustrated on Figure 8.

#### Lemarchant SW (Target 2)

At Lemarchant SW, the PEM survey was aimed at further defining the EM-37 survey completed by Noranda in 1991 (Collins, 1992) and to develop drill targets around historic drillhole 372-5 which intersected graphitic mudstone with pyritic massive sulphides at the mafic-felsic volcanic contact. Lithogeochemistry indicates the mudstone horizon has a similar hydrothermal geochemical signature to the mudstones overlying the Lemarchant Deposit. Thin plate modelling of the Lemarchant SW surface Pulse EM survey data indicates that there are two, relatively near surface conductive trends in the surveyed area. The conductive trends are interpreted to be striking to the northeast and dipping gently to the northwest. A magnetic high in the area shows similarities to the magnetic highs observed over the Lemarchant Deposit.

#### Lemarchant North (Target 5)

At Lemarchant North, the surface PEM survey was aimed at defining new conductors north of the Lemarchant Deposit and to better define a "noisy" conductor defined by an earlier TDEM survey in 2011 (Devine et al, 2011). A single drillhole (LM13-81), was also surveyed with PEM during the surface PEM

survey. Four other drill holes in this area were planned for surveying, but re-scheduled to 2017 due to poor accessibility brought on by early winter conditions.

Thin plate modelling of the Lemarchant North surface PEM survey indicates a strong near surface, east dipping conductors that coincide with north-south trending airborne EM anomalies. At least three drill holes along the south portion of this conductive trend have identified variably pyrite-pyrrhotitic-graphitic mudstones as the source of the conductors. Graphitic argillaceous sediments are intimately associated with base-metal-rich, pyritic massive sulphides at the Lemarchant Deposit and these conductive trends warrant further investigation.



Figure 5. 2016 Magnetic Survey Data (from Cullen et al., 2018).



Figure 6. 2016 Merged Magnetic Data - Total Field (from Cullen et al., 2018).



Figure 7. 2016 Merged Magnetic Data - Calculated Vertical Gradient (from Cullen et al., 2018).



Figure 8. 2016 PEM Survey Areas - Targets 2 and 5 (from Cullen et al., 2018).

#### 6.3.3 2017 Surface EM and Borehole EM surveys

In June 2017, Abitibi Geophysics Ltd. of Val-d'Or, Quebec completed Time Domain Electromagnetic (TDEM) geophysical surveys over 3 target areas as outlined in Table 5 and illustrated on Figure 9. Line cutting and grid re-establishment for these three areas was completed in 2016. Borehole TDEM was completed on 5 drill holes (1,715 metres) at the Lemarchant Northwest Zone to test for deeper targets.

	Lemarchant South (Target 1)	Lemarchant Southeast Target 3)	Lemarchant East (Target 4)	TOTAL
Gridding (2016)	20.0 line km	16.9 line km		36.9 line km
Surface Pulse EM	5.0 line km	6.9 line km	3.55 line km	15.45 line km

Table 5. 2017 Geophysical Programs (from Cullen et al, 2018).

The TDEM survey parameters included using an out-of-loop configuration for the Lemarchant South and Southeast target areas, where lines are read outside the loop. This configuration is maximum coupled to vertical to steeply dipping conductors within the loop, but will null couple horizontal conductors near the loop center. The interpreted airborne EM suggests that the geology and conductivity distribution are steeper dipping in this area. The 100 metres spaced lines were read at 25 to 50 metre station intervals. A 50 millisecond time base was used with vertical and in-line horizontal components of the secondary EM

field measured. At Lemarchant East an in-loop configuration was utilized for the TDEM survey. The three areas surveyed are summarized below.

# Lemarchant South (Target 1)

At Lemarchant South, the surface TDEM survey was aimed at defining new conductors south of the Lemarchant Deposit and to better define a small, deep plate conductor detected and modelled at the southernmost line of an earlier Pulse EM survey in 2011 (Devine et al, 2011). To get a better idea of the orientation of the small deep target, an out-of-loop configuration was used to change the EM coupling between the transmitter and target. Seven grid lines spaced 100 metres apart (94N to 100N) were surveyed over the target area.

Thin plate modelling at Lemarchant South defined a steeply dipping conductor located in the vicinity of the 2011 modelled plate, which modelled a flat lying body. The two different orientations of the plates are likely due to the body being 3D in shape and being energized in different orientations by the 2011 and 2017 loops.

The newer 2017 modelling results are more reliable than the 2011 model and remained a valid drill target. Subsequent drilling intersected a steeply dipping pyrite-pyrrhotite mudstone horizon over a 100 metre strike length near a lower mafic-felsic volcanic contact (LM17-139, 140 and 142). The mudstones have a similar hydrothermal geochemical signature to the mudstones overlying the Lemarchant Deposit, although the underlying felsic volcanic units are notably less geochemically altered.

# Lemarchant Southeast (Target 3)

At Lemarchant Southeast, the surface TDEM survey was aimed further defining a cluster of short-strike length, north-south trending airborne EM conductors (2011 airborne survey) interpreted to be bedrock sources. Review of the airborne EM conductors indicated a moderate to steeply dipping conductive body. Eight grid lines spaced 50 and 100 metres apart (92N to 97N) were surveyed over the target area.

Thin plate modelling of the TDEM data over the Southeast target area defined a moderately deep conductor off the northern edge of the survey coverage (additional surveying was recommended if located within favourable geology). Two additional modelled conductors are relatively shallow and coincide with the centre of the short strike length airborne EM anomalies located in the centre of the survey area. Drillhole SP90-01 (150/-45) tested this target in 1990 at a near parallel orientation to the 2011 airborne EM conductor trend. The drillhole intersected mafic volcanic rocks to 188 metres (EOH) with thin pyritic mudstone horizon at 50 metres and thin mudstone horizon at 120 metres. The drill core was not available for review.

A second cluster of short-strike length airborne EM conductors, located in the northeast corner of the grid area revealed no TDEM conductors. The airborne EM conductors were located within the loop and were surveyed using in-loop configuration. Drillhole SP91-03 (150/-45) tested this target in 1991 at a near

parallel orientation to the 2011 airborne EM conductor trend. The drillhole intersected mafic volcanic rocks to 158 metres (EOH) with thick mudstone horizon from 57-64 metres and thin mudstone horizon at 140 metres. The drill core was not available for review.

#### Lemarchant East (Target 4)

At Lemarchant East, the surface TDEM survey (6 lines) was aimed at further defining a set of three airborne EM anomalies spatially associated with a weak gravity anomaly to the south. An in-loop configuration was used over this target due to logistical considerations, namely a pond to the east and known airborne EM conductors to the west. Six grid lines spaced 100 metres apart (105N to 110N) were surveyed over the target area. Thin plate modelling of the TDEM data over the East target area defined two small conductors at shallow (100 m) and intermediate (200 m) depths. Their conductance are moderate to high, but due to their small, modelled size, do not appear to be high priority targets.

# 6.3.4 Borehole Survey – Lemarchant Northwest Zone

Five drill holes (1,715 metres) were surveyed with borehole TDEM by Abitibi Geophysics in 2017. Three drill holes, LM13-91, LM14-97, and LM14-98 targeted down-dip and strike extensions to the Northwest Zone mineralization. Several targets were identified up-dip (mudstones) of the drill holes and along strike to the north (untested). Drillhole LM13-93 and LM14-105 targeted the lower felsic block stratigraphy to the north of the Lemarchant Main Zone. No conductive targets were identified in these altered felsic volcanic rocks. LM11-50 EXT (extended in 2017) and a key drill hole in this area could not be surveyed due to a blockage near the top of the drill hole.

#### 6.4 Bindons Pond Prospect

In 2004, Altius identified a new alteration zone along the southeast shoreline of Bindons Pond. The alteration zone coincides with 3 untested airborne EM conductors that are spatially associated with massive, banded pyrite float.

In 2008, Paragon completed a B-horizon soil sampling program over the Bindons Pond prospect. A total of 602 soil samples were collected along GPS controlled flag lines at 25-metre sample spacing and 100 metre line spacing oriented at 340 degrees. The soil sampling identified zones of anomalous zinc (up to 1800 ppm), lead (up to 91 ppm), silver (up to 7.53 g/t) and gold (up to 138 ppb). The soil samples were collected over an area of mapped altered felsic volcanic rocks with alteration and mineralization like that mapped at the Lemarchant Deposit (Copeland et al., 2008b; Copeland et al., 2009).



Figure 9. 2016 PEM and 2017 TDEM Survey Areas - Targets 1-5 (from Cullen et al., 2018).

#### 6.5 Academic Studies – Lemarchant Deposit

In 2015, Shannon Gill completed a Master of Science (M.Sc.) degree at Memorial University with an associated thesis entitled "Mineralogy, metal zoning and genesis of the Zn-Pb-Cu-Ag-Au Lemarchant volcanogenic massive sulphide (VMS) deposit". Results of this research work are summarized in Section 7.3.

In 2016, Stephanie Lode completed a Doctor of Philosophy (Ph.D.) degree at Memorial University which studied the metalliferous mudstones and graphitic shales in the location, genesis and paleoenvironment of volcanogenic massive sulphide deposits of the Cambrian Tally Pond volcanic belt. The following is summarized from Lode (2016) and Lode et. al. (2016).

The Ph.D. study focused on the Lemarchant Deposit, where metalliferous mudstones are genetically and spatially associated with mineralization, whereas elsewhere in the Tally Pond belt the relationship of other mudstones and shales to massive sulphide mineralization is less obvious and remains not fully understood. The metalliferous mudstones represent a hiatus in the volcanic activity where the deposition of hydrothermal products dominated over the abiogenic background sedimentation and/or dilution by volcaniclastic-epiclastic material. Lithogeochemical signatures allow for distinguishing between predominantly hydrothermally or detritally (non-hydrothermal) derived material.

Metalliferous mudstones with a significant hydrothermal component, like those at Lemarchant, have elevated Fe/Al and base-metal contents, compared to detrital shales, and shale-normalized negative Ce and positive Eu anomalies, indicative of deposition from high temperature (>250°C) hydrothermal fluids within an oxygenated water column.

The mudstones and shales sampled from other locations in the Tally Pond volcanic belt have more variable signatures ranging from hydrothermal (signatures as above) to non-hydrothermal (no positive Euanomalies, flat REE patterns), with some that have mixed (hydrothermal and detrital) signatures. Both sulphur (S) and Pb isotopic compositions indicate that proximal sulphides hosted in mudstones immediately associated with massive sulphide mineralization within the Lemarchant Deposit contain a higher proportion of sulphur derived from hydrothermal sources and processes, and have more juvenile lead contributions, when compared to sulphides distal (not associated with massive sulphides) from mineralization. Lead and Nd isotopic compositions of both whole rock and minerals in the Lemarchant mudstones indicate involvement of underlying crustal basement during massive sulphide formation and throughout the evolution of the Tally Pond belt.

The Ph.D. thesis concluded that using lithogeochemistry, whole rock and in situ stable and radiogenic isotopes it possible to distinguish prospective vent proximal (immediately associated with massive sulphide mineralization) from less prospective distal (not associated with massive sulphides) depositional environments and to reconstruct the paleo tectonic setting on a deposit- to regional-scale for the Lemarchant Deposit and other mudstone-associated prospects in the Tally Pond volcanic belt. Accordingly, mudstones from areas with a Lemarchant-like hydrothermal and vent-proximal character are more attractive exploration targets than mudstones and shales with predominantly detrital signatures.

In 2017, Dr. Jonathan Cloutier completed a Post-Doctoral Fellowship at Memorial University which focused on reconstructing the original geometry of mineralization at the Lemarchant Deposit utilizing lithostratigraphy, structure, and lithogeochemistry (Cloutier et al., 2017).

Based on the research, Dr. Cloutier concluded that the Lemarchant Deposit consists of two distinct VMS lenses that formed in massive dacitic flows and related autoclastic volcaniclastic rocks (513–509 Ma) during the transition between arc dominated and rift dominated environment. The relatively shallow water position (<1500 m) of the deposit promoted boiling at or near the seafloor, ultimately resulting in precious metals enrichment of the Lemarchant Deposit. The high angle LJ and KJ syn-volcanic shear zones are crosscut by the relatively flat-laying Lemarchant shear zone and suggests that the two mineralised zones did not originate from the same lens prior to deformation. The Northwest Zone is hosted in the immediate footwall of the folded LJ syn-volcanic shear zone, whereas the Main Zone occurs in the relatively undeformed hanging wall of the Lemarchant thrust.

#### 7.0 GEOLOGICAL SETTING AND MINERALIZATION

#### 7.1 Regional Geology

The Lemarchant Property is located within the Dunnage tectonostratigraphic zone of the Canadian Appalachians (Williams, 1979) (Figure 10). Rocks within the Dunnage zone include volcanic and sedimentary rocks of back-arc and island-arc affinity, associated intrusions and ophiolitic rocks. Volcanism was active as early as the late Precambrian and continued sporadically until the Devonian.

The Dunnage Zone has been subdivided into the Notre Dame subzone to the west and Exploits subzone to the east. These two subzones are separated by an extensive fault system termed the Red Indian Line, a complex structural zone that separates the terranes developed on the Laurentian (western) margin of the lapetus Ocean from the terranes developed on the Gondwanan (eastern) margin (Williams et al. 1988).

The Notre Dame sub-zone is host to the base metal bearing Buchans Group which consists of mafic and felsic volcanic rocks and associated volcaniclastic and epiclastic rocks (Swanson and Brown, 1962; Thurlow and Swanson, 1981). The Buchans Group is best known for hosting the world-class, high grade, polymetallic Buchans Mine which produced 16.2 million tonnes of ore containing 14.51% Zn, 1.33% Cu, 7.56% Pb, 126 g/t Ag, and 1.37 g/t Au between 1928 and 1984 (Kirkham, 1987).

The Exploits subzone hosts the base metal-bearing Victoria Lake Supergroup which consists of a structurally complex, collage of bimodal Cambrian to Ordovician arc-related magmatic and sedimentary rocks (Evans and Kean, 2002; Rogers and van Staal, 2002). The Victoria Lake Supergroup consists of at least six distinct fault bound volcanic packages or groups, bounded by the Red Indian Line to the northwest and the Rogerson Lake Conglomerate to the southeast (Figure 11). The contacts between the different volcanic groups are typically high-strain zones and generally interpreted to be thrust faults.

The Victoria Lake Supergroup volcanic-sedimentary assemblages defines an overall younging sequence to the northwest (Rogers and van Staal, 2002; Valverde-Vaquero and van Staal, 2002; Zagorevski et al., 2003; Hinchey and McNicoll, 2016; Lode 2016). From east to west these include:

- 1. Tally Pond Group (513 ± 2 Ma, 509 ± 1 Ma, 512 ± 2 Ma, 514 ± 7 Ma)
- 2. Long Lake Group (506  $\pm$  3 Ma, 514  $\pm$  0.8 Ma, 511  $\pm$  4 Ma)
- 3. Tulks Group (498 +6/-4 Ma; 495 ± 2 Ma)
- 4. Pats Pond Group (488 Ma?)
- 5. Sutherland Pond Group dominantly sediments
- 6. Wigwam Pond Group dominantly sediments

The Victoria Lake Supergroup is host to numerous base metal-bearing VMS deposits, showings and extensive alteration zones, as well as several gold prospects and occurrences (Kean and Evans, 1998a,
1998b; Kean et al., 1981; Moore, 2003). This mineralization is distributed throughout all of the volcanic lithotectonic assemblages that comprise the Victoria Lake Supergroup.

