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Summary Report

On 2019 Diamond Drilling

On

Nighthawk

Ontario, Canada

Porcupine Mining Division

St Andrew Goldfields Ltd., a subsidiary of Kirkland Lake Gold Ltd.

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Table of Contents

Introduction	1
Location and Access	1
Regional and Local Geology	2
Previous Work.....	3
2019 Diamond Drill Program	3
Summary	4
North Contact:	4
Central Zone:.....	4
Southwest Anticline Limb	5
Pominex:	5
Recommendations	6
References	7
Date and Signature Page.....	8
Certificate of Qualification	9

List of Appendices

Appendix 1: Figures and Tables

Figure 1 - Property Location within Ontario and Macklem Township

Figure 2 - Drill Hole Plan View

Table 2 - Nighthawk 2019 Significant Assays Highlights

Appendix 2: Diamond Drill Logs

Appendix 3: Assay Certificates

Appendix 4: Drill Hole Sections

Introduction

This assessment report summarizes the 2019 drilling program (hereafter referred to as the *Program*), completed by St Andrew Goldfields Ltd. (SAS) in Macklem Township, covering 19 leased and/or patented legacy surface mining rights claims. 20,133.77 m of NQ core were drilled on 38 unique boreholes from January 9th through September 19th.

The main objective of the *Program* was to follow up on previous gold exploration activities at and around the *Program* area.

Location and Access

The *Program* property is located in Macklem Township in the Porcupine Mining Division. Primary site access to part of the *Program* area was via the main gate to the Kirkland Lake Gold (KLG) Aquarius Project. This property is located approximately 38 km east of the Timmins city centre, along the Highway 101 West corridor. Access to another part of the *Program* area was via Gibson Lake Road, an all-season cottage access and logging gravel road running south from Highway 101 West approximately 2.2 km further west of the Aquarius Project entrance. Access to individual drill pads was via gravel roads and dozer trails, as required.

Figure 1 shows the location of the property within Ontario and within Macklem Township.

As a result of Ontario's 2018 Mining Act Modernization initiative, both legacy and current claim numbers (per **Table 1** below) are shown in drill hole sections (**Appendix 4**).

TABLE 1				
Hole Number	Collar		Additional Traversed	
	Legacy	Current	Legacy	Current
NH19-008	CLM 293	LEA-107904	NILL	NILL
NH19-009	CLM 292	LEA-107905	NILL	NILL
NH19-010	CLM 293	LEA-107904	NILL	NILL
NH19-011	CLM 293	LEA-107904	CLM 294	LEA-108146
NH19-013	CLM 293	LEA-107904	NILL	NILL
NH19-014	CLM 290	LEA-108104	NILL	NILL
NH19-015	CLM 290	LEA-108104	P 27261, P 18252	PAT-27380, PAT-27183
NH19-016	CLM 290	LEA-108104	P 18252	PAT-27183
NH19-017	P 18252	PAT-27183	NILL	NILL
NH19-018	P 18252	PAT-27183	P 18261	PAT-27192
NH19-019	CLM 290	LEA-108104	NILL	NILL
NH19-020	CLM 292	LEA-107905	NILL	NILL
NH19-021	CLM 292	LEA-107905	NILL	NILL
NH19-021A	CLM 292	LEA-107905	NILL	NILL
NH19-022	CLM 292	LEA-107905	NILL	NILL
NH19-023	CLM 291	LEA-107906	NILL	NILL
NH19-024	CLM 291	LEA-107906	P 512829	PAT-27196

TABLE 1 (Continued)

Hole Number	Collar		Additional Traversed	
	Legacy	Current	Legacy	Current
NH19-025	P 512802	PAT-27201	P 512799	PAT-27204
NH19-026	P 512802	PAT-27201	P 512799	PAT-27204
NH19-027	P 512802	PAT-27201	P 512799	PAT-27204
NH19-028	P 512802	PAT-27201	P 512799	PAT-27204
NH19-029	P 512801	PAT-27203	NILL	NILL
NH19-030	P 18261	PAT-27192	NILL	NILL
NH19-031	P 18262	PAT-27190	P 18249	PAT-27187
NH19-032	P 18252	PAT-27183	NILL	NILL
NH19-033	P 18252	PAT-27183	NILL	NILL
NH19-034	P 18252	PAT-27183	NILL	NILL
NH19-035	P 18252	PAT-27183	NILL	NILL
NH19-036	CLM 290	LEA-108104	P 27261, P 18252	PAT-27380, PAT-27183
NH19-037	CLM 290	LEA-108104	P 27261, P 18252	PAT-27380, PAT-27183
NH19-038	CLM 290	LEA-108104	NILL	NILL
NH19-039	P 512785	PAT-27211	P 512782	LEA-109659
NH19-040	P 512801	PAT-27203	NILL	NILL
NH19-041	P 512801	PAT-27203	P 512802	PAT-27201
NH19-042	P 512801	PAT-27203	P 512802	PAT-27201
NH19-051	P 512810	331850	NILL	NILL
NH19-052	P 512810	331850	P 1189759	203984
NH19-053	P 512809	259993	NILL	NILL

Regional and Local Geology

(Source: Scott Wilson RPA 2006)

The *Program* area is located in the Abitibi granite-greenstone belt within the southeastern part of the Superior Province of the Canadian Shield. The oldest assemblages (2,745 to 2,700 Ma) are predominantly felsic to mafic metavolcanic with local minor oxide, silicate and sulphide chemical and clastic sedimentary rocks and are intruded by ultramafic to granodioritic bodies. Widespread felsic plutonism comprising granodiorites, granites, quartz feldspar porphyries, and syenite bodies occurred between 2,700 and 2,680 Ma. The younger sedimentary rocks are in the Porcupine (2,698 Ma) and Timiskaming (2,685 Ma) assemblages. Metamorphic grades within the supracrustal rocks are generally sub-greenschist to greenschist facies and amphibolite facies near intrusive bodies.

A number of steeply dipping, east-west striking, brittle to ductile deformation zones traverse these supracrustal rocks, with the Porcupine-Destor Fault Zone (PDFZ) being the most significant in the *Program* area. The PDFZ was active relatively late in the history of the belt and many gold deposits are closely associated with it and Timiskaming sediments found along its strike length. The Pipestone Fault and Nighthawk Break are two splays off the PDFZ that host the Clavos Deposit and the Aquarius Mine, respectively.

Local geology is dominated by a 1,000m thick band of variably altered ultramafic volcanics of the Tisdale Group that strikes east-southeast and parallel to the regional trend. These ultramafics have

metamorphosed to talc-chlorite schist and are separated from the overlying Timiskaming sediments to the north by the PDFZ. To the south of the property, the talc-chlorite schist is separated from a zone of altered mafic volcanics by the Gold Island Fault (GIF). The sediments, talc-chlorite schist and mafic volcanics have all been intruded by numerous albitic dykes, altered and unaltered mafic intrusives, and feldspar and quartz-feldspar porphyries.

The main structural fabric is crosscut by major northwest trending fault systems which offset older formations. The Aquarius deposit is an Archean lode gold vein deposit hosted within a broad zone of carbonate-altered ultramafics within the talc-chlorite schist. This carbonate alteration zone forms a gradational contact with the talc-chlorite schist referred to as the “mixed” zone. Although gold mineralization is predominantly hosted by carbonate altered rocks, gold also occurs within the mixed zone and the talc-chlorite schist. The deposit contains a complex assemblage of both auriferous and non-auriferous quartz veins, with quartz veins and associated gold mineralization gradually diminishing in the mixed zone. Higher grade gold mineralization may also be present within the intrusive units. Notwithstanding occasional outliers, the main Aquarius ore zones are found within two shallow-dipping limbs of an anticline striking parallel to the east-southeast regional trend.

Previous Work

(From Clarke, M.)

Pardee Amalgamated Mines Ltd. sank the Aquarius shaft in 1946 and recovered 4500 feet of drill core from the 400 and 525 foot levels. From 1959-1960, Hollinger Consolidated Gold Mines Ltd. carried out magnetic and EM surveys on 19 claims in northern Macklem Twp. Gaspé Park Mines Ltd. conducted an EM survey over part of a claim group in 1967, and Canadian Nickel Co. followed up with additional magnetic and EM surveys over the northeast bay of Nighthawk Lake plus 29 claims to the east of the lake from 1969-1970. Between 1967 and 1984, several diamond drilling and geophysical programs were conducted on CLM 292 and CLM 293. These claims are immediately to the east of the aforementioned northeast bay and are sometimes referred to as “Old Aquarius” since they are along strike with the gold mineralized south limb of the Aquarius Mine anticline.

Asarco conducted an overburden drilling program in 1978 and followed up with a magnetometer survey in 1980. From 1981 to 1983 Asarco focused on overburden basal till and reverse circulation drill programs throughout the leased area, but also completed a 5-hole diamond drill program in 1983. They followed up with a 7-hole diamond drill program in 1992. Echo Bay Mines drilled 3 holes totaling 599m in 2001, and Kinross Gold Corporation completed a 17-hole program in 2003.

The claims were transferred to SAS in 2005, and a 2014 diamond drilling program focused on the Pominex property to the NE of the program area. SAS became a wholly owned subsidiary of KLG in 2016, and the *Program* property is one of many covered by an airborne VTEM survey flown for KLG in 2016. Interpretation of the data by Geotech identified potential targets for subsequent exploration potential, which were followed up with a 2133 m drill hole program in 2017.

2019 Diamond Drill Program

Drilling commenced January 9th and finished on September 19th, with a total of 20,133.77 m of oriented core being drilled. Two hydraulic diamond drill rigs were contracted from Norex Drilling to fulfil the requirements of the program (See **Figure 2** for drillhole locations).

Norex personnel delivered core to the core shack at the Matheson exploration office for logging by SAS personnel (logs to be found in **Appendix 2**). Logged core was cut by exploration staff using a diamond bladed saw, and sent to either Bureau Veritas in Timmins, Ontario or Swastika Laboratories in Swastika, Ontario for gold analysis. A total of 4302 core samples, 242 blanks and 235 standards were sent for assay. Assay certificates are in **Appendix 3**.

Highlights from the drilling program are presented in **Table 2** and are also noted in sections for relevant drill holes (**Appendix 4**).

The drill program was planned and supervised by Raymond Toews, P. Geo. and David Schonfeldt, P. Geo.

Summary

North Contact:

NH19-039, NH19-051, NH19-052 and NH19-053 tested the Porcupine Destor Fault Zone north of the north limb of the main Nighthawk anticline. Based upon different geological interpretations, all four holes were variously predicted to either start in carbonate altered ultramafic rocks before transitioning into sedimentary units or to have run entirely through carbonate altered ultramafic units.

Since almost all of NH19-039 was composed primarily of conglomerates and tuffs, the expected contact was likely overshot due to uncertainty in the location of a NW-SE trending dextral fault.

NH19-051 started in the E-W trending Gold Island Fault before transitioning into a wide ultramafic unit which was, in turn, intruded by a diabase dike from 107.2-222.5m. This was followed by a 50m wide carbonate altered unit with erratic quartz/carbonate tension gashes and sparse blebby pyrite, before ending in a weakly intercalated argillite/conglomerate.

NH19-052 started in arkose before transitioning to carbonate altered rock after the Porcupine Destor Fault from 242.2-243.9m. The hole ended at 300m in another arkose unit that started at 248.7m.

NH19-053 also started in the Porcupine Destor before entering a 142.3m wide diabase dyke. It then transitioned to a series of ultramafic volcanic units separated by felsic intrusive and porphyry intervals before entering a tuffaceous unit at 327.3m. The hole ended at 366m in massive volcanics.

Central Zone:

The central zone lies on the north limb of the Aquarius anticline to the north of the "Old Aquarius" holes and south of the Porcupine Destor Gold Island Fault.

NH19-008 collared slightly north of a SW-NE trending fault running sub-parallel to the Gold Island Fault. The first unit was a 204.1m wide massive ultramafic package incorporating six mafic volcanic interflow units. Weak carbonate alteration was present throughout the unit, with sparse local moderate to strong alteration, trace pyrite and locally 3-5% arsenopyrite.

NH19-010 started in massive mafic volcanics before changing to relatively unaltered ultramafic volcanics at 126.65m. Typical quartz-carbonate veining was in the 1-2% range, with 10-15% locally. Chlorite alteration and sulphides were clustered along slips. A variably sheared and rubbly fault zone from 218.6-246m may represent the southern extension of a dextral fault modelled to the north.

NH19-011 started in ultramafic volcanics, switching to mafic volcanics at 185.9m. Major intervals were intercalated with biotitic lamprophyres, some of which also contained syenite intrusives with up to 4% disseminated pyrite. None of these intrusives returned significant gold values.

Southwest Anticline Limb

The bulk of holes drilled during the *Program* targeted the south limb of the Aquarius Anticline from the “Old Aquarius” program in the west through to the Aquarius Mine in the east. The Nighthawk Deformation/Gold Island Fault Zone are along the south limb of the Aquarius Anticline. Most holes in the group have a similar mix of lithologies, alteration types, and significant assay hosts, although lithological order varies from hole to hole.

NH19-013 was collared ~840m further west from NH19-020, but still plots along the same trend as the main hole cluster. The hole starts in mafic volcanics, but changes to massive ultramafics at 73.6 m, with the inclusion of sparse syenite and mafic intrusive units. Significant assays within this interval are found in pseudo-brecciated syenite and quartz-carbonate veins in association with 5-7% patchy disseminated pyrite and/or a combination of 10-25% quartz-carbonate veining and tension gashes (**Table 2**). Variable carbonate/sericite alteration is present from 257.7-274.2, but no significant assays were returned for units within this interval. Massive ultramafics follow the altered zone, and the hole ends in a pseudo-brecciated syenite.

NH19-009, 020, 021, 021A, and 022 form a cluster of holes and exhibit similar lithologies to those in NH19-013, with the addition of occasional gabbro and lamprophyre units. Strongly altered, albitic units are also present in some holes (e.g. NH19-021A from 548.2-550.8), and return composites as high as 2.84 gpt / 2.60 m. VG with a composite of 2.25 gpt / 5.2 m (incl. 9.49 gpt / 0.60m), was present near the lower margin of a pseudo-brecciated quartz/carbonate vein in NH19-021A (**Table 2**). Thick, rubbly gouge intervals reflect a system of sub-parallel, SW-NE trending faults that are reflected in the propensity of intrusive units, alteration, and associated gold mineralization.

Further towards the east, NH19-023, 024, 025, 026, 027, 028, 029, 040, 041, and 042 exhibit similar lithological sequences, with the occasional addition of quartz-feldspar porphyries (e.g. NH19-029 from 142.4-167.2). Significant gold mineralization trailed off towards the east.

Pominex:

The Pominex component of the *Program* was centred approximately 2.5km east of NH19-027, along strike with “Old Aquarius” and the Aquarius Mine, such that the holes were targeting the convergence of the mafic, ultramafic, sedimentary units and their associated intrusive bodies. This component included holes NH19-014, 015, 016, 017, 018, 019, 030, 031, 036, 037, and 038.

These holes typically started in mafic volcanics before hitting a broad quartz/feldspar porphyry; then moved back into mafic volcanics before ending in ultramafic volcanics. The porphyries often contained carbonate altered rafts or intrusives and other intrusive units (e.g. mafic intrusives per NH19-019). Significant assays were often found in the quartz/feldspar porphyry itself and within altered minor units, with a best composite of 3.05 gpt / 58.80 m (incl. 186.5 gpt / 0.70 m) in NH19-035. In this instance, contributing factors to gold mineralization appear to be the presence of shear/breccia veining and the close proximity of a mafic dyke that may have served as the heat engine for gold mobilization. Additional evidence for this theory come from NH19-015, where a fleck of VG was present in association with weakly sheared quartz/carbonate veinlets (4.26 gpt / 21.24 m incl. 126.30 gpt / 0.60 m). While NH19-038

contained a similar stratigraphic sequence, weaker sericite/carbonate alteration and the lack of suitable structural traps may be responsible for trace gold in results from this hole.

Recommendations

Thick glacial till overburden up to 114 m thick (80 m true thickness), gravelly faults, and typically wet ground conditions pose significant challenges in terms of collar locations, drilling costs, and core recovery rates. As with the *Program* campaign, it is recommended that any future drilling programs be restricted to the winter months to mitigate poor ground conditions.

Current geological interpretations, especially at the north contact and towards Nighthawk Lake to the west, are a little coarse and don't always accurately reflect the lithologies logged in the *Program*. Accordingly, these should be updated in greater detail in advance of future drilling programs, perhaps in conjunction with a shallow, structural drilling program.

Many holes returned significant assays (**Table 2**), but given that many of the best composites are present at depths greater than 400 m, the return on investment of extensive surface diamond drilling comes into question. Additional drilling on the North East Bay of Nighthawk Lake should be considered because the similarities of the geological environment as hosts the neighboring Newmont deposits occur within the bay. There are similar magnetic signatures that indicate the possible syenite intrusions within folded ultramafic rocks, controlled by D2 faulting.

References

Cochrane, L.B. (2006). *Technical Report on the Aquarius Project, Ontario, Canada NI 43-101 Report*. Scott Wilson, Roscoe Postle Associates Inc. (as prepared for SAS).

Clarke, M. (2018). Summary Report on 2017 Diamond Drilling on Nighthawk, St. Andrew Goldfields Ltd.

Date and Signature Page

This report, entitled “Summary Report On 2019 Diamond Drilling on Nighthawk” was prepared, reviewed and signed by the following authors:

Dated at Timmins, Ontario
_____, 2021

Kara Byrnes, P.Geol.
Regional Exploration Superintendent



Michael Clarke, P.Geol.
Senior Database Administrator

Certificate of Qualification

I, Michael Clarke of 219 Clement Avenue, Porcupine, ON, PON 1K0, do hereby declare:

- This report is being submitted on behalf of St. Andrew Goldfields, a wholly owned subsidiary of Kirkland Lake Gold.
- I have no interests, either directly or indirectly, nor do I expect to receive any in the future with respect to the Nighthawk property.
- I graduated from McMaster University in 1992 with a Bachelor of Science degree in Geology.
- I have been a salaried employee of Kirkland Lake Gold since May, 2017.
- I am a member, in good standing, of the Association of Professional Geoscientists of Ontario.

Signed,



Michael Clarke, P. Geo.





Appendix 1

Figures and Tables

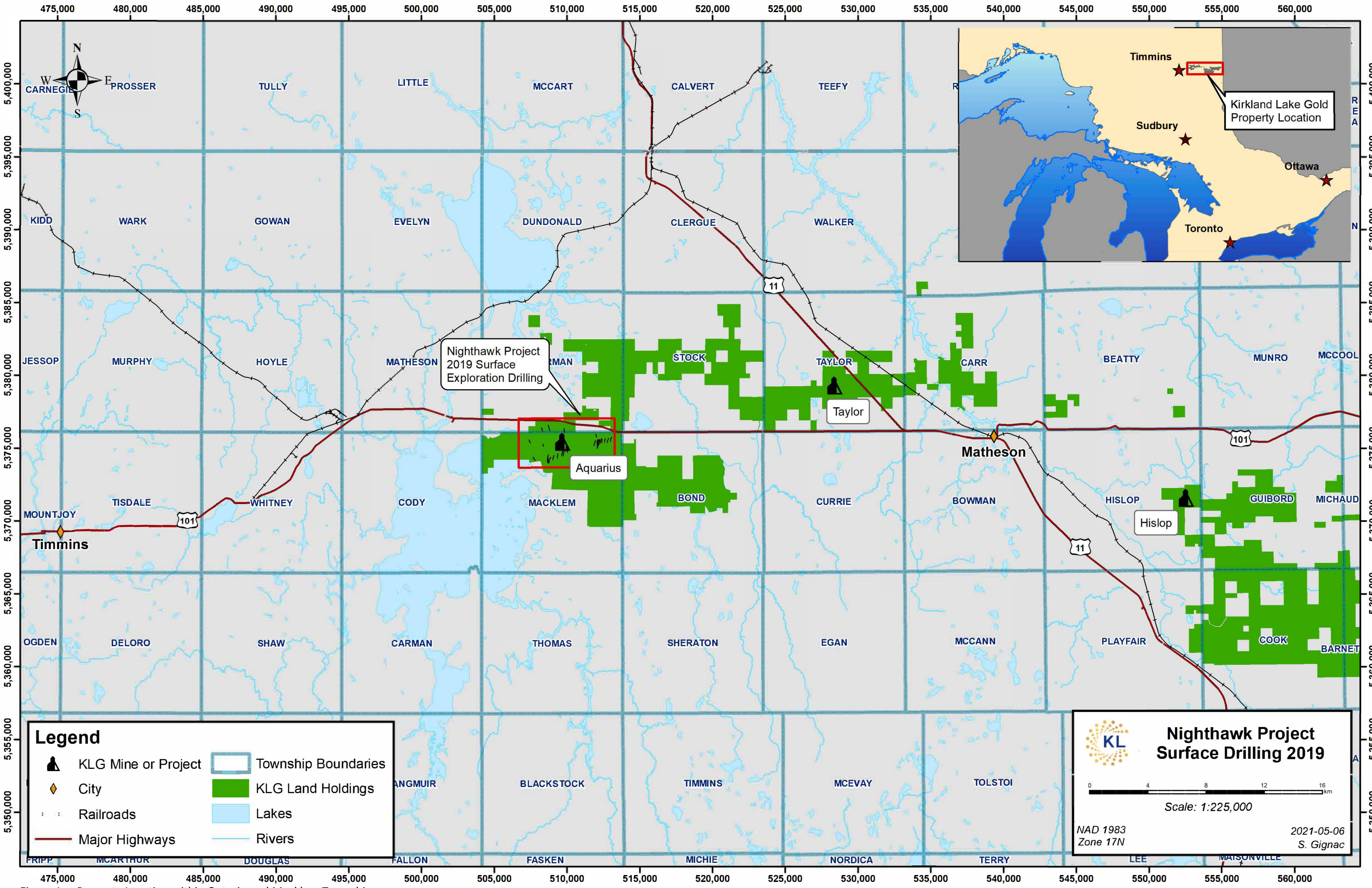


Figure 1 - Property Location within Ontario and Macklem Township

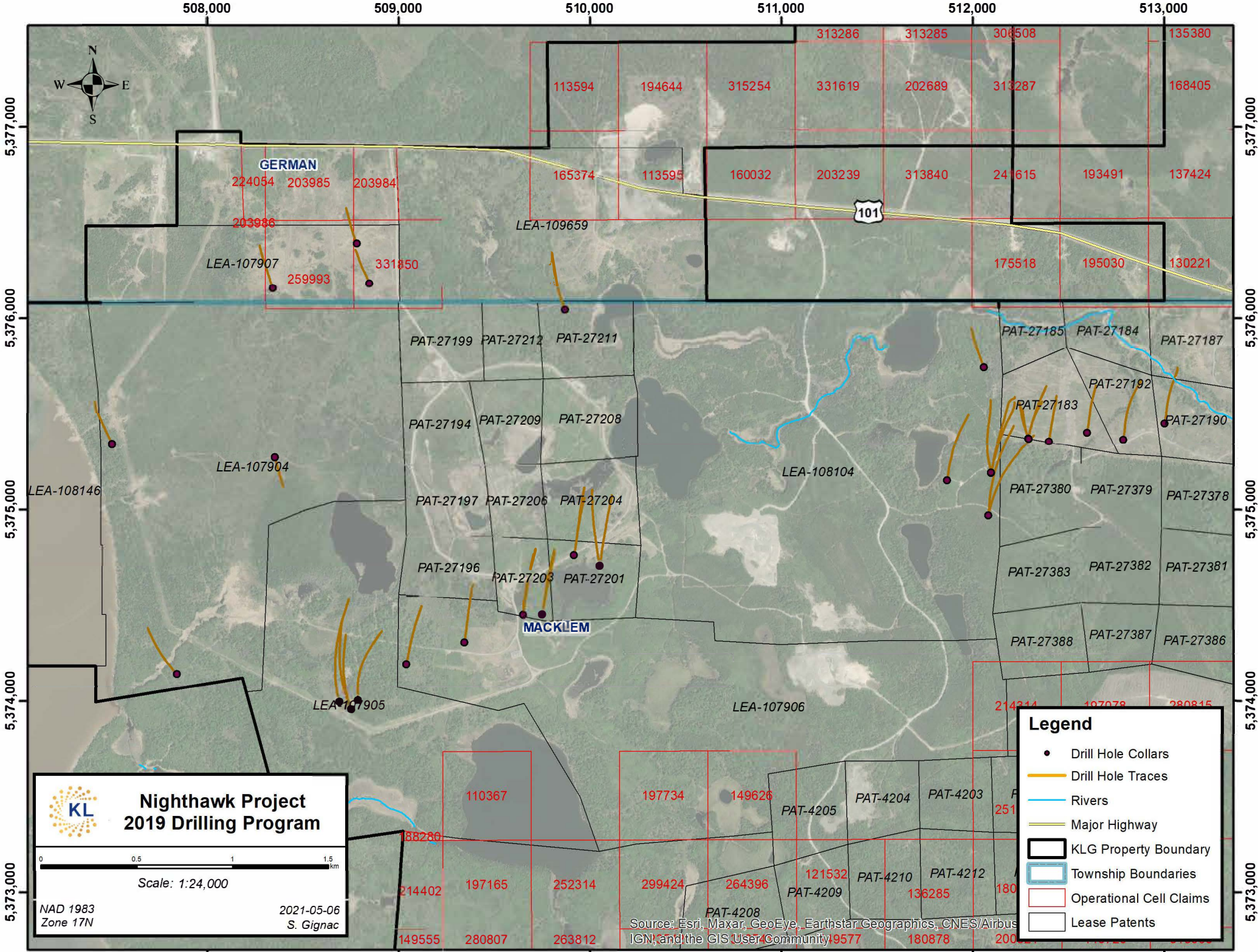


Figure 2 - Drill Hole Plan View

509,000 510,000 511,000 512,000 513,000

Table 2

NIGHTHAWK 2019 EXPLORATION ASSAYS HIGHLIGHTS OVER 1 GPT									
BHID	COLLARS - UTM NAD 83 (m)			AZIMUTH	DIP	FROM	TO	CORE LENGTH	UNCUT Au (g/t)
	EASTING	NORTHING	ELEVATION						
NH18-008	508353.7	5375272.5	286.6	165	-55	NO SIGNIFICANT ASSAYS			
NH19-009	508788.3	5374004.0	290.8	355.6	-55	491.00	492.45	1.45	1.19
and						567.30	575.10	7.80	1.06
NH19-010	507821.4	5275302.0	285.8	165	-55	NO SIGNIFICANT ASSAYS			
NH19-011	507502.5	5375341.5	283.2	350	-55	NO SIGNIFICANT ASSAYS			
NH19-013	507844.2	5374141.0	285.5	320.3	-50	154.50	157.20	2.70	1.16
and						222.20	222.70	0.50	3.09
and						230.90	231.40	0.50	1.02
and						233.00	234.00	1.00	1.01
and						303.00	304.20	1.20	1.11
NH19-014	512095.6	5375190.0	294.2	350	-55	476.40	481.00	4.60	1.01
and						484.50	489.60	5.10	1.07
and						504.10	511.50	7.40	1.11
NH19-015	512095.7	5375191.0	293.1	10.2	-55	436.30	437.10	0.80	1.39
and						518.46	539.70	21.24	4.26
incl						536.24	539.70	3.46	23.06
incl						537.60	538.20	0.60	126.30
and						562.05	564.14	2.09	1.23
and						567.30	576.85	9.55	1.02
NH19-016	512095.7	5375191.0	293.1	10	-48	499.00	500.45	1.45	6.13
and						524.00	547.00	23.00	1.06
incl						543.50	544.60	1.10	7.17
NH19-017	512397.2	5375357.0	290.6	10.4	-70	457.00	492.40	35.40	1.00
and						499.20	501.60	2.40	1.02
and						507.60	508.80	1.20	1.16
NH19-018	512597.0	5375403.5	288.3	358.7	-60	416.90	417.90	1.00	1.03
and						419.90	420.90	1.00	1.03
and						423.90	433.90	10.00	1.04
incl						428.90	429.90	1.00	5.68
and						442.10	453.60	11.50	1.04
and						456.60	457.50	0.90	1.49
and						465.70	466.70	1.00	1.13
NH19-019	511864.8	5375151.5	286.9	10	-60	455.15	456.00	0.85	1.23
and						457.90	459.00	1.10	1.37
and						460.70	489.30	28.60	1.01
incl						482.60	483.50	0.90	6.50
and						493.30	495.40	2.10	1.06
and						498.30	499.30	1.00	1.35
and						502.13	503.00	0.87	1.22
and						512.00	525.05	13.05	1.55
incl						513.97	517.85	3.88	4.05
incl						514.97	515.74	0.77	9.48
NH19-020	508690.3	5373996.0	289.7	345	-55	476.05	477.40	1.35	1.84
and						493.10	496.90	3.80	1.21
and						510.00	520.15	10.15	1.19
and						527.50	532.00	4.50	1.32
incl						529.00	529.60	0.60	7.78
and						536.50	538.00	1.50	1.77
and						543.85	544.90	1.05	2.48
and						569.00	573.00	4.00	1.09
and						577.70	584.40	6.70	1.09
and						743.60	745.10	1.50	1.07
NH19-021	508754.3	5373956.0	290.4	339.3	-50	NO SIGNIFICANT ASSAYS			
NH19-021A	508754.3	5373956.0	290.4	335.6	-50	522.50	524.60	2.10	1.04
and						548.20	550.80	2.60	2.84
and						579.80	585.00	5.20	2.25
incl						581.70	582.30	0.60	9.49
and						605.00	606.00	1.00	1.16
and						619.75	624.20	4.45	1.31
NH19-022	508754.3	5373956.0	290.4	339.3	-60	569.00	569.90	0.90	1.22
and						570.90	571.40	0.50	2.19
and						578.50	581.40	2.90	2.03
incl						580.60	581.40	0.80	6.28
NH19-023	509040.9	5374192.0	289.3	9.7	-55	256.50	257.10	0.60	1.05
and						443.75	444.20	0.45	1.39
and						448.50	449.70	1.20	1.31
and						453.34	465.00	11.66	1.03
incl						464.24	465.00	0.76	9.41
NH19-024	509344.2	5374306.0	289.3	10	-55	372.86	375.57	2.71	2.12
and						441.83	442.70	0.87	2.37
and						450.75	453.20	2.45	1.34
NH19-025	509917.0	5374760.5	288.3	10	-60	NO SIGNIFICANT ASSAYS			
NH19-026	509917.0	5374760.5	288.3	10	-50	NO SIGNIFICANT ASSAYS			

Table 2

NIGHTHAWK 2019 EXPLORATION ASSAYS HIGHLIGHTS OVER 1 GPT									
BHID	COLLARS - UTM NAD 83 (m)			AZIMUTH	DIP	FROM	TO	CORE LENGTH	UNCUT Au (g/t)
	EASTING	NORTHING	ELEVATION						
NH19-027	510050.8	5374706.0	290.0	10	-60	NO SIGNIFICANT ASSAYS			
NH19-028	510050.8	5374706.0	290.0	350	-50	420.00	423.00	3.00	1.09
NH19-029	509650.0	5374450.0	286.0	10	-55	NO SIGNIFICANT ASSAYS			
NH19-030	512786.1	5375367.0	288.1	10	-50	471.20	484.30	13.10	1.42
incl						471.20	472.20	1.00	10.80
NH19-031	513001.0	5375452.0	290.0	10	-50	NO SIGNIFICANT ASSAYS			
NH19-032	512290.7	5375372.0	291.5	10	-65	432.00	456.00	24.00	1.02
incl						453.00	454.50	1.50	5.69
and						463.00	466.00	3.00	1.01
NH19-033	512290.7	5375372.0	291.5	10	-55	NO SIGNIFICANT ASSAYS			
NH19-034	512291.8	5375371.5	290.3	340	-65	403.40	408.00	4.60	1.01
and						415.50	419.20	3.70	1.12
and						426.00	433.80	7.80	1.17
incl						428.00	428.40	0.40	5.21
and						454.10	454.80	0.70	1.04
and						459.00	464.00	5.00	1.06
NH19-035	512291.8	5375371.0	290.3	340	-73	425.70	484.50	58.80	3.05
incl						438.10	471.00	32.90	4.96
incl						456.00	459.90	3.90	2.54
incl						461.50	462.20	0.70	186.50
NH19-036	512080.0	5374969.0	290.0	15	-53	788.60	789.20	0.60	1.49
and						817.00	818.00	1.00	1.46
NH19-037	512080.6	5374969.0	295.3	5	-53	700.00	700.80	0.80	2.17
and						703.80	705.30	1.50	1.57
and						713.00	727.00	14.00	1.39
incl						716.00	717.00	1.00	5.20
NH19-038	512058.0	5375745.0	290.0	340	-45	136.60	137.00	0.40	5.71
and						151.95	166.10	14.15	1.83
incl						159.00	166.10	7.10	2.34
NH19-039	509869.8	5376045.0	290.5	340	-45	NO SIGNIFICANT ASSAYS			
NH19-040	509650.0	5374450.0	286.0	10	-50	NO SIGNIFICANT ASSAYS			
NH19-041	509749.8	5374453.0	288.3	10	-55	NO SIGNIFICANT ASSAYS			
NH19-042	509749.8	5374453.0	288.3	10	-55	134.80	135.40	0.60	1.62
and						392.40	394.80	2.40	2.53
and						460.60	461.50	0.90	1.13
NH19-051	508846.8	5376183.0	292.3	340	-50	NO SIGNIFICANT ASSAYS			
NH19-052	508781.7	5376392.0	291.7	340	-50	NO SIGNIFICANT ASSAYS			
NH19-053	508343.4	5376160.0	291.0	340	-50	NO SIGNIFICANT ASSAYS			



Appendix 2

Diamond Drill Logs

DETAILED LOG



Hole Number: **NH19-008**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5375272.50	North:	Collar Az: 165.00
Location: Macklem Township	East: 508353.69	East:	Length: 276.00
	Elev: 286.60	Elev:	Start Depth: 0.00
Date Started: Jan 09, 2019	Collar Survey: Y	Plugged: N	Contractor: Norex
Date Completed: Jan 14, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 276.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	164.60	-55.00	APS	OK		120.00	164.30	-56.10	EZ Sho	OK	- first test recorded
171.00	162.70	-55.90	EZ Sho	OK		267.00	164.60	-54.70	EZ Sho	OK	

Detailed Lithology

From		To	Lithology	Assay Data				
Sample Number	From	To	Length	Au_gpt_Final				
	0.00	71.90	HPO, OVERBURDEN					

DETAILED LOG

Hole Number: **NH19-008**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
71.90	276.00	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Fine grained, dark green, strongly sheared throughout at greater the 70 DTCA with ~60% gouge throughout the unit, minor intervals (upto 2m wide) relatively unaltered typically with +/-spin effect textures and local interbedded possibly mafic flows (see minors), weak to moderate pervasive chlorite throughout, weak pervasive carbonate throughout with local areas having moderate to strong pervasive carbonate alteration, ~5-15% QC stringer veins, trace pyrite and local zones 3-5% aspy.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 105.00 - 111.50 VMM, MAFIC VOLCANIC MASSIVE</p> <p>Minor Interval: 131.75 - 134.00 VMM, MAFIC VOLCANIC MASSIVE</p> <p>Minor Interval: 137.00 - 144.70 VMM, MAFIC VOLCANIC MASSIVE</p> <p>Minor Interval: 155.85 - 158.90 VMM, MAFIC VOLCANIC MASSIVE</p> <p>Minor Interval: 165.00 - 166.35 VMM, MAFIC VOLCANIC MASSIVE</p> <p>Minor Interval: 174.00 - 180.20 VMM, MAFIC VOLCANIC MASSIVE</p>	N33551	144.70	146.00	1.30	0.00
			N33552	146.00	147.00	1.00	0.00
			N33553	147.00	148.00	1.00	0.00
			N33554	148.00	149.00	1.00	0.00
			N33555	149.00	150.00	1.00	0.00
			N33556	150.00	151.00	1.00	0.00
			N33557	151.00	152.50	1.50	0.00
			N33558	152.50	154.00	1.50	0.00
			N33559	154.00	155.00	1.00	0.03
			N33561	155.00	156.00	1.00	0.00
			N33562	156.00	157.50	1.50	0.01
			N33563	157.50	159.00	1.50	0.10
			N33564	159.00	160.50	1.50	0.00
			N33565	174.00	175.00	1.00	0.00
			N33566	175.00	176.00	1.00	0.00
			N33567	176.00	177.00	1.00	0.00
			N33568	177.00	178.00	1.00	0.00
			N33569	178.00	179.00	1.00	0.00
			N33571	179.00	180.00	1.00	0.00
			N33572	180.00	181.50	1.50	0.00
			N33573	181.50	183.00	1.50	0.00
			N33574	183.00	184.50	1.50	0.00
			N33575	184.50	186.00	1.50	0.00
			N33576	186.00	187.50	1.50	0.00
			N33577	187.50	189.00	1.50	0.00
			N33578	189.00	190.50	1.50	0.03
			N33579	190.50	192.00	1.50	0.00
			N33581	192.00	193.00	1.00	0.00
			N33582	193.00	194.00	1.00	0.00
			N33583	194.00	195.00	1.00	0.15
			N33584	195.00	196.50	1.50	0.01
			N33585	196.50	198.00	1.50	0.01
			N33586	198.00	199.50	1.50	0.01
			N33587	199.50	201.00	1.50	0.01
			N33588	210.00	211.10	1.10	0.00
			N33589	211.10	212.50	1.40	0.00
			N33591	212.50	213.00	0.50	0.00
			N33592	213.00	214.00	1.00	0.00
			N33593	214.00	215.00	1.00	0.00
			N33594	215.00	216.00	1.00	0.00
			N33595	216.00	217.00	1.00	0.04
			N33596	217.00	218.00	1.00	0.01

DETAILED LOG

Hole Number: **NH19-008**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			N33597	218.00	219.00	1.00	0.01
			N33598	222.45	223.45	1.00	0.00
			N33599	223.45	224.45	1.00	0.00
			N33601	224.45	225.50	1.05	0.00
			N33602	225.50	226.45	0.95	0.00
			N33603	241.90	242.90	1.00	0.00
			N33604	242.90	244.20	1.30	0.07
			N33605	244.20	245.40	1.20	0.00
			N33606	245.40	246.10	0.70	0.00
			N33607	246.10	247.60	1.50	0.00
			N33608	247.60	249.00	1.40	0.00
			N33609	249.00	250.50	1.50	0.00
			N33611	250.50	252.00	1.50	0.00
			N33612	252.00	253.50	1.50	0.00
			N33613	253.50	255.00	1.50	0.02
			N33614	255.00	256.50	1.50	0.00
			N33615	256.50	258.00	1.50	0.17
			N33616	258.00	259.50	1.50	0.00
			N33617	259.50	261.00	1.50	0.01
			N33618	261.00	262.50	1.50	0.00
			N33619	262.50	264.00	1.50	0.00
			N33621	264.00	265.50	1.50	0.00
			N33622	265.50	267.00	1.50	0.00
			N33623	267.00	268.50	1.50	0.05
			N33624	268.50	270.00	1.50	0.00
			N33625	270.00	271.50	1.50	0.00
			N33626	271.50	273.00	1.50	0.00
			N33627	273.00	274.50	1.50	0.00
			N33628	274.50	276.00	1.50	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33551	144.70	146.00	0.0025
N33552	146.00	147.00	0.0025
N33553	147.00	148.00	0.0025
N33554	148.00	149.00	0.0025
N33555	149.00	150.00	0.0025
N33556	150.00	151.00	0.0025
N33557	151.00	152.50	0.0025
N33558	152.50	154.00	0.0025

Hole Number: **NH19-008**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33559	154.00	155.00	0.0330
N33561	155.00	156.00	0.0025
N33562	156.00	157.50	0.0110
N33563	157.50	159.00	0.0950
N33564	159.00	160.50	0.0025
N33565	174.00	175.00	0.0025
N33566	175.00	176.00	0.0025
N33567	176.00	177.00	0.0025
N33568	177.00	178.00	0.0025
N33569	178.00	179.00	0.0025
N33571	179.00	180.00	0.0025
N33572	180.00	181.50	0.0025
N33573	181.50	183.00	0.0025
N33574	183.00	184.50	0.0025
N33575	184.50	186.00	0.0025
N33576	186.00	187.50	0.0025
N33577	187.50	189.00	0.0025
N33578	189.00	190.50	0.0330
N33579	190.50	192.00	0.0025
N33581	192.00	193.00	0.0025
N33582	193.00	194.00	0.0025
N33583	194.00	195.00	0.1540
N33584	195.00	196.50	0.0060
N33585	196.50	198.00	0.0050
N33586	198.00	199.50	0.0050
N33587	199.50	201.00	0.0070
N33588	210.00	211.10	0.0025
N33589	211.10	212.50	0.0025
N33591	212.50	213.00	0.0025
N33592	213.00	214.00	0.0025
N33593	214.00	215.00	0.0025
N33594	215.00	216.00	0.0025
N33595	216.00	217.00	0.0440
N33596	217.00	218.00	0.0070
N33597	218.00	219.00	0.0090
N33598	222.45	223.45	0.0025
N33599	223.45	224.45	0.0025
N33601	224.45	225.50	0.0025
N33602	225.50	226.45	0.0025

Hole Number: **NH19-008**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33603	241.90	242.90	0.0025
N33604	242.90	244.20	0.0690
N33605	244.20	245.40	0.0025
N33606	245.40	246.10	0.0025
N33607	246.10	247.60	0.0025
N33608	247.60	249.00	0.0025
N33609	249.00	250.50	0.0025
N33611	250.50	252.00	0.0025
N33612	252.00	253.50	0.0025
N33613	253.50	255.00	0.0160
N33614	255.00	256.50	0.0025
N33615	256.50	258.00	0.1650
N33616	258.00	259.50	0.0025
N33617	259.50	261.00	0.0060
N33618	261.00	262.50	0.0025
N33619	262.50	264.00	0.0025
N33621	264.00	265.50	0.0025
N33622	265.50	267.00	0.0025
N33623	267.00	268.50	0.0500
N33624	268.50	270.00	0.0025
N33625	270.00	271.50	0.0025
N33626	271.50	273.00	0.0025
N33627	273.00	274.50	0.0025
N33628	274.50	276.00	0.0025

DETAILED LOG

Hole Number: **NH19-009**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5374004.00	North:	Collar Az: 355.60
Location: Macklem Township	East: 508788.30	East:	Length: 689.00
	Elev: 290.80	Elev:	Start Depth: 0.00
Date Started: Jan 22, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Feb 04, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 689.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	355.60	-55.00	APS	OK		51.00	357.30	-55.90	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
102.00	1.10	-56.20	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	153.00	3.60	-56.30	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
204.00	8.90	-56.10	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	252.00	12.30	-56.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
306.00	16.70	-57.20	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	357.00	21.10	-56.90	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
408.00	26.00	-56.40	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	459.00	29.60	-55.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
513.00	31.60	-54.00	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	564.00	33.20	-53.20	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
621.00	34.50	-51.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	675.00	36.20	-51.30	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m

Detailed Lithology			Assay Data				
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	38.60	HPO, OVERBURDEN					
38.60	64.40	VUO, ULTRAMAFIC VOLCANIC Dark grey/blueish ultramafics with light grey-milky high angle QC gashes as well as erratically blobby floods stockworked veinlets. Shearing moderate throughout typically high angle 50 to 60 degrees TCA when visible. Weak patchy core fracturing and fragmentation. Blobby chlorite in fracture fills. ~ 15-20% QC as described. ♂Trace sulphides.	N33674	63.40	64.40	1.00	0.01
64.40	67.70	IID, INTERMEDIATE DYKE Blue to bluish grey, aphanitic matrix with vfg black phenocrysts and fg carb blebs, strongly albitized disseminated, with hairline chlorite fractures sporadic. UC are sharp but very jagged and irregular while 50 degrees TCA. Sulphides trace.	N33675	64.40	65.10	0.70	0.00
			N33676	65.10	66.00	0.90	0.00
			N33677	66.00	67.00	1.00	0.01
			N33678	67.00	67.70	0.70	0.00

Hole Number: **NH19-009**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
67.70	216.90	<p>VUO, ULTRAMAFIC VOLCANIC</p> <p>Dark grey/blueish ultramafics with light grey-milky high angle QC gashes as well as erratically blobby floods, stockworked veinlets. Patchy shearing moderate throughout typically high angle 50 to 60 degrees TCA when visible. Starry night textures with QC blebs .Weak patchy core fracturing and fragmentation. Blobby chlorite in fracture fills.</p> <p>Starting at 86.3m sporadic albitized dykes till 89.33m with erratic contacts relatively shallow (or albitized veinlets)</p> <p>Starting again 114 till 121.6m erratically fingers, ranging up to 20cm wide. From 158.6m to 161.1m fingers of albitized fingers intermixed with QC veinlets. ~ 15-20% QC as described. ♂Trace sulphides. with sulphides reaching up to 1-2% along contacts with Albitized from 114 -121.6m</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>86.30 - 87.00 IID, INTERMEDIATE DYKE</p> <p>Similar textures as 64.4-67.7m</p> <p>Minor Interval:</p> <p>87.00 - 88.10 IID, INTERMEDIATE DYKE</p> <p>Similar textures and qualities 64.4-67.7m</p> <p>Minor Interval:</p> <p>88.45 - 89.33 IID, INTERMEDIATE DYKE</p> <p>Similar textures as 64.4 to 67.7</p> <p>Minor Interval:</p> <p>89.60 - 89.80 ISO, SYENITIC INTRUSIVE</p> <p>Minor Interval:</p> <p>121.60 - 122.80 ISO, SYENITIC INTRUSIVE</p> <p>Greyish with red hue fading in and out, medium to fine grained, With sharp Contacts 60 degrees TCA, with carb phenocrysts and black phenocrysts, sulphides at 1%</p> <p>Minor Interval:</p> <p>132.15 - 133.15 ISO, SYENITIC INTRUSIVE</p> <p>Greyish with red hue fading in and out, medium to fine grained, With sharp Contacts 60 degrees TCA, with carb phenocrysts and black phenocrysts, sulphides at 2-3%</p>	N33679	67.70	68.70	1.00	0.00
			N33681	85.30	86.30	1.00	0.00
			N33682	86.30	87.00	0.70	0.00
			N33683	87.00	87.60	0.60	0.00
			N33684	87.60	88.45	0.85	0.00
			N33685	88.45	89.30	0.85	0.00
			N33686	89.30	89.80	0.50	0.00
			N33687	89.80	90.80	1.00	0.00
			N33688	113.20	114.00	0.80	0.00
			N33689	114.00	115.50	1.50	0.01
			N33691	115.50	117.00	1.50	0.00
			N33692	117.00	118.50	1.50	0.00
			N33693	118.50	119.50	1.00	0.00
			N33694	119.50	120.60	1.10	0.00
			N33695	120.60	121.60	1.00	0.04
			N33696	121.60	122.80	1.20	0.00
			N33697	122.80	123.80	1.00	0.00
			N33698	131.00	132.15	1.15	0.00
			N33699	132.15	133.15	1.00	0.07
			N33701	133.15	134.20	1.05	0.00
			N33702	215.90	216.90	1.00	0.00
216.90	223.20	<p>IUO, ULTRAMAFIC INTRUSIVE</p> <p>Black, chloritic, very vitreous, sharp upper LC and UC at 90 degrees TCA, sporadic Carb veinlets with seams of chlorite within trending at ~70 degrees TCA, sulphides within background fractures and clustered disseminated throughout at 2-3% reaching up too 4%, medium to fine grained.</p>	N33703	216.90	217.90	1.00	0.00
			N33704	217.90	219.00	1.10	0.00
			N33705	219.00	220.00	1.00	0.00
			N33706	220.00	221.00	1.00	0.00
			N33707	221.00	222.00	1.00	0.00
			N33708	222.00	223.20	1.20	0.00

Hole Number: **NH19-009**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
223.20	490.00	VUO, ULTRAMAFIC VOLCANIC Similar textures and qualities as 67.7m to 216.9m Weakly albitized QC veinlets from 380.1m to 393m LC is sharp at 40 degrees TCA MINOR INTERVALS: Minor Interval: 293.20 - 294.00 ISO, SYENITIC INTRUSIVE Greyish with red hue fading in and out, medium to fine grained, With sharp Contacts 60 degrees TCA, with carb phenocrysts and black phenocrysts, sulphides at trace to 1% Minor Interval: 354.20 - 354.40 LLB, BIOTITIC LAMPROPHYRE Coarse grained with black biotite, trace sulphides, sharp LC and UC is at 40 degrees. Minor Interval: 410.10 - 410.40 IID, INTERMEDIATE DYKE Blue to bluish grey, aphanitic matrix with vfg black phenocrysts and fg carb blebs, strongly albitized disseminated, with hairline chlorite fractures sporadic. UC are sharp but very jagged and irregular while 50 degrees TCA. Sulphides trace. Minor Interval: 426.40 - 427.70 IMO, MAFIC INTUSIVE Dark black, aphanitic, with needle-like vfg white phenocrysts (carb), UC and LC is sharp at 60 degrees, no visible sulphides. Minor Interval: 471.55 - 473.00 LLB, BIOTITIC LAMPROPHYRE Coarse grained with black biotite, trace-1% sulphides fine grained, sharp LC and UC is at 40 degrees.sporaci carb veinlets ranging from 20 degrees to 40 degrees TCA,	N33709	223.20	224.20	1.00	0.00
			N33711	489.00	490.00	1.00	0.01
490.00	492.45	ISO, SYENITIC INTRUSIVE Pinkish mauve, with strong albite, weakly bleached, blobby chlorite along with jagged hairline chlorite, trace QC wormy milky white, sulphides disseminatec within fg to mg at 4-5%. LC is sharp at 90 degrees TCA	N33712	490.00	491.00	1.00	0.52
			N33713	491.00	491.80	0.80	0.57
			N33714	491.80	492.45	0.65	1.95
492.45	510.50	VUO, ULTRAMAFIC VOLCANIC Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Lacking shearing . Patchy chlorite within blobby carb, and trace sericite. ~ 15-20% QC as described. ♂Trace sulphides. MINOR INTERVALS: Minor Interval: 506.40 - 506.65 IID, INTERMEDIATE DYKE Blue to bluish grey, aphanitic matrix with vfg black phenocrysts and fg carb blebs, moderate albitized disseminated, with hairline chlorite fractures sporadic. UC and LC are sharp 50 degrees TCA. Sulphides trace.	N33715	492.45	493.50	1.05	0.15
			N33716	509.50	510.50	1.00	0.01

DETAILED LOG

Hole Number: **NH19-009**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
510.50	514.10	VMV, MAFIC VOLCANIC VARIOLITIC Massive green grey mafic rock with areas of vfg to fg. Patchy moderate to weak albite. Very weak chlorite on fracture surfaces. Varioles patchy with varioles reaching up to 1.5cm. Very weak faded tension gouging in background of unit. Overall ~5-10% veining as erratic gashes to stringers. Overall sulphides at trace to 1%. Reaching up to 2% blebby pyrite in albitic areas LC is sharp at 80 degrees TCA	N33717	510.50	511.40	0.90	0.02
			N33718	511.40	512.50	1.10	0.01
			N33719	512.50	513.40	0.90	0.00
			N33721	513.40	514.10	0.70	0.00
514.10	554.50	VUO, ULTRAMAFIC VOLCANIC Similar textures and qualities as 492.45 to 510.5m LC is sharp is at 80 degrees TCA	N33722	514.10	515.10	1.00	0.00
			N33723	553.50	554.50	1.00	0.01
554.50	564.00	ACO, CARBONATE ALTERED ROCK Strongly deformed grey with weak brown carbonate altered ultramafics. Patchy strong shearing throughout; roughly at 70 to 80 degrees TCA but many areas are experiencing wavy/folded shearing. Strong erratic tension gouging also present occasionally mimicking shearing but typically erratic grey/milky QC gashes. Sometimes giving pseudo breccia textures. Gradual LC as fuchsite grades in. Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~20-25 % QC overall. Sulphides are 1-2% with both pyrite to arsenopyrite.	N33724	554.50	555.50	1.00	0.02
			N33725	555.50	557.00	1.50	0.01
			N33726	557.00	558.50	1.50	0.03
			N33727	558.50	560.00	1.50	0.07
			N33728	560.00	561.50	1.50	0.03
			N33729	561.50	562.50	1.00	0.02
		N33731	562.50	564.00	1.50	0.01	

Hole Number: **NH19-009**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
564.00	631.00	<p>ACG, GREEN CARBONATE ALTERED ROCK</p> <p>Strongly deformed fuchsite rich green carbonate rock. Where fuchsite may be lacking, grey carbonate alteration dominates. Moderate shearing throughout; when orientation is noticed it is typically high angle ~50 degrees TCA, but often times it is erratic in nature. Brecciation texture pervasive throughout concentrated from 578.5m to 591m, breccia associated with veining and shows fragmented altered green carb clasts. Weak background amygdular texture evident. Yellow flakey sericite weak randomly scattered throughout. LC is arbitrary and gradual as green carb fades</p> <p>Overall 20-25% veining; milky erratic QC gashes, to blobby veinlets/veins. Overall 1-2% pyrite/arsen recognized as mg blebby or fracture filling vfg clustering. Localized zones reaching up to 4-5%</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>569.40 - 569.80 AAO, ALBITIC ALTERED ROCK</p> <p>Light grey to mauve, with blobby milky white quartz floods at 10-15%, with sulphides at at 2-3% fg to mg pyrite, sharp UC at 70 degrees TCA while LC is undulating roughly 80 degrees TCA.</p> <p>Minor Interval:</p> <p>570.30 - 570.50 AAO, ALBITIC ALTERED ROCK</p>	N33732	564.00	565.10	1.10	0.12
			N33733	565.10	566.60	1.50	0.10
			N33734	566.60	567.30	0.70	0.39
			N33735	567.30	568.00	0.70	1.07
			N33736	568.00	568.85	0.85	0.11
			N33737	568.85	569.40	0.55	4.31
			N33738	569.40	570.50	1.10	0.97
			N33739	570.50	571.55	1.05	0.81
			N33741	571.55	573.00	1.45	0.16
			N33742	573.00	574.40	1.40	0.68
			N33743	574.40	575.10	0.70	2.74
			N33744	575.10	576.00	0.90	0.05
			N33745	576.00	577.00	1.00	0.45
			N33746	577.00	578.00	1.00	0.40
			N33747	578.00	579.00	1.00	0.03
			N33748	579.00	580.50	1.50	0.02
			N33749	580.50	582.00	1.50	0.03
			N33752	582.00	582.50	0.50	0.03
			N33753	582.50	583.10	0.60	0.09
			N33754	583.10	584.10	1.00	0.14
			N33755	584.10	585.60	1.50	0.16
			N33756	585.60	587.10	1.50	0.12
			N33757	587.10	588.50	1.40	0.14
			N33758	588.50	590.00	1.50	0.03
			N33759	590.00	591.40	1.40	0.10
			N33761	591.40	592.90	1.50	0.13
			N33762	592.90	594.40	1.50	0.13
			N33763	594.40	595.40	1.00	0.07
			N33764	595.40	596.90	1.50	0.04
			N33765	596.90	598.00	1.10	0.10
			N33766	598.00	599.50	1.50	0.12
			N33767	599.50	601.00	1.50	0.03
			N33768	601.00	602.50	1.50	0.08
			N33769	602.50	604.00	1.50	0.02
			N33771	604.00	605.50	1.50	0.02
			N33772	605.50	607.00	1.50	0.18
			N33773	607.00	608.30	1.30	0.08
			N33774	608.30	609.60	1.30	0.05
			N33775	609.60	610.60	1.00	0.48
			N33776	610.60	611.95	1.35	0.08
			N33777	611.95	613.00	1.05	0.04
			N33778	613.00	614.50	1.50	0.08

DETAILED LOG

Hole Number: **NH19-009**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			N33779	614.50	615.30	0.80	0.03
			N33781	615.30	616.30	1.00	0.03
			N33782	616.30	617.30	1.00	0.02
			N33783	617.30	618.40	1.10	0.16
			N33784	618.40	619.80	1.40	0.01
			N33785	619.80	621.00	1.20	0.04
			N33786	621.00	622.00	1.00	0.07
			N33787	622.00	623.50	1.50	0.41
			N33788	623.50	624.50	1.00	0.19
			N33789	624.50	625.50	1.00	0.02
			N33791	625.50	626.30	0.80	0.01
			N33792	626.30	627.30	1.00	0.02
			N33793	627.30	628.50	1.20	0.11
			N33794	628.50	629.50	1.00	0.08
			N33795	629.50	630.50	1.00	0.82
			N33796	630.50	631.00	0.50	0.09
631.00	639.35	ACO, CARBONATE ALTERED ROCK Strongly deformed grey with weak-moderate brown carbonate altered ultramafics. Strong erratic tension gouging also present occasionally mimicking shearing but typically erratic grey/milky QC gashes giving breccia textures. Where veining lacks and breccia lacks starry QC blebs, Weak fuchsite from 631 to 633.5 then becoming patchy. LC is gradual/arbitrary. Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~20-25 % QC overall. Sulphides are 1-2% with both pyrite to arsenopyrite.	N33797	631.00	632.50	1.50	0.01
			N33798	632.50	634.00	1.50	0.06
			N33799	634.00	635.50	1.50	0.02
			N33801	635.50	637.00	1.50	0.02
			N33802	637.00	637.75	0.75	0.01
			N33803	637.75	638.50	0.75	0.00
			N33804	638.50	639.35	0.85	0.00
639.35	657.75	ACX, Mixed Carbonate Strongly deformed grey with moderate brown carbonate and moderate green carb altered ultramafics. Strong erratic tension gouging also present occasionally mimicking shearing but typically erratic grey/milky QC gashes giving breccia textures, Sercite mixed in with fuchsite rich zones. Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~15-20 % QC overall. Sulphides are 1-2% with both pyrite to arsenopyrite.	N33805	639.35	640.60	1.25	0.00
			N33806	640.60	642.05	1.45	0.01
			N33807	642.05	643.00	0.95	0.07
			N33808	643.00	644.30	1.30	0.00
			N33809	644.30	645.50	1.20	0.01
			N33811	645.50	646.50	1.00	0.01
			N33812	646.50	647.90	1.40	0.03
			N33813	647.90	649.00	1.10	0.73
			N33814	649.00	650.50	1.50	0.03
			N33815	650.50	651.50	1.00	0.01
			N33816	651.50	652.20	0.70	0.09
			N33817	652.20	653.40	1.20	0.00
			N33818	653.40	654.50	1.10	0.00
			N33819	654.50	655.50	1.00	0.74
			N33821	655.50	657.00	1.50	0.07
			N33822	657.00	657.75	0.75	0.05

DETAILED LOG

Hole Number: **NH19-009**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
657.75	672.30	VUO, ULTRAMAFIC VOLCANIC Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Lacking shearing . Patchy chlorite within blobby carb, patchy sercite ~ 15-20% QC as described. ♂Trace sulphides.	N33823	657.75	658.75	1.00	0.04
672.30	689.00	ZFZ, FAULT ZONE Faulted Ultramafics with textures similar to 657.75 to 672.3m with pervasive gouge throughout, caving throughout, core loss prevalent, MINOR INTERVALS: Minor Interval: 684.00 - 687.00 OLO, LOST CORE					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33674	63.40	64.40	0.0110
N33675	64.40	65.10	0.0025
N33676	65.10	66.00	0.0025
N33677	66.00	67.00	0.0070
N33678	67.00	67.70	0.0025
N33679	67.70	68.70	0.0025
N33681	85.30	86.30	0.0025
N33682	86.30	87.00	0.0025
N33683	87.00	87.60	0.0025
N33684	87.60	88.45	0.0025
N33685	88.45	89.30	0.0025
N33686	89.30	89.80	0.0025
N33687	89.80	90.80	0.0025
N33688	113.20	114.00	0.0025
N33689	114.00	115.50	0.0050
N33691	115.50	117.00	0.0025
N33692	117.00	118.50	0.0025
N33693	118.50	119.50	0.0025
N33694	119.50	120.60	0.0025
N33695	120.60	121.60	0.0390
N33696	121.60	122.80	0.0025
N33697	122.80	123.80	0.0025
N33698	131.00	132.15	0.0025
N33699	132.15	133.15	0.0730
N33701	133.15	134.20	0.0025

Hole Number: **NH19-009**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N33702	215.90	216.90	0.0025
N33703	216.90	217.90	0.0025
N33704	217.90	219.00	0.0025
N33705	219.00	220.00	0.0025
N33706	220.00	221.00	0.0025
N33707	221.00	222.00	0.0025
N33708	222.00	223.20	0.0025
N33709	223.20	224.20	0.0025
N33711	489.00	490.00	0.0070
N33712	490.00	491.00	0.5170
N33713	491.00	491.80	0.5740
N33714	491.80	492.45	1.9460
N33715	492.45	493.50	0.1460
N33716	509.50	510.50	0.0090
N33717	510.50	511.40	0.0180
N33718	511.40	512.50	0.0080
N33719	512.50	513.40	0.0025
N33721	513.40	514.10	0.0025
N33722	514.10	515.10	0.0025
N33723	553.50	554.50	0.0110
N33724	554.50	555.50	0.0210
N33725	555.50	557.00	0.0090
N33726	557.00	558.50	0.0280
N33727	558.50	560.00	0.0670
N33728	560.00	561.50	0.0250
N33729	561.50	562.50	0.0170
N33731	562.50	564.00	0.0120
N33732	564.00	565.10	0.1170
N33733	565.10	566.60	0.1010
N33734	566.60	567.30	0.3940
N33735	567.30	568.00	1.0710
N33736	568.00	568.85	0.1130
N33737	568.85	569.40	4.3100
N33738	569.40	570.50	0.9700
N33739	570.50	571.55	0.8110
N33741	571.55	573.00	0.1570
N33742	573.00	574.40	0.6800
N33743	574.40	575.10	2.7440
N33744	575.10	576.00	0.0470

Hole Number: **NH19-009**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33745	576.00	577.00	0.4450
N33746	577.00	578.00	0.3960
N33747	578.00	579.00	0.0290
N33748	579.00	580.50	0.0200
N33749	580.50	582.00	0.0250
N33752	582.00	582.50	0.0300
N33753	582.50	583.10	0.0930
N33754	583.10	584.10	0.1420
N33755	584.10	585.60	0.1620
N33756	585.60	587.10	0.1150
N33757	587.10	588.50	0.1370
N33758	588.50	590.00	0.0270
N33759	590.00	591.40	0.0970
N33761	591.40	592.90	0.1340
N33762	592.90	594.40	0.1320
N33763	594.40	595.40	0.0680
N33764	595.40	596.90	0.0430
N33765	596.90	598.00	0.0980
N33766	598.00	599.50	0.1240
N33767	599.50	601.00	0.0290
N33768	601.00	602.50	0.0770
N33769	602.50	604.00	0.0200
N33771	604.00	605.50	0.0190
N33772	605.50	607.00	0.1820
N33773	607.00	608.30	0.0800
N33774	608.30	609.60	0.0470
N33775	609.60	610.60	0.4780
N33776	610.60	611.95	0.0830
N33777	611.95	613.00	0.0390
N33778	613.00	614.50	0.0750
N33779	614.50	615.30	0.0290
N33781	615.30	616.30	0.0340
N33782	616.30	617.30	0.0190
N33783	617.30	618.40	0.1600
N33784	618.40	619.80	0.0090
N33785	619.80	621.00	0.0380
N33786	621.00	622.00	0.0740
N33787	622.00	623.50	0.4080
N33788	623.50	624.50	0.1930

Hole Number: **NH19-009**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N33789	624.50	625.50	0.0180
N33791	625.50	626.30	0.0120
N33792	626.30	627.30	0.0170
N33793	627.30	628.50	0.1050
N33794	628.50	629.50	0.0760
N33795	629.50	630.50	0.8150
N33796	630.50	631.00	0.0930
N33797	631.00	632.50	0.0070
N33798	632.50	634.00	0.0630
N33799	634.00	635.50	0.0170
N33801	635.50	637.00	0.0180
N33802	637.00	637.75	0.0070
N33803	637.75	638.50	0.0025
N33804	638.50	639.35	0.0025
N33805	639.35	640.60	0.0025
N33806	640.60	642.05	0.0140
N33807	642.05	643.00	0.0720
N33808	643.00	644.30	0.0025
N33809	644.30	645.50	0.0060
N33811	645.50	646.50	0.0100
N33812	646.50	647.90	0.0300
N33813	647.90	649.00	0.7300
N33814	649.00	650.50	0.0320
N33815	650.50	651.50	0.0130
N33816	651.50	652.20	0.0880
N33817	652.20	653.40	0.0025
N33818	653.40	654.50	0.0025
N33819	654.50	655.50	0.7350
N33821	655.50	657.00	0.0700
N33822	657.00	657.75	0.0480
N33823	657.75	658.75	0.0380

DETAILED LOG



Hole Number: **NH19-010**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5275302.00	North:	Collar Az: 165.00
Location: Macklem Township	East: 507821.40	East:	Length: 246.00
	Elev: 285.80	Elev:	Start Depth: 0.00
Date Started: Jan 09, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jan 14, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 246.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	165.20	-55.00	APS	OK		78.00	164.70	-57.20	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
129.00	164.30	-57.30	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	180.00	163.70	-57.00	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m

Detailed Lithology

From		To	Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final	
0.00	69.00		HPO, OVERBURDEN					
69.00	126.65		VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg fine or (on the rare occasion) Lacking any significant alteration, veining, or sulphides throughout. Pervasive gouge seams with wrapping VMM clasts. may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. Weak pillow savages and patchy spinifex within ultramfics. Patchy weak to moderate carb alteration disseminated and odd veinlet. Blocky broken throughout. LC is arbitray as spinifex textures dominates Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides. MINOR INTERVALS: Minor Interval: 74.40 - 75.00 OLO, LOST CORE Minor Interval: 76.50 - 78.00 OLO, LOST CORE Grinding loss of 1.5m Minor Interval: 81.00 - 81.30 OLO, LOST CORE Minor Interval: 84.20 - 87.00 OLO, LOST CORE Minor Interval: 106.40 - 107.70 OLO, LOST CORE					

DETAILED LOG

Hole Number: **NH19-010**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
126.65	218.60	VUO, ULTRAMAFIC VOLCANIC Dark grey/blueish ultramafics with a starry night appearance with light grey-milky erractic angle QC gashes, pervasive patchy spinifex textures. Strong and pervasive patchy core fracturing and fragmentation and gouge. Chlorite clustered along slip surfaces. Shearing ranging from 20 to 40 degrees starting at 207. Switch to BQ Starting at 205.8m ~ 10-15% QC as described. δ sulphides (arseno vfg) clustered along gouge (healed faults) and carb veinlets at 1-2% overall trace.	N33502	127.45	128.50	1.05	0.00
			N33503	128.50	129.70	1.20	0.01
			N33504	129.70	130.70	1.00	0.00
			N33505	130.70	131.65	0.95	0.00
			N33506	131.65	133.10	1.45	0.00
			N33507	133.10	134.10	1.00	0.00
			N33508	134.10	135.25	1.15	0.01
			N33509	135.25	136.25	1.00	0.00
			N33511	136.25	137.25	1.00	0.01
			N33512	137.25	138.00	0.75	0.00
			N33513	138.00	139.50	1.50	0.00
			N33514	139.50	140.50	1.00	0.00
			N33515	140.50	141.20	0.70	0.00
			N33516	141.20	142.20	1.00	0.00
			N33517	142.20	143.20	1.00	0.00
			N33518	143.20	144.70	1.50	0.00
			N33519	144.70	145.60	0.90	0.00
			N33521	145.60	146.30	0.70	0.00
			N33522	146.30	147.00	0.70	0.00
			N33523	147.00	148.00	1.00	0.00
			N33524	148.00	148.80	0.80	0.00
			N33525	148.80	150.00	1.20	0.00
			N33526	150.00	151.00	1.00	0.00
			N33527	151.00	151.50	0.50	0.00
			N33528	203.40	204.20	0.80	0.00
			N33529	204.20	205.70	1.50	0.00
			N33531	205.70	206.60	0.90	0.00
			N33532	206.60	207.30	0.70	0.00
			N33533	207.30	208.30	1.00	0.00
			N33534	208.30	209.30	1.00	0.00
			N33535	209.30	210.30	1.00	0.01
			N33536	210.30	211.50	1.20	0.00
			N33537	211.50	213.00	1.50	0.00
			N33538	213.00	214.50	1.50	0.00
			N33539	214.50	216.00	1.50	0.00
			N33541	216.00	217.20	1.20	0.00
			N33542	217.20	218.00	0.80	0.00
			N33543	218.00	218.60	0.60	0.00

Hole Number: **NH19-010**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
218.60	246.00	ZFZ, FAULT ZONE Heavily fractured gouge and cataclastic, of ultramafics sporadic small lens of massive mafics when visible, patchy carb alteration giving lighter blue colour, shallow foliation at 10-30 degrees when visible, chlorite slips at 30 degrees TCA, with smeared sulphides vfg, at 2-3% overall vfg at 1-2%	N33544	218.60	219.60	1.00	0.00
			N33545	219.60	221.10	1.50	0.00
			N33546	221.10	222.00	0.90	0.00
			N33547	222.00	223.00	1.00	0.00
			N33548	223.00	224.00	1.00	0.00
			N33549	224.00	225.00	1.00	0.00
			N33651	225.00	226.00	1.00	0.00
			N33652	226.00	227.00	1.00	0.01
			N33653	227.00	228.00	1.00	0.00
			N33654	228.00	229.00	1.00	0.00
			N33655	229.00	230.00	1.00	0.00
			N33656	230.00	231.00	1.00	0.00
			N33657	231.00	232.00	1.00	0.00
			N33658	232.00	233.00	1.00	0.00
			N33659	233.00	234.00	1.00	0.00
			N33661	234.00	235.00	1.00	0.00
			N33662	235.00	236.00	1.00	0.00
			N33663	236.00	237.00	1.00	0.01
			N33664	237.00	238.00	1.00	0.00
			N33665	238.00	239.00	1.00	0.00
			N33666	239.00	240.00	1.00	0.00
			N33667	240.00	241.00	1.00	0.00
			N33668	241.00	242.00	1.00	0.00
			N33669	242.00	243.00	1.00	0.00
			N33671	243.00	244.00	1.00	0.00
			N33672	244.00	245.00	1.00	0.00
			N33673	245.00	246.00	1.00	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33502	127.45	128.50	0.0025
N33503	128.50	129.70	0.0080
N33504	129.70	130.70	0.0025
N33505	130.70	131.65	0.0025
N33506	131.65	133.10	0.0025
N33507	133.10	134.10	0.0025
N33508	134.10	135.25	0.0070
N33509	135.25	136.25	0.0025
N33511	136.25	137.25	0.0050
N33512	137.25	138.00	0.0025

Hole Number: **NH19-010**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33513	138.00	139.50	0.0025
N33514	139.50	140.50	0.0025
N33515	140.50	141.20	0.0025
N33516	141.20	142.20	0.0025
N33517	142.20	143.20	0.0025
N33518	143.20	144.70	0.0025
N33519	144.70	145.60	0.0025
N33521	145.60	146.30	0.0025
N33522	146.30	147.00	0.0025
N33523	147.00	148.00	0.0025
N33524	148.00	148.80	0.0025
N33525	148.80	150.00	0.0025
N33526	150.00	151.00	0.0025
N33527	151.00	151.50	0.0025
N33528	203.40	204.20	0.0025
N33529	204.20	205.70	0.0025
N33531	205.70	206.60	0.0025
N33532	206.60	207.30	0.0025
N33533	207.30	208.30	0.0025
N33534	208.30	209.30	0.0025
N33535	209.30	210.30	0.0100
N33536	210.30	211.50	0.0025
N33537	211.50	213.00	0.0025
N33538	213.00	214.50	0.0025
N33539	214.50	216.00	0.0025
N33541	216.00	217.20	0.0025
N33542	217.20	218.00	0.0025
N33543	218.00	218.60	0.0025
N33544	218.60	219.60	0.0025
N33545	219.60	221.10	0.0025
N33546	221.10	222.00	0.0025
N33547	222.00	223.00	0.0025
N33548	223.00	224.00	0.0025
N33549	224.00	225.00	0.0025
N33651	225.00	226.00	0.0025
N33652	226.00	227.00	0.0080
N33653	227.00	228.00	0.0025
N33654	228.00	229.00	0.0025
N33655	229.00	230.00	0.0025

Hole Number: **NH19-010**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33656	230.00	231.00	0.0025
N33657	231.00	232.00	0.0025
N33658	232.00	233.00	0.0025
N33659	233.00	234.00	0.0025
N33661	234.00	235.00	0.0025
N33662	235.00	236.00	0.0025
N33663	236.00	237.00	0.0060
N33664	237.00	238.00	0.0025
N33665	238.00	239.00	0.0025
N33666	239.00	240.00	0.0025
N33667	240.00	241.00	0.0025
N33668	241.00	242.00	0.0025
N33669	242.00	243.00	0.0025
N33671	243.00	244.00	0.0025
N33672	244.00	245.00	0.0025
N33673	245.00	246.00	0.0025

DETAILED LOG



Hole Number: **NH19-011**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5375341.50	North:	Collar Az: 350.00
Location: Macklem Township	East: 507502.53	East:	Length: 357.00
	Elev: 283.20	Elev:	Start Depth: 0.00
Date Started: Jan 22, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jan 29, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 357.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	335.60	-50.00	APS	OK		90.00	333.70	-49.90	EZ Sho	OK	
141.00	335.00	-49.00	EZ Sho	OK		192.00	336.10	-47.80	EZ Sho	OK	
243.00	335.10	-46.20	EZ Sho	OK		294.00	340.10	-44.90	EZ Sho	OK	
351.00	165.00	-42.50	EZ Sho	DO	low mag						

Detailed Lithology

From		To	Lithology	Assay Data				
Sample Number	From	To	Length	Au_gpt_Final				
	0.00	76.00	HPO, OVERBURDEN					

Hole Number: **NH19-011**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
76.00	158.50	VUC, ULTRAMAFIC VOLCANIC TALCOSE Fine grained, dark green to bluish black, moderately to strongly sheared at a high angle to the core axis (75-90 deg) with lots of gouge zones throughout the unit, weak to moderate pervasive carbonate and chlorite alteration, local zones of weak silicification/albitization typically having higher sulphides and veining, unit is soft and talcy, 10-30% QC +/- Abl > Ep/Fuchsite stringer veining, throughout the unit there are small Qtz-Carb phenocrysts 1-5mm wide typically in clustered zones, locally some of these phenocrysts are turning to granets (red), ~1-3m wide, trace pyrite throughout with local areas up to 3%, trace to 1% arsenopyrite disseminated.	N33629	109.50	110.50	1.00	0.03
			N33631	110.50	111.50	1.00	0.03
			N33632	111.50	112.50	1.00	0.05
			N33633	112.50	113.50	1.00	0.01
			N33634	113.50	114.00	0.50	0.02
			N33635	124.50	125.40	0.90	0.00
			N33636	125.40	126.50	1.10	0.03
			N33637	126.50	127.50	1.00	0.00
			N33638	127.50	128.50	1.00	0.01
			N33639	128.50	129.50	1.00	0.01
			N33641	129.50	130.25	0.75	0.00
			N33642	130.25	131.00	0.75	0.01
			N33643	131.00	132.50	1.50	0.02
			N33644	132.50	134.00	1.50	0.01
			N33645	134.00	135.00	1.00	0.01
			N33646	135.00	136.00	1.00	0.57
			N33647	136.00	137.10	1.10	0.04
			N33648	137.10	138.00	0.90	0.01
			N33649	138.00	139.00	1.00	0.02
			N64501	139.00	140.00	1.00	0.05
			N64502	140.00	141.00	1.00	0.03
			N64503	147.00	148.50	1.50	0.02
			N64504	148.50	150.00	1.50	0.00
			N64505	150.00	151.00	1.00	0.01
			N64506	151.00	152.00	1.00	0.02
			N64507	152.00	153.00	1.00	0.03
			N64508	153.00	154.00	1.00	0.02
			N64509	154.00	155.00	1.00	0.03
			N64511	155.00	156.00	1.00	0.17
			N64512	156.00	157.00	1.00	0.01
			N64513	157.00	157.75	0.75	0.06
			N64514	157.75	158.50	0.75	0.38
158.50	162.60	LLB, BIOTITIC LAMPROPHYRE Coarse grained, moderately sheared at ~65 DTCA with moderate pervasive carbonate and biotite alteration, 2% blebby pyrite. Top contact is sharp at 60 DTCA.	N64515	158.50	159.50	1.00	0.00
			N64516	159.50	160.50	1.00	0.00
			N64517	160.50	161.50	1.00	0.06
			N64518	161.50	162.60	1.10	0.06

Hole Number: **NH19-011**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
162.60	179.20	VUC, ULTRAMAFIC VOLCANIC TALCOSE As per the description from 76.00 - 158.50m. Top contact is sharp at 45 DTCA. MINOR INTERVALS: Minor Interval: 176.80 - 177.45 LLB, BIOTITIC LAMPROPHYRE	N64519	162.60	163.60	1.00	0.00
			N64521	163.60	165.00	1.40	0.00
			N64522	165.00	166.50	1.50	0.00
			N64523	166.50	168.00	1.50	0.01
			N64524	176.10	176.80	0.70	0.00
			N64525	176.80	177.45	0.65	0.00
			N64526	177.45	178.55	1.10	0.00
			N64527	178.55	179.20	0.65	0.00
179.20	185.90	LLB, BIOTITIC LAMPROPHYRE As per the description from 158.50 - 162.60m. Top contact is sharp at 45 DTCA. MINOR INTERVALS: Minor Interval: 180.45 - 180.60 ISO, SYENITIC INTRUSIVE Sharp Bx contacts 2% dis py Minor Interval: 181.10 - 181.95 ISO, SYENITIC INTRUSIVE Sharp Bx contacts and 4% disseminated pyrite. Minor Interval: 182.55 - 183.55 VUM, MASSIVE ULTRAMAFIC	N64528	179.20	180.00	0.80	0.02
			N64529	180.00	181.10	1.10	0.03
			N64531	181.10	181.95	0.85	0.11
			N64532	181.95	182.55	0.60	0.01
			N64533	182.55	183.55	1.00	0.05
			N64534	183.55	184.70	1.15	0.00
			N64535	184.70	185.90	1.20	0.00
185.90	194.10	VMP, VOLCANIC MASSIVE PILLOWED Fine grained, dark green, massive, moderate pervasive carbonate alteration and chlorite, with minor biotite or tourmaline fracture infilling, trace pyrite. Top contact is sharp at 60 DTCA.	N64536	185.90	187.40	1.50	0.00
			N64537	187.40	188.90	1.50	0.00
			N64538	188.90	190.40	1.50	0.00
			N64539	190.40	191.90	1.50	0.00
			N64541	191.90	193.40	1.50	0.00
			N64542	193.40	194.10	0.70	0.00
194.10	203.05	LLB, BIOTITIC LAMPROPHYRE Coarse grained, black in colour, weak foliation at approximately 50 DTCA, moderate pervasive carbonate and biotite alteration, weak patchy chlorite mainly in fracture infilling, 3% disseminated arsenopyrite and trace to 1% blebby cubic pyrite. Top contact is sharp at 50 DTCA.	N64543	194.10	195.50	1.40	0.01
			N64544	195.50	196.60	1.10	0.00
			N64545	196.60	197.30	0.70	0.00
			N64546	197.30	198.00	0.70	0.00
			N64547	198.00	199.50	1.50	0.00
			N64548	199.50	201.00	1.50	0.01
			N64549	201.00	202.00	1.00	0.13
			N64551	202.00	203.05	1.05	0.00
203.05	209.35	VMP, VOLCANIC MASSIVE PILLOWED As per the description from 185.90 - 194.10m. Top contact is sharp at 65 DTCA.	N64552	203.05	204.00	0.95	0.00
			N64553	204.00	205.50	1.50	0.01
			N64554	205.50	207.00	1.50	0.00
			N64555	207.00	208.50	1.50	0.00
			N64556	208.50	209.35	0.85	0.00

Hole Number: **NH19-011**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
209.35	217.95	<p>LLB, BIOTITIC LAMPROPHYRE</p> <p>Coarse grained, black in colour, weak foliation at approximately 50 DTCA, moderate pervasive carbonate and biotite alteration, weak patchy chlorite mainly in fracture infilling, 3% disseminated arsenopyrite and trace to 1% blebby cubic pyrite. Top contact is sharp at 50 DTCA.</p> <p>MINOR INTERVALS: Minor Interval: 211.15 - 211.60 VMP, VOLCANIC MASSIVE PILLOWED</p>	N64557	209.35	210.35	1.00	0.01
			N64558	210.35	211.15	0.80	0.01
			N64559	211.15	211.65	0.50	0.00
			N64561	211.65	213.00	1.35	0.00
			N64562	213.00	214.50	1.50	0.00
			N64563	214.50	216.00	1.50	0.00
			N64564	216.00	217.00	1.00	0.00
			N64565	217.00	217.95	0.95	0.01
217.95	274.25	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Fine grained, dark green to bluish black, moderately to strongly sheared (anastomosing shear zone appear as distinct shear domains) at a 50-70 DTCA with gouge zones throughout the unit, moderate pervasive carbonate and chlorite alteration, local zones of weak silicification/albitization typically having higher sulphides and veining, unit is talcy locally, 10-30% QC +/- Abl > Ep/Fuchsite stringer veining, throughout the unit there are small Qtz-Carb phenocrysts 1-5mm wide typically in clustered zones, locally some of these phenocrysts are turning to granets (red), ~1-3m wide, trace pyrite throughout with local areas up to 3%, trace to 1% arsenopyrite disseminated. Top contact is fused</p>	N64566	217.95	219.00	1.05	0.00
			N64567	230.40	231.40	1.00	0.00
			N64568	231.40	232.30	0.90	0.00
			N64569	232.30	233.30	1.00	0.00
			N64571	233.30	234.30	1.00	0.02
			N64572	234.30	235.30	1.00	0.00
			N64573	235.30	236.30	1.00	0.00
			N64574	236.30	237.30	1.00	0.00
			N64575	237.30	238.30	1.00	0.00
			N64576	238.30	239.30	1.00	0.01
			N64577	239.30	240.00	0.70	0.00
			N64578	240.00	240.90	0.90	0.00
			N64579	264.00	265.40	1.40	0.03
			N64581	265.40	266.40	1.00	0.22
			N64582	266.40	267.40	1.00	0.03
			N64583	267.40	268.40	1.00	0.29
			N64584	268.40	269.35	0.95	0.08
			N64585	269.35	270.50	1.15	0.05
			N64586	270.50	271.40	0.90	0.03
			N64587	271.40	272.40	1.00	0.01
			N64588	272.40	273.40	1.00	0.00
			N64589	273.40	274.25	0.85	0.00
274.25	275.55	<p>OLO, LOST CORE</p> <p>Grind</p>					
275.55	314.90	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>As per the description from 217.95 - 274.25m.</p>	N64591	275.55	276.00	0.45	0.03
			N64592	276.00	277.00	1.00	0.20
			N64593	277.00	278.00	1.00	0.02
			N64594	278.00	279.00	1.00	0.03
			N64595	279.00	280.00	1.00	0.23
			N64596	280.00	281.50	1.50	0.06
			N64597	281.50	282.50	1.00	0.02

Hole Number: **NH19-011**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
314.90	319.00	LLB, BIOTITIC LAMPROPHYRE Coarse grained, dark reddish purple, massive, moderate pervasive carbonate alteration, weak pervasive hematite alteration, 1% pyrite. Top contact is sharp at 60 DTCA.					
319.00	357.00	VUM, MASSIVE ULTRAMAFIC Fine grained, dark green, weak to local zones of moderate shearing at about 60-75 DTCA, with local augen texture, ~5-20% QC +/- Ep stringer veins throughout, weak pervasive carbonate mostly in stringer veins, weak to moderate chlorite alteration as wispy stringers, locally talcy, unit is soft, the unit is highly faulted and gouged, trace pyrite. End of the hole at 357m.					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33629	109.50	110.50	0.0270
N33631	110.50	111.50	0.0260
N33632	111.50	112.50	0.0450
N33633	112.50	113.50	0.0060
N33634	113.50	114.00	0.0160
N33635	124.50	125.40	0.0025
N33636	125.40	126.50	0.0250
N33637	126.50	127.50	0.0025
N33638	127.50	128.50	0.0090
N33639	128.50	129.50	0.0100
N33641	129.50	130.25	0.0025
N33642	130.25	131.00	0.0110
N33643	131.00	132.50	0.0160
N33644	132.50	134.00	0.0060
N33645	134.00	135.00	0.0060
N33646	135.00	136.00	0.5730
N33647	136.00	137.10	0.0350
N33648	137.10	138.00	0.0090
N33649	138.00	139.00	0.0180
N64501	139.00	140.00	0.0450
N64502	140.00	141.00	0.0250
N64503	147.00	148.50	0.0150
N64504	148.50	150.00	0.0025
N64505	150.00	151.00	0.0080
N64506	151.00	152.00	0.0150
N64507	152.00	153.00	0.0320

Hole Number: **NH19-011**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N64508	153.00	154.00	0.0160
N64509	154.00	155.00	0.0260
N64511	155.00	156.00	0.1650
N64512	156.00	157.00	0.0130
N64513	157.00	157.75	0.0610
N64514	157.75	158.50	0.3760
N64515	158.50	159.50	0.0025
N64516	159.50	160.50	0.0025
N64517	160.50	161.50	0.0640
N64518	161.50	162.60	0.0570
N64519	162.60	163.60	0.0025
N64521	163.60	165.00	0.0025
N64522	165.00	166.50	0.0025
N64523	166.50	168.00	0.0080
N64524	176.10	176.80	0.0025
N64525	176.80	177.45	0.0025
N64526	177.45	178.55	0.0025
N64527	178.55	179.20	0.0025
N64528	179.20	180.00	0.0150
N64529	180.00	181.10	0.0270
N64531	181.10	181.95	0.1070
N64532	181.95	182.55	0.0050
N64533	182.55	183.55	0.0540
N64534	183.55	184.70	0.0025
N64535	184.70	185.90	0.0025
N64536	185.90	187.40	0.0025
N64537	187.40	188.90	0.0025
N64538	188.90	190.40	0.0025
N64539	190.40	191.90	0.0025
N64541	191.90	193.40	0.0025
N64542	193.40	194.10	0.0025
N64543	194.10	195.50	0.0140
N64544	195.50	196.60	0.0025
N64545	196.60	197.30	0.0025
N64546	197.30	198.00	0.0025
N64547	198.00	199.50	0.0025
N64548	199.50	201.00	0.0050
N64549	201.00	202.00	0.1250
N64551	202.00	203.05	0.0025

Hole Number: **NH19-011**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N64552	203.05	204.00	0.0025
N64553	204.00	205.50	0.0080
N64554	205.50	207.00	0.0025
N64555	207.00	208.50	0.0025
N64556	208.50	209.35	0.0025
N64557	209.35	210.35	0.0130
N64558	210.35	211.15	0.0060
N64559	211.15	211.65	0.0025
N64561	211.65	213.00	0.0025
N64562	213.00	214.50	0.0025
N64563	214.50	216.00	0.0025
N64564	216.00	217.00	0.0025
N64565	217.00	217.95	0.0140
N64566	217.95	219.00	0.0025
N64567	230.40	231.40	0.0025
N64568	231.40	232.30	0.0025
N64569	232.30	233.30	0.0025
N64571	233.30	234.30	0.0180
N64572	234.30	235.30	0.0025
N64573	235.30	236.30	0.0025
N64574	236.30	237.30	0.0025
N64575	237.30	238.30	0.0025
N64576	238.30	239.30	0.0060
N64577	239.30	240.00	0.0025
N64578	240.00	240.90	0.0025
N64579	264.00	265.40	0.0300
N64581	265.40	266.40	0.2230
N64582	266.40	267.40	0.0270
N64583	267.40	268.40	0.2900
N64584	268.40	269.35	0.0790
N64585	269.35	270.50	0.0540
N64586	270.50	271.40	0.0250
N64587	271.40	272.40	0.0090
N64588	272.40	273.40	0.0025
N64589	273.40	274.25	0.0025
N64591	275.55	276.00	0.0270
N64592	276.00	277.00	0.2010
N64593	277.00	278.00	0.0180
N64594	278.00	279.00	0.0290

Hole Number: **NH19-011**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N64595	279.00	280.00	0.2270
N64596	280.00	281.50	0.0610
N64597	281.50	282.50	0.0170

DETAILED LOG



Hole Number: **NH19-013**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5374141.00	North:	Collar Az: 320.30
Location: Macklem Township	East: 507844.16	East:	Length: 450.00
	Elev: 285.50	Elev:	Start Depth: 0.00
Date Started: Jan 30, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Feb 10, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 450.00

Comments: Casing at 39.6m

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	320.30	-50.00	APS	OK		57.00	318.10	-51.70	EZ Sho	OK	Pulled back 6m
153.00	323.30	-52.00	EZ Sho	OK	Pulled back 7m	204.00	326.70	-52.20	EZ Sho	OK	Pulled back 6m
255.00	329.20	-51.40	EZ Sho	OK	Pulled back 7m	306.00	331.70	-50.20	EZ Sho	OK	Pulled back 6m
357.00	333.10	-49.00	EZ Sho	OK	Pulled back 6m	408.00	335.40	-47.00	EZ Sho	OK	Pulled back 6m
450.00	336.90	-44.90	EZ Sho	OK	Pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	39.60	HPO, OVERBURDEN					
39.60	73.60	VMM, MAFIC VOLCANIC MASSIVE Green grey mafic rock that is fine grained appearance. Experiencing faulting and gouging which is described in the minor and structures tab. Erratic QC gashes throughout as stockwork veining. Patchy carbonate alteration prior to the lower contact from 71.4-72m that is associated with increased sulphides (~10-12% dissem, blebby and fracture fill pyrite). ~7-10% QVC MINOR INTERVALS: Minor Interval: 48.40 - 49.80 ZGO, GOUGE Minor Interval: 71.20 - 71.40 ZGO, GOUGE Minor Interval: 72.30 - 72.90 ZGO, GOUGE	N76001	69.40	70.40	1.00	0.09
			N76002	70.40	71.40	1.00	0.01
			N76003	71.40	72.00	0.60	0.01
			N76004	72.00	73.00	1.00	0.01
			N76005	73.00	73.60	0.60	0.01

Hole Number: **NH19-013**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
73.60	148.30	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with stockwork erratic veining, as well as instances of the pseudo-starry night appearance with the high angle gashes and QC blebs. Localized areas of shearing, where shear is variable TCA, ranging from high angle to ~45 degrees TCA, to instances of wormy shear that is at nearly parallel TCA. Patchy faulting and gouging throughout that is described in the minors and structures tabs. Patch of carbonate alteration from 73.6-74.2m that is associated with increased sulphides (~5% as disseminated and blebby). Sharp lower contact @high angle TCA. ~20% QVC as described</p> <p>MINOR INTERVALS: Minor Interval: 88.10 - 88.30 ZGO, GOUGE</p>	N76006	73.60	74.20	0.60	0.01
			N76007	74.20	75.20	1.00	0.01
			N76008	75.20	76.20	1.00	0.01
			N76009	146.40	147.40	1.00	0.03
			N76011	147.40	148.30	0.90	0.01
148.30	153.70	<p>ISO, SYENITIC INTRUSIVE</p> <p>Grey-green syenite interval with erratic and faded dark tourmaline tension gouging (sometimes giving a brecciated appearance to the core). Localized patches of ~5-7% sulphides as disseminated, blebby and clustered pyrite. Interval may be experiencing patchy weak carbonate alteration which may be the cause for the increased sulphide content. ~30cm vein flood prior to lower contact with yellow-tan colouration that may be experiencing sericite alteration (but is not associated with increased sulphides). Sharp lower contact @variable angles TCA. ~10-12% QVC as gashes and veinlets, with the occasional vein</p>	N76012	148.30	149.30	1.00	0.01
			N76013	149.30	150.30	1.00	0.01
			N76014	150.30	151.30	1.00	0.36
			N76015	151.30	152.30	1.00	0.02
			N76016	152.30	153.10	0.80	0.24
			N76017	153.10	153.70	0.60	0.22
153.70	155.30	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>See above VUM description (73.6-148.3m). Lacking the faulting/gouging of the above VUM interval. K-spar alteration sometimes seen to influence veining. Sharp lower contact, where angle is difficult to discern due to core fracturing/fragmentation. ~22% QVC</p>	N76018	153.70	154.50	0.80	0.08
			N76019	154.50	155.30	0.80	0.60
155.30	157.20	<p>ISO, SYENITIC INTRUSIVE</p> <p>Grey-green syenite interval with erratic and faded dark tourmaline tension gouging (sometimes giving a brecciated appearance to the core). Erratic QC gashes and veining can also give a brecciated appearance to the core. Localized patches of ~5-7% sulphides as disseminated and blebby pyrite. Interval is experiencing patchy carbonate and sericite alteration which is most likely the cause for the increased sulphide content. Sharp lower contact @variable angles TCA. ~12-15% QVC as gashes and veinlets</p>	N76021	155.30	156.10	0.80	2.24
			N76022	156.10	157.20	1.10	0.77

Hole Number: **NH19-013**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
157.20	212.20	VUM, MASSIVE ULTRAMAFIC See above VUM description (73.6-148.3m). Area lacking deformation/shearing/veining from ~162.9-168m (could be mafic dyke, but no sharp contacts recognized) that is associated with increased sulphide content as ~3% as cubic blebby and fracture fill pyrite. Patchy carbonate alteration from 209.1-209.4m that is associated with increased sulphide content as ~2% blebby pyrite. Otherwise the interval is experiencing the occasional pyrite bleb/cluster. Sharp lower contact where pervasive gouging begins. ~20% QVC	N76023	157.20	158.70	1.50	0.08
			N76024	158.70	160.20	1.50	0.01
			N76025	160.20	161.70	1.50	0.01
			N76026	161.70	162.90	1.20	0.01
			N76027	162.90	163.90	1.00	0.01
			N76028	163.90	165.10	1.20	0.01
			N76029	165.10	166.30	1.20	0.01
			N76031	166.30	167.10	0.80	0.01
			N76032	167.10	168.00	0.90	0.01
			N76033	168.00	169.50	1.50	0.01
			N76034	169.50	171.00	1.50	0.01
			N76035	171.00	172.50	1.50	0.01
			N76036	172.50	174.00	1.50	0.01
			N76037	174.00	175.30	1.30	0.01
			N76038	208.60	209.10	0.50	0.06
			N76039	209.10	209.60	0.50	0.05
			N76041	209.60	210.10	0.50	0.09
212.20	213.60	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Sharp lower contact where gouging ends					
213.60	224.70	VUM, MASSIVE ULTRAMAFIC See above VUM description (73.6-148.3m). Lacking the stockwork veining and increased deformation and pseudo starry-night texture in this case. Shearing is again localized, but typically at high angle to ~45 degrees TCA in this case. Sharp lower contact, where angle is difficult to discern due to core fracturing/fragmentation. ~22-25% QVC with 30cm vein from 214.5-214.7m and 40cm vein flood from 222.7-223.1m.	N76042	214.00	214.50	0.50	0.48
			N76043	214.50	215.00	0.50	0.45
			N76044	215.00	215.50	0.50	0.03
			N76045	222.20	222.70	0.50	3.09
			N76046	222.70	223.20	0.50	0.09
			N76047	223.20	223.70	0.50	0.08
224.70	225.70	IMD, MAFIC DYKE Dark grey mafic dyke that is lacking magnetism. Erratic and faded dark tourmaline tension gouging and erratic QC gashes throughout. Sharp lower contact where angle is difficult to discern due to core fracturing/fragmentation. ~3% QVC					
225.70	234.00	VUM, MASSIVE ULTRAMAFIC See above VUM description (73.6-148.3m). Entire interval appears to be faulted, with gouging and core fracturing/fragmentation throughout. Lower contact is difficult to discern due to faulting ~20% QVC with 15cm vein from 230.65-230.8m and 20cm vein from 233.1-233.3m.	N76048	229.90	230.40	0.50	0.02
			N76049	230.40	230.90	0.50	0.70
			N76051	230.90	231.40	0.50	1.02
			N76052	231.40	232.40	1.00	0.17
			N76053	232.40	233.00	0.60	0.08
			N76054	233.00	233.50	0.50	1.85
			N76055	233.50	234.00	0.50	0.16

Hole Number: **NH19-013**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
234.00	238.10	VMM, MAFIC VOLCANIC MASSIVE Grey-green mafic interval that appears to be experiencing weak albite alteration giving a light blue tinge to the core and is also experiencing sericite +/- carbonate alteration halos. Localized areas of sulphides as disseminations, fracture fill and blebby pyrite. Up to ~7% disseminated pyrite seen. Patches of core fracturing/fragmentation throughout that are probably part of a fault zone. Area from 237.2-237.5m and 237.8-238.1m that appears to be experiencing pervasive carbonate alteration, weak patchy sericite and possibly epidote or fuchsite alteration as there is a green tinge to the core. Sharp lower contact, where angle is difficult to discern due to core fracturing/fragmentation. ~10-12% QVC	N76056	234.00	235.20	1.20	0.17
			N76057	235.20	236.40	1.20	0.32
			N76058	236.40	236.90	0.50	0.17
			N76059	236.90	237.50	0.60	0.03
			N76061	237.50	238.10	0.60	0.14
238.10	257.70	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with mm scale QC blebs and porphyroblast-like texture with angular to sub-rounded black clasts that are typically cm in scale until ~248.7m. Following which the interval has stockwork veining with occasional localized areas of shearing, where shear varies from high angle to ~45 degrees TCA. Occasional faulting/gouge present (see structures tab). Gradual lower contact over ~50cm where alteration comes in. ~20-22% QVC as described.	N76062	238.10	238.70	0.60	0.03
			N76063	256.50	257.10	0.60	0.01
			N76064	257.10	257.70	0.60	0.03
257.70	272.50	AEC, SERICITE CARBONATE ALTERED ROCK Light yellow sericite-carbonate altered ultramafics. Strong deformation and associated shearing, where shear is typically high angle (>70 degrees) TCA with instances of wormy shear at nearly parallel TCA until 259.9m. Following which the strong deformation and shear is no longer present and interval shows QC blebs with some erratic stockwork tension gouging/veining. Where sericite alteration is lacking, the interval resembles typical VUM. Overall lacking significant sulphides, but occasional pyrite blebs are recognized. Sharp lower contact @high angle TCA. ~18% QVC	N76065	257.70	258.80	1.10	0.11
			N76066	258.80	259.90	1.10	0.01
			N76067	259.90	260.60	0.70	0.00
			N76068	260.60	261.80	1.20	0.00
			N76069	261.80	263.00	1.20	0.01
			N76071	263.00	264.20	1.20	0.03
			N76072	264.20	265.40	1.20	0.01
			N76073	265.40	266.60	1.20	0.01
			N76074	266.60	267.80	1.20	0.00
			N76075	267.80	269.00	1.20	0.00
			N76076	269.00	270.20	1.20	0.10
			N76077	270.20	271.40	1.20	0.04
			N76078	271.40	272.50	1.10	0.12
272.50	274.20	ACO, CARBONATE ALTERED ROCK Moderate-strongly deformed grey carbonate altered ultramafics with patchy weak sericite alteration. Some associated shearing is present, and when noticed it is typically at ~45 degrees TCA. Dark tourmaline tension gouging can mimic shear, but is also erratic in nature and sometimes gives a brecciated appearance to the core. Overall insignificant sulphides, but occasional areas of disseminated pyrite are recognized. Sharp lower contact @variable angles TCA. ~15-18% QVC	N76079	272.50	273.40	0.90	0.01
			N76081	273.40	274.20	0.80	0.00

Hole Number: **NH19-013**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
274.20	297.70	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a pseudo-starry night appearance with the light grey-milky high angle QC gashes as well as smeared blebs. Localized areas of shearing, and when seen, shear is typically high angle to ~45 degrees TCA. Areas of faulting/gouge throughout (described in structures tab). Patch of albite +carb alteration from 277-277.7m that is associated with increased sulphides (~7% as disseminated and blebby pyrite). Patch of hematite alteration from 285.9-286.4m that is associated with ~5% sulphides as disseminated and blebby pyrite.</p> <p>Sharp lower contact @variable angles TCA ~22% QVC as described. Larger vein flood within the hematite altered area from 285.9-286.4m</p>	N76082	274.20	275.70	1.50	0.01
			N76083	275.70	277.00	1.30	0.03
			N76084	277.00	277.70	0.70	0.40
			N76085	277.70	278.70	1.00	0.02
			N76086	278.70	279.70	1.00	0.00
			N76087	285.40	285.90	0.50	0.41
			N76088	285.90	286.40	0.50	0.36
			N76089	286.40	287.10	0.70	0.01
297.70	300.60	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics, but lacking the starry night texture seen above. Overall insignificant deformation and shearing. QC blebs seen throughout with occasional veining. Patchy sericite and albite+carb alteration from 300-300.6m. Gradual lower contact over ~15cm where ISO fragments are seen within the VUM ~5-7% QVC</p>	N76091	298.60	299.60	1.00	0.01
			N76092	299.60	300.60	1.00	0.03
300.60	306.00	<p>ISO, SYENITIC INTRUSIVE</p> <p>Grey-green syenite interval experiencing patchy sericite and albite+carb alteration (probably originating as alteration halos). Alteration is associated with ~5-7% sulphides throughout. Erratic, faded and sometimes truncated in appearance dark tourmaline tension gouging (sometimes giving a brecciated appearance to the core). Sharp lower contact @high angle TCA. ~5-7% QVC</p>	N76093	300.60	301.80	1.20	0.18
			N76094	301.80	303.00	1.20	0.44
			N76095	303.00	304.20	1.20	1.11
			N76096	304.20	305.20	1.00	0.32
			N76097	305.20	306.00	0.80	0.00

DETAILED LOG

Hole Number: **NH19-013**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
306.00	338.90	VUM, MASSIVE ULTRAMAFIC See above VUM interval (297.7-300.6m). Patchy sericite and maybe epidote or fuchsite alteration from 309.3-318.3m giving a light yellow-green tinge to the core and is associated with patches of ~2-3% blebby and dissem pyrite. Patches of albite+carb alteration from 322.7-323.4m and 330-330.8m, but don't show significant sulphides. Sharp lower contact @variable angles TCA. ~12% QVC with 20cm veins from 313.2-313.4m and 313.9-314.1m	N76098	306.00	307.50	1.50	0.01
			N76099	307.50	308.50	1.00	0.00
			N76101	308.50	309.30	0.80	0.00
			N76102	309.30	310.50	1.20	0.00
			N76103	310.50	311.70	1.20	0.00
			N76104	311.70	312.40	0.70	0.00
			N76105	312.40	313.10	0.70	0.00
			N76106	313.10	313.60	0.50	0.03
			N76107	313.60	314.10	0.50	0.03
			N76108	314.10	315.30	1.20	0.02
			N76109	315.30	316.50	1.20	0.06
			N76111	316.50	317.50	1.00	0.10
			N76112	317.50	318.30	0.80	0.67
			N76113	318.30	319.80	1.50	0.01
			N76114	319.80	321.30	1.50	0.01
			N76115	321.30	322.70	1.40	0.01
			N76116	322.70	323.40	0.70	0.02
			N76117	323.40	324.90	1.50	0.05
			N76118	324.90	326.40	1.50	0.01
			N76119	326.40	327.90	1.50	0.01
			N76121	327.90	329.00	1.10	0.01
			N76122	329.00	330.00	1.00	0.01
			N76123	330.00	330.80	0.80	0.00
			N76124	330.80	332.30	1.50	0.06
			N76125	332.30	333.30	1.00	0.07
			N65351	333.30	334.00	0.70	0.01
			N65352	334.00	335.00	1.00	0.02
			N65353	335.00	336.00	1.00	0.96
			N65354	336.00	337.00	1.00	0.25
			N65355	337.00	337.90	0.90	0.49
			N76126	337.90	338.90	1.00	0.04

Hole Number: **NH19-013**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
338.90	349.80	ISO, SYENITIC INTRUSIVE *Vg seen at ~344.15m Albite, silica and epidote altered syenite interval. Albite + silica alteration dominate from upper contact to ~344.6m that are believed to be sourced as alteration halos. This alteration is associated with increased fractured dark tourmaline tension gouging and ~5-7% sulphides, typically as dissem pyrite. QC flooding also seen from 339.7-340.3m. From 344.6m to lower contact is primarily epidote + silica alteration which fades gradually towards lower contact, where primarily syenite textures can then be seen. Tension gouging is present in this portion, but not as strong. Sulphide content is patchier, with localized patches up to ~10% as dissem, blebby and fracture fill pyrite. Altered phenocrysts are seen throughout which become poikioblastic porphoblasts. Sharp lower contact @variable angles TCA. ~10% QVC	N76127	338.90	339.70	0.80	0.04
			N76128	339.70	340.30	0.60	0.04
			N76129	340.30	341.30	1.00	0.05
			N76131	341.30	342.30	1.00	0.02
			N76132	342.30	343.30	1.00	0.04
			N76133	343.30	344.00	0.70	0.06
			N76134	344.00	344.50	0.50	0.02
			N76135	344.50	345.50	1.00	0.13
			N76136	345.50	346.50	1.00	0.02
			N76137	346.50	347.50	1.00	0.03
			N76138	347.50	348.50	1.00	0.02
			N76139	348.50	349.20	0.70	0.03
			N76141	349.20	349.80	0.60	0.03
349.80	450.00	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with significant gouging throughout (see structures tab). Experiencing patchy albite alteration from ~371.6- 375.3m and ~414-423.6m giving a light blue tinge to the core. Patchy weak fuchsite alteration is also recognized, starting after ~405.3m. Spinifex texture is present from 386.2-388.7m and 402.4-403.5m. Silver mica minerals typically seen within the gouged areas. Localized areas of pyrite clusters (were spot sampled). ~18% QVC where veining can be oriented at high angle TCA, or areas of erratic stockwork type veining are also present. EOH	N76142	349.80	350.80	1.00	0.02
			N65356	350.80	352.30	1.50	0.02
			N65357	352.30	353.50	1.20	0.01
			N65358	353.50	354.60	1.10	0.14
			N76143	368.40	369.00	0.60	0.01
			N76144	369.00	369.60	0.60	0.01
			N76145	369.60	370.20	0.60	0.01
			N76146	404.30	405.30	1.00	0.00
			N76147	405.30	406.30	1.00	0.07
			N76148	406.30	407.10	0.80	0.04
			N76149	407.10	408.00	0.90	0.00
			N76151	408.00	408.60	0.60	0.01
			N76152	408.60	409.40	0.80	0.02
			N76153	413.00	414.00	1.00	0.03
			N76154	414.00	415.50	1.50	0.01
			N76155	415.50	417.00	1.50	0.00
			N76156	417.00	418.50	1.50	0.01
			N76157	418.50	420.00	1.50	0.34
			N76158	420.00	421.50	1.50	0.01
			N76159	421.50	422.50	1.00	0.01
		N76161	422.50	423.60	1.10	0.00	
		N76162	423.60	424.60	1.00	0.01	

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N76001	69.40	70.40	0.0900
N76002	70.40	71.40	0.0100

Hole Number: **NH19-013**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76003	71.40	72.00	0.0050
N76004	72.00	73.00	0.0100
N76005	73.00	73.60	0.0100
N76006	73.60	74.20	0.0050
N76007	74.20	75.20	0.0050
N76008	75.20	76.20	0.0050
N76009	146.40	147.40	0.0300
N76011	147.40	148.30	0.0050
N76012	148.30	149.30	0.0050
N76013	149.30	150.30	0.0050
N76014	150.30	151.30	0.3600
N76015	151.30	152.30	0.0200
N76016	152.30	153.10	0.2400
N76017	153.10	153.70	0.2200
N76018	153.70	154.50	0.0800
N76019	154.50	155.30	0.6000
N76021	155.30	156.10	2.2400
N76022	156.10	157.20	0.7700
N76023	157.20	158.70	0.0800
N76024	158.70	160.20	0.0050
N76025	160.20	161.70	0.0050
N76026	161.70	162.90	0.0050
N76027	162.90	163.90	0.0100
N76028	163.90	165.10	0.0050
N76029	165.10	166.30	0.0050
N76031	166.30	167.10	0.0050
N76032	167.10	168.00	0.0050
N76033	168.00	169.50	0.0050
N76034	169.50	171.00	0.0050
N76035	171.00	172.50	0.0050
N76036	172.50	174.00	0.0050
N76037	174.00	175.30	0.0050
N76038	208.60	209.10	0.0600
N76039	209.10	209.60	0.0500
N76041	209.60	210.10	0.0900
N76042	214.00	214.50	0.4800
N76043	214.50	215.00	0.4500
N76044	215.00	215.50	0.0300
N76045	222.20	222.70	3.0900

Hole Number: **NH19-013**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76046	222.70	223.20	0.0900
N76047	223.20	223.70	0.0800
N76048	229.90	230.40	0.0200
N76049	230.40	230.90	0.7000
N76051	230.90	231.40	1.0200
N76052	231.40	232.40	0.1700
N76053	232.40	233.00	0.0800
N76054	233.00	233.50	1.8500
N76055	233.50	234.00	0.1600
N76056	234.00	235.20	0.1700
N76057	235.20	236.40	0.3200
N76058	236.40	236.90	0.1700
N76059	236.90	237.50	0.0300
N76061	237.50	238.10	0.1380
N76062	238.10	238.70	0.0340
N76063	256.50	257.10	0.0080
N76064	257.10	257.70	0.0290
N76065	257.70	258.80	0.1070
N76066	258.80	259.90	0.0060
N76067	259.90	260.60	0.0025
N76068	260.60	261.80	0.0025
N76069	261.80	263.00	0.0140
N76071	263.00	264.20	0.0250
N76072	264.20	265.40	0.0090
N76073	265.40	266.60	0.0070
N76074	266.60	267.80	0.0025
N76075	267.80	269.00	0.0025
N76076	269.00	270.20	0.1030
N76077	270.20	271.40	0.0410
N76078	271.40	272.50	0.1220
N76079	272.50	273.40	0.0070
N76081	273.40	274.20	0.0025
N76082	274.20	275.70	0.0060
N76083	275.70	277.00	0.0280
N76084	277.00	277.70	0.3980
N76085	277.70	278.70	0.0170
N76086	278.70	279.70	0.0025
N76087	285.40	285.90	0.4080
N76088	285.90	286.40	0.3560

Hole Number: **NH19-013**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76089	286.40	287.10	0.0130
N76091	298.60	299.60	0.0060
N76092	299.60	300.60	0.0330
N76093	300.60	301.80	0.1800
N76094	301.80	303.00	0.4410
N76095	303.00	304.20	1.1070
N76096	304.20	305.20	0.3220
N76097	305.20	306.00	0.0025
N76098	306.00	307.50	0.0090
N76099	307.50	308.50	0.0025
N76101	308.50	309.30	0.0025
N76102	309.30	310.50	0.0025
N76103	310.50	311.70	0.0025
N76104	311.70	312.40	0.0025
N76105	312.40	313.10	0.0025
N76106	313.10	313.60	0.0300
N76107	313.60	314.10	0.0310
N76108	314.10	315.30	0.0150
N76109	315.30	316.50	0.0570
N76111	316.50	317.50	0.0970
N76112	317.50	318.30	0.6730
N76113	318.30	319.80	0.0060
N76114	319.80	321.30	0.0130
N76115	321.30	322.70	0.0070
N76116	322.70	323.40	0.0160
N76117	323.40	324.90	0.0500
N76118	324.90	326.40	0.0080
N76119	326.40	327.90	0.0080
N76121	327.90	329.00	0.0060
N76122	329.00	330.00	0.0080
N76123	330.00	330.80	0.0025
N76124	330.80	332.30	0.0620
N76125	332.30	333.30	0.0670
N65351	333.30	334.00	0.0130
N65352	334.00	335.00	0.0160
N65353	335.00	336.00	0.9600
N65354	336.00	337.00	0.2490
N65355	337.00	337.90	0.4880
N76126	337.90	338.90	0.0400

Hole Number: **NH19-013**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76127	338.90	339.70	0.0400
N76128	339.70	340.30	0.0400
N76129	340.30	341.30	0.0500
N76131	341.30	342.30	0.0200
N76132	342.30	343.30	0.0400
N76133	343.30	344.00	0.0600
N76134	344.00	344.50	0.0200
N76135	344.50	345.50	0.1300
N76136	345.50	346.50	0.0200
N76137	346.50	347.50	0.0300
N76138	347.50	348.50	0.0200
N76139	348.50	349.20	0.0300
N76141	349.20	349.80	0.0300
N76142	349.80	350.80	0.0200
N65356	350.80	352.30	0.0160
N65357	352.30	353.50	0.0060
N65358	353.50	354.60	0.1370
N76143	368.40	369.00	0.0060
N76144	369.00	369.60	0.0090
N76145	369.60	370.20	0.0080
N76146	404.30	405.30	0.0025
N76147	405.30	406.30	0.0680
N76148	406.30	407.10	0.0420
N76149	407.10	408.00	0.0025
N76151	408.00	408.60	0.0100
N76152	408.60	409.40	0.0170
N76153	413.00	414.00	0.0290
N76154	414.00	415.50	0.0050
N76155	415.50	417.00	0.0025
N76156	417.00	418.50	0.0130
N76157	418.50	420.00	0.3380
N76158	420.00	421.50	0.0070
N76159	421.50	422.50	0.0050
N76161	422.50	423.60	0.0025
N76162	423.60	424.60	0.0060

DETAILED LOG



Hole Number: **NH19-014**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5375190.00	North:	Collar Az: 350.00
Location: Macklem Township	East: 512095.60	East:	Length: 651.00
	Elev: 294.20	Elev:	Start Depth: 0.00
Date Started: Feb 11, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Feb 27, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 651.00

Comments: Casing at 64.2m

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	350.30	-55.00	APS	OK		75.00	347.60	-57.70	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m
126.00	347.30	-57.00	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m	177.00	353.90	-56.00	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m
228.00	356.50	-55.00	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m	279.00	0.70	-54.40	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m
330.00	4.90	-53.40	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m	381.00	4.30	-52.70	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m
432.00	6.60	-51.80	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m	483.00	8.50	-50.60	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m
534.00	7.40	-50.20	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m	585.00	51.80	-49.70	EZ Sho	DO	Azimuth corrected by -11.4, pulled back 6m
636.00	342.10	-50.10	EZ Sho	DO	Azimuth corrected by -11.4, pulled back 6m	651.00	16.10	-48.80	EZ Sho	OK	Azimuth corrected by -11.4, pulled back 6m

Detailed Lithology

From		To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00		64.20	HPO, OVERBURDEN					

Hole Number: **NH19-014**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
64.20	350.95	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Green-grey medium/coarse with patchy fine grained mafic rock with dark blebs in the background giving a 'salt and pepper' appearance to the core. Leucoxene strong throughout, Patchy epidote alteration and epidote also seen to be weakly influencing the occasional vein within patchy pillow salvages, and patchy varioles. Pervasive sporadic small mafic dykes. Interval becomes more bleached in appearance and appears to begin gradually and is more significant at ~171m and is most likely epidote +/- carb alteration. Sulphide content is insignificant, but pyrite blebs are recognized throughout.</p> <p>Flow breccias from 317.5 to 319.5m with epidote/carb</p> <p>LC is gradual as varioles start to increase, and becoming vfg and dark green. ~3% QVC as gashes/veinlets</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 117.70 - 118.20 IMD, MAFIC DYKE</p> <p>Minor Interval: 119.60 - 120.50 IMD, MAFIC DYKE</p> <p>Minor Interval: 122.90 - 123.50 IMD, MAFIC DYKE</p> <p>Minor Interval: 124.20 - 124.25 IMD, MAFIC DYKE</p> <p>Minor Interval: 125.10 - 125.40 IMD, MAFIC DYKE</p> <p>Minor Interval: 170.30 - 170.70 IMD, MAFIC DYKE</p> <p>Minor Interval: 261.40 - 261.70 IMD, MAFIC DYKE</p>					
350.95	473.30	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>VIPOND formation</p> <p>Massive green with patchy greenish grey mafic rock, aphanitic, Lacking any significant alteration, veining, or sulphides throughout. Pervasive pillow salvages/flow breccia spaced ~1m to 1.5m infilled carb/calcite with pinkish tinge. Sulphides clustered within at trace to 1%. Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. Varioles ranging in size ~mm to 1cm. LC is sharp at 90 dTCA</p> <p>Overall ~3-5 % veining as erratic gashes to stringers.</p> <p>Trace sulphides.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 472.80 - 473.30 IMO, MAFIC INTUSIVE</p> <p>Blackish grey with weak reddish/purple (hematite), small black phenocrysts, weak carb alteration, sulphides ~1%</p>	1678001	471.80	472.80	1.00	0.15
			1678002	472.80	473.30	0.50	0.04

Hole Number: **NH19-014**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
473.30	532.70	IP2, FELDSPAR & QUARTZ PORPHYRY Cloudy white extensive QC with white plag feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Patchy alterations may include moderate carbonate+ strong silicification, and patchy albite+sericite. Weak-moderate tension gouging throughout resulting in wavy erratic dark gashes (tourmaline occasionally filled with chlorite) that weave remnant phenocrysts/QC eyes; associated with very weak high angle shear. Small patchy variolitic lens ~5cm scattered, 502.5-503.1 Lacking alteration greyish green with Qc eyes Milky white veins/veinlets generally trending 30 to 40 degrees TCA spaced Overall ~2-3% vfg dissem, reaching 4-6% fracture controlled pyrite. Gradual lower contact over a few cm where pervasive veining fades. VG @ 485.68m along vein margin (Vein goes from 485.4m to 485.8m) Starting 519m becoming more chloritic. From 530.1m to 531m intercollated mafic intrusions and IP2 with high tensional hairline strings erratically with sulphides within. Possible VG @ 530.6 MINOR INTERVALS: Minor Interval: 525.00 - 525.50 IMO, MAFIC INTUSIVE Greenish yellow, carb altered, slightly bleached, Sharp contacts at 90 degrees TCA. Minor Interval: 531.80 - 532.10 IMO, MAFIC INTUSIVE Similar textures and qualities as 525.0 to 525.5	1678003	473.30	474.15	0.85	0.23
			1678004	474.15	475.30	1.15	0.08
			1678005	475.30	476.40	1.10	0.14
			1678006	476.40	477.80	1.40	0.22
			1678007	477.80	479.20	1.40	2.67
			1678008	479.20	480.00	0.80	0.46
			1678009	480.00	481.00	1.00	0.21
			1678011	481.00	481.80	0.80	0.70
			1678012	481.80	483.00	1.20	0.07
			1678013	483.00	484.50	1.50	0.05
			1678014	484.50	485.25	0.75	0.41
			1678015	485.25	486.10	0.85	4.49
			1678016	486.10	487.60	1.50	0.40
			1678017	487.60	488.70	1.10	0.30
			1678018	488.70	489.60	0.90	0.42
			1678019	489.60	491.10	1.50	0.60
			1678021	491.10	492.60	1.50	0.17
			1678022	492.60	493.60	1.00	0.15
			1678023	493.60	494.60	1.00	0.23
			1678024	494.60	495.80	1.20	0.20
			1678025	495.80	496.80	1.00	0.33
			1678026	496.80	498.00	1.20	0.12
			1678027	498.00	498.50	0.50	0.32
			1678028	498.50	500.00	1.50	0.22
			1678029	500.00	501.50	1.50	0.63
			1678031	501.50	502.50	1.00	0.56
			1678032	502.50	503.10	0.60	0.05
			1678033	503.10	504.10	1.00	0.24
			1678034	504.10	504.80	0.70	0.96
			1678035	504.80	505.85	1.05	1.60
			1678036	505.85	507.00	1.15	0.56
			1678037	507.00	508.30	1.30	2.55
			1678038	508.30	509.05	0.75	0.69
			1678039	509.05	510.50	1.45	0.75
			1678041	510.50	511.50	1.00	0.27
			1678042	511.50	512.50	1.00	0.11
			1678043	512.50	514.00	1.50	0.31
			1678044	514.00	515.00	1.00	0.39
			1678045	515.00	516.00	1.00	0.58
			1678046	516.00	517.00	1.00	0.42
			1678047	517.00	518.50	1.50	0.24
			1678048	518.50	519.50	1.00	0.82

DETAILED LOG

Hole Number: **NH19-014**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1678049	519.50	521.00	1.50	0.37
			1678051	521.00	522.50	1.50	0.05
			1678052	522.50	524.00	1.50	0.05
			1678053	524.00	525.00	1.00	0.10
			1678054	525.00	525.50	0.50	0.01
			1678055	525.50	527.00	1.50	0.71
			1678056	527.00	528.00	1.00	0.16
			1678057	528.00	529.20	1.20	0.08
			1678058	529.20	530.10	0.90	0.17
			1678059	530.10	531.00	0.90	0.10
			1678061	531.00	531.80	0.80	0.31
			1678062	531.80	532.70	0.90	0.02
532.70	540.45	IMO, MAFIC INTUSIVE Black to dark grey, with blebby carb blebs, QC veinlets trace to 5% behaving erratically and patchy, patchy disseminated sulphides at 1-2% mg-cg, small lens of ~5cm Variolitic lens, with clasts visible. LC is sharp at 90 degrees TCA	1678063	532.70	534.00	1.30	0.01
			1678064	534.00	535.50	1.50	0.01
			1678065	535.50	537.00	1.50	0.01
			1678066	537.00	538.50	1.50	0.01
			1678067	538.50	539.80	1.30	0.01
			1678068	539.80	540.45	0.65	0.01
540.45	551.35	VMP, VOLCANIC MASSIVE PILLOWED Green to light green, mottled with weak breccia, predominately pillow salvages, bleached,, epidote influenced veinlets, sheared with orientation 80 to 90 degrees TCA, patchy sericitic and silicification, Sulphides are disseminated at 1-2%, LC is irregular at ~60 degrees. MINOR INTERVALS: Minor Interval: 542.30 - 542.75 AQE, SILICA SERICITE ALTERED ROCK Brownish yellow, vitreous, strong tourmaline(chlorite?) weaving throughout giving pseudo breccia texture, sulphides overall at 1-2% with clustered in fracture fills, Sharp UC at 60 degrees while LC is at 40 degrees TCA.	1678069	540.45	541.30	0.85	0.01
			1678071	541.30	542.30	1.00	0.01
			1678072	542.30	542.80	0.50	0.01
			1678073	542.80	544.10	1.30	0.01
			1678074	544.10	545.50	1.40	0.01
			1678075	545.50	547.00	1.50	0.01
			1678076	547.00	548.50	1.50	0.01
			1678077	548.50	550.00	1.50	0.01
			1678078	550.00	551.35	1.35	0.01
551.35	587.20	IUO, ULTRAMAFIC INTRUSIVE Dark black patchy purple tinge (hematite), massive, strongly magnetic, chloritic influenced veinlets patchy throughout, Strong QC erratic tensional stringers and veinlets at 5-10% increasing to 20-25% starting at 582m, larger veins a ranging 30 to 50 degrees. LC is sharp at 90 degrees TCA. Trace sulphides. Fracture surfaces with thin calcitic film, vfg irredesant metallic mineral scattered throughout (tarnished pyrite? bornite?) MINOR INTERVALS: Minor Interval: 579.70 - 580.90 IUO, ULTRAMAFIC INTRUSIVE Ultramafic intursion with the ultramafic, lacking veining, sporadic pervasive veinlets/ gashes infilled with drozy metallic mineral (pyrrhotite)	1678079	551.35	552.80	1.45	0.01
			1678081	559.00	560.00	1.00	0.01
			1678082	560.00	561.00	1.00	0.01
			1678083	561.00	562.00	1.00	0.01
			1678084	576.00	577.00	1.00	0.01
			1678085	577.00	578.50	1.50	0.03
			1678086	578.50	579.50	1.00	0.01
			1678087	579.50	581.00	1.50	0.01
			1678088	581.00	582.50	1.50	0.01
			1678089	582.50	584.00	1.50	0.01
			1678091	584.00	585.00	1.00	0.01

DETAILED LOG

Hole Number: **NH19-014**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
587.20	651.00	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically high angle 80 degrees TCA, patchy undulating and weaving. Pervasive patchy core fracturing and fragmentation. ~ 20-25% QC as described. ♂Trace coarse sulphides.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 587.20 - 587.75 ZGO, GOUGE intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides. sharp contacted perpendicular TCA</p> <p>Minor Interval: 588.00 - 588.50 ZGO, GOUGE intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides.</p>					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678001	471.80	472.80	0.1500
1678002	472.80	473.30	0.0400
1678003	473.30	474.15	0.2300
1678004	474.15	475.30	0.0800
1678005	475.30	476.40	0.1400
1678006	476.40	477.80	0.2200
1678007	477.80	479.20	2.6700
1678008	479.20	480.00	0.4600
1678009	480.00	481.00	0.2100
1678011	481.00	481.80	0.7000
1678012	481.80	483.00	0.0700
1678013	483.00	484.50	0.0500
1678014	484.50	485.25	0.4100
1678015	485.25	486.10	4.4900
1678016	486.10	487.60	0.4000
1678017	487.60	488.70	0.3000
1678018	488.70	489.60	0.4200
1678019	489.60	491.10	0.6000
1678021	491.10	492.60	0.1700
1678022	492.60	493.60	0.1500

Hole Number: **NH19-014**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678023	493.60	494.60	0.2300
1678024	494.60	495.80	0.2000
1678025	495.80	496.80	0.3300
1678026	496.80	498.00	0.1200
1678027	498.00	498.50	0.3200
1678028	498.50	500.00	0.2200
1678029	500.00	501.50	0.6300
1678031	501.50	502.50	0.5600
1678032	502.50	503.10	0.0500
1678033	503.10	504.10	0.2400
1678034	504.10	504.80	0.9600
1678035	504.80	505.85	1.6000
1678036	505.85	507.00	0.5600
1678037	507.00	508.30	2.5500
1678038	508.30	509.05	0.6900
1678039	509.05	510.50	0.7500
1678041	510.50	511.50	0.2700
1678042	511.50	512.50	0.1100
1678043	512.50	514.00	0.3100
1678044	514.00	515.00	0.3900
1678045	515.00	516.00	0.5800
1678046	516.00	517.00	0.4200
1678047	517.00	518.50	0.2400
1678048	518.50	519.50	0.8200
1678049	519.50	521.00	0.3700
1678051	521.00	522.50	0.0500
1678052	522.50	524.00	0.0500
1678053	524.00	525.00	0.1000
1678054	525.00	525.50	0.0050
1678055	525.50	527.00	0.7100
1678056	527.00	528.00	0.1600
1678057	528.00	529.20	0.0800
1678058	529.20	530.10	0.1700
1678059	530.10	531.00	0.1000
1678061	531.00	531.80	0.3100
1678062	531.80	532.70	0.0200
1678063	532.70	534.00	0.0050
1678064	534.00	535.50	0.0050
1678065	535.50	537.00	0.0050

Hole Number: **NH19-014**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678066	537.00	538.50	0.0050
1678067	538.50	539.80	0.0050
1678068	539.80	540.45	0.0050
1678069	540.45	541.30	0.0050
1678071	541.30	542.30	0.0050
1678072	542.30	542.80	0.0050
1678073	542.80	544.10	0.0050
1678074	544.10	545.50	0.0050
1678075	545.50	547.00	0.0050
1678076	547.00	548.50	0.0100
1678077	548.50	550.00	0.0050
1678078	550.00	551.35	0.0100
1678079	551.35	552.80	0.0050
1678081	559.00	560.00	0.0050
1678082	560.00	561.00	0.0050
1678083	561.00	562.00	0.0100
1678084	576.00	577.00	0.0050
1678085	577.00	578.50	0.0300
1678086	578.50	579.50	0.0050
1678087	579.50	581.00	0.0050
1678088	581.00	582.50	0.0050
1678089	582.50	584.00	0.0050
1678091	584.00	585.00	0.0050

DETAILED LOG



Hole Number: **NH19-015**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5375191.00	North:	Collar Az: 10.20
Location: Macklem Township	East: 512095.70	East:	Length: 648.00
	Elev: 293.10	Elev:	Start Depth: 0.00
Date Started: Mar 04, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Mar 18, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 648.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.20	-55.00	APS	OK		75.00	11.30	-55.30	EZ Sho	OK	Pulled back 6m
126.00	15.90	-54.80	EZ Sho	OK	Pulled back 7m	177.00	15.40	-54.50	EZ Sho	OK	Pulled back 6m
228.00	15.50	-54.00	EZ Sho	OK	Pulled back 7m	279.00	17.30	-53.60	EZ Sho	OK	Pulled back 6m
330.00	21.70	-53.10	EZ Sho	OK	Pulled back 7m	381.00	20.30	-51.90	EZ Sho	OK	Pulled back 7m
432.00	22.50	-51.20	EZ Sho	OK	Pulled back 6m	483.00	25.60	-50.70	EZ Sho	OK	Pulled back 6m
534.00	26.90	-50.20	EZ Sho	OK	Pulled back 6m	585.00	26.60	-49.90	EZ Sho	OK	Pulled back 7m
636.00	66.80	-49.60	EZ Sho	DO	Pulled back 6m, Magnetic rock	648.00	344.40	-49.50	EZ Sho	DO	Pulled back 6m, Magnetic rock

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	64.80	HPO, OVERBURDEN					
64.80	236.50	LDO, DIABASE DYKE					
236.50	307.50	<p>VGO, GABBRO</p> <p>Green grey gabbroic mafic rock. Minor LDOs present at 242-242.2m, and 244.8-245.1m. 261.9-263.8m shows weak grey carb alteration and weak brecciation also occurring (for example the veinlet at ~262m shows breccia fragments embedded within. 271-271.7m shows massive milky QC +/- calcitic shear vein at low angle ~20 DTCA. Weak patchy yellowish sericite in lowermost half of unit. Aside from these features, interval is lacking any significant alts/veins (~8-10% erratic) or sulphides (trace).</p> <p>Lower contact placed where phaneritic texture gradually fades, and more massive finer grained mafic rock (with abundant leucoxene) initiates.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 242.00 - 242.20 LDO, DIABASE DYKE</p> <p>Minor Interval: 244.80 - 245.10 LDO, DIABASE DYKE</p>					

Hole Number: **NH19-015**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
307.50	360.00	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained appearance. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Leucoxene abundant throughout. Overall ~3-5 % veining as erratic gashes to veinlets. Trace sulphides. Lower contact where pillowing features roughly initiate</p>					
360.00	409.93	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally the same as previous VMM, but this interval is exhibiting pillowing features throughout. Lacking any sig alts/veins/sulphides. Gradational lower contact marked by initiating varioles and decreasing pillow content.</p> <p>MINOR INTERVALS: Minor Interval: 403.31 - 404.25 IMD, MAFIC DYKE</p> <p>Dark grey-black, fine grained, massive mafic dyke. Weak patchy magnetisim throughout the unit. Very weak discordant epidote veinlets present within the unit. No significant veining or mineralization observed within the unit. Sharp irregular lower contact at ~60deg TCA.</p>					

Hole Number: **NH19-015**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
409.93	505.20	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Medium green, massive variolitic basalt. ~15% of the unit is comprised of globular light green varioles mm-cm in size. Weak pervasive chlorite alteration with weak hematite alteration influencing few of the veins. From 430.5-444.0m patchy carbonate, sericite, and bleaching are observed primarily associated with mineralized veins. Weak vein associated fuchsite. Moderate bleaching is also observed from 495.7-501.0m along with weak patchy carboante alteration. Weak bleaching is also associated increased presence of varioles. ~5% iscordant whispy epidote veinlets throughout the unit. ~15 weakly sheared QC veinlets overall, averaging ~60deg TCA. ~0.5% fine grained clustered pyrite in the vein selvages. From 430.5-430.95m, QC vein <5cm in thickness at 20deg TCA, containing ~1% vein grained pyrite in the vein selvages. From 436.3-437.10m; massive QC vein ~20deg TCA, with increased bleaching and sercite alteration with ~3% fine grained pyrite and 1% fine grained phyrrotite in the vein/vein selvage. Phyrrotite appears blebby with no remainin crystal structure. Moderate tension gouging resulting in QC gashes and discordant dark grey veinlets. Weak-moderate localized breccia teture (possible flow breccia) from 433.96-435.56m. Gradational transition to pillow basalt.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 448.47 - 448.67 IMD, MAFIC DYKE</p> <p>Dark grey-black, fine grained, massive mafic dyke. Weak patchy magnetisim throughout the unit. Very weak discordant epidote veinlets present within the unit with weak disseminate carbonate alteration. ~7% discdordant QC veinlets typically <30deg TCA. No significant minarealization observe within the unit. Sharp irregular lower contact at ~70deg TCA.</p> <p>Minor Interval: 465.07 - 465.63 IMD, MAFIC DYKE</p> <p>Dark grey-black, fine grained, massive mafic dyke. Weak patchy magnetisim throughout the unit. Very weak discordant epidote veinlets present within the unit with weak disseminate carbonate alteration. ~5% discdordant QC veinlets typically <30deg TCA. Weak tension gouging resulting in QC gashes. No significant minarealization observe within the unit. Sharp irregular lower contact at ~80deg TCA.</p>	N76169	428.00	429.20	1.20	0.00
			N76171	429.20	430.50	1.30	0.01
			N76172	430.50	430.95	0.45	0.01
			N76173	430.95	432.00	1.05	0.01
			N76174	432.00	433.10	1.10	0.01
			N76175	433.10	433.96	0.86	0.06
			N76176	433.96	435.00	1.04	0.51
			N76177	435.00	435.56	0.56	0.04
			N76178	435.56	436.30	0.74	0.21
			N76179	436.30	437.10	0.80	1.39
			N76181	437.10	438.00	0.90	0.50
			N76182	438.00	439.15	1.15	0.21
			N76183	439.15	440.24	1.09	0.03
			N76184	440.24	441.35	1.11	0.19
			N76185	441.35	442.70	1.35	0.41
			N76186	442.70	444.00	1.30	0.06
505.20	507.00	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Medium green, fine grained, pillow basalt. Weak pervasive chlorite alteration with weak patchy bleaching and carbonate alteration associated with the veins. ~15% discordant QC veins averaging 60deg TCA. Brecciate QC vein from 506.34-506.84m, containing anheral chlorite altered clasts. Moderate tension gouging resulting in discorant QC gashes and ~1% discordant chlorite veinlets. 0.5% fine graine pyrite overall with localized areas 1% clustere pyrite. Gradational lower contact.</p>					

Hole Number: **NH19-015**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
507.00	515.33	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Dark green-grey fine grained massive mafic volcanic unit. No visible pillows or varioles within the unit. Very weak patchy carbonate alteration and bleaching. High angle, wispy epidote veinlets <60deg TCA. ~5% weakly sheared QC veinlets at 60deg TCA. Moderate tension gouging resulting in QC gashes and erratic/discordant chlorite veinlets. ~0.5% fine grained disseminated an vein hosted pyrite. Localized intervals with up to 1% fine grained disseminated pyrite. Sharp lower contact with intrusive at 60deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 508.59 - 508.77 IMD, MAFIC DYKE</p> <p>Dark grey-black, fine grained, massive mafic dyke. Weak patchy magnetisim throughout the unit. Very weak discordant epidote veinlets present within the unit with weak disseminate carbonate alteration. ~1% discordant QC veinlets typically <30deg TCA. Weak tension gouging resulting in QC gashes. No significant minarealization observe within the unit. Sharp irregular lower contact at ~80deg TCA.</p> <p>Minor Interval: 514.54 - 515.33 IMD, MAFIC DYKE</p> <p>Dark grey-brown, uniformly fine grained, massive mafic dyke. Weak patchy brown carbonate and weak patchy bleaching differentiates this dyke from the others observed. Bleaching appears as alteration halos surrounding the veins/gashes. ~3% discordant QC veinlets and blebs. Strong tension gouging resulting in discordant chlorite veinlets and few QC gashes. Weak tectonic banding with chlorite filled fractures. Trace pyrite. Very weak brecciation towards lower contact. Sharp lower contact at 70deg TCA.</p>	N76187	512.00	513.14	1.14	0.01
			N76188	513.14	514.54	1.40	0.01
			N76189	514.54	515.33	0.79	0.01
515.33	517.30	<p>AEC, SERICITE CARBONATE ALTERED ROCK</p> <p>Dark brown patchy yellow, altered mafic unit. Very weak remnant volcanic structures are observed (weak pillows). Moderate patchy-pervasive brown carbonate alteration with moderate patchy sericite. Sericite is present in areas with decreased carbonate influence, strongest towards lower contact. ~5%, typically high angled <50deg TCA, QC veinlets. 0.5% fine grained disseminated pyrite. Sharp lower contact at 40deg TCA.</p>	N76191	515.33	516.40	1.07	0.00
			N76192	516.40	517.30	0.90	0.07

Hole Number: **NH19-015**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
517.30	579.26	IP2, FELDSPAR & QUARTZ PORPHYRY Light grey, patchy yellow, feine-medium grained, weakly sheared feldspar quartz porphyry. ~15% subhedral light grey-beige feldspar porphyroblasts <1cm in size, disseminated throughout the unit. Porphyroblasts appear to decrease with depth (towards lower contact with mafic volcanic unit). Few faint background quartz eyes are also observed within the unit. Moderate pervasive silicification with moderate patchy-pervasive carbonate alteration. Moderate sercite and bleaching are present as alteration halos around the fractures and veins. Areas with increased carbonate alteration show weak signs of patchy silica+carbonate flooding within the veins. Gradational decrease in alteration towards lower contact. ~10% weakly sheared QC veinlets with ~3% sheared veins. When orientation is apparent veinlets are typically at 60deg TCA with few larger veins at <45deg TCA. Moderate-strong tension gouging resulting in few QC gashes and ~5% discordant tourmaline veinlets. Veinlets display weak signs of localized microfaulting. 0.5% fine grained disseminated pyrite overall. From 536.24-538.8m, ~5% fine grained disseminated and vein hosted (tourmaline veins) pyrite withing a weak-moderately sercitic altered interval. VG fleck at 537.9m, withing a weakly sheared veinlets at 60deg TCA. From 562.05-564.14m and 571.7-576.85m, ~5% disseminated and vein hosted pyrite with few visible pyrite stringers. Weak shearing at 60deg TCA. Sharp lower contact at 80deg TCA. MINOR INTERVALS: Minor Interval: 525.28 - 525.44 AEC, SERICITE CARBONATE ALTERED ROCK Medium green-yellow, fine grained altered mafic unit, weakly altered mafic volcanic. ~10% spherical varioles towards the lower contact suggest the unit is an altered VMV. Weak pervasive carbonate alteration with weak disseminated sercite. No significant veining or mineralization within the unit. Sharp lower contact at 80deg TCA. Minor Interval: 525.79 - 526.76 AEC, SERICITE CARBONATE ALTERED ROCK Medium green-yellow, fine grained altered mafic unit, weakly altered mafic volcanic. ~10% spherical varioles suggest the unit is an altered VMV. Weak pervasive carbonate alteration with weak disseminated sercite. ~3% weakly sheared QC veinlets typically 70-80deg TCA. Weak tension gouging resultin in 1% QC gashes and few erratic chlorite veinlets. No significant mineralization observed. Sharp lower contact at 80deg TCA. Minor Interval: 528.47 - 528.64 AEC, SERICITE CARBONATE ALTERED ROCK Medium green-yellow, fine grained altered mafic unit, weakly altered mafic volcanic. ~12% subhedral, disseminated black flecks throughout possibly pyroxenes. Weak pervasive carbonate alteration with weak disseminated sercite. No significant veining or mineralization within the unit. Sharp lower contact at 70deg TCA.	N76193	517.30	518.46	1.16	0.04
			N76194	518.46	519.20	0.74	0.40
			N76195	519.20	520.30	1.10	4.34
			N76196	520.30	521.20	0.90	0.20
			N76197	521.20	522.37	1.17	0.06
			N76198	522.37	523.55	1.18	0.24
			N76199	523.55	525.00	1.45	0.34
			N76201	525.00	525.71	0.71	0.17
			N76202	525.71	526.76	1.05	0.08
			N76203	526.76	527.88	1.12	0.28
			N76204	527.88	528.47	0.59	0.32
			N76205	528.47	529.10	0.63	0.03
			N76206	529.10	530.08	0.98	0.25
			N76207	530.08	531.20	1.12	0.42
			N76208	531.20	532.20	1.00	0.22
			N76209	532.20	533.55	1.35	1.90
			N76211	533.55	535.00	1.45	0.08
			N76212	535.00	536.24	1.24	0.14
			N76213	536.24	536.90	0.66	2.58
			N76214	536.90	537.60	0.70	0.30
			N76215	537.60	538.20	0.60	126.30
			N76216	538.20	538.85	0.65	0.52
			N76217	538.85	539.70	0.85	2.07
			N76218	539.70	540.90	1.20	0.02
			N76219	540.90	541.90	1.00	0.01
			N76221	541.90	543.10	1.20	0.03
			N76222	543.10	543.80	0.70	0.09
			N76223	543.80	545.00	1.20	0.20
			N76224	545.00	546.00	1.00	0.01
			N76225	546.00	547.10	1.10	0.13
			N76226	547.10	548.20	1.10	0.01
			N76227	548.20	549.10	0.90	0.01
			N76228	549.10	550.32	1.22	0.00
			N76229	550.32	551.65	1.33	0.00
			N76231	551.65	552.84	1.19	0.01
			N76232	552.84	553.90	1.06	0.37
			N76233	553.90	555.00	1.10	0.03
			N76234	555.00	555.86	0.86	0.00
			N76235	555.86	557.00	1.14	0.28
			N76236	557.00	557.84	0.84	0.03
			N76237	557.84	558.80	0.96	0.02
			N76238	558.80	559.70	0.90	0.03

Hole Number: **NH19-015**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		<p>MINOR INTERVALS: Minor Interval: 528.80 - 529.10 IMD, MAFIC DYKE Medium green-yellow, fine grained altered mafic unit. ~5% spherical varioles suggest the unit is an altered VMV. Weak pervasieve carbonate alteration with weak disseminated sericite. No significant veining or mineralization within the unit. Sharp lower contact at 80deg TCA. Minor Interval: 575.55 - 575.83 IMD, MAFIC DYKE Medium green-grey, fine grained mafic dyke. Weak pervasive chlorite alteration with patchy grey carbonate alteration. ~1% discordant QC veinlets. Weak tension gouging resulting in QC gashes and erratic dark green chlorite veinlets. Trace pyrite. Sharp lower contact at 70deg TCA. Minor Interval: 577.40 - 577.46 IMD, MAFIC DYKE See above IMD Minor Interval: 578.70 - 578.94 IMD, MAFIC DYKE Medium green-grey, fine grained mafic dyke. Weak pervasive chlorite alteration with patchy grey carbonate alteration. No significant veins within the unit. Weak tension gouging resulting in QC gashes and erratic dark green chlorite veinlets. Trace pyrite. Sharp lower contact at 70deg TCA.</p>	N76239	559.70	560.92	1.22	0.00
			N76241	560.92	562.05	1.13	0.09
			N76242	562.05	563.00	0.95	0.85
			N76243	563.00	564.14	1.14	1.55
			N76244	564.14	565.20	1.06	0.54
			N76245	565.20	566.28	1.08	0.00
			N76246	566.28	567.30	1.02	0.01
			N76247	567.30	568.36	1.06	0.74
			N76248	568.36	569.60	1.24	0.63
			N76249	569.60	570.60	1.00	0.30
			N76251	570.60	571.70	1.10	0.36
			N76252	571.70	572.60	0.90	2.10
			N76253	572.60	573.53	0.93	0.83
			N76254	573.53	574.46	0.93	0.78
			N76255	574.46	575.36	0.90	3.18
			N76256	575.36	575.83	0.47	0.24
			N76257	575.83	576.85	1.02	1.08
		N76258	576.85	577.46	0.61	0.55	
		N76259	577.46	578.70	1.24	0.10	
		N76261	578.70	579.26	0.56	0.01	
579.26	605.40	<p>VMM, MAFIC VOLCANIC MASSIVE Dark green, fine grained, massive mafic volcanic unit. Weak pervasive chlorite alteration throughout. Weak bleaching and carbonate alteration from 603.46-604.6m. Strong pervasive bleaching and carboante alteration from 604.6-605.4m. Increased alteration is a result of proximity to diabase dyke.~5% weakly sheared QC veinlets with few veins. When orientation is apparent veins are typically at 60deg TCA. Moderate tension gouging resulting in QC gashes and few erratic and sheared chlorite veinlets. 0.25% fine grained disseminated pyrite overall with up to 1% fine grained clustered pyrite. Weak localized breccia texture, with anhedral-subhedral chlorite altered clasts. Sharp lower contact at 65deg TCA. MINOR INTERVALS: Minor Interval: 595.33 - 595.52 IMD, MAFIC DYKE Dark grey-black, fine grained, massive mafic dyke. No significant alteration, veining or mineralization is observed within the unit. Possible weak chlorite alteration. Sharp lower contact at 80deg TCA.</p>	N76262	579.26	580.43	1.17	0.00
			N76263	580.43	581.75	1.32	0.00
605.40	646.65	<p>LDO, DIABASE DYKE Dark grey-black, fine grained, massive diabase dyke. Unit is moderate-strongly magnetic, a result of fine grained disseminated magnetite throughout. Weak-moderate epidote wispy sheared veinlets. ~7% sheared QC veinlets overall. From 624.0m, veining increases to ~12% sheared, wispy QC veinlets at 60-70deg TCA. Weak blocky core fragmentation. Trace sulphides. Sharp lower contact with gouge.</p>					

Hole Number: **NH19-015**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
646.65	648.00	ZGO, GOUGE Light grey, massive gouge. Unit is likely part of the LDO that has undergone significant faulting. No remaining textures, alteration or mineralization is observed. EOH at 648.0m					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76169	428.00	429.20	0.0025
N76171	429.20	430.50	0.0080
N76172	430.50	430.95	0.0050
N76173	430.95	432.00	0.0140
N76174	432.00	433.10	0.0120
N76175	433.10	433.96	0.0580
N76176	433.96	435.00	0.5140
N76177	435.00	435.56	0.0390
N76178	435.56	436.30	0.2090
N76179	436.30	437.10	1.3880
N76181	437.10	438.00	0.4980
N76182	438.00	439.15	0.2070
N76183	439.15	440.24	0.0290
N76184	440.24	441.35	0.1940
N76185	441.35	442.70	0.4120
N76186	442.70	444.00	0.0590
N76187	512.00	513.14	0.0070
N76188	513.14	514.54	0.0130
N76189	514.54	515.33	0.0100
N76191	515.33	516.40	0.0025
N76192	516.40	517.30	0.0730
N76193	517.30	518.46	0.0420
N76194	518.46	519.20	0.3950
N76195	519.20	520.30	4.3370
N76196	520.30	521.20	0.1950
N76197	521.20	522.37	0.0560
N76198	522.37	523.55	0.2380
N76199	523.55	525.00	0.3350
N76201	525.00	525.71	0.1710
N76202	525.71	526.76	0.0800
N76203	526.76	527.88	0.2800
N76204	527.88	528.47	0.3210

Hole Number: **NH19-015**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76205	528.47	529.10	0.0320
N76206	529.10	530.08	0.2460
N76207	530.08	531.20	0.4210
N76208	531.20	532.20	0.2180
N76209	532.20	533.55	1.9030
N76211	533.55	535.00	0.0830
N76212	535.00	536.24	0.1390
N76213	536.24	536.90	2.5780
N76214	536.90	537.60	0.3040
N76215	537.60	538.20	126.3000
N76216	538.20	538.85	0.5180
N76217	538.85	539.70	2.0730
N76218	539.70	540.90	0.0210
N76219	540.90	541.90	0.0120
N76221	541.90	543.10	0.0250
N76222	543.10	543.80	0.0910
N76223	543.80	545.00	0.2040
N76224	545.00	546.00	0.0050
N76225	546.00	547.10	0.1260
N76226	547.10	548.20	0.0140
N76227	548.20	549.10	0.0080
N76228	549.10	550.32	0.0025
N76229	550.32	551.65	0.0025
N76231	551.65	552.84	0.0140
N76232	552.84	553.90	0.3650
N76233	553.90	555.00	0.0320
N76234	555.00	555.86	0.0025
N76235	555.86	557.00	0.2770
N76236	557.00	557.84	0.0290
N76237	557.84	558.80	0.0220
N76238	558.80	559.70	0.0310
N76239	559.70	560.92	0.0025
N76241	560.92	562.05	0.0860
N76242	562.05	563.00	0.8460
N76243	563.00	564.14	1.5510
N76244	564.14	565.20	0.5360
N76245	565.20	566.28	0.0025
N76246	566.28	567.30	0.0110
N76247	567.30	568.36	0.7400

Hole Number: **NH19-015**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76248	568.36	569.60	0.6300
N76249	569.60	570.60	0.3020
N76251	570.60	571.70	0.3640
N76252	571.70	572.60	2.1010
N76253	572.60	573.53	0.8340
N76254	573.53	574.46	0.7760
N76255	574.46	575.36	3.1820
N76256	575.36	575.83	0.2430
N76257	575.83	576.85	1.0790
N76258	576.85	577.46	0.5470
N76259	577.46	578.70	0.1000
N76261	578.70	579.26	0.0140
N76262	579.26	580.43	0.0025
N76263	580.43	581.75	0.0025

DETAILED LOG



Hole Number: **NH19-016**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -48.00
Project Number: MACKLE_TWP	North: 5375191.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 512095.70	East:	Length: 622.00
	Elev: 293.10	Elev:	Start Depth: 0.00
Date Started: Mar 19, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Mar 26, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 622.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.20	-48.00	APS	OK		84.00	10.70	-48.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
135.00	11.90	-47.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	186.00	13.00	-47.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
237.00	13.20	-47.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	288.00	15.10	-46.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
339.00	16.60	-46.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	390.00	15.60	-46.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
445.00	15.90	-45.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	496.00	15.00	-45.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
547.00	15.50	-45.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	598.00	69.30	-45.30	EZ Sho	DO	Azi corrected by subtracting 11.4 from reading; pulled back 6m
622.00	15.70	-45.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	70.40	HPO, OVERBURDEN					

Hole Number: **NH19-016**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
70.40	335.60	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium-coarse grained pseudo-gabbroic appearance w/ more defined crystallization (ex following 126m block). Leucoxene flakes throughout majority of unit. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. A few rare minor intrusives/varying (mafic-intermediate) flows recognized and broken out as minors.</p> <p>Overall ~5-8% veining as erratic gashes to veinlets. Trace sulphides. Lower contact placed where pillowing initiates.</p> <p>MINOR INTERVALS: Minor Interval: 111.10 - 111.50 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 112.30 - 112.50 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 121.70 - 121.80 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 244.80 - 245.00 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 250.20 - 250.60 IIO, INTERMEDIATE INTRUSIVE</p>					
335.60	357.00	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally similar to previous VMM (mafic, but this interval is even more massive/finer), with this interval exhibiting pillowing features. Lacking sig alts/veins/sulphides. Pillowing features fade over lower few meters</p>					
357.00	393.00	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>See previous VMM. Lower contact placed where pillowing features reinitiate.</p>					
393.00	407.40	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>See most recent VMP. Lower contact placed where variolitic textures initiate.</p>					
407.40	497.70	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Vipoond formation. mm-cm scale rounded variolitic texture abundant throughout. Rock appears lighter in colour in certain intervals; potentially more intermediate in terms of composition. Lacking any significant alts/veins/sulphs. Sharp LC at 90 degrees TCA along shill margin</p>	N71351	496.70	497.70	1.00	0.00

DETAILED LOG

Hole Number: **NH19-016**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
497.70	562.15	IP2, FELDSPAR & QUARTZ PORPHYRY Cloudy white with yellowish tinge extensive QC with white plag feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Patchy alterations may include moderate carbonate+ strong silicification, and patchy sericite weak trace patchy albite. Weak-moderate tension gouging throughout resulting in wavy erratic dark gashes (tourmaline occasionally filled with chlorite) that weave remnant phenocrysts/QC eyes; associated with very weak high angle shear. Small patchy variolitic lens ~15cm scattered, Milky white veins/veinlets generally trending 30 to 40 degrees TCA at ~5-10% Overall ~1-2% vfg dissem, reaching ~3% fracture controlled pyrite in veinlets. Small mafic raft from 561.3m to 561.7m	N71352	497.70	499.00	1.30	0.09
			N71353	499.00	500.45	1.45	6.13
			N71354	500.45	501.50	1.05	0.03
			N71355	501.50	502.50	1.00	0.06
			N71356	502.50	503.50	1.00	0.03
			N71357	503.50	505.00	1.50	0.02
			N71358	505.00	506.00	1.00	0.03
			N71359	506.00	507.00	1.00	0.00
			N71361	507.00	508.00	1.00	0.03
			N71362	508.00	509.00	1.00	0.03
			N71363	509.00	510.50	1.50	0.20
			N71364	510.50	512.00	1.50	0.14
			N71365	512.00	512.70	0.70	0.03
			N71366	512.70	513.70	1.00	0.16
			N71367	513.70	515.00	1.30	0.34
			N71368	515.00	516.10	1.10	0.22
			N71369	516.10	517.20	1.10	0.30
			N71371	517.20	518.50	1.30	0.17
			N71372	518.50	520.00	1.50	0.09
			N71373	520.00	521.50	1.50	0.74
			N71374	521.50	523.00	1.50	0.24
			N71375	523.00	524.00	1.00	0.29
			N71376	524.00	525.00	1.00	0.52
			N71377	525.00	526.20	1.20	0.57
			N71378	526.20	527.70	1.50	1.60
			N71379	527.70	529.00	1.30	0.59
			N71381	529.00	530.50	1.50	0.38
			N71382	530.50	532.00	1.50	0.57
			N71383	532.00	533.00	1.00	3.13
			N71384	533.00	534.50	1.50	0.26
			N71385	534.50	536.00	1.50	0.42
			N71386	536.00	537.00	1.00	1.00
			N71387	537.00	538.00	1.00	1.19
			N71388	538.00	539.00	1.00	0.93
			N71389	539.00	540.50	1.50	0.18
			N71391	540.50	542.00	1.50	0.03
			N71392	542.00	543.50	1.50	0.02
			N71393	543.50	544.60	1.10	7.17
			N71394	544.60	545.50	0.90	2.74
			N71395	545.50	547.00	1.50	0.43
			N71396	547.00	548.50	1.50	0.29
			N71397	548.50	549.50	1.00	0.66

Hole Number: **NH19-016**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			N71398	549.50	550.50	1.00	0.88
			N71399	550.50	552.00	1.50	0.16
			N71401	552.00	553.50	1.50	0.10
			N71402	553.50	555.00	1.50	0.26
			N71403	555.00	556.40	1.40	0.14
			N71404	556.40	557.40	1.00	0.14
			N71405	557.40	558.40	1.00	0.09
			N71406	558.40	559.70	1.30	0.12
			N71407	559.70	560.80	1.10	0.04
			N71408	560.80	562.15	1.35	0.00
562.15	572.30	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock with areas of vfg to fg (on the rare occasion) medium-coarse grained pseudo-gabbroic appearance w/ more defined crystallization. Leucoxene flakes throughout majority of unit. Lacking any significant alteration, veining, or sulphides throughout. Very weak faded tension gouging in background of unit. "Salt and pepper" appearance may be present. A few rare minor intrusives/varying (mafic-intermediate) flows recognized and broken out as minors. Small lens varioles. Weak shearing at 70 degrees. Sharp LC 90 degrees</p> <p>Overall ~5-8% veining as erratic gashes to veinlets.</p> <p>Trace sulphides.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>564.00 - 564.55 ISP, PORPHYRITIC SYENITE</p> <p>Pinkish white, with background Quartz and feldspar phenocrysts, Intense tourmaline brittle fractures, sulphides at 1-2%</p>	N71409	562.15	563.60	1.45	0.00
			N71411	563.60	564.55	0.95	0.00
			N71412	564.55	565.50	0.95	0.00
			N71413	571.30	572.30	1.00	0.00
572.30	586.05	<p>VMH, MAFIC VOLCANIC HYALOCLASTITE</p> <p>Light/dark green with patchy beigeish green, Volcanclastic, vitreous, weakly silicified, chlorite weaving around the pseudo breccia, Trace sporadic tensional running parallel to core axis, and veinlets at perpendicular. Trace sulphides. LC is sharp at 90 degrees TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>572.30 - 572.60 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Similar to 497.7 to 562.15</p>	N71414	572.30	572.80	0.50	0.00
			N71415	572.80	573.80	1.00	0.00
586.05	615.30	<p>IUO, ULTRAMAFIC INTRUSIVE</p> <p>Dark black/grey with patchy brownish tinge ultramaficstn light grey-milky high angle QC gashes as well as veinlets running at 70 to 80 degrees. Shearing moderate throughout typically high angle ~70 degrees TCA. Weak patchy brown carbonate. Strongly magnetic</p> <p>~ 5-10% QC as described. Trace sulphides.</p>					

Hole Number: **NH19-016**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
615.30	622.00	ZFZ, FAULT ZONE Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically high angle >60 degrees TCA. Pervasive gouge and patchy core fracturing and fragmentation. ~ 15-20% QC as described. ♂Trace sulphides.					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N71351	496.70	497.70	0.0025
N71352	497.70	499.00	0.0850
N71353	499.00	500.45	6.1260
N71354	500.45	501.50	0.0310
N71355	501.50	502.50	0.0550
N71356	502.50	503.50	0.0250
N71357	503.50	505.00	0.0200
N71358	505.00	506.00	0.0320
N71359	506.00	507.00	0.0025
N71361	507.00	508.00	0.0300
N71362	508.00	509.00	0.0250
N71363	509.00	510.50	0.2030
N71364	510.50	512.00	0.1380
N71365	512.00	512.70	0.0310
N71366	512.70	513.70	0.1550
N71367	513.70	515.00	0.3390
N71368	515.00	516.10	0.2230
N71369	516.10	517.20	0.2970
N71371	517.20	518.50	0.1730
N71372	518.50	520.00	0.0930
N71373	520.00	521.50	0.7430
N71374	521.50	523.00	0.2420
N71375	523.00	524.00	0.2940
N71376	524.00	525.00	0.5200
N71377	525.00	526.20	0.5710
N71378	526.20	527.70	1.5970
N71379	527.70	529.00	0.5850
N71381	529.00	530.50	0.3770
N71382	530.50	532.00	0.5680
N71383	532.00	533.00	3.1310

Hole Number: **NH19-016**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N71384	533.00	534.50	0.2550
N71385	534.50	536.00	0.4160
N71386	536.00	537.00	1.0040
N71387	537.00	538.00	1.1890
N71388	538.00	539.00	0.9280
N71389	539.00	540.50	0.1820
N71391	540.50	542.00	0.0300
N71392	542.00	543.50	0.0240
N71393	543.50	544.60	7.1680
N71394	544.60	545.50	2.7440
N71395	545.50	547.00	0.4290
N71396	547.00	548.50	0.2900
N71397	548.50	549.50	0.6580
N71398	549.50	550.50	0.8760
N71399	550.50	552.00	0.1560
N71401	552.00	553.50	0.0990
N71402	553.50	555.00	0.2600
N71403	555.00	556.40	0.1390
N71404	556.40	557.40	0.1360
N71405	557.40	558.40	0.0860
N71406	558.40	559.70	0.1150
N71407	559.70	560.80	0.0420
N71408	560.80	562.15	0.0025
N71409	562.15	563.60	0.0025
N71411	563.60	564.55	0.0025
N71412	564.55	565.50	0.0025
N71413	571.30	572.30	0.0025
N71414	572.30	572.80	0.0025
N71415	572.80	573.80	0.0025

DETAILED LOG



Hole Number: **NH19-017** Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -70.00
Project Number: MACKLE_TWP	North: 5375357.00	North:	Collar Az: 10.40
Location: Macklem Township	East: 512397.20	East:	Length: 571.00
	Elev: 290.60	Elev:	Start Depth: 0.00
Date Started: Mar 26, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Apr 06, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 571.00

Comments: Hole logged by revans from 95.8m to EOH.

