



**Updated NI43-101 Resource Report  
*for the*  
Mooseland Gold Property**

Halifax County, Nova Scotia  
44° 56' N Latitude, 64° 46' West Longitude

MINE TECH INTERNATIONAL LIMITED  
HALIFAX, CANADA



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## 1 Summary

On June 25, 2020, MineTech International Limited of Halifax, Nova Scotia (MineTech) was commissioned by NSGold Corporation of Bedford, Nova Scotia (NSGold) to complete an updated National Instrument 43-101 Form 1 (NI 43-101) compliant resource estimate on the West and East Zones of the Mooseland Property.

The Mooseland Property (the Property) is an advanced-stage exploration gold property in Halifax County, Nova Scotia, 110 highway kilometres northeast of the city of Halifax. The Mooseland Property is made up of five Nova Scotia exploration licenses, numbers 05978, 50939, 52153, 52209, and 52352. These exploration licenses, in turn, cover 77 mineral claims with a total area of 1,220 hectares. The land that makes up the Property is partly owned by the Nova Scotia provincial government and partly owned by private landholders. The Mineral Resources identified to date are on Crown Land, entirely on EL 05978 (40 claims). There are no private landowners on EL 05978.

NSGold acquired the central claim underlying the Property from Globex Mining Enterprises Inc. of Rouyn-Noranda, Quebec (Globex). Globex controls a 2% royalty on all metals produced from that claim. NSGold and Globex amended their agreement in 2019.

The Property is underlain by metamorphosed Cambrian-Ordovician sediments which were folded into a series of upright north-easterly striking anticlines and synclines during the Taconian Orogeny at the end of the Ordovician. The rocks were deformed and intruded during the Acadian Orogeny at the end of the Devonian, and during the Late Carboniferous Hercynian Orogeny. To the south and west of the property, the metamorphosed sediments have been intruded by the granite – granodiorite Musquodoboit Pluton. The property rocks include the Goldenville Formation, composed of continental shelf turbidite type sediments, and the Halifax Formation, which is made up of deeper water sediments, now slates with some greywacke. The formations are subdivisions of the Meguma structural terrain. The Meguma terrane, in turn, is a tectonic subdivision of the northern Appalachian Mountains.

The Mooseland Property has a major, regional east-west trending anticlinal structure, with bedding that dips uniformly steeply north and south a short distance from a fairly compact hinge area. This anticlinal structure is the host of the gold-bearing saddle veins. A major, post-mineralization, northwest trending fault zone disrupts the anticlinal structure, dividing the property into the West Zone and East Zone.

The identified strike length is approximately one kilometre for the West Zone and over 300 metres for the East Zone. The West Zone is “open” at depth. A granite intrusive defines the western extent of the Meguma, and a fault defines the eastern extent of the West Zone. This left-hand fault offsets the deposit. On the eastern side of the fault, the East Zone continues eastward. The East Zone is open towards the east and at depth.

The West Zone is covered by relatively shallow overburden averaging 1.5 metres. The East Zone lies beneath a northwest trending drumlin 15 to 30 metres thick. Gold occurs as coarse free grains and irregular masses ranging from pin-point to match head in size. Gold grain distribution is irregular within the quartz veins. Vein gangue minerals consist of carbonate, calcite, chlorite and tourmaline.

The Mooseland Property was first discovered in 1858. Total historical production from 1863 to 1934 is 3,865 troy ounces of gold recovered from 9,058 short tons of crushed material.

The 1986-1989 Acadia Mineral Ventures Ltd. and Hecla Mining Co. exploration program included an IP Survey, 135 diamond drill holes totalling approximately 31,700 metres, and construction of a settling pond and shaft. The 2002-2004 Azure Resources Corporation exploration program from included 6 diamond drill holes totalling approximately 1,168 metres, a decline, and drifting along several veins. Other work includes a federal airborne VLF-EM survey from the 1980s and a single-line ground VLF-EM survey from 2002.

The NSGold exploration program is ongoing. In 2010, they completed 26 diamond drill holes totalling 6,507 metres, 13 in the West Zone (3,613 metres) and 13 in the East Zone (2,894 metres). In 2011, NSGold drilled 8 holes (2,606 metres) in the West Zone and 8 holes (2,404 metres) in the East Zone during 2011 for a total of 5,010 metres of NQ-sized core. In late 2012, NSGold drilled 15 holes (948 metres) in the West Zone, targeting the upper level of the deposit (MacKinnon 2013).

## Resource Estimate

Table 1 A summary of the Inferred Mineral Resources at Mooseland.

WEST ZONE						EAST ZONE						Total Ounces
Cut-off Grade (g/tonne)	Volume (m <sup>3</sup> )	Tonnes <sup>1</sup>	Average Grade (g/tonne)	Kilograms Au	Ounces	Cut-off Grade (g/tonne)	Volume (m <sup>3</sup> )	Tonnes <sup>1</sup>	Average Grade (g/tonne)	Kilograms Au	Ounces	
10	55,200	146,200	14.0	2,046.8	66,000	10	33,700	89,200	12.7	1,132.8	36,400	102,400
8	91,800	243,200	12.0	2,918.4	94,000	8	73,800	195,500	10.6	2,072.3	66,600	160,600
6	159,000	422,000	9.8	4,135.6	133,000	6	148,000	393,000	8.78	3,450.5	111,000	244,000
5	209,000	553,000	8.77	4,849.8	156,000	5	196,000	519,000	7.97	4,136.4	133,000	289,000
4	299,000	791,000	7.47	5,908.8	190,000	4	257,000	681,000	7.12	4,848.7	156,000	346,000
3	464,000	1,228,000	6.05	7,429.4	239,000	3	350,000	926,000	6.15	5,694.9	183,000	422,000
<b>2</b>	<b>759,000</b>	<b>2,011,000</b>	<b>4.64</b>	<b>9,331.0</b>	<b>300,000</b>	<b>2</b>	<b>545,000</b>	<b>1,443,000</b>	<b>4.81</b>	<b>6,940.8</b>	<b>223,000</b>	<b>523,000</b>
1 **	1,627,000	4,311,000	2.9	12,501.9	402,000	1 **	879,000	2,329,000	3.53	8,221.4	264,000	666,000
0 **	3,790,000	10,045,000	1.58	15,871.1	510,000	0 **	1,464,000	3,879,000	2.35	9,115.7	293,000	803,000

\* Planned dilution, to 1.5 m minimum width, was included. Non-planned dilution was not included.

\*\* Mineralisation below the chosen 2.0 g/tonne block cut-off is not considered to be a "Mineral Resource" and is shown here for information purposes only.

Mineral resources were identified using a block cut-off grade of 2.0 g/tonne.

For the West Zone, non-diluted<sup>1</sup> Inferred Mineral Resources totalled 2.11 million tonnes with an average gold grade of 4.64 g/tonne for 300,000 ounces.

<sup>1</sup> Planned dilution, to a minimum true width of 1.5 metres, was included. Non-planned dilution was not included.



For the East Zone, non-diluted, Inferred Mineral Resources totalled 1.44 million tonnes with an average gold grade of 4.81 g/tonne for 223,000 ounces.

**For both zones, the total non-diluted Inferred Mineral Resources was 3.45 million tonnes with an average gold grade of 4.7 g/tonne for 523,000 ounces.**

The late 2012 diamond drill sampling was not included in the estimation of resources. Near surface resources would be estimated using a lower cut-off grade.

No Indicated or Measured mineral resources were identified, primarily because the drilling intercept spacing was not sufficient to establish grade continuity to the levels required by those categories. The mineralisation exhibits a strong nugget effect.

No mineral reserves of either category were identified.

The 2012 update of the Technical Report made several recommendations, some of which were carried out, most were not. These recommendations were made with the intention of going underground to access the deposit. Phase 1 was to carry out a surface diamond drilling program to further delineate the strike and depth extents of the East and West Zones, and specific gravity test work to better determine the specific gravity of material at the site. The diamond drilling was carried out the specific gravity test work indicated a value of 2.65 tonnes per cubic metre was appropriate for the silicified greywackes and siltstones, a value closer to 3 tonnes per cubic metre would be appropriate for sections with greater than ~ 5% sulphides.

This report recommends a preliminary economic analysis study for a surface operation; diamond drilling, including geotechnical holes; ore sorting tests; and government meetings. Phase 2, upon successful conclusion of Phase 1 includes dewatering and continuing the existing underground decline and then taking of a bulk sample. The entire program, Phase 1 PEA and drilling and Phase 2 underground work was estimated to cost \$5.3 million Canadian dollars.

## **2 Introduction**

### **2.1 Issuer for whom the Technical Report is Prepared**

This Technical Report was prepared for NSGold Corporation (NSX, TSX-V) of Bedford, Nova Scotia, Canada (“NSGold” or “the Issuer”).

### **2.2 Terms of Reference and Purpose of the Report**

On June 25 2020, NSGold engaged MineTech International Limited of Halifax, Nova Scotia to complete an updated National Instrument 43-101 compliant mineral resource estimate for its Mooseland Property.

The purpose of the report is to update the existing (MineTech, 2012) mineral resource estimate, incorporating new work conducted by NSGold since 2012 and a revised cut-off grade, based on the 2015-2020 gold market.

### **2.3 Sources of Information**

This report and the previous MineTech technical reports on the Property (MineTech, 2010 and MineTech, 2011, MineTech, 2012) are based on previously published reports, especially reports prepared by Acadia Mineral Ventures Ltd. (Acadia), Hecla Mining Co. (Hecla), and Azure Resources Corp. (Azure). Special mention goes to Michael Sanguinetti’s 2002 “Report on the Geology and Gold Potential of the Mooseland Property”, prepared for Azure, which brought together much of the work that had been done up to that point. A full list of the documents used can be found in the References section.

New exploration data, including drill hole data from 2010 and 2011, as well as a reinterpretation of existing geophysical data conducted in 2010 and a data from a LiDAR survey in 2011, was provided by NSGold. NSGold geologists also provided ongoing assistance in the geological interpretation of the deposit, and resolving errors in the drill hole dataset.

### **2.4 Extent of Field Involvement of the Qualified Persons**

Mr Douglas Roy, M.A.Sc., P.Eng., the Principal Author of the report, is a Qualified Person under Section 1.1 of National Instrument 43-101. As an employee of MineTech, he supervised exploration work on-site in December 2010 during a 1-day site visit. Mr Roy was also consulted during hole-spotting for the 2010 drill program.

Previously, Mr Roy conducted a site visit in 2009 as part of MineTech's 2010 Technical Report on the Property. From 2002 to 2004, Mr Roy visited the site several times as part of MineTech's work with Azure, during which he worked on the surface and underground surveys.

Mr. Patrick Hannon, M.A.Sc., P.Eng., also a Principal author of this report, is a Qualified Person under Section 1.1 of National Instrument 43-101. From 2002 to 2020, Mr Hannon visited the site several times as part of MineTech's work with Azure, during which he worked on the surface and underground surveys. Mr. Hannon's most recent visit was on June 18, 2020, to collect samples for specific gravity testing.

## 2.5 Units of Measure

Unless otherwise stated, all units used in this report are metric. Unless otherwise stated, the legal currency used is the Canadian dollar.

### 2.5.1 Site Grid & Coordinate System Parameters

Site elevations use mean sea level plus 1,000 metres as the vertical datum. The site grids used in this report are metric, and are based on a local variant of the UTM system: Zone 4 of the Nova Scotia Modified Transverse Mercator System, using the NAD27 Geoid (NS MTM/NAD27). Separate site grids have been developed for the West and East Zones of the Property. Drill hole collars locations were recorded using site grid and/or NS MTM/NAD27 grid coordinates. All drill hole collar locations were later rotated onto the site grid.

The strike direction of the West Zone anticline was discovered in the 19<sup>th</sup> century, and early site grids appear on maps such as those by drawn under E.R. Faribault in 1898 and 1899. The modern site grid was established in advance of the drilling programs of the 1980s.

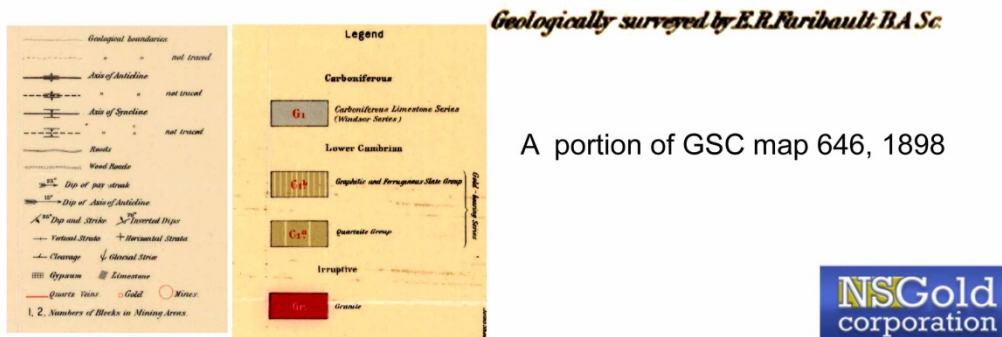
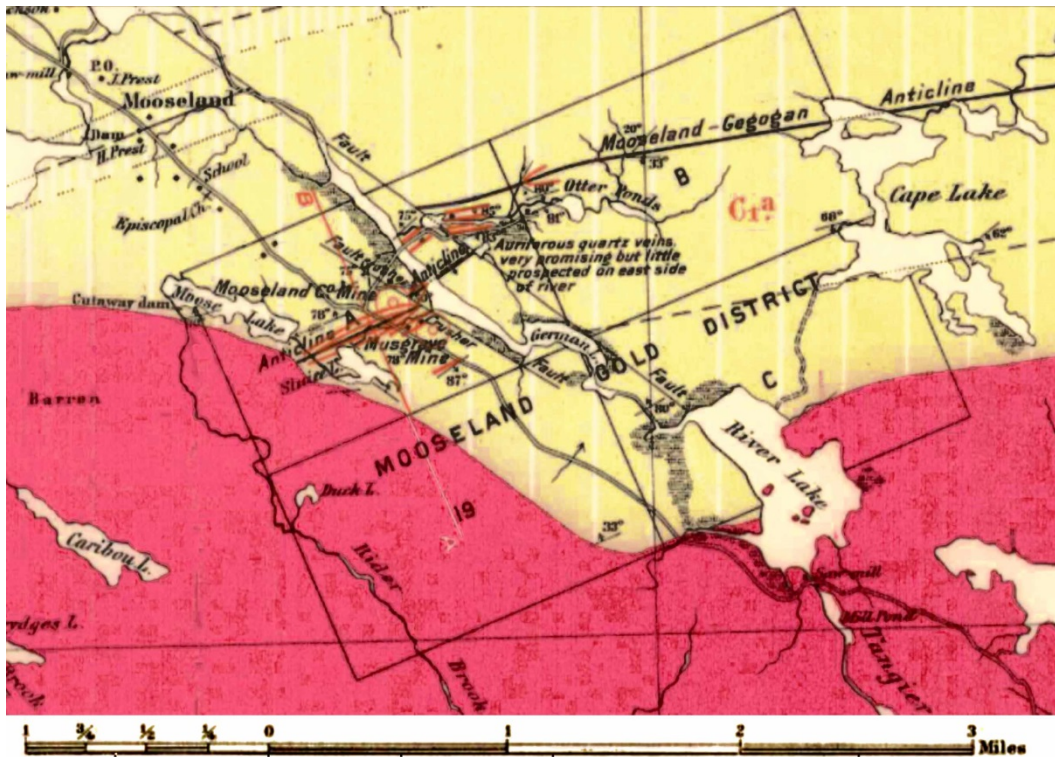


Figure 1 A portion of GSC map 646 by E.R. Faribault.

The West Zone baseline runs 070° from true north.

The strike direction of the East Zone anticline was delineated in the 1980s. The first modern East Zone grid used a baseline (BL1) that ran nearly parallel to the West Zone anticline, at 071°. Later, the true strike of the anticline in the area being drilled was determined to run at 024°. A second baseline (BL2) was established, running at 024°.

The BL2 baseline was re-established prior to the 2010 drilling program. GPS surveys of the re-established baseline showed it to run at 025° from true north, within one degree of the Hecla-era BL2.

Site grids used by Acadia, Hecla and Azure recorded positions in northing/southing and easting/westing, relative to the grid origin, which was defined as 0N, 0E. During resource estimation, the grid origins were shifted to ensure that all coordinates had positive northing/easting values.

Finally, because BL2 was much closer to a north-south than an east-west line, the direction markings for the East Zone grid were changed; northings became eastings, and eastings became northings (see Table 2-2).

Table 2-1 - Baseline Conversion Table

Grid	Origin (E)	Origin (N)	Direction of Base Line
Original West Zone	0+00	0+00	070°/250° (E/W)
MineTech West Zone	2000	6000	070°/250° (E/W)
Original East Zone	0+00	0+00	024°/204° (E/W)
MineTech East Zone	4400	8000	024°/204° (N/S)

Table 2-2 - Cross-Section Numbering Lookup Table

Zone	Current (MineTech) Name	Alternative (Hecla-era) Name
West Zone	1900E	1+00W
West Zone	2000E	0+00E
West Zone	2050E	0+50E
West Zone	2100E	1+00E
East Zone	8000N	0+00E
East Zone	8200N	2+00E

### 3 Reliance on Other Experts

The information, conclusions and recommendations contained herein are based on a review of digital and hard copy data and information supplied to MineTech by NSGold, as well as various published geological and technical reports and discussions with individuals who are familiar with the Property and the area in general. MineTech has assumed that all of the information and technical documents reviewed and listed in the references section are accurate and complete in all material aspects. While MineTech has carefully reviewed all of this information, MineTech has not conducted an independent investigation to verify its accuracy and completeness.

Some relevant information on the Property presented in this Report is based on data derived from historic reports written by geologists and/or engineers, whose professional status may or may not be known in relation to the NI 43-101 definition of a Qualified Person. MineTech has made every attempt to accurately convey the content of those files, but cannot guarantee either the accuracy or validity of the work contained within those files. However, MineTech believes that these reports were written with the objective of presenting the results of the work performed without any promotional or misleading intent. In this sense, the information presented should be considered reliable, unless otherwise stated, and may be used without any prejudice by NSGold.

MineTech has relied on information provided by NSGold regarding land tenure, underlying agreements and technical information and data not in the public domain. While MineTech has not independently verified the legal status of the underlying agreements, all of the information appears to be of sound quality.

MineTech has not investigated any environmental or social issues that could conceivably affect the Property. Historical mineral resources figures contained in the Report, including any underlying assumptions, parameters and classifications, are not 43-101 compliant and are quoted “as is” from the source.

NSGold has warranted that full disclosure of all material information in its possession or control at the time of writing has been made to MineTech, and that it is complete, accurate, true and not misleading.

Only the target areas within the Property area and those visited by MineTech are discussed in any detail in this report. MineTech reserves the right to, but will not be obligated to revise this Report and conclusions if additional information becomes known to MineTech subsequent to the date of this Report.

NSGold reviewed draft copies of this Report for factual discrepancies. Any changes made because of these reviews did not include alterations to the conclusions made.

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

## **4 Property Description and Location**

### **4.1 Area of Property**

The Property consists of 77 claims on 5 exploration licenses. The total area is 1,220 hectares.

Nova Scotia has a map-based claim staking system whereby claims are staked using a defined grid, based on the Canadian National Topographic System (NTS). Individual claims generally do not need to be surveyed until the actual mining stage is reached. Under this system, an NTS sub-unit (e.g. 11D/15C) is subdivided into 108 tracts, and each tract is subdivided into 16 claims. Tracts are numbered and claims are lettered, each increasing from east to west, then south to north.

### **4.2 Location of the Property**

The exploration licenses are located on NTS map sheets 11D/15C and 11D/15D. The centre of the Property is at approximately 44°56' N, 62°46' W.



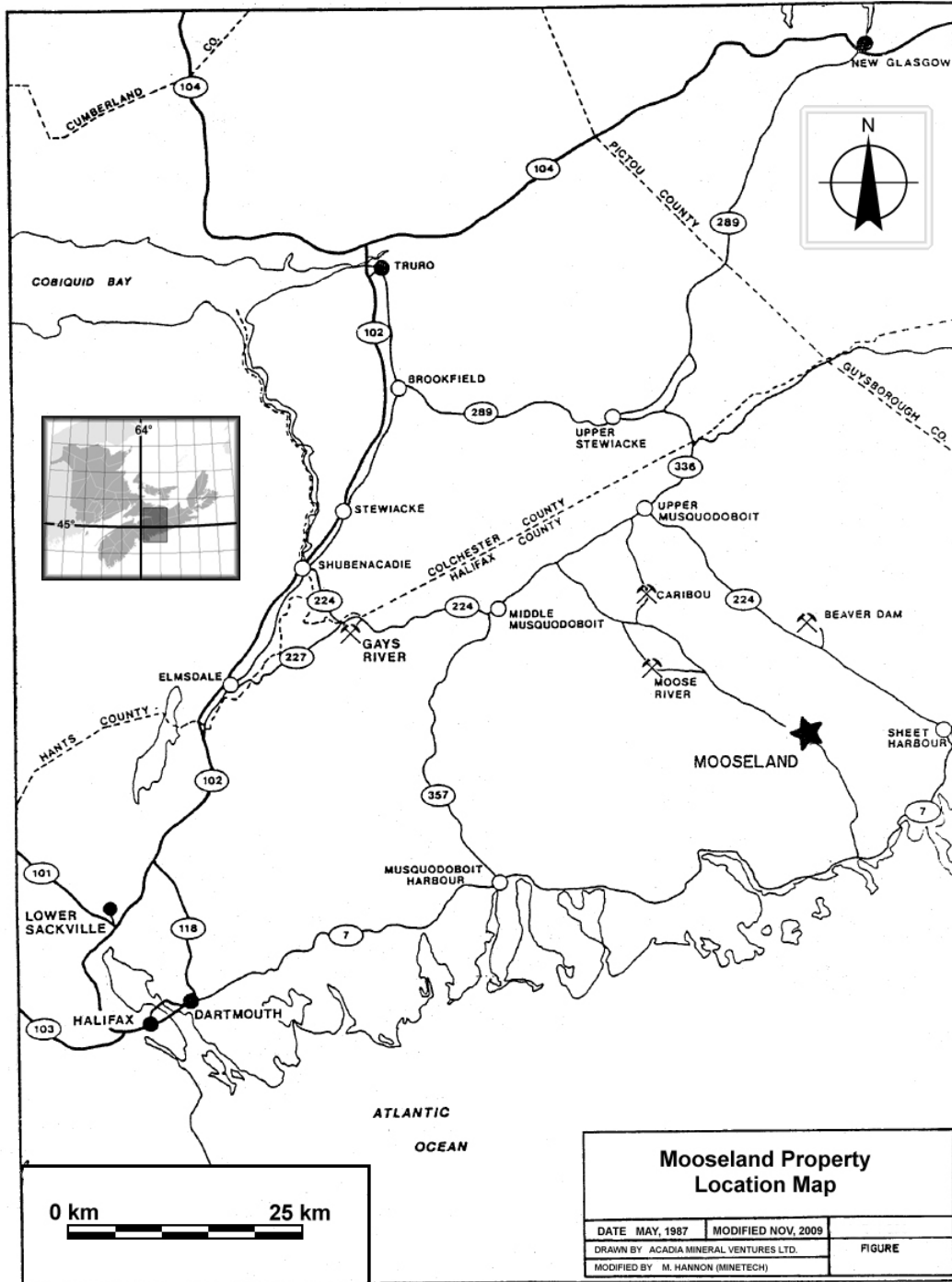


Figure 4-1 - Location Map

### 4.3 Mineral Rights

The Mooseland Property is made up of five Nova Scotia exploration licenses, numbers 05978, 50939, 52153, 52209, and 52352. These exploration licenses, in turn, cover 105 mineral claims (see Table 4-1).

Many of the claims underlying the exploration licenses were purchased from Globex Mining Enterprises of Rouyn-Noranda, Quebec (see section 4.5).

Exploration licenses in Nova Scotia “entitle the holder to conduct exploration upon the license area with the landowner’s permission, to remove minerals from it for test purposes (not for sale) and to apply for a mining lease within the boundaries of the license.”<sup>2</sup>

Table 4-1 - Mineral Exploration Licenses

Right Num.	Holder	Right Type	Location	Issue Date	Expiry Date	Term	No. of Claims	Status
05978	NSGold Corp.	Exploration Licence	11D15C TRACTS 47 CLAIMS Q 11D15C TRACTS 48 CLAIMS N,O,P 11D15C TRACTS 49 CLAIMS ALL 11D15C TRACTS 50 CLAIMS ALL 11D15C TRACTS 72 CLAIMS A,B,C,D	1985-04-02	2021-04-02	18	40	Active
50939	NSGold Corp.	Exploration Licence	11D15C TRACTS 70 CLAIMS E,F,G,K,L,M,O	2016-04-06	2021-04-06	2	7	Active
52153	NSGold Corp.	Exploration Licence	11D15C TRACTS 69 CLAIMS J,K,L,N,O,P,Q 11D15C TRACTS 70 CLAIMS N 11D15C TRACTS 75 CLAIMS D 11D15C TRACTS 76 CLAIMS A,B,C,D,E,F,G 11D15C TRACTS 77 CLAIMS A,H	2018-03-27	2021-03-27	1	18	Active
52209	NSGold Corp.	Exploration Licence	11D15C TRACTS 75 CLAIMS A,B,C,E,F,G,H 11D15C TRACTS 76 CLAIMS H	2018-04-30	2021-04-30	1	8	Active
52352	NSGold Corp.	Exploration Licence	11D15D TRACTS 60 CLAIMS O,P 11D15D TRACTS 61 CLAIMS A,B	2018-07-10	2021-07-10	1	4	Active

<sup>2</sup> Nova Scotia Department of Natural Resources, Information Circular ME 58, *A Guide to Mineral Exploration Legislation in Nova Scotia*, April 2008, paragraph 10

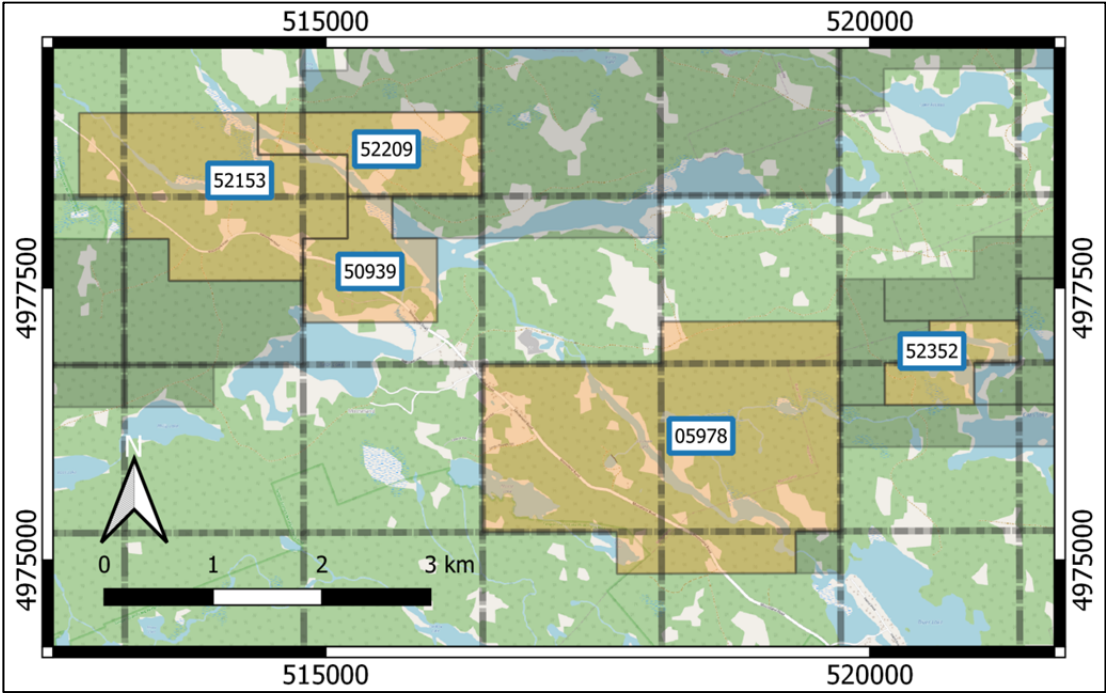


Figure 4-2 - Claim Map, as of August, 2020

**4.3.1 Obligations to Retain the Property**

Mineral claims in Nova Scotia are subject to annual assessment requirements, while exploration licenses are subject to annual renewal fees.

Assessment requirements constitute a requirement to conduct work of a certain value on the claim and report the results. Work done in one claim can be transferred to other claims in the same license, and work can be carried over from year to year if there is a surplus.

Fees payable under the Act are as follows:

Description	Fee
Issuance of exploration licence (term 1 - licence age 1 and 2 years), per claim	\$10.00
Regrouping of coterminous exploration licences (s. 56 of Act), per regroup	\$20.00
Renewal of exploration licence, per claim	
each renewal, 1 to 4 (licence age 3 to 10 years)	\$20.00
each renewal, 5 to 7 (licence age 11 to 16 years)	\$40.00

each renewal, 8 to 12 (licence age 17 to 26 years)	\$160.00
each renewal, 13 and after (licence age 27 years and older)	\$320.00
Lease rental, per claim, per year	\$120.00
Issuance of non-mineral registration, per claim	\$120.00
Assignment or transfer of exploration licence	\$20.00
Assignment or transfer of mineral lease or non-mineral registration and registration of document affecting title	\$100.00
Registration of document affecting title of mineral right or non-mineral registration (excluding transfers)	\$20.00
Search of document relating to mineral right or non-mineral registration, per document	\$40.00
Copy of exploration licence, lease or non-mineral registration, or paper affecting title, per page	\$1.50
Registration as prospector	\$10.00
Miscellaneous services not listed above, per hour	\$150.00

Table 4-2 - Mineral Exploration: License Application Fees

The dollar value of work credit given for assessment work that is required for renewing an exploration licence is based on the number of terms for which the licence has been issued and consecutively renewed, as set out in the following table:

Number of Terms for Which Licence Issued/Renewed (age of licence at the end of the current licence period)	Dollars per Term per Claim
1 to 2 (licence age 0-4 years)	\$400
3 to 5 (licence age 5-10 years)	\$600
6 to 8 (licence age 11-16 years)	\$800
9 and any subsequent renewal term (licence age 17 years and older)	\$1600

#### 4.4 Surface Rights and Legal Access

The land (surface rights) that makes up the Property is owned by individuals, companies and the crown. Most of the land covering license 05978, which hosts the West & East Zones, is publically owned (“Crown Land”), and is administered by the Nova Scotia Department of Natural Resources. The land in the northern parts of that license is privately owned (see Figure 4-3).

Most of the land that underlies the rest of the claims is owned by forestry companies. Some is owned by individuals or the government.

For both crown land and private land, exploration license holders must come to an agreement with the landholder in order to gain the right to access and work on the land.

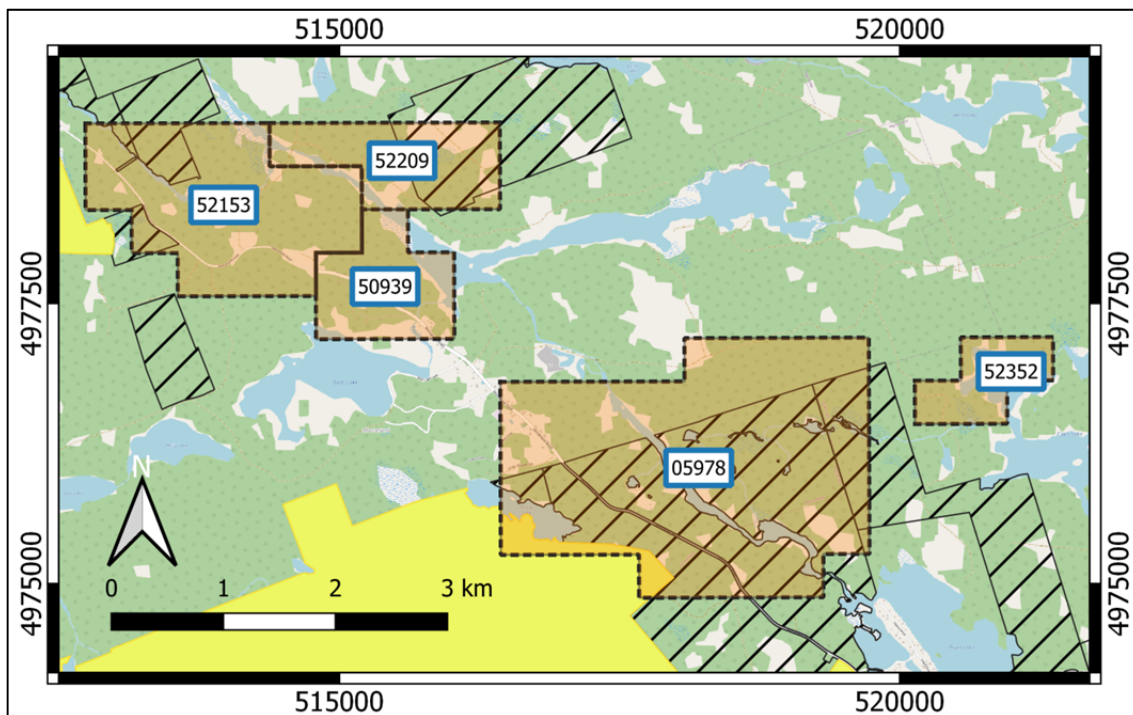


Figure 4-3 - Land Ownership in the Central Claim (Hatching: Crown Land; Yellow Shading: Wilderness Area)

#### 4.5 Agreements & Encumbrances

There is currently only the Globex NSR attached to the Mooseland Property.

A number of claims were obtained from Globex as part of the NSGold-Globex purchase agreement, signed on April 14<sup>th</sup>, 2010 with the final payment made by September 1<sup>st</sup>, 2011.

On April 15, 2019, NSGold Corporation and Globex issued a press release which described the amended terms of their agreement dated April 14, 2010, whereby NSGold

acquired 100% ownership of the Mooseland Gold Property and certain secondary properties from Globex. The amended agreement gave Globex a gross metal royalty of 2%, and approximately 11.1% of the common shares of NSGold. (Press Release April 15, 2019).

## 4.6 Environmental Liabilities

### 4.6.1 Infrastructure

Surface structures, including the headframe, a garage/storage building (both built by Hecla), and a steel shed (being built by NSGold), would have to be removed should the property be abandoned.

### 4.6.2 Environmental Bonds

The reclamation bond associated with Mooseland (EL 05978) is currently \$77,744.38 as of March 31, 2020. This was confirmed by John MacNeil, Registrar of Mineral and Petroleum Titles Nova Scotia Department of Energy and Mines.

### 4.6.3 Tangier Grand Lake Wilderness Area

Six claims on the south-western side of exploration license 05978 are covered in part by the Tangier Grand Lake Wilderness Area, which is governed under the Nova Scotia Wilderness Area Protection Act (the NSWAPA). All affected claims sit outside the main East and West Zones. The NSWAPA prohibits mining (s. 17) except where existing mining rights were issued before February 9, 1993 (s. 25). Exploration license 05978 was first issued in the year 1986. The full text of the NSWAPA is included in the appendices.

Areas of the Property that are covered by the Tangier Grand Lake Wilderness Area generally drain into the Tangier Grand Lake Wilderness Area. The area of the West Zone adjacent to the Tangier Grand Lake Wilderness Area generally drains away from it, flowing eastward into the Tangier River.

Table 4-3 - Claims overlapping Tangier Grand Lake Wilderness Area

License	NTS	Tract	Claims
05978	11D/15C	50	ABCDE
05978	11D/15C	47	Q

## 4.7 Permits

### 4.7.1 General

Permission from the Land Administration Division of the Nova Scotia Department of Natural Resources (NSDNR) must be received before work can begin on crown (public) land. Permission from private landholders must be received before work can begin on private land.

### 4.7.2 Drilling

Before exploration drilling can begin, DEPARTMENT OF ENERGY AND MINES must be notified using a “Notification of Proposed Drilling Program” form. There is no fee.

### 4.7.3 Bulk Sampling

Approval from the Nova Scotia Department of Labour under the Underground Mining Regulations is required before underground exploration can begin. A Water Withdrawal Application approval from the provincial department of the environment (Nova Scotia Environment) is also required. Finally, a letter of authority from the Director of Mines of the DEPARTMENT OF ENERGY AND MINES is also required.

### 4.7.4 Production

If the issuer wishes to proceed to full production, they may need to undergo an Environmental Assessment (EA). In the province of Nova Scotia, EAs are not always needed for small, underground mines. However, the provincial minister responsible for the Environment can, at their discretion, require an EA.

An EA is a comprehensive assessment of an undertaking involving input from many branches of government and the public; it can take more than one year to complete. Once given, approval from an EA does not expire.

Industrial approval from Nova Scotia Environment is required before mining operations begin. These approvals are usually valid for 10 years from the date issued, with the possibility of renewal.

Finally, a Mineral Lease from the NSDNR is needed before commercial mining or mineral processing can begin. The waiting period for an initial application is listed as 2 ½ months. Leases are valid for up to 20 years from the date they are issued and can be renewed for another 20 years.

## **4.8 Other Significant Factors**

No other significant factors or risks that may affect access, title, or the right or ability to perform work on the Property are known at this time.



## **5 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **5.1 Topography, Elevation and Vegetation**

The Property is in an area of moderate relief in undulating terrain with a minimum elevation of approximately 90 metres above sea level, and a maximum elevation of approximately 145 metres above sea level. Many of the elevation highs, especially on the east side of the Tangier River, are due to drumlins. A northwest-southeast trending drumlin lies along the east side of the river and covers the East Zone with 15 to 30 metres of glacial moraine.

Drainage is controlled by the principal northeast-southwest trending geological formations, and the crossing northwest-southeast striking fault zones which control the trend of the Tangier River across the claim group.

The region is covered with mixed coniferous and deciduous forest, mostly second growth, and is of small merchantable size. Some areas have been clear-cut (Gillick, 2010).

### **5.2 Means of Access to the Property**

The West Zone is adjacent to the Mooseland Road, a paved secondary highway that connects with Nova Scotia Trunk Highway 7 at Tangier. A network of access roads on the site connect to the shaft, portal, former camp site, and tailings pond.

The East Zone can be accessed via a logging bridge, about two kilometres northwest of the West Zone entrance along the Mooseland Road, and then by a series of unpaved seasonal logging roads and trails developed for logging and diamond drilling.

The far western part of the property appears to be accessible by a gravel road from Mooseland passing around the south part of Bear Lake, however, the condition of this road is unknown (Gillick, 2010).

### **5.3 Proximity to Population Centers**

Modern towns and cities exist within commuting distance. From to the Property, the village of Mooseland is approximately two kilometres to the northwest, the town of Tangier is approximately 20 highway-kilometres to the southeast, and the city of Halifax is 110 highway-kilometres west-south-west. Many small coastal towns are on Nova Scotia Trunk Highway 7, which passes through Tangier and terminates at Halifax.

### 5.4 Climate

The climate at Mooseland allows for exploration, mining and construction operations to continue throughout the year. The climate is temperate, the Property being only about 20 kilometres north of the Atlantic coast.

The closest weather station is in village of Middle Musquodoboit, approximately 30 kilometres northeast of the Property.

Mean annual total precipitation in Middle Musquodoboit is 1,180 mm. In July, the mean maximum daily temperature is 24.6°C; in February, the mean minimum daily temperature is -11.1°C. Summer design temperature for buildings and equipment is 27°C; winter design temperature is -18°C. Average monthly rainfall ranges from 60.4mm in February to 123.5mm in November; average monthly snowfall ranges from 41.2cm in February to nil between June and September. All climate data is from the Environment Canada “Canadian Daily Climate Data” database. See Figure 5-1 and Figure 5-2.

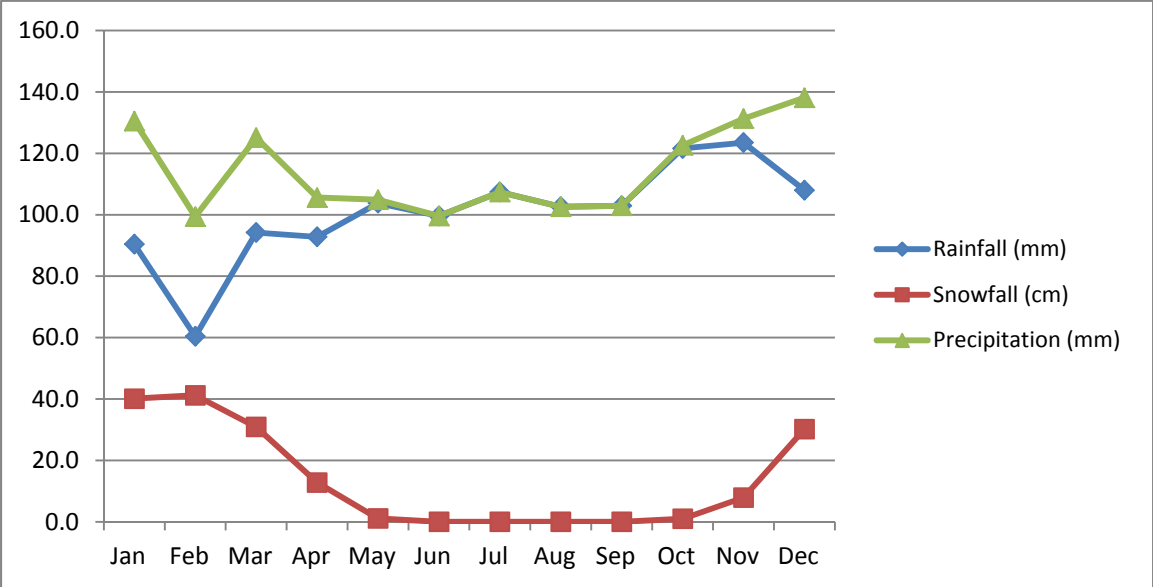


Figure 5-1 - Precipitation Averages, Middle Musquodoboit

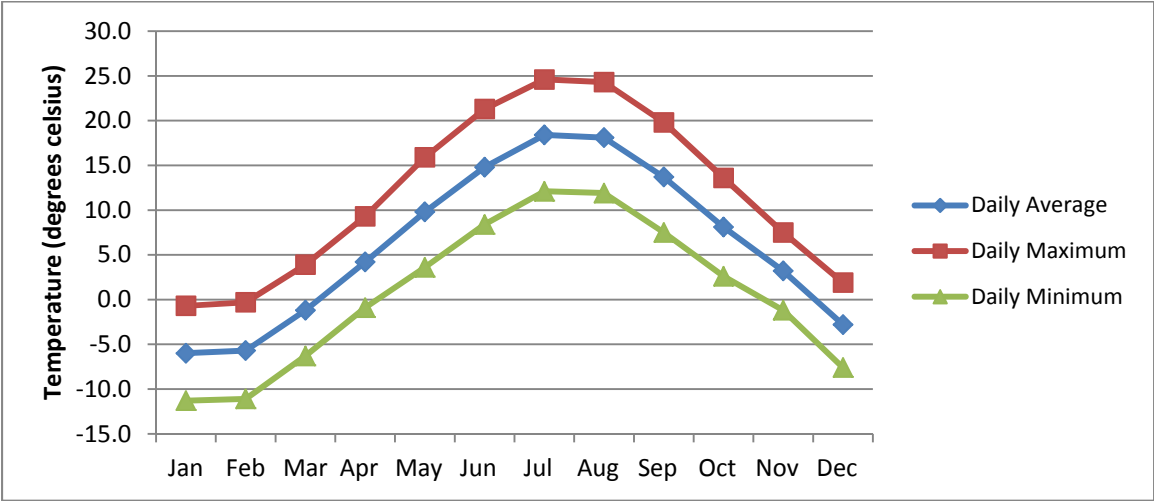


Figure 5-2 - Temperature Averages, Middle Musquodoboit

### 5.5 Surface Rights

As discussed in section 4.4, mineral rights to the Property are held by the Issuer. Surface rights are held by the Crown and by private landholders. The Issuer must obtain permission from the surface rights holders to access their land. Permits must be obtained from the government before exploration and/or development work can begin (see section 4.7).

