# Technical Report on the Fay Lake Project Flin Flon Area Manitoba

**Report Prepared for:** 

**Boreal Gold Inc** 

NTS Map Area 63 K 14/63 N 4 Latitude: 54°58' 20" N Longitude: 101°06'00" E

> John G. Pearson, M.Sc., P.Geo., FGC, FEC(Hon) May 20, 2024

### Contents

1.0 SUMMARY	5
2.0 INTRODUCTION	8
3.0 RELIANCE ON OTHER EXPERTS	9
4.0 PROPERTY DESCRIPTION AND LOCATION	
5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY	14
6.0 HISTORY	15
7. GEOLOGICAL SETTING AND MINERALIZATION	26
7.1 Geological Setting	26
7.2 Property Geology	28
7.3 Redwin Area Geology and Mineralization	
7.4 Fay Lake East Geology and Mineralization	
7.5 Koscielny Lake area geology and Mineralization	35
8.0 DEPOSIT TYPES	37
9.0 EXPLORATION	
9.1TDEM Airborne Geophysical Survey	
9.2 2023 Detailed Linecutting, Sampling and Mapping project.	45
9.3 Ground Geophysics in the Redwin Peninsula Area	
10.0 DRILLING	61
11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY	62
12.0 DATA VERIFICATION	63
13.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES	64
14.0 ADJACENT PROPERTIES	65
15.0 OTHER RELEVANT DATA AND INFORMATION	67
16.0 INTERPRETATION AND CONCLUSIONS	
17.0 RECOMMENDATIONS	70
18.0 REFERENCES	72
19.0 SIGNATURE PAGE	74
20.0 CERTIFICATE OF QUALIFICATIONS	75

## Figures

Figure 1: Location map for the Fay Lake Property	10
Figure 2: Geological map of Manitoba showing the location of the Fay Lake Property	10
Figure 3: Main shaft at the Redwin deposit, May 8 2024.	15
Figure 4: One of the trenches at the Redwin Deposit	16
Figure 5: Geology of the Fay Lake area showing the location of mineral showings cited in Gayle and	d Norquay
(1996) including the Redwin mineralization and Fay Lake (#20). Geology after McGlynn (1959), Pa	rbery
(1986) and Schledewitz (1990, 1992)	20
Figure 6: Location of drill holes and trenches on the Koscielny Lake (MB12811) property (from Hei	ne, 2003
and references therein). The drill holes are those drilled by A.L. Parres in 1950	21
Figure 7: Location of the Fay Lake property within the major tectonic assemblages and sedimental	ry and
intrusive rocks of the Flin Flon Domain, both exposed and beneath Paleozoic cover. Also shown a	re the
structurally complex domain boundaries, the subdomains including the southern parts of the Kisse	eynew
Domain, and the sillimanite-biotite-garnet isograd (modified from Zwanzig and Bailes, 2010)	27
Figure 8: Geology of the Fay Lake area showing the location of the Puffy Lake Gold Deposit and the	e Vamp
Lake VMS Deposit. Modified from Zwanzig et al. (1995) and Schledewitz (1992)	29
Figure 9: Geology of the Fay Lake Property area showing the location of the Redwin, Fay Lake and	Jasper
showings	31
Figure 10: Geology of the area of the Redwin mineralization showing the location of the Granges I	Orill Holes
(Assessment File 92463) (modified from Gale and Norquay, 1996, Parbery, 1986)	33
Figure 11: Schematic diagram of typical mineralized zone in the Redwin area, Fay Lake (Parbery, 1	986)34
Figure 12: Trench location map of the Fay Lake mineral showing (Gayle and Norquay (1996) No. 2	0) from
Catear Resources Assessment Report 92651	35
Figure 13: Geological Map by Norwest Minerals Ltd on the Jasper Claims showing the location of t	he 1990
drill holes (Doyle and McKillen, 1990 in Assessment File 94080)	36
Figure 14: Fay Lake conductor dot picks over Vertical Derivative Magnetics, 2023	40
Figure 15: Fay Lake Project Time Domain EM study areas: North Central region (blue), Central (gre	en), East
(orange) South Central (Yellow), South West (blue-green), Main Zone (light brown)	41
Figure 16: Fay Lake Project Time Domain EM study areas showing the location of the conductors s	elected in
each area	42
Figure 17: Airborne TDEM conductors in the North Central zone. Target 7 is recommended for fol	low-up. 43
Figure 18: East Zone anomalies, note that anomaly 1 has 2 components. Anomaly 4 is the second	anomaly
of interest in this area.	43
Figure 19: East survey area showing the detailed location of Conductors 1A, 1B and 4	44
Figure 20: Conductivity map of the South West area showing the location of the Sundown Anomal	ly (blue
contoured area in the center of the map). The scale on the left is a relative conductance scale	44
Figure 22: Location map of the conductors in the Main Zone on a general geology base map. The	area is
divided into a west, central and east.	45
Figure 21: Map showing the location of the Main Zone conductors relative to the underlying geological states of the states of th	ogy. The
area is divided into West, Central and East Target areas	45
Figure 23: Geology map of the Redwin Peninsula area, Fay Lake Property	47
Figure 24: Sampling areas in the Redwin Peninsula area, see Figure 23 for scale and legend	48
Figure 25: HLEM Survey on the Redwin Peninsula area showing the location of HLEM conductors in	n
relationship to the Redwin Shaft area. The HLEM profiles are from the survey carried out at 1760	Hz with
150 coil separation.	59

### Tables

Table 1: Fay Lake Property, Mineral Claims and Tenure	12
Table 2: Terms of the agreement between Boreal Gold Inc. and 4058867 Manitoba Ltd	13
Table 3: Summary of the claim groups described by the early workers in the area of the Boreal Gold (	Corp.
property. Various sources site different names and descriptions to the different mineral showings	18
Table 4: Summary of Assessment File information for the Fay Lake property ordered by the year the	work
was carried out	22
Table 5: Puffy Lake Gold Deposit measured, indicated and inferred resources	65
Table 6: Proposed Phase 1 Budget for the Fay Lake Property exploration program	71
Table 7: Proposed Phase 2 Budget for the Fay Lake Property.	71

### 1.0 SUMMARY

The Fay Lake property consists of 17 mineral claims totalling 2719 hectares located approximately 55 km east-northeast of the city of Flin Flon, MB. The center of the property lies at approximately 54°58′20″N Latitude and 101°06′00″ E Longitude. Access to the property is via Manitoba Provincial Highway 10 from Flin Flon, to the all weather Sherridon road, then north approximately 50 km and then via a bush road to the west shoreline of Fay Lake. From there access is via boat in the summer or snow machine in the winter. Alternatively, Keewatin Railway company (a First Nations owned railway) operates a railway from the The Pas, MB to Pukatawagan and could be utilized for access as well.

The property was optioned by Boreal Gold INC. from 4058667 MB LTD under an agreement with an effective date of June 17, 2022 under which Boreal can acquire 100% undivided interest in the property over a period of 6 years by paying escalating payments and work totalling \$150,000, issuing 1,430,000 shares of Boreal Gold Inc to the vender and a work commitment of \$1,100,000 Boreal Gold Inc. The vender will retain a 2% NSR on the property.

The property lies within the northern part of the Flin Flon belt (FFB) which is one of the largest Proterozoic volcanichosted massive sulphide (VMS) districts in the world, containing 27 Cu-Zn-(Au) deposits from which more than 162 million tonnes of sulphide have already been mined or are in development within these deposits. The FFB is composed of structurally juxtaposed volcanic and sedimentary assemblages that were emplaced in a variety of tectonic environments. The major 1.92–1.88 Ga components (tectonostratigraphic assemblages) of the central Flin Flon belt include aerially significant juvenile arc and juvenile ocean-floor rocks (Mid Oceanic Ridge Basalt (MORB)), and minor contaminated arc, ocean-plateau and ocean-island basalt. The early volcanic assemblages are cut by 1976 – 1830 Ma 'successor-arc' intrusions that constitute over 50% of the outcrops in the Flin Flon Domain. The volcanic sequence, and early successor-arc plutons are unconformably overlain by the Missi Group sedimentary rocks and, in the property area, the Burntwood metasedimentary rocks. All of these are defined in the south and traced to the north into the Kississing–File lakes area, with metamorphic grade increasing to the north and can generally still be recognized in the more highly metamorphosed and deformed rocks in the north. The property area lies marginally south of the boundary of the structurally overlapping Kisseynew and Flin Flon lithotectonic domains.

Most of the mined VMS deposits in the Flin Flon belt are associated with the juvenile arc volcanic rocks. Gold mineralization in the FFB is less thoroughly studied but has been shown to be intimately associated with late brittle-ductile shear zones that follow peak tectonic and metamorphic activity within the Trans-Hudson Orogen.

The Fay Lake property has a long history based on the discovery of two zones of gold rich sulphide mineralization in the 1920's – those in the Fay Lake area including the Redwin, which is on the central peninsula of Fay Lake and the Jasper mineral occurrences located on Koscielny Lake. In the area of the Redwin mineralization there are at least 2 shafts of undermined depth and several trenches. In the early 1930's the operators shipped a total of 229 tonnes (252.4 tons) of ore in 3 shipments to Hudson Bay Mining and Smelting with grades varying from 4.04 g/t to 13.99 g/t Au (0.13 to 0.45 oz/ton Au) and 0.2 to 0.65% Cu. The area has undergone subsequent exploration including HLEM surveys and drilling which intersected narrow zones of lower grade gold and copper mineralization. The Jasper mineralization was discovered in the early 1950's and subsequently explored in the 1980's with detailed geology, geochemistry, geophysics and diamond drilling.

Within the property area the Amisk Group mafic, and felsic volcanic, Missi and Burntwood sedimentary rocks occur as an east trending sequence extending from Fay Lake to Ponton Lake. The volcanic rocks in the Fay Lake - Saddle Lake area are intruded by gabbro sills, and felsic porphyritic and sills.

Mineralization in the Redwin area lies at the contact of mafic volcanic rocks and rhyolite. The near vertically dipping sequence, from south to north, is rhyolite, becoming increasingly siliceous, to a contact with solid sulphide containing pyrrhotite, chalcopyrite and siliceous rocks/quartz veins with coarse grained pyrite, then mafic volcanic rocks. The sulphide zones strike east to northeast but can not be aligned over their approximately 600 m strike length. This suggests that the sulphide zones are probably offset by north-trending faults.

To the east of Fay Lake, near the railroad, eight trenches and pits test two quartz veins in schist zones within rhyolite porphyry that contained up to 3% pyrite, arsenopyrite and gold where gab samples by the property owners at the time reported assays of 9.33 g/t Au (0.3 oz/ton Au). Similar values were returned by the current property holders with Au values of up to 58.99 g/t Au.

The Jasper mineralization in the Koscielny Lake area includes three zones of gold mineralization within a sequence including volcaniclastic rocks intruded by intermediate dykes and sills, gabbro and quartz diorite and granodiorite. The gold mineralization is associated with narrow, pyritic quartz veins along the sheared margins of the granodiorite. The mineralization contains values of up to 11.81 g/t Au (0.38 oz/ton Au) over 1 m. The zones have been evaluated with geological, geochemical, VLF-EM and Magnetic surveys as well as drilling which only intersected low grade gold values over narrow widths.

Three kilometers south west of the Redwin occurrence is the Vamp Lake VMS deposit in a setting similar to that of the Redwin occurrence. The Vamp Lake deposit has a historic (non-NI43101 compliant) resource of 703,000 tonnes grading 1.3 % Cu, 3.74g/t Au and 12.68 g/t Ag. This should be considered an historical resource estimate and does not comply with resource categories defined in 'NI-43101 Standards For Disclosure for Mineral Projects' and is provided for Information only. The author has not done sufficient work to classify the historical estimate as current mineral resource. Boreal Gold Inc. is not treating the historical estimate as current mineral resources.

The Puffy Lake Gold Deposit lies approximately 2.3 km north of the northeast claims of the property produced 930 kg of gold between 1987 and 1989. A 2017 feasibility study on the property by Minnova Corp. has a (NI-43101 compliant) measured plus indicated resource of 1.481 million tonnes grading 5.93 g Au/t, with an additional inferred resource of 7.846 million tonnes grading 5.08 g Au/t.

In 2033 Boreal Gold Inc. carried out a 437.4-line km TDEM airborne survey with a traverse line spacing of 100 m. An analysis of this data divided the property into seven regions based on conductive bodies and the relationship to magnetic signatures and/or known mineralization. Within these seven regions 13 targets were identified for ground follow-up.

Boreal Gold also carried out a program of linecutting extending existing grids in the Redwin area, detailed geological mapping, lithogeochemistry and prospecting. The program identified the following:

- Quartz/sulphide veins in proximity to the Redwin sulphide horizon were anomalously enriched in gold with samples assaying 146.9 g/t Au and 59.88 g/t Au.
- Identified a layered gabbro complex
- Identified a new sulphide horizon (Sunrise) and found the historic Sundown Showing
- Structural data indicates that the sequence has been folded in 2 separate phases repeating stratigraphy as well as target VMS horizons
- Prospecting identified a number of quartz veins within the gabbro complex, all of which reported low gold values.

The Fay Lake property has the potential for both VMS Cu/Zn deposits similar to others in the Flin Flon – Snow Lake – Hanson Lake areas as well as epigenetic type gold mineralization similar to that identified in the Puffy lake area. The Puffy Lake gold deposit (~4 km NE of the property) occurs within NNW trending shear zones within Amisk volcanics and Missi sedimentary rocks, a setting that also occurs within the property area.

The Fay Lake property has undergone several phases of exploration since the Redwin mineralization was discovered 90 years ago. The early work concentrated on the sulfide zones with significant Cu and Au values in the immediate area of the Redwin showing on the eastern peninsula of Fay Lake. This work consisted of extensive trenching and sampling of high-grade rocks with little geological control that would aid in understanding the geometry of the sulphide zones. Exploration in other areas of the property targeted the gold potential of the area including the Fay Lake east area explored by Catear Resources and the Koscielny Lake area which has undergone several exploration programs. The work by Granges in the Ponton Lake area targeted EM conductors for their VMS potential, however this work identified anomalous gold values within graphitic conductors in lithologies similar to those that host the Puffy Lake gold deposit.

The recent work by Boreal Gold Inc. includes a TDEM Airborne EM survey as well as linecutting, geological mapping and grab sampling from a number of the known mineral occurrences. This work has provided a base to target the next phase of exploration. The airborne TDEM survey and magnetic survey has identified 13 targets within five of the six target areas which must be considered within their geological settings:

• The conductive targets within the North Central Region are largely within interbedded Missi sedimentary rocks (arenite and conglomerate) and Burntwood Suite siltstone and mudstone (and their metamorphic equivalents). In order to evaluate the gold potential, basal till Geochem sampling down-ice of the conductors

will aid in determining potential gold dispersion trains from a potential deposit, plus analysis of the detailed aeromagnetic data and geological mapping will identify any structures which may host mineralization.

- The single AEM anomaly in the Central region lies within mafic volcanic rocks interlayered with gabbro sill like bodies. It is a relatively short strike length and a conductivity of 22 siemens and is considered a lower priority.
- Within the East region two target areas were identified which will require geological mapping in order to define the setting of the conductors and if favourable followed up with, linecutting, detailed geological mapping and HLEM.
- Within the Southwest area, two small anomalies were identified. The western most is a strong anomaly (80 siemens) which occurs on the western most AEM Line and will require linecutting geological mapping and HLEM surveying to evaluate this conductor. The second conductor (the Sunrise Occurrence) will also require ground proofing with linecutting mapping and HLEM surveying
- The geology and geophysics of the Main Zone, which is centered on the Redwin mineralization, is complex. Additional work here should target these conductors, particularly the M1 and M2 conductors which extend to the west of the Redwin zone and should include linecutting, geological mapping and HLEM surveying. Follow up drilling will be contingent on the results from this work.