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.40	-65.60	EZ Sho	OK		81.00	6.60	-65.60	EZ Sho	OK	Pulled back 7m
132.00	8.40	-65.50	EZ Sho	OK	Pulled back 7m	183.00	9.00	-65.50	EZ Sho	OK	Pulled back 6m
234.00	10.40	-65.30	EZ Sho	OK	Pulled back 6m	285.00	10.20	-65.20	EZ Sho	OK	Pulled back 7m
336.00	10.50	-65.00	EZ Sho	OK	Pulled back 6m	388.00	11.40	-64.90	EZ Sho	OK	Pulled back 7m
439.00	11.80	-64.70	EZ Sho	OK	Pulled back 6m	493.00	11.90	-64.10	EZ Sho	OK	Pulled back 6m
547.00	58.70	-63.00	EZ Sho	DO	Pulled back 6m	571.00	108.50	-62.50	EZ Sho	DO	Pulled back 6m

Detailed Lithology		Assay Data				
From	To	Lithology	Sample Number	From	To	Length Au_gpt_Final
0.00	67.30	HPO, OVERBURDEN Oberburden				

DETAILED LOG

Hole Number: **NH19-017**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
67.30	448.60	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Dark grey-green, fine grained massive mavic volcanic unit. Localized varioles and pillows are observed within the unit. Weak patchy-pervasive chlorite alteration. Weak patchy carbonate present as alteration haloes surrounding the veins. Weak-mod patchy hematite alteration sometimes seen to influence veining. Weak-moderate epidote alteration occasionally seen to influence veining, with occasional larger patches- largest at ~40cm from 173.2-173.6m that is also expericincing weak-mod hematite alteration and some dissem pyrite. Grain size increases with medium grained variable clasts seen in boxes 28-34, but changes back to typical vfg vmm at ~207.4m. Few whispys, weakly deformed ~5% discordant QC veins and weak blebby floods. Veing are typically >50deg TCA when orientation is distiguishable. Weak tension gouging resulting in QC gashes and few erratic chlorite veinlets. 0.25% clustered fine grained pyrite. Sharp lower contact @variable angles TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 298.90 - 299.95 IMD, MAFIC DYKE</p> <p>Minor Interval: 337.20 - 337.30 IMD, MAFIC DYKE</p> <p>Minor Interval: 338.80 - 339.00 IMD, MAFIC DYKE</p>	1678325	446.20	447.40	1.20	0.01
			1678326	447.40	448.60	1.20	0.01

DETAILED LOG

Hole Number: **NH19-017**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
448.60	492.40	IP2, FELDSPAR & QUARTZ PORPHYRY Cloudy white with green-grey tinge extensive QC with white plagioclase feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Patchy alterations may include moderate carbonate+ strong silicification, patchy feldspar, and patchy sericite weak trace patchy albite. Weak-moderate tension gouging throughout resulting in erratic dark gashes (tourmaline occasionally filled with chlorite). Occasional patchy weak-mod core fracturing/fragmentation and occasional small mafic rafts (max 15cm). Milky white veins/veinlets generally trending ~40 degrees TCA at ~5-10% and erratic gashes ~3-4% localized within the altered portions as vfg dissem, blebby pyrite	1678327	448.60	449.80	1.20	0.01
			1678328	449.80	451.00	1.20	0.02
			1678329	451.00	452.20	1.20	0.06
			1678331	452.20	453.40	1.20	0.03
			1678332	453.40	454.60	1.20	0.03
			1678333	454.60	455.80	1.20	0.09
			1678334	455.80	457.00	1.20	0.08
			1678335	457.00	458.20	1.20	0.27
			1678336	458.20	459.40	1.20	2.61
			1678337	459.40	460.60	1.20	0.42
			1678338	460.60	461.80	1.20	0.25
			1678339	461.80	463.00	1.20	0.33
			1678341	463.00	464.20	1.20	0.38
			1678342	464.20	465.40	1.20	0.05
			1678343	465.40	466.60	1.20	0.22
			1678344	466.60	467.80	1.20	0.76
			1678345	467.80	469.00	1.20	1.60
			1678346	469.00	470.20	1.20	0.21
			1678347	470.20	471.40	1.20	0.72
			1678348	471.40	472.60	1.20	0.34
			1678349	472.60	473.80	1.20	0.44
			1678351	473.80	475.00	1.20	0.58
			1678352	475.00	476.20	1.20	0.88
			1678353	476.20	477.40	1.20	0.15
			1678354	477.40	478.60	1.20	0.33
			1678355	478.60	479.80	1.20	0.20
			1678356	479.80	481.00	1.20	0.41
			1678357	481.00	482.20	1.20	3.13
			1678358	482.20	483.40	1.20	4.88
			1678359	483.40	484.60	1.20	1.43
			1678361	484.60	485.80	1.20	1.92
			1678362	485.80	487.00	1.20	1.59
			1678363	487.00	488.20	1.20	0.93
			1678364	488.20	489.40	1.20	1.09
			1678365	489.40	490.60	1.20	1.65
			1678366	490.60	491.60	1.00	1.27
			1678367	491.60	492.40	0.80	1.11

Hole Number: **NH19-017**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
492.40	494.30	VMO, MAFIC VOLCANIC UNDIVIDED Dark grey-green, medium grained mafic volcanic unit. Weak tension gouging resulting in erratic dark tourmaline gashes. Possible very weak carbonate alteration halos recognized. Evidence of micro-faulting at ~493.7m, with max 2.5cm offset. Localized patches as disseminated and fracture filling sulphides. Sharp lower contact @high angle TCA. ~3-5% QC gashes/veinlets with the rare vein.	1678368	492.40	493.40	1.00	0.04
			1678369	493.40	494.30	0.90	0.01
494.30	516.50	IP2, FELDSPAR & QUARTZ PORPHYRY *VG fleck at ~497.7m Cloudy white with green-grey tinge extensive QC with white plagioclase feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Patchy alterations may include moderate carbonate+ strong silicification, mod patchy sericite and weak trace patchy albite. Weak-moderate tension gouging throughout resulting in erratic dark gashes (tourmaline occasionally filled with chlorite). Occasional minor rafts of mafics seen. Milky white veins/veinlets generally trending 60-70 degrees TCA at ~5-10% and erratic gashes. Sharp lower contact @variable angles TCA. ~4-5% overall as disseminated, blebby and fracture fill MINOR INTERVALS: Minor Interval: 495.00 - 495.30 VMO, MAFIC VOLCANIC UNDIVIDED	1678371	494.30	495.00	0.70	0.08
			1678372	495.00	495.50	0.50	0.05
			1678373	495.50	496.70	1.20	0.47
			1678374	496.70	497.50	0.80	0.17
			1678375	497.50	498.00	0.50	0.95
			1678376	498.00	499.20	1.20	0.70
			1678377	499.20	500.40	1.20	1.20
			1678378	500.40	501.60	1.20	0.85
			1678379	501.60	502.80	1.20	0.79
			1678381	502.80	504.00	1.20	0.09
			1678382	504.00	505.20	1.20	0.64
			1678383	505.20	506.40	1.20	0.18
			1678384	506.40	507.60	1.20	0.43
			1678385	507.60	508.80	1.20	1.16
			1678386	508.80	510.00	1.20	0.33
			1678387	510.00	511.20	1.20	0.01
			1678388	511.20	512.40	1.20	0.06
			1678389	512.40	513.60	1.20	0.08
			1678391	513.60	514.80	1.20	0.02
			1678392	514.80	515.60	0.80	0.00
			1678393	515.60	516.50	0.90	0.00
516.50	526.10	VMH, MAFIC VOLCANIC HYALOCLASTITE Light/dark green with patchy beige green, volcaniclastic, vitreous, weakly silicified, chlorite weaving around the pseudo breccia. Banded appearance sometimes present that typically sits at high angle TCA. Rare and sporadic QC gashes/veinlets. Trace sulphides. Sharp LC at variable angles TCA	1678394	516.50	517.70	1.20	0.00
			1678395	517.70	518.90	1.20	0.00
526.10	571.00	IUO, ULTRAMAFIC INTRUSIVE Dark black/grey ultramafics with light grey-milky high angle QC gashes as well as veinlets typically running at 70 to 80 degrees and may be following a shearing plane. Patchy epidote alteration influencing veining. Strongly magnetic ~ 5-10% QC as described. ♂Trace sulphides. EOH					

Hole Number: **NH19-017**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
1678325	446.20	447.40	0.0070
1678326	447.40	448.60	0.0060
1678327	448.60	449.80	0.0130
1678328	449.80	451.00	0.0190
1678329	451.00	452.20	0.0580
1678331	452.20	453.40	0.0320
1678332	453.40	454.60	0.0300
1678333	454.60	455.80	0.0890
1678334	455.80	457.00	0.0800
1678335	457.00	458.20	0.2700
1678336	458.20	459.40	2.6130
1678337	459.40	460.60	0.4200
1678338	460.60	461.80	0.2480
1678339	461.80	463.00	0.3340
1678341	463.00	464.20	0.3750
1678342	464.20	465.40	0.0510
1678343	465.40	466.60	0.2170
1678344	466.60	467.80	0.7630
1678345	467.80	469.00	1.5960
1678346	469.00	470.20	0.2090
1678347	470.20	471.40	0.7200
1678348	471.40	472.60	0.3420
1678349	472.60	473.80	0.4440
1678351	473.80	475.00	0.5780
1678352	475.00	476.20	0.8750
1678353	476.20	477.40	0.1450
1678354	477.40	478.60	0.3250
1678355	478.60	479.80	0.1990
1678356	479.80	481.00	0.4050
1678357	481.00	482.20	3.1260
1678358	482.20	483.40	4.8790
1678359	483.40	484.60	1.4280
1678361	484.60	485.80	1.9240
1678362	485.80	487.00	1.5900
1678363	487.00	488.20	0.9290
1678364	488.20	489.40	1.0940
1678365	489.40	490.60	1.6490
1678366	490.60	491.60	1.2710
1678367	491.60	492.40	1.1120

Hole Number: **NH19-017**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678368	492.40	493.40	0.0360
1678369	493.40	494.30	0.0060
1678371	494.30	495.00	0.0810
1678372	495.00	495.50	0.0470
1678373	495.50	496.70	0.4690
1678374	496.70	497.50	0.1720
1678375	497.50	498.00	0.9530
1678376	498.00	499.20	0.7000
1678377	499.20	500.40	1.2000
1678378	500.40	501.60	0.8450
1678379	501.60	502.80	0.7910
1678381	502.80	504.00	0.0870
1678382	504.00	505.20	0.6420
1678383	505.20	506.40	0.1780
1678384	506.40	507.60	0.4270
1678385	507.60	508.80	1.1570
1678386	508.80	510.00	0.3310
1678387	510.00	511.20	0.0100
1678388	511.20	512.40	0.0600
1678389	512.40	513.60	0.0810
1678391	513.60	514.80	0.0190
1678392	514.80	515.60	0.0025
1678393	515.60	516.50	0.0025
1678394	516.50	517.70	0.0025
1678395	517.70	518.90	0.0025

DETAILED LOG

Michael Clarke

Hole Number: **NH19-018**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -60.00
Project Number: MACKLE_TWP	North: 5375403.50	North:	Collar Az: 358.70
Location: Macklem Township	East: 512597.03	East:	Length: 501.00
	Elev: 288.30	Elev:	Start Depth: 0.00
Date Started: Apr 06, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Apr 13, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 501.00

Comments: Casing at 57m

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.10	-60.00	APS	OK		69.00	8.10	-60.30	EZ Sho	OK	Pulled back 6m
120.00	6.40	-60.20	EZ Sho	OK	Pulled back 6m	171.00	6.90	-60.20	EZ Sho	OK	Pulled back 6m
222.00	8.00	-60.00	EZ Sho	OK	Pulled back 6m	273.00	9.90	-60.00	EZ Sho	OK	Pulled back 7m
324.00	12.10	-60.00	EZ Sho	OK	Pulled back 6m	375.00	13.30	-59.90	EZ Sho	OK	Pulled back 6m
426.00	14.10	-59.70	EZ Sho	OK	Pulled back 6m	477.00	17.10	-59.50	EZ Sho	OK	Pulled back 6m
501.00	54.20	-59.30	EZ Sho	DO	Pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	56.20	HPO, OVERBURDEN					

Hole Number: **NH19-018**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
56.20	290.90	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock with medium grained pseudo-gabbroic appearance w/ more defined crystallization and leucoxene flakes. Grades into med-coarse grained starting at ~156m and then into fine grained with localized pillow selvages starting at ~195-243m. Lacking significant veining and sulphides. Weak-mod epidote alteration influencing veining and on the rare occasion as patchy alteration. Hematite and feldspar alteration on the rare instance. Very weak faded tension gouging in background of unit. A few rare minor intrusives/varying (mafic-intermediate) flows recognized and broken out as minors.</p> <p>Overall ~3-5% veining as erratic gashes to veinlets.</p> <p>Trace sulphides.</p> <p>Gradual LC starting at ~290.9m over 1m or so where grain size changes and pillow texture comes in</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 103.60 - 103.80 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 104.00 - 104.50 IIO, INTERMEDIATE INTRUSIVE</p> <p>IIO bands (max at 10cm thickness)</p> <p>Minor Interval: 105.70 - 105.90 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 259.30 - 261.10 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 277.50 - 278.20 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 284.60 - 286.50 IIO, INTERMEDIATE INTRUSIVE</p>					

Hole Number: **NH19-018**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
290.90	393.30	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Fine grained massive green grey mafic rock exhibiting pillowing features and exhibiting weak pervasive carbonate alteration giving a lighter grey-green colouration. Occasional sulphide clusters seen within pillows, as well as occasional hematite alteration. A few rare minor intrusives/varying (mafic-intermediate) flows recognized and broken out as minors. Area with med grain size and lacking pillowing features (resembles above VMM) from ~334.3-346m. Area from ~347.3-356m exhibiting rare breccia texture within pillows (spot sampled) and pseudo flow features and rare k-spar alteration. Overall ~5 veining as erratic gashes to veinlets and QC occasionally infilling pillow features Sharp LC @variable angles TCA.</p> <p>MINOR INTERVALS: Minor Interval: 295.10 - 295.60 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 377.90 - 378.10 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 378.60 - 379.30 IIO, INTERMEDIATE INTRUSIVE</p>	1678396	346.10	347.10	1.00	0.00
			1678397	347.10	347.60	0.50	0.10
			1678398	347.60	348.60	1.00	0.00
393.30	408.90	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock that is medium-fine grained and also experiencing weak pervasive carbonate alteration giving a light grey-green appearance. Erratic QC gashes/veinlets increase starting in box 81 that are often experiencing green-yellow epidote (or possibly sericite?) alteration. Occasional faded and erratic dark tourmaline tension gouging in background. Occasional fracture fill pyrite seen. ~3-5% as erratic gashes to veinlets. Sharp LC @variable angles TCA.</p>	1678399	406.90	407.90	1.00	0.00
			1678401	407.90	408.90	1.00	0.02

DETAILED LOG

Hole Number: **NH19-018**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
408.90	475.60	IP2, FELDSPAR & QUARTZ PORPHYRY Cloudy white with green-grey tinge extensive QC with white plagioclase feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Patchy alterations may include moderate carbonate+ strong silicification, patchy feldspar, and patchy sericite weak trace patchy albite. Rafts of ISO seen throughout. Moderate-strong tension gouging throughout resulting in erratic dark gashes (tourmaline occasionally filled with chlorite). Milky white veins/veinlets generally trending ~40 degrees TCA at ~7-10% and erratic gashes ~3% overall primarily as fracture fill and vfg disseminations, with some blebby pyrite Sharp LC @high angle TCA.	1678402	408.90	409.90	1.00	0.04
			1678403	409.90	410.90	1.00	0.07
			1678404	410.90	411.90	1.00	0.59
			1678405	411.90	412.90	1.00	0.20
			1678406	412.90	413.90	1.00	0.01
			1678407	413.90	414.90	1.00	0.28
			1678408	414.90	415.90	1.00	0.02
			1678409	415.90	416.90	1.00	0.24
			1678411	416.90	417.90	1.00	1.03
			1678412	417.90	418.90	1.00	0.19
			1678413	418.90	419.90	1.00	0.08
			1678414	419.90	420.90	1.00	1.03
			1678415	420.90	421.90	1.00	0.09
			1678416	421.90	422.90	1.00	0.03
			1678417	422.90	423.90	1.00	0.07
			1678418	423.90	424.90	1.00	1.45
			1678419	424.90	425.90	1.00	1.24
			1678421	425.90	426.90	1.00	0.47
			1678422	426.90	427.90	1.00	0.17
			1678423	427.90	428.90	1.00	0.09
			1678424	428.90	429.90	1.00	5.68
			1678425	429.90	430.90	1.00	0.44
			1678426	430.90	431.90	1.00	0.25
			1678427	431.90	432.90	1.00	0.44
			1678428	432.90	433.90	1.00	0.13
			1678429	433.90	434.90	1.00	0.23
			1678431	434.90	435.90	1.00	0.57
			1678432	435.90	436.90	1.00	0.07
			1678433	436.90	437.90	1.00	0.16
			1678434	437.90	438.90	1.00	0.22
		1678435	438.90	439.90	1.00	0.37	
		1678436	439.90	441.10	1.20	0.32	
		1678437	441.10	442.10	1.00	0.20	
		1678438	442.10	443.10	1.00	3.11	
		1678439	443.10	444.10	1.00	0.24	
		1678441	444.10	445.10	1.00	0.23	
		1678442	445.10	446.10	1.00	0.60	
		1678443	446.10	447.10	1.00	0.27	
		1678444	447.10	448.10	1.00	0.43	
		1678445	448.10	449.20	1.10	1.69	
		1678446	449.20	450.30	1.10	1.48	
		1678447	450.30	451.60	1.30	1.54	

DETAILED LOGHole Number: **NH19-018**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1678448	451.60	452.60	1.00	0.44
			1678449	452.60	453.60	1.00	1.13
			1678451	453.60	454.60	1.00	0.17
			1678452	454.60	455.60	1.00	0.73
			1678453	455.60	456.60	1.00	0.28
			1678454	456.60	457.50	0.90	1.49
			1678455	457.50	458.40	0.90	0.50
			1678456	458.40	459.20	0.80	0.02
			1678457	459.20	460.20	1.00	0.21
			1678458	460.20	461.20	1.00	0.96
			1678459	461.20	462.20	1.00	0.95
			1678461	462.20	463.20	1.00	0.41
			1678462	463.20	464.00	0.80	0.40
			1678463	464.00	464.80	0.80	0.03
			1678464	464.80	465.70	0.90	0.00
			1678465	465.70	466.70	1.00	1.13
			1678466	466.70	467.70	1.00	0.00
			1678467	467.70	468.70	1.00	0.02
			1678468	468.70	469.50	0.80	0.06
			1678469	469.50	470.10	0.60	0.00
			1678471	470.10	471.15	1.05	0.00
			1678472	471.15	472.20	1.05	0.07
			1678473	472.20	473.20	1.00	0.27
			1678474	473.20	474.20	1.00	0.09
			1678475	474.20	474.90	0.70	0.09
			1678476	474.90	475.60	0.70	0.04

Hole Number: **NH19-018**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
475.60	478.30	<p>ISO, SYENITIC INTRUSIVE</p> <p>Grey-green syenitic intrusive interval with mm scale black to white blebs/flakes present in the background matrix. Rafts of above IP2 (with similar alteration styles as above) broken out in the minors category.</p> <p>~3% QC as erratic gashes to veinlets.</p> <p>Sharp LC @ high angle TCA</p> <p>Localized sulphides in the ISO and ~4% in the IP2 rafts primarily as fg dissem and blebby pyrite</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 476.00 - 476.15 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Minor Interval: 476.25 - 476.30 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Minor Interval: 476.45 - 476.50 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Minor Interval: 476.60 - 476.65 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Minor Interval: 476.75 - 476.95 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Minor Interval: 477.00 - 477.17 IP2, FELDSPAR & QUARTZ PORPHYRY</p>	1678477	475.60	476.15	0.55	0.00
			1678478	476.15	476.65	0.50	0.00
			1678479	476.65	477.17	0.52	0.00
			1678481	477.17	478.30	1.13	0.00
478.30	480.50	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Fg dark grey mafic interval with occasional black specks in the background giving a 'salt and pepper' appearance. Appears to be weak shearing (at ~45 degrees TCA) or perhaps the "banded appearance" is associated with flow or chlorite alteration? Rare erratic dark tourmaline tension gouging and QC gashes to veinlets that are typically concave. Lacking significant alteration and trace sulphides.</p> <p>Sharp LC @ high angle TCA.</p>	1678482	478.30	479.30	1.00	0.00
			1678483	479.30	480.50	1.20	0.00
480.50	485.00	<p>VMH, MAFIC VOLCANIC HYALOCLASTITE</p> <p>Light/dark green with patchy beigeish green, volcanoclastic, vitreous, weakly silicified, chlorite weaving around the pseudo breccia. Occasional patchy sericite (or epidote?) alteration. Banded appearance sometimes present that typically sits at high angle TCA. Rare and sporadic QC gashes/veinlets. Trace sulphides. Sharp LC at variable angles TCA</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 483.05 - 483.60 VMM, MAFIC VOLCANIC MASSIVE</p>					
485.00	501.00	<p>IUO, ULTRAMAFIC INTRUSIVE</p> <p>Dark black/grey ultramafics with light grey-milky high angle QC veinlets typically running at 70 to 80 degrees and may be following a shearing plane. QC gashes varying from high angle to erratic. Rare patchy epidote alteration influencing veining. Strongly magnetic</p> <p>~ 5-10% QC as described. ♂Trace sulphides.</p> <p>EOH</p>					

Hole Number: **NH19-018**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678396	346.10	347.10	0.0025
1678397	347.10	347.60	0.1010
1678398	347.60	348.60	0.0025
1678399	406.90	407.90	0.0025
1678401	407.90	408.90	0.0200
1678402	408.90	409.90	0.0420
1678403	409.90	410.90	0.0660
1678404	410.90	411.90	0.5900
1678405	411.90	412.90	0.1970
1678406	412.90	413.90	0.0120
1678407	413.90	414.90	0.2830
1678408	414.90	415.90	0.0170
1678409	415.90	416.90	0.2350
1678411	416.90	417.90	1.0290
1678412	417.90	418.90	0.1900
1678413	418.90	419.90	0.0820
1678414	419.90	420.90	1.0260
1678415	420.90	421.90	0.0900
1678416	421.90	422.90	0.0330
1678417	422.90	423.90	0.0680
1678418	423.90	424.90	1.4510
1678419	424.90	425.90	1.2380
1678421	425.90	426.90	0.4720
1678422	426.90	427.90	0.1720
1678423	427.90	428.90	0.0910
1678424	428.90	429.90	5.6760
1678425	429.90	430.90	0.4350
1678426	430.90	431.90	0.2540
1678427	431.90	432.90	0.4360
1678428	432.90	433.90	0.1280
1678429	433.90	434.90	0.2290
1678431	434.90	435.90	0.5710
1678432	435.90	436.90	0.0720
1678433	436.90	437.90	0.1550
1678434	437.90	438.90	0.2210
1678435	438.90	439.90	0.3690
1678436	439.90	441.10	0.3160
1678437	441.10	442.10	0.2020
1678438	442.10	443.10	3.1080

Hole Number: **NH19-018**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678439	443.10	444.10	0.2380
1678441	444.10	445.10	0.2260
1678442	445.10	446.10	0.6030
1678443	446.10	447.10	0.2670
1678444	447.10	448.10	0.4270
1678445	448.10	449.20	1.6870
1678446	449.20	450.30	1.4830
1678447	450.30	451.60	1.5370
1678448	451.60	452.60	0.4380
1678449	452.60	453.60	1.1290
1678451	453.60	454.60	0.1740
1678452	454.60	455.60	0.7270
1678453	455.60	456.60	0.2830
1678454	456.60	457.50	1.4850
1678455	457.50	458.40	0.4960
1678456	458.40	459.20	0.0190
1678457	459.20	460.20	0.2130
1678458	460.20	461.20	0.9600
1678459	461.20	462.20	0.9540
1678461	462.20	463.20	0.4090
1678462	463.20	464.00	0.3970
1678463	464.00	464.80	0.0310
1678464	464.80	465.70	0.0025
1678465	465.70	466.70	1.1340
1678466	466.70	467.70	0.0025
1678467	467.70	468.70	0.0180
1678468	468.70	469.50	0.0550
1678469	469.50	470.10	0.0025
1678471	470.10	471.15	0.0025
1678472	471.15	472.20	0.0690
1678473	472.20	473.20	0.2700
1678474	473.20	474.20	0.0920
1678475	474.20	474.90	0.0910
1678476	474.90	475.60	0.0440
1678477	475.60	476.15	0.0025
1678478	476.15	476.65	0.0025
1678479	476.65	477.17	0.0025
1678481	477.17	478.30	0.0025
1678482	478.30	479.30	0.0025

Hole Number: **NH19-018**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
1678483	479.30	480.50	0.0025

DETAILED LOG

Hole Number: **NH19-019**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -60.00
Project Number: MACKLE_TWP	North: 5375151.50	North:	Collar Az: 10.00
Location: Macklem Township	East: 511864.75	East:	Length: 555.00
	Elev: 286.90	Elev:	Start Depth: 0.00
Date Started: Apr 14, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Apr 28, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 555.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.00	-60.00	APS	OK		57.00	8.80	-50.30	EZ Sho	OK	Pulled back 6m, 9m past casing
108.00	10.50	-50.10	EZ Sho	OK	Pulled back 6m	159.00	11.10	-49.80	EZ Sho	OK	Pulled back 7m
210.00	12.00	-49.30	EZ Sho	OK	Pulled back 7m	261.00	15.60	-48.10	EZ Sho	OK	Pulled back 6m
312.00	18.10	-46.80	EZ Sho	OK	Pulled back 7m	363.00	22.60	-46.00	EZ Sho	OK	Pulled back 7m
414.00	25.20	-46.50	EZ Sho	OK	Pulled back 6m	465.00	27.40	-45.80	EZ Sho	OK	Pulled back 6m
519.00	27.30	-44.60	EZ Sho	OK	Pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	45.00	HPO, OVERBURDEN					
45.00	350.40	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained appearance. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Patchy varioles/pillow salvages. Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides. From 258 to 260, Flow breccia From 288 to 309 coarser grained with phenocrysts with chlorite.					

DETAILED LOG

Hole Number: **NH19-019**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
350.40	446.26	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Vipond</p> <p>Massive green grey mafic rock with areas of vfg grained appearance. Weak to moderate chlorite fracture surfaces . Very weak faded tension gouging in background of unit. Patchy varioles throughout the unit, ranging 0.5cm to 1cm, light grey, QC hairline stockworking and veinlets throughout at 5-7%, Trace sulphides. Sharp lower contact at 80deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 406.00 - 407.10 IMO, MAFIC INTUSIVE</p> <p>Aphanitic, dull dark grey, lacking any significant alteration and sulphides, sharp contacts at ~80 degrees TCA.</p> <p>Minor Interval: 429.55 - 430.20 IMO, MAFIC INTUSIVE</p> <p>Minor Interval: 435.54 - 436.33 IMO, MAFIC INTUSIVE</p> <p>See previous IMO.</p>	N76535	442.80	443.70	0.90	0.00
			N76536	443.70	445.00	1.30	0.00
			N76537	445.00	446.26	1.26	0.01

Hole Number: **NH19-019**

Units: METRIC

Detailed Lithology		Assay Data						
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final	
446.26	529.46	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Pominex Porphyry- Light beige, patchy grey, fine grined, massive feldspar-quartz porphyry. ~10% subhedral, light beige flecks disseminated throuout the unit- remnant feldspar porphyroblasts (twinning observed). Weak mm-scale quartz-eyes dthrouought the unit. Weak-moderate patchy sericite alteration with moderate patchy carbonate alteration. Weak-moderate pervasive silicification of the unit. Carbonate alteration present in areas with decreased sericite influence. Moderate yellow flecks clustered in the host rock, increased sericite alteration (?). Sericite influnce sharply decreases from ~526.34m onwards. Moderate bleaching present as alteration halos surrounding veins and fractures. Carbonate content appears to decrease ~468.0-489.0m. Localized silica+carbonate flooding. ~10% QC veinlets with few veins <5cm in thickness observed. Veins are typically >45deg TCA. Weak microfaulting in the veins. Lower angled QC veinlets also observec (3%) at ~20deg TCA. Minor AEC units througout, only those >10cm are noted in minor lithology. Dark grey-black along margins of minors, possible chlorite alteration (?). Moderate-strong tension gouging resulting in dark grey chlorite veinlets, typically erratic. Tension gouging increaes from 528.7-529.26m. 3-4% clustered/vein hosted pyrite overall. Localized patches with up to 10% vein hosted/fracture filling pyrite. Increased pyrite associated with silica+carbonate flooding (ex. ~464.70m) or along margins with AEC minors. Up to 1% pyrite stringers. Gradational decrease in vein hosted pyrite from 526.34m onwards. Sharp lower contact at 80deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 459.60 - 460.70 AEC, SERICITE CARBONATE ALTERED ROCK Altered mafic unit- Light green-beige fine grained mafic unit. Weak-moderate patchy sericite and carbonate alteration with disseminated green flecks (mm-scale) throughout- possible chlorite. Sericite alteration appears to increase towards upper/ lower contacts. Weak silica+carbonate flooding associated with veins. Weak patchy bleaching. ~30% typically high angled QC veins/floods >40deg TCA. Strong tension gouging resulting in discordant chlorite (+/- tourmaline veinlets). Weak microfaulting. ~0.5% fine grained disseminated pyrite. Sharp lower contact at 60deg TCA.</p> <p>Minor Interval: 503.00 - 503.75 AEC, SERICITE CARBONATE ALTERED ROCK See above AEC 459.6-460.7m</p> <p>Minor Interval: 508.90 - 509.35 IMO, MAFIC INTUSIVE Dark grey, massive mafic volcanic unit. ~15% sunhedral black phenocrysts dissmeinated throughout, likely pyrozesn/amphobolates. Weak patchy carbonate and chlorite alteration. Weak bleaching urrounding the veins. ~2% discordant, milky white, wavy hairline QC veinlets. Weak tension gouging resulting in erratic dark grey chlorite veinlets. Trace sulphides. Sharp lower contact at 60deg TCA.</p>	N76538	446.26	447.25	0.99	0.05	
				N76539	447.25	448.06	0.81	0.07
				N76541	448.06	449.16	1.10	0.21
				N76542	449.16	450.10	0.94	0.69
				N76543	450.10	451.15	1.05	0.02
				N76544	451.15	452.20	1.05	0.11
				N76545	452.20	453.15	0.95	0.36
				N76546	453.15	454.25	1.10	0.65
				N76547	454.25	455.15	0.90	0.36
				N76548	455.15	456.00	0.85	1.23
				N76549	456.00	457.10	1.10	0.79
				N76551	457.10	457.90	0.80	0.35
				N76552	457.90	459.00	1.10	1.37
				N76553	459.00	459.60	0.60	0.12
				N76554	459.60	460.70	1.10	0.03
				N76555	460.70	461.80	1.10	0.22
				N76556	461.80	462.95	1.15	0.09
				N76557	462.95	463.95	1.00	0.27
				N76558	463.95	465.15	1.20	0.71
				N76559	465.15	466.15	1.00	0.05
				N76561	466.15	467.05	0.90	0.64
				N76562	467.05	467.78	0.73	0.40
				N76563	467.78	468.55	0.77	0.93
				N76564	468.55	469.65	1.10	1.59
				N76565	469.65	470.55	0.90	0.91
				N76566	470.55	471.65	1.10	0.48
				N76567	471.65	472.75	1.10	0.13
				N76568	472.75	473.70	0.95	0.14
				N76569	473.70	474.60	0.90	1.86
				N76571	474.60	475.75	1.15	2.02
				N76572	475.75	476.67	0.92	0.41
				N76573	476.67	477.50	0.83	0.13
				N76574	477.50	478.60	1.10	0.08
				N76575	478.60	479.60	1.00	2.73
			N76576	479.60	480.60	1.00	2.78	
			N76577	480.60	481.60	1.00	1.16	
			N76578	481.60	482.60	1.00	0.49	
			N76579	482.60	483.50	0.90	6.50	
			N76581	483.50	484.55	1.05	0.08	
			N76582	484.55	485.50	0.95	0.44	
			N76583	485.50	486.42	0.92	0.97	
			N76584	486.42	487.55	1.13	0.22	

Hole Number: **NH19-019**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		MINOR INTERVALS:	N76585	487.55	488.25	0.70	0.75
		Minor Interval:	N76586	488.25	489.30	1.05	2.51
		511.10 - 511.23 AEC, SERICITE CARBONATE ALTERED ROCK	N76587	489.30	490.30	1.00	0.06
		Light green, patchy yellow, massive altered mafic volcanic unit. Moderate	N76588	490.30	491.20	0.90	0.19
		patchy sericite alteration and bleaching with weak disseminated chlorite flecks.	N76589	491.20	492.25	1.05	0.19
		No significant veining observed within the unit. Trace disseminated sulphides.	N76591	492.25	493.30	1.05	0.39
		Sharp lower contact at 65deg TCA.	N76592	493.30	494.20	0.90	1.63
		Minor Interval:	N76593	494.20	495.40	1.20	0.64
		513.06 - 513.35 AEC, SERICITE CARBONATE ALTERED ROCK	N76594	495.40	496.50	1.10	0.03
		Altered mafic unit- Light green-beige fine grained mafic unit. Weak-moderate	N76595	496.50	497.92	1.42	0.15
		patchy sericite and carbonate alteration with disseminated green flecks	N76596	497.92	498.30	0.38	0.13
		(mm-scale) throughout- possible chlorite. Sericite alteration appears to	N76597	498.30	499.30	1.00	1.35
		increase towards upper/ lower contacts. ~2% discordant QC veinlets.	N76598	499.30	500.44	1.14	0.26
		Moderate tension gouging resulting in discordant chlorite veinlets. Up to 1%	N76599	500.44	501.35	0.91	0.26
		fine grained pyrite nearing lower contact with porphyry. Sharp lower contact at	N76601	501.35	502.13	0.78	0.13
		70deg TCA.	N76602	502.13	503.00	0.87	1.22
		Minor Interval:	N76603	503.00	503.75	0.75	0.01
		513.75 - 513.97 AEC, SERICITE CARBONATE ALTERED ROCK	N76604	503.75	504.80	1.05	0.08
		Altered mafic volcanic unit- Light green, patchy yellow mafic intrusive. Weak	N76605	504.80	505.95	1.15	0.23
		locitized light green varioles are observed primarily around contacts.	N76606	505.95	507.00	1.05	0.32
		Weak-moderate patchy pervasive sericite and carbonate alteration. Weak	N76607	507.00	507.93	0.93	0.15
		patchy bleaching also observed within the unit. Strong bright yellow sericite	N76608	507.93	508.90	0.97	0.41
		veinlets also present. ~15% subhedral green flecks disseminated in the host	N76609	508.90	509.35	0.45	0.18
		rock, possible chlorite alteration. Increased sericite and bleaching relative to	N76611	509.35	510.30	0.95	0.07
		the above mentioned AEC minors. ~5% discordant QC veinlets	N76612	510.30	511.10	0.80	0.07
		(sericite+bleaching associated with veining). Moderate tension gouging	N76613	511.10	512.00	0.90	0.11
		resulting in discordant chlorite veinlets. 0.5% fine grained pyrite in chlorite	N76614	512.00	513.00	1.00	0.71
		veinlets. SHarp lower contact at 70deg TCA.	N76615	513.00	513.97	0.97	0.29
		Minor Interval:	N76616	513.97	514.97	1.00	3.09
		515.64 - 515.74 AEC, SERICITE CARBONATE ALTERED ROCK	N76617	514.97	515.74	0.77	9.48
		See previous AEC 513.75-513.97m.	N76618	515.74	517.00	1.26	1.40
		Minor Interval:	N76619	517.00	517.85	0.85	4.17
		521.54 - 521.69 AEC, SERICITE CARBONATE ALTERED ROCK	N76621	517.85	519.00	1.15	0.27
		Altered mafic unit- Light yellow-green, massive mafic volcanic unit. Weak	N76622	519.00	520.10	1.10	0.21
		variolitic texture observed. Weak-moderate patchy sericite and carbonate	N76623	520.10	521.30	1.20	0.77
		alteration with disseminated green flecks (mm-scale) throughout- possible	N76624	521.30	521.69	0.39	0.78
		chlorite. ~20% QC floods <3cm in thickness. Moderate tension gouging	N76625	521.69	522.88	1.19	0.04
		resulting in discordant dark grey/green chlorite veinlets and few wispy-thin	N76626	522.88	523.46	0.58	1.83
		QC gashes. Trace sulphides. Sharp lower contact at 80deg TCA.	N76627	523.46	524.00	0.54	0.45
		Minor Interval:	N76628	524.00	525.05	1.05	0.38
		525.60 - 525.70 AEC, SERICITE CARBONATE ALTERED ROCK	N76629	525.05	525.70	0.65	0.14
		See previous AEC 521.54-521.69m.	N76631	525.70	526.34	0.64	0.09

DETAILED LOG

Hole Number: **NH19-019**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		<p>MINOR INTERVALS: Minor Interval: 527.45 - 527.79 IMO, MAFIC INTUSIVE Dark grey, massive mafic intrusive unit, likely volcanic. Very weak patchy carbonate alteration with weak bleaching surrounding the veinlets. Possible very weak patchy background chlorite and sericite alteration. ~5% weakly oriented smokey grey QC veinlets, typically at 60-70deg TCA. Moderate tension gouging resulting in discordant chlorite veinlets. ~1% fine grained pyrite near lower contact. Sharp contact at 75deg TCA. Minor Interval: 529.26 - 529.40 IMD, MAFIC DYKE Coarser phenocrysts differentiates this unit from the above IMO (527.45-527.79m) Dark grey, patchy brown, medium grained mafic dyke. MM-cm scale dark grey/black phenocrysts, pyroxenes (?). Few flecks of biotite (?) also observed. Weak patchy carbonate alteration. No significant veining within the unit. ~0.25% fine grained pyrite. Sharp lower contact at 80deg TCA.</p>	N76632	526.34	527.45	1.11	0.09
			N76633	527.45	527.79	0.34	0.02
			N76634	527.79	528.70	0.91	0.01
			N76635	528.70	529.46	0.76	0.01

Hole Number: **NH19-019**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
529.46	536.12	<p>IMO, MAFIC INTUSIVE</p> <p>Dark grey, fine-medium grained, massive mafic unit. ~15% subhedral-anhedral black flecks disseminated throughout the unit, pyroxens/amphiboles. Phenocrysts size ranges within the unit as a result of multiple flows. Weak patchy carbonate alteration and bleaching. Sulphide content appears to increase in areas with bleaching, carbonate alteration and increased grain size. Increased bleaching surrounding the veinlets. Very weak hematite alteration influencing few of the larger veinlets. ~3% discordant, typically high angled white QC veinlets. When orientation is apparent, veinlets are typically >50deg TCA. Moderate tension gouging resulting in discordant dark grey-black chlorite veinlets (+/- tourmaline) with few wispy-thin QC gashes. ~2-3% fracture controlled pyrite with trace vein hosted pyrite. Unit is cut by several minor porphyries. Sharp lower contact with major porphyry at 60deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>530.46 - 530.64 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Light grey, massive quartz-feldspar porphyry. ~7% subhedral light beige feldspar phenocrysts disseminated throughout the unit. Weak pervasive carbonate alteration with weak-moderate silicification. ~3% discordant smokey grey QC veinlets. Moderate tension gouging resulting in 7% discordant black chlorite (+/- tourmaline veinlets). ~1% fine grained disseminated pyrite. Sharp lower contact at 70deg TCA.</p> <p>Minor Interval:</p> <p>531.03 - 531.14 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Light pink-beige massive felsic intrusive. Weak background porphyritic textures observed. Weak patchy carbonate and hematite (k-feldspar) alteration with moderate pervasive silicification. ~3% discordant smokey QC veinlets. Moderate tension gouging resulting in discordant chlorite and tourmaline veinlets giving pseudo-brecciated appearance. Weak bleaching surrounding lower contact. ~5% fine grained disseminated pyrite. Sharp lower contact at 60deg TCA.</p> <p>Minor Interval:</p> <p>532.06 - 532.21 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Light grey, massive quartz-feldspar porphyry. ~7% subhedral light beige feldspar phenocrysts disseminated throughout the unit. Weak pervasive carbonate alteration with weak-moderate silicification. No significant veining within the unit. Weak tension gouging observed. <1-1% fine grained disseminated pyrite. Sharp lower contact at 80deg TCA.</p> <p>Minor Interval:</p> <p>532.50 - 532.90 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Light pink-beige, massive felsic intrusive. Weak background porphyritic textures. Moderate pervasive silicification and weak patchy carbonate alteration. Weak possible feldspar alteration giving pink colouration to the unit. ~7% smokey grey QC veinlets/hairline stringers. Moderate tension gouging resulting in weakly oriented chlorite veinlets. When orientation is apparent veinlets are typically at 60deg TCA. ~0.5% fine grained disseminated pyrite. Sharp lower contact at 75deg TCA.</p>	N76636	529.46	530.46	1.00	0.00
			N76637	530.46	531.14	0.68	0.00
			N76638	531.14	532.06	0.92	0.00
			N76639	532.06	532.90	0.84	0.00
			N76641	532.90	534.00	1.10	0.00
			N76642	534.00	534.80	0.80	0.00
			N76643	534.80	536.12	1.32	0.00

Hole Number: **NH19-019**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		<p>MINOR INTERVALS: Minor Interval: 533.35 - 533.45 IP2, FELDSPAR & QUARTZ PORPHYRY Light-medium grey, massive quartz-feldspar porphyry. ~5% sunbhdral light beige, mm-scale feldspar porphyroblasts disseminated throughout the host rock. Weak pervasive carbonate alteration with moderate pervasive silicification. ~2% discordant wispy QC veinlets. Moderate tension gouging resulting in 7% discordant/erratic dark grey chlorite/tourmaline veinlets. Up to 2% fine grained disseminated pyrite. Sharp lower contact at 75deg TCA.</p> <p>Minor Interval: 535.90 - 535.96 IP2, FELDSPAR & QUARTZ PORPHYRY See previous IP2 533.35-533.45m.</p>					
536.12	538.80	<p>IP2, FELDSPAR & QUARTZ PORPHYRY Medium grey, patchy light green, massive quartz porphyry. ~7-10% subhdral light beige feldspar porphyroblasts disseminated throughout the unit. Remnant mm-cm scale quartz eyes also present within the unit. Weak-moderate pervasive carbonate alteration and silicification. Moderate blesching present as alteration halos around veins/fractures. Weak brown carbonate (?) alteration from 538.2-538.8m. ~3% discordant QC hairline veinlets. Moderate-strong tension gouging resulting in discordant chlorite veinlets increaseing towards lower contact. 1-2% fine grained clustered/vein hosted pyrite. Localized areas with disseminated pyrite also observed. Few pyrite stringers.Trace vein hosted pyrrhotite. Sharp lower contact at 70deg TCA.</p> <p>MINOR INTERVALS: Minor Interval: 538.31 - 538.37 IMO, MAFIC INTUSIVE</p>	N76644	536.12	537.20	1.08	0.00
			N76645	537.20	538.20	1.00	0.00
			N76646	538.20	538.80	0.60	0.00
538.80	541.35	<p>IMO, MAFIC INTUSIVE Dark grey-black, massive, fine grained mafic intrusive. Very weak patchy bleaching and carbonate alteration observed within the unit. Possible weak background chlorite alteration. ~3% discordant milky white QC veinlets, typically >50deg TCA. Localized clusteres up to 5% fine grained pyrite. Trace vein clustered pyrrhotite. Gradational lower contact.</p> <p>MINOR INTERVALS: Minor Interval: 539.58 - 539.90 IIO, INTERMEDIATE INTRUSIVE Medium grey, patchy beige intermediate intrusive. Unit may be a chage in alteration and mineralization surrounding two minor felsic intrusives. Weak patchy silicification with weak-moderate patchy bleaching and carbonate alteration. ~2% discordant white QC veinlets and thin gashes.Moderate tension gouging resulting in tyoically high angled chlorite veinlets >60deg TCA. ~7% fine grained disseminated pyrite in mafic portion surrounding felsic units (?).Weak localized brecciation within quartz+feldspar rich sections. (539.58-539.64m and 539.71-539.8m). Sharp lower contact marked by decrease in mineralization at 70deg TCA.</p>	N76647	538.80	539.58	0.78	0.00
			N76648	539.58	539.90	0.32	0.00
			N76649	539.90	541.35	1.45	0.00

DETAILED LOG

Hole Number: **NH19-019**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
541.35	545.29	VMO, MAFIC VOLCANIC UNDIVIDED Medium green, massive, weakly foliated mafic volcanic unit. This unit may be an intermediated between mafic and ultramafic. Few mm scale amygdules near upper contact. Moderate pervasive chlorite overall with patchy strong carbonate also observed. Weak patchy bleaching. Weak epidote veinlets. ~7% discordant white to smokey grey QC veins. Weak silica flooding associated with veining. Moderate-strong localized tension gouging resulting in wavy chlorite veinlets. ~1% fracture controlled pyrite overall with ares up to 3%. Weak localized brecciation and cataclastic textures. Weak foliation at 65deg TCA. Sharp lower contact at 45deg TCA.	N76651	541.35	542.35	1.00	0.00
			N76652	542.35	543.20	0.85	0.00
			N76653	543.20	543.70	0.50	0.00
			N76654	543.70	544.45	0.75	0.00
			N76655	544.45	545.29	0.84	0.00
545.29	555.00	VUO, ULTRAMAFIC VOLCANIC Black, massive, strongly magnetic ultramafic unit. Weak chlorite and epidote veinlets observed throughout the unit. Moderate fracture filling chlorite alteration also observed. Clustered bright yellow flecks near veinlets, possible sericite. Possible weak serpentinization~15% discordant, tensional veinlets, typically 70-80 deg TCA, Weak brecciation within the lower angled larger QC veins (40-60deg TCA). Trace sulphides. EOH at 555.0m	N76656	545.29	546.68	1.39	0.01
			N76657	546.68	547.78	1.10	0.00
			N76658	547.78	549.00	1.22	0.01
			N76659	549.00	550.30	1.30	0.01
			N76661	550.30	551.30	1.00	0.00
			N76662	551.30	552.35	1.05	0.00
			N76663	552.35	553.25	0.90	0.00
			N76664	553.25	554.30	1.05	0.00
		N76665	554.30	555.00	0.70	0.00	

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76535	442.80	443.70	0.0025
N76536	443.70	445.00	0.0025
N76537	445.00	446.26	0.0050
N76538	446.26	447.25	0.0510
N76539	447.25	448.06	0.0740
N76541	448.06	449.16	0.2050
N76542	449.16	450.10	0.6930
N76543	450.10	451.15	0.0160
N76544	451.15	452.20	0.1080
N76545	452.20	453.15	0.3640
N76546	453.15	454.25	0.6490
N76547	454.25	455.15	0.3560
N76548	455.15	456.00	1.2300
N76549	456.00	457.10	0.7910
N76551	457.10	457.90	0.3530
N76552	457.90	459.00	1.3700
N76553	459.00	459.60	0.1160
N76554	459.60	460.70	0.0280
N76555	460.70	461.80	0.2230

Hole Number: **NH19-019**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76556	461.80	462.95	0.0900
N76557	462.95	463.95	0.2730
N76558	463.95	465.15	0.7120
N76559	465.15	466.15	0.0530
N76561	466.15	467.05	0.6400
N76562	467.05	467.78	0.3950
N76563	467.78	468.55	0.9320
N76564	468.55	469.65	1.5930
N76565	469.65	470.55	0.9050
N76566	470.55	471.65	0.4800
N76567	471.65	472.75	0.1250
N76568	472.75	473.70	0.1360
N76569	473.70	474.60	1.8590
N76571	474.60	475.75	2.0200
N76572	475.75	476.67	0.4100
N76573	476.67	477.50	0.1330
N76574	477.50	478.60	0.0800
N76575	478.60	479.60	2.7330
N76576	479.60	480.60	2.7830
N76577	480.60	481.60	1.1620
N76578	481.60	482.60	0.4930
N76579	482.60	483.50	6.4990
N76581	483.50	484.55	0.0770
N76582	484.55	485.50	0.4360
N76583	485.50	486.42	0.9670
N76584	486.42	487.55	0.2240
N76585	487.55	488.25	0.7450
N76586	488.25	489.30	2.5130
N76587	489.30	490.30	0.0620
N76588	490.30	491.20	0.1880
N76589	491.20	492.25	0.1930
N76591	492.25	493.30	0.3890
N76592	493.30	494.20	1.6300
N76593	494.20	495.40	0.6380
N76594	495.40	496.50	0.0250
N76595	496.50	497.92	0.1450
N76596	497.92	498.30	0.1280
N76597	498.30	499.30	1.3460
N76598	499.30	500.44	0.2550

Hole Number: **NH19-019**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76599	500.44	501.35	0.2590
N76601	501.35	502.13	0.1340
N76602	502.13	503.00	1.2180
N76603	503.00	503.75	0.0090
N76604	503.75	504.80	0.0780
N76605	504.80	505.95	0.2290
N76606	505.95	507.00	0.3180
N76607	507.00	507.93	0.1540
N76608	507.93	508.90	0.4140
N76609	508.90	509.35	0.1770
N76611	509.35	510.30	0.0660
N76612	510.30	511.10	0.0730
N76613	511.10	512.00	0.1110
N76614	512.00	513.00	0.7060
N76615	513.00	513.97	0.2900
N76616	513.97	514.97	3.0940
N76617	514.97	515.74	9.4810
N76618	515.74	517.00	1.4030
N76619	517.00	517.85	4.1730
N76621	517.85	519.00	0.2740
N76622	519.00	520.10	0.2080
N76623	520.10	521.30	0.7700
N76624	521.30	521.69	0.7830
N76625	521.69	522.88	0.0420
N76626	522.88	523.46	1.8280
N76627	523.46	524.00	0.4460
N76628	524.00	525.05	0.3810
N76629	525.05	525.70	0.1420
N76631	525.70	526.34	0.0870
N76632	526.34	527.45	0.0850
N76633	527.45	527.79	0.0220
N76634	527.79	528.70	0.0140
N76635	528.70	529.46	0.0060
N76636	529.46	530.46	0.0025
N76637	530.46	531.14	0.0025
N76638	531.14	532.06	0.0025
N76639	532.06	532.90	0.0025
N76641	532.90	534.00	0.0025
N76642	534.00	534.80	0.0025

Hole Number: **NH19-019**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76643	534.80	536.12	0.0025
N76644	536.12	537.20	0.0025
N76645	537.20	538.20	0.0025
N76646	538.20	538.80	0.0025
N76647	538.80	539.58	0.0025
N76648	539.58	539.90	0.0025
N76649	539.90	541.35	0.0025
N76651	541.35	542.35	0.0025
N76652	542.35	543.20	0.0025
N76653	543.20	543.70	0.0025
N76654	543.70	544.45	0.0025
N76655	544.45	545.29	0.0025
N76656	545.29	546.68	0.0110
N76657	546.68	547.78	0.0025
N76658	547.78	549.00	0.0100
N76659	549.00	550.30	0.0110
N76661	550.30	551.30	0.0025
N76662	551.30	552.35	0.0025
N76663	552.35	553.25	0.0025
N76664	553.25	554.30	0.0025
N76665	554.30	555.00	0.0025

DETAILED LOG

Hole Number: **NH19-020**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5373996.00	North:	Collar Az: 345.00
Location: Macklem Township	East: 508690.30	East:	Length: 753.00
	Elev: 289.70	Elev:	Start Depth: 0.00
Date Started: Feb 05, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Feb 20, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 753.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	345.00	-55.00	APS	OK		51.00	348.20	-55.00	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
102.00	351.10	-53.60	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	153.00	350.70	-51.90	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
204.00	356.50	-49.10	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	255.00	358.70	-47.60	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
306.00	1.20	-45.60	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	357.00	4.20	-43.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
408.00	5.00	-41.60	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	459.00	9.50	-39.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
510.00	11.20	-37.40	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	561.00	13.50	-35.60	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
657.00	17.10	-32.00	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	726.00	18.10	-29.40	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m

Detailed Lithology			Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final	
0.00	39.00	HPO, OVERBURDEN						
39.00	103.40	VMO, MAFIC VOLCANIC UNDIVIDED Massive green grey mafic rock with areas of vfgg rained appearance. Weak to moderate chlorite fracture surfaces . Very weak faded tension gouging in background of unit. From 60.6-66 Albitized bluish white breccia veinlets with patchy mg to cg sulphides reaching up to 2% Albitite veinlets becoming weak and patchy after 66 Overall ~5-10 % veining as erratic gashes to stringers. Trace sulphides.	N33824	59.10	60.40	1.30	0.00	
			N33825	60.40	61.80	1.40	0.00	
			N33826	61.80	63.00	1.20	0.00	
			N33827	63.00	64.00	1.00	0.00	
			N33828	64.00	65.00	1.00	0.00	
			N33829	65.00	66.00	1.00	0.00	
			N33831	66.00	67.00	1.00	0.00	
103.40	117.10	VMV, MAFIC VOLCANIC VARIOLITIC Massive green grey mafic rock with areas of vfg grained appearance. Weak to moderate chlorite fracture surfaces . Very weak faded tension gouging in background of unit. Patchy varioles throughout the unit, ranging 0.5cm to 1cm, light grey, QC hairline stockworking and veinlets throughout at 5-7%, Trace sulphides						

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
117.10	225.40	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Similar textures and qualities as as 39m to 103.4m From 141.3m-143.2m Weakly undulating fault infilled with gouge running parallel TCA. Lacking core fragmentation Milky white QC trace to 5%,dominately albitized veinlets with chlorite(and actinolite?) at 10-15%,coarse sulphides patchy at trace-1% localized at 1-2%, Albitized erractic veinlets reaching up to 10-15% from 192m to 199.5m.</p>					
225.40	230.40	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with pervasive carb blebs with light grey-milky high angle QC gashes as and porphyroblastic carb altered blebs. Patchy background shearing morderate throughout typically high angle 60 to 70 degrees TCA. Weak patchy chlorite. LC is 80 degrees TCA. ~ 15-20% QC as described. ♂Trace sulphides.</p>					
230.40	235.40	<p>VGO, GABBRO</p> <p>Black to dark grey, with mottled in light grey, predominetly coarse grained with patchy fg/mg, small rafts of host rock, possible multiple event with two chill margins visible, lacking signicificant veining at trace to 1%, carb alteration disseminated, LC is sharp 60 degrees TCA. Trace sulphides.</p>					
235.40	242.80	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Similar textures and qualities as 225.4 to 230.4m Top 25cm brittle with weak gouge, hairline erractic carb veinlets pervasive, LC is sharp 50 to 60 degrees TCA.</p>					
242.80	246.65	<p>VGO, GABBRO</p> <p>Black to dark grey, with mottled in light grey, predominetly coarse grained , lacking signicificant veining at 5-7%, sporadic rafts of host rock ,carb alteration disseminated, weakly chloritic, LC is sharp 60 degrees TCA. Trace sulphides.</p>					

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
246.65	432.70	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Massive green grey mafic rock with areas of vfg grained appearance. Weak to moderate chlorite fracture surfaces . Very weak faded tension gouging in background of unit. Patchy zones of albitized veinlets/veins. Varioles starting 393m carb influenced~1cm in size.</p> <p>From 264.4 to 266.1, 2cm wide unit of gouge/fault, undulating parallel to core axis (10-20)</p> <p>Starting at 402.5m light blue albite (intermediate) erratic, and blobby intrusions(dykes)</p> <p>Overall ~5-10 % veining as erratic gashes to stringers. Reaching up too 25-30% between 266.8m to 277.1m</p> <p>Trace sulphides.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 272.25 - 272.85 LLO, LAMPROPHYRE Black with mg biotite with visible muscovite mixed in, sharp LC and UC at 50 to 60 degrees TCA.</p> <p>Minor Interval: 313.00 - 313.25 LLO, LAMPROPHYRE Similar textures and qualities as 272.25 to 272.85m</p> <p>Minor Interval: 316.35 - 318.00 LLO, LAMPROPHYRE Similar textures and qualities as 272.25m to 272.85m</p> <p>Minor Interval: 337.20 - 337.75 LLO, LAMPROPHYRE Similar textures and qualities 272.25m to 272.85m</p> <p>Minor Interval: 337.75 - 338.00 IID, INTERMEDIATE DYKE Pale blue greyish, speckled black mineral, with weaving chlorite, no visible sulphides.</p> <p>Minor Interval: 338.00 - 340.00 LLO, LAMPROPHYRE Similar textures and qualities 272.25m to 340m</p> <p>Minor Interval: 341.60 - 342.00 LLO, LAMPROPHYRE</p> <p>Minor Interval: 366.10 - 366.40 IID, INTERMEDIATE DYKE Similar textures as 337.75m to 338.0m</p> <p>Minor Interval: 366.40 - 366.70 LDO, DIABASE DYKE Black to dark grey, with needlelike white minerals(carb?), weakly magnetic, Sharp LC and UC at 60 to 70 degrees TCA.</p>	N33832	275.20	275.80	0.60	0.00
			N33833	275.80	277.10	1.30	0.00
			N33834	277.10	278.00	0.90	0.00

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
432.70	476.05	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with pervasive carb blebs with light grey-milky high angle QC gashes as and porphyroblastic carb altered blebs, pervasive mm carb blebs. Patchy sporadic bluish green veinlets throughout, soft (chlorite? jade?) Patchy background shearing moderate throughout typically high angle 60 to 70 degrees TCA. Pervasive patchy chlorite. LC is 80 degrees TCA. ~ 15-20% QC as described. ♂Trace sulphides.</p> <p>MINOR INTERVALS: Minor Interval: 452.85 - 454.40 ISO, SYENITIC INTRUSIVE</p> <p>Greyish green, salt and pepper, carb altered, chloritic, fine grained with black phenocrysts, trace QC veinlets, sharp LC and UC at 70 to 80 degrees TCA. Sulphides at ~2%</p>	N33835	451.80	452.85	1.05	0.00
			N33836	452.85	453.50	0.65	0.00
			N33837	453.50	454.40	0.90	0.00
			N33838	454.40	455.60	1.20	0.00
			N33847	475.00	476.05	1.05	0.00
476.05	490.70	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Intensely grey carbonate with moderate brown carb and dark green chlorite altered ultramafics. Very weak sericite and patchy moderate fuchsite. Moderate erratic tension gouging resulting in primarily grey discontinuous QC gashes. With blobby background carb.</p> <p>Overall ~ 10-15% QC, primarily as brecciated veinlets or erratic discontinuous gashes/stringers.</p> <p>Trace sulphides with clustered sulphides along QC veinlets at 2%.</p> <p>MINOR INTERVALS: Minor Interval: 483.80 - 485.20 ISP, PORPHYRITIC SYENITE</p> <p>Green with slight bluish white. faded QC eyes in the background, weakly albitic and strongly carb altered, sulphides disseminated within at 1-2%, QC veinlets and blobs at 5-7% generally 90 degrees sometimes erractical, Sharp LC is 80 degrees TCA</p>	N33848	476.05	477.40	1.35	1.84
			N33849	477.40	478.50	1.10	0.04
			N33851	478.50	480.00	1.50	0.00
			N33852	480.00	481.50	1.50	0.00
			N33853	481.50	483.00	1.50	0.01
			N33854	483.00	483.80	0.80	0.01
			N33855	483.80	485.20	1.40	0.00
			N33856	485.20	486.00	0.80	0.03
			N33857	486.00	487.50	1.50	0.00
			N33858	487.50	489.00	1.50	0.00
			N33859	489.00	490.00	1.00	0.01
			N33861	490.00	490.70	0.70	0.02

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
490.70	508.30	<p>ACG, GREEN CARBONATE ALTERED ROCK</p> <p>Strongly deformed fuchsite rich green carbonate rock. Where fuchsite may be lacking, grey carbonate alteration dominates. Patchy moderate shearing throughout; when orientation is noticed it is typically high angle 60-70 degrees TCA, but often times it is erratic in nature. Moderate tension gouging resulting thin and wavy gashes may be mimicking shearing orientation. Localized cataclastic/brecciation textures recognized; breccia associated with veining and shows fragmented altered green carb clasts. Weak background amygdular texture evident.</p> <p>Overall 10-15% veining; milky erratic QC gashes, to blobby veinlets/veins. 1-2% pyrite recognized as blebby or fracture filling vfg clustering reaching up to 3%.</p> <p>MINOR INTERVALS: Minor Interval: 493.10 - 493.75 AAO, ALBITIC ALTERED ROCK</p> <p>Smokey grey/purple strongly albite altered interval with weak-moderate silicification throughout, and hosting increased vfg dissem, clustered, blebby pyrite. Baserock believed to be an intrusive (sharp contacts, intensely altered pervasively throughout). UC is sharp at 30 degrees, with LC at 40 degrees QC content ~5-7 % throughout, primarily as faded clasts, wispy stringers. Overall coarse pyrite sulphides may reach 3-4% Sigmoidal shear/veins, tectonic banding, crenulation cleavage.</p> <p>Minor Interval: 494.00 - 494.35 AAO, ALBITIC ALTERED ROCK</p> <p>Similar textures and qualities as 493.1to 494.35m</p>	N33862	490.70	492.00	1.30	0.02
			N33863	492.00	493.10	1.10	0.11
			N33864	493.10	493.75	0.65	2.18
			N33865	493.75	494.35	0.60	1.59
			N33866	494.35	495.50	1.15	0.79
			N33867	495.50	496.90	1.40	0.94
			N33868	496.90	497.40	0.50	0.31
			N33869	497.40	498.90	1.50	0.01
			N33871	498.90	500.40	1.50	0.03
			N33872	500.40	501.60	1.20	0.13
			N33873	501.60	503.10	1.50	0.07
			N33874	503.10	504.20	1.10	0.03
			N33875	504.20	505.40	1.20	0.36
			N33993	505.40	506.20	0.80	0.15
			N33994	506.20	507.00	0.80	0.02
			N33995	507.00	508.30	1.30	0.02
508.30	514.10	<p>IFD, FELSIC DYKE</p> <p>Cloudy grey extensive QC+/- light plag feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Additional alterations may include moderate carbonate+silicification, and very weak patchy albite. Moderate tension gouging throughout resulting in wavy erratic dark gashes (tourmaline occasionally filled with chlorite) that weave remnant phenocrysts/QC eyes; associated with very weak high angle shear.</p> <p>Overall ~10% vfg-cg blebby/dissemin/fracture controlled pyrite. Sharp lower contact slightly variable but average 70-80 DTCA.</p>	N33839	508.30	509.10	0.80	0.27
			N33841	509.10	510.00	0.90	0.21
			N33842	510.00	511.50	1.50	1.14
			N33843	511.50	513.00	1.50	1.87
			N33844	513.00	514.10	1.10	1.75
514.10	519.50	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Cloudy grey extensive QC+/- light plag feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Additional alterations may include moderate carbonate+silicification, and very weak patchy albite. Fuchsite also moderate and patchy disseminated. Trace tension gouging throughout resulting in wavy erratic dark gashes (tourmaline) Predominately QC veinlets that weave remnant phenocrysts/QC eyes; associated with very weak high angle shear.</p> <p>Overall ~1-2% vfg-cg blebby/dissemin/fracture controlled pyrite. Sharp lower contact slightly variable but average 70-80 DTCA.</p>	N33996	514.10	515.60	1.50	0.76
			N33997	515.60	516.70	1.10	0.16
			N33998	516.70	518.10	1.40	1.28
			N33876	518.10	519.50	1.40	1.40

DETAILED LOG

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
519.50	578.70	ACG, GREEN CARBONATE ALTERED ROCK Similar textures and qualities as 490.70 to 508.30 QC veining increasing to 20 to 25% Sulphides overall 1-2% reaching up to 4% lens MINOR INTERVALS: Minor Interval: 519.85 - 529.50 AFE, FUCHSITE, SERICITE ALTERED ROCK Intermixed yellow/green Strongly fuchsite/sericite altered ultramafics exhibiting, vfg, sharp LC and UC Weak-mod erratic tension gouging resulting in both grey QC and darker tourmaline. Minor Interval: 576.40 - 576.70 IFD, FELSIC DYKE Similar textures and qualities 508.3m to 514.1 Sulphides at 1-2%	N33877	519.50	520.15	0.65	0.70
			N33878	520.15	521.50	1.35	0.20
			N33879	521.50	523.00	1.50	0.06
			N33881	523.00	524.50	1.50	0.39
			N33882	524.50	526.00	1.50	0.10
			N33883	526.00	527.50	1.50	0.04
			N33884	527.50	529.00	1.50	0.27
			N33885	529.00	529.60	0.60	7.78
			N33886	529.60	530.75	1.15	0.47
			N33887	530.75	532.00	1.25	0.27
			N33888	532.00	533.50	1.50	0.10
			N33889	533.50	535.00	1.50	0.05
			N33891	535.00	536.50	1.50	0.10
			N33892	536.50	538.00	1.50	1.77
			N33893	538.00	539.50	1.50	0.08
			N33894	539.50	541.00	1.50	0.09
			N33895	541.00	542.50	1.50	0.10
			N33896	542.50	543.85	1.35	0.18
			N33897	543.85	544.90	1.05	2.48
			N33898	544.90	546.00	1.10	0.12
			N33899	546.00	547.50	1.50	0.06
			N33901	547.50	549.00	1.50	0.04
			N33902	549.00	550.50	1.50	0.08
			N33903	550.50	552.00	1.50	0.04
			N33904	552.00	553.00	1.00	0.06
			N33905	553.00	553.50	0.50	0.14
			N33906	553.50	555.00	1.50	0.24
			N33907	555.00	556.50	1.50	0.12
			N33908	556.50	558.00	1.50	0.03
			N33909	558.00	559.50	1.50	0.03
			N33911	559.50	560.60	1.10	0.16
			N33912	560.60	561.30	0.70	0.05
			N33913	561.30	562.15	0.85	0.16
			N33914	562.15	562.80	0.65	0.35
			N33915	562.80	564.00	1.20	0.29
			N33916	564.00	565.30	1.30	0.08
			N33917	565.30	566.40	1.10	0.13
			N33918	566.40	567.50	1.10	0.10
			N33919	567.50	568.40	0.90	0.19
			N33921	568.40	569.00	0.60	0.17
			N33922	569.00	570.00	1.00	0.40
			N33923	570.00	571.00	1.00	1.58

DETAILED LOG

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
			N33924	571.00	572.00	1.00	1.86
			N33925	572.00	573.00	1.00	0.52
			N33926	573.00	574.05	1.05	0.13
			N33927	574.05	575.25	1.20	0.04
			N33928	575.25	576.30	1.05	0.24
			N33929	576.30	576.80	0.50	0.60
			N33931	576.80	577.70	0.90	0.07
			N33932	577.70	578.70	1.00	0.21
578.70	581.00	IFD, FELSIC DYKE See recent IFD (508.3-514.1m). This interval is more of a smokey grey/purpleish colour most likely from more intense (moderate) pervasive albite/carb +/- weaker silicification. This interval also contains increased sulphides, of up to 15% primarily blebby/ FF f-cg py.	N33845	578.70	579.80	1.10	3.40
			N33846	579.80	581.00	1.20	1.70
581.00	589.80	ACO, CARBONATE ALTERED ROCK Moderate deformed grey with patchy weak brown carbonate altered ultramafics. Strong shearing throughout; 70 to 80 degrees TCA experiencing wavy/folded shearing. Moderate erratic tension gouging also present occasionally mimicking shearing but typically erratic grey/milky QC gashes. "Salt and pepper" appearance in intervals lacking deformation. . Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~10-15 % QC overall. Trace sulphides.	N33933	581.00	582.00	1.00	0.64
			N33934	582.00	583.00	1.00	0.24
			N33935	583.00	584.40	1.40	0.31
			N33936	584.40	585.55	1.15	0.06
			N33937	585.55	586.50	0.95	0.04
			N33938	586.50	587.60	1.10	0.36
			N33939	587.60	588.70	1.10	0.05
			N33941	588.70	589.80	1.10	0.26
589.80	603.00	ZGO, GOUGE Blocky broken with pervasive gouge generally trending 50 to 60 degrees but often erratic, weaving around black ultramafics, QC veinlets and blobs at 5-7%. Trace sulphides.	N33942	589.80	591.00	1.20	0.02

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
603.00	717.45	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically high angle ~60 degrees TCA. Patchy core fracturing and fragmentation. ~ 10-15% QC as described with zones reaching up to 20% Trace sulphides with patchy zones 1-2% disseminated.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 639.45 - 640.45 IMD, MAFIC DYKE Black, aphanitic, with trace to 5% QC tension gashes, no visible sulphides,</p> <p>Minor Interval: 681.80 - 684.30 ISO, SYENITIC INTRUSIVE Blobby Pinkish grey, slight green with weaving Ultramafics with carb alteration, syenite strong silicification with weak hemetites and potassics, with milky white QC veinlets at 5-7% erratically, sulphides fg to with trace mg pyrite at 2-4%</p>	N33943	611.00	612.00	1.00	0.01
			N33944	612.00	613.50	1.50	0.01
			N33945	613.50	615.00	1.50	0.01
			N33946	615.00	616.50	1.50	0.02
			N33947	616.50	618.00	1.50	0.01
			N33948	618.00	619.00	1.00	0.01
			N33949	651.00	652.50	1.50	0.01
			N33951	652.50	654.00	1.50	0.02
			N33952	654.00	655.50	1.50	0.13
			N33953	655.50	656.50	1.00	0.01
			N33954	656.50	657.50	1.00	0.51
			N33955	657.50	659.00	1.50	0.05
			N33956	680.00	681.00	1.00	0.01
			N33957	681.00	681.80	0.80	0.01
			N33958	681.80	682.80	1.00	0.03
			N33959	682.80	683.60	0.80	0.38
			N33961	683.60	684.30	0.70	0.10
			N33962	684.30	685.00	0.70	0.01
			N33963	685.00	685.65	0.65	0.01
			N33964	685.65	687.00	1.35	0.01
			N33965	687.00	688.00	1.00	0.01
			N33966	715.00	716.00	1.00	0.02
			N33967	716.00	717.45	1.45	0.01
717.45	729.70	<p>ACO, CARBONATE ALTERED ROCK</p> <p>Strongly deformed grey, weak brown carbonate altered ultramafics. Strong shearing throughout; when an orientation is recognized it is typically high angle TCA but many areas are experiencing wavy/folded shearing. Moderate erratic tension gouging also present occasionally mimicking shearing but typically erratic grey/milky QC gashes and chlorite giving cataclastic texture. Mm-cm scale rounded QC eyes/blebs present in background; shearing seems to weave around these.</p> <p>Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~ 20-25 % QC overall. Lc is gradual as as shearing changes and becomes more chloritic.</p> <p>Trace to 1% sulphides.</p>	N33968	717.45	718.50	1.05	0.02
			N33969	718.50	719.50	1.00	0.01
			N33971	719.50	720.90	1.40	0.01
			N33972	720.90	721.90	1.00	0.01
			N33973	721.90	723.00	1.10	0.01
			N33974	723.00	724.10	1.10	0.01
			N33975	724.10	725.30	1.20	0.01
			N33976	725.30	726.00	0.70	0.01
			N33977	726.00	727.50	1.50	0.01
			N33978	727.50	729.00	1.50	0.01
			N33979	729.00	729.70	0.70	0.13

Hole Number: **NH19-020**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
729.70	753.00	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing is erratic ranging when visible 40 to 50 degrees TCA. Weak patchy core fracturing and fragmentation. Weak patchy brown carbonate and sericite. Strong chlorite ~ 25-30% QC as described. ♂Trace sulphides with patchy zones of mg reaching 2-3% EOH. MINOR INTERVALS: Minor Interval: 741.80 - 745.70 ACO, CARBONATE ALTERED ROCK Sulphides reaching up to 4% coarse grained. Similar to 717.45 to 729.7m .	N33981	729.70	731.20	1.50	0.02
			N33982	731.20	732.20	1.00	0.01
			N33983	732.20	733.10	0.90	0.05
			N33984	733.10	734.10	1.00	0.01
			N33985	734.10	735.20	1.10	0.01
			N33986	735.20	736.70	1.50	0.01
			N33987	736.70	738.00	1.30	0.02
			N33988	738.00	739.40	1.40	0.01
			N33989	739.40	740.20	0.80	0.01
			N33991	740.20	741.00	0.80	0.01
			N33992	741.00	741.80	0.80	0.01
			N72305	741.80	742.60	0.80	0.85
			N72306	742.60	743.60	1.00	0.52
			N72307	743.60	744.60	1.00	1.05
			N72308	744.60	745.10	0.50	1.11
			N72309	745.10	745.70	0.60	0.64
			N72311	745.70	747.00	1.30	0.02
			E32352	747.00	747.60	0.60	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33824	59.10	60.40	0.0025
N33825	60.40	61.80	0.0025
N33826	61.80	63.00	0.0025
N33827	63.00	64.00	0.0025
N33828	64.00	65.00	0.0025
N33829	65.00	66.00	0.0025
N33831	66.00	67.00	0.0025
N33832	275.20	275.80	0.0025
N33833	275.80	277.10	0.0025
N33834	277.10	278.00	0.0025
N33835	451.80	452.85	0.0025
N33836	452.85	453.50	0.0025
N33837	453.50	454.40	0.0025
N33838	454.40	455.60	0.0025
N33847	475.00	476.05	0.0025
N33848	476.05	477.40	1.8360
N33849	477.40	478.50	0.0380
N33851	478.50	480.00	0.0025
N33852	480.00	481.50	0.0025

Hole Number: **NH19-020**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N33853	481.50	483.00	0.0130
N33854	483.00	483.80	0.0070
N33855	483.80	485.20	0.0025
N33856	485.20	486.00	0.0280
N33857	486.00	487.50	0.0025
N33858	487.50	489.00	0.0025
N33859	489.00	490.00	0.0060
N33861	490.00	490.70	0.0190
N33862	490.70	492.00	0.0160
N33863	492.00	493.10	0.1060
N33864	493.10	493.75	2.1770
N33865	493.75	494.35	1.5900
N33866	494.35	495.50	0.7880
N33867	495.50	496.90	0.9360
N33868	496.90	497.40	0.3060
N33869	497.40	498.90	0.0060
N33871	498.90	500.40	0.0340
N33872	500.40	501.60	0.1320
N33873	501.60	503.10	0.0730
N33874	503.10	504.20	0.0300
N33875	504.20	505.40	0.3570
N33993	505.40	506.20	0.1500
N33994	506.20	507.00	0.0200
N33995	507.00	508.30	0.0200
N33839	508.30	509.10	0.2730
N33841	509.10	510.00	0.2090
N33842	510.00	511.50	1.1360
N33843	511.50	513.00	1.8730
N33844	513.00	514.10	1.7540
N33996	514.10	515.60	0.7600
N33997	515.60	516.70	0.1600
N33998	516.70	518.10	1.2800
N33876	518.10	519.50	1.3950
N33877	519.50	520.15	0.6980
N33878	520.15	521.50	0.2030
N33879	521.50	523.00	0.0640
N33881	523.00	524.50	0.3900
N33882	524.50	526.00	0.1000
N33883	526.00	527.50	0.0400

Hole Number: **NH19-020**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33884	527.50	529.00	0.2700
N33885	529.00	529.60	7.7800
N33886	529.60	530.75	0.4700
N33887	530.75	532.00	0.2700
N33888	532.00	533.50	0.1000
N33889	533.50	535.00	0.0500
N33891	535.00	536.50	0.1000
N33892	536.50	538.00	1.7700
N33893	538.00	539.50	0.0800
N33894	539.50	541.00	0.0900
N33895	541.00	542.50	0.1000
N33896	542.50	543.85	0.1800
N33897	543.85	544.90	2.4800
N33898	544.90	546.00	0.1200
N33899	546.00	547.50	0.0600
N33901	547.50	549.00	0.0400
N33902	549.00	550.50	0.0800
N33903	550.50	552.00	0.0400
N33904	552.00	553.00	0.0600
N33905	553.00	553.50	0.1400
N33906	553.50	555.00	0.2400
N33907	555.00	556.50	0.1200
N33908	556.50	558.00	0.0300
N33909	558.00	559.50	0.0300
N33911	559.50	560.60	0.1600
N33912	560.60	561.30	0.0500
N33913	561.30	562.15	0.1600
N33914	562.15	562.80	0.3500
N33915	562.80	564.00	0.2900
N33916	564.00	565.30	0.0800
N33917	565.30	566.40	0.1300
N33918	566.40	567.50	0.1000
N33919	567.50	568.40	0.1900
N33921	568.40	569.00	0.1700
N33922	569.00	570.00	0.4000
N33923	570.00	571.00	1.5800
N33924	571.00	572.00	1.8600
N33925	572.00	573.00	0.5200
N33926	573.00	574.05	0.1300

Hole Number: **NH19-020**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33927	574.05	575.25	0.0400
N33928	575.25	576.30	0.2400
N33929	576.30	576.80	0.6000
N33931	576.80	577.70	0.0700
N33932	577.70	578.70	0.2100
N33845	578.70	579.80	3.3960
N33846	579.80	581.00	1.6960
N33933	581.00	582.00	0.6400
N33934	582.00	583.00	0.2400
N33935	583.00	584.40	0.3100
N33936	584.40	585.55	0.0600
N33937	585.55	586.50	0.0400
N33938	586.50	587.60	0.3600
N33939	587.60	588.70	0.0500
N33941	588.70	589.80	0.2600
N33942	589.80	591.00	0.0200
N33943	611.00	612.00	0.0050
N33944	612.00	613.50	0.0050
N33945	613.50	615.00	0.0050
N33946	615.00	616.50	0.0200
N33947	616.50	618.00	0.0050
N33948	618.00	619.00	0.0050
N33949	651.00	652.50	0.0050
N33951	652.50	654.00	0.0200
N33952	654.00	655.50	0.1300
N33953	655.50	656.50	0.0050
N33954	656.50	657.50	0.5100
N33955	657.50	659.00	0.0500
N33956	680.00	681.00	0.0050
N33957	681.00	681.80	0.0050
N33958	681.80	682.80	0.0300
N33959	682.80	683.60	0.3800
N33961	683.60	684.30	0.1000
N33962	684.30	685.00	0.0050
N33963	685.00	685.65	0.0100
N33964	685.65	687.00	0.0050
N33965	687.00	688.00	0.0050
N33966	715.00	716.00	0.0200
N33967	716.00	717.45	0.0050

Hole Number: **NH19-020**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N33968	717.45	718.50	0.0200
N33969	718.50	719.50	0.0050
N33971	719.50	720.90	0.0050
N33972	720.90	721.90	0.0050
N33973	721.90	723.00	0.0050
N33974	723.00	724.10	0.0100
N33975	724.10	725.30	0.0050
N33976	725.30	726.00	0.0050
N33977	726.00	727.50	0.0050
N33978	727.50	729.00	0.0050
N33979	729.00	729.70	0.1300
N33981	729.70	731.20	0.0200
N33982	731.20	732.20	0.0050
N33983	732.20	733.10	0.0500
N33984	733.10	734.10	0.0050
N33985	734.10	735.20	0.0050
N33986	735.20	736.70	0.0050
N33987	736.70	738.00	0.0200
N33988	738.00	739.40	0.0100
N33989	739.40	740.20	0.0050
N33991	740.20	741.00	0.0050
N33992	741.00	741.80	0.0090
N72305	741.80	742.60	0.8450
N72306	742.60	743.60	0.5220
N72307	743.60	744.60	1.0510
N72308	744.60	745.10	1.1060
N72309	745.10	745.70	0.6370
N72311	745.70	747.00	0.0160
E32352	747.00	747.60	0.0130

DETAILED LOG

*Michael Conka*Hole Number: **NH19-021**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5373956.00	North:	Collar Az: 339.30
Location: Macklem Township	East: 508754.30	East:	Length: 57.00
	Elev: 290.40	Elev:	Start Depth: 0.00
Date Started: Feb 21, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Feb 21, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 57.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	339.30	-50.00	APS	OK		51.00	338.00	-57.00	EZ Sho	OK	Pulled back 6m

Detailed Lithology

From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	42.00	HPO, OVERBURDEN Overburden					
42.00	48.63	VMO, MAFIC VOLCANIC UNDIVIDED Dark green-grey, massive, volcanic unit. Weak pervasive chlorite alteration with weak bleaching around the veins. ~7% discordant milky white QC veinlets with QC gashes. Moderate tension gouging resulting in QC gashes and erratic chlorite veinlets. 0.5% fine grained clustered pyrite in the host rock veins. Sharp lower contact 70deg TCA.	N76163	47.47	48.63	1.16	0.01
48.63	51.14	ISO, SYENITIC INTRUSIVE Dark grey beige, fine grained, massive syenitic intrusive. Weak pervasive chlorite alteration with very weak possible hematite influence in the host rock. ~5% discordant quartz-carbonate veinlets/stringers. Moderate tension gouging resulting in QC gashes and erratic dark grey veinlets. ~7% fine grained disseminated pyrite throughout the unit. Moderate gouge from 50.13-50.26m. Lower contact marked by fault. MINOR INTERVALS: Minor Interval: 50.26 - 50.73 VMO, MAFIC VOLCANIC UNDIVIDED Dark green-grey, fine grained massive mafic volcanic. Entire unit has display weak blocky core fragmentation, due to proximity to the fault. Weak pervasive chlorite alteration. ~3% discordant QC gashes with moderate chlorite veinlets, likely the result of tension gouging. ~0.1% fine grained clustered pyrite. Sharp lower contact at 70deg TCA.	N76164	48.63	49.40	0.77	0.03
			N76165	49.40	50.26	0.86	0.01
			N76166	50.26	50.73	0.47	0.01
			N76167	50.73	51.14	0.41	0.08
51.14	54.00	ZGO, GOUGE Dark grey, massive gouge unit. Unit is likely part of the VMO, with moderate-strong gouging and faulting. No significant veining remains and no significant sulphides present. Gradational lower contact.	N76168	51.14	52.50	1.36	0.01

DETAILED LOG

Hole Number: **NH19-021**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
54.00	57.00	VMO, MAFIC VOLCANIC UNDIVIDED Dark green-grey, massive, volcanic unit. Weak pervasive chlorite alteration with weak bleaching around the veins. ~20% discordant milky white QC veinlets with QC gashes. Moderate tension gouging resulting in QC gashes and erratic chlorite veinlets. 0.5% fine grained clustered pyrite in the host rock veins. EOH at 57m					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76163	47.47	48.63	0.0050
N76164	48.63	49.40	0.0300
N76165	49.40	50.26	0.0050
N76166	50.26	50.73	0.0050
N76167	50.73	51.14	0.0800
N76168	51.14	52.50	0.0050

DETAILED LOG



Hole Number: **NH19-021A**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5373956.00	North:	Collar Az: 335.60
Location: Macklem Township	East: 508754.30	East:	Length: 720.00
	Elev: 290.40	Elev:	Start Depth: 0.00
Date Started: Feb 21, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Mar 08, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 720.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	335.60	-50.00	APS	OK		57.00	338.50	-50.40	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
108.00	340.90	-49.90	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	159.00	343.80	-50.50	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
210.00	345.60	-49.90	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	261.00	349.90	-49.30	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
312.00	351.80	-48.70	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	363.00	355.70	-48.20	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
414.00	357.00	-48.50	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	465.00	1.20	-48.10	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
526.00	2.80	-47.30	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	567.00	4.30	-45.90	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
618.00	5.50	-43.90	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	669.00	5.90	-42.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
720.00	6.50	-42.00	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m						

Detailed Lithology

From		To	Lithology	Assay Data				
Sample Number	From	To	Length	Au_gpt_Final				
	0.00	45.60	HPO, OVERBURDEN					

Hole Number: **NH19-021A**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
45.60	286.10	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Massive green grey to black mafic rock with vfg grained appearance with patchy mg. ,Patchy carb alteration blebby. Weak to moderate chlorite fracture surfaces .Patchy albitized QC veinlets .Very weak faded tension gouging in background of unit giving pseudo breccia. Patchy core fracturing. LC is gradual is varioles become more dominate</p> <p>From 89.5 to 90m breccia veining with albitized QC veinlets.</p> <p>From 102.5 to 104.4m shear with foliation at 30 to 40 degrees TCA</p> <p>From 124.2 to 131m sulphides reaching up to 3% mg along contacts of albitized QC breccia veins/veinlet</p> <p>Weak variolitic textures starting ~264</p> <p>Overall ~5-10 % reaching up to 15% veining as erratic gashes to stringers. Trace sulphides.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>173.15 - 173.80 IMD, MAFIC DYKE</p> <p>Minor Interval:</p> <p>284.10 - 284.80 LLO, LAMPROPHYRE</p> <p>Black with carb phenocrysts with pervasive biotite/muscovite phenocrysts with sharp LC and UC at 80 to 90 degrees, Trace to 1% sulphides disseminated</p>	1678092	123.00	124.20	1.20	0.05
			1678093	124.20	125.00	0.80	0.01
			1678094	125.00	126.00	1.00	0.01
			1678095	126.00	126.70	0.70	0.02
			1678096	126.70	127.70	1.00	0.01
			1678097	127.70	128.70	1.00	0.01
			1678098	128.70	129.90	1.20	0.01
			1678099	129.90	131.00	1.10	0.01
			1678101	131.00	132.00	1.00	0.04
286.10	308.50	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Massive green grey to black mafic rock with vfg grained appearance with patchy mg. ,Patchy carb alteration blebby. Weak to moderate chlorite fracture surfaces ., Faded carb infilled varioles pervasive throughout, with varioles reaching up too 3cm. Strong carb alteration disseminated throughout. 3-5% QC veinlets/gahes erratic.Trace sulphides, LC is sharp at 90 degrees</p>					
308.50	317.40	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing morderate throughout typically high angle 60-70 degrees TCA. Weak patchy core fracturing and fragmentation with cholrite dominate fracture surfaces chlorite. Lc is sharp at 60 degrees. ~ 10-15% QC as described within sheared area, 3-5% where shearing lacks. ♂Trace sulphides.</p>	1678102	316.40	317.40	1.00	0.01
317.40	321.00	<p>ZFZ, FAULT ZONE</p> <p>Faulted Ultramafics with pervasive gouge, foliation at 50 to 60 degrees, with disked structure cross cutting at 90 dTCA. Sulphides coarse grained at 2-3%. High core fractureing, LC is sharp at 90 degrees, QC veinlets,and gashes at 3-5%.</p>	1678103	317.40	318.00	0.60	0.01
			1678104	318.00	319.50	1.50	0.01
			1678105	319.50	320.00	0.50	0.01
			1678106	320.00	321.00	1.00	0.01
321.00	329.70	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Similar qualities and textures as 308.5 to 317.4m</p> <p>LC sharp at 60 degrees TCA</p>	1678107	321.00	322.00	1.00	0.01

Hole Number: **NH19-021A**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
329.70	460.75	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Massive green grey to black mafic rock with vfg grained appearance with patchy mg. .Patchy moderate/strong carb alteration blebby. Weak to moderate chlorite fracture surfaces . Weak patchy shearing 40 to 50 degrees TCA. Patchy albitized QC veinlets .Very weak faded tension gouging in background of unit giving pseudo breccia. Patchy core fracturing. Overall ~5-10 % reaching up to 15% veining as erratic gashes to stringers. Trace sulphides.</p> <p>MINOR INTERVALS: Minor Interval: 439.10 - 439.35 LDO, DIABASE DYKE Dark black, with pervasive peppered of fine grained needle like carb, trace sulphides, moderately magnetic throughout. Sharp LC and UC @ ~80 degrees TCA. Minor Interval: 459.40 - 460.75 LDO, DIABASE DYKE Dark black, with pervasive peppered of fine grained needle like carb, trace sulphides, moderately magnetic throughout. Sharp LC (@ ~80 degrees TCA) and UC (@~40 degrees TCA)</p>					
460.75	522.50	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing morderate throughout typically high angle ~60 degrees TCA. Patchy core fracturing and fragmentation. Light blue albitecarb veins sporadic. LC is sharp at 60 degrees TCA. ~ 10-15% QC as described with zones reaching up to 20%Trace sulphides with patchy zones 1-2% disseminated.</p> <p>MINOR INTERVALS: Minor Interval: 483.00 - 483.15 LLO, LAMPROPHYRE Black grey, with speckled barb blebs, with smeared biotite/muscovite sulphides disseminated at 1-2% sharp contact, UC is sharp 50 degrees, LC is at 80 degrees TCA.</p>	1678108	521.00	522.50	1.50	0.02
522.50	524.60	<p>ISP, PORPHYRITIC SYENITE</p> <p>Pinkish white/green, strongly albitized, weakly chlorite, sporadic milky veinlets at at 3-5%, background quartz eyes, carb carb altered, sulphides vfg to fine at 5-6%.</p>	1678109	522.50	523.50	1.00	0.97
			1678111	523.50	524.60	1.10	1.10

Hole Number: **NH19-021A**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
524.60	530.00	<p>AEC, SERICITE CARBONATE ALTERED ROCK</p> <p>Pale yellow/tan intensely sericite and bleached ultramafic rock. Weak patchy fuchsite influencing Moderate carbonate and silicification also influencing the unit. Weak to moderate background shearing orientation is ~ perp but more evident is tension gouging; dark erratic to wavy tourmaline fractures/gashes. Weak faded amygdular texture noticed where deformation may be lacking. Additionally, mm scale olive green blebs/flakes, and even finer darker flakes recognized in the matrix of undeformed intervals. . Chlorite also rare but influencing fracture surfaces with increasing frequency towards end of unit. Overall ~ 5-10 % QC as milky/grey thin stringers to blobby veinlets. Trace sulphides with sporadic veins infilled with coarse pyrite.</p> <p>MINOR INTERVALS: Minor Interval: 527.90 - 528.25 ISO, SYENITIC INTRUSIVE Pinkish red, with milky white to beige tensional veinlets wormy throughout at 5-10%, sulphides at 3-4, irregular sharp undulating contacts ~40 to 60 degrees.</p>	1678112	524.60	525.75	1.15	0.80
			1678113	525.75	527.00	1.25	0.04
			1678114	527.00	528.25	1.25	0.08
			1678115	528.25	529.00	0.75	0.01
			1678116	529.00	530.00	1.00	0.26
530.00	543.15	<p>ACO, CARBONATE ALTERED ROCK</p> <p>Strongly deformed grey with weak brown carbonate altered ultramafics. Pachy shearing throughout at 80 degrees TCA when an orientation is recognized. Moderate erratic tension gouging also present occasionally mimicking shearing but typically erratic grey/milky QC gashes. "Salt and pepper" appearance in intervals lacking deformation. Mm-cm scale rounded QC eyes/blebs present in background; shearing seems to weave around these. Patchy grey felsic fingers erratic.</p> <p>Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~ 10-15 % QC overall with sporadic veinlets infilled with pyrite oriented ar ~60 degrees.</p> <p>Trace sulphides.</p>	1678117	530.00	531.50	1.50	0.01
			1678118	531.50	532.50	1.00	0.01
			1678119	532.50	534.00	1.50	0.01
			1678121	534.00	535.50	1.50	0.02
			1678122	535.50	537.00	1.50	0.01
			1678123	537.00	538.50	1.50	0.04
			1678124	538.50	540.00	1.50	0.01
			1678125	540.00	541.50	1.50	0.01
			1678126	541.50	542.50	1.00	0.01
			1678127	542.50	543.15	0.65	0.01
543.15	548.20	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Intensely grey carbonate and dark green chlorite altered ultramafics. Very weak sericite and patchy moderate fuchsite. Strong erratic tension gouging resulting in primarily grey discontinuous QC gashes but also rarer is wavy tourmaline gashes. Tension gouging in combination with QC surrounding fragmented clasts are associated with breccia veining. Other deformation features such as microfaulting and localized cataclastic texture may also be present.</p> <p>Overall ~ 10-15% QC, primarily as brecciated veinlets or erratic discontinuous gashes/stringers.</p> <p>Trace to 1% sulphides.</p>	1678128	543.15	544.35	1.20	0.01
			1678129	544.35	545.30	0.95	0.01
			1678131	545.30	546.80	1.50	0.05
			1678132	546.80	548.20	1.40	0.02
548.20	550.80	<p>AAO, ALBITIC ALTERED ROCK</p> <p>Smokey grey/purple strongly albite altered interval with moderate silicification throughout, and hosting increased vfg dissem, clustered, blebby pyrite. Baserock believed to be an intrusive (sharp contacts, intensely altered pervasively throughout). Sharp LC and UC at 80 degrees. Small lens of green carb QC content ~5-10 % throughout, primarily as faded clasts, wispy stringers. Overall sulphides may reach 4-5 %, localized may reach up to 7%</p>	1678133	548.20	549.20	1.00	2.38
			1678134	549.20	550.00	0.80	1.85
			1678135	550.00	550.80	0.80	4.39

Hole Number: **NH19-021A**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
550.80	570.80	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Similar textures and qualities as 543.15 to 548.2m Dominated by breccia veining/ cataclastic throughout out with brown carb/chlorite altered clasts with patchy albite with clasts. green carb more prevalent throughout. Sulphides at trace to 1%.</p> <p>MINOR INTERVALS: Minor Interval: 555.70 - 557.00 ACG, GREEN CARBONATE ALTERED ROCK Typical moderate to strongly deformed fuchsite rich green carbonate rock. Strong shearing throughout; 50 degrees TCA, but often times it is erratic in nature. Additionally, trace tension gouging resulting in dark tourmaline gashes occur erratically, but also thin and wavy gashes may be mimicking shearing orientation. . Weak background amygdular texture evident. Yellow flakey sericite randomly scattered throughout primarily seems to occur where deformation is lacking. Overall 5-10% veining; milky erratic QC gashes, to blobby veinlets/veins</p> <p>Minor Interval: 559.30 - 560.00 AQE, SILICA SERICITE ALTERED ROCK Light tan grey, strongly silicified, weakly albitic, lacking veining, sharp UC and LC at 50 to 60 degrees.</p> <p>Minor Interval: 560.30 - 560.80 AQE, SILICA SERICITE ALTERED ROCK Similar textures and qualities as 559.3 to 560 More sericitc lacking albite, shallow sharp contacts at ~20 degrees TCA</p>	1678136	550.80	552.00	1.20	0.01
			E32351	552.00	553.40	1.40	0.01
			1678137	553.40	554.90	1.50	0.05
			1678138	554.90	555.70	0.80	0.06
			1678139	555.70	557.00	1.30	0.61
			1678141	557.00	558.10	1.10	0.13
			1678142	558.10	559.30	1.20	0.35
			1678143	559.30	560.00	0.70	0.11
			1678144	560.00	560.80	0.80	0.04
			1678145	560.80	562.00	1.20	0.14
			1678146	562.00	563.50	1.50	0.05
			1678147	563.50	565.00	1.50	0.04
			1678148	565.00	566.50	1.50	0.02
			1678149	566.50	568.00	1.50	0.03
			1678151	568.00	569.50	1.50	0.01
			1678152	569.50	570.80	1.30	0.03

DETAILED LOG

Hole Number: **NH19-021A**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
570.80	619.75	ACG, GREEN CARBONATE ALTERED ROCK strongly deformed fuchsite rich green carbonate rock. Strong shearing throughout; 50 degrees TCA, but often times it is erratic in nature. Where fuchsite lacks grey carbonate dominates starting at 616m , Additionally, trace tension gouging resulting in dark tourmaline gashes occur erratically, but also thin and wavy gashes may be mimicking shearing orientation. . Weak background amygdular texture evident. Yellow flakey sericite randomly scattered throughout primarily seems to occur where deformation is lacking. LC is sharp at 90 degrees along breccia veins. Overall 20-25% veining; milky erratic QC gashes, to blobby veinlets/veins Sulphides overall at 2-3% reaching up to 7% along green carb contacts with veins. VG @ 582.23m MINOR INTERVALS: Minor Interval: 579.80 - 582.30 QVO, QUARTZ VEINS Milky white Quartz veining with weaving green carb rafts, with coarse pyrite reaching up to 7%. VG @ 582.23m Minor Interval: 611.65 - 612.25 AAO, ALBITIC ALTERED ROCK Smokey grey/purple strongly albite altered interval with moderate silicification throughout, and hosting increased vfg dissem, clustered, blebby pyrite. Baserock believed to be an intrusive (sharp contacts, intensely altered pervasively throughout). Sharp LC and UC at 80 degrees. Small lens of green carb QC content ~5-10 % throughout, primarily as faded clasts, wispy stringers. Overall sulphides may reach 3-4 %, localized may reach up to 5%	1678153	570.80	571.80	1.00	0.02
			1678154	571.80	573.00	1.20	0.41
			1678155	573.00	574.00	1.00	0.03
			1678156	574.00	575.20	1.20	0.01
			1678157	575.20	576.00	0.80	0.02
			1678158	576.00	577.50	1.50	0.35
			1678159	577.50	579.00	1.50	0.08
			1678161	579.00	579.80	0.80	0.05
			1678162	579.80	580.70	0.90	0.73
			1678163	580.70	581.70	1.00	2.12
			1678164	581.70	582.30	0.60	9.49
			1678165	582.30	583.00	0.70	1.76
			1678166	583.00	584.00	1.00	1.56
			1678167	584.00	585.00	1.00	0.46
			1678168	585.00	586.50	1.50	0.06
			1678169	586.50	587.50	1.00	0.06
			1678171	587.50	589.00	1.50	0.20
			1678172	589.00	590.30	1.30	0.10
			1678173	590.30	591.30	1.00	0.05
			1678174	591.30	592.65	1.35	0.01
			1678175	592.65	594.00	1.35	0.03
			1678176	594.00	595.50	1.50	0.02
			1678177	595.50	597.00	1.50	0.09
			1678178	597.00	598.50	1.50	0.03
			1678179	598.50	600.00	1.50	0.02
			1678181	600.00	601.30	1.30	0.57
			1678182	601.30	602.30	1.00	0.10
			1678183	602.30	603.60	1.30	0.07
			1678184	603.60	605.00	1.40	0.11
			1678185	605.00	606.00	1.00	1.16
			1678186	606.00	607.50	1.50	0.04
			1678187	607.50	609.00	1.50	0.36
			1678188	609.00	610.50	1.50	0.21
			1678189	610.50	611.65	1.15	0.22
			1678191	611.65	612.25	0.60	0.45
			1678192	612.25	613.00	0.75	0.44
			1678193	613.00	614.50	1.50	0.01
			1678194	614.50	616.00	1.50	0.06
			1678195	616.00	617.50	1.50	0.01
			1678196	617.50	619.00	1.50	0.01
			1678197	619.00	619.75	0.75	0.24

Hole Number: **NH19-021A**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
619.75	623.00	AAO, ALBITIC ALTERED ROCK Smokey grey/purple strongly albite altered interval with moderate silicification throughout, and hosting increased vfg dissem, clustered, blebby pyrite. Baseroack believed to be an intrusive (sharp contacts, intensely altered pervasively throughout). Sharp LC and UC at 80 degrees. Small lens of green carb QC content ~5-10 % throughout, primarily as faded clasts, wispy stringers. Overall sulphides may reach 3-4 %, localized may reach up to 5%	1678198	619.75	620.60	0.85	3.05
			1678199	620.60	621.50	0.90	0.45
			1678201	621.50	622.30	0.80	0.35
			1678202	622.30	623.00	0.70	1.89
623.00	701.00	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Patchy shearing moderate throughout typically high angle weaving changing from 50 to 70 degrees TCA. Strong patchy core fracturing and fragmentation. ~ 15-20% QC as described. ♂Trace sulphides.	1678203	623.00	624.20	1.20	1.03
			1678204	700.00	701.00	1.00	0.06
701.00	716.80	ACO, CARBONATE ALTERED ROCK Strongly deformed grey, weak brown carbonate altered ultramafics. Strong shearing throughout; when an orientation is recognized it is typically high angle TCA but many areas are experiencing wavy/folded shearing. Moderate erratic tension gouging also present occasionally mimicking shearing but typically erratic grey/milky QC gashes and chlorite giving cataclastic texture. Mm-cm scale rounded QC eyes/blebs present in background; shearing seems to weave around these. Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~ 20-25 % QC overall. Lc is sharp @ 50 degrees TCA Trace to 1% sulphides.	1678205	701.00	702.50	1.50	0.97
			1678206	702.50	704.00	1.50	0.05
			1678207	704.00	705.50	1.50	0.01
			1678208	705.50	707.00	1.50	0.01
			1678209	707.00	708.50	1.50	0.01
			1678211	708.50	710.00	1.50	0.01
			1678212	710.00	711.50	1.50	0.01
			1678213	711.50	713.00	1.50	0.01
			1678214	713.00	714.00	1.00	0.03
			1678215	714.00	715.50	1.50	0.01
		1678216	715.50	716.80	1.30	0.01	
716.80	720.00	QVC, QUARTZ CARBONATE VEINS Milky white quartz vein, with sporadic weak chlorite fracture fills and ultramafic rafts, no visible sulphides	1678217	716.80	718.00	1.20	0.01
			1678218	718.00	719.00	1.00	0.01
			1678219	719.00	720.00	1.00	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678092	123.00	124.20	0.0500
1678093	124.20	125.00	0.0050
1678094	125.00	126.00	0.0050
1678095	126.00	126.70	0.0200
1678096	126.70	127.70	0.0100
1678097	127.70	128.70	0.0100
1678098	128.70	129.90	0.0100
1678099	129.90	131.00	0.0100
1678101	131.00	132.00	0.0400
1678102	316.40	317.40	0.0050

Hole Number: **NH19-021A**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678103	317.40	318.00	0.0050
1678104	318.00	319.50	0.0050
1678105	319.50	320.00	0.0050
1678106	320.00	321.00	0.0050
1678107	321.00	322.00	0.0050
1678108	521.00	522.50	0.0200
1678109	522.50	523.50	0.9700
1678111	523.50	524.60	1.1000
1678112	524.60	525.75	0.8000
1678113	525.75	527.00	0.0400
1678114	527.00	528.25	0.0800
1678115	528.25	529.00	0.0050
1678116	529.00	530.00	0.2600
1678117	530.00	531.50	0.0050
1678118	531.50	532.50	0.0050
1678119	532.50	534.00	0.0050
1678121	534.00	535.50	0.0200
1678122	535.50	537.00	0.0050
1678123	537.00	538.50	0.0400
1678124	538.50	540.00	0.0050
1678125	540.00	541.50	0.0050
1678126	541.50	542.50	0.0050
1678127	542.50	543.15	0.0050
1678128	543.15	544.35	0.0100
1678129	544.35	545.30	0.0100
1678131	545.30	546.80	0.0500
1678132	546.80	548.20	0.0200
1678133	548.20	549.20	2.3800
1678134	549.20	550.00	1.8500
1678135	550.00	550.80	4.3900
1678136	550.80	552.00	0.0050
E32351	552.00	553.40	0.0100
1678137	553.40	554.90	0.0500
1678138	554.90	555.70	0.0600
1678139	555.70	557.00	0.6100
1678141	557.00	558.10	0.1300
1678142	558.10	559.30	0.3500
1678143	559.30	560.00	0.1100
1678144	560.00	560.80	0.0400

Hole Number: **NH19-021A**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678145	560.80	562.00	0.1400
1678146	562.00	563.50	0.0500
1678147	563.50	565.00	0.0400
1678148	565.00	566.50	0.0200
1678149	566.50	568.00	0.0300
1678151	568.00	569.50	0.0100
1678152	569.50	570.80	0.0300
1678153	570.80	571.80	0.0200
1678154	571.80	573.00	0.4100
1678155	573.00	574.00	0.0300
1678156	574.00	575.20	0.0100
1678157	575.20	576.00	0.0200
1678158	576.00	577.50	0.3500
1678159	577.50	579.00	0.0800
1678161	579.00	579.80	0.0500
1678162	579.80	580.70	0.7330
1678163	580.70	581.70	2.1190
1678164	581.70	582.30	9.4930
1678165	582.30	583.00	1.7600
1678166	583.00	584.00	1.5580
1678167	584.00	585.00	0.4600
1678168	585.00	586.50	0.0600
1678169	586.50	587.50	0.0600
1678171	587.50	589.00	0.2000
1678172	589.00	590.30	0.1000
1678173	590.30	591.30	0.0500
1678174	591.30	592.65	0.0100
1678175	592.65	594.00	0.0300
1678176	594.00	595.50	0.0200
1678177	595.50	597.00	0.0900
1678178	597.00	598.50	0.0300
1678179	598.50	600.00	0.0200
1678181	600.00	601.30	0.5700
1678182	601.30	602.30	0.1000
1678183	602.30	603.60	0.0700
1678184	603.60	605.00	0.1100
1678185	605.00	606.00	1.1600
1678186	606.00	607.50	0.0400
1678187	607.50	609.00	0.3600

Hole Number: **NH19-021A**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678188	609.00	610.50	0.2100
1678189	610.50	611.65	0.2200
1678191	611.65	612.25	0.4500
1678192	612.25	613.00	0.4400
1678193	613.00	614.50	0.0050
1678194	614.50	616.00	0.0600
1678195	616.00	617.50	0.0100
1678196	617.50	619.00	0.0100
1678197	619.00	619.75	0.2400
1678198	619.75	620.60	3.0500
1678199	620.60	621.50	0.4500
1678201	621.50	622.30	0.3500
1678202	622.30	623.00	1.8900
1678203	623.00	624.20	1.0300
1678204	700.00	701.00	0.0600
1678205	701.00	702.50	0.9700
1678206	702.50	704.00	0.0500
1678207	704.00	705.50	0.0050
1678208	705.50	707.00	0.0050
1678209	707.00	708.50	0.0050
1678211	708.50	710.00	0.0100
1678212	710.00	711.50	0.0050
1678213	711.50	713.00	0.0050
1678214	713.00	714.00	0.0300
1678215	714.00	715.50	0.0050
1678216	715.50	716.80	0.0050
1678217	716.80	718.00	0.0050
1678218	718.00	719.00	0.0050
1678219	719.00	720.00	0.0050

DETAILED LOG



Hole Number: **NH19-022**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -60.00
Project Number: MACKLE_TWP	North: 5373956.00	North:	Collar Az: 339.30
Location: Macklem Township	East: 508754.30	East:	Length: 739.00
	Elev: 290.40	Elev:	Start Depth: 0.00
Date Started: Mar 08, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Mar 22, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 739.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	339.30	-60.00	APS	OK		48.00	339.30	-61.30	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
99.00	342.80	-61.00	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	150.00	346.70	-59.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
201.00	348.80	-59.20	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	258.00	353.10	-58.80	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
306.00	349.90	-58.30	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m	357.00	355.10	-58.20	EZ Sho	OK	Azimuth corrected by subtracting 11.4 degrees, pulled back 6m
408.00	358.60	-57.60	EZ Sho	OK	Pulled back 6m	456.00	358.90	-57.60	EZ Sho	OK	Pulled back 6m
510.00	1.90	-56.10	EZ Sho	OK	Pulled back 6m	561.00	3.90	-55.20	EZ Sho	OK	Pulled back 6m
612.00	5.70	-53.80	EZ Sho	OK	Pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	39.00	HPO, OVERBURDEN					

Hole Number: **NH19-022**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
39.00	69.65	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Massive green grey to black mafic rock with vfg grained appearance with patchy mg. ,Patchy carb alteration blebby. Weak to moderate chlorite fracture surfaces .Patchy albitized QC veinlets .Very weak faded tension gouging in background of unit giving pseudo breccia. Patchy core fracturing. QC Veining at 5-10% as discontinuous gashes and stringers.</p> <p>MINOR INTERVALS: Minor Interval: 66.70 - 68.40 ISO, SYENITIC INTRUSIVE Pinkish green, fine grained with disseminated sulphides at 2-3%,strong carb alteration ,trace hairline QC veinlets, LC is sharp at ~30 degrees TCA. Minor Interval: 68.40 - 69.00 VUM, MASSIVE ULTRAMAFIC Blakc with pervasive QC gashes and stringers at 5-10%, trace sulphides, high core fracturing with breaks generally occuring at 60 degrees TCA. Weak shearing at 50 degrees Minor Interval: 69.00 - 69.65 ISO, SYENITIC INTRUSIVE Similar textures and qualties as 66.7 to 68.4m</p>	1678222	66.70	67.70	1.00	0.04
			1678223	67.70	68.40	0.70	0.14
			1678224	68.40	69.00	0.60	0.00
			1678225	69.00	69.65	0.65	0.03
69.65	87.80	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing morderate weaving from 30 to 60 degrees TCA. Weak patchy core fracturing and fragmentation. Weak patchy moderate/strong chlorite, and weak sericite. Sulphides reaching up to 2% in chlorite zones LC is arbitrary as shearing becomes weak ~ 15-20% QC as described. ♂Trace sulphides.</p> <p>MINOR INTERVALS: Minor Interval: 73.25 - 74.80 ZFZ, FAULT ZONE Block and broken, with shallow UC at 20 degrees, shearing when visible ~20 to 30 degrees, intermitten gouge lens. Trace sulphides</p>	1678226	69.65	70.50	0.85	0.00
			1678227	80.00	81.00	1.00	0.00
			1678228	81.00	82.00	1.00	0.00
			1678229	82.00	83.00	1.00	0.00
			1678231	83.00	83.80	0.80	0.00
			1678232	83.80	84.80	1.00	0.00
			1678233	84.80	85.80	1.00	0.00

Hole Number: **NH19-022**

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Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
87.80	260.30	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Similar textures and qualities as 39.0 to 69.65 Trace Patchy carb filled varioles reaching up to 1.5cm , Shearing has weak breccia with chlorite weaving around clasts. Bluish tinge from the albitic QC veinlets from 160.5 to 174m, sporadic patchy shearing at 40 to 50 degrees TCA. Small shallow intermediate intrusion fingers with greenish blue and fine speckled black minerals sporadic from 205.3 to 214.0m</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 92.90 - 93.50 ISO, SYENITIC INTRUSIVE Similar textures and qualities as 66.7 to 68.4m</p> <p>Minor Interval: 137.70 - 138.00 LLO, LAMPROPHYRE Blackish grey with 0.5cm phenocrysts of black (chlorite)? sulphides at trace to 1%, Sharp LC and UC at 60 to 70 degrees TCA. strong carb alteration disseminated.</p> <p>Minor Interval: 165.95 - 167.95 LLO, LAMPROPHYRE Similar textures and qualities as 137.7 to 138.0m Sulphides increasing to 1-2%, mg to cg. biotite visible sporadically within matrix.</p> <p>Minor Interval: 172.20 - 173.50 LLO, LAMPROPHYRE Similar to previous LLO shallow UC at 10 to 20 degrees TCA, stong carb alteration. patchy coarse sulphides at 1-2%.</p> <p>Minor Interval: 180.60 - 181.70 LLO, LAMPROPHYRE Similar to previous LLO, Weakly bleached, trace sulphides.</p> <p>Minor Interval: 209.50 - 209.80 LLB, BIOTITIC LAMPROPHYRE Blackish grey with 0.5cm phenocrysts of black (chlorite)? with pervasive biotite, sulphides are trace. Sharp LC and UC at 60 to 70 degrees TCA. strong carb alteration disseminated.</p> <p>Minor Interval: 215.60 - 216.00 LLB, BIOTITIC LAMPROPHYRE Similar textures and qualities as 209.5 to 209.8m</p>	1678234	91.80	92.80	1.00	0.00
			1678235	92.80	93.50	0.70	0.04
			1678236	93.50	94.50	1.00	0.00
			1678237	165.00	165.95	0.95	0.00
			1678238	165.95	167.00	1.05	0.00
			1678239	167.00	167.95	0.95	0.02
			1678241	167.95	169.00	1.05	0.00

Hole Number: **NH19-022**

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Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
260.30	266.20	<p>VUX, Ultramafic Breccia</p> <p>Black with interwoven green and white carb, erratic gashes of chlorite and carb break up ultramafics grading from moderate till 263.9m then goes to intense, sulphides trace to 1% with in fracture filled intense, with weak shearing at 50 degrees. LC is sharp at 90 degrees TCA</p> <p>MINOR INTERVALS: Minor Interval: 260.30 - 260.80 ZFZ, FAULT ZONE</p> <p>Blocky and broken, intermitten gouge, strong weaving chlorite, contacts are sharp roughly at 50 to 60 degrees TCA</p>	1678242	262.90	263.90	1.00	0.04
			1678243	263.90	265.00	1.10	0.62
			1678244	265.00	265.60	0.60	0.25
			1678245	265.60	266.20	0.60	0.59
266.20	278.15	<p>ZGO, GOUGE</p> <p>intense gouging with intercollated ultramafics (with conglomerated QC and ultramafic clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides.</p> <p>MINOR INTERVALS: Minor Interval: 268.50 - 269.40 OLO, LOST CORE</p> <p>Minor Interval: 269.40 - 271.80 VUM, MASSIVE ULTRAMAFIC</p> <p>Similar textures and qualities as 260.3m to 266.2m Less erratic weaving chlorite and carb, more along shearing plane at ~50 to 60 degrees, patchy core fragmentation</p> <p>Minor Interval: 272.40 - 273.00 OLO, LOST CORE</p> <p>Minor Interval: 273.30 - 273.80 VUM, MASSIVE ULTRAMAFIC</p> <p>similar to 269.4 to 271.8m</p> <p>Minor Interval: 273.80 - 275.30 OLO, LOST CORE</p> <p>Minor Interval: 275.30 - 276.00 VUM, MASSIVE ULTRAMAFIC</p> <p>Similar to 269.</p>					
278.15	296.20	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics blotchy light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. . Blobby soap stone (chlorite?) Shearing moderate weaving from ~60 degrees TCA but often times erratic. Weak patchy core fracturing and fragmentation. Weak patchy moderate/strong chlorite, and patchy brown carb. LC is sharp at 30 degrees TCA. ~ 15-20% QC as described. ♂Trace sulphides.</p>					
296.20	300.20	<p>LLO, LAMPROPHYRE</p> <p>Blackish grey with 0.5cm phenocrysts of black (chlorite)? and carb, medium grained, Veining at 5-7% ~roughly oriented at 50-60 degrees. sulphides at trace to 1%, Sharp LC 70 degrees TCA.</p>					

Hole Number: **NH19-022**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
300.20	311.30	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics blotchy light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. . Blobby soap stone (chlorite?) Shearing moderate weaving from ~60 degrees TCA but often times erratic . Moderate patchy core fracturing and fragmentation. Weak patchy moderate/strong chlorite, and patchy brown carb. LC is sharp at 30 degrees TCA. From 300.2 to 303m Shearing lacking and veining, predominantly porphyroblastic carb blebs ~ 15-20% QC as described. ♂Trace sulphides. Sharp lower contact@variable angles TCA</p>					
311.30	313.00	<p>ZGO, GOUGE</p> <p>intense gouging with intercollated ultramafics (with conglomerated QC and ultramafic clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides.</p>					
313.00	344.50	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Dark grey/blueish undivided ultramafics with wormy/erratic stringers/veinlets and the occasion vein. Occasional faded and sometimes truncated in appearance dark tourmaline tension gouging. Green-blue most likely chlorite influence sometimes seen in veining. Typically lacking significant shear/deformation. Sharp lower contact @variable angles TCA ~10-12% QVC</p>					
344.50	355.60	<p>LLO, LAMPROPHYRE</p> <p>Dark grey/blueish lamprophyre with a speckled appearance with darker clasts and QC specks. Sharp lower contact @variable angles TCA. ~5% QVC as stringers/veinlets with the odd vein</p>					
355.60	492.70	<p>VMO, MAFIC VOLCANIC UNDIVIDED</p> <p>Dark grey/blueish undivided ultramafics with wormy/erratic stringers/veinlets, occasional veins and occasional QC blebs. Occasional faded and sometimes truncated in appearance dark tourmaline tension gouging. Green-blue most likely chlorite influence sometimes seen in veining. Typically lacking significant shear/deformation. Patchy core fracturing/fragmentation throughout (see structures tab). Overall insignificant sulphides, but occasional pyrite clusters seen (for example box77 is spot sampled). Veining increases in boxes 84-87 to ~15-18% QVC with more frequent QC blebs and veining on the scale of vein size. ~10-12% QVC. Larger scale veins from ~425.5-425.7m and 426-426.5m with some k-spar alteration and occasional blebby and fracture fill chalcopyrite (was spot sampled). Contact with IMD is sharp, but is a blob of IMD within VMO, but pervasive IMD starts at ~493.4m</p> <p>MINOR INTERVALS: Minor Interval: 476.80 - 477.30 IMD, MAFIC DYKE Weak-moderately magnetic with sharp upper and lower contacts</p>	1678246	363.70	365.20	1.50	0.01
			1678247	365.20	366.70	1.50	0.00
			1678248	366.70	367.50	0.80	0.00
			1678249	425.00	425.50	0.50	0.00
			1678251	425.50	426.00	0.50	0.00
			1678252	426.00	426.50	0.50	0.00
			1678253	426.50	427.00	0.50	0.00

Hole Number: **NH19-022**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
492.70	495.40	IMD, MAFIC DYKE Dark grey moderately magnetic mafic dyke with sharp upper and lower contacts and lacking significant veining, sulphides and alteration.					
495.40	501.90	VMO, MAFIC VOLCANIC UNDIVIDED Dark grey/blueish undivided ultramafics with wormy/erratic stringers/veinlets. Occasional faded and sometimes truncated in appearance dark tourmaline tension gouging. Green-blue most likely chlorite influence sometimes seen in veining. Typically lacking significant shear/deformation. Overall insignificant sulphides, but occasional pyrite blebs seen. ~5-7% QVC Sharp lower contact @high angle TCA.	1678254	500.90	501.90	1.00	0.00
501.90	503.70	LLO, LAMPROPHYRE Dark grey/blueish lamprophyre with a speckled appearance with darker clasts and QC specks. Increased sulphide content compared to surrounding intervals with ~10% dissem sulphide content throughout. Sharp lower contact @high angle TCA. ~3% QVC as stringers	1678255	501.90	502.80	0.90	0.00
			1678256	502.80	503.70	0.90	0.00
503.70	506.10	VMO, MAFIC VOLCANIC UNDIVIDED See above VMO (495.4-501.9m). Sharp lower contact @variable angles TCA.	1678257	503.70	504.70	1.00	0.00
506.10	507.20	IMD, MAFIC DYKE Dark grey moderately magnetic mafic dyke with sharp upper and lower contacts and lacking significant veining, sulphides and alteration.					
507.20	568.00	VMO, MAFIC VOLCANIC UNDIVIDED Dark grey/blueish undivided ultramafics with wormy/erratic stringers/veinlets, occasional veins and QC blebs. Occasional faded and sometimes truncated in appearance dark tourmaline tension gouging. Green-blue most likely chlorite influence sometimes seen in veining. Typically lacking significant shear/deformation. Overall insignificant sulphides, but occasional pyrite blebs seen. ~5-7% QVC Sharp lower contact @high angle TCA	1678258	565.60	566.80	1.20	0.01
			1678259	566.80	568.00	1.20	0.03
568.00	571.40	ISO, SYENITIC INTRUSIVE Carbonate and possibly albite altered grey-green syentic interval lacking significant deformation/shearing. Dark tourmaline tension gouging is erratic in nature. Alteration halos and patchy alteration are seen, although all the alteration probably originates from the halos. Erratic QC stringers/veinlets. Increased sulphides compared to surrounding intervals. ~10-12%QVC. Sharp lower contact @high angle TCA MINOR INTERVALS: Minor Interval: 569.90 - 570.70 VMO, MAFIC VOLCANIC UNDIVIDED Minor Interval: 570.70 - 570.80 IMD, MAFIC DYKE Minor Interval: 570.80 - 570.90 VMO, MAFIC VOLCANIC UNDIVIDED	1678261	568.00	569.00	1.00	0.64
			1678262	569.00	569.90	0.90	1.22
			1678263	569.90	570.90	1.00	0.01
			1678264	570.90	571.40	0.50	2.19

DETAILED LOG

Hole Number: **NH19-022**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
571.40	576.70	VMO, MAFIC VOLCANIC UNDIVIDED See above VMO description (507.2-568m). ~18-20%QVC. Sharp lower contact @high angle TCA	1678265	571.40	572.90	1.50	0.01
			1678266	572.90	574.40	1.50	0.01
			1678267	574.40	575.60	1.20	0.00
			1678268	575.60	576.70	1.10	0.01
576.70	581.40	ISO, SYENITIC INTRUSIVE See above ISO (568-571.4m). Evidence of micro-faulting, for example at ~580.4m with max 2cm offset. ~10-12%QVC. Sharp lower contact @high angle TCA. MINOR INTERVALS: Minor Interval: 579.10 - 579.90 VMO, MAFIC VOLCANIC UNDIVIDED Wtih patchy fuchsite alteration	1678269	576.70	577.70	1.00	0.01
			1678271	577.70	578.50	0.80	0.04
			1678272	578.50	579.10	0.60	0.72
			1678273	579.10	579.90	0.80	0.01
			1678274	579.90	580.60	0.70	0.60
			1678275	580.60	581.40	0.80	6.28
581.40	594.40	VMO, MAFIC VOLCANIC UNDIVIDED See above VMO description (507.2-568m). Moderate shearing begins at ~591.3 to lower contact that is typically oriented at high angle (>70 degrees) TCA. At the same measurement a pseudo-breccia or cataclastic texture begins with dark clasts of variable sizes that are oriented along the shear plane. ~18-20%QVC with increased QC blebs compared to previous intervals. Sharp contact where pervasive carbonate alteration begins.	1678276	581.40	582.90	1.50	0.01
			1678277	582.90	584.40	1.50	0.00
			1678278	584.40	585.90	1.50	0.00
			1678279	585.90	587.40	1.50	0.00
			1678281	587.40	588.90	1.50	0.00
			1678282	588.90	590.40	1.50	0.01
			1678283	590.40	591.90	1.50	0.00
			1678284	591.90	593.40	1.50	0.00
			1678285	593.40	594.40	1.00	0.00
594.40	598.70	ACX, Mixed Carbonate Moderately sheared grey-brown mixed carbonate altered ultramafic interval that is experiencing grey and brown carbonate alteration along with patchy fuchsite alteration. Shearing is typically oriented at ~45 degrees TCA. A pseudo cataclastic texture is seen from ~596.597m with clasts of variable sizes that are oriented along the shearing plane. Shearing is lacking from ~597.9m to lower contact where erratic QC stringers/gashes are also seen. ~18-20%QVC where veining typically follows shearing, except the above mentioned erratic gashes. Sharp lower contact @high angle TCA.	1678286	594.40	595.60	1.20	0.04
			1678287	595.60	596.80	1.20	0.21
			1678288	596.80	597.80	1.00	0.10
			1678289	597.80	598.70	0.90	0.02
598.70	606.10	ACO, CARBONATE ALTERED ROCK Primarily grey carbonate altered mafic interval that is lacking deformation or shearing and is uniform in appearance. Weak fuchsite alteration that is seen as patchy, as well as alteration halos. Occasional erratic QC stringers/veinlets with the odd vein. Sharp lower contact @variable angles TCA. ~5% QVC	1678291	598.70	600.20	1.50	0.01
			1678292	600.20	601.70	1.50	0.02
			1678293	601.70	603.20	1.50	0.99
			1678294	603.20	604.70	1.50	0.03
			1678295	604.70	606.10	1.40	0.03

Hole Number: **NH19-022**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
606.10	616.10	ACX, Mixed Carbonate Strongly deformed and moderately sheared grey +/- brown carb mixed carbonate interval that is also experiencing patchy fuchsite and sericite alteration. When shearing orientation is discernable, it is typically oriented at high angle (>70 degrees) TCA and a pseudo-cataclastic texture is seen associated with it as clasts of variable sizes are oriented along the shear plane. When shear isn't discernable, dark tourmaline tension gouging is seen that can be oriented at high angle TCA or also be erratic in nature. ~18-20%QVC where stringers/veinlets can be associated with shear or also wormy/erratic in nature. Larger vein from 613-613.3m. Sharp lower contact where deformation/shearing changes	1678296	606.10	607.30	1.20	0.02
			1678297	607.30	608.50	1.20	0.00
			1678298	608.50	609.70	1.20	0.07
			1678299	609.70	610.20	0.50	0.01
			1678301	610.20	610.70	0.50	0.01
			1678302	610.70	611.70	1.00	0.03
			1678303	611.70	612.50	0.80	0.01
			1678304	612.50	613.00	0.50	0.03
			1678305	613.00	613.50	0.50	0.13
			1678306	613.50	614.80	1.30	0.01
			1678307	614.80	616.10	1.30	0.17
616.10	623.90	AEC, SERICITE CARBONATE ALTERED ROCK Light yellow to brown sericite carbonate altered interval that may also be experiencing brown carbonate alteration and is also experiencing very weak patchy fuchsite alteration. Interval is lacking significant deformation/shear, but is experiencing erratic/stockwork QC stringers/veinlets throughout, giving a brecciated appearance. Sharp lower contact @variable angles TCA. ~18% QVC as described	1678308	616.10	617.30	1.20	0.76
			1678309	617.30	618.50	1.20	0.20
			1678311	618.50	619.70	1.20	0.04
			1678312	619.70	620.90	1.20	0.07
			1678313	620.90	622.10	1.20	0.02
			1678314	622.10	623.00	0.90	0.01
			1678315	623.00	623.90	0.90	0.01
623.90	666.10	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with a pseudo-starry night appearance with the light grey-milky high angle QC gashes as well as smeared blebs. Occasional patches of shear at variable angles TCA, but nothing of significance. Friable core throughout, with core fracturing/fragmentation and some gouging which is probably evidence of faulting (see structures tab). ~18-20%QVC as described. Sharp lower contact where intense and pervasive gouging begins.	1678316	623.90	625.10	1.20	0.01
			1678317	625.10	626.30	1.20	0.01
666.10	675.00	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Sharp lower contact where intense and pervasive gouging ends					
675.00	700.40	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with a pseudo-starry night appearance with the light grey-milky high angle QC gashes as well as smeared blebs. Occasional patches of shear at variable angles TCA, but nothing of significance. Friable core throughout, with core fracturing/fragmentation and gouging which is probably evidence of faulting (see structures tab). Larger veins from 690.9-691.1m and 696.6-697.4m. Area of QC flooding and feldspar alteration from 698.7-700.4m that has patchy sulphides with areas up to 5% as clustered and fracture fill pyrite (spot sampled). ~18-20%QVC as described. Sharp lower contact where intense and pervasive gouging begins.	1678318	695.90	696.60	0.70	0.05
			1678319	696.60	697.40	0.80	0.00
			1678321	697.40	698.70	1.30	0.00
			1678322	698.70	699.50	0.80	0.06
			1678323	699.50	700.40	0.90	0.12
700.40	728.60	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Sharp lower contact where intense and pervasive gouging ends	1678324	700.40	701.40	1.00	0.00

DETAILED LOG

Hole Number: **NH19-022**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
728.60	732.40	VUM, MASSIVE ULTRAMAFIC See above VUM description (675-700.4m). Decreased veining compared to previous intervals at ~5-7% QVC. Patchy core fracturing/fragmentation and gouging throughout which probably indicates a fault zone					
732.40	739.00	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. EOH					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678222	66.70	67.70	0.0440
1678223	67.70	68.40	0.1360
1678224	68.40	69.00	0.0025
1678225	69.00	69.65	0.0310
1678226	69.65	70.50	0.0025
1678227	80.00	81.00	0.0025
1678228	81.00	82.00	0.0025
1678229	82.00	83.00	0.0025
1678231	83.00	83.80	0.0025
1678232	83.80	84.80	0.0025
1678233	84.80	85.80	0.0025
1678234	91.80	92.80	0.0025
1678235	92.80	93.50	0.0370
1678236	93.50	94.50	0.0025
1678237	165.00	165.95	0.0025
1678238	165.95	167.00	0.0025
1678239	167.00	167.95	0.0160
1678241	167.95	169.00	0.0025
1678242	262.90	263.90	0.0350
1678243	263.90	265.00	0.6210
1678244	265.00	265.60	0.2490
1678245	265.60	266.20	0.5930
1678246	363.70	365.20	0.0060
1678247	365.20	366.70	0.0025
1678248	366.70	367.50	0.0025
1678249	425.00	425.50	0.0025
1678251	425.50	426.00	0.0025
1678252	426.00	426.50	0.0025
1678253	426.50	427.00	0.0025

Hole Number: **NH19-022**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678254	500.90	501.90	0.0025
1678255	501.90	502.80	0.0025
1678256	502.80	503.70	0.0025
1678257	503.70	504.70	0.0025
1678258	565.60	566.80	0.0100
1678259	566.80	568.00	0.0310
1678261	568.00	569.00	0.6350
1678262	569.00	569.90	1.2220
1678263	569.90	570.90	0.0120
1678264	570.90	571.40	2.1930
1678265	571.40	572.90	0.0070
1678266	572.90	574.40	0.0090
1678267	574.40	575.60	0.0025
1678268	575.60	576.70	0.0060
1678269	576.70	577.70	0.0050
1678271	577.70	578.50	0.0420
1678272	578.50	579.10	0.7170
1678273	579.10	579.90	0.0120
1678274	579.90	580.60	0.5950
1678275	580.60	581.40	6.2790
1678276	581.40	582.90	0.0120
1678277	582.90	584.40	0.0025
1678278	584.40	585.90	0.0025
1678279	585.90	587.40	0.0025
1678281	587.40	588.90	0.0025
1678282	588.90	590.40	0.0060
1678283	590.40	591.90	0.0025
1678284	591.90	593.40	0.0025
1678285	593.40	594.40	0.0025
1678286	594.40	595.60	0.0430
1678287	595.60	596.80	0.2050
1678288	596.80	597.80	0.0960
1678289	597.80	598.70	0.0220
1678291	598.70	600.20	0.0060
1678292	600.20	601.70	0.0170
1678293	601.70	603.20	0.9880
1678294	603.20	604.70	0.0260
1678295	604.70	606.10	0.0310
1678296	606.10	607.30	0.0200

Hole Number: **NH19-022**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678297	607.30	608.50	0.0025
1678298	608.50	609.70	0.0690
1678299	609.70	610.20	0.0140
1678301	610.20	610.70	0.0120
1678302	610.70	611.70	0.0340
1678303	611.70	612.50	0.0130
1678304	612.50	613.00	0.0260
1678305	613.00	613.50	0.1270
1678306	613.50	614.80	0.0110
1678307	614.80	616.10	0.1670
1678308	616.10	617.30	0.7570
1678309	617.30	618.50	0.1960
1678311	618.50	619.70	0.0360
1678312	619.70	620.90	0.0730
1678313	620.90	622.10	0.0160
1678314	622.10	623.00	0.0060
1678315	623.00	623.90	0.0080
1678316	623.90	625.10	0.0050
1678317	625.10	626.30	0.0090
1678318	695.90	696.60	0.0470
1678319	696.60	697.40	0.0025
1678321	697.40	698.70	0.0025
1678322	698.70	699.50	0.0600
1678323	699.50	700.40	0.1160
1678324	700.40	701.40	0.0025

DETAILED LOG



Hole Number: **NH19-023**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5374192.00	North:	Collar Az: 9.70
Location: Macklem Township	East: 509040.90	East:	Length: 570.77
	Elev: 289.30	Elev:	Start Depth: 0.00
Date Started: Mar 23, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Apr 06, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 570.77

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	9.70	-55.00	APS	OK		63.00	11.10	-56.50	EZ Sho	OK	Pulled back 6m
165.00	12.10	-56.20	EZ Sho	OK	Pulled back 6m	216.00	12.40	-56.30	EZ Sho	OK	Pulled back 6m
267.00	13.70	-56.40	EZ Sho	OK	Pulled back 6m	318.00	14.90	-56.80	EZ Sho	OK	Pulled back 6m
369.00	16.20	-57.10	EZ Sho	OK	Pulled back 6m	420.00	17.50	-57.20	EZ Sho	OK	Pulled back 6m
471.00	18.00	-57.00	EZ Sho	OK	Pulled back 6m	522.00	19.30	-57.00	EZ Sho	OK	Pulled back 6m

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	50.84	HPO, OVERBURDEN Overburden					
50.84	100.90	VMM, MAFIC VOLCANIC MASSIVE Medium grey-green, fine grained, massive mafic volcanic unit, Weak pervasive chlorite alteration with weak carbonate alteration and bleaching present as halos around the fractures and veins. Weak hematite alteration present along fractured surfaces. Few weak, typically high angled <50deg TCA, epidote veinlets/stringers. ~5% discordant QC veinlets, <2cm in thickness, display weak micro faulting. Veinlets are typically <40deg TCA. Trace sulphides in the unit. Weak blocky core fragmentation from 50-84-57.0m. Gradational lower contact.					
100.90	109.60	VMP, VOLCANIC MASSIVE PILLOWED Medium green-grey, fine grained pillow basalt. ~12% weak pillows are observed within the unit with very weak patches of light green spherical to elongated varioles. Weak pervasive chlorite alteration with weak carbonate and bleaching towards lower contact (associated with the vein). ~5% discordant QC veinlets typically <40deg TCA. Few veins exhibit weak shearing at 60deg TCA. Lower angled veinlets show signs of weak microfaulting. 0.25% fine grained pyrite primarily in the vein selvages. Gradational lower contact.					