### 5.6 Utilities

The Property is well located with respect to utilities. An electrical power line runs along the Mooseland Highway, although a generator or utility upgrade may be required to supply three-phase power for milling. Water is abundant and readily available. The nearby population centres of Mooseland, Tangier and Halifax are a supply of skilled & semi-skilled labour.

Modern sawmills are located within 50 kilometres of the Property, and can provide the necessary timber for mining purposes.

### 5.7 Processing, Waste and Tailings Sites

A settling pond exists on-site, and can be re-activated were production to begin. During past exploration, this settling pond was used to hold water gathered from surface and water pumped from underground.



Figure 5-3 - Mooseland Settling Pond, Looking Southwest

A new open-pit mine, with attached mill and tailings impoundment facility is planned at the nearby Moose River property (16 road-kilometres away).

Finally, a past-producing gold mine, mill and tailings impoundment facility is located nearby at Tangier, Nova Scotia.

## 5.8 Site Infrastructure

### 5.8.1 Surface Infrastructure

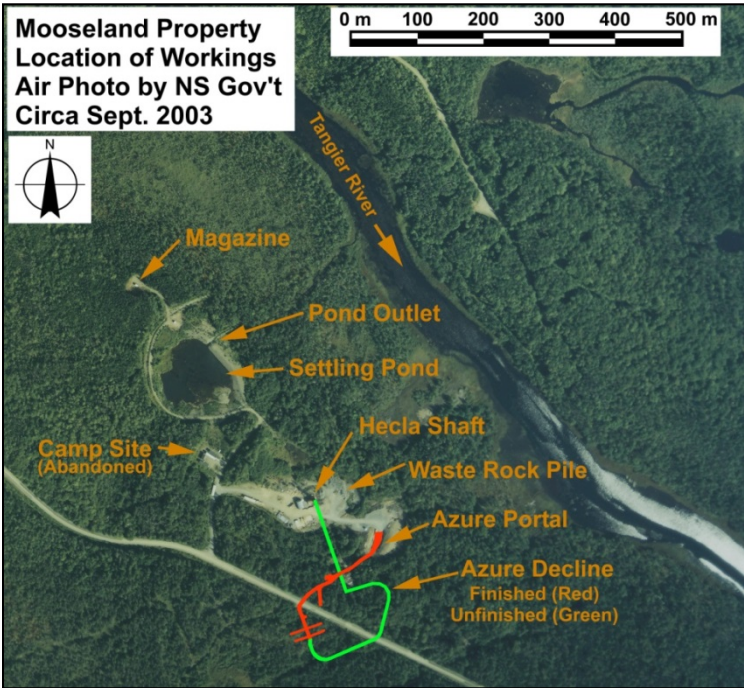


Figure 5-4 - Detail View of Workings on Site

Since modern exploration began in 1988, the site has been levelled and five structures have been built – four buildings and one retention pond.

Buildings on-site include a magazine, headframe, garage, and a core shed. NSGold used the garage to log and store the core. A steel shed is in the process of being built by NSGold; at the time of writing, it is open on two ends.

Approximately four hectares of land were cleared for the surface plant complex, the contractor camp, and the water retention dam. The site and the access road from the highway were graded and levelled in 1988 (Bye, December 1989).

A 12,000 cubic metre settling pond, located north of the surface plant site, was completed in November 1988. Over 10,000 cubic metres of glacial till was placed and compacted to form the retention dam structure (Bye, December 1989).

**5.8.2 Underground Infrastructure**

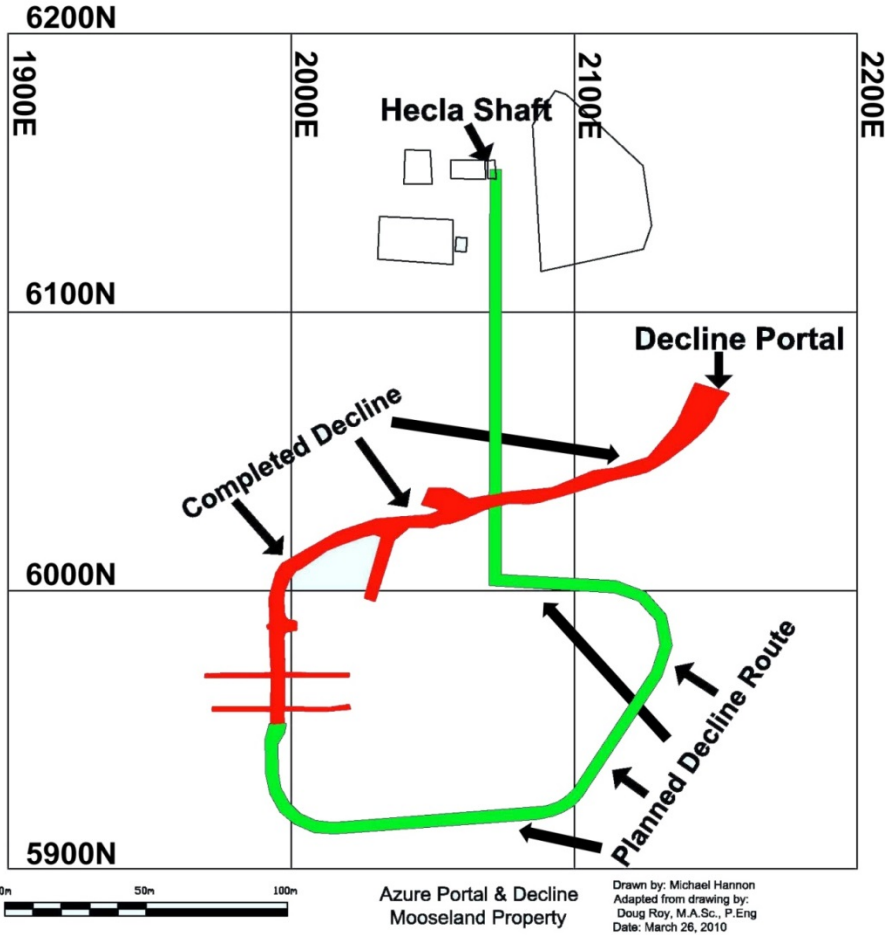


Figure 5-5 - Azure Portal & Decline

Underground infrastructure at the site consists of a shaft and a decline.

The shaft was sunk in 1988-1989 as part of Hecla's exploration project, and reached a total depth of 124.9 metres before work ceased.

The decline was made in 2003 as part of Azure's exploration project; it was intended to pass through the south limb of the West Zone and meet up with the Hecla shaft. It reached a length of 218 metres and depth of 46 metres before work ceased. In addition, a sump, remuck and two drifts were put in place.

See section 9.2 for more details on underground exploration at the Property.

## 6 History

### 6.1 Prior Ownership

Since 1985, four different companies - Tri-Explorations Ltd., Acadia, Globex, and NSGold - have held all or part of the claims that make up the central license (# 05978). During Globex's ownership, a fifth company, Azure Resources Inc. (now called Pencari Mining Corporation) held an option on the central license and conducted work on the property, but the license remained in the control of Globex.

The remaining licenses were originally staked by Globex (no. 08708, in 2009), Meguma Resource Enterprises Inc. (no. 08604), and NSGold (nos. 09232, 09233, and 09845, in 2010, 2010 and 2011, respectively). Parts of license 09845 were previously obtained from Globex as the former license 08565. A current list of the licenses & constituent claims that make up the property can be found in Table 4-1.

### 6.2 Historical Exploration

#### 6.2.1 Introduction

The first recorded discovery of gold bearing quartz in Nova Scotia was made at Mooseland in September, 1858 by Lieutenant C. L'Estrange while moose hunting on the Tangier River. Two years later, in May 1860, gold in a quartz boulder was found in the same area, initiating the first gold rush in Nova Scotia. The area was officially proclaimed the Mooseland Gold District by April, 1861. Old stamp mill tailings are widely scattered and overgrown (Zalnierunas, 1997).

Since discovery of gold at Mooseland in 1858, the Property has been explored and exploited by numerous individuals and companies. Early workers recognized the unique nature of the saddle veins. Their work focused on trenching along the surface strike of the veins with shafts at regular intervals along each vein. The depths of trenches and shafts were limited by the water table.

In excess of 22 shafts and 100 trenches and pits were excavated in the West Zone before the 1980s; more than 14 shafts on the east side of the river were mapped by E.R. Faribault of the Geological Survey of Canada on his 1899 map of the Mooseland Gold District. The sites of three old crushers (stamp mills) are included on his map and two tailings piles from this work were observed during the property examination.

## 6.2.2 Summary

Table 6-1 - Summary of Historical Exploration

<b>1860</b>	Production began on the Furnace Lead using a stone grinding mill; the first stamp mill was erected during 1862.																								
<b>circa 1866</b>	District opened up to road access; several shafts and stopes developed on the Furnace, Cummings and Specimen Leads.																								
<b>1869</b>	Discovery of the Irving Belt in 1869, followed by the discovery of Little North Lead in 1870. Small scale mining continued on these zones until the 1880s.																								
<b>1884</b>	Gold bearing boulders found on the west bank of the Tangier River. Discovery of the Bismarck Lead and formation of the <b>Mooseland Gold Mining Company</b> with minor production until 1895.																								
<b>1896 - 1914</b>	Minor sporadic work on the Cummings Lead.																								
<b>1932 - 1933</b>	19.9 ton sample was metallurgically tested, and averaged 3.77 g/tonne (0.11 opt) Au.																								
<b>1934</b>	Prospecting and sampling by <b>Mining and Finance Corporation Ltd.</b>																								
<b>1937 - 1938</b>	Nine diamond drill holes drilled by <b>Compagnie Belgo-Canadien de Prospection Minière Limitée</b> testing hinge zones of the Irving and Cummings Leads. Best reported assays were:																								
	<table border="1"> <thead> <tr> <th>g/tonne</th> <th>Metres</th> <th>Opt</th> <th>Feet</th> </tr> </thead> <tbody> <tr> <td>38.06</td> <td>0.61</td> <td>1.11</td> <td>2</td> </tr> <tr> <td>15.09</td> <td>1.22</td> <td>0.44</td> <td>4</td> </tr> <tr> <td>16.80</td> <td>0.61</td> <td>0.49</td> <td>2</td> </tr> <tr> <td>19.54</td> <td>0.61</td> <td>0.57</td> <td>2</td> </tr> <tr> <td>17.83</td> <td>0.91</td> <td>0.52</td> <td>3</td> </tr> </tbody> </table>	g/tonne	Metres	Opt	Feet	38.06	0.61	1.11	2	15.09	1.22	0.44	4	16.80	0.61	0.49	2	19.54	0.61	0.57	2	17.83	0.91	0.52	3
g/tonne	Metres	Opt	Feet																						
38.06	0.61	1.11	2																						
15.09	1.22	0.44	4																						
16.80	0.61	0.49	2																						
19.54	0.61	0.57	2																						
17.83	0.91	0.52	3																						
<b>1948</b>	Self Potential survey completed for <b>Marshall Red Lake Mines Ltd.</b>																								
<b>1963 - 1967</b>	<b>W.B. Jackson</b> worked an old 18.3 metre (60 foot) shaft on Irving Belt and sank a shaft on the Anna Lead.																								
<b>1974</b>	Geological mapping was completed by <b>Stuart Avril</b> . The Property was acquired by <b>D.P. Rogers</b> and one drill hole was drilled to 67.7 metres																								



(222 feet), encountering 4 specks of gold.

- 1978 - 1981** **Cuvier Mines Inc.** carried out surface sampling, trenching and diamond drilling (21 holes for 350 metres (1,150 feet)). The property was subsequently acquired by **Tri-Explorations Ltd.** who optioned it to **Acadia Mineral Ventures Ltd.** in 1986.
- 1985 - 1986** The **Geological Survey of Canada** carried out a VLF / Total Field Magnetic / Vertical Gradient of TF survey. The survey was carried out at a mean altitude of 150 metres on N-S lines spaced 300 metres apart, with a line distance of 16,233 km.
- 1986 - 1988** Acadia carried out a broad exploration program on the East and West Zones, including diamond drilling and an Induced Polarization (IP) survey. The drilling totalled approximately 31,700 metres in 135 holes. This drilling outlined the most promising West Zone targets, increased the understanding of the East Zone, and formed the basis of later resource estimates. The IP survey covered 9.8 line kilometres. The Tangier River fault system was interpreted to correspond to a resistivity low, while the anticline was thought to correspond to a frequency effect anomaly.
- 1988 - 1989** **Hecla Mining Company of Canada, Ltd.**, carried out site preparation including clearing land, constructing surface buildings and a 12,000 cubic metre settling pond.
- Later, Hecla began to sink a shaft in order to explore and bulk sample mineralized veins that had previously been identified by diamond drilling. Due to lack of available financing, the project was suspended before completion. The planned program of lateral development and bulk sampling was not carried out.
- 1997** The provincial government publishes an enhanced (2<sup>nd</sup> vertical derivative) aeromagnetic map of NTS area 11D/15C.
- 2002** In 2002, a single reconnaissance line of V.L.F. E.M. surveying was done for Globex, approximately 1 kilometre east of the East Zone. The survey outlined two cross-overs, probably related to slate horizons within the Meguma rock sequence. The survey was carried out by **Rainbow Resources Ltd.** on behalf of Globex (O'Sullivan, 2002).
- 2003 - 2004** Azure carried out an extensive program including diamond drilling and development of a portal and decline.

The drill program had six holes totalling 1,167.65 metres. The four West Zone holes succeeded in confirming previous intersections and demonstrating sufficient rock quality for the anticipated decline. The two East Zone holes confirmed previous intersections and improved understanding of the geological structure & stratigraphy of that Zone.

The decline was collared in the West Zone, with a plan to connect it with the Hecla shaft, and collect a 2,000-10,000 tonne bulk sample. Work on the decline ended before it was finished due to lack of financing. The bulk sample was limited to 2,000 tonnes. Time and money constraints led to its failure: it was taken out before the planned depth had been reached, and milled before an efficient circuit could be installed in the mill.

- 2005** In 2005, the Nova Scotia Department of Natural Resources published an Airborne Total Field VLF-EM (Line Component) map for the area surrounding the Mooseland Property.
- 2010** **NSGold Corporation** began working on the property, carrying out a 26-hole diamond drilling program. In the West Zone, 13 holes (3,613 metres) were drilled, and in the East Zone, 13 holes (2,894 metres) were drilled.
- 2011** **NSGold** conducts further drilling, comprising 8 holes (2,606 metres) in the West Zone and 8 holes (2,404 metres) in the East Zone during 2011 for a total of 5,010 metres of NQ-sized core.
- 2012-2013** **NSGold** conducts drilling of 15 holes (948 metres) in the West Zone, outlining near surface gold resources.

### 6.3 Historical Resource Estimates

Two non-NI 43-101 compliant historical resource estimates were made for the Property in the late 1980s.

The background material for the historical resource estimates, such as cross sections and resource block diagrams, were not available.

#### 6.3.1 MPH

**The Qualified Person has not done sufficient work to classify the following historical estimate by MPH as current mineral resources or mineral reserves. NSGold is not treating the historical estimate by MPH as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of NI 43-101.**

**The 1987 and 1989 resource estimates by Coates & Riddell are historical estimates and should not be relied upon.**

The MPH resource estimates are relevant because they use much of the same base data as the current resource estimate. However, they are not reliable, because they are not 43-101 compliant, and because background information – such as cross sections and resource block diagrams – was not available for review.

The MPH estimates did not use the resource/reserve categories set out in Sections 1.2 and 1.3 of NI 43-101. The categories of “reserves” used to define mineralized material at Mooseland by Coates and Riddell in their 1987 and 1989 historical estimates were standard and acceptable practice at the time.<sup>3</sup> However, the category of ‘possible reserve’ uses inferred resources to calculate a mineral reserve, a practice that is not permitted under current standards. There is no current designation of ‘possible’ reserves.

The Mooseland property has no current mineral reserves. No economic feasibility work was done to support establishing mineral reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability. For the reasons stated

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<sup>3</sup> The definitions, quoted from their report, were as follows (Coates and Riddell, 1987, pp.28-29 via Zalnierunas, 1997):

*“ “Proven Ore” or “Measured Ore” is that material for which tonnage is computed from dimensions revealed in outcrops or trenches or underground workings and/or drill holes and for which the grade is computed from the results of adequate sampling. The sites for inspection, sampling, and measurement are so spaced and the geological character so well defined that the size, shape, and mineral content are established. The computed tonnage and grade are judged to be accurate within limits which must be stated. It must be clearly stated whether the tonnage and grade of “Proven” or “Measured” Ore is in situ or extractable. Dilution factors, if used, should be clearly explained.*

*“Probable Ore” or “Indicated Ore” is that material for which tonnage and grade are computed partly from specific measurements, samples, or production data, and partly from projection for a reasonable distance on geologic evidence. The sites available for inspection, measurement, and sampling are too widely or otherwise inappropriately spaced to outline the material completely or to establish its grade throughout.*

*“Possible Ore” or “Inferred Ore” is that material for which quantitative estimates are based largely on broad knowledge of the geologic character of the deposit and for which there are few, if any, samples or measurements. The estimates are based on an assumed continuity or repetition for which there are reasonable geological indications; these indications may include comparison with deposits of similar type. Bodies that are completely concealed may be included if there is specific evidence of their presence...”*

above, the “reserve” categories used by Coates & Riddell for their historical estimates cannot be compared to current resource categories.

MPH prepared a “reserve” estimate of the West Zone for Hecla in 1987 and updated it in 1989 (Coates and Riddell, 1987 and 1989). The 1987 estimate defined a “geological reserve” of 600,000 tonnes at 8.36 g/tonne of “possible and probable material” hosted in seven separate zones, along a strike length of 600 metres. The estimate was based on the results of 65 West Zone drill holes.

The MPH “probable reserve” calculation was made using longitudinal projections of individual ore zones, from data and cross sections provided by Acadia. High gold values were cut (‘top cut’) using a log probability plot. A total of 20 core samples returned values in excess of 1 oz/ton with five samples over 10 oz/ton. Cutting resulted in the five highest assays being reduced to values of 7 to 2 oz/T.

The “possible reserves” were based on following reasoning:

“Good potential for discovery of further mineralization exists in several areas within and immediately adjacent to the drilled area. Since all of the known mineralized zones are open either along strike or to depth or both it is not unreasonable to assume that further gold mineralization would be encountered with further drilling. An in situ possible reserve figure of 300,000 tonnes of material of similar grade to that of the probable reserve is assigned to the Main Mooseland area.”

Parameters to calculate the “probable reserve” were:

- Cutoff grade of 3.4 g/tonne Au using a minimum width of 1.5m, high assays cut;
- Drill hole intersection assigned a 50 metre square zone of influence;
- Overlapping drill intersection squares reduced to weighted polygons;
- Core assays diluted at zero grade to a minimum mining width of 1.5 metres;
- Specific gravity of 2.7 tonnes per cubic metre; and
- Maximum depth of 400 metres

Results from the 1987 MPH estimate are summarized below:

Table 6-2 - 1987 MPH Historical “Resource Estimate”, not 43-101 Compliant

Zone(s)	Maximum Tested Depth	Tonnes	Grade (g/tonne)
Furnace	200	28,115	3.27
Little North	250	68,889	4.86
South Irving	250	59,618	7.58
South Bismark	250	53,967	14.13
Miscellaneous Core Zones	400	10,124	9.22
North Bismark	250	85,113	9.00
North Cummings	200	10,125	16.31
<i>“Probable Reserves”</i>		315,991	8.36
<i>“Possible Reserves”</i>		300,000	8.36
<b>Grand Total Geological Reserves (rounded)</b>		<b>600,000</b>	<b>8.36</b>

In 1989, Coates & Riddell updated their estimate to incorporate 20 new drill holes in the West Zone, for a total of 85 drill holes. 58 samples assaying from 5451.47 to 13.00 grams of gold per tonne were cut ('top-cut') to values ranging from 225.0 to 12.0 grams per tonne. This estimate only calculated "Probable" reserves. It found "total probable indicated reserves", to a depth of 400 metres, of 433,000 tonnes with an uncut grade of 18.00 g/tonne Au or a cut grade of 5.15 g/tonne Au. The reader should note the large difference between the "top-cut" and "non-top-cut" grades, which is a classic example of coarse gold environments.

The zones were diluted to a minimum mining width of 1.22 metres (4 feet). Mineralization was contained in eight zones.

The actual grade of the resource may be somewhere in between the uncut estimate of 17.7 g/tonne and the cut estimate of 5.1 g/tonne. Some method for treating the outliers is absolutely required. Coates's and Riddell's method, while more thoughtful than simply cutting outliers back to a single grade, may have been excessive. The best method for evaluating and perhaps modifying their cutting procedure would be to compare their estimated grades with "actual" grades from larger samples or from mining.

**The 1987 and 1989 resource estimates by Coates & Riddell are historical estimates and should not be relied upon.**

### 6.3.2 [Hecla](#)

**The Qualified Person has not done sufficient work to classify the following historical estimates by Hecla as current mineral resources or mineral reserves. NSGold is not treating the historical estimates by Hecla as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of NI 43-101.**

**The 1988 Hecla resource estimates are historical estimates and should not be relied upon.**

The Hecla resource estimates are relevant because they use much of the same base data as the current resource estimate. However, they are not reliable, because they are not 43-101 compliant, because they are unpublished internal estimates, and because background information – such as cross sections and resource block diagrams – was not available for review.

The Hecla estimates did not use the resource/reserve categories set out in Sections 1.2 and 1.3 of NI 43-101. Because the criteria used by Hecla may have changed from one estimate to the next, and no detailed reports on the Hecla estimates are available, the

ways in which Hecla's "resource"/"reserve" categories differ from the current categories outlined in Section 1.2 or Section 1.3 of NI 43-101 are not known. It is known that Hecla's "factored reserve" category used a method of reducing tonnage and/or grade of individual blocks (described below) that is not permitted under current standards.

The Mooseland property has no current mineral reserves. No economic feasibility work was done to support establishing mineral reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability. For the reasons stated above, the "reserve" categories used by Hecla for its historical estimates cannot be compared to current resource/reserve categories.

A number of unpublished internal "summary reserve estimates" by Hecla's staff exist. The reserve figures fluctuate, possibly due to changing criteria and the addition of drilling data. The reserve criteria are not stated, except in a statement which refers to the East Zone for January 1988. These reserve criteria are listed below and may apply in general to the other calculations. Only one summary estimate has been reviewed by the Author; the rest are known only through Zalnieriunas' 1997 report.

It is important to note that what the Hecla staff refer to as a "factored reserve" is a hybrid reduced reserve in which staff reduced tonnage and/or grade by a percentage factor, based on unexpressed geological or data quality reasons, to reflect what they expected to find in actual underground stopes. The judgement was speculative, perhaps based on previous experience on similar deposits, but not based on historical mining experience from the Property.

The other notable change that Hecla took in comparison to the MPH estimates was the stated shrinking of reserve blocks from 25m radial zones of influence to 15m radial zones of influence, with rectangular blocks constructed to join intersections of apparent continuity.

The criteria used to calculate the January 1988 East Zone reserves are described in the 1997 Zalnieriunas report as follows:

- intersections corrected for true width and diluted to a minimum 1.5 metre (5ft mining) width;
- minimum cut-off grade used was 5.14 grams per tonne over 1.5 metres (0.15 opt over 5.0 feet);
- reserve blocks as squares or rectangles using a maximum projection of 15 metres (50 feet); adjacent drill intersections given strong consideration on determining peripheral block dimensions;
- specific gravity used was 2.67 (tonnage factor of 12 cubic feet per ton);
- multiple drill hole intercepts in a given ore block stated as a width-weighted average;
- all assays uncut; figures in feet, short tons and troy ounces of gold per short ton
- "ore reserves" represent geologic "Indicated-Inferred reserves"; and
- a probability factor is estimated for and applied to each reserve block. This factor was based on the estimator's appraisal of the geologic factors and data quality applied to each block. The factored or probable tons and grade were thought to more accurately reflect the reserves for each given block (i.e. overall probability factor for the East Zone was 66.5% although applied factors ranged from 80% to 50% for individual ore blocks 1 to 19).

(Zalnieriunas, 1997, page 23)

The results of the Hecla “reserve” estimates are included below:

Table 6-3 - Historical Hecla “Reserve Estimate”, Not 43-101 Compliant

Date / Author	Zone(s)	Drill Indicated Reserves (Hecla's "calculated")	"Factored" Reserves (Hecla's "probable")	Comments
1988-01-05 by Kopp	East	269,000T @ 0.384opt Au	179,000T @ 0.373 opt Au	East: 19 ore blocks; calculated to depth of 170 metres (560 ft) West: Depth not available
	West	622,000T @ 0.428opt Au	344,000T @ 0.428 opt Au	
	Total	891,000T @ 0.413opt Au	523,000T @ 0.41 opt Au	
1988-02-17 by Kopp	East	304,700T @ 0.633opt Au	206,805T @ 0.565 opt Au	East: 27 ore blocks West: 8 veins Both zones unstated depths
	West	360,600T @ 0.72 opt Au	219,730T @ 0.67 opt Au	
	Total	665,300T @ 0.68 opt Au	426,535T @ 0.62 opt Au	
1988-02-18 by Kopp	East	327,350 @ 0.585opt Au	206,518T @ 0.563 opt Au	East: 27 oreblocks. Depth: 185m (600 ft)
1988-04-28 by Kopp	West	312,720T @ 0.37 opt Au	250,280T @ 0.37 opt Au	West: 8 veins, DDH ML-1 to ML-85; reserve to 950m elevation with L'Estrange belt to about 700m level; surface at 1100m, depth of 400m (1,300 ft)

**The 1988 Hecla resource estimates are historical estimates and should not be relied upon.**

The Mooseland property has no current mineral reserves. No economic feasibility work was done to support establishing mineral reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

## 6.4 Historical Production

Total recorded production for the district between 1863 and 1934 is 3,865 ounces of gold recovered from 9,058 tons of crushed material (J. Bates, 1982).

## 7 Geological Setting

### 7.1 Regional Geology

This description of the regional geology is derived from reports by R.V. Zalnierius (1997) and H.J. Coates and W.J. Riddell (1987):

The gold fields of Nova Scotia occur within the Meguma structural terrane. The Meguma is a tectonic subdivision of the northern Appalachians composed predominantly of Cambrian to Lower Devonian sediments and turbiditic metasediments. These were folded about northeasterly trending, sub-horizontal axes during the Early Devonian Acadian Orogeny when the terrane docked with the eastern side of the Avalon Platform. These sediments have been subdivided into two groups: the Cambro-Ordovician Meguma Group, which consists of the basal Goldenville Formation quartz wackes and overlying Halifax Formation slates; and the Silurian to Lower Devonian-aged infolded keels of clastic sediments and volcanics of the White Rock, Kentville, New Caan and Torbrook formations, which occur at the terrane's west and northeasterly limits.

The Meguma Group was intruded by granitoid plutons of Middle Devonian to Early Carboniferous age, consisting of granite, granodiorite, granodiorite porphyry, two-mica granite and lesser quantities of tonalite and trondhjemite. Intrusives range in size from a few square kilometres to that of composite batholiths. A Devonian granitoid body, the Musquodoboit Pluton, outcrops in the western part of the Mooseland Gold District. The intrusions deformed and metamorphosed the turbidite sequence during the Acadian Orogeny. The main feature of the deformational history of the Meguma Terrane is the formation of a series of major east-west trending upright symmetric to slightly reclined asymmetric folds. A penetrative slaty cleavage was developed in the argillaceous units during this episode as well as a pervasive pressure solution cleavage in the greywackes. This folding and cleavage has an important role in the development of the gold deposits. Regional metamorphism is of greenschist to upper amphibolite facies.



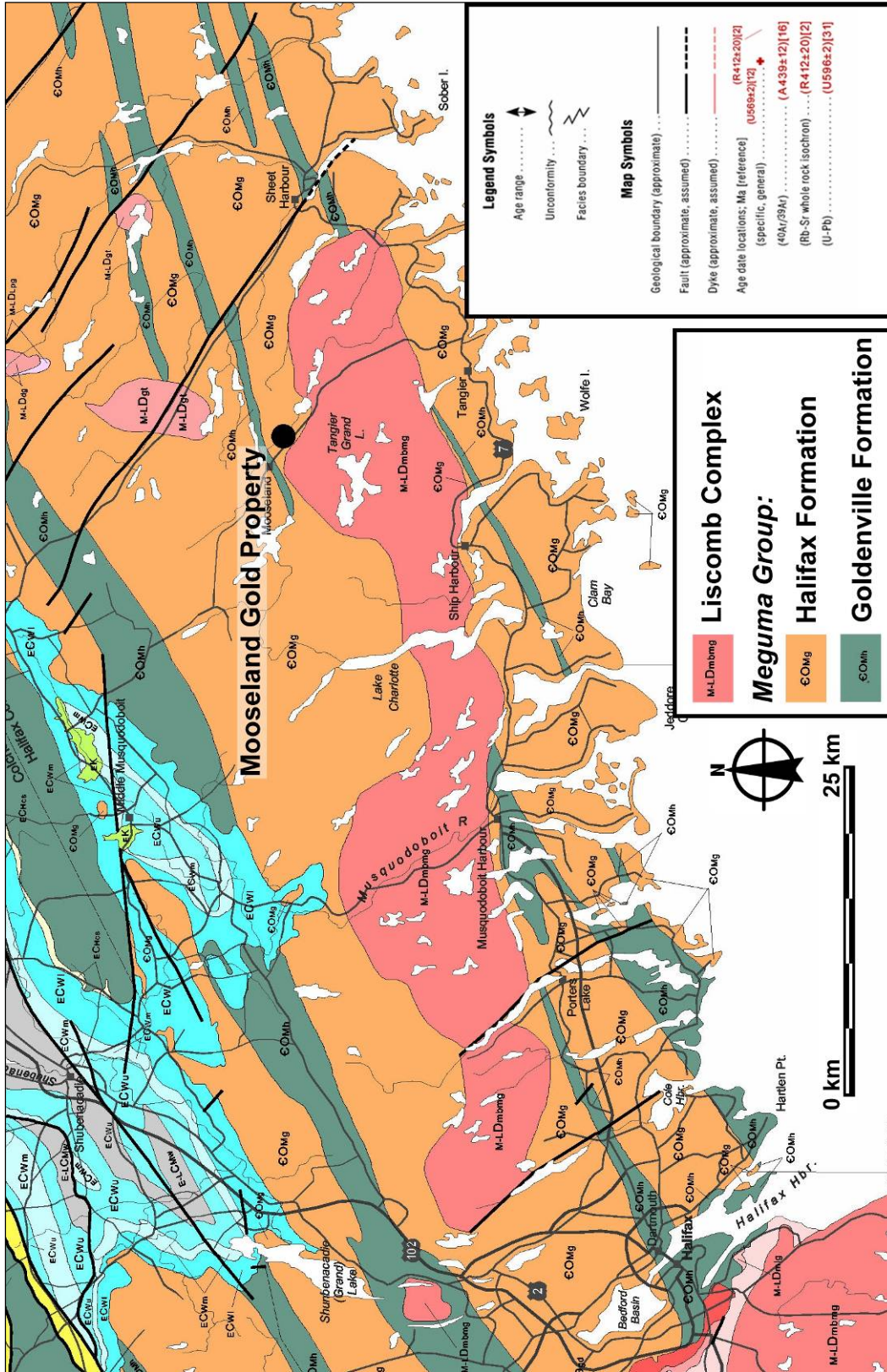


Figure 7-1 - Regional Geology Map, from the Geological Map of Nova Scotia (Map ME 2000-1)

Mineral occurrences within the Meguma occur as three styles as follows:

- a) concordant, syn-depositional or diagenetically related deposits such as the Eastville base metal occurrences associated with the Goldenville-Halifax Formation Transition Zone (GHT) and Clinton-type iron formations;
- b) hydrothermal, structurally controlled deposits such as the 370 Ma-aged auriferous concordant Goldenville Formation quartz veins; and
- c) mineralization associated with Acadian plutonism such as the East Kemptville or Millet Brook uranium deposits

## 7.2 Property Geology

There are two primary zones of mineralization on the Mooseland Property, the East and West Zones. The West Zone was the first to be discovered and is the source of most historical production. A fault block between the two zones hosts a portion of the Bismark lead; this fault block is the source of some historical production.

The following geological description of the property is based on reports by M. Sanguinetti (2002), R.V. Zalnierunas (1997), Lionel Thorpe (1989), and information in files provided by Globex.

The property is underlain by both the Goldenville and Halifax formations of the Meguma Group. A mountain-building period 375-325 million years ago (the Acadian Orogeny) deformed the Meguma Group strata, creating a major east-west trending anticline<sup>4</sup>. Bedding dips steeply north and south a short distance from a fairly compact hinge area. The fold forms a narrow, elongated dome which varies in plunge from 10° E on the eastern part of the district near the Tangier River to 5°W near Moose Lake. A penetrative slaty cleavage, which may grade into a schistose fabric, as well as a pervasive pressure solution cleavage in the greywackes, was developed in the argillaceous units during deformation.

A major, post-ore, northwest trending fault zone follows the Tangier River, causing a combined displacement of several hundred meters. Several other faults of similar attitude, but with limited displacement, occur nearby, away from the main fault zone. Carbon-rich slates of the Halifax Formation underlie the northwest corner of the property and granites of the Musquodoboit Pluton underlie the southwest corner. A 'halo' of metamorphic rock, defined by staurolitic slate, borders the pluton.

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<sup>4</sup> The Mooseland-Geogan Anticline

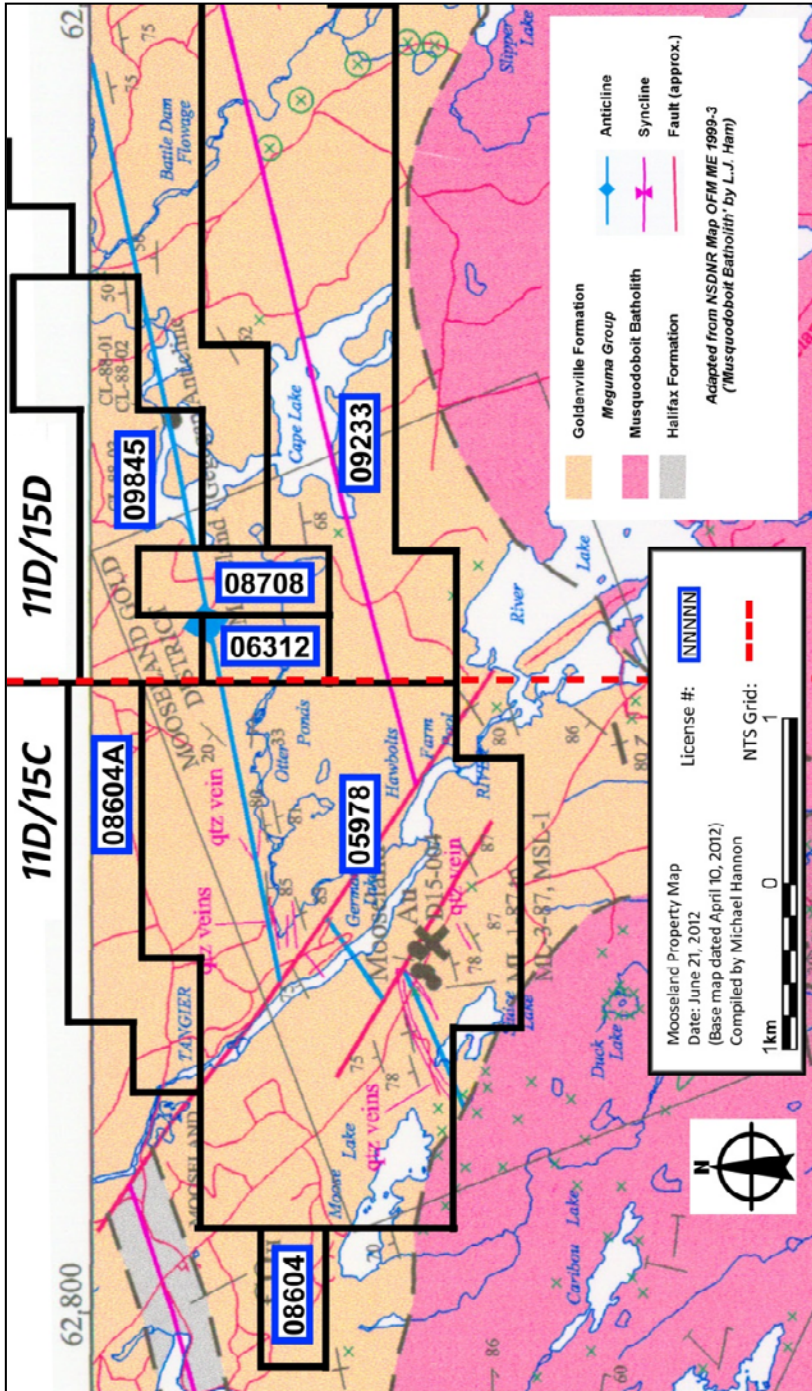


Figure 7-2 - Property Geology Map (adapted from OFM ME 1999-3)

The main area of the property is underlain by turbidites of the Goldenville Formation which consist of quartz-rich greywacke units with interbedded, thin argillaceous beds. The interbedded greywacke and argillite package which hosts the mineralization is greater than 200 metres in true thickness. Gold mineralization is developed in and adjacent to interbedded quartz veins which are preferentially developed in the argillite

units. The gold-bearing veins are nearly conformable to bedding and often show a distinctive laminated or brecciated appearance due to wispy inclusions of dark chloritic argillite. The main structural control on the veins is the cleavage, which develops parallel or sub-parallel to bedding in argillaceous material during concentric folding. Many of the veins are saddle veins which are wrapped around the major anticline. Quartz veining seems to preferentially occur asymmetrically on a preferred anticlinal flank, commonly associated with a domal nose or secondary flanking structure (R.V. Zalnierunas, 1997).

Since these veins are folded, they are interpreted as being emplaced during the period of tectonic activity which produced the main folding. Gold occurs in and adjacent to these quartz veins as free gold and within sulphides. Carbonate is often associated with the quartz as are arsenopyrite and minor amounts of pyrite, chalcopyrite and galena. The veins locally contain black tourmaline. The existence of fluid movement throughout the mineralized system is indicated by the presence of silicification, chloritization, sericitization and carbonate alteration. These features are widespread but non-penetrative (H.J. Coates and W.J. Riddell, 1987).

Similarities between the Mooseland mineralization and structure and the nearby Dufferin Mine have been observed and commented upon by geologists from Faribault and Malcolm in 1929 to current government personnel, such as R. Horne (Sanguinetti, 2002).

### 7.3 Mineralization

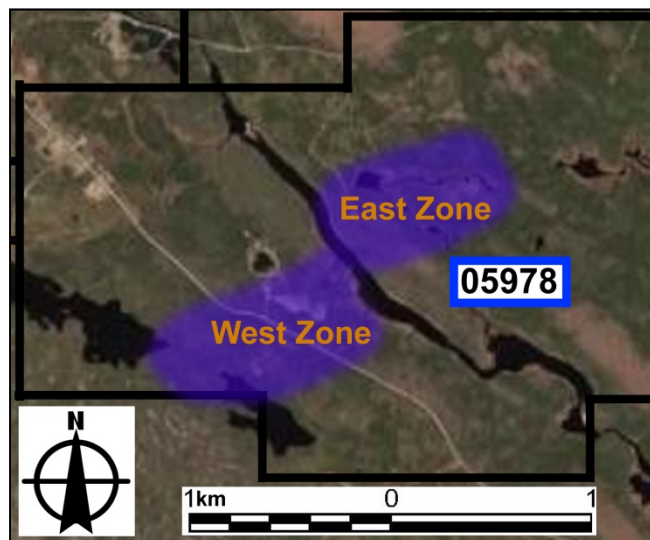


Figure 7-3 - General Location of the West and East Zones

All mineral resources, mine workings, waste rock deposits, and improvements are located in license 05978. They are near the centre of the license, and cover an area of

approximately one square kilometre. The major infrastructure, including shaft, portal, decline and settling pond are in an area about 300 metres by 500 metres on the right (west) side of the Tangier river (see Figure 5-4 and Figure 7-3).

A review of available geophysical data, commissioned by NSGold and described in section 9.1.4, revealed potential exploration targets to the east of the developed section of the Property.

Mineralization is hosted by an interbedded greywacke and argillite package that is greater than 200 metres in true thickness. (Covey, 2004, Part I, page 13)

Veins consist of 85% to 95% massive quartz, white to pale grey in colour and containing 5% to 10% wall rock inclusions and minor sulphides. The most common sulphide is euhedral, coarse-grained arsenopyrite. There are significant quantities of pyrrhotite and pyrite while minor amounts of sphalerite, galena and chalcopyrite occur and generally indicate a higher gold content. At the nearby Dufferin Mine the presence of galena is invariably indicative of gold mineralization. A few lenses of pyrrhotite-pyrite-chalcopyrite were observed within the sediments as elongated stringers parallel to bedding. (Zalnieriunas, 1997) Gold generally occurs within argillite and does not occur within greywacke.

The **West Zone** covers a strike length of approximately 1,000 metres in an east-west direction. The western end of the zone abuts the local granite intrusive. The eastern end of the zone is cut off by the northwest trending Tangier Fault. A short fault block segment several hundred feet north of the West Zone and containing the Bismark Lead was mined in the late 1890s. Overburden averages five feet in depth; the crest of the fold is well exposed in a trench immediately west of the highway that transects the property. At least eleven separate quartz veins have been defined on both limbs of the fold. Gold is interpreted to occur in small chutes that plunge at 10 to 30 degrees to the east. The individual veins average from three inches to three feet and occasionally are up to eight feet in width. (adapted from Zalnieriunas, 1997)

The **East Zone** has been explored over a strike length of approximately 240 metres and to a depth of approximately 300 metres. The area is covered by 15 to 30 metres of glacial drift, in the form of a drumlin.

Several drill holes had encountered economically significant gold values for 60 cm to 150 cm disseminated into wallrock adjacent to veining.

The East Zone anticline begins approximately 335 metres north-northeast of the West Zone, while the final fault displacement is about 500-600 metres north of its trend on the West Zone, based on IP geophysics data (Gillick, 2010, pg. 10). The two zones are separated by a wide zone of multiple northwesterly faults. The axis of the anticline



## 8 Deposit Types

The more significant gold deposits in Meguma Terrane, such as the Mooseland Property, are hosted by quartz veins are saddle vein types (see Figure 7-4), and are located in the Goldenville Formation near the Goldenville-Halifax contact.

Within the Goldenville Formation, these quartz veins are better developed in slate horizons than in the more competent greywacke and quartzite strata. The spatial relationship of gold in the Meguma Terrane to major anticlinal structures or domal features along these structures was recognized and documented early on by workers such as Faribault. Many of the occurrences are associated with major cross structures and are less than 1 kilometre from granitic plutons. (R.V. Zalnieriunas, 1997)

The majority of former Nova Scotia gold producers worked individual leads or belts which were typically characterized by narrow mining widths and relatively erratic but sometimes very high grade. In many Meguma gold deposits ore shoots are small target areas in thin lead(s) which would be diluted to a 1 to 1.2 metre mining width (Thorpe, 1989). Larger deposits exhibit geological characteristics similar to smaller ones, but have additional structural or lithological features as a means of concentrating the gold. Such features may include shears, hinge zone thickenings, wider argillite beds or cross-faulting.

Like some other gold deposits in the Meguma, such as Dufferin Mine, Harrigan Cove and Taylor Head, the deposit at Mooseland is a typical saddle reef-type deposit. Saddle reef deposits are located in the crest of anticlinal folds and follow the bedding planes. The hinge zone of a saddle reef type deposit is usually a rounded arc-shape structure, with the limbs (leg reef veins) uniform and straight. Saddle reefs are usually found in vertical succession.