To the east of Fay Lake, near the railroad, a series of trenches over a strike length of approximately 100 m contained anomalous gold up to 1390 pp Au and 380 ppm As within highly silicified rock with similar values, up to 58.99 g/t Au, taken by the current owners. The soil sampling program, carried out by Catear Resources, over a small 150 m long grid also identified erratic but weakly to strongly anomalous enrichment of gold and arsenic and also noted that the setting for the trenches was in highly silicified and laminated volcanic rock. To evaluate this area will require cleaning out and sampling of the trenches and overburden stripping of some of the area as well as linecutting, basil till sampling and geological mapping of the area.

The initial work on the Fay Lake property should concentrate on:

- 1) the area identified as the Main Zone to evaluate the conductors trending to the west of the Redwin mineralization,
- 2) the Southwest zone in order to trace out the Sundown zone and also to determine the extent and strength of the far west anomaly
- 3) The Fay Lake Gold zone to the east of Fay Lake to determine the extent, setting and structural geology of the mineralization.

The budget for this phase of work is \$170,000. This work will identify potential drill targets for follow up on each of these zones.

A second phase of work will drill test the targets identified in the first phase of work in the Redwin/Granges Bay and Southwest Target areas. It will also examine the potential mineralization in other areas of the property East including the following targets:

- In the North Central region an evaluation of the gold potential of the Ponton Lake conductors is recommended . In order to evaluate the gold potential different exploration techniques will need to be employed such as basil till Geochem sampling down-ice of the conductors to determine potential gold dispersion trains from a potential deposit, analysis of the detailed aeromagnetic data and geological mapping to identify any structures which may host mineralization.
- In the East Region the conductors should be evaluated by linecutting, detailed geological mapping and HLEM surveying

The budget for the second phase of work is \$456,000.

### 2.0 INTRODUCTION

The author was retained by Boreal Gold Inc. to prepare a National Instrument 43101 Compliant Technical Report on the Fay Lake Property. The purpose of this report is to summarize the technical data on the property in the context of current Volcanic Hosted Massive Sulphide (VMS) and Epigenetic Gold Deposit models and to provide recommendations for future exploration programs.

The property Is subject to an agreement Boreal Gold Inc. from and 4058667 MB LTD. Boreal Gold Inc. is a public mineral exploration company focused on the development of base metal and gold deposits in the Flin Flon Domain of Manitoba and Saskatchewan in Canada.

Data utilized in this report in this report was obtained and compiled from Boreal Gold Inc., assessment work filed with Manitoba Natural Resources and available through Manitoba Map Gallery (<u>Map Gallery (gov.mb.ca)</u>), the Manitoba Integrated Mining and Quarrying System (IMAQ, <u>iMaQs | Integrated Mining and Quarrying System | Province of Manitoba (gov.mb.ca</u>)) and reports from the Manitoba Geological Survey which detail the geology and mineral occurrences In the area (and are cited In the relevant sections of this report.

The author is familiar with the geology of the area having carried out projects on gold metallogeny in the Flin Flon – Amisk Lakes area and on the metallogeny in the Kisseynew Domain while employed with the Saskatchewan Geological Survey and having generated and managed exploration projects in the Flin Flon area for over 15 years.

The author does not have, nor has he previously had any material interest in the Company or the vendor. the relationship with the Company and the Vendor is solely a professional association between the Company, the vendor and the author.

The author has carried out site visits on the property on two occasions. On July 14 2022 the author visited the property and examined the geology and mineralization in the area of the Redwin Deposit as part of an earlier technical report for Boreal Gold (dated August 1, 2022). On May 8, 2024 the author again visited the property and examined the area recently mapped by Boreal Gold Inc. and also examined the quartz sulphide veins identified in the 2024 report (Masson and Masson, 2024) and the interpretation of the structural geology of that area as well as traversed a short section of the Lynn Lake rail line which traverse the property next to the east shore line of Fay Lake.

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

This Report has been prepared by John G. Pearson P.Geo. for Boreal Gold Inc. The information, opinions, conclusions and recommendations are based on:

- information available to the author at the time of this report
- assumptions, qualifications and conditions as set forth in this report
- data, reports and other technical information supplied by the company and from third party sources.

The report has been prepared in accordance with the disclosure requirements of National Instrument 43-101 - Standards of Disclosure for Mineral Projects. The effective date of the report is May 20, 2024.

The author did not rely on other experts in connection with the preparation of this Report.

The author is not aware of any legal, political, environmental or tax maters with respect to the property.

Except for the purposes of legislation under provincial securities laws, any use of this report by any third party, is at the party's sole risk.

### 4.0 PROPERTY DESCRIPTION AND LOCATION

The Fay Lake Property is located in west central Manitoba (Figure 1) and consists of 17 claims totalling 2719 approximately 55 km northeast of the city of Flin Flon, MB and is located on NTS Map Sheets 63 K14 and 63 N 4 (Table 1, Figure 2). The center of the property lies at approximately 54°58′20″N Latitude and 101°06′00″ E Longitude.

The mineral claim tenure information and data has been obtained from Boreal Gold Inc. (the optionee of the property), assessment work filed with Manitoba Natural Resources and available through Manitoba Map Gallery (<u>Map Gallery (gov.mb.ca)</u>), the Manitoba Integrated Mining and Quarrying System (IMAQ, <u>iMaQs | Integrated</u> Mining and Quarrying System | Province of Manitoba (gov.mb.ca)) and reports from the Manitoba Geological Survey which detail the geology and mineral occurrences In the area (and are cited In the relevant sections of this report.

The property was optioned by Boreal Gold Inc. from 4058667 MB LTD under an agreement dated June 17, 2022 under which Boreal can gain 100% undivided interest in the property by satisfying the terms of the agreement as listed in Table 2. To summarize, by paying to the fender \$150,000, issuing 1,430,000 shares of Boreal Gold Inc to the vendor and carrying out \$1,100,000 over a period of 6 years, Boreal Gold Inc. will have 100% interest in the property. The vendor will retain a 2% Net Smelter Return (NSR). To the authors knowledge there are no other royalties, back-in rights, payments or other agreements which encumber the property.



Figure 1: Location map for the Fay Lake Property



Figure 2: Location map showing the location of the Fay Lake Property claims, the location of the rail line to Pukatawagan and the road to Sherridon.

Disposition Number	Claim Name	Holder	Issue Date	Good To Date	Area (ha)
MB12811	Jasper	4058667 MANITOBA LTD	2021-10-07	2026-10-07	36
MB12812	Fay	4058667 MANITOBA LTD	2021-10-13	2026-10-13	194
MB12896	MAR	4058667 MANITOBA LTD	2023-09-25	2026-09-25	163
MB12981	FAY 1	4058667 MANITOBA LTD	2022-01-12	2027-01-12	248
MB12982	FAY 2	4058667 MANITOBA LTD	2022-02-02	2027-02-02	156
MB12983	FAY 3	4058667 MANITOBA LTD	2022-06-13	2027-06-13	248
MB12984	FAY 4	4058667 MANITOBA LTD	2022-08-23	2027-08-23	256
MB12985	FAY 5	4058667 MANITOBA LTD	2022-10-19	2027-10-19	200
MB12986	FAY 6	4058667 MANITOBA LTD	2022-10-19	2027-10-19	144
MB12987	FAY 7	4058667 MANITOBA LTD	2023-05-30	2026-05-30	138
MB12990	WIN 1	4058667 MANITOBA LTD	2021-10-13	2026-10-13	211
MB12991	RED	4058667 MANITOBA LTD	2021-10-13	2026-10-13	248
MB12992	BRUCE	4058667 MANITOBA LTD	2021-10-14	2026-10-14	177
MB12993	WIN 2	4058667 MANITOBA LTD	2021-10-14	2026-10-14	76
MB12994	RITA	4058667 MANITOBA LTD	2021-10-14	2026-10-14	69
MB12995	MEEKA	4058667 MANITOBA LTD	2021-10-14	2026-10-14	38
MB13728	MINE	4058667 MANITOBA LTD	2020-09-25	2026-09-25	117
Total Ha					2719

Table 1: Fay Lake Property, Mineral Claims and Tenure

Table 2.	Torme of the	agroomont botwoor	Boroal Cold Inc.	and 1058867	Manitoba I td
		agreement betweet		anu 4030007	

Terms of the Option Agreement between Boreal Gold Inc and 4058867 Manitoba Ltd.						
Time of Commitment	me of Commitment Cash or Royalty Consideration Dollar value of					
	Payment	Shares	Commitment			
Within 10 days of completion of crowd funding	\$20,000					
On or before the first anniversary of the Effective Date	\$20,000	10,000	\$100,000			
On or before the second anniversary of the Effective Date	\$20,000	10,000	\$150,000			
On or before the third anniversary of the Effective Date	\$20,000	10,000	\$200,000			
On or before the fourth anniversary of the Effective Date	\$20,000	200,000	\$200,000			
On or before the fifth anniversary of the Effective Date	\$20,000	200,000	\$200,000			
On or before the sixth anniversary of the Effective Date	\$30,000	1,000,000	\$250,000			
Total	\$150,000	1,430,000	\$1,100,000			
Optionor to retain a 2% NSR						

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

Access to the property is via Manitoba Provincial Highway 10 from Flin Flon, to the all weather Sherridon road, then north approximately 50 km and then via a bush road to the west shoreline of Fay Lake (approximately 4 km). From there, access is via boat in the summer or snow machine in the winter. Alternatively, a rail line, operated by Keewatin Railway company (a First Nations owned railway) connects The Pas to Pukatawagan and crosses the property near the east shore of Fay Lake. This rail line connects to The Bay Line railway in The Pas with links to Churchill Manitoba as well as the national railway networks. The center of the Fay Lake property is less than 4 km to the road linking Sherridon and the electrical power line connecting Sherridon to the Manitoba Power Grid.

The Flin Flon area is an active mining area and as such, there is a large skilled mining force that is readily available for any new developments that are to take place in the region of the Fay Lake Property.

The region is typical of the Precambrian Shield and is characterized by a mix of bedrock outcrops, glacial deposits, wetlands and lakes.

This ecoregion is located along the southern edge of the Precambrian Shield in north-central Saskatchewan and Manitoba. It is marked by cool summers and very cold winters. The mean annual temperature is approximately -2.5°C. The mean summer temperature is 12.5°C and the mean winter temperature is -18.5°C. The mean annual precipitation ranges from 400 - 500 mm. This ecoregion is classified as having a subhumid high boreal ecoclimate. It forms part of the continuous coniferous boreal forest that extends from northwestern Ontario to Great Slave Lake in the southern Northwest Territories. The predominant vegetation consists of closed stands of black spruce and jack pine with a shrub layer of ericaceous shrubs and a ground cover of mosses and lichens. Black spruce is the climatic climax species. Depending on drainage, surficial material and local climate, trembling aspen, white birch, white spruce, and to a lesser extent balsam fir, occupy significant areas, especially in the eastern section. Bedrock exposures have fewer trees and are covered with lichens. Closed to open stands of stunted black spruce with ericaceous shrubs and a ground cover of sphagnum moss dominate poorly drained peat-filled depressions. Permafrost is distributed throughout the ecoregion, but is only widespread in organic deposits. Small to large lakes compose 30 - 40% of the ecoregion and drain northeastward via the Churchill, Nelson and Seal river systems. A pulpwood and dimension lumber industry operates to a limited extent in the ecoregion. Wildlife includes barrenground caribou, moose, black bear, lynx, wolf, beaver, muskrat, snowshoe hare and red-backed vole. Bird species include raven, common loon, spruce grouse, bald eagle, gray jay, hawk owl, and waterfowl, including ducks and geese.

In order to conduct mineral exploration activities on Crown land within Manitoba, the proponent must complete a Work Permit Application and follow the guidelines that are available at <u>Province of Manitoba | agriculture -</u> <u>Mineral Exploration (gov.mb.ca)</u>, The approval of these permits may take an extended period of time

During the authors property visits on July 14, 2022 and May 8, 2024 it was apparent that ground work in the area will be challenging. The northern part of the property was burned in a forest fire in 1989 and as such this area of the property has extensive dead fall and regrowth so is very difficult to traverse. The area of Fay Lake is a mature forest that has undergone severe windstorms in the last five years and as such there is extensive areas of blown down timber, making this area challenging to carry out ground work as well.



# Figure 3: Main shaft at the Redwin deposit, May 8 2024.

### 6.0 HISTORY

The Fay Lake property has a long history based on the discovery of two zones of gold rich sulphide mineralization in the 1920's. The Boreal Gold Inc. properties are centered on two area of historic showings – those in the Faye Lake area including the Redwin, which is on the central peninsula of Fay Lake, (Figure 5) and the Fay Lake showings (labelled #20 in Gale and Norquay (1996)), 60 m east of Fay Lake, near the rail line. The second is located to the east, the Jasper mineral occurrences (Heine, 2003) located on Koscielny Lake. The references to the zones of mineralization are described in a number of geological reports including Wright (1931) McGlynn (1959), Schledewitz (1990, 1992), Heine (2003) plus property histories detailed in assessment files. Table 3 lists the zones of mineralization with their historic references. The assessment files listed below and in Table 4 can be accessed through Manitoba Integrated Mining and Quarrying system (IMAQ, iMaQs Integrated Mining and Quarrying System | Province of Manitoba (gov.mb.ca)) and/or through the Manitoba Map Gallery (Map Gallery (gov.mb.ca)). Table 4 summarizes the assessment file information on the Fay Lake Property.

Mineralization in the Faye Lake area was discovered in the 1929 by Alfred Redwin (Heberlein and Doborzynski (1987) in Assessment File 93121). During the period 1932 - 1933 the property was held by the Fay Lake Mining Syndicate which delivered three

shipments of sulphide ore to Hudson Bay Mining and Smelting, presumably from the shaft area. The three shipments of ore are as follows (Letter from A. Kauffman, Chief Geologist HBM&S, 1949, Heberlein and Doborzynski, 1987):

November 24, 1932	46.2 tonnes	14.6 g/t Au	50 g/t Ag	0.20% Cu
January 12, 1933	40.0 tonnes	15.7 g/t Au	7.9 g/t Ag	0.65% Cu
January 25, 1933	147 tonnes	4.35 g/t Au	4.5 g/t Ag	0.51% Cu

During this period the Syndicate excavated two shafts (Figure 3) and numerous tranches (Figure 4) and carried out a drill program in the main showing area however results from this program are not recorded.

In late 1937 the 'Copper Chief' group of claims (including the Redwin showing) were optioned by Fay Lake Mining Syndicate who dug additional trenches and drilled ten holes, the option was dropped in late 1938. The area around the occurrence was restaked in 1947 and again in 1949 by Alfred Redwin who reported a drilling program in 1952 (Mineral Index Card 63K/14 Au2 (<u>Mineral Resources | Province of Manitoba (gov.mb.ca</u>)), Gale and Norquay 1996).