The Tulks Group contains at least eight known massive sulphide deposits, some of which are currently undergoing evaluation, including the Boomerang Deposit, which has a current Mineral Resource Estimate prepared in accordance with NI 43-101 and the CIM Standards. This includes an Indicated Mineral Resource of 1,364,600 tonnes grading 7.09% Zn, 3.00% Pb, 0.51% Cu, 110.43 g/t Ag, and 1.66 g/t Au, and an Inferred Mineral Resource of 278,100 tonnes grading 6.72% Zn, 2.88% Pb, 0.44% Cu, 96.53 g/t Ag, and 1.29 g/t Au (at a 1% Zn cut-off grade). The adjacent Domino Deposit hosts an additional 411,200 tonnes of Inferred Mineral Resource grading 6.3% Zn, 2.8% Pb, 0.4% Cu, 94 g/t Ag and 0.6 g/t Au, also prepared in accordance with NI 43-101 and the CIM Standards (De Mark, P. and Dearin, C., 2007).



Figure 10. Tectonostratigraphic Zones of Newfoundland.



Figure 11. Regional Geology and Mineral Occurrences of the Victoria Lake Supergroup.

The Long Lake Group hosts four massive sulphide lenses that occur over 5 kilometres of strike length. The massive sulphide is associated with barite and is underlain by intensely altered felsic volcanic rocks containing stringer and disseminated base metal-bearing sulphides (Noranda 1998). In 2013, Messina completed an initial NI43-101 Mineral Resource Estimate for the Long Lake Main Zone Deposit with an Indicated Mineral Resource of 407,000 tonnes grading an average of 7.82 percent zinc, 1.58 percent lead, 0.97 percent copper, 49 g/t Ag and 0.57 g/t Au and an Inferred Mineral Resource of 78,000 tonnes grading an average of 5.77% Zn, 1.24% Pb, 0.70 % Cu, 34 g/t Ag, and 0.48 g/t Au (Keller and Bernier, 2012).

The Tally Pond Group hosts the past producing Duck Pond / Boundary deposits and the precious metalrich Lemarchant Deposit. The Duck Pond Mine was active from 2007 to 2015 and produced 5.4 million tonnes averaging 5.8% Zn, 0.9% Pb, 3.3% Cu, 0.86 g/t Au and 59 g/t Ag (MODS).

The Neoproterozoic Sandy Brook Group ( $\sim$ 563 Ma, 572 ± 4 Ma) and related intrusions are located along the southern margin of the Tally Pond Group. The Sandy Brook Group hosts extensive underexplored VMS-style alteration zones and a high-grade massive sulphide occurrence at Burnt Pond.

#### 7.2 Property Geology

The Lemarchant Property is largely underlain by the Tally Pond Group (Figure 12). The volcanic belt consists of Cambrian-aged volcanic, volcaniclastic and lesser sedimentary rocks that extend from Quinn Lake in the southwest to Burnt Pond in the northeast. The Tally Pond Group is defined as a bimodal volcanic assemblage and is sub-divided into two informal volcanic sequences: the basalt-dominated rocks of the Lake Ambrose Formation and the overlying felsic-dominated rocks of the Bindons Pond Formation (Evans and Kean, 2002; Rogers and Van Staal, 2002; Pollock et al., 2002a; Rogers et al, 2006; Squires and Hinchey, 2006; McNicoll et al. 2008). The volcanic and sedimentary rocks of the Tally Pond Group are obscured in most areas by thick surficial deposits, so map patterns are generally not well constrained.

The Lake Ambrose Formation consists of variably amygdaloidal, locally porphyritic, pillowed to massive mafic flows, with lesser pillow breccia, autoclastic, reworked tuffs and minor sedimentary rocks. Intercalated felsic volcanic rocks are commonly present, but subordinate to the mafic rocks. The mafic rocks are compositionally sub-alkalic basalt or basaltic andesite with a depleted island-arc tholeiitic signature (Pollock et al., 2002 a, b). The mafic volcanic rocks are variably magnetic producing local magnetic highs. Age dating indicate ~513-514 million years ("Ma") for the Lake Ambrose Formation (Dunning et al, 1991, McNicoll et al 2008).

The Bindons Pond Formation consists of felsic flows that are variably massive to pseudo-brecciated and locally flow banded, breccia, tuffs and quartz porphyry with rhyolitic to dacitic composition. The felsic rocks have transitional to calc-alkalic geochemical signatures. Age dates indicate ~509 Ma for the Bindons Pond Formation (McNicoll et al, 2008) and is host to the Duck Pond and Boundary VMS deposits.

The contact between the Lake Ambrose Formation and overlying Bindons Pond Formation is intricately intermingled suggesting synchronous deposition to contacts marked by a relatively thin (<1 to 20 metre) sequence of argillite, siltstone or pyritic mudstone that marks a hiatus in volcanic activity. At the Lemarchant Deposit, a metalliferous mudstone horizon marks the top of Main Zone mineralization which transitions altered felsic volcanic rocks (footwall) to mafic volcanic rocks (hangingwall). The argillite and mudstone sequences form short (<500 m) to lengthy airborne EM conductor trends within the belt and are targets for base metal exploration.

The Lemarchant microgranite is a large, bimodal felsic/mafic intrusive body located between the Lemarchant Deposit and the Rogerson Lake prospect. The Lemarchant microgranite is described as fineto medium-grained quartz and feldspar porphyritic felsic intrusive rocks. The Lemarchant microgranite has a similar geochemical signature to the felsic volcanic rocks of the Bindons Pond Formation suggesting that the intrusion is syn-volcanic and related to VMS alteration and mineralization at Lemarchant and Rogerson Lake (Squires and Moore, 2004).



Figure 12. Geology Map – Lemarchant Property Area (modified after Cullen et al, 2018).

The volcanic sequences of the Tally Pond group are locally capped by Upper Ordovician (Caradoc) black shale units, commonly located along the wester margin of the Property. The black shale units typically form long strike length conductors through the belt due to high graphite, pyrite and pyrrhotite contents. The black shale units are in turn overlain by Ordovician marine turbidite and epiclastic rocks of the Harpoon Brook Formation. The volcanic rocks of the Bindons Pond and Lake Ambrose formations are often in fault (thrust) contact with these younger overlying sedimentary sequences (Kean and Jayasinghe, 1982).

The Tally Pond Group volcanic and sedimentary stratigraphy is cut by the Ordovician-aged Harpoon Gabbro. The Harpoon Gabbro is well exposed in the northeast portion of the property and is associated with sills and dykes that crosscut all lithologies including mineralized rocks at the Duck Pond Mine and the Lemarchant Deposit. The Harpoon Gabbro forms a large magnetic high in the eastern part of the Property.

The Neoproterozoic Sandy Brook group underlies the southeast boundary of the property and consists of an estimated 8 km long belt of bi-modal volcanic and associated sedimentary rocks. The Sandy Brook group has been subdivided into four units including: i) felsic volcanic unit; ii) chloritoid-rich unit; iii) volcaniclastic unit; and iv) mafic volcanic unit. The felsic volcanic rocks consist of strongly foliated, quartzphyric fragmental and/or pseudo-fragmental rocks, with lesser massive, quartz-phyric to aphyric rhyolite that displays strong sericite, silica, ferroan carbonate and pyrite alteration. The rocks are unconformably overlain by the Rogerson Lake conglomerate to the south and in thrust (?) contact with the younger Tally Pond Group to the west. The VMS alteration indices are very similar to the strong alteration signatures seen at the Lemarchant Deposit and Duck Pond Mine (Barbour and Churchill, 2005).

The Sandy Brook group is interpreted to be Neoproterozoic based on a similar Nd isotopic signature as the Burnt Pond Formation (ca.  $572 \pm 4$  Ma (U-Pb)). These rocks are similar in age to the Valentine Lake trondhjemite ( $563 \pm 2$  Ma) and Crippleback Lake quartz monzonite ( $565 \pm 4/-3$  Ma) that occur along strike to the northeast and southwest at a similar structural and stratigraphic location (Pollock et al., 2002b; Rogers et al., 2006; McNicoll et al., 2008).

The Silurian-aged Rogerson Lake conglomerate is located along the southeast margin of the South Tally Pond property. The unit is deep red to grey, hematitic, and comprises pebble to cobble conglomerate with occasional beds of sandstone. The conglomerate is generally thick bedded and weakly to moderately sorted, with clast-supported texture. The conglomerate contact is discordant to the trend of volcanic units within the Sandy Brook Formation, suggesting structural juxtaposition, or that the conglomerate might have been deposited in a graben-like structure. This unit is interpreted as a fault-scarp, molasse-type sequence that is suspected to mask a Silurian or earlier structure (Kean and Evans, 1988).

Recent exploration along the margins of the Rogerson Lake conglomerate in the South Tally Pond Property area has resulted in the discovery of numerous gold occurrences. Gold has been identified within several different geological settings including, structurally controlled quartz veins within the Rogerson Lake Conglomerate, structurally-controlled disseminated and stringer pyrite in altered feldspar porphyry, and within the deformed contact zone between the Rogerson Lake Conglomerate and an underlying gabbroic unit.

#### 7.2.1 Structure and Metamorphism

Major lithological contacts within the Tally Pond Group (i.e., black shale/felsic volcanic contacts) are defined by early stage thrust faults that mark early (D<sub>1</sub>) deformation and tectonic amalgamation of the various volcanic arc and sedimentary sequences within the region (Evans and Kean, 2002; Rogers et. al., 2006; Zagorevski and van Staal, 2002). The fault zones are generally marked by localized shearing and fault breccia development. Local thrust induced folds are observed on the property.

The oldest deformation is recorded as a north-south striking, and moderately to steeply east dipping  $S_1$  foliation that is present in fine-grained mafic xenoliths/rafts within the plagiogranite sequence. Zones of ductile shearing, largely observed in drill core represent an early stage fabric ( $S_1$ ). This shear fabric is often sub-parallel to lithological contacts and is commonly associated with sulphide-rich, carbonaceous shale units, or zones of locally intense Fe-carbonate and sericite alteration. This penetrative fabric is also observed to transgress lithological contacts and to define the Lemarchant Fault, a relatively early stage thrust fault affecting the stratigraphy at the Lemarchant Deposit (Collins, 1994; Squires and Moore, 2004). A similar relationship has been observed at the Duck Pond Mine where the hangingwall to the Duck Pond Deposit is truncated by the Duck Pond Thrust, an early stage, and possibly reactivated thrust fault. The  $S_1$  fabric is tentatively interpreted to be related to early stage, lithology parallel thrust faulting within the Tally Pond Belt (Barbour and Churchill, 2005).

The second deformation event is represented as a regional, east to southeast striking and moderately north dipping  $S_2$  foliation that is present in all lithologic units. The foliation is well developed in the finegrained ductile lithologies, and macroscopically absent in the more competent lithologies such as pillow basalt flows and massive, siliceous rhyolites. The regional pervasive nature of the foliation, and its orientation at a relatively large angle to the trend of lithologic units, suggest that the foliation is an axial planar fabric related to regional folding. The nature of this folding is poorly documented because the volcanic stratigraphy is composed of thick, massive units that were originally far from planar. There is a general lack of bedded or thinly layered units in the stratigraphy, and where present, they are very poorly exposed (Barbour and Churchill, 2005).

All lithologies and mapped  $D_1$  thrust faults have been deformed about generally upright, open to tight, east-northeast-striking, southeast-verging folds ( $F_2/D_2$ ). This fold system marks progressive deformation and thickening of the volcanic belt and is associated with development of a weak to moderate pervasive easterly striking foliation. The  $F_2$  folds are gently shallow to doubly plunging, which causes multiple repetitions of the main lithological contacts within the belt.

The Victoria Lake Supergroup has a lower-greenschist facies metamorphic signature (Evans and Kean, 2002). Rock units of the Tally Pond group are relatively well preserved with intact, primary volcanic textures that are easily discernible in surface outcrops and drill core.

#### 7.2.2 Mineralization

The Lemarchant Property is host to the Lemarchant Deposit and several zones of hydrothermal alteration and mineralization (Figure 12). Volcanogenic massive sulphide-style mineralization is associated with alteration zones and consists of semi-massive to massive sulphides or stringer and disseminated sulphides containing various proportions of pyrite, pyrrhotite, chalcopyrite, sphalerite, galena, bornite and massive barite. The two main alteration areas are described below.

**Lemarchant Deposit** is hosted within a 4000-metre long and up to 700-metre wide zone of VMS-style hydrothermal alteration. Alteration varies between intense silicification, sericitization, chloritization and barium-enrichment, with anomalous disseminated and stringer pyrite, base metal sulphides and lesser pyrrhotite. Lithogeochemical analyses of the altered rocks returned alteration signatures comparative to those of the alteration surrounding the Duck Pond and Boundary deposits. Massive, semi-massive and stringer sulphide mineralization at the Lemarchant Deposit is further discussed in Section 7.3.

**Bindons Pond Prospect** is a poorly exposed zone of altered felsic volcanic rocks estimated to be 900 metres long by 200 metres wide and located south of a mafic-felsic volcanic contact (Figure 12). Alteration is dominated by varying amounts of quartz, sericite, and chlorite, with abundant stringer pyrite and minor base metal sulphides. The presence of short strike length airborne EM conductors and anomalous soil geochemistry provide a favourable target for initial drill testing. The felsic rocks are interpreted to be the folded eastern exposure of the felsic rocks seen at the Lemarchant Deposit.

### 7.3 Lemarchant Deposit Geology

The Lemarchant area stratigraphy consists of a north striking, gently east dipping sequence of mafic and felsic volcanic rocks that are locally cut by mafic to felsic intrusive rocks (Figure 13). From youngest to oldest, the general stratigraphy consists of an upright sequence (generally 150-200 metres thick) of gently east dipping, aphyric, magnetite-bearing, pillowed, massive or brecciated mafic flows and flow breccias, and associated syn-volcanic mafic dykes and sills. At the base of this mafic "hangingwall" sequence is a conformable fine-grained, generally thin (<1 to 20 metres), conductive, pyrite mineralized mudstone horizon (metalliferous mudstones) that conformably overlies, or is intercalated with, the massive sulphide and barite mineralization. The mineralized zone varies in thickness from less than 1.7 metre up to 30 metres. Below the mineralized zone is a sequence of moderate to strongly altered, and variably mineralized felsic volcanic and volcaniclastic rocks. This felsic "footwall" sequence varies in thickness from <10 to 50 metres before grading into less altered felsic volcanic rocks measuring up to 250 metres thick.

The mafic hanging wall rocks contains some silica-chlorite-epidote alteration, but are generally not significantly altered. Alteration in the felsic footwall generally consists of moderate to intense quartz-sericite±chlorite alteration with local, moderate to intense chlorite altered intervals. The alteration zones typically contain disseminated to stringer Cu-Pb-Zn mineralization.

