

We are committed to providing <u>accessible customer service</u>. If you need accessible formats or communications supports, please <u>contact us</u>.

Nous tenons à améliorer <u>l'accessibilité des services à la clientèle</u>. Si vous avez besoin de formats accessibles ou d'aide à la communication, veuillez <u>nous contacter</u>.

TECHNICAL REPORT

UAV Magnetic Survey, Prospecting and Sampling, Milestone Property, Temagami, Ontario

Prepared for Northstar Gold Corp.



Prepared by

Darcy McGill, P.Geo. (Limited) Sean Hicks Ronacher McKenzie Geoscience Inc.



January 9, 2023



(Photo credit: George Pollock: mylonitic schist, Milestone property)



TABLE OF CONTENTS

1.0	SUMMARY	4			
2.0	INTRODUCTION	4			
2.1	TERMINOLOGY	5			
2.2	UNITS	5			
2.3	RONACHER MCKENZIE GEOSCIENCE QUALIFICATIONS	5			
3.0	PROPERTY DESCRIPTION AND LOCATION	6			
4.0	HISTORY	11			
4.1	J.T. O'CONNOR - 1916	12			
4.2	CANDELA DEVELOPMENT COMPANY – 1952				
4.3	DIADEM MINES – 1956	12			
4.4	MILESTONE MINES – 1956				
4.5	UNKNOWN – 1959/60				
4.6	UNKNOWN – 1965				
4.7	COPPERFIELD MINING CORPORATION LIMITED – 1960-1974				
4.8	DAVID I ARONDE – 1999 14				
4.9	TEMEX RESOURCES CORP. – 2000-2001				
4.10) NORTHSTAR GOLD CORP. – 2012-2014				
4.11	NORTHSTAR GOLD CORP. – 2019	15			
5.0	GEOLOGICAL SETTING AND MINERALIZATION	15			
5.1	REGIONAL GEOLOGY	15			
5.2	LOCAL AND PROPERTY GEOLOGY				
	5.2.1 Structure				
5.3	MINERALIZATION				
6.0	EXPLORATION	21			
6.1	PROSPECTING AND SAMPLING	21			
	6.1.1 Overview & Personnel				
	6.1.2 Plans and Permits				
	6.1.3 Activities Undertaken				
	6.1.4 Traverses				
6.0					
0.2	6.21 Survey Procedures and Quality Control				
	0.2.1 Survey Procedures and Quality Control				





	6.2.1 Magnetic Data Processing	
	6.2.2 Magnetic Inversion	
	6.2.3 Magnetic Survey Results	
7.0	INTERPRETATION AND CONCLUSIONS	
8.0	RECOMMENDATIONS	
9.0	REFERENCES	
10.0	STATEMENT OF AUTHORSHIP	50

FIGURES

Figure 3-1: Location of the Milestone property8
Figure 3-2: Access to the Milestone property9
Figure 3-3: Map showing the claims of the Milestone property in Strathcona Township. The mineral patents are
not owned by Northstar10
Figure 5-1: Map showing the regional geology around the Milestone property
Figure 5-2: Map showing the geology of the Milestone property
Figure 6-1: Map showing geophysical anomalies targeted during the 2022 prospecting program23
Figure 6-2: Map showing the assay results for Ni
Figure 6-3: Map showing the assay results for Cu
Figure 6-4: Vision 4K UAV magnetometer system configuration35
Figure 6-5: Flown (yellow) and unflown (red) survey lines
Figure 6-6: 3D isosurfaces from the MVI inversion. Red: 0.001, green: 0.00025. Black squares are the locations
of the Diadem and O'Connor prospects
Figure 6-7: Map showing the total magnetic intensity (TMI)
Figure 7-1: Map showing the first vertical derivative (VD1) of the pole reduced total magnetic intensity
Figure 7-2: Map showing the 200 m elevation slice of the MVI inversion results
Figure 7-3: Map showing the total horizontal derivative (THD) of the pole reduced total magnetic intensity44
Figure 7-4: Map showing the first vertical derivative (VD1) of the total horizontal derivative (THD; THD-VD1)45

TABLES

6
11
14
21
22
24
- -





Table 6-4. Feature locations and descriptions	27
Table 6-5. Summary of Assays	29
Table 6-6: UAV magnetic survey parameters	36
Table 6-7: Table showing the line kilometres on each claim	37
Table 8-1: Estimated cost of recommended work.	46

APPENDICES

- Appendix 1 Certificates of Qualifications
- Appendix 2 Travers Map
- Appendix 3 Assay Certificates
- Appendix 4 UAV Survey Logistics Report





1.0 SUMMARY

Northstar Gold Corp. ("Northstar") commissioned Vision 4K to complete a UAV magnetic survey on its Milestone property ("the property") near Temagami, Ontario. Northstar commissioned Ronacher McKenzie Geoscience ("Ronacher McKenzie") to interpret the magnetic data, complete an inversion of the data and complete a sampling and prospecting program on the property. The objective of the program was to determine the extent of the mineralized gabbro unit that crosses the property, determine the structural control on mineralization and to obtain assay results of the mineralized zones.

The property consists of 28 single cell claims covering an area of 615.76 ha and is centred on 587420E/5209690 N (NAD83, UTM Zone 17N).

The prospecting and sampling program lasted from November 10 to 16, 2022, and was completed by Sean Hicks, of Ronacher McKenzie, and independent prospector Charlie Tatai. Seven days were spent in the field. A total of 72 samples were collected.

The UAV magnetic survey was completed on November 8, 2022, by Vision 4K. One day was spent in the field. A total of 76.7 line km were flown.

The leveled TMI data were inverted to produce a 3D model of the magnetic vector amplitude in the survey area. The data were inverted on a 12.5 m square horizontal mesh over the entire survey area. The vertical mesh cells started at 6.25 m thickness, increasing with depth. In addition, Ronacher McKenzie produced magnetic filter products.

The magnetic data shows that the gabbro unit is not uniform, and is interrupted by NNW and NW striking linear magnetic features. The northern and southern margins of the gabbro as mapped are consistent with the magnetic signature.

Based on the geological information available for the property, the current and historic geophysical data and the LiDAR data and associated structural interpretation, Ronacher McKenzie conclude that further exploration on the property is required to understand the mineralization associated with the gabbro unit and to delineate additional mineralization.

It is recommended to extend the sampling beyond what was completed in 2022. In particular, further sampling is warranted along the edge of the gabbro in the northeastern part of the property.

The coordinate system used to locate the area of work is NAD 83, UTM Zone 17N.

2.0 INTRODUCTION

Northstar Gold Corp. ("Northstar") commissioned Vision 4K to complete a UAV magnetic survey and Ronacher McKenzie Geoscience ("Ronacher McKenzie") to complete a prospecting and sampling program and an





inversion of ground magnetic data on Northstar's Milestone property ("the property") near Temagami, Ontario. Ronacher McKenzie was also commissioned to summarize the results in a report prepared according to the Ontario assessment regulations.

The main source of information was Northstar who provided access to the UAV data as well as historic geophysical surveys. Other historic data, including assessment reports, were obtained from Northstar and from the public domain, dominantly the Ontario Ministry of Energy, Northern Development and Mines ("MENDM") and the Ontario Geological Survey ("OGS")

2.1 Terminology

AMIS: Abandoned Mines Information System

EM: electromagnetic; commonly used term referring to electromagnetic geophysical data

LiDAR: Light Detection and Ranging; laser-based technology for determining digital terrain models

MDI: Mineral Deposit Inventory; superseded by OMI, Ontario Mineral Inventory

MENDM: Ontario Ministry of Energy, Northern Development and Mines

OGS: Ontario Geological Survey

OMI: Ontario Mineral Inventory, previously MDI (Mineral Deposit Inventory)

VLF: Very low frequency electromagnetic survey. Utilizes signals in the 15 to 30 kHz range to measure electromagnetic responses

2.2 Units

The metric system of measurement is used in this report. Historic data are typically reported in imperial units and were converted for this report using appropriate conversion factors. Ounces per (short) ton are converted to grams per (metric) tonne using the conversion factor of 34.2857. One foot is 0.3048 m. One mile is 1.609344 km. One gamma (unit of magnetic intensity) is $1x10^{-9}$ T or 1 nT. Area is defined in hectares (ha). 1 ha = 0.01 km².

Universal Transverse Mercator (UTM) coordinates are provided in the datum of NAD83, Zone 17N.

2.3 Ronacher McKenzie Geoscience Qualifications

Ronacher McKenzie Geoscience is an international consulting company with offices in Toronto and Sudbury, Ontario, Canada. Ronacher McKenzie's mission is to use intelligent geoscientific data integration to help mineral explorationists focus on what matters to them. We help a growing number of clients understand the factors that control the location of mineral deposits.





With a variety of professional experience, our team's services include:

- Data Integration, Analysis and Interpretation
- Geophysical Services
- Project Generation and Property Assessment
- Exploration Project Management
- Independent Technical Reporting
- Project Promotion
- Lands Management

The co-author of this Report is Darcy McGill, P.Geo. (Limited). Mr McGill is a Senior Geophysicist with Ronacher McKenzie Geoscience, and a member in good standing with Professional Geoscientists Ontario (PGO#2010). Mr. McGill received a B.Sc. from the University of Toronto in 1995, and has worked continuously since 1995 as a geophysicist with experience in many airborne and ground geophysics techniques applied to a wide range

Co-author to this Report is Sean Hicks. Mr. Hicks is a Project Geologist with Ronacher McKenzie Geoscience. He received a BSc from the University of Ottawa and has worked on exploration projects across Canada (Ontario, British Columbia, Nunavut) and on a variety of commodities including Au, Cu, base-metals and Ag-Ni-Co.

Certificates of Qualification are provided in Appendix 1.

3.0 PROPERTY DESCRIPTION AND LOCATION

The Milestone property is located on the northeast arm of Lake Temagami in Strathcona and Briggs Townships, 3 km southwest of the Municipality of Temagami, Ontario (Figure 3-1, Figure 3-2). The property consists of 28 single cell claims covering an area of 615.76 ha (Table 3-1, Figure 3-3). The property can be accessed by turning west onto Strathcona Road from Highway 11, approximately 1.5 km south of Temagami, which leads to the south shore of Lake Temagami, just north of the property boundary (Figure 3-2). From there, the property can be accessed by all-terrain vehicle or snow mobile. The closest airport is located in North Bay, approximately 100 km south of the property.

The property is fully owned by Northstar.

Claim No	Cell ID	Claim Holder	Due Date	Claim Type	Area (ha)
631381	31M04D299	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	22.00
631385	31M04D300	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	22.00
631383	31M04C281	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	22.00
631378	31M04C282	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	22.00
631386	31M04D279	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631382	31M04D280	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99

Table 3-1: List of claims of the Milestone property.



Claim No	Cell ID	Claim Holder	Due Date	Claim Type	Area (ha)
631384	31M04C261	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631379	31M04C262	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631380	31M04C242	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631375	31M04C243	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631376	31M04C244	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631377	31M04C245	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631372	31M04C223	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631373	31M04C224	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
631374	31M04C225	(100) NORTHSTAR GOLD CORP.	18/01/2023	Single Cell Mining Claim	21.99
228382	31M04C226	(100) NORTHSTAR GOLD CORP.	30/06/2024	Single Cell Mining Claim	21.99
174436	31M04C227	(100) NORTHSTAR GOLD CORP.	30/06/2023	Single Cell Mining Claim	21.99
127130	31M04C228	(100) NORTHSTAR GOLD CORP.	30/06/2023	Single Cell Mining Claim	21.99
631646	31M04C205	(100) NORTHSTAR GOLD CORP.	21/01/2023	Single Cell Mining Claim	21.99
208985	31M04C206	(100) NORTHSTAR GOLD CORP.	30/06/2024	Single Cell Mining Claim	21.99
208984	31M04C207	(100) NORTHSTAR GOLD CORP.	30/06/2024	Single Cell Mining Claim	21.99
323681	31M04C208	(100) NORTHSTAR GOLD CORP.	30/06/2023	Single Cell Mining Claim	21.99
181629	31M04C209	(100) NORTHSTAR GOLD CORP.	08/06/2023	Single Cell Mining Claim	21.99
631647	31M04C186	(100) NORTHSTAR GOLD CORP.	21/01/2023	Single Cell Mining Claim	21.99
299312	31M04C187	(100) NORTHSTAR GOLD CORP.	08/06/2024	Single Cell Mining Claim	21.99
275604	31M04C188	(100) NORTHSTAR GOLD CORP.	30/06/2024	Single Cell Mining Claim	21.99
233281	31M04C189	(100) NORTHSTAR GOLD CORP.	08/06/2023	Single Cell Mining Claim	21.99
292012	31M04C190	(100) NORTHSTAR GOLD CORP.	08/06/2023	Single Cell Mining Claim	21.99
					615.76



NORTHSTAR GOLD CORP





Figure 3-1: Location of the Milestone property.







Figure 3-2: Access to the Milestone property.







Figure 3-3: Map showing the claims of the Milestone property in Strathcona Township. The mineral patents are not owned by Northstar.





4.0 HISTORY

Pyrite accumulations were discovered in the area of the Milestone property in the early 1900s and the property is said to have been drilled between 1927 and 1928 (as mentioned in Assessment Report 41116SW9408). Table 4-1 is an overview of historic exploration activities on the property.

Table 4-1: Summar	v of historic e	xploration	activity on	the Milesi	one propertv.

Year	Company	Activity	Results	Assessment
1916-1917	J.T. O'Connor	Bulk sampling, diamond drilling: 8 holes totalling 303	Unknown	Bennett, 1978; Hewitt, 1967; Janes, 1952
1952-1953	Candela Development	magnetic survey, 5 diamond drill holes	no magnetic anomalies	31M04SW9745
1956	Diadem Mines	13 diamond drill holes totalling 1,364.28 m	diorite with locally up to 20% sulfides intersected; no assay results	31M04SW0023
1956	Milestone Mines Ltd.	geological review	exploration on the property warranted	41116SW9408
1959-1960	Unknown	EM survey	no anomalies delineated	31M04SW0054
1960-1970	Copperfield Mining Corp.	diamond drilling: 6 holes totalling 572 72 m	no assay results reported	31M04SW0035
1965	Unknown	airborne magnetic and EM surveys	no conductors but several magnetic anomalies delineated,	31M04SE0007
1966	Copperfield Mining Corp.	geological review	pyrite zone delineated	31M04SW0053
1967	Copperfield Mining Corp.	2 diamond drill holes: 84.58 m	highest grade: 7.54 g/t Au over 1.07 m	31M04SW0034
1970	Copperfield Mining Corp.	magnetic and VLF survey	no conductors or magnetic anomalies delineated	31M04SW0047
1974	Copperfield Mining Corp.	magnetic and VLF surveys	no significant magnetic highs, weak conductor delineated	31M04SW0045
1998	Redstar	prospecting,	no significant assay results	31M04SW2026,
1999	Resources David Laronde	sampling sampling, magnetic- VLF survey	assay results 0.30-0.80% Cu, 0.1- 0.3% Ni, 0.03-0.07% Co, 1.0 g/t Ag, 0.15 g/t Au, 0.10-0.20 g/t Pt+Pd; geophysical survey delineated a magnetic high coincident with a conductor	31M04SW2027 31M04SW2042
2000	Temex Resources Corp.	prospecting, 11 grab samples	anomalous Cu and Ni (>1%)	31M04SW2047





Year	Company	Activity	Results	Assessment Report
1916-1917	J.T. O'Connor	Bulk sampling, diamond drilling: 8 holes totalling 303 m	Unknown	Bennett, 1978; Hewitt, 1967; Janes, 1952
2001	Temex Resources Corp.	lithogeochem. sampling: 377 samples collected, 97 samples analyzed	up to 4.35% Cu and 0.282% Ni, 1 ppb Au in massive sulfide samples	31M04SW2049
2001	Temex Resources Corp.	3 diamond drill holes totalling 436 m	some anomalous intersections, e.g., 8.38 m of 0.47% Cu and 0.16% Ni; 4.42 m of 1% Cu and 0.17% Ni	31M04SW2050
2002	Temex Resources Corp	magnetic and VLF surveys	conductor partially coincident with magnetic high delineated	31M04SW2053
2012	Northstar Gold Corp.	magnetic and VLF surveys	magnetic highs and conductors delineated	20000007257
2014	Northstar Gold Corp.	magnetic and VLF surveys	magnetic highs and conductors delineated	20000008107

4.1 J.T. O'Connor - 1916

J.T. O'Connor shipped 542 Tons of massive sulfide from open cuts on the "O'Connor" zone, however the final analytical results are unknown (Bennett 1978). Assays reportedly ranged from 0.78% to 5.4% Cu and 1.0 to 1.7 g/t Au. (Janes 1952 p.69). Eight diamond drill holes totaling 303 m were drilled below the mineralized workings with six of the holes reported intercepts of sulfides from 5 feet (1.5 m) to 35 feet (10.6 m) in width but the core was not assayed (Hewitt, 1967; Janes, 1952: p.69).

4.2 Candela Development Company – 1952

Candela Development Company completed a magnetic survey on the property in 1953. No magnetic anomalies were delineated. The contact between the diorite and the felsic volcanic rocks, which was one of the targets of the survey, was not detected with sufficient accuracy. The mineralization did not have a magnetic signature either (Assessment Report 31M04SW9745).

A diamond drilling program consisting of five drill holes was completed concurrently with the magnetic survey. No information other than an assay table (assessment report 41116SW9408) is available for the drilling program (indicated in Assessment Report 31M04SW9745).

4.3 Diadem Mines – 1956

Diadem Mines completed 13 diamond drill holes totalling 1,364.28 m on the property. They intersected dominantly "diorite" with locally up to 40% to 60% sulfides at the contact (mainly pyrite with minor chalcopyrite) and felsic volcanic rocks (Assessment Report 31M04SW0023), however, no assay data were reported with the drill logs. The drilling is reported to have defined a zone over a strike length of 700 feet (200m) with widths of





approximately 15 feet (4.6m) to vertical depths of 400 feet (120m) steeply dipping to the south ("Diadem deposit") (Bennett 1978; Thomson, et al. 1957). The Diadem deposit was estimated to contain 500,000 tons grading 0.5% Cu and 0.1% Ni which remains open along strike and at depth (Thomson, et al. 1957) and is classified as a "Developed Prospect with Reported Reserves and Resources in the Ontario Mineral Inventory Database (MDI31M04SW00077). This estimate is historical and cannot be relied upon. The key assumptions, parameters, and methods used to prepare the estimates are not documented or known. The estimate does not use the categories set out by the Canadian Institute of Mining and Metallurgy. A more recent estimate does not exist. A substantial amount of drilling would have to be completed to verify the estimate. The authors of this report have not done sufficient work to classify the historical estimate as current. Northstar is not treating the estimate as current.