The Ribbon Model, developed for the saddle reef deposits in the Bendigo area of Australia, may be applicable to the Mooseland Property. This model has been applied to the nearby Forest Hill gold deposit. Referring to the Ribbon Model in a report about the Forest Hill deposit, Cullen (2004) wrote:

“This model was originally applied to the Bendigo goldfield in eastern Australia. Johansen (2001) described this model in detail and demonstrated that near horizontal gold grade shoots defined by past mining in the Bendigo area were characterized by ordered vertical stacking within respective vein systems. Multiple repetitions of grade shoots were documented within the 1500 meter vertical depth range to which past mining had been carried in this district. Grade shoots of economic interest were shown to be separated by intervening areas of barren or low grade vein material and thereby produced a ribbon-like pattern when viewed in vein longitudinal projections.” (Cullen, 2004)

Determining the location, size, shape, rake and grade of mineable ore shoots is a major difficulty in planning underground development on a narrow vein gold deposit in the Meguma. Since the gold is not distributed evenly within the quartz veins, it is nearly impossible to accurately define ore shoots by diamond drilling alone.

It is recommended that underground sampling be used to determine a true average grade for the Property.



## 9 Exploration

### 9.1 Geophysical Surveys

Four geophysical surveys have been carried out on the site since 1986. This includes three surveys carried out by third parties and previous owners/operators.

In 2010, the first three surveys were re-interpreted by Gillick et al. on behalf of the Issuer (see section 9.1.4).

#### 9.1.1 VLF-EM Survey, GSC, 1986

The Geological Survey of Canada carried out an airborne magnetic - VLF/EM survey between 1985 and 1986. (GSC Project No. 184). It had a mean altitude of 150 metres on N-S lines spaced 300 metres apart, with a line distance of 16,233 km.

The Government of Nova Scotia produced two regional maps with data from this survey – a 2<sup>nd</sup> Vertical Derivative Aeromagnetic map (Open File Map 87-011) and an Airborne Total Field VLF/EM map (Open File Map ME 2005-105).

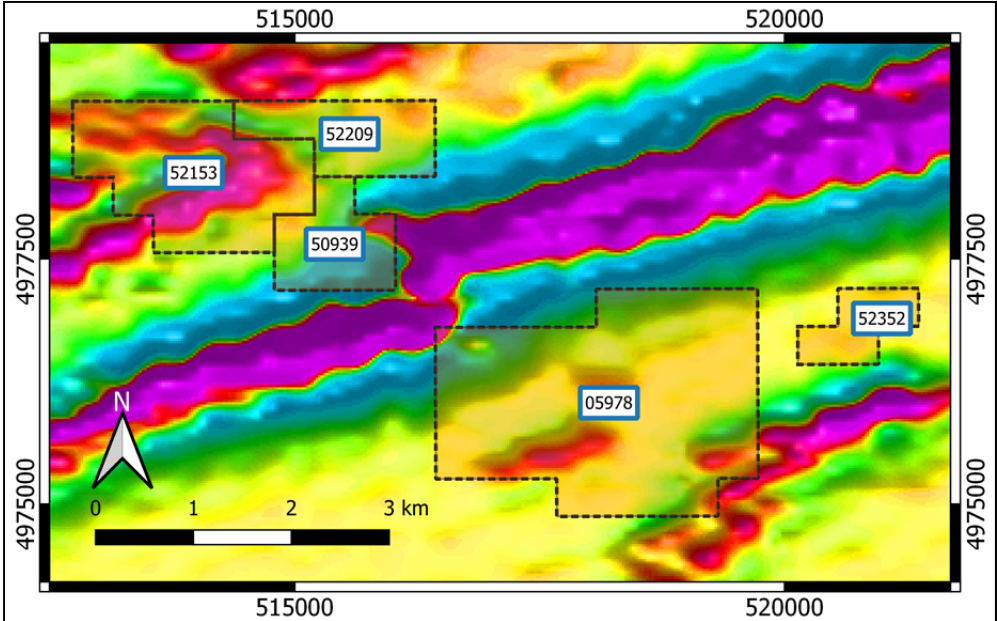


Figure 9-1 - Aeromagnetic Map, 2nd Vertical Derivative, NSDNR, 1997

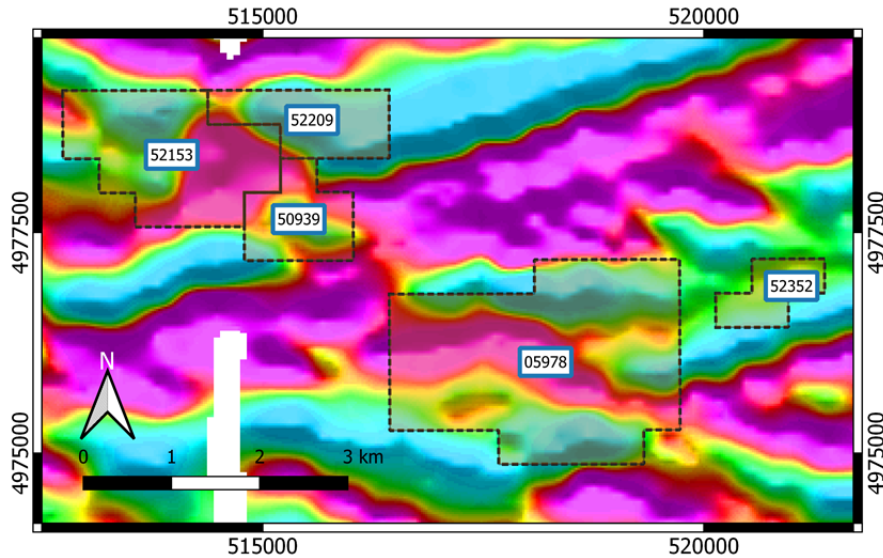


Figure 9-2 - Airborne Total Field VLF-EM Map, NSDNR, 2005

### 9.1.2 I.P. Survey, Acadia, 1987

A 9.8 line kilometre IP survey was completed by Acadia in 1987. A baseline was established to follow the approximate course of the Mooseland anticline as mapped by Faribault. Cross lines were put in at 100-metre intervals and stations established at 50-metre intervals on the lines. Lines were generally run 600 metres north and 1,000 metres south. Difficulties with property owners necessitated shortening the north side of lines 4E to 8E inclusive so they only run to 4+50 metres north.

### 9.1.3 VLF EM Survey, Globex, 2002

A single reconnaissance line of V.L.F. E.M. was surveyed in 2002 by Rainbow Resources Ltd. on behalf of Globex. The survey was run approximately 1 kilometre east of the East Zone.

### 9.1.4 Compilation and Review of Ground Geophysics, NSGold, 2010

In 2010, NSGold commissioned Robert E. Gillick (of Robert E. Gillick & Associates Ltd.), who was subcontracted through D.R. Duncan & Associates Ltd., to produce a compilation, review and reinterpretation of historical geophysical surveys carried out in the Mooseland mining district.

The review incorporated four datasets – the three datasets mentioned above, as well as a nearby IP survey (the Cape Lake MEX survey).

The data quality was considered to be good. The average positional error of the various survey grids ranged from 20-30 metres for the Acadia & Globex grids, to 40-60 metres for the MEX grids.

Drawings produced include pseudosections of apparent frequency effect (FE) and apparent resistivity, 2D sectional and plan inversions of IP/resistivity data, and plan maps of apparent FE and apparent resistivity.

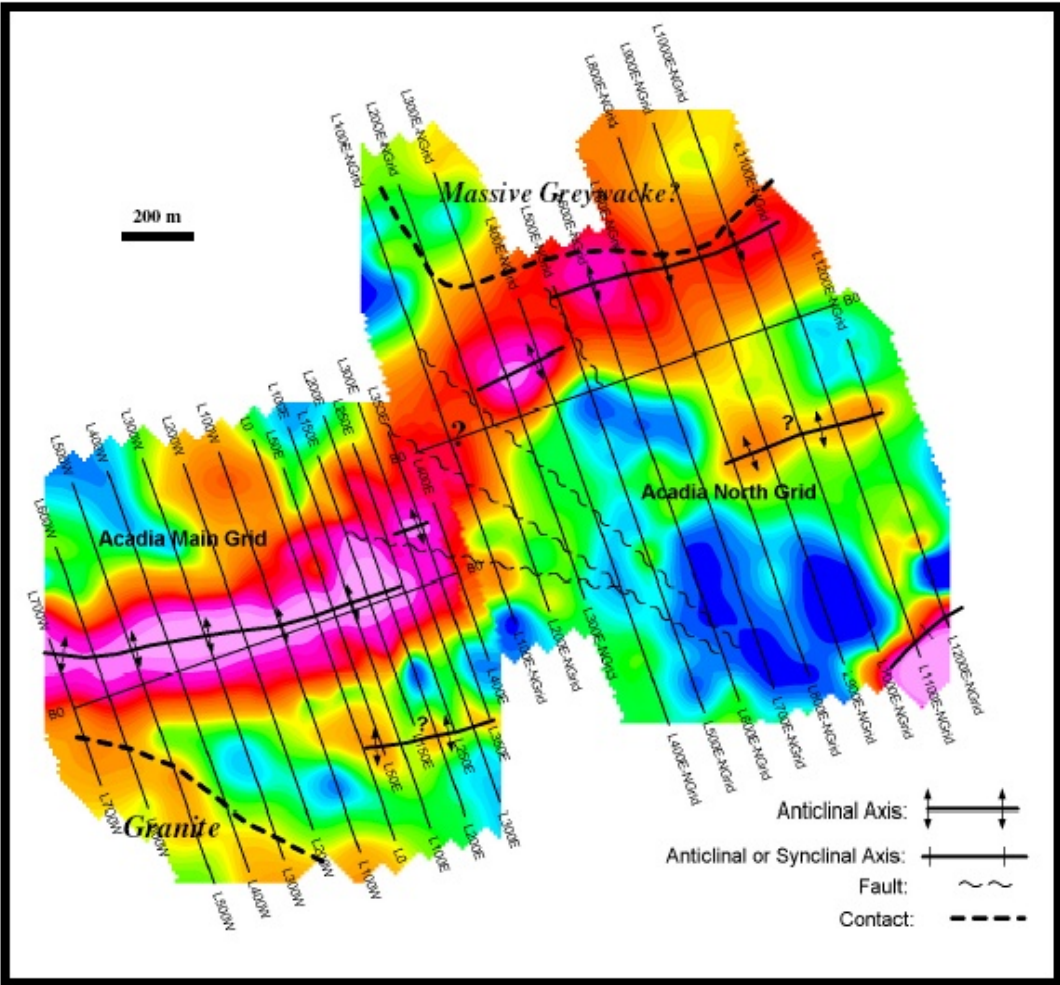


Figure 9-3 - Inverted 2D FE Plan - Acadia Grids - for depths of 32 metres (Gillick, 2010).

Using data from the Acadia IP survey, the axis of the anticline was observed as a frequency effect anomaly across both zones. The MEX grids were too far south to cover the extrapolated position of the Mooseland anticline, although the northern ends on the MEX Northeast Extension grid encountered frequency effect (FE) responses that may be the flanks of the anomaly associated with the anticline (see Figure 9-6).

The Gillick report states that

It appears that there has been no rotation of strike direction of the anticlinal axis by the faulting although more IP surveying is warranted in this zone to confirm this. In particular, along lines 100E and 200E of the Acadia North grid, the FE anomaly is poorly-defined and broad making it impossible to identify strike direction in this area. (Gillick, 2010, pg. 10)

However, diamond drilling in the area has indicated that the axis of the East Zone anticline in that area is rotated (see section 2.5.1).

To the east of this area of ambiguous geophysics data, Gillick's interpretation shows the axis of the anticline returning to the strike direction found in the West Zone, with a final displacement of 600-650 metres north.

Some large areas of high resistivity correlated with wide greywacke sections and/or silicified zones. Major faults at the eastern and western extremities of the West Zone as well as the granite contact at the west end of the grid were also identified.

Gillick finds two anomalies to the south of the anticline. The first is a weak frequency effect anomaly about 450 metres south of and parallel to the West Zone anticlinal axis on the Acadia Main grid. It appears again on the Acadia North and MEX grids, for a total apparent strike length of 3 kilometres.

Gillick described the second anomaly as "a strongly conductive and chargeable trend which first appears in the southeast corner of the Acadia North grid, and then extends across the south part of the MEX NE Extension grid and into the southwest part of the MEX Regional grid. The feature is interpreted as either an anticlinal or synclinal fold, possibly sheared, containing sulfide mineralization."

Based on the federal airborne magnetometer data, Zalnieriunas has written that "[the survey] seems to indicate that the [Mooseland anticline] is a subsidiary fold structure located on the northern flank of a larger structure" (Zalnieriunas, 1997).

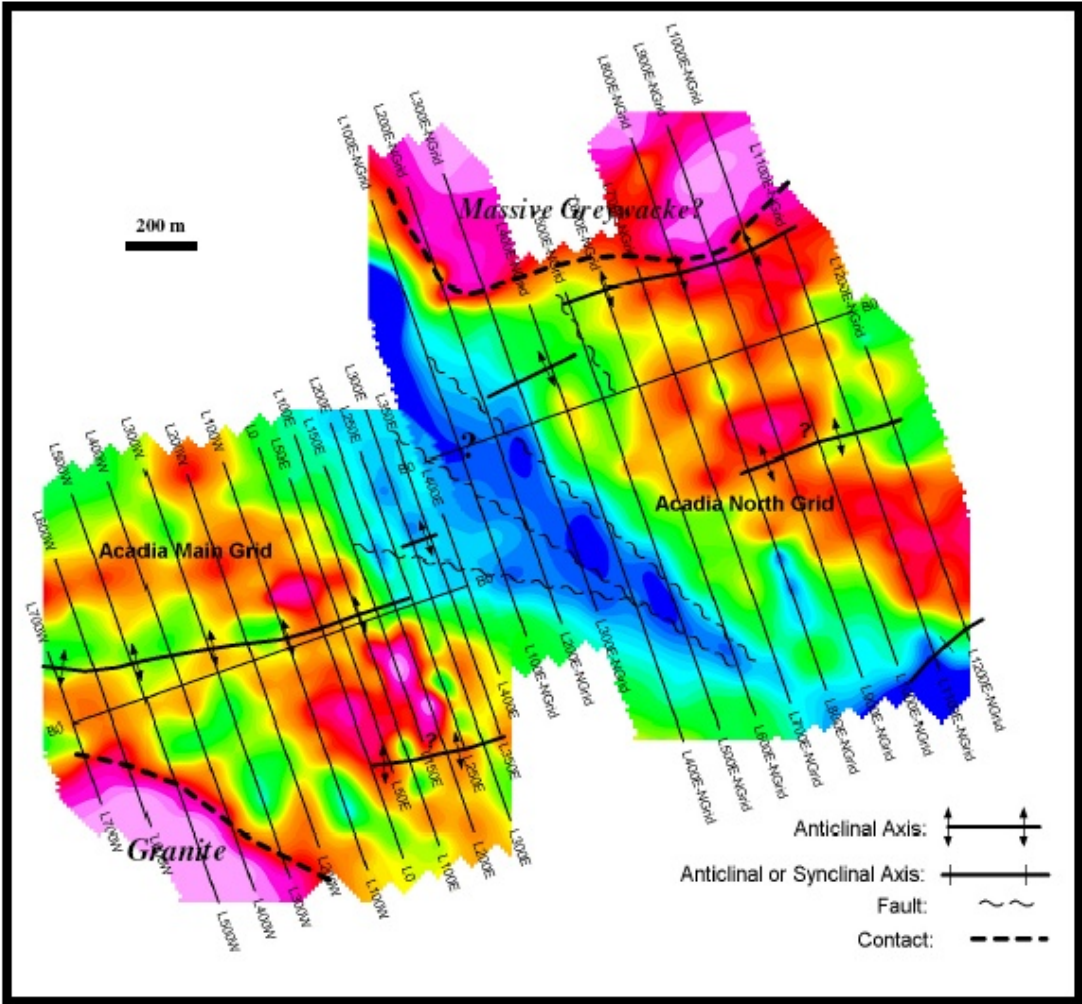


Figure 9-4 - Inverted 2D Resistivity Plan - Acadia Grids - for depth of 32 metres (Gillick, 2010).

A broad resistivity low was thought to correspond to the Tangier River Fault system. This zone was found to have an apparent width of 400 metres and to extend across the entire property.

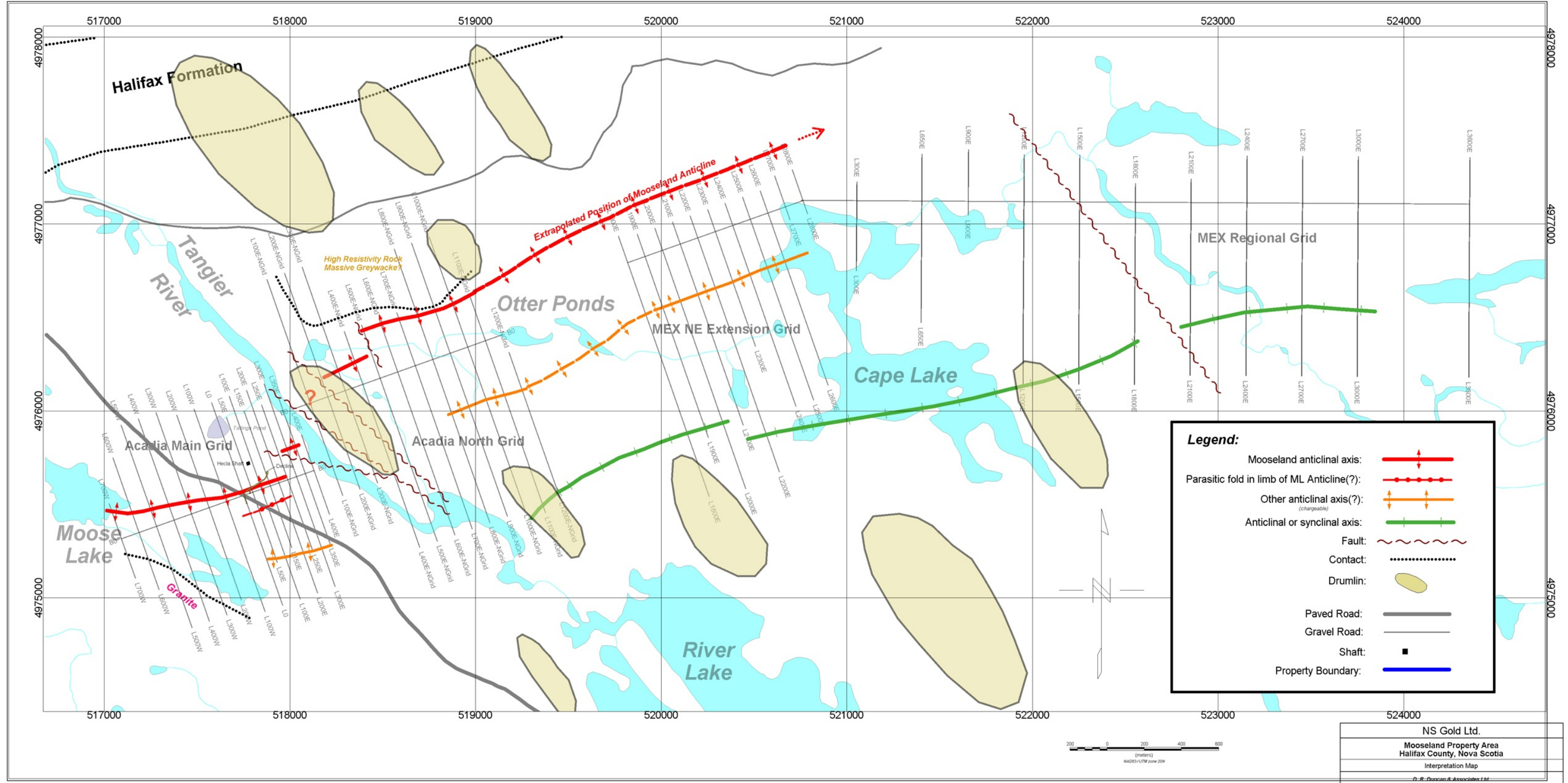


Figure 9-5 - Geophysical Data Reinterpretation (Gillick, 2010)

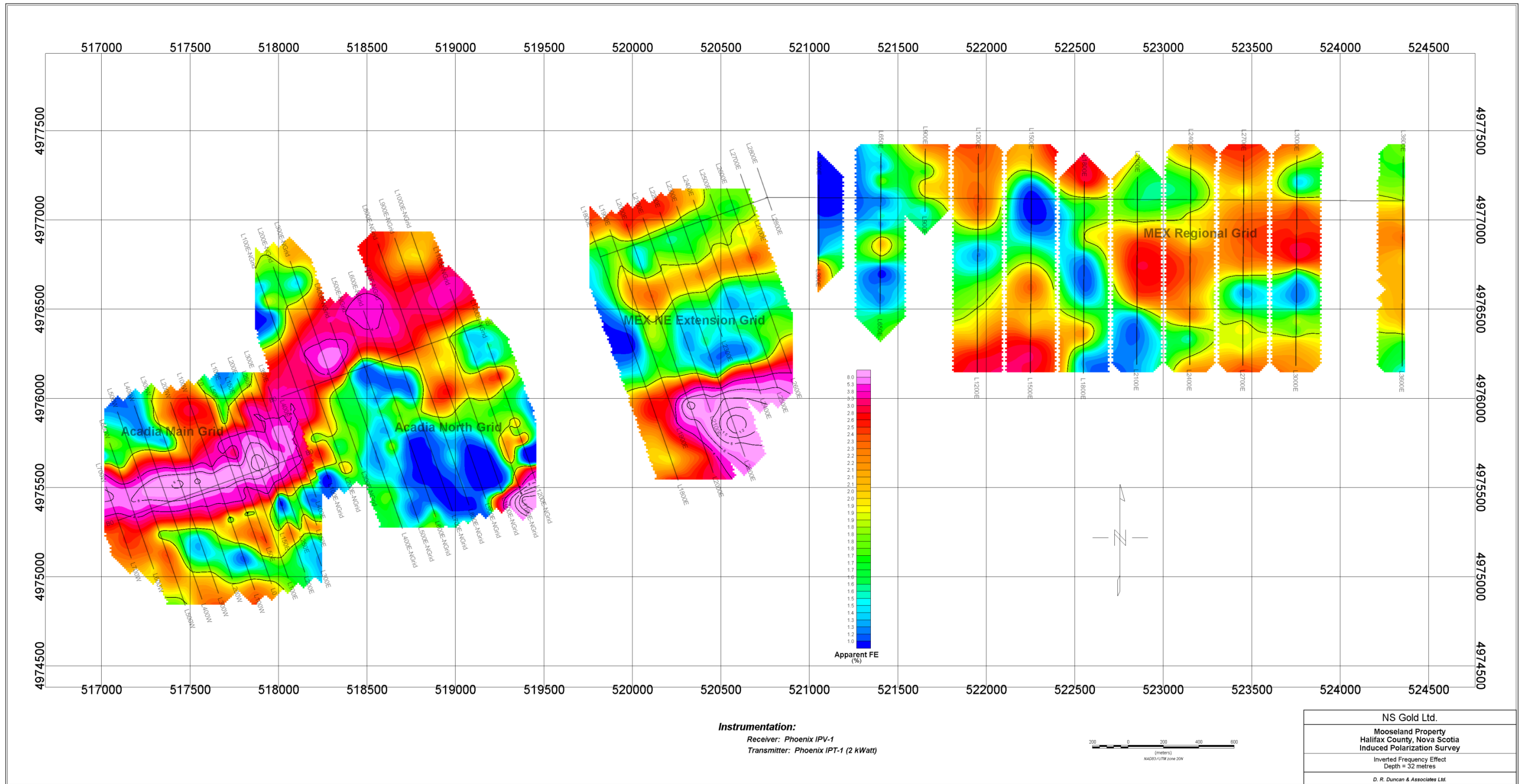


Figure 9-6 - 2D Inverted FE Plan (32m) (Gillick, 2010)

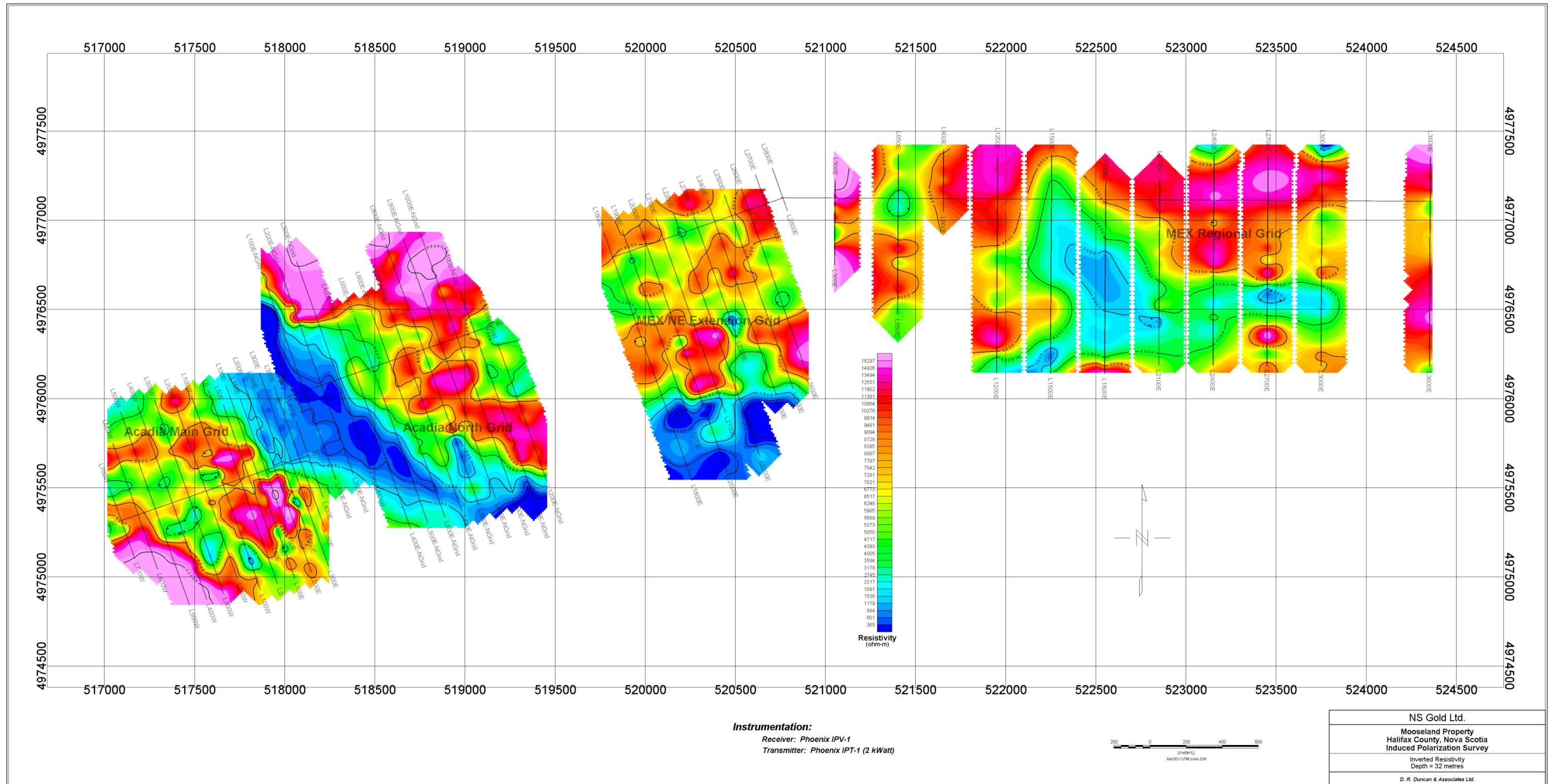


Figure 9-7 - 2D Inverted Resistivity Plan (32m) (Gillick, 2010)



### **9.1.5 LiDAR Survey, NSGold 2011**

NSGold contracted Leading Edge Geomatics (LEG) of Fredericton, New Brunswick to conduct an airborne LiDAR (Light Detection and Ranging) survey over all of its Nova Scotia claims, including the Mooseland Property claims. The survey was flown on August 8<sup>th</sup>, 2011, producing a 'hillshade' photographic quality map of the area. The survey was flown at sufficient density to produce one data point per square metre.

In the LiDAR map, the West Zone of the deposit is visible as a narrow, fairly faint linear feature trending approximately 70 degrees. In the vicinity of the East Zone, structural definition is obscured by a thick drumlin. The structure was interpreted to go further east, into an area that NSGold has since staked.

LiDAR is an optical remote sensing technique that can 'see' through foliage and provides very high resolution surface elevation map. Structural features not easily detected from the ground or by other remote sensing techniques are more apparent in this type of survey.

## **9.2 Underground Exploration**

### **9.2.1 Shaft Sinking, Hecla, 1988-1989**

In May 1988, Hecla, in partnership with Acadia and Biron Bay Resources Ltd. (Biron Bay), began to sink a shaft in the West Zone to explore and bulk sample mineralized veins that had previously been identified by diamond drilling.

Due to lack of available financing, the project was suspended in May 1989 while shaft sinking was in progress. The planned program of lateral development and bulk sampling was not carried out (Bye, December 1989).

Patrick Harrison and Company Ltd. of Ontario performed the surface plant construction, shaft sinking, and underground drifting work.

The shaft collar was excavated and lined with concrete to a depth of 7.3 metres in September 1988. An 18.3 metre high steel headframe was erected over the shaft collar in November 1988 and is still on site.

Shaft sinking began in January 1989 and continued until May 1989, for a total depth of 124.9 metres. A small shaft station was excavated at a depth of 48.8 metres and a full-sized station was cut at a depth of 97.5 metres. A pocket and finger raise was excavated below the second station; the finger raise was intentionally not broken through to the station floor to facilitate future diamond drilling from the station.

The shaft was sunk within a massive greywacke bed; no argillite was encountered. Numerous north-south trending angular quartz veins and a few east-west angulars were present. On seven occasions during sinking, grouting was required to stop water inflow from open fissures to stop minor water inflows of up to 4.7 litres per second.

### **9.2.2 Decline, Azure, 2003-2004**

Azure constructed a portal and decline between 2003 and 2004. While the initial plan was to drive the decline to a depth of more 100 metres and have it link up with the Hecla shaft, the company was forced to stop work early due to financial constraints.

The decline was collared on August 19, 2003, on the north limb of the anticline in the West Zone at grid elevation of 1099 metres (99 metres above mean sea level). The decline was 218 meters in length and at grid elevation 1053 metres when it was stopped on December 18, 2003. In addition to the decline, a large sump was established at distance 100 metres and grid elevation of 1076 metres. At about 120 m along the decline, at grid elevation 1072m, a 3.5 x 3 m remuck was driven 29 metres to the south. This was to facilitate the more efficient mucking of the decline. Sill drifts were driven on both the Cummings and the Little North veins. A few slashes and drift rounds were taken on the Irving Belt.

Azure intersected five West Zone veins and took a 2,000-tonne bulk sample from sill drifts on the Little North and Cummings veins. See section 13.1 for more information.

## 10 Drilling

### 10.1 Acadia, 1986-1988

Acadia completed 135 diamond drill holes totalling approximately 33,000 metres between 1986 and 1988. Of this total, 85 holes totalling approximately 22,000 metres were drilled on the West Zone and 50 holes totalling approximately 11,000 metres were drilled on the East Zone.

Drill hole collar data can be found in Appendix VII.

Drill collar locations and elevations were surveyed. Downhole surveys used acid dip tests and Tropari instruments. Assay results indicated a typical scatter of values associated with free particulate gold.

The first baseline that was established in the east zone was laid down on the assumption that the east zone anticline had the same strike as the well-known West Zone anticline, running approximately 69°/249°. After a number of holes had been drilled and examined, it was determined that the true direction of strike in the east zone was approximately 24°/204°. This led to the establishment of a second baseline, known as BL-2.

The drilling program was carried out under contract by Maritime Diamond Drilling of Hilden, N.S. and Longyear Drilling of Moncton, N.B, under the field supervision of Acadia personnel. Drill hole locations and elevations were determined using standard land surveying techniques by Ritchie F. MacInnis Surveying Ltd. of New Glasgow, Nova Scotia (Covey, 2004). The core was logged, photographed, sampled and stored at Mooseland.<sup>5</sup>

A stratigraphic study (Thorpe, 1989) was initiated in 1988 to refine the existing geological interpretation of the deposit. Some 13,001 metres of West Zone core from 38 holes and 8,615 metres of East Zone core from 38 holes were re-logged in detail. Geology sections, level plans and longitudinal sections were prepared for the West and East Zones. A preliminary correlation of stratigraphy and projected zoning of sub-parallel mineralized trends was proposed. This was based on a zoning theory developed by Dr. D. R. Derry for the mine at Goldenville, Nova Scotia. Confirmation would require examining the vein underground to determine the character of each gold mineralized lead (or 'belt'). Thorpe concluded by finding that the most promising targets for

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<sup>5</sup> The core was left with Mr. Berry Prest of the town of Mooseland after Hecla left the property. It is currently sitting on the property of Mr. Prest, an entrepreneur located in Mooseland, though it is in poor condition, being both exposed to the elements and disorganized. The photos of the core were held by Mr. Prest until Azure arrived, in 2003. Their current location is not known.

underground exploration in the Property are located on the West Zone on the south limb of the Mooseland Anticline from Sections 0+00 to 2+00E, above the 200 metre level.

Drilling on the East Zone was characterized by intense quartz veining, faulting and an absence of stratigraphic markers. However, numerous significant gold intersections were encountered. Thorpe suggested the East Zone may be characterized by discontinuous gold mineralization.

## 10.2 Azure, 2003

Six HQ-sized diamond drill holes totalling approximately 1,168 metres were completed between April 29<sup>th</sup> and June 10<sup>th</sup>, 2003. Four holes (827.5 metres) were drilled in the West Zone and two holes (340.15 metres) were drilled in the East Zone.

Drill hole collar data can be found in Appendix VII.

Downhole surveys were conducted with a Pajari instrument.

The purpose of the West Zone drilling was to confirm previous drill intersections and evaluate rock quality in the area of the proposed decline. The East Zone holes were drilled to confirm previous exploration intersections and provide additional information regarding the geological structure and stratigraphy of that zone.

The West Zone had 35 drill intercepts over 1.0 g/tonne Au with seven occurrences of visible gold. All but one of the samples that ran more than 1 gram were located in quartz veins, though typically only quartz veins were sampled.

The East Zone had more faulting and gouge associated with the quartz veins which are often wider and higher in grade. Assay results were very encouraging with values to 205.33 g/tonne at a depth of 84.2 metres over 40cm, and 83.34 g/tonne at a depth of 64.15 metres over 45cm. Some high-grade intersections occurred in barren rock. Many of the quartz veins were found to be contorted and crenulated with carbonate throughout the veins rather than just on the vein margins. The quartz was fractured and brecciated.

Rock Quality Designation (RQD) was done on three drill holes in the vicinity of the proposed decline to determine the stability of the ground. A majority of the drill core gave high values indicating the rock was very stable. Values varied by rock type with higher values in the greywacke and lower values in the well-cleaved argillite units.

The final report on the Azure drilling program recommended a modest 1,000-2,000 metre surface drill program in the East Zone, targeted between existing drill sections, to

allow more detailed stratigraphic and structural studies and to assess the continuity of previously intersected auriferous veins. The program also recommended 2 or 3 drill holes under the Tangier River, for geological information and engineering studies in the area of the then-proposed decline.

## 10.3 NSGold, 2010

### 10.3.1 Overview

NSGold drilled 13 holes (3,613 metres) in the West Zone and 13 holes in the East Zone (2,894 metres) during 2010 for a total of 6,507 metres of NQ-sized<sup>6</sup> drill core.

Drill collar spacing was variable, from approximately 25 metres to 50 metres. Drilling covered 225 metres of strike length in the West Zone and 175 metres of strike length in the East Zone.

Two of the West Zone holes were twins of holes from the Acadia drill program – NSG 12-10 twinned ML87-05, and NSG 13-10 twinned ML87-08.

The purpose of the drilling was to confirm and enhance the resources defined by the earlier Acadia, Hecla and Azure programs in preparation for this Resource Estimate, aid in determining the structure of the East Zone and provide a basis for decisions regarding follow on exploration and development work on the property.

Drill hole collar data can be found in Appendix VII.

### 10.3.2 Procedures

The drilling program was carried out under contract by Landdrill International Inc. of Moncton, New Brunswick, Canada, under the field supervision of NSGold personnel.

The East Zone baseline (BL2) was re-established in prior to drilling. GPS survey of the re-established baseline showed it to run at 025° from true north, one degree off the 24° direction of the Hecla-era BL2 (see section 2.5.1).

Drill hole collar locations and elevations were determined by standard (i.e.: non-differential) GPS.

Downhole surveys were taken with a Flexit system, using magnetic readings. Pyrrhotite was sometimes present, which may have affected azimuth readings.

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<sup>6</sup> NQ Size has hole (outside) diameter of 75.7mm, and a core (inside) diameter of 47.6mm

The core was logged, photographed, sampled and stored at Mooseland. Logging was done by NSGold staff and contractors (primarily Glen Covey, an independent geologist, and Perry MacKinnon, of NSGold).

### 10.3.3 Results

Drilling conducted in 2010 by NSGold confirms the results of previous programs. Mineralization encountered during the program matched the results from earlier programs, with anomalous gold values, including visible gold, being discovered throughout. East Zone drilling data was used to help determine the structure of anticline.

## 10.4 NSGold, 2011

### 10.4.1 Overview

NSGold drilled 8 holes (2,606 metres) in the West Zone and 8 holes (2,404 metres) in the East Zone during 2011 for a total of 5,010 metres of NQ-sized core.

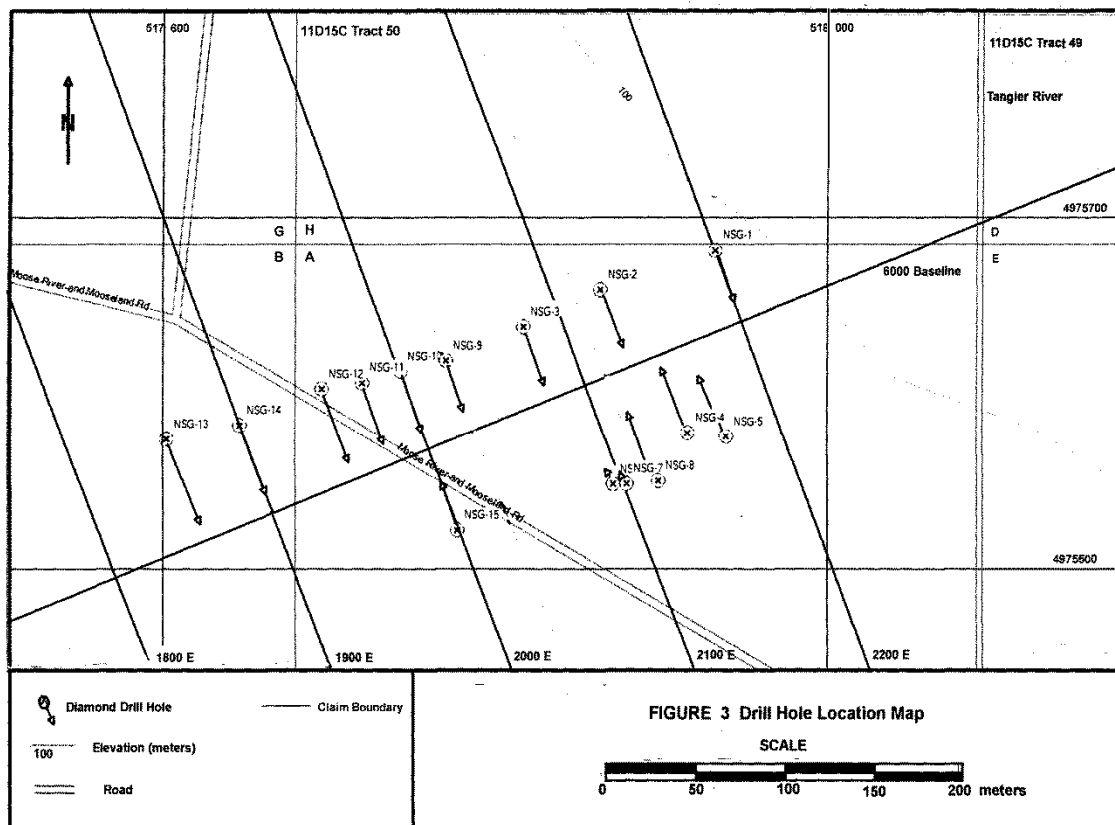


Figure 8 A diamond drill program to examine near surface mineralization in late 2012 (Perry, 2013)..

NSGold Corporation Limited, Mooseland Property Drilling, late 2012									
	NAD 83: 20T								
Hole Number	Easting	Northing	ELEVATION	AZ(collar)	AZ(EOH)	Dip(collar)	Dip(EOH)	Survey depth	Totl Depth
NSG-1	517936.13	4975671.18	95.50	160.0	180.5	45.0	43.5	70.0	74.0
NSG-2	517869.60	4975650.77	101.59	160.0	180.8	45.0	41.6	70.0	76.1
NSG-3	517823.95	4975630.54	104.42	160.0	180.5	45.0	43.5	70.0	74.0
NSG-4	517903.42	4975549.92	107.44	340.0	3.8	45.0	42.2	71.0	71.0
NSG-5	517920.89	4975575.26	105.83	340.0	358.6	45.0	42.2	71.0	71.0
NSG-6	517876.94	4975548.05	108.60	340.0	258.6	45.0	45.0	5.0	5.0
NSG-7	517884.93	4975548.20	108.30	340.0	340.0	50.0	50.0	7.0	7.0
NSG-8	517718.64	4975612.66	104.26	340.0	0.1	45.0	42.4	80.0	80.0
NSG-9	517778.64	4975612.66	106.07	160.0	180.6	45.0	42.3	68.0	68.0
NSG-10	517752.19	4975606.98	106.91	160.0	180.6	45.0	43.0	71.0	71.0
NSG-11	517729.42	4975600.66	107.10	160.0	180.5	45.0	42.8	66.0	68.0
NSG-12	517705.68	4975597.40	107.80	160.0	179.6	45.0	41.6	80.0	80.0
NSG-13	517614.76	4975570.42	110.55	160.0	177.8	45.0	43.5	68.0	68.0
NSG-14	517657.62	4975578.04	109.16	160.0	180.3	45.0	41.7	8.0	68.0
NSG-15	517785.71	4975523.59	111.04	340.0	355.2	45.0	43.0	71.0	71.0

Mackinnon (2013) described the program: “Drill collar spacing was variable, but was generally 25 to 50 metres. In the West Zone, holes were drilled in three groups: one group of three, with 50 metre spacing; one hole by itself, separated by 175 metres and 325 metres from the other groups, and a final group of four, with 50 metre spacing (including two holes that shared the same collar). In the East Zone, spacing was between 25 and 50 metres. Drilling covered 700 metres of strike length in the West Zone and 275 metres of strike length in the East Zone.

“Targets for this drill program were chosen based on one of two goals; fill in of under-explored areas in the West and East zones, and completion of holes planned for the 2010 program that were not completed due to adverse weather conditions at the time.

“The objective of the 2011 drill program was to add to the inferred gold resource announced in the previous Technical Report (MineTech, 2011), as well as completing several drill holes in promising areas of the structure which had only seen limited work in the past.” (Mackinnon, P. 2013)

Drill hole collar data can be found in Appendix VII.

#### 10.4.2 Procedures

The 2012 drilling program was carried out under contract by Landdrill International Inc. of Moncton, New Brunswick, Canada, under the field supervision of NSGold personnel.

Procedures used were the same as those used for the 2010 drill program (see section 10.3.2), with the exception that drill hole collar elevations were determined by extrapolation from known elevations of adjacent collars. These extrapolation elevations were later corrected using data gathered during the LiDAR survey (see section 9.1.5).

### **10.4.3 Results**

In both zones, mineralization encountered during the program matched the results from earlier programs, with anomalous gold values, including visible gold, being discovered throughout. Some holes, such as NSG-34-11, did not encounter substantial mineralization; this was attributed to the 'nuggety' character of the deposit. East Zone drilling data was used to help further determine the structure of anticline.

The data gathered during this drill program succeeded in adding to the inferred resource for the Property (see section 14 for more details).