A gently, west-dipping, east-verging thrust fault (D1), termed the Lemarchant fault cuts the mineralization and underlying footwall sequence (Figure 13). The Lemarchant fault is observed in multiple drill holes as a strongly deformed, ductile structure with well-developed fabric up to several metres wide. In these drilled areas, the fault zone typically marks a succession of variably altered felsic volcanic rocks structurally overlying mafic volcanic rocks which resemble the hangingwall mafic volcanic rocks. Several drill holes have been completed through this lower mafic volcanic sequence and successfully intersected a lower sequence of altered and stringer mineralized felsic volcanic rocks. This lower package of felsic volcanic rocks has been termed the Lower Felsic Block (LFB).

Faults are a prominent feature of the deformation history of the Tally Pond Group and are observed to truncate and offset mineralization at Duck Pond (Moore, 2003; Squires and Moore, 2004). At the Lemarchant Deposit, the east-west trending fault structures (D2) have been identified by offsets of the stratigraphy. Outcrop patterns and drilling results outline west to northwest-striking faults, with minor dextral surface displacement, cutting through the Lemarchant Deposit. Surface magnetic patterns and conductor offsets support the presence of a number of east-west to northwest oriented faults. Evidence from drilling indicates these structures are generally parallel to the section orientation, are steeply dipping and recognized by broken, blocky and brecciated sections in the drill core. Multiple drill pierce points suggest extensional displacement along the faults resulting in up to 100 metres of dip-slip movement.

The Lemarchant Deposit consists of two stratiform massive to semi-massive sulphide zones and underlying stringer zones located between section 100+50N to 104+50N (Main Zone) and between section 105+00N to 107+00N (Northwest Zone). The Main Zone mineralization is located approximately 120 to 210 metres below surface, dips gently to the east, and is truncated by the Lemarchant fault down dip.

The Northwest Zone is located approximately 300 to 350 metres below surface, dips gently to the west, and is truncated by gabbroic intrusion(s) to the east and by thrust faults(?) to the west. The massive sulphides zones vary in thickness from less than 1 metre to 30.4 metres and are underlain by a sequence of intensely altered and barium-enriched felsic volcanic rocks.

Mineralization is characterized by high-grade, zinc-lead-copper semi-massive to massive sulphides with significant precious metal (gold, silver) contents, massive, mineralized barite intervals, and an underlying copper rich stringer sulphide zone. The mineralization has been characterized by Gill and Piercey (2014) into five distinct mineral assemblages as follows:

Type 1 Assemblage	Granular barite, white sphalerite, pyrite, galena and trace chalcopyrite and retrahedrite-tennantite group minerals.									
Type 2A Assemblage	Bornite, galena and chalcopyrite.									
Type 2B Assemblage	Bladed barite, tetrahedrite-tennantite group mineral, galena and precious metals (gold).									
Type 3 Assemblage	Red sphalerite, fine to medium grained pyrite, lesser galena and chalcopyrite and minor barite.									
Type 4 Assemblage	Chalcopyrite, pyrite and minor orange sphalerite stringers.									



Figure 13. Geology Map - Lemarchant Deposit (from Cullen et. al., 2018).

The paragenesis of the sulphide mineralization at Lemarchant is broadly divided into three stages of deposition (Gill and Piercey, 2014; Gill et al., 2015) as follows:

<u>Stage 1</u> early fluids were dominated by Type 1 mineral assemblages forming massive, mineralized barite at the seafloor upon mixing with oxygenated seawater.

<u>Stage 2</u> paragenesis resulted in variable replacement of the barite-rich Type 1 mineral assemblage by Type 2A in the central portions of the deposit and Type 2B along the margins of the deposit. The barite is cross-cut by bornite, likely the product of copper transport in highly oxidized fluids. The restriction of the bornite to barite zones suggests that bornite formed prior to Stage 3 mineralization.

<u>Stage 3</u> type 3 and 4 mineral assemblages were deposited to the massive sulphide and stringer zones, respectively. The Type 3 replaced the upper portion of the Type 1 mineral assemblage and the Type 4 stringers were deposited in the stringer sulphide zones below the Type 1, 2, and 3 mineral assemblages.

The paragenesis from barite to lead-zinc sulphides (black ore) to more copper-rich sulphides (yellow ore) is like most VMS systems representing initial lower temperature venting (barite), through moderate temperature venting (black ore) to higher temperature (~300°C) venting (yellow ore).

Alteration varies between intense silicification, sericitization, chloritization and barite-enrichment with anomalous disseminated and stringer pyrite, base metal sulphides and lesser pyrrhotite. Ishikawa (Ishikawa, 1976) and ACNK ( $AI_2O_3$ /Total Alkali) are useful alteration indices in assessing the alteration intensity. Ba/Sr (barium/strontium) is a useful ratio in determining the presence of Ba-enrichment in footwall rocks, suggesting proximity to hydrothermal seafloor venting. Typically, rocks at the Lemarchant Deposit with Ishikawa >50, ACNK >1.4, and Ba/Sr >25 are considered altered. Moderate to intense alteration of felsic volcanic rocks are common below the massive sulphide mineralization, but also occurs north and south of the Lemarchant Deposit in the Lower Felsic Block. These areas remain important exploration targets as they have similar felsic volcanic lithology and alteration intensity and may represent the structural repetition of the host stratigraphy to the Lemarchant Main Zone.

Airborne geophysical surveys have defined several shallow (< 150 metres), short strike length conductive trends of significance. Two airborne EM conductive trends follow the mafic-felsic contact that marks the horizon hosting the Lemarchant massive sulphides at depth (Figure 13). The airborne EM conductors are interpreted to represent the near surface pyrite and pyrrhotite-bearing mudstone and argillaceous sediment at the mafic-felsic contact. These mudstones typically overlie the massive sulphides and associated VMS-style alteration zone in the underlying felsic volcanic strata. There is a notable gap in the airborne EM conductors directly over the Main Zone mineralization (i.e., no near surface mudstones) which presumably resulted from structural displacement along the east-west structures.

Historical and more recent geochronology work by McNicoll et al (2008, 2010) indicates the available age dates for the Lemarchant Deposit host rocks are limited (1 sample), but does show that the felsic footwall rocks have a U-Pb age date of ~513 Ma. This suggests the Lemarchant Deposit host stratigraphy is part of the older Lake Ambrose Formation which has yielded similar age dates of ~514-513 Ma. This older stratigraphy coincides with the Upper Block stratigraphy at the Duck Pond Deposit which has age dates from 514-512 Ma, and hosts an abundance of metalliferous mudstones, but no significant mineralization. The Upper Block stratigraphy structurally overlies the younger host rocks to the Duck Pond and Boundary deposits (Mineralized Block) and are dated at ~509 Ma. This coincides with known age dates for the Bindons Pond Formation (Figure 14).

Piercey et al. (2017) indicate the metalliferous hydrothermal mudstones in the Upper Block are similar to the mineralization-associated mudstones at the Lemarchant Deposit. The lithogeochemistry of these hydrothermal mudstones provide an excellent opportunity to evaluate vent-distal and vent-proximal sedimentary rocks as a means to exploration vectoring within the Tally Pond belt and similar geological environments.



Figure 14. Tally Pond Stratigraphy - Duck Pond/Boundary Deposits.

## 8.0 DEPOSIT TYPES

The Lemarchant Property has been explored for volcanogenic massive sulphide (VMS) deposits enriched in zinc, copper, lead, gold and silver. These deposits are well known in the central Newfoundland with the past producing Buchans ore deposits (1926-1984) and more recently mined Duck Pond and Boundary deposits (2007-2015).



Figure 15. Bimodal Felsic Complex with alteration zones

Volcanogenic massive sulphide (VMS) deposits are formed in a submarine volcanic environment by discharge of metal-bearing fluids onto or just beneath the sea floor following and during active deposition of volcanic lavas (Franklin et al., 1981; Franklin, 1993; Franklin et al., 2005; Gibson, et al., 1999; and Barrie & Hannington, 1999). These deposits are currently classified into five different types, largely based on the nature of the rocks hosting the massive sulphides deposit (Galley et al., 2007; Franklin et al., 2005). The Lemarchant and Duck Pond and Boundary deposits are classified as Bimodal-Felsic VMS deposits as they are predominantly hosted within stratigraphy containing greater than 50% felsic volcanic rocks, less than 15% siliciclastic sediments and mafic volcanic rocks forming the remainder (Figure 14).

Key characteristics of these deposit types are that they commonly form concordant lenticular to tabular shaped bodies that overlie a footwall stockwork sulphide and hydrothermal alteration zone (chlorite, silica, sericite) that is generally discordant to the contacts of the host rocks (Date et al., 1983; Saeki and Date, 1980; Spitz and Darling, 1978). The massive sulphides and underlying stringer systems are often

closely associated with felsic lava domes, volcaniclastic breccia, subvolcanic intrusions and syn-volcanic fault zones. Discharge of hydrothermal fluids is largely controlled by a combination of syn-volcanic fracture/fault zones and host rock permeability and porosity.

VMS deposits commonly form at a favourable stratigraphic horizon within volcanic belts and are found in clusters throughout productive volcanic belts globally. This transition generally records a significant hiatus in volcanism that is marked by a relatively thin sequence of either chemical or clastic sedimentary rocks that, depending upon proximity to the hydrothermal vent system, may be intimately associated with base metal sulphide deposition (hydrothermal exhalite, e.g., modern black and white smokers). Bimodal felsic VMS deposits are commonly found within more compositionally mature volcanic arcs and are usually more silver, zinc and barium-rich than the other VMS deposit types. Examples of these deposit types include Kuroko, Japan; Tasmanian VMS deposits (Hellyer, Que River) and Buchans, Newfoundland.

# 9.0 EXPLORATION

During 2022, Canterra carried out a data review and targeting exercise on the Lemarchant Deposit in conjunction with an IP survey. The data review and targeting was aimed at expansion of the existing Mineral Resource at Lemarchant.

# 9.1 Lemarchant Targeting

Several generations of archived diamond drill and soil geochemical data, magnetic and electromagnetic (EM) surveys are available for the Lemarchant area (Longridge and Chrzastowski, 2023). The targeting step was based primarily on an updated structural interpretation of the project area using airborne magnetic data which was then was integrated with by soil geochemical and drillhole data, and reviewed in the context of other available geophysics (DCIP & MT, Ground EM, Downhole EM, Ground Gravity).

The following relevant data is available for the Lemarchant project (Longridge and Chrzastowski, 2023):

- Diamond drillholes, with drill logs and assays (>50,000m, 165 BH drilled)
- Airborne magnetic data & EM (2004 Time-Domain EM, 2011 Aeroquest EM & Mag Survey)
- DCIP & MT (2008 Titan survey)
- Ground EM (2007 & 2010 Pulse EM, 2011 Deep EM, 2016 TDEM, 2017 Fixed-Loop EM)
- Downhole EM
- Ground Gravity (2 lines)
- Till/Soil samples (>2000 samples collected & assayed by Noranda and Canadian Zinc)
- 3D modeling of structures

The initial targeting step was conducting a structural interpretation of the project area using airborne magnetic data – this revelated several additional normal faults that are inferred over the southwestern portion of the property, in addition to an earlier (D1) anticlinal structure also inferred to the southwest. The interpretation is shown in Figure 16. This interpretation was overlain by soil geochemistry data and existing drillhole.

The work identified four priority drill targets which are summarised as follows:

- Target 1 is a potential anticline, with a core of rhyolites and felsic tuffs of the Bindons Pond Formation, overlain by mafic rocks of the Lake Ambrose Formation dipping to the west or east. Traces of sphalerite and chalcopyrite have been identified in historic drillholes, the stratigraphic setting is like the Main Zone deposit, and the target is largely untested.
- Target 2 is potentially an extension of the Main Zone deposit, which is inferred to have has been fault displaced. Although the area has been drill tested, mineralization appears to increase in grade and thickness up-dip towards the west, suggesting that thicker, higher-grade mineralization may be present at shallow depths to the west.
- Target 3 is interpreted as a downthrown graben with possible deeper extensions of the Main Zone deposit.
- Target 4 is the northern extension of the Northwest Zone, where very little drilling has been carried out, particularly testing for deeper mineralization within the felsic volcanics of the Bindons Pond Formation.



Figure 16. Lemarchant Project structural interpretation based on airborne magnetic data, Zn soils and deposit locations (from Longridge and Chrzastowski, 2023).

# Target 1 – Southwest Anticline

Target 1 is hypothesised to be an anticline, with a core of rhyolites and felsic tuffs of the Bindons Pond Formation, overlain by mafic rocks of the Lake Ambrose Formation dipping to the west or east. The contact between the two formation is marked by graphitic greywacke or mudstone, which commonly contains pyrrhotite and pyrite, and which forms the magnetic high used to trace the anticlinal structure. Two drillholes (372-04 and 372-05) were drilled by Noranda in 1983 into the anticline and identified the typical sequence found at the Main Zone deposit, with mafic volcanics (Lake Ambrose Formation) overlying felsic

volcanics (Bindons Pond Formation), with greywacke or mudstone near the contact. A section through the anticline based on these two holes is shown in Figure 17. Although Noranda identified traces of sphalerite and chalcopyrite in their 1983 drillholes, very few samples were assayed from these cores.

Soil geochemical data (collected by Paragon Minerals in 2008) shows anomalous Zinc values of >100 ppm in the core of the interpreted anticline, as well as anomalous values for Cu and Pb (Figure 18). In addition, the mudstone horizon drilled in 1983 by Noranda was identified in a 2016 PEM survey (**Error! Reference source not found.** 19).

Although Noranda identified traces of sphalerite and chalcopyrite in their 1983 drillholes, very few samples were assayed from these cores.

Soil geochemical data (collected by Paragon Minerals in 2008) shows anomalous Zinc values of >100 ppm in the core of the interpreted anticline, as well as anomalous values for Cu and Pb (Figure 18). In addition, the mudstone horizon drilled in 1983 by Noranda was identified in a 2016 PEM survey (Figure 19).



Figure 17. NW-SE section through Noranda drillholes 372-04 and 372-05. The location of the section is shown on Figure 16 (from Longridge and Chrzastowski, 2023).



Figure 18. Map of the Southwest Target, showing the location of the cross-section (**Error! Reference source not found.**), and soil geochemical data for Zn, Cu and Pb (from Longridge and Chrzastowski, 2023).



Figure 19. Results of a 2016 PEM survey over the Southwestern Target (from Longridge and Chrzastowski, 2023).

### Target 2 – Main Zone Southern Extension

The Main Zone deposit strikes northwest-southeast, and dips moderately to the east. The deposit stops abruptly to the south (**Error! Reference source not found.**), where it is inferred that it has been

displaced by a fault – although several holes have been drilled to test continuity south of this fault, most have only intersected low-grade or no mineralization.



Figure 20. Map of Target 2 area, where the Main Zone deposit is interpreted to have been truncated by a normal fault (from Longridge and Chrzastowski, 2023).

An east-west section south of the Main Zone deposit (Figure 21) shows that mineralization occurs in felsic volcanic rocks of the Bindons Pond Formation, which dips to the East. Mineralization appears to increase in grade and thickness up-dip towards the west, with grades of 7.4% Zn, 0.64% Cu, 6.3% Pb and 1.14g/t Au over 0.6 m in hole LM91-01, suggesting that thicker, higher-grade mineralization may be present at shallow depths to the west.