4.4 Milestone Mines – 1956

Milestone Mines completed a geological review of the property in 1956. They recognized that a mafic sill cuts the felsic volcanic rocks and concluded that the sill continued under the lake "for a considerable distance". Milestone described a zone of massive and disseminated pyrite at the base of the mafic sill. Locally, the presence of chalcopyrite and pyrrhotite were described. Milestone concluded that exploration for Cu and Ni on the property was warranted (Assessment Report 4116SW9408)

4.5 Unknown – 1959/60

An unknown entity completed an electromagnetic survey on the property in 1959 and 1960. No anomalies were delineated (Assessment Report 31M04SW0054).

4.6 Unknown – 1965

An unknown entity staked claims in the area of the Milestone property in 1965 and completed an airborne magnetic and EM survey (Assessment Report 31M04SE0007). No conductors were delineated. Magnetic anomalies were explained by iron formation and a diabase dike. Another magnetic anomaly was unexplained.

4.7 Copperfield Mining Corporation Limited – 1960-1974

Copperfield Mining Corporation Limited ("Copperfield") completed six diamond drill holes totalling 572.72 m between 1960 and 1970 (Assessment Report 32M04SW0035). The holes intersected felsic volcanic rocks, mafic dikes and "meta-diorite". Assay results were only available for one hole where the best result was 1.38% Cu over an interval of 2.6 ft (0.79 m).

Copperfield reviewed the historic O'Connor property in 1966. Copperfield described the rocks on the property and concluded that the only zone of importance is an area, locally over 15 m wide, with abundant pyrite that crosses the property from east to west.

Copperfield drilled two diamond drill holes totaling 277.5 ft (84.58 m) on the property in 1967. The holes intersected dominantly felsic volcanic rocks and drill core was assayed for Cu and Au. The best intersections





were 2.5 ft (0.76 m) of 0.16% Cu and 0.01 oz/t Au (0.34 g/t Au) and 3.5 ft (1.07 m) of 0.12% Cu and 0.22 oz/t Au (7.54 g/t Au).

In 1970, Copperfield completed a VLF survey bud did not delineate any conductors.

Copperfield also completed a magnetic and VLF survey on the property in 1974. No significant magnetic anomalies were detected. A weak conductor crossing the property from east to west was interpreted to be caused by overburden. A moderate conductor interpreted to be due to a bedrock source was delineated at the western end of the property. No further work was recommended.

4.8 David Laronde – 1999

In 1999, prospector David Laronde assessed the property and collected grab samples from preexisting pits and trenches (Assessment Report 31M04SW2026). The assay results were 0.30-0.80% Cu, 0.1-0.3% Ni, 0.03-0.07% Co, 1.0 g/t Ag, 0.15 g/t Au, 0.10-0.20 g/t Pt+Pd. Samples from the property had previously not been analyzed for Co although Co can be a significant component of Cu-Ni-PGE mineralization. The Co values reported by Laronde are anomalous.

Laronde also commissioned magnetic, VLF and horizontal loop EM surveys at a line spacing of 100 m. The surveys delineated a magnetic high and coincident conductor in an area where massive sulfide is exposed in pits.

4.9 Temex Resources Corp. – 2000-2001

Temex Resources Corp. ("Temex") acquired the property from Teck Resources in 2000. In that same year, Temex started prospecting on the property and collected 11 grab samples that returned anomalous Cu and Ni values (Assessment Report 31M04SW2047). In 2001, Temex completed a lithogeochemical sampling program and collected 377 samples of with 97 were analyzed for Cu, Ni and PGE. Samples consisting of massive sulfides (pyrite, pyrrhotite and minor chalcopyrite) returned anomalous Ni and Cu values. The highest Cu assay was 4.35% Cu and the highest Ni value was 2820 ppm Ni (Assessment Report 31M04SW2049).

In 2001, Temex also completed three diamond drill holes totalling 436 m. The purpose of the holes was to test the PGE potential of the Temagami Island Meta-Diorite and in the footwall of the rhyolite sequence. The best intersections are listed in Table 4-2 (Assessment Report 31M04SW2050).

DDH	Interval (ft)	Interval (m)	Cu (%)	Ni (%)		
DDH 00-01	27.5	8.4	0.47	0.16		
DDH 00-03	14.5	4.4	1.00	0.17		
DDH 00-03	63.5	19.4	0.20	not reported		
DDH 00-03	24	7.3	0.20	not reported		
DDH 00-03	2.6	0.8	not reported	0.45		

 Table 4-2: Selected historic drill results (Assessment Report 31M04SW2050)





In 2002, Temex completed a magnetic and VLF survey and delineated a magnetic high and a conductor, where the conductor is partially coincident with a magnetic high (Assessment Report 31M04SW2053).

4.10 Northstar Gold Corp. – 2012-2014

Northstar completed magnetic and VLF surveys on the property in 2012 and in 2014. Conductors interpreted to be caused by bedrock and magnetic anomalies were delineated. However, the magnetic anomalies appear to be caused by a dike rather than a gabbro.

4.11 Northstar Gold Corp. – 2019

Northstar commissioned KBM Resources Group ("KBM") to acquire LiDAR and high-resolution imagery for the Milestone property. The survey was completed on May 14, 2019 (Ronacher and McKenzie 2019). Northstar completed a structural interpretation of the LiDAR data. Several north-trending lineaments were observed. These are parallel to ice directions noted to the west of the property and may be related to recent glaciation events (OGS 1997).

Deeper arcuate NNE-NE trending lineaments are noted and are parallel to other mapped structures in the greater area. The Temagami Island Gabbro is observed to be slightly depressed compared to the surrounding felsic bedrock.

5.0 GEOLOGICAL SETTING AND MINERALIZATION

5.1 Regional Geology

The property is located in the Southern Province of the Canadian Shield, approximately 22 km north of the boundary between the Southern and Grenville provinces. In the region, the Southern Province is characterized by the sedimentary rocks of the Huronian Supergroup and by diabase dikes and sills (Nipissing diabase). In the area of the Milestone property, a window of Archean rocks, the Temagami greenstone belt, is exposed (Bowins and Heaman 1991) (Fyon and Cole 1989).

Felsic and mafic volcanic rocks and iron formation occur. The volcanic rocks are metamorphosed to greenschist facies conditions and intruded by felsic plutonic rocks (Strathy-Chambers, Iceland Lake and Spawning Lake Plutons; Fyon and Cole 1989).





Figure 5-1: Map showing the regional geology around the Milestone property.

5.2 Local and Property Geology

The dominant rocks on the property are felsic volcanic rocks, including rhyolite, rhyodacite and dacite (Figure 5-2). Tuffs and breccias also occur. The felsic volcanic rocks are yellow to grey, moderately sheared and sericite-carbonate altered. This alteration is associated with disseminated pyrite (1-3%, locally up to 10-15%). Fyon and Cole (1989) divided the volcano-sedimentary rocks in the Temagami Greenstone Belt into five



NORTHSTAR GOLD CORP



lithostratigraphic sequences. The Milestone property falls in their sequence E. Sequence E is located on the south limb of the Tetapaga Syncline, whose axis is parallel to the north shore of Lake Temagami. Sequence E is characterized from bottom to top by tholeiitic basalt, andesite/rhyolite and iron formation overlain by metasedimentary rocks (Fyon and Cole 1989).

Diabase dikes run across the property. According to OGS Map 51e (Moorhouse 1942) and M2324 (Bennett 1978), a diabase dike trends north-south; in addition, regional (GDS1242 2013) and local (Assessment Reports 20000007257 and 2000008107) magnetic data indicate an east-west trend of another diabase dike.

Mafic volcanic rocks occur southeast of the property. Iron formation was mapped northwest of Lake Temagami. The Iceland Lake Pluton, immediately south of the property, consists of granite and granodiorite. Fyon and Cole (1989) suggested based on geochemical characteristics that the Iceland Lake Pluton and the metavolcanic rocks of sequence E could be comagmatic.

A northeast trending sill consisting of ultramafic rocks, gabbro and diorite cuts the volcanic rocks on the property; this sill is a part of the Temagami Island Gabbro (Bennett 1978) although it is called Diadem Gabbro in some historic assessment reports. The gabbro is medium- to fine-grained and medium to dark green; it dips steeply to the north and is characterized by the presence of quartz eyes, leucoxene and pyrite. Locally, it is sheared and chlorite altered. The alteration intensifies towards the contact with the rhyolite where a "chlorite marker horizon" or "pyrite zone" is described (Ontario Mineral Inventory: record number MDI31M04SW00077). This strongly chloritized and sheared amphibolite is associated with semi-massive to massive sulfide mineralization (Assessment Report 31M04SW2042). On land the sill is 1.6 km long and 150-200 m wide; its western extension is under Lake Temagami but Bennett (1978) reported occurrences of the Temagami Island Gabbro on Ferguson Island, approximately 1.5 km southwest of where it crops out on the Milestone property.

Locally extensive gossan, both in the gabbro where sulfide mineralization occurs and in the host felsic volcanic rocks where they are altered to iron carbonate, exists on the property. The gossan is up to one metre deep.

The rocks on the property are metamorphosed to greenschist facies condition (Bennett, 1978).

The "pyrite zone" occurs along the same geologic contact that hosts the former Temagami Island Copper mine 20 km to the southwest of, which produced 10,155 oz Au, 186,861 oz Ag and 67,084,858 lbs Cu from >800,000 Tons mined (495,561 tons milled) at a grade of 6.0% Cu during the period 1952 to 1968 from lenses of massive chalcopyrite and gold-silver-PGM-rich sulphides (Ontarioi Mineral Inventory, 2022). The massive chalcopyrite lenses or pods were often hosted within cross cutting structures near the base of the "pyrite zone".







Figure 5-2: Map showing the geology of the Milestone property.





5.2.1 Structure

The general trend of the Temagami Greenstone belt is NE (Bennett 1978). A dominant feature in the area is the Tetapaga Syncline mentioned above. In addition, Bennett (1978) observed three major trends of faults in the area, NNE, NW and NE. The NNE trending faults are characterized by gabbro dikes, including one in central Strathcona Township. The NW trending faults are characterized by diabase dikes and little or no displacement or horizontal movement was recognized. The E and NE trending faults are represented by relatively wide shear zones, e.g., the Northeast Arm of Temagami Lake. Bennett (1978) reports a left lateral displacement of approximately 150 m along this shear zone. Shearing was associated with carbonatization. Temex reported that east to northeast trending structures on the property dip steeply to the north and are interpreted to be related to a major deformation zone underlying the Northeast Arm of Temagami Lake (Assessment Report 31M04SW2047).

5.3 Mineralization

According to Assessment Report 31M04SW2042 (1999) there are five types of sulfides on the property.

- 1. Disseminated pyrite in the felsic volcanic rocks (1-3%, locally 10-15%).
- 2. Disseminated pyrite (1-5%) and chalcopyrite (0.5-1.0%) in the central part of the gabbro sill.
- 3. Disseminated pyrite (3-5%, up to 25%) and minor chalcopyrite in parts of the gabbro.
- 4. Massive pyrite-chalcopyrite within the chloritized amphibolite at the southern part of the gabbro close to the contact with the rhyolite. Magnetite is also associated with this mineralization (10-20%).
- 5. Massive and semi-massive pyrite without chalcopyrite. This pyrite appears to surround the massive pyrite-chalcopyrite mineralization.

Fitzhenry (1998, Assessment Report 31M04SW2026) stated et al. in that pyritechalcopyrite±pyrrhotite±magnetite mineralization is restricted to the basal parts of the gabbro just above the "pyrite zone", which is a 20 m thick zone at the contact between the gabbro and the rhyolite. The mineralization was described as "2-3 cm disseminated blebs and patches up to 1 m in diameter" (Fitzhenry et al., 1998). The Pyrite Zone consists of pods of massive pyrite and chalcopyrite with minor millerite, siegenite, gersdorffite and magnetite in gabbro, pyrite and chalcopyrite interstitial in chlorite altered gabbro and minor disseminated pyrite and chalcopyrite in gabbro (Fitzhenry et al., 1998).

Two Cu-Ni-PGE mineral prospects are associated with the basal contact of the gabbro. According to the Ontario Mineral Inventory ("OMI"), the Diadem prospect is a zone of massive to semi-massive pyrite intergrown with minor chalcopyrite and Ni minerals. This zone is called the "Pyrite Zone'. In 1956 Diadem Mines drilled 13 holes totaling 1356 meters which defined a zone over a strike length of 700 feet (200m) with widths of approximately 15 feet (4.6m) to vertical depths of 400 feet (120m) steeply dipping to the south ("Diadem deposit") (Bennett 1978; Thomson, et al. 1957). The Diadem deposit was estimated to contain 500,000 tons grading 0.5% Cu and 0.1% Ni which remains open along strike and at depth (Thomson, et al. 1957) and is





classified as a "Developed Prospect with Reported Reserves and Resources in the Ontario Mineral Inventory Database (MDI31M04SW00077). This estimate is historical and cannot be relied upon. The key assumptions, parameters, and methods used to prepare the estimates are not documented or known. The estimate does not use the categories set out by the Canadian Institute of Mining and Metallurgy. A more recent estimate does not exist. A substantial amount of drilling would have to be completed to verify the estimate. The authors of this report have not done sufficient work to classify the historical estimate as current. Northstar is not treating the estimate as current.

In 1970 Copperfields Mining drilled 0.58% Cu, 0.12% Ni over 5.97m in DDH C-12 representing a 40 metre ENE extension of the zone (assessment report 31M04SW0035). In 2001, Temex Resources intersected 8.38 m at 0.47% Cu, 0.16% Ni and 196 ppb PGE in DDH 00-01 in a down plunge extension of the Diadem Zone (assessment report 31M04SW2050).

The O'Connor prospect is characterized by a zone of sheared "fine-grained chloritized amphibolite" with pyrite, pyrrhotite and chalcopyrite. The primary commodities described at the O'Connor prospect are Cu and Ni, with Au, Pt and Pd as secondary commodities (MDI31M04SW00072, MDI0000000510). Several trenches were observed in the gabbro. In 1917 J.T. O'Connor shipped a 542 Ton bulk sample of semi-massive to massive sulfides (20.12% to 39.4% Sulfur) from open cuts in the zone with assays reportedly ranging from 0.78% Cu to 5.4% Cu and 1.0 g/t Au to 1.7 g/t Au (Janes 1952). Grab samples collected from this prospect contained 0.30-0.80% Cu, 0.1-0.3% Ni, 0.03-0.07% Co, 1.0 g.t Ag, 0.15 g.t Au and 0.10-0.20 g/t Pt+Pd. Samples P8358 and P8369 assayed 1.34% Ni, 0.69% Cu 0.033% Co. and 3.68% Cu, 0.52% Ni, 0.05% Co, 0.23 g/t Pd and 0.25 g/t Au respectively (OMI record number MDI00000001519). Temex Resources reported surface grab assays between 0.22% Cu and 4.35% Cu, 1.0 g/t Au (Assessment Report 31M04SW2049 2001). Drill hole assay results include 11.6 m of 0.71% Cu including 7.04% Cu and 1.79% Ni over 0.36m in Candela DDH T-2, 2.4 m of 0.47% Cu and 0.22% Ni in Candela DDH T-4 (assessment report 41116SW9408), and 4.4 m of 1.0% Cu, 0.17% Ni in Temex Resources DDH 00-03 (assessment report 31M04SW2050).

A third occurrence, the Copperfields DDH C-6 occurrence, is located in the southern part of the property. This occurrence is based on one diamond drill hole that intersected dacitic metavolcanic rocks, granite and a mafic dike. Disseminated chalcopyrite, pyrite and tourmaline with Au, minor Cu, and possible Mo were described (MDI31M04SW00078); a 1.1 m long section of dacite in drill hole C-6 drilled in this area in 1967 assayed 7.54 g/t Au, 0.12% Cu (assessment report 31M04SW0034).

Bennett (1978) described the pyrite zone at the base of the Temagami Island Gabbro as consisting of irregular disseminations with massive sulfides and sulfide veins. The most abundant sulfide is Ni-bearing pyrite with minor millerite, linnaeite, pyrrhotite, violarite, bravoite, chalcopyrite and gersdorffite. The host rocks are strongly dolomitized and silicified. Barren quartz veins were also observed, which lead Bennett (1978) to conclude that the mineralization is both magmatic and hydrothermal.





6.0 EXPLORATION

6.1 Prospecting and Sampling

6.1.1 Overview & Personnel

The prospecting program took place between November 10th and 16th, 2022 at Northstar's, Milestone property 3 km southwest of Temagami. The prospecting crew consisted of geologist Sean Hicks, of Ronacher Mckenzie Geoscience Inc. and local prospector Charlie Tatai. Both crew members were contracted by Northstar Gold Corp.

The purpose of the prospecting program was to investigate and sample known historic workings, primarily the O'Connor AMIS and Diadem MDI sites, while ground-truthing various geophysical anomalies throughout the property (Figure 6-1). Initially, it was hoped that the lower contact between the gabbro and the felsic volcanics could be mapped in with more detail to further constrain the mineralized contact. Unfortunately, a sustained snowfall on November 12th made this objective slightly more difficult.

Furthermore, the prospecting was meant to aid in better understanding the geological control of the mineralization at the contact, whether mineralization may extend beyond the contact into the gabbro and/or adjacent felsic volcanic rocks, to determine the cause of the various magnetic anomalies throughout the property and to locate AMIS/MDI features, drill collars and any historical work described in assessment reports which are generally centred on past developed zones of mineralization. LiDAR tiles, collected by Northstar in 2019, were systematically examined for accurately locating AMIS sites and additional undocumented features which were then investigated.

6.1.2 Plans and Permits

The prospecting work was surficial and did not require any plans or permits.

6.1.3 Activities Undertaken

A summary of activities is shown in Table 6-1 and the daily log is shown in Table 6-2.