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
109.60	130.63	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Medium green fine-medium grained massive mafic volcanic. Gradational changes in grain size could be the result of alternating flows. Weak pervasive chlorite alteration with carbonate and bleaching as alteration haloes around veins and fractures. Few high angled epidote veinlets observed. ~3% discordant QV veins/veinlets. Trace pyrite. Sharp lower contact at 50deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 110.73 - 111.13 IMD, MAFIC DYKE Dark grey-black, fine grained, massive mafic dyke. Weak patchy magnetisim throughout the unit. Very weak discordant epidote veinlets present within the unit. No significant veining or mineralization observed within the unit. ~1% QC gashes observed. Sharp irregular lower contact at ~70deg TCA.</p> <p>Minor Interval: 127.00 - 127.50 IMD, MAFIC DYKE Dark grey-black, fine grained, massive mafic dyke. Weak patchy magnetisim throughout the unit. Very weak discordant epidote veinlets present within the unit. No significant veining or mineralization observed within the unit. ~1% QC gashes observed. Sharp irregular lower contact at 45deg TCA.</p>					
130.63	132.06	<p>IMD, MAFIC DYKE</p> <p>Dark grey-black, fine grained, massive mafic dyke. Very weak patchy chlorite alteration within the unit, and weak patchy and fracture controlled epidote. ~5% discordant, wispy QC veinlets typically <60deg TCA. Weak tension gouging resulting in QC gashes along with discordant chlorite veinlets. No significant mineralization observed. Sharp lower contact at 60deg TCA.</p>					
132.06	159.50	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Medium green-grey, fine grained massive mafic volcanic unit. Weak pervasive chlorite alteration with weak carbonate and bleaching present as alteration halos around the veins. Increased bleaching and carbonate alteration nearing the lower contact starting at 157.75m. Few wispy epidote veinlets observed. Weak hematite alteration along fractures. ~3% discordant QC veinlets, <2cm in thickness. Veinlets are typically high angled <50deg TCA. Lower angled veinlets show signs of weak microfaulting and multiple folding events. Very weak breccia tecture in the veins, subhedral chlorite fragments. Localized patches with up to 0.5% fine grained clustered pyrite. Sharp lower contact at 60deg TCA.</p>	N76264	157.20	158.60	1.40	0.05
			N76265	158.60	159.50	0.90	0.01
159.50	164.00	<p>IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Light grey patchy yellow-brown, fine grained, weakly sheared felsic intrusive. ~3% subhedral like beige feldspar porphyroblasts with few remnant quartz eyes, suggest that the unit may be an altered porphyry. ~3% subhedral-anhedral black mm size disseminated flecks throughout the unit, possible pyroxenes. Moderate patchy sercite and carbonate (grey+brown) alteration. Moderate pervasive silicification observed throughout the unit. Sericite and carbonate alteration appear parallel to weak shearing (?) at 60deg TCA. ~3% QC veinlets at 50-60deg TCA. Weak tension gouging resulting in QC gashes and few sheared tourmaline veinlets. ~3% fine grained disseminated and vein hosted pyrite. Sharp lower contact at 70deg TCA.</p>	N76266	159.50	160.33	0.83	0.04
			N76267	160.33	161.47	1.14	0.03
			N76268	161.47	162.10	0.63	0.13
			N76269	162.10	163.20	1.10	0.01
			N76271	163.20	164.00	0.80	0.07

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
164.00	167.18	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Medium green-grey, fine grained, pillow basalt. Few sphericle light green varioles observed within the unit. Weak pervasive chlorite alteration throughout with weak hematite influencing the veins and fractures. ~3% weakly sheared QC veinlets at 60deg TCA. Moderate tension gouging resulting in QC gashes and weak discordant chlorite veinlets. Trace clustered pyrite in the pillow selvages. Sharp lower contact at 60deg TCA.</p>	N76272	164.00	165.00	1.00	0.01
			N76273	165.00	166.22	1.22	0.00
167.18	169.65	<p>ISO, SYENITIC INTRUSIVE</p> <p>Dark red-grey, fine grained massive syenitic intrusive. ~3% dark grey anhedral clasts <2cm, observed within the fine grained matrix. Clasts may be part of the surrounding mafic volcanics. Moderate pervasive hematite alteration throughout with very weak patchy grey carbonate alteration also observed. ~3% discordant QC veinlets typically <40deg TCA. Weak tension gouging resulting in QC gashes. 1% very fine grained disseminated pyrite. Sharp lower contact at 60deg TCA.</p>					
169.65	239.00	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Medium green, fine grained, locally brecciated, massive variolitic basalt. ~12% of the unit is comprised of mm scale, light green, sphericle varioles. Weak pervasive chlorite alteration with weak patchy bleaching surrounding the varioles and veins. Increased carbonate alteration from 183.56-185.1m.~5% discordant QC veins/veinlets, typicall <50deg TCA. Lower angled veinlets show signs of weak microfaulting. Weak tension gouging resulting in QC gashes and few discordant chlorite veinlets. 0.25% fine grained clustered pyrite. Weak localized breccia texture resulting in anhedral-subhedral chlorite altered clasts within the veins. Sharp lower contact with syenitic intrusive at 80deg TCA.</p>					
239.00	240.60	<p>ISO, SYENITIC INTRUSIVE</p> <p>Dark purple red, fine grained, syenitic intrusive. Weak-moderate pervasive hematite alteration with weak patchy grey carbonate alteration also observed. ~3% discordant QC veinlets typically <50deg TCA. Weak tension gouging resulting in few QC gashes and erratic dark grey veinlets. Very weak microfaulting observed within the veins. 0.5% fine grained clustered pyrite. Sharp lower contact at 70deg TCA.</p>					
240.60	242.46	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Dark grey-green, uniformly fine grained, massive mafic volcanic interval. Weak pervasive chlorite alteration throughout the unit. ~1% discordant QC veinlets typically <60deg TCA showing signs of weak microfaulting. Weak tension gouging also observed resulting in few QC gashes. ~1% medium grained disseminated pyrite in the host rock. sharp lower contact at 80deg TCA.</p>					

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
242.46	282.38	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey-blue, fine grained, weakly seared massive ultramafic unit. Weak patchy fine grained magnetite (clustered). Moderate pervasive chlorite alteration with weak patchy possible talc overprint. Weak-moderate disseminated carbonate alteration also observed. Weak sericite, carbonate, and and bleaching present as alteration halos surrounding a vein from 256.7-257.10m. ~20% weakly sheared QC veins averaging 60deg TCA. Secondary wispy discordant veinlets are observed cross cutting shearing at various angles 20-80deg TCA. Weak-moderate tension gouging resulting in discordant QC gashes and few erratic chlorite veinlets. Weak microfaulting observed primarily within the discordant veinlets. 0.25% fine grained disseminated pyrite. Weak silca+carbonate flooding from 264.1-265.22m, with ~1% vein hosted pyrite. Sharp lower contact with fault at 60deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>246.42 - 246.97 IIO, INTERMEDIATE INTRUSIVE</p> <p>Medium grey, fine grained intermediate intrusive. Weak-moderate pervasive grey carbonate alteration with possible weak background chlorite also observed. ~1% discordant milky white QC gashes, likely the result of weak tension gouging. ~5% fine grained disseminated pyrite in the host rock. Sharp lower contact at 70deg TCA.</p> <p>Minor Interval:</p> <p>247.05 - 247.65 IIO, INTERMEDIATE INTRUSIVE</p> <p>Medium grey, fine grained intermediate intrusive. Weak-moderate pervasive grey carbonate alteration with possible weak background chlorite also observed. ~25% discordant milky white QC veinlets gashes, likely the result of weak tension gouging. Moderate microfaulting observed within the veinlets. ~5% fine grained disseminated pyrite in the host rock. Sharp lower contact at 60deg TCA.</p> <p>Minor Interval:</p> <p>261.01 - 261.37 ISO, SYENITIC INTRUSIVE</p> <p>Dark grey-red, fine grained, weakly altered syenitic intrusive. Weak patchy-pervasive hematite alteration with weak patchy grey carbonate alteration of the host rock. ~10% weakly sheared QC veinlets typically at 60deg TCA. Secondary lower angled veinlets cross cut shearing at 30-50deg TCA. Very weak stockwork appearance within the non sheared veinlets. Weak tension gouging resulting in QC gashes and few discordant tourmaline veinlets, ~1% fine grained disseminated pyrite primarily located near the upper contact. Sharp irregular lower contact at ~30deg TCA.</p>	N76274	243.85	245.18	1.33	0.00
			N76275	245.18	246.42	1.24	0.00
			N76276	246.42	247.65	1.23	0.01
			N76277	247.65	248.70	1.05	0.00
			N76278	248.70	249.90	1.20	0.00
			N76279	254.00	255.34	1.34	0.00
			N76281	255.34	256.50	1.16	0.01
			N76282	256.50	257.10	0.60	1.05
			N76283	257.10	258.15	1.05	0.01
			N76284	258.15	259.53	1.38	0.01
			N76285	259.53	261.01	1.48	0.00
			N76286	261.01	261.72	0.71	0.02
			N76287	261.72	262.90	1.18	0.02
			N76288	262.90	264.10	1.20	0.01
			N76289	264.10	265.22	1.12	0.00
			N76291	265.22	266.53	1.31	0.00
			N76292	266.53	267.80	1.27	0.00

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		<p>MINOR INTERVALS:</p> <p>Minor Interval: 261.72 - 262.90 ISO, SYENITIC INTRUSIVE Dark red-grey, fine grained, syenitic intrusive. Weak-moderate patchy-pervasive hematite alteration with weak patchy grey carbonate alteration. ~5% weakly sheared QC veinlets at 60deg TCA when orientation is apparent. ~3% of the veinlets are discordant and cross cut shearing between 20-50deg TCA, with few higher angled veinlets also observed. Weak microfaulting observed within the discordant veinlets. Very weak tension gouging resulting in few QC gashes and erratic tourmaline veinlets. ~0.5% fine grained disseminated pyrite. Sharp lower contact at 45deg TCA.</p> <p>Minor Interval: 273.07 - 273.90 IMD, MAFIC DYKE Dark blue-grey with zones of medium blue, fine grained mafic intrusive. Very weak, patchy blue albite albite alteration appraising near contacts and weakly influencing the veins. Weak pervasive chlorite alteration and patchy carbonate alteration also observed within the unit. ~3% discordant QC veinlets. Moderate tension gouging resulting in QC gashes as well as weak discordant chlorite veinlets. ~5% fine-medium grained disseminated pyrite. Unit may be part of a chill margin. Sharp lower contact at 80deg TCA.</p> <p>Minor Interval: 274.46 - 274.70 IMD, MAFIC DYKE Dark blue-grey, fine grained, massive mafic intrusive unit. Weak-moderate disseminated carbonate alteration with weak pervasive chlorite alteration. No significant veining observed within the unit. Weak tension gouging resulting in discordant chlorite veinlets. ~0.5% fine grained disseminated pyrite. Sharp lower contact at 60deg TCA.</p> <p>Minor Interval: 274.81 - 275.40 IMD, MAFIC DYKE Dark blue-grey, fine grained, massive mafic intrusive unit. Weak-moderate disseminated carbonate alteration with weak pervasive chlorite alteration. ~3% discordant QC veinlets. Weak tension gouging resulting in discordant chlorite veinlets. ~1% fine grained disseminated pyrite. Sharp lower contact at 70deg TCA.</p>					
282.38	284.27	<p>ZFZ, FAULT ZONE Moderate fault zone with weak-moderate patchy gouge material. Fault occurs within the ultramafic unit. Moderate pervasive chlorite alteration with weak patchy talc overprint. Weak disseminate carbonate alteration also observed. ~12% weakly sheared, remnant QC veinlets at 60-70deg TCA when orientation is apparent. Discordant secondary veinlets are observed cross cuttin shearing. No significant mineralization within the unit. SHarp lower contact at 80deg TCA.</p>					

DETAILED LOG

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
284.27	427.50	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey-blue, fine grained massive ultramafic unit. Weak patchy magnetite throughout the unit. Moderate pervasive chlorite alteration with weak patchy talc overprint. Weak patchy carbonate alteration primarily surrounding the veins. Moderate chlorite present as fracture filling alteration. Unit contains significantly less carbonate influence than the above VUM, weak patchy disseminated carbonate is observed. ~7% discordant QC gashes with ~3% weakly sheared QC veinlets at 60deg TCA. Weak brecciation observed within the larger veins, containing anhedral chlorite altered fragments. Gradational increase in vein content from 366.0m onwards (~12%). Moderate-strong tension gouging resulting in QC gashes and discordant chlorite veinlets. Very weak brecciation is observed within the veinlets along with weak microfaulting. Unit contains albite altered intermediate intrusives, only the most pronounced are noted in the minors. ~0.5% fine grained clustered pyrite with localized patches containing up to ~1% fine grained clustered pyrite in the host rock. Weak localized shearing at 60deg TCA. Gradational lower contact marked by increased veining.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 341.80 - 341.92 ISO, SYENITIC INTRUSIVE Medium grey-red/brown, fine grained, massive syenitic intrusive. Weak pervasive hematite alteration with weak patchy-pervasive carbonate alteration. ~5% discordant, typically low angled smokey QC veinlets, 20-40deg TCA. Moderate tension gouging resulting in few QC gashes along with erratic dark grey veinlets. ~3% fine grained disseminated pyrite. Sharp lower contact at 70deg TCA.</p> <p>Minor Interval: 344.16 - 344.33 ISO, SYENITIC INTRUSIVE Dark grey-red, fine grained massive syenitic intrusive. Weak pervasive hematite alteration with weak patchy carbonate alteration also observed. possible weak brown carbonate alteration associated with the veins. ~12% weakly sheared QC veinlets at 70deg TCA. Weak tension gouging resulting in QC veinlets as well as erratic dark grey veinlets. ~5% fine grained disseminated pyrite in the host rock. Sharp lower contact at 60deg TCA.</p> <p>Minor Interval: 344.40 - 344.51 ISO, SYENITIC INTRUSIVE Dark red-grey, fine grained, massive syenitic intrusive unit. Weak patchy hematite alteration with weak pervasive carbonate alteration of the host rock. Hematite alteration appears strongest as alteration halos surrounding the veins and tructures. ~20% weakly sheared QC veins at 60-70deg TCA. Weak silica+carbonate flooding associated with the veins. Shear vein from 344.47-344.51m, at 70deg TCA. ~7% fine grained disseminated pyrite within the unit. Sharp lower contact at 80deg TCA.</p>	N76293	338.93	340.15	1.22	0.00
			N76294	340.15	341.40	1.25	0.01
			N76295	341.40	341.92	0.52	0.04
			N76296	341.92	342.96	1.04	0.01
			N76297	342.96	343.86	0.90	0.01
			N76298	343.86	344.51	0.65	0.51
			N76299	344.51	345.60	1.09	0.03
			N76301	345.60	346.90	1.30	0.00
			N76302	385.30	386.64	1.34	0.00
			N76303	386.64	387.80	1.16	0.00
			N76304	387.80	388.90	1.10	0.01
			N76305	388.90	390.15	1.25	0.00
			N76306	390.15	391.46	1.31	0.00
			N76307	424.70	426.00	1.30	0.00
			N76308	426.00	427.50	1.50	0.00

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		<p>MINOR INTERVALS:</p> <p>Minor Interval: 387.80 - 389.00 ISO, SYENITIC INTRUSIVE Medium grey-red, fine grained, weakly sheared syenitic intrusive unit. Weak-moderate patchy-pervasive hematite alteration with weak patchy carbonate alteration. Hematite alteration appears to increase when presnet as alteration halos/ fractutre filling alteration. ~12% weakly sheared QC veins typically at 60deg TCA. Secondary veins/veinlets are observed, cross cut shearing at ~20-50deg TCA. Weak tension gouging observed, resulting in QC gashes and few erratic dark grey veinlets. Weak microfaulting observed in non-sheared veinlets. ~3% fine grained disseminated pyrite. Sharp lower contact at 60deg TCA.</p> <p>Minor Interval: 396.70 - 397.10 IIO, INTERMEDIATE INTRUSIVE Smokey blue weak intermediate intrusive. Unit contains clasts of the surrounding ultramafic interval. No definitive contacts, resembles a patchy change in alteration. Weak patchy albite and carbonate alteration. ~20% discordant QC veinlets with few gashes. Moderate tension gouging resulting in QC gashes. No significant mineralization. Irregular lower contact at 80deg TCA.</p> <p>Minor Interval: 399.05 - 399.40 IIO, INTERMEDIATE INTRUSIVE Smokey blue weak intermediate intrusive. Unit contains clasts of the surrounding ultramafic interval. Similar to the above IIO, unit resembles a change in alteration. Weak patchy albite and carbonate alteration. ~7% discordant QC veinlets typically <50deg TCA. Moderate tension gouging resulting in QC gashes. No significant mineralization. Irregular lower contact at 70deg TCA.</p> <p>Minor Interval: 401.74 - 403.00 IIO, INTERMEDIATE INTRUSIVE Dark smokey blue-grey alternating intrusive and ultramafic material. intrusive material resembles the above two IIOs, with weak patchy albite and carbonate alteration. Weak disseminated carbonate also observed. ~5% discordant QC veinlets, typically low angled <60deg TCA. 0.5% fine grained disseminated pyrite within the unit. Irrequal lower contact at 45deg TCA.</p>					
427.50	434.50	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey-blue, fine grained, weak-moderately deformed, weakly magnetic ultramafic unit. Moderate-strong pervasive and vein influencing chlorite alteration. Weak-moderate patchy talc overprint and moderate disseminated carbonate alteration are also observed. Very weak patchy fuchsite alteration present as alteration halos surrounding few of the veins. ~35% deformed QC veins showing pseudo stockwork appearance. When orientation in the veins is apparent they appear to be at ~60deg TCA. Weak-moderate brecciation within the larger veins, hosting subhedral chlorite altered clasts.Weak silca+carbonate flooding. Moderate tension gouging resulting in QC gashes and few eratic chlorite veinlets. ~3% fine-medium grained vein hosted pyrite with possible trace amounts of pyrrhotite. Gradational lower contact.</p>	N76309	427.50	428.80	1.30	0.00
			N76311	428.80	430.00	1.20	0.01
			N76312	430.00	431.20	1.20	0.00
			N76313	431.20	432.30	1.10	0.01
			N76314	432.30	433.40	1.10	0.01
			N76315	433.40	434.50	1.10	0.00

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
434.50	441.94	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dak grey, fine grained, massive weakly altered ultramafic unit. Unit is differentiated from the above VUM by a significant decrease in veining and shearing. Moderate pervasive chlorite alteration with weak disseminated carbonate alteration. Weak patchy fuchsite is observed within select veins primarily nearing lower contact. ~12% locally sheared QC veinlets and weak silica+carbonate floods. When orientation is apparent veinlets are 60-70deg TCA. Few lower angled secondary veinlets cross cut shearing. Weak tension gouging resulting in few sheared QC gashes. Weak microfaulting within few of the veins. 0.5% fine grained clustered/ vein hosted pyrite. Weak localized shearing at 60deg TCA. Gradational lower contact.</p>	N76316	434.50	435.70	1.20	0.00
			N76317	435.70	436.90	1.20	0.00
			N76318	436.90	438.35	1.45	0.00
			N76319	438.35	439.65	1.30	0.00
			N76321	439.65	440.89	1.24	0.01
			N76322	440.89	441.94	1.05	0.01
441.94	444.20	<p>ACO, CARBONATE ALTERED ROCK</p> <p>Light grey, fine grained, moderately deformed carbonate altered ultramafic unit. Moderate pervasive grey carbonate alteration with weak bleaching present as alteration halos around the veins and fractures. Very weak sericite and fuchsite are observed influencing few of the veins. ~20% weakly sheared QC veins <4cm in thickness. When orientation is apparent veins are at 60-70deg TCA. Secondary erratic QC veinlets cross cut shearing at >30deg TCA. Weak brecciation is observed within few of the larger veins. ~1% fine grained disseminated pyrite. Sharp lower contact with minor at 60deg TCA.</p> <p>MINOR INTERVALS: Minor Interval: 444.05 - 444.20 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Light grey-beige, fine grained felsic intrusive. Weak porphyritic textures with few remnant feldspar porphyroblasts suggests that the unit may be a reworked prophyry. Weak pervasive carbonate alteration with weak silicification. Moderate pervasive bleaching. Very weak patchy sericite alteration also observed within the unit. ~3% discordant QC veinlets. Weak-moderate tension gouging resulting in QC gashes and few discordant tourmaline (?) veinlets. ~0.5% fine grained disseminated pyrite. Sharp lower contact at 50deg TCA.</p>	N76323	441.94	442.83	0.89	0.23
			N76324	442.83	443.75	0.92	0.56
			N76325	443.75	444.20	0.45	1.39

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
444.20	457.40	<p>ACG, GREEN CARBONATE ALTERED ROCK</p> <p>Fleck of VG at 449.45m, within a milky white QC vein at ~40deg TCA. Bright green, patchy grey, weak-moderately deformed altered unit. Weak shearing suggests the unit is likely ultramafic in nature. Moderate patchy-pervasive fuchsite alteration with moderate patchy grey carbonate alteration also observed. Weak patchy sericite is observed gradually turning to moderate alteration with depth. Carbonate dominates in areas with decreased fuchsite influence. Sericite often occurs with the fuchsite. ~15% locally sheared QC veins, when orientation is distinguishable, veins are typically at 60-70deg TCA. Moderate tension gouging resulting in QC gashes and wavy sheared chlorite veinlets. 0.25% fine grained pyrite overall with localized clusters within the vein selvages of up to 1% pyrite. Sharp lower contact at 70deg TCA.</p> <p>MINOR INTERVALS: Minor Interval: 444.40 - 445.40 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Light grey-beige, fine grained, massive felsic intrusive. Weak remnant feldspar porphyroblasts and quartz eyes, suggesting unit may be porphyritic. Weak pervasive carbonate alteration and silicification with moderate bleaching. Anhedral fuchsite altered clasts present within the unit 444.67-444.75m containing 7% clustered pyrite. Weak patchy sericite alteration is also observed. ~10% weakly sheared QC veinlets at 60deg TCA. Weak tension gouging resulting in thin wispy QC gashes and few discordant dark grey veinlets. Up to 1% fine grained disseminated pyrite overall. Sharp lower contact at 50deg TCA.</p>	N76326	444.20	445.40	1.20	0.35
			N76327	445.40	446.60	1.20	0.06
			N76328	446.60	447.60	1.00	0.04
			N76329	447.60	448.50	0.90	0.02
			N76331	448.50	449.40	0.90	0.20
			N76341	449.40	449.70	0.30	4.63
			N76332	449.70	450.45	0.75	0.01
			N76333	450.45	451.45	1.00	0.12
			N76334	451.45	452.45	1.00	0.07
			N76335	452.45	453.34	0.89	0.38
			N76336	453.34	454.50	1.16	1.19
			N76337	454.50	455.50	1.00	0.03
			N76338	455.50	456.60	1.10	1.34
			N76339	456.60	457.40	0.80	0.78
457.40	460.05	<p>AEC, SERICITE CARBONATE ALTERED ROCK</p> <p>Medium brown-yellow, fine grained, weakly deformed, altered unit. Moderate pervasive brown carbonate alteration with weak patchy/disseminated sericite and grey carbonate alteration also observed. ~12% weakly sheared QC veins at 60deg TCA. Moderate tension gouging resulting QC gashes and few erratic/discordant tourmaline veinlets. Weak microfaulting is observed within the veinlets. 0.5% fine grained clustered pyrite. Weak blocky core fragmentation approaching lower contact. Weak lower contact at ~55deg TCA.</p>	N76342	457.40	458.33	0.93	0.13
			N76343	458.33	459.00	0.67	0.33
			N76344	459.00	460.05	1.05	0.10
460.05	461.35	<p>ZCO, CATACLASITE</p> <p>Dark brown-grey, fine grained, moderately deformed unit. Increased deformation suggests the unit may be part of a fault heal. ~15% subhedral (subrounded) clasts displaying moderate pervasive carbonate alteration observed. Moderate pervasive brown carbonate alteration with weak patchy grey carbonate and patchy sericite. Weak fuchsite alteration is observed influencing few of the veins. Weak silica+carbonate flooding resulting in a vein network resembling stockwork veining. ~40% moderately deformed QC veins. When orientation is apparent, veins are typically at 60-70deg TCA. Sharp lower contact at 60deg TCA.</p>	N76345	460.05	460.80	0.75	0.03
			N76346	460.80	461.35	0.55	0.02

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
461.35	477.70	<p>ACG, GREEN CARBONATE ALTERED ROCK</p> <p>Flecks of VG at 464.55m within a smokey grey QC veinlet at ~30deg TCA and at 464.65m within a milky white QC vein at 40deg TCA. Bright green, patchy grey, moderate-strongly deformed altered unit. Zones with decreased alteration appear to show weak amygdular (?) textures. Strong pervasive fuchsite alteration with patchy grey carbonate alteration. Weak patchy sericite is also observed within the unit and associated with the veins. Sericite and carbonate alteration gradually increase with depth. Carbonate appears primarily in zones with weaker fuchsite alteration. Weak silica+carbonate flooding associated with the veins. ~40% moderately deformed QC veinlets of which ~5% are sheared veins. When orientation is apparent veins are typically at 70deg TCA. Few sigmoidal veinlets present. Strong tension gouging resulting in QC gashes/blebs along with discordant to sheared chlorite veinlets. ~0.5% fine grained clustered pyrite in the vein selvages overall. Localized patches with up to 1% fine grained pyrite in the veins and vein selvages observed. Moderate localized cataclastic textures observed within the unit, primarily in areas with increased carbonate influence. Cataclastic texture is most apparent from 465.25-466.35m, where QC veins appear to weave around subhedral carbonate altered clasts <5cm. Weak localized brecciation within the unit with possible weak tectonic banding. Moderate shearing at 70deg TCA. Sharp lower contact at 80deg TCA.</p>	N76347	461.35	462.30	0.95	0.02
			N76348	462.30	463.40	1.10	0.10
			N76349	463.40	464.24	0.84	0.85
			N76351	464.24	465.00	0.76	9.41
			N76352	465.00	465.75	0.75	0.06
			N76353	465.75	466.35	0.60	0.05
			N76354	466.35	467.40	1.05	0.02
			N76355	467.40	468.40	1.00	0.01
			N76356	468.40	469.40	1.00	0.02
			N76357	469.40	470.67	1.27	0.02
			N76358	470.67	471.80	1.13	0.20
			N76359	471.80	472.60	0.80	0.31
			N76361	472.60	473.50	0.90	0.05
			N76362	473.50	474.37	0.87	0.63
			N76363	474.37	475.00	0.63	0.15
			N76364	475.00	475.90	0.90	0.01
		N76365	475.90	476.70	0.80	0.03	
		N76366	476.70	477.70	1.00	0.09	
477.70	493.90	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Dark grey-blue, patchy brown, moderately deformed ultramafic unit. Zones with weaker deformation have a "stary night appearance". ~3% subhedral-anhedral, smokey purple-grey clasts, <3cm in size, of mafic dyke material within the unit. Dyke fragments contain up to 1% fine grained disseminated pyrite. Moderate-strong pervasive chlorite alteration with moderate patchy brown+grey carbonate alteration. Very weak sericite alteration present along the veins. Weak silica+carbonate flooding associated with the veins. Gradation decrease in carbonate influence towards lower contact. ~30% locally sheared QC veinlets, when orientation is apparent veins are typically at 60-70deg TCA. Boudinage structures present within the unit. Moderate tension gouging resulting in QC gashes and sheared chlorite veinlets. ~0.5% fine grained pyrite overall with localized clustered of up to 1% pyrite in the veins/selvages. Weak-moderate cataclastic texture observed within the unit along with weak brecciation. Sharp lower contact at 60deg TCA.</p>	N76367	477.70	478.50	0.80	0.05
			N76368	478.50	479.50	1.00	0.04
			N76369	479.50	480.50	1.00	0.02
			N76371	480.50	481.50	1.00	0.02
			N76372	481.50	482.50	1.00	0.01
			N76373	482.50	483.55	1.05	0.04
			N76374	483.55	484.70	1.15	0.02
			N76375	484.70	485.60	0.90	0.04
			N76376	485.60	486.74	1.14	0.02
			N76377	486.74	487.70	0.96	0.03
			N76378	487.70	488.70	1.00	0.04
			N76379	488.70	489.57	0.87	0.04
			N76381	489.57	490.35	0.78	0.15
		N76382	490.35	491.10	0.75	0.02	
		N76383	491.10	492.10	1.00	0.01	
		N76384	492.10	492.96	0.86	0.01	
		N76385	492.96	493.90	0.94	0.01	

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
493.90	496.67	ACO, CARBONATE ALTERED ROCK Light-medium grey, moderately deformed, altered ultramafic unit. Moderate pervasive grey carbonate alteration with weak patchy brown carbonate alteration. Very weak sericite alteration present around the veins. Weak patchy/vein influencing fuchsite gradually increasing towards lower contact. ~20% moderately sheared QC veins with few larger blebby floods. When shear orientation is apparent, veins are typically at 60deg TCA. Weak-moderate QC flooding. Moderate tension gouging resulting in QC gashes and weakly sheared (parallel to shearing) chlorite veinlets. ~1% fine grained disseminated/vein hosted pyrite. Moderate localized cataclastic textures with with very weak patchy brecciation. Gradational lower contact.	N76386	493.90	494.90	1.00	0.15
			N76387	494.90	495.70	0.80	0.40
			N76388	495.70	496.67	0.97	0.37
496.67	515.60	ACG, GREEN CARBONATE ALTERED ROCK Bright green, patchy grey, moderately deformed ultramafic unit. Areas lacking deformation show weak remnant amygdular textures. The first 2m of the unit has a weak mottled appearance, a result of silica +carbonate flooding and tension gouging. Moderate pervasive fuchsite alteration with moderate patchy grey carbonate. Moderate sericite present as clustered flecks as well as alteration halos around the veins. Weak silica+carbonate flooding associated with the veins. Gradational increase in sericite and carbonate alteration towards lower contact. ~25% milky white, moderately sheared QC veins/veinlets. Veinlets and smaller veins appear at 60-70deg TCA while larger veins are ~40deg TCA when orientation is distinguished. Veins appear to gradually shallow with depth. Moderate tension gouging resulting in QC gashes and sheared chlorite veinlets. Moderate shearing gradually weakning with depth, averaging 65deg TCA. Massive QC vein from 511.91-512.32m. Weak tectonic banding resulting in chlorite filled fractures. Clusteres with up to 2% fine grained pyrite in the vein selvages. Gradational lower contact. MINOR INTERVALS: Minor Interval: 505.87 - 507.36 ZCO, CATACLASITE Could be clasified as an ACH- Dark blue-grey, deformed, ultramafic unit. ~30% subhedral chlorite altered porphyroblasts. Moderate pervasive chlorite alteration with moderate disseminated carbonate alteration. Very weak patchy fuchsite near upper and lower contacts. Carbonate appears to flood the unit and surrounds chlorite altered phenocrysts giving a breccia texture. ~20% strongly deformed QC veinlets and floods. When orientation can be determined, veinlets are typically at 50deg TCA. ~0.5% fine grained clustered pyrite. Weak blocky core fragmentation. Sharp lower contact at 70deg TCA.	N76389	496.67	497.80	1.13	0.86
			N76391	497.80	498.75	0.95	0.09
			N76392	498.75	499.37	0.62	0.19
			N76393	499.37	500.05	0.68	0.03
			N76394	500.05	501.00	0.95	1.49
			N76395	501.00	502.20	1.20	0.08
			N76396	502.20	503.20	1.00	0.20
			N76397	503.20	504.05	0.85	0.61
			N76398	504.05	504.90	0.85	0.40
			N76399	504.90	505.87	0.97	0.10
			N76401	505.87	506.60	0.73	0.02
			N76402	506.60	507.36	0.76	0.06
			N76403	507.36	508.40	1.04	0.05
			N76404	508.40	509.15	0.75	0.37
			N76405	509.15	510.15	1.00	0.27
			N76406	510.15	511.00	0.85	0.13
			N76407	511.00	511.91	0.91	0.55
			N76408	511.91	512.66	0.75	0.94
			N76409	512.66	513.61	0.95	0.85
			N76411	513.61	514.60	0.99	0.17
		N76412	514.60	515.60	1.00	0.15	

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
515.60	519.00	<p>AEC, SERICITE CARBONATE ALTERED ROCK</p> <p>Light yellow-brown, fine grained, weakly deformed sericite altered unit. Moderate-strong pervasive sericite alteration with weak patchy grey carbonate alteration. Carbonate appears to increase surrounding the veins. Weak fuchsite alteration within few of the flood veins. Moderate silica-carbonate flooding. ~30% deformed, milky white and smokey grey QC veins and floods. When orientation is apparent veins are typically at 70deg TCA. Floods appear at multiple angles 20-60deg TCA. Secondary veinlets cross cut shearing at 30-50deg TCA. Moderate tension gouging resulting in discordant QC gashes and weakly sheared dark grey veinlets. Localized clusters with up to 2% fine grained pyrite. Gradational lower contact.</p>	N76413	515.60	516.57	0.97	0.18
			N76414	516.57	517.57	1.00	0.64
			N76415	517.57	518.35	0.78	0.56
			N76416	518.35	519.00	0.65	0.10
519.00	523.80	<p>ACO, CARBONATE ALTERED ROCK</p> <p>Light brown, patchy grey, fine grained, moderately deformed unit. Moderate patchy grey carbonate and sericite alteration with weak patchy brown carbonate also observed. Weak background chlorite alteration is observed in areas with decreased carbonate and sericite influence. Unit differentiates from the above AEC by a decreased sericite and silica+carbonate flooding, and increase in shearing. Weak-moderate patchy silica+carbonate flooding. ~30% sheared QV veins, typically at 50deg TCA with few patches >60deg TCA. Moderate tension gouging resulting in sheared QC gashes and bleb floods along with wavy sheared chlorite veinlets. Clusters with up to 1% vein hosted and vein selvages pyrite. Weak bodinage is observed within few of the veins. Sharp lower contact at 70deg TCA.</p>	N76417	519.00	520.00	1.00	0.18
			N76418	520.00	521.00	1.00	0.01
			N76419	521.00	522.00	1.00	0.05
			N76421	522.00	523.00	1.00	0.09
			N76422	523.00	523.80	0.80	0.75
523.80	534.73	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Dark blue-grey, massive. moderately deformed, weakly altered ultramafic unit. Moderate-strong pervasive chlorite alteration with weak patchy grey+brown carbonate alteration. Brown carbonate appears primarily as alteration halos around the veins along with very weak sericite. Possible weak patchy talc (could just be zones of very strong chlorite alteration). In areas with decreased deformation, disseminated carbonate give a "stary night" appearance within the unit. ~20% concordant, moderately sheared QC veins and veinlets at 70deg TCA when orientation is apparent. Moderate tension gouging resulting in sheared QC gashes and wavy chlorite veinlets.</p>	N76423	523.80	525.00	1.20	0.04
			N76424	525.00	525.80	0.80	0.11
			N76425	525.80	527.15	1.35	0.05
			N76426	527.15	528.30	1.15	0.02
			N76427	528.30	529.50	1.20	0.00
			N76428	529.50	530.80	1.30	0.01
			N76429	530.80	531.60	0.80	0.01
			N76431	531.60	532.55	0.95	0.01
			N76432	532.55	533.65	1.10	0.00
			N76433	533.65	534.73	1.08	0.12

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
534.73	546.62	ACO, CARBONATE ALTERED ROCK Light grey patchy brown, fine grained, moderately deformed carbonate altered unit. Moderate patchy-perbvasive grey carbonate alteration with weak-modertae patchy sericite and rown carbonate alteration. Weak patchy background chlorite alteration is obsrved in areas with decreased carbonate influence. ~30% moderately deformed QC veins typically at 70 deg TCA when orientation is apparent. Larger veins are typically lower angled than shearing 50-60deg TCA. Moderate silca+carbonate flooding associated with veining. Very weak patchy silicification of the host rock. ~10% light green talc (?) veinlets parallel to shearing from 543.9m onwards.Moderate tension gouging resulting in discordant QC gashes and wavy sheared chlorite veinlets. Weak tectonic banding resulting in chlorite and talc filled fractueres. ~0.5% fine grained, vein hosted pyrite. Sharp lower contact at 70deg TCA.	N76434	534.73	535.65	0.92	0.39
			N76435	535.65	536.70	1.05	0.03
			N76436	536.70	537.50	0.80	0.04
			N76437	537.50	538.40	0.90	0.05
			N76438	538.40	539.20	0.80	0.05
			N76439	539.20	540.10	0.90	0.05
			N76441	540.10	541.15	1.05	0.07
			N76442	541.15	542.00	0.85	0.13
			N76443	542.00	542.80	0.80	0.08
			N76444	542.80	543.90	1.10	0.02
			N76445	543.90	544.84	0.94	0.03
		N76446	544.84	545.75	0.91	0.07	
		N76447	545.75	546.62	0.87	0.25	
546.62	548.90	ACH, CARB-CHLORITIC ROCK Dark blue grey, weakly deformed ultramafic unit. Moderate pervasive chlorite alteration with weak patchy grey+brown carbonate alteration. Very weak patchy talc overprint. Areas with decreased deformation have a "stary night" appearence as a result of QC gashes caused by tension gouging. ~10% weakly sheared , wavy. white QC veinlets and elongated gashes at ~75deg TCA. Very weak cataclatic texture within the unit. Trace clustered/vein hosted pyrite. Lower contact lost in gouge material.	N76448	546.62	547.70	1.08	0.05
			N76449	547.70	548.90	1.20	0.06
548.90	556.45	VUM, MASSIVE ULTRAMAFIC Dark blue-grey, fine grained, massive, locally sheared ultramafic unit. Moderate pervasive chlorite alteration with weak talc alteration associated with the veins. Weak patchy brown carbonate is also observed. ~12% weakly sheared QC veinlets typically 70-80deg TCA. Weak tension gouging resulting in QC gashes and few discordant chlorite veinlets. ~0.25% fine grained vein hosted pyrite. Moderate gouge from 548.9-549.0m and 553.15-553.40m. Increased shearing from 553.4-555.0m at 75deg TCA. 0.25% fine grained clustered pyite and trace pyrrhotite. Lower contact marked by gouge.	N76451	548.90	550.00	1.10	0.01
			N76452	550.00	551.10	1.10	0.01

Hole Number: **NH19-023**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
556.45	562.90	ZGO, GOUGE PDFZ- Massive fault zone where 80% is gouge material and the remaining portion is faulted VUM. Dark blue-grey, weakly deformed ultramafic unit. Moderate-strong pervasive chlorite alteration with weak talc overprint. Porphyroblastic carbonate is present in areas with weaker shearing. ~5% sheared QC veins typically >60deg when orientation is apparent. Strong tension gouging causing QC gashes and discordant dark grey chlorite veinlets. ~0.25% clustered and blebby pyrite. MINOR INTERVALS: Minor Interval: 560.70 - 561.74 VUC, ULTRAMAFIC VOLCANIC TALCOSE Dark grey blue, moderately deformed ultramafic unit. Moderate pervasive chlorite alteration with moderate fracture filling talc alteration. Weak patchy carbonate alteration is also observed within the unit. Very weak sericite observed along vein margins ~30% weakly sheared QC veins at 50deg TCA when orientation is noticed. Weak-moderate brecciation of the veins. ~2% vein hosted pyrite with 0.5% clustered pyrrhotite. Lower contact lost in gouge material.	N76453	559.60	560.70	1.10	0.07
			N76454	560.70	561.74	1.04	0.17
			N76455	561.74	562.90	1.16	0.08
562.90	568.00	VUC, ULTRAMAFIC VOLCANIC TALCOSE Medium grey-blue, talc rich, weakly magnetic ultramafic unit. Moderate pervasive talc alteration with strong talc observed around the veins. Weak-moderate pervasive chlorite alteration is also observed within the unit. ~35% milky white QC veins and blebby floods averaging 65-70deg TCA. Moderate tension gouging resulting in QC gashes and few erratic chlorite and talc veinlets. ~3% fine-medium grained pyrite in the veins with 0.5% vein hosted pyrrhotite. Weak gouge and faulting observed within the unit. Lower contact lost in gouge.	N76456	562.90	563.76	0.86	0.00
			N76457	563.76	564.77	1.01	0.07
			N76458	564.77	565.63	0.86	0.14
			N76459	565.63	566.54	0.91	0.01
			N76461	566.54	567.40	0.86	0.00
		N76462	567.40	568.00	0.60	0.00	
568.00	570.77	ZGO, GOUGE Light green-grey, massive fault/gouge zone. Moderate-strong patchy pervasive talc alteration remaining. ~3% discordant QC veinlets visible within the unit along with 0.5% fine grained pyrite. EOH at 570.77	N76463	568.00	569.30	1.30	0.00
			N76464	569.30	570.00	0.70	0.00
			N76465	570.00	570.77	0.77	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76264	157.20	158.60	0.0490
N76265	158.60	159.50	0.0060
N76266	159.50	160.33	0.0370
N76267	160.33	161.47	0.0310
N76268	161.47	162.10	0.1310
N76269	162.10	163.20	0.0140
N76271	163.20	164.00	0.0720
N76272	164.00	165.00	0.0090
N76273	165.00	166.22	0.0025

Hole Number: **NH19-023**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76274	243.85	245.18	0.0025
N76275	245.18	246.42	0.0025
N76276	246.42	247.65	0.0070
N76277	247.65	248.70	0.0025
N76278	248.70	249.90	0.0025
N76279	254.00	255.34	0.0025
N76281	255.34	256.50	0.0070
N76282	256.50	257.10	1.0500
N76283	257.10	258.15	0.0070
N76284	258.15	259.53	0.0080
N76285	259.53	261.01	0.0025
N76286	261.01	261.72	0.0190
N76287	261.72	262.90	0.0170
N76288	262.90	264.10	0.0050
N76289	264.10	265.22	0.0025
N76291	265.22	266.53	0.0025
N76292	266.53	267.80	0.0025
N76293	338.93	340.15	0.0025
N76294	340.15	341.40	0.0070
N76295	341.40	341.92	0.0360
N76296	341.92	342.96	0.0100
N76297	342.96	343.86	0.0120
N76298	343.86	344.51	0.5100
N76299	344.51	345.60	0.0260
N76301	345.60	346.90	0.0025
N76302	385.30	386.64	0.0025
N76303	386.64	387.80	0.0025
N76304	387.80	388.90	0.0070
N76305	388.90	390.15	0.0025
N76306	390.15	391.46	0.0025
N76307	424.70	426.00	0.0025
N76308	426.00	427.50	0.0025
N76309	427.50	428.80	0.0025
N76311	428.80	430.00	0.0120
N76312	430.00	431.20	0.0025
N76313	431.20	432.30	0.0120
N76314	432.30	433.40	0.0060
N76315	433.40	434.50	0.0025
N76316	434.50	435.70	0.0025

Hole Number: **NH19-023**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76317	435.70	436.90	0.0025
N76318	436.90	438.35	0.0025
N76319	438.35	439.65	0.0025
N76321	439.65	440.89	0.0080
N76322	440.89	441.94	0.0120
N76323	441.94	442.83	0.2320
N76324	442.83	443.75	0.5580
N76325	443.75	444.20	1.3930
N76326	444.20	445.40	0.3500
N76327	445.40	446.60	0.0640
N76328	446.60	447.60	0.0440
N76329	447.60	448.50	0.0230
N76331	448.50	449.40	0.2020
N76341	449.40	449.70	4.6310
N76332	449.70	450.45	0.0060
N76333	450.45	451.45	0.1160
N76334	451.45	452.45	0.0690
N76335	452.45	453.34	0.3800
N76336	453.34	454.50	1.1920
N76337	454.50	455.50	0.0300
N76338	455.50	456.60	1.3420
N76339	456.60	457.40	0.7800
N76342	457.40	458.33	0.1270
N76343	458.33	459.00	0.3290
N76344	459.00	460.05	0.1010
N76345	460.05	460.80	0.0290
N76346	460.80	461.35	0.0220
N76347	461.35	462.30	0.0150
N76348	462.30	463.40	0.1040
N76349	463.40	464.24	0.8450
N76351	464.24	465.00	9.4100
N76352	465.00	465.75	0.0580
N76353	465.75	466.35	0.0470
N76354	466.35	467.40	0.0160
N76355	467.40	468.40	0.0130
N76356	468.40	469.40	0.0180
N76357	469.40	470.67	0.0200
N76358	470.67	471.80	0.2030
N76359	471.80	472.60	0.3050

Hole Number: **NH19-023**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76361	472.60	473.50	0.0450
N76362	473.50	474.37	0.6330
N76363	474.37	475.00	0.1540
N76364	475.00	475.90	0.0070
N76365	475.90	476.70	0.0270
N76366	476.70	477.70	0.0860
N76367	477.70	478.50	0.0490
N76368	478.50	479.50	0.0370
N76369	479.50	480.50	0.0170
N76371	480.50	481.50	0.0180
N76372	481.50	482.50	0.0120
N76373	482.50	483.55	0.0410
N76374	483.55	484.70	0.0200
N76375	484.70	485.60	0.0440
N76376	485.60	486.74	0.0210
N76377	486.74	487.70	0.0320
N76378	487.70	488.70	0.0440
N76379	488.70	489.57	0.0420
N76381	489.57	490.35	0.1470
N76382	490.35	491.10	0.0200
N76383	491.10	492.10	0.0050
N76384	492.10	492.96	0.0050
N76385	492.96	493.90	0.0070
N76386	493.90	494.90	0.1460
N76387	494.90	495.70	0.3990
N76388	495.70	496.67	0.3670
N76389	496.67	497.80	0.8580
N76391	497.80	498.75	0.0910
N76392	498.75	499.37	0.1910
N76393	499.37	500.05	0.0310
N76394	500.05	501.00	1.4850
N76395	501.00	502.20	0.0800
N76396	502.20	503.20	0.1960
N76397	503.20	504.05	0.6100
N76398	504.05	504.90	0.4000
N76399	504.90	505.87	0.1020
N76401	505.87	506.60	0.0190
N76402	506.60	507.36	0.0590
N76403	507.36	508.40	0.0540

Hole Number: **NH19-023**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N76404	508.40	509.15	0.3690
N76405	509.15	510.15	0.2650
N76406	510.15	511.00	0.1280
N76407	511.00	511.91	0.5450
N76408	511.91	512.66	0.9380
N76409	512.66	513.61	0.8470
N76411	513.61	514.60	0.1740
N76412	514.60	515.60	0.1460
N76413	515.60	516.57	0.1840
N76414	516.57	517.57	0.6390
N76415	517.57	518.35	0.5580
N76416	518.35	519.00	0.0990
N76417	519.00	520.00	0.1820
N76418	520.00	521.00	0.0140
N76419	521.00	522.00	0.0520
N76421	522.00	523.00	0.0930
N76422	523.00	523.80	0.7510
N76423	523.80	525.00	0.0390
N76424	525.00	525.80	0.1140
N76425	525.80	527.15	0.0450
N76426	527.15	528.30	0.0180
N76427	528.30	529.50	0.0025
N76428	529.50	530.80	0.0050
N76429	530.80	531.60	0.0060
N76431	531.60	532.55	0.0100
N76432	532.55	533.65	0.0025
N76433	533.65	534.73	0.1170
N76434	534.73	535.65	0.3870
N76435	535.65	536.70	0.0340
N76436	536.70	537.50	0.0350
N76437	537.50	538.40	0.0490
N76438	538.40	539.20	0.0490
N76439	539.20	540.10	0.0480
N76441	540.10	541.15	0.0710
N76442	541.15	542.00	0.1250
N76443	542.00	542.80	0.0840
N76444	542.80	543.90	0.0210
N76445	543.90	544.84	0.0310
N76446	544.84	545.75	0.0730

Hole Number: **NH19-023**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N76447	545.75	546.62	0.2510
N76448	546.62	547.70	0.0540
N76449	547.70	548.90	0.0630
N76451	548.90	550.00	0.0070
N76452	550.00	551.10	0.0060
N76453	559.60	560.70	0.0670
N76454	560.70	561.74	0.1680
N76455	561.74	562.90	0.0760
N76456	562.90	563.76	0.0025
N76457	563.76	564.77	0.0710
N76458	564.77	565.63	0.1390
N76459	565.63	566.54	0.0090
N76461	566.54	567.40	0.0025
N76462	567.40	568.00	0.0025
N76463	568.00	569.30	0.0025
N76464	569.30	570.00	0.0025
N76465	570.00	570.77	0.0025

DETAILED LOG

*Michael Conka*Hole Number: **NH19-024**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5374306.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 509344.20	East:	Length: 531.00
	Elev: 289.30	Elev:	Start Depth: 0.00
Date Started: Apr 06, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Apr 10, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 531.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	9.70	-55.00	APS	OK		45.00	6.40	-55.40	EZ Sho	OK	Pulled back 6m
96.00	7.00	-55.10	EZ Sho	OK	Pulled back 6m	147.00	6.90	-55.20	EZ Sho	OK	Pulled back 6m
198.00	6.90	-55.00	EZ Sho	OK	Pulled back 6m	249.00	7.80	-55.00	EZ Sho	OK	Pulled back 6m
300.00	7.70	-54.80	EZ Sho	OK	Pulled back 6m	351.00	7.30	-55.00	EZ Sho	OK	Pulled back 6m
402.00	9.00	-55.30	EZ Sho	OK	Pulled back 6m	453.00	10.70	-55.60	EZ Sho	OK	Pulled back 6m
504.00	11.80	-55.80	EZ Sho	OK	Pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	33.00	HPO, OVERBURDEN					
33.00	210.00	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained appearance. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Patchy varioles/pillow salvages. Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides.					
210.00	276.30	VMP, VOLCANIC MASSIVE PILLOWED Vipond, Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained appearance. Pillow salvages pervasives with varioles ~<1cm, .Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. LC sharp at 85 degrees Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides. MINOR INTERVALS: Minor Interval: 264.00 - 265.00 IMD, MAFIC DYKE					

DETAILED LOG

Hole Number: **NH19-024**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
276.30	306.10	<p>VMM, MAFIC VOLCANIC MASSIVE Light green to greenish beige, aphanitic, small dark green, chlorite. lacking any alteration, veining, significant sulphides. LC is sharp at 70 degrees TCA, Starting at 290m weak varioles and weak shearing 70 degrees, medium grained.</p> <p>MINOR INTERVALS: Minor Interval: 304.00 - 306.10 VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with weak light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically high angle 70 degrees TCA. ~ trace-5% QC as described. ♂Trace sulphides.</p>					
306.10	344.64	<p>VMO, MAFIC VOLCANIC UNDIVIDED Massive green grey to black mafic rock with vfg grained appearance with patchy mg. ,Patchy carb alteration blebby. Moderate chlorite fracture surfaces associated with discontinous QC veinlets and gashes. Very weak faded tension gouging in background of unit giving pseudo breccia. Patchy core fracturing. Weak gouge from 344.5-344.64m. QC as described at at 5-10% Sulphides trace to 1%, in clustered disseminated zones</p>	N76466	342.90	343.90	1.00	0.00
			N76467	343.90	344.64	0.74	0.00

Hole Number: **NH19-024**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
344.64	373.60	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark blue-grey, massive, weakly magnetic ultramafic unit. Increased veining and chlorite alteration differentiates this unit from the above VUM. Moderate pervasive chlorite alteration of the host rock with weak patchy fracture filling talc alteration. Weak patchy-disseminated carbonate alteration, often present as porphyroblasts. ~15% QC veins/veinets. Weak brecciation within the larger veins. Weak shearing from 344.50-344.64m at 50deg TCA. Overall veins are typically 60-70deg TCA. Moderate tension gouging resulting in QC gashes and erratic chlorite veinlets. ~1% clustered and vein hosted pyrite. Sharp lower contact at 75deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 344.64 - 345.04 IIO, INTERMEDIATE INTRUSIVE</p> <p>Medium grey, fine grained, massive intrusive unit. ~5% subhedral remnant quartz eyes along with 20% subhedral dark grey Weak pervasive carbonate alteration within the unit. ~3% weakly concordant QC veinets typically 60-70deg TCA. Weak tension gouging resulting in few QC gashes and dark grey erratic veinlets, likely chlorite. ~2% medium grained pyrite. Sharp lower contact at 70deg TCA.</p> <p>Minor Interval: 357.70 - 358.00 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Dark grey fine grained, massive intrusive unit. ~12% subhedral back flecks <2mm size disseminated throughout. likely pyroxenes. Weak patchy carbonate alteration with very weak patchy hematite. Weak patchy silicification. ~2% discordant QC veinets within the unit. Moderate tension gouging resulting in 7% discordant/erratic chlorite veinets. Weak fracture filling chlorite. ~7% disseminated pyrite of which 2% in vein hosted. Sharp lower contact at 70deg TCA.</p> <p>Minor Interval: 358.36 - 359.10 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Medium grey-pink, fine grained, massive intrusive. Weak remnant disseminated k-feldspar observed within the unit. Weak pervasive carbonate alteration in the host rock with weak hematite alteration present around the veins. Weak patchy-pervasive silicification. ~15% weakly oriented white QC veinets typically at 60-70deg TCA. Weak tension gouging resulting in few QC gashes along with chlorite filling fractures. ~5% fine grained vein hosted and disseminated pyrite. Sharp lower contact at 70deg TCA.</p> <p>Minor Interval: 359.10 - 360.20 ACH, CARB-CHLORITIC ROCK</p> <p>Dark grey-green, weakly sheared ultramafic unit. Alteration is a result of proximity to intrusive units. Weak pervasive chlorite alteration with moderate patchy carbonate alteration of the host rock. Moderate sericite veins observed within the unit. ~20% weakly sheared QV veinets <2cm in thickness, at ~50deg TCA. Weak brecciation observed in few of the larger veinets. Weak tension gouging resulting in wispy QC gashes along with chlorite filled fractures. ~0.25% fine grained clustered pyrite. Sharp lower contact at 40deg TCA.</p>	N76468	344.64	345.04	0.40	0.01
			N76469	345.04	345.96	0.92	0.00
			N76471	345.96	347.30	1.34	0.00
			N76472	355.20	356.50	1.30	0.00
			N76473	356.50	357.70	1.20	0.01
			N76474	357.70	358.00	0.30	0.26
			N76475	358.00	358.36	0.36	0.04
			N76476	358.36	359.10	0.74	0.34
			N76477	359.10	360.20	1.10	0.03
			N76478	360.20	361.10	0.90	0.03
			N76479	361.10	362.45	1.35	0.01
			N76481	362.45	363.70	1.25	0.00
			N76482	370.15	371.40	1.25	0.00
			N76483	371.40	372.86	1.46	0.01
			N76484	372.86	373.60	0.74	0.26

Hole Number: **NH19-024**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		<p>MINOR INTERVALS: Minor Interval: 360.20 - 361.10 IIO, INTERMEDIATE INTRUSIVE Dark grey patchy red, fine grained intrusive unit. Weak pervasive carbonate alteration along with patchy sericite and silicification of the host rock. Weak albite(?) is present influencing few of the veins. ~30% weakly sheared QC veinlets, typically at 70deg TCA. Low angled QC vein from 360.2-360.5m at 30deg TCA. Weak tension gouging resulting in few QC gashes and chlorite filled fractures. Clusters with up to 5% fine grained pyrite. Sharp irregular lower contact ~50deg TCA.</p>					
373.60	375.57	<p>IFO, FELSIC INTRUSIVE UNDIVIDED Medium beige-purple, fine grained, massive felsic intrusive. ~50% subhedral disseminated feldspars with ~15% subhedral pyroxenes (?). Weak pervasive carbonate alteration with weak hematite (possibly k-feldspar) alteration. Weak patchy silicification of the host rock. ~12% discordant QC veins. QC veinlets are typically at >60% while lower veins are at ~30deg TCA. Moderate tension gouging resulting in QC gashes and ~7% discordant chlorite veinlets. Moderate microfaulting is observed within the higher angled QC and chlorite veinlets. ~3% vein hosted pyrite, primarily observed within the dark grey chlorite veinlets. Weak banding (?) towards lower contact at 75deg TCA. Sharp lower contact at 80deg TCA.</p>	N76485	373.60	374.56	0.96	2.83
			N76486	374.56	375.57	1.01	2.82
375.57	402.13	<p>VUM, MASSIVE ULTRAMAFIC Dark blue-grey, fine grained, weakly deformed ultramafic unit. Moderate pervasive chlorite alteration with weak-moderate fracture filling talc. Talc is often associated with larger QC veins. Weak-moderate disseminated carbonate with weak patchy brown carbonate in the host rock. ~12% weak, locally sheared QC veins. When orientation is apparent, veins are at 60-70deg TCA, 0.5% fine grained clustered pyrite. Gradational lower contact.</p>	N76487	375.57	376.95	1.38	0.08
			N76488	376.95	378.28	1.33	0.00
402.13	437.75	<p>ACH, CARB-CHLORITIC ROCK Medium grey, patchy brown, fine grained weakly altered ultramafic unit. Weak patchy magnetism throughout. Moderate pervasive chlorite alteration with weak brown carbonate alteration. Moderate disseminated carbonate also observed. Moderate fracture filling talc associated with the QC veins. Weak patchy talc overprint is also observed within the unit. Brown carbonate appears to increase towards lower contact, from 435.50m onwards. Unit resembles the above VUM with slight alteration variations. ~15% weakly deformed QC veins >50deg TCA of which half exhibit weak-moderate talc influence. Moderate tension gouging resulting in QC gashes and chlorite filled fractures. Weak brecciation present within few of the larger veins. Weak microfaulting observed within the QC and chlorite veins. Clusters containing up to 1% fine-medium grained pyrite, 0.25% pyrite overall. Sharp lower contact at 80deg TCA.</p>	N76489	434.33	435.50	1.17	0.00
			N76491	435.50	436.84	1.34	0.01
			N76492	436.84	437.75	0.91	0.04

Hole Number: **NH19-024**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
437.75	440.13	<p>ACO, CARBONATE ALTERED ROCK</p> <p>AEC/ACO- Light brown-grey, fine grained, moderately deformed altered unit. Moderate pervasive grey carbonate alteration with weak patchy-pervasive brown carbonate alteration. Weak patchy sericite alteration and silicification also observed within the unit. Sericite is present in areas with decreased grey carbonate influence. ~30% moderately deformed white QC veins. When orientation is distinguishable, veins are typically at 70deg TCA. Secondary low angled, smokey grey QC veinlets cross cut shearing at <50deg TCA. Moderate tension gouging resulting in QC gashes and discordant chlorite veinlets. Weak microfaulting observed primarily within the secondary lower angled veinlets. Weak cataclastic texture from 439.55-440.13m. Moderate shearing at 70deg TCA throughout the unit. Sharp lower contact at 50deg TCA.</p> <p>MINOR INTERVALS: Minor Interval: 438.58 - 438.70 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Light grey, massive felsic intrusive. Weak pervasive carbonate alteration and silicification within the unit. ~25% weakly deformed QC veinlets, when orientation is noticed veins are typically at 60-70deg TCA. Secondary QC veinlets cross cut shearing at <40deg TCA. Weak tension gouging resulting in erratic dark grey veinlets. Localized clusters with up to 1% fine grained pyrite. Sharp lower contact at 85deg TCA.</p>	N76493	437.75	438.70	0.95	0.10
			N76494	438.70	439.55	0.85	0.36
			N76495	439.55	440.13	0.58	0.64
440.13	445.90	<p>ACG, GREEN CARBONATE ALTERED ROCK</p> <p>Bright green, patchy grey, weakly deformed, altered unit. Moderate pervasive fuchsite alteration with weak-moderate patchy grey carbonate alteration. Weak fecks of fine grained disseminated sericite observed in areas with increased veining. Carbonate is strongest in areas with decreased fuchsite influence. ~15% weak-moderately deformed QC veins/veinets. When orientation is apparent light beige veinlets are typically at 70deg TCA, white larger white veins are at 40-50deg TCA. Lower angled secondary, smokey grey, QC veinlets cross cut shearing at <30deg TCA. Moderate-strong tension gouging resulting in beige QC gashes along with weakly sheared chlorite veinlets. Very weak microfaulting observed within selected veinlets. Trace, QC vein hosted chalcopyrite with 0.5% chlorite veinlet hosted (some QC hosted) pyrite. Localized clusters with up to 1% vein hosted pyrite. Weak shearing at 70deg TCA. Sharp lower contact at 40deg TCA.</p>	N76496	440.13	441.00	0.87	0.09
			N76497	441.00	441.83	0.83	0.09
			N76498	441.83	442.70	0.87	2.37
			N76499	442.70	443.65	0.95	0.39
			N76501	443.65	444.53	0.88	0.28
			N76502	444.53	445.10	0.57	0.47
			N76503	445.10	445.90	0.80	0.60
445.90	450.25	<p>AEC, SERICITE CARBONATE ALTERED ROCK</p> <p>Light brown, patchy green, weakly deformed unit. Areas with weak-no alteration <10cm in size are fine grained, massive and black. Moderate patchy-pervasive sericite, brown+grey carbonate alteration of the host rock. Brown carbonate and sericite appear to gradually increase towards lower contact. Weak patchy fuchsite alteration from 447.56m onwards. Very weak silica+carbonate flooding associated with the veins. ~15% sheared milky white QC veinlets at 65deg TCA. Few veins <3cm in thickness cut shearing at 40-50deg TCA. Secondary low angled smokey QC veinlets cut shearing at 30-60deg TCA. Weak tension gouging resulting in few discontinuous QC gashes and wavy sheared chlorite veinlets. Dominant veining occurs from 449.32-450.25m. 0.25% fine grained cluster/vein hosted pyrite. Weak patchy/localized cataclastic texture. Weak shearing at 65deg TCA. Sharp lower contact at 70deg TCA.</p>	N76504	445.90	447.00	1.10	0.03
			N76505	447.00	448.20	1.20	0.01
			N76506	448.20	449.32	1.12	0.01
			N76507	449.32	450.25	0.93	0.10

Hole Number: **NH19-024**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
450.25	453.20	VMO, MAFIC VOLCANIC UNDIVIDED Possible VUO- Dark grey transitioning to medium grey, massive mafic unit (?). Patchy areas containing subhedra chlorite filled amygdules present within the unit. Weak pervasive grey carbonate alteration with weak patchy fuchsite. Weak patchy bleaching also observed within the unit. ~5% weakly deformed QC veinlets, primarily ~70deg TCA. Weak tension gouging resulting in few QC gashes along with discordant chlorite veinlets. Weak microfaulting present within the QC veinlets. 0.25% fine grained disseminated pyrite. Sharp lower contact at 60deg TCA.	N76508	450.25	450.75	0.50	0.11
			N76509	450.75	452.00	1.25	0.57
			N76511	452.00	453.20	1.20	2.15
453.20	459.40	AEC, SERICITE CARBONATE ALTERED ROCK Light brown, fine grained, moderately deformed sericite altered ultramafic unit. Areas with decreased alteration show signs of weak Moderate patchy-pervasive sericite and grey carbonate alteration with weak patchy brown carbonate and fuchsite alteration also observed. Weak patchy silicification of the host rock also present. Sericite decreases with depth and is dominant in areas with decreased carbonate influence. Fuchsite is associated with grey carbonate alteration. Weak silica+carbonate flooding associated with the veins. ~ 25% sheared QC veinlets at ~70deg TCA when orientation is apparent. Few veins display weak boudinage (?). Moderate tension gouging resulting in sheared QC Gashes and wavy sheared chlorite veinlets. Larger secondary veins cross cut shearing at <50deg TCA. Massive QC vein from 454.2-454.6m (blocky core fragmentation) at ~30deg TCA. ~1% fine grained, vein hosted pyrite. Weak localized cataclastic texture and moderate shearing at ~70deg TCA. Sharp lower contact at 60deg TCA.	N76512	453.20	454.20	1.00	0.12
			N76513	454.20	454.74	0.54	0.06
			N76514	454.74	455.84	1.10	0.24
			N76515	455.84	456.90	1.06	0.06
			N76516	456.90	457.74	0.84	0.11
			N76517	457.74	458.50	0.76	0.08
			N76518	458.50	459.40	0.90	0.06
459.40	472.50	ACH, CARB-CHLORITIC ROCK Dark grey-blue, patchy brown, weakly deformed ultramafic unit. Moderate pervasive chlorite alteration with weak fracture filling and overprinting talc alteration. Weak patchy grey+brown carbonate also observed. In areas where deformation is lacking, QC gashes and carbonate phenocrysts give a "stary night" appearance. ~15% weakly sheared QC veinlets and elongated gashes at 30-70deg TCA when orientation is apparent. Weak boudinage in few of the veinlets. Moderate tension gouging resulting in gashes and few discordant chlorite veinlets. Localized clusters with up to 1% vein hosted pyrite. Moderate tension gouge from: 468.18-468.43m and 471.4-472.5m. Weak shearing at ~65deg TCA. Lower contact marked by decreased in carbonate alteration following gouge. MINOR INTERVALS: Minor Interval: 470.52 - 471.20 IIO, INTERMEDIATE INTRUSIVE Medium grey, fine grained, very weakly deformed intrusive. Weak pervasive carbonate alteration with very weak hematite alteration influencing the veins. Moderate fracture filling chlorite. ~7% weakly sheared QC veinlets ranging between 50-70deg TCA when orientation is apparent. Moderate-strong tension gouging resulting in smoky grey QC gashes and discordant/erratic chlorite veinlets. ~2% fine grained disseminated pyrite. Sharp lower contact at 80deg TCA.	N76519	459.40	460.60	1.20	0.02
			N76521	460.60	461.75	1.15	0.03
			N76522	461.75	462.90	1.15	0.08
			N76523	462.90	464.20	1.30	0.09
			N76524	464.20	465.20	1.00	0.05
			N76525	465.20	466.20	1.00	0.01
			N76526	466.20	467.30	1.10	0.00
			N76527	467.30	468.43	1.13	0.00
			N76528	468.43	469.50	1.07	0.07
			N76529	469.50	470.52	1.02	0.06
			N76531	470.52	471.20	0.68	0.93
			N76532	471.20	471.90	0.70	0.11
			N76533	471.90	472.50	0.60	0.09

Hole Number: **NH19-024**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
472.50	516.10	<p>VUC, ULTRAMAFIC VOLCANIC TALCOSE</p> <p>VUC/ACL- Dark grey-blue, patchy green, fine grained, weakly deformed, weakly magnetic chlorite altered unit. Weak volcanic textures are observed in areas with weaker deformation. Moderate pervasive chlorite alteration of the host rock with weak-moderate disseminated carbonate. Moderate-strong talc present as fracture filling alteration associated with carbonate veins as well as weak patchy-pervasive talc alteration of the host rock. Talc gradually increases towards lower contact with gouge material. Weak patchy, fine grained leucoxene throughout the unit with weak sericite alteration influencing the veins. ~12% weakly deformed QC +/- talc veins and bleb-like floods. When orientation is apparent veins are typically at 60-70deg TCA. Moderate tension gouging resulting in weakly oriented QC gashes and both sheared and erratic chlorite veinlets. 0.25% fine frained clustered pyrite, areas containing up to 0.5% clustered/vein hosted pyrrhotite also observed. Moderate patches of gouge throughout, of which the most notable are at 474.66-475.9m and 512.85-513.96m likely the result of increased talc alteration.</p>	N76534	472.50	474.00	1.50	0.04
516.10	531.00	<p>ZGO, GOUGE</p> <p>PDFZ- Light green-grey, massive fault/gouge zone. Moderate-strong patchy pervasive talc and chlorite alteration remaining in competent core. ~5% discordant QC veins and bleby floods. 0.25% clustered pyrite remains. EOH at 531.0m</p> <p>MINOR INTERVALS: Minor Interval: 525.36 - 525.60 IMD, MAFIC DYKE</p> <p>Dark grey-black. patchy red, massive mafic intrusive. Weak patchy carbonate alteration with moderate patchy hematite alteration. No significant veining or mineralization observed within the unit. ~3% subhedral disseminated carbonate blebs <1cm in size present. Sharp contacts at 80deg TCA.</p>					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76466	342.90	343.90	0.0025
N76467	343.90	344.64	0.0025
N76468	344.64	345.04	0.0070
N76469	345.04	345.96	0.0025
N76471	345.96	347.30	0.0025
N76472	355.20	356.50	0.0025
N76473	356.50	357.70	0.0050
N76474	357.70	358.00	0.2550
N76475	358.00	358.36	0.0390
N76476	358.36	359.10	0.3360
N76477	359.10	360.20	0.0310
N76478	360.20	361.10	0.0260

Hole Number: **NH19-024**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76479	361.10	362.45	0.0060
N76481	362.45	363.70	0.0025
N76482	370.15	371.40	0.0025
N76483	371.40	372.86	0.0100
N76484	372.86	373.60	0.2550
N76485	373.60	374.56	2.8250
N76486	374.56	375.57	2.8240
N76487	375.57	376.95	0.0810
N76488	376.95	378.28	0.0025
N76489	434.33	435.50	0.0025
N76491	435.50	436.84	0.0070
N76492	436.84	437.75	0.0440
N76493	437.75	438.70	0.0990
N76494	438.70	439.55	0.3590
N76495	439.55	440.13	0.6420
N76496	440.13	441.00	0.0870
N76497	441.00	441.83	0.0920
N76498	441.83	442.70	2.3660
N76499	442.70	443.65	0.3860
N76501	443.65	444.53	0.2800
N76502	444.53	445.10	0.4650
N76503	445.10	445.90	0.6030
N76504	445.90	447.00	0.0320
N76505	447.00	448.20	0.0080
N76506	448.20	449.32	0.0090
N76507	449.32	450.25	0.1020
N76508	450.25	450.75	0.1060
N76509	450.75	452.00	0.5720
N76511	452.00	453.20	2.1500
N76512	453.20	454.20	0.1220
N76513	454.20	454.74	0.0590
N76514	454.74	455.84	0.2430
N76515	455.84	456.90	0.0640
N76516	456.90	457.74	0.1050
N76517	457.74	458.50	0.0800
N76518	458.50	459.40	0.0560
N76519	459.40	460.60	0.0160
N76521	460.60	461.75	0.0250
N76522	461.75	462.90	0.0810

Hole Number: **NH19-024**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N76523	462.90	464.20	0.0920
N76524	464.20	465.20	0.0510
N76525	465.20	466.20	0.0100
N76526	466.20	467.30	0.0025
N76527	467.30	468.43	0.0025
N76528	468.43	469.50	0.0730
N76529	469.50	470.52	0.0620
N76531	470.52	471.20	0.9260
N76532	471.20	471.90	0.1080
N76533	471.90	472.50	0.0900
N76534	472.50	474.00	0.0350

DETAILED LOG



Hole Number: **NH19-025**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -60.00
Project Number: MACKLE_TWP	North: 5374760.50	North:	Collar Az: 10.00
Location: Macklem Township	East: 509916.97	East:	Length: 600.00
	Elev: 288.30	Elev:	Start Depth: 0.00
Date Started: Apr 10, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Apr 25, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 600.00

Comments: Casing at 63m

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.00	-60.00	APS	OK		75.00	8.30	-60.60	EZ Sho	OK	Pulled back 6m
126.00	8.00	-59.70	EZ Sho	OK	Pulled back 6m	177.00	8.40	-60.20	EZ Sho	OK	Pulled back 6m
228.00	9.20	-60.10	EZ Sho	OK	Pulled back 6m	279.00	9.30	-60.10	EZ Sho	OK	Pulled back 6m
330.00	9.00	-59.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	381.00	9.70	-60.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
441.00	10.40	-59.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	495.00	13.30	-58.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
552.00	15.10	-58.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	62.20	HPO, OVERBURDEN					
62.20	116.20	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with fine-medium grained appearance w/ leucoxene texture and 'salt and pepper' appearance. Epidote occasionally influencing veining, hematite influencing veining on the rare instance and unit may be weakly carbonate bleached throughout. Occasional rafts of VMP with pillowing textures and varioles. Occasional erratic QC gashes and erratic and truncated in appearance dark tourmaline gashes. Lacking significant sulphides. Overall ~3-5% veining as erratic gashes to veinlets and rare veins. Sharp LC @high angle TCA where pervasive VMP begins					

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
116.20	320.10	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Fine grained massive green grey mafic rock exhibiting pillowing features and varioles. Varioles increase in intensity from box 26-40. May be experiencing weak bleaching throughout. Occasional sulphide clusters seen within pillows, as well as rare hematite and epidote +/- sericite alteration. Rare k-spar alteration seen in veining. Patchy pervasive sericite alteration from ~243.7-245.9m (spot sampled) with some vfg disseminated and clustered pyrite. Areas with strong tension gouging that give a fractured appearance to the core. Multiple occurrences of micro-faulting, for example at ~119.8m with max 0.5cm offset. A few rare minor intrusives/varying (mafic-intermediate) flows recognized and broken out as minors. Patch from ~251.9-254.4m lacking pillow texture and coarser (fine-med) grain size, as well as patch from ~279.1-282m (spot sampled) with coarser (med) grain size and pseudo-gabbroic appearance that is associated with ~3% pyrite as disseminated, with some blebs and may also be experiencing carbonate bleaching.</p> <p>Overall ~3-5 veining as erratic gashes to veinlets with the rare vein. Sharp LC @high angle TCA</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 199.00 - 199.90 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 227.40 - 227.70 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 229.40 - 230.20 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 263.10 - 263.20 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 268.90 - 270.20 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 272.60 - 272.80 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 290.60 - 291.50 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 310.50 - 311.20 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 311.40 - 315.30 IIO, INTERMEDIATE INTRUSIVE</p>	1678484	242.70	243.70	1.00	0.00
			1678485	243.70	244.80	1.10	0.01
			1678486	244.80	245.90	1.10	0.00
			1678487	245.90	246.90	1.00	0.00
			1678488	278.10	279.10	1.00	0.01
			1678489	279.10	280.60	1.50	0.06
			1678491	280.60	282.00	1.40	0.04
			1678492	282.00	283.00	1.00	0.01
320.10	340.50	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock with fine-medium grained appearance w/ leucoxene texture and 'salt and pepper' appearance. Epidote occasionally influencing veining, and sericite on the rare occasion. Occasional erratic QC gashes and erratic and truncated in appearance dark tourmaline gashes. Occasional pyrite blebs, but overall lacking significant sulphides.</p> <p>Overall ~3-5% veining as erratic gashes to veinlets with the rare vein. Sharp LC @high angle TCA</p>					

DETAILED LOGHole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
340.50	358.60	VMP, VOLCANIC MASSIVE PILLOWED See above VMP (116.2-320.1m). Patch of pervasive sericite +carbonate alteration (spot sampled) from 353.9-358.6m with some vfg dissem and clustered pyrite. Overall ~3-5 veining as erratic gashes to veinlets with the rare vein. Sharp LC @ high angle TCA.	1678493	352.90	353.90	1.00	0.00
			1678494	353.90	354.90	1.00	0.01
			1678495	354.90	355.90	1.00	0.02
			1678496	355.90	356.90	1.00	0.02
			1678497	356.90	357.90	1.00	0.02
			1678498	357.90	358.60	0.70	0.03
358.60	375.00	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with a pseudo-starry night appearance with the light grey-milky high angle QC gashes as well as smeared blebs. Shearing moderate throughout typically high angle >65 degrees TCA. Patchy gouging and core fracturing/fragmentation throughout. Patchy weak brown carb alteration throughout and patchy sericite alteration within first ~1m of upper contact. Trace sulphides. ~ 20-25% QC as described. Sharp lower contact, where angle is difficult to discern due to core fracturing/fragmentation.	1678499	358.60	359.80	1.20	0.03
			1674224	373.70	375.00	1.30	0.02

DETAILED LOG

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
375.00	412.50	IP2, FELDSPAR & QUARTZ PORPHYRY Pominex structure. Cloudy white extensive QC+/-feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, variable clasts and fg dark flakes. Light pinkish/peach tinge sometimes seen most likely a result of feldspar influence. Patches of strong dark tourmaline tension gouging that occasionally result in a brecciated appearance to the core (tourmaline occasionally filled with chlorite). ~2% pyrite overall typically blebby/clustered with trace chalcopyrite as well. Silver mineral also seen throughout and possibly tellurides. Evidence of weak dissolution sometimes recognized. Sharp LC @variable angles TCA	1674225	375.00	376.00	1.00	0.02
			1674226	376.00	377.00	1.00	0.14
			1674227	377.00	378.00	1.00	0.00
			1674228	378.00	379.00	1.00	0.04
			1674229	379.00	380.00	1.00	0.00
			1674231	380.00	381.00	1.00	0.00
			1674232	381.00	382.00	1.00	0.00
			1674233	382.00	383.00	1.00	0.00
			1674234	383.00	384.00	1.00	0.00
			1674235	384.00	385.00	1.00	0.00
			1674236	385.00	386.00	1.00	0.00
			1674237	386.00	387.00	1.00	0.00
			1674238	387.00	388.00	1.00	0.00
			1674239	388.00	389.00	1.00	0.00
			1674241	389.00	390.00	1.00	0.00
			1674242	390.00	391.00	1.00	0.00
			1674243	391.00	392.00	1.00	0.00
			1674244	392.00	392.80	0.80	0.01
			1674245	392.80	393.10	0.30	0.06
			1674247	393.10	394.10	1.00	0.00
			1674248	394.10	395.10	1.00	0.00
			1674249	395.10	396.10	1.00	0.00
			1674251	396.10	397.10	1.00	0.00
			1674252	397.10	398.10	1.00	0.00
			1674253	398.10	399.10	1.00	0.00
			1674254	399.10	400.10	1.00	0.00
			1674255	400.10	401.10	1.00	0.01
			1674256	401.10	402.10	1.00	0.00
			1674257	402.10	403.10	1.00	0.01
			1674258	403.10	404.00	0.90	0.00
			1674259	404.00	405.00	1.00	0.00
			1674261	405.00	406.00	1.00	0.00
			1674262	406.00	407.00	1.00	0.00
			1674263	407.00	408.00	1.00	0.00
			1674264	408.00	409.00	1.00	0.00
			1674265	409.00	410.00	1.00	0.00
			1674266	410.00	411.00	1.00	0.00
			1674267	411.00	411.90	0.90	0.00
			1674268	411.90	412.50	0.60	0.00

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
412.50	422.00	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>See previous VUM. Grey carb altered with less QC present ~20%. Shearing/deformation less defined. Lower contact placed where rock appears to become softer and more talcy, with gouging initiating.</p>	1674269	412.50	414.00	1.50	0.00
			1674271	414.00	415.50	1.50	0.01
			1674272	415.50	417.00	1.50	0.01
			1674273	417.00	417.70	0.70	0.01
			1674274	417.70	418.30	0.60	0.00
422.00	447.50	<p>VUC, ULTRAMAFIC VOLCANIC TALCOSE</p> <p>Massive Ultramafic rock, but this interval is softer and more talcy throughout, with weak-moderate patches of blocky fracturing and even gouging present; conglomerated mm-1cm scale clasts embedded in gouged patches. Additionally, between ~430.5-437m shows olive green chlorite+/- very weak fuchsite alteration, and weak patches of grey carb alteration also present. Weak-mod shearing and deformation typically 45-70 DTCA but variable. Lower contact placed where gouging becomes even stronger and pervasive throughout, representative of faulting.</p>					
447.50	468.00	<p>ZGO, GOUGE</p> <p>DPFZ- intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides. Intense core loss between 450/453/456m blocks; 'grind' written on blocks Lower contact placed where core becomes more competent, but a few gouging patches still present into upper few meters of next unit.</p>					
468.00	479.60	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Blue-grey massive ultramafic rock with increased sulphides compared to previous VUM units, as well as numerous QCV minors (and majors intercollated throughout). Moderate mottled/speckled/splotchy grey-brown carb and weak patchy silicification throughout; increased alt intervals shows correlating increased sulphides. Uppermost few meters shows a few softer gouged intervals. Minor QCVs as follows: 471.5-471.6m, 472.4-472.7m, 472.9- 473.5m. See following QCV majors for description. Overall ~5% blebby (fg-cg)/clustered pyrite; only present in ultramafic lenses, QCVs are lacking sulphides. ~30-40% QC throughout as described floods or smaller erratic gashes-veinlets. Sharp lower contact at ~70 DTCA fracturing.</p> <p>MINOR INTERVALS: Minor Interval: 471.50 - 471.60 QVC, QUARTZ CARBONATE VEINS Sharp contacts ~35-60 DTCA Minor Interval: 472.40 - 472.70 QVC, QUARTZ CARBONATE VEINS Sharp contacts ~60-75 DTCA Minor Interval: 472.90 - 473.50 QVC, QUARTZ CARBONATE VEINS Sharp contacts ~50-70 DTCA</p>	1674275	469.50	470.00	0.50	0.00
			1674276	470.00	470.50	0.50	0.00
			1674277	470.50	471.50	1.00	0.00
			1674278	471.50	472.40	0.90	0.00
			1674279	472.40	472.90	0.50	0.00
			1674281	472.90	473.50	0.60	0.00
			1674282	473.50	474.70	1.20	0.00
			1674283	474.70	475.80	1.10	0.01
			1674284	475.80	477.00	1.20	0.04
			1674285	477.00	478.00	1.00	0.65
			1674286	478.00	479.00	1.00	0.35
			1674287	479.00	479.60	0.60	0.11

DETAILED LOG

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
479.60	481.10	QVC, QUARTZ CARBONATE VEINS Extensive milky white Qtz carb +/- calcite flooding. Bland and milky/somewhat glassy throughout its entirety, lacking any sulphides and potentially very weak chlorite alteration. Sharp lower contact at ~75 DTCA.	1674288	479.60	480.30	0.70	0.00
			1674289	480.30	481.10	0.80	0.00
481.10	483.80	VUM, MASSIVE ULTRAMAFIC See most recent VUM (hosting inc sulphides ~5%, primarily pyrite with even pyrrhotite initiating 2-3%). Minor QVC 482.9-483.3m. Sharp lower contact at ~70 DTCA. MINOR INTERVALS: Minor Interval: 482.90 - 483.30 QVC, QUARTZ CARBONATE VEINS See previous major QVC; sharp contacts ~70 DTCA.	1674291	481.10	482.00	0.90	0.05
			1674292	482.00	482.90	0.90	0.02
			1674293	482.90	483.30	0.40	0.00
			1674294	483.30	483.80	0.50	0.02
483.80	485.70	QVC, QUARTZ CARBONATE VEINS See most recent QVC. Lacking sulphides; extensively milky throughout. Sharp lower contact at ~60 DTCA.	1674295	483.80	484.80	1.00	0.00
			1674296	484.80	485.70	0.90	0.00

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
485.70	520.30	VUM, MASSIVE ULTRAMAFIC See recent VUM; weak to mod patchy carb, very weak silicification, ~5% blebby py, w/ 2-3% blebby pyhrotite. Following ~504m, pyhrotite becomes dominant at ~3-4%, 2-3% py, overall around 5% sulphides still present. Minor QVCs 486.5-486.7m, 491.9-493m, 504-504.2m, 507.2-507.9m, 510.6-511.6m, 514.2-514.9m, 516.4-516.7m, 517.1-517.4m, 519.6-520.1m. Sharp LC with pervasive QVC MINOR INTERVALS: Minor Interval: 486.50 - 486.70 QVC, QUARTZ CARBONATE VEINS Sharp contacts ~50-70 DTCA Minor Interval: 491.90 - 493.00 QVC, QUARTZ CARBONATE VEINS Sharp contacts ~60-75 DTCA Minor Interval: 504.00 - 504.20 QVC, QUARTZ CARBONATE VEINS Sharp upper contact at block ~45 DTCA, sharp lower at ~80 DTCA fracturing. Minor Interval: 507.20 - 507.90 QVC, QUARTZ CARBONATE VEINS Sharp contacts at ~50-60 DTCA fractures Minor Interval: 510.60 - 511.60 QVC, QUARTZ CARBONATE VEINS Chlorite altered ultramafic intercollated in middle of this interval, with believed to be micaceous green-brown mineral recognized. Milky QC similar to previous and lacking sulphides. Sharp upper contact at fracturing, sharp lower at average ~50 DTCA. Minor Interval: 514.20 - 514.90 QVC, QUARTZ CARBONATE VEINS In and out of QC flooding with less defined contacts (except lower contact ~35 DTCA). Minor Interval: 516.40 - 516.70 QVC, QUARTZ CARBONATE VEINS Sharp contacts ~50-65 DTCA. Minor Interval: 517.10 - 517.40 QVC, QUARTZ CARBONATE VEINS Sharp upper contact ~70 DTCA, and sharp lower ~70-85 DTCA variable. Minor Interval: 519.60 - 520.10 QVC, QUARTZ CARBONATE VEINS Sharp upper contact ~70 DTCA, intercollated in and out of VUM lensing following lower contact.	1674297	485.70	486.50	0.80	0.02
			1674298	486.50	487.00	0.50	0.11
			1674299	487.00	488.00	1.00	0.00
			1674301	488.00	489.00	1.00	0.00
			1674302	489.00	490.00	1.00	0.00
			1674303	490.00	491.00	1.00	0.01
			1674304	491.00	491.90	0.90	0.00
			1674305	491.90	492.40	0.50	0.00
			1674306	492.40	493.00	0.60	0.00
			1674307	493.00	494.00	1.00	0.00
			1674308	494.00	495.00	1.00	0.00
			1674309	495.00	496.00	1.00	0.00
			1674311	496.00	497.00	1.00	0.00
			1674312	497.00	498.00	1.00	0.00
			1674313	498.00	499.50	1.50	0.00
			1674314	499.50	501.00	1.50	0.00
			1674315	501.00	502.50	1.50	0.00
			1674316	502.50	504.00	1.50	0.00
			1674317	504.00	504.50	0.50	0.01
			1674318	504.50	505.40	0.90	0.00
			1674319	505.40	506.30	0.90	0.00
			1674321	506.30	507.20	0.90	0.01
			1674322	507.20	507.90	0.70	0.00
			1674323	507.90	508.90	1.00	0.00
			1674324	508.90	509.80	0.90	0.00
			1674325	509.80	510.60	0.80	0.00
			1674326	510.60	511.60	1.00	0.01
			1674327	511.60	512.60	1.00	0.00
			1674328	512.60	513.40	0.80	0.00
			1674329	513.40	514.20	0.80	0.01
			1674331	514.20	514.90	0.70	0.00
			1674332	514.90	515.80	0.90	0.01
			1674333	515.80	516.40	0.60	0.00
			1674334	516.40	516.70	0.30	0.00
			1674335	516.70	517.40	0.70	0.01
			1674336	517.40	518.00	0.60	0.01
			1674337	518.00	518.70	0.70	0.01
			1674338	518.70	519.60	0.90	0.01
			1674339	519.60	520.30	0.70	0.00

DETAILED LOGHole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
520.30	525.30	QVC, QUARTZ CARBONATE VEINS Extensive milky white Qtz carb +/- calcite flooding. Bland and milky/somewhat glassy throughout its entirety, lacking any sulphides and potentially very weak chlorite alteration. Minor raft of VUM from 521.2-521.4m. Patchy core fracturing and fragmentation. Sharp lower contact at ~80 DTCA.	1674341	520.30	520.90	0.60	0.00
			1674342	520.90	521.40	0.50	0.00
			1674343	521.40	522.40	1.00	0.00
			1674344	522.40	523.40	1.00	0.00
			1674345	523.40	524.40	1.00	0.00
			1674346	524.40	525.30	0.90	0.00

DETAILED LOG

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
525.30	544.10	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>See recent VUM; weak to mod patchy carb, very weak silicification, ~5% locally blebby pyhrottite, w/ 2-3% blebby pyrite.</p> <p>Minor QVCs 527.6-527.8, 528.7-528.9, 530.85-531.1, 531.9-532.1, 532.8-533.25, 533.7-533.8, 534.35-534.6, 534.75-534.95, 536.4-537, 537.2-537.3, 542.1-542.7, and 542.95-543.1m, with veinlets to veins also seen in box 111. Sharp LC ~45 DTCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 527.60 - 527.80 QVC, QUARTZ CARBONATE VEINS Sharp ~75 DTCA</p> <p>Minor Interval: 528.70 - 528.90 QVC, QUARTZ CARBONATE VEINS Sharp LC ~75 DTCA</p> <p>Minor Interval: 530.85 - 531.10 QVC, QUARTZ CARBONATE VEINS UC gradual over ~5cm and LC ~65 DTCA</p> <p>Minor Interval: 531.90 - 532.10 QVC, QUARTZ CARBONATE VEINS Sharp - UC ~45 DTCA and LC ~75 DTCA</p> <p>Minor Interval: 532.80 - 533.25 QVC, QUARTZ CARBONATE VEINS Gradual UC and LC ~3-5cm</p> <p>Minor Interval: 533.70 - 533.80 QVC, QUARTZ CARBONATE VEINS Sharp ~45 DTCA</p> <p>Minor Interval: 534.35 - 534.60 QVC, QUARTZ CARBONATE VEINS Sharp ~75 DTCA</p> <p>Minor Interval: 534.75 - 534.95 QVC, QUARTZ CARBONATE VEINS Gradual- UC ~7cm and LC ~3cm</p> <p>Minor Interval: 536.40 - 537.00 QVC, QUARTZ CARBONATE VEINS Sharp ~45 DCTA</p> <p>Minor Interval: 537.20 - 537.30 QVC, QUARTZ CARBONATE VEINS Gradual UC ~3-5cm and sharp LC ~60 DTCA</p> <p>Minor Interval: 542.10 - 542.70 QVC, QUARTZ CARBONATE VEINS Gradual UC ~7cm and sharp LC ~75 DTCA</p> <p>Minor Interval: 542.95 - 543.10 QVC, QUARTZ CARBONATE VEINS Sharp LC ~45 DTCA</p>	1674347	525.30	526.00	0.70	0.01
			1674348	526.00	526.70	0.70	0.01
			1674349	526.70	527.60	0.90	0.00
			1674351	527.60	527.90	0.30	0.00
			1674352	527.90	528.70	0.80	0.01
			1674353	528.70	529.00	0.30	0.00
			1674354	529.00	529.80	0.80	0.00
			1674355	529.80	530.80	1.00	0.00
			1674356	530.80	531.10	0.30	0.01
			1674357	531.10	531.90	0.80	0.01
			1674358	531.90	532.20	0.30	0.01
			1674359	532.20	532.80	0.60	0.00
			1674361	532.80	533.25	0.45	0.00
			1674362	533.25	533.70	0.45	0.00
			1674363	533.70	534.00	0.30	0.01
			1674364	534.00	534.35	0.35	0.02
			1674365	534.35	534.95	0.60	0.00
			1674366	534.95	535.75	0.80	0.00
			1674367	535.75	536.40	0.65	0.00
			1674368	536.40	537.00	0.60	0.00
			1674369	537.00	537.30	0.30	0.00
			1674371	537.30	538.30	1.00	0.00
			1674372	538.30	539.00	0.70	0.00
			1674373	539.00	540.00	1.00	0.00
			1674374	540.00	540.80	0.80	0.00
			1674375	540.80	541.30	0.50	0.00
			1674376	541.30	542.10	0.80	0.00
			1674377	542.10	542.70	0.60	0.00
			1674378	542.70	543.10	0.40	0.00
			1674379	543.10	543.50	0.40	0.00
			1674381	543.50	544.10	0.60	0.01

DETAILED LOG

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
544.10	552.90	QVC, QUARTZ CARBONATE VEINS Extensive milky white Qtz carb +/- calcite flooding. Bland and milky/somewhat glassy throughout its entirety, lacking any sulphides and potentially very weak chlorite alteration. Occasional smokey grey Qtz carb seen that's not seen in previous intervals. Minor VUM from 545.6-545.8 and 546.05-546.3m. Occasional patchy core fracturing/fragmentation. Sharp lower contact at ~45 DTCA. MINOR INTERVALS: Minor Interval: 545.60 - 545.80 VUM, MASSIVE ULTRAMAFIC Sharp ~50 DTCA Minor Interval: 546.05 - 546.30 VUM, MASSIVE ULTRAMAFIC Gradual- UC ~10cm and LC ~5cm	1674382	544.10	544.80	0.70	0.00
			1674383	544.80	545.60	0.80	0.00
			1674384	545.60	545.90	0.30	0.00
			1674385	545.90	546.30	0.40	0.00
			1674386	546.30	546.80	0.50	0.00
			1674387	546.80	547.80	1.00	0.00
			1674388	547.80	548.80	1.00	0.00
			1674389	548.80	549.80	1.00	0.00
			1674391	549.80	550.80	1.00	0.00
			1674392	550.80	551.30	0.50	0.02
			1674393	551.30	551.80	0.50	0.00
			1674394	551.80	552.90	1.10	0.00
552.90	559.20	VUM, MASSIVE ULTRAMAFIC See recent VUM; mod carb alteration and mottled/speckled/splotchy carb, very weak silicification. Lacking the sulphides seen in the previous VUM, some vfg sulphides may be present. ~20-22% QC as described and veinlets to odd veins typically at ~80 DTCA. Gradual LC ~20cm	1674395	552.90	553.90	1.00	0.00
			1674396	553.90	554.90	1.00	0.00
			1674397	554.90	555.90	1.00	0.00
			1674398	555.90	556.90	1.00	0.00
			1674399	556.90	557.90	1.00	0.00
			1674401	557.90	558.50	0.60	0.00
			1674402	558.50	559.20	0.70	0.00
559.20	560.40	QVC, QUARTZ CARBONATE VEINS Extensive milky white Qtz carb +/- calcite flooding. Bland and milky/somewhat glassy throughout its entirety, lacking any sulphides and potentially very weak chlorite alteration. Occasional smokey grey Qtz carb seen again. Sharp lower contact at ~45 DTCA.	1674403	559.20	559.80	0.60	0.00
			1674404	559.80	560.40	0.60	0.00
560.40	573.10	VUM, MASSIVE ULTRAMAFIC See above VUM (552.9-559.2m). Patchy gouging with friable core and core fracturing/fragmentation is now present. Minor QVC veins from 569.4-569.6 and 570.3-570.5m. Rare pyrite blebs, but overall insignificant sulphides. ~20-22% QVC. Sharp LC ~40 DTCA	1674405	560.40	561.40	1.00	0.00
			1674406	561.40	562.40	1.00	0.00
			1674407	562.40	563.40	1.00	0.00
			1674408	563.40	564.40	1.00	0.00
			1674409	564.40	565.40	1.00	0.00
			1674411	565.40	566.40	1.00	0.00
			1674412	566.40	567.40	1.00	0.00
			1674413	567.40	568.40	1.00	0.00
			1674414	568.40	569.40	1.00	0.00
			1674415	569.40	569.70	0.30	0.00
			1674416	569.70	570.30	0.60	0.00
			1674417	570.30	570.60	0.30	0.00
			1674418	570.60	571.60	1.00	0.01
			1674419	571.60	572.60	1.00	0.00
			1674421	572.60	573.10	0.50	0.00

Hole Number: **NH19-025**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
573.10	574.40	QVC, QUARTZ CARBONATE VEINS Smokey grey appearance is more intense and milky white qtz carb +/- calcite flooding is also present. Lacking sulphides and potentially very weak chlorite alteration. Sharp lower contact at ~50 DTCA.	1674422	573.10	573.70	0.60	0.00
			1674423	573.70	574.40	0.70	0.00
574.40	600.00	VUM, MASSIVE ULTRAMAFIC See above VUM (560.4-573.1m). Increased gouging, core fracturing & fragmentation most likely evidence of a fault zone (see minors/structures tabs). Rare pyrite blebs and overall insignificant sulphides. ~20-22% QVC. EOH MINOR INTERVALS: Minor Interval: 574.40 - 575.00 ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Minor Interval: 580.00 - 580.90 ZGO, GOUGE See above ZGO Minor Interval: 598.20 - 599.00 ZGO, GOUGE See above ZGO	1674424	574.40	575.00	0.60	0.13
			1674425	575.00	576.00	1.00	0.02
			1674426	576.00	577.00	1.00	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1678484	242.70	243.70	0.0025
1678485	243.70	244.80	0.0130
1678486	244.80	245.90	0.0025
1678487	245.90	246.90	0.0025
1678488	278.10	279.10	0.0090
1678489	279.10	280.60	0.0570
1678491	280.60	282.00	0.0400
1678492	282.00	283.00	0.0070
1678493	352.90	353.90	0.0025
1678494	353.90	354.90	0.0090
1678495	354.90	355.90	0.0180
1678496	355.90	356.90	0.0170
1678497	356.90	357.90	0.0180
1678498	357.90	358.60	0.0290
1678499	358.60	359.80	0.0330
1674224	373.70	375.00	0.0200
1674225	375.00	376.00	0.0220
1674226	376.00	377.00	0.1410
1674227	377.00	378.00	0.0025

Hole Number: **NH19-025**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674228	378.00	379.00	0.0350
1674229	379.00	380.00	0.0025
1674231	380.00	381.00	0.0025
1674232	381.00	382.00	0.0025
1674233	382.00	383.00	0.0025
1674234	383.00	384.00	0.0025
1674235	384.00	385.00	0.0025
1674236	385.00	386.00	0.0025
1674237	386.00	387.00	0.0025
1674238	387.00	388.00	0.0025
1674239	388.00	389.00	0.0025
1674241	389.00	390.00	0.0025
1674242	390.00	391.00	0.0025
1674243	391.00	392.00	0.0025
1674244	392.00	392.80	0.0050
1674245	392.80	393.10	0.0600
1674247	393.10	394.10	0.0025
1674248	394.10	395.10	0.0025
1674249	395.10	396.10	0.0025
1674251	396.10	397.10	0.0025
1674252	397.10	398.10	0.0025
1674253	398.10	399.10	0.0025
1674254	399.10	400.10	0.0025
1674255	400.10	401.10	0.0110
1674256	401.10	402.10	0.0025
1674257	402.10	403.10	0.0070
1674258	403.10	404.00	0.0025
1674259	404.00	405.00	0.0025
1674261	405.00	406.00	0.0025
1674262	406.00	407.00	0.0025
1674263	407.00	408.00	0.0025
1674264	408.00	409.00	0.0025
1674265	409.00	410.00	0.0025
1674266	410.00	411.00	0.0025
1674267	411.00	411.90	0.0025
1674268	411.90	412.50	0.0025
1674269	412.50	414.00	0.0025
1674271	414.00	415.50	0.0100
1674272	415.50	417.00	0.0050

Hole Number: **NH19-025**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674273	417.00	417.70	0.0120
1674274	417.70	418.30	0.0025
1674275	469.50	470.00	0.0025
1674276	470.00	470.50	0.0025
1674277	470.50	471.50	0.0025
1674278	471.50	472.40	0.0025
1674279	472.40	472.90	0.0025
1674281	472.90	473.50	0.0025
1674282	473.50	474.70	0.0025
1674283	474.70	475.80	0.0120
1674284	475.80	477.00	0.0410
1674285	477.00	478.00	0.6460
1674286	478.00	479.00	0.3520
1674287	479.00	479.60	0.1140
1674288	479.60	480.30	0.0025
1674289	480.30	481.10	0.0025
1674291	481.10	482.00	0.0530
1674292	482.00	482.90	0.0200
1674293	482.90	483.30	0.0025
1674294	483.30	483.80	0.0170
1674295	483.80	484.80	0.0025
1674296	484.80	485.70	0.0025
1674297	485.70	486.50	0.0170
1674298	486.50	487.00	0.1090
1674299	487.00	488.00	0.0025
1674301	488.00	489.00	0.0025
1674302	489.00	490.00	0.0025
1674303	490.00	491.00	0.0110
1674304	491.00	491.90	0.0025
1674305	491.90	492.40	0.0025
1674306	492.40	493.00	0.0025
1674307	493.00	494.00	0.0025
1674308	494.00	495.00	0.0025
1674309	495.00	496.00	0.0025
1674311	496.00	497.00	0.0025
1674312	497.00	498.00	0.0025
1674313	498.00	499.50	0.0025
1674314	499.50	501.00	0.0025
1674315	501.00	502.50	0.0025

Hole Number: **NH19-025**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674316	502.50	504.00	0.0025
1674317	504.00	504.50	0.0080
1674318	504.50	505.40	0.0025
1674319	505.40	506.30	0.0025
1674321	506.30	507.20	0.0060
1674322	507.20	507.90	0.0025
1674323	507.90	508.90	0.0025
1674324	508.90	509.80	0.0025
1674325	509.80	510.60	0.0025
1674326	510.60	511.60	0.0120
1674327	511.60	512.60	0.0025
1674328	512.60	513.40	0.0025
1674329	513.40	514.20	0.0050
1674331	514.20	514.90	0.0025
1674332	514.90	515.80	0.0060
1674333	515.80	516.40	0.0025
1674334	516.40	516.70	0.0025
1674335	516.70	517.40	0.0060
1674336	517.40	518.00	0.0050
1674337	518.00	518.70	0.0080
1674338	518.70	519.60	0.0080
1674339	519.60	520.30	0.0025
1674341	520.30	520.90	0.0025
1674342	520.90	521.40	0.0025
1674343	521.40	522.40	0.0025
1674344	522.40	523.40	0.0025
1674345	523.40	524.40	0.0025
1674346	524.40	525.30	0.0025
1674347	525.30	526.00	0.0090
1674348	526.00	526.70	0.0050
1674349	526.70	527.60	0.0025
1674351	527.60	527.90	0.0025
1674352	527.90	528.70	0.0070
1674353	528.70	529.00	0.0025
1674354	529.00	529.80	0.0025
1674355	529.80	530.80	0.0025
1674356	530.80	531.10	0.0120
1674357	531.10	531.90	0.0070
1674358	531.90	532.20	0.0070

Hole Number: **NH19-025**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674359	532.20	532.80	0.0025
1674361	532.80	533.25	0.0025
1674362	533.25	533.70	0.0025
1674363	533.70	534.00	0.0080
1674364	534.00	534.35	0.0180
1674365	534.35	534.95	0.0025
1674366	534.95	535.75	0.0025
1674367	535.75	536.40	0.0025
1674368	536.40	537.00	0.0025
1674369	537.00	537.30	0.0025
1674371	537.30	538.30	0.0025
1674372	538.30	539.00	0.0025
1674373	539.00	540.00	0.0025
1674374	540.00	540.80	0.0025
1674375	540.80	541.30	0.0025
1674376	541.30	542.10	0.0025
1674377	542.10	542.70	0.0025
1674378	542.70	543.10	0.0025
1674379	543.10	543.50	0.0025
1674381	543.50	544.10	0.0070
1674382	544.10	544.80	0.0025
1674383	544.80	545.60	0.0025
1674384	545.60	545.90	0.0025
1674385	545.90	546.30	0.0025
1674386	546.30	546.80	0.0025
1674387	546.80	547.80	0.0025
1674388	547.80	548.80	0.0025
1674389	548.80	549.80	0.0025
1674391	549.80	550.80	0.0025
1674392	550.80	551.30	0.0190
1674393	551.30	551.80	0.0025
1674394	551.80	552.90	0.0025
1674395	552.90	553.90	0.0025
1674396	553.90	554.90	0.0025
1674397	554.90	555.90	0.0025
1674398	555.90	556.90	0.0025
1674399	556.90	557.90	0.0025
1674401	557.90	558.50	0.0025
1674402	558.50	559.20	0.0025

Hole Number: **NH19-025**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674403	559.20	559.80	0.0025
1674404	559.80	560.40	0.0025
1674405	560.40	561.40	0.0025
1674406	561.40	562.40	0.0025
1674407	562.40	563.40	0.0025
1674408	563.40	564.40	0.0025
1674409	564.40	565.40	0.0025
1674411	565.40	566.40	0.0025
1674412	566.40	567.40	0.0025
1674413	567.40	568.40	0.0025
1674414	568.40	569.40	0.0025
1674415	569.40	569.70	0.0025
1674416	569.70	570.30	0.0025
1674417	570.30	570.60	0.0025
1674418	570.60	571.60	0.0050
1674419	571.60	572.60	0.0025
1674421	572.60	573.10	0.0025
1674422	573.10	573.70	0.0025
1674423	573.70	574.40	0.0025
1674424	574.40	575.00	0.1260
1674425	575.00	576.00	0.0210
1674426	576.00	577.00	0.0025

DETAILED LOG

Michael Clarke

Hole Number: **NH19-026**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5374760.50	North:	Collar Az: 10.00
Location: Macklem Township	East: 509916.97	East:	Length: 570.00
	Elev: 288.30	Elev:	Start Depth: 0.00
Date Started: Apr 25, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: May 09, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 570.00

Comments: Logged by revans from 375.8m to EOH. Block error at 441m that equates to a 6m difference. For example, block reading 447m should actually be 441m. Had difficulty securing a good core orientation lock angle. Angle used was 60deg so error should be associated with the measured values

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.00	-50.00	APS	OK		81.00	7.10	-51.30	EZ Sho	OK	Pulled back 6m
132.00	9.40	-51.30	EZ Sho	OK	Pulled back 6m	183.00	7.40	-51.20	EZ Sho	OK	Pulled back 6m
234.00	7.90	-51.40	EZ Sho	OK	Pulled back 6m	285.00	7.10	-51.10	EZ Sho	OK	Pulled back 6m
336.00	7.60	-51.10	EZ Sho	OK	Pulled back 6m	387.00	8.30	-50.40	EZ Sho	OK	Pulled back 6m
438.00	9.60	-51.10	EZ Sho	OK	Pulled back 6m	489.00	9.90	-50.20	EZ Sho	OK	Pulled back 6m
540.00	9.90	-49.70	EZ Sho	OK	Pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	66.50	HPO, OVERBURDEN Overburden					
66.50	88.00	VMM, MAFIC VOLCANIC MASSIVE Dark grey-green, massive mafic volcanic unit. No distinguishable textures observed within. Weak pervasive chlorite alteration with weak patchy carbonate. Increased carbonate alteration surrounding few of the QC veins and pervasively from 73.65-75.5m. Weak hematite veinlets towards lower contact. 5-7% discordant QC veins and veinlets.. Typically veining is >50deg TCA when orientation is apparent. Few weak epidote veinlets also present within the unit. ~0.5% fine grained pyrite with up to 1% clustered pyrite. Gradational lower contact.					
88.00	96.44	VMP, VOLCANIC MASSIVE PILLOWED Medium green pillow basalt. Medium green varioles along pillow margins. Weak pervasive chlorite alteraion with weak patchy carbonate alteration and bleaching surrounding the pillows.Gradual increase in carbonate influence with depth. Weak-moderate hematite+mottled chlorite (+/- epidote) alteration from 91.84-92.2m. No significant veining present. Clusters up to 2% fine grained pyrite in the pillows and pillow selvages. Weak brecciation within the pillows. Gradational lower contact marked by increased carbonate content.					

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
96.44	162.85	<p>VIP, PILLOWED INTERMEDIATE VOLCANIC</p> <p>Alteration change- Light green, altered pillow basalt. Increased alteration differentiates this unit from the above VMP. Weak subhedral light green varioles observed along pillow selvages within the unit. Weak pervasive chlorite, weak-moderate pervasive carbonate, and weak patchy bleaching within the unit. Moderate pervasive carbonate alteration from 111.43-111.80 and 113.14-113.6m. Weak fracture filling chlorite observed. 3-5% discordant QC veins and gashes. Weak-moderate tension gouging resulting in few discordant chlorite veinlets and gashes primarily present from 113.9m onwards. Up to 2% clustered pyrite and 0.5% clustered pyrrhotite in the vein selvages. Overall 0.5% pyrite and trace pyrrhotite. Weak localized brecciation in the pillow selvages.</p>					
162.85	222.15	<p>VIV, VARYOLITIC INTERMEDIATE</p> <p>Alteration- Light green, massive variolitic mafic volcanic. Increased alteration differentiates this unit from typical VMV units in other holes. ~10-15% spherical medium green, clustered varioles (mm-cm scale) throughout the unit. Decreased alteration surrounding the varioles. Few pillows present. Weak-moderate patchy carbonate alteration and bleaching. Weak fracture filling chlorite alteration. ~3% discordant QC veins/veinlets. Veining is typically high angled 50-70deg TCA. 169.7-170.30m, mottled carbonate-chlorite (+/- quartz). Weak tension gouging resulting in discordant chlorite veinlets. Trace sulphides overall with localized clusters up to .05-1% associated with varioles. Gradational lower contact.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 196.64 - 196.80 IMD, MAFIC DYKE Dark grey-black, fine grained massive mafic dyke. No significant alteration, veining or mineralization observed within the unit. Sharp lower contact at 75deg TCA.</p> <p>Minor Interval: 197.00 - 197.55 IMD, MAFIC DYKE See previous IMD 196.64-196.80m.</p> <p>Minor Interval: 214.63 - 215.74 IMD, MAFIC DYKE Series of minor mafic dykes. See Previous IMD from 196.64-196.8m.</p>					
222.15	247.23	<p>VIM, MASSIVE INTERMEDIATE VOLCANIC</p> <p>Alteration- Light green, fine grained, massive mafic volcanic unit. No visible pillows or varioles observed within the unit. Weak pervasive carbonate alteration with weak patchy-pervasive bleaching. Weak-moderate fracture filling chlorite. Weak patchy epidote and epidote veinlets. ~3% discordant QC veins and hairine veinlet, typically >50deg TCA. Veins are <10cm. Weak tension gouging resulting in <2% discordant chlorite veinlets and few QC gashes. Trace sulphides overall. Gradational lower contact.</p>					

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
247.23	261.66	<p>VIV, VARYOLITIC INTERMEDIATE</p> <p>Alteration- Light green, fine grained, variolitic basalt. Unit resembles the above VIV (162.85-222.15m). 5-7% subhedral medium green spherical varioles clustered throughout the unit. Bleaching appears to decrease nearing the varioles. Weak fracture controlled hematite alteration. Weak patchy-pervasive bleaching and carbonate alteration of the host rock. Moderate pervasive sericite alteration from 256.95-257.8m. 3-5% discordant milky white QC veinlets typically >50deg TCA. Weak microfaulting in lower angled veinlets (<50deg TCA). Weak tension gouging resulting in few very thin QC gashes. Up to 1% clustered pyrite associated with varioles. Trace sulphides overall. Weak core fragmentation from 256.95-257.8m. Sharp lower contact at 75deg TCA.</p>	N76666	255.60	256.95	1.35	0.00
			N76667	256.95	257.80	0.85	0.05
			N76668	257.80	259.00	1.20	0.00
			N76669	259.00	260.40	1.40	0.00
			N76671	260.40	261.66	1.26	0.00
261.66	273.28	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Patchy beige/yellow and grey, massive quartz feldspar porhyry. Weak porphyritic textures observed in areas with weaker alteration. Alteration appears to overprint and mask textures within the unit. ~10% subhedral mm-sm calc feldspar porphyroblasts disseminated throughout the unit. Few remnant background quartz eyes also aparent within the unit. Moderate patchy-pervasive carbonate and sericite alteration with moderate pervasive silicification. Sericite dominates in areas with decreased carbonate influence. Strong sericite veinlets also observed. Weak-moderate patchy hematite alteration nearing upper and lower contacts with maor and minor intervals. Weak bleaching present as alteration halos surrounding veins/fractures. Possible weak-moderate patchy albite alteration. ~15% discordant QC veinlets typically 50-70deg TCA. Moderate tension gouging resulting in discordant dark grey chlorite veinlets (+/- tourmaline). Weak microfaulting observed withing few of the veinlets. 2-3% vein hosted and clustered pyrite. Up to 7% vein hosted and fature controlled pyrite observed. Sharp lower contact at 65deg TCA. Sharp lower contact at 70deg TCA.</p> <p>MINOR INTERVALS: Minor Interval: 271.77 - 272.24 IMO, MAFIC INTUSIVE</p> <p>Dark grey, fine grained, massive mafic minor. Very weak disseminated carbonate with weak patchy hematite alteration observed. ~5% discordant QC veinlets showing weak boudinage. Weak tension gouging resulting in QC gashes and few discordant chlorite veinlets. ~3% fine grained disseminated pyrite. Sharp lower contact at 60deg TCA.</p>	N76672	261.66	262.75	1.09	0.02
			N76673	262.75	264.00	1.25	0.02
			N76674	264.00	265.09	1.09	0.01
			N76675	265.09	265.80	0.71	0.01
			N76676	265.80	266.86	1.06	0.01
			N76677	266.86	267.80	0.94	0.01
			N76678	267.80	268.50	0.70	0.01
			N76679	268.50	269.26	0.76	0.01
			N76681	269.26	270.03	0.77	0.01
			N76682	270.03	270.96	0.93	0.02
			N76683	270.96	271.77	0.81	0.06
			N76684	271.77	272.24	0.47	0.00
			N76685	272.24	273.28	1.04	0.05
273.28	275.93	<p>ISO, SYENITIC INTRUSIVE</p> <p>Dark grey-red, fine grained syenitic intrusive. ~15% subhedral black phenocrysts disseminated throughout, likly pyroxenes and hornblend (+/- biotite). Weak pervasive hematite alteration with weak disseminated carbonate alteration. 1-2% QC veinlets. Weak tension gouging resultin in discordant chlorite veinlets. 5% medoum grained clustered pyrite. Sharp lower contact at 80deg TCA.</p>	N76686	273.28	274.18	0.90	0.05
			N76687	274.18	275.06	0.88	0.07
			N76688	275.06	275.93	0.87	0.18

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
275.93	296.00	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Patchy beige and grey, massive quartz-feldspar porphyry. Unit resembles the above IP2 (261.66-273.28m). 10-15% subhedral light beige disseminated feldspar porphyroblasts. Weak remnant quartz eyes mm-cm scale also observed. Alteration masks textural features. Moderate patchy carbonate and sericite alteration with weak-moderate patchy albite alteration also observed. Moderate bleaching present as alteration halos surrounding the veins. Moderate pervasive silicification. Weak silica+carbonate flooding associated with veins. Gradational increase in sericite and decrease in carbonate alteration with depth. 15-20% discordant QC veins and veinlets typically >60deg TCA. Massive flooding/ QC vein from 276.8-277.43m. Moderate-strong tension gouging resulting in erratic chlorite veinlets. 3-4% clustered and vein hosted pyrite. Localized fracture controlled pyrite up to 10%. Sharp lower contact at 60deg TCA.</p>	N76689	275.93	276.80	0.87	0.05
			N76691	276.80	277.43	0.63	0.18
			N76692	277.43	278.60	1.17	0.15
			N76693	278.60	279.76	1.16	0.01
			N76694	279.76	280.80	1.04	0.02
			N76695	280.80	281.42	0.62	0.02
			N76696	281.42	282.35	0.93	0.03
			N76697	282.35	283.45	1.10	0.06
			N76698	283.45	284.58	1.13	0.09
			N76699	284.58	285.74	1.16	0.18
			N76701	285.74	286.70	0.96	0.05
			N76702	286.70	287.20	0.50	0.09
			N76703	287.20	288.25	1.05	0.08
			N76704	288.25	289.37	1.12	0.03
			N76705	289.37	290.45	1.08	0.06
			N76706	290.45	291.50	1.05	0.14
		N76707	291.50	292.60	1.10	0.05	
		N76708	292.60	293.68	1.08	0.02	
		N76709	293.68	294.87	1.19	0.02	
		N76711	294.87	296.00	1.13	0.11	
296.00	299.84	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Dark grey-green, fine grained, massive mafic volcanic unit. Weak pervasive chlorite alteration with weak patchy bleaching primarily present as alteration halos surrounding veinlets. Very weak patchy hematite alteration near upper contact. Weak disseminated epidote flecks. ~3% weakly oriented QC veinlets (hairline). When orientation is apparent veinlets are at 60deg TCA. 0.25% fine grained pyrite. Unit is cut by felsic intrusive at 70deg TCA.</p> <p>MINOR INTERVALS: Minor Interval: 299.34 - 299.84 IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Dark grey, fine grained, massive felsic intrusive. 7-10% subhedral light beige feldspar phenocrysts disseminated throughout the unit. Visible feldspar twinning. Weak background porphyritic texture observed. Moderate pervasive silicification with weak-moderate patchy carbonate and sericite alteration. 3-5% typically high angled QC veinlets >50deg TCA. Moderate tension gouging resulting in discordant chlorite veinlets. Trace sulphides.</p>	N76712	296.00	297.10	1.10	0.01
			N76713	297.10	298.30	1.20	0.02
			N76714	298.30	299.34	1.04	0.00
			N76715	299.34	299.84	0.50	0.01
299.84	305.37	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Medium green patchy grey, aphanitic, variolitic basalt. ~15% spherical light green, clustered varioles within the unit (mm scale). Weak pervasive chlorite alteration with weak patchy carbonate alteration associated with varioles. Very weak clustered flecks of epidote. ~3% discordant QC veinlets displaying weak microfaulting. Weak tension gouging resulting in few erratic chlorite veinlets. 0.5% clustered pyrite overall. Gradational lower contact marked by decreased variole content.</p>	N76716	299.84	301.00	1.16	0.00

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
305.37	341.20	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Medium green, patchy grey, massive mafic volcanic. No visible textures within the unit. Weak-moderate pervasive chlorite alteration with weak patchy carbonate also observed. Weak patchy epidote and epidote veinlets. Very weak hematite influencing the veinlets and present as fracture controlled alteration. ~5% milky white QC veinlets typically at 60-70deg TCA. Secondary low angled veinlets also observed (<50deg TCA) showing weak-moderate microfaulting. Weak tension gouging resulting in QC gashes and few erratic chlorite veinlets. 0.5% fine grained clustered pyrite overall. Localized patches up to 1% pyrite. Blocky core fragmentation from 329-329.7m, 332.75-333.0m, and 335.38-335.8m. Gradational lower contact marked by increased carbonate alteration.</p> <p>MINOR INTERVALS: Minor Interval: 331.80 - 331.93 IMD, MAFIC DYKE Black, aphanitic mafic intrusive. No significant veining, mineralization or alteration present within the unit. Sharp contacts at 80deg TCA. Minor Interval: 333.43 - 334.00 IMD, MAFIC DYKE See previous IMD 331.8-331.93m.</p>	N76717	339.82	341.20	1.38	0.00
341.20	344.85	<p>ACO, CARBONATE ALTERED ROCK</p> <p>Altered mafic flow- Light grey-green, fine grained, massive altered mafic volcanic unit. Weak patchy carbonate alteration and possible weak bleaching differentiates this unit from the above VMM. Very weak disseminated sericite also observed. Moderate disseminated leucoxene throughout with moderate fracture filling chlorite. ~7% locally sheared QC veinlets at 60deg TCA when orientation is apparent. Secondary lower angled veinlets cross cut shearing at <50deg TCA and show weak-moderate microfaulting. En echelon (?) QC veinlets also observed. Weak tension gouging resulting in QC gashes and few erratic chlorite veinlets. 0.5-1% clustered and vein hosted pyrite. Sharp lower contact at 50deg TCA.</p>	N76718	341.20	342.00	0.80	0.02
			N76719	342.00	342.60	0.60	0.03
			N76721	342.60	344.10	1.50	0.02
			N76722	344.10	344.85	0.75	0.01
344.85	347.20	<p>AEC, SERICITE CARBONATE ALTERED ROCK</p> <p>Altered mafic flow- Light brown-yellow, patchy grey, massive altered mafic volcanic unit. No visible pillows or varioles present. Moderate patchy-pervasive sericite alteration with weak patchy carbonate. Strong sericite veinlets associated with QC veining. Weak patchy background chlorite alteration appearing to mimic shearing. 10-12% locally sheared QC veins and bleb-like floods. When orientation is apparent veins are typically at ~40deg TCA gradually steepening to ~65deg TCA towards lower contact. 1-2% pyrite overall with up to 10% associated with veins (346.46-347.2.). Sharp lower contact at 75deg TCA with gouge.</p>	N76723	344.85	345.70	0.85	0.05
			N76724	345.70	346.46	0.76	0.19
			N76725	346.46	347.20	0.74	0.75
347.20	351.30	<p>ZGO, GOUGE</p> <p>Grey, massive fault/gouge zone. Moderate-strong patchy pervasive talc alteration remaining. ~3% discordant QC blebs visible within the unit along with 0.25% fine grained, disseminated pyrite. Lower contact at 80deg TCA.</p>	N76726	347.20	348.00	0.80	0.06
			N76727	348.00	348.80	0.80	0.15

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
351.30	379.10	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>VUM/VUC- Medium grey-blue, talc rich, weakly sheared ultramafic unit. Moderate pervasive talc alteration with strong talc observed in the veins. ~30% subhedral-spherical magnesite porphyroblasts disseminated throughout the unit (mm-cm scale). Moderate pervasive chlorite alteration also observed. ~35% milky white QC veins and blebby floods averaging 50-60deg TCA. Moderate tension gouging resulting in QC gashes and few erratic chlorite and talc veinlets. 0.5-1% clustered pyrite overall. Strong gouge from 363.44-364.06m and 364.6-365.3m. Trace fg-mg clustered/vein hosted pyrite. Weak localized shearing averaging ~60deg TCA when orientation is apparent. Moderate localized gouge and faulting observed within the unit. Sharp LC @high angle TCA.</p> <p>MINOR INTERVALS: Minor Interval: 363.44 - 364.06 ZGO, GOUGE Minor Interval: 364.60 - 365.30 ZGO, GOUGE</p>	N76728	377.10	378.10	1.00	0.01
			N76729	378.10	379.10	1.00	0.01
379.10	385.20	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Pomine structure. Cloudy white-smokey grey extensive QC+/-feldspar porphyritic interval. Less silicified than previous intervals. Background porphyritic texture indicated by remnant quartz eyes, variable clasts and fg dark flakes. Occasional areas of strong erratic dark tourmaline tension gouging (tourmaline occasionally filled with chlorite). A few minor patches of core fracturing/fragmentation. ~1-2% pyrite overall typically blebby with some clusters. Silver mineral also seen throughout and possibly tellurides. Evidence of weak dissolution sometimes recognized. ~5% QC that cross cuts the interval as high angle to erratic stringers to veinlets. Sharp LC @variable angles TCA</p>	N76731	379.10	380.10	1.00	0.03
			N76732	380.10	381.10	1.00	0.02
			N76733	381.10	382.10	1.00	0.01
			N76734	382.10	383.10	1.00	0.01
			N76735	383.10	384.10	1.00	0.01
			N76736	384.10	385.20	1.10	0.01
385.20	392.40	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics lacking significant features such as shear or the pseudo-starry night appearance. Small QC blebs throughout with ~5-7% high angle to ~60 DTCA veinlets. Insignificant sulphides. Sharp LC @high angle TCA.</p> <p>MINOR INTERVALS: Minor Interval: 389.10 - 389.70 IP2, FELDSPAR & QUARTZ PORPHYRY See above IP2 (379.1-385.2m). Gradual UC over ~10cm and sharp LC @~45 DTCA Minor Interval: 390.40 - 391.20 IP2, FELDSPAR & QUARTZ PORPHYRY See above IP2 (379.1-385.2m). Sharp UC and LC @variable angles TCA</p>	N76737	385.20	386.70	1.50	0.01
			N76738	386.70	388.20	1.50	0.01
			N76739	388.20	389.10	0.90	0.01
			N76741	389.10	389.70	0.60	0.01
			N76742	389.70	390.40	0.70	0.01
			N76743	390.40	391.20	0.80	0.01
			N76744	391.20	392.40	1.20	0.01

DETAILED LOG

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
392.40	446.40	IP2, FELDSPAR & QUARTZ PORPHYRY See above IP2 (379.1-385.2m). Weak patchy silicification. ~1-2% pyrite throughout, where some patches could be closer to ~4% typically as blebby pyrite. ~5-10% QC that cuts the core with erratic gashes, veinlets ranging from high angle to ~45 DTCA and the odd vein. Gradual LC over ~60cm that is also hosting larger pyrite blebs/clusters.	N76745	392.40	393.40	1.00	0.01
			N76746	393.40	394.40	1.00	0.01
			N76747	394.40	395.40	1.00	0.01
			N76748	395.40	396.40	1.00	0.01
			N76749	396.40	397.40	1.00	0.01
			N76751	397.40	398.40	1.00	0.01
			N76752	398.40	399.40	1.00	0.01
			N76753	399.40	400.40	1.00	0.01
			N76754	400.40	401.40	1.00	0.01
			N76755	401.40	402.40	1.00	0.01
			N76756	402.40	403.40	1.00	0.01
			N76757	403.40	404.40	1.00	0.01
			N76758	404.40	405.40	1.00	0.01
			N76759	405.40	406.40	1.00	0.01
			N76761	406.40	407.40	1.00	0.02
			N76762	407.40	408.40	1.00	0.05
			N76763	408.40	409.40	1.00	0.03
			N76764	409.40	410.40	1.00	0.05
			N76765	410.40	411.40	1.00	0.04
			N76766	411.40	412.40	1.00	0.05
			N76767	412.40	413.40	1.00	0.15
			N76768	413.40	414.40	1.00	0.20
			N76769	414.40	415.40	1.00	0.01
			N76771	415.40	416.40	1.00	0.06
			N76772	416.40	417.40	1.00	0.08
			N76773	417.40	418.40	1.00	0.01
			N76774	418.40	419.40	1.00	0.01
			N76775	419.40	420.40	1.00	0.01
			N76776	420.40	421.40	1.00	0.12
			N76777	421.40	422.40	1.00	0.05
			N76778	422.40	423.40	1.00	0.02
			N76779	423.40	424.40	1.00	0.01
		N76781	424.40	425.40	1.00	0.09	
		N76782	425.40	426.40	1.00	0.01	
		N76783	426.40	427.40	1.00	0.01	
		N76784	427.40	428.40	1.00	0.04	
		N76785	428.40	429.40	1.00	0.03	
		N76786	429.40	430.30	0.90	0.02	
		N76787	430.30	431.30	1.00	0.01	
		N76788	431.30	432.30	1.00	0.02	
		N76789	432.30	433.30	1.00	0.01	
		N76791	433.30	434.30	1.00	0.01	

DETAILED LOG

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			N76792	434.30	435.30	1.00	0.01
			N76793	435.30	436.30	1.00	0.03
			N76794	436.30	437.30	1.00	0.15
			N76795	437.30	438.30	1.00	0.01
			N76796	438.30	439.30	1.00	0.08
			N76797	439.30	440.30	1.00	0.01
			N76798	440.30	441.30	1.00	0.01
			N76799	441.30	442.30	1.00	0.01
			N76801	442.30	443.30	1.00	0.01
			N76802	443.30	444.30	1.00	0.01
			N76803	444.30	445.30	1.00	0.01
			N76804	445.30	446.40	1.10	0.01
446.40	457.30	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics where the majority of the interval is lacking significant features, but has small QC blebs, ~7-10% veinlets to veins that are typically at ~45 DTCA and sometimes concave, and cubic pyrite blebs. Strong shear present from 454.9-456.6m at high angle (>75 DTCA) and with dark tourmaline tension gouging that mimics shear. Sharp LC where gouging begins.	N76805	446.40	447.60	1.20	0.55
			N76806	447.60	448.80	1.20	0.14
			N76807	448.80	450.00	1.20	0.16
			N76808	450.00	451.20	1.20	0.16
			N76809	451.20	452.40	1.20	0.01
			N76811	452.40	453.60	1.20	0.01
			N76812	453.60	454.90	1.30	0.04
			N76813	454.90	455.70	0.80	0.01
			N76814	455.70	456.60	0.90	0.01
			N76815	456.60	457.30	0.70	0.10
457.30	473.50	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Patches of more competent VUM are seen, but overall interval is experiencing gouge.					

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
473.50	501.80	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with significant milky white QC veins as follows: 484.2-484.8m, 486.8-487.6m, 489.3-490.3m, 492-492.4m, 495.4-495.7m, and 498.8-499.5m (see minors tab for more details). VUM has the pseudo-starry night texture with high angle gashes and QC blebs. Patches of localized moderate shearing, typically at high angle (>75) DTCA with dark tourmaline tension gouging that mimics shear. Area of pervasive gouge (see structure tab). Weak patchy carbonate alteration and silicification with patchy chlorite alteration as well. >30% QC with the described veins. Overall insignificant sulphides, but localized pyrite blebs are seen. Local magnetism associated with sulphides could be pyrrhotite. Most promising area with consistent sulphides and alteration from ~490.8-494.7m. Silver mineral also recognized in localized patches. Sharp LC @variable angles TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 484.20 - 484.80 QVC, QUARTZ CARBONATE VEINS Milky white QC vein. Gradual contacts over ~10cm Minor Interval: 486.80 - 487.60 QVC, QUARTZ CARBONATE VEINS Gradual UC over ~10cm and LC difficult to discern due to core fracturing/fragmentation Minor Interval: 489.30 - 490.30 QVC, QUARTZ CARBONATE VEINS Sharp UC and gradual LC over ~40cm Minor Interval: 492.00 - 492.40 QVC, QUARTZ CARBONATE VEINS Sharp contacts Minor Interval: 495.40 - 495.70 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10cm Minor Interval: 498.80 - 499.50 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~15cm</p>	N76816	482.20	483.20	1.00	0.01
			N76817	483.20	484.20	1.00	0.01
			N76818	484.20	484.80	0.60	0.01
			N76819	484.80	485.80	1.00	0.01
			N76821	485.80	486.80	1.00	0.01
			N76822	486.80	487.60	0.80	0.01
			N76823	487.60	488.50	0.90	0.01
			N76824	488.50	489.30	0.80	0.01
			N76825	489.30	490.30	1.00	0.01
			N76826	490.30	491.00	0.70	0.02
			N76827	491.00	492.00	1.00	0.32
			N76828	492.00	492.60	0.60	0.02
			N76829	492.60	493.60	1.00	0.03
			N76831	493.60	494.60	1.00	0.01
			N76832	494.60	495.40	0.80	0.01
			N76833	495.40	495.90	0.50	0.01
			N76834	495.90	497.10	1.20	0.01
			N76835	497.10	498.00	0.90	0.01
			N76836	498.00	498.80	0.80	0.01
			N76837	498.80	499.50	0.70	0.01
			N76838	499.50	500.50	1.00	0.01
			N76839	500.50	501.80	1.30	0.01
501.80	505.20	<p>QVC, QUARTZ CARBONATE VEINS</p> <p>Milky white QC vein with minor VUM fragment from 504.6-505.2m and otherwise lacking any significant features, sulphides and alteration, except some chlorite alteration (probably associated with the VUM patch. Sharp LC @high angle TCA.</p>	N76841	501.80	502.80	1.00	0.01
			N76842	502.80	503.80	1.00	0.01
			N76843	503.80	504.60	0.80	0.01
			N76844	504.60	505.20	0.60	0.01

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
505.20	542.80	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with significant milky white QC veins as follows: 505.9-506.3m, 511.1-512.1m, 512.3-512.7m, 513.4-513.8m, 515-515.9m, 517-517.4m, 519.5-519.8m, 521.6-522m, 522.5-522.9m, 523.5-524m, 528.6-529.4m, 530.9-531.6m, 536.1-536.5m (see minors tab for more details). VUM has the pseudo-starry night texture with high angle gashes and QC blebs. Patches of localized weak-moderate shearing, typically at high angle (>75) DTCA. Weak patchy carbonate alteration and silicification with patchy chlorite alteration as well. >30% QC with the described veins. Overall insignificant sulphides, but localized pyrite blebs are seen. Local magnetism associated with sulphides could be pyrrhotite. Silver mineral also recognized in localized patches. Gradual LC over ~20cm. MINOR INTERVALS: Minor Interval: 505.90 - 506.30 QVC, QUARTZ CARBONATE VEINS Milky white QC vein. Gradual contacts over ~10-15cm Minor Interval: 511.10 - 512.10 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10cm Minor Interval: 512.30 - 512.70 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10-15cm Minor Interval: 513.40 - 513.80 QVC, QUARTZ CARBONATE VEINS UC hard to discern due to core fracturing/fragmentation. Gradual LC over ~15cm Minor Interval: 515.00 - 515.90 QVC, QUARTZ CARBONATE VEINS Sharp contacts @high angle TCA Minor Interval: 517.00 - 517.40 QVC, QUARTZ CARBONATE VEINS UC difficult to discern due to core fracturing/fragmentation. Gradual LC over ~20cm Minor Interval: 519.50 - 519.80 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10cm Minor Interval: 521.60 - 522.00 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10cm Minor Interval: 522.50 - 522.90 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10-15cm Minor Interval: 523.50 - 524.00 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10cm	N76845	505.20	505.80	0.60	0.01
			N76846	505.80	506.30	0.50	0.01
			N76847	506.30	507.30	1.00	0.01
			N76848	507.30	508.30	1.00	0.01
			N76849	508.30	509.30	1.00	0.01
			N76851	509.30	510.30	1.00	0.01
			N76852	510.30	511.10	0.80	0.01
			N76853	511.10	512.10	1.00	0.01
			N76854	512.10	512.70	0.60	0.01
			N76855	512.70	513.40	0.70	0.01
			N76856	513.40	514.00	0.60	0.01
			N76857	514.00	515.00	1.00	0.01
			N76858	515.00	515.90	0.90	0.01
			N76859	515.90	517.00	1.10	0.01
			N76861	517.00	517.50	0.50	0.01
			N76862	517.50	518.50	1.00	0.01
			N76863	518.50	519.50	1.00	0.01
			N76864	519.50	520.00	0.50	0.01
			N76865	520.00	520.90	0.90	0.01
			N76866	520.90	521.60	0.70	0.01
			N76867	521.60	522.20	0.60	0.01
			N76868	522.20	522.90	0.70	0.01
			N76869	522.90	523.50	0.60	0.01
			N76871	523.50	524.00	0.50	0.01
			N76872	524.00	525.00	1.00	0.01
			N76873	525.00	526.00	1.00	0.01
			N76874	526.00	527.00	1.00	0.01
			N76875	527.00	528.00	1.00	0.01
			N76876	528.00	528.60	0.60	0.01
			N76877	528.60	529.40	0.80	0.01
			N76878	529.40	530.20	0.80	0.01
			N76879	530.20	530.90	0.70	0.01
			N76881	530.90	531.60	0.70	0.01
			N76882	531.60	532.80	1.20	0.01
			N76883	532.80	534.00	1.20	0.01
			N76884	534.00	535.20	1.20	0.01
			N76885	535.20	536.10	0.90	0.01
			N76886	536.10	536.60	0.50	0.01
			N76887	536.60	537.80	1.20	0.01
			N76888	537.80	539.00	1.20	0.01
			N76889	539.00	540.20	1.20	0.01
			N76891	540.20	541.40	1.20	0.01

Hole Number: **NH19-026**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		MINOR INTERVALS: Minor Interval: 528.60 - 529.40 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10-15cm Minor Interval: 530.90 - 531.60 QVC, QUARTZ CARBONATE VEINS Gradual UC over ~10-15cm and LC difficult to discern due to core fracturing/fragmentation. Minor Interval: 536.10 - 536.60 QVC, QUARTZ CARBONATE VEINS Gradual contacts over ~10cm	N76892	541.40	542.80	1.40	0.01
542.80	548.70	QVC, QUARTZ CARBONATE VEINS Milky white QC vein with some intermixed VUM and a larger VUM raft from 546.5-547m. Some patchy chlorite alteration associated with the VUM. Lacking significant sulphides. Sharp LC experiencing minor core fracturing/fragmentation. MINOR INTERVALS: Minor Interval: 546.50 - 547.00 VUM, MASSIVE ULTRAMAFIC Sharp contacts @~45 DTCA	N76893	542.80	543.80	1.00	0.01
			N76894	543.80	544.50	0.70	0.01
			N76895	544.50	545.10	0.60	0.01
			N76896	545.10	546.00	0.90	0.01
			N76897	546.00	546.50	0.50	0.01
			N76898	546.50	547.00	0.50	0.01
			N76899	547.00	548.00	1.00	0.01
			N76901	548.00	548.70	0.70	0.01
548.70	563.90	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with occasional milky white QC veins as follows: 548.9-549.2m and 563.2-563.5m (see minors tab for more details). VUM has the pseudo-starry night texture with high angle gashes and QC blebs. Patches of localized weak shearing, typically at high angle (>75) DTCA. Weak patchy carbonate alteration and silicification with patchy chlorite alteration as well. Patchy gouging and core fracturing/fragmentation. ~25-30% QC as described. Overall insignificant sulphides. Sharp LC where pervasive gouge begins. MINOR INTERVALS: Minor Interval: 548.90 - 549.20 QVC, QUARTZ CARBONATE VEINS Gradual UC over ~15cm and LC hard to discern due to core fracturing/fragmentation Minor Interval: 563.20 - 563.50 QVC, QUARTZ CARBONATE VEINS Sharp contacts @variable angles TCA	N76902	548.70	549.40	0.70	0.01
			N76903	549.40	550.40	1.00	0.01
			N76904	550.40	551.40	1.00	0.01
			N76905	551.40	552.40	1.00	0.01
			N76906	552.40	553.50	1.10	0.01
			N76907	562.20	563.20	1.00	0.01
			N76908	563.20	563.90	0.70	0.01
563.90	570.00	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. EOH	N76909	563.90	564.50	0.60	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N76666	255.60	256.95	0.0025

Hole Number: **NH19-026**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76667	256.95	257.80	0.0530
N76668	257.80	259.00	0.0025
N76669	259.00	260.40	0.0025
N76671	260.40	261.66	0.0025
N76672	261.66	262.75	0.0180
N76673	262.75	264.00	0.0150
N76674	264.00	265.09	0.0120
N76675	265.09	265.80	0.0140
N76676	265.80	266.86	0.0070
N76677	266.86	267.80	0.0100
N76678	267.80	268.50	0.0100
N76679	268.50	269.26	0.0060
N76681	269.26	270.03	0.0070
N76682	270.03	270.96	0.0230
N76683	270.96	271.77	0.0620
N76684	271.77	272.24	0.0025
N76685	272.24	273.28	0.0470
N76686	273.28	274.18	0.0500
N76687	274.18	275.06	0.0660
N76688	275.06	275.93	0.1800
N76689	275.93	276.80	0.0480
N76691	276.80	277.43	0.1750
N76692	277.43	278.60	0.1480
N76693	278.60	279.76	0.0120
N76694	279.76	280.80	0.0180
N76695	280.80	281.42	0.0160
N76696	281.42	282.35	0.0300
N76697	282.35	283.45	0.0610
N76698	283.45	284.58	0.0920
N76699	284.58	285.74	0.1750
N76701	285.74	286.70	0.0540
N76702	286.70	287.20	0.0850
N76703	287.20	288.25	0.0750
N76704	288.25	289.37	0.0320
N76705	289.37	290.45	0.0580
N76706	290.45	291.50	0.1410
N76707	291.50	292.60	0.0470
N76708	292.60	293.68	0.0170
N76709	293.68	294.87	0.0230

Hole Number: **NH19-026**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76711	294.87	296.00	0.1120
N76712	296.00	297.10	0.0120
N76713	297.10	298.30	0.0150
N76714	298.30	299.34	0.0025
N76715	299.34	299.84	0.0060
N76716	299.84	301.00	0.0025
N76717	339.82	341.20	0.0025
N76718	341.20	342.00	0.0160
N76719	342.00	342.60	0.0260
N76721	342.60	344.10	0.0180
N76722	344.10	344.85	0.0090
N76723	344.85	345.70	0.0500
N76724	345.70	346.46	0.1940
N76725	346.46	347.20	0.7540
N76726	347.20	348.00	0.0600
N76727	348.00	348.80	0.1540
N76728	377.10	378.10	0.0100
N76729	378.10	379.10	0.0100
N76731	379.10	380.10	0.0300
N76732	380.10	381.10	0.0200
N76733	381.10	382.10	0.0050
N76734	382.10	383.10	0.0050
N76735	383.10	384.10	0.0050
N76736	384.10	385.20	0.0050
N76737	385.20	386.70	0.0050
N76738	386.70	388.20	0.0050
N76739	388.20	389.10	0.0050
N76741	389.10	389.70	0.0050
N76742	389.70	390.40	0.0050
N76743	390.40	391.20	0.0050
N76744	391.20	392.40	0.0050
N76745	392.40	393.40	0.0050
N76746	393.40	394.40	0.0050
N76747	394.40	395.40	0.0050
N76748	395.40	396.40	0.0100
N76749	396.40	397.40	0.0050
N76751	397.40	398.40	0.0050
N76752	398.40	399.40	0.0050
N76753	399.40	400.40	0.0050

Hole Number: **NH19-026**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N76754	400.40	401.40	0.0100
N76755	401.40	402.40	0.0050
N76756	402.40	403.40	0.0050
N76757	403.40	404.40	0.0100
N76758	404.40	405.40	0.0050
N76759	405.40	406.40	0.0100
N76761	406.40	407.40	0.0200
N76762	407.40	408.40	0.0500
N76763	408.40	409.40	0.0300
N76764	409.40	410.40	0.0500
N76765	410.40	411.40	0.0400
N76766	411.40	412.40	0.0500
N76767	412.40	413.40	0.1500
N76768	413.40	414.40	0.2000
N76769	414.40	415.40	0.0050
N76771	415.40	416.40	0.0600
N76772	416.40	417.40	0.0800
N76773	417.40	418.40	0.0050
N76774	418.40	419.40	0.0050
N76775	419.40	420.40	0.0050
N76776	420.40	421.40	0.1200
N76777	421.40	422.40	0.0500
N76778	422.40	423.40	0.0200
N76779	423.40	424.40	0.0100
N76781	424.40	425.40	0.0900
N76782	425.40	426.40	0.0050
N76783	426.40	427.40	0.0100
N76784	427.40	428.40	0.0400
N76785	428.40	429.40	0.0300
N76786	429.40	430.30	0.0200
N76787	430.30	431.30	0.0050
N76788	431.30	432.30	0.0200
N76789	432.30	433.30	0.0100
N76791	433.30	434.30	0.0050
N76792	434.30	435.30	0.0050
N76793	435.30	436.30	0.0300
N76794	436.30	437.30	0.1500
N76795	437.30	438.30	0.0050
N76796	438.30	439.30	0.0800

Hole Number: **NH19-026**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76797	439.30	440.30	0.0050
N76798	440.30	441.30	0.0050
N76799	441.30	442.30	0.0050
N76801	442.30	443.30	0.0050
N76802	443.30	444.30	0.0050
N76803	444.30	445.30	0.0050
N76804	445.30	446.40	0.0050
N76805	446.40	447.60	0.5500
N76806	447.60	448.80	0.1400
N76807	448.80	450.00	0.1600
N76808	450.00	451.20	0.1600
N76809	451.20	452.40	0.0050
N76811	452.40	453.60	0.0050
N76812	453.60	454.90	0.0400
N76813	454.90	455.70	0.0050
N76814	455.70	456.60	0.0050
N76815	456.60	457.30	0.1000
N76816	482.20	483.20	0.0050
N76817	483.20	484.20	0.0100
N76818	484.20	484.80	0.0050
N76819	484.80	485.80	0.0050
N76821	485.80	486.80	0.0050
N76822	486.80	487.60	0.0050
N76823	487.60	488.50	0.0050
N76824	488.50	489.30	0.0050
N76825	489.30	490.30	0.0050
N76826	490.30	491.00	0.0200
N76827	491.00	492.00	0.3200
N76828	492.00	492.60	0.0200
N76829	492.60	493.60	0.0300
N76831	493.60	494.60	0.0050
N76832	494.60	495.40	0.0050
N76833	495.40	495.90	0.0050
N76834	495.90	497.10	0.0050
N76835	497.10	498.00	0.0050
N76836	498.00	498.80	0.0050
N76837	498.80	499.50	0.0050
N76838	499.50	500.50	0.0050
N76839	500.50	501.80	0.0100

Hole Number: **NH19-026**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76841	501.80	502.80	0.0050
N76842	502.80	503.80	0.0050
N76843	503.80	504.60	0.0050
N76844	504.60	505.20	0.0100
N76845	505.20	505.80	0.0050
N76846	505.80	506.30	0.0050
N76847	506.30	507.30	0.0050
N76848	507.30	508.30	0.0050
N76849	508.30	509.30	0.0050
N76851	509.30	510.30	0.0050
N76852	510.30	511.10	0.0050
N76853	511.10	512.10	0.0050
N76854	512.10	512.70	0.0050
N76855	512.70	513.40	0.0050
N76856	513.40	514.00	0.0050
N76857	514.00	515.00	0.0050
N76858	515.00	515.90	0.0050
N76859	515.90	517.00	0.0050
N76861	517.00	517.50	0.0050
N76862	517.50	518.50	0.0050
N76863	518.50	519.50	0.0050
N76864	519.50	520.00	0.0050
N76865	520.00	520.90	0.0050
N76866	520.90	521.60	0.0050
N76867	521.60	522.20	0.0050
N76868	522.20	522.90	0.0050
N76869	522.90	523.50	0.0050
N76871	523.50	524.00	0.0050
N76872	524.00	525.00	0.0050
N76873	525.00	526.00	0.0050
N76874	526.00	527.00	0.0050
N76875	527.00	528.00	0.0050
N76876	528.00	528.60	0.0050
N76877	528.60	529.40	0.0050
N76878	529.40	530.20	0.0050
N76879	530.20	530.90	0.0050
N76881	530.90	531.60	0.0050
N76882	531.60	532.80	0.0050
N76883	532.80	534.00	0.0050

Hole Number: **NH19-026**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
N76884	534.00	535.20	0.0050
N76885	535.20	536.10	0.0050
N76886	536.10	536.60	0.0050
N76887	536.60	537.80	0.0050
N76888	537.80	539.00	0.0050
N76889	539.00	540.20	0.0050
N76891	540.20	541.40	0.0050
N76892	541.40	542.80	0.0100
N76893	542.80	543.80	0.0050
N76894	543.80	544.50	0.0050
N76895	544.50	545.10	0.0050
N76896	545.10	546.00	0.0050
N76897	546.00	546.50	0.0050
N76898	546.50	547.00	0.0050
N76899	547.00	548.00	0.0050
N76901	548.00	548.70	0.0050
N76902	548.70	549.40	0.0050
N76903	549.40	550.40	0.0050
N76904	550.40	551.40	0.0050
N76905	551.40	552.40	0.0050
N76906	552.40	553.50	0.0050
N76907	562.20	563.20	0.0050
N76908	563.20	563.90	0.0050
N76909	563.90	564.50	0.0100

DETAILED LOG



Hole Number: **NH19-027**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -60.00
Project Number: MACKLE_TWP	North: 5374706.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 510050.80	East:	Length: 576.00
	Elev: 290.00	Elev:	Start Depth: 0.00
Date Started: May 09, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: May 24, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 576.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	9.60	-50.00	APS	OK		84.00	8.20	-49.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
135.00	8.30	-49.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	186.00	8.60	-49.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
237.00	10.00	-49.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	288.00	9.60	-49.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
339.00	9.80	-49.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	390.00	10.30	-49.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
441.00	13.20	-49.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	492.00	10.50	-49.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	69.50	HPO, OVERBURDEN					
69.50	134.00	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained appearance for example ~93-123m (is even pseudo-gabbroic in some instances); Lacking any significant alteration, veining, or sulphides throughout majority of unit. Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Overall ~5 % veining as erratic gashes to veinlets. Trace sulphides. Lower contact where pillowing features initiate.					
134.00	189.00	VMP, VOLCANIC MASSIVE PILLOWED Compositionally typical green mafic (see previous), but this interval is exhibiting weak pillowing features such as salvages, chill margins, etc. Weak chlorite, carb +/- ser alterations may be influencing. ~5% erratic QC gashes. Trace sulphides. Lower contact placed where pillowing appears to cease and leucoxene reinitiates.					