## **10.5 NSGold, 2012**

### **10.5.1 Overview**

NSGold conducted a 15-hole 948-metre drill program in 2012, targeting the deposit above the 17 metre level, to test the feasibility of a limited surface mining operation of the West Zone, along the anticlinal axis. As the near surface area of the deposit had been little tested in the various drilling programs, a need for a shallow drill program became evident. In 2012, NSGold applied for and received financial assistance toward such a study from an NSMIP Advanced Project Grant provided by the Nova Scotia Department of Natural Resources. Fifteen holes were drilled near the centre of the deposit over a strike length of 350 meters. Two of the holes encountered old mine workings at very shallow levels and were discontinued. Of the remaining holes, nine were drilled from the north side of the axis and four from the south side.

All holes intersected the expected quartz vein systems hosted by arsenopyrite bearing argillite units. The anticlinal axis was observed in many of the holes. Visible gold was observed in five of the holes and values up to 36.8 grams per tonne over 0.6 meters were obtained.

Thirty four assays returned values over 0.5 grams per tonne, twenty five of which were over 1 gram per tonne and four of which were over 10 grams per tonne.

The results will provide information critical in determining the practical and economic feasibility of a surface mining operation at the Mooseland West Zone.



### 10.5.2 Procedures

MacKinnon (2013) describes the the 2012 drill program procedures. It began on November 10th and finished on December 5<sup>th</sup>, 2012.

Most of the samples were sent to laboratoire Expert in Rouyn-Noranda, Quebec for analysis.

### 10.5.3 Results

MacKinnon (2013) states that "All of the holes contained alternating units of medium grey to almost black, generally mineraliferous argillite and light grey greywacke of varying percentages of silica. ... another type of rock observed throughout the drilling is referred to as a "dirty greywacke" ... Quartz veining is hosted predominantly by the argillite bands and they range from a few millimeters to over a meter. Typically the host argillite will display a sericite-biotite alteration, often with chlorite, for 10-15 centimeters on either side of the vein. Veins typically have 2-5% host inclusions and wispy, light greenish, alteration. Mineralization within the quartz veins ranges from none in many of the veins, to 2% or so in some cases. Much of the argillite inclusions within the quartz tend to be well mineralized with up to 10% or more of arsenopyrite, disseminated in 1-4 mm euhedral to subhedral cubes and less commonly, megacrysts and twinned megacrysts of arsenopyrite up 4 cm in length.

"In some quartz veins, trace amounts of galena, chalcopyrite and, even more rarely sphalerite, occur as unattached crystals and blebs. Visible gold was observed in five of the holes in six locations. They varied from a single flake of not much more than a millimeter, to a large number of pin-point and pin-head size flakes occurring along a fracture. The best looking gold sighted in the core was in hole NSG-13-12 where two patches on opposite sides of the core included numerous fine flakes over 2 cm and 1.2 cm. This section of core ran just 9.44 grams per tonne over one meter. Five other sections with no visible gold (in other holes) tested higher for gold than this sample. The best hole in terms of number of plus 0.5 gram per tonne results with seven, six of those being over 1.0 gram per tonne, was NSG-8-12 and there was no visible gold spotted in the hole at all.

"Mineralization in the argillite, away from quartz veining, tends to be in the trace to 2% range with occasional megacrysts, finely disseminated pyrrhotite along the cleavage planes with occasional stringers, and rare pyrite, mainly as fracture filling films. Occasional thin «2 cm), sometimes discontinuous, near solid to solid pyrrhotite, pyrite and arsenopyrite lenses occur and this feature provided the best gold value (36.8 grams per tonne) in a/l of the drilling at 31.27 meters depth in hole NSG-8-12.

"Fracturing, faulting and fault gouge occur sporadically throughout and movement along some of these features undoubtedly occurred, however no firm evidence of this is apparent, except on a one cm or less scale. Axial planar cleavage is evident throughout the drilling and is generally weak to not apparent in the siliceous greywacke, weak to

moderate in the altered, dirty greywacke and moderate to very strong in the argillitic units. This cleavage can be used to determine the proximity to the hinge of the axial plane as it generally is a few degrees less than bedding going up the leg of the anticline, increases (the cleavage angle respect to the core) as the core approaches the axis and is roughly normal to the core as it passes through the axial plane. On the opposite side of the hinge the cleavage angle to the core becomes greater than that of the bedding angle.

“The 2012 drill program has filled in some significant near surface gaps in the Mooseland West Zone along the anticlinal axis. All holes intersected multiple quartz veins with approximately 30 percent more veining occurring in the easternmost hole compared to the western most holes.

“Visible gold intercepts were relatively low and spread evenly between the north and the southward directed holes.” (MacKinnon, 2013)

The best intersection, grade wise, was in an argillite containing an elliptical fragment(?) of massive arsenopyrite-pyrrhotite which ran 36.8 grams per tonne.

The best intercept from a mining perspective was 1.7 meters grading 15.21 grams per tonne. The best quartz intersected was approximately eight meters of quartz contained in an argillite about fifteen meters in width in hole NSG-9-12.

There were no values of significance in this hole however the alteration and arsenopyrite mineralization were as good as elsewhere in the deposit, although most was contained in inclusions in the quartz rather than in the quartz itself.

This drilling has provided further information on the structure and mineralization of the shallower areas of the Mooseland West Zone Deposit which will be essential to a scoping study that NSGold expects to undertake immediately to determine the feasibility of surface mining operation on the property.

## **10.6 Factors Materially Impacting Results**

The representativeness of individual samples from the Mooseland Property is affected by the ‘nugget effect’, in which metal is concentrated into a small number of the samples. This makes it difficult to find an accurate grade for the deposit. The problem can be mitigated statistically using top-cuts, but an accurate grade for the deposit can only be found with a bulk sample.

## 10.7 Sample Length-True Width Relationship

### 10.7.1 West Zone

For calculating true width values, an average formation dip of 80° was used. North of the anticlinal axis, the average dip was 80° north. South of the axis, the average dip was 80° south. See Table 10-1 for a summary of West Zone intercepts from the 2011 drill program.

Table 10-1 - Notable Samples, West Zone, 2011 Drilling

Hole	From (m)	To (m)	Au (g/tonne)	Length (m)	Horizontal Length (m)
NSG-36-11	161.80	163.40	2.87	1.60	1.17
NSG-36-11	204.80	206.80	11.46	2.00	1.47
NSG-36-11	232.60	233.60	14.91	1.00	0.74
NSG-36-11	336.80	338.70	6.86	1.90	1.44
NSG-37-11	215.80	217.70	2.71	1.90	1.48
NSG-38-11	65.70	67.20	4.76	1.50	1.11
NSG-38-11	79.00	80.50	2.92	1.50	1.12
NSG-38-11	98.30	100.70	4.65	2.40	1.85
NSG-40-11	62.80	64.30	3.71	1.50	0.71
NSG-41-11	253.40	255.00	4.16	1.60	1.43

### 10.7.2 East Zone

The formation dip could not be generalised for the East Zone. On average, the formation dip varied between 60° and vertical. Table 10-2 shows the East Zone's drilling intercepts, including the intercepts' horizontal widths. For the most part, these values are very close to the true width values.

Table 10-2 - Notable Samples, East Zone, 2011 Drilling

Hole	From (m)	To (m)	Au (g/tonne)	Length (m)	Horizontal Length (m)
NSG-33-11	417.50	418.00	16.2	0.50	0.43
NSG-33-11	437.60	438.60	26.7	1.00	0.86
NSG-30-11	144.00	145.30	14.7	1.30	0.75
NSG-28-11	35.50	37.40	26.7	1.90	1.38
NSG-28-11	156.50	158.00	3.3	1.50	1.21
NSG-27-11	59.90	64.70	6.3	4.80	3.15
NSG-27-11	119.50	121.90	4.3	2.40	1.62
NSG-27-11	152.00	153.50	13.3	1.50	1.05
NSG-25-11	198.50	200.10	16.5	1.60	1.23
NSG-25-11	233.70	237.00	3.5	3.00	2.32

Table 10-3 Notable Intersections, 2012 Near Surface Drilling

Hole	From	To	Length	G/t	G/T * m	G/t/1.5m
NSG-8-12	30.9	31.5	0.6	36.8	22.080	24.53
NSG-8-12	77.7	78.7	1	19.59	19.590	13.06
NSG-15-12	22.9	23.9	1	18.76	18.760	12.51
NSG-10-12	51.8	52.8	1	11.49	11.490	7.66
NSG-1-12	25.2	26.2	1	9.93	9.930	6.62
NSG-13-12	48	49	1	9.44	9.440	6.29
NSG-10-12	54.8	55.8	1	8.44	8.440	5.63
NSG-3-12	67.2	68.2	1	7.1	7.100	4.73
NSG-8-12	78.7	79.4	0.7	8.97	6.279	5.98
NSG-8-12	74.3	75.3	1	6.25	6.250	4.17
NSG-8-12	25	26.1	1.1	4.78	5.258	3.19
NSG-2-12	58.1	59.1	1	4.5	4.500	3.00
NSG-12-12	62	63	1	4.38	4.380	2.92
NSG-2-12	55.4	56.1	0.7	4.89	3.423	3.26
NSG-13-12	32.5	33.5	1	3.28	3.280	2.19
NSG-12-12	13	14	1	2.46	2.460	1.64

E

veins

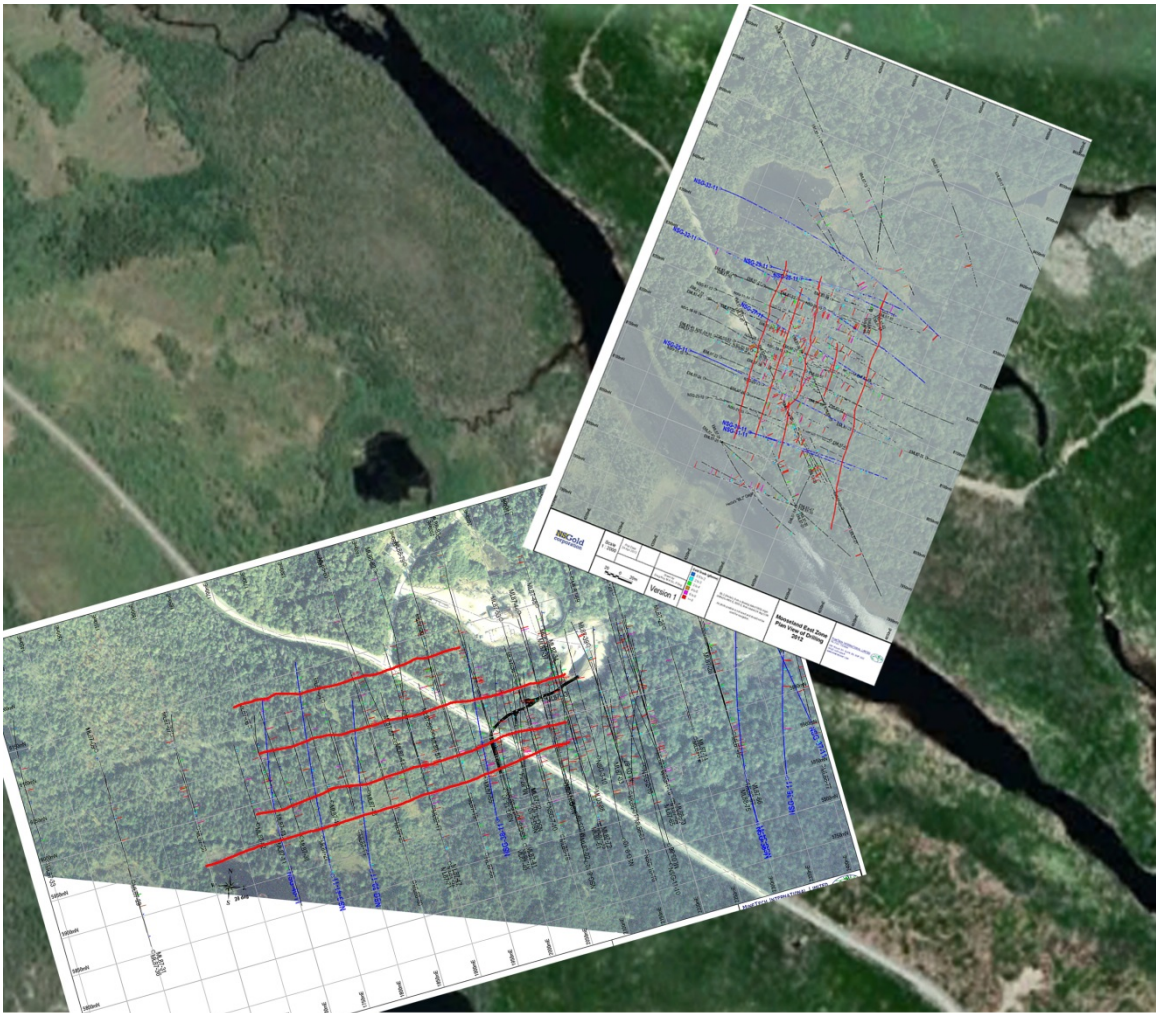


Figure 9 The East and West Zones of the Mooseland property are separated by a fault that displaced and rotated the east zone to the northwest. The red traces are the veins. The West and East zone grids are patched into a Google Earth image of the Mooseland property. North is to the top of the page.

## 11 Sample Preparation, Analysis & Security

### 11.1 Acadia, 1986-1988

#### 11.1.1 On-Site Procedures

Handling of the drill core from the 1987 and 1988 drilling program consisted of logging the core, measuring quartz veins and veinlets and then submitting each piece of vein core material in its entirety for gold assay.

Acadia's standard practice was to only sample areas of quartz veining or stringering, and these generally only over short lengths (approximately 30cm). Wing or wall rock samples were not taken as a matter of course. Since quartz veining is so ubiquitous at Mooseland, with quartz found in thicknesses of hairs, threads, to metre sized veins, the effect was to create long areas of sampling chopped up by short sections of unsampled core. Core was not split, but rather submitted as 'whole core' to the assay labs. (Zalnierunas, 1997)

The remaining diamond drill core was left in the possession of a local entrepreneur and logging contractor, Mr. Berry Prest, at Mooseland. It currently sits on his property, although it is exposed to the elements and in poor condition. At the time of writing, NSGold is in the process of transferring some of the Acadia drill core into new boxes. Approximately four holes have been transferred. Core which has been transferred to new boxes is being kept on the Property.



Figure 11-1 - Abandoned Acadia/Hecla Core, 2011  
(Photo Courtesy P. MacKinnon, NSGold Corp.)



Figure 11-2 - Rehabilitation of Acadia/Hecla Core, 2011  
(Photo Courtesy P. MacKinnon, NSGold Corp.)

### **11.1.2 Laboratory Procedures**

Whole core samples were sent to Bondar-Clegg and Co. Ltd. in Ottawa, Ontario for assay.

Two analytical procedures were utilized on the samples submitted for assay; routine and screen-for-metallics ('metallics sieve') analysis. Routine analysis consisted of a sample, split down to 10 grams, analysed using fire assay with atomic absorption finish. In metallic sieve analysis, the sample was split using a 150 mesh sieve, and the fractions were weighed. Then, the whole +150 fraction and 29.2 grams of the -150 fraction were assayed, and a weighted average was calculated.

All samples containing visible gold were immediately designated for metallics assay while all remaining samples yielding assay result of 1,000 ppb or greater were redone by the metallics assay method (Covey, May 5, 1988, pg. 19). See Appendix III for the assayer's note.

### **11.1.3 Quality Control Procedures**

Check assays were used extensively during the Acadia drill program.

Because of the presence of high erratic gold values caused by the "nuggety" nature of this saddle vein style of mineralization, Acadia required samples to be checked by three outside umpire laboratories (Chemlab of Saint John, Bourlamaque Assay Laboratories Limited of Val d'Or, and X-Ray laboratories of Don Mills).

Quality control procedures used within the assay laboratories are not known, although it is likely that they were acceptable according to the standards of the day.

### **11.1.4 Adequacy of Procedures**

The Author does not have sufficient information to give a definitive opinion on the adequacy of sample preparation, security and analytical procedures used during the 1986-1988 Acadia drill campaign.

However, based on the information available, it appears that the program followed generally accepted procedure for its day.

## **11.2 Azure, 2003**

### **11.2.1 On-Site Procedures**

The following is taken from Azure's 2004 report on their diamond drilling program (Covey & Albert, 2004, Vol. II):

Geologist Glen Covey logged the core from the 6 diamond drill holes. As core was logged, samples were demarcated and taken once the hole was completely logged. There were a total of 640 samples taken from the six diamond drill holes. Samples with visible gold, or from a promising vein, were identified to be assayed by screened metallics. All others were tested by straight fire assay. All samples were analysed for 30 elements by ICP method.

Mineralized vein intervals and adjoining 30 to 60 cm of wall rock were sawn, one-half of the cut cores were taken for sampling and the remaining half kept as reference. Each sample was placed in a plastic bag with a numbered sample tag from Eastern Analytics Ltd. Thirty individual samples were placed in rice bags with a list of those sample numbers placed on the inside and outside of the rice bag. Bags were closed with heavy aluminium wire and a lead security seal to prevent tampering.

Logging of arsenopyrite content was conducted to define any link between the arsenic sulphide content and gold. The arsenopyrite content was logged by measuring out every 50cm of core and describing the arsenopyrite present. The percentage of arsenopyrite, crystal size and shape, twinning, corona structures, descriptions of other minerals present was noted, and then representative grains were measured for their dimensions. The arsenopyrite logs were integrated in a spreadsheet with gold assay results.

Core from the Azure program remains on the Mooseland Property. NSGold is in the process of moving it into new core boxes (90% completed at the time of writing). Some of the core boxes have been put into a steel shed (mentioned in section 5.8.1).



Figure 11-3 - Azure Core Boxes Found On Site (Nov. 20, 2009)



Figure 11-4 - Azure Core in Rehabilitated Boxes (Dec. 7, 2010)

### **11.2.2 Laboratory Procedures**

Samples were assayed at Eastern Analytics Limited. A total of 640 samples were taken from the six diamond drill holes; of these, 138 were assayed by standard fire assay. All samples were analysed by the ICP method.



### **11.2.3 Quality Control Procedures**

Based on available information, it appears that no check or blank samples were included with the regular samples sent to the assay laboratory. Furthermore, no umpire laboratory was used.

For current diamond drill programs, it is recommended that check and blank samples be included with any samples sent to a lab.

The exact methods used by Azure and the laboratory are not known but it is assumed they met the quality assurance/quality control standards of the time.

### **11.2.4 Adequacy of Procedures**

Sample preparation procedures were generally adequate. One aspect that is not recommended for future work is the use of a core saw rather than a core splitter. In 'nuggety' gold deposits, a core saw can lead to contamination - malleable gold from one sample can stick to the saw and transfer to a subsequent sample.

Sample security procedures, as described, are adequate.

The analytical methods chosen are adequate; however, because the assayer's data sheet (which describes the procedures used in detail) is not available, it is not possible to give a definitive opinion on the adequacy of analytical procedures.

## **11.3 NSGold, 2010**

Table 11-1 - Summary of NSGold 2010 Samples

<b>Zone</b>	<b>Number of Samples</b>	<b>Average Length</b>
West	1,865	0.70 metres
East	1,849	0.68 metres
<i>Both</i>	<i>3,714</i>	

A total of 3,714 samples, ranging from 0.5 to 1.5 metres in length, were taken from the 2010 NSGold drilling program (see section 10.3). The primary assay lab for the 2010 drill program was Laboratoire Expert of Rouyn-Noranda, Quebec. Umpire samples were sent to ALS Chemex of Val D'Or, Quebec. The laboratories are independent of the Issuer.

ALS Chemex of Val D'Or has received accreditation to ISO/IEC 17025:2005 from the Standards Council of Canada (SCC) for Fire Assay Au by Atomic Absorption (AA) and Au by gravimetric finish. Certifications for Laboratoire Expert were not known at the time of writing.

Core from the 2010 program is currently being stored in core boxes, on site, in the garage and in the steel shed mentioned in section 5.8.1.

### **11.3.1 On-Site Procedures**

Samples were usually 50 centimetres in length. Sample segments were marked with grease pencil by the logging geologist, with lines marking the start and end of the sample segment as well as numerical from-to values.

Samples were geologically controlled; geologists started and ended samples within quartz veins.

Core was then given to the assistant. The assistant photographed the un-split core box, and then cut the samples out with a core saw and split the section to be sampled with a hydraulic core splitter. Half of the core was put into a strong plastic bag, along with a sample tag. The other half was kept in a core box on site. If one side of the core had a spec of VG, that side was put into the bag to be sampled.



**Figure 11-5 - The Core Splitter**

The splitter and the table it rests on were brushed off between splits, and the buckets were thumped against the table to remove residue. Core boxes were labelled with metal tags, showing hole number and interval.

Most samples were sent for AA and Gravimetric tests. Promising samples, and those that had been sampled & ran over 500 ppb, were re-assayed using Screen for Metallics.

During a site visit, the Author observed NSGold staff treat each bag by rolling the top up, and then taping the top with strong tape. Sample bags were then packed into strong cardboard boxes. Once filled, the cardboard boxes were sealed with packing tape and kept in the core hut.

### **11.3.2 Sample Delivery & Security**

After drilling, most core was kept in the locked core hut, although some unprocessed core was kept outdoors in a gated and locked yard. After samples were prepared, they were put into heavy plastic sample bags, the sample bags were sealed with packing tape, packed into delivery boxes, and the delivery boxes were sealed. Boxes were taken by the chief geologist (P. MacKinnon) to a Canada Post office on a regular basis (approximately every three days), from which they were sent to the assay lab. On three occasions, large sets of boxes were shipped to Canada Post via Day and Ross. In all

cases, samples were kept in possession of NSGold Staff until delivery (either via Canada Post or via Day and Ross).

### **11.3.3 Laboratory Procedures**

The main assay lab for the 2010 drill program was Laboratoire Expert of Rouyn-Noranda, Quebec. The assayer used fire assay with atomic absorption finish, fire assay with gravimetric finish, and screen-for-metallics.

Samples are dried, reduce to -1/4 inch with a jaw crusher, then reduced to 90% -10 mesh with a rolls crusher. The sample is then riffled using a Jones type splitter to approximately 300 grams. The 300 gram portion is pulverized to 90% -200 mesh.

Both fire assay methods use samples weighing 29.166 grams. Samples checked using atomic absorption that assay over 1,000 ppb (1 ppm) were checked gravimetrically. Gravimetric analysis has no upper limit, but all values over 3.00 g/tonne (ppm) were verified before reporting. Screen-for-metallics involved crushing & pulverizing the sample, then splitting it using a 100 mesh screen. The -100 mesh portion was mixed and assayed in duplicate by fire assay gravimetric finish as well as all of the +100 mesh portion. All individual assays as well as the final calculated value were reported.

See Appendix III for the detailed assayer’s note.

### **11.3.4 Quality Control Procedures**

Blanks and standards were inserted at regular intervals into the body of samples. Every 25<sup>th</sup> sample sent to the lab was a standard, and approximately every 11<sup>th</sup> sample sent to the lab was a blank.

<b>Zone</b>	<b>Blanks</b>		<b>Standards</b>		<b>Regular Samples</b>		<b>Total</b>
West Zone	166	7.8%	84	4.0%	1,865	88.2%	2,115
East Zone	167	8.0%	73	3.5%	1,849	88.5%	2,089
<i>Both</i>	<i>333</i>	<i>7.9%</i>	<i>157</i>	<i>3.7%</i>	<i>3,714</i>	<i>88.3%</i>	<i>4,204</i>

Assay checking on pulp and coarse rejects was carried out on approximately 10% of samples.

Results from 26 umpire samples showed acceptable consistency; umpire samples differed by -0.062 to +0.132 g/t from the reference samples. The nugget effect was notable, with some samples giving a ‘nil’ result in one lab and a gold-positive result in the other lab.

#### **11.3.4.1 Standards**

Standards were supplied by CND Resource Laboratories of Langley, BC, Canada. The standards were observed by the Author to be grey in colour and consisting of a powder with grain sizes similar to sand. There were two Standards used, one at  $1.16 \pm 0.13$  g/tonne (Gold Ore Reference Material CDN-GS-1F), the other at  $2.16 \pm 0.24$  g/tonne (Gold Ore Reference Material CDN-GS-2F). Assayed values of the Standards were within expected parameters, with the exception of four samples of CDN-GS-1F that were outside the expected range (see Table 11-2, Figure 11-6 and Figure 11-7). See Appendix III for the Standards datasheets.

Table 11-2 - QA/QC Standards Results (2010)

Standard	Expected Result	Results from NSG Drill Program			Number Tested
		Minimum Result	Maximum Result	Mean Result	
1	$1.16 \pm 0.13$ g/tonne	1.07	1.37	1.17	42
2	$2.16 \pm 0.24$ g/tonne	1.99	2.37	2.15	115

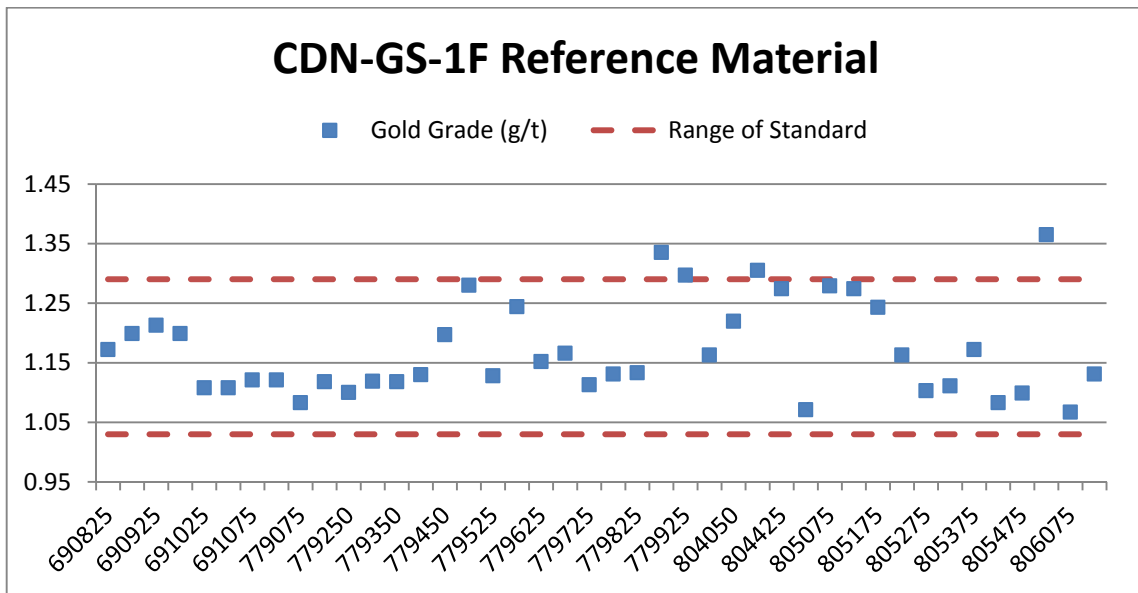


Figure 11-6 – Assay Standard – 2010 - CDN-GS-1F

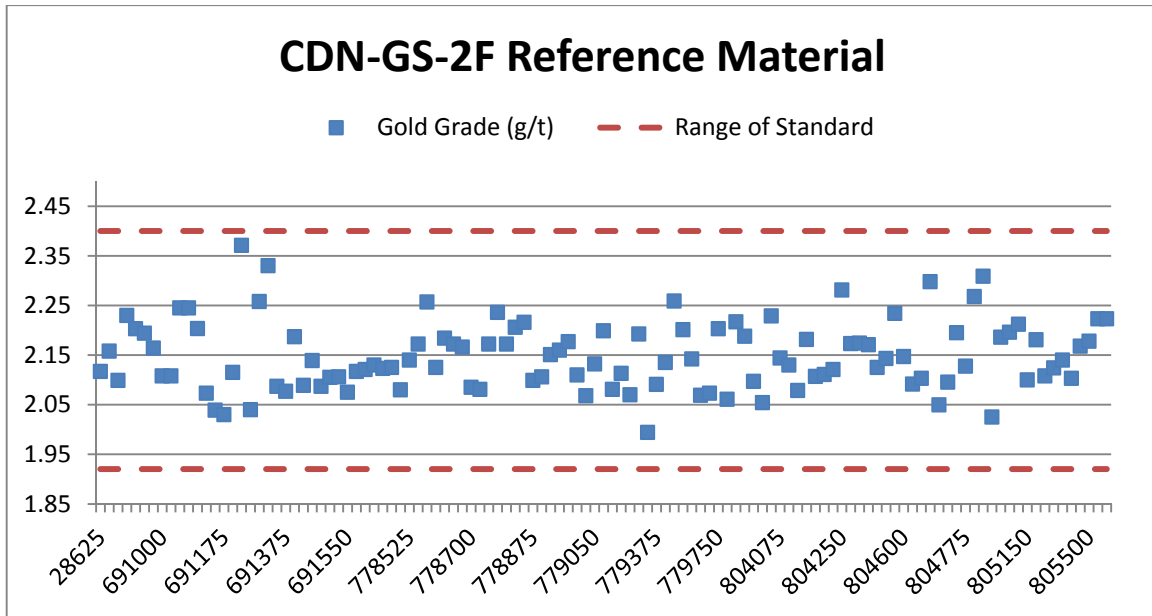


Figure 11-7 - Assay Standard – 2010 - CDN-GS-2F

#### 11.3.4.2 Blanks

Most blanks used were broken-up concrete building blocks. Broken-up quartz rock that was thought to be barren was used as a blank 17 times (sample numbers 778588 to 778778, in holes NSG-7-10 and NSG-8-10). When the first lab results showed this material to be gold-positive, the program returned to using broken-up concrete blocks.

#### 11.3.5 Adequacy of Procedures

The procedures used during the 2010 sampling program are considered by the Qualified Person to be adequate for the purposes of this report.

### 11.4 NSGold, 2011

#### 11.4.1 Overview

Table 11-3 - Summary of NSGold 2010 Samples

Zone	Number of Samples	Average Length
West	1401	0.636 metres
East	1792	0.658 metres
Both	3,193	0.648 metres

A total of 3,193 samples, ranging from 0.3 to 2.0 metres in length, were taken from the 2011 NSGold drilling program (see section 10.4).

The only assay lab used for the 2011 drill program was Activation Laboratories of Ancaster, Ontario. The laboratory is independent of the Issuer. It is certified to ISO standard 17025:2005 by the Standards Council of Canada for mineral analysis, including analysis of Gold and/or Silver by Fire Assay with AA or Gravimetric finish.

Core from the 2011 program is currently being stored in core boxes, on site, in the garage and in the steel shed mentioned in section 5.8.1.

#### **11.4.2 On-Site Procedures**

On-site procedures for the 2011 drill program mirrored those used in the 2010 drill program. Some samples were sent via Canada Post, while most were sent via Day & Ross.

#### **11.4.3 Laboratory Procedures**

Activation Labs uses fire assay with atomic absorption, gravimetric and screen-for-metallics finishes.

Most samples were analysed using the atomic absorption finish. Samples that tested above 3 grams per tonne were analysed using the gravimetric finish. Samples that tested above 500 grams per tonne were analysed using the screen-for-metallics method. Samples with visible gold were only analysed using the screen-for-metallics method.

Samples are prepared by being crushed to a nominal minus 10 mesh (1.7 mm), mechanically split (riffle) to obtain a representative sample and then pulverized to at least 95% minus 150 mesh (106 microns).

In the screen-for-metallics procedure, a representative 500 g split is sieved at 100 mesh with fire assays performed on the entire +100 mesh and 2 splits on the -100 mesh fraction. The total amount of sample and the +100 mesh and -100 mesh fraction is weighed for assay reconciliation. Measured amounts of cleaner sand is used between samples and saved as gold may plate out on the mill.

#### **11.4.4 Quality Control Procedures**

Blanks and standards were inserted at regular intervals into the body of samples. Blanks were inserted after every 14 samples, and standards were inserted after every 24 samples.

#### 11.4.4.1 Standards

Standards were supplied by CND Resource Laboratories of Langley, BC, Canada. The standards were observed by the Author to be grey in colour and consisting of a powder with grain sizes similar to sand. There were four Standards used, at  $1.16 \pm 0.13$  g/tonne (CDN-GS-1F),  $1.47 \pm 0.15$  g/tonne (CDN-GS-1P5D),  $2.26 \pm 0.19$  g/tonne (CDN-GS-2G), and  $2.36 \pm 0.20$  g/tonne (CDN-GS-2J) (see figures

Of the 138 standards submitted, 9 could not be traced back to the reference sample used because the sample code was not marked on the tag.

Eight standards were more than 0.5 g/t outside of the expected range. Overall, however, assayed results for the standards matched well with expected results. Samples of mineralized rock surrounding these out-of-range standards were not re-tested (see section 11.4.5).

Table 11-4 - QA/QC Standards Results

Standard	Expected Result	Results from NSG Drill Program			Number Tested
		Minimum Result	Maximum Result	Mean Result	
CDN-GS-1F	$1.16 \pm 0.13$ g/t	1.04	2.4	1.27	29
CDN-GS-1P5D	$1.47 \pm 0.15$ g/t	1.29	1.82	1.51	34
CDN-GS-2G	$2.26 \pm 0.19$ g/t	1.83	2.62	2.35	30
CDN-GS-2J	$2.36 \pm 0.20$ g/t	0.24	2.79	2.33	34

Assayed values of the Standards were within expected parameters, although some tests of each standard fell outside the expected range.

## CDN-GS-1F Reference Material (2011 Program)

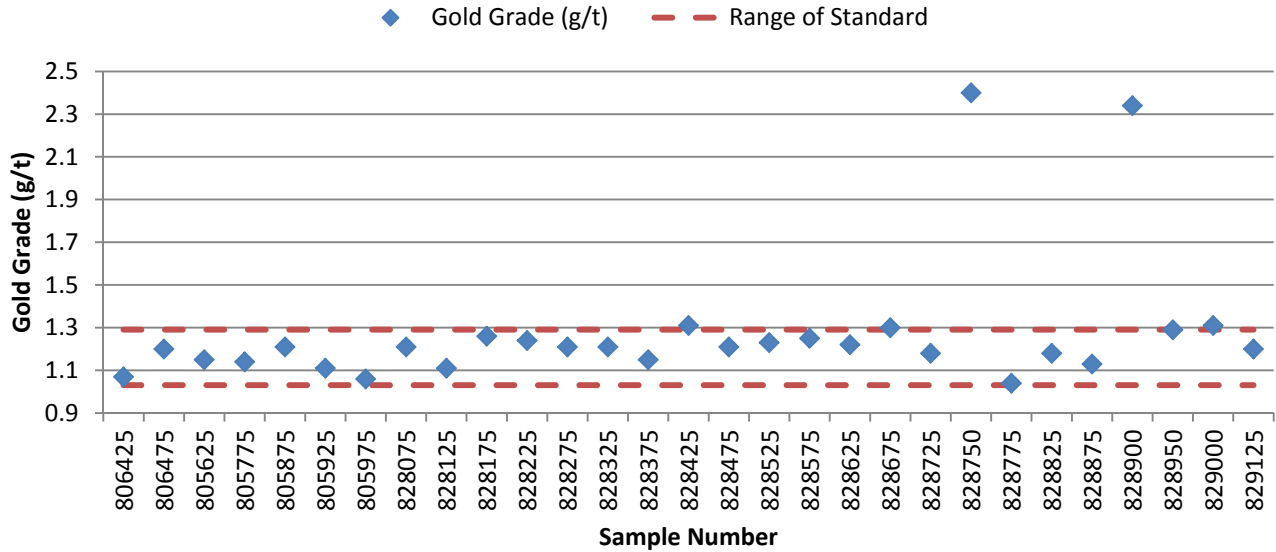


Figure 11-8 - Assay Standard - 2011 - CDN-GS-1F

## CDN-GS-2G Reference Material (2011 Program)

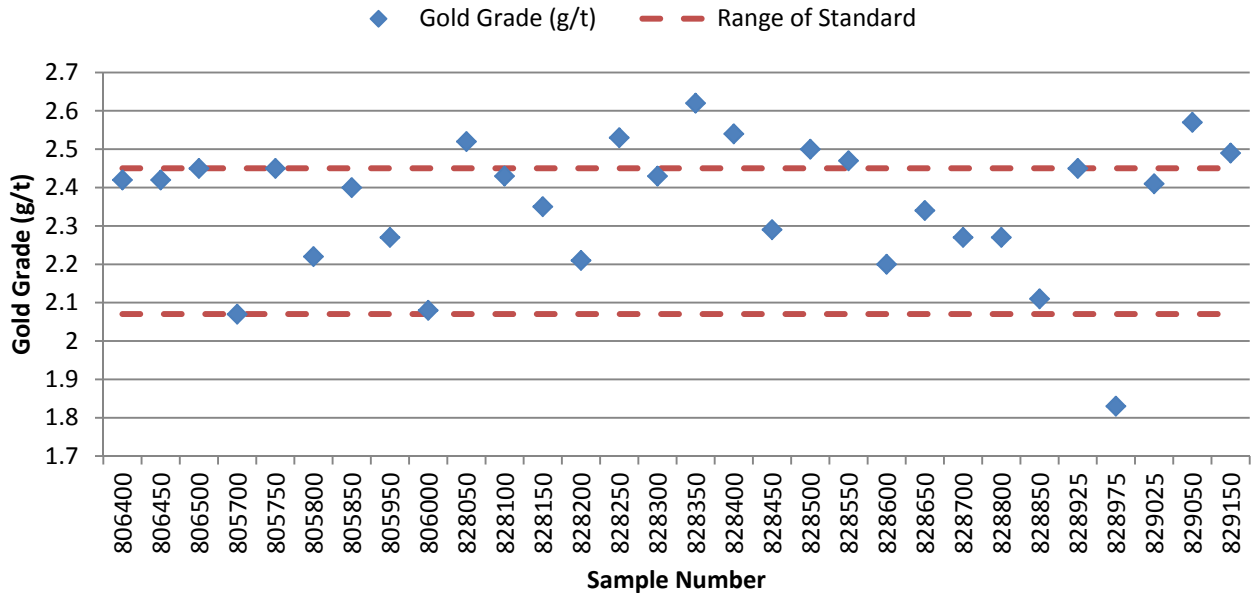


Figure 11-9 - Assay Standard - 2011 - CDN-GS-2G



### CDN-GS-2J Reference Material (2011 Program)

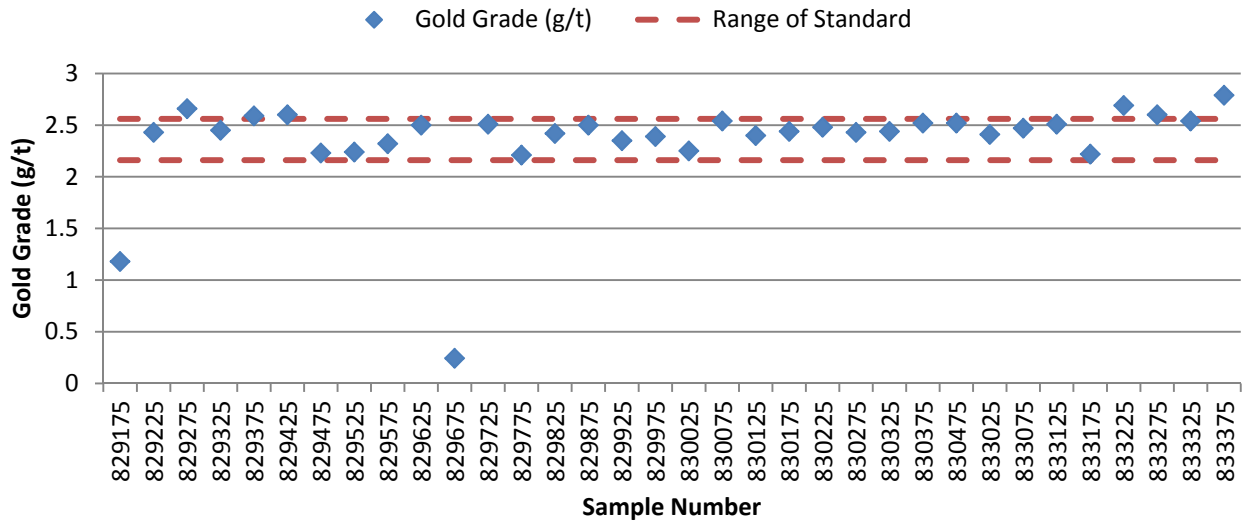


Figure 11-10 - Assay Standard - 2011 - CDN-GS-2J

### CDN-GS-1P5D Reference Material (2011 Program)

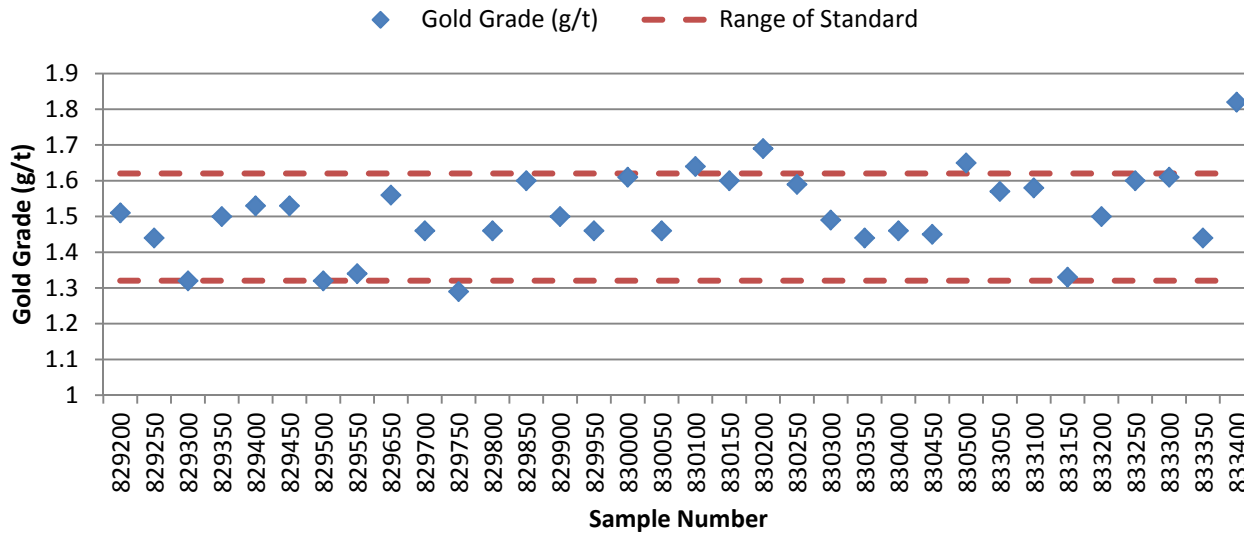


Figure 11-11 - Assay Standard - 2011 - CDN-GS-1P5D

#### 11.4.4.2 Blanks

Of the 212 blanks sent to the laboratory, 196 returned below-detection-limit ('nil') values. The remaining 16 samples were reported as gold-positive; of these, 13 were reported as holding 0.015 grams/tonne of gold or less. The highest-assayed blank returned a value of 0.179 grams/tonne.

#### **11.4.5 Adequacy of Procedures**

The procedures used during the 2011 sampling program are considered by the author (Mr Roy) to be adequate for the purposes of this report. However, the author recommends that for future sampling programs, when a submitted standard or submitted blank is out of range, the geologist should re-run either (a) the entire batch of samples if the batch is small, or (b) a certain number of samples before and after the out-of-range sample.

## 12 Data Verification

### 12.1 Check Samples

#### 12.1.1 Chip & Grab Samples, Sanguinetti, 2002

During the course of a field examination of the Property in preparation for a technical report, Michael H. Sanguinetti of Sanguinetti Engineering (Vancouver, BC) collected 10 chip and grab samples across quartz veins in place, as float of quartz and wall rock from old spoil piles and from the stamp mill tailings pile near the Tangier River. These samples were collected for assay and analysis on behalf of Azure Resources as part of an internal technical report on the Property for Azure Resources. His sampling confirmed the presence of anomalous gold values on the Property.

#### 12.1.2 MineTech Visit, 2009

The property was visited by the author on November 20, 2009. Core boxes from the Azure drilling program were found on-site, exposed to the elements and in poor repair.