Activity	Dates	Details	Personnel
Prospecting	November 10-16, 2022	72 samples collected 27.3 km traversed	Ronacher McKenzie Geologist Local prospector
Assaying		80 samples	ALS Global

Table 6-1: Summary of activities





Date	Personnel	Details	Samples Taken	Distance Traversed
09/11/2022	S. Hicks	Mobilization: travel day	-	
10/11/2022	S. Hicks	Field preparation and assessing access via old drill road to the major AMIS/MDI site on the property, the historic O'Connor workings	-	1.4 km
11/11/2022	S. Hicks/C. Tatai	Investigate and sample the historic O'Connor workings and nearby LiDAR features to the southwest, interpreted to be historic pits and trenches before heading north along a N-S structure.	15	4.8 km
12/11/2022	S. Hicks/C. Tatai	Ground truth geophysical anomalies 2, 5 & 6 and investigate LiDAR features. Investigate and sample historic pits southwest of the O'Connor workings. Attempt to map in the gabbro felsic volcanic contact proximal to anomaly 5.	10	4.8 km
13/11/2022	S. Hicks/C. Tatai	Investigate and sample the historic Diadem workings and nearby LiDAR features while ground truthing geophysical anomaly 1.	11	3.6 km
14/11/2022	S. Hicks/C. Tatai	Investigate a known pyrite-chalcopyrite showing thought to be extension of Conductor B. Investigate and sample historic pits in the Pyrite Zone (Diadem West) and investigate several LiDAR features south of Temagami Marine rd.	13	4.4 km
15/11/2022	S. Hicks/C. Tatai	Investigate LiDAR features and map in the gabbro- felsic volcanic contact between the historic O'Connor and Diadem sites.	14	4.3 km
16/11/2022	S. Hicks/C. Tatai	Investigate a known pyrite showing and several geophysical anomalies thought to possibly be the north-eastern extension of the pyrite zone historically mined at Diadem.	9	4.0 km
17/11/2022	S. Hicks	Demobilization: travel day	-	

Table 6-2. Summary of Daily Logs

6.1.4 Traverses

Prospecting work conducted on the property involved traverses which focused on investigating known historic workings, ground truthing LiDAR features and geological areas of interest. The potential sources for several magnetic anomalies identified during a 2014 survey were also investigated. As previously mentioned, targets were predetermined and prioritized using LiDAR tiles and geophysical compilation maps (Figure 6-1); traverses were then planned accordingly in order to ground truth the features and locate the sources of the geophysical anomalies. Due to the encroaching weather during this program, field days were limited and several lower priority targets were omitted from this program.





Figure 6-1: Map showing geophysical anomalies targeted during the 2022 prospecting program

Traverse tracks were recorded using Garmin 64SX GPS' and retrieved using Garmin's BaseCamp software. All other points of interest (i.e., Stations, Features, Lithologies and Samples) were collected using the QGIS Mergin Maps plugin and corresponding Android App. All tracks and captured features are illustrated in Appendix 2.

6.1.5 Results

During the 2022 prospecting of the Milestone property, 72 grab samples were collected. The collected samples comprise representative samples from muck piles of the various historic workings and showings (pits and trenches) throughout the property along with mineralized and gossanous in-situ samples taken from pit walls or outcrop. In addition, samples of the gabbro and felsic volcanic rocks were taken where significant disseminated sulphides were observed and in areas overlying geophysical anomalies. The majority of the samples collected from historic workings, whether from muck or in-situ, consisted of semi-massive to massive



NORTHSTAR

GOLD CORP



sulphides, primarily pyrite with localized trace to minor amounts of chalcopyrite, pyrrhotite and magnetite. Samples from one historic pit differed from the rest, Station SWH22-062, where the muck consisted of large barren boulders of quartz-ankerite vein material. Multiple samples from this locality were collected as they may prove prospective for gold mineralization. The sample coordinates with brief descriptions are detailed in Table 6-3; sample locations are displayed in Appendix 2.

Sample ID	Date	Elevation (m)	Easting	Northing	Station ID	Comments
E455201	2022-11-11	316	588844	5210268	SWH22-001	Rep sample from large muck pile at O'Connor; semi-massive to massive sulphides 80-90% py with trace blebby cpy
E455202	2022-11-11	320	588856	5210266	SWH22-001	Rep sample from O'Connor muck pile of semi-massive to massive sulphides (80% py +/- cpy +/- po) with very strongly chloritized host rock
E455203	2022-11-11	321	588843	5210254	SWH22-001	In-situ gossanous sample from pit wall of large O'Connor pit wall (west pit); sample is semi-massive sulphides (30-50% py +/- po) sample is very weakly magnetic
E455204	2022-11-11	321	588862	5210240	SWH22-001	In-situ sample taken from pit wall between large exploration pit at O'Connor and smaller pit to the south; sample is gossanous and consists of semi-massive to massive sulphides (80% py +/- cpy +/- po)
E455205	2022-11-11	314	588825	5210235	SWH22-003	Rep sample taken from muck pile between two open cuts west of main O'Connor pits; sample is semi-massive to massive sulphides (80% py +/- cpy +/- po)
E455206	2022-11-11	323	588889	5210239	SWH22-002	In-situ sample of light blueish grey felsic volcanics with very finely disseminated py (<1%)
E455207	2022-11-11	313	588810	5210240	SWH22-003	In-situ sample taken from gossanous outcrop between two open cuts west of main O'Connor pits; semi-massive to massive sulphides (80-90% py)
E455208	2022-11-11	318	588773	5210216	SWH22-004	In-situ sample from possible historic trench of felsic volcanics with 3-5% disseminated py
E455209	2022-11-11	312	588765	5210240	SWH22-005	Rep sample from muck pile of small historic pit; semi-massive to massive sulphides (80% py +/- po) sample very weakly magnetic
E455211	2022-11-11	317	588761	5210242	SWH22-005	In-situ sample from pit wall of semi- massive sulphides (80% py +/- po)
E455212	2022-11-11	315	588753	5210271	SWH22-006	In-situ sample of unusual gabbro (metagabbro/int. volcanics?); sample is medium grained with possible k-spar blebs and 1-3% disseminated py
E455213	2022-11-11	313	588761	5210327	SWH22-008	In-situ sample of medium green grey medium grained gabbro with trace disseminated py
E455214	2022-11-11	320	588790	5210356	SWH22-010	In-situ green hued gabbro with ~1% disseminated py and trace blebby cpy
E455215	2022-11-11	318	588787	5210278	SWH22-011	In-situ sample of medium to coarse grained gabbro with trace finely disseminated py
E455216	2022-11-11	316	588857	5210313	SWH22-012	In-situ sample of medium to coarse grained massive gabbro with 1-2% finely disseminated py

Table 6-3. Sample locations and descriptions





Sample ID	Date	Elevation (m)	Easting	Northing	Station ID	Comments
E455317	2022-11-12	308	588904	5210300	SWH22-013	Pod of semi-massive to massive sulphides in strongly chloritized gabbro; with 70% py +/- cpy
E455218	2022-11-12	319	588908	5210277	SWH22-014	Felsic volcanic with 1-3% finely disseminated py
E455219	2022-11-12	312	588750	5210168	SWH22-016	In-situ sample of felsic volcanics with finely disseminated py (1%)
E455221	2022-11-12	313	588740	5210164	SWH22-016	In-situ grab sample if semi-massive sulphides from pit wall; with 80-90% py trace cpy with possible Ni bloom observed; host rock is very strongly chloritized
E455222	2022-11-12	309	588728	5210166	SWH22-016	Grab sample from muck pile of semi massive sulphides (60% py +/- cpy +/- po); sample is weakly magnetic in patches and sulphides display evidence of shearing and form as rods
E455223	2022-11-12	306	558707	5210187	SWH22-018	Medium grey fine to medium grained gabbro with 1-3% disseminated blebby py and trace blebby cpy
E455224	2022-11-12	309	588693	5210185	SWH22-018	Medium grey with greenish hue medium grained gabbro massive with 1-3% fine to medium grained blebby py a with trace blebby cpy and possible Ni bloom
E455225	2022-11-12	318	588693	5210257	SWH22-023	In-situ grab of medium grained gabbro with trace very finely disseminated py
E455226	2022-11-12	297	588544	5210130	SWH22-024	Aphanitic and siliceous felsic volcanics with trace finely disseminated py
E455227	2022-11-12	297	588540	5210172	SWH22-024	Fine grained gabbro/intermediate volcanic? with trace very finely disseminated py
E455228	2022-11-13	310	589335	5210600	SwH22-025	Massive equigranular gabbro with trace to 1% py; py is pale colour
E455229	2022-11-13	329	589484	5210551	SWH22-028	In-situ sample of semi-massive sulphides from pit wall; 60-70% py +/- cpy
E455231	2022-11-13	329	589484	5210555	SWH22-028	Rep sample from muck pile of historic put consisting of semi-massive sulphides
E455232	2022-11-13	319	589495	5210559	SWH22-029	In-situ sample from wall of historic open cut; semi-massive sulphides 60-70% py with minor cpy (malachite staining) and pods of massive mgt
E455233	2022-11-13	321	589503	5210552	SWH22-029	In-situ grab sample of oxidized semi massive sulphides with py and cu bloom
E455234	2022-11-12	322	589362	5210503	SWH22-032	Rep sample from muck pile of historic open cut; semi-massive to massive py (70-80%) +/- cpy +/- po with pods of massive mgt and strongly chlorinated host rock
E455235	2022-11-12	321	589370	5210505	SWH22-032	In-situ sample taken from open cut wall; semi-massive to massive sulphide predominantly py (60-70%) +/- cpy
E455236	2022-11-13	325	589384	5210507	SWH22-032	In-situ grab from possible historic pit; 3- 5% finely disseminated py in medium grey fine grained host (gabbro/int volcanics?)
E455237	2022-11-13	324	589354	5210504	SWH22-032	rep sample from muck pile of historic pit; semi-massive sulphides predominantly py (70-85%) +/_ po +/- cpy
E455238	2022-11-13	325	589354	5210500	SWH22-032	In-situ sample of massive py +/- po from pit wall
E455239	2022-11-13	320	589297	5210484	SWH22-034	Light to medium greenish grey fine to medium grained weakly foliated and equigranular gabbro with 1% finely disseminated py and trace cpy (malachite staining)





Sample ID	Date	Elevation (m)	Easting	Northing	g Station ID Comments	
E455241	2022-11-14	315	588963	5210326	SWH22-039	In-situ sample of semi-massive to massive sulphides pyt/- cpy (60-80%)
E455243	2022-11-14	315	588940	5210315	SWH22-039	In-situ grab sample of med dark grey very fine to fine grained rock (f.g. gabbro/int. Vol?) with 3-5% sulphides (py +/- cpy)
E455242	2022-11-14	315	588951	5210308	SWH22-039	In-situ sample from pit wall of massive py
E455244	2022-11-14	321	588975	5210275	SWH22-040	In-situ sample of felsic volcanics with 3- 5% py
E455245	2022-11-14	315	588939	5210319	SWH22-039	In-situ sample of semi-massive to massive pyrite +/- cpy (60-70%)
E455246	2022-11-14	319	588946	5210268	SWH22-042	In-situ sample of semi-massive to massive py; pod of gossanous sulphides
E455247	2022-11-12	325	588873	5210144	SWH22-047	In-situ sample of felsic volcanics with 3- 5% disseminated sulphides (py +/- cpy)
E455248	2022-11-14	324	588890	5210229	SWH22-049	In-situ sheared felsic volcanics; sample is very oxidized with a well developed fabric with 1-3% finely disseminated py
E455249	2022-11-14	317	588996	5210304	SWH22-051	In-situ sample of felsic volcanics with 3- 5% finely disseminated py
E455251	2022-11-14	314	588991	5210345	SWH22-052	In-situ sample of semi-massive sulphides from small pit wall
E455252	2022-11-14	310	589629	5210868	SWH22-053	In-situ sample of felsic volcanics with qtz eyes and 1-3% finely disseminated py
E455253	2022-11-14	312	589610	5210861	SWH22-054	Muck from small trench; fine grained felsic volcanics with 1-3% py
E455254	2022-11-14	302	589466	5210870	SWH22-056	Well foliated felsic volcanics with 1% finely disseminated py
E455255	2022-11-15	319	589075	5210357	SWH22-058	Sample from trench muck pile of semi- massive to massive sulphide predominantly py (60-70%) +/- po with minor metal as sample is moderately magnetic
E455256	2022-11-15	319	589084	5210358	SWH22-058	In-situ sample from trench wall of semi- massive py +/- po with minor metal as sample is moderately magnetic
E455257	2022-11-15	318	589111	5210369	SWH22-059	In-situ sample from pit wall of semi- massive sulphides (50-60% py +/- cpy +/- po) sample is locally very weakly magnetic
E455258	2022-11-15	320	589114	5210370	SWH22-059	Muck sample of semi- massive sulphides (60-70% py +/- cpy +/- po) with minor blebby calcite
E455259	2022-11-15	322	589123	5210354	SWH22-059	Muck sample from historic pit of semi- massive sulphides (80% py +/- cpy +/- po); localized pieces of muck are weakly magnetic
E455261	2022-11-15	322	589153	5210370	SWH22-060	In-situ medium grey fine grained weakly foliated gabbro (int vol?) with 1-3% finely disseminated py
E455262	2022-11-15	319	589167	5210405	SWH22-062	Muck sample of strongly chloritized and sheared host rock with trace qtz stringers; unknown protolith
E455263	2022-11-15	319	589165	5210402	SWH22-062	Muck sample of qtz-carb vein (Fe- carb/ankerite); surface of qtz is oxidized orange no sulphides
E455264	2022-11-15	318	589164	5210403	SWH22-062	Muck sample of qtz-carb vein (Fe- carb/ankerite): no sulphides
E455265	2022-11-15	316	589165	5210425	SWH22-063	In-situ medium greenish grey very fine to fine grained with weak pervasive chlorite alteration and around 1% very finely disseminated py; gabbro chilled margin or int vol?
E455266	2022-11-15	333	589220	5210367	SWH22-065	In-situ sample of felsic volcanics with 1- 3% finely disseminated py





Sample ID	Date	Elevation (m)	Easting	Northing	Station ID	Comments
E455267	2022-11-15	331	589254	5210424	SWH22-066	In-situ sample of sheared felsic volcanics with 1% finely disseminated py
E455268	2022-11-15	329	589432	5210528	SWH22-069	In-situ sample of semi-massive sulphide from pit walls; 35-50% py +/- cpy
E455269	2022-11-15	331	589431	5210531	SWH22-069	Muck sample from Diadem Pit 5; semi- massive sulphides (50-60% py +/- po)
E455271	2022-11-15	326	589854	5210794	SWH22-071	In-situ sample of medium green grey medium grained and weakly foliated gabbro with 1-5% finely disseminated and medium grained blebby py
E455272	2022-11-16	322	589959	5210790	SWH22-072	In-situ sample from very gossanous outcrop wall of well foliated/sheared gabbro (possibly int vol?); 10-20% finely disseminated to semi-massive py
E455273	2022-11-16	322	589958	5210789	SWH22-073	In-situ sample of gossanous outcrop wall with 10-20% disseminated to semi- massive py; fine grained sheared gabbro or int. volcanics?
E455274	2022-11-16	326	589772	5210748	SWH22-077	In-situ sample (sub-crop?) of medium to coarse grained qtz-gabbro with 5-7% disseminated py +/- cpy some sulphides in sample are weathering differently possibly cpy?
E455275	2022-11-16	327	589776	5210679	SWH22-078	In-situ sample of medium grained moderately foliated gabbro with 3-5% disseminated py
E455276	2022-11-16	315	589694	5210709	SWH22-080	In-situ sample of sheared gabbro with 1- 3% py and coarse bless of k-spar
E455277	2022-11-16	324	589698	5210662	SWH22-082	In-situ sample of weakly foliated medium grained gabbro with 3-5% disseminated and blebby py
E455278	2022-11-16	330	589712	5210619	SWH22-083	In-situ sample of possible metagabbro with minor disseminated and blebby sulphides (1-2% py with trace to 1% cpy)
E455279	2022-11-16	311	589571	5210706	SWH22-086	In-situ sample of medium grained weakly foliated gabbro with 1-3% finely disseminated py

Cpy=chalcopyrite, Fe=iron, f.g.=fine grained, int=intermediate, K-spar=potassium feldspar, mgt=magnetite, po=pyrrhotite, py=pyrite, rep=representative, vol=volcanic rocks, qtz=quartz, carb=carbonate

The field observations also confirmed that the existing OGS maps were accurate with only minor discrepancies in relation to the lower contact between the gabbro and the felsic volcanic rocks, however the AMIS/MDI features and drill collars displayed on OGSEarth projections were inaccurate and required coordinates derived from the LiDAR tiles for easier location. All of the features encountered during the 2022 prospecting program were recorded, their coordinates and details can be found in Table 6-4.