The area was staked in 1963 by T, J. Murray and optioned to Kerr Addison Mines Ltd in 1964. Kerr Addison Mines Ltd carried out an HLEM survey over the Redwin area, located conductors in the main showing area which were subsequently drilled by Pascar Oils Ltd in 1968.



Figure 4: One of the trenches at the Redwin Deposit.

This Pascar Oils program intersected a chalcopyrite bearing massive sulphide zone which is reported to have gold values of 2.4 g/t over a 65 cm interval (Gale and Norquay,1996) however a review of the drill logs in the public domain (Manitoba Assessment File 90473) indicates the highest gold grade at 0.62 g/t (0.02 oz/ton). Each of the 8 drill holes reported intersected significant sulphide zones with the best result being in Drill Hole 2 which intersected 14.295 m (46.9 ft, core length) with an average of 0.21% Cu, within which, one 1.52 m (5 foot) interval assayed 0.42% Cu. The property was subsequently acquired (1971) by Hudson Bay Exploration and Development (HBED) who drilled 2 of the Kerr Addison conductors and intersected a 2 m wide pyrite/pyrrhotite zone which reported only a trace of Cu in DDH FUD 2.

In the period 1982 - 1983 Granges Exploration carried out an HLEM survey and drilled holes intersecting pyrite/pyrrhotite with trace of chalcopyrite (Assessment File 92463). This was followed by 4 drill holes (OP 17 to OP 20). Drill hole OP 18 drilled under the Redwin Shaft intersecting 1.21 m grading 0.6% Cu, 0.2% Zn, 3.11 g/.t Au (0.1 oz/ton Au). Drill Hole OP 17 drilled ~200 m to the SE on a separate conductor intersected 76 cm -grading 1.01% Cu/ 0.03% Zn

In 1985 Granges drilled 4 holes (OP25 – OP28) on HLEM conductors in Ponton Lake (Assessment File 93510). This

drilling intersected low grade gold values in 2 of the 4 holes with the highest grade being as follows:

Drill Hole OP 25	0.21 g/t Au, 1.95 g/t Ag over a core length of 0.9 m
Drill Hole OP 26	0.167 g/t Au 3.32 g/t Ag over a core length of 1.97 m and
	0.186 g/t Au over a core length of 8.54 m
Drill Hole OP 28	2.31 g/t Au over a core length of 0.92 m

In 1985 Catear Resources carried out a soil, stream and lithogeochem sampling and prospecting program on a claim immediately to the east of Fay Lake which failed to identify any geochem anomalies however trench samples yielded up to 1390 ppb Au and 380 ppb As (Assessment File 92651).

In 1986 A.L. Parres/Nor-Acme Gold Mines Limited/Phillip Bachnick/Varna Gold acquired the property and carried out an Airborne VLF EM/Mag Survey that covered nearly the entire Boreal property. The property was subsequently optioned to Esso Resources who carried out Humus Geochem, HLEM and Magnetic ground surveys and identified 2 strong conductors one with a co-incident magnetic signature which they speculated to be caused by pyrrhotite (Assessment Files 93087, 93121).

Between 1993 and 1995 HBED carried out a Time Domain Airborne EM Survey (Spectrum Survey) over much of the Flin Flon belt. The survey extends to the very south edge of the Fay Lake property and unfortunately any of the areas covered by competitor claims are blacked out (Assessment File 73859).

In 1996/1997 Callinan Flin Flon Mines carried out a program of linecutting - HLEM surveys (Assessment File 94288) over the Ponton Lake area in the northern part of the Fay Lake Property. The author reports that previously HBED had drilled 10 holes in the area with the most significant intersections (the results of the HBED program do not appear to be in the public domain):

FUD 9 – 0.335 m grading 5.6 g/t (0.18 oz/ton) Au (at a 33.53 m vertical depth) Fud 15 – 0.823 m grading 4.72 (0.152 oz/ton) Au (below FUD 9 at a depth of 111.25)

The HLEM survey identified a number of anomalies on which drilling was recommended.

In 2012 Minnova Corp/Auriga Gold Corp cared out an extensive airborne VTEM - magnetic survey (assessment file 63N12235) which covered the Puffy Lake gold deposit area and extended into the northern part of the Fay Lake claim group onto the Ponton-Wajusk Lakes (Mineral Claims MB 12982 and MB 12983) area. The magnetics and EM conductors appear to be continuous from Puffy Lake onto the northern parts of the Fay Lake property.

The Jasper mineral occurrences in the Koscielny Lake area (MB 12811) consist of mineralization on a small island in the NE part of Koscielny Lake and on the shoreline to the east of the island. The property was first staked in 1950 by A.L. Parres Ltd as the Tip Top claims. Parres carried out a 24-hole X- Ray drill program (totalling 441.96 m) and trenching on the property (Figure 6 and Assessment File 90520). Several of the holes reported visible gold (see Heine 2003). The mineralization lies with several quartz veins containing pyrite and visible gold within coarse grained gabbro.

In June 1988 Westfields Minerals carried out a reconnaissance program over the Jasper area which included linecutting, soil geochemistry, rock sampling, geological mapping, stripping trenching and chip sampling. The soil sampling program yielded anomalous gold concentrations ranging from 15 ppb to 420 ppb and the chip sampling program on the Island showing gave values of 2.0 m grading 3.11 g/t (0.10 oz/ton) Au, 3.85 g/t (0.124 oz/ton) Au and, on the Lakeshore showing, a 1.0 m interval returned 10.07 g/t (0.328 oz/ton) Au. The following year Westfield carried out linecutting, deep overburden Ponjar sampling and VLF-EM and Magnetic surveys. A twelvehole (1092.5 m) drill program was completed in early 1990 testing the extent of the surface mineralization around the Lakeshore, Reef and Island showings. Three holes produced narrow low grade, gold intersections. Figure 13 details the location of the drilling (Doyle and McKillen, 1990 in Assessment File 94080). Table 3: Summary of the claim groups described by the early workers in the area of the Boreal Gold Corp. property. Various sources site different names and descriptions to the different mineral showings.

Reference	Name	Location	Alternate Name	Description
Wright, 1931	B.C. Copper Group	Base of Peninsula on Fay Lake	Redwin	Several pits are described with pyrite (py) and pyrrhotite (po)mineralization up to 20 feet wide and chalcopyrite (cpy) occurring along both margins. Veinlets of quartz cut the jointed rock and a speck of gold was found in one specimen., Quartz associated with sulphide bodies carries abundant chalcopyrite and gold but the average combined gold and copper content of the large pyrrhotite and pyrite body is low.
	Sundown Group	3300 ' south of Redwin	Gale and Norquay (1996) #19, Site B	A pyrrhotite - pyrite body containing some chalcopyrite exposed by three trenches, hosted in andesite. The sulphide body has been traced 300' along the side of a swamp and is up to 10' wide
	Copper Chief	North side of an island in the entrance to the second bay south from the east end of Fay Lake, about 2000' west of B.C. Copper Group	Gale and Norquay (1996) #19, Site A	Parts of a bed of garnet-bearing schist about 100' thick carry quartz in veinlets and small lenses and some pyrite, pyrrhotite and chalcopyrite in scattered grains, widths of 20' or more of the schistose rock carry sulphides.
	Pembroke Group	West end of Fay Lake	Gale and Norquay (1996) #19, Site C	Some trenching has been done to explore zones of schist in andesite.
Brownell, 1931	Copper Chief No. 11	May be the eastern zone described by (Wright, 1931).	Redwin	Describes a lenticular mass of gold bearing quartz (2.1 m x 4.3 m) in a shallow trench located 73 m east of the shaft (see Figure 8)

McGlynn, 1959	Redwin		Deposits consist of sulphide bodies and quartz veins in the schistose veins. The schist is partly replaced by sulphides and locally the replacement is complete resulting in narrow lens shaped bodies of massive pyrrhotite and pyrite. Minor amounts of chalcopyrite occur in quartz veins and in the sulphide rich zones. Quartz veins apparently contain most of the gold that has been reported. Sulphide and quartz bodies are known to extend for a total length of 600 feet along strike but for 200 feet of this length outcrops are sparce individual sulphide zones are up to 20 feet wide and the quartz veins within the sulphide
	Fay Lake Property	Between the east shore of Fay Lake and the railroad just north of Mile 29	Zones are up to a foot wide and seldom more than 50 feet long.Deposit is in hornblende-plagioclase gneiss intruded by bodies of rhyolite porphyry Quartz occurs in schist zones as veins, lenses and podsin one trench are two veins separated by 10 feet of altered and sheared gneiss. The veins are 2 feet wide at places and their known length is about 100 feet wide in places contains up to 3 percent pyrite, arsenopyrite and gold, grab samples are reported by the owners to assay 7.15 g/t Au (0.23 oz/ton).



Figure 5: Geology of the Fay Lake area showing the location of mineral showings cited in Gayle and Norquay (1996) including the Redwin mineralization and Fay Lake (#20). Geology after McGlynn (1959), Parbery (1986) and Schledewitz (1990, 1992).



Figure 6: Location of drill holes and trenches on the Koscielny Lake (MB12811) property (from Heine, 2003 and references therein). The drill holes are those drilled by A.L. Parres in 1950.

Table 4: Summary of Assessment File information for the Fay Lake property ordered by the year the work was carried out.

Assessment File Number	Claim Number	Company	Year	Type of Program	Comments
90472	MB13728, 12992, 12995	Kerr Addison Mines	1964	HLEM	One short conductor found, recommended follow up
90474	MB 12990, MB13728	Kerr Addison Mines	1963/64	HLEM	No conductors identified - comment about good gold values I trench on adjoining claims to the south.
90473	MB13728, MB 12992	Pascar Petroleum	1968	Drilling	Drill Test Kerr Addison conductors, Hole 2 intersected 14.295 m (46.9 ft, core length) with an average of 0.21% Cu and within which one 5- foot interval 0.42% Cu.
91496	MB 12994, MB12991, MB12992	HBED	1973	Drilling	2 drill holes - intersected ~ 3.05 m py/ solid sulphide in one hole and 4' of 5-25% py with trace cpy in FUD 2
91563	MB12990, MB12993, MB12991, MB13728, MB12994, MB12992	HBED	1973	HLEM	One anomaly tested by DDH FUD 1 and 2
92463	MB 12991	Granges Exploration	1982	Drilling	4 drill holes intersected sulphides - dominantly Py/Po/with tr cpy. DDH OP 17 – 20. DDH OP17 intersected 76 cm -grading 1.01% Cu/ 0.03% Zn, DDH OP18 intersected 1.21 m grading 0.6% Cu, 0.2% Zn, 3.11 g/t Au.

92651	MB 12812, MB 12981, MB 12995	Catear Resources	1985	Geochem and Prospecting	Strong but inconsistent enrichments of gold and arsenic, recommend detailed geochemical surveys and geophysics. trench samples contain up to 1390 ppb Au and 380 ppb As
93505	MB 12982, MB12983	Granges/Pioneer Metals Corp	1983	HLEM	5 Conductors identified on Ponton Lake.
93510	MB 12982, MB12983, MB12987	Granges Exploration	1985	Drilling	Ponton Lake area - 4 holes on parallel conductors OP 25 – 28, OP 25 and 26 had low grade gold mineralization including OP 25 - 0.225 g/t over 3 m, OP 26 - 8.6m - 0.186 g/t
94473	MB12993, MB12991, MB12990, MB13728, MB12994, MB 12982, MB12995, MB12812, MB12981, MB18982	A.L. Parres Ltd, Varna Gold Inc/Philip Bachnick/Noracme Gold Mines Ltd	1986	VLF AEM/Mag Survey	Regional Survey
93086	MB 12990, MB13728	Esso Minerals	1986/87	Humus Geochem	4 anomalies identified with Cu/Pb/As, Cu/Zn/Pb, Cu/Pb/Zn, Pb/Zn
93087	MB 12990, MB13728, MB12994, MB12992	Esso Resources	1987	HLEM	2 strong conductors identified with co-incident magnetics - indicating po mineralization, Zone A is intensely silicified containing disseminated sulphides in the HW and should be surveyed by IP
93121	MB 12991	Esso Resources	1987		Humus geochem, HLEM and Mag Surveys, found 2 strong conductors, one with mag that speculated associated with Po

94080	MB 12811	Norwest Minerals	1988/90	Drilling, Trench Sampling, Petrographic Report	12 drill holes with 3 holes giving narrow, low grade gold intersections. (Follow up of Westfield Minerals work (Assessment File 94073)
93165	MB12992, MB 12995, MB 12812, MB 12981, MB 12982	Esso Minerals	1989	Geological mapping, humus geochem, VLF- EM, Magnetic surveying	Recommended follow up of humus geochem anomalies in three areas.
94073	MB 12811	Westfield Minerals	1988/89	Geological Mapping, soil geochem, chip sampling, trenching, geophysics, basal till sampling	Recommended a 2500 drill program to test the mineralization in the showings and the basal till geochem anomalies.
73859	MB 12991, MB12993, MB12990, MB13728, MB12994, MB12992, MB12995, MB12812, MB12981, MB12982, MB12983, MB12811	HBED	1993/95	Spectrum Airborne Time Domain AEM Survey	Very Large regional survey.
94288	MB12983	Callinan Royalties Corp	1996/97	HLEM	AJ O'Donnel reports HBED in their FUD claims drilled 10 holes between 1981 and 1988 and on the Zeek Claims 3 and 4 intersected 2 holes with interesting Au values FUD 9 intersected .335 m of 5.6 g/t (0.18 oz/ton) Au, FUD 17 intersected 0.82 m of 4.72 g/t (0.152 oz/ton) Au. Four holes were recommended based on conductors associated with the

					HBED Au intercepts. These anomalies appear to be just north of the claim.
63N12235	MB 12982, 12983	Auriga Gold Corp/Minnova Corp	2012	VTEM Airborne Survey	Maverick Gold Project - this survey extends from covers part of Ponton and Wajusk Lake - to Puffy Lake and Nokomis Lake

### 7. GEOLOGICAL SETTING AND MINERALIZATION

#### 7.1 Geological Setting

The geological mapping in the Fay Lake area is compiled in GSC Open File 3054 (Zwanzig et al., 1995) from several sources including McGlynn (1959), Schledewitz (1990, 1992), Parbery and Gale (1984), Gilbert (1995), Parbery (1986), Gale and Norquay (1996), Zwanzig and Bailes (2010), Zwanzig (1990), Zwanzig and Schledewitz (1992), Robertson (1953) as, since McGlynn's work, no single map covers the entire property.

The property area lies marginally south of the boundaries of the structurally overlapping parts of two lithotectonic domains (Flin Flon and Kisseynew) in the Paleoproterozoic Trans-Hudson Orogen (THO) in Manitoba ((Figure 7, Zwanzig and Bailes, 2010 and references therein). The low-grade metamorphic rocks in the Flin Flon Domain have been recognized as being fault-bounded assemblages of volcanic and lesser sedimentary rocks formed in an oceanic island-arc environment at approximately 1.90 - 1.88 GA. These volcanics formed in a variety of oceanic environments including arcs, back arcs, arc rifts an ocean plateau and an ocean island. Parts of these terranes were structurally juxtaposed to form an accretionary collage, termed the Amisk Collage, in the central Flin Flon area (Lucas et al., 1996), and units of similar age in the eastern part of the Flin Flon Domain. All of these are defined in the south and traced to the north into the Kississing–File lakes area, with metamorphic grade increasing to the north and can generally still be recognized in the more highly metamorphosed and deformed rocks in the north (Zwanzig and Schledewitz, 1992; Zwanzig, 1999).