Figure 21. East-west cross section south of the Main Zone - note the possible increase in grade (and thickness) of mineralization towards the west (from Longridge and Chrzastowski, 2023).

#### <u>Target 3 – Graben Wedge</u>

Target 3 is interpreted as a downthrown graben, based on airborne magnetic data (Figure 22). Although the contact between the Bindons Pond Formation and the Lake Ambrose Formation has been tested, possible deeper extensions (coincident with a soil anomaly for Zn) have not been tested, and this area is suggested as having potential for additional mineralization.



Figure 22. Map of the Graben Wedge Target (from Longridge and Chrzastowski, 2023).

# Target 4 – Northwest Zone Northern Extension.

The Northwest Zone deposit occurs at deeper levels than the Main Zone (up to ~400 m below surface), and also occurs broadly within the Bindons Pond Formation felsic volcanic rocks, rather than near the upper contact with the Lake Ambrose Formation (as in the Main Zone). The Northwest Zone has been interpreted as part of a possible "feeder zone" system (Longridge and Chrzastowski, 2023).

Like the Main Zone, the Northwest Zone is truncated to the north and south by upright (normal or strike slip) D2 faults (Error! Reference source not found.). Although some drilling has been carried out north of the Northwest Zone, focused on the contact between the Bindons Pond Formation and the Lake Ambrose Formation (Error! Reference source not found.), very little drilling has been carried out to test for northwards extensions to the Northwest Zone, particularly testing for deeper mineralization withing the felsic volcanics of the Bindons Pond Formation. This is suggested as an additional target, although deeper drillholes (up to ~500 m) would be required here than for the other targets described above.

Also note that the N-S striking Northwest Zone is only about 100 m wide (in an E-W direction) at its broadest point – therefore drillholes will need to be spaced at about 50 m or less to detect a similarly sized mineralized body.



Figure 23. Map of the Northwest Zone Extension Target (from Longridge and Chrzastowski, 2023). Base Map are airborne EM anomalies (2011). Note that the Northwest Zone has no EM response, and that the contact between the Bindons Pond Formation and the Lake Ambrose Formation is marked by a graphitic mudstone horizon that gives a strong EM response.

### 9.1 Lemarchant IP Survey

In 2022, Canterra contracted Simcoe Geoscience ("Simcoe") of Toronto, Ontario to conduct an Alpha IP<sup>™</sup> Distributed Time Domain Survey on the Lemarchant Property. The survey used allows receiver dipoles to be designed and deployed without line cutting. Field survey specifications and parameters are outlined in Table 6. Survey coverage is provided in Table 7. Survey line locations are illustrated on **Error! Reference source not found.** 

The Alpha IP<sup>™</sup> Wireless Time Domain Distributed Induced Polarization system allows for the simultaneous deployment of 16 receiver dipoles (8 Alphi) along each 1800m profile in single deployment. For the longer profiles, 36 receiver dipoles (18 Alphi) in a single deployment were setup.

The Alpha IP system provides precise full waveform time series data including Induced Polarization, Resistivity and SP (self potential) measurements. Each receiver unit (Alphi) is a dual channel system and continuously record at a 10 millisecond (ms) sample rate. The Alphi's synchronizes the GPS PPS signal with transmitter and current recording unit, allowing for smooth processing of the signal.

Each Alphi is fully independent, incorporating its own power source, GPS module and digital memory for up to 3 months continuous recording. Data on the memory can be downloaded directly on a simple USB stick for post processing.

Parameter	Lemarchant Property
Survey Array	Dipole-Pole-Dipole Array
Receiver Configuration	100 Rx = Continuous In-line voltages
Array Length	1750 m up to 4500 m
Dipole length	Rx = 100 meter
Sampling Interval	Ex = 100 meter
Rx-Tx Separation	N-spacing = $1-40$ (max)
Tx Current	+/- 1 - 20 Amps
Input Impedance	100 MOhms
Input Voltage	15V, automatic gain, input protection 1000V
Readings	Full waveform 10ms (100Hz) sampling rate
Noise Rejection	Power line rejection, SP linear drift correction
Transmitter Square wave Switching	2 sec., (2 sec. ON+, 2sec. OFF, 2 sec. ON-, 2sec. OFF)
Chargeability Windows	20 Programmable
Time-Series Stacking	up to 100 cycles (full waveform)
Read Time	approx. 7.0 minutes per station
Time-Domain Decay Window	1600 ms
Integration Start Time	220 ms
Integration End Time	1820 ms

Table 6. Field Survey Specifications and Parameters.

Line	Easting	Northing	Surface	Target	Priority	Target	Target	Chargeability	Resistivity	Structure
			Elevation (m)	IJ		Depth (m)	Elevation (m)			
L14E	520445.28	5375798.1	361.6	S1	1st	104.42	257.16	Strong	Mod/High	Contact
L14E	520773.35	5375653.4	359.8	S2	1st	119.1	240.68	Strong	Mod/High	Fault
L14E	521143.19	5375490.3	341.6	S3	1st	180.92	160.64	Strong	Mod/High	Contact
L14E	521876.69	5375166.8	324.5	S4	1st	154.4	170.06	Strong/Mod	Mod/High	Contact
L14E	520822.87	5375631.6	356.4	P1	3rd	454.71	-98.28	Strong	High	
L15E	520286.2	5375186.1	369	W1	2nd	72.45	296.58	Moderate	Mod/High	Contact
L15E	521267.5	5374852	333	W2	2nd	73.58	259.41	Moderate	Mod/High	Contact
L15E	521396.19	5374808.2	331.3	W3	2nd	101.29	230.05	Moderate	Low	Fault
L15E	520833.15	5374999.9	334.8	S1	1st	134.1	200.7	Strong	Low	Fault
L15E	521719.39	5374698.2	327.4	S2	1st	156.02	171.35	Strong/Mod	Mod/High	Contact
L16E	520823.51	5374202.2	337	W1	2nd	76.42	260.56	Strong	Low	Fault
L16E	521689.96	5373907.2	335	W2	2nd	50.33	284.66	Strong	Mod/High	Contact
L16E	520649.95	5374261.3	337.8	S1	1st	131.05	206.78	Strong/Mod	Mod/High	Contact
L16E	521209.96	5374070.6	332.1	S2	1st	164.24	167.84	Strong	Mod/High	Contact
L16E	521515.04	5373966.8	333.2	S3	1st	144.97	188.23	Strong	Low/Mod	Fault
L16E	520713.68	5374239.6	335.7	P1	3rd	360.69	-25.02	Strong	Low	Fault
L16E	521866.23	5373847.2	343	P2	3rd	360.6	-17.6	Strong	High	Intrusive
L17E	519820.98	5373433.9	343.4	W1	2nd	68.64	274.74	Strong	Low	Fault
L17E	519498.4	5373478.1	353.6	S1	1st	132.49	221.16	Strong	Mod/High	Fault
L17E	520093.73	5373396.6	345.7	S2	1st	136.63	209.06	Strong/Mod	Mod/High	Contact
L17E	520357.31	5373360.4	337.6	S3	1st	194.26	143.37	Strong	Mod/High	Contact

Table 7. 2022 IP Survey Coverage Lemarchant Property.



Figure 24. IP survey lines Lemarchant Property. Also shown are anomalies and priority targets (from Mirza, 2022).

### Results – Lemarchant

Four IP lines (L14E, L15E, L16E, L17E) were carried out over Lemarchant, with several targets identified along each section line, as shown in Figure 25 to Figure 28 below.



Figure 25. Lemarchant - Line 14E Interpreted Chargeability and Resistivity Sections (from Mirza, 2022).



Figure 26. Lemarchant - Line 15E Interpreted Chargeability and Resistivity Sections (from Mirza, 2022).



Figure 27. Lemarchant - Line 16E Interpreted Chargeability and Resistivity Sections (from Mirza, 2022).



Figure 28. Lemarchant - Line 17E Interpreted Chargeability and Resistivity Sections (from Mirza, 2022).

Two anomalous zones have been identified across the four sections surveyed at Lemarchant (Figure 24):

• AZ-7 This zone trends almost north-south and extends across all the lines and lies on the western side of the grid. It covers six (6) first priority targets with the strongest chargeability observed in this zone.

• AZ-8 is located on the eastern side of the grid and extends from L14E to L16E and trends approximately north-south. It is broad and hosts four (4) first priority targets.

There are two other possible anomaly zones in the western part of the Lemarchant grid that are open towards west due to lack of data.

## 10.0 DRILLING

Since acquiring its Lemarchant Property in November 2021 Canterra has not undertaken any drilling. The following review of drilling was taken from the Technical Report by Cullen et al. (2018) and details work completed by NorZinc between 2013 to 2017.

A total of 165 drill holes for 52,950 metres have been completed at the Lemarchant Deposit including 14 Noranda drill holes and 60 Paragon drill holes as presented on Table 9. A drillhole locations are shown on Figure 29 below and two cross sections, one through the Main Zone (Figure 30) and one through the Northwest Zone (Figure 31) are provided.

NorZinc completed 91 drill holes for 28,675 metres from 2013 to 2017 at the Lemarchant Deposit and immediately along strike to the north and south. The total meterage includes 1,390 metres of drilling in 8 drillhole extensions and 219 metres in 3 drill holes that were abandoned due to excessive deviation. The drilling has resulted in the discovery of the Northwest zone, addition mineralization up-dip of the Main zone, and further overall definition of the Lemarchant Deposit. All NorZinc drillhole information is provided in Appendix II.

The drill programs were supervised by Christine Devine, P.Geo (2013), Alex Marcotte, P.Geo. (2013/2014); Gerry Squires, P.Geo. (2014-2015), Andrew Hussey, P.Geo. (2014-2017) and Michael Vande Guchte, P.Geo. (2013-2017). Drill core is stored outside in steel core racks at Canterra's core logging facility in Buchan's Junction, NL. All significant drill intercepts are stored inside the core facility.

### 10.1 Drilling Methodology

New Valley Drilling Company Ltd. (2013-2014) and RNR Diamond Drilling Ltd. (2014-2017), both from Springdale, NL were contracted to complete the diamond drilling. The drilling was completed using unitized Boyles 37 and Duralite 500 drill rigs equipped to drill NQ-sized core to depths of 600 metres. Drill pads and trails were typically cut ahead of the drilling and drill moves were made using a wide-pad bulldozer and/or Nodwell (New Valley) or with an excavator (RNR).

Drill collars were marked in the field with 2"x 2" painted wooden posts and labelled with aluminum tags. During the drill programs, the drill collar coordinates were collected using a hand-held GPS unit. A Reflex single-shot downhole survey instrument or equivalent was used to monitor drillhole deviation, with tests taken at the 20 metre depth and then approximately every 60 metres down the drillhole. Drilling utilized an 18 inch reaming shell and a hexagonal core barrel to help keep the drill holes from deviating excessively. Drill core was placed in wooden core trays supplied by local suppliers. Overall, the drill core recovery is considered excellent with only local, broken blocky sections around fault zones.

All drill core was processed at NorZinc's secure, well-lit core logging facility in Buchans Junction, Newfoundland. NorZinc technicians determined rock quality designation (RQD), confirmed run lengths, and prepared the core for logging. Core boxes were labelled with aluminum tags indicating borehole number, box number, and core from and to data. Drill core was logged by NorZinc geologists who also selected and marked out all sample intervals. The drill core was systematically photographed four boxes at a time prior to sampling.

Year	Company	Drill holes	Metres	
1983	Noranda	2	171.9	372-1 and 371-2
1991-1993	Noranda	12	2,845.4	LM91-01 to 06, LM92-07 to LM92-
				08; LM93-09 to LM93-12
2007-2011	Paragon	60	21,258.4	LM07-13 to LM17-72; 4 extensions
	Minerals			(LM93-11E; LM08-24E; LM07-17E;
				LM08-28E)
Total Noranda	and Paragon	72	24,275.7	
2013 - Winter	NorZinc	9	3,371.2	LM13-73 to LM13-81; 2 extensions
				(LM08-27Ext; LM11-52Ext)
2013 - Fall	NorZinc	13	4,727.4	LM13-82 to LM13-94; 1 extension
				LM11-61Ext)
2014 - Winter	NorZinc	6	2,355.5	LM14-95 to LM14-100
2014 - Fall	NorZinc	6	2,644.0	LM14-101 to LM14-106; 2
				extensions (LM13-84E; LM13-94E)
2015 - Fall	NorZinc	1	239.0	LM15-107 (metallurgical drillhole)
2017 - Winter	NorZinc	10	3,071.4	LM17-108 to LM17-117; 3
				extensions (LM11-50E; LM11-68E;
				LM13-90E)
2017 -	NorZinc	38	9,082.0	LM17-118 to LM17-155
Summer				
2017 - Fall	NorZinc	8	3,184.2	LM17-156 to LM17-163
Total NorZinc		91	28,674.7	
TOTAL DRILLING	i	165	52,950.4	

Table 8. NorZinc's Diamond Drilling at Lemarchant Deposit.



Figure 29. Drill hole Location Map - Lemarchant Deposit (from Cullen et al., 2018)

All sampled drill core intervals were cut in half using a diamond-bladed rock saw. Half of the core sample interval was bagged and sent to Eastern Analytical Ltd. ("Eastern Analytical") in Springdale, NL, where samples were analysed for Cu, Pb, Zn, Ag and Au. The remaining half of the core sample is stored in the wood core trays with the sampled intervals marked for each sample. Select sample pulps resulting from the preparation for analysis at Eastern Analytical were forwarded to ALS Canada Ltd. ("ALS Canada") of North Vancouver, BC for 33 trace-element ICP analysis (ME-ICP61) and Au Fire Assay (Au-AA23). The check assay program at ALS Canada ranged from 6 to 14% of the samples submitted to Eastern Analytical. Eastern Analytical services firm accredited to the ISO 17025 Standard for Fire Assay Au, as well as for multi-acid ore grade assays in Cu, Pb, Zn, Ag, Fe and Co. ALS Canada is a commercial analytical services firm operating internationally that is also accredited to the ISO 17025 Standard for the metals noted previously.

A total of 2,684 drill core samples were submitted to Eastern Analytical for Cu, Pb, Zn, Ag and/or Au analysis along with 149 blanks and 149 standards as outlined in Table 10. All drill core samples were delivered to Eastern Analytical by NorZinc personnel.

A total of 335 check assay samples (pulps) were sent to ALS Canada for Cu, Pb, Zn and Ag analysis of which 148 were also analysed for gold. Selected samples were sent for whole rock geochemical analysis by ME-XRF06 and ME-MS81.

Samples	Au	Cu	Pb	Zn	Ag	
2544	х	х	х	х	х	Drill Core - Assay samples
44		х	х	х		Drill Core - Metallurgical Sample (LM15-107)
92		х	х	х	х	Drill core - Whole Rock Sample - no gold analysis
4	х					Drill Core - Gold analysis only
2684	2548	2680	2680	2680	2636	

Table 9. Summary of Drill Core Samples submitted to Eastern Analytical

Specific gravity determinations were carried out for 1,610 drill core samples via the mass in air/mass in water method for a total of 2,725 specific gravity density measurements. A total of 769 of the specific gravity readings fall within the geological solid used for the resource calculation.