1 able 6-4. Fea	able 6-4. Feature locations and descriptions									
Date	Elevation	Easting	Northing	Station ID	Comments					
2022-11-11	314	588851	5210262	SWH22-001	Historic O'Connor site consists of two large historic pits (5 m x 8 m) with several nearby by open cuts and smaller explorations pits and trenches					
2022-11-11	314	588853	5210253	SWH22-001	Drill collar					
2022-11-11	312	588825	5210242	SWH22-001	Large open cut/pit with 3m high gossanous pit wall. Host rock is semi-massive sulphides					
2022-11-11	316	588851	5210249	SWH22-001	Smaller 2 x 3 m pit south or large exploration pit					

Table 6-4. Feature locations and descriptions





Date	Elevation	Easting	Northing	Station ID	Comments
2022-11-11	313	588767	5210244	SWH22-005	Small (2 m x 2 m) Exploration pit with small muck pile. Host rock appears to be the strongly chloritized semi-massive sulphides. Numerous small peripheral pits and trenches which all appear to be in dirt
2022-11-11	314	588733	5210291	SWH22-007	Drill collar; making water very red and rusty
2022-11-12	312	588740	5210164	SWH22-016	Historic pit (2 x 4 m) with strongly oxidized and gossanous pit walls
2022-11-12	306	588708	5210181	SWH22-018	Two old drill collars
2022-11-12	306	588719	5210199	SWH22-018	Old drill collar
2022-11-13	317	589483	5210550	SWH22-027	Historic pit (2 x 2 m) with very gossanous pit walls
2022-11-13	319	589497	5210561	SWH22-029	2 x 2 m historic open cut with strongly oxidized and gossanous walks of semi-massive sulphides; 60-70% py with malachite staining and pods of massive mgt
2022-11-13	315	589514	5210559	SWH22-030	Drill collar
2022-11-13	320	589366	5210503	SWH22-032	Open cut inside of ridge with very oxidized and gossanous pit walls; semi-massive to massive py +/- cpy
2022-11-13	324	589382	5210508	SWH22-032	Possible small historic pit (1 x 1 m) with slightly gossanous pit walls
2022-11-13	326	589349	5210500	SWH22-032	Historic pit with rusty gossanous walls (2 \times 3 m)
2022-11-13	327	589352	5210498	SWH22-032	Historic pit (1x2m)
2022-11-14	306	588975	5210372	SWH22-038	Drill collar; making a lot of water
2022-11-14	314	588955	5210307	SWH22-039	Historic pit (2 x 3 m); walls and muck are very gossanous and consist of semi-massive to massive sulphides (py+/-cpy) but appear to be mostly boulders or subcrop
2022-11-14	314	588949	5210311	SWH22-039	Drill collar; appears to be targeting historic pit [azimuth=150°]
2022-11-14	316	588942	5210320	SWH22-039	Two old drill collars; [azimuth=150 ⁰ -160 ⁰]
2022-11-14	315	588931	5210248	SWH22-043	Historic pit (2x2 m) with shallow trench trending south; very little orangey oxidation
2022-11-14	314	588992	5210340	SWH22-052	Historic drill collar [azimuth=150º-160º]
2022-11-14	315	588991	5210347	SWH22-052	Historic pit (1x1 m) with shallow trench; very gossanous muck and pit walls
2022-11-14	317	589599	5210863	SWH22-053	Short shallow trench in felsic volcanics
2022-11-14	314	589018	5210366	SWH22-055	Historic drill collars (Hole ID=C46); [azimuth=150 ⁰]
2022-11-15	318	589055	5210352	SWH22-056	Historic drill collar [150]
2022-11-15	319	589084	5210353	SWH22-058	Historic trench (1x / m) with gossanous pit wall of semi-massive sulphides
2022-11-15	321	589114	5210363	SWH22-059	Historic pit (3x4 m) with gossanous pit walls and sizeable muck pile
2022-11-15	322	589126	5210353	SWH22-059	Historic pit (2x2 m) appears to be mostly in rubble with one gossanous pit wall; muck appears to be fine grained gabbro
2022-11-15	318	589173	5210398	SWH22-062	Historic pit/shaft (2x4 m); muck pile appears to be predominantly very green altered (chlorite/fuchsite?) and qtz calcite (Fe- carb/ankerite)
2022-11-15	328	589402	5210529	SWH22-068	Historic drill collar [azimuth=200 ⁰]
2022-11-15	329	589432	5210532	SWH22-069	Historic Diadem Pit 5; gossanous pit walls in a 2x3 m open cut/pit with semi-massive sulphides (py +/- cpy)





Date	Elevation	Easting	Northing	Station ID	Comments
2022-11-16	327	589958	5210782	SWH22-072	Possible historic pit; outcrop with gossanous wall of significant disseminated to semi-massive py (10-20%)
2022-11-16	328	589728	5210697	SWH22-079	Historic stripping; smooth "pavement" outcrop with unnatural embankment likely historic stripped outcrop but covered in snow

Cpy=chalcopyrite, Fe=iron, mgt=magnetite, py=pyrite, qtz=quartz

All 72 samples were sent for geochemical analysis to ALS Minerals Timmins with an additional 8 samples sent for quality control, totalling 80 samples. Of the 8 samples sent for quality control, 4 consisted of marble blanks, the other 4 were standards. Two separate standards were used during the program that were deemed suitable for the known historic mineralization on the property, standard CDN-CM-38 and OREAS 507. All eight of the samples submitted to ALS for QAQC were deemed acceptable within 3 standard deviations.

Assay results for selected elements are shown below in Table 6-5, anomalous and elevated results are indicated in bold. Figure 6-2 and Figure 6-3 show the Ni and Cu results.

Original Certificates of Analysis which detail the full assay results are attached as Appendix 3.

Sample ID	Au ppm	Pt ppm	Pd ppm	Ag ppm	Co ppm	Cu ppm	Ni ppm	S %
E455201	0.3185	0.072	0.469	0.8	536	11150	2180	>10.0
E455202	0.1665	0.0535	0.1635	0.87	826	7900	3680	>10.0
E455203	0.0485	0.036	0.0655	0.42	282	1955	1600	8.5
E455204	0.1595	0.059	0.1255	0.69	1340	8130	5940	>10.0
E455205	0.487	0.075	0.075	0.56	1055	14500	1280	>10.0
E455206	0.001	0.013	0.0005	0.05	14.7	20.7	26.6	0.29
E455207	0.23	0.0695	0.19	1.05	847	8350	2090	>10.0
E455208	0.027	0.017	0.015	0.32	23.6	612	34.3	2.23
E455209	0.198	0.0375	0.105	0.6	762	6220	2820	>10.0
E455211	0.154	0.036	0.0775	0.68	576	4740	2070	>10.0
E455212	0.021	0.028	0.012	0.26	94.1	1000	507	1.21
E455213	0.021	0.018	0.021	0.09	27.7	162.5	50.8	0.03
E455214	0.018	0.022	0.009	0.23	83.2	509	167.5	0.88
E455215	0.0005	0.0025	0.0005	0.03	39.4	242	111.5	0.07
E455216	0.026	0.024	0.032	0.21	82.7	800	327	1.19
E455217	0.2245	0.0545	0.085	1.43	366	1125	1760	>10.0
E455218	0.0005	0.0025	0.0005	0.05	28.2	34	157.5	0.77
E455219	0.0005	0.022	0.0005	0.09	39.8	47.8	24	1.01
E455221	0.28	0.057	0.1015	0.89	1130	9850	1025	>10.0
E455222	0.063	0.043	0.044	0.24	250	6920	1680	9.46
E455223	0.03	0.031	0.038	0.27	126	2220	570	2.61
E455224	0.02	0.029	0.027	0.4	86	1330	465	0.96
E455225	0.001	0.022	0.0005	0.1	49.2	540	145.5	0.58

Table 6-5. Summary of Assays



Sample ID	Au ppm	Pt ppm	Pd ppm	Ag ppm	Co ppm	Cu ppm	Ni ppm	S %
E455226	0.0005	0.009	0.0005	0.02	1	13.2	2.6	0.16
E455227	0.0005	0.012	0.0005	0.01	38.3	7.6	270	0.01
E455228	0.002	0.052	0.017	0.05	43.1	344	127	0.69
E455229	0.197	0.0615	0.136	1.8	209	4290	1570	7.61
E455231	0.152	0.052	0.0825	0.98	251	3680	2430	7.82
E455232	0.012	0.03	0.059	0.38	185	1845	2130	1.82
E455233	0.11	0.038	0.0535	0.46	70	1815	562	1.89
E455234	0.3435	0.113	0.235	5.93	823	15200	2110	>10.0
E455235	0.097	0.059	0.0765	2.86	299	12050	2340	>10.0
E455236	0.008	0.023	0.014	0.25	39	905	308	0.91
E455237	0.129	0.042	0.1065	1.91	772	3120	3200	>10.0
E455238	0.189	0.048	0.1055	1.63	584	2840	4370	>10.0
E455239	0.077	0.04	0.061	0.95	40.4	2450	119.5	0.82
E455241	0.1155	0.054	0.105	0.83	912	8100	2250	>10.0
E455242	0.2165	0.078	0.242	1.15	731	7940	2530	>10.0
E455243	0.02	0.029	0.053	0.35	151.5	1860	655	2.11
E455244	0.038	0.01	0.0005	0.18	32.3	57.3	47.7	2.26
E455245	0.0595	0.0415	0.0665	0.41	350	2910	2730	>10.0
E455246	0.4115	0.4575	1.305	6.35	50.9	12500	490	4.4
E455247	0.019	0.016	0.0005	0.18	41.7	641	82.9	0.83
E455248	0.003	0.009	0.0005	0.14	19	275	37.2	0.57
E455249	0.0005	0.022	0.0005	0.1	25	35.3	27.8	1.07
E455251	0.0675	0.04	0.063	0.46	168	1210	1500	7.13
E455252	0.01	0.011	0.0005	0.06	8.3	133	46.1	1.48
E455253	0.017	0.013	0.0005	0.11	23.9	85.5	27.4	2.35
E455254	0.007	0.0025	0.0005	0.19	16.9	17	40	0.89
E455255	0.296	0.0615	0.1985	1.92	660	9990	3360	>10.0
E455256	0.1275	0.03	0.0775	0.94	198	4870	1460	>10.0
E455257	0.17	0.0545	0.109	2.07	530	5690	3110	>10.0
E455258	0.1265	0.0735	0.12	2.54	814	12500	6050	>10.0
E455259	0.326	0.069	0.1285	1.64	807	9690	2360	>10.0
E455261	0.009	0.021	0.013	0.29	52.5	895	372	0.37
E455262	0.008	0.019	0.006	0.22	55.4	94.3	150	0.45
E455263	0.0005	0.008	0.0005	0.01	2.7	5.4	5	0.005
E455264	0.0005	0.011	0.0005	0.03	4.7	7	7.9	0.04
E455265	0.0005	0.013	0.0005	0.03	47.8	216	83.6	0.02
E455266	0.013	0.013	0.0005	0.1	16.2	9.7	49.1	1.26
E455267	0.004	0.014	0.0005	0.15	16.2	136	115	0.12
E455268	0.095	0.028	0.0825	1.49	302	3080	2620	>10.0
E455269	0.0985	0.044	0.0965	1.83	505	4970	2690	>10.0



NORTHSTAR GOLD CORP



Sample ID	Au ppm	Pt ppm	Pd ppm	Ag ppm	Co ppm	Cu ppm	Ni ppm	S %
E455271	0.007	0.023	0.002	0.11	44.8	383	103.5	0.5
E455272	0.032	0.031	0.052	0.89	44	854	443	1.18
E455273	0.018	0.027	0.041	0.71	111	919	1510	2.59
E455274	0.0005	0.014	0.0005	0.02	173	65.6	24	2.8
E455275	0.004	0.012	0.0005	0.09	63.5	389	297	0.57
E455276	0.0005	0.014	0.0005	0.04	42.7	56.3	103	0.12
E455277	0.072	0.024	0.0005	0.2	58.7	386	183	0.49
E455278	0.083	0.0025	0.0005	0.13	27.9	154.5	118.5	0.02
E455279	0.005	0.024	0.013	0.09	47.3	190	98.6	0.25

It is evident from the above assays that the highly sulphidic semi-massive to massive-sulphides across the property are associated with anomalous to elevated copper along with anomalous nickel and cobalt. This correlation is observed across the property, not only at the historic O'Connor and Diadem sites, but at several localized sulphide pods and various other localities along the southern contact of the gabbroic intrusion. Furthermore, anomalous silver values were also recorded locally throughout the property, however there is no apparent relationship between the presence of copper, cobalt, or nickel, nor lithologies which may explain the presence of anomalous silver.

Nine samples of semi-massive to massive sulphides were collected from the main O'Connor workings; four representative samples were taken from the muck piles adjacent to the main pits (E455201, E455202, E455205 and E455209) and four were taken in-situ from the pit walls (E455203, E455204, E455207 and E455211). Both sets of samples produced similar results. All nine samples produced sulphur values of 8.5% S or higher, with copper values ranging from 0.20 to 1.45% Cu, 0.13% to 0.59% Ni and 282 to 1340 ppm Co.

Two samples of semi-massive sulphides were collected from a small historic exploration pit just southwest of the main historic O'Connor workings. Sample E455221 was taken in-situ and E455222 was a representative sample taken from the small muck pile. These samples represent the extension of the sulphide/pyrite zone into the footwall rhyolite at the O'Connor site below the southern contact of the gabbro as the reported assays are comparable, yielding >10% and 9.46% S, 0.99% and 0.69% Cu with 0.10% and 0.17% Ni and 1130 and 250 ppm Co respectively.

The O'Connor workings to the northeast along the southern contact of the gabbro were also sampled. Four of the five in-situ samples taken from small historic exploration pits yielded similar results (E455241, E455242, E455245 and E455246) with more than 10% S, anomalous to elevated copper ranging from 0.11% to 0.81% Cu and anomalous nickel and cobalt values ranging from 0.18% to 0.27% Ni and 350 to 912 ppm Co. One sample of semi-massive sulphides collected from this area within the footwall rhyolite south of the gabbro contact (E455246) yielded relatively unusual results reporting only 4.4% S with only background nickel and cobalt while yielding elevated copper and anomalous silver at 1.25% Cu and 6.35g/t, respectively. The sample also contained anomalous concentrations of precious metals assaying 1.31 g/t Pd, 0.46 g/t Pt and 0.41 g/t Au.







Figure 6-2: Map showing the assay results for Ni.



NORTHSTAR





Figure 6-3: Map showing the assay results for Cu.



NORTHSTAR GOLD CORP



Eight more samples of semi-massive to massive sulphides were collected and sampled from the historic Diadem workings around 500m northeast of the main historic O'Connor workings that yielded significant results. Half of the samples were taken in-situ (E455229, E455235, E455238 and E455268) while half were representative samples taken from muck piles of the historic Diadem pits (E455231, E455234, E455237 and E455269). The assays all exhibit elevated sulphur of no less than 7.61% S, copper values ranging from 0.28% to 1.52% Cu with anomalous nickel and cobalt ranging from 0.21% to 0.44% Ni and 185 ppm to 912 ppm Co respectively. Sample E455234 which produced 1.52% Cu also yielded 5.93 g/t Ag.

The final locality where semi-massive to massive sulphides were sampled during this program was approximately 350m southwest of the historic Diadem workings. The sulphur zone appears to continue along the southern contact of the gabbro and historic exploration pits indicate the area has been previously explored although little data was available. Five samples were collected at this locality (E455255, E455256, E455257, E455258 and E455259). All five samples yielded more than 10% S and anomalous copper ranging from 0.49% to 1.25% Cu with 0.15% to 0.61% Ni and 198 ppm to 814 ppm Co.

6.2 UAV Magnetic Survey

In 2022 Northstar completed an airborne magnetic survey using a UAV-mounted high sensitivity cesium magnetometer. The survey was executed by Vision 4K Inc. The field portion of the survey took place on November 8, 2022.

The UAV magnetometer system consists of a bird-mounted Scintrex CS-VL cesium magnetometer suspended 5 m below a DJI Matrice 600 Pro multirotor UAV, as seen in Figure 6-4 (Dostie 2022). The survey was flown at a nominal sensor altitude of 30 m above ground. The magnetic data were recorded at a rate of 10 samples per second. The system parameters are summarized in Table 6-6.

A total of 76.7 line km out of a planned 165.3 line km were flown from a single planned landing zone ("LZ"). A second planned landing zone was inaccessible due to trail conditions. No tie lines were planned or flown. The line spacing was 25 m, and the line orientation was 355.5° true, chosen to be perpendicular to geological strike. The flown and unflown flight lines are shown in Figure 6-5.






Figure 6-4: Vision 4K UAV magnetometer system configuration.







Figure 6-5: Flown (yellow) and unflown (red) survey lines.

Table 6-6: UAV magnetic survey parameters

Parameter	Specification
UAV Aircraft	DJI Matrice 600 Pro
Operator/Contractor	Vision 4K
Total Line km flown	76.7 km
Total Line km - Property	76.7 km
Line Spacing	25 m
Line Direction	355.5° True
UAV Magnetometer Sensor	Scintrex CS-VL
UAV Magnetometer Sample Interval	0.1 s
Nominal Sensor Height AGL	30 m
UAV-Magnetometer Separation	5 m
Base Station Magnetometer sensor	GEM GSM-19
Base Station Magnetometer Sample Interval	3 s





Claim Number	Line km
631647	7.0
299312	8.7
275604	8.8
233281	8.8
292012	8.6
208985	3.3
208984	8.8
323681	8.8
181629	8.7
228382	0.2
174436	1.9
127130	3.1
Total:	76.5

Tuble 6-7. Tuble showing the line kilonieties on each claim.
--

6.2.1 Survey Procedures and Quality Control

To ensure that the magnetometer base station was located in a magnetically quiet area, a gradient test was performed at the proposed base station location by taking readings at the proposed locations and 1 m away in each of the four cardinal directions. The maximum acceptable measured gradient is 2 nT/m. The base station was located at coordinates 589257E, 5210844N (NAD83, UTM Zone 17N), near Landing Zone 1.

Prior to the first survey flight, an altitude calibration flight is performed to estimate the local offset between the measured GPS elevation and the DEM used for flight planning. For the Milestone survey, no altitude correction was required.

In-field quality control was performed by the survey crew, to verify that data coverage contained no unacceptable gaps.

No quality tolerances for flight path or altitude deviation, magnetometer noise levels, or base station variation were specified in the contract.

6.2.1 Magnetic Data Processing

Any spurious readings were removed from the raw magnetic data, and any small gaps were interpolated. The data was then corrected for diurnal drift using the base station to produce the data delivered to Northstar.

Ronacher McKenzie then performed secondary leveling using a grid-based decorrugation/microleveling technique to remove remaining small line-to-line leveling errors. The final leveled total magnetic intensity data are shown in Figure 6-7.





6.2.2 Magnetic Inversion

The leveled TMI data were inverted by Ronacher McKenzie using the Seequent VOXI Magnetic Vector Inversion (MVI) to produce a 3D model of the magnetic vector amplitude in the survey area, to a depth of approximately 500 m.

The data were inverted on a 12.5 m square horizontal mesh over the entire survey area. The vertical mesh cells started at 6.25 m thickness, increasing with depth.

6.2.3 Magnetic Survey Results

The UAV magnetic survey provided detailed magnetic data for the property. Ronacher McKenzie produced magnetic filter products and an MVI inversion to better interpret the data (Figure 6-7). Ronacher McKenzie used the magnetic products in combination with historic geology maps to identify structures and refine the geological understanding of the property.



Figure 6-6: 3D isosurfaces from the MVI inversion. Red: 0.001, green: 0.00025. Black squares are the locations of the Diadem and O'Connor prospects.







Figure 6-7: Map showing the total magnetic intensity (TMI).





7.0 INTERPRETATION AND CONCLUSIONS

The objectives of the 2022 surveys on the property were to determine the extent of the mineralized gabbro unit and the structural control, if any, on massive sulfide mineralization.

During the field work, it was attempted to map the southern contact of the gabbro with the host volcanic rocks. However, lack of outcrop prevented detailed mapping. Nevertheless, sampling of the limited available outcrop and of historic pits indicated that the gabbro-volcanic rock contact as indicated on the existing map is roughly accurate. Some samples consisting of semi-massive and massive sulfide (e.g., E455221, E455222 and E455246) were collected several meters from the gabbro-rhyolite contact within the rhyolite, which indicates that the footwall of the gabbro contact is prospective. At the Temagami Mine pods and lenses of chalcopyrite rich sulfides also occurred in the footwall rhyolite (Franklin 1967).

Based on the magnetic data, the gabbro unit is interpreted to be a broad (200 m wide) anomalous zone of high magnetic response, oriented ENE-WSW over a strike length of approximately 1.5 km, most easily seen on the first vertical derivative (Figure 7-1).