Four mineralized samples of drill core from hole ML-03-86 were taken from core boxes to independently confirm the presence of mineralization on the Property. Samples were selected from segments that Azure had previously split and assayed. Segments sampled by Azure contained split core with a mineralized segment as well as wall rock on either side. The remaining half of the mineralized segment was taken, leaving the wall rock in the box. The samples were handled by the Author until they arrived at the assay lab. The results are included in the tables below, with 2003 results taken on an individual basis from copies of the 2003 assay certificates. The 2009 assay certificate, with check assay results, is included in the MineTech 2010 Technical report.

Table 12-1 - 2003 versus 2009 Assays

Sample	Hole	From	To	2003 Result (g/tonne)	2009 Result (g/tonne)
17512	ML03-86	41.70	42.00	0.12	51.84
17518	ML03-86	84.55	84.75	2.88	0.477
17546	ML03-86	164.25	164.60	0.59	0.316
17578	ML03-86	193.15	193.50	0.01	0.055

Given the coarse nature of the gold mineralisation and the small size of the samples that were examined, verification sample assays were not expected to closely agree with the original sample assays. It was more important to see 'gold positive' assays where 'gold

positive' assays were seen previously. For each of the four verification assays that were taken, the objectives of the verification sampling exercise were met.

It is worth noting that no visible gold was observed in Sample 17512 that assayed 52 g/tonne.

### 12.1.3 MineTech Visit, 2010

The Author visited the site again on December 7, 2010 in order to review the drilling and sampling procedures being used by NSGold staff and to take new verification samples.

The Author took the remaining half of four samples that had already been split and sampled by NSGold. Each section, chosen by MineTech had been sent for Screen-for-Metallics testing by NSGold, and had returned anomalous gold (i.e.: gold-positive) values.

The Author sent all four samples to the Minerals Engineering Centre at Dalhousie University for testing using Screen-for-Metallics. All samples tested by MineTech were gold-positive.

Sample	Hole	From	To	NSG Grade (g/tonne)	MineTech Grade (g/tonne)
691694	NSG05-10	200.4	200.9	7.90	0.309
778547	NSG06-10	209.5	210.0	6.74	2.425
778696	NSG07-10	196.0	197.0	10.42	3.817
778767	NSG08-10	159.7	160.3	4.71	5.777

Through verification sampling and past production records, the author believes that the quantity and quality of diamond drill sampling on the property, both historically and by NSGold, adequately represents the mineralisation for the purpose of mineral resource estimation.

## 12.2 Drillhole Database – Quality Assurance / Quality Control

The drill hole database used in the resource estimate was checked and corrected by MineTech staff. The following data sources were used to bring together the current database:

- An existing DDH database (the 'legacy database')
- NS DNR file *AR ME 1988-234* (1986-1987 drill program: scanned copies logsheets)
- NS DNR file *AR ME 1990-030* (1986-1987 drill program: scanned copies of logsheets; scans of assay certificates)

- NS DNR file *AR ME 2004-035* (2003 drill program: scanned copies of logsheets; scans of assay certificates)
- Unpublished, MS Excel-format spreadsheets of DDH geometry & assay data, incl. assay certificates (2010 & 2011 drill program; data from P. MacKinnon)

### **12.2.1 Collar Data**

All collar records were checked against corresponding logsheets. Collar points for the two historical drill programs were also visually compared, in software, against contemporary plan maps that had been prepared by the exploration companies (Hecla and Azure). A small number of discrepancies were found and were fixed on a case-by-case basis.

### **12.2.2 Downhole Survey Data**

All downhole survey records were checked against corresponding logsheets. A small number of holes showed changes in azimuth / dip that were not possible; these holes were corrected on a case-by-case basis. Drill hole traces for the two historical drill programs were then visually compared, in software, against cross-sections that had been prepared by Glen Covey for a 2004 report by Azure (Nova Scotia DNR report no. 2004-035), for each available cross-section.

### **12.2.3 Sample Data**

The drilling database used for the current resource estimate contained data from all three major drill programs (1986-1988, 2003, 2010 and 2011). Database records were checked against paper records, including drill hole logsheets and assay lab certificates, where available.

#### ***12.2.3.1 Hecla/Acadia and Azure Samples***

Sample data in the supplied digital database was incomplete - especially for the 1986-1988 Acadia/Hecla program. As part of the Quality Assurance/Quality Control check, missing and new data was entered and all of the data was checked against printed drill logs and assay certificates.

Data missing from the legacy database included all samples for holes ML07-04, ML87-09, ML87-31 and ML03-86. A total of 31 other holes in the legacy database had partial records. It was noted that missing samples generally had low gold values. It is possible that the legacy database only included those samples that were used in resource estimation or were above a certain threshold.

Sample results for hole ML03-86 were not available in the drill logs and were not entered into the revised database.

Missing samples were added using a scanned copy (in PDF format) of the drill logs and OCR software to recognize the text / numbers.

After the missing data had been entered, the sample database was checked for a number of expected patterns; if problems were found, samples were checked individually against the values reported in the logsheets. Patterns checked included:

- Numeric fields containing letters
- Duplicate sample numbers
- Out-of-sequence sample numbers
- 'From'-'To' fields agree with 'Length' field
- Gold assay values outside of the detection range of the test

Finally, the top 100 samples (by Au value) were manually checked against available assay certificates. Two errors were found and fixed.

### *12.2.3.2 NSGold Samples*

Sample data from the 2010, 2011 and 2012 programs was provided by NSGold in the form of Microsoft Excel spreadsheets (the NSGold Sample Database). The spreadsheets included the results of each individual test and, in some cases, an average value for a sample. Each individual sample carried anywhere from one to eight test results. These test results were combined into a single weighted value.

NSGold also provided assay certificates, in the form of dozens of Microsoft Excel spreadsheets. The certificates were combined, using a computer script, into a single spreadsheet. The results from the assay certificates were also combined into a single weighted value.

The procedure for arriving at weighted values was as follows. First, each reported test value was converted to grams per tonne and multiplied by the sample mass that went into the test, giving a value in (grams \* grams)/tonne for each test performed. Then, all (grams \* grams)/tonne values were added up, and that summed value was divided by the total mass of material assayed, giving a single value in grams per tonne. The formula used was:

$$\left( \sum_{x=1}^i m_x * v_x \right) / \sum_{x=1}^i m_x$$

Given

$m_x$  = mass of sample x, in grams

$v_x$  = assayed value of sample x, in grams per tonne

$i$  = total number of samples

Finally, the values in the NSGold Sample Database were compared against the values in the assay certificates using formulas in Microsoft Excel. No significant discrepancies were discovered.

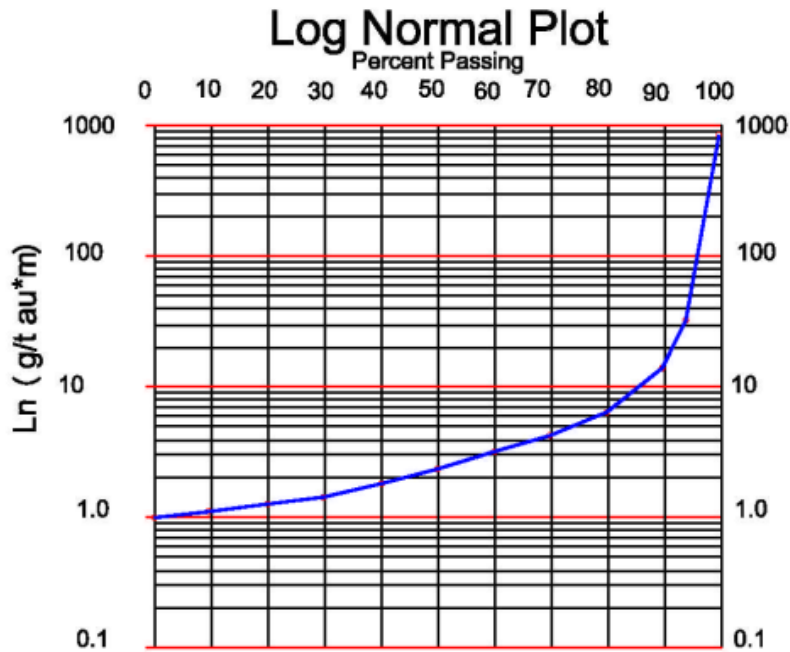


Figure 12 Log-Normal plot of assay data, up to mid 2012.

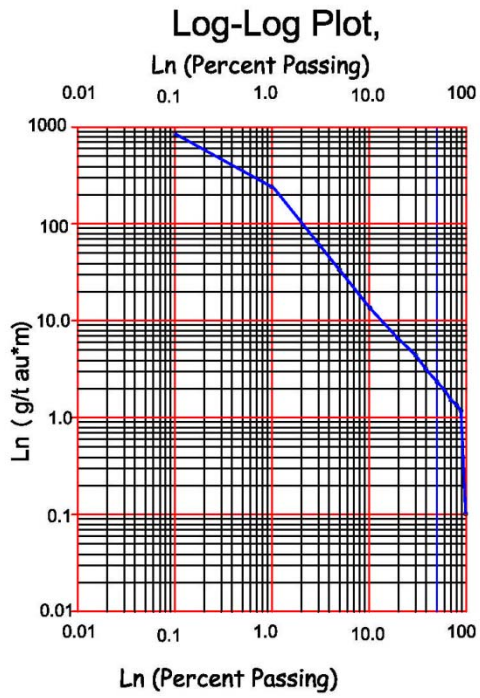


Figure 13 Ln percent passing vs. Ln. grade plot

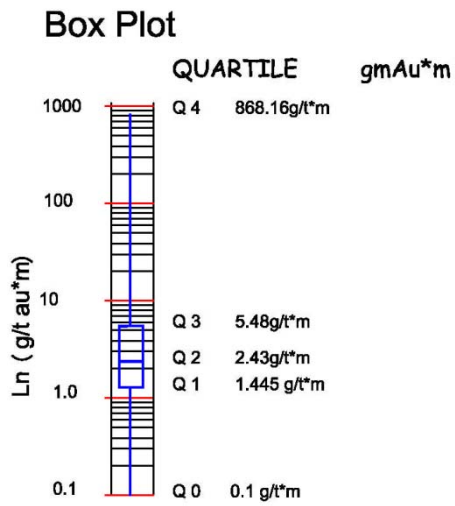


Figure 14 Box plot of samples greater than 1 g/t/1.5m.



## **13 Mineral Processing and Metallurgical Testing**

### **13.1 Bulk Sample, Azure, 2003-2004**

Azure intersected five West Zone veins and took a 2,000-tonne bulk sample from sill drifts on the Little North and Cummings veins. The bulk sample was shipped to the nearby Dufferin Mines mill, which Azure controlled and operated at the time.

No published reports on the bulk sample processing are available, but interviews with people involved indicate that recovery was poor. Three principal reasons were given for this. First, time constraints forced Azure to take the bulk sample early, before the decline had reached the planned target area. Second, the material had little coarse gold and was unsuited to the gravity circuit used to process it.<sup>7</sup> Third, gravity methods have a poor history in Nova Scotian gold deposits, with maximum gold recovery values in the 60-70% range.

### **13.2 Bench-Scale Testing, 2004**

Preliminary, limited bench-scale metallurgical testing was carried out in 2004 by Ed Thornton, P.Eng., an associate metallurgical engineer with MineTech. Gravity/flotation and cyanide leaching methods were tested. The highest recovery achieved was 89% over a total of six tests. Samples were ground for forty minutes in a rod mill. Flotation samples were conditioned with MIBC and R-208 prior to 15 minutes of flotation. Although the testing was done on a bench scale, the materials used can be considered representative of the type of mineralization at the Property.

### **13.3 Metallurgical Work, NSGold Corporation, 2013**

During Q1 2013 NSGold engaged GPX Gold Royalty Corp. of Oakville, Ontario to complete a metallurgical scoping study for the Mooseland Gold Project. GPX Gold provides metallurgical studies as a service to gold mine owners-operators who have completed preliminary investigation and are in need of detailed metallurgical information to proceed with a final evaluation or project implementation. The study was undertaken by GPX Gold's affiliate company, Resources Mining Technologies ("RMT"), based in Sarasota, Florida. The scoping study entailed the completion of ore analysis including sample preparation, work index, head grades, and fractional analysis by size. Major gold processing routes were evaluated, including gravity, flotation and cyanidation recovery. Basic reagent consumptions were also determined.

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<sup>7</sup> Personal communications with Glen Covey (Geologist, Azure), Steve Furlotte (fmr. mgr., Dufferin Mill) and Ed Thornton (Metallurgist).

The metallurgical scoping study was supervised by Stuart Turner, the Chief Technology Officer and Project Manager for RMT. Mr. Turner is an internationally experienced Extractive Metallurgist with more than 22 years of experience in process engineering and extraction of gold. All analysis and assays were conducted by McLelland Laboratories in Sparks, Nevada, a well-respected independent laboratory.

NSGold delivered to RMT 160 kilograms of drill core in sealed bags from which RMT prepared a composite sample. RMT then used approximately 30 kilograms of the composited material to carry out the scoping cyanidation, floatation, gravity concentration and comminution test work. The remaining composited sample is being stored in anticipation of an eventual definitive metallurgical test work.

Cyanide leach test work resulted in gold recovery of 94.2% in 72 hours with low reagent consumptions of sodium cyanide (0.20 kilograms per metric tonne of ore) and lime consumption (1.1 kilograms per metric tonne of ore).

Floatation test work yielded a gold recovery of 93.7% into a mass of 6.1%.

Gravity concentration test work was carried out at a coarse grind and yielded a gold recovery of 53.7% into a mass of 0.13%. Although the gravity performance was only moderate, RMT commented that batch gravity concentration has the “potential to increase overall process recovery by removal of coarse free gold prior to a floatation treatment route”. Microscopic examination of the gravity concentrate clearly showed the presence of large “nugget-like” coarse gold particles. For this reason gravity recovery is considered to be an essential processing step for recovering gold from the Mooseland Property.

The test work carried out by RMT also highlighted the variability in the gold grade of the various samples. This inherent characteristic of the Nova Scotia Meguma gold deposits is well documented and is generally referred to as the “nugget effect”. The average gold grade of all assayed and calculated head grades in the scoping study was 3.15 grams per tonne. However, metallic screen assays returned an average head grade of 5.27 grams per tonne gold. The wide variance in assay values (low value of 1.15 gpt and high value of 8.81 gpt) indicates the presence of coarse disseminated gold. Furthermore, RMT reported that “the close agreement between the metallic screen assay value difference and the standard deviation indicates that the actual grade of the deposit is significantly higher than that indicated by the study average.”

## 14 Mineral Resource Estimate

### 14.1 Introduction

During April and May, 2012, MineTech International Limited ("MineTech") carried out a resource estimate for NSGold Corporation's ("NSGold's") Mooseland deposit. The resource estimate includes holes up to Hole NSG-41-11 (i.e.: the 41<sup>st</sup> hole drilled by NSGold).

This resource estimate was prepared by Doug Roy, M.A.Sc., P.Eng., Mining Engineer with MineTech. Micromine software (Version 2011) was used to facilitate the resource estimating process.

The resource estimate was prepared in accordance with CIM Standards on Mineral Resources and Reserves<sup>8</sup> where:

- A *Measured Mineral Resource*, as defined by the CIM Standing Committee is "that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity."
- An *Indicated Mineral Resource* as defined by the CIM Standing Committee is "that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonable assumed." And,
- An *Inferred Mineral Resource* as defined by the CIM Standing Committee is "that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through

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<sup>8</sup> CIM Standards in Mineral Resources and Reserves, Definitions and Guidelines, adopted December 11, 2005.

appropriate techniques from locations such as outcrops, trenches, pits, working and drill holes.”

A *Mineral Reserve* is “the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study.” This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

- A *Probable Mineral Reserve* is “the economically mineable part of an Indicated, and in some circumstances a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.”
- A *Proven Mineral Reserve* is “the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors.”

Classification, or assigning a level of confidence to Mineral Resources, has been undertaken in strict adherence to the CIM Standards on Mineral Resources and Reserves.

Only mineral resources were identified in this report. No economic work that would enable the identification of mineral reserves was carried out. In other words, no mineral reserves were identified.

## 14.2 Supplied Data

### 14.2.1 West Zone

For Hole ML88-85, the downhole surveys at depths 262.13 and 286.51 metres was disregarded because of suspect azimuth values.

A hard-copy plan map that Hecla prepared during the late 1980s was examined. Collar coordinates were compared with those from the written, hard-copy drilling logs. It was found that northings (distance from the baseline) generally compared very well (i.e.: within acceptable limits) but the differences in easting values (baseline direction) were often significant, often with differences of 5-10 metres and sometimes 10-15 metres.

The author felt that differences in the northing values would have a greater effect on geological interpretation. With that in mind, there were two historical collars that required modification: Holes 87-69 and 87-82:

Hole	Logs Easting	Logs Northing	Hecla Easting	Hecla Northing	$\Delta$ Easting	$\Delta$ Northing
ML87-69	2300	6340	2153.2	6168.9	146.8	171.1
ML88-82	2100	6248	1911.5	6247.8	188.5	0.2

*Grid coordinates in metres.*

West Zone holes that NSGold drilled in 2011 appeared on the following cross-sections:

<b>Name</b>	<b>Alternate Name</b>
1700E	3+00W
1750E	2+50W
1800E	2+00W
1975E	0+25W
2300E	3+00E
2400E	4+00E

### 14.2.2 East Zone

For the East Zone, the azimuth for Hole EML-32 did not match Hecla's plan maps of drilling (circa 1989). The azimuth was changed to 90° (site grid) to agree with Hecla's plan map.

East Zone holes that NSGold drilled in 2011 appeared on the following East Zone cross-sections:

<b>Name</b>	<b>Alternate Name</b>
8100N	1+00E
8125N	1+25E
8150N	1+50E
8185N	1+85E
8215N	2+15E
8250N	2+50E
8275N	2+75E
8300N	3+00E
8325N	3+25E
8350N	3+50E

## 14.3 Site Grid

Site elevations use mean sea level plus 1,000 metres as a datum.

### 14.3.1 West Zone

The site grid that exists on the property has been in use since the 1800s.

### **14.3.2 East Zone**

The East Zone grid baseline has changed several times over the past few decades, mainly because earlier geological work was based solely on diamond drilling. The direction of the anticlinal axis was not initially apparent.

The East Zone baseline that was used for the current mineral resource estimate was based on Hecla's BL2 or Baseline 2. For convenience in modelling, BL2's origin was shifted to 4400 m East, 8000 m North, then rotated 24° counter-clockwise such that the baseline was oriented North-South.

### **14.3.3 Magnetic Declination**

Downhole survey azimuth values were recorded relative to magnetic north. During Fall 2011, magnetic declination at the Mooseland site (approximate Latitude: 44° 56' North, Longitude: 62° 46' West) was 18.4° West.

For the East Zone, 42.3° was subtracted from the magnetic values to obtain the grid-relative values. For the West Zone, 18.3° was added.

## **14.4 Mineralised Zone Interpretation**

Mineralised zone interpretation was carried out using a combination of cut-off grade and the author's judgement. A cut-off grade of approximately 1 g/tonne was generally used. However, in many cases, if the intercept grade was less than the cut-off but "gold positive," and occurred in a location where the author felt that a vein or mineralised zone ought to occur based on the geology of adjacent cross-sections, that intercept was included.

Zones were extended down-dip by a maximum of 25 metres beyond the last intercept.

Glen Covey, an independent geologist who was working for NSGold during their 2010 drilling program, provided interpreted cross-sections for most of the West and East Zones. Mr Covey's interpretations were generally followed. In other words, the location of the anticlinal axis, and the interpreted the strike and dip of the zones were adopted for the current interpretation.

For consistency, the author retained the names of previously named veins. Many veins were also outlined that previously had not been named. For the West Zone, newly named veins were given names from the phonetic alphabet in the order in which they were identified (i.e.: in a more-or-less random order). No East Zone veins were previously named. To avoid confusing the veins with the West Zone veins, East Zone veins were given names of cities. Refer to Table 14-2 for a stratigraphic column of the veins that were identified.

A minimum horizontal width of 1.5 metres was used. Where it was necessary to expand an intercept to the minimum width, the author expanded it to include sampled intervals. Where there were no samples to incorporate (i.e.: where the sampled interval was less than 1.5 metres wide, the grade of “planned dilution material” was zero (grams per tonne).

The author closely examined each individual intercept to ensure that the interpretation was as accurate as possible and reflected the interpreted geology as closely as possible.

The zone interpretations were further adjusted on longitudinal sections. A long section showing zone intercepts was produced for each of the 60 zones that were outlined in the West Zone. There were 43 such longitudinal sections for the East Zone. The longitudinal sections were reviewed and, where geological continuity was apparent, defined by an intercept spacing of approximately 25 metres, one or more polygons were drawn, enclosing the intercepts, to outline the mineralised zone.

Table 14-1: Cross-section definitions.

**West Zone**

Number	Section	Name	Alternate Name	2011 Holes on Section	Towards (The Viewer)	Away (From the Viewer)	Width
1	1400	1400E	6+00W		50	50	100
2	1500	1500E	5+00W		50	50	100
3	1600	1600E	4+00W		50	25	75
4	1650	1650E	3+50W		25	25	50
5	1700	1700E	3+00W	Yes	25	25	50
6	1750	1750E	2+50W	Yes	25	25	50
7	1800	1800E	2+00W	Yes	25	25	50
8	1850	1850E	1+50W		25	25	50
9	1900	1900E	1+00W		25	25	50
10	1950	1950E	0+50W		25	12.5	37.5
11	1975	1975E	0+25W	Yes	12.5	12.5	25
12	2000	2000E	0+00		12.5	12.5	25
13	2025	2025E	0+25E		12.5	12.5	25
14	2050	2050E	0+50E		12.5	12.5	25
15	2075	2075E	0+75E		12.5	12.5	25
16	2100	2100E	1+00E		12.5	12.5	25
17	2125	2125E	1+25E		12.5	12.5	25
18	2150	2150E	1+50E		12.5	12.5	25
19	2175	2175E	1+75E		12.5	12.5	25
20	2200	2200E	2+00E		12.5	25	37.5
21	2250	2250E	2+50E		25	25	50
22	2300	2300E	3+00E	Yes	25	50	75
23	2400	2400E	4+00E	Yes	50	50	100

**East Zone**

Number	Section	Name	Alternate Name	Towards (The Viewer)	Away (From the Viewer)	Width	2011 Drilling on this Section?
1	8000	8000N	0+00E	50	25	75	
2	8050	8050N	0+50E	25	25	50	
3	8100	8100N	1+00E	25	12.5	37.5	Yes
4	8125	8125N	1+25E	12.5	12.5	25	Yes
5	8150	8150N	1+50E	12.5	17.5	30	Yes
6	8185	8185N	1+85E	17.5	15	32.5	Yes
7	8215	8215N	2+15E	15	17.5	32.5	Yes
8	8250	8250N	2+50E	17.5	12.5	30	Yes
9	8275	8275N	2+75E	12.5	12.5	25	Yes
10	8300	8300N	3+00E	12.5	12.5	25	Yes
11	8325	8325N	3+25E	12.5	12.5	25	Yes
12	8350	8350N	3+50E	12.5	25	37.5	Yes
13	8400	8400N	4+00E	25	25	50	
14	8450	8450N	4+50E	25	50	75	



Table 14-2: Stratigraphic column.

<u>West Zone</u>	<u>East Zone</u>
 Juliet	 Takoradi
 Sierra	 Kumasi
 Charlie	 Lisbon
 Lima	 Lagos
 Bravo	 Accra
 Golf	 Madrid
 Yankee	 Victoria
 Tango	 Rio
 Papa	 Vancouver
 Kilo	 Bangkok
 Xmas	 London
 India	 Tokyo
 Furnace	 Moscow
 Romeo	 Belfast
 Cummings	 Montreal
 Special	 Berlin
 Little North	 Halifax
 Uniform	 Bedford
 Irving	 Bathurst
 X-Ray	 Dawson
 Bismark	 Whitehorse
 Quebec	 Vegas
 Alfa	 Winnipeg
 Delta	 Toronto
 Foxtrot	 Hanoi
 Echo	 Dublin
 Hotel	 Shanghai
 Oscar	
 Mike	
 November	
 Victor	
 Whiskey	

Figure 14-1: Plan view of drilling, West Zone.

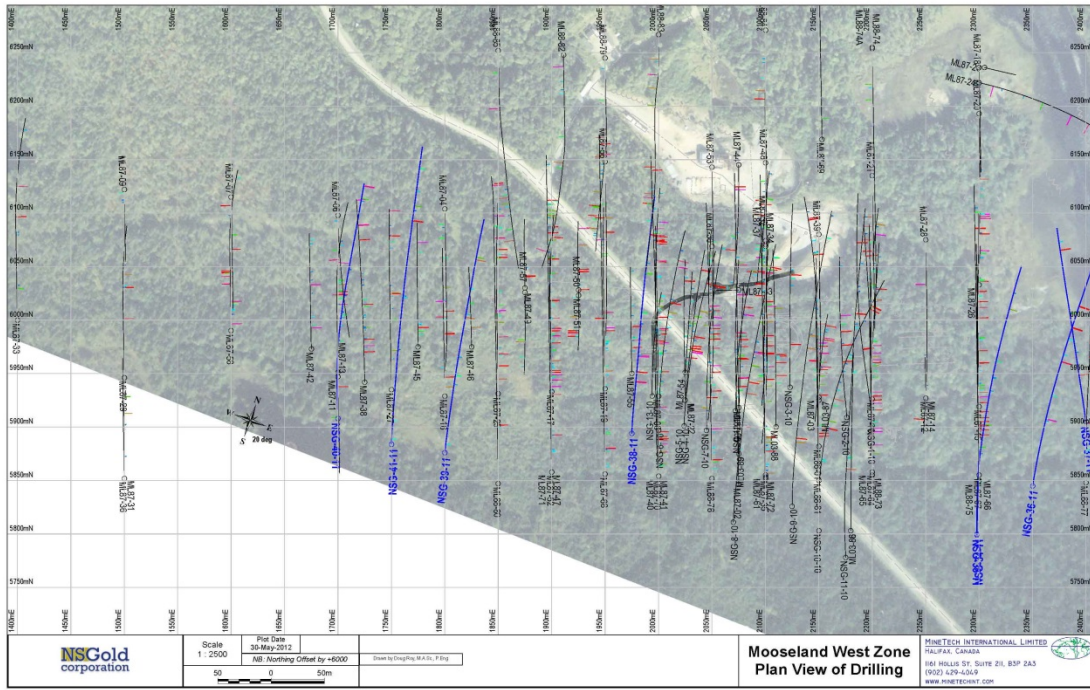
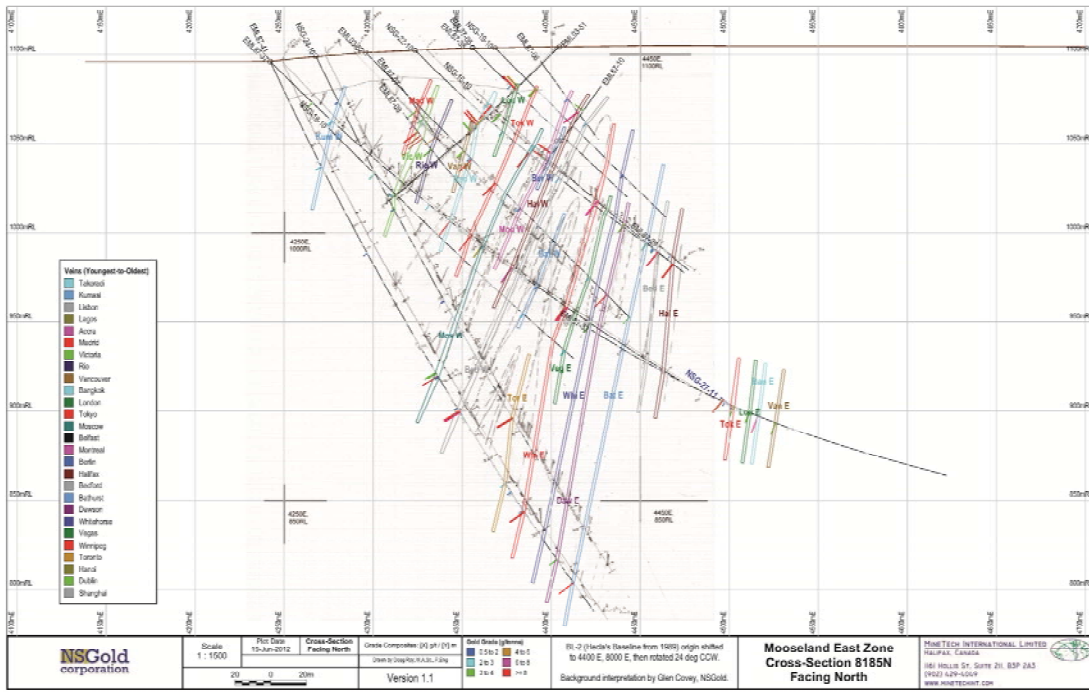


Figure 14-2: Cross-section, West Zone.



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Figure 14-3: Plan view of Drilling, East Zone

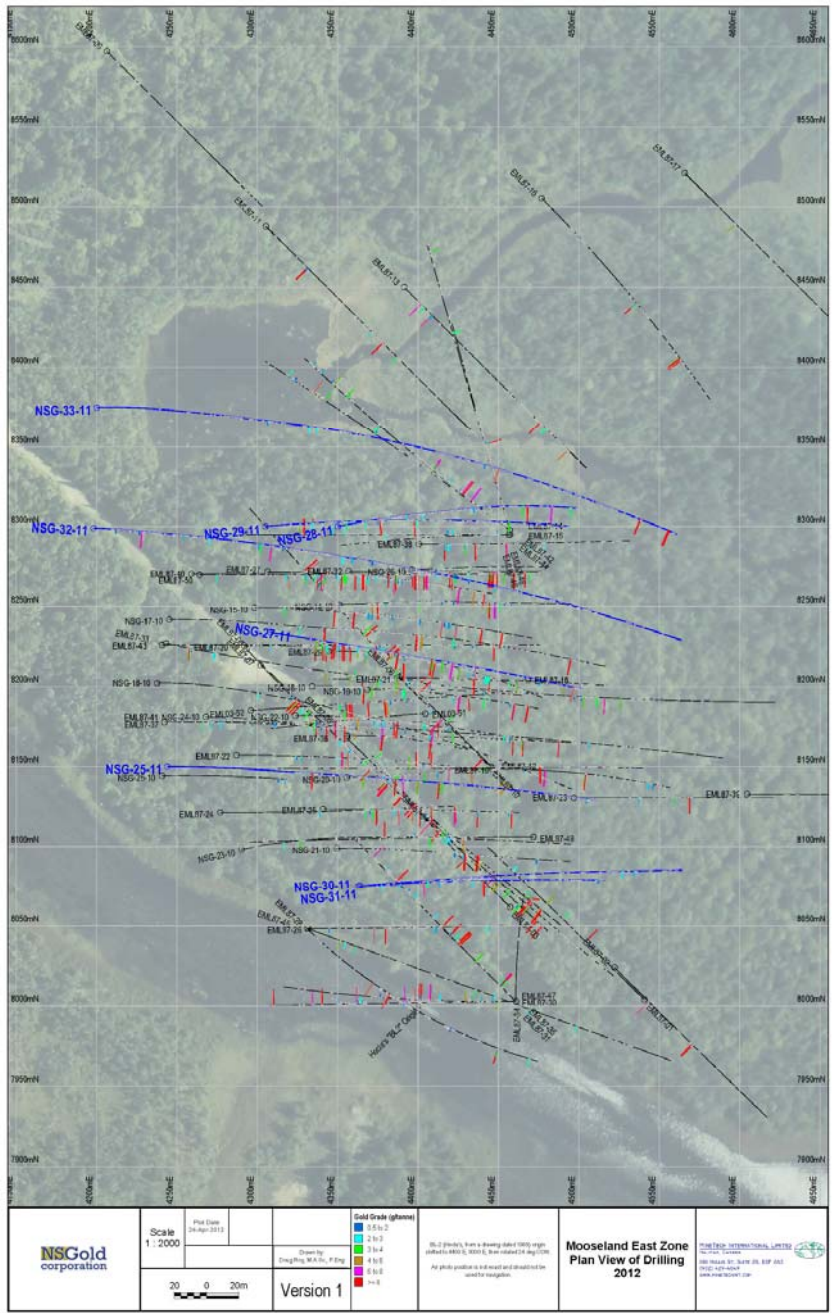
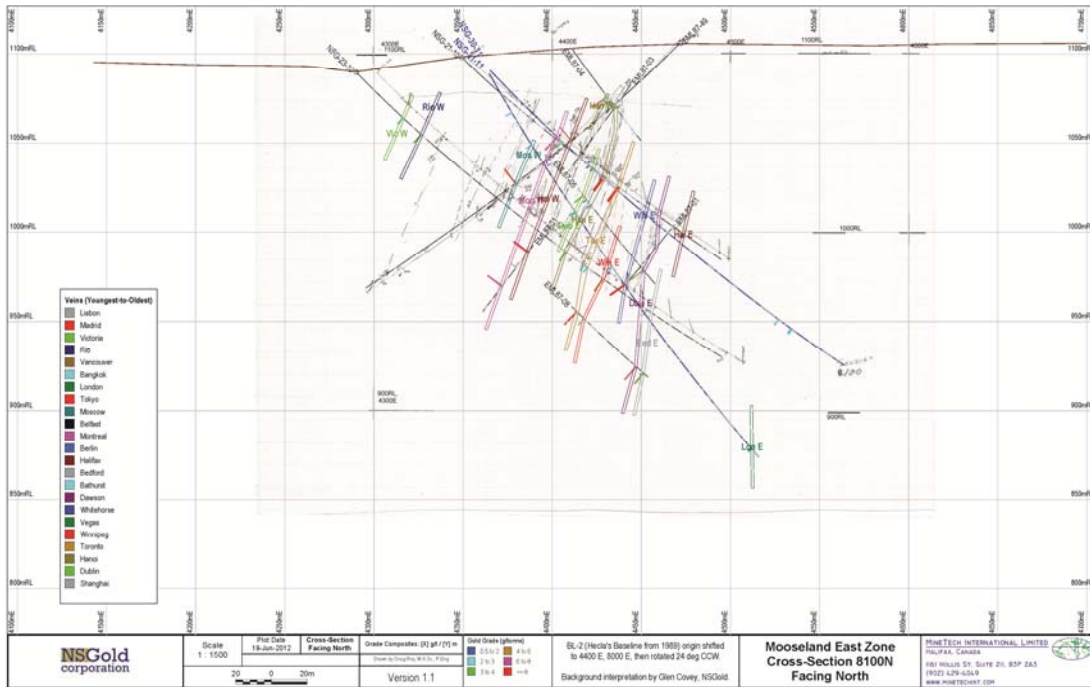


Figure 14-4: Cross-section, East Zone



## 14.5 Statistics

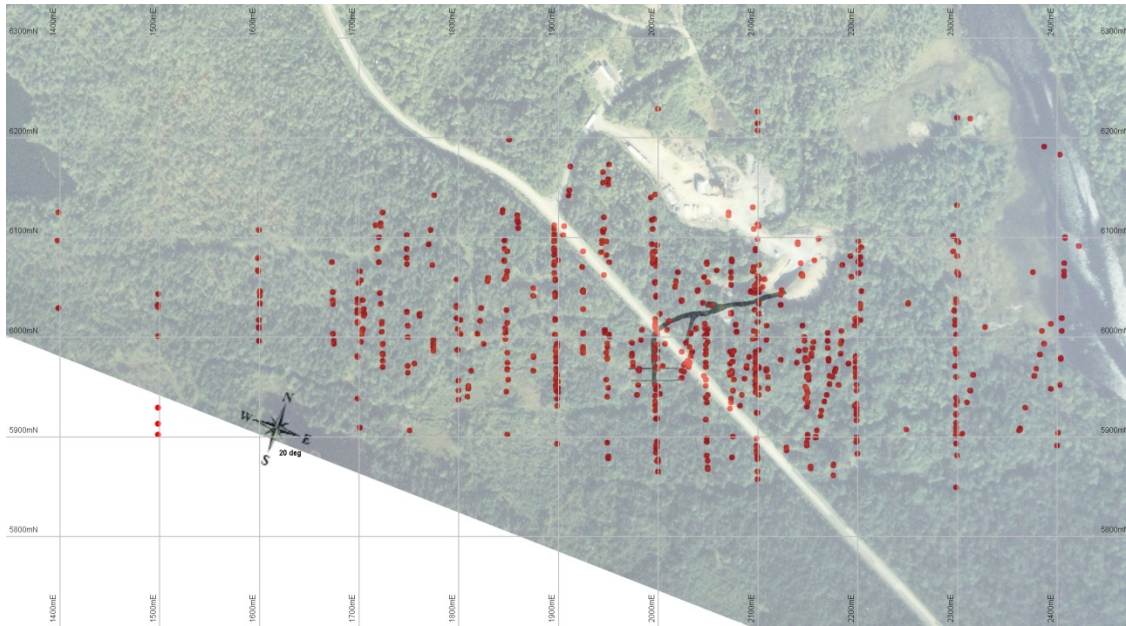
### 14.5.1 West Zone

Statistics of the raw (irregular length) assays within the interpreted mineralised zones were examined. Of the 3112 samples, the average grade was 3 g/tonne. Some of the intercepts were wide as the 1.5 metre minimum width; however, many were not. The author would expect that the regularised (even sample length), diluted, average grade (diluted to the 1.5 metre minimum width) of all samples within the interpreted mineralised zones would be less than 3 g/tonne.

Of the 2916 regularised (over 0.5 metres) samples within the mineralised zones, the mean grade was 2.6 g/tonne (refer to Figure 14-10). As with the irregular length sample statistics (previous paragraph), some of the intercepts were as wide, or wider than the 1.5 metre minimum width; however, many were not.

Sample intercepts were widened to a 1.5 metre minimum horizontal width. In many cases, intercepts were diluted with waste rock at zero grade. This process is known as “planned dilution.” Afterward, the average diluted grade was calculated by dividing the total gold accumulation [sum of all gold accumulation (grade × true width) values] by the total true width (sum of true width values).

Plan View:



Facing Grid North:

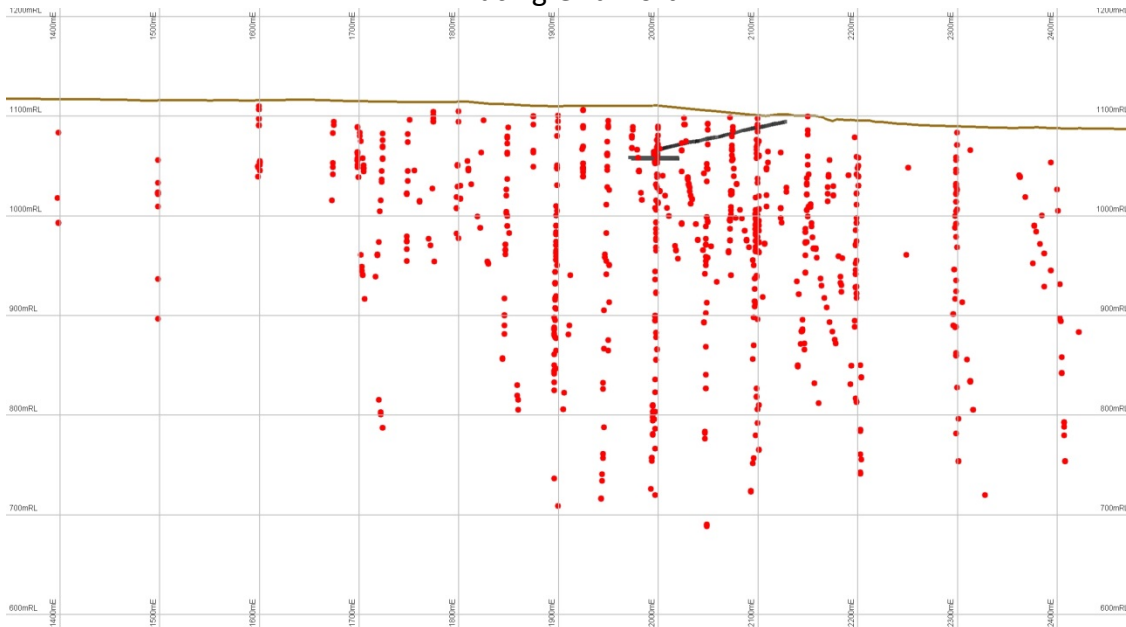


Figure 14-5: Samples greater than 1 g/tonne within the mineralised zones - West Zone.

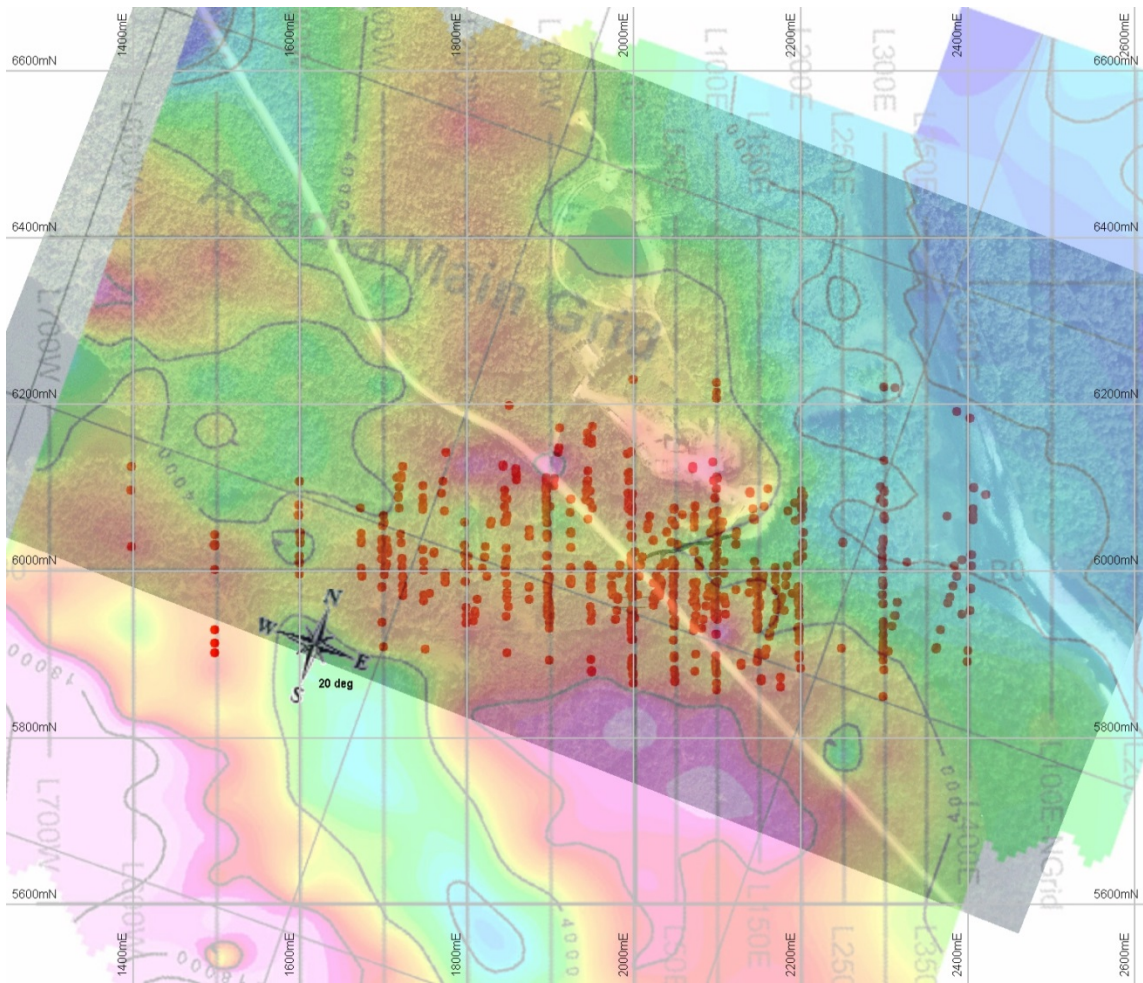


Figure 14-6: Plan view of the West Zone showing samples greater than 1 g/tonne and IP resistivity.