In 2017, RIS Limited (Surveyors and Engineers) of Grand Falls-Windsor were contracted to survey all the Lemarchant drill holes. The drillhole survey was conducted using a GPS Real-time Kinematic (RTK) surveying system that obtains centimeter-level horizontal and vertical (elevation) accuracy. The GPS RTK data was collected in NAD83 MTM Zone 2 coordinates, the "TRX" and "NTv2" geodetic tools (provided on the Natural Resources Canada federal government website) were used to perform the coordinate transformation into NAD83 UTM Zone 21.

GeoticLog Software is utilized for entering and managing all the Lemarchant drillhole data. The data is stored in an MS Access database with hardcopy logs stored at NorZinc's core logging facility in Buchan's Junction, NL.

#### **10.2** Drilling Programs and Results

Seven drill campaigns were completed by NorZinc between 2013 and 2017 at the Lemarchant Deposit and surrounding area. The seven drill programs were completed in 2013 winter and fall, 2014 winter and fall and 2017 winter, summer and fall. Highlights of the drill programs are summarized below.

The Lemarchant Deposit mineralization is defined as two zones or lenses, referred to as the Main zone and the Northwest zone. The latter was discovered during the first drill program by NorZinc in 2013. The drill programs focused on further defining the Northwest mineralization, extending the Main zone mineralization up-dip and along strike to the south, testing for mineralization in the "lower block" felsic stratigraphy through drillhole extensions, and testing 2 priority target areas to the north and south.

### 10.2.1 2013 Winter Drill Program

The 2013 winter program resulted in the discovery of the Northwest Zone mineralization located 250 metres northwest of the Lemarchant Main Zone mineralization. A total of 9 drill holes (3,371.2 metres), including two drillhole extensions, were completed during the program. Highlights are summarized below with significant assay results provided in Table 11.

- Massive sulphide mineralization discovered 250 metres to the northwest of the Lemarchant main zone mineralization in drill holes LM13-73 and LM13-74;
- Three drill holes (LM13-76, 77 and 78) tested for a south extension to the Lemarchant Deposit and intersected favourable felsic volcanic stratigraphy with local anomalous base metal mineralization;
- Massive sulphide mineralization intersected in drillhole LM13-79 which extended the Lemarchant Main Zone mineralization 35 metres up-dip of LM11-72 which intersected 5.02% Zn, 0.48% Pb, 0.47% Cu, and 12.82 g/t Ag over 3.7 metres beginning at a downhole depth of 173.3 metres;
- LM13-80 intersected local zones of anomalous footwall mineralization in the Main zone; and
- LM13-75, LM13-81 and two drillhole extensions were designed to test for down-dip extensions to the Lemarchant Main zone mineralization within the fault displaced lower felsic block stratigraphy.

### 10.2.2 2013 Fall Drill Program

The 2013 fall program focused on extending the mineralization of the Northwest Zone and testing for extensions to the Lemarchant Main zone mineralization. Thirteen drill holes and one drillhole extension, totaling 4,727.4 metres were completed. Nine of the drill holes intersected significant sulphide mineralization. Highlights are summarized below with significant assay results provided in Table 12.

- Additional massive sulphide mineralization intersected at the Northwest Zone, extending the mineralization over a 100 metre strike length and remains open for expansion.
- Significant precious metal values accompany the Northwest Zone base metal mineralization, including samples assaying 463.0 g/t silver over 1.0 metre and 17.5 g/t gold over 0.8 metre in drillhole LM13-94 at 338.5 metres downhole.

Drilling at the North target (LM13-93) intersected strongly altered felsic volcanic rocks directly below the overlying basalts, which is similar to the stratigraphy associated with the massive sulphide mineralization of the Lemarchant Deposit to the immediate south.

Drillhole	Section	From	To (m)	Length	Zn	Pb	Cu	Ag	Au (g/t)		
		(m)	(m)	(m)	(%)	(70)	(70)	(8/1)	(g/ l)		
LM13-73	106+00N	302.8	317.4	14.6	2.54	0.81	0.27	30.27	0.65		
		328.0	350.2	22.2	5.82	1.48	0.75	65.41	1.63		
	includes	328.0	331.0	3.0	6.48	3.42	1.78	175.73	2.01		
		331.0	347.5	16.5	2.13	1.19	0.24	41.49	1.20		
		347.5	350.2	2.7	27.60	1.12	2.71	89.01	3.80		
LM13-74	106+00N	296.25	301.8	5.55	5.33	1.01	0.75	44.72	0.26		
		301.8	313.0	11.2	0.64	0.19	0.08	14.55	1.29		
		321.12	325.68	4.56	1.18	0.68	0.19	70.34	0.59		
		328.51	334.08	5.57	4.11	1.33	0.23	63.40	0.64		
		347.0	352.0	5.0	4.01	0.09	0.57	9.32	0.25		
LM13-75	106+00N				No significant assays						
LM13-76	100+00N				No significant assays						
LM13-77	100+00N				No sign	ificant a	assays				
LM13-78	100+00N	171.0	178.6	7.6	0.79	0.01	0.18	2.41	0.05		
LM13-79	101+25N	184.4	195.8	11.4	5.14	1.35	0.55	58.86	0.22		
	includes	184.4	187.0	2.6	13.96	5.17	1.08	197.23	0.42		
LM13-80	101+50N	210.8	215.0	4.2	1.50	0.07	0.39	2.17	0.04		
		228.3	229.3	1.0	0.04	-	1.16	16.7	0.23		
		233.8	260.7	26.9	0.80	0.03	0.14	1.21	0.06		
		268.7	272.0	3.3	1.54	0.24	0.06	4.37	0.11		
LM08-52 Ext.	102+50N				No sign	ificant a	assays				
LM08-27 Ext.	106+00N				No sign	ificant a	assays				
LM13-81	109+50N				No sign	ificant a	assays				

Table 10. Significant Assay Results from 2013 Winter Drill Program

\* All intervals are core length; true thickness is estimated to be near core length.

Drillhole	Section	From	То	Length	Zinc	Lead	Copper	Silver	Gold		
		(m)	(m)	(m)	(%)	(%)	(%)	(g/t)	(g/t)		
LM13-82	105+50N	309.0	312.0	3.0	9.33	0.38	0.90	38.57	0.47		
LM13-83	105+50N	275.1	284.1	9.0	6.55	1.96	0.30	37.12	0.35		
		301.1	310.1	9.0	5.92	1.42	0.37	34.47	0.70		
		352.1	354.1	2.0	6.85	1.60	1.43	49.40	0.95		
LM13-84	105+50N	331.7	333.0	1.3	7.01	5.17	1.35	42.77	3.50		
		348.0	363.0	15.0	1.33	0.19	0.14	5.95	0.12		
LM13-85	106+50N				No sigr	nificant as	ssays	(%)  (g/t)  (g/t)    0.90  38.57  0.47    0.30  37.12  0.35    0.37  34.47  0.70    1.43  49.40  0.95    1.35  42.77  3.50    0.14  5.95  0.12    ys  0.25  10.57  0.23    0.08  49.6  2.4    1.32  72.84  2.13    0.42  6.42  0.27    0.11  3.73  0.03    ys			
LM13-86	105+00N	324.5	327.5	3.0	3.45	0.11	0.25	10.57	0.23		
LM13-87	105+00N	282.6	283.6	1.0	2.08	0.38	0.08	49.6	2.4		
LM13-88	102+75N	211.0	214.1	2.4	8.84	1.31	1.32	72.84	2.13		
		214.1	238.0	23.9	3.36	0.01	0.42	6.42	0.27		
LM13-89	103+50N	163.1	166.1	3.0	1.41	0.08	0.11	3.73	0.03		
LM11-61 Ext	103+00N				No sigr	nificant as	ssays				
LM13-90	104+00N				No sigr	nificant as	ssays				
LM13-91	108+50N				No sigr	nificant as	ssays				
LM13-92	104+50N	155.6	157.6	2.0	1.73	0.0	1.30	18.1	0.27		
LM13-93	106+50N				No sigr	nificant as	ssays				
LM13-94	106+50N	331.6	361.9	30.3	3.48	1.21	0.36	87.5	1.80		
includes		331.6	340.3	8.7	8.21	3.66	0.72	150.1	3.24		
		340.3	356.5	16.2	0.59	0.16	0.21	72.05	1.30		
		356.5	361.9	5.4	4.53	0.45	0.22	32.88	0.97		

Table 11. Significant Assay Results from the 2013 Fall Drill Program

\* All intervals are core length; true thickness is estimated to be near core length.

### 10.2.3 2014 Winter Drill Program

The 2014 winter program focused on extending the mineralization of the Northwest Zone. Six drill holes, totaling 2,355.5 metres were completed during the program. Highlights are summarized below with significant assay results provided in Table 13.

- Drillhole LM14-95 (Section 106+50N), located 30 metres up-dip of drillhole LM13-94, intersected two semi-massive sulfide intervals between 315 and 400 metres downhole.
- Drillhole LM14-96 (Section 106+50N), located 30 metres up-dip of drillhole LM14-95, intersected semimassive to massive sulphides with massive barite (14 metres) between 303 and 321 metres downhole
- Drillhole LM14-97 (Section 105+50N) located 35 metres down-dip of LM13-82, intersected a mineralized massive barite interval between 357 and 361 metres downhole.
- Drillhole LM14-99 (Section 106+50N), located 40 metres up-dip of LM14-96 intersected a thick sequence of iron-rich mudstones and felsic volcanic rocks with anomalous base and precious metals between 224 and 249 metres downhole.

• Drillhole LM14-100 (Section 107+00N), located 50 metres north of LM13-94, intersected disseminated to semi-massive stringer pyrite mineralization between 314 and 364 metres downhole with anomalous base and precious metals over two, 13 metres intervals.

Drillhole	Section	From (m)	To (m)	Length (m)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)
LM14-95	106+50N	315.6	318.1	2.5	2.7	1.0	0.3	21.2	0.25
		397.5	400.0	2.5	4.8	0.3	0.5	24.3	0.93
LM14-96	106+50N	302.8	305.3	2.5	2.8	1.1	0.3	26.3	0.40
		305.3	319.3	14.0	0.9	0.3	0.2	55.8	0.70
		319.3	320.8	1.5	7.0	4.3	0.4	62.1	0.70
LM14-97	105+50N	357.1	360.6	3.5	0.8	0.1	0.2	90.5	1.41
LM14-98	105+50N				No sigi	nificant ass	says		
LM14-99	106+50N	223.2	224.1	0.9	2.4	1.2	0.09	29.1	0.25
LM14-100	107+00N	253.9	255.9	2.0	1.2	0.3	0.2	12.8	0.6
		319.2	332.2	13.0	0.3	0.1	0.02	16.1	0.65
		344.2	356.2	13.0	0.3	0.1	0.01	7.4	0.15

Table 12. Significant Assay Results from the 2014 Winter Drill Program

\* All intervals are core length; true thickness is estimated to be near core length.

#### 10.2.4 2014 Fall Drill Program

The 2014 fall program continued testing for mineralized extensions to the Lemarchant Northwest Zone mineralization. Six drill holes and two drillhole extensions, totalling 2,644 metres were completed during the program. Highlights are summarized below with significant assay results provided in Table 14.

- Drillhole LM14-102 intersected stringer to semi-massive sulphides (stockwork) grading 3.40% zinc, 0.30% lead, 0.52% copper, 27.30 g/t silver and 0.44 g/t gold over 7.0 metres (core length) beginning at a downhole depth of 341.1 metres. The mineralization is located 30 metres down-dip of LM13-94 which intersected 8.21% zinc, 3.66% lead, 0.72% copper, 150.1 g/t silver and 3.24 g/t gold over 8.7 metres, beginning at a downhole depth of 331.6 metres.
- Drillhole LM14-103 intersected semi-massive to massive sulphides grading 8.50 % zinc, 4.41% lead, 1.06% copper, 34.0 g/t silver and 0.55 g/t gold over 6.1 metres (core length), beginning at a downhole depth of 340.9 metres. The mineralization is located 30 metres down-dip of LM13-83 which intersected 6.55% zinc, 1.96% lead, 0.30% copper, 37.12 g/t silver and 0.35 g/t gold over 9.0 metres, beginning at a downhole depth of 275.1 metres.

The Northwest Zone consists of precious metal rich semi-massive to massive sulphide mineralization and mineralized barite intervals within altered felsic volcanic rocks. The footwall to the mineralization consists of strongly altered felsic volcanic rocks with disseminated to stringer stockwork base metal mineralization.

Drilling and ongoing section interpretation has demonstrated the existence of numerous east-trending faults that have dissected the Northwest Zone and are interpreted to have detached the Lemarchant

Deposit from its roots at the Northwest Zone. These displacements extend several hundred metres, leaving excellent potential to locate additional portions of the original lens in the immediate area.

Drillhole	Section	From (m)	To (m)	Length (m)*	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)
LM14-101	106+50N				No significant assays				
LM14-102	106+50N	320.0	325.0	5.0	1.62	0.19	0.15	8.6	0.25
LM14-102		341.1	348.1	7.0	3.40	0.30	0.52	27.3	0.44
LM14-103	105+50N	340.9	347.0	6.1	8.50	4.41	1.06	34.0	0.55
includes		343.9	345.9	2.0	12.35	7.40	1.84	47.8	0.90
LM14-103	105+50N	349.5	355.9	6.4	1.93	0.41	0.23	9.6	0.16
LM14-104	105+50N				No sigr	nificant	assays		
LM14-105	107+00N	372.0	377.0	5.0	0.88	0.00	0.03	1.0	0.03
LM14-105		380.1	386.6	6.5	1.78	0.00	0.08	2.4	0.05
LM14-106	107+00N	240.5	244.7	4.2	0.56	0.23	0.05	4.8	0.08
includes		240.5	241.3	0.8	1.18	0.58	0.12	10.3	0.11
LM13-83EXT	105+50N				No significant assays				
LM13-94EXT	106+50N				No sigr	nificant	assays		

Table 13, Significant Assay Results from the 2014 Fall Drill Program

\* All intervals are core length; true thickness is estimated to be near core length.

#### 10.2.5 2017 Winter Drill Program

The 2017 winter program tested for mineralized extensions to the Lemarchant Deposit along strike, updip and down-dip of the currently defined Lemarchant resource. Ten drill holes and three drillhole extensions, totaling 3,071.4 metres were completed. Highlights are summarized below with significant assay results provided in Table 15.

- Significant massive to semi-massive sulphide mineralization and mineralized barite was intersected in drill holes LM17-110 and LM17-111 extending the Lemarchant Deposit mineralization 25 and 50 metres up-dip respectively on section 101+25N
- Mineralized massive barite intervals (separated by a mafic intrusive) were intersected in drillhole LM17-113 extending the Lemarchant Deposit mineralization 25 metres on strike to the south on section 100+75N.
- Significant massive sulphide mineralization with mineralized barite was intersected in drill holes LM17-115 and LM17-116 extending the Lemarchant Deposit mineralization 35 and 65 metres up-dip respectively on section 102+50N.