The magnetic data shows that the gabbro unit is not uniform, and is interrupted by NNW and NW striking linear magnetic features. The NNW magnetic features correspond with a previously mapped dike. In addition, features identified previously based on a structural interpretation of LiDAR data on the property (Northstar, 2019: assessment report 20000017047) area also consistent with a disruption of the gabbro.

The location of a NNW trending mafic dike mapped on OGS map M2324 (Bennett 1978) is not obvious from the magnetic data. Instead, a magnetic feature that could be interpreted as a dike trends NW-SE. Additional mapping and sampling is recommended in this area.

The Diadem prospect is coincident with an ovoid magnetic high (approximately 150 m x 250 m). An unexplored group of three smaller (50-100 m) magnetic features lie approximately 450 m to the ENE of the magnetic high associated with the Diadem prospect. Ground truthing and sampling is strongly recommended in this area. The 3D magnetic inversion results also show the Diadem prospect as a highly magnetic zone, as well as the largest of the three smaller features to the ENE of the Diadem zone (Figure 7-2).

A slightly weaker anomaly exists around the O'Connor prospect. Much of the historic drilling at both the Diadem and O'Connor prospects did not reach the core of the magnetic zones in the inversion model.

An ENE trending feature north of the Diadem prospect is noteworthy; the area is mapped as felsic volcanic rocks.

Conductor axes interpreted from a previous VLF-EM survey (Northstar, 2014: assessment report 2000008107) lie along the northern and southern edges of the magnetic zone interpreted to be the response from the gabbro unit. The VLF conductors on the northeastern edge of the interpreted gabbro are coincident with the thin, linear, magnetic response mentioned in the previous paragraph and warrants ground truthing. Historic drill hole C-5 is located approximately 180 m northeast of conductor C-1 and intersected semi-massive





pyrite with chalcopyrite (assessment report 31M04SW0035). Ground truthing in this area is challenging because of a swamp in this location.

It is evident from the multi-element analysis that the geochemical characteristics of this sulphide zone remains consistent across the property with a correlation between the pyrite-rich high sulphidic zones and anomalous to elevated copper with anomalous nickel and cobalt with localized anomalous silver, palladium, platinum and gold

It is unclear whether the cross-cutting magnetic features, interpreted to be diabase dikes, are mineralized, and this requires further investigation. At these intersections between the presumed magnetic dikes and the southern contact of the gabbro mineralized semi-massive to massive sulphides are observed, however the assay results suggest, that the nature of the mineralization at these junctions does not appear to differ from the mineralization exposed elsewhere along the southern contact. This suggests that the dike-like magnetic features could be related either to radial extensions of the main gabbro intrusion or structures hosting magnetic minerals and not a separate mafic lithology. Further investigation is warranted.

The UAV magnetic survey and the sampling were valuable in terms of reaching the goals of the program, which was to identify the extent of the gabbro unit and associated mineralization. Based on the current and historic exploration results and the geology of the property, further exploration at Milestone is warranted to determine the potential of gabbro unit to host massive Cu-Ni-Co-Au-PGM mineralization.







Figure 7-1: Map showing the first vertical derivative (VD1) of the pole reduced total magnetic intensity.







Figure 7-2: Map showing the 200 m elevation slice of the MVI inversion results.







Figure 7-3: Map showing the total horizontal derivative (THD) of the pole reduced total magnetic intensity.







Figure 7-4: Map showing the first vertical derivative (VD1) of the total horizontal derivative (THD; THD-VD1).





8.0 **RECOMMENDATIONS**

Based on the current magnetic and field surveys as well as historic data, including the 2019 LiDAR survey and associated structural interpretation and historic sampling (cf. assessment report 31M04SW2049), Ronacher McKenzie recommends the following work program:

- Due to the limited field work completed in 2022, not all areas of interest could be sampled or mapped. It is recommended to continue the sampling program to delineate the best drilling targets. Areas of focus would be to the ENE of Diadem prospect, proximal to an unexplored magnetic anomaly, south of the gabbro contact at the O'Connor zone, the NW-SE linear magnetic anomaly between the Diadem and O'Connor zones and in the vicinity of VLF Conductor 'D' near Copperfields DDH C-6.
- 2. Expand coverage of the UAV mag survey towards the southeast. In preparation for the field work and potential drilling, it is strongly recommended to complete a compilation of historic data, including historic sampling and drilling, and visualizing all data in 3D.

Table 8-1: Estimated cost of recommended work.

Item	Cost
Field work	
Mapping and sampling	\$40,000
Assaying	\$14,000
Data interpretation	\$7,000
sub-TOTAL	\$61,000
UAV Magnetic Survey Extension	
80 line km UAV survey	\$17,000
sub-TOTAL	\$17,000
Data Compilation	
Data retrieval and digitization	\$10,000
3D compilation	\$2,500
Data interpretation	\$5,000
sub-TOTAL	\$17,500
TOTAL	\$95,500





9.0 REFERENCES

- 20000007257. 2012. Assessment Work Report on Magnetometer and VLF-EM Surveys, Strathcona Twp. Project. Northstar Gold Corp., Ontario Ministry of Energy, Northern Development and Mines, 8 p.
- 2000008107. 2014. Assessment Work Report on Magnetometer and VLF-EM Surveys, Phase Two, Strathcona Twp. Project. Northstar Gold Corp., Ontario Ministry of Energy, Northern Development and Mines, 8 p.
- 2000017047. 2019. *LiDAR Survey and Structural Interpretation, Milestone Property, Temagami, Ontario.* Assessment Report, 47 p., Ontario Ministry of Energy, Northern Development and Mines.
- 31M04SE0007. 1965. Assessment Report, Airborne Magnetic and EM Surveys. Ontario Ministry of Energy, Northern Development and Mines, 8 p.
- 31M04SW0023. 1956. *Assessment Report, Diadem Mines*. Ontario Ministry of Energy, Northern Development and Mines, 27 p.
- 31M04SW0034. 1967. Assessment Report, Diamond Drilling, Copperfield Mining Corp. . Ontario Ministry of Energy, Northern Development and Mines, 10 p.
- 31M04SW0035. 1970. Assessment Report, Copperfield Mining Corp. Ontario Ministry of Energy, Northern Development and Mines, 18 p.
- 31M04SW0045. 1974. Assessment Report on Geophysical Survey of Claims L357905 andL357906, Savard Option, Strathcona Township, Ontario. Ontario Ministry of Energy, Northern Development and Mines, 10 p.
- 31M04SW0047. 1970. Assessment Report, Magnetic and VLF Survey, Copperfield Mining Corp. Ltd. Ontario Ministry of Energy, Northern Development and Mines, 8 p.
- 31M04SW0053. 1966. Assessment Report, Geology of the O'Connor Property of Copperfield Mining Corporation Limited, Township of Strathcona. Ontario Ministry of Energy, Northern Development and Mines, 7 p.

31M04SW0054. 1960. Assessment Report. Ontario Ministry of Energy, Northern Development and Mines, 5 p.

- 31M04SW2026. 1998. Assessment Report on the Jessie Lake Property, Strathcona Township, Temagami, Ontario. G. Chitaroni, Redstar Resources Corporation, Ontario Ministry of Energy, Northern Development and Mines, 48 p.
- 31M04SW2027. 1998. Assessment Report on the Jessie Lake Property, Strathcona Township, Temagami, Ontario. G. Chitaroni, Redstar Resources Corp., Ontario Ministry of Energy, Northern Development and Mines, 50 p.





- 31M04SW2042. 1999. Assessment Report, A Geological Report on the Diadem West Property. G. Chitaroni for D. Laronde, Ontario Ministry of Energy, Northern Development and Mines, 72 p.
- 31m04SW2047. 2000. Assessment Report, Prospecting Program, Diadem/O'Connor Claims, Strathcona Township, G-3450. Temex Resources Corp., Ontario Ministry of Energy, Northern Development and Mines, 27 p.
- 31M04SW2049. 2001. Assessment Report, Lithogeochemistry Sampling Program, Milestone Property, Strathcona Township, G-3450. Temex Resources Corp., Ontario Ministry of Energy, Norther Development and Mines, 79 p.
- 31M04SW2050. 2001. Assessment Report on Milestone PGE/Copper/Nickel Project Preliminary Drilling Program, West Diadem and Teck Corporation Claim Groups, Strathcona Twp. G-3450. Temex Resources Corp., Ontario Ministry of Energy, Norther Development and Mines, 86 p.
- 31M04SW2053. 2002. Assessment Report, Ground Geophysical Surveys, Magnetometer and VLF-EM, Milestone Project - Teck Claims. Temex Resources Corp., Ontario Ministry of Energy, Norther Development and Mines, 19 p.
- 31M04SW9745. 1953. Assessment Report, Candela Development Company. Ontario Ministry of Energy, Northern Development and Mines, 9 p.
- 41116SW9408. 1956. Assessment Report on Properties of Milestone Mines Limited, Strathcona and Clement Townwhips, District of Nipissing, Ontario. W.S. Wilson, Milestone Mines Ltd. Ontario Ministry of Energy, Northern Development and Mines, 14 p.
- Bennett, G. 1978. "Geology of the Northeast Temagami Area, District of Nipissing." Ontario Geological Survey Report 163, 159 p.
- Bowins, R.J., and L. M. Heaman. 1991. "Age and timing of igneous activity in the Temagami greenstone belt, Ontario: a preliminary report." *Journal of Canadian Earth Science, v. 28, p. 1873-1876.*

Dostie, Pierre-Olivier. 2022. "Report on a Drone Magnetic Durvey over the Milestone Project." Logistics Report.

- Fitzhenry, K.L., J. K. Dunning, R. S. James, H. L. Gibson, T. E. Lane, and R. R. Keays. 1998. "Cu-Ni-PGE Mineralization in Association with the Temagami Island Leucogabbro, A Late Archean/Early Proterozoic Layered Intrustion, Temagami, Ontario." In Assessment Report 31M04SW2026, by G. Chitaroni, 24-26. Ontario Ministry of Northern Development and Mines.
- Franklin, J.M. 1967. *The pyrite zone of the Temagami Mine of Copperfields Mining Company, Temagami, Ontario.* MSc Thesis, 142 p., Ottawa: Carleton University.
- Fyon, J.A., and S. Cole. 1989. "Project Unit 87-01: Geology of Part of the Temagami Greenstone Belt, District of Nipissing, Including Relationships Between Lithologic, Alteration, and Structural Features and Precious





Metal Occurrences." *Summary of Field Work and Other Activities 1989, Ontario Geological Survey* p. 108-115.

- GDS1242. 2013. Ontario Airborne Geophysical Surveys, Magnetic and Electromagnetic Data, Geophysical Data Set 1242. Ontario Geological Survey.
- Hewitt, D.F. 1967. *Pyrite Deposits of Ontario*. Mineral Resources Circular No. 5, Toronto: Ontario Department of Mines, 74 p.
- Janes, T.H. 1952. *Sulphur and Pyrites in Canada*. Ottawa: Canada Department of Mines and Technical Sureys -- Mines Branch, 106 p.
- Moorhouse, W.W. 1942. *The Northeastern Portion of the Timagami Lake Area, District of Nipissing, Ontario.* Map No. 51e, Ontario Department of Mines.
- OGS. 1997. *Quaternary geology, seamless coverage of the province of Ontario.* Ontario Geological Survey, Data Set 14.

Ontario Geological Survey. 2022. Ontario Mineral Inventory, online database. December 2022.

- Ronacher, E.,, and J. McKenzie. 2019. *LiDAR Survey and Structural Interpretation, Milestone Property, Temagami, Ontario.* Assessment Report # 20000017047, Ministry of Energy, Northern Development and Mines.
- Thomson, J.E., S. A. Ferguson, W. G.Q. Johnston, E. G. Pye, W. S. Savage, and R. Thomson. 1957. *Copper, Nickel, Lead, and Zinc Deposits in Ontario*. Metal Resources Circular No. 2, 134 p., Toronto: Ontario Department of Mines.





10.0 STATEMENT OF AUTHORSHIP

This report, titled "UAV Magnetic Survey, Prospecting and Sampling, Milestone Property, Temagami, Ontario", dated January 9, 2023 and prepared for Northstar Gold Corp, was completed and signed by the following authors:

"Signed and sealed"

Darcy McGill, P.Geo. (Limited) January 9, 2023 Toronto, ON

"Signed"

Sean Hicks January 9, 2023 Ottawa, ON





Appendix 1 – Certificates of Qualifications





STATEMENT OF QUALIFICATIONS

Darcy McGill Ronacher McKenzie Geoscience Inc. Toronto, ON, Canada Darcy.McGill@rmgeoscience.com M: +1 (416) 928-1649

I, Darcy McGill, do hereby certify that:

- 1. I am a Senior Geophysicist of Ronacher McKenzie Geoscience.
- 2. I am responsible for the report titled "UAV Magnetic Survey, Prospecting and Sampling,
- Milestone Property, Temagami, Ontario" for Northstar Gold Corp., dated January 9th, 2023.
- 3. I hold the following academic qualifications: Hons.B.Sc. Physics Geophysics (1995), University of Toronto, Toronto, ON, Canada.
- 4. I am a member in good standing of Professional Geoscientists Ontario (PGO, member # 2010), the Society for Exploration Geophysicists (SEG) and the Canadian Exploration Geophysical Society (KEGS).
- 5. I have worked on exploration projects worldwide (including North and South America, Europe, Africa, the Middle East, South Asia, and Australia). I have worked on porphyry-copper, gold, diamond, Ni-Cu-PGE, and other deposits since 1995.
- 6. This report is compiled from data obtained from the public domain and company data provided by Northstar Gold Corp. I have not visited the property.
- 7. I do not hold any interest in Northstar Gold Corp., nor in the property discussed in this report, nor in any other property held by this company, nor do I expect to receive any interest as a result of writing this report.

Dated this 9th Day of January 2023

"Signed and sealed"

Darcy McGill, P.Geo. (Limited) Ronacher McKenzie Geoscience





CERTIFICATE OF QUALIFICATIONS

Sean Hicks **Ronacher McKenzie Geoscience** Ottawa, ON, Canada sean.hicks@rmgeoscience.com **111** 705-419-1508

I, Sean Hicks, do hereby certify that:

- 1. I am a Project Geologist at Ronacher McKenzie Geoscience.
- 2. I am jointly responsible for the report titled "Technical Report UAV Magnetic Survey, Prospecting and Sampling, Milestone Property, Temagami, Ontario", January 9, 2023 and prepared for Northstar Gold Corp. 3. I hold the following academic qualifications: B.Sc. Earth Science with Honours (2018), Carleton University,
- Ottawa, Canada
- 4. I have worked on exploration projects across Canada (Ontario, British Colombia, Nunavut) and on a variety of commodities including Au, Cu, base-metal and Ag-Ni-Co projects since 2017.
- 5. This report is compiled from data obtained from the public domain and company data provided by Northstar Gold Corp. and field data that I personally gathered from the property. I have visited the property and was directly involved in the data acquisition associated with this report.
- 6. I do not hold any interest in Northstar Gold Corp. nor in the property discussed in this report, nor in any other property held by this company, nor do I expect to receive any interest as a result of writing this report.

Dated this 9th Day of January 2023

"Signed"

Sean Hicks Ronacher McKenzie Geoscience





Appendix 2 – Traverse Map







Appendix 3 – Assay Certificates





2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 1 Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

CERTIFICATE TM22337391

Project: Milestone Project

This report is for 47 samples of Rock submitted to our lab in Timmins, ON, Canada on 22-NOV-2022.

The following have access to data associated with this certificate:

GEORGE POLLOCK

ELISABETH RONACHER

	SAMPLE PREPARATION
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-23	Pulp Login – Rcvd with Barcode
LOG-21	Sample logging – ClientBarCode
CRU-31	Fine crushing – 70% <2mm
SPL-21	Split sample – riffle splitter
PUL-32	Pulverize 1000g to 85% < 75 um
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test

	ANALYTICAL PROCEDURES	
ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS61 PGM-ICP23	48 element four acid ICP-MS Pt, Pd, Au 30g FA ICP	ICP-AES