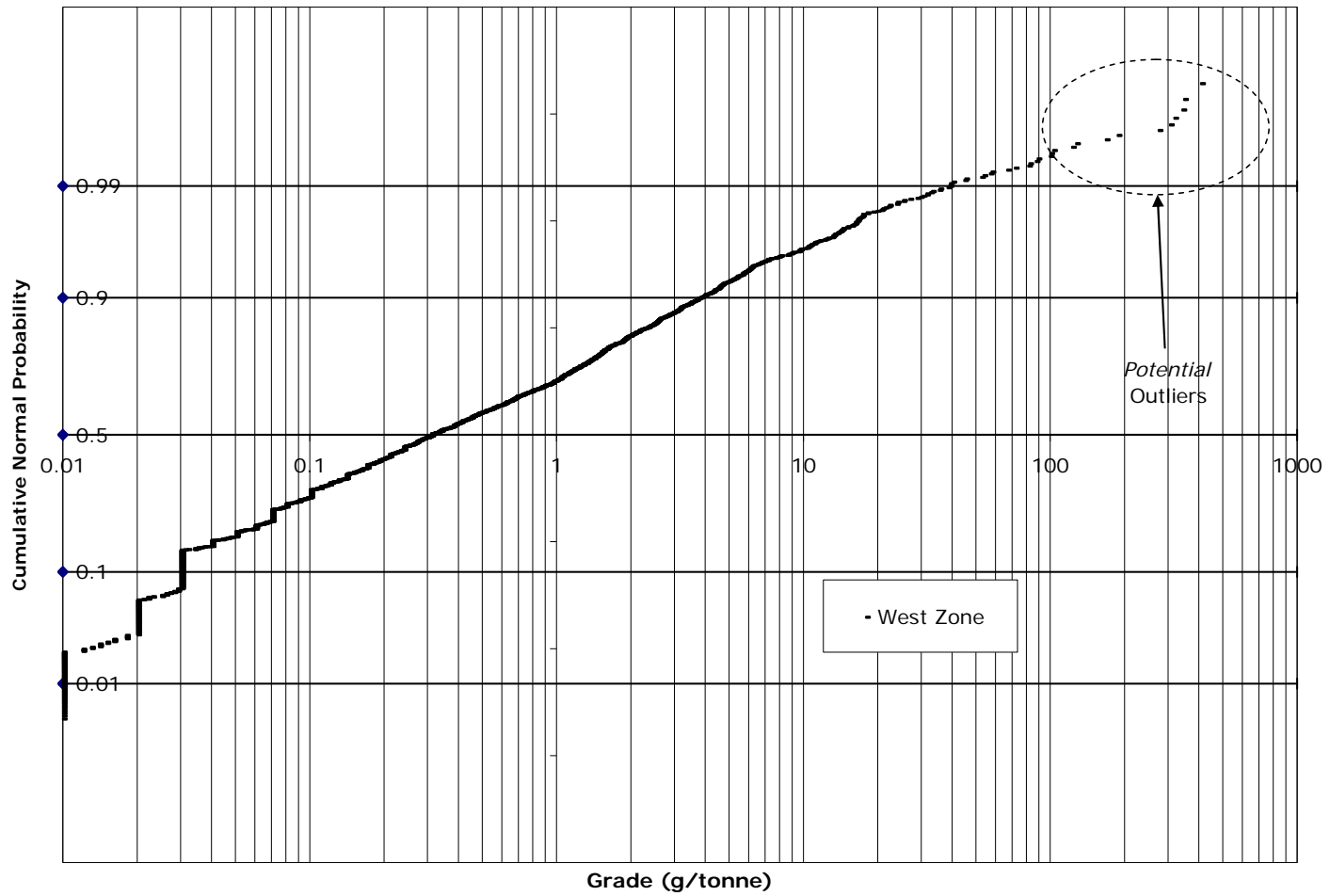


Figure 14-7: Cumulative normal probability plot of all West Zone samples within the mineralised zones.



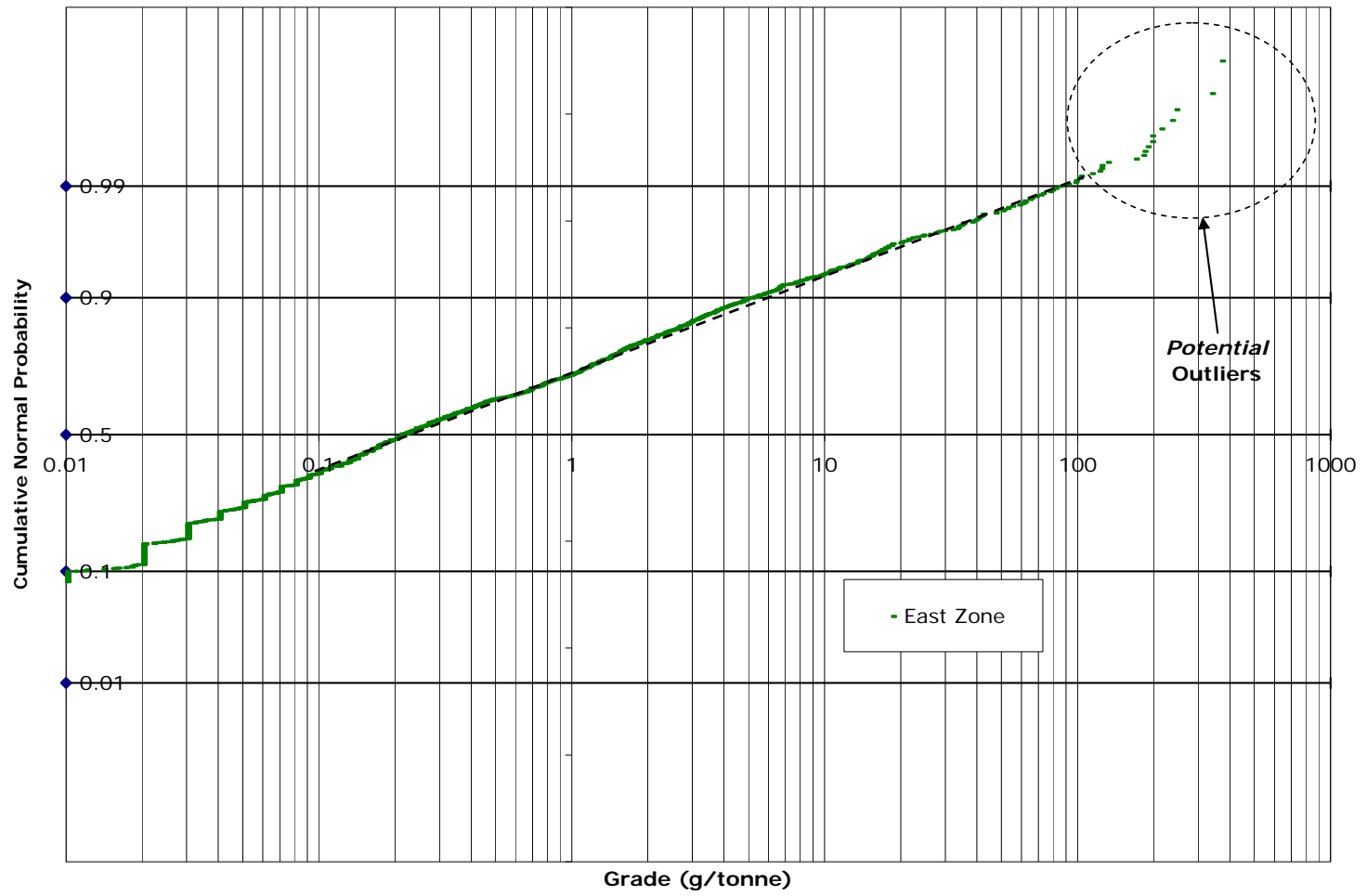


Figure 14-8: Cumulative normal probability plot of all East Zone samples within the mineralised zones.

### 14.5.2 East Zone

Of the 1955 regularised (over 0.5 metres) samples within the mineralised zones, the mean grade was 4.3 g/tonne - higher than the West Zone's mean grade of 2.6 g/tonne (refer to Figure 14-12). Some of the intercepts were as wide, or wider than the 1.5 metre minimum width; however, many were not.

### 14.6 Top-Cut Grade

A top-cut value is normally chosen to prevent the overestimation of block grades by a small number of very high assays or *outliers*. Mooseland mineralisation, typical of the majority of Nova Scotian lode gold deposits, exhibits "coarse gold" or "nuggety" behaviour. In this type of deposit, close samples may vary wildly in grade.

Examination of the cumulative normal probability plot for the West Zone (refer to Figure 14-7) revealed a fairly continuous linear trend up to approximately 100 g/tonne. Above that grade, the linear trend became discontinuous. Above approximately 200 g/tonne, the samples started deviating from the linear trend.

The spatial distribution of the higher grade samples was examined (refer to Figure 14-5). No pattern could be resolved; the samples seemed to be fairly evenly distributed throughout the deposit. In other words, the higher grade samples could not be spatially or geologically isolated.

One method for treating outliers is to project the samples back to the linear trend line, thereby reducing the sample's grade to fit the lognormal distribution. However, to do so in this case would mean increasing the samples' grades. This was thought to be imprudent.

For the East Zone, the samples followed a fairly linear trend until approximately 100 g/tonne. Like the West Zone, above that value they trended above the trend line. Meaning, if the samples were projected to the linear trend, the grades would *increase*. As with the West Zone, this was thought to be imprudent.

Top-cutting was carried out using the following procedure.

The +100 g/tonne assays were top-cut or "capped" to 100 g/tonne. The capped samples were composited over the vein intercept, with a minimum horizontal width of 1.5 metres. For intercepts that were narrower than the 1.5 metre minimum horizontal mining width, they were diluted (at zero grade) to 1.5 metres.

The author considers this top-cut methodology to be appropriate.

Table 14-3: Top-cut grades.

### West Zone

Hole	Sample	From	To	Length	Au (g/t)	Au (g/t)	Top-Cut	Zone
ML86-01	40618	153.60	153.70	0.10	5451.470		100.000	XRA S
ML87-27	51552	129.10	129.30	0.20	868.160		100.000	HOT S
ML87-49	66378	14.81	15.18	0.37	539.700		100.000	OSC N
ML87-05	43800	61.41	61.51	0.10	410.330		100.000	ROM S
ML87-52	76603	464.60	465.03	0.43	354.720		100.000	HOT N
ML87-35	64364	112.86	113.26	0.40	343.340		100.000	PAP S
NSG-10-10	779453	363.50	364.00	0.50	342.730		100.000	NOV N
ML88-78	8483	315.30	316.00	0.70	317.800		100.000	NOV S
ML87-70	4247	377.03	377.30	0.27	242.880		100.000	DEL N
ML87-05	6510	255.35	255.77	0.42	228.520		100.000	FUR N
ML87-70	4246	376.73	377.03	0.30	226.250		100.000	DEL N
ML87-40	64897	293.88	294.13	0.25	176.950		100.000	DEL N
ML87-35	64511	399.97	400.13	0.16	128.130		100.000	HOT N
NSG-3-10	691539	152.40	152.90	0.50	122.490		100.000	FOX N
ML87-02	40762	166.61	166.91	0.30	118.290		100.000	LN S
ML87-19	46152	81.46	81.61	0.15	117.600		100.000	BIS S
ML87-72	6927	180.04	180.31	0.27	113.970		100.000	IRV S
ML87-27	51610	200.90	201.20	0.30	113.490		100.000	DEL N
ML87-39	65789	148.74	149.04	0.30	106.660		100.000	LN S
ML87-66	82111	305.30	305.99	0.69	102.520		100.000	IRV N

### East Zone

Hole	From	To	Length	Sample	Au (g/tonne)	Au (g/tonne)	Top-Cut	Zone
EML87-35	26.65	27.04	0.39	1959	479.410000		100.000000	Win E
EML87-20	71.59	71.81	0.22	92061	411.150000		100.000000	Rio W
EML87-04	128.13	128.38	0.25	81914	374.540000		100.000000	Mos E
EML87-37	215.40	216.00	0.60	2780	368.720000		100.000000	Win E
EML87-05	51.30	51.80	0.50	82155	336.590000		100.000000	Tok W
EML87-04	41.20	41.40	0.20	81846	324.640000		100.000000	Han W
EML87-31	70.64	70.85	0.21	1393	314.310000		100.000000	Han E
NSG-21-10	104.00	105.10	1.10	805069	243.730000		100.000000	Han E
EML87-41	222.82	223.07	0.25	3241	234.000000		100.000000	Bed W
EML87-41	223.07	223.40	0.33	3242	234.000000		100.000000	Bed W
EML87-05	212.20	212.40	0.20	82320	229.030000		100.000000	Mon E
EML87-30	74.10	74.39	0.29	93250	206.490000		100.000000	Bed W
EML03-52	84.20	84.60	0.40	17486	205.330000		100.000000	Ban W
EML87-25	83.10	83.25	0.15	92616	196.310000		100.000000	Mon W
NSG-14-10	32.60	33.20	0.60	779881	195.100000		100.000000	Ban W
NSG-15-10	68.90	69.40	0.50	804010	180.230000		100.000000	Rio W
EML87-40	139.51	140.10	0.59	2972	175.200000		100.000000	Lon W
EML87-40	194.40	194.70	0.30	3070	139.560000		100.000000	Han W
EML87-41	200.00	200.30	0.30	3220	134.230000		100.000000	Mos W
EML87-28	181.77	182.16	0.39	1370	130.510000		100.000000	Win E
NSG-15-10	186.80	187.30	0.50	804167	112.800000		100.000000	Bel E
EML87-08	65.10	65.40	0.30	90191	106.800000		100.000000	Vic W
NSG-28-11	36.00	36.50	0.50	805953	100.840000		100.000000	Van W

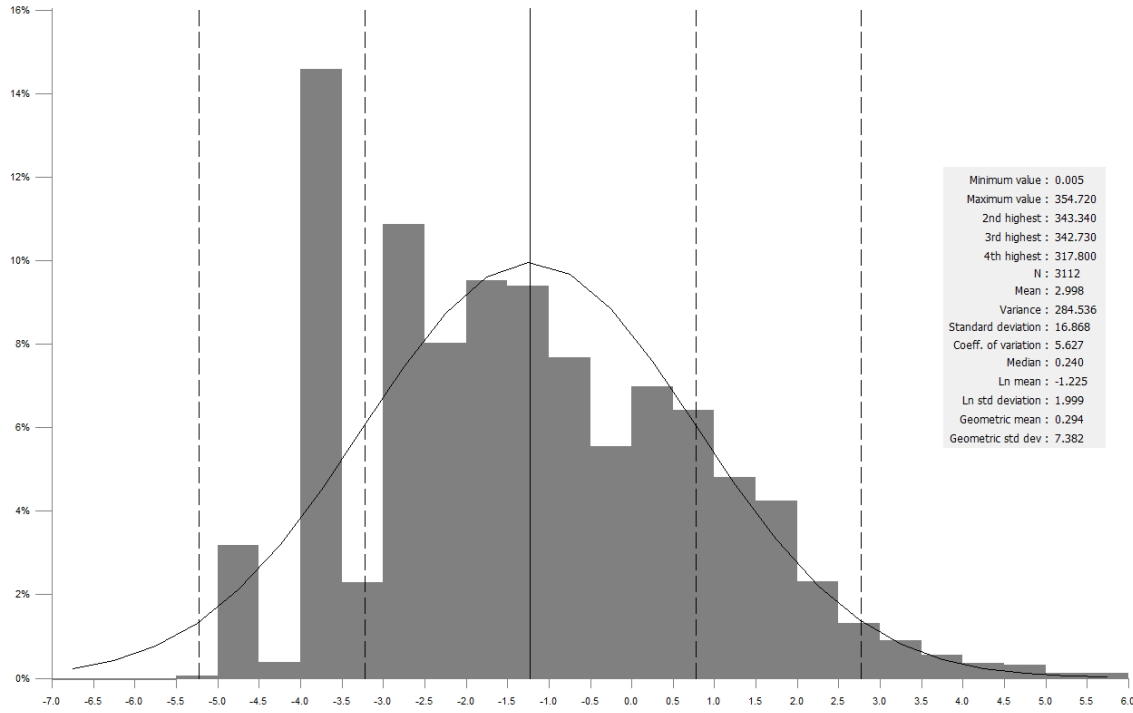


Figure 14-9: Histogram of Non-Regularised (i.e.: irregular length) assays within West Zone interpreted veins (log scale).

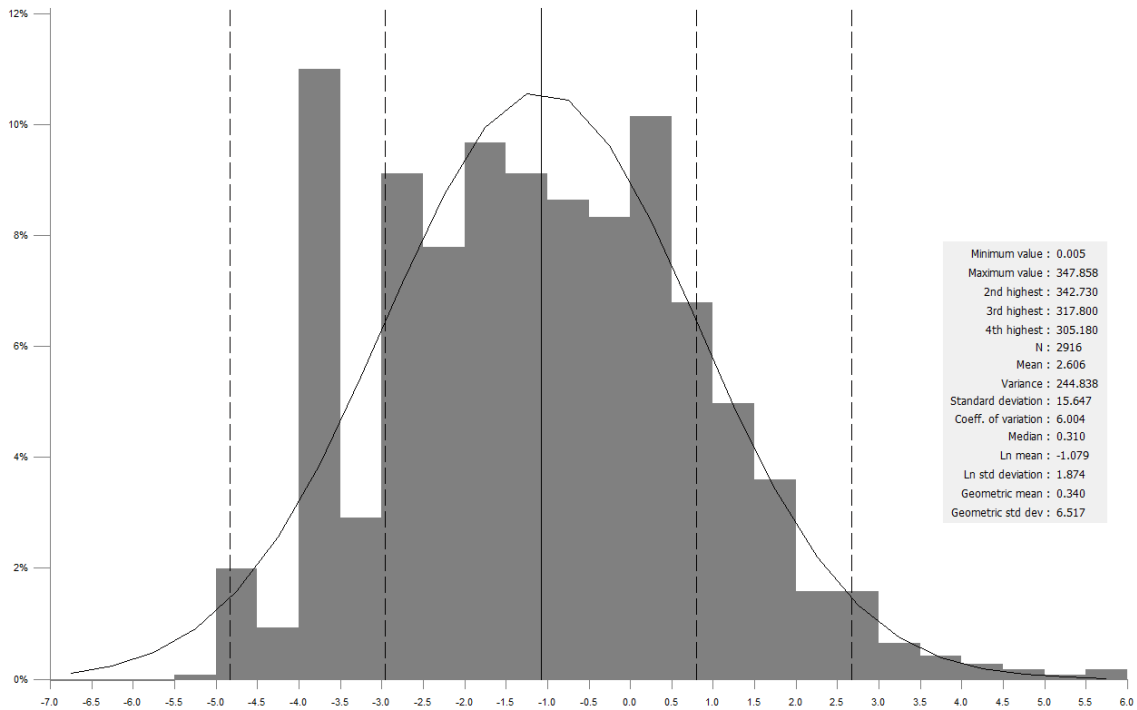


Figure 14-10: Histogram of 0.5 m regularised samples within interpreted veins (West Zone).

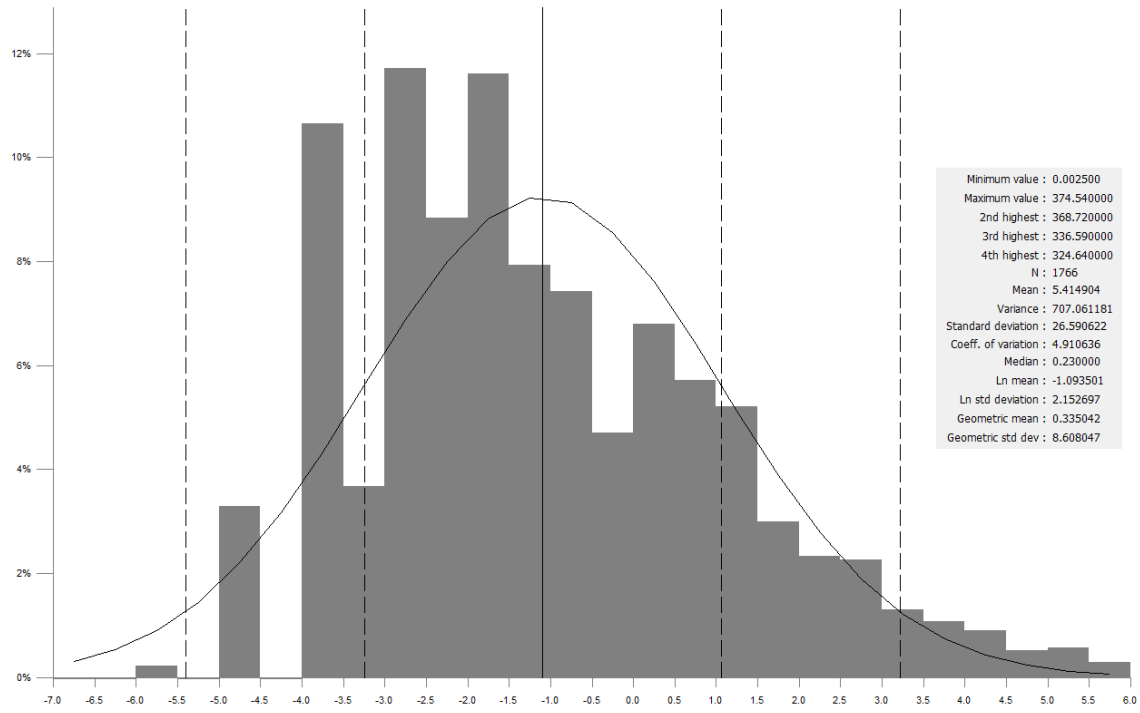


Figure 14-11: Histogram of non-Regularised (i.e.: irregular length) assays within East Zone interpreted veins (log scale).

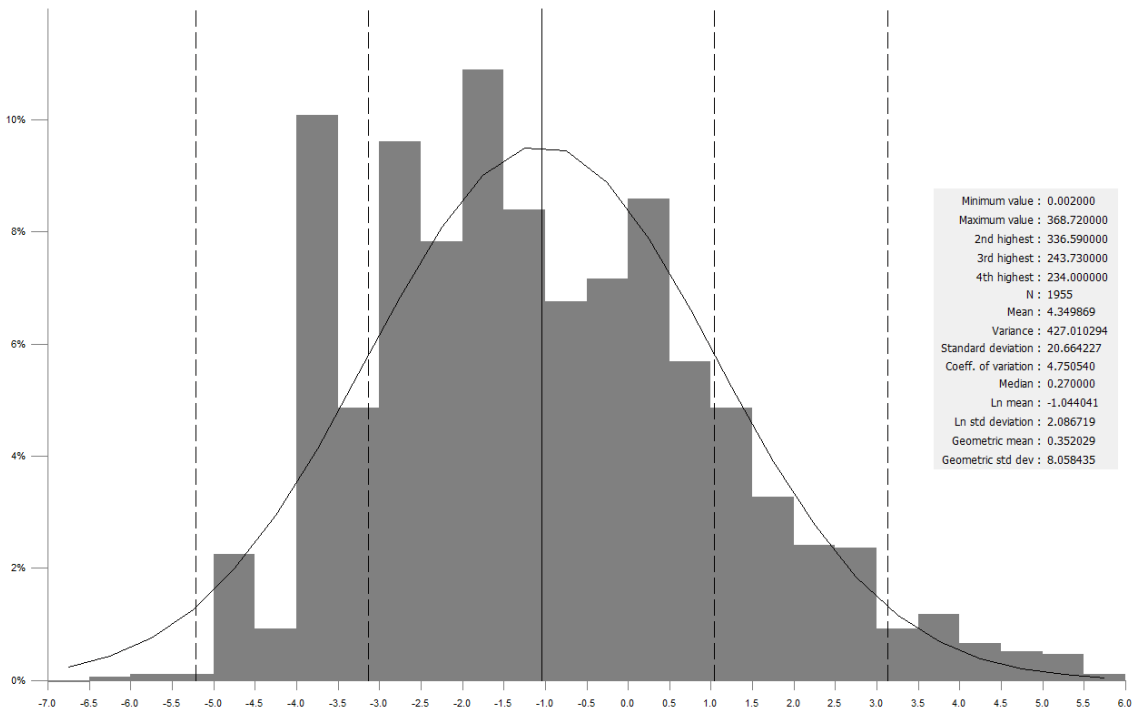


Figure 14-12: Histogram of 0.5 m regularised samples within interpreted veins (East Zone).

## 14.7 Specific Gravity

As part of this estimate, several samples of drill core were collected and the specific gravity determined.

A value of 2.65 was chosen as representative of the rock types under consideration. Rocks with significant sulphide mineralization test higher; however, these have not been sorted out of the population.

Mooseland Samples taken for specific gravity determination.											
Samples from Hole NSG33-71 by meterage. Collected June 18, 2020					Higher SG when sulphides present						
Sample	Grams	Volume	S.G.	Comments							
200.9	75.4	29.0	2.60	Silicious, light grey qtzite, fine grained greenish tint.	246.9	137.7	38.4	3.59	Dark slate with large AsPy xls, ~ 0.5cm, splotches		
201.1	56.6	21.6	2.62	Silicious, light grey qtzite, fine grained greenish tint.	ML-1	112.6	39.2	2.87	dark banded slate, AsPy xls, qtz veinlet		
204.9	171.3	66.3	2.58	Silicious, light grey qtzite, fine grained greenish tint.	ML-2	133.1	47.4	2.81	dark grey - black slate rock.		
247.9	207.4	77.0	2.69	banded fine grained turbidite.	ML-3	149.0	50.0	2.98	Silicious, massive qtzite, fine grained greenish tint.		
250.6	157.6	58.3	2.70	grey, silicious, massive fine grained rock with greenish tint.							
279.1	80.2	30.0	2.67	black graphitic slate.				3.06	Average		
366.1	134.1	51.0	2.63	Medium grey green qtzite.				0.31	Std. Dev.		
								3.20	Kurtosis		
				2.64 Average							
				0.04 Std. Dev.							
				-1.70 Kurtosis							
				105.7% increase in tonnes							

Figure 13 Specific gravity tests on drill core, NSG33-71.

## 14.8 Block Modelling

### 14.8.1 Preliminary Work

Preliminary two-dimensional block model files were created for grade estimation – one for each zone that was outlined. Grade estimation was carried out in four “runs” using 25, 50, 100 and 200 metre search radii. For grade estimation, the diluted (to 1.5 metres true width) grade, with a top-cut grade of 20 g/tonne, was used. Inverse-distance weighting was employed, using varying distance “powers.”

Sets of longitudinal cross-sections for each “run” were printed and examined. Preliminary work indicated that use of a low distance “power” coupled with a relatively longer search radius was

effective at addressing the coarse-gold nature of the mineralisation (also known as the “nugget effect”).

To further illustrate, consider a high grade intercept (say, 20 g/tonne) ten metres from a lower grade, but “gold-positive” intercept (say, 1 g/tonne). In “nuggety” mineralisation, it is likely that, because of small sample size relative to block size, the high grade intercept happened to intersect a nugget while the lower grade intercept did not. If a high power of say, two, were used in conjunction with inverse distance weighting to estimate the block grades and the block centroids were near the intercepts, the resulting grade of the block near the 20 g/tonne intercept would be very high – close to 20 g/tonne – and the block grade near the 1 g/tonne intercept would be very low – close to 1 g/tonne.

Such a result is possible but not likely. It is more likely that the grades of each block are somewhere in between. Using a lower-value inverse-distance power is effective at smoothing the nuggety grades while preserving the total metal content. This results in much more realistic block grades on a “local” scale and, in the author’s opinion, a more realistic global estimate of tonnes, grade and metal content (ounces).

### 14.8.2 Final Work

Two-dimensional block models were created, one for each vein. Two sets of models were created – one set for grade estimates and one for true width.

Refer to Table 14-4 for block model parameters. From the individual models, a single model was compiled that held all of the blocks from all of the veins.

The blocks were constrained by the interpreted vein outlines (refer to Section 14.4). The block size was 10x10 metres.

Table 14-4: Block model parameters.

<b>West Zone</b>					
Direction	Model Origin (Grid, m)	Model Limit (Grid, m)	Model Extent (m)	Block Size (m)	Number of Blocks
East	1,300	2,500	1,200	10	121
Elevation (RL)	600	1200	600	10	61

<b>East Zone</b>					
Direction	Model Origin (Grid, m)	Model Limit (Grid, m)	Model Extent (m)	Block Size (m)	Number of Blocks
North	7,800	8,800	1,000	10	101
Elevation (RL)	600	1,200	600	10	61

## 14.9 Cut-off Grades

Jean-Michel Rendu, in “An Introduction to Cut-Off Grade Estimation, 2<sup>nd</sup> Ed.” states that A cut-off grade is generally defined as the minimum amount of valuable product or metal that one metric ton (i.e., 1,000 kg) of material must contain before this material is sent to the processing plant. This definition is used to distinguish material that should not be mined or should be wasted from that which should be processed.

“In complex geological environments, impurities may have to be considered to define the cut-off grade. Cut-off grades are also used to decide the routing of mined material when two or more processes are available, such as heap leaching and milling. Cut-off grades are used to decide whether material should be stockpiled for future processing or processed immediately.” (Rendu, 2014).

As the cut-off grade is lowered continuity improves and tonnage increases. Development headings would be sampled, because, once any rock is broken the mining cost is out of the equation. If there is enough metal to pay for transport and processing, the material would be sent to a low grade stockpile or the mill.

### 14.9.1 Zone Interpretation

The chosen cut-off grade for mineralised zone interpretation was approximately 1 g/tonne of gold. This value was chosen through iteration as the cut-off that, in the author’s opinion, provided the closest approximation of the continuity of that mineralisation. As discussed in Section 14.4, if the intercept grade was less than the cut-off but “gold positive,” and occurred in a location where the author felt that a vein or mineralised zone ought to occur based on the geology of adjacent cross-sections, that intercept was included.

#### Break even grade estimation for cut-off grad

Table 5 Comparing current estimate with the previous, 2012 estimate of resources.

Item	Current Estimate (2012)	Previous Estimate (2010)	Reasoning Behind Change
Top-Cut Grade:	2020 Report	2012 Report	Comment
Value	100 g/tonne based on observation of outliers on the lognormal probability distribution curves.	20 g/tonne based on deviation from cumulative histogram.	More standard-practice and more repeatable.
Application	Raw samples, prior to compositing intercept grades.	After compositing intercept grades.	More standard-practice.
Grade Estimation:			



Inverse Distance Power	1	0.25	Less smoothing than previously to decrease the effects of using a higher top-cut grade.
Block Cut-off Grade	2.0 g/tonne	3.0 g/tonne	Gold price increased from \$US 1800 (2012 Estimate) per ounce to \$2000.

A **Mineral Resource**: as defined in the CIM Standards and referenced in NI 43-101, means: “a concentration or occurrence of natural, solid, inorganic, or fossilized organic material in or on the Earth’s crust in such form and quantity and of such a grade or quality that it **has reasonable prospects for economic extraction**. The location, quantity, grade, geological characteristics, and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge”. (CIM Estimation Guidelines Committee)

Reasonable prospects for economic extraction requires an estimate of the mining costs and possible mining methods; however, that does not convert these Mineral Resources to a Mineral Reserve –the Resources are Inferred Mineral Resources and Inferred Resources are not eligible for Reserve classification.

For a resource In order to get a realistic cutoff grade, an underground mining operation was assumed. Trucking mined vein material to the gold mine at Moose River, a distance of 12.5 km. from the mine appears to be a possible alternative to building a standalone operation. Trucking would cost between \$3/tonne and \$5/tonne delivered. A simple cash flow was completed for a 100,000 tonne/year operation, as described below.

### 14.10 Cut-off Grades

The cutoff grade was calculated using the input from a Monte Carlo simulation having the following input:

At a gold price of \$1800 US/oz. a 2 g/t cutoff is warranted.

The price of gold in US dollars is close to \$2,000/troy ounce now (July 2020) and should remain above \$2,000/ounce for some time as the US interest rate is close to zero and the deficit and US debt are increasing dramatically.



Figure 14 The one-year gold price, July 2019 till July 2020. Note the steep rise from December 2019.

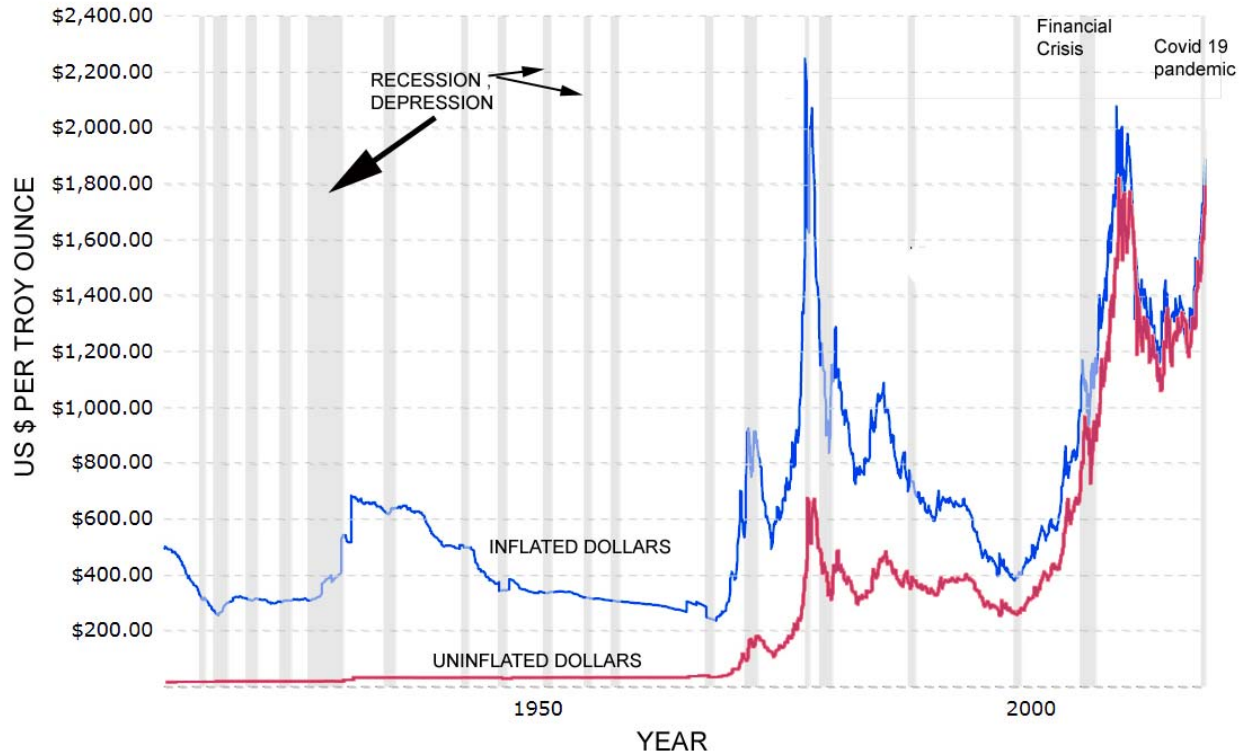


Figure 15 The gold price in US dollars per ounce for the last 100 years, inflated dollars and non-inflated dollars.

Mining costs were estimated by assuming

Table 6 One of 10,000 simulations using the costs and variance to obtain a probable cost

**Monte Carlo Simulation, 10,000 trials**

ASSUME	Mean	Std dev	\$ Probable
US\$ / Cdn \$	\$0.70	\$0.05	\$0.65
Processing	\$15.00	\$5.00	\$20.30
Transport	\$8.00	\$3.00	\$8.47
Mining	\$90.00	\$25.0	\$107.01
Development	\$10.00	\$3.00	\$8.66
General & Administration	\$10.00	\$3.00	\$12.49
Recovery	90.0%	5.0%	93.2%
Total Cost \$C			\$156.93

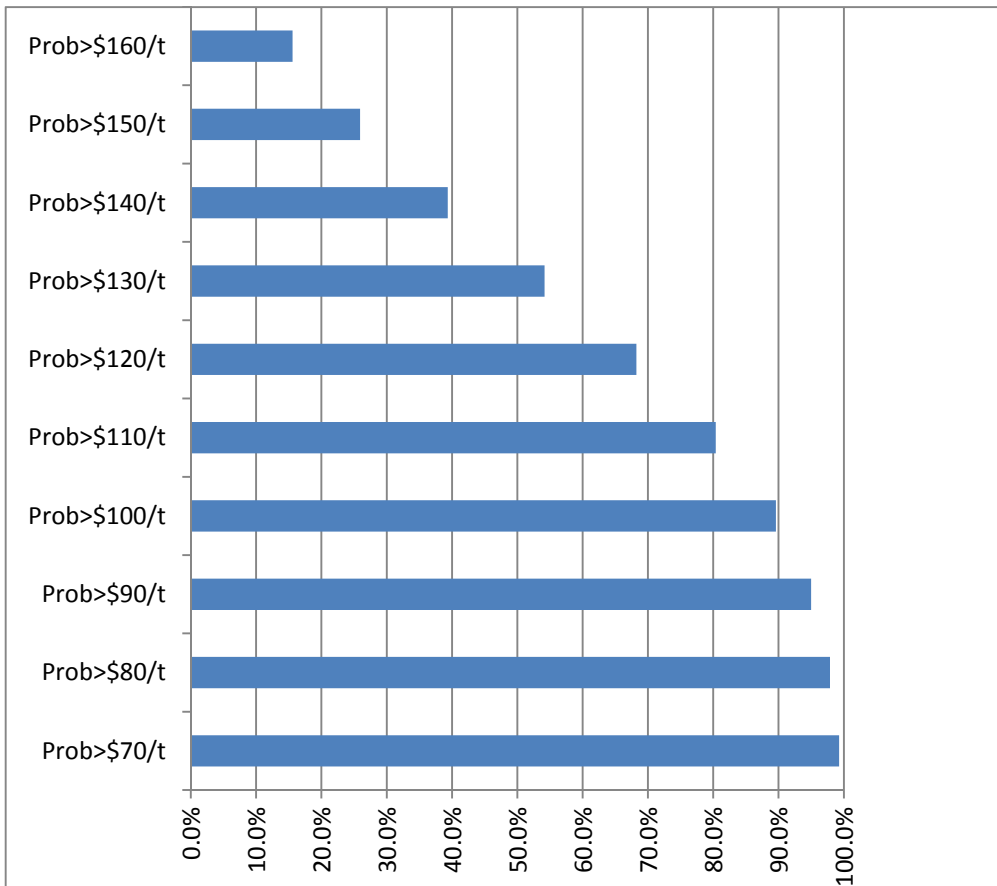


Figure 16 Probable total mining cost, Monte Carlo Simulations.

Table 7 Simple cash flow.

<b>Mooseland 2020, simple cash flow</b>	
<b>Revenue</b>	
tonnes	100,000
Mined grade, g/t	4.00
processing loss	5%
net saleable grams	<b>400,000</b>
US \$/troy ounce	<b>1,800</b>
Cdn\$/US\$	<b>1.30</b>
Canadian \$/troy ounce	<b>2340</b>
Mine Gate price per gram, \$ Cdn:	<b>\$ 75.23</b>
Gross revenue	<b>\$30,093,173</b>
<b>costs</b>	
Operating per tonne	
Fixed cost/year	\$300,000
variable cost/t	\$130.0
Total Cost	<b>\$13,300,000</b>
Net income before taxes, interest, amortiza	<b>\$16,790,000</b>
<b>Tax</b>	30%
Taxes owing	<b>\$5,037,000</b>
Net income	<b>\$11,753,000</b>
<b>Deductions</b>	
capital	10,000,000
sustaining capital	\$2,000,000
Total Capital	<b>\$12,000,000.0</b>
Allowable deduction	
Deductions against taxes	<b>\$5,037,000</b>

The conclusion from this preliminary cost/revenue estimation is that the Inferred Mineral Resource has reasonable prospects for economic extraction.

#### 14.10.1 Zone Interpretation

The chosen cut-off grade for mineralised zone interpretation was approximately 1 g/tonne of gold. This value was chosen through iteration as the cut-off that, in the author's opinion, provided the closest approximation of the continuity of that mineralisation. As discussed if the

intercept grade was less than the cut-off but “gold positive,” and occurred in a location where the author felt that a vein or mineralised zone ought to occur based on the geology of adjacent cross-sections, that intercept was included.

#### **14.10.2 Mineral Resources**

The chosen “block cut-off” grade (non-diluted - i.e.: without non-planned dilution) for defining mineral resources was 2.6 g/tonne. Considering a typical mining recovery of 95%, a typical overall processing recovery of 95%, a typical smelter return of 98% and a gold price of \$US 1800 per ounce, rock with that grade would have a revenue of \$US 100-105 per tonne. That was considered to be a reasonable block cut-off grade for relatively higher cost underground, narrow vein mining and conventional processing – the most likely methods that would be applied to this deposit.

The above analysis justifies the 2 g/t cut-off grade for Inferred Mineral Resources. At this time, there are no Mineral Reserves.

#### **14.10.3 Zone Interpretation**

The chosen cut-off grade for mineralised zone interpretation was approximately 1 g/tonne of gold. This value was chosen through iteration as the cut-off that, in the author’s opinion, provided the closest approximation of the continuity of that mineralisation. As discussed if the intercept grade was less than the cut-off but “gold positive,” and occurred in a location where the author felt that a vein or mineralised zone ought to occur based on the geology of adjacent cross-sections, that intercept was included.

#### **14.10.4 Mineral Resources**

The chosen “block cut-off” grade (non-diluted - i.e.: without non-planned dilution) for defining mineral resources was 2.0 g/tonne. Considering a typical mining recovery of 95%, a typical overall processing recovery of 95%, a typical smelter return of 98% and a gold price of \$US 1800 per ounce, rock with that grade would have a revenue of \$US 100-105 per tonne. That was considered to be a reasonable block cut-off grade for relatively higher cost underground, narrow vein mining and conventional processing – the most likely methods that would be applied to this deposit.



Figure 17 Gold Price in Canadian Dollars per ounce, over a 20 year period.

## 14.11 Grade Estimation

The sample density provided by diamond drilling was insufficient for geostatistical grade estimation.

Inverse distance weighting, using a power of 1 was considered to be a reasonable method for estimating block grades (refer to Section 14.8). For estimating horizontal width values, a power of 2 was used to best honour the sample data. Refer to Table 14-8 for grade and true thickness estimation parameters.

A maximum sample search radius of 200 metres was used - a large value, but the author felt it to be appropriate for several reasons:

- The vein geometries were constrained as described in Section 14.4.
- Only the closest three samples in four sectors were considered. Farther samples were ignored.
- In some cases of established geological continuity but where intercept spacing was long, the large search radius was necessary to avoid a large number of block grades being estimated using only one intercept.

Separate estimates were carried out and separate files were created for each zone for both grade and true thickness. Refer to Table 14-9 for a description of the model fields.

Estimated horizontal thickness values were merged into the final grade model for each vein. A separate model file was created for each vein. For the West Zone, the final model files were

named "2D IDW Au Run 3, XXXX.dat", where XXXX represented the vein name. For the East Zone, the corresponding files were named "EZ 2D IDW Au Run 3, XXXX.dat".

**Table 14-8: Grade estimation parameters.**

<b>Parameter</b>	<b>Grade</b>	<b>Horizontal Thickness</b>
Intercept Field Used	Au (g/tonne) Top-Cut Diluted	"Diluted Horiz Length"
Inverse Distance Power	1	2
Maximum Sample Search Ellipse Diameter	200 m	200 m
Blocks Constrained?	Outline Constrained	Outline Constrained
Min. Number of Holes	1	1
Ellipse Search Sectors	4	4
Max. Number of Samples Per Sector	3	2

Table 14-9: Block model fields.

<b><u>West Zone</u></b>	
<b>Field</b>	<b>Description</b>
Easting	Easting, block centroid.
_Easting	Block size, east direction.
Northing	Northing, block centroid.
_Northing	Block size, north direction.
Elevation	Elevation, block centroid.
_Elevation	Block size, elevation direction.
Au (g/t) Top-Cut Diluted	Estimated gold grade (g/tonne).
Run	Run.
Zone	Zone (vein).
Diluted Horiz Length	Estimated horizontal thickness (1.5 m min.).
Points	Number of intercepts used to estimate grade.
STD_DEV	Standard deviation of the grade estimate.
BLOCKINDX	Unique block index.
Number of Holes	Number of intercepts used to estimate grade.
Average Distance	Average distance of samples used to estimate grade.