Drillhole	Section	From (m)	To (m)	Length (m)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)		
LM13-90Ext	104+00N	304.4	311.0	6.6	1.78	0.26	0.15	11.09	.08		
LM17-108	104+00N	345.6	348.7	3.1	3.32	0.53	0.16	28.52	0.06		
LM17-109	102+00N				No significant assays						
LM11-68Ext	102+00N				No significant assays						
LM17-110	101+25N	150.6	157.5	6.9	11.20	0.46	0.94	46.30	1.06		
LM17-111	101+25N	151.4	155.2	3.8	2.84	1.01	0.75	73.40	0.45		
LM17-112	101+25N	157.8	190.0	33.2	0.60	0.04	0.35	7.80	0.24		
includes		159.8	162.7	2.9	2.89	0.15	0.31	9.10	0.18		
LM17-113	100+75N	157.4	158.3	0.9	7.21	2.93	0.36	53.00	0.16		
LM17-113	100+75N	161.0	162.5	1.5	10.10	4.54	2.32	147.90	0.88		
LM17-114	102+00N	214.0	217.9	3.9	3.85	0.21	0.45	7.80	0.08		
LM17-115	102+50N	202.0	209.1	7.1	10.23	2.19	0.78	148.40	2.41		
LM17-116	102+50N	212.3	218.3	6.0	14.06	6.27	1.88	382.90	2.01		
LM17-116	102+50N	225.3	229.8	4.5	2.59	0.66	0.57	21.50	0.33		
LM11-50Ext	108+00N	387.4	398.7	11.3	0.62	0.03	0.13	6.30	0.10		
LM17-117	105+00N	295.15	297.1	1.95	3.12	0.89	0.31	38.20	0.31		

Table 14. Significant Assay Results from the 2017 Winter Drill Program

\* All intervals are core length; true thickness is estimated to be near core length.

#### 10.2.6 2017 Summer Drill Program

The 2017 summer program totalled 38 drill holes (9,082 metres) focused on testing and defining the updip mineralization discovered by the 2017 winter drill program, and initial testing of the North and South target areas. Highlights are summarized below with significant assay results provided in Table 16. Twentysix drill holes, totaling 5,360 metres, were completed on the Lemarchant Main Zone and two drill holes (880 metres) were completed on the Northwest Zone. Nine of the 28 drill holes intersected significant base and precious metal massive sulphide mineralization with numerous drill holes reporting lower grade, stringer base metal mineralization in the underlying footwall zone.

The winter and summer drill program successfully extended the Lemarchant Main Zone massive sulphide mineralization by up to 80 metres up-dip on sections 101+75N through 103+25N (150 metres strike length). This mineralization typically has a well-developed footwall alteration zone with local zones of intense hydrothermal alteration and stringer mineralization. The vertical depths of the mineralized drill intercepts range from 120 to 170 metres.

Five drill holes, totaling 1,479 metres (LM17-139 to LM17-144) were completed on a priority Target 1 located 500 metres south of the Lemarchant Deposit. The five drill holes targeted conductive zones modelled from the *2017* ground electromagnetic (EM) geophysical surveys. The drilling intersected up to 5-metre thick, pyrite and/or pyrrhotite-rich mudstone horizons similar to those seen immediately above the massive sulphide mineralization at the Lemarchant Deposit. The iron-rich mudstones are typically located at the mafic-felsic transition; however, no significant base metal mineralization was intersected.

Drill Hole	Section	From (m)	To (m)	Length (m)	Zon e	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)
LM17-118	102+50N	139.8	153.5	13.7	FW	0.78	0.05	0.26	2.3	0.08
LM17-119	102+50N	149.1	156.4	7.3	MZ	6.99	2.83	0.64	79.6	1.27
LM17-119	102+50N	156.4	167.9	11.5	FW	2.7	0.53	0.31	18.8	0.23
LM17-120	102+50N					No sigr	nificant a	assays		
LM17-121	102+00N	158.3	166.1	7.8	MZ	5.35	1.59	0.59	136.1	2.93
LM17-122	102+00N	161.7	166.1	4.4	MZ	9.78	3.17	1.04	91.0	2.92
LM17-123	102+00N					No sigr	nificant a	assays	1	
LM17-124	102+00N	154.65	157.45	2.8	MZ	8.82	1.02	1.14	46.5	0.53
LM17-125	103+00N	210.0	211.8	1.8	MZ	9.29	2.92	2.32	155.6	0.55
LM17-126	103+00N	210.6	218.1	7.5	MZ	14.41	3.41	2.40	576.9	1.06
LM17-127	103+00N	139.3	147.8	8.5	FW	0.71	0.04	0.11	2.22	0.06
LM17-128	103+25N	191.2	194.1	2.9	MZ	10.26	3.06	0.96	33.8	0.24
LM17-129	103+25N	182.0	186.0	4.0	FW	2.83	0.17	0.21	5.8	0.1
LM17-130	101+75N	158.75	161.0	2.25	MZ	29.26	2.33	1.91	168.3	7.1
LM17-131	101+75N	163.2	165.95	2.75	MZ	2.25	0.21	0.14	25.4	0.4
includes		163.2	163.55	0.35	MZ	3.50	1.61	0.49	184.6	2.3
includes		165.5	165.95	0.45	MZ	11.00	0.05	0.44	11.7	0.6
LM17-132	101+75N	161.2	163.0	2.8	FW	2.21	0.01	2.21	4.6	0.2
includes		161.2	161.4	0.20	FW	26.80	0.09	4.13	35.9	0.33
LM17-133	101+75N	171.5	186.0	14.5	FW	0.84	0.43	0.07	24.0	0.2
LM17-134	101+50N	144.6	162.0	17.4	FW	1.13	0.28	0.20	16.7	0.3
includes		144.6	147.6	3.0	FW	1.81	0.91	0.15	46.1	0.3
includes		155.6	162.0	6.4	FW	1.76	0.18	0.44	18.6	0.4
LM17-134	101+50N	172.7	177.2	4.5	FW	2.05	0.09	0.43	3.2	0.1
LM17-135	101+00N	168.8	170.65	1.85	FW	2.90	0.11	0.29	10.5	0.2
LM17-136	101+00N	191.35	197.4	6.05	FW	5.04	1.29	0.60	29.6	0.3
LM17-136	101+00N	204.4	208.1	3.7	FW	5.59	0.79	0.69	7.8	0.1
LM17-136	101+00N	223.8	225.3	1.5	FW	2.99	0.01	1.40	8.0	0.2
LM17-137	101+75N	197.9	198.4	0.5	FW	2.37	0.81	0.19	32.9	2.35
LM17-138	101+75N	203.2	205.4	1.5	FW	1.89	0.53	0.18	30.3	0.10
LM17-145	102+50N	183.0	200.2	17.2	FW	2.17	0.28	0.19	10.60	0.08
includes		197.9	200.2	2.3	FW	3.32	0.04	0.33	3.99	0.10
LM17-146	102+00N	201.4	204.3	2.9	MZ	10.97	0.27	1.31	28.09	1.73
		204.3	210.1	5.8	FW	0.90	0.12	0.34	6.36	0.24
LM17-147	104+75N	196.0	201.2	5.2	MZ	3.36	0.96	0.39	113.7	1.60
LM17-148	104+75N					No Sigi	nificant a	assays		
LM17-149	106+75N					No Sigi	nificant a	assays	n	I
LM17-150	106+75N	316.8	321.9	6.1	FW	3.22	2.00	0.26	15.7	0.4
	106+75N	325.5	337.5	12.0	FW	3.18	1.86	0.44	15.5	0.3

Table 15. Significant Assay Results from the 2017 Summer Drill Program

\* All intervals are core length; true thickness is estimated to be near core length; FW=Footwall, MZ=Mineralized Zone

Five drill holes, totalling 1,363 metres (LM17-151 to LM17-155) were completed on the North target area (Target 5), an undrilled area, located 300 to 500 metres north of the Lemarchant Deposit. The five drill holes targeted near surface, conductive zones modelled from the ground electromagnetic ("EM") geophysical surveys completed in 2016. The drilling in this area intersected up to 2-metre thick, pyrite and/or pyrrhotite-rich mudstone horizons similar to those seen near surface at the Lemarchant Deposit. The iron-rich mudstones are typically located at the mafic-felsic volcanic transition; however, no significant base mineralization was intersected.

# 10.2.7 2017 Fall Drill Program

The 2017 fall drill program at Lemarchant tested for additional south extensions to the Main Zone and extensions to the Northwest Zone. Three drill holes (618.2 metres) tested for south extensions to the Lemarchant Main Zone. Highlights are summarized below with significant assay results provided in Table 17.

- Drillhole LM17-160 intersected 3.92% zinc, 0.52% lead, 0.73% copper, 15.4 g/t silver, 0.07 g/t gold over 1.1 metres extending the mineralization 25 metres south of previous drillhole LM17-113, which intersected 10.10% zinc, 4.54% lead, 2.32% copper, 147.9 g/t silver, 0.88 g/t gold over 1.5 metres, beginning at a downhole depth of 161.0 metres. The mineralized horizon remains open along strike to the south.
- Drillhole LM17-161 extended the mineralization 25 metres up-dip of LM17-113 on section 100+75N with 1.89% zinc, 0.27 lead, 2.36% copper, 23.19 g/t silver, 0.19 g/t gold over 4.25 metres, beginning at a downhole depth of 170.5 metres. The mineralized horizon remains open up-dip.
- Drillhole LM17-163 tested 25 metres south of LM17-161 where the projected mineralized horizon has been replaced by un-mineralized felsic intrusions.

Five drill holes (2,566 metres) tested for additional extensions to the Lemarchant Northwest Zone. Three of the drillhole intersected footwall stringer and disseminated base metal mineralization over 2 to 7 metres widths.

- Drill holes LM17-156 and 157 targeted up-dip and north extensions, respectively, to mineralization intersected in LM17-150 which intersected 3.05% zinc, 1.78% lead, 0.35% copper, 14.6 g/t silver, 0.5 g/t gold over 21.4 metres, beginning at a downhole depth of 316.8 metres.
- Drill holes LM17-158 tested 50 metres up-dip of LM10-24 where previous drilling intersected 6.60% zinc, 0.68% lead, 0.61% copper, 28.28 g/t silver, 0.46 g/t gold over 6.0 metres, beginning at a downhole depth of 432.9 metres. No significant mineralization was intersected.
- Drill holes LM17-159 and 162 targeted down-dip extension to the Northwest Zone mineralization. LM17-162 intersected weak base metal mineralization in a strongly sheared interval.
| Drill Hole | Section     | From<br>(m) | To<br>(m) | Length<br>(m) | Zn<br>(%)             | Pb<br>(%) | Cu<br>(%) | Ag<br>(g/t) | Au<br>(g/t) |
|------------|-------------|-------------|-----------|---------------|-----------------------|-----------|-----------|-------------|-------------|
| Lemarchant | Main Zone   |             |           |               |                       |           |           |             |             |
| LM17-160   | 100+50N     | 163.7       | 164.8     | 1.1           | 3.92                  | 0.52      | 0.73      | 15.43       | 0.07        |
| LM17-161   | 100+75N     | 170.5       | 174.75    | 4.25          | 1.89                  | 0.27      | 2.36      | 23.19       | 0.19        |
| including  |             | 174.15      | 174.75    | 0.60          | 1.18                  | 0.02      | 14.50     | 51.2        | 0.77        |
| LM17-163   | 100+50N     |             |           |               | No Significant Assays |           |           |             |             |
| Lemarchant | Northwest Z | lone        |           |               |                       |           |           |             |             |
| LM17-156   | 106+75N     | 252.0       | 254.0     | 2.0           | 3.02                  | 0.65      | 0.30      | 16.05       | 0.02        |
|            |             | 295.0       | 299.0     | 4.0           | 1.92                  | 0.73      | 0.13      | 71.28       | 0.82        |
| LM17-157   | 107+50N     | 447.0       | 451.0     | 4.0           | 1.25                  | 0.34      | 0.13      | 19.63       | 0.15        |
| LM17-158   | 105+00N     |             |           |               | No Significant Assays |           |           |             |             |
| LM17-159   | 107+00N     |             |           |               | No Significant Assays |           |           |             |             |
| LM17-162   | 106+00N     | 448.0       | 455.0     | 7.0           | 2.19                  | 0.05      | 0.19      | 3.87        | 0.12        |

Table 16. Significant Assay Results from the 2017 Fall Drill Program

\* All intervals are core length; true thickness is estimated to be 80-100% of core length



Figure 30. Section 102+50N - Lemarchant Deposit (Main Zone) (from Cullen et al., 2018)



Figure 31. Section 106+00N - Lemarchant Deposit (Northwest Zone) (from Cullen et al., 2018)

#### 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

Since acquiring the Lemarchant Property in 2021. Canterra has not completed any sampling. The description below covers NorZinc's sampling program and was taken from the Technical Report by Cullen et al, (2018). The Author has not verified these procedures but from the description they would appear to adhere to accepted mineral exploration industry procedures and standards. The Author has visited the Eastern Analytical Laboratory on many occasions and has used the facilities for several major exploration programs.

#### **12.0 DATA VERIFICATION**

Canterra has not completed any sampling on its Lemarchant Property since it was acquired in 2021. NorZinc's sampling program was covered in detail in the NI 43-101 Technical Report by Cullen et al, (2018). The Author has not verified this data but the QA-QC protocols employed by NorZinc appear to adhere to accepted mineral exploration industry procedures and standards.

#### 12.1 Independent Data Verification and Site Visit

In September 2021, the Author completed a site visit to Canterra's core logging facility in Buchan's Junction, NL and a site visit to the Lemarchant Deposit. During the site visit the Author observed drill holes collars at both the Main and Northwest Zones. While at the core logging facility the Author was shown representative sections through the Lemarchant Deposit stratigraphy and mineralization. A review of geological maps, drill sections and project data was completed during the visit.

#### 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Since acquiring the Lemarchant Property in 2021 Canterra has not completed any additional mineral processing or metallurgical testing.

Metallurgical test work on the Lemarchant Deposit was undertaken by Paragon (Lascelles and Imeson, 2012; Fraser et. al., 2012) and later by NorZinc (Thibault et al, 2017; Vande Guchte and Hussey, 2017). For a detailed account of this work the reader is referred to the NI 43-101 Technical Report by Cullen et al. (2018).

#### 14.0 MINERAL RESOURCE ESTIMATE

Since acquiring the Lemarchant Property in 2021 Canterra has not updated the existing NI43-101 compliant mineral resource as released by NorZinc in 2018. For a detailed account of this work the reader is referred to the NI 43-101 Technical Report by Cullen et al. (2018).

#### 15.0 MINERAL RESERVE ESTIMATES

There are no current Mineral Reserves at the Lemarchant Deposit

#### 16.0 MINING METHODS

This section is not applicable.

#### 17.0 RECOVERY METHODS

This section is not applicable.

#### **18.0 PROJECT INFRASTRUCTURE**

This section is not applicable.

#### **19.0 MARKET STUDIES AND CONTRACTS**

This section is not applicable.

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

Baseline water sampling programs were completed by Stantec Consulting Ltd of St. Johns, NL in 2013 and 2014. The water sampling programs consisted of three sampling sessions each year: mid-winter low water conditions (February-March), spring peak high flow conditions (May), and summer medium flow conditions (August-September) at 6 sample sites in the area surrounding the Lemarchant Deposit.

Exploration activities are permitted under various Land Use and Exploration Permits that are issued by the Government of Newfoundland and Labrador, DIET on an as-needed basis. The Government of Newfoundland and Labrador monitor all exploration activity and periodically inspects the properties to ensure that the work is undertaken in a responsible manner and, when complete, have been properly reclaimed according to the mining guidelines.