Hole Number: **NH19-027**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
189.00	262.50	VMM, MAFIC VOLCANIC MASSIVE See previous VMM. Lighter grey-green than previous with leucoxene abundant throughout and up to med grained pseudo-gabbroic texture occurring. Lacking any significant alts/veins/sulphides. Lower contact placed where variolitic texture initiates.					
262.50	311.60	VMV, MAFIC VOLCANIC VARIOLITIC Compositionally, rock is still green mafic, but mm to ~1cm scale variolitic texture abundant throughout. ~10-20cm on either side of 300m block shows pink felsic intercollated between slightly fragmented mafic rock. Lacking any significant alts/veins/sulphs. Minor ISO 293.1-293.8m. Lower contact where variolitic texture ceases, but mafic rock is still dominant. MINOR INTERVALS: Minor Interval: 293.10 - 293.80 ISO, SYENITIC INTRUSIVE					
311.60	345.80	VMM, MAFIC VOLCANIC MASSIVE See previous VMM. Weak hematite on the odd fracture surface. Lower contact where variolitic texture re-initiates.					
345.80	355.20	VMV, MAFIC VOLCANIC VARIOLITIC See most recent VMV. Minor ISOs 346.1-346.3m 347-347.5m, 349.3-349.8m, 351-351.3m. Sharp lower contact slightly variable 70-80 DTCA. MINOR INTERVALS: Minor Interval: 346.10 - 346.30 ISO, SYENITIC INTRUSIVE Minor Interval: 347.00 - 347.50 ISO, SYENITIC INTRUSIVE Minor Interval: 349.30 - 349.80 ISO, SYENITIC INTRUSIVE Minor Interval: 351.00 - 351.30 ISO, SYENITIC INTRUSIVE	1674485	353.20	354.20	1.00	0.01
			1674486	354.20	355.20	1.00	0.00
355.20	363.90	IP2, FELDSPAR & QUARTZ PORPHYRY Pale greenish-grey porphyritic intrusive. Weak-mod green chlorite, weak-mod patchy grey carb, and weak patchy yellow sericite. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Weak-moderate tension gouging throughout resulting in wavy erratic dark gashes (chlorite) that weave remnant phenocrysts/QC eyes; associated with very weak high angle shear (most visible around ~362m). Overall ~2-3% vfg- cg blebby/fracture controlled pyrite. ~10-15% erratic QC stringers or blebs. Sharp lower contact variable but average ~60 DTCA.	1674487	355.20	356.10	0.90	0.00
			1674488	356.10	357.00	0.90	0.01
			1674489	357.00	358.00	1.00	0.00
			1674491	358.00	359.00	1.00	0.00
			1674492	359.00	360.00	1.00	0.00
			1674493	360.00	361.00	1.00	0.00
			1674494	361.00	362.00	1.00	0.00
			1674495	362.00	363.00	1.00	0.01
363.90	369.00	VMM, MAFIC VOLCANIC MASSIVE See previous VMM. Lower contact where variolitic texture initiates.	1674496	363.00	363.90	0.90	0.02
			1674497	363.90	364.80	0.90	0.00
			1674498	364.80	365.60	0.80	0.00

Hole Number: **NH19-027**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
369.00	409.90	VMV, MAFIC VOLCANIC VARIOLITIC See previous VMV. A few blocky/ fragmented chipped fracture intervals for example ~376.5-376.8m. LC is sharp 90 degrees TCA.					
409.90	503.00	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate with the foliation weaving at 50 to 70 degrees . Very strong fault gouge with pervasive core fracturing and fragmentation with weaving chlorite. ~ 5-10% QC as described. Gouge moving from 1m to 3m spaced every ~50cm till 441.9m Then gouge becoming pervasive ~10cm then becoming strong pervasive starting 462.7 to 496m ♂Trace to 1% sulphides. Lower contact placed where intense gouging initiates, but compositionally rock remains ultramafic. MINOR INTERVALS: Minor Interval: 414.00 - 414.30 OLO, LOST CORE Minor Interval: 416.10 - 417.00 OLO, LOST CORE					
503.00	560.40	ZGO, GOUGE EXTENSEIVE DPFZ- intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides. A few intervals are slightly more competent ultramafic rock, but the vast majority of this extensive interval is strongly gouged/fragmented. Lowermost 1m or so shows blobby milky/grey QC blebs before vein flooding initiates. Sharp lower contact where intense flooding initiates at variable from 20-75 DTCA.	1674499	558.50	559.00	0.50	0.00
			1679501	559.00	559.70	0.70	0.00
			1679502	559.70	560.40	0.70	0.00
560.40	562.00	QVC, QUARTZ CARBONATE VEINS Milky white qtz carb vein flooding within soft ultramafic package. Blueish ultramafic and greenish chlorite where vein flooding isnt consistent (ex ~561.4m). ~90% QC in this interval. No other significant alts/sulphides (1-2% vfg dissem py). Sarp lower contact where veining ceases at nearly perp TCA.	1679503	560.40	561.20	0.80	0.00
			1679504	561.20	562.00	0.80	0.00
562.00	576.00	ZGO, GOUGE See recent ZGO. EOH.	1679505	562.00	562.50	0.50	0.00
			1679506	562.50	563.40	0.90	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674485	353.20	354.20	0.0050
1674486	354.20	355.20	0.0025
1674487	355.20	356.10	0.0025

Hole Number: **NH19-027**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674488	356.10	357.00	0.0050
1674489	357.00	358.00	0.0025
1674491	358.00	359.00	0.0025
1674492	359.00	360.00	0.0025
1674493	360.00	361.00	0.0025
1674494	361.00	362.00	0.0025
1674495	362.00	363.00	0.0110
1674496	363.00	363.90	0.0180
1674497	363.90	364.80	0.0025
1674498	364.80	365.60	0.0025
1674499	558.50	559.00	0.0025
1679501	559.00	559.70	0.0025
1679502	559.70	560.40	0.0025
1679503	560.40	561.20	0.0025
1679504	561.20	562.00	0.0025
1679505	562.00	562.50	0.0025
1679506	562.50	563.40	0.0025

DETAILED LOG



Hole Number: **NH19-028**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5374706.00	North:	Collar Az: 350.00
Location: Macklem Township	East: 510050.80	East:	Length: 624.00
	Elev: 290.00	Elev:	Start Depth: 0.00
Date Started: May 27, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jun 11, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 624.00

Comments: Logged by revans from 160.5m

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	350.00	-50.00	APS	OK	Reading taken by drillers at top of hole	90.00	350.70	-50.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
141.00	351.60	-50.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	192.00	352.40	-50.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
243.00	352.00	-50.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	294.00	353.00	-50.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
345.00	354.10	-50.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	396.00	354.70	-50.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
498.00	357.60	-49.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	549.00	359.30	-50.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
600.00	0.50	-49.60	EZ Sho	OK	Pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	77.90	HPO, OVERBURDEN Casing block at 78.2m, but box starts at 77.9m.					
77.90	160.50	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained appearance. First 4 boxes exhibiting intense blocky core fracturing/fragmentation. Lacking any significant alteration (aside from very weak patchy grey carb/yellow sericite), veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Overall ~5-8% veining as erratic gashes to veinlets. Trace sulphides. LC is unknown, but may be gradual over severa meters where pillowing features begin					

Hole Number: **NH19-028**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
160.50	193.80	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>*Exact upper contact is unknown as switch in loggers occurred at 160.5m and is hard to decipher from pictures.</p> <p>Fine grained massive green grey mafic rock exhibiting pillowing features and varioles. Lacking any significant alteration, aside from very rare patchy sericite, hematite and possible epidote alteration, which is typically seen within pillow selveges. Insignificant sulphides, however rare pyrite clusters sometimes seen within pillow selveges. Erratic weak faded tension gouging in background of unit. Insignificant veining throughout as the odd gash/veinlet. Sharp LC @high angle TCA</p>					
193.80	225.20	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Coarser grained (than above VMM) massive green grey mafic rock. Typically medium-coarse grained and exhibiting the 'salt and pepper' appearance. Patch of VMP from ~202-204.2m, but contacts are difficult to discern. Lacking significant alteration until ~204.4m followign which there is patchy sericite and epidote alteration that are typically seen to influence veins and gashes. Erratic weak faded tension gouging in background of unit. Sharp LC @variable angles TCA. ~3-5% as high angle veinlets (with rare vein) and erratic gashes. Lacking significant sulphides</p>					
225.20	242.00	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>See above VMP (160.5-193.8m). Lacking any noticeable alteration in this unit. Few minor patches of core fracturing/fragmentation. Sharp LC @high angle TCA.</p>					
242.00	250.00	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>See above VMM (193.8-225.2m). Rare and weak epidote (+/- sericite?) alteration seen to influence veins/fractures. Insignificant QC. LC set where first evidence of variolitic texture seen.</p>					
250.00	328.00	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Massive green grey mafic rock exhibiting variolitic texture with associated chill margins. Typically vfg, but areas of medium grained appearance and section from 286.9-289.3m with the more psuedo-gabbroic texture/more well defined grains that is associated with ~3% as dissem and some blebby and clustered pyrite. Patchy epidote alteration seen to influence veining on the rare occasion. Overall insignificant sulphides, but occasional clusters typically seen within veins/fractures. ~3-5% QC as erratic stringers to veinlets. Lower contact placed where variolitic texture ceases.</p>					
328.00	356.80	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>See 193.8-225.2m VMM for more detailed description. Weak spherulitic/variolitic textures recognized but rare. Minor grey intrusives believed to be IIOs present as follows: 346.9-347.9m, 352.2-352.4m. Lowermost 1m or so of unit showing increased fracture/gashing and very weak silicification. Sharp lower contact at ~80 DTCA fracturing.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 346.90 - 347.90 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 352.20 - 352.40 IIO, INTERMEDIATE INTRUSIVE</p>	1679507	355.50	356.10	0.60	0.00
			1679508	356.10	356.80	0.70	0.01

Hole Number: **NH19-028**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
356.80	368.30	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Similar to pomine lens Green-grey weak-moderately glassy porphyritic (fg background remnant texture) dyke. Mod pervasive carb, weak-mod patchy carb, and weak patchy bleaching alterations all influencing this unit. Weak-mod erratic chloritic gashes/fractures also recognized, with occasionally QC/ alt haloes bleeding out of them. ~15% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs. 2-3% FF blebby/clustered VFG py. Sharp lower contact at nearly perp (~85) DTCA fracturing.</p>	1679509	356.80	358.00	1.20	0.00
			1679511	358.00	359.00	1.00	0.01
			1679512	359.00	360.00	1.00	0.01
			1679513	360.00	361.50	1.50	0.03
			1679514	361.50	363.00	1.50	0.01
			1679515	363.00	364.00	1.00	0.00
			1679516	364.00	365.00	1.00	0.01
			1679517	365.00	366.00	1.00	0.00
			1679518	366.00	367.00	1.00	0.00
			1679519	367.00	368.30	1.30	0.04
368.30	383.70	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>See previous VMV. More flow textures compared to previous VMV; pillowing features present. Lacking any significant alts/veins/sulphs. Lower contact where variolitic texture ceases.</p>	1679521	368.30	369.00	0.70	0.01
			1679522	369.00	369.80	0.80	0.00
383.70	410.10	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>See previous VMMs. Minor IIOs present as follows: 395.3-395.6m, 395.8-396.1m, 397.7-398.2m, 398.9-399.2m, 400-400.2m, 400.8-400.9m. ...Increasing en echelon high angle >70DTCA stringers-veinlets starting at ~400m. Weak patchy pale yellow sericite and olive green chlorite initiating at ~406.5m until bottom of unit. 410-410.1m is an intensely sericite altered dyke just before faulting. Sharp lower contact following dyke at essentially perp TCA fracturing.</p> <p>MINOR INTERVALS: Minor Interval: 410.00 - 410.10 IOO, UNDEFINED INTRUSIVE Intensely sericite altered w/ weak glassy texture; possibly felsic dyke?</p>					
410.10	419.60	<p>ZGO, GOUGE</p> <p>DPFZ- intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides. Lower contact where core becomes competent again, but weak-mod patches of gouge within soft dark ultramafics still present in next litho.</p>					

Hole Number: **NH19-028**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
419.60	490.50	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically high angle >60 degrees TCA. Weak-mod patchy core fracturing and fragmentation. Localized brecciation or pseudo-cataclastic textures. Moderate patches of gouging ranging from ~30cm to 1m or so in length.</p> <p>A few noteworthy intervals hosting inc veining/sulphides/alts, as follows: ~420.5-427m shows weak albite alteration influencing, with increased shear/stockwork stringers-veinlets, hosting 2-3% clustered/blebby py. Blobby vein floods initiating following 450m block to ~456m block; ~2-3% blebby vein hosted py, and weak green fuchsite alt initiating on fracture surfaces. Green fuchsite reinitiates again after 462m block and core seems to become more competent; potentially green carb initiating. Minor BLL 481-481.6m (see upcoming major for litho description). ~ 25-30% QC as described. ~2% clustered/blebby py, primarily in described intervals of inc veining/alts. Sharp lower contact at ~50 DTCA.</p> <p>MINOR INTERVALS: Minor Interval: 481.00 - 481.60 LLB, BIOTITIC LAMPROPHYRE</p>	1679523	419.60	420.00	0.40	0.08
			1679524	420.00	420.40	0.40	1.16
			1679525	420.40	421.20	0.80	1.34
			1679526	421.20	422.10	0.90	1.32
			1679527	422.10	423.00	0.90	0.62
			1679528	423.00	424.00	1.00	0.03
			1679529	424.00	425.00	1.00	0.15
			1679531	425.00	426.00	1.00	0.22
			1679532	426.00	427.50	1.50	0.02
			1679533	427.50	429.00	1.50	0.01
			1679534	429.00	430.50	1.50	0.01
			1679535	430.50	431.00	0.50	0.01
			1679536	431.00	431.50	0.50	0.00
			1679537	431.50	432.00	0.50	0.00
			1679538	449.70	450.00	0.30	0.00
			1679539	450.00	450.40	0.40	0.00
			1679541	450.40	451.00	0.60	0.01
			1679542	451.00	452.00	1.00	0.01
			1679543	452.00	453.00	1.00	0.01
			1679544	453.00	454.00	1.00	0.01
			1679545	454.00	455.00	1.00	0.00
			1679546	455.00	456.00	1.00	0.01
			1679547	456.00	457.50	1.50	0.00
			1679548	457.50	459.00	1.50	0.01
			1679549	459.00	460.50	1.50	0.01
			1679551	460.50	462.00	1.50	0.01
			1679552	462.00	463.50	1.50	0.02
			1679553	463.50	465.00	1.50	0.01
			1679554	465.00	466.50	1.50	0.02
			1679555	466.50	468.00	1.50	0.02
			1679556	468.00	469.50	1.50	0.02
			1679557	469.50	471.00	1.50	0.00
			1679558	471.00	472.50	1.50	0.01
			1679559	472.50	474.00	1.50	0.01
		1679561	474.00	475.50	1.50	0.02	
		1679562	475.50	477.00	1.50	0.01	
		1679563	477.00	478.50	1.50	0.01	
		1679564	478.50	480.00	1.50	0.01	
		1679565	480.00	481.00	1.00	0.06	
		1679566	481.00	481.60	0.60	0.68	
		1679567	481.60	483.00	1.40	0.01	
		1679568	483.00	484.20	1.20	0.00	

DETAILED LOG

Hole Number: **NH19-028**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1679569	484.20	485.10	0.90	0.00
			1679571	485.10	486.00	0.90	0.00
			1679572	486.00	487.50	1.50	0.00
			1679573	487.50	489.00	1.50	0.00
			1679574	489.00	490.50	1.50	0.00
490.50	492.70	LLB, BIOTITIC LAMPROPHYRE Dark grey-black f-mg biotitic lamprophyre, hosting ~3% blebby cubic pyrite and <5% QC veining (but QC blebs also present in matrix). Sharp lower contact at ~70 DTCA, adjacent to fracturing.	1679575	490.50	491.60	1.10	0.02
			1679576	491.60	492.70	1.10	0.01
492.70	524.80	VUM, MASSIVE ULTRAMAFIC See previous VUM; mod-strong gouging patches ranging from a few cm to meters in length but compositionally still in softer ultramafics. A few blobby veins (primarily shear associated) present; ~30% overall. Sampled throughout but will be hole cored due. Weak green fuchsite in veining around 507.7m. Glassy milky QC shear flooding from 514.5-515m. Carb alteration seems to be increasing following ~513m block. Sharp lower contact low angle and variable but average ~15-30 DTCA. MINOR INTERVALS: Minor Interval: 514.50 - 515.00 QVC, QUARTZ CARBONATE VEINS	1679577	492.70	494.10	1.40	0.00
			1679578	494.10	495.00	0.90	0.01
			1679579	495.00	496.50	1.50	0.00
			1679581	496.50	498.00	1.50	0.01
			1679582	498.00	499.50	1.50	0.01
			1679583	499.50	501.00	1.50	0.01
			1679584	501.00	502.50	1.50	0.01
			1679585	502.50	504.00	1.50	0.01
			1679586	504.00	505.50	1.50	0.02
			1679587	505.50	507.00	1.50	0.01
			1679588	507.00	508.50	1.50	0.01
			1679589	508.50	510.00	1.50	0.01
			1679591	510.00	511.50	1.50	0.01
			1679592	511.50	513.00	1.50	0.04
			1679593	513.00	514.50	1.50	0.01
			1679594	514.50	515.00	0.50	0.01
			1679595	515.00	516.00	1.00	0.01
			1679596	516.00	517.50	1.50	0.00
			1679597	517.50	519.00	1.50	0.01
			1679598	519.00	520.50	1.50	0.00
			1679599	520.50	522.00	1.50	0.00
			1679601	522.00	523.50	1.50	0.01
			1679602	523.50	524.80	1.30	0.01
524.80	527.30	QVC, QUARTZ CARBONATE VEINS Milky white massive QC flooded interval with greenish chlorite on the rare fracture surface/near contacts. Blocky core fracturing moderate throughout. Essentially 100% QC. Trace sulphides. Sharp lower contact at ~70 DTCA.	1679603	524.80	526.00	1.20	0.00
			1679604	526.00	527.30	1.30	0.00

DETAILED LOG

Hole Number: **NH19-028**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
527.30	532.00	VUM, MASSIVE ULTRAMAFIC See previous VUM; moderate carb and weaker green chlorite alts. Porphyroblastic-esque carb blebs occurring. ~25-30% QC. 1-2% fg dissem/blebby py. Sharp lower contact at ~35 DTCA.	1679605	527.30	528.00	0.70	0.00
			1679606	528.00	529.50	1.50	0.00
			1679607	529.50	531.00	1.50	0.00
			1679608	531.00	532.00	1.00	0.00
532.00	535.50	QVC, QUARTZ CARBONATE VEINS See most recent QVC. Weak carb/chlorite. Minor VUM from 531.5-531.7m. ~90+% QC throughout. Trace sulphides. Sharp lower contact at ~40 DTCA. MINOR INTERVALS: Minor Interval: 532.50 - 532.70 VUM, MASSIVE ULTRAMAFIC	1679609	532.00	532.70	0.70	0.00
			1679611	532.70	534.00	1.30	0.00
			1679612	534.00	534.70	0.70	0.00
			1679613	534.70	535.50	0.80	0.00
535.50	539.70	VUM, MASSIVE ULTRAMAFIC See previous VUM. Minor QVC 538-538.3m with green chlorite on fracture surfaces. ~35% QC. ~2% fg clustered to mg blebby py. Sharp lower contact at ~60 DTCA. MINOR INTERVALS: Minor Interval: 538.00 - 538.30 QVC, QUARTZ CARBONATE VEINS	1679614	535.50	537.00	1.50	0.01
			1679615	537.00	538.00	1.00	0.00
			1679616	538.00	539.30	1.30	0.00
			1679617	539.30	539.70	0.40	0.02
539.70	544.00	QVC, QUARTZ CARBONATE VEINS See previous QVC. Sharp lower contact at ~20 DTCA.	1679618	539.70	541.00	1.30	0.00
			1679619	541.00	542.00	1.00	0.00
			1679621	542.00	543.00	1.00	0.00
			1679622	543.00	544.00	1.00	0.00
544.00	554.70	VUM, MASSIVE ULTRAMAFIC See previous VUM. Minor QVCs 548.9-549.2m, 549.8-550m, and 554-554.3m. Sharp lower contact at ~60 DTCA. MINOR INTERVALS: Minor Interval: 548.90 - 549.20 QVC, QUARTZ CARBONATE VEINS Minor Interval: 549.80 - 550.00 QVC, QUARTZ CARBONATE VEINS Minor Interval: 554.00 - 554.30 QVC, QUARTZ CARBONATE VEINS	1679623	544.00	545.00	1.00	0.01
			1679624	545.00	546.00	1.00	0.00
			1679625	546.00	547.50	1.50	0.00
			1679626	547.50	548.90	1.40	0.00
			1679627	548.90	549.20	0.30	0.00
			1679628	549.20	550.00	0.80	0.01
			1679629	550.00	551.00	1.00	0.01
			1679631	551.00	552.00	1.00	0.01
			1679632	552.00	553.00	1.00	0.01
			1679633	553.00	554.00	1.00	0.00
			1679634	554.00	554.30	0.30	0.00
			1679635	554.30	554.70	0.40	0.01
554.70	555.80	QVC, QUARTZ CARBONATE VEINS Similar to previous QVCs, but this interval has smokey grey carb/albite also influencing it. Sharp lower contacts at variable but average ~20 DTCA.	1679636	554.70	555.20	0.50	0.00
			1679637	555.20	555.80	0.60	0.01

DETAILED LOG

Hole Number: **NH19-028**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
555.80	574.50	VUM, MASSIVE ULTRAMAFIC See previous VUMs; moderate grey carb alteration splotchy/mottled throughout. ~25-30% QC as shear associated veinlets or erratic blebs/splotches. 1-2% blebby py. Sharp lower contact at ~ 20 DTCA.	1679638	555.80	556.50	0.70	0.01
			1679639	556.50	558.00	1.50	0.00
			1679641	558.00	559.50	1.50	0.01
			1679642	559.50	561.00	1.50	0.01
			1679643	561.00	562.50	1.50	0.01
			1679644	562.50	564.00	1.50	0.01
			1679645	564.00	565.50	1.50	0.00
			1679646	565.50	567.00	1.50	0.00
			1679647	567.00	568.50	1.50	0.00
			1679648	568.50	570.00	1.50	0.00
			1679649	570.00	571.50	1.50	0.01
			1679651	571.50	573.00	1.50	0.00
			1679652	573.00	574.50	1.50	0.00
574.50	576.30	QVC, QUARTZ CARBONATE VEINS See initial milky QCVs (no carb/alb alt); this interval is strongly fractured with blocky fragmentation also occurring. Sharp lower contact at ~30 DTCA.	1679653	574.50	575.40	0.90	0.00
			1679654	575.40	576.30	0.90	0.00
576.30	586.20	VUM, MASSIVE ULTRAMAFIC See previous VUMs. Patchy carbonate (primarily grey carb) alteration increasing around ~579m, with patchy weak albite alteration and silicification. Localized areas of decent sulphides, for example from 584-584.15m and 584.7-585.2m with ~5-7% pyrite/chalcopyrite. Silver mineral is also seen in localized areas throughout. ~25% QC from 579m to LC with QC blebs, veining and some QC flooded areas. Sharp LC where gouging begins.	1679655	576.30	577.10	0.80	0.00
			1679656	577.10	577.60	0.50	0.01
			1679657	577.60	578.30	0.70	0.01
			1679658	578.30	579.00	0.70	0.01
			1679659	579.00	580.00	1.00	0.01
			1679661	580.00	581.00	1.00	0.01
			1679662	581.00	582.00	1.00	0.00
			1679663	582.00	583.00	1.00	0.01
			1679664	583.00	583.60	0.60	0.01
			1679665	583.60	584.15	0.55	0.01
			1679666	584.15	584.70	0.55	0.01
			1679667	584.70	585.20	0.50	0.01
			1679668	585.20	586.20	1.00	0.01
586.20	593.60	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. A few competent sections are also present, where silver mineral is still seen and possible weak carb alteration still present	1679669	586.20	587.20	1.00	0.02
			1679671	587.20	588.20	1.00	0.01
			1679672	588.20	589.20	1.00	0.00
			1679673	589.20	590.20	1.00	0.01
			1679674	590.20	591.20	1.00	0.01
			1679675	591.20	592.20	1.00	0.01
			1679676	592.20	593.00	0.80	0.00
			1679677	593.00	593.60	0.60	0.00

Hole Number: **NH19-028**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
593.60	597.40	VUM, MASSIVE ULTRAMAFIC Similar to above VUMs. Some patchy gouging still present (see structures tab). Patchy carb and albite alteration still present, where albite alteration may be more mod-weak in this case (for example at 595.6-596.4m and 597-597.4m), but is lacking the sulphides as seen in the above VUM interval. Sharp LC where pervasive gouging begins. ~25% QC	1679678	593.60	594.60	1.00	0.00
			1679679	594.60	595.60	1.00	0.01
			1679681	595.60	596.60	1.00	0.01
			1679682	596.60	597.40	0.80	0.01
597.40	606.00	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Lacking significant competent sections	1679683	597.40	598.40	1.00	0.01
			1679684	598.40	599.40	1.00	0.01
			1679685	599.40	600.40	1.00	0.00
			1679686	600.40	601.40	1.00	0.01
			1679687	601.40	602.40	1.00	0.01
			1679688	602.40	603.40	1.00	0.01
			1679689	603.40	604.40	1.00	0.00
			1679691	604.40	605.40	1.00	0.00
			1679692	605.40	606.00	0.60	0.01
606.00	619.60	VUM, MASSIVE ULTRAMAFIC Similar to above VUMs. Some patchy carb alteration possible, but lacking that seen in the recent above VUM intervals. Overall insignificant sulphides. Sharp LC where pervasive gouging begins. ~25% QC	1679693	606.00	607.00	1.00	0.01
			1679694	607.00	608.00	1.00	0.03
			1679695	608.00	609.00	1.00	0.01
			1679696	609.00	610.00	1.00	0.00
			1679697	610.00	611.00	1.00	0.01
			1679698	611.00	612.00	1.00	0.01
			1679699	612.00	613.00	1.00	0.01
			1656001	613.00	614.00	1.00	0.00
			1656002	614.00	615.00	1.00	0.00
			1656003	615.00	616.00	1.00	0.01
			1656004	616.00	617.00	1.00	0.01
			1656005	617.00	618.00	1.00	0.00
			1656006	618.00	619.00	1.00	0.00
			1656007	619.00	619.60	0.60	0.01
619.60	624.00	ZGO, GOUGE Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Lacking significant competent sections. EOH	1656008	619.60	620.60	1.00	0.01
			1656009	620.60	621.60	1.00	0.00
			1656011	621.60	622.60	1.00	0.02
			1656012	622.60	623.30	0.70	0.02
			1656013	623.30	624.00	0.70	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1679507	355.50	356.10	0.0025
1679508	356.10	356.80	0.0100
1679509	356.80	358.00	0.0025
1679511	358.00	359.00	0.0120

Hole Number: **NH19-028**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1679512	359.00	360.00	0.0060
1679513	360.00	361.50	0.0290
1679514	361.50	363.00	0.0060
1679515	363.00	364.00	0.0025
1679516	364.00	365.00	0.0050
1679517	365.00	366.00	0.0025
1679518	366.00	367.00	0.0025
1679519	367.00	368.30	0.0390
1679521	368.30	369.00	0.0120
1679522	369.00	369.80	0.0025
1679523	419.60	420.00	0.0750
1679524	420.00	420.40	1.1610
1679525	420.40	421.20	1.3360
1679526	421.20	422.10	1.3150
1679527	422.10	423.00	0.6170
1679528	423.00	424.00	0.0290
1679529	424.00	425.00	0.1520
1679531	425.00	426.00	0.2150
1679532	426.00	427.50	0.0160
1679533	427.50	429.00	0.0130
1679534	429.00	430.50	0.0120
1679535	430.50	431.00	0.0100
1679536	431.00	431.50	0.0025
1679537	431.50	432.00	0.0025
1679538	449.70	450.00	0.0025
1679539	450.00	450.40	0.0025
1679541	450.40	451.00	0.0070
1679542	451.00	452.00	0.0060
1679543	452.00	453.00	0.0060
1679544	453.00	454.00	0.0060
1679545	454.00	455.00	0.0025
1679546	455.00	456.00	0.0090
1679547	456.00	457.50	0.0025
1679548	457.50	459.00	0.0050
1679549	459.00	460.50	0.0080
1679551	460.50	462.00	0.0070
1679552	462.00	463.50	0.0150
1679553	463.50	465.00	0.0130
1679554	465.00	466.50	0.0160

Hole Number: **NH19-028**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1679555	466.50	468.00	0.0240
1679556	468.00	469.50	0.0210
1679557	469.50	471.00	0.0025
1679558	471.00	472.50	0.0090
1679559	472.50	474.00	0.0080
1679561	474.00	475.50	0.0240
1679562	475.50	477.00	0.0110
1679563	477.00	478.50	0.0100
1679564	478.50	480.00	0.0090
1679565	480.00	481.00	0.0600
1679566	481.00	481.60	0.6830
1679567	481.60	483.00	0.0060
1679568	483.00	484.20	0.0025
1679569	484.20	485.10	0.0025
1679571	485.10	486.00	0.0025
1679572	486.00	487.50	0.0025
1679573	487.50	489.00	0.0025
1679574	489.00	490.50	0.0025
1679575	490.50	491.60	0.0190
1679576	491.60	492.70	0.0100
1679577	492.70	494.10	0.0025
1679578	494.10	495.00	0.0130
1679579	495.00	496.50	0.0025
1679581	496.50	498.00	0.0110
1679582	498.00	499.50	0.0120
1679583	499.50	501.00	0.0110
1679584	501.00	502.50	0.0100
1679585	502.50	504.00	0.0060
1679586	504.00	505.50	0.0160
1679587	505.50	507.00	0.0120
1679588	507.00	508.50	0.0140
1679589	508.50	510.00	0.0100
1679591	510.00	511.50	0.0070
1679592	511.50	513.00	0.0380
1679593	513.00	514.50	0.0080
1679594	514.50	515.00	0.0060
1679595	515.00	516.00	0.0100
1679596	516.00	517.50	0.0025
1679597	517.50	519.00	0.0060

Hole Number: **NH19-028**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1679598	519.00	520.50	0.0025
1679599	520.50	522.00	0.0025
1679601	522.00	523.50	0.0060
1679602	523.50	524.80	0.0080
1679603	524.80	526.00	0.0025
1679604	526.00	527.30	0.0025
1679605	527.30	528.00	0.0025
1679606	528.00	529.50	0.0025
1679607	529.50	531.00	0.0025
1679608	531.00	532.00	0.0025
1679609	532.00	532.70	0.0025
1679611	532.70	534.00	0.0025
1679612	534.00	534.70	0.0025
1679613	534.70	535.50	0.0025
1679614	535.50	537.00	0.0060
1679615	537.00	538.00	0.0025
1679616	538.00	539.30	0.0025
1679617	539.30	539.70	0.0210
1679618	539.70	541.00	0.0025
1679619	541.00	542.00	0.0025
1679621	542.00	543.00	0.0025
1679622	543.00	544.00	0.0025
1679623	544.00	545.00	0.0060
1679624	545.00	546.00	0.0025
1679625	546.00	547.50	0.0025
1679626	547.50	548.90	0.0025
1679627	548.90	549.20	0.0025
1679628	549.20	550.00	0.0070
1679629	550.00	551.00	0.0080
1679631	551.00	552.00	0.0060
1679632	552.00	553.00	0.0100
1679633	553.00	554.00	0.0025
1679634	554.00	554.30	0.0025
1679635	554.30	554.70	0.0060
1679636	554.70	555.20	0.0025
1679637	555.20	555.80	0.0060
1679638	555.80	556.50	0.0080
1679639	556.50	558.00	0.0025
1679641	558.00	559.50	0.0120

Hole Number: **NH19-028**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1679642	559.50	561.00	0.0060
1679643	561.00	562.50	0.0050
1679644	562.50	564.00	0.0060
1679645	564.00	565.50	0.0025
1679646	565.50	567.00	0.0025
1679647	567.00	568.50	0.0025
1679648	568.50	570.00	0.0025
1679649	570.00	571.50	0.0120
1679651	571.50	573.00	0.0025
1679652	573.00	574.50	0.0025
1679653	574.50	575.40	0.0025
1679654	575.40	576.30	0.0025
1679655	576.30	577.10	0.0025
1679656	577.10	577.60	0.0080
1679657	577.60	578.30	0.0060
1679658	578.30	579.00	0.0070
1679659	579.00	580.00	0.0060
1679661	580.00	581.00	0.0080
1679662	581.00	582.00	0.0025
1679663	582.00	583.00	0.0090
1679664	583.00	583.60	0.0060
1679665	583.60	584.15	0.0120
1679666	584.15	584.70	0.0100
1679667	584.70	585.20	0.0120
1679668	585.20	586.20	0.0060
1679669	586.20	587.20	0.0160
1679671	587.20	588.20	0.0090
1679672	588.20	589.20	0.0025
1679673	589.20	590.20	0.0060
1679674	590.20	591.20	0.0090
1679675	591.20	592.20	0.0060
1679676	592.20	593.00	0.0025
1679677	593.00	593.60	0.0025
1679678	593.60	594.60	0.0025
1679679	594.60	595.60	0.0050
1679681	595.60	596.60	0.0080
1679682	596.60	597.40	0.0070
1679683	597.40	598.40	0.0080
1679684	598.40	599.40	0.0090

Hole Number: **NH19-028**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1679685	599.40	600.40	0.0025
1679686	600.40	601.40	0.0060
1679687	601.40	602.40	0.0110
1679688	602.40	603.40	0.0060
1679689	603.40	604.40	0.0025
1679691	604.40	605.40	0.0025
1679692	605.40	606.00	0.0060
1679693	606.00	607.00	0.0050
1679694	607.00	608.00	0.0270
1679695	608.00	609.00	0.0050
1679696	609.00	610.00	0.0025
1679697	610.00	611.00	0.0060
1679698	611.00	612.00	0.0050
1679699	612.00	613.00	0.0050
1656001	613.00	614.00	0.0025
1656002	614.00	615.00	0.0025
1656003	615.00	616.00	0.0050
1656004	616.00	617.00	0.0050
1656005	617.00	618.00	0.0025
1656006	618.00	619.00	0.0025
1656007	619.00	619.60	0.0050
1656008	619.60	620.60	0.0140
1656009	620.60	621.60	0.0025
1656011	621.60	622.60	0.0230
1656012	622.60	623.30	0.0190
1656013	623.30	624.00	0.0025

DETAILED LOG



Hole Number: **NH19-029**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5374450.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 509650.00	East:	Length: 630.00
	Elev: 286.00	Elev:	Start Depth: 0.00
Date Started: Jun 11, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jun 26, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 630.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	5.90	-58.00	APS	OK	Assumed from first test, No APS reading	60.00	5.90	-58.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
121.00	7.10	-57.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	171.00	7.40	-56.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
222.00	8.70	-55.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	273.00	10.20	-55.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
324.00	10.70	-55.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	375.00	12.80	-55.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
426.00	13.20	-55.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	477.00	14.30	-55.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
525.00	15.20	-55.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	579.00	14.70	-55.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	50.00	HPO, OVERBURDEN					
50.00	142.40	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock; upper portion of unit until ~115m shows med-coarse grained crystallization with pseudo-gabbroic texture in areas; following 115m is primarily fine with medium grained rare patches. Intense blocky core fracturing+fragmentation in boxes 13-15. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Overall ~3-5 % veining as erratic gashes to veinlets. Trace sulphides. Sharp lower contact at variably fractured core; best guess of angle averaging ~60 DTCA.	1656014	141.00	141.70	0.70	0.01
			1656015	141.70	142.40	0.70	0.02

DETAILED LOG

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
142.40	167.20	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Similar to Pominex East lense, but higher up than predicted to be. Green-grey weak-moderately glassy porphyritic dyke (fg background remnant texture). Mod pervasive carb, weak-mod patchy carb, and weak patchy bleaching alterations all influencing this unit. Rare pink potassic alt also bleeding out of fractures. Weak-mod erratic chloritic gashes/fractures also recognized, with occasionally QC/ alt haloes bleeding out of them. Intense blocky core fracturing throughout majority of unit. ~15-20% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs. 2-3% FF blebby/clustered VFG py. Sharp lower contact where intense fragmentation occurs, and where it becomes more competent it is mafic rock again.</p>	1656016	142.40	143.10	0.70	0.00
			1656017	143.10	144.00	0.90	0.01
			1656018	144.00	145.00	1.00	0.00
			1656019	145.00	146.00	1.00	0.01
			1656021	146.00	147.00	1.00	0.00
			1656022	147.00	148.50	1.50	0.00
			1656023	148.50	150.00	1.50	0.00
			1656024	150.00	151.50	1.50	0.02
			1656025	151.50	153.00	1.50	0.01
			1656026	153.00	154.00	1.00	0.02
			1656027	154.00	155.00	1.00	0.01
			1656028	155.00	156.00	1.00	0.01
			1656029	156.00	157.50	1.50	0.01
			1656031	157.50	159.00	1.50	0.01
			1656032	159.00	160.00	1.00	0.01
			1656033	160.00	161.00	1.00	0.01
			1656034	161.00	162.00	1.00	0.02
			1656035	162.00	163.50	1.50	0.01
			1656036	163.50	165.00	1.50	0.02
			1656037	165.00	166.20	1.20	0.11
			1656038	166.20	167.20	1.00	0.01
167.20	170.00	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green mafic rock; see previous VMM unit for more detailed description. Sharp lower contact at nearly perp TCA.</p>	1656039	167.20	168.00	0.80	0.00
			1656041	168.00	169.00	1.00	0.01
			1656042	169.00	170.00	1.00	0.01
170.00	172.70	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>See recent IP2 for detailed description. Sharp lower contact at ~45 DTCA.</p>	1656043	170.00	171.00	1.00	0.02
			1656044	171.00	171.80	0.80	0.00
			1656045	171.80	172.70	0.90	0.00
172.70	202.70	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Similar to previous mafic compositionally, but texturally this interval is exhibiting pillowing features. Still lacking any sig alts/veins/sulphs. Lowermost 50cm or so shows high angle (~60-75 DTCA) moderate shearing. Lower contact placed where variolitic texture initiates.</p>	1656046	172.70	173.40	0.70	0.00
			1656047	173.40	174.00	0.60	0.00

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
202.70	296.50	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Compositionally similar to previous mafics, but this interval is exhibiting primarily mm-just under 1cm scale variolitic texture. Lacking any sig alts/veins/sulphs. Variolitic texture weakens after ~279m.</p> <p>A few darker grey mafic dyke minors present: 243.7-243.8m, 254.4-254.8m, 255-255.3m, 290.5-290.8m, 293.8-294.6m, and 295.6-295.8m.</p> <p>Lower contact where pillowing features initiate, but compositionally rock is still mafic.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 243.70 - 243.80 IMD, MAFIC DYKE</p> <p>Minor Interval: 254.40 - 254.80 IMD, MAFIC DYKE</p> <p>Minor Interval: 255.00 - 255.30 IMD, MAFIC DYKE</p> <p>Minor Interval: 290.50 - 290.80 IMD, MAFIC DYKE</p> <p>Minor Interval: 293.80 - 294.60 IMD, MAFIC DYKE</p> <p>Minor Interval: 295.60 - 295.80 IMD, MAFIC DYKE</p>					
296.50	329.70	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally similar to previous mafic units, but this interval is exhibiting pillowing features (selveges, chill margins, etc.). Lacking any significant alts, veins (~10% erratic QC gashes-veinlets), or sulphides (trace).</p> <p>Sharp lower contact seperated by vein oriented at ~75-80 DTCA.</p>					
329.70	367.30	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Greenish-blue massive unit that is exhibiting weak pervasive chlorite alteration, and weak patchy grey carb. Compositionally, rock appears to be transitioning into more ultramafic base (blueish/softer in some areas but not definitive/pervasive). Mod erratic dark chlorite/lighter grey QC gashes occasionally resulting in 'shattered' appearance.</p> <p>~15-20% QC primarily as erratic gashes to blobby floods (ex 356.4m).</p> <p>1-2% blebby py.</p> <p>Sharp lower contact variable but average ~60 DTCA.</p>					
367.30	369.70	<p>ISO, SYENITIC INTRUSIVE</p> <p>Pink syenitic intrusive interval with mm scale black to white blebs/flakes, and qtz eyes present in the background matrix. Weak to moderate tension gouging present, resulting in dark black erratic chlorite filled gashes/fractures.</p> <p>2-3% fg-mg dissem/blebby py.</p> <p>Sharp lower contact at ~85 DTCA fracturing.</p>					

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
369.70	396.00	<p>VUO, ULTRAMAFIC VOLCANIC</p> <p>Massive rock believed to be more ultramafic in composition compared to recent ACH, as this interval is more blue, somewhat softer, and talc is present on the odd fracture surface. Mod-strong erratic dark chlorite/light QC gashes often resulting in 'shattered' appearance. Very weak patchy brecciation recognized with fragmented baserock. Minor pale grey IFO at 370.6-370.8m. ~20% QC overall as described erratic gashes and blobby veinlets. 1-2% blebby f-mg py. Lower contact at block where rock switches to massive mafic composition.</p> <p>MINOR INTERVALS: Minor Interval: 370.60 - 370.80 IFO, FELSIC INTRUSIVE UNDIVIDED</p>					
396.00	400.40	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>See previous VMM; massive green mafic lacking any sig alts, veins (<5%), or sulphs (~2% blebby py). Sharp lower contact at ~75 DTCA where softer altered ultramafic reinitiates.</p>					
400.40	452.80	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Dark green chlorite altered ultramafics. Weak-mod patchy carb also influencing the unit. Moderate-strong erratic tension gouging resulting in primarily grey discontinuous QC gashes but also wavy chlorite gashes; pseudo stockwork and occasionally results in "shattered" +/- breccia textures. Moderate shearing present and strengthening towards bottom of unit (even pseudo cataclastic wormy shear veinlets following 441m); typically oriented ~60-80 DTCA with a few blobby veinlets occurring (ex a few individual examples present between 408-414m). Additionally, moderate brecciation occurring, with a massive QC breccia flood interval from 421.6-422.4m; pinkish felsic chunk (~10cm) hosting ~5% disseminated py also recognized. Overall ~ 25-30 % QC, primarily as brecciated veinlets or erratic discontinuous gashes/stringers. ~2% blebby/vein hosted pyrite overall. Sharp lower contact at ~80 DTCA where intense alteration initiates.</p> <p>MINOR INTERVALS: Minor Interval: 422.00 - 422.10 IFO, FELSIC INTRUSIVE UNDIVIDED Felsic chunk hosting ~5% disseminated py.</p>	1656048	407.00	408.00	1.00	0.10
			1656049	408.00	409.00	1.00	0.12
			1656051	409.00	410.00	1.00	0.02
			1656052	410.00	411.00	1.00	0.08
			1656053	411.00	412.50	1.50	0.01
			1656054	412.50	414.00	1.50	0.00
			1656055	414.00	415.50	1.50	0.00
			1656056	415.50	417.00	1.50	0.00
			1656057	417.00	418.50	1.50	0.00
			1656058	418.50	420.00	1.50	0.01
			1656059	420.00	420.80	0.80	0.09
			1656061	420.80	421.60	0.80	0.04
			1656062	421.60	422.00	0.40	0.69
			1656063	422.00	422.40	0.40	0.34
			1656064	422.40	423.00	0.60	0.12
			1656065	423.00	424.50	1.50	0.03
			1656066	424.50	426.00	1.50	0.00
			1656067	439.00	440.00	1.00	0.00
			1656068	440.00	441.00	1.00	0.00
			1656069	441.00	442.50	1.50	0.00
			1656071	442.50	444.00	1.50	0.00
			1656072	444.00	445.50	1.50	0.00
			1656073	445.50	447.00	1.50	0.00
			1656074	447.00	448.50	1.50	0.00
			1656075	448.50	450.00	1.50	0.00
			1656076	450.00	451.40	1.40	0.00
			1656077	451.40	452.80	1.40	0.01

DETAILED LOG

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
452.80	475.10	ACO, CARBONATE ALTERED ROCK	1656078	452.80	454.00	1.20	0.03
		POTENTIAL AQUARIUS LENSE	1656079	454.00	455.00	1.00	0.04
		Intensely sheared ultramafic rock with mod-strong pervasive brown carbonate alteration throughout majority of unit; when this alteration is lacking (for instance 459-464m is primarily chlor/grey carb with breccia+/-stockwork 'shattered' erratic QC veinlets). Weak patchy silicification, and Weak wispy yellow sericite alteration on the rare shear/vein margin. Shear strong throughout with mimicking wormy QC stringers-veinlets and chlorite tectonic banding; orientation is quite variable/wavy throughout, but commonly 50-80 DTCA. Weak-mod localized brecciation also recognized.	1656081	455.00	456.00	1.00	0.03
		~40% QC primarily as wormy shear stringers-veinlets, as well as erratic breccia associated floods.	1656082	456.00	457.00	1.00	0.02
		~3-4% mg blebby/vfg clustered py; locally may reach 5+%.	1656083	457.00	458.00	1.00	0.02
		Gradual lower contact over a few meters where brown carb fades away, and soft dark (less altered) ultramafic composition remains.	1656084	458.00	459.00	1.00	0.02
			1656085	459.00	460.10	1.10	0.03
			1656086	460.10	461.00	0.90	0.01
			1656087	461.00	462.00	1.00	0.01
			1656088	462.00	463.00	1.00	0.01
			1656089	463.00	463.80	0.80	0.02
			1656091	463.80	464.90	1.10	0.05
			1656092	464.90	465.30	0.40	0.14
			1656093	465.30	465.60	0.30	0.12
			1656094	465.60	466.80	1.20	0.02
			1656095	466.80	468.00	1.20	0.03
			1656096	468.00	468.70	0.70	0.06
			1656097	468.70	469.80	1.10	0.05
			1656098	469.80	471.00	1.20	0.03
			1656099	471.00	472.00	1.00	0.02
			1656101	472.00	473.00	1.00	0.03
			1656102	473.00	474.00	1.00	0.03
			1656103	474.00	475.10	1.10	0.01

DETAILED LOG

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Assay Data						
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final	
475.10	630.00	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Softer dark blue-grey ultramafic unit, exhibiting a few noteworthy deformation/vein features. Shearing is moderate throughout, and typically oriented 50-75 DTCA, but is also recognized to be quite erratic/wavy in many instances as well. Erratic QC fractures/gashes present, more so from upper contact until ~480m. Upper contact until ~525m shows weak-moderate patches of pervasive gouging; after 525m intense gouging and associated faulting is common (pervasive Gold Island Fault initiating at ~534m), with more competent grey carb flooded ultramafic lenses occurring in between (for example ~526.5-531m). Alterations include moderate patchy grey carbonate, weak patchy green fuchsite (primarily associated with veining), wispy/flakey yellow sericite (primarily on vein margins). Minor IMD 544.8-545.1m.</p> <p>Overall ~25% milky QC primarily as blobby, shear associated veinlets to floods; a few noteworthy intervals as follows: 487-487.9m, 508.1-508.5m, 523.5-523.9m, 536.5-538, 564.4-567.4m, 581.9-584.1m and 588.5- 589.1m.</p> <p>Overall ~3% blebby/clustered f-mg pyrite throughout; sulphides primrily cluster along vein margins or gouge patches, and may locally reach ~5%. EOH</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>544.80 - 545.10 IMD, MAFIC DYKE</p>	1656104	475.10	475.90	0.80	0.01	
				1656105	475.90	477.00	1.10	0.03
				1656106	477.00	478.50	1.50	0.12
				1656107	478.50	480.00	1.50	0.06
				1656108	480.00	481.10	1.10	0.01
				1656109	481.10	482.30	1.20	0.01
				1656111	482.30	483.00	0.70	0.01
				1656112	483.00	484.50	1.50	0.01
				1656113	484.50	486.00	1.50	0.01
				1656114	486.00	487.00	1.00	0.01
				1656115	487.00	487.90	0.90	0.01
				1656116	487.90	489.00	1.10	0.01
				1656117	489.00	489.70	0.70	0.01
				1656118	489.70	490.80	1.10	0.01
				1656119	490.80	492.00	1.20	0.01
				1656121	492.00	493.50	1.50	0.01
				1656122	493.50	495.00	1.50	0.01
				1656123	495.00	496.30	1.30	0.01
				1656124	496.30	497.60	1.30	0.01
				1656125	497.60	499.00	1.40	0.01
				1656126	499.00	500.30	1.30	0.01
				1656127	500.30	501.60	1.30	0.01
				1656128	501.60	502.70	1.10	0.01
				1656129	502.70	504.00	1.30	0.01
				1656131	504.00	505.50	1.50	0.01
				1656132	505.50	507.00	1.50	0.01
				1656133	507.00	508.10	1.10	0.01
				1656134	508.10	508.50	0.40	0.01
				1656135	508.50	509.50	1.00	0.01
				1656136	509.50	510.00	0.50	0.01
			1656137	510.00	511.50	1.50	0.01	
			1656138	511.50	513.00	1.50	0.01	
			1656139	513.00	514.50	1.50	0.01	
			1656141	514.50	516.00	1.50	0.01	
			1656142	516.00	517.30	1.30	0.01	
			1656143	517.30	517.70	0.40	0.01	
			1656144	517.70	518.80	1.10	0.01	
			1656145	518.80	519.90	1.10	0.01	
			1656146	519.90	520.90	1.00	0.01	
			1656147	520.90	522.00	1.10	0.01	
			1656148	522.00	523.50	1.50	0.01	
			1656149	523.50	523.90	0.40	0.01	

DETAILED LOG

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656151	523.90	525.00	1.10	0.01
			1656152	525.00	526.50	1.50	0.01
			1656153	526.50	528.00	1.50	0.01
			1656154	528.00	529.50	1.50	0.01
			1656155	529.50	531.00	1.50	0.01
			1656156	531.00	532.50	1.50	0.01
			1656157	532.50	534.00	1.50	0.02
			1656158	534.00	535.50	1.50	0.11
			1656159	535.50	536.50	1.00	0.01
			1656161	536.50	537.00	0.50	0.02
			1656162	537.00	538.50	1.50	0.01
			1656163	538.50	540.00	1.50	0.01
			1656164	540.00	541.50	1.50	0.01
			1656165	541.50	543.00	1.50	0.01
			1656166	543.00	544.50	1.50	0.01
			1656167	544.50	546.00	1.50	0.01
			1656168	546.00	547.50	1.50	0.01
			1656169	547.50	549.00	1.50	0.01
			1656171	549.00	550.50	1.50	0.01
			1656172	550.50	552.00	1.50	0.01
			1656173	552.00	553.50	1.50	0.03
			1656174	553.50	555.00	1.50	0.01
			1656175	555.00	556.50	1.50	0.01
			1656176	556.50	558.00	1.50	0.01
			1656177	558.00	558.80	0.80	0.01
			1656178	558.80	559.80	1.00	0.02
			1656179	559.80	560.80	1.00	0.02
			1656181	560.80	561.60	0.80	0.28
			1656182	561.60	562.60	1.00	0.51
			1656183	562.60	563.95	1.35	0.03
			1656184	563.95	564.90	0.95	0.04
			1656185	564.90	565.90	1.00	0.04
			1656186	565.90	566.90	1.00	0.06
			1656187	566.90	567.90	1.00	0.04
			1656188	567.90	568.90	1.00	0.04
			1656189	568.90	569.90	1.00	0.01
			1656191	569.90	570.90	1.00	0.09
			1656192	570.90	571.90	1.00	0.01
			1656193	571.90	572.90	1.00	0.01
			1656194	572.90	573.90	1.00	0.01
			1656195	573.90	574.90	1.00	0.01
			1656196	574.90	575.90	1.00	0.01

DETAILED LOG

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656197	575.90	576.90	1.00	0.01
			1656198	576.90	577.90	1.00	0.01
			1656199	577.90	578.90	1.00	0.01
			1656201	578.90	579.90	1.00	0.05
			1656202	579.90	580.90	1.00	0.01
			1656203	580.90	581.90	1.00	0.01
			1656204	581.90	582.90	1.00	0.01
			1656205	582.90	583.90	1.00	0.01
			1656206	583.90	584.90	1.00	0.01
			1656207	584.90	585.90	1.00	0.01
			1656208	585.90	586.90	1.00	0.01
			1656209	586.90	587.90	1.00	0.01
			1656211	587.90	588.90	1.00	0.01
			1656212	588.90	589.90	1.00	0.01
			1656213	589.90	590.90	1.00	0.03
			1656214	590.90	591.90	1.00	0.01
			1656215	591.90	592.90	1.00	0.01
			1656216	592.90	593.90	1.00	0.01
			1656217	593.90	594.90	1.00	0.01
			1656218	594.90	595.90	1.00	0.01
			1656219	595.90	596.90	1.00	0.01
			1656221	596.90	597.90	1.00	0.01
			1656222	597.90	598.90	1.00	0.01
			1656223	598.90	599.90	1.00	0.03
			1656224	599.90	600.90	1.00	0.04
			1656225	600.90	601.90	1.00	0.01
			1656226	601.90	602.90	1.00	0.01
			1656227	602.90	603.90	1.00	0.01
			1656228	603.90	604.90	1.00	0.01
			1656229	604.90	605.90	1.00	0.01
			1656231	605.90	606.90	1.00	0.01
			1656232	606.90	607.90	1.00	0.01
			1656233	607.90	608.90	1.00	0.01
			1656234	608.90	609.90	1.00	0.01
			1656235	609.90	610.90	1.00	0.02
			1656236	610.90	611.90	1.00	0.01
			1656237	611.90	612.90	1.00	0.01
			1656238	612.90	613.90	1.00	0.01
			1656239	613.90	614.90	1.00	0.01
			1656241	614.90	615.90	1.00	0.04
			1656242	615.90	616.90	1.00	0.07
			1656243	616.90	617.90	1.00	0.05

DETAILED LOG

Hole Number: **NH19-029**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656244	617.90	618.90	1.00	0.01
			1656245	618.90	619.90	1.00	0.01
			1656246	619.90	620.90	1.00	0.01
			1656247	620.90	621.90	1.00	0.01
			1656248	621.90	622.90	1.00	0.01
			1656249	622.90	623.90	1.00	0.01
			1656251	623.90	624.90	1.00	0.01
			1656252	624.90	625.90	1.00	0.01
			1656253	625.90	627.00	1.10	0.01
			1656254	627.00	628.50	1.50	0.01
			1656255	628.50	630.00	1.50	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656014	141.00	141.70	0.0060
1656015	141.70	142.40	0.0240
1656016	142.40	143.10	0.0025
1656017	143.10	144.00	0.0090
1656018	144.00	145.00	0.0025
1656019	145.00	146.00	0.0090
1656021	146.00	147.00	0.0025
1656022	147.00	148.50	0.0025
1656023	148.50	150.00	0.0025
1656024	150.00	151.50	0.0220
1656025	151.50	153.00	0.0070
1656026	153.00	154.00	0.0200
1656027	154.00	155.00	0.0100
1656028	155.00	156.00	0.0050
1656029	156.00	157.50	0.0050
1656031	157.50	159.00	0.0050
1656032	159.00	160.00	0.0140
1656033	160.00	161.00	0.0050
1656034	161.00	162.00	0.0170
1656035	162.00	163.50	0.0080
1656036	163.50	165.00	0.0160
1656037	165.00	166.20	0.1050
1656038	166.20	167.20	0.0100
1656039	167.20	168.00	0.0025
1656041	168.00	169.00	0.0100

Hole Number: **NH19-029**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656042	169.00	170.00	0.0090
1656043	170.00	171.00	0.0170
1656044	171.00	171.80	0.0025
1656045	171.80	172.70	0.0025
1656046	172.70	173.40	0.0025
1656047	173.40	174.00	0.0025
1656048	407.00	408.00	0.1020
1656049	408.00	409.00	0.1150
1656051	409.00	410.00	0.0200
1656052	410.00	411.00	0.0750
1656053	411.00	412.50	0.0120
1656054	412.50	414.00	0.0025
1656055	414.00	415.50	0.0025
1656056	415.50	417.00	0.0025
1656057	417.00	418.50	0.0025
1656058	418.50	420.00	0.0080
1656059	420.00	420.80	0.0910
1656061	420.80	421.60	0.0390
1656062	421.60	422.00	0.6890
1656063	422.00	422.40	0.3370
1656064	422.40	423.00	0.1200
1656065	423.00	424.50	0.0280
1656066	424.50	426.00	0.0025
1656067	439.00	440.00	0.0025
1656068	440.00	441.00	0.0025
1656069	441.00	442.50	0.0025
1656071	442.50	444.00	0.0025
1656072	444.00	445.50	0.0025
1656073	445.50	447.00	0.0025
1656074	447.00	448.50	0.0025
1656075	448.50	450.00	0.0025
1656076	450.00	451.40	0.0025
1656077	451.40	452.80	0.0100
1656078	452.80	454.00	0.0300
1656079	454.00	455.00	0.0400
1656081	455.00	456.00	0.0300
1656082	456.00	457.00	0.0200
1656083	457.00	458.00	0.0200
1656084	458.00	459.00	0.0200

Hole Number: **NH19-029**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656085	459.00	460.10	0.0300
1656086	460.10	461.00	0.0050
1656087	461.00	462.00	0.0100
1656088	462.00	463.00	0.0100
1656089	463.00	463.80	0.0200
1656091	463.80	464.90	0.0500
1656092	464.90	465.30	0.1400
1656093	465.30	465.60	0.1200
1656094	465.60	466.80	0.0200
1656095	466.80	468.00	0.0300
1656096	468.00	468.70	0.0600
1656097	468.70	469.80	0.0500
1656098	469.80	471.00	0.0300
1656099	471.00	472.00	0.0200
1656101	472.00	473.00	0.0300
1656102	473.00	474.00	0.0300
1656103	474.00	475.10	0.0100
1656104	475.10	475.90	0.0100
1656105	475.90	477.00	0.0300
1656106	477.00	478.50	0.1200
1656107	478.50	480.00	0.0600
1656108	480.00	481.10	0.0050
1656109	481.10	482.30	0.0050
1656111	482.30	483.00	0.0050
1656112	483.00	484.50	0.0050
1656113	484.50	486.00	0.0050
1656114	486.00	487.00	0.0050
1656115	487.00	487.90	0.0050
1656116	487.90	489.00	0.0050
1656117	489.00	489.70	0.0050
1656118	489.70	490.80	0.0050
1656119	490.80	492.00	0.0050
1656121	492.00	493.50	0.0050
1656122	493.50	495.00	0.0050
1656123	495.00	496.30	0.0050
1656124	496.30	497.60	0.0050
1656125	497.60	499.00	0.0050
1656126	499.00	500.30	0.0050
1656127	500.30	501.60	0.0050

Hole Number: **NH19-029**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656128	501.60	502.70	0.0050
1656129	502.70	504.00	0.0050
1656131	504.00	505.50	0.0050
1656132	505.50	507.00	0.0050
1656133	507.00	508.10	0.0050
1656134	508.10	508.50	0.0050
1656135	508.50	509.50	0.0050
1656136	509.50	510.00	0.0050
1656137	510.00	511.50	0.0050
1656138	511.50	513.00	0.0050
1656139	513.00	514.50	0.0050
1656141	514.50	516.00	0.0050
1656142	516.00	517.30	0.0050
1656143	517.30	517.70	0.0050
1656144	517.70	518.80	0.0050
1656145	518.80	519.90	0.0050
1656146	519.90	520.90	0.0050
1656147	520.90	522.00	0.0050
1656148	522.00	523.50	0.0050
1656149	523.50	523.90	0.0050
1656151	523.90	525.00	0.0050
1656152	525.00	526.50	0.0050
1656153	526.50	528.00	0.0050
1656154	528.00	529.50	0.0050
1656155	529.50	531.00	0.0050
1656156	531.00	532.50	0.0050
1656157	532.50	534.00	0.0200
1656158	534.00	535.50	0.1100
1656159	535.50	536.50	0.0050
1656161	536.50	537.00	0.0200
1656162	537.00	538.50	0.0050
1656163	538.50	540.00	0.0050
1656164	540.00	541.50	0.0050
1656165	541.50	543.00	0.0050
1656166	543.00	544.50	0.0050
1656167	544.50	546.00	0.0050
1656168	546.00	547.50	0.0050
1656169	547.50	549.00	0.0050
1656171	549.00	550.50	0.0050

Hole Number: **NH19-029**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656172	550.50	552.00	0.0050
1656173	552.00	553.50	0.0300
1656174	553.50	555.00	0.0050
1656175	555.00	556.50	0.0050
1656176	556.50	558.00	0.0050
1656177	558.00	558.80	0.0050
1656178	558.80	559.80	0.0200
1656179	559.80	560.80	0.0200
1656181	560.80	561.60	0.2800
1656182	561.60	562.60	0.5100
1656183	562.60	563.95	0.0300
1656184	563.95	564.90	0.0400
1656185	564.90	565.90	0.0400
1656186	565.90	566.90	0.0600
1656187	566.90	567.90	0.0400
1656188	567.90	568.90	0.0400
1656189	568.90	569.90	0.0050
1656191	569.90	570.90	0.0900
1656192	570.90	571.90	0.0050
1656193	571.90	572.90	0.0050
1656194	572.90	573.90	0.0050
1656195	573.90	574.90	0.0050
1656196	574.90	575.90	0.0050
1656197	575.90	576.90	0.0050
1656198	576.90	577.90	0.0050
1656199	577.90	578.90	0.0050
1656201	578.90	579.90	0.0500
1656202	579.90	580.90	0.0050
1656203	580.90	581.90	0.0050
1656204	581.90	582.90	0.0050
1656205	582.90	583.90	0.0050
1656206	583.90	584.90	0.0050
1656207	584.90	585.90	0.0050
1656208	585.90	586.90	0.0050
1656209	586.90	587.90	0.0050
1656211	587.90	588.90	0.0050
1656212	588.90	589.90	0.0100
1656213	589.90	590.90	0.0300
1656214	590.90	591.90	0.0050

Hole Number: **NH19-029**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
1656215	591.90	592.90	0.0050
1656216	592.90	593.90	0.0050
1656217	593.90	594.90	0.0050
1656218	594.90	595.90	0.0050
1656219	595.90	596.90	0.0050
1656221	596.90	597.90	0.0050
1656222	597.90	598.90	0.0050
1656223	598.90	599.90	0.0300
1656224	599.90	600.90	0.0400
1656225	600.90	601.90	0.0100
1656226	601.90	602.90	0.0100
1656227	602.90	603.90	0.0050
1656228	603.90	604.90	0.0050
1656229	604.90	605.90	0.0050
1656231	605.90	606.90	0.0050
1656232	606.90	607.90	0.0050
1656233	607.90	608.90	0.0050
1656234	608.90	609.90	0.0050
1656235	609.90	610.90	0.0200
1656236	610.90	611.90	0.0050
1656237	611.90	612.90	0.0050
1656238	612.90	613.90	0.0050
1656239	613.90	614.90	0.0050
1656241	614.90	615.90	0.0400
1656242	615.90	616.90	0.0700
1656243	616.90	617.90	0.0500
1656244	617.90	618.90	0.0100
1656245	618.90	619.90	0.0050
1656246	619.90	620.90	0.0050
1656247	620.90	621.90	0.0050
1656248	621.90	622.90	0.0050
1656249	622.90	623.90	0.0050
1656251	623.90	624.90	0.0050
1656252	624.90	625.90	0.0050
1656253	625.90	627.00	0.0050
1656254	627.00	628.50	0.0050
1656255	628.50	630.00	0.0050

DETAILED LOG



Hole Number: **NH19-030**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5375367.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 512786.10	East:	Length: 549.00
	Elev: 288.10	Elev:	Start Depth: 0.00
Date Started: Apr 28, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: May 11, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 549.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	9.60	-50.00	APS	OK		117.00	2.60	-54.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
168.00	9.60	-54.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	219.00	11.60	-54.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
270.00	15.40	-54.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	372.00	22.60	-53.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
423.00	26.10	-54.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	474.00	28.90	-53.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
525.00	31.80	-52.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	549.00	43.40	-52.00	EZ Sho	DO	Azi corrected by subtracting 11.4 from reading; pulled back 6m

Detailed Lithology

From		To	Lithology	Assay Data				
Sample Number	From	To	Length	Au_gpt_Final				
	0.00	68.30	HPO, OVERBURDEN Box starts at ~68m but competent mafic initiates at 68.3m.					

Hole Number: **NH19-030**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
68.30	310.40	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained appearance; even gabbroic in certain intervals for example ~105-112m. Lacking any significant alteration, veining, or sulphides throughout majority of unit (aside from lower described intervals). Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Minor intermediate intrusive at ~148.9-149.1m, 157.7-158.7m, 166.35-166.7m, 179.9-180.2m, 295.9-296.7m 302.3-302.7m. Weak ser+/- carb alt gradually initiating around ~210m. Overall ~5 % veining as erratic gashes to veinlets; A few en echelon 40 -50 (for one set), ~70 DTCA (for another set) milky QC veinlets-veins present between ~237-240m. Trace sulphides. Lower contact placed where leucogene fades and weak pillowing features gradually initiate.</p> <p>MINOR INTERVALS: Minor Interval: 148.90 - 149.10 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 157.70 - 158.70 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 166.35 - 166.70 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 179.90 - 180.20 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 295.90 - 296.70 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 302.30 - 302.70 IIO, INTERMEDIATE INTRUSIVE</p>	1674427	235.80	236.50	0.70	0.01
			1674428	236.50	237.25	0.75	0.01
			1674429	237.25	238.50	1.25	0.00
			1674431	238.50	239.50	1.00	0.00
			1674432	239.50	240.80	1.30	0.00
			1674433	240.80	241.80	1.00	0.00
			1674434	241.80	242.40	0.60	0.05
			1674435	242.40	243.00	0.60	0.05
310.40	380.20	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally typical green mafic (see previous), but this interval is exhibiting weak pillowing features throughout. Weak chlorite, carb +/- ser alterations may be influencing. Minor dark grey mafic dyke/intrusive 343.2-343.m. ~5% erratic QC gashes. Trace sulphides. Lower contact placed where variolitic texture initiates.</p> <p>MINOR INTERVALS: Minor Interval: 343.20 - 343.70 IMD, MAFIC DYKE</p>					

DETAILED LOG

Hole Number: **NH19-030**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
380.20	458.30	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Light green-grey mafic exhibiting mm to cm scale varioulitic texture throughout majoriity of unit, with weak pillowing/flow, and even very weak breccia features. Weak patchy carb/ser/chlorite alts. Minor dark grey mafic dyke/intrusives at ~410.1-411.2m, 411.6-412.1m; ~3-5% blebby py over this intervals. Additional IMDs: 446.1-446.3m, and 457.5-458.3m. ~5% QC as erratic gashes to breccia associated fragments. Trace sulphides overall. Lower contact placed where varioulitic texture ceases.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 410.10 - 411.20 IMD, MAFIC DYKE</p> <p>Minor Interval: 411.60 - 412.10 IMD, MAFIC DYKE</p> <p>Minor Interval: 446.10 - 446.30 IMD, MAFIC DYKE</p> <p>Minor Interval: 457.50 - 458.30 IMD, MAFIC DYKE</p>					

DETAILED LOG

Hole Number: **NH19-030**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
458.30	501.70	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Pale greenish-grey porphyritic intrusive. Weak-mod green chlorite, weak-mod patchy grey carb, and pale bleaching (carb+/-alb) bleeding out of chloritic gashes/QC veins; for example uppermost few meters of unit, and ~477-480m. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Weak-moderate tension gouging throughout resulting in wavy erratic dark gashes (chlorite) that weave remnant phenocrysts/QC eyes; associated with very weak high angle shear. Additionally, weak brecciation present in uppermost meter or so of unit, and other intensely chlorite gashes intervals result in 'shattered'; appearance. Bubbly background texture on occasion.</p> <p>Overall ~2-3% vfg- cg blebby/fracture controlled pyrite.</p> <p>Sharp lower contact at ~60 DTCA.</p>	1674436	470.20	470.70	0.50	0.00
			1674437	470.70	471.20	0.50	0.03
			1674438	471.20	472.20	1.00	10.80
			1674439	472.20	473.10	0.90	0.18
			1674441	473.10	474.00	0.90	0.11
			1674442	474.00	475.50	1.50	1.28
			1674443	475.50	477.00	1.50	0.05
			1674444	477.00	478.00	1.00	1.69
			1674445	478.00	479.00	1.00	0.35
			1674446	479.00	480.00	1.00	0.63
			1674447	480.00	481.00	1.00	0.84
			1674448	481.00	481.50	0.50	0.96
			1674449	481.50	483.00	1.50	0.28
			1674451	483.00	483.80	0.80	0.04
			1674452	483.80	484.30	0.50	2.25
			1674453	484.30	485.00	0.70	0.11
			1674454	485.00	486.00	1.00	0.04
			1674455	486.00	487.50	1.50	0.01
			1674456	487.50	489.00	1.50	0.03
			1674457	489.00	490.50	1.50	0.02
		1674458	490.50	492.00	1.50	0.02	
		1674459	492.00	493.50	1.50	0.01	
		1674461	493.50	495.00	1.50	0.06	
		1674462	495.00	496.50	1.50	0.46	
		1674463	496.50	498.00	1.50	0.01	
		1674464	498.00	499.00	1.00	0.01	
		1674465	499.00	500.00	1.00	0.02	
		1674466	500.00	501.00	1.00	0.03	
		1674467	501.00	501.70	0.70	0.27	
501.70	542.80	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>See previous VMV. Weak felsic/silicification patches (for example ~517-518m), and weak patchy carb/chlorite alts. 526.5-527.7m lower angle milky QC vein flooding.</p> <p>Overall ~1-2% vfg dissem/blebby py.</p> <p>~8-10% QC primarily as thin erratic gashes to veinlets.</p> <p>Sharp lower contact at ~60 DTCA, adjacent to mimicking fracturing.</p>	1674468	501.70	502.40	0.70	0.00
			1674469	502.40	503.00	0.60	0.00
			1674471	525.00	525.75	0.75	0.01
			1674472	525.75	526.50	0.75	0.01
			1674473	526.50	527.70	1.20	0.00
			1674474	527.70	528.20	0.50	0.01
		1674475	528.20	529.00	0.80	0.00	

DETAILED LOG

Hole Number: **NH19-030**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
542.80	549.00	<p>ACH, CARB-CHLORITIC ROCK</p> <p>dark green softer chlorite altered ultramafics. Very weak sericite and/or fuchsite may also be influencing the unit (ex fuchsite in carb veining at ~545m). Weak-Moderate erratic tension gouging resulting in primarily grey discontinuous QC gashes but also rarer is wavy chlorite gashes. ~545.6-545.9m shows localized QC stockwork/erratic gashing. Minor felsic intrusive at ~546.4-546.85m. Overall ~ 10-15% QC, primarily as sheared veinlets (ex 545m) or erratic discontinuous gashes/stringers. ~2% vfg dissem/blebby py. EOH.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>546.40 - 546.85 IFO, FELSIC INTRUSIVE UNDIVIDED</p>	1674476	543.00	544.00	1.00	0.00
			1674477	544.00	545.00	1.00	0.00
			1674478	545.00	545.60	0.60	0.00
			1674479	545.60	545.90	0.30	0.00
			1674481	545.90	546.40	0.50	0.01
			1674482	546.40	546.85	0.45	0.00
			1674483	546.85	548.00	1.15	0.00
			1674484	548.00	549.00	1.00	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
1674427	235.80	236.50	0.0140
1674428	236.50	237.25	0.0080
1674429	237.25	238.50	0.0025
1674431	238.50	239.50	0.0025
1674432	239.50	240.80	0.0025
1674433	240.80	241.80	0.0025
1674434	241.80	242.40	0.0520
1674435	242.40	243.00	0.0460
1674436	470.20	470.70	0.0025
1674437	470.70	471.20	0.0280
1674438	471.20	472.20	10.8000
1674439	472.20	473.10	0.1800
1674441	473.10	474.00	0.1080
1674442	474.00	475.50	1.2820
1674443	475.50	477.00	0.0510
1674444	477.00	478.00	1.6930
1674445	478.00	479.00	0.3540
1674446	479.00	480.00	0.6340
1674447	480.00	481.00	0.8360
1674448	481.00	481.50	0.9590
1674449	481.50	483.00	0.2750
1674451	483.00	483.80	0.0380
1674452	483.80	484.30	2.2480
1674453	484.30	485.00	0.1130

Hole Number: **NH19-030**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1674454	485.00	486.00	0.0410
1674455	486.00	487.50	0.0090
1674456	487.50	489.00	0.0340
1674457	489.00	490.50	0.0180
1674458	490.50	492.00	0.0200
1674459	492.00	493.50	0.0070
1674461	493.50	495.00	0.0570
1674462	495.00	496.50	0.4590
1674463	496.50	498.00	0.0130
1674464	498.00	499.00	0.0050
1674465	499.00	500.00	0.0180
1674466	500.00	501.00	0.0260
1674467	501.00	501.70	0.2680
1674468	501.70	502.40	0.0025
1674469	502.40	503.00	0.0025
1674471	525.00	525.75	0.0070
1674472	525.75	526.50	0.0110
1674473	526.50	527.70	0.0025
1674474	527.70	528.20	0.0060
1674475	528.20	529.00	0.0025
1674476	543.00	544.00	0.0025
1674477	544.00	545.00	0.0025
1674478	545.00	545.60	0.0025
1674479	545.60	545.90	0.0025
1674481	545.90	546.40	0.0080
1674482	546.40	546.85	0.0025
1674483	546.85	548.00	0.0025
1674484	548.00	549.00	0.0025

DETAILED LOG



Hole Number: **NH19-031**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5375452.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 513001.00	East:	Length: 504.00
	Elev: 290.00	Elev:	Start Depth: 0.00
Date Started: May 12, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: May 27, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Aquarius
	Pulse EM Survey: N	Casing: YES	Final Depth: 504.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	9.80	-50.00	APS	OK		99.00	6.70	-51.60	EZ Sho	OK	
150.00	9.10	-52.30	EZ Sho	OK		201.00	11.10	-53.10	EZ Sho	OK	
252.00	13.00	-53.80	EZ Sho	OK		303.00	16.50	-53.90	EZ Sho	OK	
354.00	18.30	-54.60	EZ Sho	OK		405.00	21.40	-55.40	EZ Sho	OK	
456.00	22.00	-56.10	EZ Sho	OK		504.00	154.40	-55.90	EZ Sho	DO	Azi corrected by subtracting 11.4 from reading; pulled back 7m; rock is

Detailed Lithology

From		To	Lithology	Assay Data				
Sample Number	From	To	Length	Au_gpt_Final				
0.00	73.80		HPO, OVERBURDEN Highly core fractured mainly mafic with sporadic felsic.					
73.80	245.90		VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of to fine medium grained appearance. Lacking any significant alteration, veining, or sulphides throughout. Pervasive leucoxene throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. High core fracturing til 79.5m Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides. MINOR INTERVALS: Minor Interval: 165.15 - 165.35 IMO, MAFIC INTUSIVE Minor Interval: 179.10 - 180.10 IMO, MAFIC INTUSIVE Minor Interval: 220.20 - 220.60 IMO, MAFIC INTUSIVE					

Hole Number: **NH19-031**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
245.90	276.50	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Massive green grey mafic rock with areas of vfg .Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy. Very weak faded tension gouging in background. Pervasive weak pillow savages/flow breccia. LC is gradual as fg/medium grained VMM</p> <p>Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides.</p>					
276.50	300.35	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Similar textures and qualities as 73.8m to 245.9m</p> <p>Pervasive medium grained, thin veinlets at 40 to 50 degrees TCA. From 288.9 to 291.2m flow breccia, moderate carb influence,</p>					
300.35	414.70	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Massive green grey/dark to light green mafic rock with areas of vfg with patchy . Alternating bands of massive mafics. With varioles and pillow salvages increasing with depth (more VIPOND) Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy. Very weak faded tension gouging in background. Pervasive weak pillow savages/flow breccia. LC is gradual as fg/medium grained VMM</p> <p>Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>354.80 - 355.30 IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Cloudy white with yellowish tinge with pinkish tinge extensive QC with white plagioclase feldspar porphyritic interval. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Patchy alterations may include moderate carbonate+ strong silicification, and patchy sericite weak trace patchy albite. Sulphides clustered at contacts at 5-6%</p>					
414.70	424.80	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Mafic base (see previous mafic units), but this interval is exhibiting variolitic texture throughout. 415.7-415.8m Minor IFO. Lacking any sig alts/veins/sulphs. Sharp lower contact variable from ~50-75 DTCA, but average ~60.</p>	1675553	423.00	423.90	0.90	0.01
			1675554	423.90	424.80	0.90	0.01

DETAILED LOG

Hole Number: **NH19-031**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
424.80	478.20	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Pale greenish/yellow-grey porphyritic intrusive. Weak-mod green chlorite, weak-mod patches of pale bleaching (grey carb+/-yellow sericite), alterations also may intensify bleeding out of chloritic gashes/QC veins. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Weak-moderate tension gouging throughout resulting in wavy erratic dark gashes (chlorite) that weave remnant phenocrysts/QC eyes; associated with very weak high angle shear typically oriented ~30-70 DTCA, occasionally en echelon (mimicking QC gashes may be occurring as well). Intense chlorite gashed intervals may result in 'shattered' appearance.</p> <p>Overall ~2-3% vfg- cg blebby/fracture controlled/vein hosted pyrite. Sharp lower contact at ~70 DTCA.</p>	1675555	424.80	426.00	1.20	0.01
			1675556	426.00	427.50	1.50	0.01
			1675557	427.50	429.00	1.50	0.01
			1675558	429.00	430.50	1.50	0.01
			1675559	430.50	432.00	1.50	0.07
			1675561	432.00	433.50	1.50	0.04
			1675562	433.50	435.00	1.50	0.01
			1675563	435.00	436.50	1.50	0.03
			1675564	436.50	438.00	1.50	0.61
			1675565	438.00	439.50	1.50	0.17
			1675566	439.50	441.00	1.50	0.01
			1675567	441.00	442.50	1.50	0.01
			1675568	442.50	444.00	1.50	0.01
			1675569	444.00	445.50	1.50	0.01
			1675571	445.50	447.00	1.50	0.03
			1675572	447.00	448.50	1.50	0.03
			1675573	448.50	450.00	1.50	0.13
			1675574	450.00	451.50	1.50	0.01
			1675575	451.50	453.00	1.50	0.01
			1675576	453.00	454.50	1.50	0.01
			1675577	454.50	456.00	1.50	0.01
			1675578	456.00	457.50	1.50	0.29
			1675579	457.50	459.00	1.50	0.18
			1675581	459.00	460.50	1.50	0.03
			1675582	460.50	462.00	1.50	0.02
			1675583	462.00	463.50	1.50	0.04
			1675584	463.50	465.00	1.50	0.07
			1675585	465.00	466.50	1.50	0.01
			1675586	466.50	468.00	1.50	0.46
			1675587	468.00	469.50	1.50	0.14
		1675588	469.50	471.00	1.50	0.01	
		1675589	471.00	472.50	1.50	0.01	
		1675591	472.50	474.00	1.50	0.04	
		1675592	474.00	475.50	1.50	0.03	
		1675593	475.50	477.00	1.50	0.06	
		1675594	477.00	478.20	1.20	0.01	

Hole Number: **NH19-031**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
478.20	482.00	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Intensely grey carbonate and dark green chlorite altered ultramafics. Moderate-strong erratic tension gouging resulting in primarily grey discontinuous QC gashes but also rarer is wavy chlorite gashes. Tension gouging in combination with QC surrounding fragmented clasts are associated with breccia veining. Other deformation features such as microfaulting and localized cataclastic texture may also be present. Minor IP2 with ~20% erratic/pseudo-stockwork QC gashing at 480.6-481.1m. Overall ~ 10% QC, primarily as brecciated veinlets or erratic discontinuous gashes/stringers. Trace sulphides. Sharp lower contact at slightly variable ~60 DTCA fracturing.</p> <p>MINOR INTERVALS: Minor Interval: 480.60 - 481.10 IP2, FELDSPAR & QUARTZ PORPHYRY Sharp contacts ~55/75 DTCA on either end respectively. See previous IP2 litho for more detailed description.</p>	1675595	478.20	479.10	0.90	0.01
			1675596	479.10	480.00	0.90	0.01
			1675597	480.00	480.60	0.60	0.01
			1675598	480.60	481.10	0.50	0.01
			1675599	481.10	482.00	0.90	0.01
482.00	494.40	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>See previous Major IP2 for detailed description. Minor olive green/dark grey ACH 484.4-484.9m. Mod pervasive grey carb, weak pervasive silicification, weak darker chlorite on fracture surfaces or tension fractures/gashes. 493.2-494.4m milky white QC flooded interval with weak albite/pink peppery felsic influencing as well. ~10-15% erratic QC gashes. ~2% FF/blebby py. Sharp lower contact at ~80 DTCA.</p>	1675601	482.00	483.00	1.00	0.01
			1675602	483.00	484.40	1.40	0.02
			1675603	484.40	484.90	0.50	0.01
			1675604	484.90	486.00	1.10	0.15
			1675605	486.00	487.50	1.50	0.13
			1675606	487.50	489.00	1.50	0.01
			1675607	489.00	490.50	1.50	0.01
			1675608	490.50	492.00	1.50	0.01
			1675609	492.00	493.20	1.20	0.01
			1675611	493.20	494.40	1.20	0.01
494.40	504.00	<p>LDO, DIABASE DYKE</p> <p>Dark grey moderately magnetic diabase dyke lacking any significant sulphides, veining, or alteration. Weak erratic dark tension gashes (tourmaline) recognized. Weak chlorite noticed to be influencing fracture surfaces and occasional stringer. 10-15% QC as discontinuous gashes or stringers most often oriented high angle, concave. Trace sulphides. EOH</p>	1675612	494.40	495.20	0.80	0.01
			1675613	495.20	496.00	0.80	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1675553	423.00	423.90	0.0100
1675554	423.90	424.80	0.0100
1675555	424.80	426.00	0.0100
1675556	426.00	427.50	0.0050
1675557	427.50	429.00	0.0050

Hole Number: **NH19-031**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1675558	429.00	430.50	0.0050
1675559	430.50	432.00	0.0700
1675561	432.00	433.50	0.0400
1675562	433.50	435.00	0.0100
1675563	435.00	436.50	0.0300
1675564	436.50	438.00	0.6100
1675565	438.00	439.50	0.1700
1675566	439.50	441.00	0.0100
1675567	441.00	442.50	0.0100
1675568	442.50	444.00	0.0050
1675569	444.00	445.50	0.0100
1675571	445.50	447.00	0.0300
1675572	447.00	448.50	0.0300
1675573	448.50	450.00	0.1300
1675574	450.00	451.50	0.0100
1675575	451.50	453.00	0.0100
1675576	453.00	454.50	0.0100
1675577	454.50	456.00	0.0100
1675578	456.00	457.50	0.2900
1675579	457.50	459.00	0.1800
1675581	459.00	460.50	0.0300
1675582	460.50	462.00	0.0200
1675583	462.00	463.50	0.0400
1675584	463.50	465.00	0.0700
1675585	465.00	466.50	0.0100
1675586	466.50	468.00	0.4600
1675587	468.00	469.50	0.1400
1675588	469.50	471.00	0.0050
1675589	471.00	472.50	0.0050
1675591	472.50	474.00	0.0400
1675592	474.00	475.50	0.0300
1675593	475.50	477.00	0.0600
1675594	477.00	478.20	0.0050
1675595	478.20	479.10	0.0050
1675596	479.10	480.00	0.0050
1675597	480.00	480.60	0.0050
1675598	480.60	481.10	0.0100
1675599	481.10	482.00	0.0050
1675601	482.00	483.00	0.0050

Hole Number: **NH19-031**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1675602	483.00	484.40	0.0200
1675603	484.40	484.90	0.0050
1675604	484.90	486.00	0.1500
1675605	486.00	487.50	0.1300
1675606	487.50	489.00	0.0050
1675607	489.00	490.50	0.0050
1675608	490.50	492.00	0.0050
1675609	492.00	493.20	0.0050
1675611	493.20	494.40	0.0050
1675612	494.40	495.20	0.0050
1675613	495.20	496.00	0.0050

DETAILED LOG



Hole Number: **NH19-032**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -65.00
Project Number: MACKLE_TWP	North: 5375372.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 512290.70	East:	Length: 528.00
	Elev: 291.50	Elev:	Start Depth: 0.00
Date Started: May 27, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jun 04, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 528.00

Comments: Casing at 72m

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.50	-65.00	APS	OK	Reading taken by drillers at top of hole	84.00	10.80	-65.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
135.00	14.10	-65.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	186.00	16.90	-66.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
237.00	19.70	-66.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	288.00	22.30	-67.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
339.00	23.90	-67.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	387.00	26.20	-68.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
438.00	29.30	-68.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	489.00	27.50	-68.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	70.30	HPO, OVERBURDEN					
70.30	267.00	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock typically medium grained with 'salt and pepper' appearance. Lacking any significant alteration (aside from epidote and possibly sericite alteration influencing veining on the rare occasion), veining, or sulphides throughout. Occasional weak faded tension gouging in background of unit. ~3-5% veining typically as concave gashes to veinlets. Trace sulphides. Moderate breccia flooding between 113.2-113.6m. Weak pale yellow sericite bleaching bleeding out of fractures/veinlets ~137-137.6m. Minor IIO 171.7-171.9m. Lower contact where pillowing initiates.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 170.90 - 171.10 IIO, INTERMEDIATE INTRUSIVE Steel grey intrusive lacking textures relative to surrounding rock.</p> <p>Minor Interval: 171.70 - 171.90 IIO, INTERMEDIATE INTRUSIVE</p>					

Hole Number: **NH19-032**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
267.00	329.50	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally very similar to previous VMM, but this interval is exhibiting weak-mod pillowing features throughout, such as salveges and chill margins. Minor grey IIOs 285.5-286.5m, and 314.3-314.5m. Sale and pepper as well as unique flowtop textures at 324-327m, spherules at ~327.5m. Lacking any sig alts, veins (~5%), and sulphs (trace). Lower contact where intense varioulitic texture initiates.</p> <p>MINOR INTERVALS: Minor Interval: 285.50 - 286.50 IIO, INTERMEDIATE INTRUSIVE</p>					
329.50	414.30	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Compositionally same as previous mafic units, but this interval is exhibiting moderate varioulitic texture ranging from a few mm to >1cm in diameter. Weak pillowing features also occurring, as well as weak localized brecciation. Where flow features are lacking, salt and pepper texture present. A few intermediate flows may be present: ex 341.7m darker grey flow initiates to gradually transition back into mafic after 1m or so, and 409.7-410.2m is definiite minor intrusive with sharp high angle contacts. Lowermost 1m or so shows chlorite alteration influencing, with a few fragmented chunks of next litho present in the lowermost 10cm or so as well. Lacking any sig alts, veins (~5%), or sulphs (trace overall). Sharp lower contact at variable but average 60-70 DTCA.</p> <p>MINOR INTERVALS: Minor Interval: 409.70 - 410.20 IIO, INTERMEDIATE INTRUSIVE</p>					

Hole Number: **NH19-032**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
414.30	500.50	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>QC+/- white plag feldspar porphyritic intrusive. Colour varies from smokey grey (carb), olive green (chlorite), and pale yellow (sericite), based on the alteration influencing; Upper contact until ~446m seems to be primarily grey carb dominant, whereas after this chlorite comes in, soon followed by sericite. Weak-mod silicification also pervasive throughout. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Weak-moderate tension gouging throughout resulting in wavy erratic dark gashes (chlorite) that often mimic high angle QC gashes-veinlets (typically ~60-75DTCA), but also often erratic. Minor IMOs 433.1-433.3m, and 450.9-451.7m, 458.5-458.8m. Numerous ISO minors as follows: 493.5-494.4m, 495-495.1m, 495.9-496.3m, 497.9-498.8m, 499.9-500.1m. ~20% QC primarily as higher angle described stringers-veinlets, as well as the odd flood. Overall ~3-4% primarily vfg dissem/fracture controlled py, but also coarse blebby pyrite is rare; Locally up to ~5-8% but rare. Sharp lower contact at ~70 DTCA fracturing.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 433.10 - 433.30 IMO, MAFIC INTUSIVE</p> <p>Minor Interval: 450.90 - 451.70 IMO, MAFIC INTUSIVE</p> <p>Minor Interval: 458.50 - 458.80 IMO, MAFIC INTUSIVE</p> <p>Minor Interval: 493.50 - 494.40 ISO, SYENITIC INTRUSIVE</p> <p>Minor Interval: 495.00 - 495.10 ISO, SYENITIC INTRUSIVE</p> <p>Minor Interval: 495.90 - 496.30 ISO, SYENITIC INTRUSIVE</p> <p>Minor Interval: 496.40 - 496.60 ISO, SYENITIC INTRUSIVE</p> <p>Minor Interval: 497.90 - 498.80 ISO, SYENITIC INTRUSIVE</p> <p>Minor Interval: 499.90 - 500.10 ISO, SYENITIC INTRUSIVE</p>	N76911	429.00	429.80	0.80	0.00
			N76912	429.80	430.60	0.80	0.09
			N76913	430.60	431.30	0.70	0.02
			N76914	431.30	432.00	0.70	0.15
			N76915	432.00	433.10	1.10	0.28
			N76916	433.10	434.00	0.90	1.02
			N76917	434.00	435.00	1.00	0.96
			N76918	435.00	436.00	1.00	0.95
			N76919	436.00	437.00	1.00	0.23
			N76921	437.00	438.00	1.00	0.13
			N76922	438.00	439.00	1.00	0.31
			N76923	439.00	440.00	1.00	0.53
			N76924	440.00	441.00	1.00	0.34
			N76925	441.00	442.00	1.00	0.42
			N76926	442.00	443.00	1.00	0.35
			N76927	443.00	444.00	1.00	1.15
			N76928	444.00	445.00	1.00	1.24
			N76929	445.00	446.00	1.00	0.95
			N76931	446.00	447.00	1.00	0.26
			N76932	447.00	448.50	1.50	1.44
			N76933	448.50	450.00	1.50	0.47
			N76934	450.00	450.90	0.90	0.07
			N76935	450.90	451.70	0.80	0.01
			N76936	451.70	453.00	1.30	0.73
			N76937	453.00	454.50	1.50	5.69
			N76938	454.50	456.00	1.50	1.97
			N76939	456.00	457.00	1.00	0.08
			N76941	457.00	458.50	1.50	0.02
			N76942	458.50	458.80	0.30	0.00
			N76943	458.80	459.30	0.50	0.02
			N76944	459.30	460.50	1.20	0.02
			N76945	460.50	462.00	1.50	0.73
		N76946	462.00	463.00	1.00	0.03	
		N76947	463.00	464.00	1.00	0.24	
		N76948	464.00	465.00	1.00	1.74	
		N76949	465.00	466.00	1.00	1.04	
		N76951	466.00	467.00	1.00	0.12	
		N76952	467.00	468.00	1.00	0.00	
		N76953	468.00	468.90	0.90	0.23	
		N76954	468.90	470.40	1.50	0.31	
		N76955	470.40	471.00	0.60	0.06	
		N76956	471.00	472.50	1.50	0.31	

DETAILED LOG

Hole Number: **NH19-032**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
			N76957	472.50	474.00	1.50	0.07
			N76958	474.00	475.00	1.00	0.11
			N76959	475.00	476.00	1.00	0.57
			N76961	476.00	477.00	1.00	0.11
			N76962	477.00	478.00	1.00	0.01
			N76963	478.00	479.00	1.00	0.01
			N76964	479.00	480.00	1.00	0.14
			N76965	480.00	481.50	1.50	0.00
			N76966	481.50	483.00	1.50	0.16
			N76967	483.00	484.50	1.50	0.01
			N76968	484.50	486.00	1.50	0.11
			N76969	486.00	487.10	1.10	0.12
			N76971	487.10	487.50	0.40	0.03
			N76972	487.50	489.00	1.50	0.06
			N76973	489.00	490.50	1.50	0.17
			N76974	490.50	492.00	1.50	0.08
			N76975	492.00	492.70	0.70	0.19
			N76976	492.70	493.50	0.80	0.02
			N76977	493.50	494.40	0.90	0.01
			N76978	494.40	495.10	0.70	0.01
			N76979	495.10	495.90	0.80	0.01
			N76981	495.90	496.60	0.70	0.01
			N76982	496.60	497.90	1.30	0.01
			N76983	497.90	498.80	0.90	0.00
			N76984	498.80	499.70	0.90	0.01
			N76985	499.70	500.50	0.80	0.01
500.50	502.30	ISO, SYENITIC INTRUSIVE Pink syenitic intrusive interval with mm scale black to white blebs/flakes, and qtz eyes present in the background matrix. Weak to moderate tension gouging present, resulting in dark black erratic chlorite filled gashes/fractures. ~5-8% QC as erratic stringers. Trace sulphides. Sharp lower contact at ~60 DTCA fracturing.	N76986	500.50	501.40	0.90	0.00
			N76987	501.40	502.30	0.90	0.01
502.30	503.70	IP2, FELDSPAR & QUARTZ PORPHYRY See previous IP2; this interval is moderately silicified with weak-mod smokey grey carb also influencing. ~3% vfg dissem py. Sharp lower contact at ~50 DTCA.	N76988	502.30	503.70	1.40	0.01
503.70	516.50	VMO, MAFIC VOLCANIC UNDIVIDED Green grey mafic; compositionally similar to previous mafic lithos in this log. But, this interval is exhibiting moderate patches of shearing typically 60-80 DTCA. Lacking any sig alts/veins/sulphs. Sharp lower contact at variable but average 60-70 DTCA.	N76989	503.70	505.00	1.30	0.00
			N76991	505.00	506.00	1.00	0.01
			N76992	506.00	507.00	1.00	0.01

Hole Number: **NH19-032**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
516.50	528.00	LDO, DIABASE DYKE Dark grey moderately magnetic diabase dyke lacking any significant sulphides, veining, or alteration. Weak erratic dark tension gashes (tourmaline) recognized. Very weak chlorite noticed to be influencing fracture surfaces and occasional stringer. Blebby green epidote(?) porphyroblasts rare. 3-5% QC as discontinuous gashes or stringers most often oriented high angle, concave. Trace sulphides. EOH.					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76911	429.00	429.80	0.0025
N76912	429.80	430.60	0.0940
N76913	430.60	431.30	0.0150
N76914	431.30	432.00	0.1480
N76915	432.00	433.10	0.2760
N76916	433.10	434.00	1.0160
N76917	434.00	435.00	0.9580
N76918	435.00	436.00	0.9490
N76919	436.00	437.00	0.2330
N76921	437.00	438.00	0.1280
N76922	438.00	439.00	0.3050
N76923	439.00	440.00	0.5310
N76924	440.00	441.00	0.3400
N76925	441.00	442.00	0.4210
N76926	442.00	443.00	0.3490
N76927	443.00	444.00	1.1450
N76928	444.00	445.00	1.2370
N76929	445.00	446.00	0.9470
N76931	446.00	447.00	0.2630
N76932	447.00	448.50	1.4360
N76933	448.50	450.00	0.4670
N76934	450.00	450.90	0.0670
N76935	450.90	451.70	0.0140
N76936	451.70	453.00	0.7310
N76937	453.00	454.50	5.6860
N76938	454.50	456.00	1.9730
N76939	456.00	457.00	0.0800
N76941	457.00	458.50	0.0150

Hole Number: **NH19-032**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76942	458.50	458.80	0.0025
N76943	458.80	459.30	0.0150
N76944	459.30	460.50	0.0220
N76945	460.50	462.00	0.7260
N76946	462.00	463.00	0.0270
N76947	463.00	464.00	0.2380
N76948	464.00	465.00	1.7390
N76949	465.00	466.00	1.0420
N76951	466.00	467.00	0.1150
N76952	467.00	468.00	0.0025
N76953	468.00	468.90	0.2340
N76954	468.90	470.40	0.3050
N76955	470.40	471.00	0.0560
N76956	471.00	472.50	0.3050
N76957	472.50	474.00	0.0660
N76958	474.00	475.00	0.1100
N76959	475.00	476.00	0.5670
N76961	476.00	477.00	0.1130
N76962	477.00	478.00	0.0120
N76963	478.00	479.00	0.0130
N76964	479.00	480.00	0.1420
N76965	480.00	481.50	0.0025
N76966	481.50	483.00	0.1600
N76967	483.00	484.50	0.0110
N76968	484.50	486.00	0.1090
N76969	486.00	487.10	0.1180
N76971	487.10	487.50	0.0300
N76972	487.50	489.00	0.0640
N76973	489.00	490.50	0.1730
N76974	490.50	492.00	0.0800
N76975	492.00	492.70	0.1930
N76976	492.70	493.50	0.0180
N76977	493.50	494.40	0.0070
N76978	494.40	495.10	0.0110
N76979	495.10	495.90	0.0090
N76981	495.90	496.60	0.0070
N76982	496.60	497.90	0.0070
N76983	497.90	498.80	0.0025
N76984	498.80	499.70	0.0060

Hole Number: **NH19-032**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76985	499.70	500.50	0.0070
N76986	500.50	501.40	0.0025
N76987	501.40	502.30	0.0060
N76988	502.30	503.70	0.0080
N76989	503.70	505.00	0.0025
N76991	505.00	506.00	0.0060
N76992	506.00	507.00	0.0070

DETAILED LOG


Hole Number: **NH19-033**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5375372.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 512290.70	East:	Length: 513.00
	Elev: 291.50	Elev:	Start Depth: 0.00
Date Started: Jun 05, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jun 14, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Aquarius
	Pulse EM Survey: N	Casing: YES	Final Depth: 513.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.50	-55.00	APS	OK	Reading taken by drillers at top of hole	87.00	12.80	-55.40	EZ Sho	OK	
138.00	15.00	-55.70	EZ Sho	OK		189.00	16.70	-55.50	EZ Sho	OK	
291.00	19.60	-55.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	342.00	22.10	-55.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
393.00	24.20	-56.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	444.00	25.60	-55.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m,
495.00	22.00	-55.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m						

Detailed Lithology

From		To	Lithology	Assay Data				
From	To			Sample Number	From	To	Length	Au_gpt_Final
0.00	72.00		HPO, OVERBURDEN					
72.00	248.40		VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine with patchy trace medium grained appearance. Lacking any significant alteration, veining, or sulphides throughout. .Very weak faded tension gouging in background of unit. Pervasive leucoxene fine grained. Epidote stringers weak and patchy. LC sharp at 90 degrees TCA along faint chill margin. Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides. Very fine grained mafic intrusions ~10cm from 110m to 111m.					

DETAILED LOG

Hole Number: **NH19-033**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
248.40	383.30	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Massive green grey mafic rock with areas of vfg. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy and infilled varioles. Very weak faded tension gouging in background. Pervasive weak pillow savages/flow breccia with patchy moderate varioles becoming stong and pervasive after 302m. Small coarse grained gabbro like intrusions till 302m. Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides reaching up to 1%. Lower contact placed where variolitic texture initiates.</p> <p>MINOR INTERVALS: Minor Interval: 248.40 - 258.40 IMO, MAFIC INTUSIVE</p> <p>Black fine grained, sharp contacts at 70 to 80 degrees, with trace milky white veinlets. Trace sulphides</p> <p>Minor Interval: 299.30 - 299.70 IMO, MAFIC INTUSIVE</p>					
383.30	400.50	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Compositionally similar to previous mafic, but this interval is exhibiting variolitic texture throughout. Lacking any sig alts/veins/sulphs. Minor ISO from 399.7-400.5m. Sharp lower contact where intrusive initiates at ~65 DTCA fracturing.</p> <p>MINOR INTERVALS: Minor Interval: 399.70 - 400.50 ISO, SYENITIC INTRUSIVE</p> <p>Pink syenitic intrusive interval with mm scale black to white blebs/flakes, and qtz eyes present in the background matrix. Weak to moderate tension gouging present, resulting in dark black erratic chlorite filled gashes/fractures.</p>	N76993	398.50	399.00	0.50	0.01
			N76994	399.00	399.70	0.70	0.02
			N76995	399.70	400.50	0.80	0.01

DETAILED LOG

Hole Number: **NH19-033**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
400.50	472.20	IP2, FELDSPAR & QUARTZ PORPHYRY	N76996	400.50	401.25	0.75	0.01
		Pominex Lense	N76997	401.25	402.00	0.75	0.01
		Green-grey (even pale yellow in localized sericite rich intervals) moderately glassy porphyritic dyke (fg background remnant texture). Mod cloudy grey-white patchy carb, weak-mod patchy yellow sericite, and weak patchy chlorite alterations all influencing this unit; numerous cases of alteration bleeding out of fractures/veinlets. Weak-mod erratic chloritic gashes/fractures also recognized, with occasionally QC/ alt haloes bleeding out of them. Intense blocky core fracturing throughout majority of unit. Alts seem to weaken after ~450m. Minor mafic intrusives present: 412.8-413m, 443.8-8-444.3m, 446-446.3m, 449.7-450m, 456.5-457m, 467.4-467.8m.	N76998	402.00	403.00	1.00	0.01
		~15-20% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs.	N76999	403.00	404.00	1.00	0.01
		2-3% FF blebby/clustered (primarily in alt haloes) VFG py.	1644001	404.00	405.00	1.00	0.01
		Sharp lower contact at ~50 DTCA.	1644002	405.00	406.50	1.50	0.03
		MINOR INTERVALS:	1644003	406.50	408.00	1.50	0.01
		Minor Interval:	1644004	408.00	409.50	1.50	0.01
		412.80 - 413.00 IMO, MAFIC INTUSIVE	1644005	409.50	411.00	1.50	0.02
		Minor Interval:	1644006	411.00	412.00	1.00	0.25
		443.80 - 444.30 IMO, MAFIC INTUSIVE	1644007	412.00	413.00	1.00	0.03
		Minor Interval:	1644008	413.00	414.00	1.00	0.01
		446.00 - 446.30 IMO, MAFIC INTUSIVE	1644009	414.00	415.00	1.00	0.06
		Minor Interval:	1644011	415.00	416.00	1.00	0.02
		449.70 - 450.00 IMO, MAFIC INTUSIVE	1644012	416.00	417.00	1.00	0.14
		Minor Interval:	1644013	417.00	418.50	1.50	0.11
		456.50 - 457.00 IMO, MAFIC INTUSIVE	1644014	418.50	420.00	1.50	0.06
		Minor Interval:	1644015	420.00	421.50	1.50	0.06
		467.40 - 467.80 IMO, MAFIC INTUSIVE	1644016	421.50	423.00	1.50	0.04
			1644017	423.00	424.50	1.50	0.05
			1644018	424.50	426.00	1.50	0.11
			1644019	426.00	427.50	1.50	0.07
			1644021	427.50	429.00	1.50	0.14
			1644022	429.00	430.00	1.00	0.12
			1644023	430.00	431.00	1.00	0.82
			1644024	431.00	432.00	1.00	0.08
			1644025	432.00	433.00	1.00	0.15
			1644026	433.00	434.00	1.00	0.83
			1644027	434.00	435.00	1.00	0.21
			1644028	435.00	436.00	1.00	0.42
			1644029	436.00	437.00	1.00	0.03
			1644031	437.00	438.00	1.00	0.01
			1644032	438.00	439.50	1.50	0.01
			1644033	439.50	441.00	1.50	0.01
			1644034	441.00	442.40	1.40	0.01
			1644035	442.40	443.80	1.40	0.01
			1644036	443.80	444.30	0.50	0.01
			1644037	444.30	445.30	1.00	0.01
			1644038	445.30	446.00	0.70	0.01
			1644039	446.00	446.30	0.30	0.01
			1644041	446.30	447.00	0.70	0.01
			1644042	447.00	447.60	0.60	0.01

Hole Number: **NH19-033**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1644043	447.60	448.80	1.20	0.01
			1644044	448.80	450.00	1.20	0.01
			1644045	450.00	451.50	1.50	0.01
			1644046	451.50	453.00	1.50	0.16
			1644047	453.00	454.50	1.50	0.02
			1644048	454.50	455.50	1.00	0.01
			1644049	455.50	456.50	1.00	0.01
			1644051	456.50	457.00	0.50	0.01
			1644052	457.00	458.00	1.00	0.01
			1644053	458.00	459.00	1.00	0.01
			1644054	459.00	460.50	1.50	0.01
			1644055	460.50	462.00	1.50	0.01
			1644056	462.00	463.50	1.50	0.01
			1644057	463.50	465.00	1.50	0.01
			1644058	465.00	466.20	1.20	0.01
			1644059	466.20	467.40	1.20	0.01
			1644061	467.40	467.80	0.40	0.01
			1644062	467.80	468.50	0.70	0.01
			1644063	468.50	469.75	1.25	0.01
			1644064	469.75	471.00	1.25	0.01
			1644065	471.00	472.20	1.20	0.01
472.20	484.80	VMM, MAFIC VOLCANIC MASSIVE Typical Massive green-grey mafic rock (see previous VMM); lacking any sig alts/veins/sulphs. Lower contact placed where shearing/deformational features initiate, but mafic composition continues in next unit.	1644066	472.20	473.10	0.90	0.01
			1644067	473.10	474.00	0.90	0.01
484.80	499.10	VMO, MAFIC VOLCANIC UNDIVIDED Compositionally rock is still green-grey mafic, but this interval is exhibiting more intense (moderate throughout) deformational features. Primary feature is moderate patchy shearing 60-80 DTCA, as well as other flow features (ex flowtop). Sharp lower contact at ~75 DTCA fracturing.					
499.10	513.00	LDO, DIABASE DYKE Dark grey moderately magnetic diabase dyke lacking any significant sulphides, veining, or alteration. Weak erratic dark tension gashes (tourmaline) recognized. Weak chlorite noticed to be influencing fracture surfaces and occasional stringer. 10-15% QC as discontinuous gashes or stringers most often oriented high angle, concave. Trace sulphides. EOH.					

Hole Number: **NH19-033**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
N76993	398.50	399.00	0.0050
N76994	399.00	399.70	0.0200
N76995	399.70	400.50	0.0050
N76996	400.50	401.25	0.0050
N76997	401.25	402.00	0.0050
N76998	402.00	403.00	0.0050
N76999	403.00	404.00	0.0050
1644001	404.00	405.00	0.0100
1644002	405.00	406.50	0.0300
1644003	406.50	408.00	0.0050
1644004	408.00	409.50	0.0100
1644005	409.50	411.00	0.0200
1644006	411.00	412.00	0.2500
1644007	412.00	413.00	0.0300
1644008	413.00	414.00	0.0100
1644009	414.00	415.00	0.0600
1644011	415.00	416.00	0.0200
1644012	416.00	417.00	0.1400
1644013	417.00	418.50	0.1100
1644014	418.50	420.00	0.0600
1644015	420.00	421.50	0.0600
1644016	421.50	423.00	0.0400
1644017	423.00	424.50	0.0500
1644018	424.50	426.00	0.1100
1644019	426.00	427.50	0.0700
1644021	427.50	429.00	0.1400
1644022	429.00	430.00	0.1200
1644023	430.00	431.00	0.8200
1644024	431.00	432.00	0.0800
1644025	432.00	433.00	0.1500
1644026	433.00	434.00	0.8300
1644027	434.00	435.00	0.2100
1644028	435.00	436.00	0.4200
1644029	436.00	437.00	0.0300
1644031	437.00	438.00	0.0050
1644032	438.00	439.50	0.0050
1644033	439.50	441.00	0.0050
1644034	441.00	442.40	0.0050
1644035	442.40	443.80	0.0050

Hole Number: **NH19-033**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644036	443.80	444.30	0.0050
1644037	444.30	445.30	0.0050
1644038	445.30	446.00	0.0050
1644039	446.00	446.30	0.0050
1644041	446.30	447.00	0.0050
1644042	447.00	447.60	0.0050
1644043	447.60	448.80	0.0050
1644044	448.80	450.00	0.0050
1644045	450.00	451.50	0.0100
1644046	451.50	453.00	0.1600
1644047	453.00	454.50	0.0200
1644048	454.50	455.50	0.0050
1644049	455.50	456.50	0.0050
1644051	456.50	457.00	0.0050
1644052	457.00	458.00	0.0050
1644053	458.00	459.00	0.0050
1644054	459.00	460.50	0.0050
1644055	460.50	462.00	0.0100
1644056	462.00	463.50	0.0050
1644057	463.50	465.00	0.0050
1644058	465.00	466.20	0.0050
1644059	466.20	467.40	0.0050
1644061	467.40	467.80	0.0050
1644062	467.80	468.50	0.0050
1644063	468.50	469.75	0.0050
1644064	469.75	471.00	0.0050
1644065	471.00	472.20	0.0050
1644066	472.20	473.10	0.0050
1644067	473.10	474.00	0.0050

DETAILED LOG



Hole Number: **NH19-034**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -65.00
Project Number: MACKLE_TWP	North: 5375371.48	North:	Collar Az: 340.00
Location: Macklem Township	East: 512291.81	East:	Length: 498.00
	Elev: 290.30	Elev:	Start Depth: 0.00
Date Started: Jun 17, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jun 21, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 498.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	340.00	-65.00	APS	OK		81.00	340.40	-65.50	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m
132.00	341.90	-65.95	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m	183.00	344.30	-66.40	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m
234.00	346.20	-66.90	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m	285.00	347.10	-67.50	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m
336.00	348.70	-68.00	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m	387.00	350.50	-68.40	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m
438.00	350.50	-68.60	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m	489.00	350.70	-68.60	EZ Sho	OK	Azi corrected by -11.4 degrees, pulled back 6m

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	70.80	HPO, OVERBURDEN					
70.80	264.00	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine with patchy moderate medium grained appearance. Lacking any significant alteration, veining, or sulphides throughout. Very weak faded tension gouging in background of unit. Pervasive leucoxene fine grained. Patchy bleaching Overall ~3-5 % veining as erratic gashes to stringers. LC is arbitrary as pillow salvages and varioles come in. Trace sulphides.					
264.00	403.40	VMP, VOLCANIC MASSIVE PILLOWED Fine grained massive green grey mafic rock exhibiting pillowing features and exhibiting weak pervasive carbonate alteration giving a lighter grey-green colouration. Occasional sulphide clusters seen within pillows, as well as occasional hematite alteration. Varying amount of varioles along flows from weak to strong. Overall ~5 veining as erratic gashes to veinlets and QC occasionally infilling pillow features. Overall sulphides at trace to 1% Sharp LC 50 Degrees TCA.	1656256	402.40	403.40	1.00	0.01

DETAILED LOG

Hole Number: **NH19-034**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
403.40	468.10	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Pale greenish-grey porphyritic intrusive. Weak-mod green chlorite, weak-mod patchy grey carb, and weak patchy yellow sericite. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Weak-moderate tension gouging throughout resulting in wavy erratic dark gashes (chlorite) that weave remnant phenocrysts/QC eyes. Overall ~2-3% vfg- cg blebby/fracture controlled pyrite. ~10-15% erratic QC stringers or blebs. Sharp lower contact variable but average ~60 DTCA. VG @ 417.58m in Qtz veinlet with chlorite</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>423.50 - 428.85 IMO, MAFIC INTUSIVE</p> <p>Dark greenish yellow, with small IP2 lens at 5cm, small chlorite phenocrysts. sharp contacts at 80 degrees TCA, sulphides at 1-2%</p>	1656257	403.40	404.40	1.00	0.39
			1656258	404.40	405.00	0.60	0.52
			1656259	405.00	405.60	0.60	1.40
			1656261	405.60	406.25	0.65	3.27
			1656262	406.25	406.90	0.65	0.99
			1656263	406.90	408.00	1.10	0.29
			1656264	408.00	409.00	1.00	0.29
			1656265	409.00	410.00	1.00	0.09
			1656266	410.00	411.00	1.00	0.02
			1656267	411.00	412.00	1.00	0.02
			1656268	412.00	413.00	1.00	0.04
			1656269	413.00	414.00	1.00	0.13
			1656271	414.00	414.50	0.50	0.53
			1656272	414.50	415.50	1.00	0.07
			1656273	415.50	416.50	1.00	0.20
			1656274	416.50	417.00	0.50	1.59
			1656275	417.00	417.50	0.50	0.90
			1656276	417.50	418.00	0.50	2.69
			1656277	418.00	418.60	0.60	1.10
			1656278	418.60	419.20	0.60	1.19
			1656279	419.20	420.00	0.80	0.13
			1656281	420.00	421.00	1.00	0.08
			1656282	421.00	421.70	0.70	0.07
			1656283	421.70	422.70	1.00	0.01
			1656284	422.70	423.50	0.80	0.03
			1656285	423.50	424.85	1.35	0.02
			1656286	424.85	426.00	1.15	0.02
			1656287	426.00	427.00	1.00	0.15
			1656288	427.00	428.00	1.00	0.59
			1656289	428.00	428.40	0.40	5.21
			1656291	428.40	429.00	0.60	0.94
			1656292	429.00	429.50	0.50	2.36
			1656293	429.50	429.80	0.30	3.84
		1656294	429.80	430.75	0.95	0.64	
		1656295	430.75	431.25	0.50	0.21	
		1656296	431.25	432.05	0.80	1.27	
		1656297	432.05	432.40	0.35	2.50	
		1656298	432.40	433.25	0.85	0.73	
		1656299	433.25	433.80	0.55	0.27	
		1656301	433.80	435.00	1.20	0.03	
		1656302	435.00	436.10	1.10	0.14	
		1656303	436.10	437.10	1.00	0.54	

DETAILED LOG

Hole Number: **NH19-034**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656304	437.10	438.00	0.90	0.50
			1656305	438.00	438.80	0.80	0.21
			1656306	438.80	439.30	0.50	0.13
			1656307	439.30	439.90	0.60	0.31
			1656308	439.90	440.60	0.70	0.29
			1656309	440.60	441.60	1.00	0.23
			1656311	441.60	442.10	0.50	0.73
			1656312	442.10	443.25	1.15	0.90
			1656313	443.25	444.00	0.75	0.27
			1656314	444.00	445.00	1.00	0.55
			1656315	445.00	445.50	0.50	0.23
			1656316	445.50	446.20	0.70	0.07
			1656317	446.20	447.00	0.80	0.97
			1656318	447.00	448.00	1.00	0.13
			1656319	448.00	448.50	0.50	0.12
			1656321	448.50	449.00	0.50	0.31
			1656322	449.00	450.00	1.00	0.22
			1656323	450.00	451.00	1.00	0.02
			1656324	451.00	452.00	1.00	0.21
			1656325	452.00	452.50	0.50	0.74
			1656326	452.50	453.50	1.00	0.40
			1656327	453.50	454.10	0.60	0.89
			1656328	454.10	454.80	0.70	1.04
			1656329	454.80	455.80	1.00	0.89
			1656331	455.80	456.80	1.00	0.48
			1656332	456.80	458.00	1.20	0.35
			1656333	458.00	459.00	1.00	0.51
			1656334	459.00	459.50	0.50	1.07
			1656335	459.50	460.00	0.50	0.71
			1656336	460.00	460.50	0.50	3.01
			1656337	460.50	461.50	1.00	0.34
			1656338	461.50	462.00	0.50	2.32
			1656339	462.00	463.00	1.00	0.68
			1656341	463.00	464.00	1.00	0.74
			1656342	464.00	465.00	1.00	0.10
			1656343	465.00	466.00	1.00	0.06
			1656344	466.00	467.00	1.00	0.01
			1656345	467.00	467.60	0.60	0.03
			1656346	467.60	468.10	0.50	0.00

Hole Number: **NH19-034**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
468.10	492.20	VMO, MAFIC VOLCANIC UNDIVIDED Patchy shearing undivided mafic, dark green to greyish black, with blebby carb/chlorite, shearing becoming strong 477.3m. Previous unit IP2 fingers reaching up to 70cm and min 5cm spaced every ~1.5m till 477.3. Sulphides clusters in fractures at 2-3%, in mafic sulphides trace to 1%. Weak trace to 5% veinlets trending along shearing at 60 to 70 degrees TCA. LC is sharp at 70 degrees TCA, From 486m to 492.4m relic sheared pillow salvages.	1656347	468.10	469.20	1.10	0.01
			1656348	469.20	469.75	0.55	0.00
			1656349	469.75	471.00	1.25	0.00
			1656351	471.00	472.50	1.50	0.00
			1656352	472.50	473.60	1.10	0.00
			1656353	473.60	474.10	0.50	0.00
			1656354	474.10	474.80	0.70	0.00
			1656355	474.80	475.70	0.90	0.00
			1656356	475.70	476.80	1.10	0.00
			1656357	476.80	477.30	0.50	0.00
		1656358	477.30	478.30	1.00	0.00	
492.20	498.00	VUO, ULTRAMAFIC VOLCANIC Dark black with trace/weak strong chlorite fracture fills and calcite, strongly magnetic, fine grained trace sulphides.					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656256	402.40	403.40	0.0100
1656257	403.40	404.40	0.3930
1656258	404.40	405.00	0.5240
1656259	405.00	405.60	1.4040
1656261	405.60	406.25	3.2690
1656262	406.25	406.90	0.9900
1656263	406.90	408.00	0.2940
1656264	408.00	409.00	0.2930
1656265	409.00	410.00	0.0930
1656266	410.00	411.00	0.0170
1656267	411.00	412.00	0.0170
1656268	412.00	413.00	0.0400
1656269	413.00	414.00	0.1260
1656271	414.00	414.50	0.5340
1656272	414.50	415.50	0.0730
1656273	415.50	416.50	0.1980
1656274	416.50	417.00	1.5860
1656275	417.00	417.50	0.8990
1656276	417.50	418.00	2.6940
1656277	418.00	418.60	1.0970
1656278	418.60	419.20	1.1870
1656279	419.20	420.00	0.1280
1656281	420.00	421.00	0.0800

Hole Number: **NH19-034**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656282	421.00	421.70	0.0670
1656283	421.70	422.70	0.0130
1656284	422.70	423.50	0.0330
1656285	423.50	424.85	0.0230
1656286	424.85	426.00	0.0240
1656287	426.00	427.00	0.1530
1656288	427.00	428.00	0.5870
1656289	428.00	428.40	5.2100
1656291	428.40	429.00	0.9360
1656292	429.00	429.50	2.3640
1656293	429.50	429.80	3.8420
1656294	429.80	430.75	0.6360
1656295	430.75	431.25	0.2080
1656296	431.25	432.05	1.2710
1656297	432.05	432.40	2.5000
1656298	432.40	433.25	0.7340
1656299	433.25	433.80	0.2660
1656301	433.80	435.00	0.0290
1656302	435.00	436.10	0.1400
1656303	436.10	437.10	0.5420
1656304	437.10	438.00	0.5010
1656305	438.00	438.80	0.2050
1656306	438.80	439.30	0.1260
1656307	439.30	439.90	0.3140
1656308	439.90	440.60	0.2850
1656309	440.60	441.60	0.2300
1656311	441.60	442.10	0.7300
1656312	442.10	443.25	0.8990
1656313	443.25	444.00	0.2670
1656314	444.00	445.00	0.5520
1656315	445.00	445.50	0.2300
1656316	445.50	446.20	0.0690
1656317	446.20	447.00	0.9660
1656318	447.00	448.00	0.1290
1656319	448.00	448.50	0.1180
1656321	448.50	449.00	0.3080
1656322	449.00	450.00	0.2220
1656323	450.00	451.00	0.0230
1656324	451.00	452.00	0.2090

Hole Number: **NH19-034**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656325	452.00	452.50	0.7430
1656326	452.50	453.50	0.4030
1656327	453.50	454.10	0.8940
1656328	454.10	454.80	1.0380
1656329	454.80	455.80	0.8850
1656331	455.80	456.80	0.4780
1656332	456.80	458.00	0.3450
1656333	458.00	459.00	0.5060
1656334	459.00	459.50	1.0660
1656335	459.50	460.00	0.7060
1656336	460.00	460.50	3.0100
1656337	460.50	461.50	0.3420
1656338	461.50	462.00	2.3220
1656339	462.00	463.00	0.6790
1656341	463.00	464.00	0.7380
1656342	464.00	465.00	0.1040
1656343	465.00	466.00	0.0590
1656344	466.00	467.00	0.0060
1656345	467.00	467.60	0.0310
1656346	467.60	468.10	0.0025
1656347	468.10	469.20	0.0060
1656348	469.20	469.75	0.0025
1656349	469.75	471.00	0.0025
1656351	471.00	472.50	0.0025
1656352	472.50	473.60	0.0025
1656353	473.60	474.10	0.0025
1656354	474.10	474.80	0.0025
1656355	474.80	475.70	0.0025
1656356	475.70	476.80	0.0025
1656357	476.80	477.30	0.0025
1656358	477.30	478.30	0.0025

DETAILED LOG



Hole Number: **NH19-035**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -73.00
Project Number: MACKLE_TWP	North: 5375371.00	North:	Collar Az: 340.00
Location: Macklem Township	East: 512291.80	East:	Length: 537.00
	Elev: 290.30	Elev:	Start Depth: 0.00
Date Started: Jun 24, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jun 28, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 537.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	340.00	-73.00	APS	OK	Planned bearing for hole; reading taken by drillers at top of hole	78.00	342.90	-71.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
129.00	344.40	-71.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	180.00	346.50	-72.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
231.00	347.40	-72.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	282.00	349.30	-72.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
333.00	352.00	-72.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	384.00	352.50	-73.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
435.00	352.50	-73.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	486.00	352.70	-72.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
537.00	357.60	-72.80	EZ Sho	OK	Drillers wrote 'rock was magnetic from 521-537m'. Azi corrected by						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	67.50	HPO, OVERBURDEN Upper felsic/K-spar blocky/rounded chunks/boulders. Box starts at 64.7m but this rock continues until 67.5m					
67.50	269.00	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained crystallization. Leucoxene rich. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as wispy yellow sericite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Overall ~5-10% veining as erratic gashes to veinlets. Trace sulphides. Lower contact placed where pillowing features initiate.					

Hole Number: **NH19-035**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
269.00	327.00	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally similar to previous mafic rock (lighter green in colour), but this interval is exhibiting pillowing features (selveges, chill margins, etc.). Unique pinkish-grey blobby/pseudo-porphyroblastic texture is present along some pillow/flow margins; carb albite pillow rims. Minor darker mafic flow/intrusive 298.3-298.7m.</p> <p>Lacking any sig alts, veins (~5-8% erratic stringers-veinlets), and trace sulphides</p> <p>Lower contact where variolitic texture initiates.</p> <p>MINOR INTERVALS: Minor Interval: 298.30 - 298.70 IMO, MAFIC INTUSIVE</p>					
327.00	424.90	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Compositionally similar to previous mafic rock, but this interval is exhibiting variolitic texture throughout (mm to ~1cm scale). A few localized pillowing/flow margins, as well as weak localized brecciation (for example on either side of 366m block). Weak chlor/hematite on rare fracture surface, and weak patchy grey carb. Lighter grey fg minors believed to be intermediate intrusives; 355.8-356.8m, 357.7-358.7m, 409.4-409.8m. Lacking any sig veins (~5-8% erratic QC overall), or sulphides (1-2%) throughout.</p> <p>Sharp lower contact slightly variable 70-80 DTCA.</p> <p>MINOR INTERVALS: Minor Interval: 355.80 - 356.80 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 357.70 - 358.70 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 409.40 - 409.80 IIO, INTERMEDIATE INTRUSIVE</p>	1656359	423.00	424.00	1.00	0.01
			1656361	424.00	424.90	0.90	0.01

DETAILED LOG

Hole Number: **NH19-035**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
424.90	497.80	IP2, FELDSPAR & QUARTZ PORPHYRY Pominex Lense Green-pale grey (even pale yellow in localized sericite rich intervals) moderately glassy (silicified) porphyritic dyke (f-mg background remnant texture). Mod cloudy grey-white patchy carb bleaching, weak-mod patchy yellow sericite, and weak patchy chlorite alterations all influencing this unit; numerous cases of alteration bleeding out of fractures/veinlets. Upper contact until ~462m is primarily carb/ser bleaching, whereas following this chlorite appears more dominant (olive green in colour). Weak-mod erratic chloritic gashes/fractures also recognized, with occasionally QC/ alt haloes bleeding out of them; more so in increased areas of chlorite fractures (for example 459.7-453m). Weak patchy blocky core fracturing throughout localized portions of unit. 459.4-459.9m shows pinkish felsic/K-spar rich shear/breccia veining. ~20-25% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs. ~3% FF clustered fg/blebby mg py throughout; locally ~5%. Sharp lower contact at ~60 DTCA.	1656362	424.90	425.70	0.80	0.08
			1656363	425.70	426.70	1.00	8.87
			1656364	426.70	427.70	1.00	0.20
			1656365	427.70	429.00	1.30	0.82
			1656366	429.00	430.20	1.20	0.64
			1656367	430.20	431.60	1.40	0.56
			1656368	431.60	432.70	1.10	0.06
			1656369	432.70	433.90	1.20	0.32
			1656371	433.90	435.00	1.10	0.19
			1656372	435.00	435.90	0.90	0.36
			1656373	435.90	436.90	1.00	0.60
			1656374	436.90	437.40	0.50	0.02
			1656375	437.40	438.10	0.70	0.05
			1656376	438.10	439.30	1.20	4.07
			1656377	439.30	440.60	1.30	0.32
			1656378	440.60	440.90	0.30	0.63
			1656379	440.90	441.20	0.30	1.80
			1656381	441.20	442.30	1.10	3.32
			1656382	442.30	443.40	1.10	0.43
			1656383	443.40	444.00	0.60	0.03
			1656384	444.00	444.80	0.80	0.26
			1656385	444.80	445.90	1.10	2.04
			1656386	445.90	447.00	1.10	0.45
			1656387	447.00	448.30	1.30	0.06
			1656388	448.30	449.20	0.90	0.10
			1656389	449.20	450.00	0.80	1.78
			1656391	450.00	451.00	1.00	0.20
			1656392	451.00	452.00	1.00	0.50
			1656393	452.00	453.00	1.00	0.06
			1656394	453.00	454.00	1.00	0.19
			1656395	454.00	455.00	1.00	0.07
			1656396	455.00	456.00	1.00	0.20
			1656397	456.00	457.10	1.10	5.32
			1656398	457.10	458.20	1.10	0.46
			1656399	458.20	458.90	0.70	1.58
			1656401	458.90	459.50	0.60	0.28
			1656402	459.50	459.90	0.40	5.72
			1656403	459.90	460.50	0.60	0.08
			1656404	460.50	461.50	1.00	0.04
			1656405	461.50	462.20	0.70	186.50
			1656406	462.20	463.50	1.30	0.44
			1656407	463.50	465.00	1.50	1.67

DETAILED LOG

Hole Number: **NH19-035**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
			1656408	465.00	466.50	1.50	0.23
			1656409	466.50	468.00	1.50	0.35
			1656411	468.00	469.50	1.50	0.11
			1656412	469.50	471.00	1.50	1.70
			1656413	471.00	472.00	1.00	0.38
			1656414	472.00	473.00	1.00	0.03
			1656415	473.00	474.00	1.00	0.54
			1656416	474.00	475.50	1.50	0.03
			1656417	475.50	475.80	0.30	0.26
			1656418	475.80	476.60	0.80	0.00
			1656419	476.60	477.70	1.10	0.07
			1656421	477.70	478.70	1.00	0.27
			1656422	478.70	479.70	1.00	0.94
			1656423	479.70	480.70	1.00	0.55
			1656424	480.70	481.70	1.00	0.02
			1656425	481.70	482.80	1.10	0.00
			1656426	482.80	483.70	0.90	0.01
			1656427	483.70	484.50	0.80	0.30
			1656428	484.50	486.00	1.50	0.01
			1656429	486.00	487.50	1.50	0.01
			1656431	487.50	489.00	1.50	0.01
			1656432	489.00	490.20	1.20	0.01
			1656433	490.20	491.70	1.50	0.01
			1656434	491.70	492.70	1.00	0.02
			1656435	492.70	493.40	0.70	0.00
			1656436	493.40	494.00	0.60	0.02
			1656437	494.00	495.00	1.00	0.01
			1656438	495.00	496.00	1.00	0.03
			1656439	496.00	496.40	0.40	0.01
			1656441	496.40	497.10	0.70	0.03
			1656442	497.10	497.40	0.30	0.01
			1656443	497.40	497.80	0.40	0.01
497.80	503.20	VMO, MAFIC VOLCANIC UNDIVIDED	1656444	497.80	498.60	0.80	0.00
		Compositionally rock is green-grey mafic, but this interval is exhibiting weak deformational features such as average ~60 DTCA shear. Minor pinkish intrusive IFO 499.4-499.8m.	1656445	498.60	499.40	0.80	0.00
		Sharp lower contact at ~80 DTCA.	1656446	499.40	499.80	0.40	0.00
		MINOR INTERVALS:	1656447	499.80	501.00	1.20	0.01
		Minor Interval:	1656448	501.00	502.10	1.10	0.00
		499.40 - 499.80 IFO, FELSIC INTRUSIVE UNDIVIDED	1656449	502.10	503.20	1.10	0.00
		Pinkish silicified minor intrusive.					

Hole Number: **NH19-035**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
503.20	504.90	IP2, FELDSPAR & QUARTZ PORPHYRY See previous IP2 litho for more detailed description. ~3-5% blebby/FF py, weak-mod carb/silicification alts. Sharp lower contact at ~75 DTCA.	1656451	503.20	503.50	0.30	0.00
			1656452	503.50	504.20	0.70	0.00
			1656453	504.20	504.90	0.70	0.00
504.90	521.40	VMO, MAFIC VOLCANIC UNDIVIDED Continuation of recent VMO; this interval shows even more intense shearing (mod-strong typically 60-80 DTCA), and unique flow features as well. Lacking any sig alts/sulphs/veins. Sharp lower contact at sharp 80 DTCA fracture.	1656454	504.90	505.90	1.00	0.00
			1656455	505.90	507.00	1.10	0.00
521.40	537.00	LDO, DIABASE DYKE Dark grey moderately magnetic diabase dyke lacking any significant sulphides, veining, or alteration. Weak erratic dark tension gashes (tourmaline) recognized. Weak chlorite noticed to be influencing fracture surfaces and occasional stringer. 10-15% QC as discontinuous gashes or stringers most often oriented high angle, concave. Trace sulphides. EOH.					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656359	423.00	424.00	0.0110
1656361	424.00	424.90	0.0050
1656362	424.90	425.70	0.0800
1656363	425.70	426.70	8.8730
1656364	426.70	427.70	0.2030
1656365	427.70	429.00	0.8190
1656366	429.00	430.20	0.6400
1656367	430.20	431.60	0.5550
1656368	431.60	432.70	0.0560
1656369	432.70	433.90	0.3180
1656371	433.90	435.00	0.1910
1656372	435.00	435.90	0.3560
1656373	435.90	436.90	0.5950
1656374	436.90	437.40	0.0210
1656375	437.40	438.10	0.0450
1656376	438.10	439.30	4.0660
1656377	439.30	440.60	0.3150
1656378	440.60	440.90	0.6270
1656379	440.90	441.20	1.8000
1656381	441.20	442.30	3.3150
1656382	442.30	443.40	0.4270

Hole Number: **NH19-035**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656383	443.40	444.00	0.0320
1656384	444.00	444.80	0.2610
1656385	444.80	445.90	2.0350
1656386	445.90	447.00	0.4470
1656387	447.00	448.30	0.0630
1656388	448.30	449.20	0.1010
1656389	449.20	450.00	1.7750
1656391	450.00	451.00	0.1960
1656392	451.00	452.00	0.5030
1656393	452.00	453.00	0.0560
1656394	453.00	454.00	0.1880
1656395	454.00	455.00	0.0650
1656396	455.00	456.00	0.1990
1656397	456.00	457.10	5.3240
1656398	457.10	458.20	0.4640
1656399	458.20	458.90	1.5750
1656401	458.90	459.50	0.2780
1656402	459.50	459.90	5.7220
1656403	459.90	460.50	0.0810
1656404	460.50	461.50	0.0370
1656405	461.50	462.20	186.5000
1656406	462.20	463.50	0.4350
1656407	463.50	465.00	1.6680
1656408	465.00	466.50	0.2250
1656409	466.50	468.00	0.3490
1656411	468.00	469.50	0.1090
1656412	469.50	471.00	1.6960
1656413	471.00	472.00	0.3800
1656414	472.00	473.00	0.0320
1656415	473.00	474.00	0.5390
1656416	474.00	475.50	0.0250
1656417	475.50	475.80	0.2560
1656418	475.80	476.60	0.0025
1656419	476.60	477.70	0.0700
1656421	477.70	478.70	0.2650
1656422	478.70	479.70	0.9430
1656423	479.70	480.70	0.5500
1656424	480.70	481.70	0.0150
1656425	481.70	482.80	0.0025

Hole Number: **NH19-035**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656426	482.80	483.70	0.0100
1656427	483.70	484.50	0.2990
1656428	484.50	486.00	0.0140
1656429	486.00	487.50	0.0070
1656431	487.50	489.00	0.0070
1656432	489.00	490.20	0.0100
1656433	490.20	491.70	0.0080
1656434	491.70	492.70	0.0170
1656435	492.70	493.40	0.0025
1656436	493.40	494.00	0.0230
1656437	494.00	495.00	0.0130
1656438	495.00	496.00	0.0320
1656439	496.00	496.40	0.0050
1656441	496.40	497.10	0.0290
1656442	497.10	497.40	0.0090
1656443	497.40	497.80	0.0070
1656444	497.80	498.60	0.0025
1656445	498.60	499.40	0.0025
1656446	499.40	499.80	0.0025
1656447	499.80	501.00	0.0050
1656448	501.00	502.10	0.0025
1656449	502.10	503.20	0.0025
1656451	503.20	503.50	0.0025
1656452	503.50	504.20	0.0025
1656453	504.20	504.90	0.0025
1656454	504.90	505.90	0.0025
1656455	505.90	507.00	0.0025

DETAILED LOG



Hole Number: **NH19-036**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -53.00
Project Number: MACKLE_TWP	North: 5374969.00	North:	Collar Az: 15.00
Location: Macklem Township	East: 512080.00	East:	Length: 850.00
	Elev: 290.00	Elev:	Start Depth: 0.00
Date Started: Jul 02, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jul 17, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 850.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	15.20	-53.00	APS	OK		75.00	13.90	-54.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
126.00	17.80	-54.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	177.00	18.80	-54.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
228.00	19.90	-54.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	279.00	22.60	-54.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
330.00	23.60	-55.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	381.00	29.80	-55.50	EZ Sho	OK	
432.00	31.70	-55.10	EZ Sho	OK		483.00	34.30	-55.60	EZ Sho	OK	
534.00	36.10	-55.70	EZ Sho	OK		586.00	38.20	-55.30	EZ Sho	OK	
640.00	38.40	-55.10	EZ Sho	OK		691.00	39.60	-54.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
745.00	42.30	-54.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	796.00	42.50	-54.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
850.00	40.30	-53.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	62.60	HPO, OVERBURDEN Box initiates at 62.6m, but casing block reads 63m.					
62.60	561.00	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained crystallization. Leucoxene rich. Very intense blocky core fracturing/fragmentation from start of hole until ~126m. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as wispy yellow sericite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Very weak patchy pillowing features initiate around 184m. Additionally, moderate ~75-80 DTCA shear patch present from 207.3-208.3m with wormy pink QC (+felsic?) veinlets, and weak pale yellow sericite alteration. Overall ~5-8% veining as erratic gashes to veinlets. 277.1-277.3m is a mid angle (~25-40DTCA 'c' shaped) vein hosting blebby (even cubic) pyrite. other veins in this area occasionally en echelon ~45-70 DTCA. Trace sulphides. Sharp lower contact ~80DTCA at flow where pillowing initiates.					