<b><u>East Zone</u></b>	
<b>Field</b>	<b>Description</b>
East	Easting, block centroid.
_East	Block size, east direction.
North	Northing, block centroid.
_North	Block size, north direction.
RL	Elevation, block centroid.
_RL	Block size, elevation direction.
Au (g/tonne) Top-Cut Diluted	Estimated gold grade (g/tonne).
Run	Run.
Zone	Zone (vein).
Diluted Horiz Length	Estimated horizontal thickness (1.5 m min.).
Points	Number of intercepts used to estimate grade.
STD_DEV	Standard deviation of the grade estimate.
BLOCKINDX	Unique block index.
Number of Holes	Number of intercepts used to estimate grade.
Average Distance	Average distance of samples used to estimate grade.

## 14.12 Resource Classification Parameters

Resource classification parameters were chosen based on the author’s judgement. The degree of confidence in the reported resources was classified based on the validity and robustness of input data and the proximity of resource blocks to sample locations. Resources were reported, as required by NI 43-101, according to the CIM Standards on Minerals Resources and Reserves.



Inferred resources were outlined graphically, on cross-sections and longitudinal sections using the process that was described in Section 14.4.

No Indicated or Measured mineral resources were identified. While a sample intercept spacing of approximately 25 metres was adequate for defining the geometry and geological continuity of the veins, the current intercept spacing was inadequate for determining grade continuity above the Inferred level of mineral resources.

Poor collar survey control for historical (i.e.: pre-2010/2011) drilling, coupled with a lack of SG work are additional reasons why Indicated or Measured resources were not identified.

### 14.13 Dip Correction

Zones were outlined on the vertical plane and the horizontal thickness of each block was estimated. Using those two values together, no dip correction was required.

### 14.14 Factors Materially Impacting the Estimate

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially impact the mineral resource estimate.X

### 14.15 Results

Mineral resources were identified using a block cut-off grade of 2.0 g/tonne.

For the West Zone, non-diluted<sup>9</sup> Inferred Mineral Resources totalled 2.11 million tonnes with an average gold grade of 4.64 g/tonne for 300,000 ounces.

For the East Zone, non-diluted, Inferred Mineral Resources totalled 1.44 million tonnes with an average gold grade of 4.81 g/tonne for 223,000 ounces.

**For both zones, the total non-diluted**Error! Bookmark not defined. **Inferred Mineral Resources was 3.45 million tonnes with an average gold grade of 4.7 g/tonne for 523,000 ounces.** The late 2012 diamond drill sampling was not included in the estimation of resources. Near surface resources would be estimated using a lower cut-off grade.

Resources were tabulated by zone in Table 14-13.

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<sup>9</sup> Planned dilution, to a minimum true width of 1.5 metres, was included. Non-planned dilution was not included.

Table 14-10: Summary of mineral resources.

Zone	Volume	Tonnes	Average Grade, g/t	total ounces
West Zone	759,000	2,011,000	4.64	300,000
East Zone	545,000	1,443,000	4.81	223,000
<b>Total</b>	<b>1,304,000</b>	<b>3,454,000</b>	<b>4.71</b>	<b>523,000</b>

Table 11 A summary of the Inferred Mineral Resources at Mooseland.

WEST ZONE						EAST ZONE						Total Ounces
Cut-off Grade (g/tonne)	Volume (m <sup>3</sup> )	Tonnes*	Average Grade (g/tonne)	Kilograms Au	Ounces	Cut-off Grade (g/tonne)	Volume (m <sup>3</sup> )	Tonnes*	Average Grade (g/tonne)	Kilograms Au	Ounces	
10	55,200	146,200	14.0	2,046.8	66,000	10	33,700	89,200	12.7	1,132.8	36,400	102,400
8	91,800	243,200	12.0	2,918.4	94,000	8	73,800	195,500	10.6	2,072.3	66,600	160,600
6	159,000	422,000	9.8	4,135.6	133,000	6	148,000	393,000	8.78	3,450.5	111,000	244,000
5	209,000	553,000	8.77	4,849.8	156,000	5	196,000	519,000	7.97	4,136.4	133,000	289,000
4	299,000	791,000	7.47	5,908.8	190,000	4	257,000	681,000	7.12	4,848.7	156,000	346,000
3	464,000	1,228,000	6.05	7,429.4	239,000	3	350,000	926,000	6.15	5,694.9	183,000	422,000
<b>2</b>	<b>759,000</b>	<b>2,011,000</b>	<b>4.64</b>	9,331.0	<b>300,000</b>	<b>2</b>	<b>545,000</b>	<b>1,443,000</b>	<b>4.81</b>	6,940.8	<b>223,000</b>	<b>523,000</b>
1 **	1,627,000	4,311,000	2.9	12,501.9	402,000	1 **	879,000	2,329,000	3.53	8,221.4	264,000	666,000
0 **	3,790,000	10,045,000	1.58	15,871.1	510,000	0 **	1,464,000	3,879,000	2.35	9,115.7	293,000	803,000

\* Planned dilution, to 1.5 m minimum width, was included. Non-planned dilution was not included.

\*\* Mineralisation below the chosen 2.0 g/tonne block cut -off is not considered to be a "Mineral Resource" and is shown here for information purposes only.

Table 14-12: Resource estimation results.

Notes on Mineral Resource Estimate:

1. Cut-off grade for mineralised zone interpretation was 1 g/tonne.
2. Block cut-off grade for defining Mineral Resources was 2.0g/tonne.
3. Based on lognormal probability analysis, the top-cut grade was 100 g/tonne.
4. Gold price was \$US 1800 per troy ounce.
5. Zones extended up to 25 metres from the last intercept, both along strike and down-dip.
6. Minimum width was 1.5 metres.
7. Planned dilution, based on a minimum mining width of 1.5 metres, was included. Non-planned dilution was not included.
8. No mineral reserves were identified. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
9. Resource estimate prepared by Doug Roy, M.A.Sc., P.Eng., MineTech International Limited.
10. A specific gravity (bulk density) value of 2.65 was applied to all blocks - a typical value for the lithology.
11. Inverse distance weighting was used for estimating block grades, with "powers" of one and two for gold grades and vein thickness values, respectively.

Table 14-13: Non-diluted mineral resources by zone.

<b>West Zone Resources, Non-Diluted*, 2.6 g/tonne Block Cut-off Grade</b>				
<b>Zone</b>	<b>Volume (m<sup>3</sup>)</b>	<b>Tonnes</b>	<b>Average Grade (g/tonne)</b>	<b>Ounces</b>
IRV N	61,700	163,000	8.21	43,000
DEL N	63,800	169,000	6.83	37,100
FOX N	35,700	94,600	8.31	25,300
OSC N	27,500	72,900	8.15	19,100
XMA S	43,500	115,000	4.60	17,000
NOV S	34,100	90,200	5.64	16,400
LN S	39,600	105,000	4.15	14,000
NOV N	39,900	106,000	3.94	13,400
LN N	45,300	120,000	3.27	12,600
FUR N	17,700	46,800	6.59	9,920
HOT N	20,800	55,100	5.55	9,830
BIS S	26,400	70,000	3.85	8,670
IRV S	24,700	65,400	3.88	8,160
HOT S	14,200	37,600	3.81	4,610
DEL S	9,100	24,100	4.75	3,680
CUM N	8,400	22,300	4.95	3,550
PAP S	6,150	16,300	5.48	2,870
MIK S	9,930	26,300	3.35	2,830
ROM S	7,350	19,500	4.42	2,770
ALF S	4,650	12,300	3.82	1,510
BRA N	3,750	9,940	3.48	1,110
KIL S	2,850	7,550	3.05	740
XRA S	1,800	4,780	3.66	563
UNI S	900	2,390	3.01	231
BIS N	900	2,390	2.79	214
OSC S	337	892	2.67	77
<b>Total (Rounded)</b>	<b>551,000</b>	<b>1,460,000</b>	<b>5.52</b>	<b>259,000</b>

Outlined Mineralised Zones Without Any +2.6 g/tonne Blocks:

ALF N	FOX S	KIL N	SIE N	VIC N
BRA S	FUR S	LIM S	SIE S	VIC S
CHA N	GOL N	MIK N	SPE N	WHI S
CHA S	GOL S	PAP N	SPE S	XMA N
CUM S	IND N	QUE N	STR S	XRA N
ECH N	IND S	QUE S	TAN N	YAN S
ECH S	JUL N	ROM N	TAN S	

\* Planned dilution, to 1.5 m minimum width, was included. Non-planned dilution was not included.

**East Zone Resources, Non-Diluted\*, 2.6 g/tonne Block Cut-off Grade**

<b>Zone</b>	<b>Volume (m<sup>3</sup>)</b>	<b>Tonnes</b>	<b>Average Grade (g/tonne)</b>	<b>Ounces</b>
Mon E	47,700	127,000	6.62	27,000
Win E	35,600	94,200	6.12	18,500
Han W	30,500	80,800	4.59	11,900
Ban W	20,100	53,200	6.65	11,400
Tor E	24,300	64,300	5.08	10,500
Rio W	18,100	48,000	6.80	10,500
Mos W	23,200	61,500	5.03	9,950
Tok W	26,200	69,400	4.25	9,480
Bed W	15,600	41,300	6.97	9,260
Han E	16,600	43,900	6.12	8,640
Lon W	18,700	49,600	5.31	8,470
Bel E	11,700	31,100	7.96	7,960
Mos E	9,300	24,600	7.45	5,890
Tor W	13,200	35,000	4.80	5,400
Win W	7,950	21,100	7.79	5,290
Hal W	12,200	32,300	4.90	5,090
Lis E	3,750	9,940	15.32	4,900
Van W	7,130	18,900	6.26	3,800
Bat W	7,060	18,700	6.01	3,610
Vic W	11,700	31,000	3.31	3,300
Vic E	3,750	9,940	9.05	2,890
Mad E	7,050	18,700	3.93	2,360
Dub E	4,950	13,100	5.12	2,160
Mon W	7,520	19,900	3.07	1,960
LON E	4,210	11,200	5.02	1,810
Hal E	3,920	10,400	3.35	1,120
Whi E	1,950	5,180	3.74	623
Acc W	2,350	6,230	2.73	547
Bat E	2,260	5,990	2.70	520
Tok E	1,350	3,590	3.06	353
<b>Total (Rounded)</b>	<b>400,000</b>	<b>1,060,000</b>	<b>5.72</b>	<b>195,000</b>

Outlined Mineralised Zones Without Any +2.6 g/tonne Blocks:

Ban E	Daw E	Tak W
Bed E	Kum W	Van E
Bel W	Lag W	Veg E
Ber E	Lis W	
Ber W	Mad W	

\* Planned dilution, to 1.5 m minimim width, was included. Non-planned dilution was not included.

Notes on Mineral Resource Estimate:

1. Cut-off grade for mineralised zone interpretation was 1 g/tonne.
2. Block cut-off grade for defining Mineral Resources was 2.0 g/tonne.
3. Based on lognormal probability analysis, the top-cut grade was 100 g/tonne.
4. Gold price was \$US 1800 per troy ounce.
5. Zones extended up to 25 metres from the last intercept, both along strike and down-dip.
6. Minimum width was 1.5 metres.
7. Planned dilution, based on a minimum mining width of 1.5 metres, was included. Non-planned dilution was not included.
8. No mineral reserves were identified. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
9. Resource estimate prepared by Doug Roy, M.A.Sc., P.Eng., MineTech International Limited.
10. A specific gravity (bulk density) value of 2.65 was applied to all blocks - a typical value for the lithology.
11. Inverse distance weighting was used for estimating block grades, with "powers" of one and two for gold grades and vein thickness values, respectively.

## **14.16 Comparison With Previous Resource Estimates**

The current mineral resource estimate was compared with the previous, NI-43-101-compliant estimate that was carried in 2010 (Roy, 2010).

The current mineral resource estimate used a 2.0 g/tonne block cut-off whilst the previous resource estimates (Roy, 2010, 2012) used a 3.0 g/tonne and 2.6 g/tonne block cut-off respectfully.

For the purpose of comparison, both estimates were compared at a 3 g/tonne block cut-off.

Generally the grade of above-block-cut-off blocks has increased and the tonnes have decreased, resulting in a net increase in metal content (ounces). The differences were caused partly by (a) additional drilling that NSGold carried out in 2011 and (b) a minor change in block grade estimation methods (refer to Table 14-14).

The author (Mr Roy) believes that the robustness and repeatability of the current resource estimation methodology has improved the accuracy and precision of the estimate and that the changes in the mineral resource estimate are valid.

### **Comparison Using a 3 g/tonne Block Cut-off**

Zone	Cut-off Grade (g/tonne)	Tonnes Above Cut-off	Average Diluted Grade (g/tonne)	Ounces
West Zone 2010	3.0	1,400,000	4.60	210,000
West Zone Current	3.0	1,228,000	6.05	239,000
Difference		-172,000	+1.45	+29,000
East Zone 2010	3.0	1,100,000	5.10	180,000
East Zone Current	3.0	926,000	6.15	183,000
Difference		-174,000	+1.05	+3,000
Total 2010	3.0	2,500,000	4.85	390,000
Total Current	3.0	2,154,000	6.09	422,000
Total Difference		-346,000	+1.24	+32,000

Table 14-14: Differences in methodology between the previous and current mineral resource estimates.

Item	Current Estimate (2020)	Previous Estimate (2010, 2012)	Reasoning Behind Change
Top-Cut Grade:			
Value	100 g/tonne based on observation of outliers on the lognormal probability distribution curves.	20 g/tonne based on deviation from cumulative histogram.	More standard-practice and more repeatable.
Application	Raw samples, prior to compositing intercept grades.	After compositing intercept grades.	More standard-practice.
Grade Estimation:			
Inverse Distance Power	1.0	0.25 and 1.0	Less smoothing than previously to decrease the effects of using a higher top-cut grade.
Block Cut-off Grade	2.0 g/tonne	3.0 and 2.6 g/tonne	Gold price increased from \$US 1200 (2010 Estimate) to \$US 1400 (2012) per ounce and to \$1800 (2020).

### **14.17 Resource Estimate Validation**

Longitudinal sections showing the sample intercept grades and the estimated block grades were examined. Visually/graphically, the author (Mr Roy) felt that the block grades accurately represented the sample intercept grades.

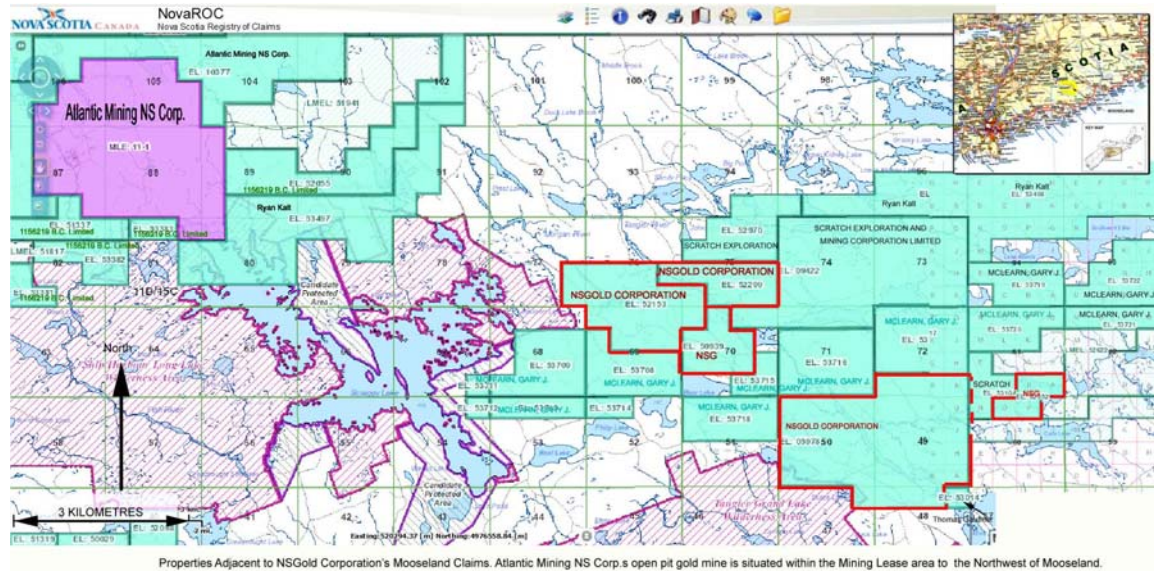
The average grade of the current mineral resource, estimated using inverse distance weighting was compared against the declustered average intercept grade. The declustered average was calculated using nearest neighbour grade estimation. This was carried out because the average block grade should be reasonably close to the declustered sample average.

In both zones, the global average grade (zero g/tonne block cut-off) compared very well with the declustered average intercept grade, indicating that on a global scale, the block model fairly represents the intercept grades (sample grades).

<b>Zone</b>	<b>Global Average Grade (Zero g/tonne Block Cut-off)</b>	
	<b>Current Estimate, Inverse Distance</b>	<b>Declustered Average, Nearest Neighbour</b>
West Zone	1.58	1.58
East Zone	2.35	2.40

## 15 Adjacent Properties

Information regarding the licence holders having the adjacent was collected from Service Nova Scotia and from NOVARoc. The map below illustrates the present mineral rights holders in the area.



### 15.1 Atlantic Mining NS Corp.

Address 6749 Moose River Rd  
RR #2

City Middle Musquodoboit

Province Nova Scotia

Country Canada

Postal Code BON 1X0

Business/Organization Name: ATLANTIC MINING NS CORP.

Registry ID: 3265532

Type: Extra-Provincial Corporation

Nature of Business:

Status: Amalgamated

Jurisdiction: Canada

Registered Office: 550 BURRARD STREET, SUITE 2900

VANCOUVER BC Canada V6C 0A3

Mailing Address: 550 BURRARD STREET, SUITE 2900

VANCOUVER BC Canada V6C 0A3

Previous Name: D.D.V. GOLD LTD.

Business/Organization Name: ATLANTIC MINING NS INC.

Registry ID: 3336147

Type: N.S. Limited Company

Nature of Business:

Status: Active



Jurisdiction: Nova Scotia  
Registered Office: 600- 1741 LOWER WATER STREET  
HALIFAX NS Canada B3J 0J2  
Mailing Address: 600- 1741 LOWER WATER STREET  
HALIFAX NS Canada B3J 0J2  
Previous Name: ATLANTIC MINING NS CORP.

## PEOPLE

Name	Position	Civic Address	Mailing Address
GARTH CAMPBELL-COWAN	Director	432 ST. KILDA ROAD, LEVEL 10 MELBOURNE VICTORIA 3004	
CRAIG ANTHONY JETSON	Director	2/56 LARNOOK STREET PRAHAN VICTORIA 3181	
LAIRD BROWNLIE	GENERAL MANAGER	409 BILLYBELL WAY, MOOSELAND MIDDLE MUSQUODOBOIT NS B0N 1X0	
IAN BILEK	Recognized Agent	600- 1741 LOWER WATER STREET HALIFAX NS B3J 0J2 PO BOX 997 HALIFAX NS B3J 2X2	
ATLANTIC MINING NS CORP.	Amalgamated From		
ACADIAN MINING CORPORATION	Amalgamated From		
ANNAPOLIS PROPERTIES CORP.	Amalgamated From		
6179053 CANADA INC.	Amalgamated From		
6927629 CANADA CORP.	Amalgamated From		
ATLANTIC GOLD	Registered		



Figure 18 Areal view of the Moose River open pit mine.

**The Atlantic Gold operation is located in Moose River Gold Mines (near Middle Musquodoboit), approximately 60km north east of Halifax, Nova Scotia.**

Halifax, the provincial capital, has a population of 400,000+ and is a significant industrial centre. Nova Scotia's primary industries include fishing, forestry, energy and tourism.

After a feasibility study was completed in 2015, mining of the current open pit at Touquoy commenced in 2017, with commercial production declared in March 2018. The operation was delivered on time and on budget and exceeded production guidance in the first year.

Commissioned in October 2017, the processing plant at Touquoy is a conventional CIL circuit with a nominal capacity of 2.0 million tonnes per year.

Further to the currently operational open pit, there is planned expansion of three additional pits nearby at Beaver Dam, Fifteen Mile Stream and Cochrane Hill, with a combined estimated mine life for the operation of 12 years.

As at 25 March 2019, the Atlantic Gold operation had a combined estimated 1.9 million ounces of gold in reserves at a grade of 1.12 grams per tonne. Ref: <https://stbarbara.com.au/our-operations/atlantic-gold/>, accessed July 30, 2020)

“Atlantic Gold currently holds 32 Exploration Licences and one Mineral Lease associated with the Moose River Consolidated Mine with a collective area of 194.96 km<sup>2</sup>. The tenures that host the operating or planned mining operations, Mineral Resources and Mineral Reserves include: • The Touquoy property consists of one Mineral Lease (ML 11-1) comprising 49 claims and covering 793 ha, and one adjoining Exploration Licence (EL 10377) comprising 64 claims and

covering 1,036 ha; • Exploration Licence 50421 at the Beaver Dam property covers an area of approximately 1,230 ha; • The Fifteen Mile Stream property consists of three Exploration Licences (EL 52901, EL 10406 and EL 05889), covering a surface area of approximately 728 ha; • Mineral tenure at the Cochrane Hill property consists of EL 51477, covering a total area of 1,230 ha. Atlantic Gold (through a wholly owned subsidiary, Atlantic Mining NS Corp. (formerly DDV Gold Ltd or DDV Gold) has an effective 63.1% interest in the Touquoy property through direct ownership of 60% and its 7.9% beneficial interest in Moose River Resources Inc. (MRRRI), and has 100% ownership interest in the remaining deposits, and the surrounding exploration properties. All of the private land required for the development of the Touquoy Mine was acquired prior to the start of operations. A Crown land lease to seven parcels of Crown land was granted in June 2014. The lease is for a 10-year term, renewable for a further 10 years. Negotiations will be required with the surface rights holders prior to any mining development at Beaver Dam, Fifteen Mile Stream and Cochrane Hill.

“The key royalties that are likely to be payable based on the current deposit outlines are as follows:

Touquoy: 1% net smelter royalty (NSR) on all metals produced payable to Maverix Metals Inc. (formerly Corner Bay Minerals Inc.);

- Beaver Dam: A variable NSR payable to Acadia Mineral Ventures Limited. Royalty amounts are based on the average grade of mined material and range from 0.6% at an average grade of 4.7 g/t Au or less, up to 3% at an average grade of 10.9 g/t Au or more.

“Some \$300,000 is available as credit against future royalties at a maximum of 50% per royalty payment, payable twice a year;

- Fifteen Mile Stream: a 1% NSR over EL (formerly Special Licence 90/11), payable to Metalla Royalty & Streaming Ltd, and a 3% NSR payable to Mr. Scott Grant of Pictou, Nova Scotia, with Atlantic Gold able to purchase up to 2% of that royalty from Mr. Grant for \$500,000 for the first percentage point and \$1,000,000 for the second percentage point, or pro-rata for parts thereof;

- Cochrane Hill: 3% NSR on all metals produced payable to Mr. Scott Grant. Up to 2% of the NSR is available for purchase for \$1.5 M.

“The Touquoy property claims are held by DDV Gold under an agreement between Atlantic Gold NL, DDV Gold and MRRRI. DDV Gold will receive 100% of the Touquoy cash-flow until all exploration, pre-production, capital, financing and other expenditures plus interest have been recouped. Thereafter DDV Gold shares 40% of pre-tax profits with MRRRI. This profit-sharing arrangement applies to all production from within the 12 claims comprising the “Development Block”. Having since secured project financing, DDV Gold’s profit-sharing obligation reduces to 25% in respect of all claims not comprising the 12 Development Block claims. The mineral rights for Beaver Dam, Fifteen Mile Stream and Cochrane Hill are wholly-owned by Atlantic Gold, subject to the above-mentioned royalties.”

Table 1-1: Mineral Resource Statement,

**Table 1-1: Mineral Resource Statement, Touquoy**

Confidence Category	Tonnage (Mt)	Grade (g/t Au)	Contained Gold (Au oz x 1,000)
Measured	3.40	1.14	124.3
Indicated	7.86	1.27	320.7
<b>Total Measured and Indicated</b>	<b>11.26</b>	<b>1.23</b>	<b>445.1</b>
Inferred	1.14	1.30	47.8

Notes to accompany Touquoy Mineral Resource table:

1. Mineral Resources have an effective date of 15 February, 2019. The Qualified Person for the estimate is Mr. Neil Schofield, MAIG, an employee of FSSI Consultants (Australia) Pty Ltd.
2. Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
3. Mineral Resources are reported at a base case cut-off grade of 0.3 g/t Au. The cut-off grade includes the following considerations: assumption of open pit mining methods; gold price of US\$1,400/oz; 94% metallurgical recovery; pit bench face angles that range from 40–65°; mining costs of \$13.40/t; processing costs of \$11.94/t, and general and administrative (G&A) costs of \$1.71/t.
4. Estimates have been rounded, and may result in summation differences.

(Ref: Moose River Consolidated Mine, Nova Scotia, Canada NI 43-101 Technical Report, March 2019)

(As of July 29, 2020, MRRI bought out for \$60 million- NS Business)

Business/Organization Name:

**SCRATCH EXPLORATION AND MINING CORPORATION LIMITED**

Registry ID: 3176233 Type: N.S. Limited Company Nature of Business: Status: Active

Jurisdiction: Nova Scotia

Registered Office: 710 Prince Street Truro NS Canada B2N 5H1

Mailing Address: P. O. Box 1128 Truro NS Canada B2N 5H1

Previous Name: 3176233 NOVA SCOTIA LIMITED

PEOPLE

Name	Position	Civic Address	Mailing Address
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Steve Furlotte	Director	1055 Rue Jacques Cartier	
		Beresford NB E8K 1A7	

Rick Horne	Director	72 Johnstone Avenue	
		Dartmouth NS B2Y 2K5	

Bryce Coffin	Director	Suite 500, 61 Nelsons Landing Blvd.	Bedford NS B4A 3X3
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Rick Horne	President	72 Johnstone Avenue	Dartmouth NS B2Y 2K5
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Bryce Coffin	Vice-President	Suite 500, 61 Nelsons Landing Blvd.	Bedford NS B4A 3X3
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Steve Furlotte	Secretary	1055 Rue Jacques Cartier	Beresford NB E8K 1A7
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Greg Mullen	Recognized Agent	710 Prince Street Truro NS B2N 5H1	P. O. Box 1128 Truro NS B2N 5H1
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Business/Organization Name:

**NSGOLD CORPORATION CORPORATION NSGOLD**

Registry ID: 3245993

Type: Extra-Provincial Corporation

Nature of Business: MINING AND EXPLORATION DEVELOPMENT

Status: Amalgamated

Jurisdiction: Canada

Registered Office: 1250 RENÉ-LÉVESQUE BLVD. W., SUITE 2500  
MONTRÉAL QC Canada H3B 4Y1

Mailing Address: 1250 RENÉ-LÉVESQUE BLVD. W., SUITE 2500  
MONTRÉAL QC Canada H3B 4Y1

PEOPLE

Name	Position	Civic Address	Mailing Address
JOHANNES H.C. VAN HOOFF	Director	2919 SAN MARTIN DE TOURS, CAPITAL FEDERAL BUENOS AIRES	
GRANT LOON	Director	GREV MAGNIGATAN 12B 11455 STOCKHOLM	
JAMES M. PROUDFOOT	Director	347-1 GEORGE STREET N. CAMBRIDGE ON N1S 4X4	
NEIL WIENER	SECRETARY	1250 RENÉ-LÉVESQUE BLVD. W., SUITE 2500 MONTRÉAL QC H3B 4Y1	
JOHANNES H.C. VAN HOOFF	PRESIDENT	2919 SAN MARTIN DE TOURS, CAPITAL FEDERAL BUENOS AIRES	
LAWRENCE J. STORDY	Recognized Agent	900-1959 UPPER WATER STREET HALIFAX NS B3J 2X2	

Business/Organization Name:

**1156219 B.C. LIMITED**

Registry ID: 3318479

Type: Extra-Provincial Corporation

Nature of Business: MINING

Status: Active

Jurisdiction: British Columbia

Registered Office: 789 WEST PENDER ST., SUITE 810  
VANCOUVER BC Canada V6C 1H2

Mailing Address: 1550 BEDFORD HIGHWAY, SUITE 802  
BEDFORD NS Canada B4A 1E6

PEOPLE

Name	Position	Civic Address	Mailing Address
THEO VAN DER LINDE	Director	2630-1075 W GEORGIA ST. VANCOUVER BC V6E 3C9	
THEO VAN DER LINDE	PRESIDENT	2630-1075 W GEORGIA ST. VANCOUVER BC V6E3C9	

AMANDA A. BOUDREAU      Recognized Agent      802- 1550 BEDFORD HWY. BEDFORD NS B4A 1E6  
802- 1550 BEDFORD HWY. BEDFORD NS B4A 1E6

MCLEARN, GARY J. (MCLEARN GEOLOGICAL SERVICES INC. )  
7 Stockton Ridge, Bedford, NS, B4A 0E4

“Gary McLearn, born, raised and currently residing in Nova Scotia, is a member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA). He is a graduate of St. Francis Xavier University in Antigonish, Nova Scotia, Bachelor of Science with Major Geology Degree (2003).” LinkedIn

### **Ryan Kalt:**

Ryan Kalt, B.Comm., M.B.A., LL.B. Chairman KALT Industries Ltd. 3016 Tutt Street, Suite 200 Kelowna, BC, V 1 Y 2H5  
200-3016 Tutt Street, Kelowna British Columbia Canada V1Y2H5  
Founder, Chairman & Chief Executive Officer at Dixie Gold, Inc.,  
Labrador Vanadium Corp. Company Number 82059 Status Active Incorporation Date 27 June 2018 Company Type Company - With Share Capital Jurisdiction Newfoundland and Labrador (Canada) Registered Address P.O. Box 5939, 5th Floor, 10 Fort William Place St. John's A1C 5X4 NL Canada Directors / Officers Ryan Kalt, director

The past-producing Beaver Dam and Caribou mines are also within a 20 km radius.

Verification of information about adjacent properties was beyond the scope of this report and was not carried out by the Qualified Person. The adjacent properties mentioned above are not necessarily indicative of the mineralization on the Property that is the subject of this report.

## **16 Other Relevant Data and Information**

No other information is needed to make this report understandable and not misleading.

## 17 Interpretation and Conclusions

Through diamond drilling, sixty-one mineralised veins have been identified in the West Zone of the Mooseland gold deposit. Forty mineralised veins were identified in the East Zone. The nested, stratiform veins are steeply dipping over a relatively tightly-folded anticline, the axis of which is oriented approximately east-west with a shallow westward plunge. The veins are narrow – most are tens of centimetres wide while some parts of some veins are up to several metres wide – especially near the fold’s apex or “saddle.”

The identified strike length is approximately one kilometre for the West Zone and over 300 metres for the East Zone. The West Zone is “open” at depth. A granite intrusive defines the western extent of the West Zone, and a fault defines the eastern extents of the West Zone. This left-hand fault offsets the deposit. On the eastern side of the fault, the “East Zone” continues eastward. The East Zone is open towards the east and at depth.

Mineral resources were identified using a block cut-off grade of 2.0 g/tonne.

A quick estimate of the potential resource addition from the 2012 drilling was completed and Mr. Roy concluded that:

1. The additional drilling could add approximately 19,000 tonnes at 5 g/tonne, for 3,000 ounces. However, many of 2012’s intercepts may negatively affect certain existing resources – this effect has not been fully evaluated. In other words, the total addition to the resource inventory would likely be somewhat less.
2. The fill-in drilling was important for increasing the confidence in the near-surface resource; and,
3. Most metal was added away from previous drilling.

Near surface material, if mineable by surface methods, would have a cut-off grade of less than 0.5 g/t Au.

The total East and West Zone tonnage at 2 g/t cut-off grade is 3,454,000 tonnes at 4.71 g/t for 523,000 troy ounces.

No Indicated or Measured mineral resources were identified, primarily because the drilling intercept spacing was not sufficient to establish grade continuity to the levels required by those categories. The mineralisation exhibits a strong nugget effect.

No mineral reserves of either category were identified.

The Mooseland gold deposit is a property of merit that warrants further mineral exploration.

NSGold delivered to RMT 160 kilograms of drill core in sealed bags from which RMT prepared a composite sample. RMT then used approximately 30 kilograms of the composited material to carry out the scoping cyanidation, floatation, gravity concentration and comminution test work.



The remaining composited sample is being stored in anticipation of an eventual definitive metallurgical test work.

Cyanide leach test work resulted in gold recovery of 94.2% in 72 hours with low reagent consumptions of sodium cyanide (0.20 kilograms per metric tonne of ore) and lime consumption (1.1 kilograms per metric tonne of ore).

Flotation test work yielded a gold recovery of 93.7% into a mass of 6.1%.

Gravity concentration test work was carried out at a coarse grind and yielded a gold recovery of 53.7% into a mass of 0.13%. Although the gravity performance was only moderate, RMT commented that batch gravity concentration has the “potential to increase overall process recovery by removal of coarse free gold prior to a flotation treatment route”. Microscopic examination of the gravity concentrate clearly showed the presence of large “nugget-like” coarse gold particles. For this reason gravity recovery is considered to be an essential processing step for recovering gold from the Mooseland Property.

The test work carried out by RMT also highlighted the variability in the gold grade of the various samples. This inherent characteristic of the Nova Scotia Meguma gold deposits is well documented and is generally referred to as the “nugget effect”. The average gold grade of all assayed and calculated head grades in the scoping study was 3.15 grams per tonne. However, metallic screen assays returned an average head grade of 5.27 grams per tonne gold. The wide variance in assay values (low value of 1.15 gpt and high value of 8.81 gpt) indicates the presence of coarse disseminated gold. Furthermore, RMT reported that “the close agreement between the metallic screen assay value difference and the standard deviation indicates that the actual grade of the deposit is significantly higher than that indicated by the study average.”

## 18 Recommendations

It is recommended that for future sampling programs, when a submitted standard or submitted blank is out of range, the geologist should re-run either (a) the entire batch of samples if the batch is small, or (b) a certain number of samples before and after the out-of-range sample.

We believe that ore sorting has the potential to add significant value to the project. Sorting technology has leapt ahead recently, is high speed, and economical. A limited test costs approximately \$10 thousand dollars.

Additional drilling to outline near surface gold bearing material is recommended. This would be followed by a preliminary economic analysis of a limited open pit operation.

Further underground mineral exploration work is recommended to delineate the strike and depth extents of the East and West Zones. The underground program's objective is to take a bulk sample.

Phase 1 is expected to cost about \$240,000 and Phase 2 is expected to cost an additional \$5.08 million, \$5.3 million for the two phase program.

Table 15 Recommended Work, Pahe 1 and Phase 2

<b>Phase 1</b>	
<b>Item</b>	<b>Estimated Cost</b>
Diamond drilling to outline resources within 50m of surface, all in cost for 1,000m	\$150,000
PEA for surface operation	\$30,000
Ore sorting tests	\$10,000
Government Liason	\$10,000
Contingency (20%)	\$40,000
<i>Phase 1 Total, Rounded</i>	<i>\$240,000</i>

<b>Phase 2</b>	
----------------	--

<b>Item</b>	<b>Estimated Cost</b>
Dewater, rehabilitate and continue existing decline	\$2,500,000
Permitting	\$200,000
Bulk Sampling	\$600,000
Metallurgical Work	\$60,000
Surface and Underground Diamond Drilling (5,000 metres)	\$750,000
Resource and Reserve Estimation, Scoping Study	\$120,000
Contingency (20%)	\$850,000
Phase 2 Total, Rounded	<i>\$5,080,000</i>
Phase 1 & 2 Total, Rounded	<i>\$5,300,000</i>

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## **20 Appendix I Cross-Sections 2012 Drilling**



March 25, 2020

NS Gold Corporation  
Attn: Glenn Holmes, CEO  
Suite 820, Sun Tower  
1550 Bedford Highway  
Bedford, Nova Scotia  
Canada B4A 1E6

**RE: Quick tonnes and grade estimate based on 2012 shallow drilling.**

Mr. Holmes,

As part of the decision making process whether to update the current mineral resource estimate, you asked us (“MineTech”) to quickly estimate the potential resource addition that could be caused by including 2012’s drilling. We have done so, and conclude that:

1. The additional drilling could add approximately 19,000 tonnes at 5 g/tonne, for 3,000 ounces. However, many of 2012’s intercepts may negatively affect certain existing resources – this effect has not been fully evaluated. In other words, the total addition to the resource inventory would likely be somewhat less.
2. The fill-in drilling was important for increasing the confidence in the near-surface resource.  
And,
3. The most metal was added away from existing drilling.

Please call or e-mail should you have any questions or concerns.

Sincerely,

A handwritten signature in black ink that reads "Doug". The letters are cursive and connected, with a prominent loop on the 'g'.

Doug Roy, M.A.Sc., P.Eng.

Mining Engineer



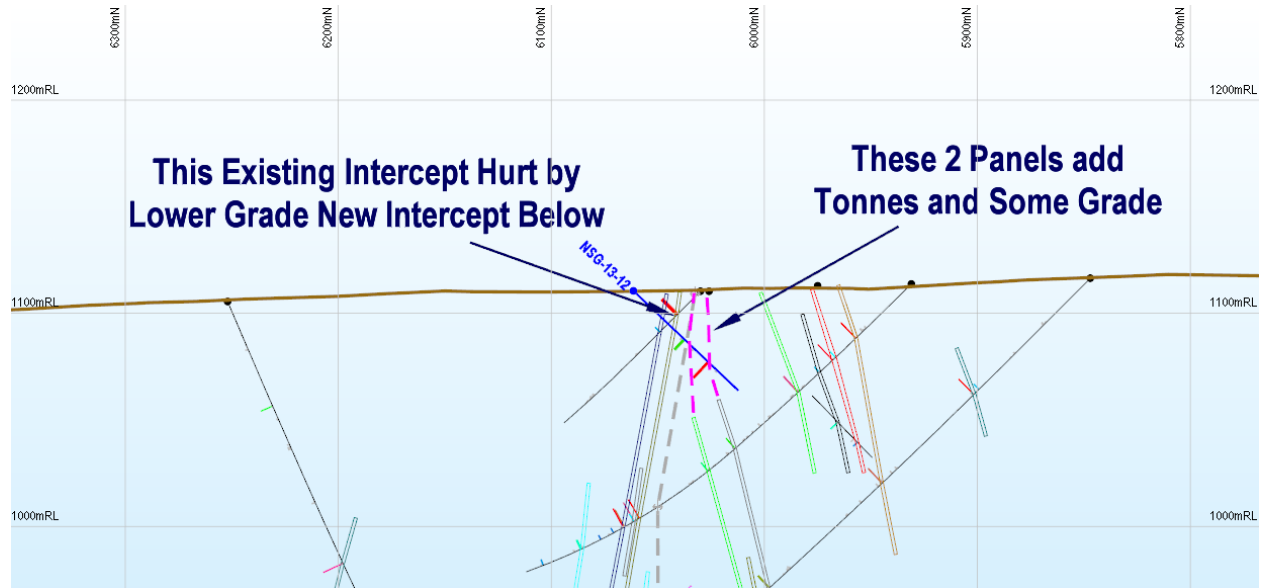
## Tables

Section	Hole	Intercept Depth (m)	Length Potential (m)	Section Width (m)	Diluted Grade (g/tonne )	Commen t	Potential Change in Grade from		Potential Tonnes	Potential Ounces	Comment
							Resource Estimate	SG			
1850	13-12	32	57	50	2	Approx.	+2	2.65	2,850	183	
1850	13-12	48	49	50	5	Approx.	+5	2.65	2,450	394	
1900	14-12							2.65	-	-	Did not tally potential decrease.
1950	12-12	13	37	37.5	2	Approx.	+2	2.65	1,388	89	Breakeven grade.
1950	12-12	62	62	37.5	3	Approx.	+3	2.65	2,325	224	
1975	11-12							2.65	-	-	Below grade.
2000	10-12	52		25	5	Approx.	+5	2.65	-	-	No additional tonnes but more metal.
2000	15-12	23	26	25	12	Approx.	+7	2.65	650	146	Additional tonnes and metal. Ignored potential loss of metal below this intercept.
2025	9-12							2.65	-	-	No significant change.
2075	3-12	68	36	25	5	Approx.	+7	2.65	900	203	
2125	2-12	55	50	25	2	Approx.	+2	2.65	1,250	80	Right around cut-off.
2125	2-12	25	50	25	2	Approx.	+2	2.65	1,250	80	Right around cut-off.
2125	8-12	25	44	25	3	Approx.	+3	2.65	1,100	106	
2125	8-12	31	47	25	20	Approx.	+20	2.65	1,175	756	
2125	8-12	74	67	25	7	Approx.	+7	2.65	1,675	377	
2150	4-12							2.65	-	-	Poor grades. Did not tally up.
2175	5-12							2.65	-	-	Poor grades. Did not tally up.
2200	1-12	25	54	37.5	6	Approx.	+6	2.65	2,025	391	
<b>Total</b>							<b>+5</b>		<b>19,038</b>	<b>3,030</b>	

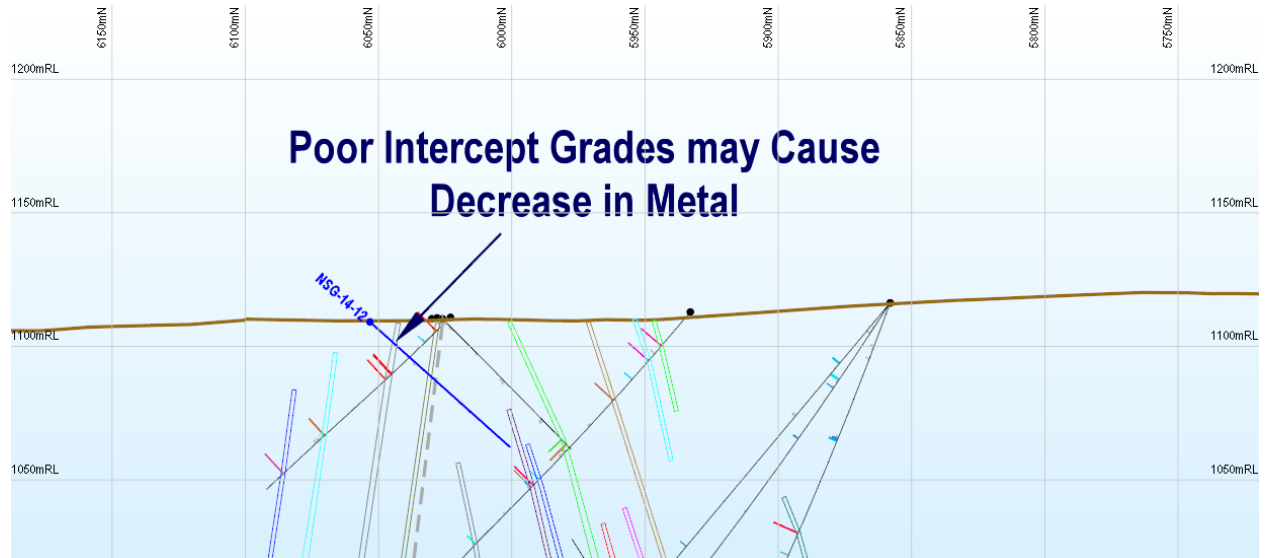
\* Approximate dilution added for 1.5 m minimum mining width.