Canterra bases its' Newfoundland exploration operations from its office and core storage facility located at Buchans Junction near Millertown. The Company tries to maximize and utilize what support services are available from the local communities and region.

#### 21.0 CAPITAL AND OPERATING COSTS

This section is not applicable.

#### 22.0 ECONOMIC ANALYSIS

No economic analysis has been completed on the Property.

#### 23.0 ADJACENT PROPERTIES

This section is not applicable.

#### 24.0 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information to present on the Property.

#### 25.0 INTERPRETATION AND CONCLUSIONS

The South Tally Pond Property is located in a proven mining district in central Newfoundland. Significant mineral deposits in the district include the world-class, past producing Buchans polymetallic massive sulphide deposits developed and mined by Asarco that supported Canada's historically richest major base metal mining operation on a grade basis, and the past producing Duck Pond massive sulphide (Cu-Zn) deposit owned by Teck Resources Limited. The South Tally Pond Property is located in the same volcanic belt as the Duck Pond mine, which is 20 km northeast of the Lemarchant Deposit.

The Lemarchant Property is underlain by the Tally Pond Group, one of six volcanic belts that make up the Victoria Lake Supergroup. The eastern-most Tally Pond Group consists of a sequence of submarine felsic and mafic volcanic rocks and related intrusive rocks that are highly prospective for volcanogenic massive sulphide deposits. The volcanic and sedimentary rocks are obscured in most areas by thick surficial deposits, so map patterns are not well constrained and often determined by regional airborne geophysics.

Previous exploration in the area was focused extensively on the Duck Pond and Boundary massive sulphide deposits which are located immediately to the northeast and do not constitute part of the Property. Intermittent exploration outside of these areas ultimately led to the discovery of the Lemarchant, Rogerson Lake, Bindons Pond, Lemarchant SW, Spencer's Pond and Beaver Lake prospects.

Drilling by Paragon at the Lemarchant prospect led to the discovery of the Lemarchant massive sulphide mineralization in 2007. Paragon's exploration work outlined a significant precious metal rich, copper-lead-zinc massive sulphide zone (the Main Zone) between sections 101+00N to 104+00N. Based on Paragon's drilling from 2007 to 2011, an initial NI 43-101 resource estimate on the Main Zone was completed by Paragon in 2012.

NorZinc acquired Paragon in 2012 and completed 28,675 metres of diamond drilling in 91 drill holes and 8 drillhole extensions over 7 drill programs. The drilling successfully extended the mineralization 250

metres to the northwest (Northwest Zone), located additional mineralization up-dip of the Main Zone, and provided further definition of the Lemarchant Deposit. A total of 165 drill holes for 52,950 metres have now been completed at the Lemarchant Deposit including 14 Noranda drill holes and 60 Paragon drill holes.

As currently defined, the Lemarchant Deposit consists of two stratiform massive to semi-massive sulphide zones and underlying stringer zones located between section 100+50N to 104+50N (Main Zone) and between section 105+00N to 107+00N (Northwest Zone). The Main Zone mineralization is located approximately 120 to 210 metres below surface, dips gently to the east, and is truncated by the Lemarchant thrust fault down dip. The Northwest Zone is located approximately 300 to 350 metres below surface, dips gently to the west, and is truncated by gabbroic intrusion(s) to the east and by thrust faults to the west. Mineralization is characterized by high-grade, zinc-lead-copper semi-massive to massive sulphides with significant precious metal (gold, silver) contents, massive mineralized barite intervals, and an underlying base metal rich stringer sulphide zone. The massive sulphides zones vary in thickness from less than 1 metre to 30.4 metres and are generally underlain by a sequence of intensely altered and mineralized felsic volcanic rocks.

Two principal deformation events are recognized in the Lemarchant area as having significantly affected the geometry of the deposit: i) a D1 event characterized as east-verging thrust faulting that occurred in response to terrane accretion in the late Paleozoic; and ii) a D2 event represented by steeply-dipping, oblique normal faulting during later extension. The D1 structures comprise broad ductile shear zones, pervasive S1 foliation and close to tight folds. Extensional tectonics resulted in late-stage D2 brittle faulting with strike-slip faults bisecting the deposit and leading to internal block rotation within the Northwest Zone. Syn- to post-mineralization mafic intrusions intruded along weakened stratigraphic contacts and structurally prepared D1 Lemarchant Fault, resulting in obscured structural contacts and destruction of mineralization along targeted horizons.

Structural complexities, specifically in the Northwest Zone remain unresolved at present due to limitations imposed by the lack of downhole structural data. In order to increase the resolution to the point where it can provide critical insights from an exploration perspective, additional structural orientation data should be collected.

Ground electromagnetic (EM) geophysical surveys have aided in defining additional drill targets in the Lemarchant area. The conductive targets are typically reflective of the pyrite and/or pyrrhotite rich mudstone horizons which may be associated with massive sulphide base metal mineralization.

Academic studies on the Lemarchant Deposit by Gill and Piercey (2015), Lode (2016), and Cloutier (2017) provide valuable insights into the geology and genesis of the Lemarchant Deposit. These studies provide useful information to aid exploration efforts in locating additional mineralization and/or new exploration targets.

Metallurgical studies completed by Thibault & Associates Inc. on a representative massive sulphide-barite sample and a footwall sample from the Lemarchant Deposit indicate favourable metal recoveries. The bench scale flotation tests provided open circuit flotation grades and recoveries at each individual process step. To-date, no closed circuit (lock cycle) tests have been conducted.

A mineral resource estimate was prepared for the Lemarchant Deposit by Mercator Geological Services Ltd. This estimate was based on a 4.0% Zn Eq. cutoff value, which was considered to reflect a reasonable expectation of economic extraction in the foreseeable future using conventional underground mining methods. Canterra has not verified this estimate and does not consider it current. The summarized 2018 Mineral Resource Estimate is as follows:

- Indicated Mineral Resource of 2.42 million tonnes grading 6.5% Zn, 1.6% Pb, 0.68% Cu, 1.22 g/t Au and 64.04 g/t Ag (12.4 % Zn Eq) and 23.53% BaSO<sub>4</sub> (at 4.0% Zn Eq. grade cut-off)
- Inferred Mineral Resource of 0.56 million tonnes grading 4.68% Zn, 1.08% Pb, 0.45% Cu, 1.08 g/t Au and 44.67 g/t Ag (9.31% Zn Eq) and 13.11% BaSO<sub>4</sub> (at 4.0% Zn Eq. grade cut-off).

The Lemarchant Deposit remains open for expansion along strike to the south and north of currently defined mineralization. Drilling in these areas, specifically where single drill holes have intersected altered felsic volcanic rocks and/or base metal mineralization should be further tested by drilling. Additional drilling up-dip of the currently defined Main Zone mineralization up to surface is also warranted.

Volcanogenic massive sulphide deposits are known to occur in clusters and a number of the nearby prospects, such as SW Lemarchant, and Bindons Pond prospects should be further evaluated by diamond drilling.

#### 26.0 RECOMMENDATIONS

Based on the encouraging results of the exploration work completed to date at the Lemarchant Deposit, additional exploration work aimed at extending the Lemarchant Deposit is well warranted. The recommended work program consists of a combination of step-out drilling to further define the extent of the Lemarchant Deposit, infill drilling to support upgrading of Inferred Mineral Resources to Indicated Mineral Resources, plus geophysical surveying and drill testing of the nearby SW Lemarchant and Bindons Pond prospects. Additional work on defining barite recovery and marketability is also recommended.

The Canterra review and integration of available historic data over the Lemarchant Property (including diamond drillholes, with drill logs and assays, airborne magnetic data & EM, DCIP & MT, Ground EM, Downhole EM, Ground Gravity, Till/Soil samples and 3D modeling of structures, has revealed several targets for potential expansion of resources at Lemarchant. This work highlighted four targets which should be tested using diamond drilling, bearing in mind that the known VMS deposits at Lemarchant are limited in width. It is suggested that E-W sections of drillholes, spaced 50m or less apart, be drilled across each target. A ground gravity survey across the entire property is also suggested.

A two-phase work program and budget is recommended, with commitment to Phase 2 being contingent on substantively positive results from Phase 1. The two phase program budget is summarized in Table 18.

The Phase 1 program includes 10,000 metres of diamond drilling (40 drill holes) to further define and extend the Lemarchant Deposit and to begin investigating two other priority target areas. More specifically,

- 1) Diamond drilling at the Lemarchant Deposit should focus on:
  - a) Drill testing up-dip of the currently defined Main Zone mineralization to the surface between Sections 101N to 104N.
  - b) Drill testing to the north of the currently defined Northwest Zone mineralization, where mineralization may have been offset by east-west trending structures.
  - c) Drill testing to the south-southwest of the Main Zone massive sulphide in the vicinity of LM91-01 where drilling intersected significant stringer sulphides.
  - d) Additional drill testing to the north and and down-dip of the massive sulphide mineralization intersected in LM08-24 (Section 105N), where massive sulphides, proximal felsic volcanic rocks and extensive hydrothermal alteration have been intersected.
- 2) Diamond drilling at SW Lemarchant prospect to begin testing the TDEM conductors outlined from the 2016 geophysical program.
- 3) Ground TDEM geophysical and/or gravity surveys to further define drill targets at the Bindons Pond prospect; and across all non surveyed prospects.

4) Further define the potential of producing barite as a co-product of the Lemarchant Deposit. Recommended Program Budget – Phase 1 and 2

Table 17. Proposed exploration budget.

PHASE 1 PROGRAM	\$ CDN
Project Management	\$100,000
Geologists / Geotechnicians (core logging, reporting)	\$215,000
Geophysical Consultant	\$8,000
Travel Costs (airfares, truck mileage)	\$15,000
Field Costs (truck rental, fuel, accommodation, food, etc.)	\$50,000
Communications	\$3,000
Computer hardware/software	\$15,000
Diamond drilling (1 Drill - 10,000 metres, 5 months)	
a) Lemarchant Main (up-dip) - 14 drill holes (2000 m @ \$200)	\$400,000
<ul><li>b) Lemarchant Northwest (north extension) - 6 drill holes (3,000 m @ \$200)</li></ul>	\$600,000
c) Lemarchant Main (south extension) - 12 drill holes (2,000 m @ \$200)	\$400,000
d) Lemarchant North (lower block) - 4 drill holes (2,000 m @ \$200)	\$400,000
e) Lemarchant SW - 4 drill holes (1000 m @ \$200)	\$200,000
Geochemistry - Assaying (2000 samples)	\$90,000
Geochemistry - Whole Rock (300 samples)	\$15,000
Geophysics - Borehole EM (select new drill holes)	\$100,000
Geophysics - Ground Magnetics, Gravity, TDEM (12 line km)	\$150,000
Environmental Baseline Studies & Consulting	\$12,000
Sub-total	\$ 2,773,000
Contingency (~10%)	\$ 277,300
TOTAL PHASE 1	\$ 3,050,300
PHASE 2 PROGRAM	\$ CDN
Infill Diamond Drilling - Lemarchant (10,000 metres)	\$2,000,000
Metallurgical Testing (lock cycle)	\$150,000
Update 43-101 Resource Estimate	\$75,000
Preliminary Economic Assessment	\$100,000
Continued Environmental Baseline Studies	\$25,000
Sub-total	\$ <b>2,350,000</b>
Contingency (~10%)	\$235,000
TOTAL PHASE 2	\$2,585,000

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#### 28.0 AUTHOR CERTIFICATE

I, David T.W. Evans, P.Geo., do hereby certify that:

1) I am an exploration geologist with a business address located at 55 Southcott Drive, Grand Falls-Windsor, NL., A2A 2P2, Telephone 709-489-9121.

2) I am a graduate of Memorial University of Newfoundland (1993) with a Master of Science (Geology) and have been employed as a geologist since 1984. I have worked as a project geologist with the Newfoundland Department of Mines and Energy and as exploration manager with Golden Dory Resources Ltd., Silvertip Consultants, Antler Gold Incorporated and Canterra Minerals Corporation. I have published extensively on gold and base metal mineralization within central Newfoundland.

3) I am a member (in good standing) of the Professional Engineers and Geoscientists of Newfoundland and Labrador (PEGNL) member number 02486.

4) 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 to be a "qualified person" for the purposes of NI 43-101.

5) I am the authour of this report entitled *"TECHNICAL REPORT ON THE LEMARCHANT PROPERTY,CENTRAL NEWFOUNDLAND, CANADA"* having an effective date of September Sept. 7, 2023 and that it fairly and accurately represents the information in the technical report for which I am responsible.

6) I visited the Lemarchant Property in September 2021 (one day) and the information and data used in this report were obtained through that field visit and information provided by Canterra Minerals Corp. and from government, university and unpublished company reports cited in the references.

7) As of September Sept. 7, 2023 to the best of my knowledge, information and belief, this Technical Report for which I am responsible, I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Report, the nondisclosure of which would make the Technical Report misleading.

8) I have read National Instrument 43-101 (NI 43-101) and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

9) I am independent of Canterra Minerals Corp., applying all of the tests in section 1.5 of National Instrument 43-101 and National Instrument 43-101 Companion Policy Section 3.5. I have had no prior involvement with the Lemarchant Property.

10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 7<sup>th</sup> day of September 2023 *"Original signed and stamped by"* 

David Evans, M:Sc., P. Geo.