Hole Number: **NH19-036**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
561.00	613.00	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Lighter green-grey mafic rock exhibiting pillowing features throughout. localized brecciation prior to 571m block. Lacking any significant alts (weak fracture associated chlo/carb)/veins (~8-10% erratic gashes to rare shear/breccia associated)/sulphs (trace throughout, local 1-2% clusters). Lower contact placed where pillowing features gradually fade and rock becomes massive once again.</p>					
613.00	647.40	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive mafic rock, see recent VMM for more detailed description. ~8-10% QC overall. Trace sulphides, lacking any significant alts. Darker grey believed to be IIO minors present: 641-641.6m, 642.1-642.6m, and 643.3-644.9m. Lower contact placed where variolitic texture initiates.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 641.00 - 641.60 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 642.10 - 642.60 IIO, INTERMEDIATE INTRUSIVE</p> <p>Minor Interval: 643.30 - 644.90 IIO, INTERMEDIATE INTRUSIVE</p>					
647.40	757.50	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Compositionally rock is still greyy grey mafic, but this interval is exhibiting abundant variolitic texture throughout (mm - ~1cm scale), as well as other unique flow textures (ex spinifex, breccia). One unique purple albitic altered halo is bleeding out of a low angle (~20DTCA) QC veinlet from 654.3-655.1m, and ~655.3-655.5m shows the albite again. Weak patchy carb/sericite/chlorite alts influencing. ~8-10% erratic QC. Trace sulphides overall, but 1-2% clusters may exist. Sharp lower contact variable 20-30 DTCA.</p>	1656456	653.00	653.60	0.60	0.00
			1656457	653.60	654.30	0.70	0.00
			1656458	654.30	655.10	0.80	0.00
			1656459	655.10	655.50	0.40	0.01
			1656461	655.50	656.00	0.50	0.01
			1656462	656.00	656.70	0.70	0.00
			1656463	755.70	756.70	1.00	0.01
			1656464	756.70	757.50	0.80	0.01

DETAILED LOG

Hole Number: **NH19-036**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
757.50	827.45	IP2, FELDSPAR & QUARTZ PORPHYRY Pominex Lense Green-pale grey (even pale yellow in localized sericite rich intervals) moderately glassy (silicified) porphyritic dyke (f-mg background remnant texture). Mod cloudy grey-white patchy carb bleaching, weak-mod patchy yellow sericite, and weak patchy chlorite alterations all influencing this unit; numerous cases of alteration bleeding out of fractures/veinlets. In areas of increased chlorite/tourmaline fracturing, larger quantity of pyrite clusters occur, with relatively increasing alteration haloes bleeding out as well (for example ~757.7m). ~20% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs; occasionally en echelon QC or chlor fractures/veinlets, most commonly oriented ~50-75DTCA. ~3% FF clustered fg/blebby mg py throughout; locally may reach ~4-5%. Starting at 768m Pervasive dark grey green mafic/rafts intrusions throughout MINOR INTERVALS: Minor Interval: 768.70 - 768.90 IMO, MAFIC INTUSIVE Fine grained, sharp contacts, generally ~70 to 80 degrees, trace to 1% sulphides, reaching up to 2-3% on contacts Minor Interval: 771.50 - 773.10 IMO, MAFIC INTUSIVE Minor Interval: 777.48 - 777.85 IMO, MAFIC INTUSIVE Minor Interval: 792.00 - 794.62 IMO, MAFIC INTUSIVE Minor Interval: 795.75 - 796.65 IMO, MAFIC INTUSIVE Minor Interval: 798.15 - 798.85 IMO, MAFIC INTUSIVE Minor Interval: 823.20 - 823.50 IMO, MAFIC INTUSIVE Minor Interval: 824.60 - 826.00 IMO, MAFIC INTUSIVE	1656465	757.50	758.10	0.60	0.64
			1656466	758.10	758.70	0.60	0.15
			1656467	758.70	759.40	0.70	0.01
			1656468	759.40	760.00	0.60	0.01
			1656469	760.00	761.00	1.00	0.01
			1656471	761.00	762.00	1.00	0.01
			1656472	762.00	763.00	1.00	0.00
			1656473	763.00	763.60	0.60	0.01
			1656474	763.60	764.50	0.90	0.08
			1656475	764.50	765.40	0.90	0.23
			1656476	765.40	766.00	0.60	0.11
			1656477	766.00	767.00	1.00	0.08
			1656478	767.00	768.00	1.00	0.08
			1656479	768.00	768.70	0.70	0.02
			1656481	768.70	769.10	0.40	0.01
			1656482	769.10	769.75	0.65	0.04
			1656483	769.75	770.50	0.75	0.01
			1656484	770.50	771.50	1.00	0.01
			1656485	771.50	772.50	1.00	0.01
			1656486	772.50	773.10	0.60	0.01
			1656487	773.10	774.10	1.00	0.02
			1656488	774.10	775.20	1.10	0.01
			1656489	775.20	776.00	0.80	0.02
			1656491	776.00	776.90	0.90	0.01
			1656492	776.90	777.48	0.58	0.01
			1656493	777.48	778.00	0.52	0.01
			1656494	778.00	779.00	1.00	0.01
			1656495	779.00	780.00	1.00	0.00
			1656496	780.00	781.00	1.00	0.05
			1656497	781.00	781.50	0.50	0.06
			1656498	781.50	782.50	1.00	0.04
			1656499	782.50	783.70	1.20	0.06
			1656501	783.70	784.20	0.50	0.58
			1656502	784.20	784.70	0.50	0.91
			1656503	784.70	785.20	0.50	0.47
			1656504	785.20	786.00	0.80	0.09
			1656505	786.00	786.50	0.50	0.12
			1656506	786.50	787.00	0.50	0.05
			1656507	787.00	787.75	0.75	0.42
			1656508	787.75	788.60	0.85	0.14
			1656509	788.60	789.20	0.60	1.49
			1656511	789.20	789.60	0.40	0.31

DETAILED LOG

Hole Number: **NH19-036**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656512	789.60	790.00	0.40	0.83
			1656513	790.00	791.00	1.00	0.52
			1656514	791.00	792.00	1.00	0.24
			1656515	792.00	793.40	1.40	0.61
			1656516	793.40	794.60	1.20	0.00
			1656517	794.60	795.46	0.86	0.03
			1656518	795.46	796.00	0.54	0.07
			1656519	796.00	796.60	0.60	0.00
			1656521	796.60	797.20	0.60	0.14
			1656522	797.20	798.15	0.95	0.02
			1656523	798.15	798.85	0.70	0.00
			1656524	798.85	799.40	0.55	0.17
			1656525	799.40	800.00	0.60	0.06
			1656526	800.00	801.00	1.00	0.03
			1656527	801.00	802.00	1.00	0.17
			1656528	802.00	803.00	1.00	0.97
			1656529	803.00	803.45	0.45	0.01
			1656531	803.45	803.85	0.40	0.01
			1656532	803.85	804.80	0.95	0.00
			1656533	804.80	805.80	1.00	0.05
			1656534	805.80	806.80	1.00	0.06
			1656535	806.80	807.30	0.50	0.01
			1656536	807.30	807.70	0.40	0.04
			1656537	807.70	808.70	1.00	0.05
			1656538	808.70	809.70	1.00	0.02
			1656539	809.70	811.00	1.30	0.06
			1656541	811.00	811.70	0.70	0.62
			1656542	811.70	812.10	0.40	0.01
			1656543	812.10	812.85	0.75	0.02
			1656544	812.85	813.50	0.65	0.02
			1656545	813.50	814.00	0.50	0.01
			1656546	814.00	815.00	1.00	0.03
			1656547	815.00	816.00	1.00	0.07
			1656548	816.00	817.00	1.00	0.02
			1656549	817.00	818.00	1.00	1.46
			1656551	818.00	818.60	0.60	0.41
			1656552	818.60	819.50	0.90	0.04
			1656553	819.50	820.00	0.50	0.02
			1656554	820.00	821.00	1.00	0.20
			1656555	821.00	822.00	1.00	0.06
			1656556	822.00	823.00	1.00	0.13
			1656557	823.00	823.50	0.50	0.78

DETAILED LOG

Hole Number: **NH19-036**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656558	823.50	824.40	0.90	0.42
			1656559	824.40	825.00	0.60	0.06
			1656561	825.00	826.00	1.00	0.04
			1656562	826.00	827.00	1.00	0.04
			1656563	827.00	827.45	0.45	0.04
827.45	850.00	VMV, MAFIC VOLCANIC VARIOLITIC Dark grey to green, with small patchy bleached lenses, predominately fine grained with medium grained lenses, pervasive flow breccias throughout, trace to 5% QC veinlets with small zone veins and veinlets reaching up to ~15% from 837.9 to 841.0m trending at 40 to 50 degrees, Trace to 1% sulphides, varioles along flow breccias ~5mm to 7mm in size, moderate to weak carb alteration. MINOR INTERVALS: Minor Interval: 831.30 - 833.05 IP2, FELDSPAR & QUARTZ PORPHYRY Pominex, Similar textures and qualities as Previous IP2.	1656564	827.45	828.40	0.95	0.05
			1656565	828.40	829.50	1.10	0.00
			1656566	829.50	830.50	1.00	0.00
			1656567	830.50	831.30	0.80	0.01
			1656568	831.30	832.00	0.70	0.04
			1656569	832.00	833.05	1.05	0.17
			1656571	833.05	834.00	0.95	0.00
			1656572	837.00	837.80	0.80	0.00
			1656573	837.80	838.60	0.80	0.01
			1656574	838.60	838.90	0.30	0.00
			1656575	838.90	839.90	1.00	0.00
			1656576	839.90	840.40	0.50	0.01
			1656577	840.40	841.00	0.60	0.01
			1656578	841.00	842.00	1.00	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656456	653.00	653.60	0.0025
1656457	653.60	654.30	0.0025
1656458	654.30	655.10	0.0025
1656459	655.10	655.50	0.0110
1656461	655.50	656.00	0.0050
1656462	656.00	656.70	0.0025
1656463	755.70	756.70	0.0090
1656464	756.70	757.50	0.0130
1656465	757.50	758.10	0.6380
1656466	758.10	758.70	0.1490
1656467	758.70	759.40	0.0140
1656468	759.40	760.00	0.0080
1656469	760.00	761.00	0.0110
1656471	761.00	762.00	0.0120
1656472	762.00	763.00	0.0025
1656473	763.00	763.60	0.0050
1656474	763.60	764.50	0.0830
1656475	764.50	765.40	0.2300

Hole Number: **NH19-036**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656476	765.40	766.00	0.1120
1656477	766.00	767.00	0.0770
1656478	767.00	768.00	0.0840
1656479	768.00	768.70	0.0150
1656481	768.70	769.10	0.0090
1656482	769.10	769.75	0.0380
1656483	769.75	770.50	0.0110
1656484	770.50	771.50	0.0070
1656485	771.50	772.50	0.0080
1656486	772.50	773.10	0.0090
1656487	773.10	774.10	0.0150
1656488	774.10	775.20	0.0120
1656489	775.20	776.00	0.0160
1656491	776.00	776.90	0.0110
1656492	776.90	777.48	0.0100
1656493	777.48	778.00	0.0140
1656494	778.00	779.00	0.0050
1656495	779.00	780.00	0.0025
1656496	780.00	781.00	0.0460
1656497	781.00	781.50	0.0580
1656498	781.50	782.50	0.0380
1656499	782.50	783.70	0.0550
1656501	783.70	784.20	0.5800
1656502	784.20	784.70	0.9120
1656503	784.70	785.20	0.4680
1656504	785.20	786.00	0.0900
1656505	786.00	786.50	0.1180
1656506	786.50	787.00	0.0540
1656507	787.00	787.75	0.4180
1656508	787.75	788.60	0.1380
1656509	788.60	789.20	1.4860
1656511	789.20	789.60	0.3110
1656512	789.60	790.00	0.8340
1656513	790.00	791.00	0.5160
1656514	791.00	792.00	0.2400
1656515	792.00	793.40	0.6090
1656516	793.40	794.60	0.0025
1656517	794.60	795.46	0.0260
1656518	795.46	796.00	0.0680

Hole Number: **NH19-036**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656519	796.00	796.60	0.0025
1656521	796.60	797.20	0.1370
1656522	797.20	798.15	0.0150
1656523	798.15	798.85	0.0025
1656524	798.85	799.40	0.1670
1656525	799.40	800.00	0.0600
1656526	800.00	801.00	0.0320
1656527	801.00	802.00	0.1660
1656528	802.00	803.00	0.9730
1656529	803.00	803.45	0.0090
1656531	803.45	803.85	0.0080
1656532	803.85	804.80	0.0025
1656533	804.80	805.80	0.0510
1656534	805.80	806.80	0.0560
1656535	806.80	807.30	0.0120
1656536	807.30	807.70	0.0390
1656537	807.70	808.70	0.0450
1656538	808.70	809.70	0.0210
1656539	809.70	811.00	0.0580
1656541	811.00	811.70	0.6220
1656542	811.70	812.10	0.0100
1656543	812.10	812.85	0.0240
1656544	812.85	813.50	0.0220
1656545	813.50	814.00	0.0080
1656546	814.00	815.00	0.0250
1656547	815.00	816.00	0.0670
1656548	816.00	817.00	0.0210
1656549	817.00	818.00	1.4630
1656551	818.00	818.60	0.4080
1656552	818.60	819.50	0.0350
1656553	819.50	820.00	0.0220
1656554	820.00	821.00	0.1990
1656555	821.00	822.00	0.0550
1656556	822.00	823.00	0.1270
1656557	823.00	823.50	0.7820
1656558	823.50	824.40	0.4180
1656559	824.40	825.00	0.0580
1656561	825.00	826.00	0.0350
1656562	826.00	827.00	0.0420

Hole Number: **NH19-036**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656563	827.00	827.45	0.0440
1656564	827.45	828.40	0.0470
1656565	828.40	829.50	0.0025
1656566	829.50	830.50	0.0025
1656567	830.50	831.30	0.0090
1656568	831.30	832.00	0.0370
1656569	832.00	833.05	0.1660
1656571	833.05	834.00	0.0025
1656572	837.00	837.80	0.0025
1656573	837.80	838.60	0.0130
1656574	838.60	838.90	0.0025
1656575	838.90	839.90	0.0025
1656576	839.90	840.40	0.0090
1656577	840.40	841.00	0.0070
1656578	841.00	842.00	0.0080

DETAILED LOG



Hole Number: **NH19-037**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -53.00
Project Number: MACKLE_TWP	North: 5374969.00	North:	Collar Az: 5.00
Location: Macklem Township	East: 512080.60	East:	Length: 787.00
	Elev: 295.30	Elev:	Start Depth: 0.00
Date Started: Jul 17, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Aug 01, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage:
	Pulse EM Survey: N	Casing: YES	Final Depth: 787.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	5.10	-53.00	APS	OK	Planned bearing for hole; reading taken by drillers at top of hole	76.00	3.90	-53.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
127.00	6.40	-52.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	178.00	7.20	-52.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
229.00	9.00	-52.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	280.00	10.60	-52.10	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
331.00	13.70	-51.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	385.00	15.60	-51.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
436.00	17.40	-51.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	487.00	19.80	-51.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
538.00	21.20	-50.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	589.00	22.60	-50.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
640.00	24.40	-49.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	691.00	25.60	-49.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
742.00	26.00	-48.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m						

Detailed Lithology			Assay Data				
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	64.40	HPO, OVERBURDEN Box 1 starts at 63.3m, but mafic rock does not initiate until 64.4m.					
64.40	511.00	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained crystallization. Leucoxene rich. Very intense blocky core fracturing/fragmentation in uppermost 15 boxes. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as wispy yellow sericite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Weak deformational (ex weak ~60DTCA shear)/flow features recognized to initiate just prior to 172m block; even weak brecciation at ~188.5m. Very weak localized variolitic texture for example ~186m. Variable flow contact at 313.5m; medium grained crystallized matrix becomes vfg/massive. Overall ~5-8% veining as erratic gashes to veinlets. Sharp LC at 80 degrees TCA Trace sulphides Gabbro like from 442 to ~454m					

Hole Number: **NH19-037**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
511.00	539.70	<p>VMP, VOLCANIC MASSIVE PILLOWED Massive green grey mafic rock with areas of vfg, with pervasive flow salvages. Lacking any significant alteration, veining, or sulphides throughout and faded faded amygdules. Very weak chlorite may be on fracture surfaces or patchy. 'Salt and pepper' appearance may be present. Overall ~3-5 % veining as erratic gashes to stringers. Trace sulphides.</p> <p>MINOR INTERVALS: Minor Interval: 529.35 - 530.50 IMD, MAFIC DYKE Dark black intrusion, vfg, lacking significant alteration, sharp contacts. Minor Interval: 539.50 - 539.70 IMD, MAFIC DYKE</p>					
539.70	576.35	<p>VMM, MAFIC VOLCANIC MASSIVE Similar textures and qualities as 64.4 to 539.7m</p>					
576.35	679.60	<p>VMV, MAFIC VOLCANIC VARIOLITIC VIPOND Grey grey mafic, but this interval is exhibiting abundant variolitic texture throughout (mm - ~1cm scale), as well as other unique flow textures (ex spinifex, breccia) localized but rare. Weak patchy carb/sericite/chlorite alts influencing. Minor darker grey Intermediate intrusive 667.9-668.1m. ~8-10% erratic QC. Trace sulphides overall, but 1-2% clusters may exist. Sharp lower contact variable 70-80 DTCA.</p> <p>MINOR INTERVALS: Minor Interval: 593.30 - 593.95 IMD, MAFIC DYKE Aphanitic dark black with sharp contacts Minor Interval: 595.30 - 596.00 IMD, MAFIC DYKE same as previous Minor Interval: 596.40 - 597.40 IMD, MAFIC DYKE same as previous Minor Interval: 667.90 - 668.10 IMD, MAFIC DYKE</p>					
679.60	684.60	<p>IMD, MAFIC DYKE Darker grey aphanitic mafic rock lacking any sig alts/veins(~5%)/sulphs (trace). Sharp lower contact at ~80 DTCA fracturing.</p>	1656579	682.00	683.30	1.30	0.00
			1656581	683.30	684.60	1.30	0.01

DETAILED LOG

Hole Number: **NH19-037**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
684.60	729.10	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Pominex Lense Green-grey (even pale yellow in localized sericite rich intervals) moderately glassy (silicious) porphyritic dyke (fg background remnant texture). Upper portion of unit (upper contact until 703.8m) shows weak-mod patchy grey carb+/-chlorite; 703.8m until lower contact shows strong patches of pervasive bleaching (cloudy white carb and tan/pale yellow sericite), with increased chloritic erratic gashes, sulphide content, and even cases of calcitic dissolution of veins. Numerous cases of alteration bleeding out of fractures/veinlets. Weak-mod erratic chloritic gashes/fractures also recognized, with occasionally QC/ alt haloes bleeding out of them. In areas of increased chlorite/tourmaline fracturing, larger quantity of pyrite clusters occur. Minor IMO 685.8-686.3m, and AEO minors 723.6-723.9m, and 724.6-724.7m. ~25-30% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs/floods. ~3% FF blebby/clustered (primarily in alt haloes) VFG py in upper described portion, and 4-5% in lower (703.8m-bottom contact). Sharp lower contact at ~80 DTCA.</p> <p>MINOR INTERVALS: Minor Interval: 685.80 - 686.30 IMO, MAFIC INTUSIVE Minor Interval: 723.60 - 723.90 AEO, SERICITE ALTERED ROCK Intensely sericite altered intrusive; believed to be mafic in composition. Minor Interval: 724.60 - 724.70 AEO, SERICITE ALTERED ROCK</p>	1656582	684.60	685.80	1.20	0.00
			1656583	685.80	686.30	0.50	0.01
			1656584	686.30	687.10	0.80	0.01
			1656585	687.10	688.00	0.90	0.01
			1656586	688.00	688.80	0.80	0.04
			1656587	688.80	689.90	1.10	0.02
			1656588	689.90	691.00	1.10	0.07
			1656589	691.00	692.00	1.00	0.07
			1656591	692.00	693.00	1.00	0.43
			1656592	693.00	694.00	1.00	0.11
			1656593	694.00	695.00	1.00	0.02
			1656594	695.00	696.00	1.00	0.09
			1656595	696.00	697.00	1.00	0.06
			1656596	697.00	698.00	1.00	0.75
			1656597	698.00	699.00	1.00	0.06
			1656598	699.00	700.00	1.00	0.15
			1656599	700.00	700.80	0.80	2.17
			1656601	700.80	701.90	1.10	0.05
			1656602	701.90	703.00	1.10	0.07
			1656603	703.00	703.80	0.80	0.05
			1656604	703.80	704.50	0.70	2.09
			1656605	704.50	705.30	0.80	1.11
			1656606	705.30	706.00	0.70	0.26
			1656607	706.00	706.70	0.70	0.11
			1656608	706.70	707.40	0.70	0.30
			1656609	707.40	708.50	1.10	0.41
			1656611	708.50	709.40	0.90	0.72
			1656612	709.40	710.30	0.90	0.68
			1656613	710.30	711.20	0.90	0.41
			1656614	711.20	712.00	0.80	0.26
			1656615	712.00	713.00	1.00	0.19
			1656616	713.00	714.00	1.00	1.25
			1656617	714.00	715.00	1.00	0.54
			1656618	715.00	716.00	1.00	0.18
			1656619	716.00	717.00	1.00	5.20
			1656621	717.00	718.00	1.00	4.44
			1656622	718.00	719.00	1.00	0.69
			1656623	719.00	719.70	0.70	0.53
			1656624	719.70	720.70	1.00	1.17
			1656625	720.70	721.50	0.80	0.32
			1656626	721.50	722.10	0.60	0.58
			1656627	722.10	723.00	0.90	1.15

DETAILED LOG

Hole Number: **NH19-037**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656628	723.00	723.60	0.60	0.63
			1656629	723.60	723.90	0.30	1.24
			1656631	723.90	724.70	0.80	0.53
			1656632	724.70	725.80	1.10	1.16
			1656633	725.80	727.00	1.20	1.26
			1656634	727.00	728.00	1.00	0.24
			1656635	728.00	729.10	1.10	0.10
729.10	731.90	<p>ISO, SYENITIC INTRUSIVE</p> <p>Uppermost 1m or so shows grey carb and possibly very weak chlorite influencing, but believed to be syenitic composition throughout. Pink-grey syenitic intrusive interval with mm scale black to white blebs/flakes, and qtz eyes present in the background matrix. Weak to moderate tension gouging present, resulting in dark black erratic chlorite filled gashes/fractures. ~10% QC as erratic gashes. 1-2% fg py. Sharp lower contact at slightly variable but essentially perp TCA fracturing.</p>	1656636	729.10	730.00	0.90	0.00
			1656637	730.00	731.00	1.00	0.00
			1656638	731.00	731.90	0.90	0.00

Hole Number: **NH19-037**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
731.90	759.20	IP2, FELDSPAR & QUARTZ PORPHYRY See recent IP2 pomine lens for more detailed description. Upper portion of this unit (until about 742.8m or so) is exhibiting strong carb+ser bleaching and 3%, up to 5% local sulphide content. Following this interval is weak-mod carb (primarily bleeding out as alt haloes) and weaker chlorite/sericite alterations, 2-3% py throughout. Increased alteration patches potentially associated with syenite intrusives coming in, as a few minors exist in this unit as well as the upper major influencing surrounding IP2 lithos. ISOs: 733.7-734.4m, 738-738.3m. Minor AEOs 738.9-739.1m, 742.5-742.8m, and numerous IIO minors 745.5-745.6m, 747-747.1m, 747.9-748.3m, 748.8-749.2m, 749.6-749.7m, 753.5-753.7m, and 757.2-758m. Sharp typically high angle >60 DTCA angles for these minors. Sharp lower contact at ~80 DTCA fracturing. MINOR INTERVALS: Minor Interval: 733.70 - 734.40 ISO, SYENITIC INTRUSIVE Minor syenite intrusive, potentially explains intense surrounding alteration. Minor Interval: 738.00 - 738.30 ISO, SYENITIC INTRUSIVE see previous Minor Interval: 738.90 - 739.10 AEO, SERICITE ALTERED ROCK Intensely bleached sericite altered intrusive of unknown composition Minor Interval: 742.50 - 742.80 AEO, SERICITE ALTERED ROCK See previous AEO Minor Interval: 745.50 - 745.60 IIO, INTERMEDIATE INTRUSIVE Lighter grey intrusive believed to be intermediate in composition with speckled black texture. Sharp contacts typically 60-75DTCA (for all upcoming IIOs) Minor Interval: 747.00 - 747.10 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 747.40 - 747.60 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 747.90 - 748.30 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 748.80 - 749.20 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 749.60 - 749.70 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 753.50 - 753.70 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 755.70 - 756.10 IIO, INTERMEDIATE INTRUSIVE	1656639	731.90	733.00	1.10	0.02
			1656641	733.00	733.70	0.70	0.00
			1656642	733.70	734.40	0.70	0.00
			1656643	734.40	735.10	0.70	0.06
			1656644	735.10	736.00	0.90	0.09
			1656645	736.00	737.00	1.00	0.15
			1656646	737.00	737.90	0.90	0.04
			1656647	737.90	738.20	0.30	0.01
			1656648	738.20	738.90	0.70	0.01
			1656649	738.90	739.20	0.30	0.00
			1656651	739.20	740.10	0.90	0.07
			1656652	740.10	741.00	0.90	0.36
			1656653	741.00	742.00	1.00	0.02
			1656654	742.00	742.50	0.50	0.10
			1656655	742.50	742.80	0.30	0.00
			1656656	742.80	744.00	1.20	0.06
			1656657	744.00	745.00	1.00	0.02
			1656658	745.00	745.60	0.60	0.02
			1656659	745.60	747.00	1.40	0.00
			1656661	747.00	747.40	0.40	0.02
			1656662	747.40	747.90	0.50	0.00
			1656663	747.90	748.30	0.40	0.00
			1656664	748.30	748.80	0.50	0.01
			1656665	748.80	749.20	0.40	0.00
			1656666	749.20	749.70	0.50	0.00
			1656667	749.70	751.00	1.30	0.02
			1656668	751.00	752.20	1.20	0.19
			1656669	752.20	753.50	1.30	0.01
			1656671	753.50	754.00	0.50	0.01
			1656672	754.00	755.00	1.00	0.00
			1656673	755.00	755.70	0.70	0.00
			1656674	755.70	756.10	0.40	0.00
			1656675	756.10	757.20	1.10	0.00
			1656676	757.20	758.00	0.80	0.01
			1656677	758.00	759.20	1.20	0.00

Hole Number: **NH19-037**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
		MINOR INTERVALS: Minor Interval: 757.20 - 758.00 IIO, INTERMEDIATE INTRUSIVE					
759.20	776.60	VMO, MAFIC VOLCANIC UNDIVIDED Compositionally rock is green-grey mafic, but this interval is exhibiting weak deformational features such as average ~60 DTCA shear and local flow breccia. Weak patchy grey carb and yellow sericite (sericite more so towards lower contact). Sharp lower contact at ~30 DTCA fracturing.	1656678	759.20	760.00	0.80	0.01
			1656679	760.00	760.70	0.70	0.01
			1656681	760.70	761.40	0.70	0.00
776.60	787.00	LDO, DIABASE DYKE Dark grey moderately-strongly magnetic diabase dyke lacking any significant sulphides, veining, or alteration. Weak erratic dark tension gashes (tourmaline) recognized. Weak chlorite noticed to be influencing fracture surfaces and occasional stringer. 10-15% QC as discontinuous gashes or stringers most often oriented high angle, concave. Trace sulphides. EOH.					

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656579	682.00	683.30	0.0025
1656581	683.30	684.60	0.0070
1656582	684.60	685.80	0.0025
1656583	685.80	686.30	0.0060
1656584	686.30	687.10	0.0110
1656585	687.10	688.00	0.0080
1656586	688.00	688.80	0.0370
1656587	688.80	689.90	0.0190
1656588	689.90	691.00	0.0720
1656589	691.00	692.00	0.0680
1656591	692.00	693.00	0.4330
1656592	693.00	694.00	0.1140
1656593	694.00	695.00	0.0220
1656594	695.00	696.00	0.0870
1656595	696.00	697.00	0.0590
1656596	697.00	698.00	0.7460
1656597	698.00	699.00	0.0610
1656598	699.00	700.00	0.1540
1656599	700.00	700.80	2.1680
1656601	700.80	701.90	0.0510

Hole Number: **NH19-037**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656602	701.90	703.00	0.0730
1656603	703.00	703.80	0.0510
1656604	703.80	704.50	2.0940
1656605	704.50	705.30	1.1140
1656606	705.30	706.00	0.2580
1656607	706.00	706.70	0.1090
1656608	706.70	707.40	0.3040
1656609	707.40	708.50	0.4140
1656611	708.50	709.40	0.7160
1656612	709.40	710.30	0.6820
1656613	710.30	711.20	0.4090
1656614	711.20	712.00	0.2630
1656615	712.00	713.00	0.1870
1656616	713.00	714.00	1.2540
1656617	714.00	715.00	0.5420
1656618	715.00	716.00	0.1800
1656619	716.00	717.00	5.1970
1656621	717.00	718.00	4.4400
1656622	718.00	719.00	0.6850
1656623	719.00	719.70	0.5280
1656624	719.70	720.70	1.1710
1656625	720.70	721.50	0.3180
1656626	721.50	722.10	0.5840
1656627	722.10	723.00	1.1540
1656628	723.00	723.60	0.6340
1656629	723.60	723.90	1.2350
1656631	723.90	724.70	0.5340
1656632	724.70	725.80	1.1620
1656633	725.80	727.00	1.2580
1656634	727.00	728.00	0.2360
1656635	728.00	729.10	0.0960
1656636	729.10	730.00	0.0025
1656637	730.00	731.00	0.0025
1656638	731.00	731.90	0.0025
1656639	731.90	733.00	0.0190
1656641	733.00	733.70	0.0025
1656642	733.70	734.40	0.0025
1656643	734.40	735.10	0.0610
1656644	735.10	736.00	0.0860

Hole Number: **NH19-037**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656645	736.00	737.00	0.1460
1656646	737.00	737.90	0.0440
1656647	737.90	738.20	0.0080
1656648	738.20	738.90	0.0090
1656649	738.90	739.20	0.0025
1656651	739.20	740.10	0.0660
1656652	740.10	741.00	0.3630
1656653	741.00	742.00	0.0230
1656654	742.00	742.50	0.0950
1656655	742.50	742.80	0.0025
1656656	742.80	744.00	0.0610
1656657	744.00	745.00	0.0150
1656658	745.00	745.60	0.0160
1656659	745.60	747.00	0.0025
1656661	747.00	747.40	0.0210
1656662	747.40	747.90	0.0025
1656663	747.90	748.30	0.0025
1656664	748.30	748.80	0.0070
1656665	748.80	749.20	0.0025
1656666	749.20	749.70	0.0025
1656667	749.70	751.00	0.0160
1656668	751.00	752.20	0.1920
1656669	752.20	753.50	0.0090
1656671	753.50	754.00	0.0070
1656672	754.00	755.00	0.0025
1656673	755.00	755.70	0.0025
1656674	755.70	756.10	0.0025
1656675	756.10	757.20	0.0025
1656676	757.20	758.00	0.0060
1656677	758.00	759.20	0.0025
1656678	759.20	760.00	0.0060
1656679	760.00	760.70	0.0050
1656681	760.70	761.40	0.0025

DETAILED LOG



Hole Number: **NH19-038**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -45.00
Project Number: MACKLE_TWP	North: 5375745.00	North:	Collar Az: 340.00
Location: Macklem Township	East: 512058.00	East:	Length: 300.00
	Elev: 290.00	Elev:	Start Depth: 0.00
Date Started: Aug 01, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Aug 14, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 300.00

Comments: Change to BQ from 163.5m onwards

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	340.00	-45.00	EZ Sho	OK	Planned AZ - No APS	0.00	340.00	-45.00	APS	OK	Planned bearing for hole; reading taken by drillers at top of hole
111.00	339.00	-46.90	EZ Sho	OK	Pulled back 6m	249.00	345.00	-43.80	EZ Sho	OK	Pulled back 7m
300.00	348.10	-41.10	EZ Sho	OK	Pulled back 7m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	92.00	HPO, OVERBURDEN					
92.00	106.90	ZGO, GOUGE Gold Island Fault Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining (20-25% milky QC shear/bobby veinlets), alteration, or sulphides. Lower contact placed where core becomes competent, but compositionally is still softer ultramafic rock.	1644552	105.90	106.40	0.50	0.02
			1644553	106.40	106.90	0.50	0.02

DETAILED LOG

Hole Number: **NH19-038**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
106.90	151.95	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically high angle >60 degrees TCA. Moderate patchy core fracturing, gouging and fragmentation. Weak-mod patchy grey carbonate (ex. 106.4-108m), weak chlorite, and +/- sericite. 124.4-124.6m, and 136.6-137m shows minor AAOs; albite flooded intervals hosting increased sulphides ~3-5% blebby pyrite. ~ 25-30% QC as described. ♂Trace sulphides. CNT at 75deg TCA.</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 124.40 - 124.60 AAO, ALBITIC ALTERED ROCK Hosting 3-5% py</p> <p>Minor Interval: 136.60 - 137.00 AAO, ALBITIC ALTERED ROCK Hosts 3-5% py</p>	1644554	106.90	108.00	1.10	0.06
			1644555	108.00	108.90	0.90	0.05
			1644556	108.90	109.90	1.00	0.01
			1644557	123.00	123.75	0.75	0.03
			1644558	123.75	124.30	0.55	0.02
			1644559	124.30	124.60	0.30	0.07
			1644561	124.60	125.30	0.70	0.01
			1644562	125.30	126.00	0.70	0.01
			1644563	135.00	135.80	0.80	0.01
			1644564	135.80	136.60	0.80	0.01
			1644565	136.60	137.00	0.40	5.71
			1644566	137.00	138.00	1.00	0.01
			1644567	138.00	139.50	1.50	0.03
			1644568	139.50	141.00	1.50	0.06
			1644569	141.00	142.50	1.50	0.02
			1644571	142.50	143.00	0.50	0.01
			1644572	143.00	144.00	1.00	0.03
			1644573	144.00	145.30	1.30	0.08
			1644574	145.30	146.50	1.20	0.03
			1644575	146.50	147.40	0.90	0.01
			1644576	147.40	148.60	1.20	0.02
			1644577	148.60	149.65	1.05	0.06
			1644578	149.65	150.80	1.15	0.06
			1644579	150.80	151.95	1.15	0.08
151.95	164.00	<p>IFO, FELSIC INTRUSIVE UNDIVIDED</p> <p>Light grey-white with a pink tint, massive felsic intrusive (?). This unit may be a strongly altered mafic intrusive similar to Taylor. Weak-moderate pervasive silicification and carbonate alteration. Very weak patchy/disseminated k-feldspar alteration. Moderate fracture controlled chlorite. 10-15% QC veinlets and bleb-like floods. Strong tension gouging resulting in discordant tourmaline/chlorite veinlets and hairline stringers throughout. Chlorite/tourmaline veinlets are typically high angled ranging from 40-60deg TCA. ~10% fine grained fracture controlled and 3% disseminated pyrite. Locally up to 15% fracture controlled pyrite. Lower contact lost during switch to BQ drilling. *Drilling changed to BQ ~163.5m.</p>	1644581	151.95	153.00	1.05	2.48
			1644582	153.00	154.00	1.00	2.06
			1644583	154.00	155.00	1.00	1.54
			1644584	155.00	156.00	1.00	1.32
			1644585	156.00	157.00	1.00	0.89
			1644586	157.00	158.00	1.00	0.52
			1644587	158.00	159.00	1.00	0.36
			1644588	159.00	159.60	0.60	2.12
			1644589	159.60	160.45	0.85	3.12
			1644591	160.45	161.30	0.85	0.91
			1644592	161.30	162.00	0.70	1.56
			1644593	162.00	163.00	1.00	0.87
			1644594	163.00	164.00	1.00	1.12

DETAILED LOG

Hole Number: **NH19-038**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
164.00	174.50	ACH, CARB-CHLORITIC ROCK Medium grey-green patchy grey-blue, moderate sheared unit. Compositionally this unit is transitioning to ultramafic. Moderate disseminated and patchy carbonate alteration (disseminated magnesite) throughout with weak patchy-pervasive chlorite alteration. Very weak patchy brown carbonate alteration. 20-25% moderately sheared, milky white QC veinlets parallel to shearing at 60deg TCA. Weak tension gouging resulting in sheared dark green-grey veinlets, likely chlorite veinlets. 1-2% fine grained clustered pyrite (locally up to 3%) throughout the unit. Increased sulphides in areas with increased carbonate alteration. Moderate shearing at 60deg TCA. Sharp lower contact at 80deg TCA.	1644595	164.00	165.00	1.00	3.44
			1644596	165.00	166.10	1.10	4.93
			1644597	166.10	167.35	1.25	0.03
			1644598	167.35	168.50	1.15	0.02
			1644599	168.50	169.80	1.30	0.05
			1644601	169.80	171.00	1.20	0.03
			1644602	171.00	172.30	1.30	0.02
			1644603	172.30	173.50	1.20	0.14
			1644604	173.50	174.50	1.00	0.04
174.50	181.30	ZGO, GOUGE Medium grey-green-blue, weakly deformed, gouged ultramafic. Weak patchy talc alteration with moderate patchy chlorite alteration and weak patchy/disseminated carbonate (magnesite) alteration. Intense gouging, core fragmentation and fracturing. 10-15% typically high angled QC veinlets/blebs/floors. 1-2% fine grained disseminated pyrite. Lower contact placed where core becomes increasingly competent.	1644605	174.50	175.70	1.20	0.04
			1644606	175.70	177.00	1.30	0.01
			1644607	177.00	178.10	1.10	0.01
			1644608	178.10	179.30	1.20	0.12
			1644609	179.30	180.45	1.15	0.01
			1644611	180.45	181.30	0.85	0.01

DETAILED LOG

Hole Number: **NH19-038**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
181.30	220.25	ACH, CARB-CHLORITIC ROCK	1644612	181.30	182.35	1.05	0.01
		ACH/ACO- Medium grey, patchy blue-green, moderately deformed intermediate (mafic/ultramafic) unit. Moderate pervasive carbonate alteration with weak disseminated magnesite porphyroblasts. Weak-moderate patchy and vein associated chlorite alteration. Very weak patchy brown carbonate. Possible weak vein associated fuchsite. Weak patchy talc (?). 25-30% moderately sheared QC veins/veinlets/bleb like floods at 60-70deg TCA. From 185.15-187.3m, Massive QC veins at 30-40deg TCA with weak-moderate fracture filling sericite, chlorite, and k-feldspar alteration. 2-3% fine grained clustered pyrite overall with up to 5% coarser grained pyrite observed. Moderate shearing ranging from 60-70deg TCA, gradually steepening with depth. Gradational low contact arkled by increase in carbonate alteration.	1644613	182.35	183.30	0.95	0.01
			1644614	183.30	184.30	1.00	0.01
			1644615	184.30	185.15	0.85	0.04
			1644616	185.15	186.00	0.85	0.01
			1644617	186.00	187.30	1.30	0.00
			1644618	187.30	188.10	0.80	0.01
			1644619	188.10	189.00	0.90	0.01
			1644621	189.00	190.10	1.10	0.01
			1644622	190.10	191.25	1.15	0.01
			1644623	191.25	192.55	1.30	0.02
			1644624	192.55	193.90	1.35	0.01
			1644625	193.90	195.00	1.10	0.01
			1644626	195.00	196.00	1.00	0.01
			1644627	196.00	197.20	1.20	0.01
			1644628	197.20	198.35	1.15	0.00
			1644629	198.35	199.65	1.30	0.00
			1644631	199.65	200.60	0.95	0.01
			1644632	200.60	201.65	1.05	0.01
			1644633	201.65	202.60	0.95	0.01
			1644634	202.60	203.80	1.20	0.01
			1644635	203.80	204.95	1.15	0.00
			1644636	204.95	206.10	1.15	0.01
			1644637	206.10	207.20	1.10	0.01
		1644638	207.20	208.35	1.15	0.01	
		1644639	208.35	209.60	1.25	0.01	
		1644641	209.60	210.70	1.10	0.01	
		1644642	210.70	211.60	0.90	0.01	
		1644643	211.60	212.60	1.00	0.01	
		1644644	212.60	213.70	1.10	0.01	
		1644645	213.70	214.70	1.00	0.01	
		1644646	214.70	216.00	1.30	0.00	
		1644647	216.00	217.20	1.20	0.01	
		1644648	217.20	218.20	1.00	0.01	
		1644649	218.20	219.35	1.15	0.01	
		1644651	219.35	220.25	0.90	0.07	

DETAILED LOG

Hole Number: **NH19-038**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
220.25	230.25	ACO, CARBONATE ALTERED ROCK ACO/ACH- Medium grey, fine grained, massive carbonate altered unit. Increased carbonate alteration and decreased chlorite, differentiates this unit from the above ACH. Moderate pervasive carbonate alteration with weak patchy/fracture filling chlorite. from 220.25-225.85m, 5-10% milky white veinlets discordant typically at 60-70deg TCA. From 225.85m onwards 30-35% moderately deformed white QC veinlets/veins at 70deg TCA. Weak microfaulting exhibited in select veinlets. 1-2% fine grained clustered pyrite. Gradational lower contact.	1644652	220.25	221.30	1.05	0.03
			1644653	221.30	222.50	1.20	0.34
			1644654	222.50	223.65	1.15	0.06
			1644655	223.65	224.60	0.95	0.02
			1644656	224.60	225.85	1.25	0.02
			1644657	225.85	226.65	0.80	0.01
			1644658	226.65	227.30	0.65	0.01
			1644659	227.30	228.15	0.85	0.02
			1644661	228.15	229.10	0.95	0.01
			1644662	229.10	230.25	1.15	0.01
230.25	254.70	VUM, MASSIVE ULTRAMAFIC VUM/ACH-Dark green-grey, moderately deformed altered ultramafic unit (?). Weak patchy talc and minor gouge (<3cm) disseminated throughout suggests that the unit is ultramafic. Moderate pervasive chlorite alteration with weak-moderate patchy carbonate (+weak brown carbonate alteration). Very weak localized talc. Moderate disseminated carbonate, in the form of mm-cm scale magnesite porphyroblasts. 30-35% moderately sheared, milky white QC veins/veinlets at 70deg TCA. Weak microfaulting. Weak tension gouging resulting in sheared QC gashes and weakly sheared dark green chlorite veinlets. 1-2% fine grained disseminated pyrite. Moderate blocky core fragmentation and weak minor gouge (typically <10cm) throughout ex. 234.8-234.95m. Sharp lower contact at 65deg TCA.	1644663	230.25	231.45	1.20	0.01
			1644664	231.45	232.60	1.15	0.00
			1644665	232.60	233.20	0.60	0.01
			1644666	233.20	234.30	1.10	0.01
			1644667	234.30	235.20	0.90	0.01
			1644668	235.20	236.00	0.80	0.00
			1644669	236.00	237.15	1.15	0.01
			1644671	237.15	238.30	1.15	0.01
			1644672	238.30	239.00	0.70	0.01
			1644673	239.00	240.15	1.15	0.01
			1644674	240.15	241.30	1.15	0.01
			1644675	241.30	242.20	0.90	0.01
			1644676	242.20	243.25	1.05	0.01
			1644677	243.25	244.30	1.05	0.01
			1644678	244.30	245.60	1.30	0.01
			1644679	245.60	246.70	1.10	0.01
			1644681	246.70	247.75	1.05	0.00
			1644682	247.75	248.90	1.15	0.01
			1644683	248.90	249.95	1.05	0.01
			1644684	249.95	250.65	0.70	0.02
		1644685	250.65	251.70	1.05	0.01	
		1644686	251.70	252.75	1.05	0.02	
		1644687	252.75	253.60	0.85	0.01	
		1644688	253.60	254.70	1.10	0.01	

Hole Number: **NH19-038**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
254.70	279.85	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>White with pink and green tint, massive quartz-feldspar porphyry. Moderate pervasive silicification with weak disseminated chlorite and k-feldspar alteration. Chlorite present in areas with decreased k-feldspar influence. Moderate fracture filling chlorite alteration. Very weak disseminated yellow flecks (mm-scale), possible sericite. ~12% discordant white QC veins/veinlets typically blending in with the surrounding host rock. Moderate-strong tension gouging resulting in ~7% discordant dark grey-green thin chlorite/tourmaline veinlets at various angles. Overall 1-2% fine grained clustered pyrite with up to ~3% observed locally. Sharp lower contact at 70deg TCA.</p> <p>MINOR INTERVALS: Minor Interval: 255.20 - 255.45 ACH, CARB-CHLORITIC ROCK</p> <p>Dark blue-grey, fine grained, moderately deformed ultramafic uni. Moderate disseminated carbonate alteration in the form of magnesite porphyroblasts. Moderate pervasive chlorite alteration, weak patchy brown carbonate and weak patchy talc overprinting. ~30% moderately deformed QC veins/gashes at 50-60deg TCA when orientation is apparent. Moderate tension gouging resulting in thick QC gashes often parallel to deformation. No significant mineralization. Sharp irregular lower contact at 50deg TCA.</p>	1644689	254.70	255.45	0.75	0.01
			1644691	255.45	256.50	1.05	0.01
			1644692	256.50	257.50	1.00	0.00
			1644693	257.50	258.50	1.00	0.01
			1644694	258.50	259.50	1.00	0.01
			1644695	259.50	260.50	1.00	0.01
			1644696	260.50	261.50	1.00	0.01
			1644697	261.50	262.50	1.00	0.00
			1644698	262.50	263.50	1.00	0.00
			1644699	263.50	264.50	1.00	0.01
			1644701	264.50	265.50	1.00	0.01
			1644702	265.50	266.50	1.00	0.01
			1644703	266.50	267.50	1.00	0.01
			1644704	267.50	268.50	1.00	0.01
			1644705	268.50	269.50	1.00	0.00
			1644706	269.50	270.50	1.00	0.00
			1644707	270.50	271.40	0.90	0.01
			1644708	271.40	272.60	1.20	0.01
			1644709	272.60	273.70	1.10	0.00
			1644711	273.70	274.90	1.20	0.00
			1644712	274.90	275.75	0.85	0.01
			1644713	275.75	276.90	1.15	0.01
			1644714	276.90	277.90	1.00	0.01
			1644715	277.90	279.00	1.10	0.01
			1644716	279.00	279.85	0.85	0.00
279.85	285.25	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark blue-grey, moderately deformed ultramafic unit. Moderate pervasive chlorite alteration and patch/disseminated carbonate alteration (magnesite porphyroblasts). Weak-moderate patchy talc overprinting. 35-40% moderately sheared, milky white QC veins at 65-70deg TCA when orientation is apparent. Tension gouging resulting in wavy sheared background chlorite veinlets and QC gashes. Weak localized brecciation observed. 1-2% fine grained, primarily euhedral pyrite. Blocky core fragmentation throughout the unit. Gradational lower contact.</p>	1644717	279.85	280.90	1.05	0.00
			1644718	280.90	282.00	1.10	0.00
			1644719	282.00	283.10	1.10	0.01
			1644721	283.10	284.20	1.10	0.01
			1644722	284.20	285.25	1.05	0.01
285.25	291.00	<p>ZGO, GOUGE</p> <p>VUM+ZGO- Medium grey-green-blue, weakly deformed, gouged ultramafic. Weak patchy talc alteration with moderate patchy chlorite alteration and weak patchy/disseminated carbonate (magnesite) alteration. Intense gouging, core fragmentation and fracturing. Gouge is patchy within the interval. ~35% typically high angled QC veinlets/ blebs/floods. Milky white QC floods <20cm in size. 1-2% fine grained disseminated pyrite. Lower contact placed where core becomes increasingly competent.</p>	1644723	285.25	286.40	1.15	0.01
			1644724	286.40	287.50	1.10	0.00
			1644725	287.50	288.65	1.15	0.01
			1644726	288.65	289.90	1.25	0.01
			1644727	289.90	291.00	1.10	0.01

DETAILED LOG

Hole Number: **NH19-038**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
291.00	300.00	VUM, MASSIVE ULTRAMAFIC Dark blue-green, moderately deformed ultramafic unit. Moderate-strong pervasive chlorite alteration with moderate disseminated carbonate porphyroblasts. Weak patchy carbonate also present within the unit. Weak-moderate patchy-pervasive talc alteration with few talc veinlets also observed. 30-35% sheared, milky white QC veins/veinlets/gashes starting at 50-60deg TCA gradually steepening with depth to ~70deg TCA. 1-2% fine grained clustered pyrite with oclized areas containing up to 3% clustered. EOH at 300.0m	1644728	291.00	292.10	1.10	0.01
			1644729	292.10	293.10	1.00	0.00
			1644731	293.10	294.00	0.90	0.00
			1644732	294.00	295.15	1.15	0.01
			1644733	295.15	296.50	1.35	0.01
			1644734	296.50	297.60	1.10	0.01
			1644735	297.60	298.70	1.10	0.01
			1644736	298.70	300.00	1.30	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644552	105.90	106.40	0.0180
1644553	106.40	106.90	0.0220
1644554	106.90	108.00	0.0560
1644555	108.00	108.90	0.0500
1644556	108.90	109.90	0.0120
1644557	123.00	123.75	0.0260
1644558	123.75	124.30	0.0190
1644559	124.30	124.60	0.0720
1644561	124.60	125.30	0.0140
1644562	125.30	126.00	0.0140
1644563	135.00	135.80	0.0120
1644564	135.80	136.60	0.0090
1644565	136.60	137.00	5.7130
1644566	137.00	138.00	0.0110
1644567	138.00	139.50	0.0300
1644568	139.50	141.00	0.0570
1644569	141.00	142.50	0.0160
1644571	142.50	143.00	0.0130
1644572	143.00	144.00	0.0330
1644573	144.00	145.30	0.0820
1644574	145.30	146.50	0.0280
1644575	146.50	147.40	0.0130
1644576	147.40	148.60	0.0240
1644577	148.60	149.65	0.0560
1644578	149.65	150.80	0.0590
1644579	150.80	151.95	0.0770
1644581	151.95	153.00	2.4790
1644582	153.00	154.00	2.0610

Hole Number: **NH19-038**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644583	154.00	155.00	1.5360
1644584	155.00	156.00	1.3160
1644585	156.00	157.00	0.8890
1644586	157.00	158.00	0.5160
1644587	158.00	159.00	0.3600
1644588	159.00	159.60	2.1240
1644589	159.60	160.45	3.1200
1644591	160.45	161.30	0.9110
1644592	161.30	162.00	1.5560
1644593	162.00	163.00	0.8730
1644594	163.00	164.00	1.1200
1644595	164.00	165.00	3.4410
1644596	165.00	166.10	4.9290
1644597	166.10	167.35	0.0280
1644598	167.35	168.50	0.0180
1644599	168.50	169.80	0.0480
1644601	169.80	171.00	0.0270
1644602	171.00	172.30	0.0200
1644603	172.30	173.50	0.1400
1644604	173.50	174.50	0.0350
1644605	174.50	175.70	0.0360
1644606	175.70	177.00	0.0120
1644607	177.00	178.10	0.0110
1644608	178.10	179.30	0.1160
1644609	179.30	180.45	0.0110
1644611	180.45	181.30	0.0060
1644612	181.30	182.35	0.0080
1644613	182.35	183.30	0.0100
1644614	183.30	184.30	0.0100
1644615	184.30	185.15	0.0390
1644616	185.15	186.00	0.0060
1644617	186.00	187.30	0.0025
1644618	187.30	188.10	0.0120
1644619	188.10	189.00	0.0080
1644621	189.00	190.10	0.0100
1644622	190.10	191.25	0.0060
1644623	191.25	192.55	0.0240
1644624	192.55	193.90	0.0070
1644625	193.90	195.00	0.0070

Hole Number: **NH19-038**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644626	195.00	196.00	0.0070
1644627	196.00	197.20	0.0080
1644628	197.20	198.35	0.0025
1644629	198.35	199.65	0.0025
1644631	199.65	200.60	0.0060
1644632	200.60	201.65	0.0110
1644633	201.65	202.60	0.0060
1644634	202.60	203.80	0.0070
1644635	203.80	204.95	0.0025
1644636	204.95	206.10	0.0060
1644637	206.10	207.20	0.0060
1644638	207.20	208.35	0.0060
1644639	208.35	209.60	0.0130
1644641	209.60	210.70	0.0080
1644642	210.70	211.60	0.0080
1644643	211.60	212.60	0.0060
1644644	212.60	213.70	0.0090
1644645	213.70	214.70	0.0100
1644646	214.70	216.00	0.0025
1644647	216.00	217.20	0.0060
1644648	217.20	218.20	0.0080
1644649	218.20	219.35	0.0090
1644651	219.35	220.25	0.0700
1644652	220.25	221.30	0.0330
1644653	221.30	222.50	0.3430
1644654	222.50	223.65	0.0610
1644655	223.65	224.60	0.0160
1644656	224.60	225.85	0.0160
1644657	225.85	226.65	0.0100
1644658	226.65	227.30	0.0100
1644659	227.30	228.15	0.0240
1644661	228.15	229.10	0.0090
1644662	229.10	230.25	0.0130
1644663	230.25	231.45	0.0050
1644664	231.45	232.60	0.0025
1644665	232.60	233.20	0.0060
1644666	233.20	234.30	0.0060
1644667	234.30	235.20	0.0070
1644668	235.20	236.00	0.0025

Hole Number: **NH19-038**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644669	236.00	237.15	0.0060
1644671	237.15	238.30	0.0050
1644672	238.30	239.00	0.0060
1644673	239.00	240.15	0.0080
1644674	240.15	241.30	0.0060
1644675	241.30	242.20	0.0080
1644676	242.20	243.25	0.0100
1644677	243.25	244.30	0.0070
1644678	244.30	245.60	0.0070
1644679	245.60	246.70	0.0100
1644681	246.70	247.75	0.0025
1644682	247.75	248.90	0.0060
1644683	248.90	249.95	0.0080
1644684	249.95	250.65	0.0160
1644685	250.65	251.70	0.0100
1644686	251.70	252.75	0.0160
1644687	252.75	253.60	0.0060
1644688	253.60	254.70	0.0060
1644689	254.70	255.45	0.0140
1644691	255.45	256.50	0.0060
1644692	256.50	257.50	0.0025
1644693	257.50	258.50	0.0070
1644694	258.50	259.50	0.0050
1644695	259.50	260.50	0.0060
1644696	260.50	261.50	0.0060
1644697	261.50	262.50	0.0025
1644698	262.50	263.50	0.0025
1644699	263.50	264.50	0.0070
1644701	264.50	265.50	0.0070
1644702	265.50	266.50	0.0060
1644703	266.50	267.50	0.0090
1644704	267.50	268.50	0.0060
1644705	268.50	269.50	0.0025
1644706	269.50	270.50	0.0025
1644707	270.50	271.40	0.0050
1644708	271.40	272.60	0.0080
1644709	272.60	273.70	0.0025
1644711	273.70	274.90	0.0025
1644712	274.90	275.75	0.0060

Hole Number: **NH19-038**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644713	275.75	276.90	0.0060
1644714	276.90	277.90	0.0060
1644715	277.90	279.00	0.0060
1644716	279.00	279.85	0.0025
1644717	279.85	280.90	0.0025
1644718	280.90	282.00	0.0025
1644719	282.00	283.10	0.0050
1644721	283.10	284.20	0.0060
1644722	284.20	285.25	0.0060
1644723	285.25	286.40	0.0050
1644724	286.40	287.50	0.0025
1644725	287.50	288.65	0.0080
1644726	288.65	289.90	0.0120
1644727	289.90	291.00	0.0060
1644728	291.00	292.10	0.0060
1644729	292.10	293.10	0.0025
1644731	293.10	294.00	0.0025
1644732	294.00	295.15	0.0060
1644733	295.15	296.50	0.0050
1644734	296.50	297.60	0.0050
1644735	297.60	298.70	0.0080
1644736	298.70	300.00	0.0025

DETAILED LOG



Hole Number: **NH19-039**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -45.00
Project Number: MACKLE_TWP	North: 5376045.00	North:	Collar Az: 340.00
Location: Macklem Township	East: 509869.80	East:	Length: 426.00
	Elev: 290.50	Elev:	Start Depth: 0.00
Date Started: Aug 15, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Aug 26, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Aquarius
	Pulse EM Survey: N	Casing: YES	Final Depth: 426.00

Comments: NW casing ran to 114m, driller thought it was in bedrock but wasn't. The NQ rods punched through the boulder, then they drilled to 127.5m and hit bedrock. The plan was to ream the NW down to bedrock but the NW rods were jammed. We reduced to BQ to drill the hole. When pulling out, the NQ rods were cut off at 127.5m and left in the hole, so that the hole could be extended in the future if needed. Both NW casing and NQ rods are in the hole but not obstructed. The hole can be continued using BQ.

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	340.10	-45.00	APS	OK		144.00	342.60	-48.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
195.00	345.30	-46.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	246.00	348.80	-43.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
300.00	350.70	-40.00	EZ Sho	OK		351.00	351.70	-37.90	EZ Sho	OK	
402.00	352.70	-35.80	EZ Sho	OK		426.00	354.00	-35.00	EZ Sho	OK	

Detailed Lithology			Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final	
0.00	114.00	HPO, OVERBURDEN						
114.00	117.00	HPO, OVERBURDEN Mixed clasts, granite, tuff, and VMM.						
117.00	127.20	OLO, LOST CORE Switching down to BQ, lots of reaming						
127.20	130.70	VOT, TUFF Dark greenish grey, fine grained, to small lenses aphanitic (Lapilli as foliation inat 60 to 70 degrees TCA. Blebby chlorite patchy throughout, sulphides associated with the lapilli reaching up to 2% overall at trace. LC is sharp at 60 degrees	1656682	127.20	127.70	0.50	0.01	
			1656683	127.70	129.00	1.30	0.01	
			1656684	129.00	130.00	1.00	0.02	
			1656685	130.00	130.70	0.70	0.05	
130.70	133.10	SCO, CONGLOMERATES Potential temiskaming, Cg to Mg, hosting in fg tuff with secondary carb growing in the dark green mafic clasts. Sub angular to sub rounded, with moderate shearing marked by clasts aligned clasts at 40 to 50 degrees TCA, clustered blebby coarse pyrite within matrix. LC is gradual clasts become finer grained.	1656686	130.70	131.50	0.80	0.05	
			1656687	131.50	132.00	0.50	0.04	
			1656688	132.00	133.10	1.10	0.02	

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
133.10	138.45	VOT, TUFF Possible sandstone, Dark greenish grey, fine grained, to small lenses aphanitic (Lapilli as foliation in at 60 to 70 degrees TCA. Blebby chlorite patchy throughout, moderate silicification, sulphides associated with the disseminated vfg lapilli patchy reaching up to 20% and overall at 5%. LC is sharp at 80 degrees, trace milky white veinlets running 70 to 80 degrees.	1656689	133.10	133.80	0.70	0.04
			1656691	133.80	134.20	0.40	0.03
			1656692	134.20	135.00	0.80	0.01
			1656693	135.00	135.55	0.55	0.03
			1656694	135.55	136.00	0.45	0.04
			1656695	136.00	137.00	1.00	0.01
			1656696	137.00	137.50	0.50	0.02
			1656697	137.50	138.00	0.50	0.03
			1656698	138.00	138.45	0.45	0.01
138.45	154.70	SCO, CONGLOMERATES Potential temiskaming, Cg to Mg, hosting in fg tuff with secondary carb growing in the dark green mafic clasts. Sub angular to sub rounded, with moderate shearing marked by clasts aligned clasts at 40 to 50 degrees TCA, clustered blebby coarse pyrite within matrix reaching up 3% overall 1-2%. weak hematitic patchy, LC is sharp at 80 degrees From 146.2 to 146.7m : QC breccia, with angular clasts of tuff, hematite altered, (weakly albitite)? Sulphides at LC is coarse at 3-4%. MINOR INTERVALS: Minor Interval: 140.00 - 140.30 VOT, TUFF Reddish black and green, similar textures and qualities as 133.1 to 138.45m sulphides at 1-2%	1656699	138.45	139.70	1.25	0.01
			1656701	139.70	140.30	0.60	0.08
			1656702	140.30	141.00	0.70	0.01
			1656703	141.00	142.00	1.00	0.06
			1656704	142.00	143.00	1.00	0.01
			1656705	143.00	144.00	1.00	0.01
			1656706	144.00	144.50	0.50	0.02
			1656707	144.50	145.10	0.60	0.01
			1656708	145.10	146.20	1.10	0.01
			1656709	146.20	146.70	0.50	0.01
			1656711	146.70	147.30	0.60	0.02
			1656712	147.30	148.30	1.00	0.13
			1656713	148.30	149.30	1.00	0.01
			1656714	149.30	150.00	0.70	0.01
			1656715	150.00	151.20	1.20	0.02
			1656716	151.20	152.20	1.00	0.04
			1656717	152.20	153.00	0.80	0.01
			1656718	153.00	154.00	1.00	0.01
			1656719	154.00	154.70	0.70	0.01
154.70	162.90	VOT, TUFF Similar textures and qualities as 133.1 to 138.45m With large mafic green clasts, last 30 cm seeing a gravel size mix of clasts. Strong carb alteration, Vein 156.75 to 156.9m	1656721	154.70	155.00	0.30	0.02
			1656722	155.00	155.40	0.40	0.01
			1656723	155.40	156.00	0.60	0.05
			1656724	156.00	156.75	0.75	0.01
			1656725	156.75	157.30	0.55	0.01
			1656726	157.30	158.00	0.70	0.02
			1656727	158.00	159.00	1.00	0.01
			1656728	159.00	159.90	0.90	0.01
			1656729	159.90	160.70	0.80	0.01
			1656731	160.70	161.40	0.70	0.01
			1656732	161.40	162.00	0.60	0.04
			1656733	162.00	162.40	0.40	0.01
			1656734	162.40	162.90	0.50	0.01

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
162.90	176.70	<p>SCO, CONGLOMERATES</p> <p>Potential temiskaming, Cg to Mg, hosting in fg tuff with secondary carb growing in the dark green mafic clasts with sporadic tuff clasts. Sub angular to sub rounded, with moderate shearing marked by clasts aligned clasts at 40 to 50 degrees TCA, clustered blebby coarse pyrite within matrix reaching up 3% overall 1-2%. weak hematitic patchy, LC is sharp at 80 degrees</p> <p>MINOR INTERVALS: Minor Interval: 174.35 - 174.65 VOT, TUFF</p> <p>Reddish black and green, similar textures and qualities as 133.1 to 138.45m sulphides at 2-3%</p>	1656735	162.90	163.90	1.00	0.02
			1656736	163.90	164.40	0.50	0.02
			1656737	164.40	165.00	0.60	0.02
			1656738	165.00	165.50	0.50	0.04
			1656739	165.50	166.50	1.00	0.02
			1656741	166.50	167.50	1.00	0.02
			1656742	167.50	168.30	0.80	0.01
			1656743	168.30	169.00	0.70	0.01
			1656744	169.00	169.80	0.80	0.02
			1656745	169.80	171.00	1.20	0.02
			1656746	171.00	172.00	1.00	0.05
			1656747	172.00	173.00	1.00	0.01
			1656748	173.00	174.00	1.00	0.03
			1656749	174.00	174.35	0.35	0.01
			1656751	174.35	174.65	0.30	0.02
			1656752	174.65	175.60	0.95	0.01
			1656753	175.60	176.70	1.10	0.01
176.70	179.50	<p>VOT, TUFF</p> <p>Dark greenish grey, fine grained, to small lenses aphanitic (Lapilli as foliation in at 60 to 70 degrees TCA. Blebby chlorite patchy throughout, moderate silicification, sulphides associated with the disseminated vfg lapilli patchy reaching up to 20% and overall at 5%. LC is sharp at 80 degrees, trace milky white veinlets running 70 to 80 degrees.</p>	1656754	176.70	177.30	0.60	0.02
			1656755	177.30	177.80	0.50	0.04
			1656756	177.80	178.10	0.30	0.09
			1656757	178.10	178.50	0.40	0.06
			1656758	178.50	179.50	1.00	0.02
179.50	184.20	<p>SCO, CONGLOMERATES</p> <p>Similar textures and qualities 162.9 to 176.7m</p>	1656759	179.50	180.00	0.50	0.01
			1656761	180.00	181.30	1.30	0.06
			1656762	181.30	182.00	0.70	0.01
			1656763	182.00	182.45	0.45	0.01
			1656764	182.45	183.00	0.55	0.01
			1656765	183.00	183.50	0.50	0.01
			1656766	183.50	184.20	0.70	0.02
184.20	188.25	<p>VOT, TUFF</p> <p>Simillar textures and qualities as 176.7 to 179.5m Becoming more carb influenced, sporadic trace angular mafic clasts, sulphides at 1-2%</p>	1656767	184.20	185.20	1.00	0.01
			1656768	185.20	186.00	0.80	0.06
			1656769	186.00	186.80	0.80	0.02
			1656771	186.80	187.20	0.40	0.01
			1656772	187.20	188.25	1.05	0.01
188.25	191.60	<p>SCO, CONGLOMERATES</p> <p>Potential temiskaming, Cg to Mg, hosting in fg tuff with secondary carb growing in the dark green mafic clasts with sporadic tuff clasts and visible chert clasts. Sub angular to sub rounded, with moderate shearing marked by clasts aligned clasts at 40 to 50 degrees TCA, clustered blebby coarse pyrite within matrix reaching up 3% overall 1-2%. weak hematitic patchy, LC is sharp at 80 degrees</p>	1656773	188.25	188.70	0.45	0.02
			1656774	188.70	189.00	0.30	0.00
			1656775	189.00	189.90	0.90	0.01
			1656776	189.90	190.80	0.90	0.01
			1656777	190.80	191.60	0.80	0.01

DETAILED LOG

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
191.60	220.25	<p>VOT, TUFF</p> <p>Dark whitish grey, fine grained, strong carb, to small lenses aphanitic (Lapilli as foliation in at 60 to 70 degrees TCA. Blebby chlorite patchy throughout, moderate silicification, sulphides associated with the disseminated vfg lapilli patchy reaching up to 20% and overall at 5%. LC is sharp at 80 degrees, trace to 5% milky white veinlets running erratic.</p> <p>MINOR INTERVALS: Minor Interval: 210.90 - 213.00 SCO, CONGLOMERATES Similar textures and qualities as 188.25m to 191.6m</p>	1656778	191.60	192.20	0.60	0.02
			1656779	192.20	192.80	0.60	0.00
			1656781	192.80	193.60	0.80	0.00
			1656782	193.60	194.20	0.60	0.01
			1656783	194.20	195.00	0.80	0.00
			1656784	195.00	195.65	0.65	0.00
			1656785	195.65	196.10	0.45	0.00
			1656786	196.10	197.00	0.90	0.00
			1656787	197.00	198.00	1.00	0.00
			1656788	198.00	199.00	1.00	0.00
			1656789	199.00	199.50	0.50	0.00
			1656791	199.50	200.10	0.60	0.00
			1656792	200.10	201.20	1.10	0.02
			1656793	201.20	201.85	0.65	0.00
			1656794	201.85	202.90	1.05	0.00
			1656795	202.90	204.05	1.15	0.00
			1656796	204.05	205.00	0.95	0.01
			1656797	205.00	206.00	1.00	0.00
			1656798	206.00	207.00	1.00	0.00
			1656799	207.00	207.80	0.80	0.00
			1656801	207.80	208.80	1.00	0.00
			1656802	208.80	209.40	0.60	0.00
			1656803	209.40	210.00	0.60	0.02
			1656804	210.00	210.90	0.90	0.00
			1656805	210.90	211.90	1.00	0.00
			1656806	211.90	213.00	1.10	0.00
			1656807	213.00	213.85	0.85	0.01
			1656808	213.85	214.85	1.00	0.00
			1656809	214.85	215.80	0.95	0.00
			1656811	215.80	216.50	0.70	0.00
			1656812	216.50	217.50	1.00	0.00
			1656813	217.50	218.50	1.00	0.00
			1656814	218.50	219.00	0.50	0.00
			1656815	219.00	220.25	1.25	0.00
220.25	223.25	<p>SCO, CONGLOMERATES</p> <p>Similar textures and qualities 188.25 to 191.60</p>	1656816	220.25	221.00	0.75	0.00
			1656817	221.00	222.00	1.00	0.00
			1656818	222.00	222.60	0.60	0.00
			1656819	222.60	223.25	0.65	0.00

DETAILED LOG

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
223.25	275.95	VOT, TUFF Similar textures and qualities as 191.6 to 220.25m Becoming at 237.8 becoming more distinguishable grain size, possible sandstone?, sulphides decreasing at 1-2% Vuggy textures from 249.0 to 249.6 MINOR INTERVALS: Minor Interval: 223.25 - 233.25 SCO, CONGLOMERATES Similar textures and qualities as 188.25 to 191.6m Minor Interval: 268.70 - 269.45 SCO, CONGLOMERATES	1656821	223.25	224.25	1.00	0.00
			1656822	224.25	225.20	0.95	0.00
			1656823	225.20	226.40	1.20	0.00
			1656824	226.40	227.85	1.45	0.00
			1656825	227.85	228.80	0.95	0.00
			1656826	228.80	229.80	1.00	0.00
			1656827	229.80	231.00	1.20	0.00
			1656828	231.00	232.15	1.15	0.00
			1656829	232.15	233.15	1.00	0.00
			1656831	233.15	234.00	0.85	0.00
			1656832	234.00	235.00	1.00	0.01
			1656833	235.00	236.00	1.00	0.00
			1656834	236.00	237.00	1.00	0.00
			1656835	237.00	237.80	0.80	0.00
			1656836	237.80	238.80	1.00	0.01
			1656837	238.80	239.50	0.70	0.00
			1656838	239.50	240.00	0.50	0.00
			1656839	240.00	240.70	0.70	0.00
			1656841	240.70	241.30	0.60	0.00
			1656842	241.30	241.80	0.50	0.00
			1656843	241.80	242.70	0.90	0.00
			1656844	242.70	243.70	1.00	0.00
			1656845	243.70	244.70	1.00	0.00
			1656846	244.70	245.20	0.50	0.00
			1656847	245.20	246.00	0.80	0.00
			1656848	246.00	247.00	1.00	0.00
			1656849	247.00	248.00	1.00	0.00
			1656851	248.00	248.60	0.60	0.00
			1656852	248.60	249.00	0.40	0.00
			1656853	249.00	249.50	0.50	0.01
			1656854	249.50	250.05	0.55	0.00
			1656855	250.05	251.00	0.95	0.00
			1656856	251.00	252.00	1.00	0.00
			1656857	252.00	252.80	0.80	0.00
			1656858	252.80	253.80	1.00	0.00
			1656859	253.80	254.40	0.60	0.00
			1656861	254.40	255.00	0.60	0.00
			1656862	255.00	256.00	1.00	0.00
			1656863	256.00	256.90	0.90	0.01
			1656864	256.90	257.25	0.35	0.00
			1656865	257.25	258.00	0.75	0.00
			1656866	258.00	259.00	1.00	0.01

DETAILED LOG

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656867	259.00	260.10	1.10	0.00
			1656868	260.10	261.00	0.90	0.00
			1656869	261.00	262.00	1.00	0.00
			1656871	262.00	262.30	0.30	0.00
			1656872	262.30	263.30	1.00	0.01
			1656873	263.30	264.00	0.70	0.01
			1656874	264.00	264.55	0.55	0.01
			1656875	264.55	265.50	0.95	0.05
			1656876	265.50	266.00	0.50	0.28
			1656877	266.00	267.00	1.00	0.00
			1656878	267.00	267.70	0.70	0.00
			1656879	267.70	268.70	1.00	0.06
			1656881	268.70	269.45	0.75	0.01
			1656882	269.45	270.40	0.95	0.00
			1656883	270.40	271.25	0.85	0.01
			1656884	271.25	272.00	0.75	0.01
			1656885	272.00	273.00	1.00	0.01
			1656886	273.00	274.00	1.00	0.00
			1656887	274.00	275.00	1.00	0.00
			1656888	275.00	275.95	0.95	0.11
275.95	288.30	SCO, CONGLOMERATES	1656889	275.95	276.50	0.55	0.04
		Potential temiskaming, Cg to Mg, hosting in fg tuff with secondary carb growing in the dark green mafic clasts with sporadic tuff clasts, ultramafic clasts with spinifex textures. Subrounded to rounded with sporadic angular, fg to mg sandsize grains , Patchy moderate shearing marked by clasts aligned clasts at 40 to 50 degrees TCA, clustered blebby coarse pyrite within matrix reaching up 3% overall 1-2%, LC is sharp at 80 degrees	1656891	276.50	277.00	0.50	0.02
			1656892	277.00	277.80	0.80	0.01
			1656893	277.80	278.50	0.70	0.01
			1656894	278.50	279.00	0.50	0.01
			1656895	279.00	280.00	1.00	0.01
			1656896	280.00	281.00	1.00	0.01
			1656897	281.00	282.00	1.00	0.03
			1656898	282.00	282.70	0.70	0.04
			1656899	282.70	283.20	0.50	0.27
			1656901	283.20	283.70	0.50	0.09
			1656902	283.70	284.40	0.70	0.02
			1656903	284.40	285.00	0.60	0.03
			1656904	285.00	286.00	1.00	0.13
			1656905	286.00	287.00	1.00	0.01
			1656906	287.00	288.00	1.00	0.02
			1656907	288.00	288.30	0.30	0.01

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
288.30	299.80	SAO, ARKOSE Dark whitish grey, fine grained, strong carb, to small lenses aphanitic. Blebby chlorite patchy throughout, patchy moderate silicification, sulphides euhedral coarse at 1-2% . Weak to mod patchy albite prior to 297m block; hosting 3-5% disseminated py. Weak patches of pale yellow/tan bleaching +/- sericite alteration. LC placed where conglomerated clasts re-initiate.	1656908	288.30	289.30	1.00	0.01
			1656909	289.30	290.00	0.70	0.00
			1656911	290.00	291.00	1.00	0.01
			1656912	291.00	292.00	1.00	0.01
			1656913	292.00	293.00	1.00	0.00
			1656914	293.00	293.60	0.60	0.01
			1656915	293.60	294.20	0.60	0.01
			1656916	294.20	295.20	1.00	0.01
			1656917	295.20	296.10	0.90	0.00
			1656918	296.10	297.00	0.90	0.01
			1656919	297.00	298.00	1.00	0.01
			1656921	298.00	299.00	1.00	0.02
			1656922	299.00	299.80	0.80	0.16
299.80	307.50	SCO, CONGLOMERATES Potential temiskaming, Cg to Mg, hosting in fg tuff with secondary carb growing in the dark green mafic clasts. Sub angular to Rounded, with weak patchy shearing marked by clasts aligned at 40 to 50 degrees TCA, clustered blebby coarse pyrite within matrix reaching locally 3-5% overall ~2%. Weak patchy chlorite and sericite alts may be influencing. Patches of intense core fracturing/fragmentation; for example 303-303.5m. ~25% lighter felsic +/- QC clasts throughout. Lower contact where conglomeration ceases.	1656923	299.80	300.40	0.60	0.01
			1656924	300.40	301.40	1.00	0.02
			1656925	301.40	302.20	0.80	0.03
			1656926	302.20	303.00	0.80	0.14
			1656927	303.00	304.50	1.50	0.02
			1656928	304.50	306.00	1.50	0.01
			1656929	306.00	306.75	0.75	0.01
			1656931	306.75	307.50	0.75	0.01

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
307.50	426.00	SAO, ARKOSE Similar to previous SAO. Grey-tan sedimentary rock with vfg-fg (rare mg or >) feldspar+/- QC crystals forming in matrix roughly 20-30% throughout. Moderate patchy smokey grey carb present in upper portion of unit; starts to weaken following ~340m or so, and chlorite/bleachingalts seem to become dominant (both of these are weak patchy throughout entire unit). A few intervals (for example 317.3-318.5m in and out, and 333.7-334m, 416-416.3m, 417.5-418.2m) shows larger formed and occasionally altered (green fuchsite rare) clasts. 1-2% blebby/dissempy throughout; locally up to 3-4% in clusters; for example around large QC clast following 393m block. EOH. MINOR INTERVALS: Minor Interval: 333.70 - 334.40 SCO, CONGLOMERATES Minor Interval: 361.30 - 361.80 SCO, CONGLOMERATES Minor Interval: 380.60 - 380.80 SCO, CONGLOMERATES Minor Interval: 392.30 - 393.10 SCO, CONGLOMERATES Minor Interval: 416.00 - 416.30 SCO, CONGLOMERATES Minor Interval: 417.50 - 418.20 SCO, CONGLOMERATES	1656932	307.50	309.00	1.50	0.01
			1656933	309.00	310.00	1.00	0.01
			1656934	310.00	310.90	0.90	0.01
			1656935	310.90	312.00	1.10	0.07
			1656936	312.00	313.00	1.00	0.02
			1656937	313.00	314.00	1.00	0.00
			1656938	314.00	315.00	1.00	0.01
			1656939	315.00	316.00	1.00	0.01
			1656941	316.00	317.00	1.00	0.01
			1656942	317.00	317.60	0.60	0.15
			1656943	317.60	318.40	0.80	0.00
			1656944	318.40	319.20	0.80	0.01
			1656945	319.20	319.90	0.70	0.01
			1656946	319.90	321.00	1.10	0.00
			1656947	321.00	322.00	1.00	0.01
			1656948	322.00	323.00	1.00	0.07
			1656949	323.00	324.00	1.00	0.08
			1656951	324.00	325.00	1.00	0.05
			1656952	325.00	326.00	1.00	0.08
			1656953	326.00	327.00	1.00	0.08
			1656954	327.00	328.50	1.50	0.01
			1656955	328.50	330.00	1.50	0.01
			1656956	330.00	331.10	1.10	0.04
			1656957	331.10	332.00	0.90	0.00
			1656958	332.00	333.00	1.00	0.00
			1656959	333.00	333.70	0.70	0.00
			1656961	333.70	334.40	0.70	0.01
			1656962	334.40	335.00	0.60	0.11
			1656963	335.00	336.00	1.00	0.00
			1656964	336.00	337.50	1.50	0.01
			1656965	337.50	339.00	1.50	0.01
			1656966	339.00	340.00	1.00	0.04
			1656967	340.00	341.00	1.00	0.01
			1656968	341.00	342.00	1.00	0.02
			1656969	342.00	342.90	0.90	0.04
			1656971	342.90	344.10	1.20	0.01
			1656972	344.10	345.00	0.90	0.01
			1656973	345.00	345.60	0.60	0.04
			1656974	345.60	346.80	1.20	0.01
			1656975	346.80	348.00	1.20	0.01
			1656976	348.00	349.00	1.00	0.02
			1656977	349.00	350.00	1.00	0.02

DETAILED LOG

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1656978	350.00	351.00	1.00	0.02
			1656979	351.00	352.00	1.00	0.03
			1656981	352.00	353.00	1.00	0.01
			1656982	353.00	354.00	1.00	0.02
			1656983	354.00	355.50	1.50	0.05
			1656984	355.50	357.00	1.50	0.02
			1656985	357.00	358.50	1.50	0.01
			1656986	358.50	360.00	1.50	0.02
			1656987	360.00	361.30	1.30	0.02
			1656988	361.30	361.80	0.50	0.02
			1656989	361.80	362.70	0.90	0.02
			1656991	362.70	363.60	0.90	0.01
			1656992	387.00	388.50	1.50	0.01
			1656993	388.50	390.00	1.50	0.04
			1656994	390.00	391.15	1.15	0.01
			1656995	391.15	392.30	1.15	0.01
			1656996	392.30	393.10	0.80	0.01
			1656997	393.10	394.30	1.20	0.01
			1656998	394.30	395.20	0.90	0.02
			1656999	395.20	396.00	0.80	0.00
			1645501	396.00	397.50	1.50	0.01
			1645502	397.50	399.00	1.50	0.00
			1645503	399.00	400.50	1.50	0.01
			1645504	400.50	402.00	1.50	0.02
			1645505	402.00	403.00	1.00	0.01
			1645506	403.00	404.00	1.00	0.01
			1645507	404.00	405.00	1.00	0.01
			1645508	405.00	406.50	1.50	0.01
			1645509	406.50	408.00	1.50	0.01
			1645511	408.00	408.90	0.90	0.01
			1645512	408.90	409.40	0.50	0.01
			1645513	409.40	410.20	0.80	0.01
			1645514	410.20	411.00	0.80	0.02
			1645515	411.00	412.50	1.50	0.01
			1645516	412.50	414.00	1.50	0.04
			1645517	414.00	415.00	1.00	0.03
			1645518	415.00	416.00	1.00	0.07
			1645519	416.00	416.50	0.50	0.04
			1645521	416.50	417.50	1.00	0.01
			1645522	417.50	418.20	0.70	0.03
			1645523	418.20	419.10	0.90	0.02
			1645524	419.10	420.00	0.90	0.01

DETAILED LOG

Hole Number: **NH19-039**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1645525	420.00	421.50	1.50	0.03
			1645526	421.50	423.00	1.50	0.01
			1645527	423.00	424.50	1.50	0.01
			1645528	424.50	426.00	1.50	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656682	127.20	127.70	0.0140
1656683	127.70	129.00	0.0070
1656684	129.00	130.00	0.0220
1656685	130.00	130.70	0.0500
1656686	130.70	131.50	0.0520
1656687	131.50	132.00	0.0430
1656688	132.00	133.10	0.0200
1656689	133.10	133.80	0.0370
1656691	133.80	134.20	0.0280
1656692	134.20	135.00	0.0100
1656693	135.00	135.55	0.0300
1656694	135.55	136.00	0.0370
1656695	136.00	137.00	0.0080
1656696	137.00	137.50	0.0210
1656697	137.50	138.00	0.0280
1656698	138.00	138.45	0.0050
1656699	138.45	139.70	0.0080
1656701	139.70	140.30	0.0810
1656702	140.30	141.00	0.0100
1656703	141.00	142.00	0.0550
1656704	142.00	143.00	0.0080
1656705	143.00	144.00	0.0140
1656706	144.00	144.50	0.0170
1656707	144.50	145.10	0.0090
1656708	145.10	146.20	0.0130
1656709	146.20	146.70	0.0090
1656711	146.70	147.30	0.0160
1656712	147.30	148.30	0.1260
1656713	148.30	149.30	0.0060
1656714	149.30	150.00	0.0090
1656715	150.00	151.20	0.0170
1656716	151.20	152.20	0.0370

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656717	152.20	153.00	0.0090
1656718	153.00	154.00	0.0140
1656719	154.00	154.70	0.0060
1656721	154.70	155.00	0.0160
1656722	155.00	155.40	0.0110
1656723	155.40	156.00	0.0500
1656724	156.00	156.75	0.0050
1656725	156.75	157.30	0.0060
1656726	157.30	158.00	0.0170
1656727	158.00	159.00	0.0050
1656728	159.00	159.90	0.0060
1656729	159.90	160.70	0.0090
1656731	160.70	161.40	0.0100
1656732	161.40	162.00	0.0350
1656733	162.00	162.40	0.0090
1656734	162.40	162.90	0.0110
1656735	162.90	163.90	0.0160
1656736	163.90	164.40	0.0200
1656737	164.40	165.00	0.0180
1656738	165.00	165.50	0.0380
1656739	165.50	166.50	0.0150
1656741	166.50	167.50	0.0170
1656742	167.50	168.30	0.0110
1656743	168.30	169.00	0.0130
1656744	169.00	169.80	0.0160
1656745	169.80	171.00	0.0150
1656746	171.00	172.00	0.0540
1656747	172.00	173.00	0.0140
1656748	173.00	174.00	0.0260
1656749	174.00	174.35	0.0120
1656751	174.35	174.65	0.0230
1656752	174.65	175.60	0.0120
1656753	175.60	176.70	0.0100
1656754	176.70	177.30	0.0150
1656755	177.30	177.80	0.0410
1656756	177.80	178.10	0.0850
1656757	178.10	178.50	0.0590
1656758	178.50	179.50	0.0200
1656759	179.50	180.00	0.0070

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656761	180.00	181.30	0.0630
1656762	181.30	182.00	0.0120
1656763	182.00	182.45	0.0100
1656764	182.45	183.00	0.0060
1656765	183.00	183.50	0.0070
1656766	183.50	184.20	0.0170
1656767	184.20	185.20	0.0100
1656768	185.20	186.00	0.0590
1656769	186.00	186.80	0.0160
1656771	186.80	187.20	0.0110
1656772	187.20	188.25	0.0120
1656773	188.25	188.70	0.0220
1656774	188.70	189.00	0.0025
1656775	189.00	189.90	0.0140
1656776	189.90	190.80	0.0110
1656777	190.80	191.60	0.0050
1656778	191.60	192.20	0.0150
1656779	192.20	192.80	0.0025
1656781	192.80	193.60	0.0025
1656782	193.60	194.20	0.0080
1656783	194.20	195.00	0.0025
1656784	195.00	195.65	0.0025
1656785	195.65	196.10	0.0025
1656786	196.10	197.00	0.0025
1656787	197.00	198.00	0.0025
1656788	198.00	199.00	0.0025
1656789	199.00	199.50	0.0025
1656791	199.50	200.10	0.0025
1656792	200.10	201.20	0.0200
1656793	201.20	201.85	0.0025
1656794	201.85	202.90	0.0025
1656795	202.90	204.05	0.0025
1656796	204.05	205.00	0.0080
1656797	205.00	206.00	0.0025
1656798	206.00	207.00	0.0025
1656799	207.00	207.80	0.0025
1656801	207.80	208.80	0.0025
1656802	208.80	209.40	0.0025
1656803	209.40	210.00	0.0160

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656804	210.00	210.90	0.0025
1656805	210.90	211.90	0.0025
1656806	211.90	213.00	0.0025
1656807	213.00	213.85	0.0100
1656808	213.85	214.85	0.0025
1656809	214.85	215.80	0.0025
1656811	215.80	216.50	0.0025
1656812	216.50	217.50	0.0025
1656813	217.50	218.50	0.0025
1656814	218.50	219.00	0.0025
1656815	219.00	220.25	0.0025
1656816	220.25	221.00	0.0025
1656817	221.00	222.00	0.0025
1656818	222.00	222.60	0.0025
1656819	222.60	223.25	0.0025
1656821	223.25	224.25	0.0025
1656822	224.25	225.20	0.0025
1656823	225.20	226.40	0.0025
1656824	226.40	227.85	0.0025
1656825	227.85	228.80	0.0025
1656826	228.80	229.80	0.0025
1656827	229.80	231.00	0.0025
1656828	231.00	232.15	0.0025
1656829	232.15	233.15	0.0025
1656831	233.15	234.00	0.0025
1656832	234.00	235.00	0.0060
1656833	235.00	236.00	0.0025
1656834	236.00	237.00	0.0025
1656835	237.00	237.80	0.0025
1656836	237.80	238.80	0.0060
1656837	238.80	239.50	0.0025
1656838	239.50	240.00	0.0025
1656839	240.00	240.70	0.0025
1656841	240.70	241.30	0.0025
1656842	241.30	241.80	0.0025
1656843	241.80	242.70	0.0025
1656844	242.70	243.70	0.0025
1656845	243.70	244.70	0.0025
1656846	244.70	245.20	0.0025

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656847	245.20	246.00	0.0025
1656848	246.00	247.00	0.0025
1656849	247.00	248.00	0.0025
1656851	248.00	248.60	0.0025
1656852	248.60	249.00	0.0025
1656853	249.00	249.50	0.0050
1656854	249.50	250.05	0.0025
1656855	250.05	251.00	0.0025
1656856	251.00	252.00	0.0025
1656857	252.00	252.80	0.0025
1656858	252.80	253.80	0.0025
1656859	253.80	254.40	0.0025
1656861	254.40	255.00	0.0025
1656862	255.00	256.00	0.0025
1656863	256.00	256.90	0.0060
1656864	256.90	257.25	0.0025
1656865	257.25	258.00	0.0025
1656866	258.00	259.00	0.0060
1656867	259.00	260.10	0.0025
1656868	260.10	261.00	0.0025
1656869	261.00	262.00	0.0025
1656871	262.00	262.30	0.0025
1656872	262.30	263.30	0.0110
1656873	263.30	264.00	0.0080
1656874	264.00	264.55	0.0110
1656875	264.55	265.50	0.0450
1656876	265.50	266.00	0.2800
1656877	266.00	267.00	0.0025
1656878	267.00	267.70	0.0025
1656879	267.70	268.70	0.0550
1656881	268.70	269.45	0.0110
1656882	269.45	270.40	0.0025
1656883	270.40	271.25	0.0130
1656884	271.25	272.00	0.0060
1656885	272.00	273.00	0.0050
1656886	273.00	274.00	0.0025
1656887	274.00	275.00	0.0025
1656888	275.00	275.95	0.1120
1656889	275.95	276.50	0.0420

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656891	276.50	277.00	0.0150
1656892	277.00	277.80	0.0110
1656893	277.80	278.50	0.0120
1656894	278.50	279.00	0.0120
1656895	279.00	280.00	0.0080
1656896	280.00	281.00	0.0130
1656897	281.00	282.00	0.0300
1656898	282.00	282.70	0.0360
1656899	282.70	283.20	0.2670
1656901	283.20	283.70	0.0890
1656902	283.70	284.40	0.0220
1656903	284.40	285.00	0.0320
1656904	285.00	286.00	0.1260
1656905	286.00	287.00	0.0080
1656906	287.00	288.00	0.0190
1656907	288.00	288.30	0.0140
1656908	288.30	289.30	0.0080
1656909	289.30	290.00	0.0025
1656911	290.00	291.00	0.0060
1656912	291.00	292.00	0.0080
1656913	292.00	293.00	0.0025
1656914	293.00	293.60	0.0070
1656915	293.60	294.20	0.0050
1656916	294.20	295.20	0.0050
1656917	295.20	296.10	0.0025
1656918	296.10	297.00	0.0050
1656919	297.00	298.00	0.0080
1656921	298.00	299.00	0.0150
1656922	299.00	299.80	0.1570
1656923	299.80	300.40	0.0140
1656924	300.40	301.40	0.0170
1656925	301.40	302.20	0.0290
1656926	302.20	303.00	0.1370
1656927	303.00	304.50	0.0150
1656928	304.50	306.00	0.0090
1656929	306.00	306.75	0.0090
1656931	306.75	307.50	0.0060
1656932	307.50	309.00	0.0140
1656933	309.00	310.00	0.0080

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656934	310.00	310.90	0.0120
1656935	310.90	312.00	0.0730
1656936	312.00	313.00	0.0240
1656937	313.00	314.00	0.0025
1656938	314.00	315.00	0.0060
1656939	315.00	316.00	0.0120
1656941	316.00	317.00	0.0120
1656942	317.00	317.60	0.1450
1656943	317.60	318.40	0.0025
1656944	318.40	319.20	0.0050
1656945	319.20	319.90	0.0070
1656946	319.90	321.00	0.0025
1656947	321.00	322.00	0.0060
1656948	322.00	323.00	0.0740
1656949	323.00	324.00	0.0780
1656951	324.00	325.00	0.0460
1656952	325.00	326.00	0.0780
1656953	326.00	327.00	0.0800
1656954	327.00	328.50	0.0100
1656955	328.50	330.00	0.0080
1656956	330.00	331.10	0.0390
1656957	331.10	332.00	0.0025
1656958	332.00	333.00	0.0025
1656959	333.00	333.70	0.0025
1656961	333.70	334.40	0.0060
1656962	334.40	335.00	0.1080
1656963	335.00	336.00	0.0025
1656964	336.00	337.50	0.0100
1656965	337.50	339.00	0.0120
1656966	339.00	340.00	0.0420
1656967	340.00	341.00	0.0130
1656968	341.00	342.00	0.0220
1656969	342.00	342.90	0.0380
1656971	342.90	344.10	0.0130
1656972	344.10	345.00	0.0060
1656973	345.00	345.60	0.0400
1656974	345.60	346.80	0.0080
1656975	346.80	348.00	0.0120
1656976	348.00	349.00	0.0150

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1656977	349.00	350.00	0.0180
1656978	350.00	351.00	0.0220
1656979	351.00	352.00	0.0300
1656981	352.00	353.00	0.0100
1656982	353.00	354.00	0.0170
1656983	354.00	355.50	0.0540
1656984	355.50	357.00	0.0160
1656985	357.00	358.50	0.0080
1656986	358.50	360.00	0.0160
1656987	360.00	361.30	0.0210
1656988	361.30	361.80	0.0170
1656989	361.80	362.70	0.0210
1656991	362.70	363.60	0.0100
1656992	387.00	388.50	0.0090
1656993	388.50	390.00	0.0400
1656994	390.00	391.15	0.0130
1656995	391.15	392.30	0.0060
1656996	392.30	393.10	0.0130
1656997	393.10	394.30	0.0130
1656998	394.30	395.20	0.0190
1656999	395.20	396.00	0.0025
1645501	396.00	397.50	0.0080
1645502	397.50	399.00	0.0025
1645503	399.00	400.50	0.0140
1645504	400.50	402.00	0.0210
1645505	402.00	403.00	0.0050
1645506	403.00	404.00	0.0090
1645507	404.00	405.00	0.0110
1645508	405.00	406.50	0.0060
1645509	406.50	408.00	0.0070
1645511	408.00	408.90	0.0100
1645512	408.90	409.40	0.0090
1645513	409.40	410.20	0.0120
1645514	410.20	411.00	0.0160
1645515	411.00	412.50	0.0120
1645516	412.50	414.00	0.0410
1645517	414.00	415.00	0.0340
1645518	415.00	416.00	0.0650
1645519	416.00	416.50	0.0400

Hole Number: **NH19-039**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1645521	416.50	417.50	0.0120
1645522	417.50	418.20	0.0340
1645523	418.20	419.10	0.0240
1645524	419.10	420.00	0.0120
1645525	420.00	421.50	0.0320
1645526	421.50	423.00	0.0080
1645527	423.00	424.50	0.0100
1645528	424.50	426.00	0.0060

DETAILED LOG



Hole Number: **NH19-040**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5374450.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 509650.00	East:	Length: 531.00
	Elev: 286.00	Elev:	Start Depth: 0.00
Date Started: Jun 26, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jul 10, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 531.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	8.50	-53.20	APS	OK	Assumed from first test, No APS reading	63.00	8.50	-53.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
114.00	8.00	-52.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	165.00	8.50	-52.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
216.00	9.20	-52.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	267.00	9.10	-52.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
318.00	9.00	-52.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	369.00	9.90	-52.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
420.00	11.70	-51.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	471.00	13.60	-51.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
522.00	14.90	-50.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m						

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	52.20	HPO, OVERBURDEN Box initiates at 52.2m but casing block at 54m. 52.2-54m is massive mafic rock					
52.20	148.50	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained crystallization. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Leucoxene recognized. Moderate blocky core fracturing/fragmentation quite common but patchy throughout. Overall ~3-5 % veining as erratic gashes to veinlets. Trace sulphides. Sharp lower contact following fractured core, where competent core is recognized as a different unit.	1644068	147.00	147.75	0.75	0.01
			1644069	147.75	148.50	0.75	0.01

DETAILED LOG

Hole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
148.50	187.80	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Similar to Pominex East lense, but higher up than predicted to be. Green-grey weak-moderately glassy porphyritic dyke (fg background remnant texture). Weak-Mod pervasive silicification, weak-mod carb as alt haloes (bleeding out of fractures/veins), and weak patchy bleaching (chlor+/-weak ser) alterations all influencing this unit. Very Rare pink potassic alt also bleeding out of fractures. Weak-mod erratic chloritic gashes/fractures also recognized, with occasionally alt haloes bleeding out of them. Moderate blocky core fracturing patchy throughout unit. Unique cubic/angular mm scale orange-dark brown splotches (sericite?) initiating in veining at ~169m; recognized in multiple veins following this but seems to weaken towards bottom of unit. ~15-20% QC primarily as erratic gashes, stringers-veinlets (even clustered; for example 168.8m) with potential higher QC content in background as blebs. 159-160.6m represents slightly increase QC/chlor stringers with alt haloes; typical orientation ~35-55 DTCA. 168.1-168.8m increased higher angle blobby milky QC veinlets typically oriented ~60-75 DTCA. ~3% FF clustered FG/blebby mg py. Sharp lower contact where fracturing/fragmentation occurs, but last competent piece variably oriented from 30-50 DTCA.</p>	1644071	148.50	149.25	0.75	0.01
			1644072	149.25	150.00	0.75	0.01
			1644073	150.00	151.00	1.00	0.01
			1644074	151.00	152.00	1.00	0.01
			1644075	152.00	153.00	1.00	0.01
			1644076	153.00	154.00	1.00	0.01
			1644077	154.00	155.00	1.00	0.01
			1644078	155.00	156.00	1.00	0.01
			1644079	156.00	157.00	1.00	0.01
			1644081	157.00	158.00	1.00	0.01
			1644082	158.00	159.00	1.00	0.01
			1644083	159.00	159.80	0.80	0.01
			1644084	159.80	160.60	0.80	0.01
			1644085	160.60	161.30	0.70	0.01
			1644086	161.30	162.00	0.70	0.01
			1644087	162.00	163.00	1.00	0.01
			1644088	163.00	164.00	1.00	0.01
			1644089	164.00	165.00	1.00	0.01
			1644091	165.00	166.00	1.00	0.01
			1644092	166.00	167.00	1.00	0.01
			1644093	167.00	168.10	1.10	0.01
			1644094	168.10	168.80	0.70	0.01
			1644095	168.80	169.90	1.10	0.01
			1644096	169.90	171.00	1.10	0.01
			1644097	171.00	172.00	1.00	0.01
		1644098	172.00	173.00	1.00	0.01	
		1644099	173.00	174.00	1.00	0.06	
		1644101	174.00	175.00	1.00	0.01	
		1644102	175.00	175.70	0.70	0.05	
		1644103	175.70	177.00	1.30	0.02	
		1644104	177.00	178.50	1.50	0.02	
		1644105	178.50	180.00	1.50	0.03	
		1644106	180.00	180.80	0.80	0.02	
		1644107	180.80	181.70	0.90	0.01	
		1644108	181.70	182.40	0.70	0.01	
		1644109	182.40	183.20	0.80	0.04	
		1644111	183.20	184.00	0.80	0.01	
		1644112	184.00	185.00	1.00	0.09	
		1644113	185.00	186.00	1.00	0.02	
		1644114	186.00	187.00	1.00	0.01	
		1644115	187.00	187.80	0.80	0.01	

Hole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
187.80	293.40	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Compositionally similar to previous mafic unit in this log, but this interval is exhibiting mm~1cm scale variolitic texture throughout, as well as other weaker localized flow/breccia textures (even rare instances of pillowing). Lacking any significant alts/veins/sulphs throughout. Minor IIO 275.8-276.8m. Lower contact placed where last major variolitic patch is recognized, and pillowing features become dominant.</p> <p>MINOR INTERVALS: Minor Interval: 275.80 - 276.80 IIO, INTERMEDIATE INTRUSIVE f-mg pseudo-speckled grey intrusive believed to be intermediate in composition.</p>	1644116	187.80	188.50	0.70	0.02
			1644117	188.50	189.00	0.50	0.01
293.40	331.70	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally similar to previous mafic units, but this interval is exhibiting pillowing features (pillows, chill margins, flows, etc.) throughout. Minor IIOs 303.6-304.3m, 306.2-308m (in and out). Lacking any significant alts/sulphs/veins. Lowermost few meters (after ~327m) shows increasing olive green chlorite alteration. Sharp lower contact at ~80 DTCA, adjacent to fracturing.</p> <p>MINOR INTERVALS: Minor Interval: 303.60 - 304.30 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 306.30 - 308.00 IIO, INTERMEDIATE INTRUSIVE In-and-out of intrusives over this interval.</p>	1644118	330.00	330.80	0.80	0.01
			1644119	330.80	331.70	0.90	0.01
331.70	340.10	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>Pominex Lense Green-grey moderately glassy porphyritic dyke (fg background remnant texture). Mod cloudy/smokey grey-white patchy carb, and weak patchy chlorite alterations all influencing this unit; numerous cases of alteration bleeding out of fractures/veinlets. Weak-mod erratic chloritic gashes/fractures also recognized, with occasionally QC/ alt haloes bleeding out of them. In areas of increased chlorite/tourmaline fracturing, larger quantity of pyrite clusters occur, with relatively increasing alteration haloes bleeding out as well. ~20-25% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs. ~3% FF blebby/clustered (primarily in alt haloes) VFG py; locally 5%. Sharp lower contact at variable but average 70-80 DTCA.</p>	1644121	331.70	332.50	0.80	0.02
			1644122	332.50	333.50	1.00	0.02
			1644123	333.50	334.50	1.00	0.04
			1644124	334.50	335.50	1.00	0.03
			1644125	335.50	336.40	0.90	0.06
			1644126	336.40	337.20	0.80	0.25
			1644127	337.20	338.10	0.90	0.05
			1644128	338.10	339.00	0.90	0.03
			1644129	339.00	340.10	1.10	0.02

DETAILED LOGHole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
340.10	349.30	ACH, CARB-CHLORITIC ROCK Darker, softer green-grey chlorite altered ultramafics. Weak patchy carb and very weak yellow sericite (towards lower contact) also influencing the unit. Moderate-strong erratic tension gouging resulting in primarily grey discontinuous QC gashes but also rarer is wavy chlorite gashes. Tension gouging in combination with QC surrounding fragmented clasts are associated with breccia veining. Other deformation features such as microfaulting and localized cataclastic texture may also be present. Overall ~ 15-20% QC, primarily as brecciated veinlets or erratic discontinuous gashes/stringers. Trace sulphides. Sharp lower contact at ~80 DTCA; adjacent to mimicking fracturing.	1644131	340.10	341.00	0.90	0.01
			1644132	341.00	342.00	1.00	0.01
			1644133	342.00	343.50	1.50	0.01
			1644134	343.50	345.00	1.50	0.01
			1644135	345.00	346.50	1.50	0.01
			1644136	346.50	348.00	1.50	0.01
			1644137	348.00	349.30	1.30	0.01

DETAILED LOG

Hole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
349.30	378.70	<p>IP2, FELDSPAR & QUARTZ PORPHYRY</p> <p>See most recent IP2 pominex lense for more detailed description. Noteworthy intervals include:</p> <p>Upper contact~353m shows relatively increased erratic dark chloritic+/-tourmaline gashes, with increased alt haloes and sulphides</p> <p>~366-370m shows en echelon, typically ~60-75 DTCA chlor+/-tourmaline gashes with thin grey carb alt haloes and occasional pyrite clustering.</p> <p>~378-378.5m Shows intense erratic chlo/tourmaline fracturing resulting in 'shattered' appearance.</p> <p>~20-25% QC overall, primarily as erratic gashes or associated with fractures.</p> <p>~3%FF/blebby py; locally up to 5%.</p> <p>Gradual lower contact over ~10cm or so.</p>	1644138	349.30	350.10	0.80	0.02
			1644139	350.10	350.90	0.80	0.01
			1644141	350.90	351.60	0.70	0.27
			1644142	351.60	352.50	0.90	0.01
			1644143	352.50	353.20	0.70	0.05
			1644144	353.20	354.00	0.80	0.01
			1644145	354.00	355.00	1.00	0.10
			1644146	355.00	356.00	1.00	0.01
			1644147	356.00	357.00	1.00	0.01
			1644148	357.00	358.10	1.10	0.02
			1644149	358.10	359.00	0.90	0.04
			1644151	359.00	360.00	1.00	0.01
			1644152	360.00	361.00	1.00	0.01
			1644153	361.00	362.00	1.00	0.01
			1644154	362.00	363.00	1.00	0.06
			1644155	363.00	363.70	0.70	0.01
			1644156	363.70	364.80	1.10	0.01
			1644157	364.80	366.00	1.20	0.01
			1644158	366.00	366.80	0.80	0.01
			1644159	366.80	367.70	0.90	0.03
			1644161	367.70	368.50	0.80	0.04
			1644162	368.50	369.40	0.90	0.03
			1644163	369.40	370.10	0.70	0.13
			1644164	370.10	371.00	0.90	0.01
			1644165	371.00	372.00	1.00	0.08
		1644166	372.00	373.00	1.00	0.01	
		1644167	373.00	373.80	0.80	0.02	
		1644168	373.80	374.60	0.80	0.01	
		1644169	374.60	375.00	0.40	0.03	
		1644171	375.00	375.60	0.60	0.10	
		1644172	375.60	376.60	1.00	0.01	
		1644173	376.60	377.30	0.70	0.02	
		1644174	377.30	378.00	0.70	0.03	
		1644175	378.00	378.70	0.70	0.15	
378.70	380.10	<p>ACH, CARB-CHLORITIC ROCK</p> <p>See previous ACH; believed to be compositionally mafic, with speckled background texture.</p> <p>~5-8% QC throughout, trace sulphides.</p> <p>Sharp lower contact at variable but average ~70 DTCA fracturing.</p>	1644176	378.70	380.10	1.40	0.01

DETAILED LOG

Hole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
380.10	381.20	IP2, FELDSPAR & QUARTZ PORPHYRY See previous pomine IP2 litho. Moderately silicified, mod alt haloes of carb+/-alb, or weaker patchy chlorite. ~3% FF/Blebbly py. Sharp lower contact at ~40-50 DTCA.	1644177	380.10	381.20	1.10	0.01
381.20	384.00	ISO, SYENITIC INTRUSIVE Pink syenitic intrusive interval with mm scale black to white blebs/flakes, and qtz eyes present in the background matrix. Weak to moderate tension gouging present, resulting in dark black erratic chlorite filled gashes/fractures. ~10-15% QC as erratic gashes. Trace sulphides. Sharp lower contact at block.	1644178	381.20	382.60	1.40	0.01
			1644179	382.60	384.00	1.40	0.03
384.00	460.10	VUO, ULTRAMAFIC VOLCANIC Massive rock believed to be more ultramafic in composition compared to recent ACH, as this interval is more blue-grey, softer, and talc is present on the odd fracture surface. Mod-strong erratic dark chlorite/light QC gashes often resulting in 'shattered' appearance. Very weak patchy brecciation recognized with fragmented baserock. ~25% QC overall as described erratic gashes and blobby veinlets. Largest vein 441.8-442.3m; massive blobby shear veining ~60 DTCA. Brecciation following this for a few meters, and rock appears to be darker and more chlorite rich to bottom of unit. 1-2% blebby f-mg py. Sharp lower contact where intense gouging/faulting initiates, but compositionally ultramafic still present into next litho.	1644181	384.00	385.50	1.50	0.01
			1644182	385.50	387.00	1.50	0.01
			1644183	440.00	441.00	1.00	0.01
			1644184	441.00	441.80	0.80	0.09
			1644185	441.80	442.30	0.50	0.41
			1644186	442.30	443.20	0.90	0.14
			1644187	443.20	444.00	0.80	0.02
			1644188	444.00	445.50	1.50	0.01
			1644189	445.50	447.00	1.50	0.02
			1644191	447.00	448.50	1.50	0.01
			1644192	448.50	449.70	1.20	0.03
			1644193	449.70	450.30	0.60	0.04
			1644194	450.30	451.50	1.20	0.01
			1644195	451.50	453.00	1.50	0.01
			1644196	453.00	454.50	1.50	0.01
			1644197	454.50	456.00	1.50	0.03
			1644198	456.00	457.00	1.00	0.08
			1644199	457.00	458.00	1.00	0.01
			1644201	458.00	459.00	1.00	0.04
			1644202	459.00	460.10	1.10	0.01
460.10	461.30	ZGO, GOUGE Potential Gold Island Fault DPFZ- intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides. Lower contact where rock becomes competent once again.	1644203	460.10	461.30	1.20	0.30

Hole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
461.30	474.00	ACO, CARBONATE ALTERED ROCK	1644204	461.30	462.00	0.70	0.02
		POTENTIAL AQUARIUS LENSE	1644205	462.00	462.80	0.80	0.02
		Intensely sheared ultramafic rock with mod-strong pervasive brown carbonate alteration throughout majority of unit; when this alteration is lacking, chlor/grey carb with breccia+/-stockwork 'shattered' erratic QC veinlets dominate. Weak patchy silicification, and Weak wispy yellow sericite alteration on the rare shear/vein margin (even green fuchsite recognized at ~470.2m). Shear strong throughout with mimicking wormy QC stringers-veinlets and chlorite tectonic banding; orientation is quite variable/wavy throughout, but commonly 50-80 DTCA. Weak-mod localized brecciation also recognized.	1644206	462.80	463.60	0.80	0.02
		~30% QC primarily as wormy shear stringers-veinlets, as well as erratic breccia associated floods; (for example a few blobby floods at ~464m, and ~469.5-470.2m).	1644207	463.60	463.90	0.30	0.02
		~3% mg blebby/vfg clustered py; locally may reach 5+% (for example in variably altered patch at ~470.2m).	1644208	463.90	464.80	0.90	0.11
		Gradual lower contact over a few meters where brown carb fades away over a few meters, and soft dark (less altered) ultramafic composition remains.	1644209	464.80	466.00	1.20	0.04
			1644211	466.00	467.00	1.00	0.01
			1644212	467.00	468.00	1.00	0.01
			1644213	468.00	468.75	0.75	0.01
			1644214	468.75	469.50	0.75	0.03
			1644215	469.50	470.10	0.60	0.08
			1644216	470.10	470.60	0.50	0.21
			1644217	470.60	471.50	0.90	0.01
			1644218	471.50	472.75	1.25	0.01
			1644219	472.75	474.00	1.25	0.01

DETAILED LOG

Hole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
474.00	531.00	VUM, MASSIVE ULTRAMAFIC Softer dark blue-grey ultramafic unit. Shearing is moderate throughout, and typically oriented 40-75 DTCA, but is also recognized to be quite erratic/wavy in many instances as well. Erratic QC fractures/gashes present. Alterations include moderate patchy grey carbonate, weak patchy green chlorite (primarily on fracture surfaces), wispy/flakey yellow sericite (primarily on vein margins). Overall ~25-30% milky QC primarily as blobby, shear associated veinlets to floods. Rounded mm scale splotches also present. Overall ~2% blebby/clustered f-mg pyrite throughout; sulphides primrily cluster along vein margins or gouge patches, and may locally reach ~3%. 498-501m more gouged; potentially GIF associated. EOH.	1644221	474.00	475.50	1.50	0.01
			1644222	475.50	477.00	1.50	0.01
			1644223	477.00	478.50	1.50	0.05
			1644224	478.50	480.00	1.50	0.01
			1644225	480.00	481.00	1.00	0.01
			1644226	481.00	482.00	1.00	0.02
			1644227	482.00	483.00	1.00	0.03
			1644228	483.00	484.50	1.50	0.01
			1644229	484.50	486.00	1.50	0.01
			1644231	486.00	487.00	1.00	0.01
			1644232	487.00	488.00	1.00	0.01
			1644233	488.00	489.00	1.00	0.01
			1644234	489.00	490.00	1.00	0.01
			1644235	490.00	491.00	1.00	0.01
			1644236	491.00	492.00	1.00	0.01
			1644237	492.00	493.50	1.50	0.01
			1644238	493.50	495.00	1.50	0.01
			1644239	495.00	496.40	1.40	0.01
			1644241	496.40	497.80	1.40	0.01
			1644242	497.80	498.50	0.70	0.01
			1644243	498.50	499.40	0.90	0.04
			1644244	499.40	499.70	0.30	0.01
			1644245	499.70	501.00	1.30	0.03
			1644246	501.00	502.50	1.50	0.01
			1644247	502.50	504.00	1.50	0.01
			1644248	504.00	505.50	1.50	0.01
			1644249	505.50	507.00	1.50	0.01
			1644251	507.00	508.50	1.50	0.01
			1644252	508.50	510.00	1.50	0.01
			1644253	510.00	511.50	1.50	0.01
			1644254	511.50	512.00	0.50	0.01
			1644255	512.00	513.00	1.00	0.01
			1644256	513.00	514.50	1.50	0.01
			1644257	514.50	516.00	1.50	0.01
			1644258	516.00	517.50	1.50	0.01
			1644259	517.50	518.50	1.00	0.01
			1644261	518.50	519.00	0.50	0.01
			1644262	519.00	520.50	1.50	0.01
			1644263	520.50	522.00	1.50	0.01
			1644264	522.00	523.50	1.50	0.01
			1644265	523.50	525.00	1.50	0.01
			1644266	525.00	526.50	1.50	0.01

DETAILED LOG

Hole Number: **NH19-040**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1644267	526.50	527.40	0.90	0.01
			1644268	527.40	528.20	0.80	0.01
			1644269	528.20	529.60	1.40	0.01
			1644271	529.60	531.00	1.40	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644068	147.00	147.75	0.0050
1644069	147.75	148.50	0.0050
1644071	148.50	149.25	0.0050
1644072	149.25	150.00	0.0050
1644073	150.00	151.00	0.0050
1644074	151.00	152.00	0.0050
1644075	152.00	153.00	0.0050
1644076	153.00	154.00	0.0050
1644077	154.00	155.00	0.0050
1644078	155.00	156.00	0.0050
1644079	156.00	157.00	0.0050
1644081	157.00	158.00	0.0050
1644082	158.00	159.00	0.0050
1644083	159.00	159.80	0.0050
1644084	159.80	160.60	0.0050
1644085	160.60	161.30	0.0050
1644086	161.30	162.00	0.0050
1644087	162.00	163.00	0.0050
1644088	163.00	164.00	0.0050
1644089	164.00	165.00	0.0050
1644091	165.00	166.00	0.0050
1644092	166.00	167.00	0.0050
1644093	167.00	168.10	0.0050
1644094	168.10	168.80	0.0050
1644095	168.80	169.90	0.0050
1644096	169.90	171.00	0.0050
1644097	171.00	172.00	0.0050
1644098	172.00	173.00	0.0050
1644099	173.00	174.00	0.0600
1644101	174.00	175.00	0.0100
1644102	175.00	175.70	0.0500
1644103	175.70	177.00	0.0200

Hole Number: **NH19-040**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644104	177.00	178.50	0.0200
1644105	178.50	180.00	0.0300
1644106	180.00	180.80	0.0200
1644107	180.80	181.70	0.0050
1644108	181.70	182.40	0.0050
1644109	182.40	183.20	0.0400
1644111	183.20	184.00	0.0050
1644112	184.00	185.00	0.0900
1644113	185.00	186.00	0.0200
1644114	186.00	187.00	0.0050
1644115	187.00	187.80	0.0050
1644116	187.80	188.50	0.0200
1644117	188.50	189.00	0.0050
1644118	330.00	330.80	0.0050
1644119	330.80	331.70	0.0050
1644121	331.70	332.50	0.0200
1644122	332.50	333.50	0.0200
1644123	333.50	334.50	0.0400
1644124	334.50	335.50	0.0300
1644125	335.50	336.40	0.0600
1644126	336.40	337.20	0.2500
1644127	337.20	338.10	0.0500
1644128	338.10	339.00	0.0300
1644129	339.00	340.10	0.0200
1644131	340.10	341.00	0.0050
1644132	341.00	342.00	0.0050
1644133	342.00	343.50	0.0050
1644134	343.50	345.00	0.0050
1644135	345.00	346.50	0.0050
1644136	346.50	348.00	0.0050
1644137	348.00	349.30	0.0050
1644138	349.30	350.10	0.0200
1644139	350.10	350.90	0.0100
1644141	350.90	351.60	0.2700
1644142	351.60	352.50	0.0050
1644143	352.50	353.20	0.0500
1644144	353.20	354.00	0.0100
1644145	354.00	355.00	0.1000
1644146	355.00	356.00	0.0050

Hole Number: **NH19-040**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644147	356.00	357.00	0.0100
1644148	357.00	358.10	0.0200
1644149	358.10	359.00	0.0400
1644151	359.00	360.00	0.0050
1644152	360.00	361.00	0.0100
1644153	361.00	362.00	0.0050
1644154	362.00	363.00	0.0600
1644155	363.00	363.70	0.0050
1644156	363.70	364.80	0.0050
1644157	364.80	366.00	0.0050
1644158	366.00	366.80	0.0050
1644159	366.80	367.70	0.0300
1644161	367.70	368.50	0.0400
1644162	368.50	369.40	0.0300
1644163	369.40	370.10	0.1300
1644164	370.10	371.00	0.0050
1644165	371.00	372.00	0.0800
1644166	372.00	373.00	0.0050
1644167	373.00	373.80	0.0200
1644168	373.80	374.60	0.0100
1644169	374.60	375.00	0.0300
1644171	375.00	375.60	0.1000
1644172	375.60	376.60	0.0050
1644173	376.60	377.30	0.0200
1644174	377.30	378.00	0.0300
1644175	378.00	378.70	0.1500
1644176	378.70	380.10	0.0050
1644177	380.10	381.20	0.0100
1644178	381.20	382.60	0.0050
1644179	382.60	384.00	0.0300
1644181	384.00	385.50	0.0050
1644182	385.50	387.00	0.0050
1644183	440.00	441.00	0.0050
1644184	441.00	441.80	0.0900
1644185	441.80	442.30	0.4100
1644186	442.30	443.20	0.1400
1644187	443.20	444.00	0.0200
1644188	444.00	445.50	0.0100
1644189	445.50	447.00	0.0200

Hole Number: **NH19-040**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644191	447.00	448.50	0.0100
1644192	448.50	449.70	0.0300
1644193	449.70	450.30	0.0400
1644194	450.30	451.50	0.0050
1644195	451.50	453.00	0.0050
1644196	453.00	454.50	0.0050
1644197	454.50	456.00	0.0300
1644198	456.00	457.00	0.0800
1644199	457.00	458.00	0.0100
1644201	458.00	459.00	0.0400
1644202	459.00	460.10	0.0050
1644203	460.10	461.30	0.3000
1644204	461.30	462.00	0.0200
1644205	462.00	462.80	0.0200
1644206	462.80	463.60	0.0200
1644207	463.60	463.90	0.0200
1644208	463.90	464.80	0.1100
1644209	464.80	466.00	0.0400
1644211	466.00	467.00	0.0100
1644212	467.00	468.00	0.0100
1644213	468.00	468.75	0.0050
1644214	468.75	469.50	0.0300
1644215	469.50	470.10	0.0800
1644216	470.10	470.60	0.2100
1644217	470.60	471.50	0.0050
1644218	471.50	472.75	0.0050
1644219	472.75	474.00	0.0050
1644221	474.00	475.50	0.0050
1644222	475.50	477.00	0.0050
1644223	477.00	478.50	0.0500
1644224	478.50	480.00	0.0050
1644225	480.00	481.00	0.0050
1644226	481.00	482.00	0.0200
1644227	482.00	483.00	0.0300
1644228	483.00	484.50	0.0100
1644229	484.50	486.00	0.0050
1644231	486.00	487.00	0.0050
1644232	487.00	488.00	0.0100
1644233	488.00	489.00	0.0050

Hole Number: **NH19-040**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644234	489.00	490.00	0.0050
1644235	490.00	491.00	0.0050
1644236	491.00	492.00	0.0050
1644237	492.00	493.50	0.0050
1644238	493.50	495.00	0.0050
1644239	495.00	496.40	0.0050
1644241	496.40	497.80	0.0050
1644242	497.80	498.50	0.0050
1644243	498.50	499.40	0.0400
1644244	499.40	499.70	0.0050
1644245	499.70	501.00	0.0300
1644246	501.00	502.50	0.0100
1644247	502.50	504.00	0.0050
1644248	504.00	505.50	0.0100
1644249	505.50	507.00	0.0050
1644251	507.00	508.50	0.0100
1644252	508.50	510.00	0.0050
1644253	510.00	511.50	0.0050
1644254	511.50	512.00	0.0050
1644255	512.00	513.00	0.0050
1644256	513.00	514.50	0.0050
1644257	514.50	516.00	0.0050
1644258	516.00	517.50	0.0050
1644259	517.50	518.50	0.0050
1644261	518.50	519.00	0.0050
1644262	519.00	520.50	0.0050
1644263	520.50	522.00	0.0050
1644264	522.00	523.50	0.0050
1644265	523.50	525.00	0.0050
1644266	525.00	526.50	0.0050
1644267	526.50	527.40	0.0050
1644268	527.40	528.20	0.0050
1644269	528.20	529.60	0.0050
1644271	529.60	531.00	0.0050

DETAILED LOG



Hole Number: **NH19-041**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5374453.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 509749.80	East:	Length: 582.00
	Elev: 288.30	Elev:	Start Depth: 0.00
Date Started: Jul 10, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Jul 23, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Hislop
	Pulse EM Survey: N	Casing: YES	Final Depth: 582.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.00	-55.00	APS	OK		90.00	10.90	-56.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
141.00	11.10	-56.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	192.00	11.00	-56.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
243.00	10.90	-56.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	297.00	11.00	-56.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
348.00	11.40	-56.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	399.00	12.20	-56.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
450.00	12.80	-56.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	501.00	13.20	-56.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	77.10	HPO, OVERBURDEN					
77.10	161.40	<p>VMM, MAFIC VOLCANIC MASSIVE</p> <p>Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained crystallization. Lacking any significant alteration, veining, or sulphides throughout. Weak-mod patches of grey carb, Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Leucoxene recognized. Moderate blocky core fracturing/fragmentation quite common but patchy throughout (ex boxes 1, and 11-17). Overall ~3-5 % veining as erratic gashes to veinlets. Trace sulphides. Rock appears to become more fine grained/less-textured at ~144m. Lower contact placed where pillowing features initiate, but compositionally rock is still mafic.</p>					

Hole Number: **NH19-041**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
161.40	205.30	<p>VMP, VOLCANIC MASSIVE PILLOWED</p> <p>Compositionally, rock is still mafic (see previous unit for more detailed description, but this interval is lighter green-grey in colour), but this interval is exhibiting weak-moderate localized pillowing features including chill margins, salveges, etc. Pillowing features weaken towards bottom of unit (ex. after ~192m they are rare). Weak localized core fracturing/fragmentation. Lacking any significant alts/veins/sulphs, aside from noe interval 178.8-179m is a interval of increased higher angle veinlets, wispy yellow sericite and weaker purple albite, chlorite, and ~2-3% blebby/vein hosted pyrite. Lower contact placed where variolitic texture initiates.</p>	1644272	177.00	177.80	0.80	0.01
			1644273	177.80	178.30	0.50	0.02
			1644274	178.30	178.80	0.50	0.01
			1644275	178.80	179.10	0.30	0.14
			1644276	179.10	180.00	0.90	0.00
			1644277	180.00	181.00	1.00	0.00
205.30	363.00	<p>VMV, MAFIC VOLCANIC VARIOLITIC</p> <p>Compositionally similar to previous mafic, but this interval is exhibiting variolitic texture throughout; mm to ~1cm scale. Weak patchy grey carb, and rare chlorite on fracture surfaces/as gashes-fractures. Lacking any sig alts/veins/sulphs. Minor IIOs 226-226.2m. variolitic texture fading in lowermost few boxes, and green chlorite alt increasing. Strong pillow salvages from 299.m to 307 spaced roughly ~1m to 1.5m Lower contact where olive green chlorite becomes dominant.</p> <p>MINOR INTERVALS: Minor Interval: 226.00 - 226.20 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 289.00 - 289.65 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 302.25 - 302.55 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 331.45 - 334.00 VGO, GABBRO Fine to medium grained, weak carb alteration, dark grey, with fine phenocrysts of white feldspar, trace, sulphides trace, Sharp contacts at UC at 40 degrees, LC at 70 degrees.</p>					
363.00	367.80	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Olive green chlorite altered rock, believed to be softer ultramafics, as certain deformational features such as spinifex and weak-mod shearing (typically 40-70DTCA) are present. Weak-moderate erratic tension gouging resulting in primarily grey discontinuous QC gashes but also rarer is wavy chlorite gashes. Overall ~ 7-10% QC, primarily as shear veinlets or erratic discontinuous gashes/stringers. Trace sulphides. Sharp lower contact weakly variable but average ~80 DTCA</p>	1644278	366.10	366.70	0.60	0.00
			1644279	366.70	367.80	1.10	0.00

DETAILED LOG

Hole Number: **NH19-041**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
367.80	421.00	IP2, FELDSPAR & QUARTZ PORPHYRY Pominex Lense Green-grey (even pale yellow in localized weak sericite rich intervals) moderately glassy porphyritic dyke (fg background remnant texture). Mod cloudy grey-white patchy carb, weak patchy yellow sericite, and weak-mod pervasive chlorite alterations all influencing this unit; numerous cases of alteration bleeding out of fractures/veinlets as alt haloes. Mod-strong erratic chloritic gashes/fractures also recognized. In areas of increased chlorite/tourmaline fracturing, larger quantity of pyrite clusters occur, with relatively increasing alteration haloes bleeding out as well (for example en echelon veining/fractures ~371-372m). 403.5-404m, and 404.8-405.6m show different carb altered baserock, and fragmented core; potentially healed fault zone ~30-45DTCA contacts with fragmented pominex lense incorporated in xenolith. ~25-30% QC primarily as erratic gashes to stringers, with potential higher QC content in background as blebs. ~3% FF blebby/clustered (primarily in alt haloes) VFG py; locally up to 5%. Sharp lower contact at ~30 DTCA. MINOR INTERVALS: Minor Interval: 388.10 - 388.20 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 419.00 - 419.20 ACH, CARB-CHLORITIC ROCK	1644281	367.80	369.00	1.20	0.03
			1644282	369.00	370.00	1.00	0.02
			1644283	370.00	371.00	1.00	0.02
			1644284	371.00	372.00	1.00	0.08
			1644285	372.00	373.00	1.00	0.02
			1644286	373.00	373.70	0.70	0.01
			1644287	373.70	374.30	0.60	0.01
			1644288	374.30	375.00	0.70	0.00
			1644289	375.00	376.50	1.50	0.01
			1644291	376.50	378.00	1.50	0.07
			1644292	378.00	378.80	0.80	0.32
			1644293	378.80	379.40	0.60	0.16
			1644294	379.40	380.20	0.80	0.02
			1644295	380.20	381.00	0.80	0.04
			1644296	381.00	382.50	1.50	0.01
			1644297	382.50	384.00	1.50	0.02
			1644298	384.00	385.00	1.00	0.04
			1644299	385.00	386.00	1.00	0.19
			1644301	386.00	387.00	1.00	0.14
			1644302	387.00	388.10	1.10	0.14
			1644303	388.10	388.50	0.40	0.01
			1644304	388.50	390.00	1.50	0.07
			1644305	390.00	391.00	1.00	0.04
			1644306	391.00	392.00	1.00	0.01
			1644307	392.00	393.00	1.00	0.00
			1644308	393.00	394.00	1.00	0.02
			1644309	394.00	395.00	1.00	0.02
			1644311	395.00	396.00	1.00	0.03
			1644312	396.00	397.50	1.50	0.01
			1644313	397.50	399.00	1.50	0.03
			1644314	399.00	399.70	0.70	0.04
			1644315	399.70	400.50	0.80	0.34
			1644316	400.50	401.20	0.70	0.02
			1644317	401.20	402.00	0.80	0.11
			1644318	402.00	402.60	0.60	0.32
			1644319	402.60	403.50	0.90	0.10
			1644321	403.50	404.00	0.50	0.08
			1644322	404.00	404.80	0.80	0.02
			1644323	404.80	405.60	0.80	0.04
			1644324	405.60	406.50	0.90	0.03
			1644325	406.50	407.20	0.70	0.14
			1644326	407.20	408.00	0.80	0.33

DETAILED LOG

Hole Number: **NH19-041**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1644327	408.00	408.60	0.60	0.13
			1644328	408.60	409.50	0.90	0.01
			1644329	409.50	410.30	0.80	0.08
			1644331	410.30	411.00	0.70	0.40
			1644332	411.00	412.50	1.50	0.13
			1644333	412.50	414.00	1.50	0.10
			1644334	414.00	415.50	1.50	0.01
			1644335	415.50	417.00	1.50	0.23
			1644336	417.00	418.00	1.00	0.10
			1644337	418.00	419.00	1.00	0.26
			1644338	419.00	419.50	0.50	0.01
			1644339	419.50	420.40	0.90	0.01
			1644341	420.40	421.00	0.60	0.02
421.00	427.90	ACH, CARB-CHLORITIC ROCK See previous ACH for more detailed description. Minor IP2 fragment 421.1-421.2m. ~10% QC erratic throughout. Trace sulphides. Sharp lower contact at ~50 DTCA.	1644342	421.00	422.00	1.00	0.00
			1644343	422.00	423.00	1.00	0.00
			1644344	423.00	424.50	1.50	0.00
			1644345	424.50	426.00	1.50	0.00
			1644346	426.00	427.00	1.00	0.00
			1644347	427.00	427.90	0.90	0.01
427.90	431.30	ISO, SYENITIC INTRUSIVE Pink syenitic intrusive interval with mm scale black to white blebs/flakes, and qtz eyes present in the background matrix. Weak to moderate tension gouging present, resulting in dark black erratic chlorite filled gashes/fractures. ~2-3% vfg dissem py. Sharp lower contact at ~40 DTCA fracturing.	1644348	427.90	429.00	1.10	0.01
			1644349	429.00	430.00	1.00	0.00
			1644351	430.00	431.30	1.30	0.01
431.30	469.00	ACH, CARB-CHLORITIC ROCK See previous ACH for more detailed description; baserock appears to be mafic in upper portion, and transitioning into softer ultramafic with increased erratic QC (often resulting in 'shattered' appearance, for example 456.5) intensifying towards bottom of unit. Weak patchy grey carb alteration. Minor intrusives believed to be IIOs 443.1-444.1m, and 447.3-447.9m. ~15-20% QC as described erratic 'shattered' stringers-veinlets, or weakly breccia associated. 1-2% blebby py. Lower contact placed where increase QC 'shatter' fracturing initiates, indicating potentially softer ultramafic composition MINOR INTERVALS: Minor Interval: 443.10 - 444.10 IIO, INTERMEDIATE INTRUSIVE Minor Interval: 447.30 - 447.90 IIO, INTERMEDIATE INTRUSIVE	1644352	431.30	432.00	0.70	0.00
			1644353	455.00	455.90	0.90	0.00
			1644354	455.90	456.40	0.50	0.00
			1644355	456.40	457.10	0.70	0.00
			1644356	457.10	458.00	0.90	0.00
			1644357	458.00	459.00	1.00	0.00
			1644358	467.00	468.00	1.00	0.00
			1644359	468.00	469.00	1.00	0.00

DETAILED LOG

Hole Number: **NH19-041**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
469.00	493.50	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/locally brown (weak patchy brown carb influencing) soft ultramafics with a 'shattered' appearance throughout (stockwork?) with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically high angle >60 degrees TCA. Brecciation moderate to locally strong. Weak patchy core fracturing and fragmentation. Weak patchy brown carbonate, chlorite. Intense QC flooding (with weak green stringy fuchsite alteration) at lowermost 40cm of this litho, just before faulting initiates. 469.4-469.8m shows glassy, somewhat albite altered intrusives (AAO minors). ~30-35% QC as described primarily thin stockwork/erratic 'shattered' fracturing. ~1-2% blebby py. Lower contact where intense fracturing/fragmentation an even gouging initiates, representing faulting.</p> <p>MINOR INTERVALS: Minor Interval: 469.40 - 469.80 AAO, ALBITIC ALTERED ROCK Albite altered intrusive with ~3-5% py. Minor Interval: 493.10 - 493.50 QVC, QUARTZ CARBONATE VEINS w/ stringy green fuchsite alteration recognized.</p>	1644361	469.00	469.40	0.40	0.01
			1644362	469.40	469.80	0.40	0.01
			1644363	469.80	471.00	1.20	0.00
			1644364	471.00	472.00	1.00	0.00
			1644365	472.00	473.00	1.00	0.01
			1644366	473.00	474.00	1.00	0.00
			1644367	474.00	474.90	0.90	0.00
			1644368	474.90	476.00	1.10	0.00
			1644369	476.00	477.00	1.00	0.00
			1644371	477.00	478.50	1.50	0.00
			1644372	478.50	480.00	1.50	0.00
			1644373	480.00	481.50	1.50	0.00
			1644374	481.50	482.50	1.00	0.00
			1644375	482.50	483.40	0.90	0.00
			1644376	483.40	484.70	1.30	0.00
			1644377	484.70	486.00	1.30	0.00
			1644378	486.00	487.50	1.50	0.00
			1644379	487.50	489.00	1.50	0.01
		1644381	489.00	490.50	1.50	0.04	
		1644382	490.50	492.00	1.50	0.06	
		1644383	492.00	493.10	1.10	0.03	
		1644384	493.10	493.50	0.40	0.02	
493.50	495.00	<p>ZGO, GOUGE</p> <p>Gold Island Fault- intense gouging, core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides.</p>	1644385	493.50	495.00	1.50	0.19

DETAILED LOG

Hole Number: **NH19-041**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
495.00	582.00	VUM, MASSIVE ULTRAMAFIC	1644386	495.00	496.00	1.00	0.07
		See previous VUM for more detailed description; this unit shows variable features as follows:	1644387	496.00	497.00	1.00	0.02
		Upper contact until ~515m or so shows strong stockwork and/or sheared (typically oriented 60-80 DTCA) stringers-veinlets, with rare blobby vein flooding. (~30-40% QC overall)	1644388	497.00	497.80	0.80	0.03
		515m to bottom of unit shows more massive, softer talc rich with less defined deformational features, but gouging becoming moderate+common (in patches) after 521.7m; weak patchy green fuchsite also influencing rare milky QC blobs/floods/breccia associated veinlets. (~25-30% QC).	1644389	497.80	498.40	0.60	0.02
		Moderate patchy grey carb and weaker patchy brown carb alterations throughout entire unit.	1644391	498.40	499.70	1.30	0.01
		509-510m shows albite altered minor intrusive hosting ~5% pyrite (following this is a few meters of stronger sheared veining).	1644392	499.70	501.00	1.30	0.01
		~2% blebby/vein hosted pyrite throughout entire unit. EOH.	1644393	501.00	502.30	1.30	0.00
		MINOR INTERVALS:	1644394	502.30	503.60	1.30	0.00
		Minor Interval:	1644395	503.60	504.00	0.40	0.00
		509.00 - 510.00 AAO, ALBITIC ALTERED ROCK	1644396	504.00	505.50	1.50	0.00
		Albite altered intrusive hosting ~5% blebby/disseminated py.	1644397	505.50	507.00	1.50	0.01
			1644398	507.00	508.00	1.00	0.03
			1644399	508.00	509.00	1.00	0.18
			1644401	509.00	509.50	0.50	0.44
			1644402	509.50	510.00	0.50	0.64
			1644403	510.00	511.00	1.00	0.02
			1644404	511.00	511.60	0.60	0.23
			1644405	511.60	512.30	0.70	0.08
			1644406	512.30	513.00	0.70	0.05
			1644407	513.00	513.50	0.50	0.24
			1644408	513.50	514.50	1.00	0.03
			1644409	514.50	516.00	1.50	0.06
			1644411	516.00	517.50	1.50	0.07
			1644412	517.50	519.00	1.50	0.01
			1644413	519.00	520.30	1.30	0.01
			1644414	520.30	521.70	1.40	0.03
			1644415	528.30	529.00	0.70	0.01
			1644416	529.00	530.00	1.00	0.00
			1644417	530.00	530.60	0.60	0.00
			1644418	530.60	531.00	0.40	0.02
			1644419	531.00	531.40	0.40	0.01
			1644421	531.40	532.00	0.60	0.03
			1644422	554.10	555.00	0.90	0.01
			1644423	555.00	556.20	1.20	0.01
			1644424	556.20	557.50	1.30	0.01
			1644425	557.50	558.00	0.50	0.02
			1644426	558.00	559.00	1.00	0.01
			1644427	559.00	560.00	1.00	0.01
			1644428	560.00	561.00	1.00	0.00
			1644429	571.50	572.00	0.50	0.04
			1644431	572.00	573.00	1.00	0.04
			1644432	573.00	573.70	0.70	0.01

DETAILED LOGHole Number: **NH19-041**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1644433	573.70	574.60	0.90	0.02
			1644434	574.60	575.10	0.50	0.01
			1644435	575.10	576.00	0.90	0.01
			1644436	576.00	577.00	1.00	0.04

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644272	177.00	177.80	0.0060
1644273	177.80	178.30	0.0170
1644274	178.30	178.80	0.0050
1644275	178.80	179.10	0.1350
1644276	179.10	180.00	0.0025
1644277	180.00	181.00	0.0025
1644278	366.10	366.70	0.0025
1644279	366.70	367.80	0.0025
1644281	367.80	369.00	0.0290
1644282	369.00	370.00	0.0210
1644283	370.00	371.00	0.0150
1644284	371.00	372.00	0.0770
1644285	372.00	373.00	0.0220
1644286	373.00	373.70	0.0090
1644287	373.70	374.30	0.0050
1644288	374.30	375.00	0.0025
1644289	375.00	376.50	0.0120
1644291	376.50	378.00	0.0700
1644292	378.00	378.80	0.3240
1644293	378.80	379.40	0.1560
1644294	379.40	380.20	0.0170
1644295	380.20	381.00	0.0440
1644296	381.00	382.50	0.0070
1644297	382.50	384.00	0.0180
1644298	384.00	385.00	0.0380
1644299	385.00	386.00	0.1860
1644301	386.00	387.00	0.1360
1644302	387.00	388.10	0.1400
1644303	388.10	388.50	0.0100
1644304	388.50	390.00	0.0710
1644305	390.00	391.00	0.0370
1644306	391.00	392.00	0.0100

Hole Number: **NH19-041**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644307	392.00	393.00	0.0025
1644308	393.00	394.00	0.0210
1644309	394.00	395.00	0.0210
1644311	395.00	396.00	0.0260
1644312	396.00	397.50	0.0100
1644313	397.50	399.00	0.0280
1644314	399.00	399.70	0.0350
1644315	399.70	400.50	0.3350
1644316	400.50	401.20	0.0200
1644317	401.20	402.00	0.1080
1644318	402.00	402.60	0.3220
1644319	402.60	403.50	0.0970
1644321	403.50	404.00	0.0780
1644322	404.00	404.80	0.0170
1644323	404.80	405.60	0.0390
1644324	405.60	406.50	0.0340
1644325	406.50	407.20	0.1440
1644326	407.20	408.00	0.3250
1644327	408.00	408.60	0.1270
1644328	408.60	409.50	0.0140
1644329	409.50	410.30	0.0810
1644331	410.30	411.00	0.3980
1644332	411.00	412.50	0.1270
1644333	412.50	414.00	0.1020
1644334	414.00	415.50	0.0060
1644335	415.50	417.00	0.2270
1644336	417.00	418.00	0.0960
1644337	418.00	419.00	0.2590
1644338	419.00	419.50	0.0110
1644339	419.50	420.40	0.0100
1644341	420.40	421.00	0.0190
1644342	421.00	422.00	0.0025
1644343	422.00	423.00	0.0025
1644344	423.00	424.50	0.0025
1644345	424.50	426.00	0.0025
1644346	426.00	427.00	0.0025
1644347	427.00	427.90	0.0060
1644348	427.90	429.00	0.0060
1644349	429.00	430.00	0.0025

Hole Number: **NH19-041**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644351	430.00	431.30	0.0070
1644352	431.30	432.00	0.0025
1644353	455.00	455.90	0.0025
1644354	455.90	456.40	0.0025
1644355	456.40	457.10	0.0025
1644356	457.10	458.00	0.0025
1644357	458.00	459.00	0.0025
1644358	467.00	468.00	0.0025
1644359	468.00	469.00	0.0025
1644361	469.00	469.40	0.0100
1644362	469.40	469.80	0.0060
1644363	469.80	471.00	0.0025
1644364	471.00	472.00	0.0025
1644365	472.00	473.00	0.0140
1644366	473.00	474.00	0.0025
1644367	474.00	474.90	0.0025
1644368	474.90	476.00	0.0025
1644369	476.00	477.00	0.0025
1644371	477.00	478.50	0.0025
1644372	478.50	480.00	0.0025
1644373	480.00	481.50	0.0025
1644374	481.50	482.50	0.0025
1644375	482.50	483.40	0.0025
1644376	483.40	484.70	0.0025
1644377	484.70	486.00	0.0025
1644378	486.00	487.50	0.0025
1644379	487.50	489.00	0.0050
1644381	489.00	490.50	0.0370
1644382	490.50	492.00	0.0570
1644383	492.00	493.10	0.0250
1644384	493.10	493.50	0.0200
1644385	493.50	495.00	0.1900
1644386	495.00	496.00	0.0720
1644387	496.00	497.00	0.0220
1644388	497.00	497.80	0.0330
1644389	497.80	498.40	0.0160
1644391	498.40	499.70	0.0060
1644392	499.70	501.00	0.0060
1644393	501.00	502.30	0.0025

Hole Number: **NH19-041**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644394	502.30	503.60	0.0025
1644395	503.60	504.00	0.0025
1644396	504.00	505.50	0.0025
1644397	505.50	507.00	0.0090
1644398	507.00	508.00	0.0320
1644399	508.00	509.00	0.1810
1644401	509.00	509.50	0.4360
1644402	509.50	510.00	0.6420
1644403	510.00	511.00	0.0210
1644404	511.00	511.60	0.2310
1644405	511.60	512.30	0.0820
1644406	512.30	513.00	0.0450
1644407	513.00	513.50	0.2420
1644408	513.50	514.50	0.0300
1644409	514.50	516.00	0.0560
1644411	516.00	517.50	0.0700
1644412	517.50	519.00	0.0110
1644413	519.00	520.30	0.0060
1644414	520.30	521.70	0.0280
1644415	528.30	529.00	0.0080
1644416	529.00	530.00	0.0025
1644417	530.00	530.60	0.0025
1644418	530.60	531.00	0.0230
1644419	531.00	531.40	0.0080
1644421	531.40	532.00	0.0320
1644422	554.10	555.00	0.0080
1644423	555.00	556.20	0.0070
1644424	556.20	557.50	0.0070
1644425	557.50	558.00	0.0170
1644426	558.00	559.00	0.0090
1644427	559.00	560.00	0.0070
1644428	560.00	561.00	0.0025
1644429	571.50	572.00	0.0410
1644431	572.00	573.00	0.0350
1644432	573.00	573.70	0.0100
1644433	573.70	574.60	0.0150
1644434	574.60	575.10	0.0070
1644435	575.10	576.00	0.0070
1644436	576.00	577.00	0.0350

DETAILED LOG



Hole Number: **NH19-042**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -55.00
Project Number: MACKLE_TWP	North: 5374453.00	North:	Collar Az: 10.00
Location: Macklem Township	East: 509749.80	East:	Length: 600.00
	Elev: 288.30	Elev:	Start Depth: 0.00
Date Started: Jul 23, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Aug 08, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage:
	Pulse EM Survey: N	Casing: YES	Final Depth: 600.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	10.00	-55.00	APS	OK		48.00	8.10	-55.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
99.00	8.80	-55.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	201.00	9.60	-54.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
252.00	9.30	-54.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	303.00	9.60	-54.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
354.00	10.90	-54.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	405.00	12.30	-54.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
456.00	13.00	-54.80	EZ Sho	OK		507.00	13.30	-54.60	EZ Sho	OK	
558.00	12.40	-54.30	EZ Sho	OK		600.00	12.60	-54.80	EZ Sho	OK	

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	36.20	HPO, OVERBURDEN					
36.20	132.10	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained crystallization. Lacking any significant alteration, veining, or sulphides throughout. Weak-mod patches of grey carb, Very weak chlorite may be on fracture surfaces or patchy, as well as patchy purple hematite influencing the rare veinlet. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Leucoxene recognized. Overall ~3-5 % veining as erratic gashes to veinlets. Trace sulphides.	1644437	131.10	132.10	1.00	0.02
132.10	136.30	IP2, FELDSPAR & QUARTZ PORPHYRY Pominex Green-pale grey strong glassy (silicified) porphyritic dyke (f-mg background remnant texture). Mod cloudy grey-white patchy carb bleaching, weak patchy yellow sericite, and weak patchy chlorite alterations all influencing this unit; Weak kspar influencing fracture surfacing. Sulphides disseminated throughout at 2-3% ~5-10% QC primarily as thin erratic gashes to stringers, with potential higher QC content in background as blebs; occasionally en echelon QC or chl fractures/veinlets, most commonly oriented ~50-75DTCA.	1644438	132.10	132.80	0.70	0.02
			1644439	132.80	133.80	1.00	0.01
			1644441	133.80	134.80	1.00	0.02
			1644442	134.80	135.40	0.60	1.62
			1644443	135.40	136.30	0.90	0.01

Hole Number: **NH19-042**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
136.30	141.45	VMM, MAFIC VOLCANIC MASSIVE Similar textures and qualities as 36.2 to 132.1m	1644444	136.30	137.30	1.00	0.02
			1644445	140.50	141.45	0.95	0.02
141.45	143.95	QVC, QUARTZ CARBONATE VEINS Milky white QC with calcite veinlets cross cutting vein with rafted light green massive volcanic (20%), sulphides within angular clasts at 2-3%. Sharp contacts at 40 to 50 degrees. Background foliation, at 40 to 50 degrees.	1644446	141.45	142.00	0.55	0.01
			1644447	142.00	143.00	1.00	0.02
			1644448	143.00	143.95	0.95	0.02
143.95	219.00	VMM, MAFIC VOLCANIC MASSIVE Similar textures and qualities 36.2 to 132.1m Strong bleaching 147 to 153m, and 216.4-216.9m (with weak-mod shearing ~70-80DTCA). Lacking any other sig alts/ veins (~5%)/ sulphs (trace). Lower contact where variolitic texture initiates.	1644449	143.95	145.00	1.05	0.01
219.00	277.40	VMV, MAFIC VOLCANIC VARIOLITIC Compositionally mafic rock (see previous for more detailed description), but this interval is exhibiting variolitic texture throughout, mm-~1cm in scale. Weak localized flow textures (even brecciation/fragmented flowtops). Minor darker grey IMD from 223.5-224.1m, and 276.1-276.2m. Sharp lower contact at ~60 DTCA where extensive IMD initiates. MINOR INTERVALS: Minor Interval: 223.50 - 224.10 IMD, MAFIC DYKE Darker grey mafic dyke lacking any significant alts/veins/sulphs. Minor Interval: 276.10 - 276.20 IMD, MAFIC DYKE					
277.40	281.50	IMD, MAFIC DYKE Darker grey vfg rock believed to be a mafic dyke. Lacking any significant alts/veins (~5%)/sulphs (trace). Minor VMM interval from 278.6-279.4m. Sharp lower contact variable but average 45-60 DTCA. MINOR INTERVALS: Minor Interval: 278.60 - 279.40 VMM, MAFIC VOLCANIC MASSIVE Lighter green grey mafic minor lense hosted in the darker dyke.					
281.50	296.00	VMV, MAFIC VOLCANIC VARIOLITIC See recent VMV for more detailed description; in this interval varioules are more rare and smaller scale (typically mm). Still lacking any significant alts/veins/sulphs. Sharp lower contact adjacent to and mimicking ~75 DTCA fracturing.					