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

Saa Traxler, Director, North Vancouver Operations

2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 2 - A Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method	WEI-21	PGM-ICP23	PGM-ICP23	PGM-ICP23	ME-MS61										
	Analyte	Recvd Wt.	Au	Pt	Pd	Ag	AI	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.005	0.001	0.01	0.01	0.2	10	0.05	0.01	0.01	0.02	0.01	0.1	1
E455206		2.27	0.001	0.013	<0.001	0.05	7.81	4.9	910	0.83	0.24	2.04	0.07	55.4	14.7	34
E455208		1.05	0.027	0.017	0.015	0.32	6.12	10.6	470	0.72	1.05	1.08	0.12	42.2	23.6	17
E455212		2.02	0.021	0.028	0.012	0.26	8.64	14.5	110	0.24	0.10	4.17	0.20	4.35	94.1	160
E455213		1.39	0.021	0.018	0.021	0.09	8.10	3.1	180	0.28	0.01	8.33	0.19	4.46	27.7	60
E455214		1.21	0.018	0.022	0.009	0.23	9.41	3.8	220	0.19	0.21	4.87	0.16	5.24	83.2	42
E455215		1.91	<0.001	<0.005	<0.001	0.03	8.92	10.4	230	0.18	0.10	4.30	0.15	2.46	39.4	122
E455216		1.79	0.026	0.024	0.032	0.21	8.54	5.4	20	0.15	0.06	6.15	0.09	4.39	82.7	59
E455218		1.83	<0.001	<0.005	<0.001	0.05	8.10	26.3	1120	0.87	0.16	4.98	0.27	69.7	28.2	394
E455219		2.39	<0.001	0.022	<0.001	0.09	7.34	7.7	270	0.55	0.15	3.18	0.17	15.15	39.8	15
E455222		2.10	0.063	0.043	0.044	0.24	4.39	44.7	<10	<0.05	1.26	0.07	0.13	5.23	250	69
E455223		1.37	0.030	0.031	0.038	0.27	7.05	6.4	60	0.26	0.21	3.64	0.12	4.46	126.0	253
E455224		1.55	0.020	0.029	0.027	0.40	7.59	20.1	20	0.15	0.10	2.38	0.16	6.27	86.0	50
E455225		1.92	0.001	0.022	<0.001	0.10	8.36	5.5	140	0.28	0.03	6.50	0.15	2.69	49.2	41
E455226		1.91	<0.001	0.009	<0.001	0.02	7.45	1.7	750	1.08	0.21	0.61	0.06	85.6	1.0	1
E455227		2.33	<0.001	0.012	<0.001	0.01	6.45	4.3	390	0.65	0.05	5.18	0.41	82.8	38.3	459
E455228		1.49	0.002	0.052	0.017	0.05	10.25	22.3	20	0.36	0.07	7.79	0.04	30.6	43.1	20
E455230		0.12	0.167	0.013	<0.001	1.42	7.75	48.3	1160	2.62	3.28	1.85	0.72	70.7	8.7	48
E455236		2.34	0.008	0.023	0.014	0.25	7.39	5.8	160	0.52	0.12	0.31	0.04	15.85	39.0	229
E455239		2.12	0.077	0.040	0.061	0.95	8.03	6.9	230	0.87	0.24	1.86	0.14	35.4	40.4	18
E455240		1.19	<0.001	0.006	<0.001	0.01	0.11	<0.2	20	0.06	0.01	36.1	<0.02	1.12	0.9	1
E455243		1.74	0.020	0.029	0.053	0.35	7.72	6.9	210	0.29	0.28	2.87	0.19	4.85	151.5	130
E455244		1.76	0.038	0.010	<0.001	0.18	7.74	15.4	780	1.15	6.95	0.43	<0.02	40.6	32.3	82
E455247		1.83	0.019	0.016	<0.001	0.18	6.76	2.8	980	0.62	0.86	5.21	0.27	55.1	41.7	90
E455248		2.11	0.003	0.009	<0.001	0.14	8.37	3.5	800	0.93	1.08	1.81	0.19	64.2	19.0	70
E455249		2.31	<0.001	0.022	<0.001	0.10	8.15	6.2	510	0.82	0.37	1.62	0.15	73.6	25.0	33
E455252		1.62	0.010	0.011	<0.001	0.06	8.20	15.6	590	0.72	2.01	1.57	0.16	54.9	8.3	14
E455253		2.06	0.017	0.013	<0.001	0.11	7.43	20.1	590	0.96	5.08	1.29	0.16	40.6	23.9	29
E455254		1.16	0.007	<0.005	<0.001	0.19	8.18	7.3	850	0.91	1.36	2.22	0.10	56.3	16.9	53
E455260		1.12	<0.001	0.010	<0.001	<0.01	0.06	<0.2	20	0.05	0.02	35.5	<0.02	1.00	0.7	<1
E455261		1.51	0.009	0.021	0.013	0.29	8.27	8.8	60	0.27	0.07	3.59	0.15	11.80	52.5	138
E455262		2.05	0.008	0.019	0.006	0.22	8.72	21.3	250	0.78	0.12	5.07	0.07	13.15	55.4	269
E455263		2.25	<0.001	0.008	<0.001	0.01	0.27	0.6	10	0.73	0.01	21.1	0.12	1.09	2.7	2
E455264		2.33	<0.001	0.011	<0.001	0.03	0.30	3.7	10	1.00	0.04	21.0	0.13	1.39	4.7	3
E455265		1.97	<0.001	0.013	<0.001	0.03	7.59	1.6	110	0.28	0.02	6.01	0.18	8.25	47.8	132
E455266		1.79	0.013	0.013	<0.001	0.10	7.24	7.7	400	0.65	1.11	2.28	0.23	51.2	16.2	83
E455267		1.50	0.004	0.014	<0.001	0.15	7.46	4.8	480	0.76	0.36	4.12	0.34	51.7	16.2	384
E455270		0.12	0.169	0.015	<0.001	1.36	7.61	46.8	1130	2.57	1.81	1.80	0.72	76.1	8.3	47
E455271		2.81	0.007	0.023	0.002	0.11	8.08	4.9	110	0.24	0.33	6.89	0.17	4.98	44.8	84
E455272		1.29	0.032	0.031	0.052	0.89	7.77	12.4	350	0.43	0.56	0.10	0.02	25.6	44.0	249
E455273		2.75	0.018	0.027	0.041	0.71	7.92	5.5	<10	0.15	0.19	1.13	0.12	8.67	111.0	77



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 2 - B Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2	0.01	5	0.05	0.01	0.1
E455206 E455208 E455212 E455213 E455214		0.76 0.68 0.20 0.20 0.20 0.26	20.7 612 1000 162.5 509	3.12 5.20 9.83 7.00 9.27	20.1 17.10 18.15 17.00 21.2	0.12 0.09 0.07 0.05 0.07	2.4 1.4 0.4 0.5 1.0	0.043 0.046 0.076 0.043 0.052	1.60 1.14 0.27 0.26 0.28	25.7 22.2 1.9 1.8 2.0	9.7 10.7 34.4 39.2 33.3	1.05 0.89 3.35 3.05 2.62	517 331 902 1040 656	0.48 2.62 0.36 0.06 0.32	2.49 0.88 2.10 1.04 1.32	5.1 1.7 0.8 1.2 1.2
E455215		0.40	242	8.98	19.70	0.06	0.3	0.050	0.81	0.9	34.8	3.23	956	0.09	2.65	1.4
E455216		0.11	800	10.95	19.15	0.06	0.5	0.076	0.05	1.6	33.8	3.63	930	0.28	1.13	0.6
E455218		0.94	34.0	5.90	19.55	0.11	1.4	0.057	1.69	33.2	15.5	2.75	1310	0.29	0.93	3.7
E455219		0.55	47.8	4.34	18.05	0.06	1.2	0.034	0.77	7.8	13.0	1.21	542	1.11	2.91	2.6
E455222		<0.05	6920	28.7	12.85	0.15	0.6	0.222	0.01	2.6	3.2	2.24	1355	0.44	0.01	0.7
E455223		0.10	2220	12.95	15.90	0.06	0.2	0.077	0.08	1.8	38.4	3.94	1015	0.21	1.28	0.5
E455224		0.10	1330	12.30	16.85	0.07	0.5	0.081	0.05	2.8	48.1	4.44	1095	0.20	1.53	0.9
E455225		0.18	540	8.32	19.30	0.05	0.7	0.045	0.35	1.2	34.9	3.16	876	0.19	1.00	0.7
E455226		0.97	13.2	1.12	17.80	0.11	3.0	0.027	2.14	44.7	1.3	0.27	473	0.23	2.67	5.1
E455227		0.48	7.6	7.51	17.70	0.15	3.2	0.039	0.94	35.6	38.1	4.48	2620	0.09	0.08	9.3
E455228		0.13	344	5.93	21.3	0.08	0.9	0.046	0.04	9.8	18.3	2.18	673	0.10	2.60	1.8
E455230		10.90	6490	3.25	21.0	0.15	2.0	0.145	3.29	34.9	53.5	0.74	371	116.0	2.19	12.7
E455236		0.20	905	11.10	20.2	0.08	1.4	0.045	0.50	6.8	33.1	3.08	535	0.47	0.43	2.2
E455239		0.55	2450	4.18	19.05	0.08	1.3	0.095	0.61	19.9	15.0	1.14	371	0.82	2.99	4.4
E455240		<0.05	10.3	0.12	0.30	<0.05	<0.1	<0.005	0.02	1.3	1.0	0.89	69	0.10	0.03	0.1
E455243 E455244 E455247 E455248 E455248 E455249		0.38 1.04 0.98 1.21 0.64	1860 57.3 641 275 35.3	16.10 5.71 5.90 4.16 4.66	16.40 19.30 18.80 20.6 21.6	0.07 0.09 0.11 0.13 0.13	0.3 2.6 2.2 2.1 2.0	0.094 0.053 0.104 0.074 0.052	0.26 1.72 1.62 1.99 1.33	1.8 20.1 28.5 31.6 37.1	46.4 9.2 17.1 13.6 14.1	4.66 0.48 3.19 1.05 1.30	1340 102 1735 738 686	0.17 3.72 0.69 0.91 0.44	0.09 1.45 0.99 1.44 2.58	0.6 0.6 4.0 2.7 5.7
E455252		1.34	133.0	3.67	21.5	0.12	2.3	0.065	2.77	29.8	7.6	0.72	673	1.15	1.16	2.0
E455253		1.30	85.5	4.47	19.90	0.11	3.0	0.073	2.50	20.7	11.0	0.84	625	3.34	0.56	1.5
E455254		1.10	17.0	4.84	20.3	0.12	3.4	0.100	2.72	28.2	18.0	1.43	998	0.65	0.89	1.3
E455260		<0.05	2.0	0.10	0.20	<0.05	<0.1	0.005	0.02	1.2	0.6	0.71	67	<0.05	0.02	0.1
E455261		0.11	895	11.90	18.45	0.07	0.8	0.077	0.11	5.4	44.4	4.49	1485	0.34	0.35	0.9
E455262		0.27	94.3	8.58	23.3	0.07	0.5	0.060	0.22	7.5	49.2	4.17	825	0.46	1.33	1.2
E455263		<0.05	5.4	4.28	0.72	<0.05	<0.1	0.012	<0.01	0.6	3.5	10.95	2010	0.11	0.02	<0.1
E455264		<0.05	7.0	4.25	0.77	<0.05	<0.1	0.011	0.02	0.7	3.5	10.60	1700	0.32	0.04	<0.1
E455265		0.28	216	9.47	18.75	0.05	1.1	0.067	0.22	3.2	44.0	4.04	1295	0.29	0.35	2.3
E455266		0.51	9.7	3.92	16.05	0.10	3.0	0.115	0.93	24.8	9.2	1.45	1085	2.20	3.70	2.0
E455267		1.08	136.0	4.63	16.15	0.09	2.5	0.088	1.16	23.2	15.7	2.10	1550	1.58	1.61	3.7
E455270		10.90	6260	3.19	20.1	0.17	2.1	0.151	3.24	36.6	51.8	0.72	357	114.0	2.13	12.3
E455271		0.17	383	7.80	17.45	0.06	0.4	0.045	0.15	2.3	45.2	3.02	908	0.29	1.14	0.7
E455272		0.30	854	12.05	20.6	0.08	1.3	0.093	0.46	13.1	23.9	1.42	247	0.59	3.17	0.7
E455273		<0.05	919	19.70	19.50	0.15	0.6	0.048	<0.01	3.5	51.2	3.78	753	0.17	0.01	0.4



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 2 - C Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2	0.2	0.05	0.05	0.01	0.005
E455206		26.6	1000	6.4	34.3	<0.002	0.29	0.99	6.8	1	0.8	166.5	0.39	<0.05	4.86	0.259
E455208		34.3	670	9.7	30.4	<0.002	2.23	0.95	4.5	2	0.5	193.0	0.15	0.27	4.01	0.113
E455212		507	160	6.4	2.3	0.006	1.21	2.39	25.9	3	0.4	107.5	0.05	0.23	0.15	0.258
E455213		50.8	110	4.2	2.3	<0.002	0.03	2.36	27.4	1	0.6	164.0	0.07	<0.05	0.13	0.402
E455214		167.5	310	4.1	3.6	0.004	0.88	1.65	28.4	3	0.3	116.0	0.08	0.12	0.30	0.435
E455215		111.5	160	4.1	7.7	<0.002	0.07	2.39	34.8	1	0.8	74.3	0.08	0.06	0.10	0.754
E455216		327	30	7.9	0.3	0.008	1.19	2.43	28.1	2	0.4	162.5	<0.05	0.14	0.10	0.374
E455218		157.5	1640	6.0	44.7	<0.002	0.77	2.46	19.6	1	0.9	242	0.23	<0.05	4.36	0.359
E455219		24.0	650	5.1	15.1	0.006	1.01	0.50	5.4	1	2.9	165.5	0.23	0.06	3.79	0.142
E455222		1680	100	3.0	0.1	0.024	9.46	2.42	23.7	13	0.4	2.1	<0.05	0.34	0.35	0.298
E455223		570	190	5.2	0.5	0.017	2.61	1.54	27.8	3	0.4	114.0	<0.05	0.34	0.14	0.174
E455224		465	250	4.1	0.3	0.006	0.96	2.40	17.4	2	0.4	52.4	0.06	0.16	0.25	0.313
E455225		145.5	110	3.1	3.1	0.007	0.58	1.38	22.7	1	0.2	131.5	<0.05	0.09	0.11	0.339
E455226		2.6	330	3.8	64.7	<0.002	0.16	0.52	1.4	<1	0.6	113.0	0.41	0.05	8.25	0.094
E455227		270	2310	4.1	28.3	<0.002	0.01	2.17	18.6	<1	0.8	142.5	0.54	<0.05	2.75	0.609
E455228		127.0	140	3.8	0.1	0.003	0.69	1.42	18.4	1	0.8	216	0.10	0.07	0.35	0.469
E455230		16.7	930	38.3	165.0	0.082	0.78	5.38	8.7	4	4.9	230	1.12	0.66	14.05	0.373
E455236		308	780	2.9	3.4	<0.002	0.91	0.59	14.6	1	0.4	64.4	0.14	0.13	1.26	0.195
E455239		119.5	670	6.0	16.3	0.002	0.82	0.64	6.3	2	0.8	167.0	0.35	0.11	4.33	0.243
E455240		1.2	70	<0.5	0.5	<0.002	0.01	<0.05	0.2	1	<0.2	93.9	<0.05	<0.05	0.06	0.007
E455243 E455244 E455247 E455248 E455248 E455249		655 47.7 82.9 37.2 27.8	240 1070 1300 1040 1350	5.6 6.7 4.3 5.7 5.3	2.4 45.7 49.4 50.3 39.7	0.018 <0.002 0.002 <0.002 <0.002	2.11 2.26 0.83 0.57 1.07	1.26 0.58 1.14 1.09 1.41	25.0 10.4 9.8 10.4 9.4	4 1 1 1 1	0.7 0.8 1.6 0.5 0.9	54.7 246 194.0 199.5 144.0	<0.05 0.05 0.25 0.20 0.43	0.24 0.37 0.08 0.13 0.06	0.11 4.59 5.67 4.90 6.54	0.206 0.074 0.241 0.204 0.282
E455252		46.1	660	5.5	74.7	<0.002	1.48	0.41	5.6	<1	1.0	123.5	0.18	0.46	4.72	0.114
E455253		27.4	840	7.6	73.2	<0.002	2.35	0.65	7.3	1	2.4	145.0	0.11	1.76	4.63	0.137
E455254		40.0	1100	4.4	76.9	<0.002	0.89	0.41	10.0	<1	0.9	121.5	0.10	0.51	4.42	0.114
E455260		<0.2	70	<0.5	0.5	<0.002	0.01	<0.05	0.2	1	<0.2	93.7	<0.05	<0.05	0.06	0.005
E455261		372	180	3.0	1.5	0.003	0.37	1.06	29.5	2	0.3	77.3	0.07	0.07	0.28	0.347
E455262 E455263 E455264 E455265 E455265		150.0 5.0 7.9 83.6 49.1	160 50 80 360 950	7.2 1.1 1.5 3.4 3.8	0.9 0.1 0.5 5.3 23.5	0.009 <0.002 <0.002 0.002 <0.002	0.45 <0.01 0.04 0.02 1.26	2.68 0.10 0.26 0.86 0.58	31.4 2.0 1.7 38.3 9.0	1 1 1 1	0.3 <0.2 <0.2 0.6 0.6	170.0 104.5 114.5 71.4 147.0	0.07 <0.05 <0.05 0.15 0.15	0.06 <0.05 <0.05 <0.05 0.25	0.08 0.01 0.02 0.36 4.23	0.571 0.011 0.012 0.546 0.157
E455267		116.0	1540	9.2	22.3	<0.002	0.12	2.02	16.5	1	0.6	204	0.24	0.08	3.48	0.364
E455270		17.1	890	39.6	157.5	0.088	0.75	5.38	8.5	4	5.0	224	1.13	0.61	15.30	0.360
E455271		103.5	130	5.1	0.9	0.002	0.50	1.03	26.5	2	0.4	128.0	0.05	0.11	0.12	0.391
E455272		443	390	9.7	11.8	0.005	1.18	0.60	11.0	6	0.5	52.1	0.08	0.33	2.42	0.075
E455273		1510	170	4.5	0.1	0.008	2.59	0.47	17.3	4	0.3	16.2	<0.05	0.15	0.48	0.136



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 2 - D Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method Analyte Units LOD	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	
E455206 E455208 E455212 E455213 E455214		0.24 0.21 0.08 0.05 0.06	1.0 1.0 0.1 0.1 0.2	58 50 161 114 328	0.3 0.4 0.1 0.4 0.1	5.4 4.9 3.7 5.1 5.1	72 93 140 71 59	83.0 53.4 11.9 17.8 36.7	
E455215 E455216 E455218 E455219 E455222		0.14 <0.02 0.29 0.09 <0.02	0.1 0.1 1.0 0.7 0.1	433 275 148 56 251	0.2 <0.1 0.5 0.8 0.1	6.5 15.8 8.3 3.6 2.6	73 72 156 104 178	8.6 16.3 48.8 40.1 21.4	
E455223 E455224 E455225 E455226 E455227		<0.02 <0.02 0.15 0.28 0.09	<0.1 0.1 1.5 0.8	217 156 272 4 148	<0.1 0.1 0.4 0.7	3.9 2.9 3.7 7.2 12.2	129 198 64 23 530	6.7 16.8 28.7 96.9 140.0	
E455228 E455230 E455236 E455239 E455240		<0.02 0.93 0.06 0.08 <0.02	0.3 3.8 0.5 0.7 0.1	136 68 91 53 1	<0.1 9.4 0.2 0.3 <0.1	19.7 15.8 2.2 4.6 2.4	57 164 170 68 3	32.0 66.1 47.3 40.4 1.4	
E455243 E455244 E455247 E455248 E455248 E455249		0.04 0.24 0.17 0.26 0.20	<0.1 0.7 0.8 0.8 1.2	213 90 73 83 80	0.1 0.2 0.7 0.5 0.5	2.8 4.1 8.0 5.2 6.1	338 47 150 90 119	7.7 105.5 81.6 80.4 71.5	
E455252 E455253 E455254 E455260 E455261		0.28 0.28 0.31 <0.02 <0.02	1.7 1.7 0.9 0.2 0.2	43 60 86 1 214	0.4 0.4 0.2 <0.1 0.7	6.7 8.1 9.2 2.3 4.6	47 58 55 2 149	86.9 114.0 130.5 1.4 21.6	
E455262 E455263 E455264 E455265 E455265		0.02 <0.02 <0.02 <0.02 0.15	0.2 <0.1 <0.1 0.1 0.8	323 12 12 286 74	9.3 2.7 4.1 0.3 0.4	3.3 3.1 2.0 8.1 6.4	99 29 29 137 115	19.0 0.7 0.9 38.9 121.5	
E455267 E455270 E455271 E455272 E455273		0.19 0.92 0.04 0.09 <0.02	0.9 4.1 0.1 0.1 0.1	138 65 278 85 223	1.1 8.8 0.7 0.1 <0.1	5.6 15.9 4.6 1.7 2.1	122 162 62 88 232	102.0 65.8 15.5 48.4 19.5	