APPENDIX I Mineral Licence Report



# Department of Industry, Energy and Technology

**Mineral Rights Inquiry Portal Mineral Licence Report** Date / Time Printed: Tue Aug 22 00:00:00 NDT 2023 Licence Number: 026920M File Number: 774:3369 **Original Holder:** Licence Holder: Canterra Minerals Corporation Address: 625 Howe St Suite 580, Vancouver BC, Canada Licence Status: Issued Electoral District: Grand Falls - Windsor - Buchans **Recorded Date:** Issue Date: 1999/01/29 Renewal Date: 2024/01/29 Report Due Date: 2024/03/29 **Original Number of Claims: 35** Current Number of Claims: 35 Recording Fee: \$0.00 Receipt(s): Deposit Amount: \$0.00 **Staking Security Status:** Map Sheet Number(s): 12A10 Land Claims (effective 2005/12/01) LISA %: 0 LIL %: 0 VBP %: 0 Crown %: 100 Replaces Licence(s): 026915M, 026918M **Replaced By Licence(s):** Mapped Claim Description:

Beginning at the Northeast corner of the herein described parcel of land, and said corner having UTM coordinates of 5 376 000 N, 523 500 E; of Zone 21; thence South 1,000 metres, thence West 1,000 metres, thence South 500 metres, thence West 500 metres, thence South 1,000 metres, thence West 1,000 metres, thence South 500 metres, thence West 500 metres, thence South 500 metres, thence West 1,500 metres, thence North 1,000 metres, thence East 500 metres, thence North 500 metres, thence East 500 metres, thence South 500 metres, thence South 500 metres, thence East 500 metres, thence East 3,500 metres to the point of beginning. All bearings are referred to the UTM grid, Zone 21. NAD27. \$58,543.49 to be expended on this license by 2024/01/29

If work is done on this licence on or before 2024/01/29, the next assessment report is due on or before 2024/03/29

## Expenditure Carry Forward

Actual Year	Actual Expenditure	Work Year	Excess Expenditure
1	\$108,018.50	1	\$77,482.08
		2	\$39,311.56
2	\$55,409.54	2	\$55,409.54
		3	\$48,916.47
3	\$64,744.71	3	\$64,744.71
		4	\$60,222.44
4	\$45,270.45	4	\$45,270.45
		5	\$44,477.74
5	\$97,436.27	5	\$97,436.27
		6	\$50,391.27
6	\$14,389.79	6	\$14,389.79
7	\$34,466.69	7	\$7,725.01
8	\$223,922.83	8	\$140,125.10
		9	\$48,602.36
9	\$500.44	9	\$500.44
10	\$747,345.02	10	\$718,104.49
		11	\$600,681.43
		12	\$485,943.09
		13	\$371,204.75
		14	\$256,466.41
		15	\$141,814.60
11	\$7,397.08	11	\$7,397.08
		12	\$7,397.08
		13	\$7,397.08
		14	\$7,397.08

Actual Year	Actual Expenditure	Work Year	Excess Expenditure
		15	\$7,397.08
12	\$213,713.38	12	\$213,713.38
		13	\$213,713.38
		14	\$213,713.38
		15	\$213,713.38
		16	\$210,055.96
		17	\$57,186.87
13	\$167,529.84	13	\$167,529.84
		14	\$167,529.84
		15	\$167,529.84
		16	\$167,529.84
		17	\$167,529.84
		18	\$71,847.62
14	\$15,277.22	14	\$15,277.22
		15	\$15,277.22
		16	\$15,277.22
		17	\$15,277.22
		18	\$15,277.22
15	\$143,208.90	15	\$143,208.90
		16	\$143,208.90
		17	\$143,208.90
		18	\$143,208.90
		19	\$77,464.65
16	\$71,850.13	16	\$71,850.13
		17	\$71,850.13
		18	\$71,850.13

Actual Year	Actual Expenditure	Work Year	Excess Expenditure
		19	\$71,850.13
17	\$0.00		
18	\$69,384.88	18	\$69,384.88
		19	\$69,384.88
19	\$277,340.23	19	\$277,340.23
20	\$0.00		-\$0.00
21	\$71,456.51	21	\$1,456.51
22	\$70,000.00	22	\$1,456.51
23	\$150,000.00	23	\$81,456.51
		24	\$11,456.51
24	\$0.00		
25	\$0.00		-\$58,543.49

## Work Reports

Year	Number Claims	Receive Date	Acceptance Date	Actual Expenditure	Security Deposit	C2 Status
1	153			\$108,018.50	\$.00	
2	153			\$55,409.54	\$.00	
3	153			\$64,744.71	\$.00	
4	153			\$45,270.45	\$.00	
5	153			\$97,436.27	\$.00	
6	153			\$14,389.79	\$.00	
7	153			\$34,466.69	\$.00	
8	153			\$223,922.83	\$.00	
9	153			\$500.44	\$.00	
10	131			\$747,345.02	\$.00	
11	130			\$7,397.08	\$.00	
12	127			\$213,713.38	\$.00	
13	127			\$167,529.84	\$.00	
14	127			\$15,277.22	\$.00	
15	127			\$143,208.90	\$.00	
16	127			\$71,850.13	\$.00	
18	127			\$69,384.88	\$.00	
19	127			\$277,340.23	\$.00	
21	35	2019/11/28		\$71,456.51	\$.00	
22	35	2021/01/30		\$70,000.00		
23	35	2023/02/14		\$150,000.00	\$68,543.00	Active

## Work Report Items

Year	<b>Receive Date</b>	Acceptance Date	Actual Expenditure
1			\$108,018.50
2			\$55,409.54
3			\$64,744.71
4			\$45,270.45
5			\$97,436.27
6			\$14,389.79
7			\$34,466.69
8			\$223,922.83
9			\$500.44
10			\$747,345.02
11			\$7,397.08
12			\$213,713.38
13			\$167,529.84
14			\$15,277.22
15			\$143,208.90
16			\$71,850.13
18			\$69,384.88
19			\$277,340.23
21	2019/11/28		\$71,456.51
22	2021/01/30		\$70,000.00
23	2023/02/14		\$150,000.00

## Licence Transfers

New Holder	Transfer Date	Transferred From	Volume/Folio	
Canterra Minerals Corporation	2021/12/06	NorZinc-Newfoundland Ltd.	28/61	
NorZinc- Newfoundland Ltd.	2019/05/23	Paragon Minerals Corporation	27/14	

## **Licence Extensions**

Year	Date	Fee	Receipt Number	Receipt Date	Receipt Amount
Year 15	2014/01/29	\$ 1,200.00	80007GMS	2014/02/21	\$ 1,200.00
Year 20	2019/01/29	\$ 7,000.00	750079LY	2019/01/29	\$ 7,000.00
Year 21	2020/01/29	\$7000	329412	2020/01/30	\$ 7,000.00
Year 22	2021/01/29	\$7000	7500BYCW	2021/02/03	\$ 7,000.00
Year 23	2022/01/31	\$7000	56A0009N	2022/01/26	\$ 7,000.00
Year 24	2023/01/30	\$7000	56A000KP	2023/02/02	\$ 7,000.00

## Work Report Descriptions

Year	GS File No.	Description
		The table is empty

## Comments

Comment Date	Comment
2023/04/04	Year 23 work report consists of Data Review, Targeting and Induced Polarization Surveys. Reviewed and data requested 2023.04.04 (JM).
2019/12/03	This license replaces 026918M,026915M. Year 21 work report consists of structural and metallurgical studies and soil sampling.



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## **APPENDIX II 2013-2017** Diamond Drillhole Information

## 2013-2017 DIAMOND DRILLHOLE INFORMATION

Drillhole	Section	Az.	Dip	Start	End	Length	Easting NAD83	Northing NAD 83	Elevation NAD 83
LM13-73	106+00N	90	-72	0	422	422	520673.131	5375350.207	350.532
LM13-74	106+00N	90	-66	0	368	368	520673.524	5375350.255	350.370
LM08-27EXT	106+00N	90	-65	262.4	485	222.6	520870.073	5375349.009	340.204
LM13-75	106+00N	270	-67	0	539	539	521280.065	5375343.965	333.010
LM13-76	100+50N	90	-80	0	216.4	216.4	521129.235	5374742.695	332.491
LM13-77	100+50N	90	-90	0	209	209	521129.054	5374742.695	332.368
LM13-78	99+75N	270	-55	0	187	187	521037.778	5374684.853	332.139
LM13-79	101+25N	270	-53	0	229	229	521187.626	5374852.468	331.007
LM13-80	101+50N	275	-55	0	272	272	521186.944	5374875.324	332.407
LM11-52EXT	102+70N	270	-62	318.8	570	251.2	521132.309	5374976.627	333.417
LM13-81	109+50N	270	-85	0	455	455	521425.909	5375676.675	340.226
LM13-82	105+50N	90	-80	0	378	378	520719.793	5375294.171	346.589
LM13-83	105+50N	90	-73	0	432	432	520720.010	5375294.141	346.375
LM13-84EXT	105+50N	90	-65	0	441	441	520720.126	5375294.151	346.381
LM13-85	106+50N	90	-80	0	402	402	520669.448	5375399.071	351.283
LM13-86	105+00N	90	-83	0	362	362	520771.981	5375252.633	340.983
LM13-87	105+00N	90	-75	0	441	441	520772.095	5375252.631	341.070
LM11-61EXT	103+00N	270	-60	310	534	224	521141.772	5375031.305	333.520
LM13-88	102+80N	270	-60	0	264	264	521136.995	5375011.993	333.357
LM13-89	103+50N	270	-82	0	225	225	521062.797	5375088.931	336.265
LM13-90EXT	104+00N	270	-61	0	540	540	521059.292	5375137.580	338.049
LM13-91	108+35N	90	-70	0	340.8	340.8	520684.642	5375603.431	359.108
LM13-92	104+50N	270	-85	0	186	186	520959.163	5375191.004	337.882
LM13-93	107+00N	270	-70	0	398	398	521164.108	5375442.567	337.510
LM13-94EXT	106+50N	90	-70	0	468	468	520670.158	5375399.105	351.198
LM14-95	106+50N	90	-64	0	429.5	429.5	520670.097	5375396.782	351.119
LM14-96	106+50N	90	-58	0	425	425	520669.877	5375397.301	351.301
LM14-97	105+50N	90	-80	0	394	394	520673.885	5375290.191	347.288
LM14-98	105+00N	90	-74	0	413	413	520670.560	5375240.988	346.112
LM14-99	106+50N	90	-68	0	314	314	520773.362	5375394.351	346.248
LM14-100	107+00N	90	-58.3	0	380	380	520671.462	5375459.125	353.331
LM14-101	106+50N	90	-64	0	252	252	520805.057	5375396.060	345.702
LM14-102	106+50N	90	-74.5	0	467	467	520669.934	5375399.196	351.161
LM14-103	105+50N	90	-77	0	446	446	520719.608	5375294.461	346.309
LM14-104	105+50N	90	-57	0	431	431	520763.126	5375297.628	343.610
LM14-105	107+00N	90	-77	0	413	413	520671.009	5375461.539	353.406
LM14-106	107+00N	90	-50	0	497	497	520671.842	5375461.553	353.559
LM15-107	102+50N	280	-90	0	239	239	521071.995	5374992.591	332.180
LM17-108	104+00N	275	-84	0	387.4	387.4	521059.836	5375137.570	338.068

Drillhole	Section	Az.	Dip	Start	End	Length	Easting NAD83	Northing NAD 83	Elevation NAD 83
LM17-109	102+00N	90	-86	0	217.7	217.7	521140.080	5374927.556	331.570
LM11-68EXT	102+00N	270	-70	252.1	327	74.9	521135.030	5374926.334	331.404
LM17-110	101+25N	270	-67	0	191	191	521106.667	5374850.631	329.263
LM17-111	101+25N	270	-57	0	200	200	521106.524	5374850.626	329.275
LM17-112	101+25N	270	-47	0	215	215	521106.224	5374850.648	329.210
LM17-113	101+00N	230	-75	0	200	200	521192.510	5374836.022	330.054
LM17-114	102+00N	270	-50	0	245	245	521134.143	5374928.985	331.472
LM17-115	102+50N	270	-57	0	230	230	521068.356	5374992.373	332.460
LM17-116	102+50N	270	-50	0	254	254	521068.285	5374992.379	332.663
LM11-50EXT	108+00N	270	-75	230	473	243	521162.840	5375541.383	342.309
LM17-117	105+00N	90	-66.5	0	377	377	520770.839	5375250.222	340.963
LM17-118	102+50N	270	-65	0	167	167	520949.987	5374994.059	331.946
LM17-119	102+50N	270	-75	0	179	179	520950.161	5374994.056	331.918
LM17-120	102+50N	270	-55	0	170	170	520949.687	5374994.056	331.842
LM17-121	102+00N	270	-76	0	188	188	520988.573	5374952.184	330.777
LM17-122	102+00N	270	-67	0	200	200	520988.400	5374952.182	330.804
LM17-123	102+00N	270	-58	0	194	194	520988.194	5374952.165	330.806
LM17-124	102+00N	270	-85	0	188	188	520988.715	5374952.190	330.777
LM17-125	103+00N	270	-51	0	242	242	521070.171	5375035.854	336.802
LM17-126	103+00N	270	-63	0	242	242	521070.524	5375035.810	336.870
LM17-127	103+00N	270	-55	0	173	173	520994.244	5375040.280	335.174
LM17-128	103+25N	270	-75	0	218	218	521016.734	5375064.016	335.833
LM17-129	103+25N	270	-68	0	218	218	521016.630	5375064.031	335.881
LM17-130	101+75N	270	-60	0	218	218	521063.468	5374912.015	330.064
LM17-131	101+75N	270	-52	0	200	200	521063.268	5374912.019	330.078
LM17-132	101+75N	270	-69	0	191	191	521063.694	5374912.036	330.076
LM17-133	101+75N	270	-45	0	191	191	521062.884	5374911.999	330.030
LM17-134	101+75N'	254	-51	0	224	224	521063.138	5374911.393	330.040
LM17-135	101+00N	270	-65	0	200	200	521184.900	5374831.557	329.538
LM17-136	101+00N	270	-45	0	230	230	521184.183	5374831.586	329.505
LM17-137	101+75N	270	-64	0	221	221	521161.432	5374899.131	331.745
LM17-138	101+75N	270	-51	0	230	230	521161.081	5374899.162	331.676
LM17-139	96+00N	270	-55	0	401	401	520940.803	5374313.220	336.931
LM17-140	96+00N	270	-45	0	335	335	520940.549	5374313.230	337.006
LM17-141	96+00N	270	-75	0	176	176	520941.382	5374313.275	336.962
LM17-142	95+00N	270	-55	0	302	302	520941.776	5374225.386	331.527
LM17-143	97+00N	270	-80	0	134	134	520929.200	5374437.723	334.337
LM17-144	97+00N	270	-60	0	131	131	521029.631	5374426.135	331.116
LM17-145	102+50N	270	-78	0	248	248	521130.675	5374976.567	333.480
LM17-146	102+00N	270	-65	0	248	248	521134.957	5374926.157	331.484
LM17-147	104+75N	275	-77	0	239	239	520964.985	5375220.267	336.678
LM17-148	104+75N	290	-75	0	341	341	520964.829	5375220.277	336.619

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Drillhole	Section	Az.	Dip	Start	End	Length	NAD83	NAD 83	NAD 83
LM17-149	106+75N	88	-70	0	443	443	520675.205	5375430.417	351.669
LM17-150	106+75N	88	-63	0	437	437	520675.354	5375430.362	351.635
LM17-151	111+00N	270	-45	0	284	284	521139.391	5375847.834	360.066
LM17-152	111+00N	270	-58	0	212	212	521139.944	5375847.821	360.248
LM17-153	111+00N	270	-80	0	242	242	521140.345	5375847.807	360.243
LM17-154	109+00N	270	-45	0	137	137	521173.644	5375642.210	346.286
LM17-155	109+00N	270	-75	0	488	488	521174.400	5375642.172	346.273
LM17-156	106+75N	88	-57	0	416	416	520674.190	5375430.000	351.669
LM17-156A	106+75N	88	-57	0	71	71	520674.185	5375430.000	351.669
LM17-157	107+50N	88	-63	0	497	497	520679.059	5375509.901	354.735
LM17-158	105+00N	278	-62.5	0	482	482	521137.000	5375238.000	337.130
LM17-159	107+00N	88	-87	0	452	452	520671.000	5375459.000	353.000
LM17-160	101+00N	200	-70	0	203.2	203.2	521192.500	5374836.022	330.540
LM17-161	101+00N'	230	-68	0	203	203	521192.500	5374836.000	330.540
LM17-162	106+00N	87	-76	0	500	500	520531.409	5375353.470	355.222
LM17-162A	106+00N	87	-76	0	116	116	520537.000	5375348.000	355.220
LM17-162B	106+00N	86	-76	0	32	32	520537.000	5375348.000	355.220
LM17-163	101+00N'	230	-58	0	212	212	521192.500	5374836.000	330.540
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