The early volcanic assemblages are cut by 1976 – 1830 Ma 'successor-arc' plutons that constitute over 50% of the outcrops in the Flin Flon Domain. intrusions (Lucas et al., 1996). The Amisk Collage and early successor-arc plutons are unconformably overlain by the Missi Group sedimentary rocks and locally present volcanics are dated at 1848 – 1830 (Machado et al., 1999; Ansdell et al., 1999) and were formed by the rapid erosion of the volcanic and plutonic rocks which supplied the immature, mainly juvenile detritus that constitutes the Missi and Burntwood groups (Bailes, 1980; Zwanzig, 1990; Syme et al., 1995). In the main part of the Flin Flon Domain, Missi Group conglomerate, pebbly sandstone and sandstone—siltstone probably formed in isolated intermontane basins. Along the transition to the Kisseynew Domain, the finer grained siliciclastic rocks of the Missi Group likely formed in a long basin between exposed volcano-plutonic rocks and a bordering sea. The favoured interpretation (Zwanzig, 1999) is that the Burntwood Group was fed by detritus provided by the same fluvial-alluvial systems that formed the Missi Group. As the Missi Group prograded into the Kisseynew basin, it formed unstable deposits on a steep slope; these were redeposited into deeper water by turbidity currents, forming greywacke/mudstone of the Burntwood Group.



**Figure 7:** Location of the Fay Lake property within the major tectonic assemblages and sedimentary and intrusive rocks of the Flin Flon Domain, both exposed and beneath Paleozoic cover. Also shown are the structurally complex domain boundaries, the subdomains including the southern parts of the Kisseynew Domain, and the sillimanite-biotite-garnet isograd (modified from Zwanzig and Bailes, 2010).

#### 7.2 Property Geology

Amisk Group mafic, and felsic volcanic and volcaniclastic rocks occur throughout the map area (Schledewitz, 1990, 1991, 1992) and keels of similar volcanic rocks appear to trend southwest into the Vamp Lake area although the relationship of the Vamp Lake volcanics with the Fay Lake sequence is disrupted by the of the Echo Lake and Syme Lake Plutons (Figure 8). The volcanic rocks in the Fay Lake - Saddle Lake area are intruded by medium grained gabbro sills, and quartz and quartz-plagioclase porphyry dykes and sills. The gabbro sills are 1 to 700 m thick and vary in strike length from several metres to 3 km. The Saddle Lake gabbro is the largest single body (0.7 by 3 km), whereas other intrusions range from a single narrow sill, to sill and dyke complexes that make up 50% of the bedrock exposures in certain areas. The gabbro sills are interpreted to be synvolcanic and are most common in the volcanic sequences exposed at, and east of, Fay Lake. The felsic porphyry dykes are most common in the Webb Lake area.

Two large composite intrusive bodies, the Echo Lake pluton (Whalen, 1991) and the Gauthier Lake pluton (Syme, 1991), underlie the southern part of the property area. The Echo Lake pluton is a quartz diorite to hornblendebiotite granodiorite that extends from southeast of Fay Lake to the west shore of Webb Lake. The Gauthier Lake pluton is a quartz phyric, variably hornblende-bearing granodiorite to granite that outcrops east and north of Webb Lake. Intrusion of quartz-rich granite, with up to 40% quartz phenocrysts, accompanied or postdated intrusion of the Gauthier Lake pluton, as did intense silicification, and alkali and sulfide mobility along its margins and within the supracrustal rocks in the Webb Lake area.

The supracrustal rocks were deformed into upright large-scale folds that predate the emplacement of the large complex plutons. A period of deformation characterized by shearing and faulting along easterly- and northerly-trending zones of deformation postdates the emplacement of the Echo Lake and Gauthier Lake plutons.

Felsic volcanic and volcaniclastic rocks occur at the southeast end of Fay Lake, and from the northeastern shore of Rodwalsh Lake to King Lake. The felsic rocks are structurally overlain by a sequence of interlayered, pale green weathering plagioclase phyric and hornblende phyric basaltic andesite, dark green weathering mafic volcanic flows and flow breccia, amygdaloidal pillow basalt with pillow breccia and rare laminated mafic interflow sediment. At one location a well-preserved sequence of trough-laminated sedimentary rock overlies an uneven flow surface; indicating an upright north-facing flow sequence. The flows are overlain by compositionally uniform, fine grained, well foliated meta-basalt that contains diorite, gabbro and diabase sills. The basaltic rocks appear to have massive and pillowed components. The pillowed component is indicated by areas of thin epidosite lenses interpreted to be highly tectonized pillow cores and selvages. This unit of multiple basaltic flows is 1200 m thick at Fay Lake and appears to thin to 500 m north of Saddle Lake. The intensity of tectonic overprint decreases to the northeast along strike from Fay Lake, to the area north of Saddle Lake.



Figure 8: Geology of the Fay Lake area showing the location of the Puffy Lake Gold Deposit and the Vamp Lake VMS Deposit. Modified from Zwanzig et al. (1995) and Schledewitz (1992).

The Echo Lake pluton truncates the volcanic stratigraphy to the south and east of Fay Lake, and the Gauthier Lake pluton truncates the easterly trend of volcanic rocks northeast of Saddle Lake. The Amisk Group volcanic rocks are overlain to the north by Missi Group rocks.

Missi Group basal conglomerate is 10 to 50 m thick and extends almost continuously for 8.5 km from the west end of Fay Lake to the east end of Wajusk Lake and to the northwest into the Ponton Lake area and further to Puffy Lake and can be used as a marker horizon to aid in defining the structural evolution of the area. At the eastern end of Fay Lake, the conglomerate is attenuated, and granite is intruded. The basal conglomerate is clast-supported with a biotite-feldspar, locally hornblende bearing, matrix with abundant epidote and quartz. The clasts are mafic volcanic, minor quartz porphyry, diorite, tonalite, rare granite, vein quartz and magnetite-quartz iron formation. The clasts are flattened, elongated down dip in the plane of the steep foliation, and have aspect ratios of 4.5: 1: 18.

The conglomerate is overlain by 100 to 400 m of variably cross-bedded meta-arkose with isolated pebble beds and cobbles. The arkose is intruded by mafic dykes and sills that predate the peak of metamorphism and subsequent deformation. A 200 to 300 m thick suite of interlayered hornblende-epidote-bearing, quartzo-feldspathic and grey biotite-feldspar-quartz paragneiss overlies the meta-arkose. The average thickness of the Missi Group appears to be 700 m. A 1600 m thick sequence of Missi Group in the large Z-fold at the east end of Fay Lake suggests considerable thickening has taken place in the north trending short limb of this structure during deformation.

The Burntwood River Group garnet-biotite-quartz-feldspar paragneiss overlies the Missi Group north of Fay Lake. The contact between them has been mapped intermittently over a distance of 4 km to the east immediately west of Wajusk Lake. The Missi Group and Burntwood River Group rocks are highly strained on either side of this contact, which has been folded into a series of tight S-folds, which in the Ponton Lake area gives the appearance that they two sequences could be interbedded. This tight folding contrasts with the style of deformation observed along the southern contact of the Missi Group with the Amisk Group. There, the contact, although highly strained as indicated by the fabric in the basal conglomerate, is not folded except for the large Z-fold at the east end of Fay Lake

Extending east from Fay Lake, mafic volcanics trend from Fay Lake to the north of Saddle Lake and further ENE to the area south of Puffy Lake. South of Saddle Lake a sequence of intermediate to felsic volcanics and volcaniclastics is present, however a 1985 Granges Airborne Time Domain survey (4058667 Manitoba Ltd. Files) fails to identify any conductivity.

#### 7.3 Redwin Area Geology and Mineralization

Parbery (1986) examined the sulphide occurrences at the base of the large peninsula at the east end of Fay Lake – the Redwin mineralization. Here (Figures 9 and 10), the Fay Lake area contains a sequence of west-trending mafic metavolcanic rocks that are intercalated with minor felsic volcanic rocks. Outcrops of mafic heterolithic breccia, mafic flow breccia, mafic pillowed flows, amygdular flows and mafic tuffs occur on the large, mushroom shaped peninsula at the east end of the lake. Hornblende-phyric and massive fine-grained sections of mafic rock are believed to be of volcanic origin. Most of the above rock types have a fine grained to aphanitic groundmass and weather medium to dark green. Small diorite-gabbro bodies are found within the mafic volcanic rocks. Outcrops of pillowed, mafic flows are poorly exposed and the pillows have been stretched, making the determination of top directions difficult; tops may be towards the south.



Figure 9: Geology of the Fay Lake Property area showing the location of the Redwin, Fay Lake and Jasper showings.

Gale and Norquay (1996) mistakenly report Granges' drill hole OP 7 drilled in the vicinity of the Redwin mineralization reported 0.76 cm grading 1.01% Cu/0.3% Zn in Assessment File 90473. This is incorrect, it is drill hole OP17 in Assessment File 92463.

Felsic rocks are aphanitic, weather pink-orange to buff-white and resemble very fine-grained intrusions; however, a few outcrops of felsic rock are quartz-phyric and one outcrop contains possible quartz amygdules. Most of the felsic volcanic rock is located in the southern part of the map area.

A sulphide-bearing siliceous vein occurring between mafic and felsic volcanic rocks is exposed in several trenches in the area (Figure 11). A typical lithologic sequence, from south to north, in association with the sulphides is:

- felsic volcanic rocks that become increasingly siliceous (occasionally cherty in appearance) toward the sulphide zone;
- a 20 cm thick near solid sulphide zone consisting of pyrrhotite with some pyrite and trace chalcopyrite ± covellite and siliceous rocks or quartz veins with coarse grained pyrite;
- a foliated fine grained mafic to intermediate rock containing biotite and up to 10% disseminated pyrite;
- a hornblende-bearing fine grained to very fine grained massive mafic rock.

The above sequence is exposed over 3-4 m in several trenches. Several metres to the north the mafic rocks vary from hornblende-phyric basalt to a quartz amygdaloidal basalt. A trench in the southern part of the map area exposes 4-5 m of solid pyrrhotite and a felsic rock of volcanic(?) origin. The solid sulphide zones appear to occur near the contact between mafic and felsic volcanic rocks. Locally, quartz and sulphide minerals have been mobilized to form veins subparallel to the contact. Geological mapping indicates that the sulphide zones strike east to northeast but cannot be aligned over their approximately 600 m strike length. This suggests that the sulphide zones are probably offset by north-trending faults.

The linecutting, prospecting and detailed geological mapping carried out by Boreal Gold Inc. as part of the 2023 exploration program has provided a more detailed geological map of the area and is detailed in Section 9.2 of this report.



Figure 10: Geology of the area of the Redwin mineralization showing the location of the Granges Drill Holes (Assessment File 92463) (modified from Gale and Norquay, 1996, Parbery, 1986)



Figure 11: Schematic diagram of typical mineralized zone in the Redwin area, Fay Lake (Parbery, 1986).

#### 7.4 Fay Lake East Geology and Mineralization

To the east of Fay Lake, near the railroad (Gale and Norquay, 1996 – Fay Lake/ #20), McGlynn reported two quartz veins in schist zones within rhyolite porphyry that contained up to 3% pyrite, arsenopyrite and gold where grab samples by the property owners at the time, reported assays of 9.33 g/t (0.3 oz/ton) Au. A trench location map by Catear Resources (Assessment File 92651) identified 8 trenches and pits (Figure 12) over a strike length of nearly 100 m, where trench sampling identified anomalous gold and arsenic values in all of the trenches ranging pt to 1390 ppb Au and 380 ppb. Similar values were returned by the current property holders (S. Masson) which reported values of up to 58.99 g/t Au. The soil sampling program over a small 150 m long grid also identified erratic but weakly to strongly anomalous enrichment of gold and arsenic and also noted that the setting for the trenches was in highly silicified and laminated volcanic rock.



# Figure 12: Trench location map of the Fay Lake mineral showing (Gayle and Norquay (1996) No. 20) from Catear Resources Assessment Report 92651.

7.5 Koscielny Lake area geology and Mineralization

The area of the Koscielny Lake mineralization is underlain by hornblende-plagioclase-phyric volcaniclastic rocks with abundant hornblende-plagioclase and plagioclase-phyric intermediate dykes and sills (Figures 9 and 13). This sequence has been intruded by well foliated, medium to coarse grained gabbro and quartz-phyric biotite-hornblende tonalite to quartz diorite of the Webb Lake plutonic complex (Heine, 2003).

The geological mapping, trenching and drilling tested the Island, Lake and Reef showings (Assessment File 94080) were found to be spatially related to the adjacent and underlying granodiorite intrusion with gold values associated with narrow, pyritic quartz veins along the sheared margins of the intrusion. In the vicinity of the showings, a period of intrusion was followed by one or more structural deformation events that resulted in a number of fault/shear zones trending east-northeast and west-northwest. These structures appear to parallel the intrusive margins in and around the Island, Reef and Lakeshore showings but are found within the intrusion at the East showing.

The chip sampling program by Norwest on the Island showing gave values of 2.0 m grading 3.11 g/t (0.10 oz/ton) Au and on the Lakeshore showing a 1.0 m interval returned 11.82 g/t (0.38 oz/ton) Au. The highest gold values returned from the three of the twelve drill holes were:

DDH JAS - 90-03	11.82 g/t (038 oz/ton) Au over 1.0 m
DDH JAS – 90-09	11.69 g/t (0.376 oz/ton Au) over 1.0 m
DDH JAS – 90-12	3.95v g/t (0.127 oz/ton Au) over 1.0 m



Figure 13: Geological Map by Norwest Minerals Ltd on the Jasper Claims showing the location of the 1990 drill holes (Doyle and McKillen, 1990 in Assessment File 94080)
# 8.0 DEPOSIT TYPES

The property has the potential for both VMS Cu/Zn deposits typical of those throughout the Flin Flon – Snow Lake - Hanson Lake area as well as epigenetic type gold mineralization similar to that identified in the Puffy lake area and in other gold deposits in the belt such as Nor-Acme and Tartan Lake.

VMS deposits are bodies of sulphide-rich mineralization that are hosted within sequences of volcanic rocks (Franklin et al. 2005). The deposits form by the discharge of metal-rich hydrothermal solutions on the sea floor (black smoker). Most deposits are associated with narrow felsic volcanic or sedimentary horizons within a larger sequence of mafic volcanic rocks. A typical VMS deposit consists of a tabular lens-shaped body of massive sulphide and a stratigraphically underlying zone of copper-stringer or vein-style mineralization. Most deposits are mined for copper, zinc,  $\pm$  lead,  $\pm$  gold,  $\pm$  silver. Common mineralogy is pyrite, pyrrhotite, chalcopyrite, sphalerite, and galena with a number of minor sulphide minerals. Large areas of rock surrounding VMS deposits are typically altered and geochemically changed as a result of interaction with hydrothermal fluids. This feature can be used as an exploration tool as the identification of alteration zones through mapping and geochemical sampling can be used to vector into deposits.

The Flin Flon Greenstone Belt is well endowed with VMS deposits. Over 100 deposits have been discovered and 27 have been mined to produce more that 162 MT of sulphide ore. Most of these deposits are hosted within volcanic rocks of island-arc (juvenile arc) assemblages. As with VMS deposits around the world, the Flin Flon belt deposits are usually surrounded by alteration zones and hosted along breaks or changes in the volcanic stratigraphy. These breaks are represented by narrow felsic volcanic horizons, exhalative sediments (such as chert) and layers of graphitic argillite. Sub-volcanic intrusions are often located in close proximity to the deposits. VMS deposits in the Flin Flon Belt usually have a distinct geophysical signature in that they are magnetic highs and/or conductors.