Hole Number: **NH19-042**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
296.00	392.40	<p>ACH, CARB-CHLORITIC ROCK</p> <p>Darker/more olive green, chlorite altered unit. Base composition is still believed to be primarily mafic throughout, but may be gradually changing to more ultramafic composition (306m initiates softer, weakly talcy/carb altered darker somewhat blue-ish rock, with areas further down potentially back into more mafic).</p> <p>~15-20% erratic QC as gashes/veinlets to blobby floods. 468.1-468.2m shows shear vein hosting locally 3-5% vfg clustered py, and 371.3-371.5m shows extensional milky vein flood lacking sulphides.</p> <p>1-2% clustered/blebby py overall with local bleb clusters (ex ~311m) but nothing too significant.</p> <p>Sharp lower contact at ~80 DTCA fracturing.</p>	1644451	366.00	367.00	1.00	0.01
			1644452	367.00	367.90	0.90	0.02
			1644453	367.90	368.20	0.30	0.42
			1644454	368.20	369.00	0.80	0.02
			1644455	369.00	370.10	1.10	0.01
			1644456	370.10	371.30	1.20	0.01
			1644457	371.30	371.60	0.30	0.02
			1644458	371.60	372.20	0.60	0.02
			1644459	372.20	373.00	0.80	0.04
			1644461	390.00	391.20	1.20	0.01
			1644462	391.20	392.40	1.20	0.21
392.40	394.80	<p>AAO, ALBITIC ALTERED ROCK</p> <p>Smokey grey/purple albite altered interval with weak silicification throughout, and hosting increased vfg dissem, clustered, blebby pyrite. Baserock believed to be an intrusive (sharp contacts, intensely altered pervasively throughout).</p> <p>QC content ~ 15-20% throughout, primarily as faded clasts, wispy stringers-veinlets.</p> <p>Overall ~5-7% blebby/fg dissem py throughout.</p> <p>Sharp lower contact at variable 60-80DTCA fracturing.</p>	1644463	392.40	393.00	0.60	1.67
			1644464	393.00	393.70	0.70	2.67
			1644465	393.70	394.30	0.60	4.40
			1644466	394.30	394.80	0.50	1.12
394.80	455.80	<p>ACH, CARB-CHLORITIC ROCK</p> <p>See previous ACH; this interval appears to be dominantly softer ultramafic. Primarily olive green chlorite rich throughout, but blue-ish grey colour also present where chlorite weakens. Weak patches of brecciation occurring.</p> <p>Weak-mod erratic light QC gashes/fractures as well as more rare darker chlorite +/-tourmaline gashes.</p> <p>~25% QC throughout as described but also blobby veinlets-floods.</p> <p>1-2% py throughout.</p> <p>Lower contact where more intense carb alteration initiates with associated breccia flooding.</p>	1644467	394.80	396.00	1.20	0.08
			1644468	396.00	397.00	1.00	0.02
			1644469	450.00	451.10	1.10	0.01
			1644471	451.10	452.00	0.90	0.01
			1644472	452.00	453.00	1.00	0.01
			1644473	453.00	454.40	1.40	0.01
			1644474	454.40	455.80	1.40	0.01

Hole Number: **NH19-042**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
455.80	468.80	<p>ACO, CARBONATE ALTERED ROCK</p> <p>POTENTIAL AQUARIUS LENSE</p> <p>Intensely brecciated/sheared ultramafic rock with mod-strong pervasive brown carbonate alteration throughout majority of unit; when this alteration is lacking, chlor/grey carb with breccia+/-stockwork 'shattered' erratic QC veinlets dominate. Upper contact until ~459m shows mod-strong brecciation, whereas 459-bottom contact shows strong shearing. Weak patchy silicification, and Weak wispy yellow sericite alteration on the rare shear/vein margin. Shearing shows mimicking wormy QC stringers-veinlets and chlorite tectonic banding; orientation is quite variable/wavy throughout, but commonly 50-80 DTCA. Weak-mod localized brecciation also recognized.</p> <p>~35% QC primarily as wormy shear stringers-veinlets, as well as erratic breccia associated or blobby floods.</p> <p>~3% mg blebby/vfg clustered py throughout; locally may reach 10-15+% (for example around 462m block).</p> <p>Lower contact where shearing and alteration weakens/ceases over a few cm.</p>	1644475	455.80	457.00	1.20	0.25
			1644476	457.00	457.70	0.70	0.22
			1644477	457.70	458.50	0.80	0.08
			1644478	458.50	459.00	0.50	0.34
			1644479	459.00	459.70	0.70	0.22
			1644481	459.70	460.60	0.90	0.09
			1644482	460.60	461.50	0.90	1.13
			1644483	461.50	462.00	0.50	0.46
			1644484	462.00	462.50	0.50	0.42
			1644485	462.50	463.50	1.00	0.34
			1644486	463.50	464.00	0.50	0.47
			1644487	464.00	465.30	1.30	0.09
			1644488	465.30	466.00	0.70	0.08
			1644489	466.00	466.60	0.60	0.15
			1644491	466.60	467.70	1.10	0.31
			1644492	467.70	468.80	1.10	0.26
468.80	496.50	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate + patchy throughout typically high angle >60 degrees TCA, but occasionally variable/erratic. Weak patchy core fracturing and fragmentation. Weak patchy carbonate, chlorite, and +/- sericite; from 494.8-lower contact shows more intense grey carb (and potentially very weak albite) alt flooding.</p> <p>~ 25-30% QC as described. ♂1-2% blebby/clustered py.</p> <p>Lower contact placed where softer, more deformed and variably altered ultramafics initiate with gouging.</p>	1644493	468.80	469.40	0.60	0.31
			1644494	469.40	470.20	0.80	0.26
			1644495	470.20	471.00	0.80	0.03
			1644496	471.00	472.50	1.50	0.26
			1644497	472.50	474.00	1.50	0.32
			1644498	474.00	475.00	1.00	0.05
			1644499	475.00	476.00	1.00	0.27
			1644501	476.00	477.00	1.00	0.08
			1644502	477.00	477.90	0.90	0.02
			1644503	477.90	478.80	0.90	0.01
			1644504	493.00	493.90	0.90	0.01
			1644505	493.90	494.80	0.90	0.01
			1644506	494.80	495.60	0.80	0.01
			1644507	495.60	496.50	0.90	0.01

DETAILED LOG

Hole Number: **NH19-042**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
496.50	600.00	VUC, ULTRAMAFIC VOLCANIC TALCOSE Softer, talcy soapstone ultramafics. Exhibiting mod-strong gouging patches (for example upper contact until ~508m (potentially fault associated?). Weak-mod patchy grey carb, and weak patches of green fuchsite, with a mod-stronger pervasive patch in very soft soapy ultramafic interval from ~521-531m (also hosts blobby QC+/-calcitic veining and silvery micaceous flakes). ~20-25% blobby vein flooding, or shear associated veinlets-veins. ~2-3% primarily shear/deformationally vein hosted blebs (occasionally cubic) or clusters. A few spot samples may be taken in intervals of locally increased veining and/or sulphide content, but samples may have to be whole cored due to intense gouging. EOH	1644508	496.50	497.70	1.20	0.01
			1644509	497.70	498.40	0.70	0.01
			1644511	498.40	499.00	0.60	0.01
			1644512	516.00	517.50	1.50	0.01
			1644513	517.50	519.00	1.50	0.01
			1644514	519.00	520.50	1.50	0.05
			1644515	520.50	521.25	0.75	0.01
			1644516	521.25	522.00	0.75	0.01
			1644517	522.00	523.00	1.00	0.01
			1644518	523.00	524.00	1.00	0.01
			1644519	524.00	524.80	0.80	0.01
			1644521	524.80	526.00	1.20	0.01
			1644522	526.00	527.00	1.00	0.01
			1644523	527.00	528.00	1.00	0.01
			1644524	555.00	556.00	1.00	0.01
			1644525	556.00	557.00	1.00	0.01
			1644526	557.00	558.00	1.00	0.01
			1644527	558.00	559.50	1.50	0.01
			1644528	559.50	561.00	1.50	0.01
			1644529	561.00	562.00	1.00	0.01
			1644531	562.00	563.00	1.00	0.01
			1644532	563.00	564.00	1.00	0.01
			1644533	564.00	565.50	1.50	0.01
			1644534	565.50	567.00	1.50	0.01
			1644535	567.00	568.00	1.00	0.01
			1644536	568.00	568.50	0.50	0.01
			1644537	568.50	569.00	0.50	0.01
			1644538	569.00	569.80	0.80	0.01
			1644539	569.80	570.40	0.60	0.01
			1644541	588.00	588.80	0.80	0.01
			1644542	588.80	589.60	0.80	0.01
			1644543	589.60	590.10	0.50	0.01
			1644544	590.10	591.00	0.90	0.01
			1644545	591.00	592.50	1.50	0.01
			1644546	592.50	594.00	1.50	0.01
			1644547	594.00	595.50	1.50	0.01
			1644548	595.50	597.00	1.50	0.01
			1644549	597.00	598.50	1.50	0.01
			1644551	598.50	600.00	1.50	0.01

Hole Number: **NH19-042**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644437	131.10	132.10	0.0200
1644438	132.10	132.80	0.0200
1644439	132.80	133.80	0.0100
1644441	133.80	134.80	0.0200
1644442	134.80	135.40	1.6200
1644443	135.40	136.30	0.0100
1644444	136.30	137.30	0.0200
1644445	140.50	141.45	0.0200
1644446	141.45	142.00	0.0100
1644447	142.00	143.00	0.0200
1644448	143.00	143.95	0.0200
1644449	143.95	145.00	0.0100
1644451	366.00	367.00	0.0100
1644452	367.00	367.90	0.0200
1644453	367.90	368.20	0.4200
1644454	368.20	369.00	0.0200
1644455	369.00	370.10	0.0100
1644456	370.10	371.30	0.0100
1644457	371.30	371.60	0.0200
1644458	371.60	372.20	0.0200
1644459	372.20	373.00	0.0400
1644461	390.00	391.20	0.0100
1644462	391.20	392.40	0.2100
1644463	392.40	393.00	1.6700
1644464	393.00	393.70	2.6700
1644465	393.70	394.30	4.4000
1644466	394.30	394.80	1.1200
1644467	394.80	396.00	0.0800
1644468	396.00	397.00	0.0200
1644469	450.00	451.10	0.0100
1644471	451.10	452.00	0.0100
1644472	452.00	453.00	0.0050
1644473	453.00	454.40	0.0050
1644474	454.40	455.80	0.0100
1644475	455.80	457.00	0.2500
1644476	457.00	457.70	0.2200
1644477	457.70	458.50	0.0800
1644478	458.50	459.00	0.3400
1644479	459.00	459.70	0.2200

Hole Number: **NH19-042**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644481	459.70	460.60	0.0900
1644482	460.60	461.50	1.1300
1644483	461.50	462.00	0.4600
1644484	462.00	462.50	0.4200
1644485	462.50	463.50	0.3400
1644486	463.50	464.00	0.4700
1644487	464.00	465.30	0.0900
1644488	465.30	466.00	0.0800
1644489	466.00	466.60	0.1500
1644491	466.60	467.70	0.3100
1644492	467.70	468.80	0.2600
1644493	468.80	469.40	0.3100
1644494	469.40	470.20	0.2600
1644495	470.20	471.00	0.0300
1644496	471.00	472.50	0.2600
1644497	472.50	474.00	0.3200
1644498	474.00	475.00	0.0500
1644499	475.00	476.00	0.2700
1644501	476.00	477.00	0.0800
1644502	477.00	477.90	0.0200
1644503	477.90	478.80	0.0050
1644504	493.00	493.90	0.0050
1644505	493.90	494.80	0.0050
1644506	494.80	495.60	0.0050
1644507	495.60	496.50	0.0100
1644508	496.50	497.70	0.0050
1644509	497.70	498.40	0.0100
1644511	498.40	499.00	0.0100
1644512	516.00	517.50	0.0050
1644513	517.50	519.00	0.0050
1644514	519.00	520.50	0.0500
1644515	520.50	521.25	0.0050
1644516	521.25	522.00	0.0050
1644517	522.00	523.00	0.0050
1644518	523.00	524.00	0.0050
1644519	524.00	524.80	0.0050
1644521	524.80	526.00	0.0050
1644522	526.00	527.00	0.0050
1644523	527.00	528.00	0.0050

Hole Number: **NH19-042**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1644524	555.00	556.00	0.0050
1644525	556.00	557.00	0.0050
1644526	557.00	558.00	0.0050
1644527	558.00	559.50	0.0050
1644528	559.50	561.00	0.0050
1644529	561.00	562.00	0.0050
1644531	562.00	563.00	0.0050
1644532	563.00	564.00	0.0100
1644533	564.00	565.50	0.0100
1644534	565.50	567.00	0.0100
1644535	567.00	568.00	0.0100
1644536	568.00	568.50	0.0050
1644537	568.50	569.00	0.0050
1644538	569.00	569.80	0.0050
1644539	569.80	570.40	0.0050
1644541	588.00	588.80	0.0100
1644542	588.80	589.60	0.0050
1644543	589.60	590.10	0.0050
1644544	590.10	591.00	0.0050
1644545	591.00	592.50	0.0050
1644546	592.50	594.00	0.0050
1644547	594.00	595.50	0.0050
1644548	595.50	597.00	0.0050
1644549	597.00	598.50	0.0050
1644551	598.50	600.00	0.0050

DETAILED LOG



Hole Number: **NH19-051**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5376183.00	North:	Collar Az: 340.00
Location: Macklem Township	East: 508846.80	East:	Length: 326.00
	Elev: 292.30	Elev:	Start Depth: 0.00
Date Started: Aug 28, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Sep 04, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Aquarius
	Pulse EM Survey: N	Casing: YES	Final Depth: 326.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	339.80	-50.00	APS	OK		93.00	335.30	-53.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
144.00	336.30	-54.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	195.00	338.40	-54.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
246.00	339.50	-55.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	300.00	340.80	-55.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
326.00	341.10	-55.40	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m						

Detailed Lithology

From		To	Lithology	Assay Data				
Sample Number	From	To	Length	Au_gpt_Final				
0.00	77.60		HPO, OVERBURDEN					
77.60	92.00		ZGO, GOUGE Gold Island Fault- intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides. Lower contact where core becomes competent.					
92.00	107.00		VUM, MASSIVE ULTRAMAFIC Dark grey/blueish-green ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Wispy Greenish-yellow chlorite +/- sericite alteration mod-strong throughout, often FF/breccia associated. Intense metamorphism occurring, and seems to be strengthening towards lower contact. Shearing moderate throughout typically high angle typically 40-60 degrees TCA, mod patchy brecciation. Weak patchy core fracturing and fragmentation. Weak patchy grey carbonate. ~ 20-25% QC as described. ♂Trace sulphides. Sharp lower contact at ~60 DTCA.	1645529	92.00	93.00	1.00	0.01
				1645531	93.00	94.00	1.00	0.01
				1645532	94.00	95.00	1.00	0.02
				1645533	95.00	96.00	1.00	0.10
				1645534	96.00	97.50	1.50	0.11
				1645535	97.50	99.00	1.50	0.02
				1645536	99.00	100.00	1.00	0.01
				1645537	100.00	101.00	1.00	0.01
				1645538	101.00	102.00	1.00	0.09
				1645539	102.00	103.50	1.50	0.01
				1645541	103.50	105.00	1.50	0.02
				1645542	105.00	106.00	1.00	0.02
				1645543	106.00	107.00	1.00	0.02

Hole Number: **NH19-051**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
107.00	222.50	<p>LDO, DIABASE DYKE</p> <p>Dark grey moderately magnetic mafic dyke lacking any significant sulphides, veining, or alteration. Upper portion until ~117m is an extensive chill margin with vfg matrix, and unit is m-cg following this with crystallization common, even pseudo-gabbroic in some areas. Weak erratic dark tension gashes (tourmaline/chlorite) recognized. Very weak chlorite noticed to be influencing fracture surfaces and occasional stringer. Shiny biotite/micaceous flakes recognized around 192m block.</p> <p><5% QC as discontinuous gashes or stringers.</p> <p>Trace sulphides.</p> <p>Sharp lower contact at ~85 DTCA fracturing.</p>	1645544	107.00	108.00	1.00	0.01
			1645545	108.00	109.00	1.00	0.01
222.50	243.30	<p>VUM, MASSIVE ULTRAMAFIC</p> <p>Uppermost 1m or so shows intercollated dark LDO lenses present from upper unit.</p> <p>Dark grey/blueish (with weak-mod patchy green chlorite alteration) ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Shearing moderate throughout typically 50-70 degrees TCA, but occasionally variable.</p> <p>Weak patchy core fracturing, fragmentation, and even gouging intervals (for example 229.9-231m). Weak patchy brown/grey carbonate +/- sericite.</p> <p>~ 15-20% QC as described. ♂Trace sulphides.</p> <p>Lower contact placed where white/grey carb alt increases but ultramafic composition continues.</p>	1645546	242.00	242.60	0.60	0.01
			1645547	242.60	243.30	0.70	0.03

DETAILED LOG

Hole Number: **NH19-051**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
243.30	293.30	ACO, CARBONATE ALTERED ROCK Moderate to strongly deformed grey+/-weak brown carbonate altered ultramafics. Weak patches of pervasive silicification also recognized; for example 251.4-251.9m. Mod-Strong shearing throughout; when an orientation is recognized it is typically high angle 60-80 DTCA but a few areas are experiencing wavy/folded shearing. Moderate erratic tension gouging also present often mimicking shearing but also erratic grey/milky QC gashes. "Salt and pepper" appearance in massive intervals lacking deformation; potential variable flows or overprinted intrusives (ex 246.5-246.9m). Mm-cm scale rounded QC eyes/blebs present in background; shearing seems to weave around these. A few localized patches of fracturing/gouging occurring; for example 249m block, and 265.5m. Carb weakens and rock becomes more blue massive ultramafic dominated following 276m block. Veining ranges from very thin grey QC gashes mimicking shearing to milky blobby/wormy shear veinlets, often associated with shearing but also erratic in nature. ~ 30% QC overall. ~2% blebby/clustered py. Transitional lower contact over a cm or so.	1645548	243.30	244.30	1.00	0.01
			1645549	244.30	245.70	1.40	0.01
			1663001	245.70	246.50	0.80	0.01
			1663002	246.50	248.00	1.50	0.01
			1663003	248.00	249.00	1.00	0.01
			1663004	249.00	249.90	0.90	0.01
			1663005	249.90	251.40	1.50	0.02
			1663006	251.40	251.90	0.50	0.02
			1663007	251.90	253.10	1.20	0.01
			1663008	253.10	254.10	1.00	0.01
			1663009	254.10	255.00	0.90	0.01
			1663011	255.00	256.00	1.00	0.01
			1663012	256.00	256.80	0.80	0.01
			1663013	256.80	258.00	1.20	0.01
			1663014	258.00	259.00	1.00	0.01
			1663015	259.00	260.00	1.00	0.01
			1663016	260.00	261.00	1.00	0.04
			1663017	261.00	262.00	1.00	0.01
			1663018	262.00	263.00	1.00	0.01
			1663019	263.00	264.00	1.00	0.26
			1663021	264.00	265.50	1.50	0.01
			1663022	265.50	267.00	1.50	0.01
			1663023	267.00	268.00	1.00	0.03
			1663024	268.00	269.00	1.00	0.01
			1663025	269.00	270.00	1.00	0.01
			1663026	270.00	270.80	0.80	0.01
			1663027	270.80	271.60	0.80	0.01
			1663028	271.60	272.50	0.90	0.01
			1663029	272.50	273.60	1.10	0.07
			1663031	273.60	274.80	1.20	0.01
			1663032	274.80	275.60	0.80	0.01
			1663033	275.60	277.00	1.40	0.01
			1663034	277.00	278.00	1.00	0.01
			1663035	278.00	279.00	1.00	0.01
			1663036	279.00	280.50	1.50	0.01
			1663037	280.50	282.00	1.50	0.01
			1663038	282.00	283.50	1.50	0.01
			1663039	283.50	285.00	1.50	0.01
			1663041	285.00	286.50	1.50	0.14
			1663042	286.50	288.00	1.50	0.01
			1663043	288.00	289.50	1.50	0.01
			1663044	289.50	291.00	1.50	0.01

Hole Number: **NH19-051**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1663045	291.00	292.00	1.00	0.01
			1663046	292.00	293.30	1.30	0.01
293.30	326.00	SIA, ARGILLITE Grey fg sedimentary argillite/wacke lense. Banding/layering (typically 50-70 DTCA) recognized in background with occasional vfg pyrite clustering along it (for example 295.4m). More conglomerated intervals are present as follows: 297-297.5m, and 298-299.2m. Aside from this, a few larger >1cm subrounded-angular clasts present but rare throughout base matrix. Weak carb patchy throughout. ~5-8% QC as stringers-veinlets typically 50-70 DTCA. 2-3% blebby (even cubic for example prior to 300m block), or clustered (along fractures/bands) vfg-mg py. EOH. MINOR INTERVALS: Minor Interval: 297.00 - 297.50 SCO, CONGLOMERATES Minor Interval: 298.00 - 298.20 SCO, CONGLOMERATES	1663047	293.30	294.00	0.70	0.09
			1663048	294.00	295.00	1.00	0.01
			1663049	295.00	296.00	1.00	0.02
			1663051	296.00	297.00	1.00	0.02
			1663052	297.00	297.50	0.50	0.01
			1663053	297.50	298.00	0.50	0.01
			1663054	298.00	299.20	1.20	0.01
			1663055	299.20	300.00	0.80	0.01
			1663056	300.00	301.00	1.00	0.01
			1663057	301.00	302.00	1.00	0.01
			1663058	302.00	302.80	0.80	0.01

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1645529	92.00	93.00	0.0050
1645531	93.00	94.00	0.0050
1645532	94.00	95.00	0.0200
1645533	95.00	96.00	0.1000
1645534	96.00	97.50	0.1100
1645535	97.50	99.00	0.0200
1645536	99.00	100.00	0.0050
1645537	100.00	101.00	0.0100
1645538	101.00	102.00	0.0900
1645539	102.00	103.50	0.0100
1645541	103.50	105.00	0.0200
1645542	105.00	106.00	0.0200
1645543	106.00	107.00	0.0200
1645544	107.00	108.00	0.0050
1645545	108.00	109.00	0.0050
1645546	242.00	242.60	0.0050
1645547	242.60	243.30	0.0300
1645548	243.30	244.30	0.0050
1645549	244.30	245.70	0.0050
1663001	245.70	246.50	0.0050

Hole Number: **NH19-051**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663002	246.50	248.00	0.0050
1663003	248.00	249.00	0.0100
1663004	249.00	249.90	0.0050
1663005	249.90	251.40	0.0200
1663006	251.40	251.90	0.0200
1663007	251.90	253.10	0.0050
1663008	253.10	254.10	0.0050
1663009	254.10	255.00	0.0050
1663011	255.00	256.00	0.0050
1663012	256.00	256.80	0.0050
1663013	256.80	258.00	0.0050
1663014	258.00	259.00	0.0050
1663015	259.00	260.00	0.0100
1663016	260.00	261.00	0.0400
1663017	261.00	262.00	0.0050
1663018	262.00	263.00	0.0050
1663019	263.00	264.00	0.2600
1663021	264.00	265.50	0.0050
1663022	265.50	267.00	0.0050
1663023	267.00	268.00	0.0300
1663024	268.00	269.00	0.0100
1663025	269.00	270.00	0.0050
1663026	270.00	270.80	0.0050
1663027	270.80	271.60	0.0050
1663028	271.60	272.50	0.0050
1663029	272.50	273.60	0.0700
1663031	273.60	274.80	0.0100
1663032	274.80	275.60	0.0050
1663033	275.60	277.00	0.0050
1663034	277.00	278.00	0.0050
1663035	278.00	279.00	0.0050
1663036	279.00	280.50	0.0050
1663037	280.50	282.00	0.0050
1663038	282.00	283.50	0.0050
1663039	283.50	285.00	0.0050
1663041	285.00	286.50	0.1400
1663042	286.50	288.00	0.0050
1663043	288.00	289.50	0.0050
1663044	289.50	291.00	0.0050

Hole Number: **NH19-051**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663045	291.00	292.00	0.0050
1663046	292.00	293.30	0.0050
1663047	293.30	294.00	0.0900
1663048	294.00	295.00	0.0050
1663049	295.00	296.00	0.0200
1663051	296.00	297.00	0.0200
1663052	297.00	297.50	0.0050
1663053	297.50	298.00	0.0050
1663054	298.00	299.20	0.0050
1663055	299.20	300.00	0.0050
1663056	300.00	301.00	0.0050
1663057	301.00	302.00	0.0050
1663058	302.00	302.80	0.0050

DETAILED LOG



Hole Number: **NH19-052**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5376392.00	North:	Collar Az: 340.00
Location: Macklem Township	East: 508781.70	East:	Length: 300.00
	Elev: 291.70	Elev:	Start Depth: 0.00
Date Started: Sep 04, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Sep 10, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Aquarius
	Pulse EM Survey: N	Casing: YES	Final Depth: 300.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	340.00	-50.00	APS	OK	Planned bearing for hole; reading taken by drillers at top of hole	75.00	340.30	-54.00	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
126.00	343.20	-50.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	177.00	344.50	-48.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
228.00	344.90	-47.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	279.00	346.30	-46.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
0.00	64.70	HPO, OVERBURDEN Box starts at 64.7m, but casing block is at 66m					

DETAILED LOG

Hole Number: **NH19-052**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
64.70	124.00	SAO, ARKOSE Dark grey, very fine-med grained matrix with often mm->1cm clasts/conglomeration patches occurring, weak-mod patchy carb (increased in boxes 10-15), to small lenses aphanitic. Weak patchy yellow sericite bands also recognized (typically 60-75 DTCA). Blebby chlorite patchy throughout, weak silicification, blebby sulphides often euhedral med-coarse at 2%; mineralization appears to increase with increasing clast size/conglomeration/carb alt. 5-10% QC as clasts/fragments. LC where intense core fracturing/fragmentation initiates; faulting.	1663059	99.00	100.00	1.00	0.02
			1663061	100.00	101.00	1.00	0.06
			1663062	101.00	102.00	1.00	0.01
			1663063	102.00	103.00	1.00	0.01
			1663064	103.00	104.00	1.00	0.05
			1663065	104.00	105.00	1.00	0.02
			1663066	105.00	106.30	1.30	0.01
			1663067	106.30	107.10	0.80	0.02
			1663068	107.10	108.00	0.90	0.01
			1663069	108.00	109.50	1.50	0.01
			1663071	109.50	111.00	1.50	0.04
			1663072	111.00	112.00	1.00	0.04
			1663073	112.00	113.00	1.00	0.03
			1663074	113.00	114.00	1.00	0.02
			1663075	114.00	115.50	1.50	0.01
			1663076	115.50	117.00	1.50	0.03
			1663077	117.00	117.70	0.70	0.01
			1663078	117.70	118.80	1.10	0.01
			1663079	118.80	120.00	1.20	0.02
			1663081	120.00	121.00	1.00	0.01
			1663082	121.00	122.00	1.00	0.03
			1663083	122.00	123.00	1.00	0.01
			1663084	123.00	124.00	1.00	0.01
124.00	128.70	ZFZ, FAULT ZONE Intensely fractured/fragmented rock; believed to be fault associated. Compositionally, rock is the same as surrounding SAO units. Very rare green fuchsite alteration on odd fracture surfaces, as well as milky white QC blebs as some fragments. Lower contact where core becomes competent again.	1663085	124.00	125.00	1.00	0.09
			1663086	125.00	125.90	0.90	0.01
			1663087	125.90	126.50	0.60	0.03
			1663088	126.50	128.00	1.50	0.01
			1663089	128.00	128.70	0.70	0.02

DETAILED LOG

Hole Number: **NH19-052**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
128.70	242.20	SAO, ARKOSE See previous SAO. Carb alteration seems weaker at top of unit (relative to previous unit), but rare green fuchsite altered clasts/fragments recognized. 143.5~162m exhibiting intense core fragmentation (believed to be fault associated). Following ~164m shows moderate patches of grey carbonate, and banded yellow sericite alterations. Additionally, alteration and potential sulphide content seems to increase with increasing local clast size pseudo-conglomerated texture on occasion but not continuous/pervasive over any extensive interval. ~10-15% QC as fragments/clasts. 2-3% py as dissem/blebby clusters. Sharp lower contact where intense core fracturing/fragmentation initiates.	1663091	162.00	163.00	1.00	0.01
			1663092	163.00	164.00	1.00	0.01
			1663093	164.00	165.00	1.00	0.01
			1663094	165.00	166.50	1.50	0.09
			1663095	166.50	168.00	1.50	0.01
			1663096	168.00	169.20	1.20	0.01
			1663097	169.20	170.10	0.90	0.03
			1663098	170.10	171.00	0.90	0.07
			1663099	171.00	172.50	1.50	0.04
			1663101	172.50	174.00	1.50	0.01
			1663102	174.00	175.00	1.00	0.01
			1663103	175.00	176.00	1.00	0.02
			1663104	176.00	177.00	1.00	0.01
			1663105	177.00	178.00	1.00	0.01
			1663106	178.00	179.00	1.00	0.01
			1663107	179.00	180.00	1.00	0.01
			1663108	180.00	181.50	1.50	0.01
			1663109	181.50	183.00	1.50	0.01
			1663111	183.00	184.00	1.00	0.01
			1663112	184.00	185.00	1.00	0.01
			1663113	185.00	186.00	1.00	0.01
			1663114	186.00	186.60	0.60	0.01
			1663115	186.60	187.80	1.20	0.04
			1663116	187.80	189.00	1.20	0.01
			1663117	189.00	190.50	1.50	0.01
			1663118	190.50	192.00	1.50	0.01
			1663119	192.00	193.50	1.50	0.01
			1663121	193.50	195.00	1.50	0.04
			1663122	195.00	196.50	1.50	0.02
			1663123	196.50	197.60	1.10	0.02
			1663124	197.60	198.80	1.20	0.01
			1663125	198.80	200.00	1.20	0.01
			1663126	200.00	201.00	1.00	0.01
			1663127	201.00	202.50	1.50	0.00
			1663128	202.50	204.00	1.50	0.00
			1663129	204.00	205.50	1.50	0.02
			1663131	205.50	207.00	1.50	0.03
			1663132	207.00	208.50	1.50	0.01
			1663133	208.50	210.00	1.50	0.02
			1663134	210.00	211.50	1.50	0.03
			1663135	211.50	213.00	1.50	0.01
			1663136	213.00	214.50	1.50	0.01

Hole Number: **NH19-052**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
			1663137	214.50	216.00	1.50	0.01
			1663138	216.00	217.50	1.50	0.00
			1663139	217.50	219.00	1.50	0.02
			1663141	219.00	220.50	1.50	0.01
			1663142	220.50	222.00	1.50	0.01
			1663143	222.00	223.50	1.50	0.00
			1663144	223.50	225.00	1.50	0.01
			1663145	225.00	226.00	1.00	0.01
			1663146	226.00	227.10	1.10	0.00
			1663147	227.10	228.00	0.90	0.01
			1663148	228.00	229.50	1.50	0.00
			1663149	229.50	231.00	1.50	0.00
			1663151	231.00	232.50	1.50	0.01
			1663152	232.50	234.00	1.50	0.04
			1663153	234.00	235.50	1.50	0.01
			1663154	235.50	237.00	1.50	0.01
			1663155	237.00	238.00	1.00	0.00
			1663156	238.00	239.10	1.10	0.01
			1663157	239.10	240.00	0.90	0.01
			1663158	240.00	241.10	1.10	0.00
			1663159	241.10	242.20	1.10	0.01
242.20	243.90	ZGO, GOUGE Gold Island Fault Intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation occurring in arkose unit. Insignificant veining, alteration, or sulphides. Lower contact where core becomes competent again, but faulting reinitiates.	1663161	242.20	243.10	0.90	0.04
			1663162	243.10	243.90	0.80	0.04
243.90	246.00	ACO, CARBONATE ALTERED ROCK Compositionally rock is believed to still be arkose, but this interval is exhibiting more intense alteration and sulphides relative to surrounding units. Core is still exhibiting weak blocky fracturing, but more competent than surrounding intervals Mod-strong pervasive grey carb, moderate yellow sericite and/or pale bleaching. Green fuchsite altered clasts/fragments recognized but rare. Mod erratic chlorite tension gashes/fracturing. ~5% (to locally 7%) FF (Fg in chlorite fractures) or dissem/blebby-clustered pyrite throughout. ~10% QC as conglomerated clasts/fragments in xenolith. Lower contact where core becomes extremely broken up again.	1663163	243.90	244.40	0.50	0.01
			1663164	244.40	245.00	0.60	0.01
			1663165	245.00	245.40	0.40	0.01
			1663166	245.40	246.00	0.60	0.01
246.00	248.70	ZGO, GOUGE See previous ZGO. LC where core becomes competent again.	1663167	246.00	247.40	1.40	0.02
			1663168	247.40	248.70	1.30	0.01

Hole Number: **NH19-052**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
248.70	300.00	SAO, ARKOSE Compositionally similar to previous SAOs; moderate patchy grey carb, weak patchy yellow sericite and possibly weak bleaching, green fuchsite altered clasts present but rare. ~257-261m shows both increased QC fragments/brecciation (with occasional sulphide increase for example 258.1-258.2m), as well as moderate chlorite tension gouging/fractures, which weave around these QC fragments. Conglomeration occurring but not continuous over any extensive interval. Banding typically 60-75 DTCA shown best in sericite intervals. ~10-15% QC as fragments/clasts. ~2% sulphides overall; clustered 3-5% (ex 258.1-258.2m). EOH.	1663169	248.70	249.80	1.10	0.00
			1663171	249.80	250.90	1.10	0.00
			1663172	250.90	252.00	1.10	0.01
			1663173	252.00	253.00	1.00	0.14
			1663174	253.00	254.00	1.00	0.00
			1663175	254.00	255.00	1.00	0.01
			1663176	255.00	256.00	1.00	0.05
			1663177	256.00	257.00	1.00	0.00
			1663178	257.00	258.00	1.00	0.00
			1663179	258.00	258.40	0.40	0.08
			1663181	258.40	259.60	1.20	0.05
			1663182	259.60	260.50	0.90	0.01
			1663183	260.50	261.60	1.10	0.02
			1663184	261.60	262.80	1.20	0.11
			1663185	262.80	264.00	1.20	0.01
			1663186	264.00	265.00	1.00	0.00
			1663187	265.00	266.00	1.00	0.01
			1663188	266.00	267.00	1.00	0.01
			1663189	267.00	268.50	1.50	0.12
			1663191	268.50	270.00	1.50	0.09
			1663192	270.00	271.50	1.50	0.03
			1663193	271.50	273.00	1.50	0.00
			1663194	273.00	274.00	1.00	0.01
			1663195	274.00	275.00	1.00	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663059	99.00	100.00	0.0200
1663061	100.00	101.00	0.0600
1663062	101.00	102.00	0.0100
1663063	102.00	103.00	0.0100
1663064	103.00	104.00	0.0500
1663065	104.00	105.00	0.0200
1663066	105.00	106.30	0.0100
1663067	106.30	107.10	0.0200
1663068	107.10	108.00	0.0050
1663069	108.00	109.50	0.0100
1663071	109.50	111.00	0.0400
1663072	111.00	112.00	0.0400
1663073	112.00	113.00	0.0300

Hole Number: **NH19-052**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663074	113.00	114.00	0.0200
1663075	114.00	115.50	0.0100
1663076	115.50	117.00	0.0300
1663077	117.00	117.70	0.0050
1663078	117.70	118.80	0.0050
1663079	118.80	120.00	0.0200
1663081	120.00	121.00	0.0050
1663082	121.00	122.00	0.0300
1663083	122.00	123.00	0.0100
1663084	123.00	124.00	0.0100
1663085	124.00	125.00	0.0900
1663086	125.00	125.90	0.0100
1663087	125.90	126.50	0.0300
1663088	126.50	128.00	0.0100
1663089	128.00	128.70	0.0200
1663091	162.00	163.00	0.0110
1663092	163.00	164.00	0.0130
1663093	164.00	165.00	0.0080
1663094	165.00	166.50	0.0850
1663095	166.50	168.00	0.0130
1663096	168.00	169.20	0.0140
1663097	169.20	170.10	0.0340
1663098	170.10	171.00	0.0740
1663099	171.00	172.50	0.0430
1663101	172.50	174.00	0.0080
1663102	174.00	175.00	0.0100
1663103	175.00	176.00	0.0190
1663104	176.00	177.00	0.0140
1663105	177.00	178.00	0.0110
1663106	178.00	179.00	0.0070
1663107	179.00	180.00	0.0060
1663108	180.00	181.50	0.0110
1663109	181.50	183.00	0.0130
1663111	183.00	184.00	0.0100
1663112	184.00	185.00	0.0100
1663113	185.00	186.00	0.0060
1663114	186.00	186.60	0.0070
1663115	186.60	187.80	0.0400
1663116	187.80	189.00	0.0070

Hole Number: **NH19-052**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663117	189.00	190.50	0.0070
1663118	190.50	192.00	0.0130
1663119	192.00	193.50	0.0100
1663121	193.50	195.00	0.0420
1663122	195.00	196.50	0.0200
1663123	196.50	197.60	0.0180
1663124	197.60	198.80	0.0120
1663125	198.80	200.00	0.0080
1663126	200.00	201.00	0.0140
1663127	201.00	202.50	0.0025
1663128	202.50	204.00	0.0025
1663129	204.00	205.50	0.0150
1663131	205.50	207.00	0.0270
1663132	207.00	208.50	0.0090
1663133	208.50	210.00	0.0160
1663134	210.00	211.50	0.0260
1663135	211.50	213.00	0.0090
1663136	213.00	214.50	0.0080
1663137	214.50	216.00	0.0080
1663138	216.00	217.50	0.0025
1663139	217.50	219.00	0.0150
1663141	219.00	220.50	0.0070
1663142	220.50	222.00	0.0080
1663143	222.00	223.50	0.0025
1663144	223.50	225.00	0.0060
1663145	225.00	226.00	0.0100
1663146	226.00	227.10	0.0025
1663147	227.10	228.00	0.0120
1663148	228.00	229.50	0.0025
1663149	229.50	231.00	0.0025
1663151	231.00	232.50	0.0070
1663152	232.50	234.00	0.0410
1663153	234.00	235.50	0.0130
1663154	235.50	237.00	0.0070
1663155	237.00	238.00	0.0025
1663156	238.00	239.10	0.0110
1663157	239.10	240.00	0.0120
1663158	240.00	241.10	0.0025
1663159	241.10	242.20	0.0060

Hole Number: **NH19-052**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663161	242.20	243.10	0.0350
1663162	243.10	243.90	0.0440
1663163	243.90	244.40	0.0120
1663164	244.40	245.00	0.0090
1663165	245.00	245.40	0.0140
1663166	245.40	246.00	0.0140
1663167	246.00	247.40	0.0220
1663168	247.40	248.70	0.0060
1663169	248.70	249.80	0.0025
1663171	249.80	250.90	0.0025
1663172	250.90	252.00	0.0050
1663173	252.00	253.00	0.1360
1663174	253.00	254.00	0.0025
1663175	254.00	255.00	0.0060
1663176	255.00	256.00	0.0450
1663177	256.00	257.00	0.0025
1663178	257.00	258.00	0.0025
1663179	258.00	258.40	0.0760
1663181	258.40	259.60	0.0490
1663182	259.60	260.50	0.0130
1663183	260.50	261.60	0.0180
1663184	261.60	262.80	0.1130
1663185	262.80	264.00	0.0080
1663186	264.00	265.00	0.0025
1663187	265.00	266.00	0.0100
1663188	266.00	267.00	0.0080
1663189	267.00	268.50	0.1210
1663191	268.50	270.00	0.0870
1663192	270.00	271.50	0.0260
1663193	271.50	273.00	0.0025
1663194	273.00	274.00	0.0100
1663195	274.00	275.00	0.0025

DETAILED LOG



Hole Number: **NH19-053**

Units: METRIC

Project Name: Macklem Township	Primary Coordinates Grid: UTM:NAD83:	Destination Coordinates Grid: UTM:	Collar Dip: -50.00
Project Number: MACKLE_TWP	North: 5376160.00	North:	Collar Az: 340.00
Location: Macklem Township	East: 508343.40	East:	Length: 366.00
	Elev: 291.00	Elev:	Start Depth: 0.00
Date Started: Sep 10, 2019	Collar Survey: N	Plugged: N	Contractor: Norex
Date Completed: Sep 19, 2019	Multishot Survey: N	Hole Size: NQ	Core Storage: Aquarius
	Pulse EM Survey: N	Casing: YES	Final Depth: 366.00

Comments:

Sample Averages

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	340.00	-50.00	APS	OK	Planned bearing for hole; reading taken by drillers at top of hole	72.00	342.00	-51.20	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m
123.00	341.80	-50.70	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m	174.00	343.50	-50.60	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
225.00	338.90	-50.30	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	276.00	344.40	-50.50	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m
300.00	345.40	-49.90	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 7m	360.00	346.30	-49.80	EZ Sho	OK	Azi corrected by subtracting 11.4 from reading; pulled back 6m

Detailed Lithology

From		To	Lithology	Assay Data				
Sample Number	From	To	Length	Au_gpt_Final				
0.00	62.00	HPO, OVERBURDEN						
62.00	81.50	ZGO, GOUGE Gold Island Fault- intense gouging (with conglomerated QC clasts), core fracturing, and fragmentation within the soft dark ultramafics. Insignificant veining, alteration, or sulphides. Sharp lower contact variable from 15-75 DTCA but average 5-60 DTCA, where more competent dyke initiates.						
81.50	223.80	LDO, DIABASE DYKE Dark grey moderately magnetic mafic dyke lacking any significant sulphides, veining, or alteration. Unit is fg-cg even pseudo-gabbroic in some areas. Weak erratic dark tension gashes (tourmaline/chlorite) recognized. Very weak chlorite noticed to be influencing fracture surfaces and occasional stringer. Chlorite increasing in lowermost few meters of unit. <5% QC as discontinuous gashes or stringers. Trace sulphides. Sharp lower contact at variable fracturing.						

Hole Number: **NH19-053**

Units: METRIC

Detailed Lithology		Lithology	Assay Data				
From	To		Sample Number	From	To	Length	Au_gpt_Final
223.80	253.90	VUM, MASSIVE ULTRAMAFIC Dark grey/blueish ultramafics with a starry night appearance with light grey-milky high angle QC gashes as well as blobby floods, smeared blebs and porphyroblastic carb altered blebs. Moderate patches of green chlorite alteration influencing unit; seems stronger towards top of unit. Shearing weak-moderate throughout typically high angle 30-60 degrees TCA. Weak patchy core fracturing and fragmentation; for example 244.4-247.5m (possibly fault associated). Weak patchy grey+/-brown carbonate. ~ 15% QC as described. ♂Trace sulphides.	1663196	250.60	251.40	0.80	0.59
			1663197	251.40	252.00	0.60	0.32
			1663198	252.00	253.00	1.00	0.22
			1663199	253.00	253.90	0.90	0.05
253.90	255.70	IFO, FELSIC INTRUSIVE UNDIVIDED Pinkish-grey felsic intrusive unit. QC present as erratic eyes/blebs. Weak pervasive silicification+carb alterations recognized. Mod erratic chlorite tension gashes. Background occasionally shows remnant pseudo-porphyritic textures. ~2% blebby (even cubic) py throughout. ~15% QC as described. Sharp lower contact at ~60 DTCA fracturing.	1663201	253.90	254.80	0.90	0.02
			1663202	254.80	255.70	0.90	0.04
255.70	276.30	VUM, MASSIVE ULTRAMAFIC See previous VUM. Increasing intensity of Cm scale rounded-subangular background clasts embedded into base as well as mm scale increasing QC eyes/blebs on margins/between these larger embedded clasts. Pseudo-tuffaceous texture. ~2% blebby/clustered fg-mg py. ~25% QC as described blebs or erratic veinlets/veins. Sharp lower contact at ~60-70 DTCA.	1663203	255.70	256.40	0.70	0.00
			1663204	256.40	257.20	0.80	0.01
			1663205	257.20	258.00	0.80	0.07
			1663206	258.00	259.25	1.25	0.11
			1663207	259.25	260.50	1.25	0.02
			1663208	274.00	274.90	0.90	0.00
			1663209	274.90	275.60	0.70	0.01
			1663211	275.60	276.30	0.70	0.00
276.30	288.10	IFO, FELSIC INTRUSIVE UNDIVIDED See recent IFO. Weak-mod patches of perv grey carb/silicification alts. Minor VUM from 287.2-287.7m. ~15-20% QC eyes/blebs. ~2-3% vfg dissem py. Sharp lower contact at ~60-70 DTCA. MINOR INTERVALS: Minor Interval: 287.20 - 287.70 VUM, MASSIVE ULTRAMAFIC	1663212	276.30	277.00	0.70	0.01
			1663213	277.00	278.00	1.00	0.09
			1663214	278.00	279.00	1.00	0.13
			1663215	279.00	280.00	1.00	0.02
			1663216	280.00	281.00	1.00	0.01
			1663217	281.00	282.00	1.00	0.10
			1663218	282.00	283.00	1.00	0.08
			1663219	283.00	284.00	1.00	0.01
			1663221	284.00	285.00	1.00	0.08
			1663222	285.00	286.00	1.00	0.06
			1663223	286.00	287.20	1.20	0.02
			1663224	287.20	287.70	0.50	0.01
			1663225	287.70	288.10	0.40	0.01

DETAILED LOG

Hole Number: **NH19-053**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
288.10	326.10	VUT, ULTRAMAFIC TUFF/LAPILLI Similar to previous VUM (with increasing large Cm scale clasts embedded; moderate brecciation), Tuffaceous texture common throughout. Uppermost 2m or so shows relatively increased milky QC shear veins. ~2% blebby/clustring py. ~30% QC as mm scale blebs/clasts/erratic stockwork gashes-veinlets (even shear associated occasionally). Sharp lower contact at ~65-70 DTCA	1663226	288.10	288.70	0.60	0.01
			1663227	288.70	289.30	0.60	0.01
			1663228	289.30	290.10	0.80	0.01
			1663229	290.10	291.00	0.90	0.02
			1663231	291.00	292.00	1.00	0.02
			1663232	292.00	293.00	1.00	0.02
			1663233	293.00	294.00	1.00	0.01
			1663234	294.00	295.50	1.50	0.01
			1663235	295.50	297.00	1.50	0.02
			1663236	297.00	298.50	1.50	0.02
			1663237	298.50	300.00	1.50	0.01
			1663238	300.00	301.50	1.50	0.02
			1663239	301.50	303.00	1.50	0.01
			1663241	303.00	304.50	1.50	0.01
			1663242	304.50	306.00	1.50	0.01
			1663243	306.00	307.50	1.50	0.02
			1663244	307.50	309.00	1.50	0.02
			1663245	309.00	310.50	1.50	0.05
			1663246	310.50	312.00	1.50	0.15
			1663247	324.00	324.50	0.50	0.01
		1663248	324.50	325.00	0.50	0.02	
		1663249	325.00	326.10	1.10	0.05	
326.10	327.30	IPF, FELDSPAR PORPHYRY Cloudy white/grey QC+/- white plagioclase feldspar porphyritic interval. Shiny micaceous mineral recognized but rare. Background porphyritic texture indicated by remnant quartz eyes, and variable phenocrysts; mm-cm scale angular to rounded. Additional alterations may include weak-moderate carbonate+/-silicification, and very weak patchy chlorite/albite. Overall ~2% vfg disseminated pyrite. Sharp lower contact at ~80 DTCA.	1663251	326.10	326.80	0.70	0.01
			1663252	326.80	327.30	0.50	0.10

Hole Number: **NH19-053**

Units: METRIC

Detailed Lithology		Assay Data					
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_Final
327.30	345.50	VMT, MAFIC VOLCANIC TUFFACEOUS Green grey mafic rock exhibiting tuffaceous texture with rounded to subangular mm-cm scale embedded clasts abundant throughout. Moderate brecciation occurring. Blebby (even occasionally cubic) pyrite present on clast margins; more common where breccia is occurring. Weak patchy grey carb and green chlorite. A few porphyritic QC+/plag intrusives (see previous IPF litho for detailed description) present as follows: 328.3-328.7m, 328.8-329.4m, 332-332.3m, 333.6-333.7m, 334.5-335.4m, 338.4-339m, 341.2-341.45m. ~20-25% QC primarily as described floods, but also rare clasts or erratic veinlets. ~2-3% blebby/clustered fg-cg (even cubic) py. Lower contact placed where tuffaceous texture gradually fades, and massive mafic rock remains.	1663253	327.30	328.30	1.00	0.04
			1663254	328.30	328.80	0.50	0.01
			1663255	328.80	329.40	0.60	0.02
			1663256	329.40	330.00	0.60	0.01
			1663257	330.00	331.00	1.00	0.04
			1663258	331.00	332.00	1.00	0.02
			1663259	332.00	332.30	0.30	0.00
			1663261	332.30	333.00	0.70	0.01
			1663262	333.00	333.70	0.70	0.03
			1663263	333.70	334.50	0.80	0.00
			1663264	334.50	335.40	0.90	0.00
			1663265	335.40	336.00	0.60	0.00
			1663266	336.00	337.20	1.20	0.00
			1663267	337.20	338.40	1.20	0.03
			1663268	338.40	339.00	0.60	0.01
			1663269	339.00	340.10	1.10	0.02
			1663271	340.10	341.20	1.10	0.05
			1663272	341.20	341.60	0.40	0.06
			1663273	341.60	342.70	1.10	0.02
			1663274	342.70	344.00	1.30	0.01
			1663275	344.00	345.00	1.00	0.00
			1663276	345.00	345.50	0.50	0.00
345.50	366.00	VMM, MAFIC VOLCANIC MASSIVE Massive green grey mafic rock with areas of vfg to fine or (on the rare occasion) medium grained crystallization. Lacking any significant alteration, veining, or sulphides throughout. Very weak chlorite may be on fracture surfaces or patchy. Very weak faded tension gouging in background of unit. 'Salt and pepper' appearance may be present. Overall ~3-5 % veining as erratic gashes to veinlets. ~2% blebby py. EOH.	1663277	345.50	346.40	0.90	0.00
			1663278	346.40	347.20	0.80	0.00
			1663279	347.20	348.00	0.80	0.00

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663196	250.60	251.40	0.5850
1663197	251.40	252.00	0.3180
1663198	252.00	253.00	0.2150
1663199	253.00	253.90	0.0490

Hole Number: **NH19-053**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type	ASSAY		
1663201	253.90	254.80	0.0230
1663202	254.80	255.70	0.0400
1663203	255.70	256.40	0.0025
1663204	256.40	257.20	0.0140
1663205	257.20	258.00	0.0730
1663206	258.00	259.25	0.1070
1663207	259.25	260.50	0.0190
1663208	274.00	274.90	0.0025
1663209	274.90	275.60	0.0130
1663211	275.60	276.30	0.0025
1663212	276.30	277.00	0.0080
1663213	277.00	278.00	0.0900
1663214	278.00	279.00	0.1340
1663215	279.00	280.00	0.0170
1663216	280.00	281.00	0.0110
1663217	281.00	282.00	0.1000
1663218	282.00	283.00	0.0840
1663219	283.00	284.00	0.0080
1663221	284.00	285.00	0.0760
1663222	285.00	286.00	0.0630
1663223	286.00	287.20	0.0150
1663224	287.20	287.70	0.0050
1663225	287.70	288.10	0.0070
1663226	288.10	288.70	0.0080
1663227	288.70	289.30	0.0090
1663228	289.30	290.10	0.0100
1663229	290.10	291.00	0.0200
1663231	291.00	292.00	0.0170
1663232	292.00	293.00	0.0190
1663233	293.00	294.00	0.0110
1663234	294.00	295.50	0.0100
1663235	295.50	297.00	0.0190
1663236	297.00	298.50	0.0150
1663237	298.50	300.00	0.0110
1663238	300.00	301.50	0.0210
1663239	301.50	303.00	0.0130
1663241	303.00	304.50	0.0130
1663242	304.50	306.00	0.0090
1663243	306.00	307.50	0.0150

Hole Number: **NH19-053**

Units: METRIC

Samples

Sample Number	From	To	Au_gpt_Final
Sample Type ASSAY			
1663244	307.50	309.00	0.0230
1663245	309.00	310.50	0.0510
1663246	310.50	312.00	0.1540
1663247	324.00	324.50	0.0110
1663248	324.50	325.00	0.0190
1663249	325.00	326.10	0.0510
1663251	326.10	326.80	0.0110
1663252	326.80	327.30	0.0990
1663253	327.30	328.30	0.0370
1663254	328.30	328.80	0.0070
1663255	328.80	329.40	0.0170
1663256	329.40	330.00	0.0090
1663257	330.00	331.00	0.0350
1663258	331.00	332.00	0.0150
1663259	332.00	332.30	0.0025
1663261	332.30	333.00	0.0130
1663262	333.00	333.70	0.0270
1663263	333.70	334.50	0.0025
1663264	334.50	335.40	0.0025
1663265	335.40	336.00	0.0025
1663266	336.00	337.20	0.0025
1663267	337.20	338.40	0.0330
1663268	338.40	339.00	0.0110
1663269	339.00	340.10	0.0170
1663271	340.10	341.20	0.0450
1663272	341.20	341.60	0.0590
1663273	341.60	342.70	0.0220
1663274	342.70	344.00	0.0080
1663275	344.00	345.00	0.0025
1663276	345.00	345.50	0.0025
1663277	345.50	346.40	0.0025
1663278	346.40	347.20	0.0025
1663279	347.20	348.00	0.0025



Appendix 3

Assay Certificates



Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1107

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902101**
Attn: **Patti Perlock**

Report Date: **08-Jul-19**

We hereby certify the following Assay of 29 core samples
submitted 02-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-MP g/Mt	FA-MP g/Mt
Blank Value	0.01	
OxH149	1.24	
1656077	0.01	
1656078	0.03	
1656079	0.04	
1656080	3.01	
1656081	0.03	
1656082	0.02	
1656083	0.02	
1656084	0.02	
1656085	0.03	
1656086	< 0.01	0.01
1656087	0.01	
1656088	0.01	
1656089	0.02	
1656090	0.01	
1656091	0.05	
1656092	0.14	
1656093	0.12	
1656094	0.02	
1656095	0.03	
1656096	0.06	0.04
Blank Value	0.01	
OxH149	1.32	
1656097	0.05	

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1107

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902101**
Attn: **Patti Perlock**

Report Date: **08-Jul-19**

We hereby certify the following Assay of 29 core samples
submitted 02-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-MP g/Mt	FA-MP g/Mt
1656098	0.03	
1656099	0.02	
1656100	0.32	
1656101	0.03	
1656102	0.03	
1656103	0.01	
1656104	0.01	
1656105	0.03	

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1214

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903101**
Attn: **Patti Perlock**

Report Date: **23-Jul-19**

We hereby certify the following Assay of 35 core samples
submitted 15-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-MP g/Mt	FA-MP g/Mt	GRAV Kg
Blank Value	0.01		
OxH149	1.31		
1675553	0.01		2.0
1675554	0.01		1.9
1675555	0.01		2.1
1675556	< 0.01		3.3
1675557	< 0.01		3.2
1675558	< 0.01		2.9
1675559	0.07		3.5
1675560	0.34		0.0
1675561	0.04		3.4
1675562	0.01	0.02	3.2
1675563	0.03		3.0
1675564	0.61		3.3
1675565	0.17		3.3
1675566	0.01		2.9
1675567	0.01		3.1
1675568	< 0.01		2.9
1675569	0.01		3.4
1675570	0.01		1.6
1675571	0.03		2.8
1675572	0.03		4.0
Blank Value	< 0.01		
OxH149	1.32		
1675573	0.13		3.2

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1214

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903101**
Attn: **Patti Perlock**

Report Date: **23-Jul-19**

We hereby certify the following Assay of 35 core samples
submitted 15-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-MP g/Mt	FA-MP g/Mt	GRAV Kg
1675574	0.01		3.4
1675575	0.01		3.5
1675576	0.01		3.4
1675577	0.01		3.3
1675578	0.29		3.3
1675579	0.18		3.2
1675580	0.89		0.0
1675581	0.03		3.3
1675582	0.02	0.02	3.2
1675583	0.04		3.4
1675584	0.07		3.1
1675585	0.01		3.3
1675586	0.46		3.3
1675587	0.14		3.3

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1215

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903101**
Attn: **Patti Perlock**

Report Date: **30-Jul-19**

We hereby certify the following Assay of 26 core samples
submitted 15-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.02		
OxH149	1.26		
1675588	< 0.01		3.2
1675589	< 0.01		3.5
1675590	< 0.01		1.7
1675591	0.04		3.2
1675592	0.03		3.0
1675593	0.06		2.9
1675594	< 0.01		2.6
1675595	< 0.01		1.9
1675596	< 0.01		2.0
1675597	< 0.01	< 0.01	1.3
1675598	0.01		0.9
1675599	< 0.01		1.7
1675600	3.01		0.0
1675601	< 0.01		2.3
1675602	0.02		3.0
1675603	< 0.01		1.3
1675604	0.15		2.5
1675605	0.13		3.0
1675606	< 0.01		3.3
1675607	< 0.01	0.02	3.4
Blank Value	< 0.01		
OxH149	1.27		
1675608	< 0.01		3.1

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1215

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903101**
Attn: **Patti Perlock**

Report Date: **30-Jul-19**

We hereby certify the following Assay of 26 core samples
submitted 15-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1675609	< 0.01		2.5
1675610	< 0.01		2.8
1675611	< 0.01		1.1
1675612	< 0.01		1.7
1675613	< 0.01		1.8

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1311

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902903**
Attn: **Patti Perlock**

Report Date: **08-Aug-19**

We hereby certify the following Assay of 35 core samples submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH149	1.31		
1656106	0.12		2.9
1656107	0.06		3.6
1656108	< 0.01		1.8
1656109	< 0.01		0.7
1656110	< 0.01		2.6
1656111	< 0.01		1.2
1656112	< 0.01		3.0
1656113	< 0.01		3.0
1656114	< 0.01		2.2
1656115	< 0.01	< 0.01	1.9
1656116	< 0.01		2.6
1656117	< 0.01		1.2
1656118	< 0.01		2.5
1656119	< 0.01		2.6
1656120	0.86		0.0
1656121	< 0.01		3.8
1656122	< 0.01		3.5
1656123	< 0.01		2.7
1656124	< 0.01		3.1
1656125	< 0.01	< 0.01	2.6
Blank Value	< 0.01		
OxH149	1.26		
1656126	< 0.01		3.3

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1311

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902903**
Attn: **Patti Perlock**

Report Date: **08-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1656127	< 0.01		3.3
1656128	< 0.01		2.3
1656129	< 0.01		2.7
1656130	< 0.01		0.5
1656131	< 0.01		3.0
1656132	< 0.01		3.2
1656133	< 0.01		2.5
1656134	< 0.01		1.1
1656135	< 0.01	< 0.01	2.1
1656136	< 0.01		0.9
1656137	< 0.01		3.0
1656138	< 0.01		3.2
1656139	< 0.01		3.3
1656140	2.95		0.0

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Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-1313

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902903**
Attn: **Patti Perlock**

Report Date: **08-Aug-19**

We hereby certify the following Assay of 14 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH149	1.29		
1656176	< 0.01		4.5
1656177	< 0.01		2.6
1656178	0.02		3.7
1656179	0.02		5.5
1656180	0.88		0.0
1656181	0.28		3.0
1656182	0.51		3.5
1656183	0.03		5.2
1656184	0.04		3.6
1656185	0.04	0.03	4.5
1656186	0.06		4.2
1656187	0.04		4.8
1656188	0.04		4.5
1656189	< 0.01		3.5

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1315

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902904**
Attn: **Patti Perlock**

Report Date: **12-Aug-19**

We hereby certify the following Assay of 31 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.01		
OxH149	1.30		
1656225	0.01		3.4
1656226	0.01		3.7
1656227	< 0.01		3.9
1656228	< 0.01		2.9
1656229	< 0.01		2.6
1656230	< 0.01		1.5
1656231	< 0.01		3.6
1656232	< 0.01		3.5
1656233	< 0.01		3.6
1656234	< 0.01	0.01	3.9
1656235	0.02		3.5
1656236	< 0.01		3.3
1656237	< 0.01		3.3
1656238	< 0.01		4.1
1656239	< 0.01		3.6
1656240	0.87		0.0
1656241	0.04		3.9
1656242	0.07		4.3
1656243	0.05		4.9
1656244	0.01	0.01	3.3
Blank Value	< 0.01		
OxH149	1.29		
1656245	< 0.01		4.3

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1315

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902904**
Attn: **Patti Perlock**

Report Date: **12-Aug-19**

We hereby certify the following Assay of 31 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1656246	< 0.01		3.6
1656247	< 0.01		3.7
1656248	< 0.01		4.9
1656249	< 0.01		3.1
1656250	< 0.01		1.8
1656251	< 0.01		4.2
1656252	< 0.01		3.7
1656253	< 0.01		4.1
1656254	< 0.01	< 0.01	2.3
1656255	< 0.01		1.8

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1316

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904001**
Attn: **Patti Perlock**

Report Date: **13-Aug-19**

We hereby certify the following Assay of 35 core samples submitted 22-Jul-19 by Patti Perlock

Sample Number	Au FA-AAS g/Mt	Au Chk FA-AAS g/Mt	Sample Weight GRAV Kg
Blank Value	< 0.01		
OxH149	1.24		
1644068	< 0.01		2.4
1644069	< 0.01		3.2
1644070	< 0.01		0.6
1644071	< 0.01		1.7
1644072	< 0.01		1.7
1644073	< 0.01		3.0
1644074	< 0.01		3.1
1644075	< 0.01		2.2
1644076	< 0.01		2.7
1644077	< 0.01	0.01	2.7
1644078	< 0.01		2.4
1644079	< 0.01		2.8
1644080	0.84		0.0
1644081	< 0.01		3.2
1644082	< 0.01		3.1
1644083	< 0.01		2.3
1644084	< 0.01		2.7
1644085	< 0.01		2.0
1644086	< 0.01		2.9
1644087	< 0.01	0.02	3.2
Blank Value	< 0.01		
OxH149	1.27		
1644088	< 0.01		2.9

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1316

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904001**
Attn: **Patti Perlock**

Report Date: **13-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644089	< 0.01		3.1
1644090	< 0.01		0.6
1644091	< 0.01		2.6
1644092	< 0.01		3.3
1644093	< 0.01		3.0
1644094	< 0.01		1.9
1644095	< 0.01		2.9
1644096	< 0.01		3.4
1644097	< 0.01	< 0.01	2.9
1644098	< 0.01		3.2
1644099	0.06		3.2
1644100	2.98		0.0
1644101	0.01		2.7
1644102	0.05		2.4

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1317

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904001**
Attn: **Patti Perlock**

Report Date: **13-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.02		
OxH149	1.28		
1644103	0.02		3.3
1644104	0.02		4.3
1644105	0.03		4.4
1644106	0.02		1.7
1644107	< 0.01		2.5
1644108	< 0.01		2.1
1644109	0.04		2.2
1644110	< 0.01		0.6
1644111	< 0.01		2.6
1644112	0.09	0.02	2.9
1644113	0.02		2.7
1644114	< 0.01		2.4
1644115	< 0.01		1.9
1644116	0.02		1.8
1644117	< 0.01		2.1
1644118	< 0.01		2.4
1644119	< 0.01		2.2
1644120	0.34		0.0
1644121	0.02		2.8
1644122	0.02	< 0.01	2.8
Blank Value	< 0.01		
OxH149	1.30		
1644123	0.04		3.3

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1317

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904001**
Attn: **Patti Perlock**

Report Date: **13-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644124	0.03		2.9
1644125	0.06		2.9
1644126	0.25		1.7
1644127	0.05		2.9
1644128	0.03		3.3
1644129	0.02		2.3
1644130	< 0.01		0.7
1644131	< 0.01		2.7
1644132	< 0.01	< 0.01	2.9
1644133	< 0.01		4.3
1644134	< 0.01		4.8
1644135	< 0.01		4.7
1644136	< 0.01		4.6
1644137	< 0.01		4.0

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1318

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904001**
Attn: **Patti Perlock**

Report Date: **13-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au FA-AAS g/Mt	Au Chk FA-AAS g/Mt	Sample Weight GRAV Kg
Blank Value	< 0.01		
OxH149	1.29		
1644138	0.02		2.2
1644139	0.01		2.9
1644140	0.86		0.0
1644141	0.27		1.6
1644142	< 0.01		2.7
1644143	0.05		1.9
1644144	0.01		2.2
1644145	0.10		3.2
1644146	< 0.01		3.0
1644147	0.01	< 0.01	3.1
1644148	0.02		2.6
1644149	0.04		2.5
1644150	< 0.01		0.6
1644151	< 0.01		2.0
1644152	0.01		2.4
1644153	< 0.01		3.0
1644154	0.06		3.2
1644155	< 0.01		2.7
1644156	< 0.01		3.4
1644157	< 0.01	0.02	3.4
Blank Value	< 0.01		
OxH149	1.27		
1644158	< 0.01		1.4

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1318

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904001**
Attn: **Patti Perlock**

Report Date: **13-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644159	0.03		2.4
1644160	3.04		0.0
1644161	0.04		2.9
1644162	0.03		1.7
1644163	0.13		2.0
1644164	< 0.01		2.5
1644165	0.08		2.9
1644166	< 0.01		2.7
1644167	0.02	0.05	1.9
1644168	0.01		2.2
1644169	0.03		1.2
1644170	< 0.01		0.6
1644171	0.10		2.0
1644172	< 0.01		3.2

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Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-1319

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904001**
Attn: **Patti Perlock**

Report Date: **14-Aug-19**

We hereby certify the following Assay of 18 core samples
submitted 22-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH149	1.31		
1644173	0.02		2.1
1644174	0.03		2.1
1644175	0.15		1.7
1644176	< 0.01		3.9
1644177	0.01		3.8
1644178	< 0.01		4.1
1644179	0.03		3.6
1644180	0.31		0.0
1644181	< 0.01		4.1
1644182	< 0.01	< 0.01	4.2
1644183	< 0.01		2.9
1644184	0.09		3.5
1644185	0.41		0.9
1644186	0.14		1.9
1644187	0.02		2.0
1644188	0.01		4.1
1644189	0.02		4.3
1644190	< 0.01		0.4

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Page 1 of 2

Assay Certificate

Certificate Number: 19-1419

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904002**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH82	1.26		
1644191	0.01		4.3
1644192	0.03		3.2
1644193	0.04		2.0
1644194	< 0.01		3.5
1644195	< 0.01		3.7
1644196	< 0.01		4.3
1644197	0.03		3.8
1644198	0.08		2.4
1644199	0.01		2.7
1644200	0.85		0.0
1644201	0.04	< 0.01	2.2
1644202	< 0.01		3.3
1644203	0.30		1.8
1644204	0.02		2.0
1644205	0.02		2.6
1644206	0.02		2.5
1644207	0.02		0.9
1644208	0.11		2.1
1644209	0.04		3.3
1644210	< 0.01		0.7
Blank Value	< 0.01		
OxH82	1.27		
1644211	0.01	0.02	2.8

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1419

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904002**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644212	0.01		2.8
1644213	< 0.01		2.1
1644214	0.03		2.2
1644215	0.08		1.4
1644216	0.21		1.3
1644217	< 0.01		2.0
1644218	< 0.01		3.1
1644219	< 0.01		3.0
1644220	0.85		0.0
1644221	< 0.01	< 0.01	3.3
1644222	< 0.01		3.3
1644223	0.05		3.8
1644224	< 0.01		4.3
1644225	< 0.01		3.3

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Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1420

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904002**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.02		
OxH82	1.28		
1644226	0.02		2.0
1644227	0.03		3.3
1644228	0.01		3.9
1644229	< 0.01		4.4
1644230	< 0.01		0.6
1644231	< 0.01		4.7
1644232	0.01		4.6
1644233	< 0.01		4.8
1644234	< 0.01		4.6
1644235	< 0.01	< 0.01	4.5
1644236	< 0.01		5.1
1644237	< 0.01		6.6
1644238	< 0.01		6.3
1644239	< 0.01		3.7
1644240	0.33		0.0
1644241	< 0.01		3.6
1644242	< 0.01		1.9
1644243	0.04		1.9
1644244	< 0.01		0.6
1644245	0.03	0.05	2.6
Blank Value	0.01		
OxH82	1.28		
1644246	0.01		2.6

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1420

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904002**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644247	< 0.01		2.9
1644248	0.01		3.4
1644249	< 0.01		3.5
1644250	< 0.01		0.9
1644251	0.01		3.9
1644252	< 0.01		4.2
1644253	< 0.01		4.2
1644254	< 0.01		1.8
1644255	< 0.01	< 0.01	2.2
1644256	< 0.01		3.5
1644257	< 0.01		3.7
1644258	< 0.01		4.4
1644259	< 0.01		2.9
1644260	0.84		0.0

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-1421

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904002**
Attn: **Patti Perlock**

Report Date: **23-Aug-19**

We hereby certify the following Assay of 11 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH82	1.30		
1644261	< 0.01		0.9
1644262	< 0.01		3.4
1644263	< 0.01		3.9
1644264	< 0.01		3.2
1644265	< 0.01		3.9
1644266	< 0.01		3.4
1644267	< 0.01		2.4
1644268	< 0.01		2.2
1644269	< 0.01		3.4
1644270	< 0.01		0.6
1644271	< 0.01	< 0.01	3.1

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Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1424

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902602**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH82	1.28		
N76728	0.01		5.4
N76729	0.01		3.2
N76730	< 0.01		0.6
N76731	0.03		2.3
N76732	0.02		2.0
N76733	< 0.01		2.2
N76734	< 0.01		2.3
N76735	< 0.01		2.2
N76736	< 0.01		2.6
N76737	< 0.01	< 0.01	3.6
N76738	< 0.01		3.6
N76739	< 0.01		2.0
N76740	0.34		0.0
N76741	< 0.01		1.5
N76742	< 0.01		1.5
N76743	< 0.01		1.9
N76744	< 0.01		2.5
N76745	< 0.01		2.1
N76746	< 0.01		2.5
N76747	< 0.01	0.01	2.3
Blank Value	< 0.01		
OxH82	1.28		
N76748	0.01		2.0

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1424

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902602**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
N76749	< 0.01		2.3
N76750	< 0.01		0.4
N76751	< 0.01		2.4
N76752	< 0.01		2.4
N76753	< 0.01		2.2
N76754	0.01		1.9
N76755	< 0.01		2.4
N76756	< 0.01		2.1
N76757	0.01	< 0.01	2.4
N76758	< 0.01		1.9
N76759	0.01		2.3
N76760	0.87		0.0
N76761	0.02		2.2
N76762	0.05		2.2

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Page 1 of 2

Assay Certificate

Certificate Number: 19-1425

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902602**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH82	1.27		
N76763	0.03		2.6
N76764	0.05		2.5
N76765	0.04		2.4
N76766	0.05		2.4
N76767	0.15		2.3
N76768	0.20		2.6
N76769	< 0.01		2.5
N76770	< 0.01		0.5
N76771	0.06		2.2
N76772	0.08	0.07	2.2
N76773	< 0.01		2.2
N76774	< 0.01		2.3
N76775	< 0.01		2.3
N76776	0.12		2.1
N76777	0.05		2.4
N76778	0.02		2.2
N76779	0.01		2.3
N76780	2.09		0.0
N76781	0.09		2.3
N76782	< 0.01	0.02	2.3
Blank Value	< 0.01		
OxH82	1.27		
N76783	0.01		2.3

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1425

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902602**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
N76784	0.04		2.2
N76785	0.03		2.3
N76786	0.02		2.1
N76787	< 0.01		2.5
N76788	0.02		2.8
N76789	0.01		2.3
N76790	< 0.01		1.2
N76791	< 0.01		1.6
N76792	< 0.01	< 0.01	2.0
N76793	0.03		2.3
N76794	0.15		2.3
N76795	< 0.01		2.3
N76796	0.08		2.1
N76797	< 0.01		1.8

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Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1426

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902602**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au FA-AAS g/Mt	Au Chk FA-AAS g/Mt	Sample Weight GRAV Kg
Blank Value	< 0.01		
OxH82	1.23		
N76798	< 0.01		3.1
N76799	< 0.01		2.3
N76800	0.33		0.0
N76801	< 0.01		2.4
N76802	< 0.01		2.2
N76803	< 0.01		2.2
N76804	< 0.01		2.6
N76805	0.55		2.5
N76806	0.14		2.9
N76807	0.16	0.16	2.9
N76808	0.16		3.0
N76809	< 0.01		2.8
N76810	< 0.01		1.2
N76811	< 0.01		3.0
N76812	0.04		3.1
N76813	< 0.01		2.0
N76814	< 0.01		2.0
N76815	0.10		2.1
N76816	< 0.01		2.4
N76817	0.01	0.02	2.5
Blank Value	< 0.01		
OxH82	1.25		
N76818	< 0.01		1.4

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Page 2 of 2

Assay Certificate

Certificate Number: 19-1426

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902602**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
N76819	< 0.01		2.0
N76820	0.84		0.0
N76821	< 0.01		2.2
N76822	< 0.01		1.7
N76823	< 0.01		1.5
N76824	< 0.01		2.0
N76825	< 0.01		2.3
N76826	0.02		1.6
N76827	0.32	0.30	2.3
N76828	0.02		1.5
N76829	0.03		2.2
N76830	< 0.01		0.9
N76831	< 0.01		2.3
N76832	< 0.01		2.0

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Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-1427

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902602**
Attn: **Patti Perlock**

Report Date: **29-Aug-19**

We hereby certify the following Assay of 16 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH82	1.25		
N76833	< 0.01		1.0
N76834	< 0.01		3.0
N76835	< 0.01		2.4
N76836	< 0.01		2.1
N76837	< 0.01		1.5
N76838	< 0.01		2.1
N76839	0.01		3.5
N76840	2.95		0.0
N76841	< 0.01		2.2
N76842	< 0.01	< 0.01	1.9
N76843	< 0.01		1.7
N76844	0.01		1.3
N76845	< 0.01		1.4
N76846	< 0.01		1.1
N76847	< 0.01		2.3
N76848	< 0.01		2.5

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Page 1 of 2

Assay Certificate

Certificate Number: 19-1428

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902603**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au FA-AAS g/Mt	Au Chk FA-AAS g/Mt	Sample Weight GRAV Kg
Blank Value	< 0.01		
OxH82	1.26		
N76849	< 0.01		2.4
N76850	< 0.01		0.9
N76851	< 0.01		2.4
N76852	< 0.01		2.2
N76853	< 0.01		2.2
N76854	< 0.01		1.2
N76855	< 0.01		1.6
N76856	< 0.01		1.2
N76857	< 0.01		2.8
N76858	< 0.01	< 0.01	1.9
N76859	< 0.01		2.7
N76860	2.96		0.0
N76861	< 0.01		0.9
N76862	< 0.01		2.4
N76863	< 0.01		2.4
N76864	< 0.01		1.4
N76865	< 0.01		2.0
N76866	< 0.01		2.0
N76867	< 0.01		1.5
N76868	< 0.01	< 0.01	1.6
Blank Value	< 0.01		
OxH82	1.28		
N76869	< 0.01		1.4

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Page 2 of 2

Assay Certificate

Certificate Number: 19-1428

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902603**
Attn: **Patti Perlock**

Report Date: **21-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
N76870	< 0.01		1.0
N76871	< 0.01		1.1
N76872	< 0.01		2.8
N76873	< 0.01		2.5
N76874	< 0.01		2.6
N76875	< 0.01		2.5
N76876	< 0.01		1.5
N76877	< 0.01		1.8
N76878	< 0.01	< 0.01	2.5
N76879	< 0.01		1.9
N76880	0.33		0.0
N76881	< 0.01		1.3
N76882	< 0.01		3.1
N76883	< 0.01		2.9

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Page 1 of 2

Assay Certificate

Certificate Number: 19-1429

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902603**
Attn: **Patti Perlock**

Report Date: **23-Aug-19**

We hereby certify the following Assay of 27 core samples submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH82	1.28		
N76884	< 0.01		2.9
N76885	< 0.01		2.3
N76886	< 0.01		0.7
N76887	< 0.01		3.0
N76888	< 0.01		3.1
N76889	< 0.01		3.0
N76890	< 0.01		0.6
N76891	< 0.01		2.9
N76892	0.01		3.3
N76893	< 0.01	< 0.01	2.3
N76894	< 0.01		1.5
N76895	< 0.01		1.3
N76896	< 0.01		1.6
N76897	< 0.01		1.4
N76898	< 0.01		0.8
N76899	< 0.01		2.0
N76900	0.84		0.0
N76901	< 0.01		1.8
N76902	< 0.01		2.0
N76903	< 0.01	< 0.01	2.1
Blank Value	< 0.01		
OxH82	1.32		
N76904	< 0.01		2.4

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1429

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902603**
Attn: **Patti Perlock**

Report Date: **23-Aug-19**

We hereby certify the following Assay of 27 core samples
submitted 25-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
N76905	< 0.01		1.8
N76906	< 0.01		2.5
N76907	< 0.01		3.8
N76908	< 0.01		1.6
N76909	0.01		1.7
N76910	< 0.01		0.7

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Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1466

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903301**
Attn: **Patti Perlock**

Report Date: **27-Aug-19**

We hereby certify the following Assay of 32 core samples submitted 30-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.02		
OxH82	1.31		
N76993	< 0.01		0.9
N76994	0.02		1.8
N76995	< 0.01		1.6
N76996	< 0.01		1.8
N76997	< 0.01		2.0
N76998	< 0.01		2.2
N76999	< 0.01		2.5
N77000	0.34		0.0
1644001	0.01		2.8
1644002	0.03	0.03	3.4
1644003	< 0.01		4.0
1644004	0.01		3.6
1644005	0.02		3.7
1644006	0.25		2.5
1644007	0.03		2.4
1644008	0.01		2.4
1644009	0.06		2.5
1644010	< 0.01		0.6
1644011	0.02		2.1
1644012	0.14	0.16	2.4
Blank Value	0.01		
OxH82	1.31		
1644013	0.11		3.6

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1466

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903301**
Attn: **Patti Perlock**

Report Date: **27-Aug-19**

We hereby certify the following Assay of 32 core samples
submitted 30-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644014	0.06		3.8
1644015	0.06		4.0
1644016	0.04		4.0
1644017	0.05		3.8
1644018	0.11		3.9
1644019	0.07		4.0
1644020	0.84		0.0
1644021	0.14		4.1
1644022	0.12	0.11	2.7
1644023	0.82		2.5
1644024	0.08		2.6

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Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1467

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903301**
Attn: **Patti Perlock**

Report Date: **27-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 30-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.02		
OxH82	1.30		
1644025	0.15		2.9
1644026	0.83		1.8
1644027	0.21		2.7
1644028	0.42		2.6
1644029	0.03		2.3
1644030	< 0.01		0.6
1644031	< 0.01		1.8
1644032	< 0.01		3.7
1644033	< 0.01		3.8
1644034	< 0.01	< 0.01	3.7
1644035	< 0.01		3.3
1644036	< 0.01		1.5
1644037	< 0.01		2.4
1644038	< 0.01		1.8
1644039	< 0.01		0.8
1644040	3.02		0.0
1644041	< 0.01		1.6
1644042	< 0.01		1.2
1644043	< 0.01		2.6
1644044	< 0.01	< 0.01	2.9
Blank Value	< 0.01		
OxH82	1.30		
1644045	0.01		3.5

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1467

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903301**
Attn: **Patti Perlock**

Report Date: **27-Aug-19**

We hereby certify the following Assay of 35 core samples
submitted 30-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644046	0.16		3.7
1644047	0.02		3.8
1644048	< 0.01		2.2
1644049	< 0.01		2.1
1644050	< 0.01		0.8
1644051	< 0.01		1.4
1644052	< 0.01		2.5
1644053	< 0.01		2.2
1644054	< 0.01	< 0.01	3.6
1644055	0.01		3.8
1644056	< 0.01		3.1
1644057	< 0.01		3.4
1644058	< 0.01		3.0
1644059	< 0.01		3.0

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-1468

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1903301**
Attn: **Patti Perlock**

Report Date: **26-Aug-19**

We hereby certify the following Assay of 8 core samples
submitted 30-Jul-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
OxH82	1.28		
1644060	0.33		0.0
1644061	< 0.01	< 0.01	0.8
1644062	< 0.01		1.7
1644063	< 0.01		3.1
1644064	< 0.01		3.2
1644065	< 0.01		3.0
1644066	< 0.01		2.3
1644067	< 0.01		2.3

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1589

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904201**
Attn: **Patti Perlock**

Report Date: **06-Sep-19**

We hereby certify the following Assay of 35 core samples
submitted 14-Aug-19 by Patti Perlock

Sample Number	Au FA-AAS g/Mt	Au Chk FA-AAS g/Mt	Sample Weight GRAV Kg
Blank Value	0.06		
Si64	1.79		
1644437	0.02		2.6
1644438	0.02		1.6
1644439	0.01		2.5
1644440	0.85		0.0
1644441	0.02		2.7
1644442	1.62		1.3
1644443	0.01		2.1
1644444	0.02		2.8
1644445	0.02	0.01	5.3
1644446	0.01		1.5
1644447	0.02		2.2
1644448	0.02		2.5
1644449	0.01		2.7
1644450	0.01		0.6
1644451	0.01		2.3
1644452	0.02		2.4
1644453	0.42		0.9
1644454	0.02		1.8
1644455	0.01		3.2
1644456	0.01	0.02	2.7
Blank Value	0.03		
Si64	1.78		
1644457	0.02		0.6

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1589

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904201**
Attn: **Patti Perlock**

Report Date: **06-Sep-19**

We hereby certify the following Assay of 35 core samples submitted 14-Aug-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644458	0.02		1.3
1644459	0.04		2.0
1644460	3.00		0.0
1644461	0.01		2.8
1644462	0.21		2.6
1644463	1.67		1.4
1644464	2.67		1.7
1644465	4.40		1.4
1644466	1.12	1.45	1.4
1644467	0.08		2.8
1644468	0.02		2.1
1644469	0.01		2.7
1644470	0.01		0.9
1644471	0.01		2.5

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1590

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904201**
Attn: **Patti Perlock**

Report Date: **06-Sep-19**

We hereby certify the following Assay of 25 core samples submitted 14-Aug-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.03		
Si64	1.78		
1644472	< 0.01		2.4
1644473	< 0.01		3.6
1644474	0.01		3.3
1644475	0.25		3.1
1644476	0.22		1.6
1644477	0.08		1.8
1644478	0.34		1.3
1644479	0.22		1.4
1644480	0.33		0.0
1644481	0.09	0.07	1.8
1644482	1.13		2.0
1644483	0.46		1.3
1644484	0.42		1.2
1644485	0.34		2.6
1644486	0.47		2.0
1644487	0.09		3.7
1644488	0.08		1.8
1644489	0.15		1.6
1644490	< 0.01		0.6
1644491	0.31	0.31	2.7
Blank Value	0.02		
Si64	1.77		
1644492	0.26		2.6

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1590

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904201**
Attn: **Patti Perlock**

Report Date: **06-Sep-19**

We hereby certify the following Assay of 25 core samples
submitted 14-Aug-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644493	0.31		1.6
1644494	0.26		2.2
1644495	0.03		2.3
1644496	0.26		3.9

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1591

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904202**
Attn: **Patti Perlock**

Report Date: **06-Sep-19**

We hereby certify the following Assay of 35 core samples
submitted 14-Aug-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.02		
Si64	1.73		
1644497	0.32		3.7
1644498	0.05		2.5
1644499	0.27		2.6
1644500	0.88		0.0
1644501	0.08		2.3
1644502	0.02		2.4
1644503	< 0.01		5.0
1644504	< 0.01		4.3
1644505	< 0.01		5.0
1644506	< 0.01	< 0.01	4.2
1644507	0.01		4.7
1644508	< 0.01		5.2
1644509	0.01		2.3
1644510	< 0.01		0.8
1644511	0.01		3.0
1644512	< 0.01		7.8
1644513	< 0.01		6.9
1644514	0.05		7.1
1644515	< 0.01		3.9
1644516	< 0.01	< 0.01	3.4
Blank Value	0.02		
Si64	1.78		
1644517	< 0.01		4.5

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1591

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904202**
Attn: **Patti Perlock**

Report Date: **06-Sep-19**

We hereby certify the following Assay of 35 core samples submitted 14-Aug-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1644518	< 0.01		3.5
1644519	< 0.01		3.6
1644520	3.05		0.0
1644521	< 0.01		4.6
1644522	< 0.01		3.5
1644523	< 0.01		3.7
1644524	< 0.01		4.5
1644525	< 0.01		4.5
1644526	< 0.01	< 0.01	5.3
1644527	< 0.01		6.4
1644528	< 0.01		6.9
1644529	< 0.01		5.0
1644530	0.01		2.1
1644531	< 0.01		3.9

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Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-1592

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1904202**
Attn: **Patti Perlock**

Report Date: **06-Sep-19**

We hereby certify the following Assay of 20 core samples
submitted 14-Aug-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	0.02		
Si64	1.74		
1644532	0.01		4.5
1644533	0.01		7.3
1644534	0.01		5.6
1644535	0.01		4.5
1644536	< 0.01		2.0
1644537	< 0.01		2.3
1644538	< 0.01		2.0
1644539	< 0.01		2.4
1644540	0.34		0.0
1644541	0.01	0.01	3.8
1644542	< 0.01		2.6
1644543	< 0.01		3.3
1644544	< 0.01		2.2
1644545	< 0.01		5.4
1644546	< 0.01		6.4
1644547	< 0.01		6.0
1644548	< 0.01		5.5
1644549	< 0.01		6.0
1644550	0.01		2.2
1644551	< 0.01	< 0.01	5.5
Blank Value	0.01		
Si64	1.72		

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Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-1847

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1905101**
Attn: **Patti Perlock**

Report Date: **27-Sep-19**

We hereby certify the following Assay of 22 core samples submitted 12-Sep-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
K074109	1.29		
1645529	< 0.01		2.1
1645530	< 0.01		0.7
1645531	< 0.01		2.0
1645532	0.02		2.2
1645533	0.10		2.5
1645534	0.11		3.3
1645535	0.02		3.3
1645536	< 0.01		2.1
1645537	0.01		2.4
1645538	0.09	0.04	2.2
1645539	0.01		3.4
1645540	0.84		0.0
1645541	0.02		3.6
1645542	0.02		2.2
1645543	0.02		2.4
1645544	< 0.01		2.7
1645545	< 0.01		2.3
1645546	< 0.01		1.2
1645547	0.03		1.9
1645548	< 0.01	< 0.01	2.1
Blank Value	< 0.01		
K074109	1.27		
1645549	< 0.01		3.1
1645550	< 0.01		1.0

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Page 1 of 2

Assay Certificate

Certificate Number: 19-1848

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1905101**
Attn: **Patti Perlock**

Report Date: **27-Sep-19**

We hereby certify the following Assay of 35 core samples
submitted 12-Sep-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
K074109	1.30		
1663001	< 0.01		1.9
1663002	< 0.01		3.5
1663003	0.01		2.1
1663004	< 0.01		2.6
1663005	0.02		2.6
1663006	0.02		0.9
1663007	< 0.01		3.1
1663008	< 0.01		2.3
1663009	< 0.01		2.3
1663010	< 0.01		1.0
1663011	< 0.01	< 0.01	2.4
1663012	< 0.01		2.0
1663013	< 0.01		2.7
1663014	< 0.01		2.5
1663015	0.01		2.1
1663016	0.04		2.3
1663017	< 0.01		2.5
1663018	< 0.01		2.5
1663019	0.26		2.5
1663020	3.06		0.0
Blank Value	0.02		
K074109	1.28		
1663021	< 0.01	< 0.01	3.8

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Assaying - Consulting - Representation

Page 2 of 2

Assay Certificate

Certificate Number: 19-1848

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1905101**
Attn: **Patti Perlock**

Report Date: **27-Sep-19**

We hereby certify the following Assay of 35 core samples submitted 12-Sep-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1663022	< 0.01		3.2
1663023	0.03		2.6
1663024	0.01		2.2
1663025	< 0.01		2.1
1663026	< 0.01		1.9
1663027	< 0.01		1.7
1663028	< 0.01		2.3
1663029	0.07		2.7
1663030	< 0.01		1.2
1663031	0.01	0.01	2.7
1663032	< 0.01		1.9
1663033	< 0.01		3.1
1663034	< 0.01		2.2
1663035	< 0.01		2.1

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Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1849

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1905101**
Attn: **Patti Perlock**

Report Date: **01-Oct-19**

We hereby certify the following Assay of 23 core samples submitted 12-Sep-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
K074109	1.31		
1663036	< 0.01		3.7
1663037	< 0.01		3.3
1663038	< 0.01		3.4
1663039	< 0.01		3.6
1663040	0.35		0.0
1663041	0.14		3.8
1663042	< 0.01		3.5
1663043	< 0.01		4.0
1663044	< 0.01		3.2
1663045	< 0.01	< 0.01	2.8
1663046	< 0.01		2.7
1663047	0.09		1.7
1663048	< 0.01		2.2
1663049	0.02		2.5
1663050	< 0.01		0.8
1663051	0.02		2.3
1663052	< 0.01		1.1
1663053	< 0.01		1.3
1663054	< 0.01		2.6
1663055	< 0.01	< 0.01	2.1
Blank Value	< 0.01		
K074109	1.33		
1663056	< 0.01		2.5

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Page 2 of 2

Assay Certificate

Certificate Number: 19-1849

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1905101**
Attn: **Patti Perlock**

Report Date: **01-Oct-19**

We hereby certify the following Assay of 23 core samples
submitted 12-Sep-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1663057	< 0.01		2.3
1663058	< 0.01		2.1

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-1850

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1905201**
Attn: **Patti Perlock**

Report Date: **27-Sep-19**

We hereby certify the following Assay of 32 core samples
submitted 12-Sep-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
Blank Value	< 0.01		
K074109	1.33		
1663059	0.02		2.2
1663060	0.86		0.0
1663061	0.06		2.2
1663062	0.01		2.1
1663063	0.01		2.2
1663064	0.05		2.4
1663065	0.02		2.5
1663066	0.01		2.8
1663067	0.02		2.0
1663068	< 0.01	< 0.01	2.0
1663069	0.01		3.5
1663070	< 0.01		0.8
1663071	0.04		3.2
1663072	0.04		2.3
1663073	0.03		2.3
1663074	0.02		2.2
1663075	0.01		3.0
1663076	0.03		3.2
1663077	< 0.01		1.6
1663078	< 0.01	< 0.01	2.3
Blank Value	0.01		
K074109	1.32		
1663079	0.02		2.4

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Page 2 of 2

Assay Certificate

Certificate Number: 19-1850

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1905201**
Attn: **Patti Perlock**

Report Date: **27-Sep-19**

We hereby certify the following Assay of 32 core samples submitted 12-Sep-19 by Patti Perlock

Sample Number	Au	Au Chk	Sample Weight
	FA-AAS g/Mt	FA-AAS g/Mt	GRAV Kg
1663080	2.97		0.0
1663081	< 0.01		2.4
1663082	0.03		2.2
1663083	0.01		2.4
1663084	0.01		2.8
1663085	0.09		2.3
1663086	0.01		2.0
1663087	0.03		1.3
1663088	0.01	< 0.01	2.8
1663089	0.02		1.5
1663090	< 0.01		0.8

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Page 1 of 1

Assay Certificate

Certificate Number: 19-210

Company: **KLG TIMMINS EAST**

Project: **NH1901301**

Report Date: **13-Feb-19**

Attn: **David Schonfeldt**

We hereby certify the following Assay of 17 core samples submitted 12-Feb-19 by David Schonfeldt

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
N76126	0.04	
N76127	0.04	
N76128	0.04	
N76129	0.05	
N76130	< 0.01	
N76131	0.02	
N76132	0.04	
N76133	0.06	
N76134	0.02	
N76135	0.13	0.12
Blank Value	< 0.01	
OxH139	1.35	
N76136	0.02	
N76137	0.03	
N76138	0.02	
N76139	0.03	
N76140	0.33	
N76141	0.03	
N76142	0.02	

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Page 1 of 3

Assay Certificate

Certificate Number: 19-459

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902004**
Attn: **Patti Perlock**

Report Date: **04-Apr-19**

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk	Au
	FA-AAS g/Mt	FA-AAS g/Mt	FA-GRAV g/Mt
N33993	0.15		
N33994	0.02		
N33995	0.02		
N33996	0.76		
N33997	0.16		
N33998	1.28		
N33884	0.27		
SP73			18.16
N33885	8.91		7.78
N33886	0.47		
N33887	0.27	0.20	
Blank Value	< 0.01		
OxH149	1.30		
N33888	0.10		
N33889	0.05		
N33890	< 0.01		
N33891	0.10		
N33892	1.77		
N33893	0.08		
N33894	0.09		
N33895	0.10		
N33896	0.18		
N33897	2.48	1.96	
N33898	0.12		
N33899	0.06		

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Page 2 of 3

Assay Certificate

Certificate Number: 19-459

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902004**
Attn: **Patti Perlock**

Report Date: **04-Apr-19**

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk	Au
	FA-AAS g/Mt	FA-AAS g/Mt	FA-GRAV g/Mt
N33900	0.35		
N33901	0.04		
N33902	0.08		
N33903	0.04		
N33904	0.06		
N33905	0.14		
Blank Value	< 0.01		
OxH149	1.29		
N33906	0.24		
N33907	0.12	0.16	
N33908	0.03		
N33909	0.03		
N33910	< 0.01		
N33911	0.16		
N33912	0.05		
N33913	0.16		
N33914	0.35		
N33915	0.29		
N33916	0.08		
N33917	0.13	0.14	
N33918	0.10		
N33919	0.19		
N33920	0.87		
N33921	0.17		
N33922	0.40		

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Page 3 of 3

Assay Certificate

Certificate Number: 19-459

Company: **KLG TIMMINS EAST**
Project: Nighthawk Dispatch NH1902004
Attn: Patti Perlock

Report Date: 04-Apr-19

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk	Au
	FA-AAS	FA-AAS	FA-GRAV
	g/Mt	g/Mt	g/Mt
N33923	1.58		
N33924	1.86		
N33925	0.52		
Blank Value	< 0.01		
OxH149	1.31		

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Page 1 of 3

Assay Certificate

Certificate Number: 19-462

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1921401**
Attn: **Patti Perlock**

Report Date: **10-Apr-19**

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-MP g/Mt	FA-MP g/Mt
1678001	0.15	
1678002	0.04	
1678003	0.23	
1678004	0.08	
1678005	0.14	
1678006	0.22	
1678007	2.67	
1678008	0.46	
1678009	0.21	
1678010	< 0.01	0.01
Blank Value	< 0.01	
OxH149	1.25	
1678011	0.70	
1678012	0.07	
1678013	0.05	
1678014	0.41	
1678015	4.49	
1678016	0.40	
1678017	0.30	
1678018	0.42	
1678019	0.60	
1678020	0.33	
1678021	0.17	0.17
1678022	0.15	
1678023	0.23	

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Assaying - Consulting - Representation

Page 2 of 3

Assay Certificate

Certificate Number: 19-462

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1921401**
Attn: **Patti Perlock**

Report Date: **10-Apr-19**

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-MP g/Mt	FA-MP g/Mt
1678024	0.20	
1678025	0.33	
1678026	0.12	
1678027	0.32	
1678028	0.22	
Blank Value	0.08	
OxH149	1.27	
1678029	0.63	
1678030	0.02	
1678031	0.56	
1678032	0.05	
1678033	0.24	
1678034	0.96	
1678035	1.60	
1678036	0.56	
1678037	2.55	
1678038	0.69	
1678039	0.75	
1678040	0.88	
1678041	0.27	0.32
1678042	0.11	
1678043	0.31	
1678044	0.39	
1678045	0.58	
1678046	0.42	

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Page 3 of 3

Assay Certificate

Certificate Number: 19-462

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1921401**
Attn: **Patti Perlock**

Report Date: **10-Apr-19**

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-MP g/Mt	FA-MP g/Mt
1678047	0.24	
1678048	0.82	
Blank Value	0.04	
OxH149	1.28	
Blank Value	0.33	
OxH149	1.24	

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Assaying - Consulting - Representation

Page 1 of 2

Assay Certificate

Certificate Number: 19-463

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1921401**
Attn: **Patti Perlock**

Report Date: **08-Apr-19**

We hereby certify the following Assay of 43 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
1678049	0.37	
1678050	< 0.01	
1678051	0.05	
1678052	0.05	
1678053	0.10	
1678054	< 0.01	
1678055	0.71	
1678056	0.16	
1678057	0.08	
1678058	0.17	
Blank Value	< 0.01	
OxH149	1.31	
1678059	0.10	
1678060	2.16	
1678061	0.31	
1678062	0.02	
1678063	< 0.01	
1678064	< 0.01	
1678065	< 0.01	
1678066	< 0.01	
1678067	< 0.01	
1678068	< 0.01	< 0.01
1678069	< 0.01	
1678070	< 0.01	
1678071	< 0.01	

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Page 2 of 2

Assay Certificate

Certificate Number: 19-463

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1921401**
Attn: **Patti Perlock**

Report Date: **08-Apr-19**

We hereby certify the following Assay of 43 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
1678072	< 0.01	
1678073	< 0.01	
1678074	< 0.01	
1678075	< 0.01	
1678076	0.01	
Blank Value	< 0.01	
OxH149	1.24	
1678077	< 0.01	
1678078	0.01	< 0.01
1678079	< 0.01	
1678080	0.33	
1678081	< 0.01	
1678082	< 0.01	
1678083	0.01	
1678084	< 0.01	
1678085	0.03	
1678086	< 0.01	
1678087	< 0.01	
1678088	< 0.01	< 0.01
1678089	< 0.01	
1678090	< 0.01	
1678091	< 0.01	

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Assaying - Consulting - Representation

Page 1 of 1

Assay Certificate

Certificate Number: 19-464

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1902101**
Attn: **Patti Perlock**

Report Date: **03-Apr-19**

We hereby certify the following Assay of 6 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FAAA g/Mt	FAAA g/Mt
N76163	< 0.01	< 0.01
N76164	0.03	
N76165	< 0.01	
N76166	< 0.01	
N76167	0.08	
N76168	< 0.01	
Blank Value	< 0.01	
OxH149	1.24	

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Page 1 of 3

Assay Certificate

Certificate Number: 19-465

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH19021A02**
Attn: **Patti Perlock**

Report Date: **08-Apr-19**

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
1678092	0.05	
1678093	< 0.01	
1678094	< 0.01	
1678095	0.02	
1678096	0.01	
1678097	0.01	
1678098	0.01	
1678099	0.01	
1678100	0.85	
1678101	0.04	0.06
Blank Value	< 0.01	
OxH149	1.28	
1678102	< 0.01	
1678103	< 0.01	
1678104	< 0.01	
1678105	< 0.01	
1678106	< 0.01	
1678107	< 0.01	
1678108	0.02	
1678109	0.97	
1678110	< 0.01	
1678111	1.10	0.94
1678112	0.80	
1678113	0.04	
1678114	0.08	

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Page 2 of 3

Assay Certificate

Certificate Number: 19-465

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH19021A02**
Attn: **Patti Perlock**

Report Date: **08-Apr-19**

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
1678115	< 0.01	
1678116	0.26	
1678117	< 0.01	
1678118	< 0.01	
1678119	< 0.01	
Blank Value	< 0.01	
OxH149	1.25	
1678120	2.12	
1678121	0.02	< 0.01
1678122	< 0.01	
1678123	0.04	
1678124	< 0.01	
1678125	< 0.01	
1678126	< 0.01	
1678127	< 0.01	
1678128	0.01	
1678129	0.01	
1678130	< 0.01	
1678131	0.05	0.07
1678132	0.02	
1678133	2.38	
1678134	1.85	
1678135	4.39	
1678136	< 0.01	
1678137	0.05	

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Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 3 of 3

Assay Certificate

Certificate Number: 19-465

Company: **KLG TIMMINS EAST**
Project: Nighthawk Dispatch NH19021A02
Attn: Patti Perlock

Report Date: 08-Apr-19

We hereby certify the following Assay of 48 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
1678138	0.06	
E32351	0.01	
Blank Value	< 0.01	
OxH149	1.26	

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Assaying - Consulting - Representation

Page 1 of 3

Assay Certificate

Certificate Number: 19-466

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH19021A02**
Attn: **Patti Perlock**

Report Date: **04-Apr-19**

We hereby certify the following Assay of 52 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
1678139	0.61	
1678140	0.35	
1678141	0.13	
1678142	0.35	
1678143	0.11	
1678144	0.04	
1678145	0.14	
1678146	0.05	
1678147	0.04	
1678148	0.02	< 0.01
Blank Value	0.02	
OxH149	1.31	
1678149	0.03	
1678150	< 0.01	
1678151	0.01	
1678152	0.03	
1678153	0.02	
1678154	0.41	
1678155	0.03	
1678156	0.01	
1678157	0.02	
1678158	0.35	0.41
1678159	0.08	
1678160	0.89	
1678161	0.05	

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Assaying - Consulting - Representation

Page 2 of 3

Assay Certificate

Certificate Number: 19-466

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH19021A02**
Attn: **Patti Perlock**

Report Date: **04-Apr-19**

We hereby certify the following Assay of 52 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
Blank Value	0.01	
OxH149	1.32	
1678162		
1678163		
1678164		
1678165		
1678166		
1678167	0.46	
1678168	0.06	0.08
1678169	0.06	
1678170	< 0.01	
1678171	0.20	
1678172	0.10	
1678173	0.05	
1678174	0.01	
1678175	0.03	
1678176	0.02	
1678177	0.09	
1678178	0.03	0.02
1678179	0.02	
1678180	2.23	
1678181	0.57	
1678182	0.10	
1678183	0.07	
1678184	0.11	

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Page 3 of 3

Assay Certificate

Certificate Number: 19-466

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH19021A02**
Attn: **Patti Perlock**

Report Date: **04-Apr-19**

We hereby certify the following Assay of 52 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
1678185	1.16	
1678186	0.04	
Blank Value	0.01	
OxH149	1.28	
1678187	0.36	
1678188	0.21	0.21
1678189	0.22	
1678190	< 0.01	

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Page 1 of 2

Assay Certificate

Certificate Number: 19-467

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH19021A02**
Attn: **Patti Perlock**

Report Date: **03-Apr-19**

We hereby certify the following Assay of 30 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FAAA g/Mt	FAAA g/Mt
1678191	0.45	
1678192	0.44	
1678193	< 0.01	
1678194	0.06	
1678195	0.01	
1678196	0.01	
1678197	0.24	
1678198	3.05	
1678199	0.45	0.62
1678200	0.34	
Blank Value	< 0.01	
OxH149	1.24	
1678201	0.35	
1678202	1.89	
1678203	1.03	
1678204	0.06	
1678205	0.97	
1678206	0.05	
1678207	< 0.01	
1678208	< 0.01	
1678209	< 0.01	
1678210	< 0.01	< 0.01
1678211	0.01	
1678212	< 0.01	
1678213	< 0.01	

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Page 2 of 2

Assay Certificate

Certificate Number: 19-467

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH19021A02**
Attn: **Patti Perlock**

Report Date: **03-Apr-19**

We hereby certify the following Assay of 30 core samples
submitted 20-Mar-19 by Patti Perlock

Sample Number	Au	Au Chk
	FAAA g/Mt	FAAA g/Mt
1678214	0.03	
1678215	< 0.01	
1678216	< 0.01	
1678217	< 0.01	
1678218	< 0.01	
Blank Value	< 0.01	
OxH149	1.27	
1678219	< 0.01	< 0.01
1678220	0.85	

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Page 1 of 2

Assay Certificate

Certificate Number: 19-664

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1901302**
Attn: **Patti Perlock**

Report Date: **30-Apr-19**

We hereby certify the following Assay of 42 core samples
submitted 11-Apr-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
N76001	0.09	
N76002	0.01	
N76003	< 0.01	
N76004	0.01	
N76005	0.01	
N76006	< 0.01	
N76007	< 0.01	
N76008	< 0.01	
N76009	0.03	0.03
N76010	< 0.01	
Blank Value	< 0.01	
OxH149	1.30	
N76011	< 0.01	
N76012	< 0.01	
N76013	< 0.01	
N76014	0.36	
N76015	0.02	
N76016	0.24	
N76017	0.22	
N76018	0.08	
N76019	0.60	
N76020	0.34	
N76021	2.24	1.87
N76022	0.77	
N76023	0.08	

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Page 2 of 2

Assay Certificate

Certificate Number: 19-664

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1901302**
Attn: **Patti Perlock**

Report Date: **30-Apr-19**

We hereby certify the following Assay of 42 core samples
submitted 11-Apr-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
N76024	< 0.01	
N76025	< 0.01	
N76026	< 0.01	
N76027	0.01	
N76028	< 0.01	
Blank Value	< 0.01	
OxH149	1.30	
N76029	< 0.01	< 0.01
N76030	< 0.01	
N76031	< 0.01	
N76032	< 0.01	
N76033	< 0.01	
N76034	< 0.01	
N76035	< 0.01	
N76036	< 0.01	
N76037	< 0.01	
N76038	0.06	
N76039	0.05	0.04
N76040	0.90	
N76041	0.09	
N76042	0.48	

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Page 1 of 1

Assay Certificate

Certificate Number: 19-665

Company: **KLG TIMMINS EAST**
Project: **Nighthawk Dispatch NH1901302**
Attn: **Patti Perlock**

Report Date: **29-Apr-19**

We hereby certify the following Assay of 18 core samples
submitted 11-Apr-19 by Patti Perlock

Sample Number	Au	Au Chk
	FA-AAS g/Mt	FA-AAS g/Mt
N76043	0.45	
N76044	0.03	
N76045	3.09	
N76046	0.09	
N76047	0.08	
N76048	0.02	
N76049	0.70	
N76050	< 0.01	
N76051	1.02	
N76052	0.17	0.19
Blank Value	< 0.01	
OxH149	1.28	
N76053	0.08	
N76054	1.85	
N76055	0.16	
N76056	0.17	
N76057	0.32	
N76058	0.17	
N76059	0.03	
N76060	2.15	

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BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: January 30, 2019
Report Date: February 19, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19000066.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1900801
P.O. Number: Night Hawk
Number of Samples: 78

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	74	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	1	Primary crushing entire sample of whole core			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	78	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	78	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Patti Perlock


SCOTT INGLIS
Fire Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000066.1

Method Analyte	Unit	WGHT	FA430
		Wgt kg	Au ppm
MDL		0.01	0.005
N33551	Drill Core	4.83	<0.005
N33552	Drill Core	4.79	<0.005
N33553	Drill Core	3.57	<0.005
N33554	Drill Core	4.06	<0.005
N33555	Drill Core	4.06	<0.005
N33556	Drill Core	3.97	<0.005
N33557	Drill Core	4.30	<0.005
N33558	Drill Core	4.83	<0.005
N33559	Drill Core	3.51	0.033
N33560	Pulp	0.07	0.854
N33561	Drill Core	3.43	<0.005
N33562	Drill Core	4.94	0.011
N33563	Drill Core	5.55	0.095
N33564	Drill Core	5.12	<0.005
N33565	Drill Core	3.25	<0.005
N33566	Drill Core	2.65	<0.005
N33567	Drill Core	3.68	<0.005
N33568	Drill Core	4.01	<0.005
N33569	Drill Core	3.60	<0.005
N33570	Drill Core	1.25	0.005
N33571	Drill Core	5.11	<0.005
N33572	Drill Core	4.34	<0.005
N33573	Drill Core	5.33	<0.005
N33574	Drill Core	4.56	<0.005
N33575	Drill Core	4.57	<0.005
N33576	Drill Core	2.22	<0.005
N33577	Drill Core	2.53	<0.005
N33578	Drill Core	5.24	0.033
N33579	Drill Core	4.64	<0.005
N33580	Pulp	0.07	2.121



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9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000066.1

Method	Analyte	WGHT	FA430
		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
N33581	Drill Core	3.50	<0.005
N33582	Drill Core	4.78	<0.005
N33583	Drill Core	3.74	0.154
N33584	Drill Core	3.57	0.006
N33585	Drill Core	4.17	0.005
N33586	Drill Core	5.72	0.005
N33587	Drill Core	5.36	0.007
N33588	Drill Core	3.36	<0.005
N33589	Drill Core	4.77	<0.005
N33590	Drill Core	1.07	0.009
N33591	Drill Core	1.68	<0.005
N33592	Drill Core	3.50	<0.005
N33593	Drill Core	3.47	<0.005
N33594	Drill Core	2.30	<0.005
N33595	Drill Core	3.98	0.044
N33596	Drill Core	4.61	0.007
N33597	Drill Core	5.01	0.009
N33598	Drill Core	4.78	<0.005
N33599	Drill Core	4.01	<0.005
N33600	Pulp	0.07	0.884
N33601	Drill Core	3.32	<0.005
N33602	Drill Core	4.07	<0.005
N33603	Drill Core	2.66	<0.005
N33604	Drill Core	2.91	0.069
N33605	Drill Core	3.02	<0.005
N33606	Drill Core	2.16	<0.005
N33607	Drill Core	2.90	<0.005
N33608	Drill Core	2.13	<0.005
N33609	Drill Core	3.25	<0.005
N33610	Drill Core	1.37	<0.005



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000066.1

Method	WGHT	FA430	
		Analyte	Au
Unit	kg	ppm	
MDL	0.01	0.005	
N33611	Drill Core	2.77	<0.005
N33612	Drill Core	2.07	<0.005
N33613	Drill Core	2.12	0.016
N33614	Drill Core	1.47	<0.005
N33615	Drill Core	1.67	0.165
N33616	Drill Core	1.39	<0.005
N33617	Drill Core	1.61	0.006
N33618	Drill Core	2.48	<0.005
N33619	Drill Core	3.44	<0.005
N33620	Pulp	0.07	2.212
N33621	Drill Core	1.83	<0.005
N33622	Drill Core	1.24	<0.005
N33623	Drill Core	1.55	0.050
N33624	Drill Core	2.35	<0.005
N33625	Drill Core	2.36	<0.005
N33626	Drill Core	2.72	<0.005
N33627	Drill Core	2.81	<0.005
N33628	Drill Core	2.37	<0.005



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000066.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N33561	Drill Core	3.43 <0.005
REP N33561	QC	<0.005
Core Reject Duplicates		
N33578	Drill Core	5.24 0.033
DUP N33578	QC	0.010
N33612	Drill Core	2.07 <0.005
DUP N33612	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.205
STD OXC145	Standard	0.205
STD OXC145	Standard	0.207
STD OXH139	Standard	1.311
STD OXH139	Standard	1.281
STD OXH139	Standard	1.343
STD OXN134	Standard	7.673
STD OXN134	Standard	7.525
STD OXN134	Standard	7.797
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000066.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: January 30, 2019
Report Date: February 19, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19000067.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1901001
P.O. Number: Night Hawk
Number of Samples: 72

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Patti Perlock

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	69	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	69	Primary crushing entire sample of whole core			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	72	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	72	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager



Bureau Veritas Commodities Canada Ltd.

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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000067.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33502	Drill Core	4.61 <0.005
N33503	Drill Core	5.11 0.008
N33504	Drill Core	4.31 <0.005
N33505	Drill Core	4.25 <0.005
N33506	Drill Core	5.96 <0.005
N33507	Drill Core	3.62 <0.005
N33508	Drill Core	5.35 0.007
N33509	Drill Core	4.23 <0.005
N33510	Drill Core	2.57 0.006
N33511	Drill Core	4.61 0.005
N33512	Drill Core	2.88 <0.005
N33513	Drill Core	6.77 <0.005
N33514	Drill Core	4.56 <0.005
N33515	Drill Core	2.97 <0.005
N33516	Drill Core	3.96 <0.005
N33517	Drill Core	4.33 <0.005
N33518	Drill Core	7.38 <0.005
N33519	Drill Core	3.92 <0.005
N33520	Pulp	0.06 0.837
N33521	Drill Core	2.99 <0.005
N33522	Drill Core	2.70 <0.005
N33523	Drill Core	4.68 <0.005
N33524	Drill Core	3.65 <0.005
N33525	Drill Core	5.59 <0.005
N33526	Drill Core	4.30 <0.005
N33527	Drill Core	3.18 <0.005
N33528	Drill Core	3.53 <0.005
N33529	Drill Core	5.53 <0.005
N33530	Drill Core	2.51 0.006
N33531	Drill Core	1.92 <0.005



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000067.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33532	Drill Core	1.76 <0.005
N33533	Drill Core	2.47 <0.005
N33534	Drill Core	1.53 <0.005
N33535	Drill Core	3.06 0.010
N33536	Drill Core	2.21 <0.005
N33537	Drill Core	3.13 <0.005
N33538	Drill Core	3.13 <0.005
N33539	Drill Core	4.07 <0.005
N33540	Pulp	0.07 2.166
N33541	Drill Core	2.54 <0.005
N33542	Drill Core	2.17 <0.005
N33543	Drill Core	1.55 <0.005
N33544	Drill Core	2.19 <0.005
N33545	Drill Core	2.90 <0.005
N33546	Drill Core	1.98 <0.005
N33547	Drill Core	2.20 <0.005
N33548	Drill Core	2.22 <0.005
N33549	Drill Core	2.37 <0.005
N33550	Drill Core	2.80 0.008
N33651	Drill Core	2.20 <0.005
N33652	Drill Core	2.07 0.008
N33653	Drill Core	2.07 <0.005
N33654	Drill Core	1.70 <0.005
N33655	Drill Core	1.55 <0.005
N33656	Drill Core	1.69 <0.005
N33657	Drill Core	2.44 <0.005
N33658	Drill Core	2.50 <0.005
N33659	Drill Core	2.34 <0.005
N33660	Pulp	0.06 0.332
N33661	Drill Core	2.38 <0.005



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Client: **Kirkland Lake Gold**
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Project: NightHawk
Report Date: February 19, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000067.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
N33662	Drill Core	2.17	<0.005
N33663	Drill Core	2.45	0.006
N33664	Drill Core	2.26	<0.005
N33665	Drill Core	2.22	<0.005
N33666	Drill Core	2.78	<0.005
N33667	Drill Core	2.28	<0.005
N33668	Drill Core	2.84	<0.005
N33669	Drill Core	1.68	<0.005
N33670	Drill Core	2.46	<0.005
N33671	Drill Core	2.26	<0.005
N33672	Drill Core	2.21	<0.005
N33673	Drill Core	1.71	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM1900067.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N33514	Drill Core	4.56 <0.005
REP N33514	QC	<0.005
N33536	Drill Core	2.21 <0.005
REP N33536	QC	<0.005
N33538	Drill Core	3.13 <0.005
REP N33538	QC	<0.005
Core Reject Duplicates		
N33654	Drill Core	1.70 <0.005
DUP N33654	QC	0.006
Reference Materials		
STD OXC145	Standard	0.205
STD OXC145	Standard	0.207
STD OXC145	Standard	0.211
STD OXH139	Standard	1.281
STD OXH139	Standard	1.343
STD OXH139	Standard	1.319
STD OXN134	Standard	7.525
STD OXN134	Standard	7.797
STD OXN134	Standard	7.806
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 19, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000067.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: February 11, 2019
Report Date: February 26, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19000110.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1900901
P.O. Number: NightHawk
Number of Samples: 60

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Patti Perlock

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	57	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	60	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	60	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 26, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000110.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33674	Drill Core	2.45 0.011
N33675	Drill Core	1.44 <0.005
N33676	Drill Core	1.94 <0.005
N33677	Drill Core	2.44 0.007
N33678	Drill Core	1.79 <0.005
N33679	Drill Core	1.74 <0.005
N33680	Pulp	0.07 0.833
N33681	Drill Core	1.51 <0.005
N33682	Drill Core	2.31 <0.005
N33683	Drill Core	1.78 <0.005
N33684	Drill Core	1.58 <0.005
N33685	Drill Core	1.72 <0.005
N33686	Drill Core	1.36 <0.005
N33687	Drill Core	2.27 <0.005
N33688	Drill Core	1.71 <0.005
N33689	Drill Core	3.42 0.005
N33690	Drill Core	0.87 <0.005
N33691	Drill Core	3.52 <0.005
N33692	Drill Core	3.28 <0.005
N33693	Drill Core	2.31 <0.005
N33694	Drill Core	2.83 <0.005
N33695	Drill Core	1.97 0.039
N33696	Drill Core	2.75 <0.005
N33697	Drill Core	2.38 <0.005
N33698	Drill Core	1.54 <0.005
N33699	Drill Core	2.35 0.073
N33700	Pulp	0.07 2.131
N33701	Drill Core	1.78 <0.005
N33702	Drill Core	1.97 <0.005
N33703	Drill Core	2.28 <0.005



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 26, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000110.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33704	Drill Core	2.06 <0.005
N33705	Drill Core	2.41 <0.005
N33706	Drill Core	2.39 <0.005
N33707	Drill Core	2.16 <0.005
N33708	Drill Core	3.12 <0.005
N33709	Drill Core	2.49 <0.005
N33710	Drill Core	0.85 <0.005
N33711	Drill Core	2.41 0.007
N33712	Drill Core	2.27 0.517
N33713	Drill Core	1.84 0.574
N33714	Drill Core	1.37 1.946
N33715	Drill Core	2.45 0.146
N33716	Drill Core	2.29 0.009
N33717	Drill Core	2.07 0.018
N33718	Drill Core	2.57 0.008
N33719	Drill Core	2.30 <0.005
N33720	Pulp	0.07 0.321
N33721	Drill Core	1.72 <0.005
N33722	Drill Core	1.85 <0.005
N33723	Drill Core	2.33 0.011
N33724	Drill Core	2.39 0.021
N33725	Drill Core	3.56 0.009
N33726	Drill Core	3.76 0.028
N33727	Drill Core	3.34 0.067
N33728	Drill Core	3.25 0.025
N33729	Drill Core	2.66 0.017
N33730	Drill Core	0.99 <0.005
N33731	Drill Core	3.58 0.012
N33732	Drill Core	2.52 0.117
N33733	Drill Core	3.86 0.101



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 26, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000110.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N33694	Drill Core	2.83 <0.005
REP N33694	QC	<0.005
N33704	Drill Core	2.06 <0.005
REP N33704	QC	<0.005
Core Reject Duplicates		
N33683	Drill Core	1.78 <0.005
DUP N33683	QC	<0.005
N33717	Drill Core	2.07 0.018
DUP N33717	QC	0.014
Reference Materials		
STD OXC145	Standard	0.201
STD OXH139	Standard	1.280
STD OXN134	Standard	7.671
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
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Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: February 12, 2019
Report Date: March 08, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19000116.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1900902
P.O. Number: Nighthawk
Number of Samples: 89

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Patti Perlock

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	84	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	89	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	89	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: March 08, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000116.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33734	Drill Core	1.68 0.394
N33735	Drill Core	1.69 1.071
N33736	Drill Core	2.18 0.113
N33737	Drill Core	1.27 4.310
N33738	Drill Core	2.35 0.970
N33739	Drill Core	2.51 0.811
N33740	Pulp	0.07 0.854
N33741	Drill Core	3.61 0.157
N33742	Drill Core	3.16 0.680
N33743	Drill Core	1.84 2.744
N33744	Drill Core	2.22 0.047
N33745	Drill Core	2.15 0.445
N33746	Drill Core	2.28 0.396
N33747	Drill Core	2.43 0.029
N33748	Drill Core	3.62 0.020
N33749	Drill Core	3.61 0.025
N33750	Drill Core	0.95 <0.005
N33752	Drill Core	1.22 0.030
N33753	Drill Core	1.50 0.093
N33754	Drill Core	2.24 0.142
N33755	Drill Core	3.15 0.162
N33756	Drill Core	3.71 0.115
N33757	Drill Core	3.49 0.137
N33758	Drill Core	3.53 0.027
N33759	Drill Core	3.25 0.097
N33760	Pulp	0.07 2.179
N33761	Drill Core	3.73 0.134
N33762	Drill Core	3.53 0.132
N33763	Drill Core	2.32 0.068
N33764	Drill Core	3.60 0.043



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Project: NightHawk
Report Date: March 08, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000116.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33765	Drill Core	2.65 0.098
N33766	Drill Core	4.02 0.124
N33767	Drill Core	3.53 0.029
N33768	Drill Core	3.79 0.077
N33769	Drill Core	3.75 0.020
N33770	Drill Core	0.91 <0.005
N33771	Drill Core	3.56 0.019
N33772	Drill Core	3.66 0.182
N33773	Drill Core	3.17 0.080
N33774	Drill Core	3.28 0.047
N33775	Drill Core	2.38 0.478
N33776	Drill Core	3.49 0.083
N33777	Drill Core	2.49 0.039
N33778	Drill Core	3.50 0.075
N33779	Drill Core	1.71 0.029
N33780	Pulp	0.07 0.335
N33781	Drill Core	2.30 0.034
N33782	Drill Core	2.30 0.019
N33783	Drill Core	2.48 0.160
N33784	Drill Core	3.51 0.009
N33785	Drill Core	2.64 0.038
N33786	Drill Core	2.60 0.074
N33787	Drill Core	3.46 0.408
N33788	Drill Core	2.29 0.193
N33789	Drill Core	2.52 0.018
N33790	Drill Core	1.00 <0.005
N33791	Drill Core	2.01 0.012
N33792	Drill Core	2.40 0.017
N33793	Drill Core	2.98 0.105
N33794	Drill Core	2.01 0.076



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: March 08, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000116.1

Method	Analyte	WGHT	FA430
		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
N33795	Drill Core	2.79	0.815
N33796	Drill Core	1.27	0.093
N33797	Drill Core	3.67	0.007
N33798	Drill Core	2.95	0.063
N33799	Drill Core	4.12	0.017
N33800	Pulp	0.07	0.854
N33801	Drill Core	3.61	0.018
N33802	Drill Core	1.81	0.007
N33803	Drill Core	1.74	<0.005
N33804	Drill Core	2.16	<0.005
N33805	Drill Core	2.97	<0.005
N33806	Drill Core	3.28	0.014
N33807	Drill Core	2.54	0.072
N33808	Drill Core	2.93	<0.005
N33809	Drill Core	3.11	0.006
N33810	Drill Core	1.27	<0.005
N33811	Drill Core	2.18	0.010
N33812	Drill Core	3.38	0.030
N33813	Drill Core	2.61	0.730
N33814	Drill Core	3.53	0.032
N33815	Drill Core	2.26	0.013
N33816	Drill Core	1.29	0.088
N33817	Drill Core	3.03	<0.005
N33818	Drill Core	2.53	<0.005
N33819	Drill Core	2.67	0.735
N33820	Pulp	0.07	2.112
N33821	Drill Core	3.06	0.070
N33822	Drill Core	1.77	0.048
N33823	Drill Core	2.26	0.038



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: March 08, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000116.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N33805	Drill Core	2.97 <0.005
REP N33805	QC	<0.005
N33806	Drill Core	3.28 0.014
REP N33806	QC	0.023
Core Reject Duplicates		
N33759	Drill Core	3.25 0.097
DUP N33759	QC	0.149
N33793	Drill Core	2.98 0.105
DUP N33793	QC	0.145
Reference Materials		
STD OXC145	Standard	0.214
STD OXC145	Standard	0.203
STD OXH139	Standard	1.273
STD OXH139	Standard	1.319
STD OXN134	Standard	7.561
STD OXN134	Standard	7.676
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: February 14, 2019
Report Date: February 20, 2019
Page: 1 of 2

CERTIFICATE OF ANALYSIS

TIM19000130.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1902001
P.O. Number
Number of Samples: 8

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Patti Perlock

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	7	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	1	Sort, label and box pulps			TIM
FA430	8	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	8	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: NightHawk
Report Date: February 20, 2019

Page: 2 of 2

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000130.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
N33839	Drill Core	1.98	0.273
N33840	Pulp	0.07	0.335
N33841	Drill Core	1.98	0.209
N33842	Drill Core	3.53	1.136
N33843	Drill Core	3.52	1.873
N33844	Drill Core	2.62	1.754
N33845	Drill Core	2.41	3.396
N33846	Drill Core	3.15	1.696



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: February 20, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000130.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N33839	Drill Core	1.98 0.273
REP N33839	QC	0.316
Reference Materials		
STD OXC145	Standard	0.206
STD OXC145	Standard	0.205
STD OXH139	Standard	1.316
STD OXH139	Standard	1.334
STD OXN134	Standard	7.682
STD OXN134	Standard	7.740
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: March 08, 2019
Report Date: April 25, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19000214.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1901101
P.O. Number: 4500104625
Number of Samples: 97

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	93	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	97	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	97	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: April 25, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000214.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N64501	Drill Core	1.53 0.045
N64502	Drill Core	1.90 0.025
N64503	Drill Core	1.89 0.015
N64504	Drill Core	3.44 <0.005
N64505	Drill Core	1.87 0.008
N64506	Drill Core	2.02 0.015
N64507	Drill Core	2.74 0.032
N64508	Drill Core	2.41 0.016
N64509	Drill Core	1.27 0.026
N64510	Drill Core	0.82 <0.005
N64511	Drill Core	1.36 0.165
N64512	Drill Core	2.15 0.013
N64513	Drill Core	1.72 0.061
N64514	Drill Core	1.57 0.376
N64515	Drill Core	2.52 <0.005
N64516	Drill Core	2.26 <0.005
N64517	Drill Core	2.47 0.064
N64518	Drill Core	2.99 0.057
N64519	Drill Core	2.27 <0.005
N64520	Pulp	0.07 2.181
N64521	Drill Core	2.87 <0.005
N64522	Drill Core	3.26 <0.005
N64523	Drill Core	2.85 0.008
N64524	Drill Core	1.79 <0.005
N64525	Drill Core	1.55 <0.005
N64526	Drill Core	2.64 <0.005
N64527	Drill Core	1.62 <0.005
N64528	Drill Core	2.00 0.015
N64529	Drill Core	2.74 0.027
N64530	Drill Core	0.85 0.022



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Project: NightHawk
Report Date: April 25, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000214.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N64531	Drill Core	2.01 0.107
N64532	Drill Core	1.56 0.005
N64533	Drill Core	1.84 0.054
N64534	Drill Core	2.99 <0.005
N64535	Drill Core	2.90 <0.005
N64536	Drill Core	3.43 <0.005
N64537	Drill Core	4.09 <0.005
N64538	Drill Core	3.89 <0.005
N64539	Drill Core	3.74 <0.005
N64540	Pulp	0.07 0.339
N64541	Drill Core	3.83 <0.005
N64542	Drill Core	1.47 <0.005
N64543	Drill Core	3.99 0.014
N64544	Drill Core	2.55 <0.005
N64545	Drill Core	1.59 <0.005
N64546	Drill Core	2.25 <0.005
N64547	Drill Core	4.14 <0.005
N64548	Drill Core	3.51 0.005
N64549	Drill Core	2.63 0.125
N64550	Drill Core	1.06 <0.005
N64551	Drill Core	2.77 <0.005
N64552	Drill Core	2.26 <0.005
N64553	Drill Core	3.85 0.008
N64554	Drill Core	3.92 <0.005
N64555	Drill Core	3.84 <0.005
N64556	Drill Core	2.25 <0.005
N64557	Drill Core	2.41 0.013
N64558	Drill Core	2.15 0.006
N64559	Drill Core	1.10 <0.005
N64560	Pulp	0.07 2.117



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Project: NightHawk
Report Date: April 25, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000214.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N64561	Drill Core	3.37 <0.005
N64562	Drill Core	3.89 <0.005
N64563	Drill Core	3.93 <0.005
N64564	Drill Core	2.51 <0.005
N64565	Drill Core	2.46 0.014
N64566	Drill Core	2.81 <0.005
N64567	Drill Core	2.03 <0.005
N64568	Drill Core	2.07 <0.005
N64569	Drill Core	2.60 <0.005
N64570	Drill Core	0.65 <0.005
N64571	Drill Core	2.24 0.018
N64572	Drill Core	2.37 <0.005
N64573	Drill Core	2.60 <0.005
N64574	Drill Core	1.43 <0.005
N64575	Drill Core	2.07 <0.005
N64576	Drill Core	2.42 0.006
N64577	Drill Core	1.65 <0.005
N64578	Drill Core	2.20 <0.005
N64579	Drill Core	3.22 0.030
N64580	Pulp	0.07 2.152
N64581	Drill Core	2.55 0.223
N64582	Drill Core	3.16 0.027
N64583	Drill Core	2.62 0.290
N64584	Drill Core	2.46 0.079
N64585	Drill Core	2.24 0.054
N64586	Drill Core	2.17 0.025
N64587	Drill Core	2.03 0.009
N64588	Drill Core	2.39 <0.005
N64589	Drill Core	2.21 <0.005
N64590	Drill Core	0.86 <0.005



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Project: NightHawk
Report Date: April 25, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000214.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
N64591	Drill Core	1.18	0.027
N64592	Drill Core	2.72	0.201
N64593	Drill Core	2.57	0.018
N64594	Drill Core	2.11	0.029
N64595	Drill Core	2.26	0.227
N64596	Drill Core	3.26	0.061
N64597	Drill Core	2.08	0.017



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: April 25, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000214.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N64526	Drill Core	2.64 <0.005
REP N64526	QC	<0.005
N64531	Drill Core	2.01 0.107
REP N64531	QC	0.056
N64535	Drill Core	2.90 <0.005
REP N64535	QC	<0.005
Core Reject Duplicates		
N64505	Drill Core	1.87 0.008
DUP N64505	QC	<0.005
N64539	Drill Core	3.74 <0.005
DUP N64539	QC	<0.005
N64573	Drill Core	2.60 <0.005
DUP N64573	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.212
STD OXC145	Standard	0.205
STD OXC145	Standard	0.214
STD OXC145	Standard	0.207
STD OXC145	Standard	0.210
STD OXH139	Standard	1.311
STD OXH139	Standard	1.287
STD OXH139	Standard	1.379
STD OXH139	Standard	1.306
STD OXN134	Standard	7.655
STD OXN134	Standard	7.516
STD OXN134	Standard	7.599
STD OXN134	Standard	7.576
STD OXN134	Standard	7.515



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: April 25, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000214.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
STD OXC145	Expected		0.212
STD OXN134	Expected		7.667
STD OXH139	Expected		1.312
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: March 08, 2019
Report Date: April 15, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19000215.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1902002
P.O. Number: 4500104625
Number of Samples: 52

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	50	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	2	Sort, label and box pulps			TIM
FA430	52	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	52	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: April 15, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000215.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33824	Drill Core	2.59 <0.005
N33825	Drill Core	2.44 <0.005
N33826	Drill Core	2.52 <0.005
N33827	Drill Core	2.25 <0.005
N33828	Drill Core	2.03 <0.005
N33829	Drill Core	2.60 <0.005
N33830	Drill Core	0.73 <0.005
N33831	Drill Core	2.31 <0.005
N33832	Drill Core	1.48 <0.005
N33833	Drill Core	2.73 <0.005
N33834	Drill Core	1.92 <0.005
N33835	Drill Core	2.02 <0.005
N33836	Drill Core	1.33 <0.005
N33837	Drill Core	1.78 <0.005
N33838	Drill Core	2.55 <0.005
N33847	Drill Core	2.15 <0.005
N33848	Drill Core	3.20 1.836
N33849	Drill Core	2.39 0.038
N33850	Drill Core	0.82 <0.005
N33851	Drill Core	3.29 <0.005
N33852	Drill Core	3.38 <0.005
N33853	Drill Core	3.38 0.013
N33854	Drill Core	1.68 0.007
N33855	Drill Core	3.09 <0.005
N33856	Drill Core	1.71 0.028
N33857	Drill Core	3.27 <0.005
N33858	Drill Core	3.30 <0.005
N33859	Drill Core	2.29 0.006
N33860	Pulp	0.07 0.875
N33861	Drill Core	1.42 0.019



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: April 15, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000215.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
N33862	Drill Core	2.89	0.016
N33863	Drill Core	2.80	0.106
N33864	Drill Core	1.25	2.177
N33865	Drill Core	1.08	1.590
N33866	Drill Core	2.53	0.788
N33867	Drill Core	3.01	0.936
N33868	Drill Core	1.06	0.306
N33869	Drill Core	3.37	0.006
N33870	Drill Core	0.98	0.007
N33871	Drill Core	3.24	0.034
N33872	Drill Core	2.75	0.132
N33873	Drill Core	3.37	0.073
N33874	Drill Core	2.47	0.030
N33875	Drill Core	2.67	0.357
N33876	Drill Core	3.06	1.395
N33877	Drill Core	1.59	0.698
N33878	Drill Core	2.55	0.203
N33879	Drill Core	3.38	0.064
N33880	Pulp	0.07	2.114
N33881	Drill Core	3.74	0.390
N33882	Drill Core	3.83	0.100
N33883	Drill Core	3.43	0.040



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: April 15, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000215.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N33827	Drill Core	2.25 <0.005
REP N33827	QC	<0.005
N33836	Drill Core	1.33 <0.005
REP N33836	QC	0.008
Core Reject Duplicates		
N33849	Drill Core	2.39 0.038
DUP N33849	QC	0.038
N33883	Drill Core	3.43 0.040
DUP N33883	QC	0.075
Reference Materials		
STD OXC145	Standard	0.205
STD OXC145	Standard	0.207
STD OXH139	Standard	1.287
STD OXH139	Standard	1.379
STD OXN134	Standard	7.516
STD OXN134	Standard	7.576
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: March 13, 2019
Report Date: April 09, 2019
Page: 1 of 2

CERTIFICATE OF ANALYSIS

TIM19000225.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1901102
P.O. Number: 4500104625
Number of Samples: 22

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	21	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	1	Sort, label and box pulps			TIM
FA430	22	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	22	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: April 09, 2019

Page: 2 of 2

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000225.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N33629	Drill Core	1.99 0.027
N33630	Drill Core	0.70 <0.005
N33631	Drill Core	3.03 0.026
N33632	Drill Core	2.67 0.045
N33633	Drill Core	2.21 0.006
N33634	Drill Core	1.17 0.016
N33635	Drill Core	2.33 <0.005
N33636	Drill Core	2.78 0.025
N33637	Drill Core	2.39 <0.005
N33638	Drill Core	2.74 0.009
N33639	Drill Core	2.64 0.010
N33640	Pulp	0.07 0.849
N33641	Drill Core	1.44 <0.005
N33642	Drill Core	1.91 0.011
N33643	Drill Core	3.40 0.016
N33644	Drill Core	2.13 0.006
N33645	Drill Core	1.83 0.006
N33646	Drill Core	2.51 0.573
N33647	Drill Core	2.66 0.035
N33648	Drill Core	2.33 0.009
N33649	Drill Core	2.00 0.018
N33650	Drill Core	0.62 <0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: April 09, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000225.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Core Reject Duplicates		
N33645	Drill Core	1.83 0.006
DUP N33645	QC	0.005
Reference Materials		
STD OXC145	Standard	0.209
STD OXH139	Standard	1.319
STD OXN134	Standard	7.619
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: April 17, 2019
Report Date: May 14, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19000455.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1901302
P.O. Number: 4500104625
Number of Samples: 93

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	89	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	93	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	93	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: Taylor
Report Date: May 14, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000455.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76061	Drill Core	1.38 0.138
N76062	Drill Core	1.14 0.034
N76063	Drill Core	1.21 0.008
N76064	Drill Core	1.68 0.029
N76065	Drill Core	2.44 0.107
N76066	Drill Core	2.37 0.006
N76067	Drill Core	1.57 <0.005
N76068	Drill Core	2.90 <0.005
N76069	Drill Core	2.72 0.014
N76070	Drill Core	1.14 <0.005
N76071	Drill Core	2.54 0.025
N76072	Drill Core	3.01 0.009
N76073	Drill Core	2.49 0.007
N76074	Drill Core	3.05 <0.005
N76075	Drill Core	1.78 <0.005
N76076	Drill Core	2.20 0.103
N76077	Drill Core	2.46 0.041
N76078	Drill Core	2.17 0.122
N76079	Drill Core	1.65 0.007
N76080	Pulp	0.06 0.335
N76081	Drill Core	2.23 <0.005
N76082	Drill Core	3.40 0.006
N76083	Drill Core	2.82 0.028
N76084	Drill Core	1.44 0.398
N76085	Drill Core	2.37 0.017
N76086	Drill Core	2.31 <0.005
N76087	Drill Core	0.57 0.408
N76088	Drill Core	1.91 0.356
N76089	Drill Core	0.75 0.013
N76090	Drill Core	0.87 <0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 14, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000455.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76091	Drill Core	2.71 0.006
N76092	Drill Core	2.49 0.033
N76093	Drill Core	2.67 0.180
N76094	Drill Core	2.29 0.441
N76095	Drill Core	2.69 1.107
N76096	Drill Core	2.18 0.322
N76097	Drill Core	2.05 <0.005
N76098	Drill Core	3.84 0.009
N76099	Drill Core	2.42 <0.005
N76100	Pulp	0.06 0.851
N76101	Drill Core	1.95 <0.005
N76102	Drill Core	2.91 <0.005
N76103	Drill Core	2.89 <0.005
N76104	Drill Core	1.46 <0.005
N76105	Drill Core	1.27 <0.005
N76106	Drill Core	1.61 0.030
N76107	Drill Core	0.90 0.031
N76108	Drill Core	3.37 0.015
N76109	Drill Core	2.88 0.057
N76110	Drill Core	0.87 <0.005
N76111	Drill Core	2.48 0.097
N76112	Drill Core	2.17 0.673
N76113	Drill Core	3.70 0.006
N76114	Drill Core	3.46 0.013
N76115	Drill Core	3.37 0.007
N76116	Drill Core	1.56 0.016
N76117	Drill Core	3.68 0.050
N76118	Drill Core	3.15 0.008
N76119	Drill Core	3.58 0.008
N76120	Pulp	0.06 2.154



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Project: Taylor
Report Date: May 14, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000455.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76121	Drill Core	2.58 0.006
N76122	Drill Core	2.14 0.008
N76123	Drill Core	1.55 <0.005
N76124	Drill Core	3.37 0.062
N76125	Drill Core	2.35 0.067
N65351	Drill Core	1.59 0.013
N65352	Drill Core	2.60 0.016
N65353	Drill Core	2.22 0.960
N65354	Drill Core	2.26 0.249
N65355	Drill Core	2.48 0.488
N65356	Drill Core	3.66 0.016
N65357	Drill Core	2.93 0.006
N65358	Drill Core	2.61 0.137
N76143	Drill Core	1.42 0.006
N76144	Drill Core	1.64 0.009
N76145	Drill Core	1.60 0.008
N76146	Drill Core	2.30 <0.005
N76147	Drill Core	2.53 0.068
N76148	Drill Core	2.39 0.042
N76149	Drill Core	2.00 <0.005
N76150	Drill Core	0.59 0.005
N76151	Drill Core	1.66 0.010
N76152	Drill Core	1.20 0.017
N76153	Drill Core	2.30 0.029
N76154	Drill Core	3.74 0.005
N76155	Drill Core	2.98 <0.005
N76156	Drill Core	4.00 0.013
N76157	Drill Core	3.19 0.338
N76158	Drill Core	3.55 0.007
N76159	Drill Core	2.33 0.005



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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 14, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000455.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76160	Pulp	0.06 0.843
N76161	Drill Core	2.65 <0.005
N76162	Drill Core	2.14 0.006



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 14, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000455.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76161	Drill Core	2.65 <0.005
REP N76161	QC	0.006
Core Reject Duplicates		
N76062	Drill Core	1.14 0.034
DUP N76062	QC	0.015
N76096	Drill Core	2.18 0.322
DUP N76096	QC	0.375
N65355	Drill Core	2.48 0.488
DUP N65355	QC	0.408
Reference Materials		
STD OXC145	Standard	0.214
STD OXC145	Standard	0.218
STD OXC145	Standard	0.206
STD OXC145	Standard	0.211
STD OXH139	Standard	1.287
STD OXH139	Standard	1.292
STD OXH139	Standard	1.326
STD OXH139	Standard	1.332
STD OXN134	Standard	7.569
STD OXN134	Standard	7.576
STD OXN134	Standard	7.601
STD OXN134	Standard	7.808
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 14, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000455.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: April 25, 2019
Report Date: May 21, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19000515.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1901601
P.O. Number: 4500104625
Number of Samples: 65

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	62	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	65	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	65	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30		TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 21, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000515.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N71351	Drill Core	2.49 <0.005
N71352	Drill Core	2.31 0.085
N71353	Drill Core	3.30 6.126
N71354	Drill Core	2.07 0.031
N71355	Drill Core	2.39 0.055
N71356	Drill Core	2.09 0.025
N71357	Drill Core	3.52 0.020
N71358	Drill Core	2.14 0.032
N71359	Drill Core	1.87 <0.005
N71360	Pulp	0.07 0.337
N71361	Drill Core	1.75 0.030
N71362	Drill Core	2.13 0.025
N71363	Drill Core	3.58 0.203
N71364	Drill Core	3.18 0.138
N71365	Drill Core	1.44 0.031
N71366	Drill Core	2.18 0.155
N71367	Drill Core	2.60 0.339
N71368	Drill Core	2.17 0.223
N71369	Drill Core	2.08 0.297
N71370	Drill Core	0.85 0.006
N71371	Drill Core	2.73 0.173
N71372	Drill Core	3.22 0.093
N71373	Drill Core	3.43 0.743
N71374	Drill Core	3.25 0.242
N71375	Drill Core	2.17 0.294
N71376	Drill Core	2.09 0.520
N71377	Drill Core	2.50 0.571
N71378	Drill Core	3.01 1.597
N71379	Drill Core	2.78 0.585
N71380	Pulp	0.07 0.849



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 21, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000515.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N71381	Drill Core	3.22 0.377
N71382	Drill Core	3.13 0.568
N71383	Drill Core	2.00 3.131
N71384	Drill Core	3.03 0.255
N71385	Drill Core	2.93 0.416
N71386	Drill Core	2.24 1.004
N71387	Drill Core	1.96 1.189
N71388	Drill Core	2.16 0.928
N71389	Drill Core	3.04 0.182
N71390	Drill Core	0.98 0.005
N71391	Drill Core	3.32 0.030
N71392	Drill Core	3.15 0.024
N71393	Drill Core	2.45 7.168
N71394	Drill Core	1.84 2.744
N71395	Drill Core	3.01 0.429
N71396	Drill Core	3.41 0.290
N71397	Drill Core	2.01 0.658
N71398	Drill Core	2.33 0.876
N71399	Drill Core	3.15 0.156
N71400	Pulp	0.07 2.187
N71401	Drill Core	3.31 0.099
N71402	Drill Core	3.02 0.260
N71403	Drill Core	2.71 0.139
N71404	Drill Core	2.00 0.136
N71405	Drill Core	2.17 0.086
N71406	Drill Core	2.40 0.115
N71407	Drill Core	2.16 0.042
N71408	Drill Core	2.82 <0.005
N71409	Drill Core	3.36 <0.005
N71410	Drill Core	0.71 0.005



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Project: Taylor
Report Date: May 21, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000515.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N71411	Drill Core	1.88 <0.005
N71412	Drill Core	1.83 <0.005
N71413	Drill Core	2.21 <0.005
N71414	Drill Core	1.02 <0.005
N71415	Drill Core	2.19 <0.005



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Project: Taylor
Report Date: May 21, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000515.1

Method	Analyte	WGHT	FA430
		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
N71393	Drill Core	2.45	7.168
Pulp Duplicates			
N71361	Drill Core	1.75	0.030
REP N71361	QC		0.020
N71392	Drill Core	3.15	0.024
REP N71392	QC		0.025
Core Reject Duplicates			
N71374	Drill Core	3.25	0.242
DUP N71374	QC		0.272
N71408	Drill Core	2.82	<0.005
DUP N71408	QC		<0.005
Reference Materials			
STD OXC145	Standard		0.200
STD OXC145	Standard		0.205
STD OXC145	Standard		0.201
STD OXC145	Standard		0.203
STD OXH139	Standard		1.337
STD OXH139	Standard		1.312
STD OXH139	Standard		1.320
STD OXH139	Standard		1.321
STD OXN134	Standard		7.495
STD OXN134	Standard		7.335
STD OXN134	Standard		7.937
STD OXN134	Standard		7.834
STD OXC145 Expected			0.212
STD OXN134 Expected			7.667
STD OXH139 Expected			1.312
BLK	Blank		<0.005
BLK	Blank		<0.005



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Project: Taylor
Report Date: May 21, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000515.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: April 25, 2019
Report Date: May 10, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19000516.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1902301
P.O. Number: 4500104625
Number of Samples: 60

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	57	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	60	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	60	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: Taylor
Report Date: May 10, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000516.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76264	Drill Core	2.83 0.049
N76265	Drill Core	2.06 0.006
N76266	Drill Core	1.72 0.037
N76267	Drill Core	2.45 0.031
N76268	Drill Core	1.37 0.131
N76269	Drill Core	2.44 0.014
N76270	Drill Core	1.00 <0.005
N76271	Drill Core	1.80 0.072
N76272	Drill Core	1.91 0.009
N76273	Drill Core	2.79 <0.005
N76274	Drill Core	2.83 <0.005
N76275	Drill Core	2.89 <0.005
N76276	Drill Core	2.30 0.007
N76277	Drill Core	2.23 <0.005
N76278	Drill Core	2.39 <0.005
N76279	Drill Core	2.83 <0.005
N76280	Pulp	0.07 0.847
N76281	Drill Core	2.46 0.007
N76282	Drill Core	1.34 1.050
N76283	Drill Core	2.45 0.007
N76284	Drill Core	3.08 0.008
N76285	Drill Core	3.14 <0.005
N76286	Drill Core	1.47 0.019
N76287	Drill Core	2.69 0.017
N76288	Drill Core	2.52 0.005
N76289	Drill Core	2.41 <0.005
N76290	Drill Core	0.98 0.006
N76291	Drill Core	2.91 <0.005
N76292	Drill Core	2.80 <0.005
N76293	Drill Core	2.66 <0.005



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Project: Taylor
Report Date: May 10, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000516.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76294	Drill Core	2.68 0.007
N76295	Drill Core	1.22 0.036
N76296	Drill Core	2.22 0.010
N76297	Drill Core	1.96 0.012
N76298	Drill Core	1.14 0.510
N76299	Drill Core	2.77 0.026
N76300	Pulp	0.07 2.165
N76301	Drill Core	2.71 <0.005
N76302	Drill Core	2.88 <0.005
N76303	Drill Core	2.50 <0.005
N76304	Drill Core	2.56 0.007
N76305	Drill Core	2.44 <0.005
N76306	Drill Core	2.98 <0.005
N76307	Drill Core	3.09 <0.005
N76308	Drill Core	3.18 <0.005
N76309	Drill Core	2.85 <0.005
N76310	Drill Core	0.93 0.010
N76311	Drill Core	2.68 0.012
N76312	Drill Core	2.65 <0.005
N76313	Drill Core	2.34 0.012
N76314	Drill Core	2.49 0.006
N76315	Drill Core	2.35 <0.005
N76316	Drill Core	2.61 <0.005
N76317	Drill Core	2.70 <0.005
N76318	Drill Core	3.27 <0.005
N76319	Drill Core	2.80 <0.005
N76320	Pulp	0.07 0.342
N76321	Drill Core	2.61 0.008
N76322	Drill Core	2.30 0.012
N76323	Drill Core	1.73 0.232



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Project: Taylor
Report Date: May 10, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000516.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76267	Drill Core	2.45 0.031
REP N76267	QC	0.013
REP N76281	QC	0.008
Core Reject Duplicates		
N76281	Drill Core	2.46 0.007
DUP N76281	QC	0.015
N76315	Drill Core	2.35 <0.005
DUP N76315	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.205
STD OXC145	Standard	0.213
STD OXH139	Standard	1.312
STD OXH139	Standard	1.295
STD OXN134	Standard	7.335
STD OXN134	Standard	7.534
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: April 25, 2019
Report Date: May 15, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19000517.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1902302
P.O. Number: 4500104625
Number of Samples: 82

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	78	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	82	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	82	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: Taylor
Report Date: May 15, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000517.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76384	Drill Core	2.03 0.005
N76385	Drill Core	2.08 0.007
N76386	Drill Core	2.80 0.146
N76387	Drill Core	1.76 0.399
N76388	Drill Core	2.41 0.367
N76389	Drill Core	2.72 0.858
N76390	Drill Core	0.67 0.009
N76391	Drill Core	2.15 0.091
N76392	Drill Core	1.41 0.191
N76393	Drill Core	1.97 0.031
N76394	Drill Core	2.15 1.485
N76395	Drill Core	2.90 0.080
N76396	Drill Core	2.37 0.196
N76397	Drill Core	1.57 0.610
N76398	Drill Core	2.20 0.400
N76399	Drill Core	2.32 0.102
N76400	Pulp	0.07 0.843
N76401	Drill Core	1.98 0.019
N76402	Drill Core	1.85 0.059
N76403	Drill Core	2.33 0.054
N76404	Drill Core	2.08 0.369
N76405	Drill Core	2.29 0.265
N76406	Drill Core	2.23 0.128
N76407	Drill Core	2.18 0.545
N76408	Drill Core	1.78 0.938
N76409	Drill Core	2.01 0.847
N76410	Drill Core	0.76 0.009
N76411	Drill Core	2.26 0.174
N76412	Drill Core	2.30 0.146
N76413	Drill Core	2.12 0.184