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 3 - A Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method	WEI–21	PGM-ICP23	PGM-ICP23	PGM-ICP23	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Recvd Wt.	Au	Pt	Pd	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.005	0.001	0.01	0.01	0.2	10	0.05	0.01	0.01	0.02	0.01	0.1	1
E455274		2.53	<0.001	0.014	<0.001	0.02	5.75	2.9	90	0.16	0.03	4.78	0.12	46.8	173.0	7
E455275		2.43	0.004	0.012	<0.001	0.09	7.71	2.5	140	0.18	0.06	4.56	0.22	5.49	63.5	72
E455276		1.60	<0.001	0.014	<0.001	0.04	8.20	3.1	150	0.22	0.02	2.83	0.19	3.07	42.7	130
E455277		1.80	0.072	0.024	<0.001	0.20	7.89	9.6	80	0.13	0.06	3.71	0.20	3.45	58.7	223
E455278		1.85	0.083	<0.005	<0.001	0.13	7.71	2.7	510	0.60	0.22	3.14	0.13	54.2	27.9	193
E455279 E455280		1.33 1.29	0.005	0.024	0.013 <0.001	0.09 <0.01	9.49 0.09	13.1 0.4	360 30	0.30	0.09 0.01	3.44 34.0	0.13 <0.02	3.35	47.3 0.9	36 <1



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 3 - B Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2	0.01	5	0.05	0.01	0.1
E455274		0.19	65.6	10.35	15.80	0.10	3.7	0.026	0.10	16.4	31.3	1.89	751	0.83	0.50	0.9
E455275		0.20	389	9.80	17.50	0.05	0.3	0.052	0.15	2.0	49.4	3.53	895	0.11	0.79	0.7
E455276		0.15	56.3	10.00	19.75	<0.05	0.4	0.042	0.11	1.4	58.5	3.90	966	0.21	0.76	0.6
E455277		0.25	386	10.40	17.95	0.05	0.4	0.045	0.18	1.3	50.6	4.21	881	0.08	0.78	0.7
E455278		0.68	154.5	6.01	19.90	0.10	3.5	0.099	1.04	25.1	28.0	2.19	845	0.51	2.04	4.4
E455279 E455280		0.27 <0.05	190.0 4.1	8.30 0.16	21.9 0.27	<0.05 <0.05	0.5 <0.1	0.046 0.006	0.29	1.6 1.2	41.3 0.9	2.61 1.24	637 77	0.10 0.07	1.40 0.03	1.1 0.1

2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 3 - C Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2	0.2	0.05	0.05	0.01	0.005
E455274		24.0	1970	2.8	3.3	0.002	2.80	0.68	18.6	1	0.4	86.4	0.19	0.16	1.09	0.255
E455275		297	120	3.7	1.0	0.003	0.57	1.27	23.9	2	0.4	130.5	<0.05	0.05	0.06	0.405
E455276		103.0	130	3.8	0.6	<0.002	0.12	0.98	29.3	1	0.3	104.5	<0.05	<0.05	0.06	0.401
E455277		183.0	170	4.0	1.4	<0.002	0.49	0.98	31.1	2	0.3	74.5	0.05	0.07	0.10	0.400
E455278		118.5	1380	3.8	25.1	<0.002	0.02	1.72	15.4	1	0.9	116.5	0.28	0.09	4.16	0.398
E455279 E455280		98.6 0.3	190 60	4.3 <0.5	1.9 0.5	0.002	0.25	2.59 <0.05	29.9 0.2	2	0.4 <0.2	143.0 86.6	0.08	0.15 <0.05	0.09 0.06	0.765 0.007



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 3 - D Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

Sample Description	Method Analyte Units LOD	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5				
E455274 E455275 E455276 E455277 E455278		<0.02 0.02 0.02 0.03 0.16	0.4 0.1 <0.1 <0.1 0.9	297 285 311 316 118	0.4 0.3 0.3 0.2 0.6	10.6 2.0 2.3 2.5 7.2	67 117 99 92 199	126.0 11.4 15.9 14.9 141.5				
E455279 E455280		0.03 <0.02	0.1 0.1	484 2	0.5 <0.1	3.6 2.2	70 3	19.2 1.4				



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: Appendix 1 Total # Appendix Pages: 1 Finalized Date: 21-DEC-2022 Account: NHSYFR

Project: Milestone Project

		CERTIFICATE COMMENTS		
	REEs may not be totally soluble in thi	ANALYTICAL CO	MMENTS	
Applies to Method:	ME-MS61	s methou.		
		LABORATORY AD	DRESSES	
Applies to Method:	Processed at ALS Vancouver located a ME-MS61	t 2103 Dollarton Hwy, North Vancou PGM-ICP23	ver, BC, Canada.	
Applies to Method:	Processed at ALS Timmins located at CRU-31 PUL-32	Unit 10 – 2090 Riverside Drive, Timn CRU-QC PUL-QC	nins, ON, Canada. LOG-21 SPL-21	LOG-23 WEI-21



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1PO

Page: 1 Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

CERTIFICATE TM22337392

Project: Milestone Project

This report is for 63 samples of Rock submitted to our lab in Timmins, ON, Canada on 21-NOV-2022.

The following have access to data associated with this certificate:

GEORGE POLLOCK

ELISABETH RONACHER

SAMPLE PREPARATION											
ALS CODE	DESCRIPTION										
WEI-21	Received Sample Weight										
LOG-22	Sample login – Rcd w/o BarCode										
LOG-21d	Sample logging – ClientBarCode Dup										
CRU-31	Fine crushing – 70% <2mm										
OA-HSUL10	Handling of High Sulphide Samples										
LOG-23	Pulp Login – Rcvd with Barcode										
CRU-QC	Crushing QC Test										
PUL-QC	Pulverizing QC Test										
SPL-21	Split sample – riffle splitter										
PUL-32	Pulverize 1000g to $85\% < 75$ um										
SPL-34	Pulp Splitting Charge										

	ANALYTICAL PROCEDURES	
ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS61	48 element four acid ICP-MS	
ME-OG62	Ore Grade Elements – Four Acid	ICP-AES
Cu-OG62	Ore Grade Cu - Four Acid	
PGM-ICP23	Pt, Pd, Au 30g FA ICP	ICP-AES

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

Saa Traxler, Director, North Vancouver Operations

2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP **17 WELLINGTON STREET NORTH** NEW LISKEARD ON POJ 1PO

Page: 2 – A Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

TM22337392

Project: Milestone Project

CERTIFICATE OF ANALYSIS

Sample Description	Method Analyte Units LOD	WEI–21 Recvd Wt. kg 0.02	PGM-ICP23 Au ppm 0.001	PGM-ICP23 Pt ppm 0.005	PGM-ICP23 Pd ppm 0.001	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1
E455201		2.78	0.331	0.076	0.465	0.80	1.53	1430	<10	<0.05	5.69	0.07	0.28	9.07	536	5
E455201d		<0.02	0.306	0.068	0.473											
E455202		2.01	0.172	0.058	0.163	0.87	1.72	602	<10	<0.05	1.59	0.64	0.33	9.83	826	152
E455202d		<0.02	0.161	0.049	0.164	a (a	4 = 0		10		4.00			10 75		
E455203		2.25	0.050	0.038	0.067	0.42	4.76	184.5	<10	0.05	1.03	0.03	0.09	12.75	282	193
E455203d		<0.02	0.047	0.034	0.064											
E455204		1.91	0.160	0.058	0.125	0.69	0.92	759	<10	<0.05	2.09	0.13	0.18	4.69	1340	19
E455204d		<0.02	0.159	0.060	0.126											
E455205		2.81	0.388	0.074	0.075	0.56	1.26	577	<10	<0.05	1.87	0.05	0.71	2.54	1055	13
E455205d		<0.02	0.586	0.076	0.075											
E455207		1.46	0.222	0.078	0.193	1.05	2.65	128.5	<10	<0.05	3.52	0.02	0.25	12.10	847	21
E455207d		<0.02	0.238	0.061	0.187											
E455209		1.36	0.179	0.033	0.106	0.60	3.48	125.0	<10	<0.05	4.05	0.04	0.22	22.1	762	62
E455209d		<0.02	0.217	0.042	0.104											
E455210		0.13	0.897	0.020	<0.001	5.97	5.68	43.8	250	0.55	1.18	0.53	5.46	18.40	14.3	21
E455211		1.07	0.148	0.034	0.079	0.68	4.41	82.8	<10	<0.05	2.62	0.05	0.13	22.9	576	35
E455211d		<0.02	0.160	0.038	0.076											
E455217		1.39	0.194	0.055	0.087	1.43	3.67	129.0	10	0.09	2.19	0.42	0.07	8.17	366	79
E455217d		<0.02	0.255	0.054	0.083											
E455220		1.07	<0.001	0.020	<0.001	<0.01	0.08	1.3	30	<0.05	0.02	35.0	0.02	0.92	3.7	1
E455221		2.66	0.301	0.044	0.101	0.89	1.36	104.5	<10	<0.05	1.84	0.06	0.31	11.10	1130	12
E455221d		<0.02	0.259	0.070	0.102											
E455229		1.84	0.175	0.062	0.135	1.80	4.75	69.0	10	<0.05	1.64	0.03	0.05	23.9	209	64
E455229d		<0.02	0.219	0.061	0.137											
E455231		2.33	0.164	0.054	0.085	0.98	5.36	649	<10	0.05	0.35	0.01	0.04	7.33	251	117
E455231d		<0.02	0.140	0.050	0.080											
E455232		2.03	0.012	0.032	0.060	0.38	5.51	26.6	<10	0.21	0.21	3.02	0.15	17.90	185.0	77
E455232d		<0.02	0.012	0.028	0.058											
E455233		2.31	0.076	0.041	0.055	0.46	7.43	42.5	210	1.01	0.32	2.50	0.10	36.5	70.0	69
E455233d		<0.02	0.144	0.035	0.052											
E455234		3.65	0.309	0.104	0.230	5.93	1.33	762	<10	<0.05	0.93	0.05	0.26	6.24	823	30
E455234d		<0.02	0.378	0.122	0.240											
E455235		3.71	0.105	0.057	0.075	2.86	5.49	96.1	<10	0.06	0.32	0.16	0.19	4.91	299	78
E455235d		<0.02	0.089	0.061	0.078											
E455237		1.57	0.124	0.053	0.105	1.91	3.78	217	<10	0.06	0.43	0.03	0.11	17.15	772	36
E455237d		<0.02	0.134	0.031	0.108											
E455238		1.83	0.144	0.042	0.105	1.63	1.82	2670	<10	<0.05	0.35	0.05	0.17	17.45	584	30
E455238d		<0.02	0.234	0.054	0.106											
E455241		3.45	0.105	0.055	0.105	0.83	2.08	199.0	10	0.07	0.39	0.01	0.15	4.52	912	32
E455241d		< 0.02	0.126	0.053	0.105											



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 2 - B Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

Project: Milestone Project

Sample Description	Method Analyte Units LOD	ME-MS61 Cs ppm 0.05	ME-MS61 Cu ppm 0.2	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1
E455201		<0.05	>10000	40.2	5.50	0.27	0.4	0.255	0.01	4.6	0.6	0.28	750	0.86	0.01	0.9
E455201d E455202 E455202d		<0.05	7900	40.1	4.91	0.24	0.2	0.280	0.01	5.0	0.7	0.43	981	1.37	0.01	0.7
E455203		<0.05	1955	26.4	12.10	0.17	0.6	0.128	<0.01	6.9	2.3	2.03	205	0.95	<0.01	0.9
E455203d E455204 E455204d		<0.05	8130	44.2	5.96	0.26	0.3	0.212	<0.01	2.6	0.5	0.12	171	1.01	<0.01	0.4
E455205 E455205d		<0.05	>10000	42.2	6.10	0.21	0.2	0.263	<0.01	1.4	0.8	0.50	1080	0.74	<0.01	0.3
E455207 E455207d		<0.05	8350	36.9	7.98	0.26	0.4	0.277	0.01	6.3	1.4	0.54	319	1.07	<0.01	1.4
E455209 E455209d		<0.05	6220	32.9	12.45	0.18	0.6	0.123	0.02	10.9	3.5	0.97	150	1.23	0.01	1.5
E455210		6.80	6860	6.99	13.90	0.10	0.1	0.344	2.20	8.6	22.9	0.47	799	182.0	0.15	1.9
E455211 E455211d		<0.05	4740	27.7	12.60	0.17	0.6	0.091	0.01	11.5	7.1	1.28	164	1.67	0.01	1.0
E455217 E455217d		<0.05	/1.8	0.28	0.26	-0.05	0.4 ∠0.1	0.177	0.04	3.7	0.0	1.52	203	0.09	0.01	0.3
E455221		<0.05	>10000	38.3	4 54	0.20	0.6	0.010	0.02	5.6	0.5	0.25	179	1 45	0.00	0.1
E455221d E455229		<0.05	4290	21.5	15.15	0.13	1.3	0.163	0.02	11.7	8.1	1.69	309	1.07	<0.01	1.4
E455229d E455231		<0.05	3680	24.9	14.85	0.17	0.6	0.150	0.01	4.3	3.4	2.01	315	0.70	<0.01	0.6
E455231d E455232 E455232d		<0.05	1845	20.2	17.15	0.11	1.1	0.074	0.01	8.1	4.7	2.68	1570	0.99	<0.01	0.8
E455233 E455233d		0.59	1815	10.35	18.95	0.11	1.4	0.089	0.61	20.1	22.5	1.64	701	0.76	0.88	2.7
E455234		<0.05	>10000	40.7	5.80	0.28	0.4	0.441	0.01	3.7	1.0	0.37	342	1.47	<0.01	0.9
E455234d E455235		<0.05	>10000	28.8	12.40	0.22	0.4	0.370	<0.01	2.4	3.9	2.32	543	0.75	<0.01	0.5
E455235d E455237		<0.05	3120	35.9	14.70	0.23	0.4	0.067	0.01	7.5	6.8	1.49	377	2.12	<0.01	1.4
E455237d E455238 E455238d		<0.05	2840	38.0	6.75	0.24	0.2	0.076	<0.01	8.7	3.8	0.68	231	2.23	<0.01	0.9
E455241 E455241d		0.05	8100	38.8	8.60	0.20	0.2	0.127	0.01	2.3	2.0	0.73	192	1.06	<0.01	0.5



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 2 - C Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

Project: Milestone Project

Sample Description	Method Analyte Units LOD	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005
E455201 E455201d		2180	130	6.7	0.2	0.007	>10.0	31.2	1.5	22	0.6	1.5	0.06	0.60	0.68	0.050
E455202 E455202d		3680	130	7.1	0.1	0.127	>10.0	9.72	3.6	23	0.5	2.5	<0.05	0.75	0.35	0.123
E455203		1600	170	4.8	0.2	0.068	8.50	2.83	17.3	11	0.7	1.3	0.05	0.29	0.70	0.242
E455203d E455204 E455204d		5940	60	4.9	0.1	0.080	>10.0	3.21	5.7	27	0.7	1.3	<0.05	0.46	0.27	0.318
E455205 E455205d		1280	10	4.1	<0.1	0.098	>10.0	9.37	5.4	20	0.5	1.4	<0.05	0.27	0.21	0.285
E455207 E455207d		2090	150	10.3	0.1	0.078	>10.0	3.41	4.9	37	0.9	1.0	0.08	2.75	0.85	0.243
E455209 E455209d		2820	290	12.6	0.5	0.085	>10.0	3.35	5.2	21	0.8	2.6	0.09	0.63	1.33	0.143
E455210		19.4	510	138.0	76.2	0.277	5.21	4.20	5.4	9	3.2	84.7	0.12	1.04	2.16	0.101
E455211 E455211d		2070	250	7.8	0.2	0.062	>10.0	1.91	4.3	16	0.5	3.1	0.06	0.80	1.58	0.076
E455217		1760	570	7.5	0.9	0.099	>10.0	5.64	10.8	21	0.7	4.0	<0.05	1.22	0.37	0.127
E455220		21.1	70	<0.5	0.3	<0.002	0.09	0.07	0.2	<1	<0.2	92.6	<0.05	<0.05	0.05	0.007
E455221		1025	210	4.8	0.5	0.090	>10.0	3.13	2.4	25	0.7	1.3	0.07	0.40	0.97	0.072
E455229 E455229		1570	250	10.4	0.8	0.013	7.61	1.25	7.6	10	0.7	2.3	0.11	1.80	2.20	0.169
E455231		2430	80	3.6	0.1	0.016	7.82	2.05	12.6	11	0.5	3.3	0.05	1.14	0.64	0.185
E455231d E455232		2130	290	2.1	0.6	0.007	1.82	0.64	26.9	3	0.7	11.1	0.06	0.24	1.94	0.232
E455233 E455233d		562	780	4.6	14.1	0.004	1.89	0.57	9.6	4	0.8	158.5	0.19	0.36	3.75	0.202
E455234		2110	90	8.6	0.2	0.016	>10.0	2.81	7.2	40	1.0	1.0	0.05	2.48	0.38	0.274
E4552340 E455235		2340	90	3.7	0.1	0.020	>10.0	0.79	17.7	14	0.7	1.7	<0.05	0.69	0.33	0.174
E455235d E455237		3200	540	9.8	0.1	<0.002	>10.0	1.81	5.9	22	0.5	1.4	0.08	0.84	0.47	0.302
E455237d E455238		4370	420	37.1	<0.1	0.002	>10.0	5.83	3.8	24	0.5	1.3	<0.05	0.82	0.29	0.206
E455238d E455241 E455241d		2250	120	5.5	0.5	0.282	>10.0	2.58	8.3	19	0.4	2.5	<0.05	0.82	0.18	0.512


2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 2 - D Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