The Flin Flon Domain contains two types of VMS deposits based on their lithotectonic setting (Franklin et al. 2005) – mafic associated and bimodal-mafic associated. The presence of felsic volcanics within a dominantly mafic sequence is indicative of the latter type of deposit which in the Flin Flon area includes the Flin Flon, Trout Lake and 777 mines. Three kilometers to the south east of the Fay Lake claim group is the Vamp Lake VMS deposit (see Figure 7) appears to be in a similar setting (see Gale and Norquay, 1996).

Epigenetic gold deposits in metamorphic terrains include those of the Precambrian shields, particularly the Late Archean greenstone belts, the Paleoproterozoic fold belts and the Neoproterozoic and younger Cordilleran-style orogens (Goldfarb et al., 2005).

The majority of gold deposits in metamorphic terrains are located adjacent to first-order, deep crustal fault zones, which show complex structural histories. Fluid migration along such zones was driven by episodes of major pressure fluctuations during seismic events. Ores formed as vein fill or second and third-order shears and faults, particularly at jogs or changes in strike along the crustal fault zones. Mineralization styles vary from stockworks and breccias in shallow, brittle regimes through laminated crack-seal veins and sigmoidal vein arrays in brittle-ductile crustal regions, to replacement- and disseminated – type orebodies in deeper ductile environments. Spatial association between gold ores and granitoids of all compositions reflects a locally favourable structural trap.

## 9.0 EXPLORATION

Boreal Gold Inc. carried has carried out two exploration programs since acquiring the property in 2022, an airborne TDEM geophysical survey and a detailed geological mapping, prospecting and sampling

#### 9.1TDEM Airborne Geophysical Survey

Between December 1, 2022 and February 16, 2023, Boreal Gold Inc. contracted Axiom Exploration Group Ltd, to carry out an airborne TDEM/Magnetic Survey over the Fay Lake Project. The TDEM survey consisted of 437.4 line—km with a traverse line spacing of 100 m and tie line spacing of 1000 (Figure 14, Coetzee et al. 2023, Masson et al., 2024). An analysis of this data divided the property into six regions based on conductive bodies and the relationship to magnetic signatures and/or known mineralization (Figures 15). Within these six regions 13 targets were identified (Figure 16) for ground follow-up:

- North Central: This region is the largest of the six divisions. Within the area seven anomalous areas were identified most of which were quite weak (Figures 16 and 17). One target however (Target 7) is the most interesting anomaly in this region. It consists of two parts both striking WSW to ENE with a combined length more than 1km. Both are dipping at 85 degrees. Neither is of particularly strong conductance varying in conductance from 5 to 15 siemens (S). and are on the edge of two different rock types with different magnetic properties.
- Central and East: The Central anomaly (CT8) is interesting in that it appears to be on the edge of a mafic schist, it is of modest size (120-m) dips 65 degrees and a conductance of 22 siemens (Figure 16). Within the Eastern area, four separate targets were identified and are of particular interest in that they all lie with a 'J' shaped region of anomalous magnetic response (see Figure 18). Target ET 1A has is 180 m long, dips 65 degrees NW and has a conductance of 15S (Figure 19). Conductor 1B is along strike to the SW, has a strike length of 150 m, dips to the NW and has a conductance of 35 S. Conductor 4 lies to the west of Conductor 1A and 1B, has a strike length of 90 m and has a conductance of 55 S (see Figures 16 and 18).
- South Central Area: Only one anomaly was selected from this area but it proved not to be of significant interest.
- South West: Two small anomalies were considered in this area (Figure 20) one of which occurs on the western most line. The other corresponds to the Sundown base metal showing. It has 2 parts one of which (Sundown 2)may be man-made. The other anomaly (Sundown 1) has a strike length of 40 m and a conductance of 85 S.
- Main Zone: The Main Zone has been divided into a West, Central and East areas (Figure 21). The West area corresponds to the area termed Granges Bay, the Central area is the area that includes the Redwin mineralization and the main part of the peninsula, and the East area corresponds to the area termed Haulage Bay and the east shore of the Main zone.
  - West zone area contains two anomalies, one of which is interpreted as a thickening of the cover material (MT2). MT1 has a strike length of 160 m and a conductance of 80 S.
  - The centre zone also contains two EM anomalies, MT3 and MT4. MT3 is identified with a significant magnetic anomaly and is the strongest conductor. MT4 has a much weaker response in late time in both the vertical and horizontal component data. However, MT4 has a clear response covering two survey lines whereas MT3 is predominately observed on only one line. MT3 actually comprises the responses of two separate conductors, one is of moderate size and the other small, MT3A and MT3B respectively. The main conductor, MT3A has a strike length of 150 m with a strong conductance of 50 S, MT3B has strike length of 80 m but a stronger conductance of 85S. MT4 is the largest in strike length at 220m and has a conductance of 50S but is deeper to the top at 40m which is why it initially appears weaker than MT3A.

The East zone also consists of two anomalies but is more complicated in that both lie within a large halo of weaker conductive material surrounding the two anomalies. MT5 has a strike length of 340 m and a conductance of 25 S. MT 6 consists of two parts which overlap. The largest portion (MT6B) has a strike length of 260 m and a conductance of 20 S while MT6C has a strike length of 130 and a conductance of 25 S.



Figure 14: Fay Lake conductor dot picks over Vertical Derivative Magnetics, 2023



Figure 15: Fay Lake Project Time Domain EM study areas: North Central region (blue), Central (green), East (orange) South Central (Yellow), South West (blue-green), Main Zone (light brown).



Figure 16: Fay Lake Project Time Domain EM study areas showing the location of the conductors selected in each area.





Figure 17: Airborne TDEM conductors in the North Central zone. Target 7 is recommended for follow-up.







East Area EM Targets 1 and 4





Figure 20: Conductivity map of the South West area showing the location of the Sundown Anomaly (blue contoured area in the center of the map). The scale on the left is a relative conductance scale

.



Figure 22: Map showing the location of the Main Zone conductors relative to the underlying geology. The area is divided into West, Central and East Target areas.

### 9.2 2023 Detailed Linecutting, Geological and Sampling Program.

#### 9.2a Linecutting

In 2022-2023 Boreal Gold Inc. carried out a linecutting, prospecting and detailed geological mapping program (Masson and Masson, 2024). The linecutting program included approximately 32 km of refurbishing the existing grid and extending it to the north and south.

#### 9.2b Geological Mapping

The geological mapping/prospecting mapping program shows that the stratigraphy of the Redwin Peninsula extending to the Haulage Bay area to the east and to Granges Bay area to the west is complex and intruded by several gabbroic dykes (Figure 22). The southern boundary of the grid area is the late Echo Bay granodiorite pluton. The supracrustal stratigraphy at it's base consists of mafic volcanic rocks including meta-basalt and andesite. This unit is overlain by rhyolite culminating in a felsic dome which includes flow rocks and their intrusive equivalents, which are in turn overlain by mafic metasedimentary rocks and metagreywacke. The Redwin sulphide zone lies at the contact of the mafic volcanics and rhyolite. The sequence is intruded by multiple ages of felsic, mafic and ultramafic intrusive rocks and very late small (< 2 m) but continuous Quartz Feldspar Porphyry Dikes and Mafic Feldspar Porphyry (andesite composition) dikes cut all the other rocks. The mafic/ultramafic suite varies from pyroxenite to gabbro. The sequence is interpreted to be deformed by two phases of folding largely about east and northeast axis which repeats the stratigraphy. The sequence is further deformed by two sets of faults, one trending north to N/NNE and the second set trending WNW.

This program also found the historic Sundown base metal occurrence on the southern margin of the supracrustal suite at the contact of mafic volcanics and rhyolite - adjacent to the Echo Bay granodiorite. It also shows the Redwin mineralization at the contact of mafic volcanics and rhyolite in the central area of the peninsula.

This mapping also notes that TDEM anomalies in the Haulage Bay and Granges Bay areas lie in close proximity and conformable with the sulphide horizons drilled by Granges.

In the northeast area of the grid, a trench was located in a sedimentary horizon dominated by strongly magnetic metagreywacke with local chert layers which locally contains pyrite and quartz stringers. This trench area is termed the Sunrise showing.

#### 9.2c Sampling

The sampling program totalled approximately 250 samples of which 116 samples were taken for whole rock and trace element geochemistry in order to characterize the lithologies. The remaining samples were grab samples, commonly from a variety of lithologies' and commonly containing sulphides, rusty zones and/or quartz veining.

The sampling program tested for the presence of Au, Ag, Cu and Zn in three areas – the Redwin area, the Sundown showing, the Sunrise showing area and the Fay Lake showing area east of the railroad. Within the Redwin area the grab sampling program an be divided into three areas, all within the Redwin felsic volcanic suite, that being the Redwin Shaft area, the South Central Redwin area and the West Redwin area adjacent to Granges Bay (Figure 24).

Within the Redwin Shaft area thirty-six grab samples were taken all of which contained sulphides and/or quartz veining from within the felsic volcanic rocks (Table 5). The values obtained range from background levels for Au, Ag, Cu and Zn to a maximum of 146.9 g/t Au in sample 298693 with maximum Cu and Zn values of 1.24% (12400 ppm)Cu and ).56% (5630 ppm) in sample 298692. No systematic trench/channel sampling has been carried out and the values shown in Table 5 reflect the range of precious and base metal values in the area.

In the West Redwin area (Figure 24) thirteen grab samples were taken, and as in the Shaft area, all of the samples contained sulphides and/or quartz veining (Table 6). The samples from this area all contained low gold values (less than 100 ppb Au) with the highest base metal value being 0.56% Cu and 0.07% Zn in sample 298633.

In the South Central Redwin area (Figure 24) thirteen grab samples wee also taken. All of the samples are described as quartz vein material, massive sulfides or gossan (Table 7). The gold values from this area are generally low with the highest being 283 ppb Au in sample 298533 in a sample described as massive pyrite with rusty quartz veining. The base metal values range up to 0.53% Cu in sample 298524 and 0.93% Zn in sample 298526.

The mapping program identified trenches in the northwest part of the grid area and is labelled as the Sunrise showing area (see Figure 23 for location). Seven grab samples were taken from the trenches and area((Table 8). They are variously described as chert, sulphidic sediments, iron formation and mafic sediments and commonly contain pyrite, pyrrhotite and/or quartz. None of the samples taken from this area contained anomalous precious or base metal values.

Eight grab samples (Table 9) were taken from the Sundown trench area in the southernmost part of the grid area (see Figure 23 for location). The host rock in the area is described as rhyolite and felsic volcanics in a similar setting to that of the Redwin showings. The Au and Ag values from this area are generally low with the highest being 16 pb Au, 20.8 g/t Ag from sample 298506 which is described as massive sulphide. This sample contains the highest base metal values as well with 0.15% Cu and 0.61% Zn. Sample 298627 also has anomalous base metal values (0.37% Cu/0.75% Zn). None of the other samples contain significant base or precious metals.



Figure 23: Geology map of the Redwin Peninsula area, Fay Lake Property



Figure 24: Sampling areas in the Redwin Peninsula area, see Figure 23 for scale and legend.

Table 5: Samples taken from the Redwin Shaft area (see Figure 24 for location). The table details the Sample Number, Description, Location and assay values. The sample locations are given in grid line co-ordinates and/or UTM co-ordinates. The Au values are given in ppb unless otherwise noted.

Sample #	Rock Name	Sample Description	Location	Au	Ag (g/t	Cu	Zn
<i>п</i>	Name			hhn	)	ppin	ppm
27303	Quartz	Quartz Stringers in iron	L25+50E	510	0.8	2432.	246
	Stringers	formation, 2-4% pyrite,	14+50N			2	
	in Iron	trace chalcopyrite from	364599				
	Formation	rubble pile between two	6092869				
		trenches/pits. (Mine Claim)					
27304	Quartz	Crack and seal white quartz	L25+50E	145	0.3	820.1	313
	Vein	vein with 2-3% pyrite, trace	14+50N				
		chalcopyrite, grey fractures	364599				
		with sulphides from rubble	6092869				
		pile between two					
		trenches/pit. (Mine Claim)					
27305	Quartz	Quartz Vein with 2% pyrite	L25+62E	710	<0.	157.8	92
	Vein	from rubble pile beside	14+45N		1		
		trench. (Mine Claim)	364612				
			6092861				
27306	Semi	Semi massive sulphides	L24+75E	75	0.9	3932.	1353
	Massive	beside old collapsed cabin	14+30N			5	
	Sulphides	with 35-40% pyrite and 2-5%	364530				
		chalcopyrite. (Mine Claim)	6092864				
27307	Quartz	Quartz Stringers in rusty iron	L24+75E	230	1.6	3861.	1073
	Stringers	formation from blast pile	14+30N			2	
	in Iron	beside trench. (Mine Claim)	364506				
	Formation		6092866				
27314	Sheared	Sheared wall rock to vein	L25+50E	325	0.2	680	475
	Wall Rock	material, same location as	14+50N				
		samples 27303 and 27304.	364599				
		(Mine Claim)	6092869				
27315	Quartz	Quartz with 2% vuggy pyrite	L25+62E	59.8	1.3	1746.	37
	Vein	from rubble pile beside	14+45N	8 g/t		3	
		trench, same location as	364612				
		sample 27305 (but vuggy	6092861				
		pyrite), (Mine Claim)					
27316	Massive	Massive pyrite found in	L24+75E	1730	2	479.6	100
	Pyrite	rubble pile beside the big	14+30N				
		shaft (same location as	364506				
		sample 27307), (Mine Claim)	6092866				

27317	Massive	Massive sulphides, 80-90%	L24+75E	85	0.9	3265.	521
	Sulphides	pyrrhotite, trace-0.5%	14+30N			4	
		chalcopyrite beside old	364530				
		collapsed cabin and big shaft	6092864				
		in rubble pile. (Mine Claim)					
27318	Massive	Massive sulphides, 80-90%	124+75E	340	4.1	3679.	383
	Sulphides	pyrrhotite, beside old	14+30N			3	
		collapsed cabin and big shaft	364530				
		in rubble pile. Same location	6092864				
		as sample 27317 (Mine					
		Claim)					
27328	Semi	Semi massive sulphides from	L24+50E	2450	6.6	5140	2000
	Massive	pit with 60-70% pyrrhotite	14+25N				
	Sulphides	and pyrite and 1-3%	364494				
		chalcopyrite	6092861				
27329	Felsic	Felsic Volcanic with 2-3%	L24+50E	162	0.6	355	162
	Volcanic	pyrite from a 5m x 12m	14+25N				
		trench	364496				
			6092860				
27330	Quartz	Quartz vein with 0.5-1%	L24+50E	2810	0.3	62	10
	Vein	pyrite	14+25N				
			364503				
			6092857				
27331	Quartz	Greyish white crack and seal	L25+50E	15.7	0.4	66	7
	Vein	quartz vein with trace	14+50N	g/t			
		pyrite, chalcopyrite and a	364596				
		speck of visible gold.	6092869				
27332	Semi	Semi massive sulphides with	L25+50E	2140	3.5	1.06%	1850
	Massive	50-60% pyrrhotite and	14+50N				
	Sulphides	pyrite and 3-5% chalcopyrite	364596				
			6092869				
298518	Rusty	Rusty light grey fine grained	L24+05E	938	8.2	4020	415
	Gossan	rock with 2-5% pyrite and	13+55N				
		quartz fragments from blast	364459				
		pile of 3m x 3m trench.	6092788				
298519	Rusty	Rusty light grey fine grained	L24+05E	94	5.6	1400	485
	Gossan	rock with 2-5% pyrite from	13+55N				
	(Basalt)	blast pile of 3m x 3m trench.	364459				
			6092788				
298520	Rusty	Rusty light grey fine grained	L23+90E	119	9.9	3470	107
	Gossan	rock with an enriched 5-10%	13+55N				
	(FV)	pyrite rich layer from blast	364439				
		pile from 3m x 10m trench.	6092789				
298679	Basalt	Fine grained medium grey	L24+05E	369	7.6	19200	354
		aphanitic mafic rock with	13+53N			1.87%	0.01
		0.5-1% chalcopyrite and	364460				%
		trace pyrite	6092783				