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Project: Taylor
Report Date: May 15, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000517.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76414	Drill Core	2.34 0.639
N76415	Drill Core	1.97 0.558
N76416	Drill Core	1.43 0.099
N76417	Drill Core	2.29 0.182
N76418	Drill Core	2.10 0.014
N76419	Drill Core	2.24 0.052
N76420	Pulp	0.07 2.107
N76421	Drill Core	2.08 0.093
N76422	Drill Core	2.32 0.751
N76423	Drill Core	2.76 0.039
N76424	Drill Core	1.94 0.114
N76425	Drill Core	2.93 0.045
N76426	Drill Core	2.91 0.018
N76427	Drill Core	2.48 <0.005
N76428	Drill Core	2.91 0.005
N76429	Drill Core	1.80 0.006
N76430	Drill Core	0.87 0.005
N76431	Drill Core	2.05 0.010
N76432	Drill Core	2.36 <0.005
N76433	Drill Core	2.10 0.117
N76434	Drill Core	2.08 0.387
N76435	Drill Core	2.36 0.034
N76436	Drill Core	2.01 0.035
N76437	Drill Core	2.03 0.049
N76438	Drill Core	1.71 0.049
N76439	Drill Core	1.94 0.048
N76440	Pulp	0.07 0.330
N76441	Drill Core	2.29 0.071
N76442	Drill Core	1.90 0.125
N76443	Drill Core	1.60 0.084



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Project: Taylor
Report Date: May 15, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000517.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76444	Drill Core	2.24 0.021
N76445	Drill Core	1.96 0.031
N76446	Drill Core	2.08 0.073
N76447	Drill Core	1.84 0.251
N76448	Drill Core	2.35 0.054
N76449	Drill Core	2.55 0.063
N76450	Drill Core	0.78 <0.005
N76451	Drill Core	2.74 0.007
N76452	Drill Core	2.25 0.006
N76453	Drill Core	3.14 0.067
N76454	Drill Core	1.90 0.168
N76455	Drill Core	2.35 0.076
N76456	Drill Core	1.92 <0.005
N76457	Drill Core	1.94 0.071
N76458	Drill Core	1.96 0.139
N76459	Drill Core	1.79 0.009
N76460	Pulp	0.07 0.864
N76461	Drill Core	1.78 <0.005
N76462	Drill Core	1.22 <0.005
N76463	Drill Core	1.76 <0.005
N76464	Drill Core	1.28 <0.005
N76465	Drill Core	1.36 <0.005



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Project: Taylor
Report Date: May 15, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000517.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76399	Drill Core	2.32 0.102
REP N76399	QC	0.094
N76413	Drill Core	2.12 0.184
REP N76413	QC	0.184
N76459	Drill Core	1.79 0.009
REP N76459	QC	<0.005
Core Reject Duplicates		
N76386	Drill Core	2.80 0.146
DUP N76386	QC	0.168
N76454	Drill Core	1.90 0.168
DUP N76454	QC	0.140
Reference Materials		
STD OXC145	Standard	0.213
STD OXC145	Standard	0.211
STD OXC145	Standard	0.217
STD OXH139	Standard	1.295
STD OXH139	Standard	1.332
STD OXH139	Standard	1.298
STD OXN134	Standard	7.534
STD OXN134	Standard	7.808
STD OXN134	Standard	7.762
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: Taylor
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Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000517.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: April 25, 2019
Report Date: May 16, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19000518.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1902501
P.O. Number: 4500104625
Number of Samples: 68

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	65	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	1	Primary crushing entire sample of whole core			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	68	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	68	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 16, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000518.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678484	Drill Core	2.38 <0.005
1678485	Drill Core	2.59 0.013
1678486	Drill Core	2.52 <0.005
1678487	Drill Core	2.07 <0.005
1678488	Drill Core	1.85 0.009
1678489	Drill Core	3.13 0.057
1678490	Drill Core	0.81 <0.005
1678491	Drill Core	2.96 0.040
1678492	Drill Core	2.09 0.007
1678493	Drill Core	2.05 <0.005
1678494	Drill Core	2.15 0.009
1678495	Drill Core	2.30 0.018
1678496	Drill Core	2.37 0.017
1678497	Drill Core	2.28 0.018
1678498	Drill Core	1.53 0.029
1678499	Drill Core	2.87 0.033
1678500	Pulp	0.07 0.339
1674224	Drill Core	3.52 0.020
1674225	Drill Core	1.91 0.022
1674226	Drill Core	2.02 0.141
1674227	Drill Core	2.19 <0.005
1674228	Drill Core	1.99 0.035
1674229	Drill Core	2.03 <0.005
1674230	Drill Core	0.77 <0.005
1674231	Drill Core	1.99 <0.005
1674232	Drill Core	1.93 <0.005
1674233	Drill Core	1.92 <0.005
1674234	Drill Core	1.89 <0.005
1674235	Drill Core	1.82 <0.005
1674236	Drill Core	2.35 <0.005



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Project: Taylor
Report Date: May 16, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000518.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1674237	Drill Core	2.42 <0.005
1674238	Drill Core	2.44 <0.005
1674239	Drill Core	2.33 <0.005
1674240	Pulp	0.07 0.872
1674241	Drill Core	2.42 <0.005
1674242	Drill Core	2.41 <0.005
1674243	Drill Core	2.33 <0.005
1674244	Drill Core	1.83 0.005
1674245	Drill Core	1.15 0.008
1674246	Drill Core	0.86 <0.005
1674247	Drill Core	2.40 <0.005
1674248	Drill Core	2.42 <0.005
1674249	Drill Core	2.26 <0.005
1674250	Drill Core	0.77 <0.005
1674251	Drill Core	2.21 <0.005
1674252	Drill Core	2.39 <0.005
1674253	Drill Core	1.80 <0.005
1674254	Drill Core	2.25 <0.005
1674255	Drill Core	2.25 0.011
1674256	Drill Core	2.25 <0.005
1674257	Drill Core	2.13 0.007
1674258	Drill Core	1.89 <0.005
1674259	Drill Core	2.04 <0.005
1674260	Pulp	0.07 0.332
1674261	Drill Core	2.08 <0.005
1674262	Drill Core	2.13 <0.005
1674263	Drill Core	2.11 <0.005
1674264	Drill Core	2.15 <0.005
1674265	Drill Core	2.18 <0.005
1674266	Drill Core	2.07 <0.005



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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: May 16, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000518.1

	Method	WGHT	FA430
Analyte		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
1674267	Drill Core	1.82	<0.005
1674268	Drill Core	1.50	<0.005
1674269	Drill Core	3.50	<0.005
1674270	Drill Core	0.83	<0.005
1674271	Drill Core	3.29	0.010
1674272	Drill Core	3.21	0.005
1674273	Drill Core	1.59	0.012
1674274	Drill Core	1.25	<0.005



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Exploration Office
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Project: Taylor
Report Date: May 16, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000518.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1674243	Drill Core	2.33 <0.005
REP 1674243	QC	<0.005
1674273	Drill Core	1.59 0.012
REP 1674273	QC	<0.005
Core Reject Duplicates		
1678496	Drill Core	2.37 0.017
DUP 1678496	QC	0.020
1674253	Drill Core	1.80 <0.005
DUP 1674253	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.212
STD OXH139	Standard	1.336
STD OXN134	Standard	7.765
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: May 23, 2019
Report Date: June 18, 2019
Page: 1 of 2

CERTIFICATE OF ANALYSIS

TIM19000518M.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1902501
P.O. Number: 4500104625
Number of Samples: 1

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PUL85	1	Pulverize to 85% passing 200 mesh			TIM
SPTRF	1	Split samples by riffle splitter			TIM
FS652	1	Metallic Sieve 500g to 150 mesh			TIM
FS652	1	Metallic Fire Assay - duplicate minus fraction analysis	50	Completed	TIM
EN002	1	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson


SCOTT INGLIS
Fire Assay Manager

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Project: Taylor
Report Date: June 18, 2019

Page: 2 of 2

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000518M.1

Method	M150	FA450	FA450	FS652	FS652	FS652	
Analyte	TotWt	-Au	-Au + Au	Wt	+ Au	Au Total	
Unit	g	gm/t	gm/t	g	gm/t	gm/t	
MDL	1	0.005	0.005	0.01	0.05	0.05	
1674245	Drill Core	505	0.052	0.043	38.83	0.21	0.06



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Project: Taylor
Report Date: June 18, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000518M.1

Method	M150	FA450	FA450	FS652	FS652	FS652
Analyte	TotWt	-Au	-Au + Au Wt	+ Au	Au Total	
Unit	g	gm/t	gm/t	g	gm/t	gm/t
MDL	1	0.005	0.005	0.01	0.05	0.05
Reference Materials						
STD OXC145	Standard		0.205			
STD OXC145	Standard	0.211				
STD OXH139	Standard		1.286			
STD OXH139	Standard	1.291				
STD OXN134	Standard		7.639			
STD OXN134	Standard	7.516				
STD OXQ90	Standard			29.27	25.21	
STD OXQ90 Expected					24.88	
BLK	Blank		<0.005			
BLK	Blank		<0.005			
BLK	Blank			50.00	<0.05	
BLK	Blank	<0.005				
BLK	Blank	<0.005				
Prep Wash						
ROCK-TIM	Prep Blank	549	<0.005	<0.005	49.15	<0.05 <0.05



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: April 25, 2019
Report Date: April 30, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19000519.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1902502
P.O. Number: 4500104625 (Rush)
Number of Samples: 59

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

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Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	56	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	59	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	59	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: Taylor
Report Date: April 30, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000519.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1674275	Drill Core	1.18 <0.005
1674276	Drill Core	0.93 <0.005
1674277	Drill Core	1.79 <0.005
1674278	Drill Core	2.25 <0.005
1674279	Drill Core	1.15 <0.005
1674280	Pulp	0.07 0.843
1674281	Drill Core	1.16 <0.005
1674282	Drill Core	2.64 <0.005
1674283	Drill Core	2.22 0.012
1674284	Drill Core	2.72 0.041
1674285	Drill Core	2.42 0.646
1674286	Drill Core	2.46 0.352
1674287	Drill Core	1.26 0.114
1674288	Drill Core	1.64 <0.005
1674289	Drill Core	1.51 <0.005
1674290	Drill Core	0.82 <0.005
1674291	Drill Core	2.24 0.053
1674292	Drill Core	1.85 0.020
1674293	Drill Core	0.75 <0.005
1674294	Drill Core	1.18 0.017
1674295	Drill Core	2.07 <0.005
1674296	Drill Core	1.58 <0.005
1674297	Drill Core	1.79 0.017
1674298	Drill Core	1.16 0.109
1674299	Drill Core	2.18 <0.005
1674300	Pulp	0.07 2.145
1674301	Drill Core	2.40 <0.005
1674302	Drill Core	2.11 <0.005
1674303	Drill Core	2.13 0.011
1674304	Drill Core	1.84 <0.005



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Project: Taylor
Report Date: April 30, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000519.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1674305	Drill Core	1.06 <0.005
1674306	Drill Core	1.41 <0.005
1674307	Drill Core	2.04 <0.005
1674308	Drill Core	2.24 <0.005
1674309	Drill Core	2.19 <0.005
1674310	Drill Core	0.83 <0.005
1674311	Drill Core	2.33 <0.005
1674312	Drill Core	2.17 <0.005
1674313	Drill Core	3.40 <0.005
1674314	Drill Core	3.21 <0.005
1674315	Drill Core	3.31 <0.005
1674316	Drill Core	3.23 <0.005
1674317	Drill Core	1.00 0.008
1674318	Drill Core	2.00 <0.005
1674319	Drill Core	1.95 <0.005
1674320	Pulp	0.07 0.341
1674321	Drill Core	2.08 0.006
1674322	Drill Core	1.48 <0.005
1674323	Drill Core	2.17 <0.005
1674324	Drill Core	1.92 <0.005
1674325	Drill Core	1.67 <0.005
1674326	Drill Core	2.18 0.012
1674327	Drill Core	2.19 <0.005
1674328	Drill Core	1.90 <0.005
1674329	Drill Core	0.92 0.005
1674330	Drill Core	1.58 <0.005
1674331	Drill Core	2.09 <0.005
1674332	Drill Core	2.09 0.006
1674333	Drill Core	1.58 <0.005



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Project: Taylor
Report Date: April 30, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000519.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1674278	Drill Core	2.25 <0.005
REP 1674278	QC	<0.005
1674289	Drill Core	1.51 <0.005
REP 1674289	QC	<0.005
Core Reject Duplicates		
1674281	Drill Core	1.16 <0.005
DUP 1674281	QC	<0.005
1674315	Drill Core	3.31 <0.005
DUP 1674315	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.216
STD OXC145	Standard	0.214
STD OXH139	Standard	1.346
STD OXH139	Standard	1.287
STD OXN134	Standard	7.422
STD OXN134	Standard	7.569
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: May 02, 2019
Report Date: May 21, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19000590.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1901501
P.O. Number: 4500104625
Number of Samples: 95

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

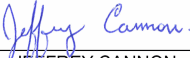
Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	90	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	95	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	95	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30	Completed	TIM

ADDITIONAL COMMENTS


JEFFREY CANNON
Geochemistry Department Supervisor

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Project: NightHawk
Report Date: May 21, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000590.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
N76169	Drill Core	3.07	<0.005
N76170	Drill Core	0.49	0.007
N76171	Drill Core	3.27	0.008
N76172	Drill Core	1.06	0.005
N76173	Drill Core	2.42	0.014
N76174	Drill Core	2.83	0.012
N76175	Drill Core	1.97	0.058
N76176	Drill Core	2.59	0.514
N76177	Drill Core	1.56	0.039
N76178	Drill Core	1.60	0.209
N76179	Drill Core	1.87	1.388
N76180	Pulp	0.06	2.099
N76181	Drill Core	2.19	0.498
N76182	Drill Core	2.88	0.207
N76183	Drill Core	2.80	0.029
N76184	Drill Core	2.82	0.194
N76185	Drill Core	3.33	0.412
N76186	Drill Core	3.10	0.059
N76187	Drill Core	2.84	0.007
N76188	Drill Core	3.55	0.013
N76189	Drill Core	2.00	0.010
N76190	Drill Core	0.93	0.007
N76191	Drill Core	2.73	<0.005
N76192	Drill Core	2.37	0.073
N76193	Drill Core	2.24	0.042
N76194	Drill Core	1.89	0.395
N76195	Drill Core	2.69	4.337
N76196	Drill Core	2.45	0.195
N76197	Drill Core	2.56	0.056
N76198	Drill Core	2.73	0.238



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Project: NightHawk
Report Date: May 21, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000590.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
N76199	Drill Core	3.60	0.335
N76200	Pulp	0.07	0.341
N76201	Drill Core	1.71	0.171
N76202	Drill Core	2.73	0.080
N76203	Drill Core	2.59	0.280
N76204	Drill Core	1.34	0.321
N76205	Drill Core	1.66	0.032
N76206	Drill Core	2.35	0.246
N76207	Drill Core	2.67	0.421
N76208	Drill Core	2.55	0.218
N76209	Drill Core	3.38	1.903
N76210	Drill Core	0.80	0.006
N76211	Drill Core	3.38	0.083
N76212	Drill Core	2.45	0.139
N76213	Drill Core	1.66	2.578
N76214	Drill Core	1.69	0.304
N76215	Drill Core	1.59	>10 126.3
N76216	Drill Core	1.42	0.518
N76217	Drill Core	2.06	2.073
N76218	Drill Core	2.77	0.021
N76219	Drill Core	2.74	0.012
N76220	Pulp	0.07	0.850
N76221	Drill Core	3.07	0.025
N76222	Drill Core	1.71	0.091
N76223	Drill Core	2.83	0.204
N76224	Drill Core	2.56	0.005
N76225	Drill Core	2.75	0.126
N76226	Drill Core	2.61	0.014
N76227	Drill Core	2.40	0.008
N76228	Drill Core	3.14	<0.005



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9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: May 21, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000590.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
N76229	Drill Core	3.27	<0.005
N76230	Drill Core	0.55	<0.005
N76231	Drill Core	2.98	0.014
N76232	Drill Core	2.70	0.365
N76233	Drill Core	2.70	0.032
N76234	Drill Core	1.93	<0.005
N76235	Drill Core	2.90	0.277
N76236	Drill Core	3.00	0.029
N76237	Drill Core	2.49	0.022
N76238	Drill Core	2.23	0.031
N76239	Drill Core	2.66	<0.005
N76240	Pulp	0.07	2.155
N76241	Drill Core	3.06	0.086
N76242	Drill Core	2.47	0.846
N76243	Drill Core	3.10	1.551
N76244	Drill Core	2.63	0.536
N76245	Drill Core	3.06	<0.005
N76246	Drill Core	2.56	0.011
N76247	Drill Core	2.96	0.740
N76248	Drill Core	3.28	0.630
N76249	Drill Core	2.96	0.302
N76250	Drill Core	0.66	0.005
N76251	Drill Core	3.02	0.364
N76252	Drill Core	2.36	2.101
N76253	Drill Core	2.55	0.834
N76254	Drill Core	2.32	0.776
N76255	Drill Core	2.56	3.182
N76256	Drill Core	1.27	0.243
N76257	Drill Core	2.90	1.079
N76258	Drill Core	1.53	0.547



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: May 21, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000590.1

	Method	WGHT	FA430	FA530
Analyte		Wgt	Au	Au
Unit		kg	ppm	gm/t
MDL		0.01	0.005	0.9
N76259	Drill Core	2.91	0.100	
N76260	Pulp	0.07	0.339	
N76261	Drill Core	1.68	0.014	
N76262	Drill Core	3.25	<0.005	
N76263	Drill Core	3.97	<0.005	



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: May 21, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000590.1

Method Analyte Unit MDL	WGHT Wgt kg	FA430	FA530
		Au ppm	Au gm/t
		0.01	0.9
Pulp Duplicates			
N76215	Drill Core	1.59	>10 126.3
REP N76215	QC		120.8
N76225	Drill Core	2.75	0.126
REP N76225	QC		0.135
Core Reject Duplicates			
N76184	Drill Core	2.82	0.194
DUP N76184	QC		0.190
N76218	Drill Core	2.77	0.021
DUP N76218	QC		0.057
N76252	Drill Core	2.36	2.101
DUP N76252	QC		1.651
Reference Materials			
STD OXC145	Standard		0.211
STD OXC145	Standard		0.213
STD OXC145	Standard		0.220
STD OXC145	Standard		0.203
STD OXH139	Standard		1.274
STD OXH139	Standard		1.282
STD OXH139	Standard		1.339
STD OXH139	Standard		1.321
STD OXN134	Standard		7.825
STD OXN134	Standard		7.889
STD OXN134	Standard		7.830
STD OXN134	Standard		7.834
STD OXP116	Standard		15.2
STD OXQ90	Standard		24.6
STD OXQ90	Standard		24.5
STD OXC145 Expected		0.212	



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Project: NightHawk
Report Date: May 21, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000590.1

		WGHT	FA430	FA530
		Wgt	Au	Au
		kg	ppm	gm/t
		0.01	0.005	0.9
STD OXN134	Expected		7.667	
STD OXH139	Expected		1.312	
STD OXP116	Expected			14.92
STD OXQ90	Expected			24.88
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank			<0.9
Prep Wash				
ROCK-TIM	Prep Blank		<0.005	
ROCK-TIM	Prep Blank		<0.005	



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: May 02, 2019
Report Date: May 21, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19000591.1

CLIENT JOB INFORMATION

Project: None Given
Shipment ID: NH1902401
P.O. Number: 4500104625
Number of Samples: 69

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	66	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	69	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	69	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: None Given
Report Date: May 21, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000591.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76466	Drill Core	2.48 <0.005
N76467	Drill Core	2.00 <0.005
N76468	Drill Core	1.21 0.007
N76469	Drill Core	2.28 <0.005
N76470	Drill Core	0.81 <0.005
N76471	Drill Core	3.10 <0.005
N76472	Drill Core	3.43 <0.005
N76473	Drill Core	3.10 0.005
N76474	Drill Core	0.57 0.255
N76475	Drill Core	0.78 0.039
N76476	Drill Core	1.77 0.336
N76477	Drill Core	3.04 0.031
N76478	Drill Core	2.07 0.026
N76479	Drill Core	3.05 0.006
N76480	Pulp	0.07 2.106
N76481	Drill Core	3.17 <0.005
N76482	Drill Core	3.21 <0.005
N76483	Drill Core	3.68 0.010
N76484	Drill Core	1.93 0.255
N76485	Drill Core	1.97 2.825
N76486	Drill Core	2.35 2.824
N76487	Drill Core	3.32 0.081
N76488	Drill Core	3.36 <0.005
N76489	Drill Core	2.97 <0.005
N76490	Drill Core	0.71 0.008
N76491	Drill Core	3.35 0.007
N76492	Drill Core	2.36 0.044
N76493	Drill Core	2.48 0.099
N76494	Drill Core	2.16 0.359
N76495	Drill Core	1.34 0.642



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Project: None Given
Report Date: May 21, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000591.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76496	Drill Core	2.58 0.087
N76497	Drill Core	2.13 0.092
N76498	Drill Core	2.27 2.366
N76499	Drill Core	2.52 0.386
N76500	Pulp	0.07 0.340
N76501	Drill Core	2.20 0.280
N76502	Drill Core	1.46 0.465
N76503	Drill Core	1.87 0.603
N76504	Drill Core	2.84 0.032
N76505	Drill Core	3.04 0.008
N76506	Drill Core	2.76 0.009
N76507	Drill Core	2.64 0.102
N76508	Drill Core	1.23 0.106
N76509	Drill Core	3.06 0.572
N76510	Drill Core	0.86 0.008
N76511	Drill Core	2.95 2.150
N76512	Drill Core	3.13 0.122
N76513	Drill Core	1.28 0.059
N76514	Drill Core	2.41 0.243
N76515	Drill Core	2.68 0.064
N76516	Drill Core	2.20 0.105
N76517	Drill Core	2.65 0.080
N76518	Drill Core	2.20 0.056
N76519	Drill Core	3.05 0.016
N76520	Pulp	0.07 0.846
N76521	Drill Core	3.23 0.025
N76522	Drill Core	2.99 0.081
N76523	Drill Core	3.46 0.092
N76524	Drill Core	2.57 0.051
N76525	Drill Core	2.59 0.010



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Project: None Given
Report Date: May 21, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000591.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76526	Drill Core	2.97 <0.005
N76527	Drill Core	2.64 <0.005
N76528	Drill Core	2.54 0.073
N76529	Drill Core	2.79 0.062
N76530	Drill Core	0.59 0.005
N76531	Drill Core	1.63 0.926
N76532	Drill Core	1.70 0.108
N76533	Drill Core	1.72 0.090
N76534	Drill Core	3.62 0.035



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Project: None Given
Report Date: May 21, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000591.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76470	Drill Core	0.81 <0.005
REP N76470	QC	<0.005
Core Reject Duplicates		
N76499	Drill Core	2.52 0.386
DUP N76499	QC	0.282
N76533	Drill Core	1.72 0.090
DUP N76533	QC	0.090
Reference Materials		
STD OXC145	Standard	0.213
STD OXC145	Standard	0.220
STD OXC145	Standard	0.212
STD OXC145	Standard	0.203
STD OXH139	Standard	1.282
STD OXH139	Standard	1.339
STD OXH139	Standard	1.312
STD OXH139	Standard	1.321
STD OXN134	Standard	7.889
STD OXN134	Standard	7.830
STD OXN134	Standard	7.647
STD OXN134	Standard	7.834
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: None Given
Report Date: May 21, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000591.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: May 08, 2019
Report Date: June 07, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19000653.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: HN1902201
P.O. Number: 4500104625
Number of Samples: 103

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	98	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	103	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	103	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30	Completed	TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
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Project: NightHawk
Report Date: June 07, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000653.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678222	Drill Core	1.87 0.044
1678223	Drill Core	1.70 0.136
1678224	Drill Core	1.25 <0.005
1678225	Drill Core	1.07 0.031
1678226	Drill Core	2.16 <0.005
1678227	Drill Core	2.04 <0.005
1678228	Drill Core	2.11 <0.005
1678229	Drill Core	2.17 <0.005
1678230	Drill Core	0.87 <0.005
1678231	Drill Core	1.73 <0.005
1678232	Drill Core	1.98 <0.005
1678233	Drill Core	1.99 <0.005
1678234	Drill Core	2.28 <0.005
1678235	Drill Core	1.03 0.037
1678236	Drill Core	2.14 <0.005
1678237	Drill Core	2.07 <0.005
1678238	Drill Core	2.22 <0.005
1678239	Drill Core	2.15 0.016
1678240	Pulp	0.06 2.296
1678241	Drill Core	2.05 <0.005
1678242	Drill Core	2.08 0.035
1678243	Drill Core	2.55 0.621
1678244	Drill Core	1.35 0.249
1678245	Drill Core	1.28 0.593
1678246	Drill Core	3.59 0.006
1678247	Drill Core	3.28 <0.005
1678248	Drill Core	1.90 <0.005
1678249	Drill Core	1.07 <0.005
1678250	Drill Core	0.84 <0.005
1678251	Drill Core	1.02 <0.005



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Project: NightHawk
Report Date: June 07, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000653.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678252	Drill Core	0.98 <0.005
1678253	Drill Core	1.06 <0.005
1678254	Drill Core	2.29 <0.005
1678255	Drill Core	1.90 <0.005
1678256	Drill Core	2.11 <0.005
1678257	Drill Core	2.01 <0.005
1678258	Drill Core	2.44 0.010
1678259	Drill Core	2.43 0.031
1678260	Pulp	0.06 0.331
1678261	Drill Core	2.15 0.635
1678262	Drill Core	1.82 1.222
1678263	Drill Core	2.13 0.012
1678264	Drill Core	1.06 2.193
1678265	Drill Core	3.19 0.007
1678266	Drill Core	3.30 0.009
1678267	Drill Core	2.55 <0.005
1678268	Drill Core	2.37 0.006
1678269	Drill Core	2.05 0.005
1678270	Drill Core	0.87 <0.005
1678271	Drill Core	1.75 0.042
1678272	Drill Core	1.45 0.717
1678273	Drill Core	1.62 0.012
1678274	Drill Core	1.48 0.595
1678275	Drill Core	2.08 6.279
1678276	Drill Core	3.23 0.012
1678277	Drill Core	3.25 <0.005
1678278	Drill Core	3.51 <0.005
1678279	Drill Core	3.64 <0.005
1678280	Pulp	0.06 0.854
1678281	Drill Core	3.56 <0.005



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 07, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000653.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678282	Drill Core	3.34 0.006
1678283	Drill Core	3.27 <0.005
1678284	Drill Core	2.85 <0.005
1678285	Drill Core	2.19 <0.005
1678286	Drill Core	2.62 0.043
1678287	Drill Core	2.75 0.205
1678288	Drill Core	2.27 0.096
1678289	Drill Core	1.87 0.022
1678290	Drill Core	0.89 <0.005
1678291	Drill Core	3.76 0.006
1678292	Drill Core	3.35 0.017
1678293	Drill Core	3.30 0.988
1678294	Drill Core	3.42 0.026
1678295	Drill Core	3.05 0.031
1678296	Drill Core	2.62 0.020
1678297	Drill Core	2.62 <0.005
1678298	Drill Core	2.76 0.069
1678299	Drill Core	1.17 0.014
1678300	Pulp	0.06 2.189
1678301	Drill Core	1.15 0.012
1678302	Drill Core	2.42 0.034
1678303	Drill Core	1.93 0.013
1678304	Drill Core	1.38 0.026
1678305	Drill Core	1.07 0.127
1678306	Drill Core	3.37 0.011
1678307	Drill Core	3.39 0.167
1678308	Drill Core	2.78 0.757
1678309	Drill Core	2.85 0.196
1678310	Drill Core	0.91 0.005
1678311	Drill Core	2.78 0.036



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 07, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000653.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678312	Drill Core	2.77 0.073
1678313	Drill Core	2.38 0.016
1678314	Drill Core	2.02 0.006
1678315	Drill Core	2.09 0.008
1678316	Drill Core	2.67 0.005
1678317	Drill Core	2.87 0.009
1678318	Drill Core	1.15 0.047
1678319	Drill Core	1.52 <0.005
1678320	Pulp	0.06 0.353
1678321	Drill Core	2.80 <0.005
1678322	Drill Core	1.82 0.060
1678323	Drill Core	1.89 0.116
1678324	Drill Core	1.43 <0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 07, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000653.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1678240	Pulp	0.06 2.296
REP 1678240	QC	2.162
1678314	Drill Core	2.02 0.006
REP 1678314	QC	0.013
1678315	Drill Core	2.09 0.008
REP 1678315	QC	0.007
Core Reject Duplicates		
1678242	Drill Core	2.08 0.035
DUP 1678242	QC	0.045
1678276	Drill Core	3.23 0.012
DUP 1678276	QC	0.019
1678310	Drill Core	0.91 0.005
DUP 1678310	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.214
STD OXC145	Standard	0.214
STD OXC145	Standard	0.211
STD OXC145	Standard	0.214
STD OXC145	Standard	0.213
STD OXH139	Standard	1.344
STD OXH139	Standard	1.299
STD OXH139	Standard	1.275
STD OXH139	Standard	1.279
STD OXH139	Standard	1.234
STD OXN134	Standard	7.833
STD OXN134	Standard	7.789
STD OXN134	Standard	7.864
STD OXN134	Standard	7.801



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Project: NightHawk
Report Date: June 07, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000653.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
STD OXN134	Standard		7.565
STD OXC145	Expected		0.212
STD OXN134	Expected		7.667
STD OXH139	Expected		1.312
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: May 08, 2019
Report Date: June 05, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19000654.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1902303
P.O. Number: 4500104625
Number of Samples: 60

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	57	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	60	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	60	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 05, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000654.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76324	Drill Core	2.26 0.558
N76325	Drill Core	0.88 1.393
N76326	Drill Core	2.77 0.350
N76327	Drill Core	2.66 0.064
N76328	Drill Core	2.09 0.044
N76329	Drill Core	2.30 0.023
N76330	Drill Core	0.98 <0.005
N76331	Drill Core	2.13 0.202
N76332	Drill Core	1.82 0.006
N76333	Drill Core	2.25 0.116
N76334	Drill Core	2.15 0.069
N76335	Drill Core	2.26 0.380
N76341	Drill Core	0.65 4.631
N76336	Drill Core	2.78 1.192
N76337	Drill Core	2.29 0.030
N76338	Drill Core	2.39 1.342
N76339	Drill Core	2.02 0.780
N76340	Pulp	0.06 0.869
N76342	Drill Core	1.89 0.127
N76343	Drill Core	1.58 0.329
N76344	Drill Core	2.36 0.101
N76345	Drill Core	1.66 0.029
N76346	Drill Core	1.49 0.022
N76347	Drill Core	2.31 0.015
N76348	Drill Core	2.87 0.104
N76349	Drill Core	2.13 0.845
N76350	Drill Core	0.97 0.007
N76351	Drill Core	1.80 9.410
N76352	Drill Core	1.89 0.058
N76353	Drill Core	1.35 0.047



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 05, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000654.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76354	Drill Core	2.52 0.016
N76355	Drill Core	2.32 0.013
N76356	Drill Core	2.62 0.018
N76357	Drill Core	2.72 0.020
N76358	Drill Core	2.60 0.203
N76359	Drill Core	1.85 0.305
N76360	Pulp	0.06 2.083
N76361	Drill Core	2.03 0.045
N76362	Drill Core	1.85 0.633
N76363	Drill Core	1.54 0.154
N76364	Drill Core	2.09 0.007
N76365	Drill Core	2.26 0.027
N76366	Drill Core	2.26 0.086
N76367	Drill Core	1.96 0.049
N76368	Drill Core	2.19 0.037
N76369	Drill Core	2.20 0.017
N76370	Drill Core	0.73 <0.005
N76371	Drill Core	2.34 0.018
N76372	Drill Core	2.33 0.012
N76373	Drill Core	2.51 0.041
N76374	Drill Core	2.63 0.020
N76375	Drill Core	2.04 0.044
N76376	Drill Core	2.54 0.021
N76377	Drill Core	2.22 0.032
N76378	Drill Core	2.17 0.044
N76379	Drill Core	2.06 0.042
N76380	Pulp	0.06 0.331
N76381	Drill Core	1.72 0.147
N76382	Drill Core	1.67 0.020
N76383	Drill Core	2.28 0.005



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Project: NightHawk
Report Date: June 05, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000654.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76339	Drill Core	2.02 0.780
REP N76339	QC	0.831
Core Reject Duplicates		
N76336	Drill Core	2.78 1.192
DUP N76336	QC	0.385
N76371	Drill Core	2.34 0.018
DUP N76371	QC	0.022
Reference Materials		
STD OXC145	Standard	0.211
STD OXC145	Standard	0.214
STD OXC145	Standard	0.214
STD OXC145	Standard	0.206
STD OXC145	Standard	0.207
STD OXC145	Standard	0.215
STD OXH139	Standard	1.275
STD OXH139	Standard	1.279
STD OXH139	Standard	1.282
STD OXH139	Standard	1.278
STD OXH139	Standard	1.293
STD OXH139	Standard	1.310
STD OXN134	Standard	7.864
STD OXN134	Standard	7.801
STD OXN134	Standard	7.487
STD OXN134	Standard	7.387
STD OXN134	Standard	7.552
STD OXN134	Standard	7.623
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667



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Project: NightHawk
Report Date: June 05, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000654.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
STD OXH139 Expected			1.312
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.006
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: May 08, 2019
Report Date: June 03, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19000655.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1902502
P.O. Number: 4500104625
Number of Samples: 93

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	88	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	93	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	93	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: NightHawk
Report Date: June 03, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000655.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1674334	Drill Core	0.43 <0.005
1674335	Drill Core	1.34 0.006
1674336	Drill Core	1.35 0.005
1674337	Drill Core	1.60 0.008
1674338	Drill Core	1.90 0.008
1674339	Drill Core	1.34 <0.005
1674340	Pulp	0.06 0.842
1674341	Drill Core	1.83 <0.005
1674342	Drill Core	1.14 <0.005
1674343	Drill Core	2.13 <0.005
1674344	Drill Core	2.20 <0.005
1674345	Drill Core	1.65 <0.005
1674346	Drill Core	2.16 <0.005
1674347	Drill Core	1.55 0.009
1674348	Drill Core	1.54 0.005
1674349	Drill Core	1.76 <0.005
1674350	Drill Core	0.69 <0.005
1674351	Drill Core	0.64 <0.005
1674352	Drill Core	1.77 0.007
1674353	Drill Core	0.70 <0.005
1674354	Drill Core	1.82 <0.005
1674355	Drill Core	2.05 <0.005
1674356	Drill Core	0.66 0.012
1674357	Drill Core	1.88 0.007
1674358	Drill Core	0.66 0.007
1674359	Drill Core	1.57 <0.005
1674360	Pulp	0.07 2.100
1674361	Drill Core	0.75 <0.005
1674362	Drill Core	1.13 <0.005
1674363	Drill Core	0.64 0.008



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Project: NightHawk
Report Date: June 03, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000655.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1674364	Drill Core	0.80 0.018
1674365	Drill Core	1.38 <0.005
1674366	Drill Core	1.80 <0.005
1674367	Drill Core	1.81 <0.005
1674368	Drill Core	1.03 <0.005
1674369	Drill Core	0.57 <0.005
1674370	Drill Core	0.69 0.009
1674371	Drill Core	2.32 <0.005
1674372	Drill Core	1.69 <0.005
1674373	Drill Core	2.32 <0.005
1674374	Drill Core	1.71 <0.005
1674375	Drill Core	1.18 <0.005
1674376	Drill Core	1.73 <0.005
1674377	Drill Core	1.33 <0.005
1674378	Drill Core	0.85 <0.005
1674379	Drill Core	1.34 <0.005
1674380	Pulp	0.07 0.338
1674381	Drill Core	1.00 0.007
1674382	Drill Core	1.48 <0.005
1674383	Drill Core	1.85 <0.005
1674384	Drill Core	0.79 <0.005
1674385	Drill Core	1.03 <0.005
1674386	Drill Core	1.07 <0.005
1674387	Drill Core	2.39 <0.005
1674388	Drill Core	1.86 <0.005
1674389	Drill Core	2.17 <0.005
1674390	Drill Core	0.72 0.008
1674391	Drill Core	2.20 <0.005
1674392	Drill Core	1.40 0.019
1674393	Drill Core	1.30 <0.005



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Project: NightHawk
Report Date: June 03, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000655.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1674394	Drill Core	2.53 <0.005
1674395	Drill Core	2.14 <0.005
1674396	Drill Core	1.87 <0.005
1674397	Drill Core	2.26 <0.005
1674398	Drill Core	2.16 <0.005
1674399	Drill Core	2.40 <0.005
1674400	Pulp	0.07 0.858
1674401	Drill Core	1.30 <0.005
1674402	Drill Core	1.50 <0.005
1674403	Drill Core	1.28 <0.005
1674404	Drill Core	1.48 <0.005
1674405	Drill Core	2.28 <0.005
1674406	Drill Core	2.17 <0.005
1674407	Drill Core	1.50 <0.005
1674408	Drill Core	2.02 <0.005
1674409	Drill Core	2.13 <0.005
1674410	Drill Core	0.71 0.008
1674411	Drill Core	2.27 <0.005
1674412	Drill Core	2.15 <0.005
1674413	Drill Core	2.40 <0.005
1674414	Drill Core	2.91 <0.005
1674415	Drill Core	0.67 <0.005
1674416	Drill Core	1.17 <0.005
1674417	Drill Core	0.61 <0.005
1674418	Drill Core	2.34 0.005
1674419	Drill Core	2.56 <0.005
1674420	Pulp	0.07 2.184
1674421	Drill Core	1.06 <0.005
1674422	Drill Core	1.25 <0.005
1674423	Drill Core	1.68 <0.005



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Project: NightHawk
Report Date: June 03, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000655.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1674424	Drill Core	1.04	0.126
1674425	Drill Core	2.04	0.021
1674426	Drill Core	2.38	<0.005



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 03, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000655.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1674335	Drill Core	1.34 0.006
REP 1674335	QC	<0.005
1674337	Drill Core	1.60 0.008
REP 1674337	QC	0.007
1674409	Drill Core	2.13 <0.005
REP 1674409	QC	<0.005
1674411	Drill Core	2.27 <0.005
REP 1674411	QC	<0.005
Core Reject Duplicates		
1674345	Drill Core	1.65 <0.005
DUP 1674345	QC	<0.005
1674379	Drill Core	1.34 <0.005
DUP 1674379	QC	<0.005
1674413	Drill Core	2.40 <0.005
DUP 1674413	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.209
STD OXC145	Standard	0.211
STD OXC145	Standard	0.206
STD OXH139	Standard	1.318
STD OXH139	Standard	1.315
STD OXH139	Standard	1.332
STD OXN134	Standard	7.453
STD OXN134	Standard	7.373
STD OXN134	Standard	7.463
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312



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PHONE (604) 253-3158

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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 03, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000655.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
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489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: May 17, 2019
Report Date: June 14, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19000801.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1903001
P.O. Number: 4500104625
Number of Samples: 58

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

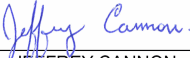
Invoice To: Kirkland Lake Gold
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489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	55	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	58	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	58	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30	Completed	TIM

ADDITIONAL COMMENTS


JEFFREY CANNON
Geochemistry Department Supervisor

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*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 14, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000801.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
1674427	Drill Core	1.66	0.014
1674428	Drill Core	1.58	0.008
1674429	Drill Core	2.83	<0.005
1674430	Drill Core	0.70	<0.005
1674431	Drill Core	2.20	<0.005
1674432	Drill Core	2.71	<0.005
1674433	Drill Core	2.00	<0.005
1674434	Drill Core	1.28	0.052
1674435	Drill Core	1.47	0.046
1674436	Drill Core	0.98	<0.005
1674437	Drill Core	1.00	0.028
1674438	Drill Core	1.97	>10 10.8
1674439	Drill Core	1.58	0.180
1674440	Pulp	0.06	0.333
1674441	Drill Core	2.08	0.108
1674442	Drill Core	3.31	1.282
1674443	Drill Core	3.03	0.051
1674444	Drill Core	2.11	1.693
1674445	Drill Core	2.38	0.354
1674446	Drill Core	2.21	0.634
1674447	Drill Core	1.93	0.836
1674448	Drill Core	1.19	0.959
1674449	Drill Core	3.69	0.275
1674450	Drill Core	0.63	0.008
1674451	Drill Core	1.59	0.038
1674452	Drill Core	1.08	2.248
1674453	Drill Core	1.49	0.113
1674454	Drill Core	1.92	0.041
1674455	Drill Core	2.90	0.009
1674456	Drill Core	3.15	0.034



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Project: NightHawk
Report Date: June 14, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000801.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
1674457	Drill Core	3.35	0.018
1674458	Drill Core	3.07	0.020
1674459	Drill Core	3.10	0.007
1674460	Pulp	0.06	0.840
1674461	Drill Core	3.10	0.057
1674462	Drill Core	3.37	0.459
1674463	Drill Core	3.70	0.013
1674464	Drill Core	2.11	0.005
1674465	Drill Core	2.36	0.018
1674466	Drill Core	2.19	0.026
1674467	Drill Core	1.71	0.268
1674468	Drill Core	1.52	<0.005
1674469	Drill Core	1.50	<0.005
1674470	Drill Core	0.79	0.006
1674471	Drill Core	1.65	0.007
1674472	Drill Core	1.64	0.011
1674473	Drill Core	2.76	<0.005
1674474	Drill Core	1.08	0.006
1674475	Drill Core	1.90	<0.005
1674476	Drill Core	2.22	<0.005
1674477	Drill Core	2.76	<0.005
1674478	Drill Core	1.68	<0.005
1674479	Drill Core	0.69	<0.005
1674480	Pulp	0.06	2.123
1674481	Drill Core	1.14	0.008
1674482	Drill Core	0.95	<0.005
1674483	Drill Core	2.73	<0.005
1674484	Drill Core	2.38	<0.005



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: June 14, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000801.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
Pulp Duplicates			
1674438	Drill Core	1.97	>10 10.8
REP 1674438	QC		11.1
1674477	Drill Core	2.76	<0.005
REP 1674477	QC		<0.005
Core Reject Duplicates			
1674445	Drill Core	2.38	0.354
DUP 1674445	QC		0.255
1674479	Drill Core	0.69	<0.005
DUP 1674479	QC		<0.005
Reference Materials			
STD OXC145	Standard		0.209
STD OXC145	Standard		0.216
STD OXC145	Standard		0.209
STD OXH139	Standard		1.287
STD OXH139	Standard		1.286
STD OXH139	Standard		1.277
STD OXN134	Standard		7.225
STD OXN134	Standard		7.557
STD OXN134	Standard		7.602
STD OXP116	Standard		15.2
STD OXQ90	Standard		25.1
STD OXQ90	Standard		25.1
STD OXC145 Expected		0.212	
STD OXN134 Expected		7.667	
STD OXH139 Expected		1.312	
STD OXP116 Expected			14.92
STD OXQ90 Expected			24.88
BLK	Blank	<0.005	



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Project: NightHawk
Report Date: June 14, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000801.1

		WGHT	FA430	FA530
		Wgt	Au	Au
		kg	ppm	gm/t
		0.01	0.005	0.9
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank			<0.9
Prep Wash				
ROCK-TIM	Prep Blank		<0.005	
ROCK-TIM	Prep Blank		<0.005	



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 05, 2019
Report Date: June 28, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19000992.1

CLIENT JOB INFORMATION

Project: Hislop
Shipment ID: HP1902004
P.O. Number: 4500104625
Number of Samples: 60

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	57	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	60	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	60	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


LILYBETH DE VERA-BOY
Fire Assay Spectroscopy Manager

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Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: Hislop
Report Date: June 28, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000992.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
2555221	Drill Core	2.78 0.023
2555222	Drill Core	1.78 0.014
2555223	Drill Core	4.02 0.036
2555224	Drill Core	3.08 0.026
2555225	Drill Core	2.98 0.060
2555226	Drill Core	3.13 0.006
2555227	Drill Core	2.32 0.006
2555228	Drill Core	2.48 0.036
2555229	Drill Core	2.89 0.007
2555230	Drill Core	0.69 0.006
2555231	Drill Core	3.32 0.230
2555232	Drill Core	3.58 0.005
2555233	Drill Core	2.70 0.007
2555234	Drill Core	2.93 <0.005
2555235	Drill Core	2.90 <0.005
2555236	Drill Core	2.33 0.006
2555237	Drill Core	3.08 0.009
2555238	Drill Core	3.08 <0.005
2555239	Drill Core	3.29 <0.005
2555240	Pulp	0.07 2.130
2555241	Drill Core	2.89 0.005
2555242	Drill Core	2.39 <0.005
2555243	Drill Core	2.86 0.043
2555244	Drill Core	2.57 0.338
2555245	Drill Core	3.31 0.186
2555246	Drill Core	1.71 1.822
2555247	Drill Core	2.78 6.174
2555248	Drill Core	3.84 3.262
2555249	Drill Core	1.76 1.241
2555250	Drill Core	0.67 0.017



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Project: Hislop
Report Date: June 28, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19000992.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
2555251	Drill Core	1.12 1.310
2555252	Drill Core	2.83 2.001
2555253	Drill Core	1.61 0.986
2555254	Drill Core	3.01 0.398
2555255	Drill Core	3.11 0.310
2555256	Drill Core	2.89 0.090
2555257	Drill Core	2.98 0.117
2555258	Drill Core	1.79 0.361
2555259	Drill Core	2.50 0.010
2555260	Pulp	0.07 0.337
2555261	Drill Core	2.63 0.012
2555262	Drill Core	2.00 0.014
2555263	Drill Core	2.85 0.009
2555264	Drill Core	2.12 0.043
2555265	Drill Core	2.58 0.007
2555266	Drill Core	1.27 0.045
2555267	Drill Core	2.56 0.030
2555268	Drill Core	3.23 0.011
2555269	Drill Core	2.45 0.006
2555270	Drill Core	0.80 0.014
2555271	Drill Core	3.25 0.037
2555272	Drill Core	2.71 0.016
2555273	Drill Core	2.50 0.022
2555274	Drill Core	3.23 0.011
2555275	Drill Core	2.90 0.010
2555276	Drill Core	3.04 0.757
2555277	Drill Core	1.74 1.308
2555278	Drill Core	2.37 0.061
2555279	Drill Core	3.10 0.010
2555280	Pulp	0.07 0.880



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Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: Hislop
Report Date: June 28, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19000992.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
2555238	Drill Core	3.08 <0.005
REP 2555238	QC	<0.005
2555250	Drill Core	0.67 0.017
REP 2555250	QC	0.021
Core Reject Duplicates		
2555232	Drill Core	3.58 0.005
DUP 2555232	QC	0.006
2555266	Drill Core	1.27 0.045
DUP 2555266	QC	0.043
Reference Materials		
STD OXC145	Standard	0.209
STD OXH139	Standard	1.275
STD OXN134	Standard	7.763
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	0.007
BLK	Blank	0.009
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 10, 2019
Report Date: July 26, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19001049.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1901901
P.O. Number: 4500104625
Number of Samples: 60

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	57	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	60	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	60	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Exploration Office
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Project: Taylor
Report Date: July 26, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001049.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76535	Drill Core	2.43 <0.005
N76536	Drill Core	3.11 <0.005
N76537	Drill Core	2.92 0.005
N76538	Drill Core	1.49 0.051
N76539	Drill Core	2.15 0.074
N76540	Pulp	0.07 2.133
N76541	Drill Core	2.23 0.205
N76542	Drill Core	1.79 0.693
N76543	Drill Core	2.34 0.016
N76544	Drill Core	2.68 0.108
N76545	Drill Core	1.56 0.364
N76546	Drill Core	2.05 0.649
N76547	Drill Core	2.28 0.356
N76548	Drill Core	1.87 1.230
N76549	Drill Core	2.28 0.791
N76550	Drill Core	0.59 0.012
N76551	Drill Core	2.07 0.353
N76552	Drill Core	2.52 1.370
N76553	Drill Core	1.80 0.116
N76554	Drill Core	2.03 0.028
N76555	Drill Core	2.34 0.223
N76556	Drill Core	2.37 0.090
N76557	Drill Core	2.07 0.273
N76558	Drill Core	2.42 0.712
N76559	Drill Core	2.14 0.053
N76560	Pulp	0.07 0.343
N76561	Drill Core	1.79 0.640
N76562	Drill Core	1.35 0.395
N76563	Drill Core	1.52 0.932
N76564	Drill Core	2.05 1.593



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Project: Taylor
Report Date: July 26, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001049.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76565	Drill Core	2.36 0.905
N76566	Drill Core	2.51 0.480
N76567	Drill Core	2.43 0.125
N76568	Drill Core	2.03 0.136
N76569	Drill Core	1.26 1.859
N76570	Drill Core	0.73 0.005
N76571	Drill Core	2.39 2.020
N76572	Drill Core	1.84 0.410
N76573	Drill Core	1.94 0.133
N76574	Drill Core	1.69 0.080
N76575	Drill Core	1.99 2.733
N76576	Drill Core	1.93 2.783
N76577	Drill Core	1.87 1.162
N76578	Drill Core	2.44 0.493
N76579	Drill Core	1.87 6.499
N76580	Pulp	0.07 0.865
N76581	Drill Core	1.94 0.077
N76582	Drill Core	2.13 0.436
N76583	Drill Core	1.79 0.967
N76584	Drill Core	2.40 0.224
N76585	Drill Core	1.61 0.745
N76586	Drill Core	2.31 2.513
N76587	Drill Core	2.01 0.062
N76588	Drill Core	2.01 0.188
N76589	Drill Core	2.43 0.193
N76590	Drill Core	0.60 0.010
N76591	Drill Core	2.07 0.389
N76592	Drill Core	2.16 1.630
N76593	Drill Core	2.42 0.638
N76594	Drill Core	2.55 0.025



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: July 26, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001049.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76556	Drill Core	2.37 0.090
REP N76556	QC	0.079
N76591	Drill Core	2.07 0.389
REP N76591	QC	0.439
Core Reject Duplicates		
N76552	Drill Core	2.52 1.370
DUP N76552	QC	1.318
N76586	Drill Core	2.31 2.513
DUP N76586	QC	1.205
Reference Materials		
STD OXC145	Standard	0.213
STD OXC145	Standard	0.207
STD OXH139	Standard	1.309
STD OXH139	Standard	1.314
STD OXN134	Standard	7.622
STD OXN134	Standard	7.140
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 10, 2019
Report Date: July 26, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001050.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1901902
P.O. Number: 4500104625
Number of Samples: 71

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	67	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	71	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	71	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: Taylor
Report Date: July 26, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001050.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76595	Drill Core	2.35 0.145
N76596	Drill Core	1.84 0.128
N76597	Drill Core	2.05 1.346
N76598	Drill Core	2.31 0.255
N76599	Drill Core	2.00 0.259
N76600	Pulp	0.07 2.177
N76601	Drill Core	1.64 0.134
N76602	Drill Core	2.10 1.218
N76603	Drill Core	1.59 0.009
N76604	Drill Core	2.09 0.078
N76605	Drill Core	2.37 0.229
N76606	Drill Core	2.20 0.318
N76607	Drill Core	1.97 0.154
N76608	Drill Core	2.19 0.414
N76609	Drill Core	0.99 0.177
N76610	Drill Core	0.63 0.008
N76611	Drill Core	2.45 0.066
N76612	Drill Core	1.44 0.073
N76613	Drill Core	1.80 0.111
N76614	Drill Core	2.22 0.706
N76615	Drill Core	2.03 0.290
N76616	Drill Core	2.04 3.094
N76617	Drill Core	1.52 9.481
N76618	Drill Core	2.31 1.403
N76619	Drill Core	1.86 4.173
N76620	Pulp	0.07 0.336
N76621	Drill Core	2.55 0.274
N76622	Drill Core	2.22 0.208
N76623	Drill Core	2.67 0.770
N76624	Drill Core	0.77 0.783



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: July 26, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001050.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76625	Drill Core	1.93 0.042
N76626	Drill Core	1.43 1.828
N76627	Drill Core	1.34 0.446
N76628	Drill Core	1.95 0.381
N76629	Drill Core	1.19 0.142
N76630	Drill Core	0.82 <0.005
N76631	Drill Core	1.26 0.087
N76632	Drill Core	2.54 0.085
N76633	Drill Core	0.76 0.022
N76634	Drill Core	1.80 0.014
N76635	Drill Core	1.48 0.006
N76636	Drill Core	2.26 <0.005
N76637	Drill Core	1.34 <0.005
N76638	Drill Core	1.81 <0.005
N76639	Drill Core	1.81 <0.005
N76640	Pulp	0.07 0.807
N76641	Drill Core	2.09 <0.005
N76642	Drill Core	1.66 <0.005
N76643	Drill Core	3.01 <0.005
N76644	Drill Core	1.90 <0.005
N76645	Drill Core	2.06 <0.005
N76646	Drill Core	1.26 <0.005
N76647	Drill Core	1.78 <0.005
N76648	Drill Core	0.90 <0.005
N76649	Drill Core	3.28 <0.005
N76650	Drill Core	0.60 0.006
N76651	Drill Core	2.22 <0.005
N76652	Drill Core	1.73 <0.005
N76653	Drill Core	1.10 <0.005
N76654	Drill Core	1.73 <0.005



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489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: July 26, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001050.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
N76655	Drill Core	1.90	<0.005
N76656	Drill Core	2.96	0.011
N76657	Drill Core	2.30	<0.005
N76658	Drill Core	2.36	0.010
N76659	Drill Core	2.91	0.011
N76660	Pulp	0.07	2.085
N76661	Drill Core	1.77	<0.005
N76662	Drill Core	2.03	<0.005
N76663	Drill Core	1.81	<0.005
N76664	Drill Core	1.96	<0.005
N76665	Drill Core	1.53	<0.005



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: July 26, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001050.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76641	Drill Core	2.09 <0.005
REP N76641	QC	0.007
N76659	Drill Core	2.91 0.011
REP N76659	QC	0.011
Core Reject Duplicates		
N76599	Drill Core	2.00 0.259
DUP N76599	QC	0.152
N76633	Drill Core	0.76 0.022
DUP N76633	QC	0.033
Reference Materials		
STD OXC145	Standard	0.213
STD OXC145	Standard	0.213
STD OXC145	Standard	0.207
STD OXH139	Standard	1.309
STD OXH139	Standard	1.308
STD OXH139	Standard	1.314
STD OXN134	Standard	7.622
STD OXN134	Standard	7.654
STD OXN134	Standard	7.140
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: Taylor
Report Date: July 26, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001050.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 10, 2019
Report Date: July 23, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001051.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1902601
P.O. Number: 4500104625
Number of Samples: 62

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	59	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	62	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	62	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Exploration Office
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Project: Taylor
Report Date: July 23, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001051.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76666	Drill Core	2.76 <0.005
N76667	Drill Core	1.92 0.053
N76668	Drill Core	2.96 <0.005
N76669	Drill Core	3.17 <0.005
N76670	Drill Core	0.64 <0.005
N76671	Drill Core	3.01 <0.005
N76672	Drill Core	2.46 0.018
N76673	Drill Core	2.68 0.015
N76674	Drill Core	2.29 0.012
N76675	Drill Core	1.59 0.014
N76676	Drill Core	2.34 0.007
N76677	Drill Core	1.97 0.010
N76678	Drill Core	1.94 0.010
N76679	Drill Core	1.63 0.006
N76680	Pulp	0.07 0.335
N76681	Drill Core	1.72 0.007
N76682	Drill Core	2.01 0.023
N76683	Drill Core	1.49 0.062
N76684	Drill Core	1.11 <0.005
N76685	Drill Core	2.35 0.047
N76686	Drill Core	1.95 0.050
N76687	Drill Core	1.86 0.066
N76688	Drill Core	2.30 0.180
N76689	Drill Core	1.90 0.048
N76690	Drill Core	0.76 0.008
N76691	Drill Core	1.33 0.175
N76692	Drill Core	2.17 0.148
N76693	Drill Core	2.48 0.012
N76694	Drill Core	2.50 0.018
N76695	Drill Core	1.41 0.016



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Project: Taylor
Report Date: July 23, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001051.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76696	Drill Core	1.93 0.030
N76697	Drill Core	2.65 0.061
N76698	Drill Core	2.57 0.092
N76699	Drill Core	2.43 0.175
N76700	Pulp	0.07 0.874
N76701	Drill Core	2.05 0.054
N76702	Drill Core	2.00 0.085
N76703	Drill Core	2.20 0.075
N76704	Drill Core	1.96 0.032
N76705	Drill Core	2.21 0.058
N76706	Drill Core	2.13 0.141
N76707	Drill Core	2.35 0.047
N76708	Drill Core	2.07 0.017
N76709	Drill Core	2.30 0.023
N76710	Drill Core	0.86 0.013
N76711	Drill Core	2.42 0.112
N76712	Drill Core	2.17 0.012
N76713	Drill Core	2.93 0.015
N76714	Drill Core	2.31 <0.005
N76715	Drill Core	1.35 0.006
N76716	Drill Core	2.95 <0.005
N76717	Drill Core	3.06 <0.005
N76718	Drill Core	2.09 0.016
N76719	Drill Core	1.26 0.026
N76720	Pulp	0.07 2.160
N76721	Drill Core	3.20 0.018
N76722	Drill Core	1.79 0.009
N76723	Drill Core	2.13 0.050
N76724	Drill Core	1.64 0.194
N76725	Drill Core	1.84 0.754



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Exploration Office
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Project: Taylor
Report Date: July 23, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001051.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76726	Drill Core	2.14 0.060
N76727	Drill Core	2.15 0.154



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Project: Taylor
Report Date: July 23, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001051.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N76684	Drill Core	1.11 <0.005
REP N76684	QC	<0.005
N76699	Drill Core	2.43 0.175
REP N76699	QC	0.107
N76711	Drill Core	2.42 0.112
REP N76711	QC	0.105
Core Reject Duplicates		
N76679	Drill Core	1.63 0.006
DUP N76679	QC	0.009
N76713	Drill Core	2.93 0.015
DUP N76713	QC	0.022
Reference Materials		
STD OXC145	Standard	0.213
STD OXC145	Standard	0.213
STD OXC145	Standard	0.212
STD OXH139	Standard	1.308
STD OXH139	Standard	1.272
STD OXH139	Standard	1.302
STD OXN134	Standard	7.654
STD OXN134	Standard	7.319
STD OXN134	Standard	7.144
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: July 23, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001051.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 12, 2019
Report Date: July 19, 2019
Page: 1 of 2

CERTIFICATE OF ANALYSIS

TIM19001141.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH1902701
P.O. Number 4500104625
Number of Samples: 22

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	21	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	1	Sort, label and box pulps			TIM
FA430	22	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	22	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Client: **Kirkland Lake Gold**
Exploration Office
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Project: Taylor
Report Date: July 19, 2019

Page: 2 of 2

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001141.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1674485	Drill Core	2.33 0.005
1674486	Drill Core	2.23 <0.005
1674487	Drill Core	1.97 <0.005
1674488	Drill Core	0.84 0.005
1674489	Drill Core	1.96 <0.005
1674490	Drill Core	1.04 0.009
1674491	Drill Core	1.98 <0.005
1674492	Drill Core	2.17 <0.005
1674493	Drill Core	2.27 <0.005
1674494	Drill Core	1.72 <0.005
1674495	Drill Core	2.14 0.011
1674496	Drill Core	1.80 0.018
1674497	Drill Core	2.03 <0.005
1674498	Drill Core	1.87 <0.005
1674499	Drill Core	1.21 <0.005
1674500	Pulp	0.07 0.335
1679501	Drill Core	1.30 <0.005
1679502	Drill Core	1.51 <0.005
1679503	Drill Core	1.52 <0.005
1679504	Drill Core	1.76 <0.005
1679505	Drill Core	0.92 <0.005
1679506	Drill Core	1.99 <0.005



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Client: **Kirkland Lake Gold**
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Project: Taylor
Report Date: July 19, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001141.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Core Reject Duplicates		
1674493	Drill Core	2.27 <0.005
DUP 1674493	QC	0.005
Reference Materials		
STD OXC145	Standard	0.214
STD OXH139	Standard	1.285
STD OXN134	Standard	7.623
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	0.005
ROCK-TIM	Prep Blank	<0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 13, 2019
Report Date: July 24, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001142.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: HP1902801
P.O. Number: 4500104625
Number of Samples: 70

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	67	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	67	Primary crushing entire sample of whole core			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	70	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	70	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager



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Client: **Kirkland Lake Gold**
Exploration Office
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Project: Taylor
Report Date: July 24, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001142.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1679523	Drill Core	1.85 0.075
1679524	Drill Core	1.98 1.161
1679525	Drill Core	3.82 1.336
1679526	Drill Core	4.03 1.315
1679527	Drill Core	3.40 0.617
1679528	Drill Core	4.71 0.029
1679529	Drill Core	4.33 0.152
1679530	Drill Core	1.53 0.010
1679531	Drill Core	5.90 0.215
1679532	Drill Core	7.03 0.016
1679533	Drill Core	7.45 0.013
1679534	Drill Core	6.49 0.012
1679535	Drill Core	2.37 0.010
1679536	Drill Core	2.37 <0.005
1679537	Drill Core	2.47 <0.005
1679538	Drill Core	1.21 <0.005
1679539	Drill Core	1.94 <0.005
1679540	Pulp	0.07 3.027
1679541	Drill Core	2.12 0.007
1679542	Drill Core	4.32 0.006
1679543	Drill Core	4.69 0.006
1679544	Drill Core	4.70 0.006
1679545	Drill Core	4.80 <0.005
1679546	Drill Core	5.41 0.009
1679547	Drill Core	7.49 <0.005
1679548	Drill Core	6.97 0.005
1679549	Drill Core	7.49 0.008
1679550	Drill Core	1.49 0.010
1679551	Drill Core	6.94 0.007
1679552	Drill Core	7.42 0.015



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Project: Taylor
Report Date: July 24, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001142.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1679553	Drill Core	7.20 0.013
1679554	Drill Core	6.36 0.016
1679555	Drill Core	6.66 0.024
1679556	Drill Core	7.14 0.021
1679557	Drill Core	6.41 <0.005
1679558	Drill Core	7.61 0.009
1679559	Drill Core	5.96 0.008
1679560	Pulp	0.07 0.339
1679561	Drill Core	6.57 0.024
1679562	Drill Core	5.73 0.011
1679563	Drill Core	6.44 0.010
1679564	Drill Core	6.34 0.009
1679565	Drill Core	4.03 0.060
1679566	Drill Core	3.58 0.683
1679567	Drill Core	5.84 0.006
1679568	Drill Core	4.91 <0.005
1679569	Drill Core	4.37 <0.005
1679570	Drill Core	1.57 0.010
1679571	Drill Core	4.22 <0.005
1679572	Drill Core	6.76 <0.005
1679573	Drill Core	6.38 <0.005
1679574	Drill Core	5.77 <0.005
1679575	Drill Core	5.63 0.019
1679576	Drill Core	5.88 0.010
1679577	Drill Core	5.92 <0.005
1679578	Drill Core	3.73 0.013
1679579	Drill Core	6.05 <0.005
1679580	Pulp	0.07 0.865
1679581	Drill Core	5.79 0.011
1679582	Drill Core	5.80 0.012



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Client: **Kirkland Lake Gold**
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489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Taylor
Report Date: July 24, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001142.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1679583	Drill Core	5.59	0.011
1679584	Drill Core	4.80	0.010
1679585	Drill Core	5.39	0.006
1679586	Drill Core	6.35	0.016
1679587	Drill Core	6.34	0.012
1679588	Drill Core	6.47	0.014
1679589	Drill Core	6.02	0.010
1679590	Drill Core	1.29	0.009
1679591	Drill Core	6.12	0.007
1679592	Drill Core	6.14	0.038



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Project: Taylor
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Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001142.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1679591	Drill Core	6.12 0.007
REP 1679591	QC	0.006
Core Reject Duplicates		
1679529	Drill Core	4.33 0.152
DUP 1679529	QC	0.475
1679563	Drill Core	6.44 0.010
DUP 1679563	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.211
STD OXC145	Standard	0.208
STD OXC145	Standard	0.209
STD OXC145	Standard	0.214
STD OXH139	Standard	1.271
STD OXH139	Standard	1.294
STD OXH139	Standard	1.276
STD OXH139	Standard	1.325
STD OXN134	Standard	8.100
STD OXN134	Standard	7.602
STD OXN134	Standard	7.485
STD OXN134	Standard	7.523
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	0.005



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Project: Taylor
Report Date: July 24, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001142.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		0.011
ROCK-TIM	Prep Blank		0.011



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 17, 2019
Report Date: July 19, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19001261.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: HP1902802
P.O. Number: 4500104625
Number of Samples: 58

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	55	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	58	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	58	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: NightHawk
Report Date: July 19, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001261.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1679507	Drill Core	1.34 <0.005
1679508	Drill Core	1.46 0.010
1679509	Drill Core	2.74 <0.005
1679510	Drill Core	0.74 <0.005
1679511	Drill Core	2.19 0.012
1679512	Drill Core	2.06 0.006
1679513	Drill Core	3.34 0.029
1679514	Drill Core	3.08 0.006
1679515	Drill Core	2.14 <0.005
1679516	Drill Core	2.18 0.005
1679517	Drill Core	1.86 <0.005
1679518	Drill Core	2.12 <0.005
1679519	Drill Core	2.49 0.039
1679520	Pulp	0.07 0.862
1679521	Drill Core	1.41 0.012
1679522	Drill Core	1.82 <0.005
1679593	Drill Core	3.22 0.008
1679594	Drill Core	1.18 0.006
1679595	Drill Core	2.65 0.010
1679596	Drill Core	3.33 <0.005
1679597	Drill Core	3.10 0.006
1679598	Drill Core	3.28 <0.005
1679599	Drill Core	3.48 <0.005
1679600	Pulp	0.07 2.960
1679601	Drill Core	2.98 0.006
1679602	Drill Core	3.33 0.008
1679603	Drill Core	2.58 <0.005
1679604	Drill Core	2.52 <0.005
1679605	Drill Core	1.78 <0.005
1679606	Drill Core	3.44 <0.005



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Project: NightHawk
Report Date: July 19, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001261.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1679607	Drill Core	3.13 <0.005
1679608	Drill Core	2.28 <0.005
1679609	Drill Core	1.51 <0.005
1679610	Drill Core	0.84 <0.005
1679611	Drill Core	2.74 <0.005
1679612	Drill Core	1.63 <0.005
1679613	Drill Core	1.47 <0.005
1679614	Drill Core	3.09 0.006
1679615	Drill Core	2.52 <0.005
1679616	Drill Core	0.38 <0.005
1679617	Drill Core	3.06 0.021
1679618	Drill Core	2.64 <0.005
1679619	Drill Core	2.07 <0.005
1679620	Pulp	0.07 0.334
1679621	Drill Core	1.97 <0.005
1679622	Drill Core	1.81 <0.005
1679623	Drill Core	2.52 0.006
1679624	Drill Core	2.32 <0.005
1679625	Drill Core	3.40 <0.005
1679626	Drill Core	3.14 <0.005
1679627	Drill Core	0.80 <0.005
1679628	Drill Core	1.70 0.007
1679629	Drill Core	2.25 0.008
1679630	Drill Core	0.77 0.012
1679631	Drill Core	2.28 0.006
1679632	Drill Core	2.29 0.010
1679633	Drill Core	2.11 <0.005
1679634	Drill Core	0.59 <0.005



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Project: NightHawk
Report Date: July 19, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001261.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1679522	Drill Core	1.82 <0.005
REP 1679522	QC	<0.005
1679611	Drill Core	2.74 <0.005
REP 1679611	QC	<0.005
Core Reject Duplicates		
1679609	Drill Core	1.51 <0.005
DUP 1679609	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.207
STD OXC145	Standard	0.213
STD OXH139	Standard	1.314
STD OXH139	Standard	1.280
STD OXN134	Standard	7.140
STD OXN134	Standard	7.401
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 17, 2019
Report Date: July 23, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001262.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1902803
P.O. Number: 4500104625
Number of Samples: 79

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	75	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	30	Primary crushing entire sample of whole core			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	79	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	79	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke



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Project: NightHawk
Report Date: July 23, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001262.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1679635	Drill Core	0.89 0.006
1679636	Drill Core	0.96 <0.005
1679637	Drill Core	1.31 0.006
1679638	Drill Core	1.41 0.008
1679639	Drill Core	3.27 <0.005
1679640	Pulp	0.07 0.861
1679641	Drill Core	3.35 0.012
1679642	Drill Core	3.25 0.006
1679643	Drill Core	3.44 0.005
1679644	Drill Core	3.29 0.006
1679645	Drill Core	3.42 <0.005
1679646	Drill Core	3.58 <0.005
1679647	Drill Core	3.30 <0.005
1679648	Drill Core	3.26 <0.005
1679649	Drill Core	3.37 0.012
1679650	Drill Core	0.88 0.006
1679651	Drill Core	3.29 <0.005
1679652	Drill Core	3.32 <0.005
1679653	Drill Core	2.04 <0.005
1679654	Drill Core	1.73 <0.005
1679655	Drill Core	1.86 <0.005
1679656	Drill Core	1.07 0.008
1679657	Drill Core	1.60 0.006
1679658	Drill Core	1.83 0.007
1679659	Drill Core	2.26 0.006
1679660	Pulp	0.07 2.991
1679661	Drill Core	2.23 0.008
1679662	Drill Core	2.31 <0.005
1679663	Drill Core	2.28 0.009
1679664	Drill Core	1.37 0.006



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Project: NightHawk
Report Date: July 23, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001262.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1679665	Drill Core	1.26 0.012
1679666	Drill Core	1.22 0.010
1679667	Drill Core	0.99 0.012
1679668	Drill Core	2.01 0.006
1679669	Drill Core	3.71 0.016
1679670	Drill Core	1.75 0.012
1679671	Drill Core	3.53 0.009
1679672	Drill Core	4.18 <0.005
1679673	Drill Core	4.69 0.006
1679674	Drill Core	4.46 0.009
1679675	Drill Core	4.19 0.006
1679676	Drill Core	3.21 <0.005
1679677	Drill Core	3.03 <0.005
1679678	Drill Core	3.99 <0.005
1679679	Drill Core	4.28 0.005
1679680	Pulp	0.07 0.337
1679681	Drill Core	4.11 0.008
1679682	Drill Core	3.28 0.007
1679683	Drill Core	3.68 0.008
1679684	Drill Core	4.02 0.009
1679685	Drill Core	2.94 <0.005
1679686	Drill Core	4.10 0.006
1679687	Drill Core	3.78 0.011
1679688	Drill Core	3.93 0.006
1679689	Drill Core	3.87 <0.005
1679690	Drill Core	1.56 0.007
1679691	Drill Core	3.98 <0.005
1679692	Drill Core	2.69 0.006
1679693	Drill Core	1.89 0.005
1679694	Drill Core	2.28 0.027



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: July 23, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001262.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1679695	Drill Core	2.35	0.005
1679696	Drill Core	2.12	<0.005
1679697	Drill Core	2.26	0.006
1679698	Drill Core	2.49	0.005
1679699	Drill Core	2.28	0.005
1679700	Pulp	0.07	0.776
1656001	Drill Core	2.30	<0.005
1656002	Drill Core	2.32	<0.005
1656003	Drill Core	2.27	0.005
1656004	Drill Core	2.32	0.005
1656005	Drill Core	2.18	<0.005
1656006	Drill Core	2.10	<0.005
1656007	Drill Core	1.80	0.005
1656008	Drill Core	2.82	0.014
1656009	Drill Core	3.16	<0.005
1656010	Drill Core	1.66	0.006
1656011	Drill Core	3.63	0.023
1656012	Drill Core	2.51	0.019
1656013	Drill Core	1.94	<0.005



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Project: NightHawk
Report Date: July 23, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001262.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1679666	Drill Core	1.22 0.010
REP 1679666	QC	0.013
1679693	Drill Core	1.89 0.005
REP 1679693	QC	0.008
Core Reject Duplicates		
1679656	Drill Core	1.07 0.008
DUP 1679656	QC	0.008
1679690	Drill Core	1.56 0.007
DUP 1679690	QC	0.006
Reference Materials		
STD OXC145	Standard	0.213
STD OXC145	Standard	0.212
STD OXC145	Standard	0.205
STD OXH139	Standard	1.280
STD OXH139	Standard	1.302
STD OXH139	Standard	1.312
STD OXN134	Standard	7.401
STD OXN134	Standard	7.144
STD OXN134	Standard	7.518
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: NightHawk
Report Date: July 23, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001262.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 17, 2019
Report Date: July 30, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001263.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1903201
P.O. Number: 4500104625
Number of Samples: 82

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	78	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	82	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	82	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30	Completed	TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
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Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke



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Project: NightHawk
Report Date: July 30, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001263.1

Method	Analyte	WGHT	FA430
		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
N76911	Drill Core	1.69	<0.005
N76912	Drill Core	1.67	0.094
N76913	Drill Core	1.49	0.015
N76914	Drill Core	1.40	0.148
N76915	Drill Core	2.24	0.276
N76916	Drill Core	1.94	1.016
N76917	Drill Core	2.11	0.958
N76918	Drill Core	2.08	0.949
N76919	Drill Core	2.37	0.233
N76920	Pulp	0.07	2.979
N76921	Drill Core	1.84	0.128
N76922	Drill Core	2.25	0.305
N76923	Drill Core	2.38	0.531
N76924	Drill Core	2.35	0.340
N76925	Drill Core	2.05	0.421
N76926	Drill Core	2.46	0.349
N76927	Drill Core	2.15	1.145
N76928	Drill Core	2.11	1.237
N76929	Drill Core	1.92	0.947
N76930	Drill Core	0.58	0.016
N76931	Drill Core	1.88	0.263
N76932	Drill Core	3.05	1.436
N76933	Drill Core	3.09	0.467
N76934	Drill Core	1.68	0.067
N76935	Drill Core	1.80	0.014
N76936	Drill Core	2.66	0.731
N76937	Drill Core	3.54	5.686
N76938	Drill Core	3.52	1.973
N76939	Drill Core	2.16	0.080
N76940	Pulp	0.07	0.338



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: July 30, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001263.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76941	Drill Core	3.17 0.015
N76942	Drill Core	0.67 <0.005
N76943	Drill Core	1.00 0.015
N76944	Drill Core	2.62 0.022
N76945	Drill Core	3.02 0.726
N76946	Drill Core	2.14 0.027
N76947	Drill Core	1.91 0.238
N76948	Drill Core	1.92 1.739
N76949	Drill Core	2.08 1.042
N76950	Drill Core	1.00 <0.005
N76951	Drill Core	2.37 0.115
N76952	Drill Core	2.16 <0.005
N76953	Drill Core	1.95 0.234
N76954	Drill Core	2.48 0.305
N76955	Drill Core	1.57 0.056
N76956	Drill Core	2.88 0.305
N76957	Drill Core	2.98 0.066
N76958	Drill Core	2.16 0.110
N76959	Drill Core	1.84 0.567
N76960	Pulp	0.07 0.888
N76961	Drill Core	2.18 0.113
N76962	Drill Core	2.29 0.012
N76963	Drill Core	1.97 0.013
N76964	Drill Core	1.96 0.142
N76965	Drill Core	2.93 <0.005
N76966	Drill Core	3.69 0.160
N76967	Drill Core	3.13 0.011
N76968	Drill Core	3.02 0.109
N76969	Drill Core	2.30 0.118
N76970	Drill Core	0.83 <0.005



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Project: NightHawk
Report Date: July 30, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001263.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76971	Drill Core	0.92 0.030
N76972	Drill Core	2.45 0.064
N76973	Drill Core	2.77 0.173
N76974	Drill Core	2.86 0.080
N76975	Drill Core	1.27 0.193
N76976	Drill Core	1.33 0.018
N76977	Drill Core	2.02 0.007
N76978	Drill Core	1.39 0.011
N76979	Drill Core	1.49 0.009
N76980	Pulp	0.07 3.015
N76981	Drill Core	1.57 0.007
N76982	Drill Core	3.06 0.007
N76983	Drill Core	1.97 <0.005
N76984	Drill Core	2.43 0.006
N76985	Drill Core	1.30 0.007
N76986	Drill Core	1.93 <0.005
N76987	Drill Core	2.40 0.006
N76988	Drill Core	2.72 0.008
N76989	Drill Core	2.98 <0.005
N76990	Drill Core	1.04 0.013
N76991	Drill Core	2.22 0.006
N76992	Drill Core	2.41 0.007



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Project: NightHawk
Report Date: July 30, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001263.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N76937	Drill Core	3.54 5.686
Pulp Duplicates		
N76917	Drill Core	2.11 0.958
REP N76917	QC	0.801
N76977	Drill Core	2.02 0.007
REP N76977	QC	0.009
Core Reject Duplicates		
N76919	Drill Core	2.37 0.233
DUP N76919	QC	0.179
N76953	Drill Core	1.95 0.234
DUP N76953	QC	0.294
N76987	Drill Core	2.40 0.006
DUP N76987	QC	0.007
Reference Materials		
STD OXC145	Standard	0.205
STD OXC145	Standard	0.208
STD OXC145	Standard	0.213
STD OXH139	Standard	1.312
STD OXH139	Standard	1.291
STD OXH139	Standard	1.290
STD OXN134	Standard	7.518
STD OXN134	Standard	7.671
STD OXN134	Standard	7.389
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: NightHawk
Report Date: July 30, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001263.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		0.007
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 26, 2019
Report Date: August 01, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001369.1

CLIENT JOB INFORMATION

Project: Hislop
Shipment ID: NH1901701
P.O. Number: 4500104625
Number of Samples: 71

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

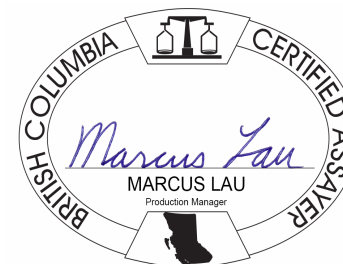
Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	68	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	71	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	71	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30	Completed	TIM

ADDITIONAL COMMENTS



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*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: Hislop
Report Date: August 01, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001369.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678325	Drill Core	3.11 0.007
1678326	Drill Core	2.67 0.006
1678327	Drill Core	2.42 0.013
1678328	Drill Core	3.14 0.019
1678329	Drill Core	3.04 0.058
1678330	Drill Core	0.72 <0.005
1678331	Drill Core	2.67 0.032
1678332	Drill Core	2.81 0.030
1678333	Drill Core	2.57 0.089
1678334	Drill Core	2.67 0.080
1678335	Drill Core	2.55 0.270
1678336	Drill Core	2.53 2.613
1678337	Drill Core	2.35 0.420
1678338	Drill Core	2.71 0.248
1678339	Drill Core	2.38 0.334
1678340	Pulp	0.07 0.879
1678341	Drill Core	2.76 0.375
1678342	Drill Core	2.75 0.051
1678343	Drill Core	2.43 0.217
1678344	Drill Core	2.21 0.763
1678345	Drill Core	2.87 1.596
1678346	Drill Core	2.53 0.209
1678347	Drill Core	2.35 0.720
1678348	Drill Core	2.44 0.342
1678349	Drill Core	2.49 0.444
1678350	Drill Core	1.02 0.007
1678351	Drill Core	2.79 0.578
1678352	Drill Core	2.70 0.875
1678353	Drill Core	2.63 0.145
1678354	Drill Core	2.80 0.325



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Project: Hislop
Report Date: August 01, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001369.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678355	Drill Core	2.47 0.199
1678356	Drill Core	2.62 0.405
1678357	Drill Core	2.69 3.126
1678358	Drill Core	3.12 4.879
1678359	Drill Core	2.12 1.428
1678360	Pulp	0.07 2.144
1678361	Drill Core	2.45 1.924
1678362	Drill Core	2.84 1.590
1678363	Drill Core	2.65 0.929
1678364	Drill Core	2.61 1.094
1678365	Drill Core	2.56 1.649
1678366	Drill Core	2.02 1.271
1678367	Drill Core	1.98 1.112
1678368	Drill Core	2.08 0.036
1678369	Drill Core	1.88 0.006
1678370	Drill Core	0.72 0.010
1678371	Drill Core	1.40 0.081
1678372	Drill Core	1.08 0.047
1678373	Drill Core	2.60 0.469
1678374	Drill Core	1.48 0.172
1678375	Drill Core	1.01 0.953
1678376	Drill Core	2.66 0.700
1678377	Drill Core	2.56 1.200
1678378	Drill Core	2.72 0.845
1678379	Drill Core	2.44 0.791
1678380	Pulp	0.07 0.330
1678381	Drill Core	3.10 0.087
1678382	Drill Core	2.28 0.642
1678383	Drill Core	2.53 0.178
1678384	Drill Core	2.07 0.427



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Project: Hislop
Report Date: August 01, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001369.1

	Method	WGHT	FA430
Analyte		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
1678385	Drill Core	2.21	1.157
1678386	Drill Core	2.60	0.331
1678387	Drill Core	2.51	0.010
1678388	Drill Core	2.71	0.060
1678389	Drill Core	2.43	0.081
1678390	Drill Core	0.52	0.006
1678391	Drill Core	2.55	0.019
1678392	Drill Core	1.67	<0.005
1678393	Drill Core	1.90	<0.005
1678394	Drill Core	2.49	<0.005
1678395	Drill Core	2.44	<0.005



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Project: Hislop
Report Date: August 01, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001369.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1678387	Drill Core	2.51 0.010
REP 1678387	QC	0.012
1678388	Drill Core	2.71 0.060
REP 1678388	QC	0.048
1678389	Drill Core	2.43 0.081
REP 1678389	QC	0.089
Core Reject Duplicates		
1678346	Drill Core	2.53 0.209
DUP 1678346	QC	0.167
Reference Materials		
STD OXC145	Standard	0.215
STD OXC145	Standard	0.210
STD OXC145	Standard	0.213
STD OXC145	Standard	0.211
STD OXH139	Standard	1.312
STD OXH139	Standard	1.290
STD OXH139	Standard	1.293
STD OXN134	Standard	7.506
STD OXN134	Standard	7.317
STD OXN134	Standard	7.389
STD OXN134	Standard	7.619
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: Hislop
Report Date: August 01, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001369.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: June 26, 2019
Report Date: July 25, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001370.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1901801
P.O. Number: 4500104625
Number of Samples: 88

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	83	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	88	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	88	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: NightHawk
Report Date: July 25, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001370.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678396	Drill Core	2.51 <0.005
1678397	Drill Core	1.06 0.101
1678398	Drill Core	2.41 <0.005
1678399	Drill Core	2.48 <0.005
1678400	Pulp	0.06 0.877
1678401	Drill Core	2.42 0.020
1678402	Drill Core	2.16 0.042
1678403	Drill Core	2.23 0.066
1678404	Drill Core	2.03 0.590
1678405	Drill Core	2.17 0.197
1678406	Drill Core	2.28 0.012
1678407	Drill Core	2.20 0.283
1678408	Drill Core	2.44 0.017
1678409	Drill Core	2.18 0.235
1678410	Drill Core	0.64 <0.005
1678411	Drill Core	1.98 1.029
1678412	Drill Core	1.94 0.190
1678413	Drill Core	2.29 0.082
1678414	Drill Core	2.24 1.026
1678415	Drill Core	2.18 0.090
1678416	Drill Core	2.10 0.033
1678417	Drill Core	2.10 0.068
1678418	Drill Core	2.37 1.451
1678419	Drill Core	2.08 1.238
1678420	Pulp	0.06 2.208
1678421	Drill Core	2.20 0.472
1678422	Drill Core	2.14 0.172
1678423	Drill Core	2.23 0.091
1678424	Drill Core	2.24 5.676
1678425	Drill Core	2.06 0.435



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Project: NightHawk
Report Date: July 25, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001370.1

Method	Analyte	WGHT	FA430
		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
1678426	Drill Core	2.24	0.254
1678427	Drill Core	2.18	0.436
1678428	Drill Core	2.09	0.128
1678429	Drill Core	2.27	0.229
1678430	Drill Core	0.72	<0.005
1678431	Drill Core	2.29	0.571
1678432	Drill Core	2.34	0.072
1678433	Drill Core	2.25	0.155
1678434	Drill Core	2.25	0.221
1678435	Drill Core	2.42	0.369
1678436	Drill Core	2.82	0.316
1678437	Drill Core	2.50	0.202
1678438	Drill Core	2.45	3.108
1678439	Drill Core	2.52	0.238
1678440	Pulp	0.07	0.339
1678441	Drill Core	2.36	0.226
1678442	Drill Core	2.29	0.603
1678443	Drill Core	1.98	0.267
1678444	Drill Core	2.28	0.427
1678445	Drill Core	2.49	1.687
1678446	Drill Core	2.60	1.483
1678447	Drill Core	3.17	1.537
1678448	Drill Core	2.22	0.438
1678449	Drill Core	1.93	1.129
1678450	Drill Core	0.89	<0.005
1678451	Drill Core	2.28	0.174
1678452	Drill Core	2.77	0.727
1678453	Drill Core	2.30	0.283
1678454	Drill Core	2.48	1.485
1678455	Drill Core	2.35	0.496



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Project: NightHawk
Report Date: July 25, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001370.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1678456	Drill Core	2.23 0.019
1678457	Drill Core	2.58 0.213
1678458	Drill Core	2.31 0.960
1678459	Drill Core	2.52 0.954
1678460	Pulp	0.06 0.884
1678461	Drill Core	2.31 0.409
1678462	Drill Core	2.18 0.397
1678463	Drill Core	2.08 0.031
1678464	Drill Core	2.53 <0.005
1678465	Drill Core	2.22 1.134
1678466	Drill Core	2.39 <0.005
1678467	Drill Core	2.31 0.018
1678468	Drill Core	1.97 0.055
1678469	Drill Core	1.64 <0.005
1678470	Drill Core	0.89 <0.005
1678471	Drill Core	2.80 <0.005
1678472	Drill Core	2.76 0.069
1678473	Drill Core	2.69 0.270
1678474	Drill Core	2.71 0.092
1678475	Drill Core	1.76 0.091
1678476	Drill Core	1.90 0.044
1678477	Drill Core	1.52 <0.005
1678478	Drill Core	1.60 <0.005
1678479	Drill Core	1.31 <0.005
1678480	Pulp	0.07 2.142
1678481	Drill Core	3.13 <0.005
1678482	Drill Core	2.91 <0.005
1678483	Drill Core	4.10 <0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: July 25, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001370.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1678421	Drill Core	2.20 0.472
REP 1678421	QC	0.525
1678453	Drill Core	2.30 0.283
REP 1678453	QC	0.290
1678482	Drill Core	2.91 <0.005
REP 1678482	QC	<0.005
Core Reject Duplicates		
1678427	Drill Core	2.18 0.436
DUP 1678427	QC	0.409
1678461	Drill Core	2.31 0.409
DUP 1678461	QC	0.555
Reference Materials		
STD OXC145	Standard	0.207
STD OXC145	Standard	0.209
STD OXH139	Standard	1.277
STD OXH139	Standard	1.271
STD OXN134	Standard	7.620
STD OXN134	Standard	7.366
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	0.010
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	0.008
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: July 04, 2019
Report Date: August 01, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19001462.1

CLIENT JOB INFORMATION

Project: Hislop
Shipment ID: NH17004A02
P.O. Number: 4500104625
Number of Samples: 40

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	38	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	40	Primary crushing entire sample of whole core			TIM
SLBHP	1	Sort, label and box pulps			TIM
FA430	40	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	40	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
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CC: Ray Toews
Alex Thompson
Michael Clarke



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Project: Hislop
Report Date: August 01, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001462.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1675951	Drill Core	4.53 0.023
1675952	Drill Core	4.66 0.021
1675953	Drill Core	3.35 0.023
1675954	Drill Core	4.42 0.008
1675955	Drill Core	4.70 0.008
1675956	Drill Core	4.69 0.016
1675957	Drill Core	5.07 <0.005
1675958	Drill Core	2.99 <0.005
1675959	Drill Core	5.90 0.013
1675960	Pulp	0.07 0.314
1675961	Drill Core	4.13 <0.005
1675962	Drill Core	4.22 <0.005
1675963	Drill Core	2.57 <0.005
1675964	Drill Core	4.12 <0.005
1675965	Drill Core	4.48 <0.005
1675966	Drill Core	5.55 0.020
1675967	Drill Core	4.63 0.029
1675968	Drill Core	5.06 <0.005
1675969	Drill Core	4.86 0.017
1675970	Drill Core	1.35 0.008
1675971	Drill Core	4.73 <0.005
1675972	Drill Core	4.06 <0.005
1675973	Drill Core	4.88 0.010
1675974	Drill Core	4.67 0.009
1675975	Drill Core	5.10 0.035
1675976	Drill Core	4.39 0.012
1675977	Drill Core	4.42 <0.005
1675978	Drill Core	4.65 <0.005
1675979	Drill Core	5.06 0.010
1675980	Pulp	0.07 0.337



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Project: Hislop
Report Date: August 01, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001462.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1675981	Drill Core	4.45	1.121
1675982	Drill Core	4.93	0.013
1675983	Drill Core	4.93	0.094
1675984	Drill Core	4.46	0.005
1675985	Drill Core	4.83	0.023
1675986	Drill Core	4.45	0.024
1675987	Drill Core	4.30	<0.005
1675988	Drill Core	4.29	<0.005
1675989	Drill Core	4.56	<0.005
1675990	Drill Core	1.24	<0.005



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Project: Hislop
Report Date: August 01, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001462.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Core Reject Duplicates		
1675968	Drill Core	5.06 <0.005
DUP 1675968	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.214
STD OXC145	Standard	0.211
STD OXC145	Standard	0.213
STD OXC145	Standard	0.211
STD OXH139	Standard	1.261
STD OXH139	Standard	1.287
STD OXH139	Standard	1.290
STD OXH139	Standard	1.293
STD OXN134	Standard	7.381
STD OXN134	Standard	7.286
STD OXN134	Standard	7.389
STD OXN134	Standard	7.619
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005



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Project: Hislop
Report Date: August 01, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001462.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
ROCK-TIM	Prep Blank		<0.005



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Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: July 04, 2019
Report Date: August 01, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19001463.1

CLIENT JOB INFORMATION

Project: Hislop
Shipment ID: NH17004A03
P.O. Number: 4500104625
Number of Samples: 57

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	54	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	57	Primary crushing entire sample of whole core			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	57	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	57	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke



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Project: Hislop
Report Date: August 01, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001463.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1675991	Drill Core	4.56 0.008
1675992	Drill Core	4.13 0.011
1675993	Drill Core	4.70 0.009
1675994	Drill Core	4.79 0.006
1675995	Drill Core	4.92 0.009
1675996	Drill Core	6.66 <0.005
1675997	Drill Core	4.90 <0.005
1675998	Drill Core	4.44 <0.005
1675999	Drill Core	4.36 <0.005
1676000	Pulp	0.07 0.849
1675451	Drill Core	4.44 0.009
1675452	Drill Core	4.52 <0.005
1675453	Drill Core	5.41 <0.005
1675454	Drill Core	4.68 <0.005
1675455	Drill Core	4.62 <0.005
1675456	Drill Core	4.30 0.006
1675457	Drill Core	5.14 <0.005
1675458	Drill Core	4.82 <0.005
1675459	Drill Core	5.18 0.015
1675460	Pulp	0.07 0.843
1675461	Drill Core	4.49 0.009
1675462	Drill Core	4.74 0.006
1675463	Drill Core	5.27 0.051
1675464	Drill Core	4.84 <0.005
1675465	Drill Core	4.77 <0.005
1675466	Drill Core	4.75 <0.005
1675467	Drill Core	4.82 <0.005
1675468	Drill Core	4.85 <0.005
1675469	Drill Core	4.93 <0.005
1675470	Drill Core	1.32 <0.005



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Project: Hislop
Report Date: August 01, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001463.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1675471	Drill Core	4.48 <0.005
1675472	Drill Core	4.16 <0.005
1675473	Drill Core	4.38 0.024
1675474	Drill Core	6.17 <0.005
1675475	Drill Core	4.68 <0.005
1675476	Drill Core	4.42 <0.005
1675477	Drill Core	5.59 <0.005
1675478	Drill Core	4.15 <0.005
1675479	Drill Core	3.72 <0.005
1675480	Pulp	0.07 0.331
1675481	Drill Core	4.88 <0.005
1675482	Drill Core	4.01 <0.005
1675483	Drill Core	4.91 0.009
1675484	Drill Core	3.88 <0.005
1675485	Drill Core	4.32 <0.005
1675486	Drill Core	4.88 0.006
1675487	Drill Core	4.75 <0.005
1675488	Drill Core	4.63 0.006
1675489	Drill Core	4.74 <0.005
1675490	Drill Core	1.54 <0.005
1675491	Drill Core	4.52 <0.005
1675492	Drill Core	4.82 <0.005
1675493	Drill Core	4.56 <0.005
1675494	Drill Core	5.09 0.008
1675495	Drill Core	4.11 0.083
1675496	Drill Core	4.32 0.031
1675497	Drill Core	4.25 0.005



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Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: Hislop
Report Date: August 01, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001463.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1675462	Drill Core	4.74 0.006
REP 1675462	QC	0.007
Core Reject Duplicates		
1675494	Drill Core	5.09 0.008
DUP 1675494	QC	0.006
Reference Materials		
STD OXC145	Standard	0.211
STD OXC145	Standard	0.211
STD OXH139	Standard	1.287
STD OXH139	Standard	1.293
STD OXN134	Standard	7.286
STD OXN134	Standard	7.619
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: July 04, 2019
Report Date: August 01, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19001464.1

CLIENT JOB INFORMATION

Project: Hislop
Shipment ID: NH1700202
P.O. Number: 4500104625
Number of Samples: 91

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	87	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	91	Primary crushing entire sample of whole core			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	91	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	91	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
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Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke



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Project: Hislop
Report Date: August 01, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001464.1

Method	Analyte	WGHT	FA430
		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
N65401	Drill Core	5.01	<0.005
N65402	Drill Core	1.60	0.021
N65403	Drill Core	5.08	0.025
N65404	Drill Core	7.45	0.065
N65405	Drill Core	7.30	0.006
N65406	Drill Core	1.57	0.008
N65407	Drill Core	6.31	<0.005
N65408	Drill Core	4.98	0.063
N65409	Drill Core	4.32	0.007
N65410	Drill Core	1.71	0.010
N65411	Drill Core	4.65	0.028
N65412	Drill Core	4.07	0.018
N65413	Drill Core	1.77	<0.005
N65414	Drill Core	6.00	<0.005
N65415	Drill Core	3.84	<0.005
N65416	Drill Core	2.49	<0.005
N65417	Drill Core	4.57	<0.005
N65418	Drill Core	4.84	0.012
N65419	Drill Core	3.66	0.015
N65420	Pulp	0.07	2.987
N65421	Drill Core	4.99	0.017
N65422	Drill Core	4.61	0.025
N65423	Drill Core	5.43	0.107
N65424	Drill Core	4.50	0.007
N65425	Drill Core	5.05	0.007
N65426	Drill Core	4.11	0.051
N65427	Drill Core	4.92	0.006
N65428	Drill Core	5.24	0.008
N65429	Drill Core	5.07	<0.005
N65430	Drill Core	1.80	<0.005



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Project: Hislop
Report Date: August 01, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001464.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N65431	Drill Core	5.23 0.005
N65432	Drill Core	4.74 <0.005
N65433	Drill Core	5.22 <0.005
N65434	Drill Core	5.01 <0.005
N65435	Drill Core	5.03 0.007
N65436	Drill Core	5.28 <0.005
N65437	Drill Core	5.15 <0.005
N65438	Drill Core	4.48 0.075
N65439	Drill Core	3.19 <0.005
N65440	Pulp	0.07 0.850
N65441	Drill Core	5.17 0.010
N65442	Drill Core	4.60 0.007
N65443	Drill Core	3.31 0.006
N65444	Drill Core	4.84 0.052
N65445	Drill Core	4.42 0.009
N65446	Drill Core	5.81 0.009
N65447	Drill Core	4.82 0.009
N65448	Drill Core	5.30 0.227
N65449	Drill Core	3.51 0.012
N65450	Drill Core	1.61 0.039
N65451	Drill Core	3.91 0.008
N65452	Drill Core	5.20 <0.005
N65453	Drill Core	3.39 <0.005
N65454	Drill Core	4.36 0.005
N65455	Drill Core	3.51 0.006
N65456	Drill Core	2.42 0.007
N65457	Drill Core	3.49 0.006
N65458	Drill Core	5.14 0.017
N65459	Drill Core	5.05 0.006
N65460	Pulp	0.07 3.017



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Project: Hislop
Report Date: August 01, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001464.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N65461	Drill Core	5.52 0.008
N65462	Drill Core	4.98 0.030
N65463	Drill Core	4.80 0.005
N65464	Drill Core	4.88 0.012
N65465	Drill Core	4.95 0.007
N65466	Drill Core	4.82 0.035
N65467	Drill Core	5.76 0.009
N65468	Drill Core	4.53 0.043
N65469	Drill Core	5.09 0.010
N65470	Drill Core	1.78 0.006
N65471	Drill Core	5.63 0.008
N65472	Drill Core	4.80 0.011
N65473	Drill Core	4.98 0.009
N65474	Drill Core	4.22 0.060
N65475	Drill Core	4.90 0.007
N65476	Drill Core	5.22 0.045
N65477	Drill Core	5.02 0.044
N65478	Drill Core	5.01 0.044
N65479	Drill Core	4.19 0.006
N65480	Pulp	0.07 2.937
N65481	Drill Core	4.95 0.007
N65482	Drill Core	4.69 <0.005
N65483	Drill Core	6.07 0.022
N65484	Drill Core	4.84 <0.005
N65485	Drill Core	4.91 0.007
N65486	Drill Core	3.75 0.006
N65487	Drill Core	1.97 0.018
N65488	Drill Core	4.96 <0.005
N65489	Drill Core	5.38 0.029
N65490	Drill Core	1.84 <0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: Hislop
Report Date: August 01, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001464.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
N65491	Drill Core	5.18 0.009



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Matheson Ontario P0K 1N0 Canada

Project: Hislop
Report Date: August 01, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001464.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
N65427	Drill Core	4.92 0.006
REP N65427	QC	0.008
N65449	Drill Core	3.51 0.012
REP N65449	QC	0.010
Core Reject Duplicates		
N65407	Drill Core	6.31 <0.005
DUP N65407	QC	<0.005
N65441	Drill Core	5.17 0.010
DUP N65441	QC	0.008
N65475	Drill Core	4.90 0.007
DUP N65475	QC	<0.005
Reference Materials		
STD OXC145	Standard	0.216
STD OXC145	Standard	0.212
STD OXH139	Standard	1.303
STD OXH139	Standard	1.297
STD OXN134	Standard	7.619
STD OXN134	Standard	7.538
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: July 17, 2019
Report Date: August 01, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001654.1

CLIENT JOB INFORMATION

Project: Taylor
Shipment ID: NH-19-024
P.O. Number: 4500104625
Number of Samples: 63

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	60	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	63	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	63	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS


SCOTT INGLIS
Fire Assay Manager

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Project: Taylor
Report Date: August 01, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001654.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656014	Drill Core	1.66 0.006
1656015	Drill Core	1.83 0.024
1656016	Drill Core	1.40 <0.005
1656017	Drill Core	2.07 0.009
1656018	Drill Core	1.92 <0.005
1656019	Drill Core	2.14 0.009
1656020	Pulp	0.07 2.956
1656021	Drill Core	2.05 <0.005
1656022	Drill Core	3.01 <0.005
1656023	Drill Core	3.33 <0.005
1656024	Drill Core	3.87 0.022
1656025	Drill Core	3.42 0.007
1656026	Drill Core	2.21 0.020
1656027	Drill Core	2.28 0.010
1656028	Drill Core	1.92 0.005
1656029	Drill Core	3.57 0.005
1656030	Drill Core	0.61 <0.005
1656031	Drill Core	3.61 0.005
1656032	Drill Core	2.73 0.014
1656033	Drill Core	2.32 0.005
1656034	Drill Core	1.90 0.017
1656035	Drill Core	3.54 0.008
1656036	Drill Core	3.63 0.016
1656037	Drill Core	2.79 0.105
1656038	Drill Core	2.20 0.010
1656039	Drill Core	1.65 <0.005
1656040	Pulp	0.07 0.344
1656041	Drill Core	2.48 0.010
1656042	Drill Core	2.78 0.009
1656043	Drill Core	2.32 0.017



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Project: Taylor
Report Date: August 01, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001654.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656044	Drill Core	2.08 <0.005
1656045	Drill Core	1.99 <0.005
1656046	Drill Core	1.83 <0.005
1656047	Drill Core	1.07 <0.005
1656048	Drill Core	2.29 0.102
1656049	Drill Core	2.48 0.115
1656050	Drill Core	0.87 0.009
1656051	Drill Core	2.43 0.020
1656052	Drill Core	2.08 0.075
1656053	Drill Core	3.27 0.012
1656054	Drill Core	3.31 <0.005
1656055	Drill Core	4.04 <0.005
1656056	Drill Core	4.20 <0.005
1656057	Drill Core	3.66 <0.005
1656058	Drill Core	3.86 0.008
1656059	Drill Core	1.92 0.091
1656060	Pulp	0.07 0.845
1656061	Drill Core	1.78 0.039
1656062	Drill Core	1.18 0.689
1656063	Drill Core	0.97 0.337
1656064	Drill Core	1.34 0.120
1656065	Drill Core	3.34 0.028
1656066	Drill Core	3.55 <0.005
1656067	Drill Core	2.79 <0.005
1656068	Drill Core	1.93 <0.005
1656069	Drill Core	4.38 <0.005
1656070	Drill Core	0.66 <0.005
1656071	Drill Core	3.03 <0.005
1656072	Drill Core	3.79 <0.005
1656073	Drill Core	3.72 <0.005



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Project: Taylor
Report Date: August 01, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001654.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1656074	Drill Core	3.64	<0.005
1656075	Drill Core	3.79	<0.005
1656076	Drill Core	4.21	<0.005



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Project: Taylor
Report Date: August 01, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001654.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1656034	Drill Core	1.90 0.017
REP 1656034	QC	0.011
1656051	Drill Core	2.43 0.020
REP 1656051	QC	0.030
Core Reject Duplicates		
1656028	Drill Core	1.92 0.005
DUP 1656028	QC	0.014
1656062	Drill Core	1.18 0.689
DUP 1656062	QC	0.360
Reference Materials		
STD OXC145	Standard	0.216
STD OXC145	Standard	0.214
STD OXH139	Standard	1.303
STD OXH139	Standard	1.288
STD OXN134	Standard	7.619
STD OXN134	Standard	7.523
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 19, 2019
Report Date: September 04, 2019
Page: 1 of 7

CERTIFICATE OF ANALYSIS

TIM19001833.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-1941
P.O. Number: 4500104625
Number of Samples: 165

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	157	Crush, split and pulverize 250 g rock to 200 mesh			TIM
CRUPR	22	Primary crushing entire sample of whole core			TIM
SLBHP	8	Sort, label and box pulps			TIM
FA430	165	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	165	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
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Canada

CC: Ray Toews
Alex Thompson
Michael Clarke



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Project: NightHawk
Report Date: September 04, 2019

Page: 2 of 7

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001833.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644272	Drill Core	1.99 0.006
1644273	Drill Core	1.13 0.017
1644274	Drill Core	1.60 0.005
1644275	Drill Core	0.84 0.135
1644276	Drill Core	2.16 <0.005
1644277	Drill Core	2.30 <0.005
1644278	Drill Core	1.86 <0.005
1644279	Drill Core	2.20 <0.005
1644280	Pulp	0.07 2.979
1644281	Drill Core	2.55 0.029
1644282	Drill Core	2.09 0.021
1644283	Drill Core	2.16 0.015
1644284	Drill Core	2.13 0.077
1644285	Drill Core	2.18 0.022
1644286	Drill Core	1.46 0.009
1644287	Drill Core	1.45 0.005
1644288	Drill Core	1.80 <0.005
1644289	Drill Core	3.41 0.012
1644290	Drill Core	0.83 <0.005
1644291	Drill Core	3.25 0.070
1644292	Drill Core	1.91 0.324
1644293	Drill Core	1.32 0.156
1644294	Drill Core	1.28 0.017
1644295	Drill Core	1.67 0.044
1644296	Drill Core	3.08 0.007
1644297	Drill Core	3.49 0.018
1644298	Drill Core	2.02 0.038
1644299	Drill Core	2.03 0.186
1644300	Pulp	0.07 0.333
1644301	Drill Core	2.11 0.136



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Project: NightHawk
Report Date: September 04, 2019

Page: 3 of 7

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001833.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644302	Drill Core	2.33 0.140
1644303	Drill Core	0.74 0.010
1644304	Drill Core	3.12 0.071
1644305	Drill Core	2.14 0.037
1644306	Drill Core	2.31 0.010
1644307	Drill Core	2.28 <0.005
1644308	Drill Core	1.98 0.021
1644309	Drill Core	2.19 0.021
1644310	Drill Core	0.84 <0.005
1644311	Drill Core	2.00 0.026
1644312	Drill Core	3.53 0.010
1644313	Drill Core	2.69 0.028
1644314	Drill Core	1.49 0.035
1644315	Drill Core	1.76 0.335
1644316	Drill Core	1.51 0.020
1644317	Drill Core	1.95 0.108
1644318	Drill Core	1.34 0.322
1644319	Drill Core	1.88 0.097
1644320	Pulp	0.07 0.824
1644321	Drill Core	1.34 0.078
1644322	Drill Core	1.75 0.017
1644323	Drill Core	1.82 0.039
1644324	Drill Core	1.50 0.034
1644325	Drill Core	1.75 0.144
1644326	Drill Core	1.70 0.325
1644327	Drill Core	1.30 0.127
1644328	Drill Core	1.76 0.014
1644329	Drill Core	1.62 0.081
1644330	Drill Core	0.89 <0.005
1644331	Drill Core	1.24 0.398



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Project: NightHawk
Report Date: September 04, 2019

Page: 4 of 7

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001833.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644332	Drill Core	3.02 0.127
1644333	Drill Core	3.31 0.102
1644334	Drill Core	3.03 0.006
1644335	Drill Core	3.06 0.227
1644336	Drill Core	2.30 0.096
1644337	Drill Core	2.63 0.259
1644338	Drill Core	0.82 0.011
1644339	Drill Core	1.86 0.010
1644340	Pulp	0.07 2.929
1644341	Drill Core	1.80 0.019
1644342	Drill Core	2.27 <0.005
1644343	Drill Core	2.55 <0.005
1644344	Drill Core	3.63 <0.005
1644345	Drill Core	3.44 <0.005
1644346	Drill Core	2.40 <0.005
1644347	Drill Core	2.41 0.006
1644348	Drill Core	2.19 0.006
1644349	Drill Core	2.58 <0.005
1644350	Drill Core	0.84 <0.005
1644351	Drill Core	2.84 0.007
1644352	Drill Core	1.48 <0.005
1644353	Drill Core	2.34 <0.005
1644354	Drill Core	1.21 <0.005
1644355	Drill Core	1.72 <0.005
1644356	Drill Core	1.76 <0.005
1644357	Drill Core	2.35 <0.005
1644358	Drill Core	2.54 <0.005
1644359	Drill Core	2.32 <0.005
1644360	Pulp	0.07 0.330
1644361	Drill Core	0.98 0.010



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Project: NightHawk
Report Date: September 04, 2019

Page: 5 of 7

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001833.1

Method Analyte Unit MDL		WGHT	FA430
		Wgt kg	Au ppm
		0.01	0.005
1644362	Drill Core	1.09	0.006
1644363	Drill Core	2.64	<0.005
1644364	Drill Core	2.39	<0.005
1644365	Drill Core	2.22	0.014
1644366	Drill Core	2.22	<0.005
1644367	Drill Core	2.07	<0.005
1644368	Drill Core	2.43	<0.005
1644369	Drill Core	2.16	<0.005
1644370	Drill Core	1.03	<0.005
1644371	Drill Core	3.38	<0.005
1644372	Drill Core	3.52	<0.005
1644373	Drill Core	3.51	<0.005
1644374	Drill Core	2.21	<0.005
1644375	Drill Core	2.00	<0.005
1644376	Drill Core	2.89	<0.005
1644377	Drill Core	3.62	<0.005
1644378	Drill Core	3.13	<0.005
1644379	Drill Core	3.41	0.005
1644380	Pulp	0.07	0.878
1644381	Drill Core	3.51	0.037
1644382	Drill Core	3.24	0.057
1644383	Drill Core	2.75	0.025
1644384	Drill Core	0.77	0.020
1644385	Drill Core	3.46	0.190
1644386	Drill Core	1.69	0.072
1644387	Drill Core	2.52	0.022
1644388	Drill Core	1.74	0.033
1644389	Drill Core	1.45	0.016
1644390	Drill Core	0.65	<0.005
1644391	Drill Core	3.02	0.006



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Project: NightHawk
Report Date: September 04, 2019

Page: 6 of 7

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001833.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644392	Drill Core	2.93 0.006
1644393	Drill Core	3.07 <0.005
1644394	Drill Core	2.95 <0.005
1644395	Drill Core	1.04 <0.005
1644396	Drill Core	3.62 <0.005
1644397	Drill Core	3.36 0.009
1644398	Drill Core	2.44 0.032
1644399	Drill Core	1.95 0.181
1644400	Pulp	0.07 2.991
1644401	Drill Core	1.09 0.436
1644402	Drill Core	1.38 0.642
1644403	Drill Core	2.11 0.021
1644404	Drill Core	1.46 0.231
1644405	Drill Core	1.71 0.082
1644406	Drill Core	1.49 0.045
1644407	Drill Core	1.25 0.242
1644408	Drill Core	2.44 0.030
1644409	Drill Core	3.51 0.056
1644410	Drill Core	0.86 <0.005
1644411	Drill Core	3.30 0.070
1644412	Drill Core	3.74 0.011
1644413	Drill Core	3.22 0.006
1644414	Drill Core	3.79 0.028
1644415	Drill Core	3.06 0.008
1644416	Drill Core	3.53 <0.005
1644417	Drill Core	2.63 <0.005
1644418	Drill Core	1.41 0.023
1644419	Drill Core	1.53 0.008
1644420	Pulp	0.07 0.321
1644421	Drill Core	2.70 0.032



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 04, 2019

Page: 7 of 7

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001833.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644422	Drill Core	3.66 0.008
1644423	Drill Core	5.73 0.007
1644424	Drill Core	5.05 0.007
1644425	Drill Core	1.62 0.017
1644426	Drill Core	4.03 0.009
1644427	Drill Core	4.29 0.007
1644428	Drill Core	4.29 <0.005
1644429	Drill Core	2.12 0.041
1644430	Drill Core	1.73 0.010
1644431	Drill Core	2.64 0.035
1644432	Drill Core	3.21 0.010
1644433	Drill Core	3.35 0.015
1644434	Drill Core	1.87 0.007
1644435	Drill Core	3.30 0.007
1644436	Drill Core	4.27 0.035



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 04, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001833.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1644308	Drill Core	1.98 0.021
REP 1644308	QC	0.017
1644314	Drill Core	1.49 0.035
REP 1644314	QC	0.027
1644377	Drill Core	3.62 <0.005
REP 1644377	QC	<0.005
1644434	Drill Core	1.87 0.007
REP 1644434	QC	0.007
Core Reject Duplicates		
1644295	Drill Core	1.67 0.044
DUP 1644295	QC	0.036
1644329	Drill Core	1.62 0.081
DUP 1644329	QC	0.057
1644363	Drill Core	2.64 <0.005
DUP 1644363	QC	<0.005
1644397	Drill Core	3.36 0.009
DUP 1644397	QC	0.012
1644431	Drill Core	2.64 0.035
DUP 1644431	QC	0.019
Reference Materials		
STD OXC145	Standard	0.201
STD OXC145	Standard	0.202
STD OXC145	Standard	0.201
STD OXC145	Standard	0.211
STD OXH139	Standard	1.257
STD OXH139	Standard	1.320
STD OXH139	Standard	1.291
STD OXH139	Standard	1.271



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 04, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001833.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
STD OXN134	Standard		7.799
STD OXN134	Standard		7.218
STD OXN134	Standard		7.630
STD OXN134	Standard		7.376
STD OXC145	Expected		0.212
STD OXN134	Expected		7.667
STD OXH139	Expected		1.312
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.008
BLK	Blank		<0.005
BLK	Blank		0.006
BLK	Blank		0.006
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 19, 2019
Report Date: September 04, 2019
Page: 1 of 6

CERTIFICATE OF ANALYSIS

TIM19001834.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-19-036
P.O. Number: 4500104625
Number of Samples: 123

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	117	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	6	Sort, label and box pulps			TIM
FA430	123	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	123	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: NightHawk
Report Date: September 04, 2019

Page: 2 of 6

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001834.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656456	Drill Core	1.44 <0.005
1656457	Drill Core	1.56 <0.005
1656458	Drill Core	1.86 <0.005
1656459	Drill Core	1.01 0.011
1656460	Pulp	0.07 2.892
1656461	Drill Core	1.25 0.005
1656462	Drill Core	1.68 <0.005
1656463	Drill Core	2.30 0.009
1656464	Drill Core	1.62 0.013
1656465	Drill Core	1.31 0.638
1656466	Drill Core	1.28 0.149
1656467	Drill Core	1.45 0.014
1656468	Drill Core	1.41 0.008
1656469	Drill Core	2.15 0.011
1656470	Drill Core	0.46 <0.005
1656471	Drill Core	2.41 0.012
1656472	Drill Core	2.11 <0.005
1656473	Drill Core	1.32 0.005
1656474	Drill Core	2.49 0.083
1656475	Drill Core	2.24 0.230
1656476	Drill Core	1.08 0.112
1656477	Drill Core	2.04 0.077
1656478	Drill Core	1.76 0.084
1656479	Drill Core	1.53 0.015
1656480	Pulp	0.07 0.331
1656481	Drill Core	0.86 0.009
1656482	Drill Core	1.28 0.038
1656483	Drill Core	1.94 0.011
1656484	Drill Core	1.66 0.007
1656485	Drill Core	1.90 0.008



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Project: NightHawk
Report Date: September 04, 2019

Page: 3 of 6

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001834.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656486	Drill Core	1.58 0.009
1656487	Drill Core	1.98 0.015
1656488	Drill Core	2.32 0.012
1656489	Drill Core	1.60 0.016
1656490	Drill Core	0.36 <0.005
1656491	Drill Core	1.84 0.011
1656492	Drill Core	1.30 0.010
1656493	Drill Core	1.56 0.014
1656494	Drill Core	1.94 0.005
1656495	Drill Core	2.11 <0.005
1656496	Drill Core	2.16 0.046
1656497	Drill Core	0.89 0.058
1656498	Drill Core	2.36 0.038
1656499	Drill Core	2.68 0.055
1656500	Pulp	0.07 0.884
1656501	Drill Core	0.92 0.580
1656502	Drill Core	1.10 0.912
1656503	Drill Core	1.24 0.468
1656504	Drill Core	1.65 0.090
1656505	Drill Core	1.67 0.118
1656506	Drill Core	1.05 0.054
1656507	Drill Core	1.56 0.418
1656508	Drill Core	1.70 0.138
1656509	Drill Core	1.44 1.486
1656510	Drill Core	0.74 0.006
1656511	Drill Core	0.81 0.311
1656512	Drill Core	1.35 0.834
1656513	Drill Core	1.83 0.516
1656514	Drill Core	1.95 0.240
1656515	Drill Core	3.39 0.609



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Project: NightHawk
Report Date: September 04, 2019

Page: 4 of 6

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001834.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656516	Drill Core	2.55 <0.005
1656517	Drill Core	2.02 0.026
1656518	Drill Core	1.25 0.068
1656519	Drill Core	1.40 <0.005
1656520	Pulp	0.07 2.482
1656521	Drill Core	1.39 0.137
1656522	Drill Core	1.80 0.015
1656523	Drill Core	1.75 <0.005
1656524	Drill Core	1.08 0.167
1656525	Drill Core	1.14 0.060
1656526	Drill Core	2.01 0.032
1656527	Drill Core	2.01 0.166
1656528	Drill Core	2.31 0.973
1656529	Drill Core	1.08 0.009
1656530	Drill Core	0.52 <0.005
1656531	Drill Core	0.82 0.008
1656532	Drill Core	2.07 <0.005
1656533	Drill Core	2.10 0.051
1656534	Drill Core	2.41 0.056
1656535	Drill Core	1.28 0.012
1656536	Drill Core	1.31 0.039
1656537	Drill Core	2.04 0.045
1656538	Drill Core	2.52 0.021
1656539	Drill Core	2.52 0.058
1656540	Pulp	0.07 0.332
1656541	Drill Core	1.71 0.622
1656542	Drill Core	1.31 0.010
1656543	Drill Core	1.99 0.024
1656544	Drill Core	1.23 0.022
1656545	Drill Core	1.04 0.008



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Project: NightHawk
Report Date: September 04, 2019

Page: 5 of 6

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001834.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656546	Drill Core	2.46 0.025
1656547	Drill Core	1.68 0.067
1656548	Drill Core	2.00 0.021
1656549	Drill Core	2.41 1.463
1656550	Drill Core	0.73 <0.005
1656551	Drill Core	1.41 0.408
1656552	Drill Core	2.05 0.035
1656553	Drill Core	1.27 0.022
1656554	Drill Core	2.29 0.199
1656555	Drill Core	2.28 0.055
1656556	Drill Core	2.29 0.127
1656557	Drill Core	1.36 0.782
1656558	Drill Core	2.60 0.418
1656559	Drill Core	1.36 0.058
1656560	Pulp	0.07 0.860
1656561	Drill Core	2.69 0.035
1656562	Drill Core	2.39 0.042
1656563	Drill Core	1.06 0.044
1656564	Drill Core	2.72 0.047
1656565	Drill Core	2.69 <0.005
1656566	Drill Core	2.42 <0.005
1656567	Drill Core	1.83 0.009
1656568	Drill Core	1.41 0.037
1656569	Drill Core	2.55 0.166
1656570	Drill Core	0.60 0.009
1656571	Drill Core	2.62 <0.005
1656572	Drill Core	2.12 <0.005
1656573	Drill Core	1.71 0.013
1656574	Drill Core	0.84 <0.005
1656575	Drill Core	2.32 <0.005



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Project: NightHawk
Report Date: September 04, 2019

Page: 6 of 6

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001834.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1656576	Drill Core	1.99	0.009
1656577	Drill Core	1.25	0.007
1656578	Drill Core	2.77	0.008



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Project: NightHawk
Report Date: September 04, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001834.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1656459	Drill Core	1.01 0.011
REP 1656459	QC	0.010
1656461	Drill Core	1.25 0.005
REP 1656461	QC	<0.005
1656491	Drill Core	1.84 0.011
REP 1656491	QC	0.008
Core Reject Duplicates		
1656466	Drill Core	1.28 0.149
DUP 1656466	QC	0.191
1656534	Drill Core	2.41 0.056
DUP 1656534	QC	0.049
1656568	Drill Core	1.41 0.037
DUP 1656568	QC	0.057
Reference Materials		
STD OXC145	Standard	0.202
STD OXC145	Standard	0.201
STD OXC145	Standard	0.205
STD OXC145	Standard	0.202
STD OXC145	Standard	0.211
STD OXH139	Standard	1.320
STD OXH139	Standard	1.291
STD OXH139	Standard	1.267
STD OXH139	Standard	1.309
STD OXH139	Standard	1.271
STD OXN134	Standard	7.218
STD OXN134	Standard	7.630
STD OXN134	Standard	7.678
STD OXN134	Standard	7.661



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Project: NightHawk
Report Date: September 04, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001834.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
STD OXN134	Standard		7.376
STD OXC145	Expected		0.212
STD OXN134	Expected		7.667
STD OXH139	Expected		1.312
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.008
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.006
BLK	Blank		0.006
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 19, 2019
Report Date: September 04, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19001836.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-19-035
P.O. Number: 4500104625
Number of Samples: 97

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	92	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	97	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	97	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30	Completed	TIM

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: NightHawk
Report Date: September 04, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001836.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
1656359	Drill Core	2.53	0.011
1656360	Pulp	0.07	0.341
1656361	Drill Core	1.84	0.005
1656362	Drill Core	1.70	0.080
1656363	Drill Core	2.62	8.873
1656364	Drill Core	2.16	0.203
1656365	Drill Core	2.84	0.819
1656366	Drill Core	2.12	0.640
1656367	Drill Core	3.00	0.555
1656368	Drill Core	2.34	0.056
1656369	Drill Core	2.42	0.318
1656370	Drill Core	0.46	0.008
1656371	Drill Core	2.10	0.191
1656372	Drill Core	1.90	0.356
1656373	Drill Core	1.99	0.595
1656374	Drill Core	1.22	0.021
1656375	Drill Core	1.62	0.045
1656376	Drill Core	2.38	4.066
1656377	Drill Core	2.46	0.315
1656378	Drill Core	0.83	0.627
1656379	Drill Core	0.57	1.800
1656380	Pulp	0.07	0.860
1656381	Drill Core	2.34	3.315
1656382	Drill Core	1.93	0.427
1656383	Drill Core	1.28	0.032
1656384	Drill Core	1.75	0.261
1656385	Drill Core	2.31	2.035
1656386	Drill Core	2.29	0.447
1656387	Drill Core	2.59	0.063
1656388	Drill Core	1.77	0.101



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Project: NightHawk
Report Date: September 04, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001836.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
1656389	Drill Core	1.57	1.775
1656390	Drill Core	0.32	0.007
1656391	Drill Core	2.24	0.196
1656392	Drill Core	2.37	0.503
1656393	Drill Core	1.99	0.056
1656394	Drill Core	2.25	0.188
1656395	Drill Core	2.20	0.065
1656396	Drill Core	2.19	0.199
1656397	Drill Core	2.57	5.324
1656398	Drill Core	2.46	0.464
1656399	Drill Core	1.92	1.575
1656400	Pulp	0.07	2.950
1656401	Drill Core	1.26	0.278
1656402	Drill Core	1.03	5.722
1656403	Drill Core	1.45	0.081
1656404	Drill Core	2.00	0.037
1656405	Drill Core	1.74	>10 186.5
1656406	Drill Core	2.78	0.435
1656407	Drill Core	3.51	1.668
1656408	Drill Core	3.51	0.225
1656409	Drill Core	3.24	0.349
1656410	Drill Core	0.61	0.009
1656411	Drill Core	2.95	0.109
1656412	Drill Core	3.27	1.696
1656413	Drill Core	2.22	0.380
1656414	Drill Core	2.14	0.032
1656415	Drill Core	2.04	0.539
1656416	Drill Core	3.52	0.025
1656417	Drill Core	0.65	0.256
1656418	Drill Core	1.81	<0.005



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Project: NightHawk
Report Date: September 04, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001836.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
1656419	Drill Core	2.42	0.070
1656420	Pulp	0.07	0.332
1656421	Drill Core	2.08	0.265
1656422	Drill Core	2.37	0.943
1656423	Drill Core	2.40	0.550
1656424	Drill Core	2.01	0.015
1656425	Drill Core	2.23	<0.005
1656426	Drill Core	2.20	0.010
1656427	Drill Core	1.84	0.299
1656428	Drill Core	3.28	0.014
1656429	Drill Core	3.77	0.007
1656430	Drill Core	0.78	<0.005
1656431	Drill Core	3.41	0.007
1656432	Drill Core	2.85	0.010
1656433	Drill Core	3.46	0.008
1656434	Drill Core	2.16	0.017
1656435	Drill Core	1.58	<0.005
1656436	Drill Core	1.44	0.023
1656437	Drill Core	2.13	0.013
1656438	Drill Core	2.16	0.032
1656439	Drill Core	1.15	0.005
1656440	Pulp	0.07	0.876
1656441	Drill Core	1.40	0.029
1656442	Drill Core	0.69	0.009
1656443	Drill Core	0.85	0.007
1656444	Drill Core	1.86	<0.005
1656445	Drill Core	1.92	<0.005
1656446	Drill Core	0.90	<0.005
1656447	Drill Core	2.95	0.005
1656448	Drill Core	2.69	<0.005



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Project: NightHawk
Report Date: September 04, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001836.1

	Method	WGHT	FA430	FA530
Analyte		Wgt	Au	Au
Unit		kg	ppm	gm/t
MDL		0.01	0.005	0.9
1656449	Drill Core	2.54	<0.005	
1656450	Drill Core	0.87	0.009	
1656451	Drill Core	0.85	<0.005	
1656452	Drill Core	1.51	<0.005	
1656453	Drill Core	1.68	<0.005	
1656454	Drill Core	2.44	<0.005	
1656455	Drill Core	2.71	<0.005	



Bureau Veritas Commodities Canada Ltd.
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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 04, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001836.1

Method	WGHT	FA430	FA530
Analyte	Wgt	Au	Au
Unit	kg	ppm	gm/t
MDL	0.01	0.005	0.9
Pulp Duplicates			
1656372	Drill Core	1.90	0.356
REP 1656372	QC		0.322
1656426	Drill Core	2.20	0.010
REP 1656426	QC		<0.005
REP 1656446	QC		<0.005
Core Reject Duplicates			
1656378	Drill Core	0.83	0.627
DUP 1656378	QC		0.733
1656412	Drill Core	3.27	1.696
DUP 1656412	QC		2.977
1656446	Drill Core	0.90	<0.005
DUP 1656446	QC		<0.005
Reference Materials			
STD OXC145	Standard		0.202
STD OXC145	Standard		0.208
STD OXC145	Standard		0.204
STD OXC145	Standard		0.211
STD OXH139	Standard		1.309
STD OXH139	Standard		1.290
STD OXH139	Standard		1.329
STD OXH139	Standard		1.271
STD OXN134	Standard		7.661
STD OXN134	Standard		7.677
STD OXN134	Standard		7.757
STD OXN134	Standard		7.376
STD OXP116	Standard		15.5
STD OXQ90	Standard		25.4
STD OXQ90	Standard		25.2



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 04, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001836.1

		WGHT	FA430	FA530
		Wgt	Au	Au
		kg	ppm	gm/t
		0.01	0.005	0.9
STD OXP116	Expected			14.92
STD OXQ90	Expected			24.88
STD OXC145	Expected		0.212	
STD OXN134	Expected		7.667	
STD OXH139	Expected		1.312	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank		0.005	
BLK	Blank		<0.005	
BLK	Blank		<0.005	
BLK	Blank			<0.9
BLK	Blank		0.006	
BLK	Blank		0.006	
Prep Wash				
ROCK-TIM	Prep Blank		<0.005	
ROCK-TIM	Prep Blank		<0.005	



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 28, 2019
Report Date: September 11, 2019
Page: 1 of 3

CERTIFICATE OF ANALYSIS

TIM19001888.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-19-034
P.O. Number: 4500104625
Number of Samples: 36

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	34	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	2	Sort, label and box pulps			TIM
FA430	36	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	36	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



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489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 11, 2019

Page: 2 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001888.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656256	Drill Core	2.78 0.010
1656257	Drill Core	2.43 0.393
1656258	Drill Core	1.74 0.524
1656259	Drill Core	1.49 1.404
1656260	Pulp	0.07 2.995
1656261	Drill Core	1.68 3.269
1656262	Drill Core	1.51 0.990
1656263	Drill Core	3.12 0.294
1656264	Drill Core	2.51 0.293
1656265	Drill Core	2.23 0.093
1656266	Drill Core	2.38 0.017
1656267	Drill Core	2.61 0.017
1656268	Drill Core	1.86 0.040
1656269	Drill Core	3.00 0.126
1656270	Drill Core	0.76 0.005
1656271	Drill Core	1.21 0.534
1656272	Drill Core	2.59 0.073
1656273	Drill Core	2.67 0.198
1656274	Drill Core	1.20 1.586
1656275	Drill Core	1.31 0.899
1656276	Drill Core	1.25 2.694
1656277	Drill Core	1.44 1.097
1656278	Drill Core	1.49 1.187
1656279	Drill Core	2.03 0.128
1656280	Pulp	0.07 0.332
1656281	Drill Core	2.85 0.080
1656282	Drill Core	1.73 0.067
1656283	Drill Core	2.50 0.013
1656284	Drill Core	2.04 0.033
1656285	Drill Core	3.31 0.023



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Project: NightHawk
Report Date: September 11, 2019

Page: 3 of 3

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001888.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1656286	Drill Core	2.88	0.024
1656287	Drill Core	2.21	0.153
1656288	Drill Core	2.53	0.587
1656289	Drill Core	1.44	5.210
1656290	Drill Core	1.00	0.007
1656291	Drill Core	1.50	0.936



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Project: NightHawk
Report Date: September 11, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001888.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1656267	Drill Core	2.61 0.017
REP 1656267	QC	0.010
1656281	Drill Core	2.85 0.080
REP 1656281	QC	0.061
REP 1656288	QC	0.647
Core Reject Duplicates		
1656288	Drill Core	2.53 0.587
DUP 1656288	QC	0.865
Reference Materials		
STD OXC145	Standard	0.212
STD OXC145	Standard	0.208
STD OXH139	Standard	1.321
STD OXH139	Standard	1.310
STD OXN134	Standard	7.784
STD OXN134	Standard	7.515
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
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Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 28, 2019
Report Date: September 17, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19001892.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-19-038
P.O. Number: 4500104625
Number of Samples: 103

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	98	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	103	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	103	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 17, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001892.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644552	Drill Core	0.94 0.018
1644553	Drill Core	0.97 0.022
1644554	Drill Core	3.11 0.056
1644555	Drill Core	2.39 0.050
1644556	Drill Core	2.67 0.012
1644557	Drill Core	1.83 0.026
1644558	Drill Core	1.57 0.019
1644559	Drill Core	0.84 0.072
1644560	Pulp	0.07 0.852
1644561	Drill Core	1.93 0.014
1644562	Drill Core	1.60 0.014
1644563	Drill Core	3.10 0.012
1644564	Drill Core	2.24 0.009
1644565	Drill Core	1.18 5.713
1644566	Drill Core	2.69 0.011
1644567	Drill Core	3.98 0.030
1644568	Drill Core	3.62 0.057
1644569	Drill Core	3.46 0.016
1644570	Drill Core	0.69 0.007
1644571	Drill Core	2.12 0.013
1644572	Drill Core	2.56 0.033
1644573	Drill Core	3.44 0.082
1644574	Drill Core	2.71 0.028
1644575	Drill Core	2.82 0.013
1644576	Drill Core	3.43 0.024
1644577	Drill Core	3.15 0.056
1644578	Drill Core	2.87 0.059
1644579	Drill Core	3.08 0.077
1644580	Pulp	0.07 3.053
1644581	Drill Core	2.14 2.479



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Project: NightHawk
Report Date: September 17, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001892.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644582	Drill Core	2.47 2.061
1644583	Drill Core	2.45 1.536
1644584	Drill Core	2.24 1.316
1644585	Drill Core	2.61 0.889
1644586	Drill Core	2.23 0.516
1644587	Drill Core	2.72 0.360
1644588	Drill Core	1.57 2.124
1644589	Drill Core	1.86 3.120
1644590	Drill Core	0.64 0.015
1644591	Drill Core	2.14 0.911
1644592	Drill Core	1.96 1.556
1644593	Drill Core	1.87 0.873
1644594	Drill Core	1.40 1.120
1644595	Drill Core	1.05 3.441
1644596	Drill Core	1.29 4.929
1644597	Drill Core	1.60 0.028
1644598	Drill Core	1.54 0.018
1644599	Drill Core	1.85 0.048
1644600	Pulp	0.07 0.335
1644601	Drill Core	1.70 0.027
1644602	Drill Core	1.69 0.020
1644603	Drill Core	1.49 0.140
1644604	Drill Core	1.25 0.035
1644605	Drill Core	1.61 0.036
1644606	Drill Core	1.74 0.012
1644607	Drill Core	1.60 0.011
1644608	Drill Core	1.80 0.116
1644609	Drill Core	1.16 0.011
1644610	Drill Core	0.86 0.012
1644611	Drill Core	0.88 0.006



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Project: NightHawk
Report Date: September 17, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001892.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644612	Drill Core	1.43 0.008
1644613	Drill Core	1.44 0.010
1644614	Drill Core	1.33 0.010
1644615	Drill Core	1.57 0.039
1644616	Drill Core	0.94 0.006
1644617	Drill Core	1.68 <0.005
1644618	Drill Core	1.18 0.012
1644619	Drill Core	1.50 0.008
1644620	Pulp	0.07 0.873
1644621	Drill Core	1.75 0.010
1644622	Drill Core	1.84 0.006
1644623	Drill Core	1.70 0.024
1644624	Drill Core	1.96 0.007
1644625	Drill Core	1.70 0.007
1644626	Drill Core	1.52 0.007
1644627	Drill Core	1.82 0.008
1644628	Drill Core	1.59 <0.005
1644629	Drill Core	1.92 <0.005
1644630	Drill Core	0.43 0.009
1644631	Drill Core	1.59 0.006
1644632	Drill Core	1.34 0.011
1644633	Drill Core	1.35 0.006
1644634	Drill Core	1.67 0.007
1644635	Drill Core	1.74 <0.005
1644636	Drill Core	1.67 0.006
1644637	Drill Core	1.73 0.006
1644638	Drill Core	1.73 0.006
1644639	Drill Core	1.76 0.013
1644640	Pulp	0.06 2.906
1644641	Drill Core	1.69 0.008



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 17, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001892.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644642	Drill Core	1.30 0.008
1644643	Drill Core	1.55 0.006
1644644	Drill Core	1.39 0.009
1644645	Drill Core	1.55 0.010
1644646	Drill Core	1.75 <0.005
1644647	Drill Core	1.86 0.006
1644648	Drill Core	1.61 0.008
1644649	Drill Core	1.64 0.009
1644650	Drill Core	0.85 0.006
1644651	Drill Core	1.31 0.070
1644652	Drill Core	1.55 0.033
1644653	Drill Core	1.65 0.343
1644654	Drill Core	1.70 0.061



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 17, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001892.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1644570	Drill Core	0.69 0.007
REP 1644570	QC	<0.005
Core Reject Duplicates		
1644552	Drill Core	0.94 0.018
DUP 1644552	QC	0.028
1644586	Drill Core	2.23 0.516
DUP 1644586	QC	0.379
1644654	Drill Core	1.70 0.061
DUP 1644654	QC	0.036
Reference Materials		
STD OXC145	Standard	0.208
STD OXC145	Standard	0.202
STD OXC145	Standard	0.212
STD OXC145	Standard	0.203
STD OXH139	Standard	1.310
STD OXH139	Standard	1.280
STD OXH139	Standard	1.264
STD OXH139	Standard	1.272
STD OXN134	Standard	7.515
STD OXN134	Standard	7.376
STD OXN134	Standard	7.453
STD OXN134	Standard	7.537
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: NightHawk
Report Date: September 17, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001892.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.006
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
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Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 28, 2019
Report Date: September 17, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001893.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-19-038
P.O. Number: 4500104625
Number of Samples: 82

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	78	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	4	Sort, label and box pulps			TIM
FA430	82	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	82	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



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Project: NightHawk
Report Date: September 17, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001893.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644655	Drill Core	1.43 0.016
1644656	Drill Core	1.85 0.016
1644657	Drill Core	1.15 0.010
1644658	Drill Core	1.02 0.010
1644659	Drill Core	1.21 0.024
1644660	Pulp	0.07 0.336
1644661	Drill Core	1.32 0.009
1644662	Drill Core	1.83 0.013
1644663	Drill Core	1.64 0.005
1644664	Drill Core	1.61 <0.005
1644665	Drill Core	1.14 0.006
1644666	Drill Core	1.54 0.006
1644667	Drill Core	1.37 0.007
1644668	Drill Core	1.48 <0.005
1644669	Drill Core	1.20 0.006
1644670	Drill Core	0.75 0.008
1644671	Drill Core	1.33 0.005
1644672	Drill Core	1.51 0.006
1644673	Drill Core	1.51 0.008
1644674	Drill Core	1.66 0.006
1644675	Drill Core	1.51 0.008
1644676	Drill Core	1.49 0.010
1644677	Drill Core	1.57 0.007
1644678	Drill Core	1.88 0.007
1644679	Drill Core	1.55 0.010
1644680	Pulp	0.06 0.884
1644681	Drill Core	1.60 <0.005
1644682	Drill Core	1.75 0.006
1644683	Drill Core	1.50 0.008
1644684	Drill Core	1.01 0.016



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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 17, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001893.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644685	Drill Core	1.59 0.010
1644686	Drill Core	1.41 0.016
1644687	Drill Core	1.18 0.006
1644688	Drill Core	1.71 0.006
1644689	Drill Core	1.13 0.014
1644690	Drill Core	0.71 0.009
1644691	Drill Core	1.44 0.006
1644692	Drill Core	1.34 <0.005
1644693	Drill Core	1.49 0.007
1644694	Drill Core	1.29 0.005
1644695	Drill Core	1.47 0.006
1644696	Drill Core	1.22 0.006
1644697	Drill Core	1.33 <0.005
1644698	Drill Core	1.27 <0.005
1644699	Drill Core	1.23 0.007
1644700	Pulp	0.07 2.965
1644701	Drill Core	1.30 0.007
1644702	Drill Core	1.36 0.006
1644703	Drill Core	1.41 0.009
1644704	Drill Core	1.38 0.006
1644705	Drill Core	1.42 <0.005
1644706	Drill Core	1.34 <0.005
1644707	Drill Core	1.33 0.005
1644708	Drill Core	1.83 0.008
1644709	Drill Core	1.46 <0.005
1644710	Drill Core	0.81 0.007
1644711	Drill Core	1.59 <0.005
1644712	Drill Core	1.28 0.006
1644713	Drill Core	1.58 0.006
1644714	Drill Core	1.26 0.006



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Report Date: September 17, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001893.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1644715	Drill Core	1.53 0.006
1644716	Drill Core	1.30 <0.005
1644717	Drill Core	1.75 <0.005
1644718	Drill Core	1.70 <0.005
1644719	Drill Core	1.66 0.005
1644720	Pulp	0.07 0.341
1644721	Drill Core	1.65 0.006
1644722	Drill Core	1.69 0.006
1644723	Drill Core	2.01 0.005
1644724	Drill Core	1.76 <0.005
1644725	Drill Core	1.63 0.008
1644726	Drill Core	2.14 0.012
1644727	Drill Core	1.61 0.006
1644728	Drill Core	1.71 0.006
1644729	Drill Core	1.68 <0.005
1644730	Drill Core	0.73 <0.005
1644731	Drill Core	1.17 <0.005
1644732	Drill Core	1.67 0.006
1644733	Drill Core	1.93 0.005
1644734	Drill Core	1.72 0.005
1644735	Drill Core	1.83 0.008
1644736	Drill Core	1.68 <0.005



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Project: NightHawk
Report Date: September 17, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001893.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1644672	Drill Core	1.51 0.006
REP 1644672	QC	0.005
1644716	Drill Core	1.30 <0.005
REP 1644716	QC	0.007
1644736	Drill Core	1.68 <0.005
REP 1644736	QC	<0.005
Core Reject Duplicates		
1644655	Drill Core	1.43 0.016
DUP 1644655	QC	0.009
1644689	Drill Core	1.13 0.014
DUP 1644689	QC	0.012
1644723	Drill Core	2.01 0.005
DUP 1644723	QC	0.006
Reference Materials		
STD OXC145	Standard	0.212
STD OXC145	Standard	0.212
STD OXC145	Standard	0.206
STD OXH139	Standard	1.264
STD OXH139	Standard	1.285
STD OXH139	Standard	1.285
STD OXN134	Standard	7.453
STD OXN134	Standard	7.622
STD OXN134	Standard	7.500
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	0.006



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Project: NightHawk
Report Date: September 17, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001893.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.005
BLK	Blank		0.007
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 30, 2019
Report Date: September 26, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19001900.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-19-034
P.O. Number: 4500104625
Number of Samples: 67

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	64	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	3	Sort, label and box pulps			TIM
FA430	67	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	67	Environmental disposal charge-Fire assay lead waste			TIM
FA530	1	Lead collection fire assay 30G fusion - Grav finish	30	Completed	TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke
David Schonfeldt


MAY LAI
Data Validation Specialist



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Project: NightHawk
Report Date: September 26, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001900.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1656292	Drill Core	1.23	2.364
1656293	Drill Core	0.86	3.842
1656294	Drill Core	2.50	0.636
1656295	Drill Core	0.93	0.208
1656296	Drill Core	2.10	1.271
1656297	Drill Core	1.00	2.500
1656298	Drill Core	1.96	0.734
1656299	Drill Core	1.47	0.266
1656300	Pulp	0.07	0.859
1656301	Drill Core	2.84	0.029
1656302	Drill Core	2.43	0.140
1656303	Drill Core	2.48	0.542
1656304	Drill Core	2.36	0.501
1656305	Drill Core	1.88	0.205
1656306	Drill Core	1.26	0.126
1656307	Drill Core	1.78	0.314
1656308	Drill Core	2.07	0.285
1656309	Drill Core	2.57	0.230
1656310	Drill Core	0.91	<0.005
1656311	Drill Core	1.24	0.730
1656312	Drill Core	3.19	0.899
1656313	Drill Core	1.78	0.267
1656314	Drill Core	2.64	0.552
1656315	Drill Core	1.30	0.230
1656316	Drill Core	1.69	0.069
1656317	Drill Core	2.03	0.966
1656318	Drill Core	2.65	0.129
1656319	Drill Core	1.18	0.118
1656320	Pulp	0.07	2.585
1656321	Drill Core	1.19	0.308



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Project: NightHawk
Report Date: September 26, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001900.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656322	Drill Core	2.71 0.222
1656323	Drill Core	2.56 0.023
1656324	Drill Core	2.32 0.209
1656325	Drill Core	1.40 0.743
1656326	Drill Core	2.59 0.403
1656327	Drill Core	1.58 0.894
1656328	Drill Core	1.66 1.038
1656329	Drill Core	2.59 0.885
1656330	Drill Core	0.89 0.007
1656331	Drill Core	2.49 0.478
1656332	Drill Core	3.28 0.345
1656333	Drill Core	2.88 0.506
1656334	Drill Core	1.30 1.066
1656335	Drill Core	1.29 0.706
1656336	Drill Core	1.14 3.010
1656337	Drill Core	2.45 0.342
1656338	Drill Core	1.84 2.322
1656339	Drill Core	2.87 0.679
1656340	Pulp	0.07 2.931
1656341	Drill Core	2.45 0.738
1656342	Drill Core	2.20 0.104
1656343	Drill Core	2.28 0.059
1656344	Drill Core	2.54 0.006
1656345	Drill Core	1.61 0.031
1656346	Drill Core	1.32 <0.005
1656347	Drill Core	2.86 0.006
1656348	Drill Core	1.49 <0.005
1656349	Drill Core	3.32 <0.005
1656350	Drill Core	0.79 0.007
1656351	Drill Core	4.38 <0.005



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 26, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001900.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1656352	Drill Core	2.85	<0.005
1656353	Drill Core	1.19	<0.005
1656354	Drill Core	1.98	<0.005
1656355	Drill Core	2.07	<0.005
1656356	Drill Core	2.51	<0.005
1656357	Drill Core	1.12	<0.005
1656358	Drill Core	2.65	<0.005



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Project: NightHawk
Report Date: September 26, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001900.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1656328	Drill Core	1.66 1.038
REP 1656328	QC	1.029
1656350	Drill Core	0.79 0.007
REP 1656350	QC	0.009
Core Reject Duplicates		
1656298	Drill Core	1.96 0.734
DUP 1656298	QC	1.087
1656332	Drill Core	3.28 0.345
DUP 1656332	QC	0.408
Reference Materials		
STD OXC145	Standard	0.206
STD OXC145	Standard	0.207
STD OXC145	Standard	0.206
STD OXC145	Standard	0.210
STD OXH139	Standard	1.260
STD OXH139	Standard	1.268
STD OXH139	Standard	1.297
STD OXH139	Standard	1.287
STD OXN134	Standard	7.669
STD OXN134	Standard	7.677
STD OXN134	Standard	7.482
STD OXN134	Standard	7.648
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: NightHawk
Report Date: September 26, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001900.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		0.006
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: August 30, 2019
Report Date: September 17, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19001901.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH-19-039
P.O. Number: 4500104625
Number of Samples: 120

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

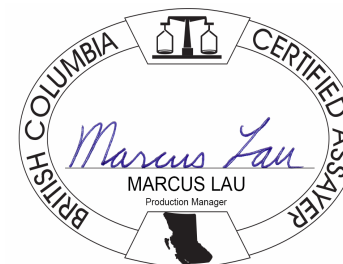
Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	114	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	6	Sort, label and box pulps			TIM
FA430	120	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	120	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: NightHawk
Report Date: September 17, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001901.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656682	Drill Core	0.65 0.014
1656683	Drill Core	1.20 0.007
1656684	Drill Core	1.34 0.022
1656685	Drill Core	0.93 0.050
1656686	Drill Core	1.03 0.052
1656687	Drill Core	0.84 0.043
1656688	Drill Core	1.36 0.020
1656689	Drill Core	1.03 0.037
1656690	Drill Core	0.85 0.006
1656691	Drill Core	0.53 0.028
1656692	Drill Core	1.14 0.010
1656693	Drill Core	0.76 0.030
1656694	Drill Core	0.68 0.037
1656695	Drill Core	1.52 0.008
1656696	Drill Core	0.61 0.021
1656697	Drill Core	0.72 0.028
1656698	Drill Core	0.67 0.005
1656699	Drill Core	1.42 0.008
1656700	Pulp	0.06 2.931
1656701	Drill Core	1.21 0.081
1656702	Drill Core	1.04 0.010
1656703	Drill Core	1.45 0.055
1656704	Drill Core	1.50 0.008
1656705	Drill Core	1.38 0.014
1656706	Drill Core	0.86 0.017
1656707	Drill Core	0.90 0.009
1656708	Drill Core	1.38 0.013
1656709	Drill Core	0.71 0.009
1656710	Drill Core	0.77 0.006
1656711	Drill Core	0.75 0.016