Project: Milestone Project

CERTIFICATE OF ANALYSIS TM22337392

Sample Description	Method Analyte Units LOD	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	Cu-OG62 Cu % 0.001	
E455201 E455201d E455202		0.02 <0.02	0.2 0.2	28 85	0.1 0.1	1.0 2.0	56 49	15.1 7.7	1.115	
E455202d E455203		<0.02	0.2	308	0.2	2.1	133	23.1		
E455203d E455204 E455204d		<0.02	0.1	303	0.1	1.2	46	10.1		
E455205 E455205d		<0.02	0.1	330	0.1	0.9	67	8.0	1.450	
E455207		0.02	0.3	143	0.1	1.4	72	16.0		
E455209 E455209		<0.02	0.3	107	0.2	2.5	140	18.8		
E455210		1.48	0.3	54	3.5	5.3	854	2.4		
E455211 E455211d E455217		0.02 0.31	0.4 0.1	79 267	0.3 0.4	1.7 1.9	181 125	17.9 12.0		
E455217d E455220		<0.02	0.1	3	<0.1	2.1	4	1.4		
E455221		0.03	0.2	43	0.1	1.8	55	25.0	0.985	
E455229 E455229		0.02	0.5	153	0.3	1.6	68	50.7		
E455231		<0.02	0.2	231	0.1	3.1	65	25.4		
E455231d E455232 E455232d		<0.02	0.3	375	0.1	5.3	114	46.7		
E455233 E455233d		0.08	0.7	90	0.2	4.7	116	53.9		
E455234 F455234d		<0.02	0.1	190	<0.1	1.4	47	14.5	1.520	
E455235		<0.02	0.1	176	0.1	1.6	126	12.9	1.205	
E4552350 E455237		<0.02	0.2	104	6.0	5.3	78	12.1		
E455237d E455238 E455238d		<0.02	0.1	73	4.4	5.1	36	7.2		
E455241 E455241d		<0.02	0.1	440	<0.1	1.3	44	9.0		



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 3 - A Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

Project: Milestone Project

									0	CERTIFIC	CATE O	F ANAL	YSIS	TM223	37392	
Sample Description	Method Analyte Units LOD	WEI–21 Recvd Wt. kg 0.02	PGM-ICP23 Au ppm 0.001	PGM-ICP23 Pt ppm 0.005	PGM-ICP23 Pd ppm 0.001	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1
E455242 E455242d E455245 E455245d E455245d E455246		2.13 <0.02 1.59 <0.02 2.14	0.222 0.211 0.075 0.044 0.447	0.072 0.084 0.050 0.033 0.463	0.242 0.242 0.062 0.071 1.305	1.15 0.41 6.35	3.48 5.19 5.36	388 150.5 48 5	<10 10 270	<0.05 <0.05 0.33	6.02 0.88 15.65	0.03 0.01 0.25	0.46 0.13 0.33	11.90 17.20 46.1	731 350 50 9	67 68 236
E455246d E455250 E455251 E455251d E455255		<0.02 0.13 1.77 <0.02 3.44	0.376 0.843 0.095 0.040 0.248	0.452 0.008 0.041 0.039 0.062	1.305 <0.001 0.064 0.062 0.199	6.21 0.46	5.88 3.54 3.89	43.0 110.0	260 10	0.58 0.06	1.16 0.68 12.60	0.55 0.04	5.44 0.07 0.21	18.70 7.97 5.63	14.4 168.0 660	22 270 44
E455255d E4552556 E455256d E455257 E455257d		<0.02 1.84 <0.02 2.32 <0.02	0.344 0.152 0.103 0.172 0.168	0.061 0.029 0.031 0.061 0.048	0.198 0.074 0.081 0.111 0.107	0.94	5.59	104.0 1070	10 <10	0.17	4.99	0.17	0.13	21.1 4.33	198.0 530	135
E455258 E455258 E455259 E455259d E455259d		2.41 <0.02 3.13 <0.02	0.130 0.123 0.315 0.337 0.100	0.070 0.077 0.068 0.070 0.021	0.120 0.120 0.129 0.128 0.084	2.54 1.64	2.52 3.33	1200 888	<10 <10	0.08	0.55	3.22 0.43	0.44	14.85 14.65	814 807	42 43
E455268 E455268d E455269 E455269d		2.65<0.023.59<0.02	0.100 0.090 0.101 0.096	0.031 0.025 0.042 0.046	0.084 0.081 0.096 0.097	1.49	4.17	180.0	<10	<0.05	0.35	0.10	0.05	30.6	505	106



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP **17 WELLINGTON STREET NORTH** NEW LISKEARD ON POJ 1PO

Page: 3 - B Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

Project: Milestone Project

CERTIFICATE OF ANALYSIS TM22337392

Sample Description	Method Analyte Units LOD	ME-MS61 Cs ppm 0.05	ME-MS61 Cu ppm 0.2	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1
E455242 E455242d		<0.05	7940	35.0	10.90	0.21	0.4	0.209	<0.01	6.4	3.5	1.06	338	3.60	<0.01	0.9
E455245 E455245d E455246		<0.05 0.30	>10000	11.15	16.05	0.17	1.5	1.150	0.57	23.4	2.4	1.48	201	16.45	0.31	1.4
E455246d E455250 E455251 E455251d E455255		6.95 0.08 <0.05	7090 1210 9990	7.22 24.2 28.6	14.50 14.85 11.45	0.07 0.16 0.22	0.1 0.8 0.6	0.363 0.061 0.356	2.27 0.07 0.01	8.7 3.8 2.7	23.7 14.8 16.5	0.49 1.59 1.25	826 346 803	192.5 1.54 4.98	0.16 0.01 <0.01	2.0 1.4 1.3
E455255d E455256 E455256d E455257 E455257d		0.10 <0.05	4870 5690	25.1 26.9	15.05 10.95	0.16 0.17	0.9 0.5	0.241 0.102	0.03 <0.01	9.9 2.2	23.6 18.1	2.09 2.09	1135 426	5.70 2.53	0.01 <0.01	1.2 0.7
E455258 E455258d E455259 E455259d E455259d		0.07 <0.05 <0.05	>10000 >10000 3080	31.6 32.6 23.6	6.82 10.25 15.55	0.24 0.21 0.14	0.4 0.5 0.9	0.144 0.313 0.091	0.01 <0.01 0.01	7.5 7.7 9.5	9.1 2.8 15.1	0.97 1.21 2.11	632 723 425	1.82 1.10 1.13	<0.01 <0.01	0.9 1.5 1.6
E455268d E455269 E455269d		<0.05	4970	28.2	13.55	0.20	1.3	0.064	<0.01	15.8	8.3	1.34	331	1.19	<0.01	1.8





2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 3 - C Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

TM22337392

Project: Milestone Project

CERTIFICATE OF ANALYSIS

Sample Description	Method Analyte Units LOD	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005
E455242 E455242d		2530	170	14.6	<0.1	0.040	>10.0	2.78	5.0	29	0.5	0.9	0.06	3.78	1.00	0.139
E455245 E455245d		2730	100	4.9	0.1	0.020	>10.0	1.83	30.1	12	0.7	2.0	0.07	0.18	0.54	0.786
E455246		490	1600	29.6	14.0	0.002	4.40	2.23	10.7	11	2.6	79.2	0.08	4.26	2.51	0.144
E455246d E455250 E455251 E455251d E455255		17.8 1500 3360	540 830 340	141.0 6.0 25.1	79.4 1.4 0.2	0.322 0.003 0.006	5.42 7.13 >10.0	4.28 0.89 3.11	5.6 9.6 5.8	8 18 29	3.2 0.5 1.3	87.3 3.9 1.6	0.14 0.08 0.08	1.13 0.40 0.51	2.33 1.83 1.30	0.104 0.166 0.193
E455255d E455256 E455256d		1460	660	11.4	0.5	0.008	>10.0	5.80	9.4	16	0.6	3.7	0.08	0.41	2.01	0.145
E455257 E455257d		3110	230	25.3	0.1	0.055	>10.0	8.23	6.0	20	0.4	1.7	0.05	1.13	1.02	0.084
E455258 E455258d		6050	270	10.1	0.1	0.066	>10.0	3.65	3.6	27	0.7	30.4	0.06	0.58	0.97	0.093
E455259 E455259d		2360	190	40.1	0.1	0.016	>10.0	9.35	6.3	29	0.8	4.3	0.10	1.11	0.90	0.422
E455268		2620	530	5.3	0.2	0.014	>10.0	1.19	8.6	12	0.6	2.1	0.10	0.70	1.74	0.232
E455268d E455269 E455269d		2690	270	5.0	0.1	0.018	>10.0	1.54	7.2	18	0.6	1.4	0.12	0.66	2.01	0.168



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP 17 WELLINGTON STREET NORTH NEW LISKEARD ON POJ 1P0

Page: 3 - D Total # Pages: 3 (A - D) Plus Appendix Pages Finalized Date: 8-JAN-2023 Account: NHSYFR

Project: Milestone Project

CERTIFICATE OF ANALYSIS TM22337392

Sample Description	Method Analyte Units LOD	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	Cu-OG62 Cu % 0.001	
E455242 E455242d E455245		0.02 <0.02	0.2 0.4	124 461	0.2 0.1	1.2 2.1	112 123	14.6 27.4		
E455245d E455246		0.15	0.7	105	0.5	4.9	268	58.0	1.250	
E455246d E455250 E455251 E455251d		1.54 0.02	0.3 0.4	56 137 71	3.5 0.2	5.5 1.9	893 134	2.3 24.3		
E455255d E455256 E455256d		0.08	0.4	80	0.2	2.5	280	33.5		
E455257 E455257d		0.05	0.2	90	0.2	2.1	125	19.0		
E455258 E455258d		0.02	0.2	78	0.2	4.0	113	13.8	1.250	
E455259 E455259d E455268		0.02 <0.02	0.2 0.5	219 198	0.1 0.3	1.8 2.1	84 122	17.1 33.1	0.969	
E455268 E455269 E455269		<0.02	0.6	122	0.2	3.1	93	52.2		



2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: +1 604 984 0221 Fax: +1 604 984 0218 www.alsglobal.com/geochemistry

To: NORTHSTAR GOLD CORP **17 WELLINGTON STREET NORTH** NEW LISKEARD ON POJ 1PO

Page: Appendix 1 Total # Appendix Pages: 1 Finalized Date: 8-JAN-2023 Account: NHSYFR

Project: Milestone Project

CERTIFICATE OF ANALYSIS TM22337392

		CERTIFICATE COMMENTS		
		ANALYTICAL CO	MMENTS	
Applies to Method:	REEs may not be totally soluble in this ME-MS61	s method.		
		LABORATORY AD	DRESSES	
Applies to Method:	Processed at ALS Vancouver located a Cu-OG62	t 2103 Dollarton Hwy, North Vancouv ME-MS61	ver, BC, Canada. ME-OG62	PGM-ICP23
Applies to Method:	Processed at ALS Timmins located at CRU-31 LOG-23 SPL-21	Unit 10 – 2090 Riverside Drive, Timm CRU-QC OA-HSUL10 SPL-34	ins, ON, Canada. LOG-21d PUL-32 WEI-21	LOG-22 PUL-QC



Appendix 4 – UAV Logistics Report



Report on a drone magnetic survey over the Milestone Project. Northstar Gold Corp. NTS 31M04C Ontario, Canada

Submitted to

Mr. George Pollock, VP exploration Northstar Gold Corp.

By Pierre-Olivier Dostie, B.eng Geomatics Director of Operations Vision 4k inc.

NOVEMBER 28TH 2022

Table of contents

1.	INTRODU	ICTION	3
2.	LOCATIO	N AND ACCESS	3
	2.1 P	HYSIOLOGY AND CLIMATE	3
	2.2 P	ERSONNEL	4
3.	METHOD	OLOGY AND PROCEDURES	4
	3.1	HEALTH AND SAFETY	4
	3.2	DRONE	4
	3.3	MAGNETOMETER	5
	3.4	BASE STATION	5
	3.5	SURVEY SPECIFICATIONS	6
	3.6	SURVEY PROCEDURES	6
	3.7	PRODUCTION AND COVERAGE	8
4.	DATA PR	OCESSING	8
5.	DIGITAL	DATA FORMAT	9

Deliverables

- Logistic survey report (PDF format)
 Database (ACSII format)

1. INTRODUCTION

At the request of Northstar Gold Corp, a high-resolution drone magnetic survey was carried out by Vision4K on November 8th 2022 over the Milestone project in Ontario. This report summarizes the field operations.

2. LOCATION AND ACCESS

The survey area was located in Ontario, at approximately 3 km South-West of the town of Temagami (figure 1).



Figure 1 (project's location)

The Northeastern part of the grid was accessed via Highway 11, and then taking the Strathcona road leading to LZ1, traced in blue on Figure 1. Access to LZ2 was impossible due to the poor state of the trail which was way overgrown past the middle point between both landing zones, which is why only half of the survey was flown.

2.1 PHYSIOLOGY AND CLIMATE

The Temagami township area is characterized by rolling hills separated by lakes and swampy lowlands. The elevation within the survey area is ranging from 250 to 320 meters ASL. The area is heavily forested, partly with hardwoods and partly with conifers. Weather conditions at the time of the survey were cold (-5 degrees Celsius), but still suitable for flying. Wind conditions were not a significant factor at the time of data collection.

2.2 PERSONNEL

A crew of two operators with numerous hours of experience was assigned to the survey:

Name	Position	Pilot Hours	Certificate number
Simon Boivin	Crew chief, telemetry operator	1057	PC1911313550
Stéphane Gauthier	Pilot in command	367	PC1911313521

The telemetry operator is tasked with mission planning, flight monitoring and quality control, whereas the pilot in command has the responsibility of controlling the aircraft during the takeoff and landing stages and inspecting the system between flights.

3. METHODOLOGY AND PROCEDURES

3.1 HEALTH AND SAFETY

An emergency response plan was established before the survey. The ERP identifies the most efficient evacuation routes around the survey area as well as the names and telephone numbers of the closest emergency services. Furthermore, Vision 4k maintains a risk analysis table for all operations ranging from operating the aircraft to using the aerial lift. All crews have a satellite phone as well as the necessary survival equipment with them should an unexpected event occur.

3.2 DRONE

The drone used for this survey is a DJI Matrice 600 pro model to which is fitted a custommade navigation system (*AimLow*TM) built by Devbrio Geophysics. This system contains a secondary C2 (command and control) link allowing redundancy on telemetry and commands as well as numerous other features:

- RTK GPS receiver for centimeter-level altitude following
- Two solid-state LiDAR sensors allowing real-time obstacle avoidance
- 900 MHz radio to monitor vehicle health and receive RTK corrections.
- Data logging
- Onboard GoPro camera

An independent control computer allows system navigation and precise control of flight altitude. The pilot can take control of the drone at any time. If a software flaw is detected, the drone returns to its take-off point autonomously.

The survey was carried out in accordance with Transport Canada regulations. The drone was correctly registered with Transport Canada, and Vision4K's operators held valid pilot certificates.

3.3 MAGNETOMETER

The magnetometer used for the survey was a Scintrex CS-VL cesium vapour device. This magnetometer is powered by an independent battery. The CS-VL has a measurement range between 15,000 nT and 105,000 nT with a sensitivity of $0.0006nT/\sqrt{Hz}$.

The magnetometer is housed in a custom-built plastic bird shell (Figure 2), allowing a controlled orientation of the magnetometer during flights. The bird shell is towed at five (5) meters below the drone. The height of the sensor is variable for each survey according to the client's request and security requirements.



Figure 2

3.4 BASE STATION

A base magnetometer was installed near the project area to allow diurnal corrections of the data. The sensor is a GSM-19 base station from GEM systems and was installed at 47.04508°N, -79.82496°W (figure 3). Prior to its installation, as magnetic gradient test has been executed to ensure that readings in all four cardinal directions do not exceed 4 nT over 1 meter from the intended base position.



Figure 3 : base magnetometer position

Results from base gradient test

Center position	55023.2 nT
1m North	55024.0 nT
1m South	55020.5 nT
1m East	55022.5 nT
1m West	55023.0 nT
Center position (2 nd reading)	55023.5 nT

3.5 SURVEY SPECIFICATIONS

The magnetic survey over the Milestone project for Northstar Gold Corp., was flown along 25m spaced lines oriented N355.5⁰ for a total of 76.7 line-kilometers. The survey was flown at a mean altitude of 30m above the ground. No tie lines were flown on the project as the altitude following in RTK-fix mode are deemed precise enough to allow "real-time leveling" of the data.

3.6 SURVEY PROCEDURES

Once the crew is set up at a new landing zone (operation site), a calibration flight is flown to determine if an altitude offset needs to be applied based on laser readings. In this case, the flight altitude was based on the SRTM DEM. Laser readings (ground truths) from the calibration flight were matching the elevation model very closely so the initial altitude calibration was kept and no offset was applied. Figures 4 and 5 show snapshots from two lines on the initial flight.



Figure 4 : Example of altitude profile and laser readings on calibration flight



Figure 5 : Example of altitude profile and laser readings on calibration flight

Tree coverage was dense enough at the moment of the survey that fewer ground laser reflections than usual were recorded. However, the lowest reflections on all lines match the elevation model with +/- 1m accuracy so it was decided to keep the initial calibration.

Following calibration, production flights were flown in separate missions of 7 to 10 km long depending on batteries used. The telemetry software shows data quality in real time to the operator. This helps identify which lines might need to be re-flown. The telemetry operator has the responsibility of analyzing data quality via the data viewer module every 3 flights and any line showing less than 90% of valid readings or gaps over 25 meters is re-flown. In this present case, no line had to be re-flown. Before demobilizing, the survey crew validates that all lines were flown and that the quality indicators are within the criteria described above.

3.7 PRODUCTION AND COVERAGE

The portion of the project that could be covered with the available access (76.7 lkm) was entirely flown on November 8th, 2022. The remaining portion (88.6 lkm) could not be flown from LZ1.



Figure 6 : Flown lines (in green) and remaining lines (in blue)

4. DATA PROCESSING

Data processing was done by Charles Mercier, P.Eng. Electrical engineering at Devbrio Geophysics. The following treatment was applied within MATLAB:

- 1. Remove outlier data points
- 2. Interpolate missing values
- 3. Apply base magnetometer diurnal corrections
- 4. 1D filtering
- 5. 2D lines leveling

5. DIGITAL DATA FORMAT

Channel	Units	Description
Line		Flight line
Date_UTCYYYY_MM_DD_	year/month/day	Flight date
Time_UTCHH_MM_SS_SSS_	hour:minute:second	Time
Latitude	Decimal Degrees	WGS84 Latitude data
Longitude	Decimal Degrees	WGS84 Longitude data
UTM_x	metres	UTM Easting
UTM_y	metres	UTM Northing
UTM_zone		UTM zone
Mag_ASLm_	metres	Magnetic sensor elevation above sea level
Mag_AGLm_	metres	Magnetic sensor terrain clearance
Mag_TMI_Ground_BasenT_	nT	Magnetic base station measurement
Mag_TMI_RawnT_	nT	Raw Total Magnetic field data
Mag_TMI_InterpolatednT_	nT	Interpolated Total Magnetic field data
Mag_Diurnal_CorrectionnT_	nT	Magnetic diurnal variation data
Mag_TMI_ProcessednT_	nT	Final Total Magnetic field data