298680	Quartz	Rusty gossan felsic volcanic	L24+05E	155	7.7	1390	177
	Stringer in	with 2-3% pyrite with ¾ inch	13+53N				
	Gossan	quartz vein cross cutting	364460				
	(FV)	gossan, wall rock 5-7%	6092782				
		pyrite					
298681	Quartz	Rusty white guartz vein with	L24+40E	508	2.7	124	25
	Vein	3-5% pyrite, muscovite from	14+10N				
		blast pile from L-shaped	364479				
		trench	6092846				
298682	Semi	Semi massive sulphides with	L24+43E	22	6.2	4340	1200
	Massive	pyrite, 0.5% pyrrhotite from	14+13N			0.45%	0.12
	Sulphides	blast pile, cut by 6cm quartz	364482			0.4370	%
		vein with chalcopyrite	6092847				/0
298683	Quartz	2-3cm quartz vein cutting	L24+43E	131	2.1	378	181
	Vein	pink chert with 2-5% pyrite	14+13N				
		from blast pile from L-	364482				
		shaped trench	6092850				
298684	Quartz	White rusty guartz vein at	124+43E	531	1.4	64	40
	Vein	contact with felsic volcanic	14+13N				
		with 2-3% pyrite and trace-	364482				
		0.5% chalcopyrite	6092849				
298685	Massive	Massive sulphides, 0.5-1%	L24+50E	65	21.	3190	940
	Sulphides	chalcopyrite, pyrrhotite.	14+30N		7	0100	
	Carbinace	pyrite blast rock 5m	364487		-		
		northwest of trench 27328	6092869				
298686	Quartz	Light grev quartz vein with	364501	29	1.6	145	95
	Vein	1% pyrite from blast pile.	6092857				
		50m SW of shaft					
298687	Quartz	2cm white guartz vein with	364510	100	1.3	182	105
	Vein	1-2% pyrite cross cutting	6092860			_	
	_	sericitized felsic volcanic					
		from blast pile					
298688	Quartz	Pyritic guartz vein cutting	364509	5.90	5.7	324	54
	Vein	pyrite, fly rock, 6m west of	6092853	g/t			
		shaft					
298689	Quartz	Pyritic guartz vein, 3m SW of	364516	38	1	82	72
	Vein	shaft	6092857				
298690	Gossan	Light grey cherty quartz,	L24+96E	171	1.1	898	134
	Felsic	pyritic, siliceous, sericite	14+46N		Avg	(Avg)	Avg
	Volcanic	rock with 1% pyrite from 3m	364544				
		x 4m x 3m deep trench.	6092878				
		from south wall					
298691	Massive	Massive sulphides with 2-4%	L25+30E	2270	9.2	11200	1380
	Sulphides	chalcopyrite, from south	14+21N			1.09%	0.14
		side of rubble pile from	364579				%
		shovel trench	6092831				

200602			105 005	240	4.6	49496	-
298692	Massive	Massive sulphides, pyrite,	L25+30E	319	16	12400	5630
	Sulphides	pyrrhotite, quartz fragments	14+21N				
		in gossan, 1-2% chalcopyrite	364579				
		from 5m x 8m blasted	6092831				
		trench, 10% quartz, shovel					
		trench					
298693	Quartz	Vuggy pyritic fractured	L25+50E	146.	6.4	679	47
	Vein	quartz vein with trace	14+50N	9 g/t			
		chalcopyrite	364597	_			
			6092865				
298694	Quartz	Rusty yellowish quartz vein	L25+50E	1037	0.9	118	51
	Vein	with 1-2% pyrite, trace	14+50N				
		chalcopyrite from blast pile	364596				
		beside trench, same location	6092867				
		as samples 27303-27304					
298695	Quartz	Quartz vein with vuggy	L25+50E	905	0.8	75	23
	Vein	pyrite	14+50N				
			364597				
			6092865				
298696	Quartz	Rusty quartz vein with 0.5-	L25+50E	719	1.8	359	97
	Vein	1% pyrite from south rubble	14+50N			(Avg)	
		pile, rail wheel	364597				
			6092861				

Table 6: Summary of samples taken from the West Redwin area (see Figure 24 for location). The table details the Sample Number, Description, Location and assay values. The sample locations are given in grid line co-ordinates and/or UTM co-ordinates. The Au values are given in ppb unless otherwise noted.

Sample	Rock Name	Sample Description	Location	Au	Ag	Cu	Zn
				ppb	(g/t)	ppm	ppm
298628	Massive	Massive sulphides hosted	L20+50E13+60N	39	16.6	385	190
	Sulphides	in gabbro?	364094 6092797				
298629	Altered	Blast rock, country rock,	L20+50E13+60N	6	4.8	449	443
	Gabbro?	magnetic, 5% pyrrhotite	364094 6092803				
		and pyrite					
298630	Massive	Massive sulphides with	L20+50E13+60N	35	22.9	874	2100
	Sulphides	clots of pyrite and a	364096 6092798				
		weathered greenish					
		section possible inclusion,					
		very biotitic					
298631	Gabbro	Grey siliceous rock, near	L20+50E13+64N		4.5	39	153
		contact with gabbro, pink	364102 6092811				
		weathering, 10 feet north					
		of trench					
298632	Quartz Vein		L20+50E13+50N	64	7.8	4900	597

		Quartz veined wall rock, 5- 7% pyrite, 5-7%	364107 6092790			0.46%	0.04%
		disseminated pyrrhotite and minor chalcopyrite					
298633	Altered	Fine grained dark grey	L20+50E13+50N	82	9.5	5850	661
	Gabbro	carbonated bleached sheared gabbro containing a lot of chalcopyrite, 1-3% finely disseminated chalcopyrite in veinlets, pyritic fractures	364109 6092791			0.56%	0.07%
298634	Gabbro	Fine grained rock with 2-	L20+50E13+50N	59	10.2	3950	654
		4% disseminated chalcopyrite, cut by glassy pyrite, chalcopyrite veins, 20 feet E-SE North end of the pit	364108 6092791				
298635	Felsic	Fine grained cherty rock	L20+50E13+50N	2	2.1	205	59
	Volcanic	with trace-1% pyrite	364109 6092791				
298636	Rhyolite	Rhyolite south of pit 20,	L20+50E13+50N	11	1.6	127	66
		sugary white, possibly carbonated, trace-1% chalcopyrite, 5% black mineral, tourmaline?	364105 6092790				
298637	Quartz Vein	Blast rock containing	L20+50E13+50N	22	10.9	1745	486
		chalcopyrite, pyrite and pyrrhotite	364107 6092788				
298644	Rhyodacite	Sericitic, silicified felsic volcanic with 2-5% pyrite, rusty weathering	L20+99E 13+07N 364152 6092750		1.5	16	13
298647	Rhyodacite	Sericitic felsic volcanic with 2-4% pyrite	L20+70E 13+40N 364125 6092775		2.5	221	275
298648	Hornblende Phyric Basalt	Highly schistose hornblende phyric basalt, strong biotite alteration, 3- 5% pyrite and 2-3% pyrrhotite	L20+80E 13+54N 364127 6092789	8	4.6	200	348

Table 7: Summary of samples taken from the South Central Redwin area (see Figure 24 for location). The table details the Sample Number, Description, Location and assay values. The sample locations are given in grid line co-ordinates and/or UTM co-ordinates. The Au values are given n ppb unless otherwise noted.

Sample	Rock	Sample Description	Location	Au	Ag	Cu	Zn
#	Name			ppb	(g/t)	ppm	ppm
298511	Massive	Massive sulphides, iridescent	L23+00E	42	26.1	1410	1260
	Sulphides	blue sheen, pyrite along	12+30N				
		fractures, minor blebs of	364348				
		quartz from blast pile from 2m	6092668				
		x 7m trench					
298522	Quartz	Rusty white quartz vein with 2-	L23+35E	<2	0.5	30	59
	Vein	5% vuggy pyrite from blast pile	12+38N				
		beside 5m x 20m trench	364385				
			6092663				
298523	Massive	60-70% pyrrhotite and pyrite	L23+32E	99	17.8	9780	4470
	Sulphides	with trace chalcopyrite from	12+38N			0.97%	0.43%
		blast pile beside 5m x 20m	364381				
		trench	6092666				
298524	Massive	60-70% pyrrhotite and pyrite	L23+34E	184	18.8	5420	3440
	Sulphides	with trace sphalerite from	12+38N			0.53%	0.33%
		blast pile beside 5m x 20m	364381				
		trench	6092664				
298525	Massive	60-70% pyrrhotite and pyrite	L23+35E	103	10.5	8360	3360
	Sulphides	with trace-0.5% chalcopyrite	12+38N			0.82%	0.33%
		from blast pile beside 5m x	364385				
		20m trench	6092663				
298526	Quartz	Rusty white quartz vein with 3-	L23+35E	<2	0.5	202	9960
	Vein	5% vuggy pyrite, 1-2%	12+38N			0.02%	0.93%
		sphalerite and trace	364385				
		chalcopyrite from blast pile	6092663				
		from 5m x 20m trench					
298527	Gossan	Rusty gossan with abundant	L23+38E	12	3.2	2480	172
	with	guartz veining and 4-7%	12+31N				
	Quartz	pyrite, 1% red sphalerite and	364388				
	Veining	0.5% chalcopyrite from blast	6092649				
		pile from 5m x 20m trench					
298528	Quartz	Rusty white quartz vein with	L23+37E	<2	1	53	62
	Vein	1% pyrite from blast pile from	12+38N				
		5m x 20m trench	364391				
			6092660				
298529	Quartz	Rusty white quartz vein with 5-	L23+37E	188	7.9	1080	6250
	Vein	7% pyrite and 0.5% sphalerite	12+41N			0.13%	0.67%
		from blast pile from 5m x 20m	364389				
		trench	6092666				
298531				39	2.9	312	4930

	Quartz	Rusty white crack and seal vein	L23+37E			0.03%	0.49%
	Vein	with 2-4% pyrite, trace-0.5%	12+41N				
		chalcopyrite and trace	364389				
		sphalerite from blast pile from	6092666				
		5m x 20m trench					
298532	Massive	Massive pyrite with rusty	L23+37E	283	14.6	551	469
	Pyrite with	quartz veining from blast pile	12+41N				
	Quartz	from 5m x 20m trench	364389				
	Veining		6092666				
298533	Quartz	Rusty white quartz vein with	L23+37E	37	1.4	273	456
	Vein	greenish color with 2-3%	12+41N				
		pyrite, trace-0.5% sphalerite	364389				
		and trace chalcopyrite from	6092666				
		blast pile from 5m x 20m					
		trench					
298534	Gossan	Rusty carbonatized cherty	L23+38E	<2	0.7	122	92
	(Felsic	gossan (felsic volcanic),	12+31N				
	Volcanic)	siliceous, sericitized medium	364388				
		grey rock similar to rock	6092649				
		sample 298690 from moose					
		trench, from blast pile from					
		5m x 20m trench					

Table 8: Summary of samples taken from the Sunrise area in the northwest part of the grid area(see Figure 23 for location). The table details the Sample Number, Description, Location andassay values. The sample locations are given in grid line co-ordinates and/or UTM co-ordinates.

Sample	Rock	Sample Description	Location	Au	Ag	Cu	Zn
	Name			ppb	(g/t)	ppm	ppm
27333	Chert	Pyrrhotite (<2%) chert	L35+50E		3.2	386	62
		sediment horizon, 85% chert	20+08N				
			365584				
			6093401				
27334	Sulphidic	Amphibole 20%, 5%-7%	L34+50E	14	9	306	339
	Sediments	pyrrhotite in black fine-	20+08N				
		grained rock with minor	365577				
		amounts of quartz blebs	6093415				
27335	Sulphidic	Fine grained black rock with	L34+50E	35	11	442	233
	Sediments	mainly pyrrhotite 25%, 5%	20+08N				
		pyrite in siliceous black	365577				
		sediments	6093415				
27340	Iron	Pyrite chert quartz dyke with	L33+25E	<2	5	94	68
	Formation	layers in oxides, iron rich	19+85N				
		sediment, 1%-2% pyrrhotite-					
		pyrite with chert					
27341	Mafic	Medium grey rock	L33+25E		4	128	177
	Sediments		19+92N				
27343	Mafic	Pyritic mafic sediments with	L32+40E	<2	4.1	256	78
	Sediments	quartz stringers with trace	18+90N				
		chalcopyrite					
27344	Mafic	Quartz stringer, grey mafic	L32+40E		4.8	69	108
	Sediments	sediments- some may be chert	18+90N				
		layers					

Table 9: Summary of samples taken from the Sundown area in the southernmost part of the grid area (see Figure 23 for location). The table details the Sample Number, Description, Location and assay values. The sample locations are given in grid line co-ordinates and/or UTM co-ordinates.

Sample	Rock	Sample Description	Location	Au	Ag	Cu	Zn
	Name			ppb	(g/t)	ppm	ppm
298506	Massive	50% pyrrhotite, 13%	L22+60E	16	20.8	1450	6820
	Sulphid	pyrite from blast pile in	6+30N			0.15	0.61
	es	5m x10m trench 2,	364290			%	%
		pyrite balls and biotite	6092073				
298507	Quartz	White quartz vein with	L22+60E	31	9.6	736	181
	Vein	5-10% pyrite in rusty	6+30N				
		gossan from blast pile in	364290				
			6092073				

		5m x 10m trench 2,					
		possibly some marcasite					
298508	Quartz	White vuggy quartz vein,	L22+70E	10	3.2	250	146
	Vein	possibly recrystallized	6+47N				
		chert with 5-10% pyrite	364300				
		in gossan from blast pile	6092093				
		from 3m x 7m trench					
298509	Quartz	White quartz vein or	L22+67E	8	1.6	127	88
	Vein	recrystalized chert with	6+47N				
		5-10% pyrite and	364296				
		marcasite in gossan	6092093				
		from blast pile from 3m					
		x 7m trench 1					
298510	Gabbro	Fine grained dark grey	L22+60E		4.6	105	292
		rock from south wall of	6+30N				
		trench 2 (Contact with	364294				
		trench)	6092075	1.0	4 -		
298625	Quartz	North end of big trench,	L22+60E	10	1./	4//	62
	Vein	middle trench, quartz	6+30N				
		Vein With 25% pyrite,	364291				
		localized chalcopyrite,	6092072				
		some fractures filled					
200626	Folcio	South and middle nit		10	1.0	02	107
298626	Veleppie	south end middle pit			1.0	85	127
	VOICATIIC	grov folsic rock with	264297				
		trace pyrite	6092083				
298627	Quartz	Quartz vein nyrite vein	122+60F	12	11 २	3710	7720
230027	Vein	20% sulphides blast	6+30N		11.5	0 27	0.75
		rock from 3 <sup>rd</sup> nit	364294			%	%
			6092075				/0

Prospecting was also carried out in the Fay Lake Showing area (see Figures 9 and 12 for location). Six grab samples were taken from the area (Table 10). The samples are described as quartz vein material and biotite sericite gneiss +/- quartz stringers with sulphides including pyrite chalcopyrite or arsenopyrite. Most of the samples are anomalously enriched in Au (greater than 100 ppb Au) with the highest value being 14.33 g/t Au in sample 27309. This sample also contains anomalous Cu and Zn values (1416 ppm Cu and 2324 ppm Zn).