## Figures

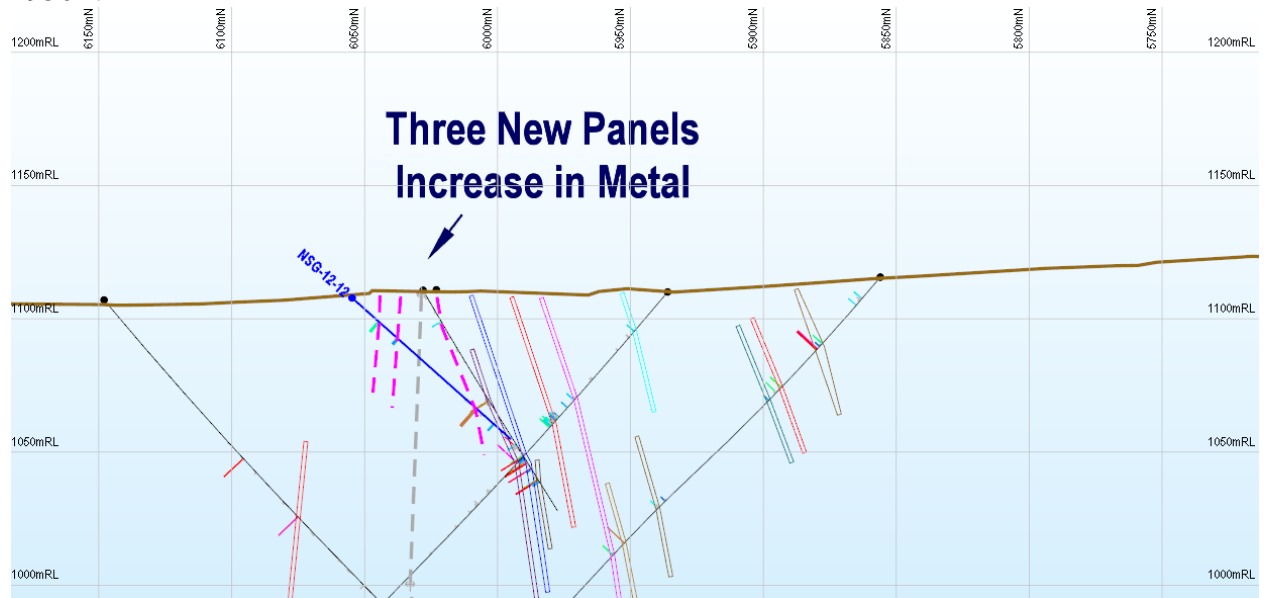
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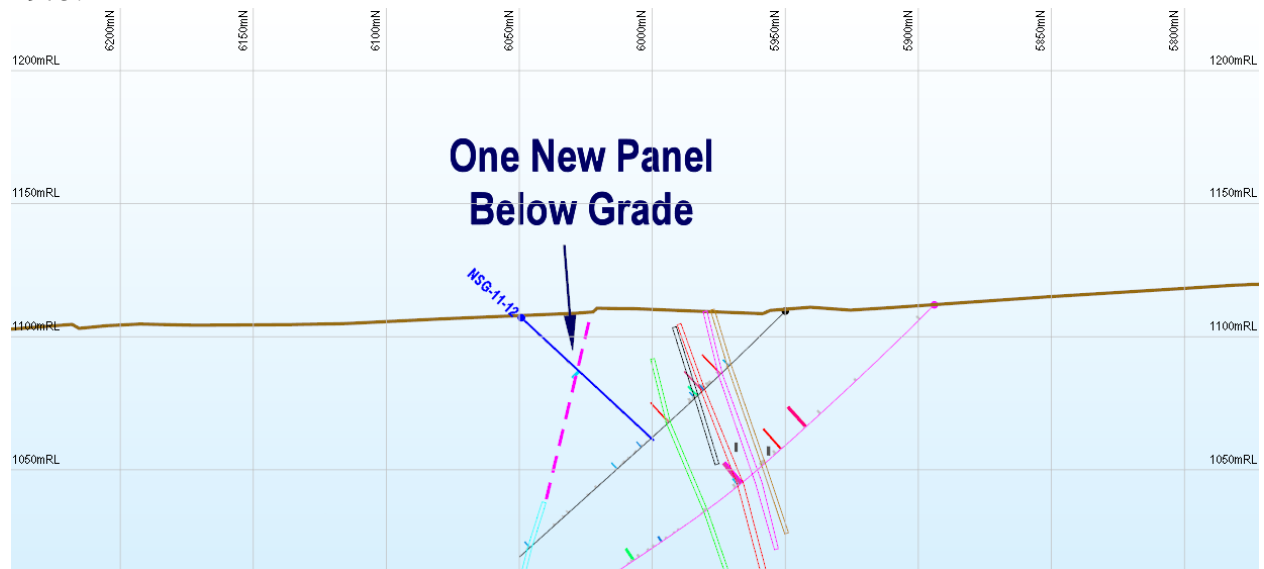
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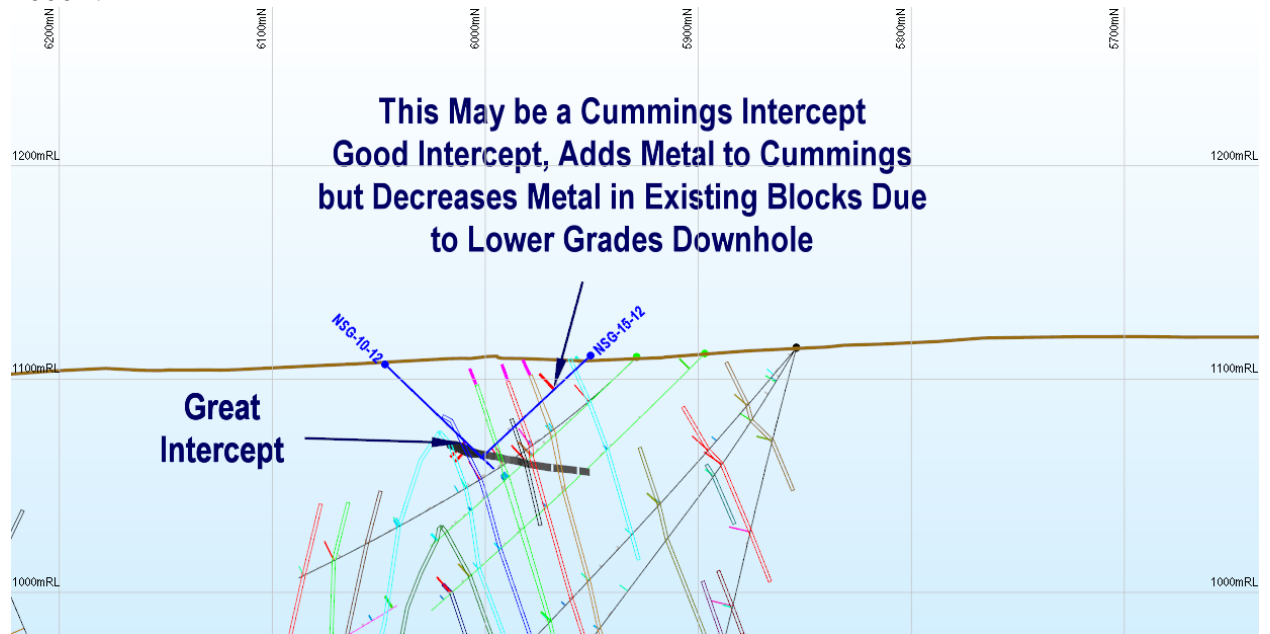
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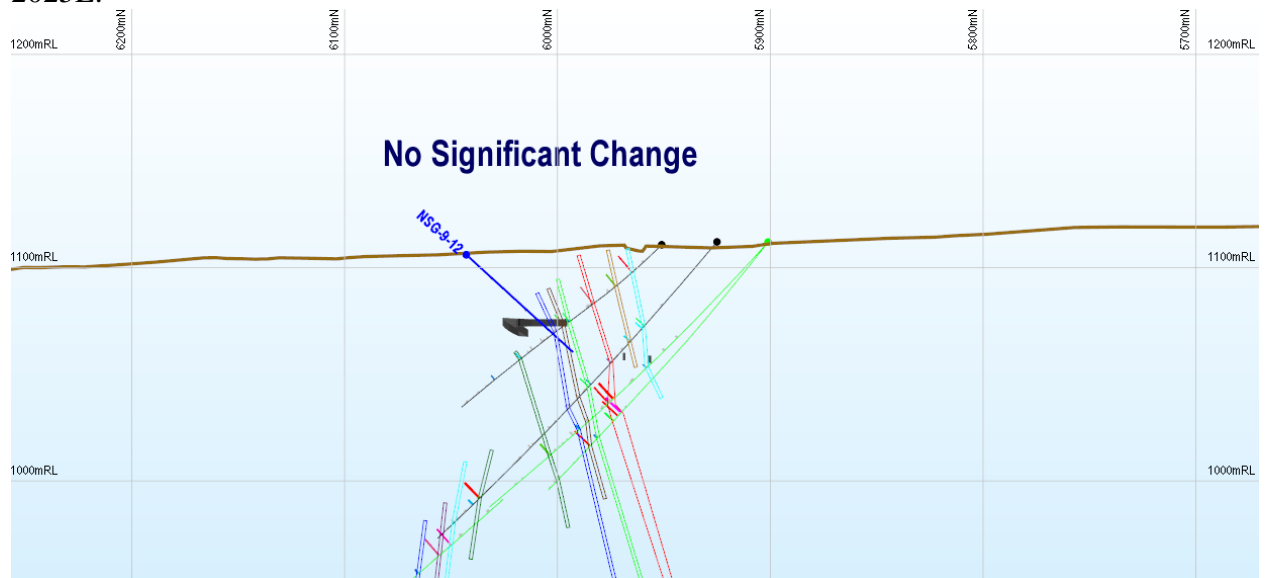
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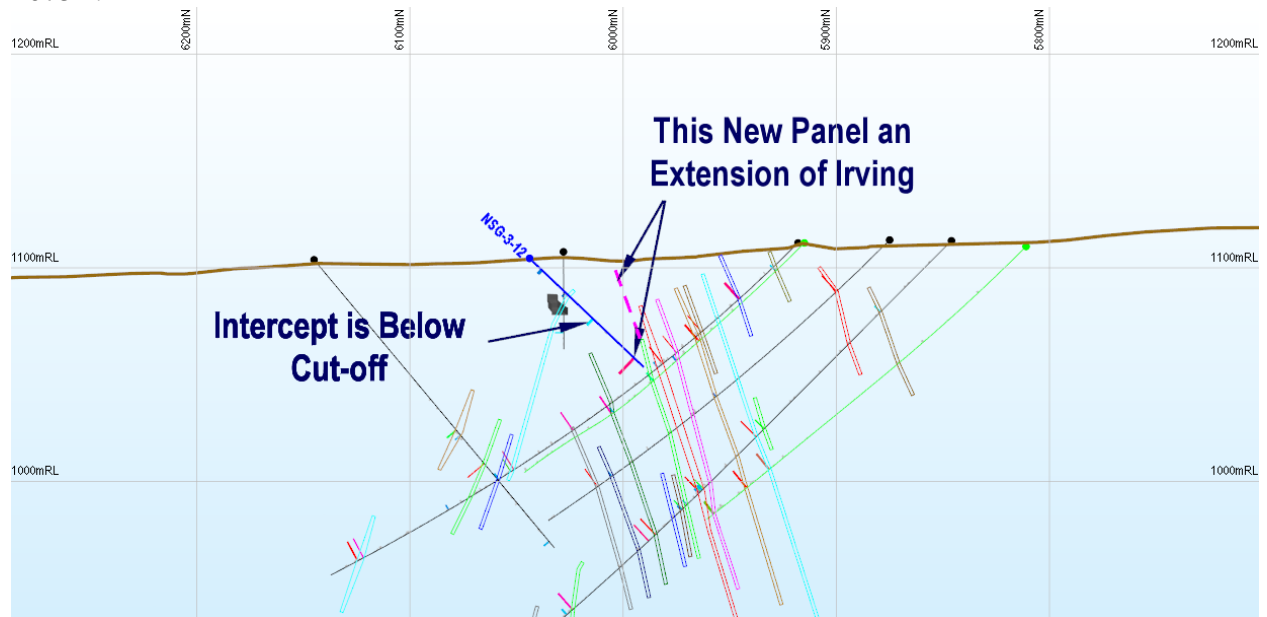
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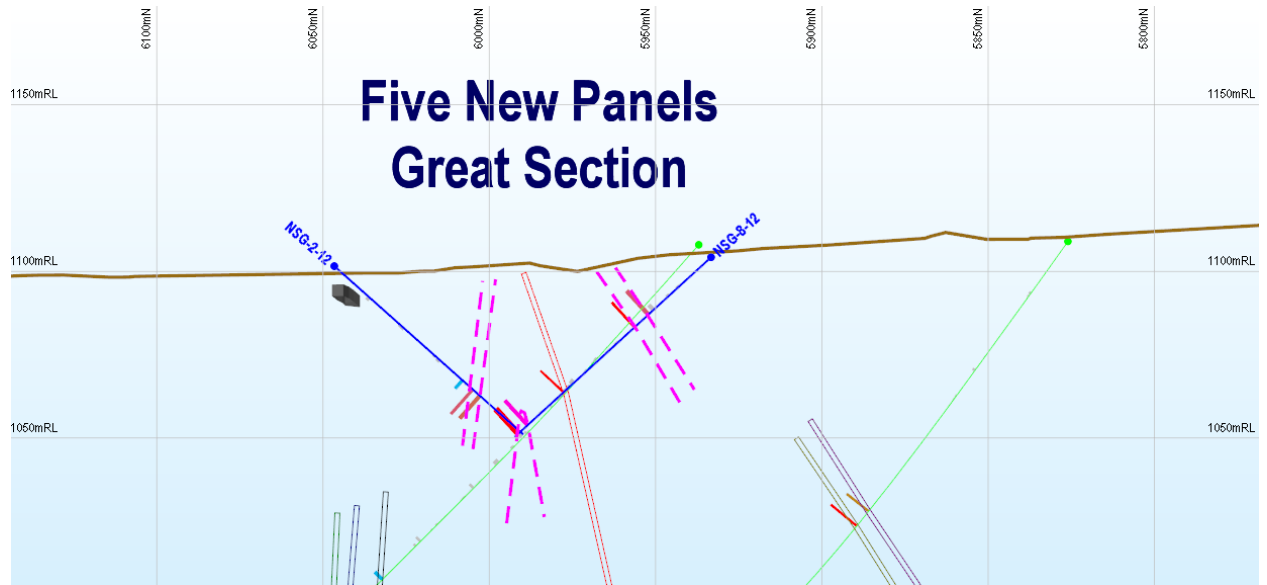
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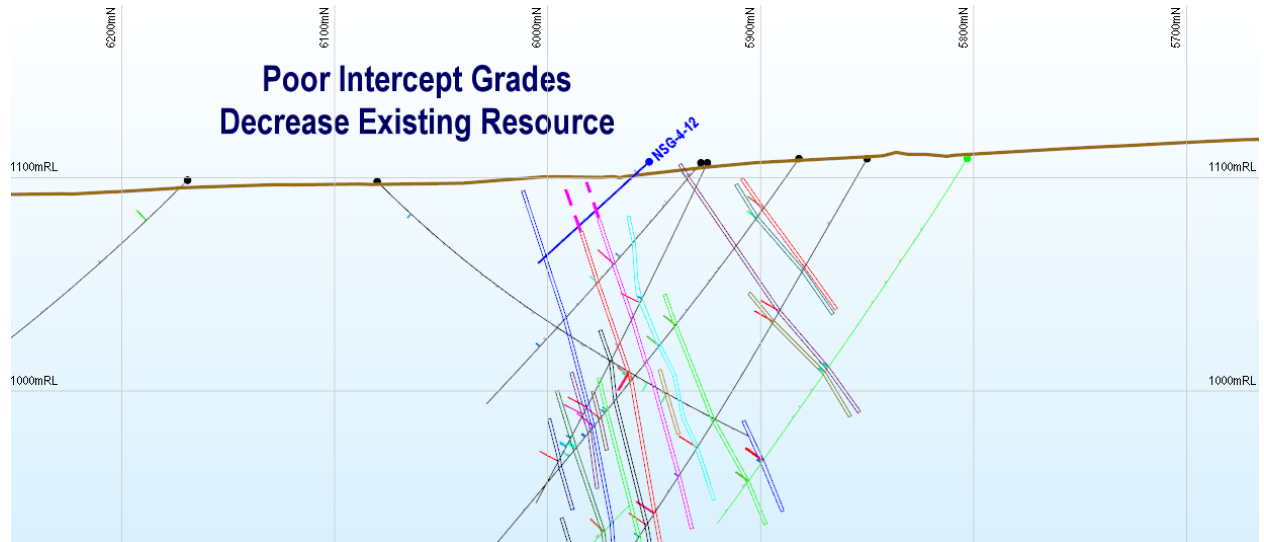
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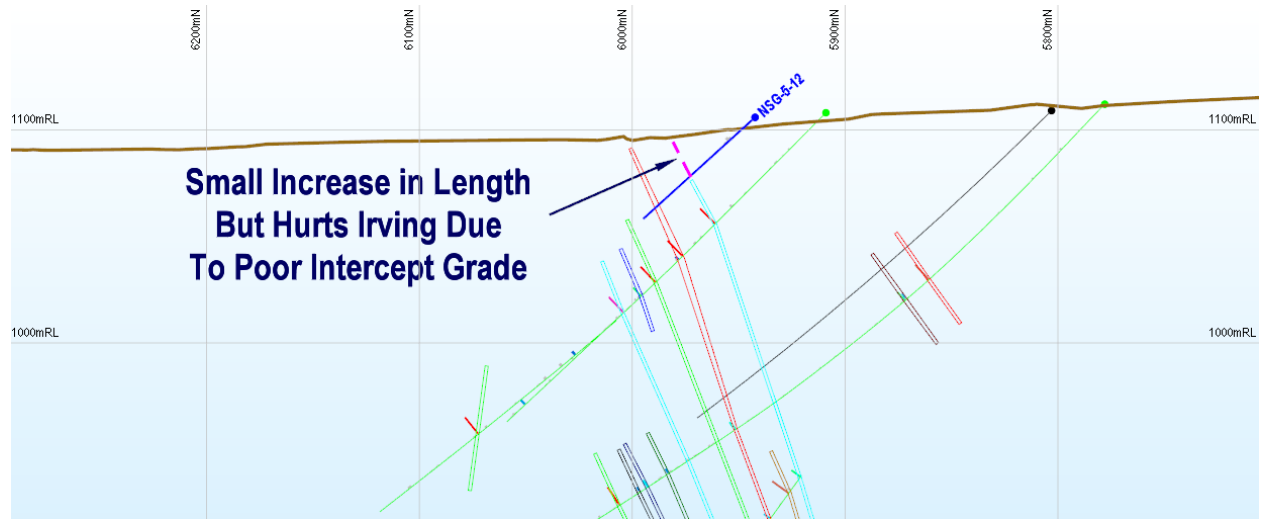
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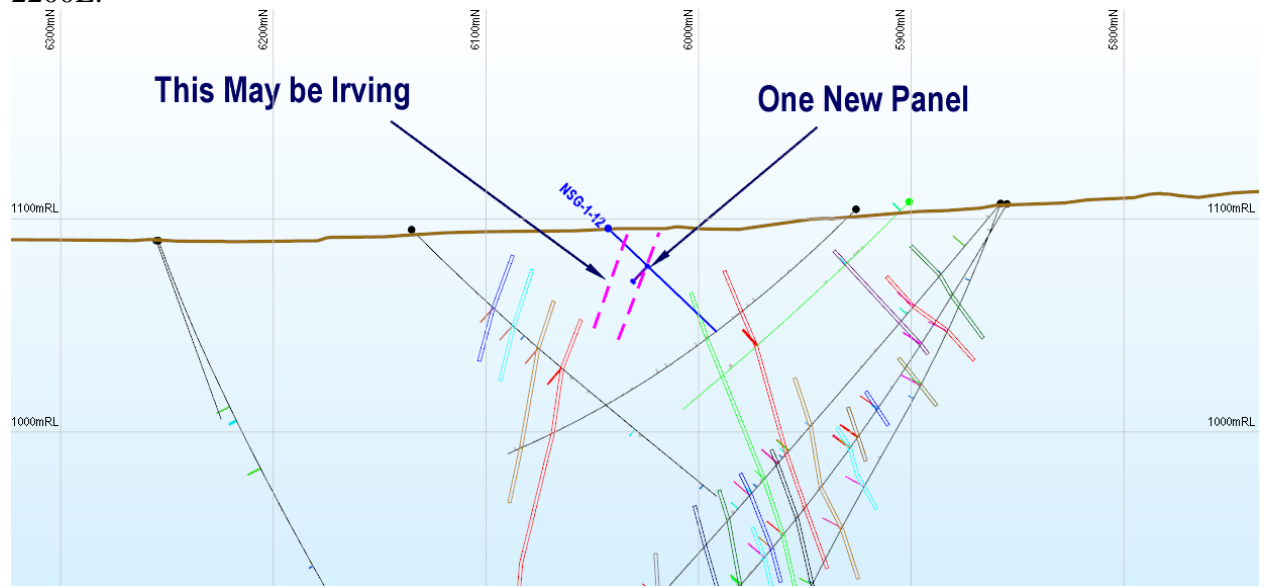
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## 21 Appendix II Glossary

Many of the defined geological terms below are from Jennifer Bates's "Gold in Nova Scotia" (Bates, 1987) " and from "A Dictionary of Earth Sciences, third edition, 2008" published by the Oxford University Press, edited by Michael Allaby, 654 pages. The definitions have been edited slightly in that extraneous material that is not relevant to this assessment report, has been left out. Mineral Resource and Reserve terms are from "CIM DEFINITION STANDARDS - For Mineral Resources and Mineral Reserve's, Prepared by the CIM Standing Committee on Reserve Definitions Adopted by CIM Council on May 10, 2014. Mining terms are mainly from the Underground Mining Methods Handbook, W.A. Hustrulid, Ed., Society of Mining Engineers of the American Institute of Mining, Metallurgy, and Petroleum Engineers, Inc. New York, 1982, also: A Dictionary of Earth Sciences third edition Edited by Michael Allaby, Oxford Univ. Press.

Word	Definition
<i>Adjacent Property</i>	means a property (a) in which the issuer does not have an interest; (b) that has a boundary reasonably proximate to the property being reported on; and (c) that has geological characteristics similar to those of the property being reported on;
<i>Adsorption</i>	Physical adherence of chemicals to substrates without chemical reaction, in this case soluble gold complexes to activated carbon.
<i>Advanced Property</i>	A property that either has mineral reserves, or has mineral resources with potential economic viability as supported by a preliminary economic assessment, a pre-feasibility study, or a feasibility study.
<i>Agglomerate (vb.)</i>	The act of binding fine particles together to create coarse particles as part of a mineral processing activity.
<i>Anticline</i>	A fold, generally convex upward, whose core contains the stratigraphically older rocks. Antonym of <b>Syncline</b> .
<i>Arenite</i>	A general name for sedimentary rocks composed of sand-sized fragments irrespective of composition; e.g., sandstone, graywacke, arkose, and calcarenite.
<i>Assay laboratory</i>	A facility in which the proportions of metal in rocks or concentrates are determined using analytical techniques.
<i>Auriferous</i>	Containing gold; gold-bearing.
<i>Back</i>	The roof or overhead rock surface of an underground opening.
<i>Bed</i>	The smallest distinctive division of a stratified series, marked by a more or less well-defined surface or plane from its neighbours above and below; a layer or stratum.
<i>Bias</i>	A measurement procedure or estimator is said to be biased if, on the average, it gives an answer that differs from the truth. The bias is the average (expected) difference between the measurement and the truth. For example, if you get on the scale with clothes on, that biases the measurement to be larger than your true weight (this would be a positive bias). The design of an experiment or of a survey can also lead to bias. Bias can be deliberate, but it is not necessarily so (Glossary of Statistical Terms).
<i>Billion</i>	One thousand million (10 <sup>9</sup> ).



<b>Word</b>	<b>Definition</b>
<i>Breast</i>	The vertical end or face of a horizontal cut. The breast is a mining face that is generally as wide as the mineralized rock body and as high as the cut height.
<i>Bouma Sequence</i>	Idealized sequence of sedimentary structures observed in *turbidity current deposits. It is named after the geologist, Arnold H. Bouma, who first emphasized its generality (Sedimentology of Some Flysch Deposits, Elsevier, Amsterdam, 1962). The lowest unit, A, a massive or graded sand, is overlain progressively by the B (lower division of parallel lamination), C (ripple or convolute laminations), D (upper division of plane parallel laminations), and E (pelagic shale) units. Examples showing the entire sequence are not common. The sequence can be interpreted in terms of deposition under waning current conditions.
<i>Cambro-Ordovician</i>	Geological timeframe; between the Cambrian and Ordovician periods (approximately 560 million and 440 million years ago).
<i>Caps</i>	Round or square timbers generally greater than 200mm in diameter, placed perpendicular to the vein for wall and back support. Caps are part of a timber set.
<i>Centrifugal Separation</i>	The separation of different particles by centrifugal action as used in cyclone separators and centrifuges.
<i>Chute</i>	The loading arrangement that utilizes gravity flow in moving broken rock from a higher elevation to a lower elevation. A gate is used to control the flow. Chute is often used for the wooden tube extending upward into the stope.
<i>Concentrate</i>	A powdery product containing the valuable mineralized rock mineral from which most of the waste material has been eliminated.
<i>Concentrate</i>	The clean product recovered in froth flotation.
<i>Contained ounces</i>	Represents ounces in the ground without the reduction of ounces not recovered by the applicable metallurgical process.
<i>Cross section</i>	A diagram or drawing that shows features transected by a vertical plane drawn at right angles to the longer of the axis of a geologic feature.
<i>Crosscut</i>	A nominally horizontal tunnel, generally driven at right angles to the strike of the vein.
<i>Crown Land</i>	Land held by the state; synonymous with Public Land. Formally, land held by the monarch acting as the head of state.
<i>Cut</i>	The volume of the orebody that is mined and filled in one cut and fill cycle.
<i>Cut-off or cut off grade</i>	The lowest grade of mineralized material considered economic to extract that returns the highest net present value; the cutoff grade is used in the calculation of the mineralized rock volume and quality of a given deposit. The cutoff grade is adjusted to present conditions as costs are sunk and opportunities arise.
<i>Decline</i>	A sloping underground opening for machine access from level to level or from surface; also called a ramp.
<i>Deposit</i>	A natural occurrence of a useful mineral, or an ore, in sufficient extent and degree of concentration to invite exploitation.
<i>Development</i>	The initial stages of opening up a new mine.
<i>Diamond Drilling</i>	Drilling with a hollow bit with a diamond cutting rim to produce a cylindrical core that is used for geological study and assays. Used in mine exploration. Infill diamond drilling at shorter intervals between existing holes, used to provide greater geological detail and to help establish reserve estimates.
<i>Dilution</i>	The contamination of mineralized rock with waste rock during mining, decreasing the

<b>Word</b>	<b>Definition</b>
	overall grade of the ore.
<i>Dip</i>	The angle that a structural surface, i.e. a bedding or a fault plane, makes with the horizontal measured perpendicular to the strike of a structure.
<i>Disseminated</i>	Said of a mineral deposit (esp. of metals) in which the desired minerals occur as scattered particles in the rock, but in sufficient quantity to make the deposit an ore. Some disseminated deposits are very large.
<i>Dissolution</i>	(also called chemical solution) - The process of chemical weathering of bedrock in which the combination of water and acid slowly removes mineral compounds from solid bedrock and carries them away in liquid solution. USGS OFR 97-536-A
<i>Down dip</i>	Down from the point of dip as described above.
<i>Drift</i>	A nominally horizontal tunnel, generally driven parallel to or coincident with a vein.
<i>Drumlin</i>	drumlin Smooth, streamlined, oval-shaped land-form, one end of which is blunt and the other tapered. Drumlins may occur singly, but more commonly they are found within a large group, called a 'drumlin field' or 'drumlin swarm'. Usually they are composed of *boulder clay, but occasionally they are made of solid rock (hence 'rock drumlin'). They are believed to be formed beneath the outer zone of an expanding *ice sheet, during a major advance: they result from the selective deposition of material that is then streamlined by the moving ice. The long axis of a drumlin lies parallel to the direction of the advance.
<i>Estimate</i>	(verb) "to judge or approximate the value, worth, or significance of; to determine the size, extent, or nature of". (noun) "an approximate calculation; a numerical value obtained from a statistical sample and assigned to a population parameter".
<i>Exploration</i>	Prospecting, sampling, mapping, diamond drilling and other work involved in searching for ore.
<i>Faulting</i>	The process of fracturing that produces a displacement in the rock strata.
<i>Feasibility Study</i>	A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate, at the time of reporting, that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Pre-Feasibility Study.
<i>Feldspar</i>	A group of common rock-forming minerals that includes microcline, orthoclase, plagioclase and others.
<i>Flotation</i>	A process by which some mineral particles are induced to become attached to bubbles and float, and other particles to sink, so that the valuable minerals are concentrated and separated from the worthless gangue or waste.
<i>Flowsheet</i>	A diagram showing the progress of material through a preparation or treatment plant. It shows the crushing, screening, cleaning, or refining processes to which the material is subjected from the run-of-mine state to the clean and sized products. The size range at the various stages may be shown.
<i>Fluvial</i>	Pertaining to a river or rivers. USGS OFR 97-536-A
<i>Footwall</i>	The underlying side of a fault, an orebody, or mine workings.

<b>Word</b>	<b>Definition</b>
<i>Froth Flotation</i>	A flotation process in which the minerals floated gather in and on the surface of bubbles of air or gas driven into or generated in the liquid in some convenient manner.
<i>G&amp;A</i>	General & Administrative Costs.
<i>Gangue</i>	Waste material that is mixed or associated with a desired mineral.
<i>Geophysics</i>	A branch of physics dealing with the Earth, including its atmosphere and hydrosphere. It includes the use of seismic, gravitational, electrical, thermal, radiometric, and magnetic phenomena to elucidate processes of dynamical geology and physical geography, and makes use of geodesy, geology, seismology, meteorology, oceanography, magnetism, and other Earth sciences in collecting and interpreting Earth data.
<i>Gold</i>	A chemical element with the symbol Au (from its Latin name aurum) and atomic number 79. It is a highly sought-after precious metal which has been used as money, a store of value and in jewelry since the beginning of recorded history. The metal occurs as nuggets or grains in rocks, underground "veins" and in alluvial deposits. It is one of the coinage metals. Gold is dense, soft, shiny and the most malleable and ductile substance known.
<i>Grab sample</i>	A sample taken from a particular area at a particular time without undue reference to any specific sampling program.
<i>Grade</i>	the amount of valuable mineral in each ton of ore, expressed as troy ounces per ton or grams per tonne for precious metals and as a percentage for other metals.
<i>Gram</i>	Metric system unit of mass. 1/1000 kg = 1 gram.
<i>Gravity separation</i>	The use of differential specific gravities to separate denser material (e.g. gold) from lighter material (waste).
<i>Graywacke (Greywacke)</i>	An old rock name that has been variously defined but is now generally applied to a dark gray, firmly indurated, coarse-grained sandstone that consists of poorly sorted, angular to subangular grains of quartz and feldspar, with a variety of dark rock and mineral fragments embedded in a compact clayey matrix having the general composition of slate and containing an abundance of very fine-grained illite, sericite, and chloritic minerals.
<i>Ground water:</i>	Water below the levels at which all voids in the rock are completely filled with water. USGS OFR 97-536-A
<i>Hanging wall</i>	The overlying side of a fault, an orebody or mine workings.
<i>Haul truck</i>	A self-propelled vehicle used to transport material.
<i>Heading</i>	The working face of a drift, crosscut or ramp. In timber sets, a heading is a bundle of wooden boards placed between a cap and the wall rock.
<i>Hectare</i>	Metric system unit of area. Equal to 10,000 square metres.
<i>Hinge</i>	The locus of maximum curvature or bending in a folded surface, usually a line.
<i>historical estimate</i>	means an estimate of the quantity, grade, or metal or mineral content of a deposit that an issuer has not verified as a current mineral resource or mineral reserve, and which was prepared before the issuer acquiring, or entering into an agreement to acquire, an interest in the property that contains the deposit;
<i>In situ</i>	In place, i.e. within unbroken rock.

<b>Word</b>	<b>Definition</b>
<i>Indicated Mineral Resource</i>	<p>An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.</p> <p>Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.</p> <p>An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.</p>
<i>Induced Polarization</i>	The production of a double layer of charge at a mineral interface, or production of changes in double-layer density of charge, brought about by application of an electric or magnetic field (induced electrical or magnetic polarization). Induced electrical polarization is manifested either by a decay of voltage in the Earth following the cessation of an excitation current phase, or by a frequency dependence of the apparent resistivity of the Earth.
<i>Indurated</i>	Said of rock or soil hardened or consolidated by pressure, cementation, or heat
<i>Inferred Mineral Resource</i>	<p>An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.</p> <p>An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.</p>
<i>Interbedded</i>	Occurring between beds, or lying in a bed parallel to other beds of different material.
<i>Kilograms</i>	Base unit of mass in the metric system. 1 kg = 1,000 grams = 2.2046 pounds.
<i>Kilometre</i>	One thousand metres.
<i>Level</i>	The workings of a mine which are on the same horizontal plane.
<i>Ligneous</i>	Rocks solidified from molten material often produced as result of volcanic activity.
<i>Lode</i>	A mineral deposit consisting of a zone of veins.
<i>London price (or fixing)</i>	The twice daily (a.m. or p.m.) gold price fixing determined by the London Gold Market.
<i>Matrix</i>	The rock material in which a fossil, crystal, or mineral is embedded.
<i>Measured Mineral Resource</i>	<p>A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.</p> <p>Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.</p> <p>A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.</p>
<i>Meta-</i>	A prefix that, when used with the name of sedimentary or igneous rock, indicates that the rock has been metamorphosed, e.g. metabasalt.
<i>Metallurgical recovery</i>	Proportion of metal in mill feed which is recovered by a metallurgical process or processes.

<b>Word</b>	<b>Definition</b>
<i>Metallurgy</i>	The science and art of separating metals and metallic minerals from their ores by mechanical and chemical processes; the preparation of metalliferous materials from raw ore.
<i>Metamorphism</i>	The mineralogical, chemical, and structural adjustment of solid rocks to physical and chemical conditions that have generally been imposed at depth below the surface zones of weathering and cementation, and that differ from the conditions under which the rocks in question originated.
<i>Metre</i>	Base unit of length in the metric system. 1 m = 3.28084 feet.
<i>Mil</i>	One thousandth of an inch.
<i>Mill</i>	A mineral treatment plant in which crushing, wet grinding, and further treatment of mineralized rock is conducted. Also, separate components, such as ball mill, hammer mill, and rod mill.
<i>Mineable</i>	That portion of a resource for which extraction is technically and economically feasible.
<i>Mineralized</i>	Rock which has undergone mineralization.
<i>Mineral Claim</i>	Title issued by the Government concerned to an individual or group, which grants that individual or group the right to explore for or exploit mineral wealth in a specified area by approved methods in accordance with the ruling laws and regulations.
<i>Mineral Reserve</i>	A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study.
<i>Mineral Resource</i>	A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.
<i>Mineralization</i>	The process or processes by which a mineral or minerals are introduced into a rock, resulting, in a valuable or potentially valuable deposit.
<i>Mineralized Zone</i>	Any mass of host rock in which minerals of potential commercial value occur.
<i>NI 43-101</i>	National Instrument 43-101 Standards of Disclosure for Mineral Projects.
<i>NSR</i>	Net Smelter Royalty or Net Smelter Return, a royalty based on the price of metal (gold) realized after deducting the cost of refining.
<i>Open pit/open cut</i>	Surface mining in which the mineralized rock is extracted from a pit. The geometry of the pit may vary with the characteristics of the orebody.
<i>Ore</i>	Rock that contains one or more minerals or metals, at least one of which has commercial value and which can be recovered at a profit.
<i>Orebody</i>	A continuous well-defined mass of mineralized rock of sufficient volume to make extraction economically feasible.

<b>Word</b>	<b>Definition</b>
<i>Permeability</i>	The property of rock or soil that permits water to pass by flowing through interconnected voids (spaces). Permeable bedrock makes a good aquifer, a rock layer that yields water to wells. USGS OFR 97-536-A
<i>Porosity</i>	The volume of void space (space filled with air or water) in soil or bedrock. When these voids are interconnected, water or air (or other fluids) can migrate from void to void. Thus interconnected pores make the soil or bedrock permeable. USGS OFR 97-536-A
<i>Percussion drilling</i>	A drilling method which involves advancing the hole by means of a pneumatically operated hammer.
<i>Pound</i>	Avoirdupois pound. An imperial system unit of mass, commonly referred to as the 'pound'. 1 pound = 0.45359237 kg.
<i>Precambrian</i>	All geological time and the corresponding rocks before the beginning of the Paleozoic Era (i.e. older than approximately 570 million years).
<i>Preliminary Economic Assessment</i>	means a study, other than a pre-feasibility or feasibility study, that includes an economic analysis of the potential viability of mineral resources
<i>Preliminary Feasibility Study</i>	A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study.
<i>Pre-stripping</i>	Removal of overburden in advance of beginning operations to remove mineralized rock in an open pit operation.
<i>Probable Mineral Reserve</i>	A Probable Mineral Reserve is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.
<i>Proven Mineral Reserve</i>	A Proven Mineral Reserve is the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.
<i>Qualified Person</i>	means an individual who (a) is an engineer or geoscientist with a university degree, or equivalent accreditation, in an area of geoscience, or engineering, relating to mineral exploration or mining; (b) has at least five years of experience in mineral exploration, mine development or operation, or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice; (c) has experience relevant to the subject matter of the mineral project and the technical report; (d) is in good standing with a professional association; and (e) in the case of a professional association in a foreign jurisdiction, has a membership designation that (i) requires attainment of a position of responsibility in their profession that requires the exercise of independent judgment; and (ii) requires A. a favourable confidential peer evaluation of the individual's character, professional judgement, experience, and ethical fitness; or B. a recommendation for membership by at least two peers, and demonstrated

<b>Word</b>	<b>Definition</b>
	prominence or expertise in the field of mineral exploration or mining;
<i>Reagent</i>	A chemical substance used to induce a chemical reaction.
<i>Reclamation</i>	The process by which lands disturbed as a result of mining activity are reclaimed back to a beneficial land use. Reclamation activity includes the removal of buildings, equipment, machinery and other physical remnants of mining, closure of tailings impoundments, leach pads and other mine features, and contouring, covering and revegetation of waste rock piles and other disturbed areas.
<i>Recovery rate</i>	A term used in process metallurgy to indicate the proportion of valuable material obtained in the processing of an ore. It is generally stated as a percentage of the material recovered compared to the total material present.
<i>Refining</i>	The final stage of metal production in which final impurities are removed from the molten metal by introducing air and fluxes. The impurities are removed as gases or slag.
<i>Refractory ore</i>	Any mineralized rock that does not respond to conventional mineral processing (cyanidation) to produce acceptable product recoveries without an intermediate step to address its refractory attributes (usually, but not always, some form of oxidation).
<i>Reverse circulation drilling</i>	A drilling method employing double walled drill rods. The drilling fluid (usually air or water) is pushed down the annulus between the rods. The cuttings are blown up in the middle.
<i>Run-of-the mine (ROM)</i>	Rock of various sizes resulting from blasting activities within the stone, before any further processing is undertaken on it.
<i>Saddle Reef</i>	A mineral deposit associated with the crest of an anticlinal fold and following the bedding planes, usually found in vertical succession, esp. the gold-bearing quartz veins of Australia.
<i>Sampling</i>	Samples of soils, stream sediments or rock chips taken to determine the quantities of trace and minor elements.
<i>Sedimentary</i>	Formed by the deposition of solid fragmental material that originates from weathering of rocks and is transported from its source to a site of deposition.
<i>Settling Pond</i>	A pond, natural or artificial, for recovering the solids from a washery effluent.
<i>Shaft</i>	A vertical or inclined excavation in rock for the purpose of providing access to an orebody. Usually equipped with a hoist at the top, which lowers and raises a conveyance for handling workers and materials.
<i>Siltstone</i>	An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which the silt predominates over the lay; a nonfissile silt shale.
<i>Slate</i>	A compact, fine-grained metamorphic rock that possesses slaty cleavage and hence can be split into slabs and thin plates. Most slate was formed from shale.
<i>Slime</i>	Extremely fine sediment (0 mesh), produced in the processing of mineralized rock or rock, especially phosphate rock, which remains suspended in water indefinitely. Consists chiefly of clay.
<i>Slurry</i>	A fluid comprising fine solids suspended in a solution (generally water containing additives).
<i>Smelter</i>	An establishment where ores are smelted to produce metal.

<b>Word</b>	<b>Definition</b>
<i>Smelting</i>	Thermal process whereby molten metal is liberated from a concentrate, with impurities separating into a lighter slag.
<i>Soil sampling</i>	Samples of soils taken to explore for mineral deposits.
<i>Stockpile</i>	A store of unprocessed mineralized material or marginal grade material.
<i>Stratigraphic</i>	Pertaining to the composition, sequence, and correlation of stratified rocks.
<i>Strike length</i>	Horizontal distance along the direction that a structural surface takes as it intersects the horizontal.
<i>Sump</i>	Reservoir to collect fluids for pumping.
<i>Syncline</i>	A fold in which the core contains the stratigraphically younger rocks; it is generally concave upward. Antonym of Anticline.
<i>Tailings</i>	The gangue and other refuse material resulting from the washing, concentration, or treatment of ground ore.
<i>Tailings Pond</i>	Area closed at lower end by constraining wall or dam to which mill effluents are run. Clear water may be returned after settlement in a dam, via penstock(s) and piping.
<i>Technical Report</i>	means a report prepared and filed in accordance with this Instrument [NI 43-101] and Form 43-101F1 Technical Report that includes, in summary form, all material scientific and technical information in respect of the subject property as of the effective date of the technical report
<i>Ton</i>	Short ton. An imperial system unit of mass, commonly referred to as the 'ton'. 1 ton = 2,000 pounds = 907.18474 kg.
<i>Tonne</i>	Also called the 'metric tonne'. 1 tonne = 1,000 kilograms = 2,204.6 pounds.
<i>Turbidite</i>	A sediment or rock deposited from, or inferred to have been deposited from, a turbidity current. It is characterized by graded bedding, moderate sorting, and well-developed primary structures.
<i>Turbidity Current</i>	A density current in water, air, or other fluid, caused by different amounts of matter in suspension, such as dry-snow avalanche or a descending cloud of volcanic dust; specifically, a bottom-flowing current laden with suspended sediment, moving swiftly (under the influence of gravity) down a subaqueous slope and spreading horizontally on the floor of the body of water.
<i>VLF-EM</i>	Very Low Frequency Electromagnetics. A geophysical technique that relies on VLF broadcasts inducing secondary responses in rock.
<i>Water table</i>	The surface between the zone of pure saturation and zone of pure aeration underground. USGS OFR 97-536-A



## **22 Appendix III Certificate of Authors**



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## **CERTIFICATE of Author Patrick JF Hannon, M.A.Sc., P.Eng.**

I, Patrick J.F. Hannon, M.A.Sc., P.Eng., do hereby certify that:

1. I am a mining engineer/geological engineer employed with MineTech International Limited, 1161 Hollis Street, Suite 211, Halifax, NS, B3H 2P6.
2. I graduated with a degree in Master of Applied Science in Mining Engineering from Dalhousie University, Halifax Nova Scotia in 1987. In addition I have a degree in Geological Engineering from, Queen's University at Kingston (1972), and diploma from the Haileybury School of Mines (Senior Mining Technician 1968).
3. I am registered as a Professional Mining and Geological Engineer with the Association of Professional Engineers of Ontario # 18260018 and with Engineers Nova Scotia #2734.
4. I have worked as a geologist and mining engineer for 48 years since my graduation from university. I have over 5 years' experience in and about surface and underground gold mines.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for the preparation the full technical titled entitled "Updated NI43-101 Resource Report for the Mooseland Gold Property" with an effective date of September 16, 2020 (the "Technical Report"). I visited the Mooseland property on several times since 2004, doing underground and surface work on site. The last visit was in June 18 2020, for half a day.
7. I have had prior involvement with the property that is the subject of the Technical Report. The nature of my prior involvement included preparing plans and reports for an underground bulk sample in 2004, updating site plan maps, environmental registration, geological and mining oversight and working with Mr. Wm. Douglas Roy, M.A.Sc., P.Eng. on previous estimates of Mineral Resources at the Mooseland Property.
8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

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

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

Dated this 7th day of October 2020.

Original Signed

Patrick J.F. Hannon, M.A.Sc., P.Eng