Table 10: Summary of samples taken from the Fay Showing area (see Figures 9 and 12 for location). The table details the Sample Number, Description, Location and assay values. The sample locations are given in grid line co-ordinates and/or UTM co-ordinates.

Sample	Rock	Sample Description	Location	Au	Ag	Cu	Zn
#	Name			ppb	(g/t)	ppm	ppm
27308	Quartz Vein	Rusty white quartz vein with 0.5-1% vuggy pyrite from small blast pit, east of railroad tracks. (Fay Claim)	L41+92E 27+93N 366289 6094163	110	2.1	68.7	25
27309	Biotite Sericite Gneiss	Biotite, sericite gneiss with quartz stringers and trace- 0.5% arsenopyrite, pyrite and chalcopyrite. (Fay Claim)	L41+92E 27+93N 366289 6094163	14.33 g/t	65.8	1416.1	2324
27310	Quartz Vein	Rusty 5-10cm quartz vein with 1% vuggy pyrite and grey metallic mineral from small blast pit. (Fay Claim)	L41+92E 27+93N 366289 6094163	75	1.6	16.6	5
27311	Biotite Sericite Gneiss	Biotite, sericite gneiss, siliceous with trace-0.5% pyrite (Fay Claim)	L41+92E 27+93N 366289 6094163	180	5.2	262.1	234
27312	Gneiss with Quartz Stringers	Sheared rusty gneiss with quartz stringers with 0.5% vuggy pyrite from first trench. (Fay Claim)	366255 6094162	450	3.4	67.5	45
27313	Rusty Shear Zone	Rusty shear zone, wall rock to quartz stringers in sample 27312. (Fay Claim)	366255 6094162	50	0.9	27.3	20

### 9.3 Ground Geophysics in the Redwin Peninsula Area

During the winter of 2023, Boreal Gold also carried out ground HLEM and Mag surveys on the peninsula which hosts the Redwin mineral deposit. This HLEM (MaxMin) survey was carried out at coil separations of 150 m and 250 m with frequencies of 1760 Hz, 3520 Hz and 7040 Hz. Figure 24 (1760 frequency, 150 m coil separation) shows that the solid sulphide zone present in the Redwin shaft is a relative weak short conductor. In Figure 25 the conductors are overlain on the geology. The HLEM conductors in the Haulage Bay area to the east of the peninsula are considerable stronger and at or near the contact with of felsic and mafic volcanics. A similar setting is present in the conductor to the west of the Redwin shaft, located in the Granges Bay area.



Figure 25: HLEM Survey on the Redwin Peninsula area showing the location of HLEM conductors in relationship to the Redwin Shaft area. The HLEM profiles are from the survey carried out at 1760 Hz with 150 coil separation.



Figure 26: Excerpt from the Geological Map (Figure 20) showing the location of the HLEM conductors relative to the geology. Red hatched areas are weak conductors, solid red lines are stronger conductors at 150 m coil separation, while solid blue lines are conductors at 250 m cable separation, all at 1760 Hz.

## 10.0 DRILLING

The Company has not yet carried out any drilling on the property. The historical drilling is described in Section 6 of this report.

## 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

During the 2023 geological mapping and prospecting program, Boreal Gold Inc. carried out the following sampling protocols .

When samples were taken in the field, the sample location was marked in the field book and the grid and/or GPS coordinates were entered in the sample book with the sample description. The sample number was written on flagging tape that was tied to a rock or a tree at the sample site. When collecting samples for protolith whole rock analysis, every effort was made to get representative samples with minimal alteration, veining and sulphide content, so that lithological classification is not skewed by introduced material. In the case of samples collected to measure the degree of alteration only veining is avoided. For each sample two rocks were collected, with one rock sent for analysis and one kept as a representative sample. The rock samples were placed in standard plastic bags which were then were placed into rice bags that were wired shut for shipment. The rice bags were delivered to Gardewine North Trucking by staff of M'Ore Exploration and shipped to SRC Laboratories in Saskatoon. Gardewine delivered the samples directly to the lab in Saskatoon.

Stephen Masson, M.Sc., P.Geo., President Boreal Gold Inc., is the qualified person, under National Instrument 43-101 who has confirmed the visual descriptions, supervised the Quality Control and all aspects of the exploration program. Sample preparation and analytical work is conducted at SRC labs in Saskatoon, Saskatchewan utilizing fire assaying with a two assay ton charge, with an AA finish. In addition, pulps of the samples are analyzed using a multi-acid digest/ ICP-MS technique for trace elements.

Samples were received by the Laboratory, opened, sorted and dried prior to preparation. Grab samples were crushed using a TM Rhino Jaw primary jaw crusher, thus obtaining a crushed reject with a minimum 70% passing through a 10 mesh. Equipment was cleaned between each sample with compressed air and brushes. In order to verify compliance with QC specifications, the lab performs a screen test at the start of each group, change of operator, change of machine or environmental conditions or if the nature of sample appears different. All screen data was recorded in a QC book, which is available for examination up on request. A representative split sample was obtained by passing the entire reject sample through a riffle, and by alternating catch pans before taking the final split. The remaining reject material was returned to a marked bag and stored. The sub-sample of 1000 grams thus obtained was pulverized to a minimum of 95% passing through a 150 mesh screen. Checks on screens were performed at the start of each group, change of operator, change of machine or environmental conditions or if the nature of sample appeared different. Pulverisers were cleaned with a sand wash when required, or between each sample when requested.

The author has not collected nor carried out any sampling or analysis to verify the results.

# **12.0 DATA VERIFICATION**

The data verification work done by the author includes reviewing documents, maps and reports provided by Boreal Gold Inc, assessment file and information posted in the Manitoba Map Gallery, claim information posted on the Manitoba IMAQ site and information in Manitoba Geological Survey documents. The author also carried out site inspections on the property on July 14, 2022 in preparation for an earlier technical report (Pearson, 2022) and on May 8, 2024. On the initial property visit the author visited the Redwin shaft, several of the trenches in proximity to the shaft area, some of the outcrops in the Redwin Peninsula area and some of the shoreline outcrops. On the follow-up property visit the author again visited the Redwin shaft area and other historic trenches in and examined the quartz-sulphide veins with and proximal to the Redwin sulphide zone and also the surface areas of the Main Zone central conductors. During this visit the author also verified the linecutting and geological mapping. The author also visited the area of Railroad and identified recent linecutting and also examined several outcrops on the rail line.

In the authors opinion, the data provided by Boreal Gold Inc. and that available in the assessment files of Manitoba Natural Resources and in publications of the Manitoba Geological Survey are adequate for the purposes used in this technical report.

The author has not collected nor carried out any sampling or analysis to verify the sampling results.

# **13.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

No mineral resource or mineral reserves have been defined on the property.

## **14.0 ADJACENT PROPERTIES**

Contiguous with the Fay Lake Property is a claim group to the northeast currently held by Minnova Corp. and which hosts the Puffy Lake gold deposit. To the Southwest is a claim group held by Hudbay Minerals which hosts the historic Vamp Lake base metal/gold deposit (Figure 26).

The Puffy Lake gold deposit currently held by Minnova Corp. lies approximately 2.3 km north of the northeast claims of the Fay Lake property. The Vamp Lake VMS deposit currently held by Hudbay Minerals lies 3 km to the southwest of the Fay Lake property boundary.

Gold mineralization at the Puffy Lake deposit is controlled by four main northwest trending shear zones that transect mafic amphibolites considered to be part of the Amisk Group, by metasedimentary gneisses of the Missi Group and within a tonalite body. (Buck et al, 2018). The Puffy Lake deposit's gold bearing shear zones generally strike N30°W and dip moderately at 30 degrees to the northeast, subparallel to the regional foliation. The mineralization occurs in a duplex structure where D3 brittle-ductile shear zone reactivated an earlier formed D1 ductile zone, forming an imbricate fan. Gold mineralization is concentrated at a flexure in this structure as quartz sulfide veins (galena, chalcopyrite/visible gold) within the shear zone and tension fill arrays.

A 2017 Feasibility Study on the Puffy Lake Gold Deposit by Minnova Corp. (<u>Minnova Corp.</u>) defined a (NI-43101 compliant) measured plus indicated resource of 1.481 million tonnes grading 5.96 g/t Au, and an additional inferred resource of 1.846 million tonnes grading 5.08 g Au/t (Table 5).

Resource Category	Cut-off Grade (Au/t)	Tonnes	Au Grade (g/t)
Measured Resource	2.5	425,000	7.53
Indicated Resource	2.5	1,056,000	5.29
Measured + Indicated Resource	2.5	1,481,000	5.96
Inferred Resource	2.5	1,846,000	5.08

#### Table 11: Puffy Lake Gold Deposit measured, indicated and inferred resources.

The resource estimate available for the Vamp lake Deposit is historical, and does not conform to NI-43101 resource categories and is provided here for information purposes only. The only resource estimate available to the author is given in the Manitoba Energy and Mines Annual Report 1988-89. That resource is 703,000 t of probable and possible ore grading 3.74 g Au/t (0.109 oz. Au/ton), 12.68 g Ag/t (0.37 oz. Ag/ton), 1.3% Cu and 1.9% Zn (Manitoba Energy and Mines, Annual Report 1988-89). This should be considered an historical (non-NI-43101) resource estimate and does not comply with resource categories defined in 'NI-43101 Standards For Disclosure for Mineral Projects' and is provided for Information only. The author has not done sufficient work to classify the historical estimate as current mineral resource.

The author has been unable to verify the information related to the adjacent properties and the information is not necessarily indicative of the mineralization on the Fay Lake Project.



Figure 27: Location Map showing the location of the competitor claims including the Minnova Corp. claims to the northeast and the Hudbay claims to the southwest. Also shown are the locations of the Puffy Lake gold deposit and the Vamp Lake base metal deposits.

# 15.0 OTHER RELEVANT DATA AND INFORMATION

The author is not aware of any other relevant data and information with respect to the Fay La Property and this report.

## **16.0 INTERPRETATION AND CONCLUSIONS**

The Fay Lake property has undergone several phases of exploration since the Redwin mineralization was discovered 90 years ago. The early work concentrated on the sulfide zones with significant Cu and Au values in the immediate area of the Redwin showing on the eastern peninsula of Fay Lake. This work consisted of extensive trenching and sampling of high-grade sulphide rich rocks with little geological control that would aid in understanding the geometry of the sulphide zones. Exploration in other areas of the property targeted the gold potential of the area including the Fay Lake east area explored by Catear Resources and the Koscielny Lake area which has undergone several exploration programs. The work by Granges in the Ponton Lake area targeted EM conductors for their VMS potential, however this work identified anomalous gold values within graphitic conductors in lithologies similar to those that host the Puffy Lake gold deposit.

The recent work by Boreal Gold Inc. has provided a base to target the next phase of exploration which will need to be integrated with the previous work. The airborne TDEM survey and magnetic survey has identified 13 target within five of the six target areas which must be considered within their geological settings:

- The conductive targets within the North Central Region are largely within interbedded Missi sedimentary rocks (arenite and conglomerate) interbedded with Burntwood Suite siltstone and mudstone (and their metamorphic equivalents). Within this setting the airborne survey identified several targets only one of which was considered anomalous with several other conformable weaker conductors. Some of these conductors had been drilled by Granges which encountered anomalous gold intercepts ((i.e. 2.31 g/t Au over a core length of 0.92 m in drill hole OP-28 and 0.186 g/t Au over 8.54 m in drill hole OPO 26) warrant ground follow-up. The Granges exploration targeted VMS mineralization. In order to evaluate the gold potential different exploration techniques will need to be employed such as basil till Geochem sampling down-ice of the conductors to determine potential gold dispersion trains from a potential deposit, analysis of the detailed aeromagnetic data and geological mapping to identify any structures which may host mineralization.
- The single AEM anomaly in the Central region lies within mafic volcanic rocks interlayered with gabbro sill like bodies. It has a relatively short strike length and a conductivity of 22 siemens and is considered a lower priority.
- Within the East region, north of Koscielny Lake are two targets labelled Target 4 and 1. The geology in this region appears to be quite complex. The northern most Target (4) appears to lie within mafic volcanic rocks while the other Target area separated into 2 zones, 1A and 1B is underlain by mafic volcanics, and an intermediate to felsic dyke suite. Initially, this suite of conductors requires geological mapping in order to define the setting of the conductors and if favourable followed up with, linecutting, detailed geological mapping and HLEM surveying to further define orientation, conductor strength and host lithologies, followed up by drill testing.
- Within the Southwest area, two small anomalies were considered. The western most is a strong anomaly (80 siemens) which occurs on the western most line of the airborne survey so it's strike extent cannot be determined. The geology in the vicinity of this conductor on regional maps consists of mafic intrusive rocks, however the detailed mapping by Boreal Gold Inc. indicates that the felsic volcanic horizons which host the Redwin deposit extend into this region. It will be necessary to extend the mapping to cover this anomaly as well as to extend the grid and carry out HLEM surveys in order to better delineate this anomaly and it's potential to host a VMS type deposit. The geological mapping in the area of the Sundown anomaly in the Southwest area indicates both favourable geology (felsic volcanics) and sulphide mineralization yet the TDEM conductor lies only on one line giving a relatively short strike length. Mapping in 2023 however identified pyrite/pyrrhotite with minor chalcopyrite in trenches over a strike length of 300 m at the contact of rhyolite with gabbro.
- The geology and geophysics of the Main Zone which is centered on the Redwin mineralization is complex. The relation of the locally present, apparently conformable, quartz sulfide veins within the sulphide zones in the Redwin area has not been determined. In addition, the north trending, sinistral faults appear to displace these zones and thereby make identifying the continuity and geometry of these zones difficult. The complex geology plus the lack of exposure due to the dead fall from windstorms that have affected

the area has hindered the development of a sound geological model for the mineralization. The drilling that has been carried out over the years targeted individual vein segments or HLEM conductors that were tested without an understanding of the underlying geology. The recent work by Boreal Gold has led to a better understanding of the geology and setting of the mineralization, as well as an understanding of the previously drilled conductors. Additionally, the airborne TDEM survey has led to a better understanding of the geology. Additional work here should target these conductors, particularly the M1 and M2 conductors which extend to the west of the Redwin zone and should include linecutting, geological mapping and HLEM surveying. Follow up drilling will be contingent on the results from this work.

To the east of Fay Lake, near the railroad, a series of trenches over a strike length of approximately 100 m contained anomalous gold in nearly all samples taken by Catear Resources, ranging p to 1390 pp Au and 380 ppm As within highly silicified rock. Similar values were returned by the current property holders which reported values of up to 58.99 g/t Au. The soil sampling program over a small 150 m long grid also identified erratic but weakly to strongly anomalous enrichment of gold and arsenic and also noted that the setting for the trenches was in highly silicified and laminated volcanic rock. The presence of the vein system in a silicified zone over the entire that is 150 m long grid area may be indicative of a major structure and the sampling by Catear also leads to the identification that a soil and basil till sampling will provide an exploration tool in this difficult setting.

# **17.0 RECOMMENDATIONS**

The initial work on the Fay Lake property should concentrate on:

- 1) the area identified as the Main Zone to evaluate the conductors trending to the west of the Redwin mineralization,
- 2) the Southwest zone in order to trace out the Sundown zone and also to determine the extent and strength of the far west anomaly
- 3) the Fay Lake Gold zone to the east of Fay Lake to determine the setting and structural geology of the mineralization.

Work in the Main Zone should concentrate in the area of the MT 1 and MT2 conductors (the Granges Bay area) This program should include extending the linecutting grid to the west to cover the strike extent of these conductors, detailed geological mapping and HLEM surveying.

In the Southwest Zone, in the vicinity of the far West conductor and the Sundown showing, a linecutting grid should be cut to provide a base for geological mapping and HLEM surveying. In order to delineate the far West Conductor, the grid should be extended to the west of the current airborne survey coverage in order to delineate the extent and strength of this conductor.

To evaluate the gold mineralization at the Fay Lake showings the following program is recommended:

- Cleaning out and detailed chip sampling and mapping of the trenches
- Stripping of the area around the trenches in order to determine the geological setting of the goldarsenopyrite-quartz veins, particularly the structural geology setting of the mineralization
- Linecutting and detailed geological mapping in order to map out the extent of the mineralization and it's setting in the regional geology
- Basil till Geochem sampling in the areas down ice from the mineralization and along strike to the east to identify any dispersion trains from gold enriched zones.

The budget for this phase of work is \$170,000 as shown in Table 12. This work will identify potential drill targets for follow up on each of these zones.

A second phase of work will drill test the targets identified in the first phase of work in the Redwin/Granges Bay and Southwest Target areas. It will also examine the potential mineralization in other areas of the property East including the following targets:

- In the North Central region an evaluation of the gold potential of the Ponton Lake conductors . In order to evaluate the gold potential different exploration techniques will need to be employed such as basil till Geochem sampling down-ice of the conductors to determine potential gold dispersion trains from a potential deposit, analysis of the detailed aeromagnetic data and geological mapping to identify any structures which may host mineralization.
- In the East Region the conductors should be evaluated by linecutting, detailed geological mapping and HLEM surveying

This work will establish targets for drilling in the Redwin area. This phase of work will evaluate the other targts define by the airborne survey in order to establish drill targets for the potential to host VMS base metal deposits. This second phase of work also budgets four drill holes to test the gold potential of the Fay Lake Gold targets which is contingent on the results of the Phase 1 sampling, mapping and geochem sampling on this target. A budget for the second phase of the work including the contingent Fay Lake Gold target work is \$456,00 (see Table 13).

Table 12: Pro	posed Phase 1	1 Budget for the	Fav Lake Pro	pertv ex	ploration	orogram.
		i Budget for the	Tuy Lunci To	porty on	pioration	or ogrann.

Activity	Cost
Linecutting - 40 km @ \$2000/km	\$80,000
Trenching/Cleaning Trenches/Sampling	\$20,000
Geophysics - HLEM/Mag Ground Surveys 750km @ \$200/km	\$17,500
Geochemistry - Basil Till Sampling + Analysis (50 samples). Sampling costs 20 days @ \$500 + Analysis (50 samples @ \$150/sample)	\$22,500
Geochemistry - Analysis of lithogeochem and trench samples (100 samples @ \$100/sample)	\$10,000
Geological Mapping - Geologist + assistant/ 20 days @ \$1000/day	\$20,000
TOTAL	\$170,000

### Table 13: Proposed Phase 2 Budget for the Fay Lake Property.

Activity	Cost
Drill Test the Redwin/Granges Bay targets: 4 drill holes/800 m @ \$250/meter	\$200,000
Drill test the Fay Lake Gold Targets: 4 holes/600 m @\$250/m	\$150,000
Linecutting on the East Region conductors 20 km @ \$2000/km	\$40,000
Basal Till Geochem sampling in the North Central Target area;100 samples, Sampling Costs 20 days @\$500/day +analysis @ 100 samples @ 150/sample	\$25,000
HLEM Surveying: 20 km @ \$200/km	\$4,000
Geological Mapping - Geologist + Assistant (20 days @ 800/day	\$16,000
Camp Costs Summer Program - 5 men @ \$700/day/30 days	\$21,000
Total	\$456,000

### **18.0 REFERENCES**

Ansdell, K.M., Connors, K.A., Stern, R.A. and Lucas, S.B. 1999: Coeval sedimentation, magmatism, and fold-thrust belt development in the Trans-Hudson Orogen: geochronological evidence from the Wekusko Lake area, Manitoba, Canada; *in* NATMAP Shield Margin Project, Volume 1, S.B. Lucas (ed.), Canadian Journal of Earth Sciences, v. 36, no. 2, p. 293–312.

Bailes, A.H. 1980: Geology of the File Lake area; Manitoba Energy and Mines, Geological Report GR78-1, 134 p.

Buck, M, LeBlanc, B., Clarke, C, Hayden, A., McGarry, L, Trinder, I, O'Connor, B., 2018; Minnova Corp. Feasibility Study, PL Gold Project, Manitoba, Canada 320 p.,

Brownell, G.W., 1931: Report on the Gem Lake Mines Limited; in Gem Lake Mines Limited, Corporation File; Manitoba Energy and Mines, Mines Branch, In Gale and Norquay (1996).

Coatzee, T., Hobson, V., Bello, B; 2023; Fay Lake Project, Manitoba, Helicopter Time Domain Electromagnetic Survey Logistic Report, 62 p.

Franklin, J. M., Gibson, H.L., Jonason, I. R. and Galley, A. G. 2005. "Volcanogenic Massive Sulfide Deposits"; In *Economic Geology 100th Anniversary Volume*, edited by. Hedenquist, J.W Thompson, J. F. H., Goldfarb, R. J., and Richards, J. P.; 523–650. Society of Economic Geologists.

Gale G.H., and Norquay, L.I., 1996; Mineral Deposits and Occurrences in the Naosap Lake area, NTS 63K14; Mineral Deposit Series Report No. 20; Manitoba Energy and Mines, Geological Services 97 p.

Gilbert, H.P., 1995; Geological investigations of the northern Flin Flon Belt, Manitoba (parts of 63K13NE and 14NW), in Report of Activities 2003, Manitoba Industry Trade and Mines, Manitoba, Geological Survey, p. 9-21

Goldfarb, R. J., T. Baker T., Dubé, B., Groves, D.I., Hart, C.J.R., and Gosselin, P.,2005; Distribution, Character, and Genesis of Gold Deposits in Metamorphic Terranes In *Economic Geology 100th Anniversary Volume*, edited by. Hedenquist, J.W Thompson, J. F. H., Goldfarb, R. J., and Richards, 407–50. Society of Economic Geologists.

Heine, T.H. 2003: Mineral deposits and

occurrences in the Elbow Lake area, Manitoba, NTS 63K15; Manitoba Industry, Trade and Mines, Manitoba Geological Survey, Mineral Deposit Series Report No. 30, 378 p. + 2 maps at 1: 50 000.

Lucas, S.B., Stern, R.A., Syme, E.C., Reilly, B.A. and Thomas, D.J., 1996: Intraoceanic tectonics and the development of oceanic crust: 1.92-1.84 Ga evolution of the Flin Flon belt, Canada; Geological Society of America Bulletin, v. 108, p. 602-629.

McGlynn, J. C., 1959: Elbow-Heming Lakes Area, Manitoba; Geological Survey of Canada, Memoir 305, 72p.

Machado, N.D., Zwanzig, H.V. and Parent, M. 1999: U-Pb ages of plutonism, sedimentation, and metamorphism of the Paleoproterozoic Kisseynew metasedimentary belt, Trans-Hudson Orogen (Manitoba, Canada); Canadian Journal of Earth Sciences, v. 36, no. 11, p. 1829.

Masson, S.L., and Masson, R., 2004; 2021 – 2024 Prospecting, Sampling and Mapping Report on the Fay Lake Property, 376 p.

Parbery, D., 1986: Mineral occurrence studies - Flin Flon area; in Manitoba Energy and Mines, Minerals Division, Report of Activities, 1986, p. 49-55.

Parbery, E. and Gale, G.H., 1984; Mineral Deposit Investigations in the Flin Flon area, in Manitoba Energy and Mines, Mineral Deposits Division Report of Activities, 1984 p. 60-66.

Robertson, D. S. 1953. "Batty Lake Map-Area, Manitoba." Memoir 271. Geological Survey of Canada.

Schledewitz, D. C. P., 1990: Webb Lake-Fay Lake; in Manitoba Energy and Mines, Minerals Division, Report of Activities, 1990, p. 58-61.
Schledewitz, D. C. P., 1991: Geology of the Webb Lake Area; in Manitoba Energy and Mines, Minerals Division, Report of Activities, 1991, p. 5-7.

Schledewitz, D.C.P., 1992: Geology of the Webb Lake-Fay Lake area (NTS 63K/14NE, 63K/15 NW); in Manitoba Energy and Mines, Minerals Division, Report of Activities, 1992, p. 7-9.

Syme, E.C. 1991: Elbow Lake project—Part A: supracrustal rocks and structural setting; *in* Report of Activities 1991, Manitoba Energy and Mines, Minerals Division, p. 14–27.

Syme, E.C., Bailes, A.H. and Lucas, S.B. 1995: Geology of the Reed Lake area (parts of 63K/9 and 10); *in* Report of Activities 1995, Manitoba Energy and Mines, Minerals Division, p. 42–60.

Whalen, J. B. 1991; Elbow Lake Project-Part B: Granitoid Rocks; in Manitoba Energy and Mines, Minerals Division, Report of Activities, 1991, p. 28-30.

Wright, J.F., 1931: Geology and mineral deposits of part of northwest Manitoba; in Geological Survey of Canada, Summary Report, 1930, Part C, p.1-124.

Zwanzig, H.V. 1990: Kisseynew gneiss belt in Manitoba: stratigraphy, structure, and tectonic evolution; *in* The Early Proterozoic Trans- Hudson Orogen of North America, J.F. Lewry and M.R. Stauffer (ed.), Geological Association of Canada, Special Paper 37, p. 95–120.

Zwanzig, H.V. 1999: Structure and stratigraphy of the south flank of the Kisseynew Domain in the Trans-Hudson Orogen, Manitoba: implications for 1.845–1.77 Ga collision tectonics; *in* NATMAP Shield Margin Project, Volume 2, Canadian Journal of Earth Sciences, v. 36, no. 11, p. 1859–1880.

Zwanzig, H.V. and Bailes, A.H. 2010: Geology and geochemical evolution of the northern Flin Flon and southern Kisseynew domains, Kississing–File lakes area, Manitoba (parts of NTS 63K, N); Manitoba Innovation, Energy and Mines, Manitoba Geological Survey, Geoscientific Report GR2010-1, 135 p

Zwanzig, H.V. and Schledewitz, D.C.P., 1992; Geology of the Kississing - Batty lakes area, Interim Report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2; 92 p.

Zwanzig, H.V., Ashton, K.E. and Schledweitz, D.G.P., 1995: Geology, Flin Flon Belt-Kisseynew Belt Transition Zone, Manitoba-Saskatchewan, Geological Survey of Canada, Open File 3054, scale 1:100,000

## **19.0 SIGNATURE PAGE**

This report titled "Technical Report on the Fay Lake Project, Flin Flon Area, Manitoba" prepared for Boreal Gold Inc. and dated May 20, 2024 was prepared and signed by:

John J. Pearson

John G. Pearson, M.Sc., P. Geo.

Dated at Saskatoon, SK May 20, 2024



## 20.0 CERTIFICATE OF QUALIFICATIONS

I, John G. Pearson, M.Sc, P.Geo. FGC, FEC (Hon), as author of this report entitled "Technical Report on the Fay Lake Project" prepared for Boreal Gold Inc. and dated May 20, 2024, do hereby certify that:

- 1. I am a consulting geologist and reside at 1418 Fairbrother Crescent, Saskatoon, SK, S7S 1H7.
- 2. I prepared and am responsible for the report entitled "Technical Report on the Fay Lake Project, Flin Flon Area", Manitoba, Report Prepared for Boreal Gold Inc. dated May 20, 2024.
- 3. I am a graduate of the University of Saskatchewan in 1972 with a Bachelor of Science (Advanced) degree in Geology and in 1979 with a Master of Science degree in Geology.
- 4. I am a registered Professional Geoscientist in the Province of Saskatchewan (Registration Number 04096)
- 5. I have worked as a geologist for a total of 50 years since my graduation. Based on my education and experience I am a 'qualified person' for the purposes of this instrument. My relevant experience for the purpose of this Technical Report is
  - a. 1.5 years as a mine geologist with the Granduc Operating Company at the Granduc Mine, Stewart, BC.
  - b. 1.5 years in exploration for Unconformity Uranium deposits.
  - c. 10 years as Resident Geologist for the Saskatchewan Geological Survey based in Creighton, SK carrying out mapping and research projects on the gold deposits of the Flin Flon Amisk Lake area.
  - d. 15 years of active exploration experience with Cominco/Teck Cominco Ltd. throughout the Canadian Shield and the Arctic Islands of Canada, Greenland and Turkey carrying out exploration in a wide variety of geological models and geological terrains. The various commodity groups and deposits worked on include VHMS Cu/Zn deposits, Magmatic Ni, Cu, PGM deposits, Sediment hosted Pb/Zn deposits, and Carbonate hosted Zn/Pb deposits.
  - e. 7 years as a consulting geologist in the exploration for and evaluation of Rare Earth Element deposits, Magmatic Ni/Cu/PGE deposits and Epithermal Gold deposits.
  - f. Attendance at a number of short courses and conference and on field trips concerning a variety of magmatic, base and precious metal deposits and a variety of sediment-hosted base metal and uranium deposits in North America.
  - g. Publication of a number of papers on Saskatchewan gold deposits and presentations at a number of professional conferences and groups on Saskatchewan gold deposits, Magmatic Ni/Cu/PGM deposits and Rare Earth Element Deposits.
- 6. I visited the property on July 14, 2022 and again on May 8, 2024. On July 14 2022 the author visited the property and examined the geology and mineralization in the area of the Redwin Deposit, On May 8, 2024 I again visited the property and examined the area recently mapped by Boreal Gold Inc. and also examine the quartz sulphide veins identified in the 2024 report (Masson and Masson, 2024) and traversed a short section of the Lynn Lake rail line which traverse the property.
- I was previously Involved with the property In June and Juily 2022 in the preparation of a NI-43101 Technical Report for Boreal Gold Inc. The report was dated August 1, 2022 and was submitted to Boreal Gold on that date.
- I have read the definition of "qualified person" set out in National Instrument 43-101 (NI43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.
- 9. I am responsible for all aspects of this technical report.

10.I am independent of the Issuer and the vendor applying the test set out in Section 1.5 of National Instrument

43-101.

- 11. I have read National Instrument 43-101, and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.
- 12. To the best of my knowledge, as of the effective date of this report (May 20, 2024), the information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated at Saskatoon, SK May 20, 2024

John J. Pearson

John G. Pearson, M.Sc., P.Geo., FGC, FEC (Hon)