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Project: NightHawk
Report Date: September 17, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001901.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656712	Drill Core	1.54 0.126
1656713	Drill Core	1.37 0.006
1656714	Drill Core	1.06 0.009
1656715	Drill Core	1.72 0.017
1656716	Drill Core	1.47 0.037
1656717	Drill Core	1.07 0.009
1656718	Drill Core	1.46 0.014
1656719	Drill Core	1.08 0.006
1656720	Pulp	0.07 0.327
1656721	Drill Core	0.46 0.016
1656722	Drill Core	0.53 0.011
1656723	Drill Core	0.87 0.050
1656724	Drill Core	1.20 0.005
1656725	Drill Core	0.75 0.006
1656726	Drill Core	1.03 0.017
1656727	Drill Core	1.53 0.005
1656728	Drill Core	1.29 0.006
1656729	Drill Core	1.12 0.009
1656730	Drill Core	0.69 0.008
1656731	Drill Core	1.22 0.010
1656732	Drill Core	0.68 0.035
1656733	Drill Core	0.63 0.009
1656734	Drill Core	0.66 0.011
1656735	Drill Core	1.53 0.016
1656736	Drill Core	0.83 0.020
1656737	Drill Core	1.01 0.018
1656738	Drill Core	0.70 0.038
1656739	Drill Core	1.47 0.015
1656740	Pulp	0.07 0.846
1656741	Drill Core	1.62 0.017



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Project: NightHawk
Report Date: September 17, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001901.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656742	Drill Core	1.14 0.011
1656743	Drill Core	1.04 0.013
1656744	Drill Core	1.16 0.016
1656745	Drill Core	1.71 0.015
1656746	Drill Core	1.45 0.054
1656747	Drill Core	1.56 0.014
1656748	Drill Core	1.36 0.026
1656749	Drill Core	0.46 0.012
1656750	Drill Core	0.88 <0.005
1656751	Drill Core	0.49 0.023
1656752	Drill Core	1.32 0.012
1656753	Drill Core	1.68 0.010
1656754	Drill Core	0.82 0.015
1656755	Drill Core	0.71 0.041
1656756	Drill Core	0.40 0.085
1656757	Drill Core	0.67 0.059
1656758	Drill Core	1.28 0.020
1656759	Drill Core	0.75 0.007
1656760	Pulp	0.07 2.973
1656761	Drill Core	1.82 0.063
1656762	Drill Core	0.98 0.012
1656763	Drill Core	0.60 0.010
1656764	Drill Core	0.75 0.006
1656765	Drill Core	0.68 0.007
1656766	Drill Core	1.00 0.017
1656767	Drill Core	1.31 0.010
1656768	Drill Core	1.03 0.059
1656769	Drill Core	1.13 0.016
1656770	Drill Core	0.88 <0.005
1656771	Drill Core	1.29 0.011



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Project: NightHawk
Report Date: September 17, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19001901.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656772	Drill Core	1.05 0.012
1656773	Drill Core	0.66 0.022
1656774	Drill Core	0.50 <0.005
1656775	Drill Core	1.34 0.014
1656776	Drill Core	1.33 0.011
1656777	Drill Core	1.09 0.005
1656778	Drill Core	0.90 0.015
1656779	Drill Core	0.88 <0.005
1656780	Pulp	0.07 0.341
1656781	Drill Core	1.22 <0.005
1656782	Drill Core	1.05 0.008
1656783	Drill Core	1.06 <0.005
1656784	Drill Core	0.90 <0.005
1656785	Drill Core	0.76 <0.005
1656786	Drill Core	1.37 <0.005
1656787	Drill Core	1.16 <0.005
1656788	Drill Core	1.43 <0.005
1656789	Drill Core	0.71 <0.005
1656790	Drill Core	0.78 0.006
1656791	Drill Core	0.86 <0.005
1656792	Drill Core	1.55 0.020
1656793	Drill Core	0.88 <0.005
1656794	Drill Core	1.40 <0.005
1656795	Drill Core	1.52 <0.005
1656796	Drill Core	1.39 0.008
1656797	Drill Core	1.38 <0.005
1656798	Drill Core	1.46 <0.005
1656799	Drill Core	0.96 <0.005
1656800	Pulp	0.07 0.868
1656801	Drill Core	1.46 <0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 17, 2019

Page: 1 of 1

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19001901.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1656729	Drill Core	1.12 0.009
REP 1656729	QC	0.007
1656747	Drill Core	1.56 0.014
REP 1656747	QC	0.012
Core Reject Duplicates		
1656706	Drill Core	0.86 0.017
DUP 1656706	QC	0.011
1656774	Drill Core	0.50 <0.005
DUP 1656774	QC	0.016
Reference Materials		
STD OXC145	Standard	0.207
STD OXC145	Standard	0.205
STD OXH139	Standard	1.268
STD OXH139	Standard	1.310
STD OXN134	Standard	7.677
STD OXN134	Standard	7.605
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
Prep Wash		
ROCK-TIM	Prep Blank	<0.005
ROCK-TIM	Prep Blank	<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: September 11, 2019
Report Date: September 25, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19002054.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1903902
P.O. Number: 4500104625
Number of Samples: 120

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke
David Schonfeldt

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	114	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	6	Sort, label and box pulps			TIM
FA430	120	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	120	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: NightHawk
Report Date: September 25, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002054.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656802	Drill Core	0.88 <0.005
1656803	Drill Core	0.88 0.016
1656804	Drill Core	1.10 <0.005
1656805	Drill Core	1.27 <0.005
1656806	Drill Core	1.63 <0.005
1656807	Drill Core	1.18 0.010
1656808	Drill Core	1.42 <0.005
1656809	Drill Core	1.30 <0.005
1656810	Drill Core	0.75 <0.005
1656811	Drill Core	1.00 <0.005
1656812	Drill Core	1.35 <0.005
1656813	Drill Core	1.42 <0.005
1656814	Drill Core	0.87 <0.005
1656815	Drill Core	1.88 <0.005
1656816	Drill Core	1.13 <0.005
1656817	Drill Core	1.56 <0.005
1656818	Drill Core	0.91 <0.005
1656819	Drill Core	0.98 <0.005
1656820	Pulp	0.07 2.941
1656821	Drill Core	1.63 <0.005
1656822	Drill Core	1.18 <0.005
1656823	Drill Core	1.79 <0.005
1656824	Drill Core	1.04 <0.005
1656825	Drill Core	1.13 <0.005
1656826	Drill Core	1.37 <0.005
1656827	Drill Core	3.32 <0.005
1656828	Drill Core	1.68 <0.005
1656829	Drill Core	1.48 <0.005
1656830	Drill Core	0.89 <0.005
1656831	Drill Core	1.22 <0.005



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Project: NightHawk
Report Date: September 25, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002054.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656832	Drill Core	1.50 0.006
1656833	Drill Core	1.47 <0.005
1656834	Drill Core	1.46 <0.005
1656835	Drill Core	1.28 <0.005
1656836	Drill Core	1.51 0.006
1656837	Drill Core	0.93 <0.005
1656838	Drill Core	0.62 <0.005
1656839	Drill Core	1.06 <0.005
1656840	Pulp	0.07 0.333
1656841	Drill Core	0.93 <0.005
1656842	Drill Core	0.69 <0.005
1656843	Drill Core	1.41 <0.005
1656844	Drill Core	1.62 <0.005
1656845	Drill Core	1.36 <0.005
1656846	Drill Core	0.76 <0.005
1656847	Drill Core	1.18 <0.005
1656848	Drill Core	1.26 <0.005
1656849	Drill Core	1.62 <0.005
1656850	Drill Core	0.86 <0.005
1656851	Drill Core	0.58 <0.005
1656852	Drill Core	0.77 <0.005
1656853	Drill Core	0.76 0.005
1656854	Drill Core	0.73 <0.005
1656855	Drill Core	1.45 <0.005
1656856	Drill Core	1.39 <0.005
1656857	Drill Core	1.25 <0.005
1656858	Drill Core	1.61 <0.005
1656859	Drill Core	0.98 <0.005
1656860	Pulp	0.07 0.845
1656861	Drill Core	0.82 <0.005



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Project: NightHawk
Report Date: September 25, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002054.1

Method	Analyte	WGHT	FA430
		Wgt	Au
Unit		kg	ppm
MDL		0.01	0.005
1656862	Drill Core	1.44	<0.005
1656863	Drill Core	1.19	0.006
1656864	Drill Core	0.55	<0.005
1656865	Drill Core	1.29	<0.005
1656866	Drill Core	1.38	0.006
1656867	Drill Core	1.52	<0.005
1656868	Drill Core	1.37	<0.005
1656869	Drill Core	1.16	<0.005
1656870	Drill Core	0.39	<0.005
1656871	Drill Core	0.32	<0.005
1656872	Drill Core	1.48	0.011
1656873	Drill Core	1.15	0.008
1656874	Drill Core	0.66	0.011
1656875	Drill Core	1.45	0.045
1656876	Drill Core	0.67	0.280
1656877	Drill Core	1.52	<0.005
1656878	Drill Core	1.02	<0.005
1656879	Drill Core	1.75	0.055
1656880	Pulp	0.07	2.958
1656881	Drill Core	1.24	0.011
1656882	Drill Core	1.19	<0.005
1656883	Drill Core	1.17	0.013
1656884	Drill Core	1.01	0.006
1656885	Drill Core	1.20	0.005
1656886	Drill Core	1.52	<0.005
1656887	Drill Core	1.46	<0.005
1656888	Drill Core	1.43	0.112
1656889	Drill Core	0.80	0.042
1656890	Drill Core	0.59	<0.005
1656891	Drill Core	0.68	0.015



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Project: NightHawk
Report Date: September 25, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002054.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656892	Drill Core	1.30 0.011
1656893	Drill Core	1.15 0.012
1656894	Drill Core	0.84 0.012
1656895	Drill Core	1.57 0.008
1656896	Drill Core	1.59 0.013
1656897	Drill Core	0.96 0.030
1656898	Drill Core	1.08 0.036
1656899	Drill Core	0.82 0.267
1656900	Pulp	0.07 0.330
1656901	Drill Core	0.96 0.089
1656902	Drill Core	0.89 0.022
1656903	Drill Core	0.88 0.032
1656904	Drill Core	1.43 0.126
1656905	Drill Core	1.40 0.008
1656906	Drill Core	1.45 0.019
1656907	Drill Core	0.57 0.014
1656908	Drill Core	1.36 0.008
1656909	Drill Core	1.22 <0.005
1656910	Drill Core	0.62 0.010
1656911	Drill Core	1.37 0.006
1656912	Drill Core	1.59 0.008
1656913	Drill Core	1.46 <0.005
1656914	Drill Core	0.90 0.007
1656915	Drill Core	1.07 0.005
1656916	Drill Core	1.57 0.005
1656917	Drill Core	1.22 <0.005
1656918	Drill Core	1.41 0.005
1656919	Drill Core	1.62 0.008
1656920	Pulp	0.06 0.885
1656921	Drill Core	1.91 0.015



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Project: NightHawk
Report Date: September 25, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19002054.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1656892	Drill Core	1.30 0.011
REP 1656892	QC	0.011
REP 1656896	QC	0.016
Core Reject Duplicates		
1656828	Drill Core	1.68 <0.005
DUP 1656828	QC	<0.005
1656862	Drill Core	1.44 <0.005
DUP 1656862	QC	0.007
1656896	Drill Core	1.59 0.013
DUP 1656896	QC	0.012
Reference Materials		
STD OXC145	Standard	0.203
STD OXC145	Standard	0.208
STD OXC145	Standard	0.211
STD OXH139	Standard	1.270
STD OXH139	Standard	1.297
STD OXH139	Standard	1.290
STD OXN134	Standard	7.402
STD OXN134	Standard	7.292
STD OXN134	Standard	7.267
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Project: NightHawk
Report Date: September 25, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19002054.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: September 11, 2019
Report Date: September 26, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19002055.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1903903
P.O. Number: 4500104625
Number of Samples: 107

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	102	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	107	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	107	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke



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*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 26, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002055.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656922	Drill Core	0.89 0.157
1656923	Drill Core	0.96 0.014
1656924	Drill Core	1.41 0.017
1656925	Drill Core	1.33 0.029
1656926	Drill Core	1.12 0.137
1656927	Drill Core	1.37 0.015
1656928	Drill Core	2.09 0.009
1656929	Drill Core	0.97 0.009
1656930	Drill Core	0.42 0.009
1656931	Drill Core	1.17 0.006
1656932	Drill Core	1.69 0.014
1656933	Drill Core	1.67 0.008
1656934	Drill Core	1.39 0.012
1656935	Drill Core	1.84 0.073
1656936	Drill Core	1.56 0.024
1656937	Drill Core	1.61 <0.005
1656938	Drill Core	1.92 0.006
1656939	Drill Core	1.62 0.012
1656940	Pulp	0.07 2.960
1656941	Drill Core	1.52 0.012
1656942	Drill Core	0.86 0.145
1656943	Drill Core	1.39 <0.005
1656944	Drill Core	1.11 0.005
1656945	Drill Core	1.30 0.007
1656946	Drill Core	1.53 <0.005
1656947	Drill Core	1.48 0.006
1656948	Drill Core	1.57 0.074
1656949	Drill Core	1.40 0.078
1656950	Drill Core	0.73 0.007
1656951	Drill Core	1.40 0.046



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Project: NightHawk
Report Date: September 26, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002055.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656952	Drill Core	1.59 0.078
1656953	Drill Core	1.41 0.080
1656954	Drill Core	2.36 0.010
1656955	Drill Core	2.26 0.008
1656956	Drill Core	1.58 0.039
1656957	Drill Core	1.30 <0.005
1656958	Drill Core	1.39 <0.005
1656959	Drill Core	0.99 <0.005
1656960	Pulp	0.06 0.323
1656961	Drill Core	1.05 0.006
1656962	Drill Core	1.21 0.108
1656963	Drill Core	1.26 <0.005
1656964	Drill Core	2.06 0.010
1656965	Drill Core	2.05 0.012
1656966	Drill Core	1.47 0.042
1656967	Drill Core	1.55 0.013
1656968	Drill Core	1.50 0.022
1656969	Drill Core	1.39 0.038
1656970	Drill Core	1.00 <0.005
1656971	Drill Core	1.77 0.013
1656972	Drill Core	1.37 0.006
1656973	Drill Core	1.00 0.040
1656974	Drill Core	1.70 0.008
1656975	Drill Core	1.99 0.012
1656976	Drill Core	1.64 0.015
1656977	Drill Core	1.50 0.018
1656978	Drill Core	1.52 0.022
1656979	Drill Core	1.62 0.030
1656980	Pulp	0.06 0.857
1656981	Drill Core	1.56 0.010



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Project: NightHawk
Report Date: September 26, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002055.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1656982	Drill Core	1.37 0.017
1656983	Drill Core	2.38 0.054
1656984	Drill Core	2.38 0.016
1656985	Drill Core	2.37 0.008
1656986	Drill Core	2.34 0.016
1656987	Drill Core	2.15 0.021
1656988	Drill Core	0.67 0.017
1656989	Drill Core	1.32 0.021
1656990	Drill Core	0.75 0.007
1656991	Drill Core	1.28 0.010
1656992	Drill Core	2.31 0.009
1656993	Drill Core	2.34 0.040
1656994	Drill Core	1.79 0.013
1656995	Drill Core	1.84 0.006
1656996	Drill Core	1.23 0.013
1656997	Drill Core	1.96 0.013
1656998	Drill Core	1.35 0.019
1656999	Drill Core	1.27 <0.005
1657000	Pulp	0.07 2.935
1645501	Drill Core	2.35 0.008
1645502	Drill Core	2.27 <0.005
1645503	Drill Core	2.33 0.014
1645504	Drill Core	2.37 0.021
1645505	Drill Core	1.50 0.005
1645506	Drill Core	1.49 0.009
1645507	Drill Core	1.62 0.011
1645508	Drill Core	2.10 0.006
1645509	Drill Core	2.23 0.007
1645510	Drill Core	0.89 0.006
1645511	Drill Core	1.46 0.010



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Project: NightHawk
Report Date: September 26, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002055.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1645512	Drill Core	0.76	0.009
1645513	Drill Core	1.34	0.012
1645514	Drill Core	1.37	0.016
1645515	Drill Core	2.36	0.012
1645516	Drill Core	2.33	0.041
1645517	Drill Core	1.56	0.034
1645518	Drill Core	1.42	0.065
1645519	Drill Core	0.86	0.040
1645520	Pulp	0.06	0.339
1645521	Drill Core	1.59	0.012
1645522	Drill Core	1.11	0.034
1645523	Drill Core	1.40	0.024
1645524	Drill Core	1.38	0.012
1645525	Drill Core	2.25	0.032
1645526	Drill Core	2.16	0.008
1645527	Drill Core	2.62	0.010
1645528	Drill Core	2.40	0.006



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Project: NightHawk
Report Date: September 26, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19002055.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1656947	Drill Core	1.48 0.006
REP 1656947	QC	0.005
1656958	Drill Core	1.39 <0.005
REP 1656958	QC	<0.005
REP 1656988	QC	0.029
Core Reject Duplicates		
1656954	Drill Core	2.36 0.010
DUP 1656954	QC	0.008
1656988	Drill Core	0.67 0.017
DUP 1656988	QC	0.024
1645522	Drill Core	1.11 0.034
DUP 1645522	QC	0.026
Reference Materials		
STD OXC145	Standard	0.208
STD OXC145	Standard	0.210
STD OXC145	Standard	0.210
STD OXH139	Standard	1.297
STD OXH139	Standard	1.293
STD OXH139	Standard	1.287
STD OXN134	Standard	7.292
STD OXN134	Standard	7.492
STD OXN134	Standard	7.648
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312
BLK	Blank	<0.005
BLK	Blank	<0.005
BLK	Blank	<0.005



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Canada

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Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: September 26, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19002055.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: September 20, 2019
Report Date: October 08, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

TIM19002088.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1905202
P.O. Number: 4500104625
Number of Samples: 105

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	100	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	105	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	105	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke
David Schonfeldt



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*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 08, 2019

Page: 2 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002088.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1663091	Drill Core	2.27 0.011
1663092	Drill Core	2.51 0.013
1663093	Drill Core	2.07 0.008
1663094	Drill Core	2.87 0.085
1663095	Drill Core	3.43 0.013
1663096	Drill Core	2.51 0.014
1663097	Drill Core	2.22 0.034
1663098	Drill Core	1.91 0.074
1663099	Drill Core	3.36 0.043
1663100	Pulp	0.07 0.334
1663101	Drill Core	3.12 0.008
1663102	Drill Core	2.24 0.010
1663103	Drill Core	2.20 0.019
1663104	Drill Core	2.10 0.014
1663105	Drill Core	2.06 0.011
1663106	Drill Core	2.58 0.007
1663107	Drill Core	2.05 0.006
1663108	Drill Core	3.32 0.011
1663109	Drill Core	3.31 0.013
1663110	Drill Core	0.93 0.006
1663111	Drill Core	2.22 0.010
1663112	Drill Core	2.07 0.010
1663113	Drill Core	1.97 0.006
1663114	Drill Core	1.20 0.007
1663115	Drill Core	2.55 0.040
1663116	Drill Core	2.35 0.007
1663117	Drill Core	3.05 0.007
1663118	Drill Core	3.14 0.013
1663119	Drill Core	3.12 0.010
1663120	Pulp	0.06 0.843



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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 08, 2019

Page: 3 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002088.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1663121	Drill Core	2.98 0.042
1663122	Drill Core	3.04 0.020
1663123	Drill Core	2.34 0.018
1663124	Drill Core	2.66 0.012
1663125	Drill Core	2.39 0.008
1663126	Drill Core	2.17 0.014
1663127	Drill Core	3.16 <0.005
1663128	Drill Core	3.44 <0.005
1663129	Drill Core	3.32 0.015
1663130	Drill Core	0.80 0.008
1663131	Drill Core	3.37 0.027
1663132	Drill Core	3.09 0.009
1663133	Drill Core	3.24 0.016
1663134	Drill Core	3.34 0.026
1663135	Drill Core	3.24 0.009
1663136	Drill Core	3.40 0.008
1663137	Drill Core	3.29 0.008
1663138	Drill Core	3.42 <0.005
1663139	Drill Core	3.13 0.015
1663140	Pulp	0.07 3.023
1663141	Drill Core	3.30 0.007
1663142	Drill Core	3.32 0.008
1663143	Drill Core	3.39 <0.005
1663144	Drill Core	3.42 0.006
1663145	Drill Core	2.08 0.010
1663146	Drill Core	2.35 <0.005
1663147	Drill Core	1.83 0.012
1663148	Drill Core	3.47 <0.005
1663149	Drill Core	3.37 <0.005
1663150	Drill Core	0.77 <0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 08, 2019

Page: 4 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002088.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1663151	Drill Core	3.33 0.007
1663152	Drill Core	3.20 0.041
1663153	Drill Core	3.28 0.013
1663154	Drill Core	3.32 0.007
1663155	Drill Core	2.30 <0.005
1663156	Drill Core	2.44 0.011
1663157	Drill Core	2.54 0.012
1663158	Drill Core	2.32 <0.005
1663159	Drill Core	3.01 0.006
1663160	Pulp	0.07 2.967
1663161	Drill Core	1.28 0.035
1663162	Drill Core	1.45 0.044
1663163	Drill Core	0.74 0.012
1663164	Drill Core	1.18 0.009
1663165	Drill Core	0.88 0.014
1663166	Drill Core	0.98 0.014
1663167	Drill Core	2.41 0.022
1663168	Drill Core	1.75 0.006
1663169	Drill Core	2.32 <0.005
1663170	Drill Core	0.78 0.008
1663171	Drill Core	2.29 <0.005
1663172	Drill Core	2.50 0.005
1663173	Drill Core	2.17 0.136
1663174	Drill Core	2.29 <0.005
1663175	Drill Core	2.27 0.006
1663176	Drill Core	2.18 0.045
1663177	Drill Core	2.27 <0.005
1663178	Drill Core	2.46 <0.005
1663179	Drill Core	0.95 0.076
1663180	Pulp	0.07 0.331



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Project: NightHawk
Report Date: October 08, 2019

Page: 5 of 5

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002088.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1663181	Drill Core	2.49 0.049
1663182	Drill Core	2.23 0.013
1663183	Drill Core	2.60 0.018
1663184	Drill Core	2.92 0.113
1663185	Drill Core	2.67 0.008
1663186	Drill Core	2.17 <0.005
1663187	Drill Core	2.25 0.010
1663188	Drill Core	2.14 0.008
1663189	Drill Core	3.35 0.121
1663190	Drill Core	0.86 <0.005
1663191	Drill Core	3.53 0.087
1663192	Drill Core	3.27 0.026
1663193	Drill Core	3.29 <0.005
1663194	Drill Core	2.30 0.010
1663195	Drill Core	2.65 <0.005



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Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 08, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19002088.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1663097	Drill Core	2.22 0.034
REP 1663097	QC	0.037
1663150	Drill Core	0.77 <0.005
REP 1663150	QC	<0.005
1663171	Drill Core	2.29 <0.005
REP 1663171	QC	<0.005
1663195	Drill Core	2.65 <0.005
REP 1663195	QC	<0.005
Core Reject Duplicates		
1663101	Drill Core	3.12 0.008
DUP 1663101	QC	0.007
1663135	Drill Core	3.24 0.009
DUP 1663135	QC	0.005
1663169	Drill Core	2.32 <0.005
DUP 1663169	QC	0.006
Reference Materials		
STD OXC145	Standard	0.203
STD OXC145	Standard	0.206
STD OXC145	Standard	0.205
STD OXC145	Standard	0.211
STD OXH139	Standard	1.303
STD OXH139	Standard	1.271
STD OXH139	Standard	1.244
STD OXH139	Standard	1.270
STD OXN134	Standard	7.332
STD OXN134	Standard	7.414
STD OXN134	Standard	7.618
STD OXN134	Standard	7.677



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Client: **Kirkland Lake Gold**
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 08, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19002088.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
STD OXC145 Expected			0.212
STD OXN134 Expected			7.667
STD OXH139 Expected			1.312
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.006
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



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Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Submitted By: Patti Perlock
Receiving Lab: Canada-Timmins
Received: September 27, 2019
Report Date: October 10, 2019
Page: 1 of 4

CERTIFICATE OF ANALYSIS

TIM19002102.1

CLIENT JOB INFORMATION

Project: NightHawk
Shipment ID: NH1905301
P.O. Number: 4500104625
Number of Samples: 85

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Kirkland Lake Gold
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0
Canada

CC: Ray Toews
Alex Thompson
Michael Clarke
David Schonfeldt

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	80	Crush, split and pulverize 250 g rock to 200 mesh			TIM
SLBHP	5	Sort, label and box pulps			TIM
FA430	85	Lead Collection Fire - Assay Fusion - AAS Finish	30	Completed	TIM
EN002	85	Environmental disposal charge-Fire assay lead waste			TIM

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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PHONE (604) 253-3158

Client: **Kirkland Lake Gold**
Exploration Office
489 MacDougal Ave.
Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 10, 2019

Page: 2 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002102.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1663196	Drill Core	2.24 0.585
1663197	Drill Core	2.20 0.318
1663198	Drill Core	1.90 0.215
1663199	Drill Core	2.17 0.049
1663200	Pulp	0.07 0.837
1663201	Drill Core	2.17 0.023
1663202	Drill Core	2.41 0.040
1663203	Drill Core	1.94 <0.005
1663204	Drill Core	2.03 0.014
1663205	Drill Core	2.69 0.073
1663206	Drill Core	3.61 0.107
1663207	Drill Core	3.07 0.019
1663208	Drill Core	2.41 <0.005
1663209	Drill Core	2.53 0.013
1663210	Drill Core	0.70 <0.005
1663211	Drill Core	1.36 <0.005
1663212	Drill Core	1.92 0.008
1663213	Drill Core	2.74 0.090
1663214	Drill Core	2.58 0.134
1663215	Drill Core	2.69 0.017
1663216	Drill Core	2.34 0.011
1663217	Drill Core	2.42 0.100
1663218	Drill Core	2.75 0.084
1663219	Drill Core	2.73 0.008
1663220	Pulp	0.06 2.924
1663221	Drill Core	2.47 0.076
1663222	Drill Core	2.54 0.063
1663223	Drill Core	3.26 0.015
1663224	Drill Core	1.29 0.005
1663225	Drill Core	1.19 0.007



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 10, 2019

Page: 3 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002102.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
1663226	Drill Core	1.64 0.008
1663227	Drill Core	1.31 0.009
1663228	Drill Core	2.27 0.010
1663229	Drill Core	2.61 0.020
1663230	Drill Core	0.68 0.007
1663231	Drill Core	2.64 0.017
1663232	Drill Core	2.52 0.019
1663233	Drill Core	2.52 0.011
1663234	Drill Core	3.93 0.010
1663235	Drill Core	4.26 0.019
1663236	Drill Core	4.15 0.015
1663237	Drill Core	3.94 0.011
1663238	Drill Core	3.92 0.021
1663239	Drill Core	3.87 0.013
1663240	Pulp	0.07 0.340
1663241	Drill Core	3.55 0.013
1663242	Drill Core	4.16 0.009
1663243	Drill Core	4.65 0.015
1663244	Drill Core	4.02 0.023
1663245	Drill Core	3.76 0.051
1663246	Drill Core	5.37 0.154
1663247	Drill Core	1.62 0.011
1663248	Drill Core	1.45 0.019
1663249	Drill Core	2.24 0.051
1663250	Drill Core	0.77 <0.005
1663251	Drill Core	1.80 0.011
1663252	Drill Core	1.32 0.099
1663253	Drill Core	2.67 0.037
1663254	Drill Core	1.47 0.007
1663255	Drill Core	1.51 0.017



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Project: NightHawk
Report Date: October 10, 2019

Page: 4 of 4

Part: 1 of 1

CERTIFICATE OF ANALYSIS

TIM19002102.1

	Method	WGHT	FA430
	Analyte	Wgt	Au
	Unit	kg	ppm
	MDL	0.01	0.005
1663256	Drill Core	1.50	0.009
1663257	Drill Core	2.60	0.035
1663258	Drill Core	2.70	0.015
1663259	Drill Core	0.90	<0.005
1663260	Pulp	0.07	0.836
1663261	Drill Core	1.67	0.013
1663262	Drill Core	1.92	0.027
1663263	Drill Core	2.02	<0.005
1663264	Drill Core	2.56	<0.005
1663265	Drill Core	1.40	<0.005
1663266	Drill Core	3.29	<0.005
1663267	Drill Core	3.08	0.033
1663268	Drill Core	1.67	0.011
1663269	Drill Core	3.17	0.017
1663270	Drill Core	0.89	<0.005
1663271	Drill Core	2.67	0.045
1663272	Drill Core	1.09	0.059
1663273	Drill Core	2.22	0.022
1663274	Drill Core	3.54	0.008
1663275	Drill Core	2.53	<0.005
1663276	Drill Core	1.16	<0.005
1663277	Drill Core	2.62	<0.005
1663278	Drill Core	1.95	<0.005
1663279	Drill Core	2.17	<0.005
1663280	Pulp	0.07	2.932



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Client: **Kirkland Lake Gold**
Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 10, 2019

Page: 1 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

TIM19002102.1

Method	WGHT	FA430
Analyte	Wgt	Au
Unit	kg	ppm
MDL	0.01	0.005
Pulp Duplicates		
1663270	Drill Core	0.89 <0.005
REP 1663270	QC	<0.005
Core Reject Duplicates		
1663201	Drill Core	2.17 0.023
DUP 1663201	QC	0.055
1663235	Drill Core	4.26 0.019
DUP 1663235	QC	0.015
1663269	Drill Core	3.17 0.017
DUP 1663269	QC	0.032
Reference Materials		
STD OXC145	Standard	0.202
STD OXC145	Standard	0.211
STD OXC145	Standard	0.208
STD OXC145	Standard	0.211
STD OXC145	Standard	0.213
STD OXH139	Standard	1.255
STD OXH139	Standard	1.299
STD OXH139	Standard	1.242
STD OXH139	Standard	1.270
STD OXH139	Standard	1.300
STD OXN134	Standard	7.443
STD OXN134	Standard	7.400
STD OXN134	Standard	7.370
STD OXN134	Standard	7.677
STD OXN134	Standard	7.337
STD OXC145 Expected		0.212
STD OXN134 Expected		7.667
STD OXH139 Expected		1.312



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Exploration Office
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Matheson Ontario P0K 1N0 Canada

Project: NightHawk
Report Date: October 10, 2019

Page: 2 of 2

Part: 1 of 1

QUALITY CONTROL REPORT

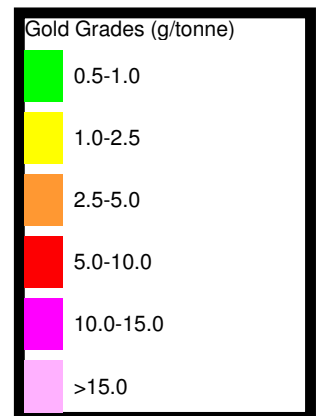
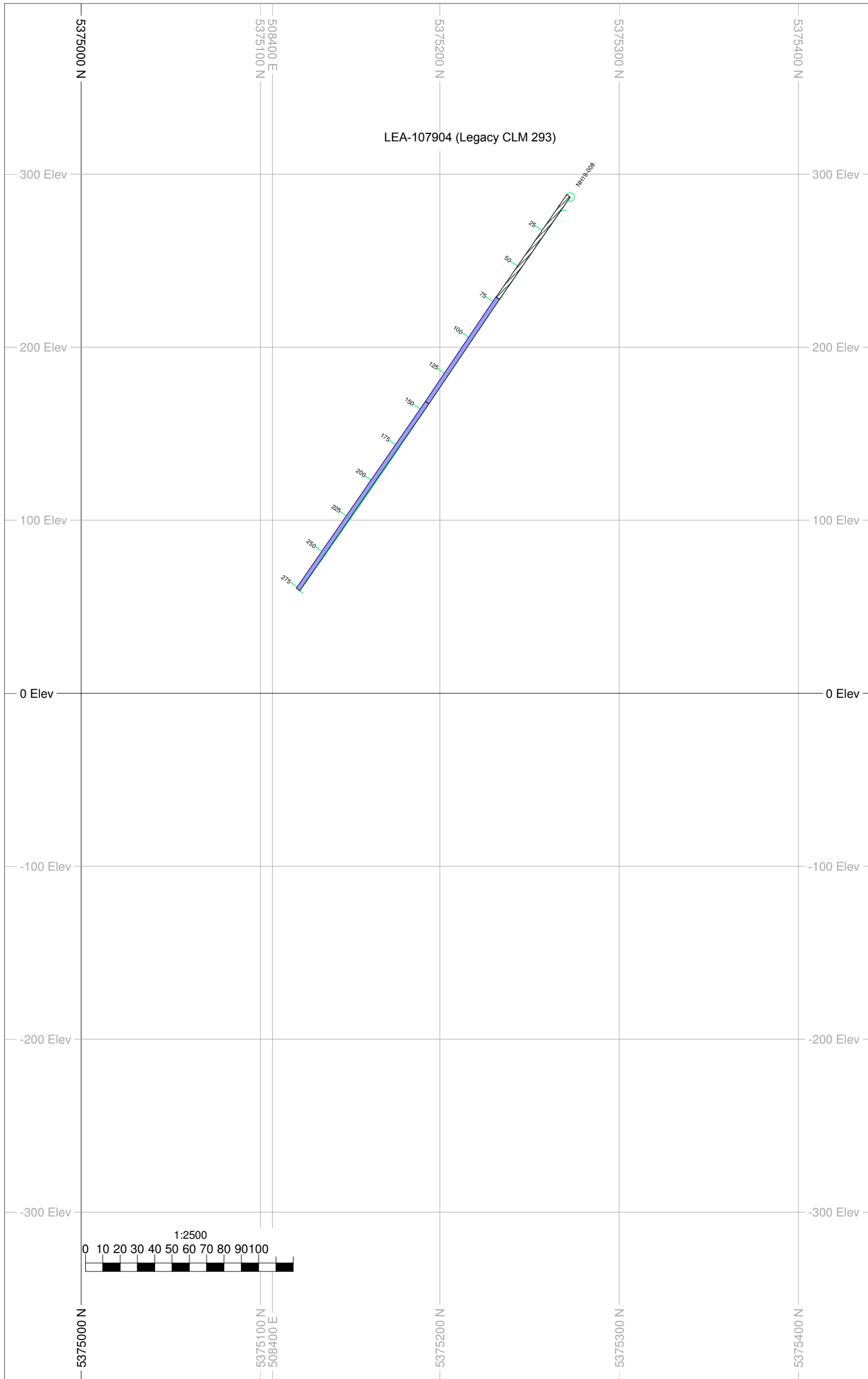
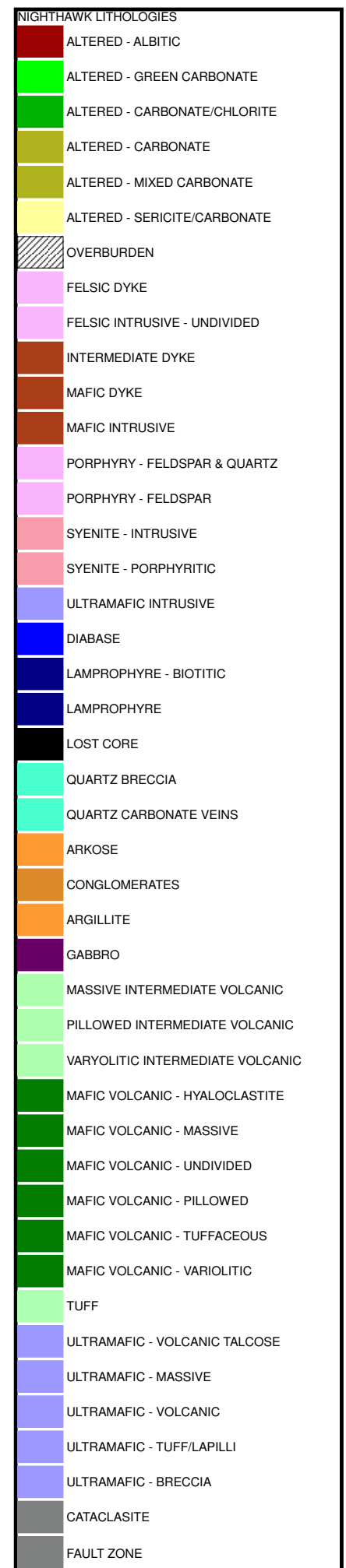
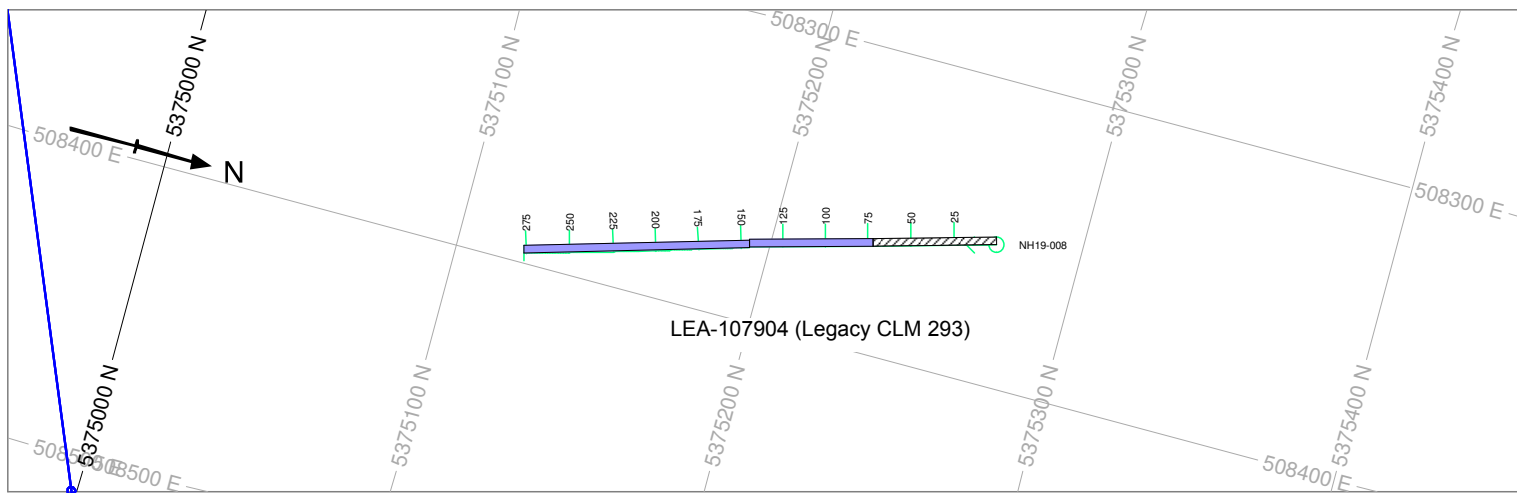
TIM19002102.1

		WGHT	FA430
		Wgt	Au
		kg	ppm
		0.01	0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		0.006
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
BLK	Blank		<0.005
Prep Wash			
ROCK-TIM	Prep Blank		<0.005
ROCK-TIM	Prep Blank		<0.005



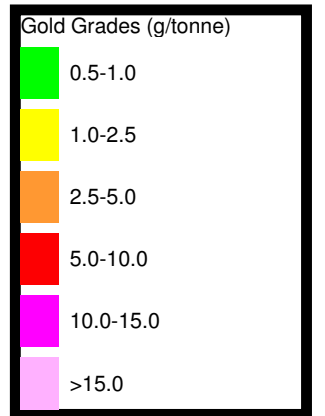
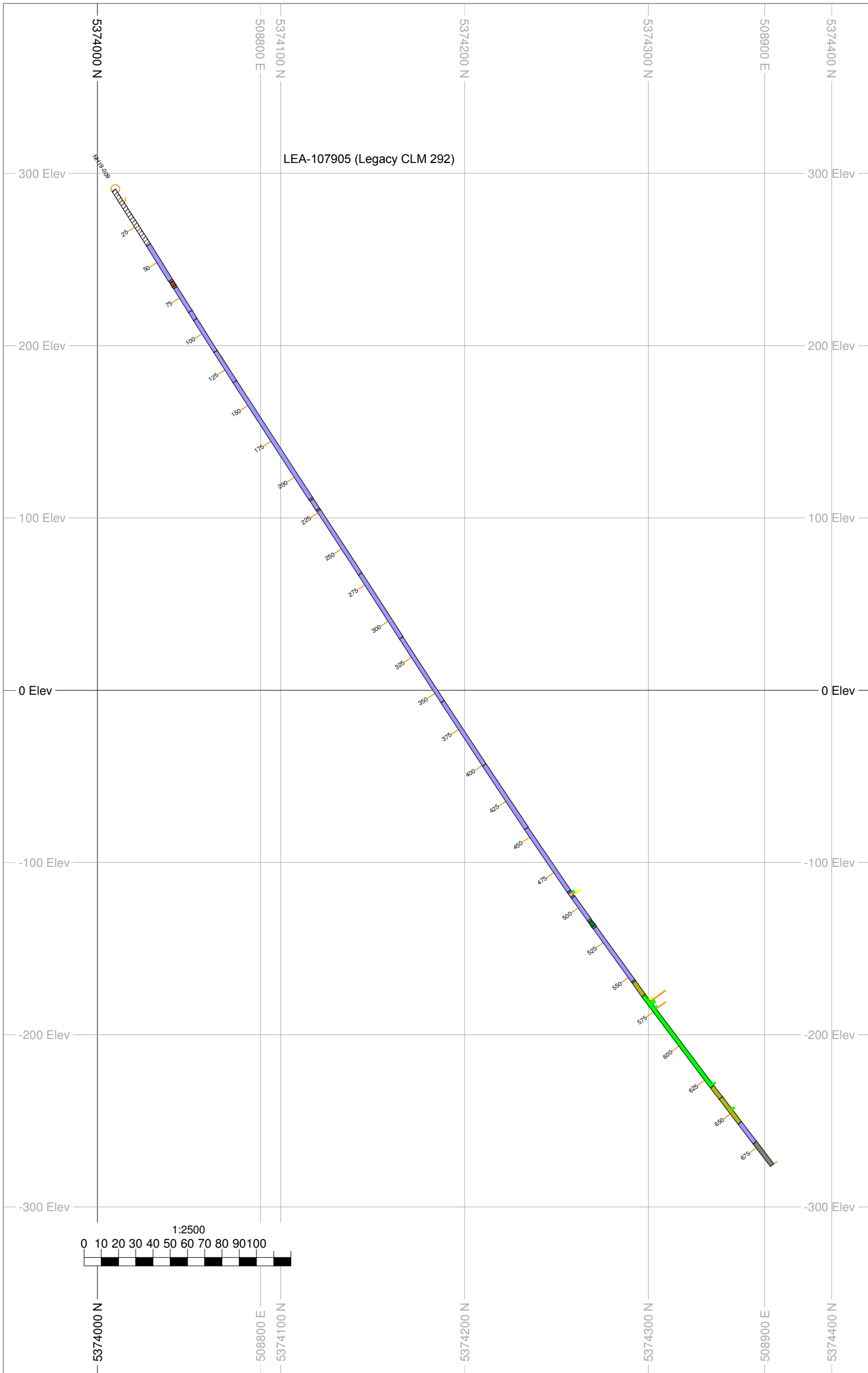
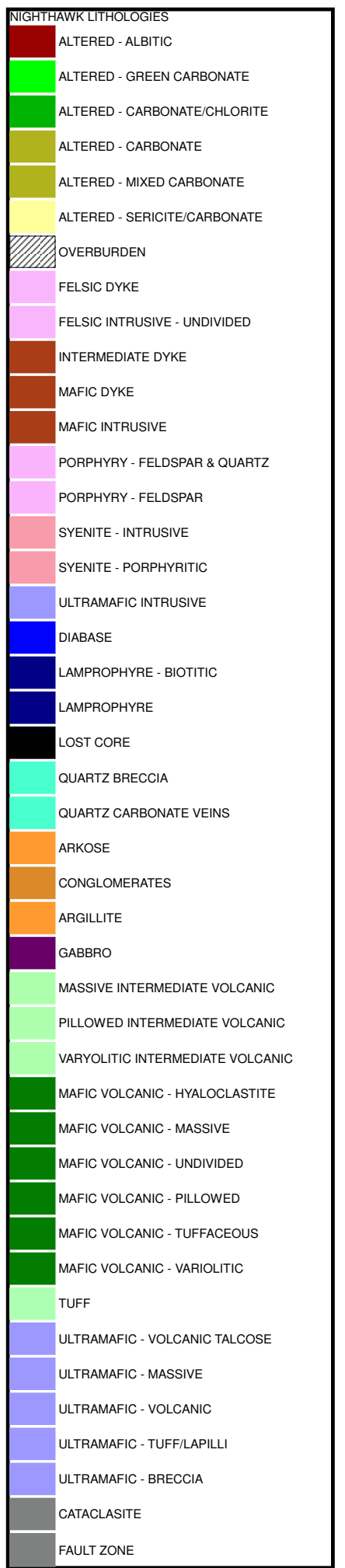
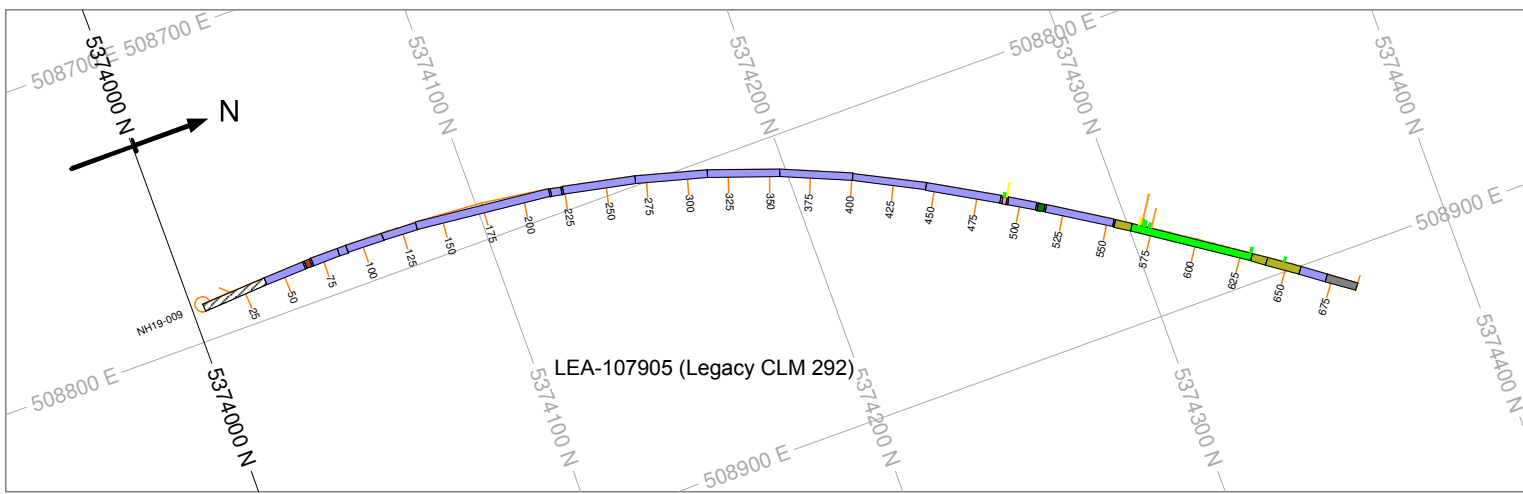
Appendix 4

Drill Hole Sections



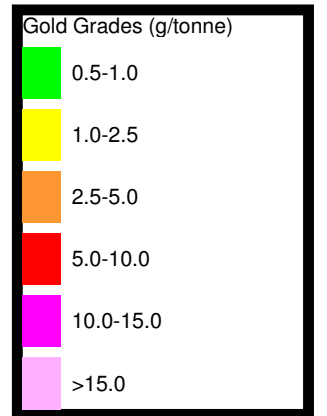
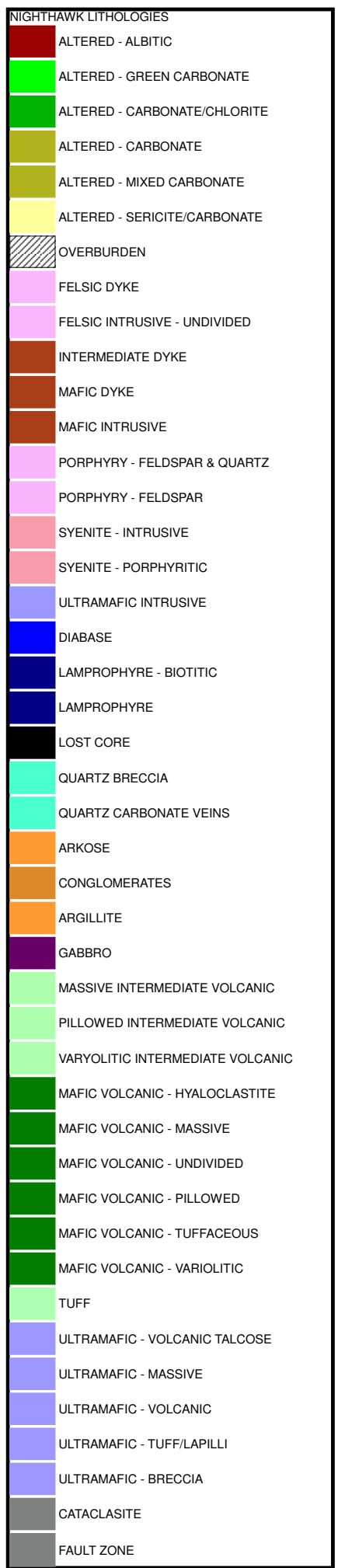
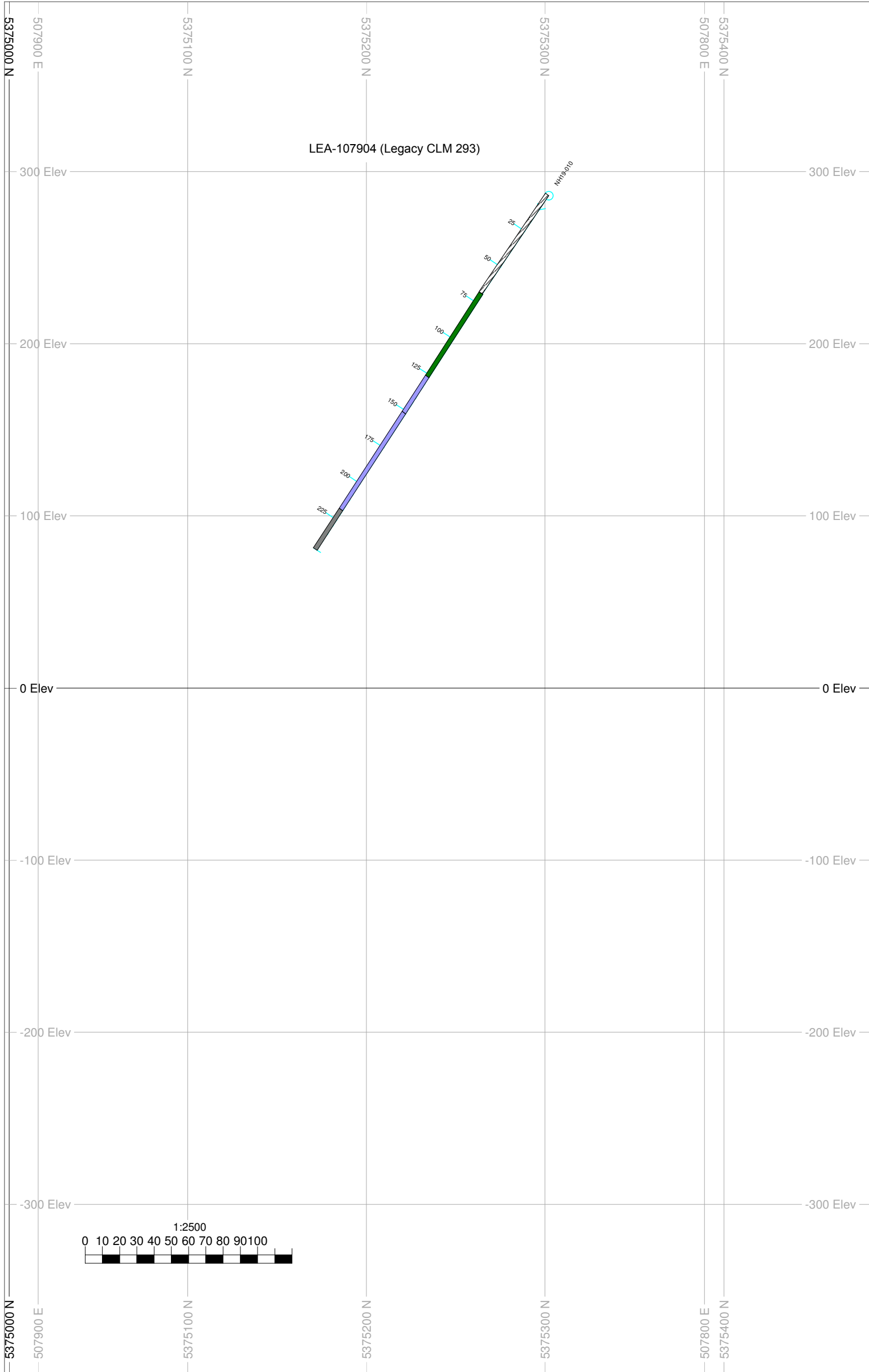
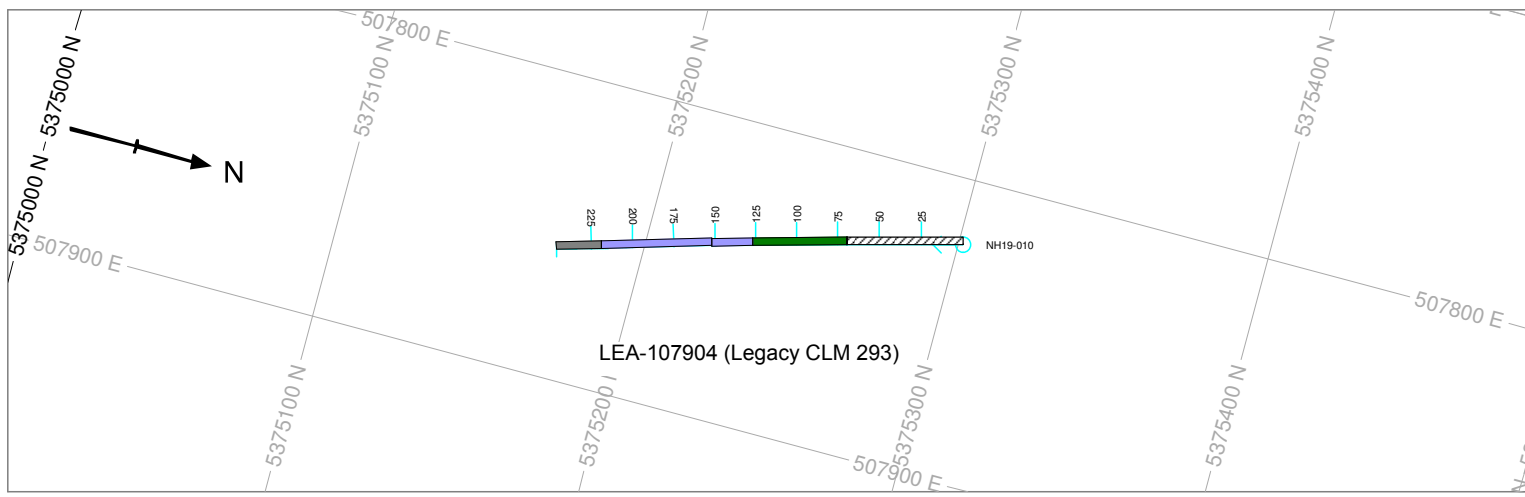
NH19-008		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 165°	Dip: -55°	EOH: 276m





NH19-009		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 355.6°	Dip: -55°	EOH: 689m

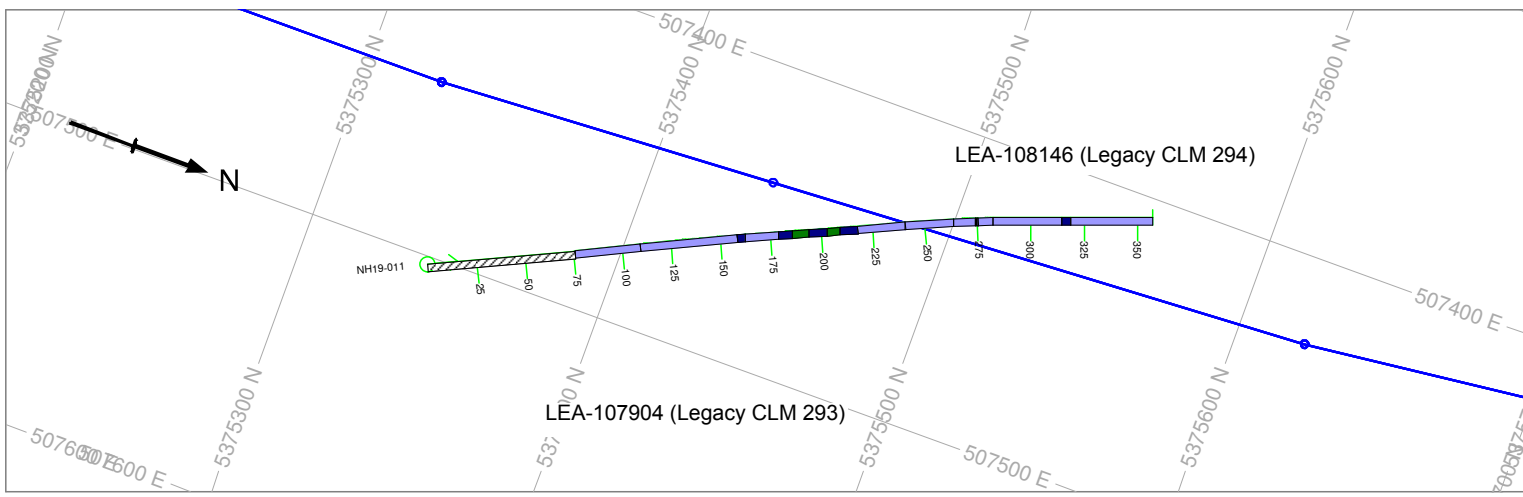




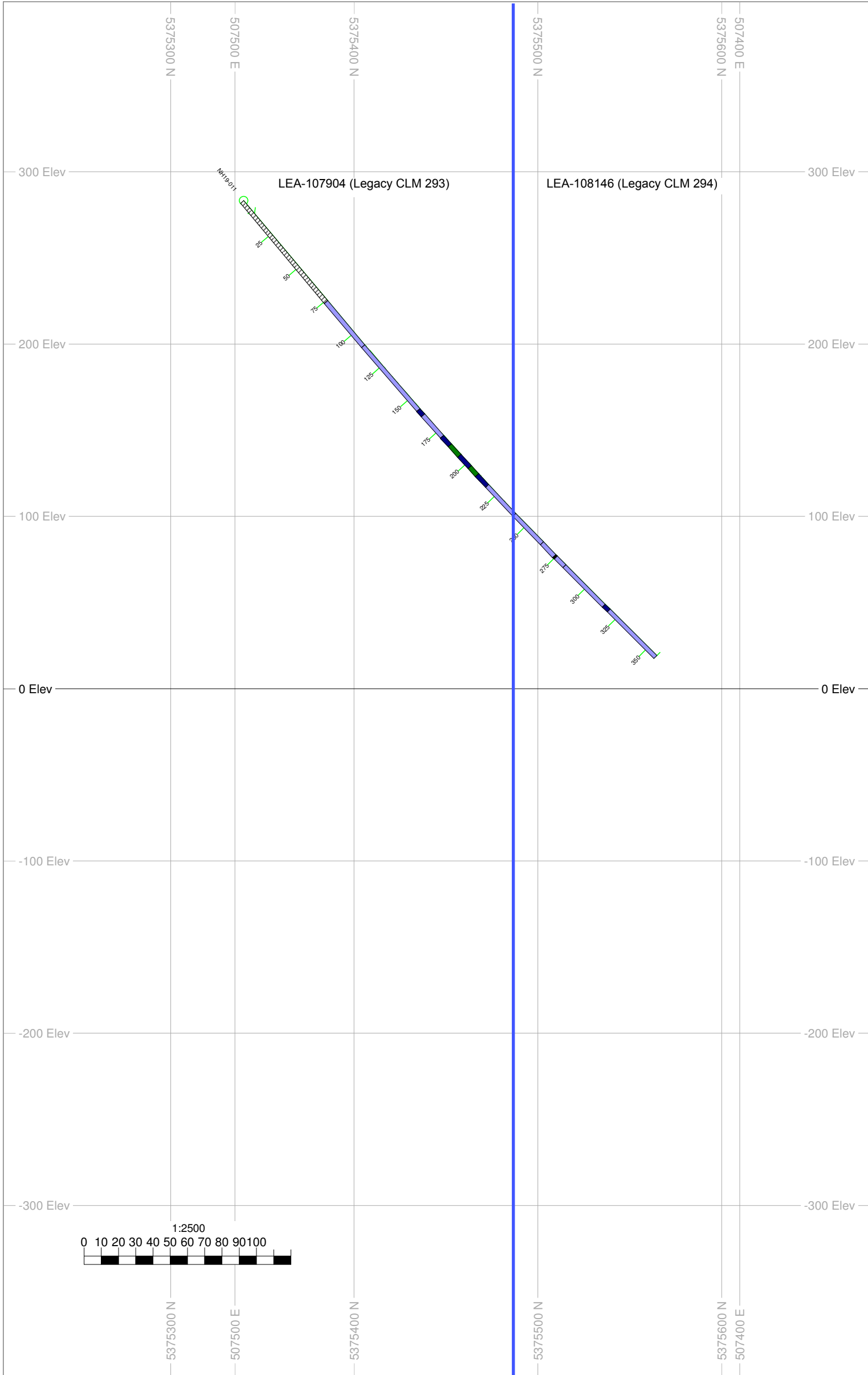
NH19-010		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 165°	Dip: -55°	EOH: 246m



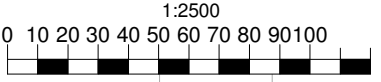
KIRKLAND LAKE GOLD



- NIGHTHAWK LITHOLOGIES**
- ALTERED - ALBITIC
 - ALTERED - GREEN CARBONATE
 - ALTERED - CARBONATE/CHLORITE
 - ALTERED - CARBONATE
 - ALTERED - MIXED CARBONATE
 - ALTERED - SERICITE/CARBONATE
 - OVERBURDEN
 - FELSIC DYKE
 - FELSIC INTRUSIVE - UNDIVIDED
 - INTERMEDIATE DYKE
 - MAFIC DYKE
 - MAFIC INTRUSIVE
 - PORPHYRY - FELDSPAR & QUARTZ
 - PORPHYRY - FELDSPAR
 - SYENITE - INTRUSIVE
 - SYENITE - PORPHYRITIC
 - ULTRAMAFIC INTRUSIVE
 - DIABASE
 - LAMPROPHYRE - BIOTITIC
 - LAMPROPHYRE
 - LOST CORE
 - QUARTZ BRECCIA
 - QUARTZ CARBONATE VEINS
 - ARKOSE
 - CONGLOMERATES
 - ARGILLITE
 - GABBRO
 - MASSIVE INTERMEDIATE VOLCANIC
 - PILLOWED INTERMEDIATE VOLCANIC
 - VARYOLITIC INTERMEDIATE VOLCANIC
 - MAFIC VOLCANIC - HYALOCLASTITE
 - MAFIC VOLCANIC - MASSIVE
 - MAFIC VOLCANIC - UNDIVIDED
 - MAFIC VOLCANIC - PILLOWED
 - MAFIC VOLCANIC - TUFFACEOUS
 - MAFIC VOLCANIC - VARIOLITIC
 - TUFF
 - ULTRAMAFIC - VOLCANIC TALCOSE
 - ULTRAMAFIC - MASSIVE
 - ULTRAMAFIC - VOLCANIC
 - ULTRAMAFIC - TUFF/LAPILLI
 - ULTRAMAFIC - BRECCIA
 - CATACLASITE
 - FAULT ZONE

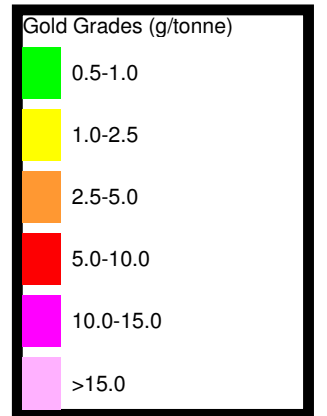
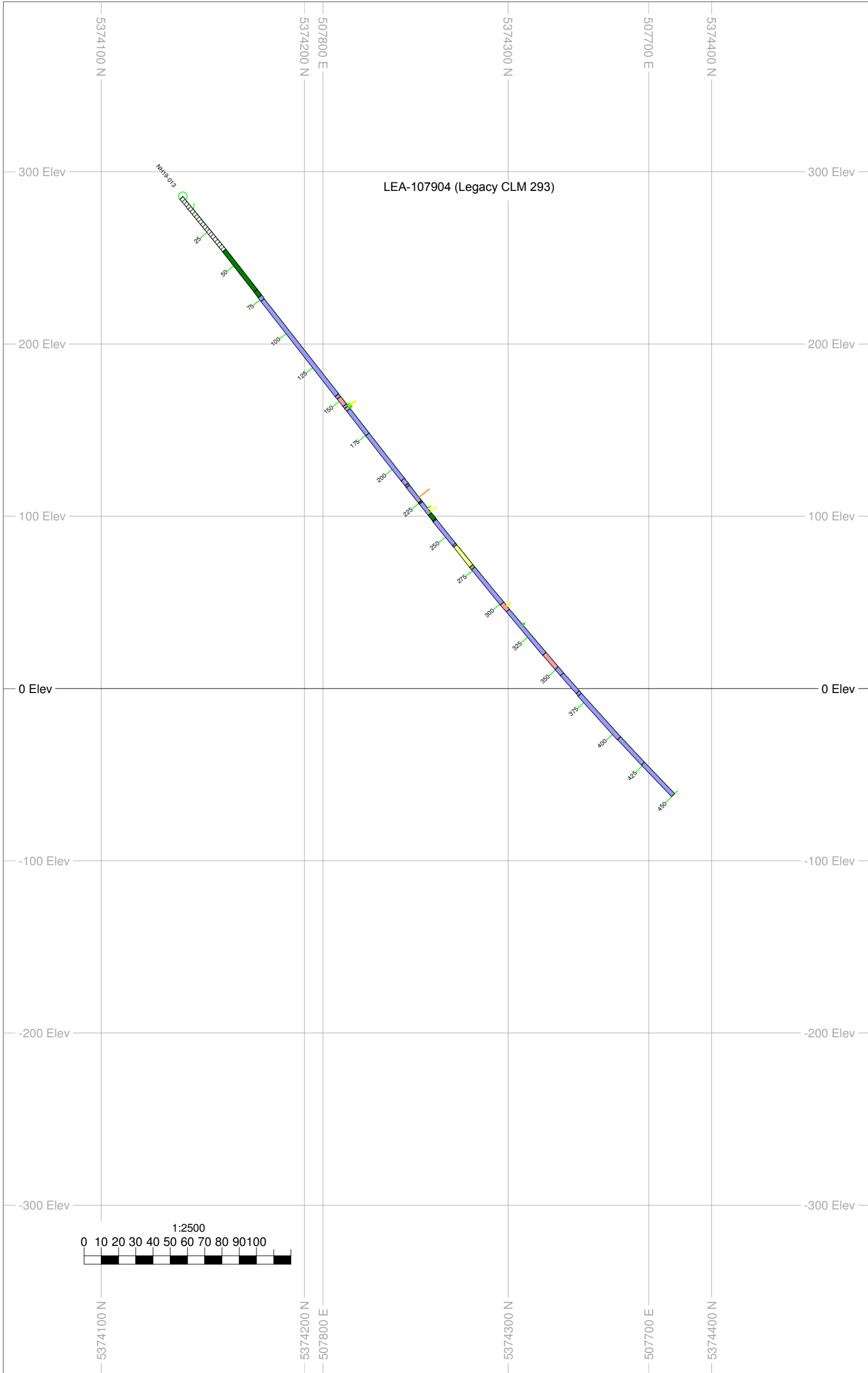
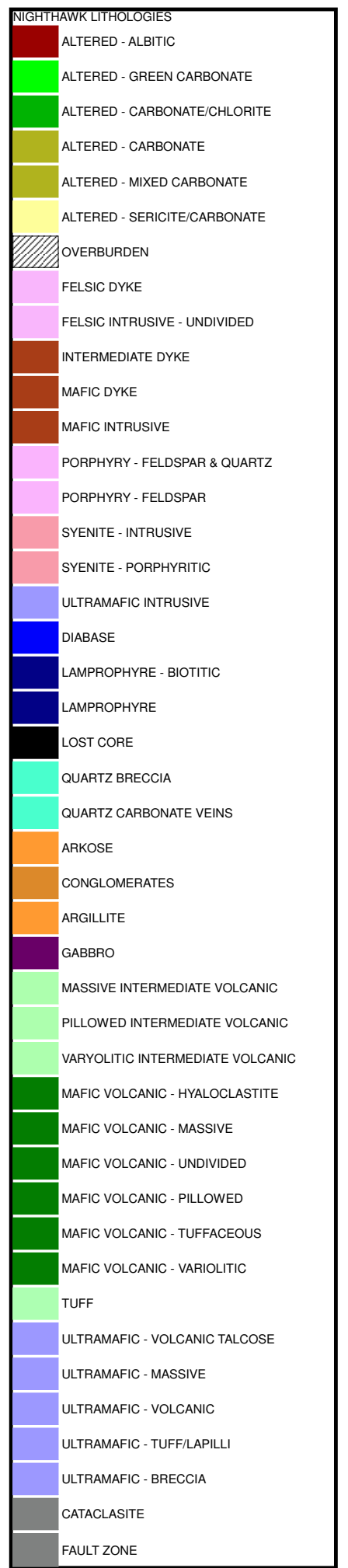
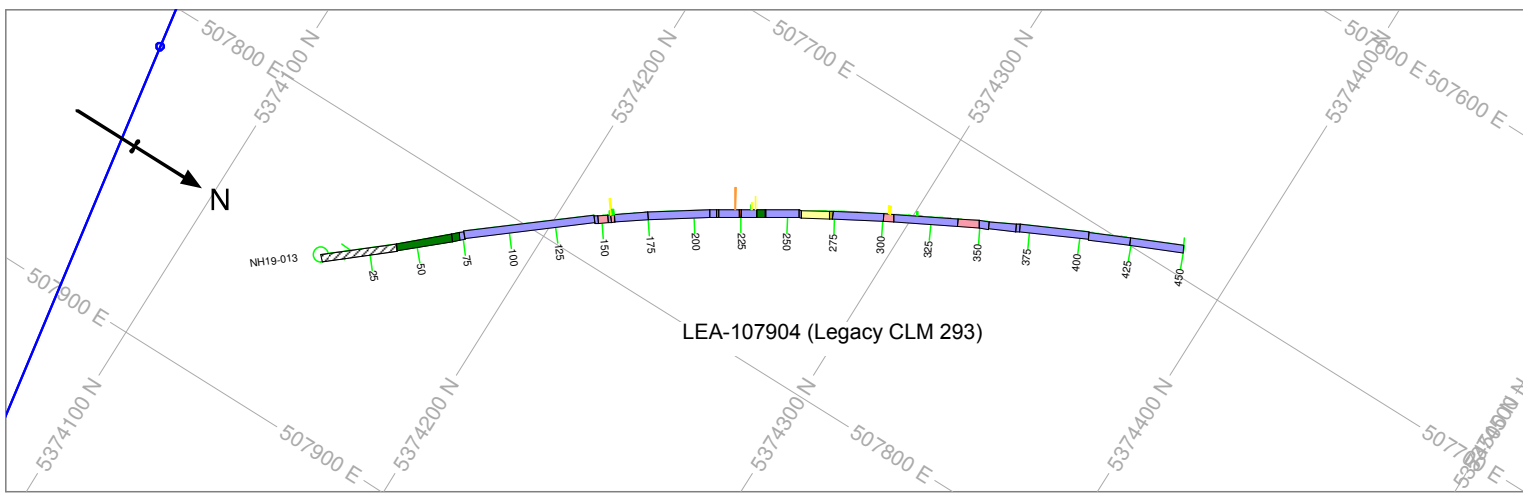


- Gold Grades (g/tonne)**
- 0.5-1.0
 - 1.0-2.5
 - 2.5-5.0
 - 5.0-10.0
 - 10.0-15.0
 - >15.0



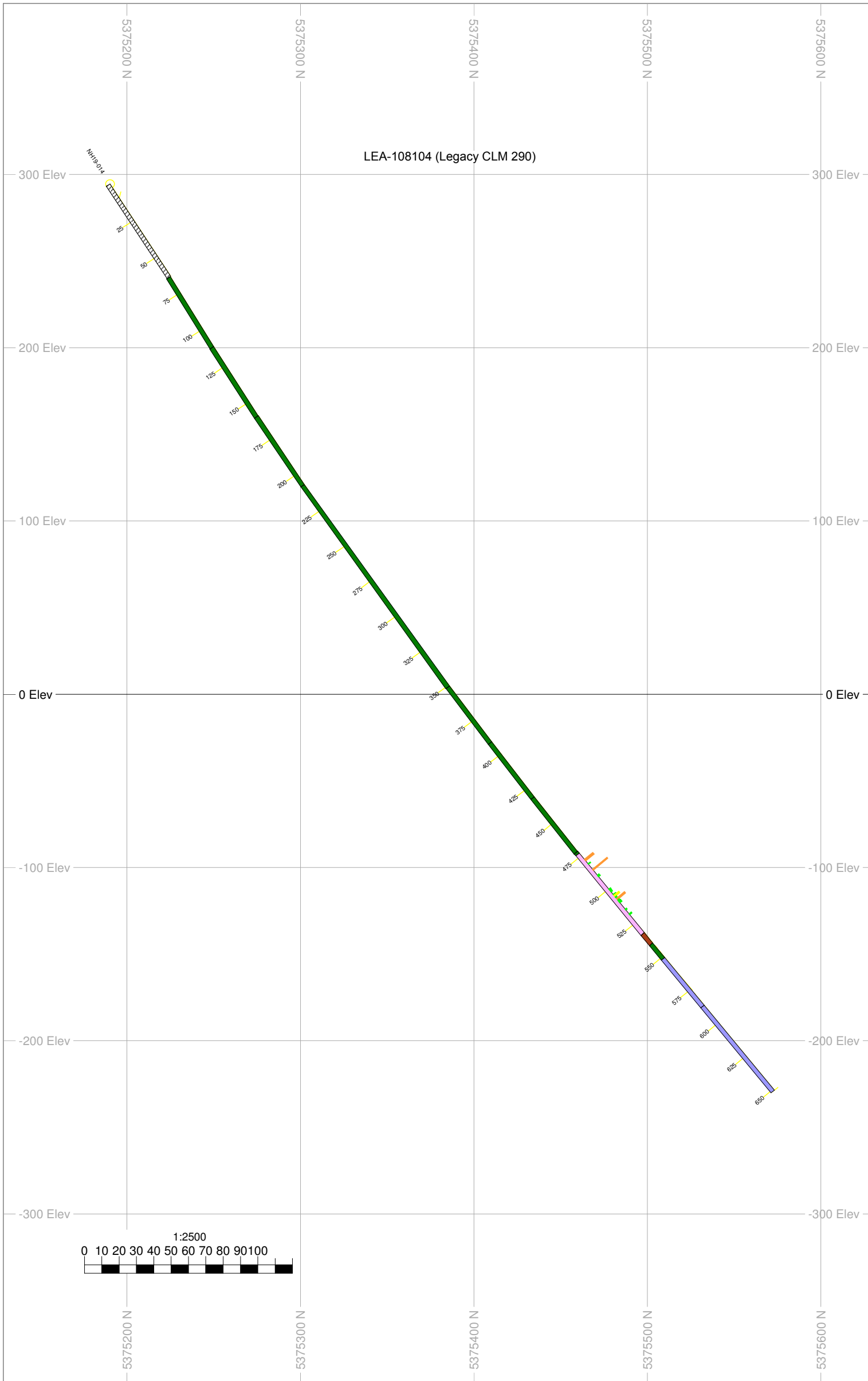
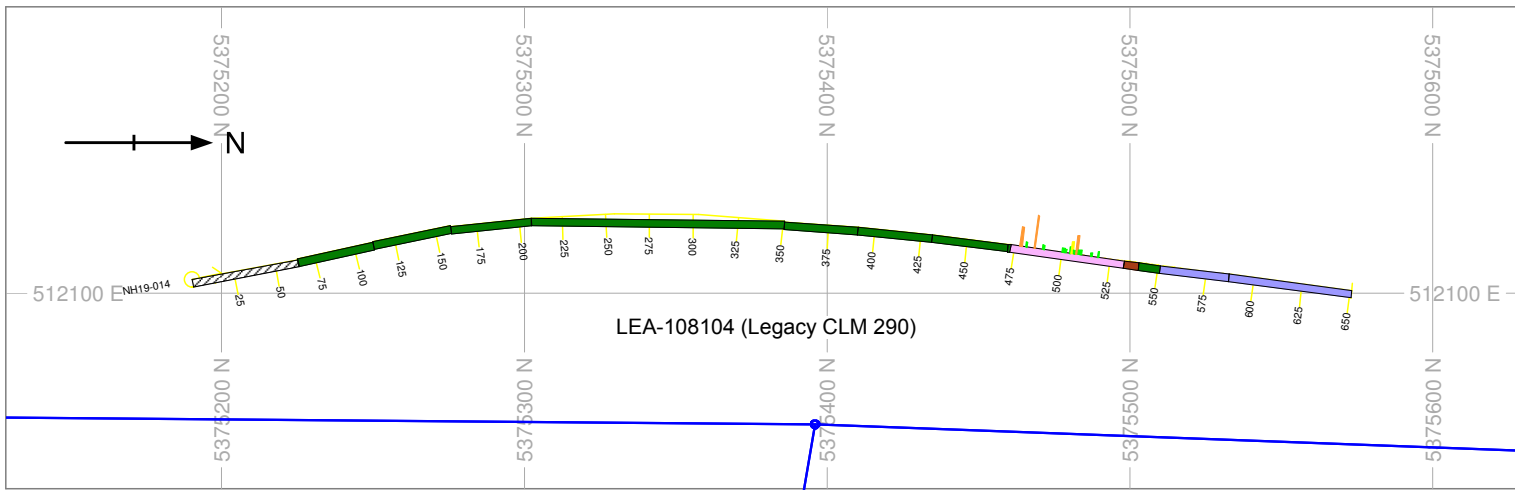
NH19-011		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 350°	Dip: -55°	EOH: 357m



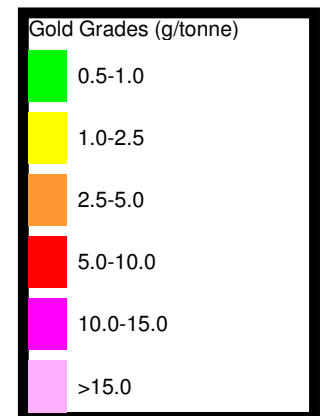


NH19-013		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 320.3°	Dip: -50°	EOH: 450m



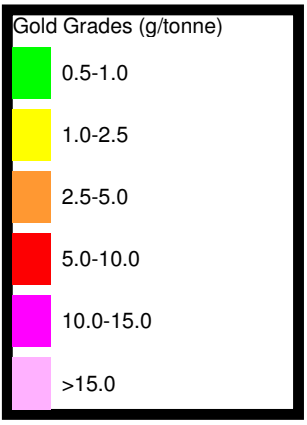
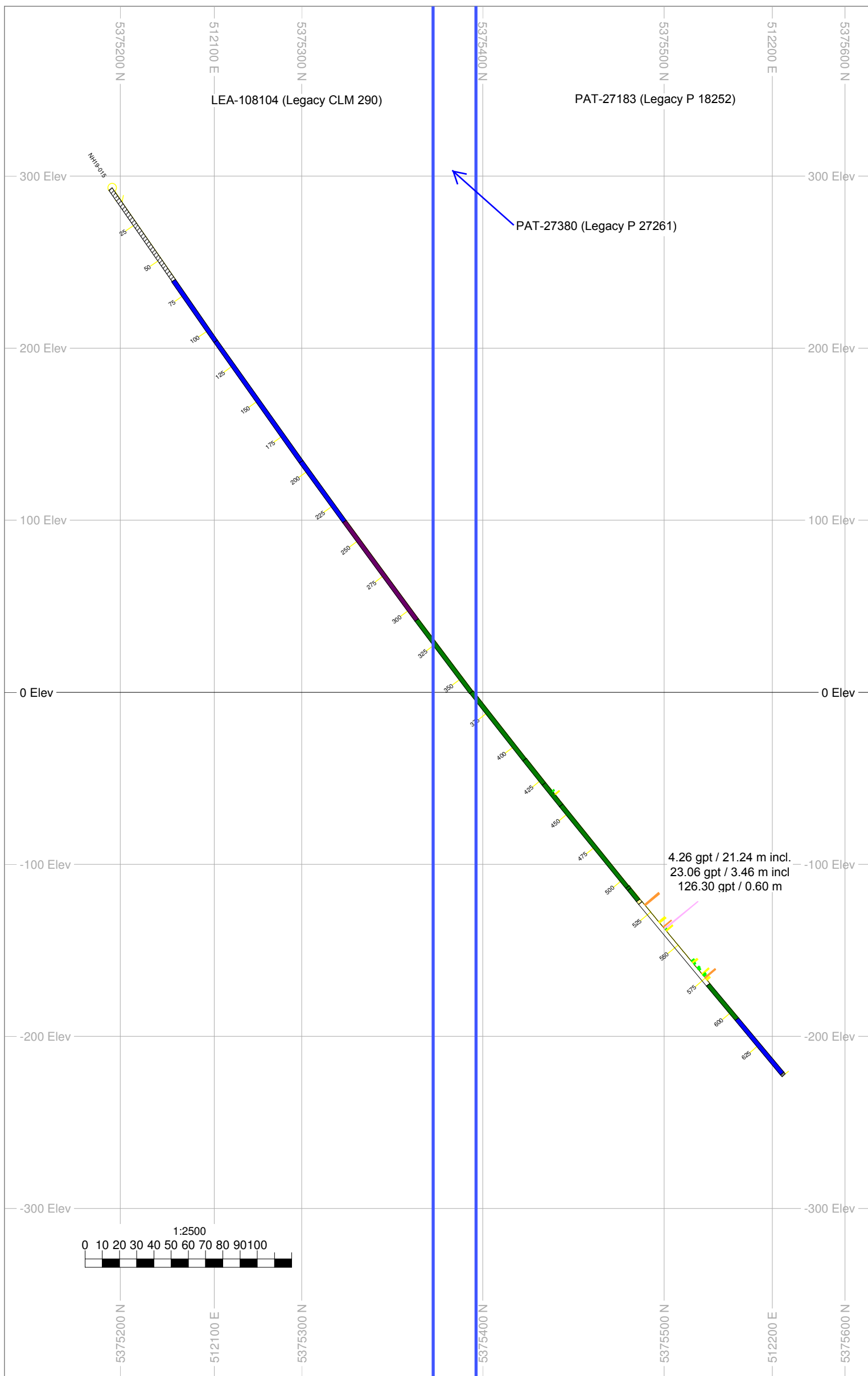
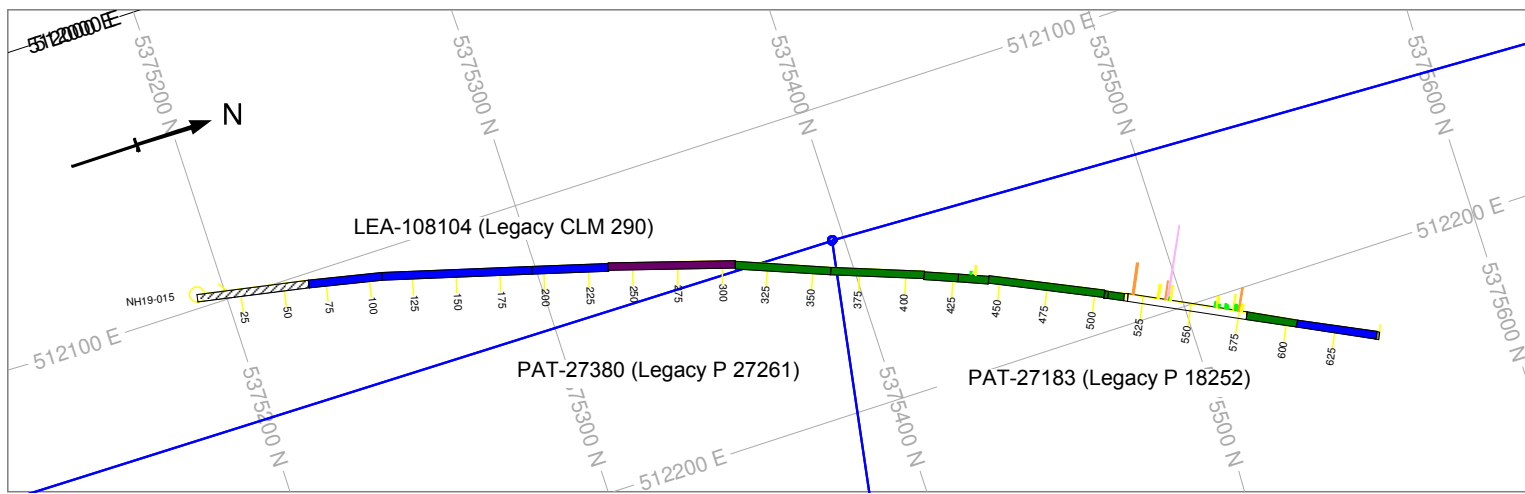


- NIGHTHAWK LITHOLOGIES**
- ALTERED - ALBITIC
 - ALTERED - GREEN CARBONATE
 - ALTERED - CARBONATE/CHLORITE
 - ALTERED - CARBONATE
 - ALTERED - MIXED CARBONATE
 - ALTERED - SERICITE/CARBONATE
 - OVERBURDEN
 - FELSIC DYKE
 - FELSIC INTRUSIVE - UNDIVIDED
 - INTERMEDIATE DYKE
 - MAFIC DYKE
 - MAFIC INTRUSIVE
 - PORPHYRY - FELDSPAR & QUARTZ
 - PORPHYRY - FELDSPAR
 - SYENITE - INTRUSIVE
 - SYENITE - PORPHYRITIC
 - ULTRAMAFIC INTRUSIVE
 - DIABASE
 - LAMPROPHYRE - BIOTITIC
 - LAMPROPHYRE
 - LOST CORE
 - QUARTZ BRECCIA
 - QUARTZ CARBONATE VEINS
 - ARKOSE
 - CONGLOMERATES
 - ARGILLITE
 - GABBRO
 - MASSIVE INTERMEDIATE VOLCANIC
 - PILLOWED INTERMEDIATE VOLCANIC
 - VARYOLITIC INTERMEDIATE VOLCANIC
 - MAFIC VOLCANIC - HYALOCLASTITE
 - MAFIC VOLCANIC - MASSIVE
 - MAFIC VOLCANIC - UNDIVIDED
 - MAFIC VOLCANIC - PILLOWED
 - MAFIC VOLCANIC - TUFFACEOUS
 - MAFIC VOLCANIC - VARIOLITIC
 - TUFF
 - ULTRAMAFIC - VOLCANIC TALCOSE
 - ULTRAMAFIC - MASSIVE
 - ULTRAMAFIC - VOLCANIC
 - ULTRAMAFIC - TUFF/LAPILLI
 - ULTRAMAFIC - BRECCIA
 - CATACLASITE
 - FAULT ZONE



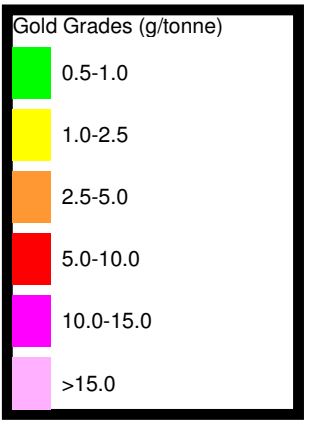
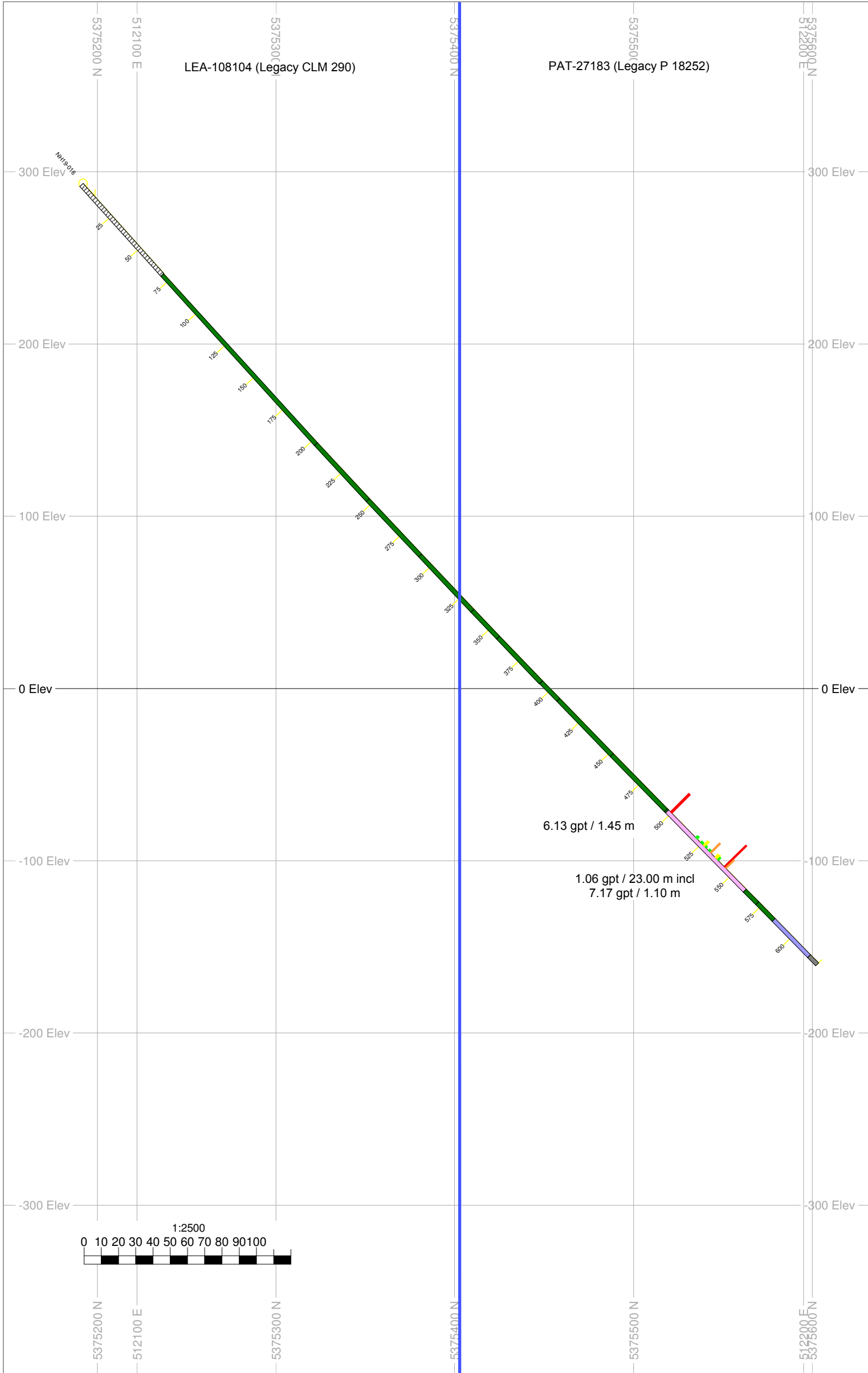
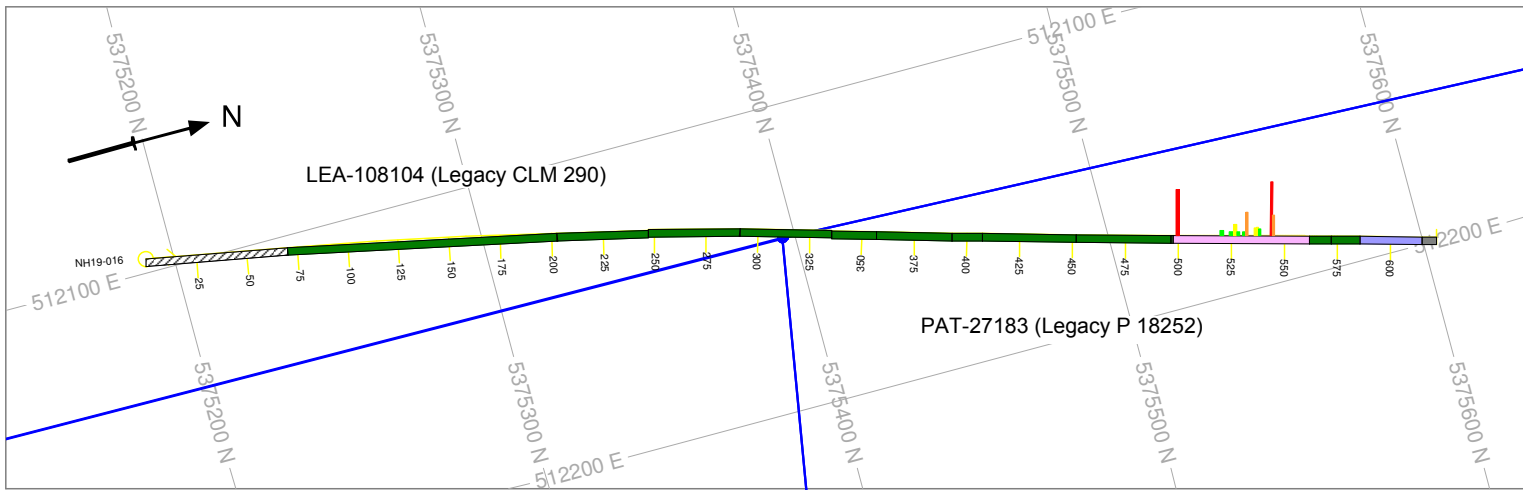
NH19-014		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 350°	Dip: -55°	EOH: 651m





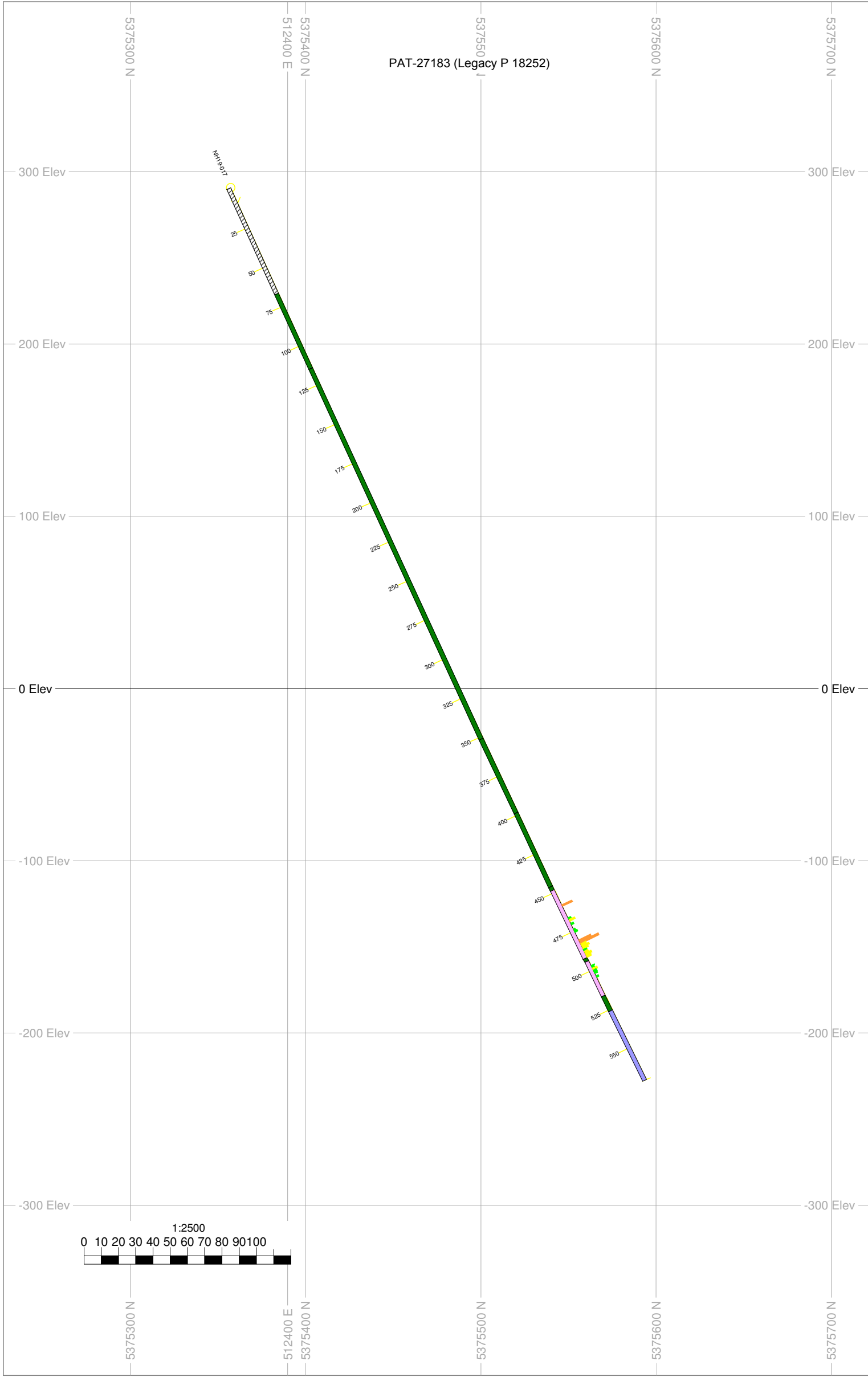
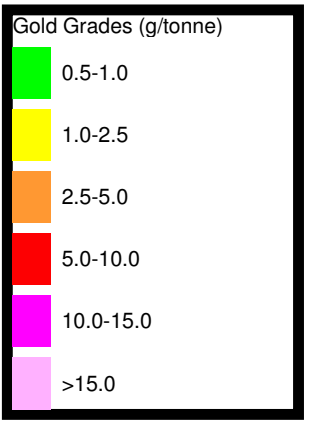
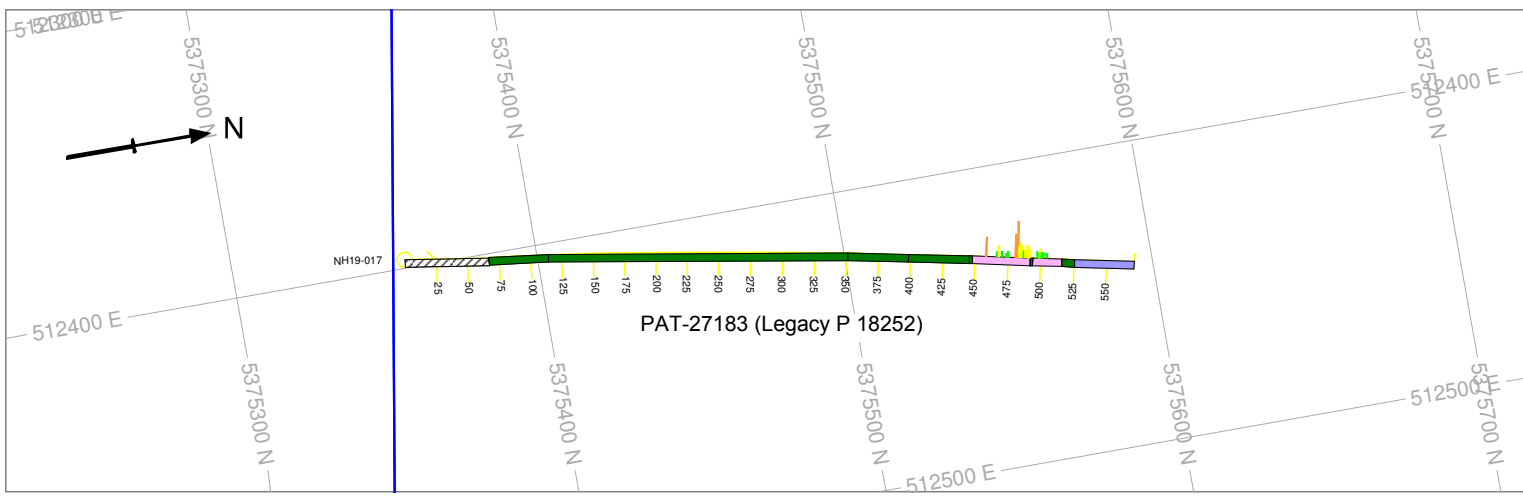
NH19-015		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10.2°	Dip: -55°	EOH: 648m





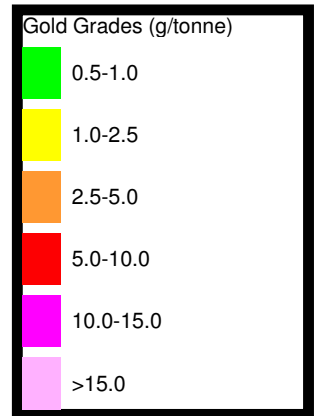
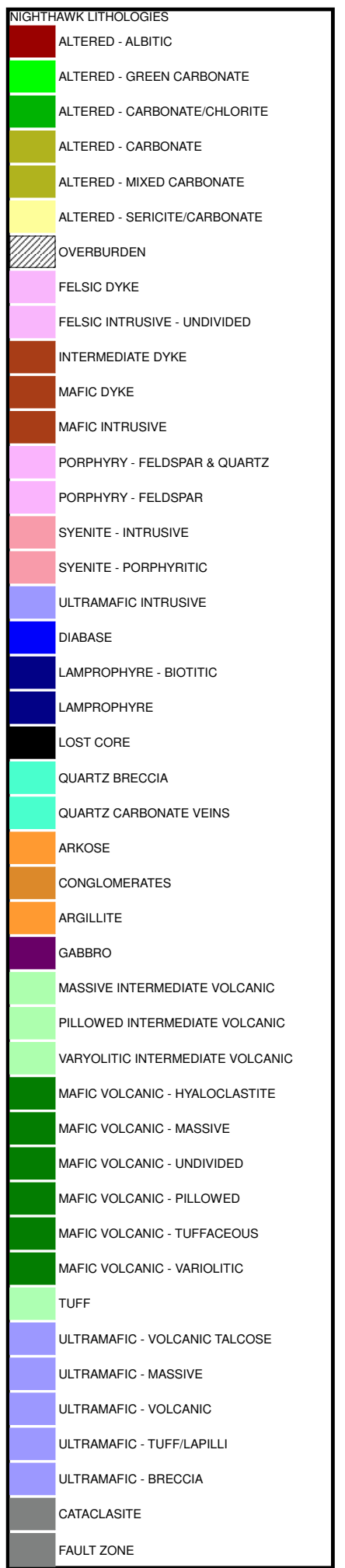
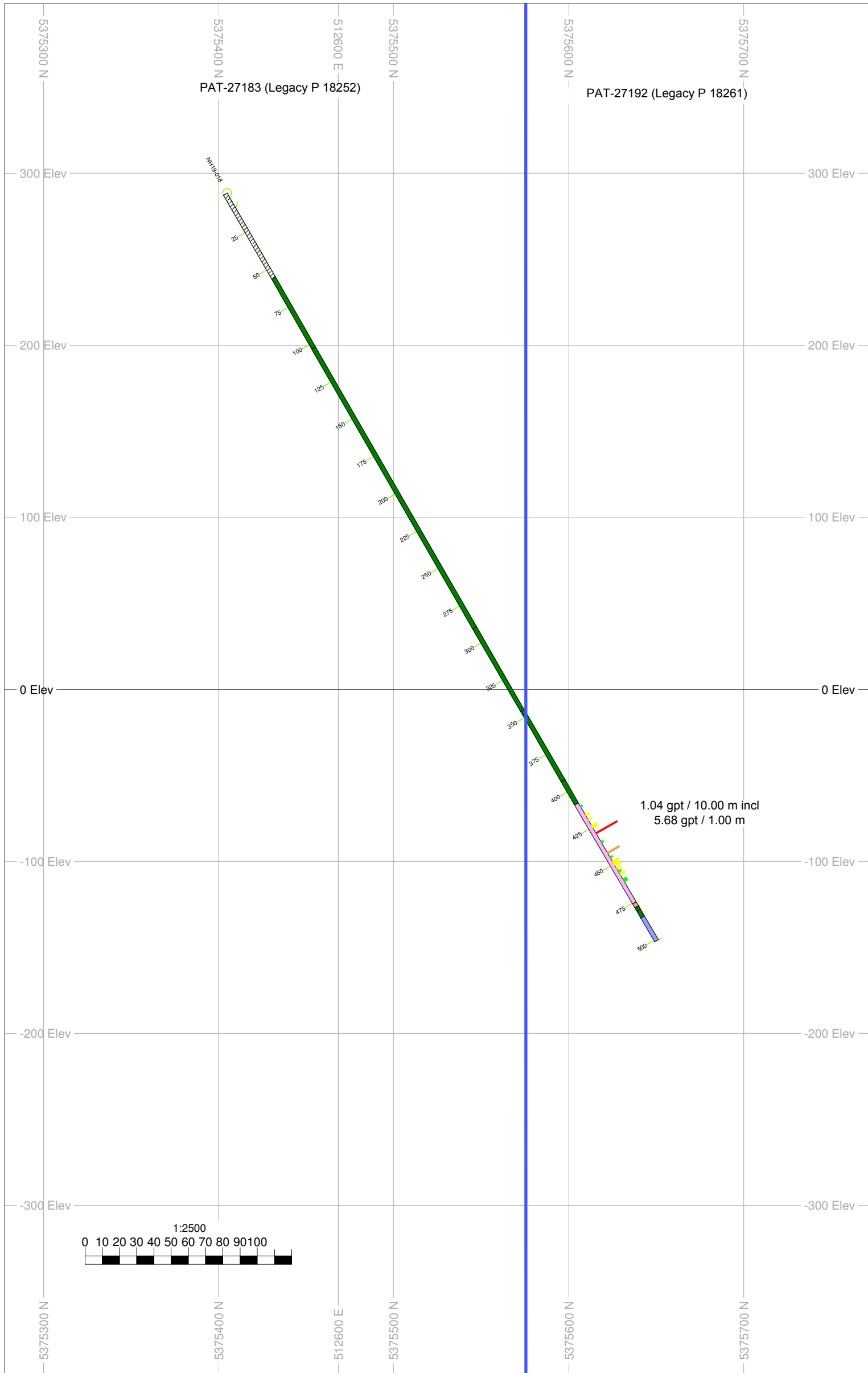
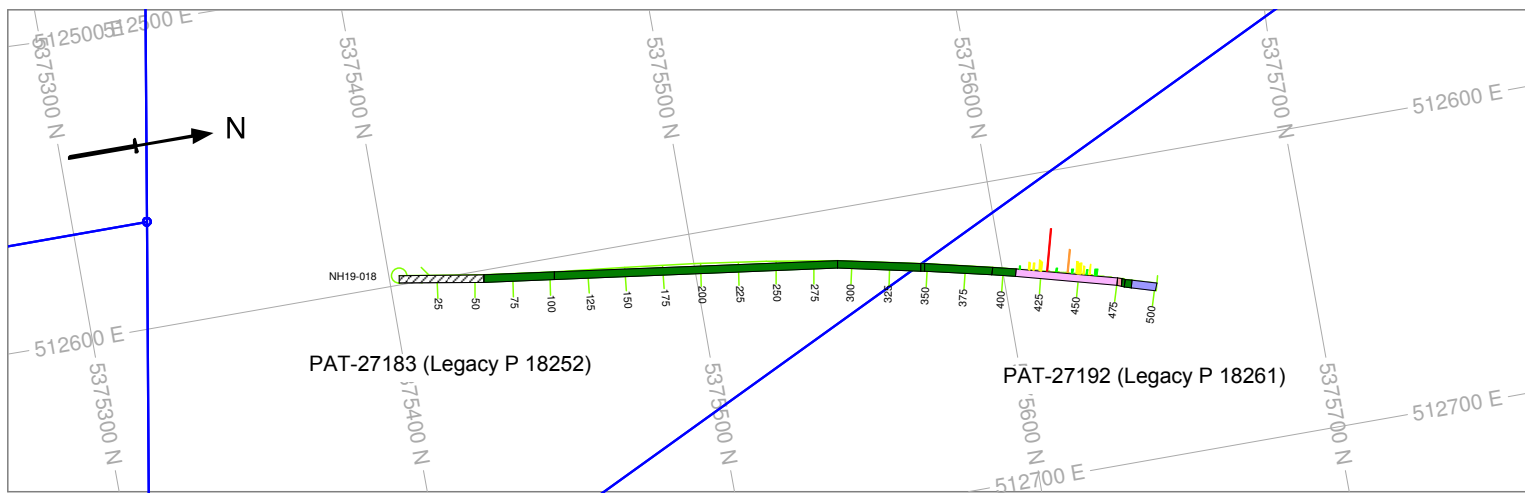
NH19-016		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -48°	EOH: 622m





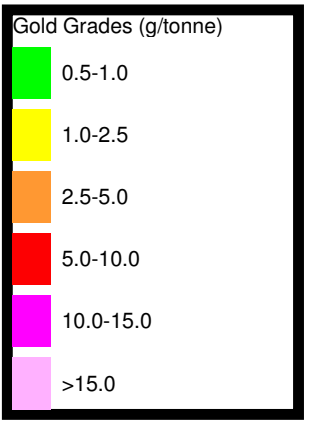
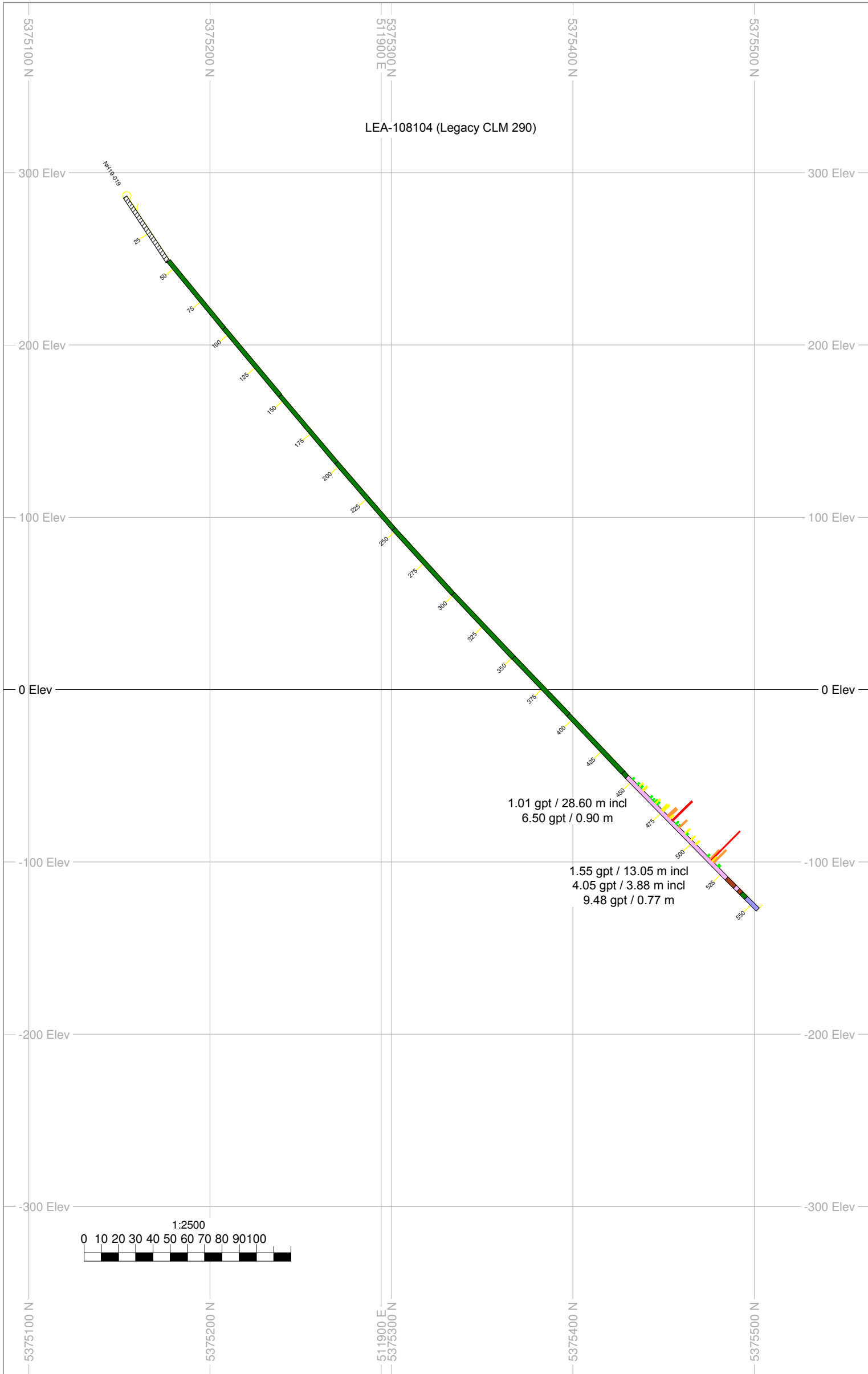
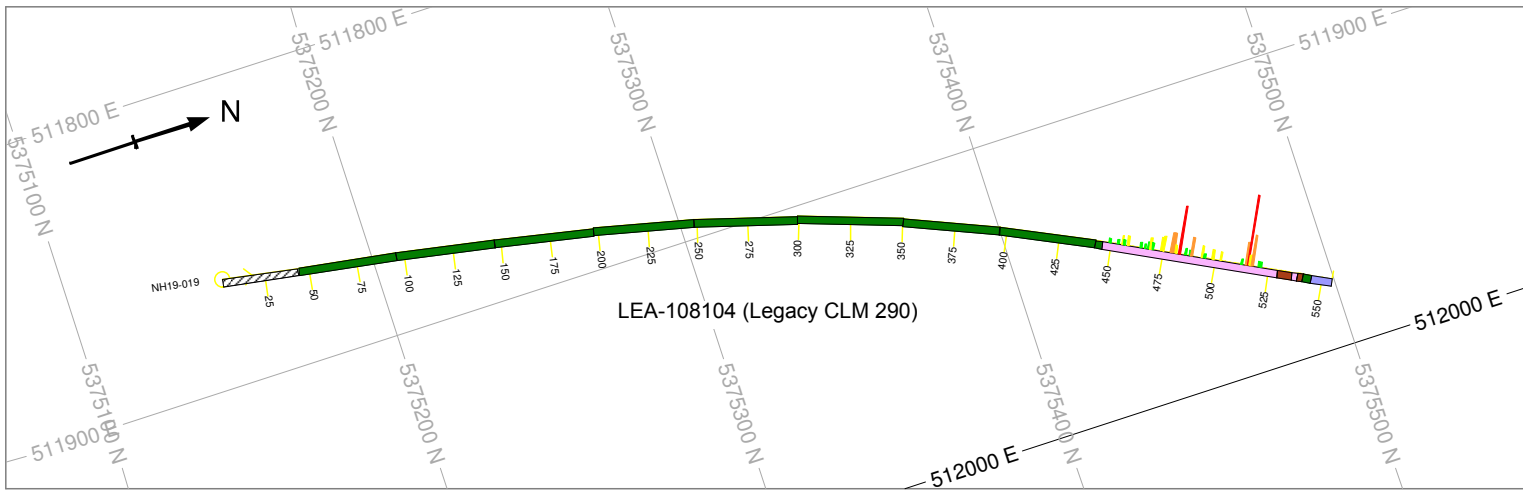
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Azimuth: 10.4°	Dip: -70°	EOH: 571m





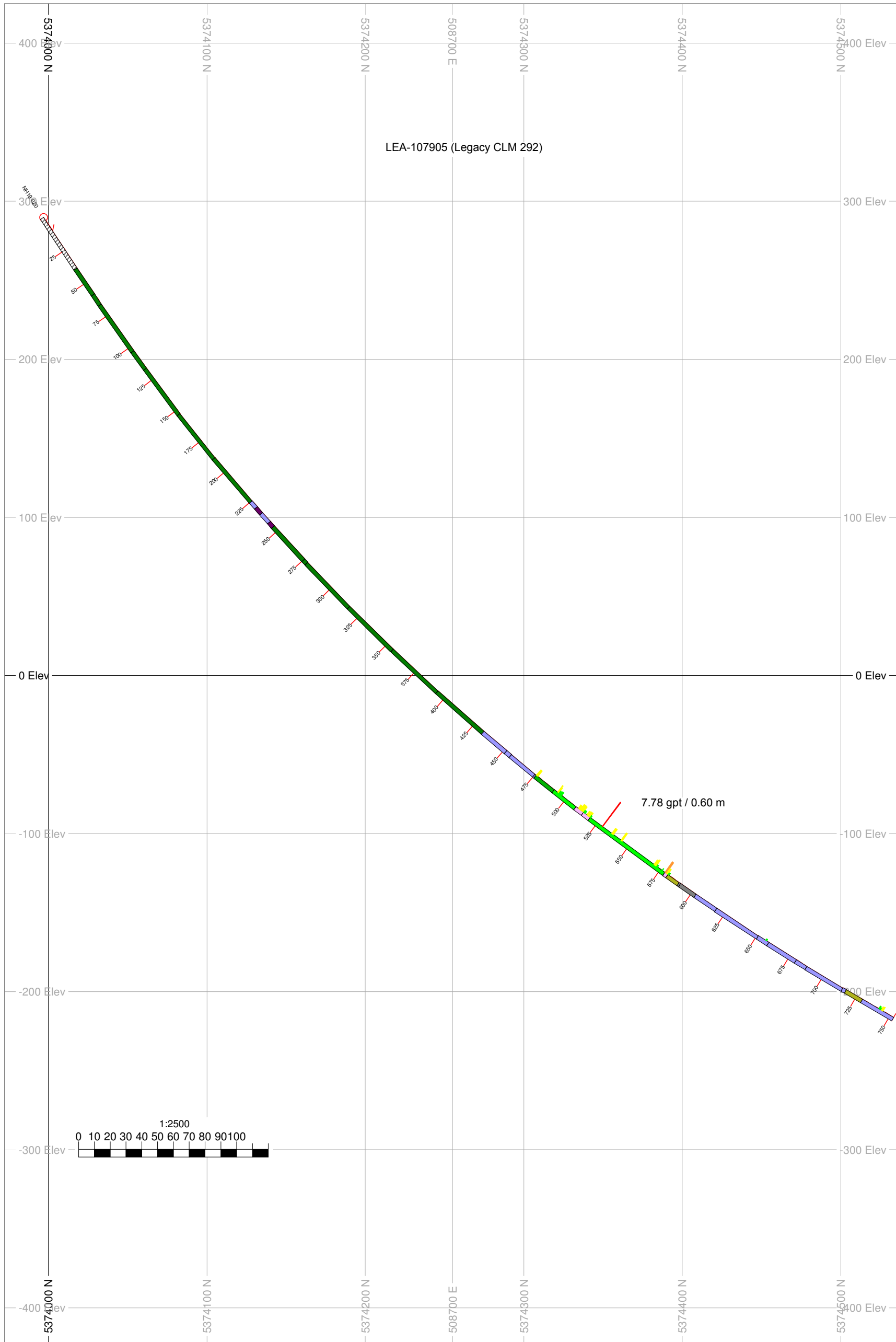
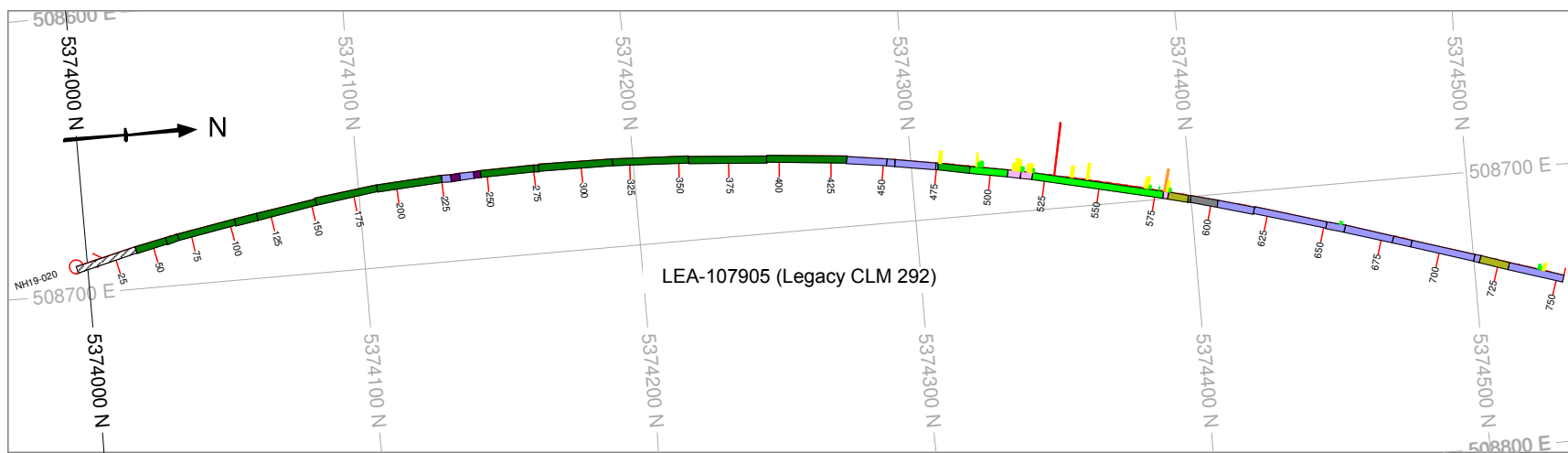
NH19-018		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 358.7°	Dip: -60°	EOH: 501m





NH19-019		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -60°	EOH: 555m



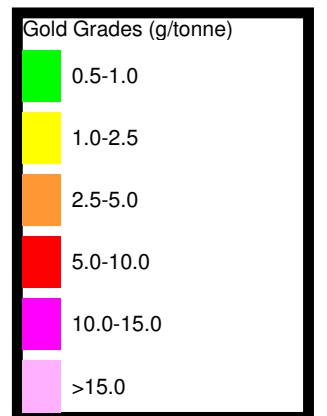
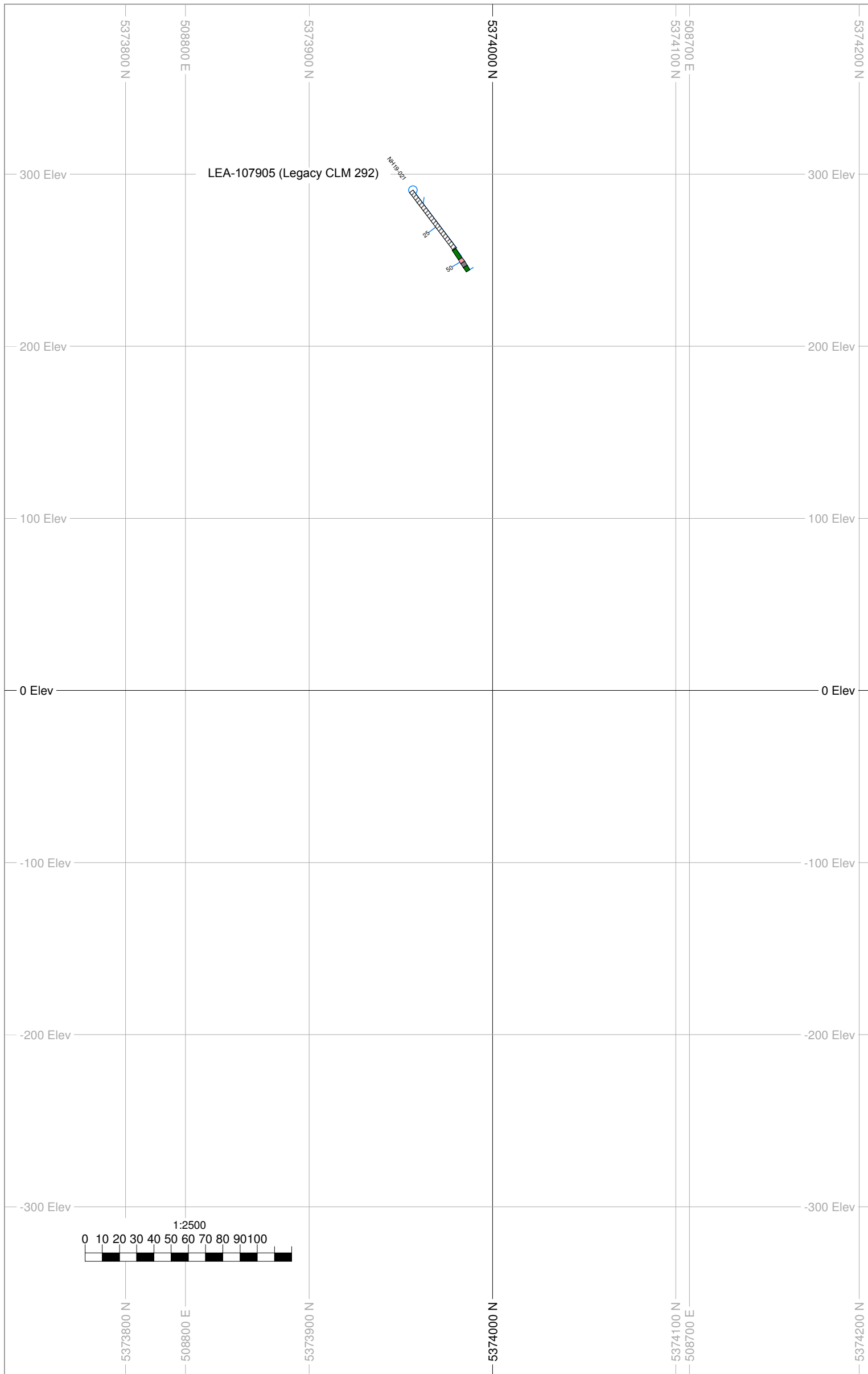
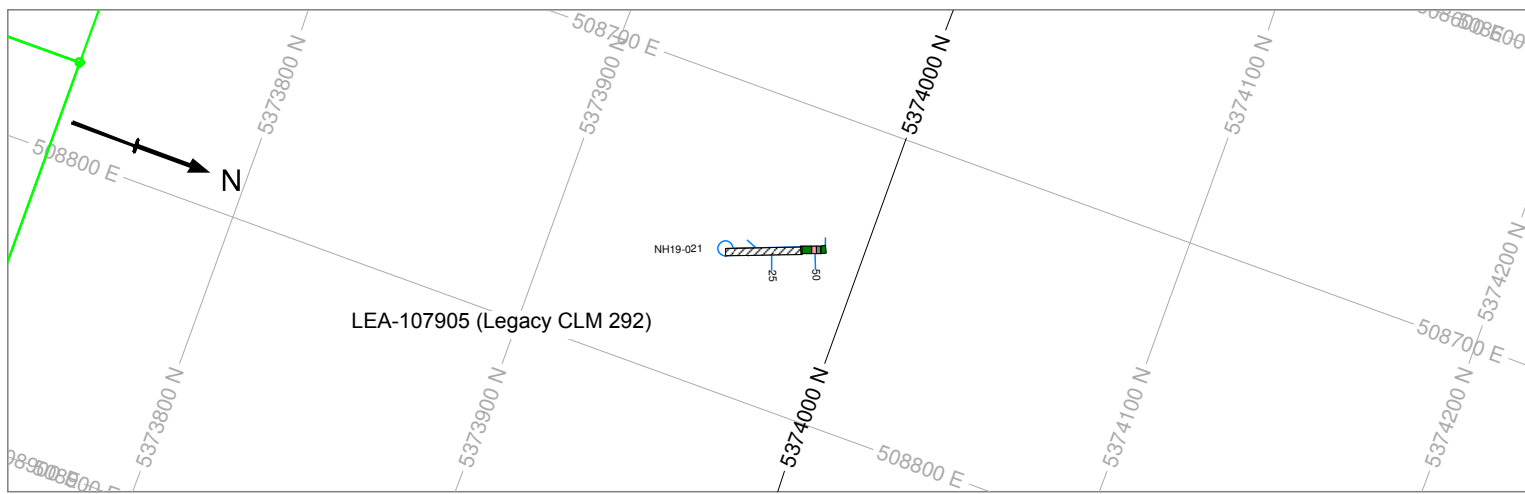


- NIGHTHAWK LITHOLOGIES**
- ALTERED - ALBITIC
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 - ALTERED - CARBONATE/CHLORITE
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 - FELSIC INTRUSIVE - UNDIVIDED
 - INTERMEDIATE DYKE
 - MAFIC DYKE
 - MAFIC INTRUSIVE
 - PORPHYRY - FELDSPAR & QUARTZ
 - PORPHYRY - FELDSPAR
 - SYENITE - INTRUSIVE
 - SYENITE - PORPHYRITIC
 - ULTRAMAFIC INTRUSIVE
 - DIABASE
 - LAMPROPHYRE - BIOTITIC
 - LAMPROPHYRE
 - LOST CORE
 - QUARTZ BRECCIA
 - QUARTZ CARBONATE VEINS
 - ARKOSE
 - CONGLOMERATES
 - ARGILLITE
 - GABBRO
 - MASSIVE INTERMEDIATE VOLCANIC
 - PILLOWED INTERMEDIATE VOLCANIC
 - VARIOLITIC INTERMEDIATE VOLCANIC
 - MAFIC VOLCANIC - HYALOCLASTITE
 - MAFIC VOLCANIC - MASSIVE
 - MAFIC VOLCANIC - UNDIVIDED
 - MAFIC VOLCANIC - PILLOWED
 - MAFIC VOLCANIC - TUFFACEOUS
 - MAFIC VOLCANIC - VARIOLITIC
 - TUFF
 - ULTRAMAFIC - VOLCANIC TALCOSE
 - ULTRAMAFIC - MASSIVE
 - ULTRAMAFIC - VOLCANIC
 - ULTRAMAFIC - TUFF/LAPILLI
 - ULTRAMAFIC - BRECCIA
 - CATACLASITE
 - FAULT ZONE

- Gold Grades (g/tonne)**
- 0.5-1.0
 - 1.0-2.5
 - 2.5-5.0
 - 5.0-10.0
 - 10.0-15.0
 - >15.0

NH19-020		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 345°	Dip: -55°	EOH: 753m

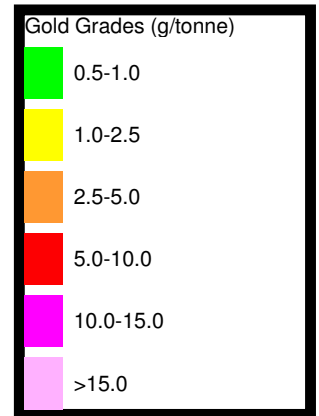
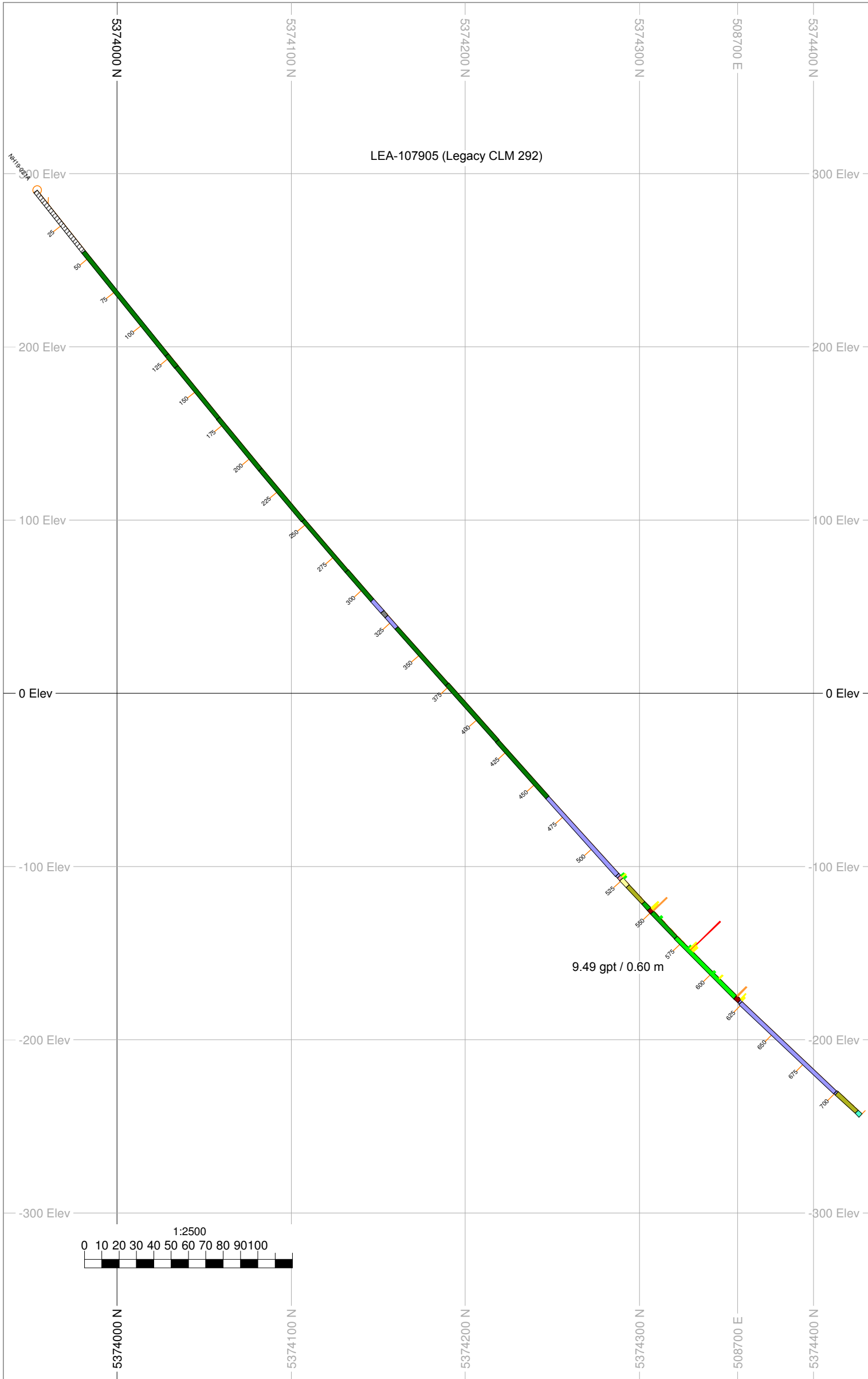
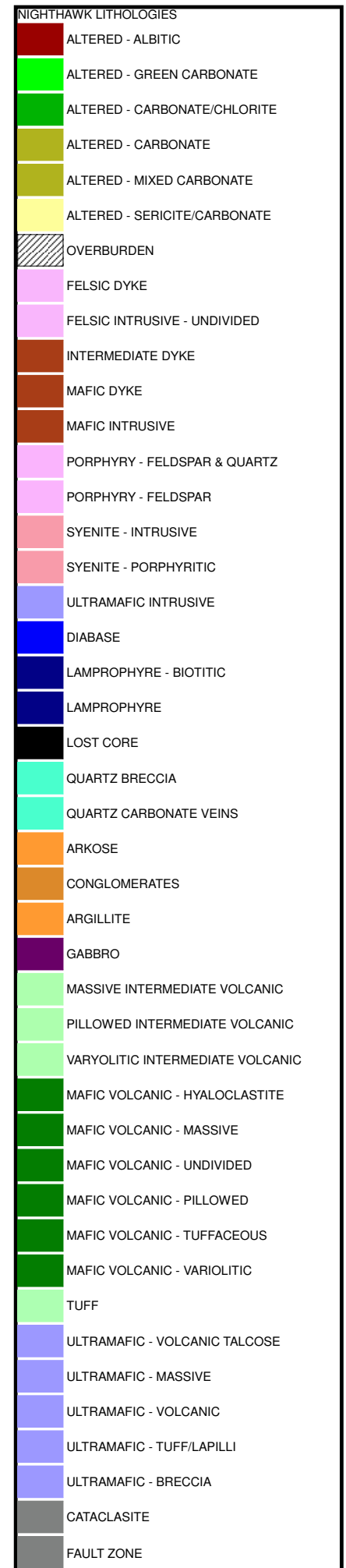
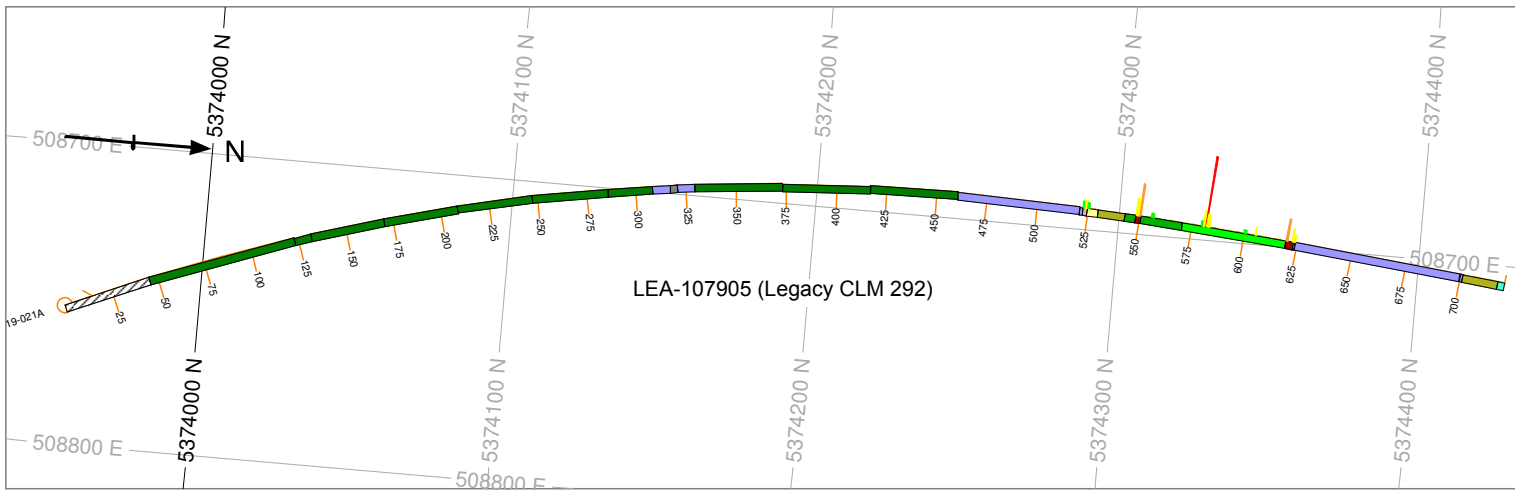




NH19-021		
Scale 1:2500	Date: 10 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 339.3°	Dip: -50°	EOH: 57m



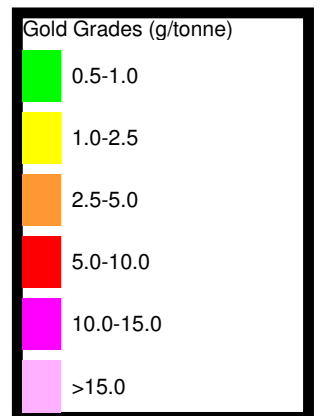
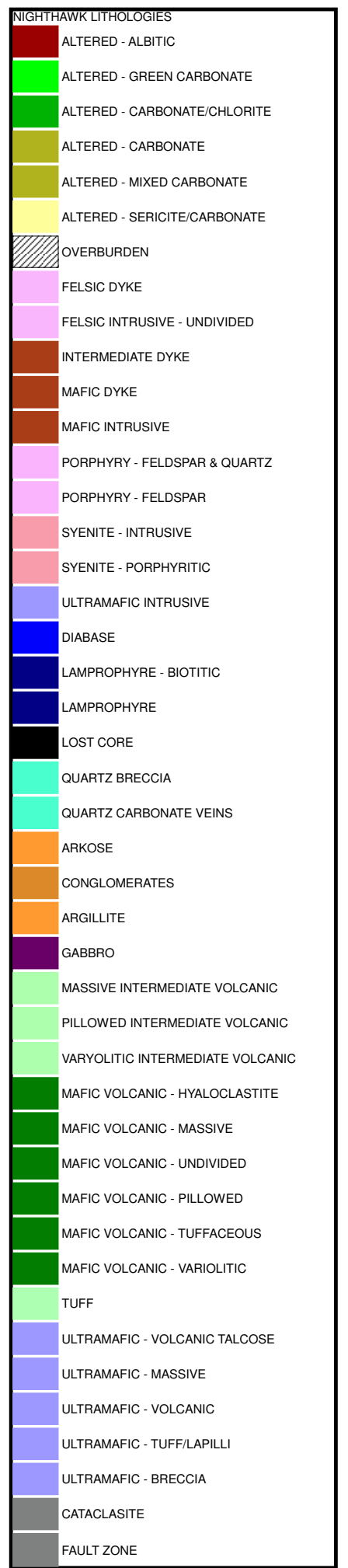
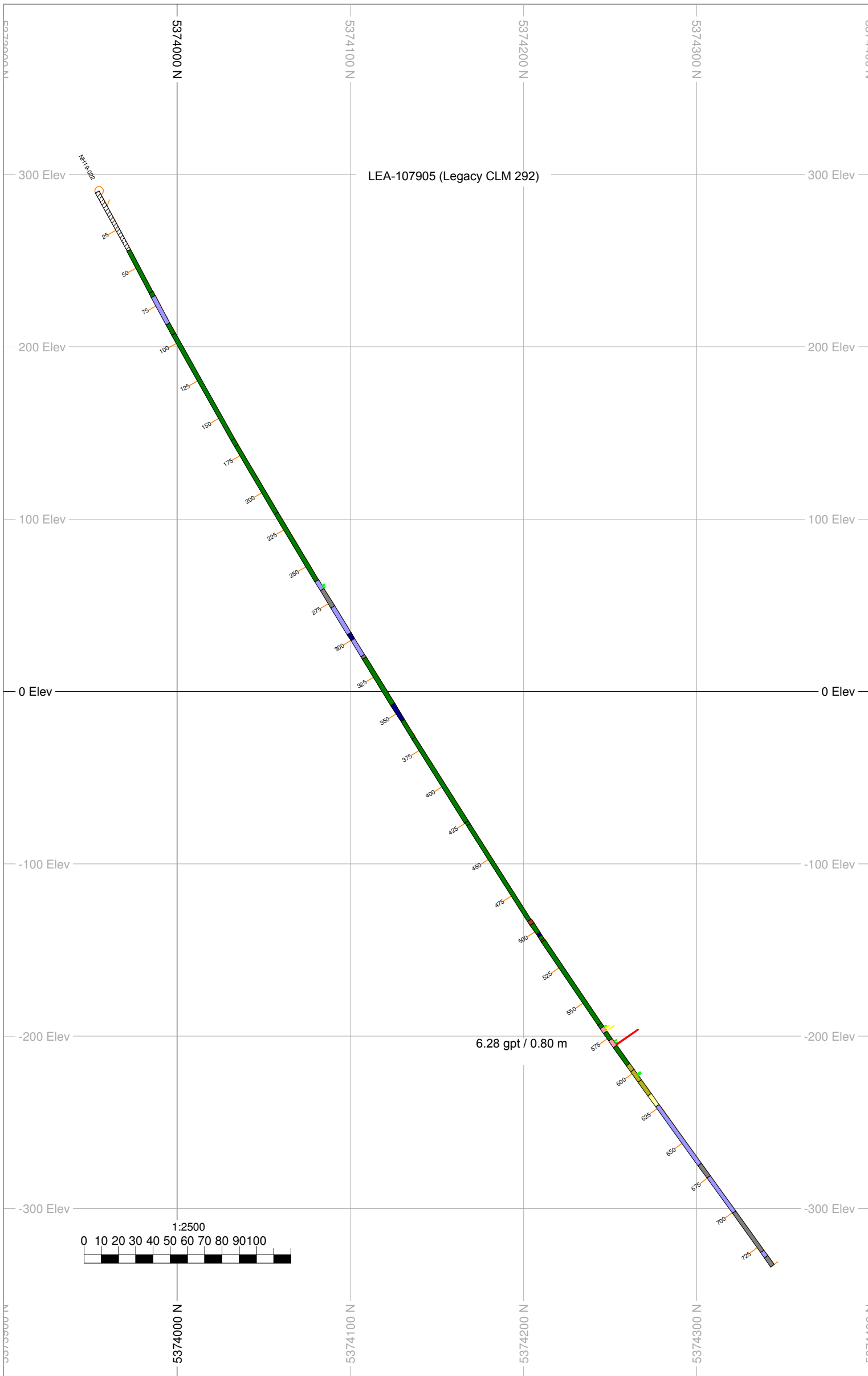
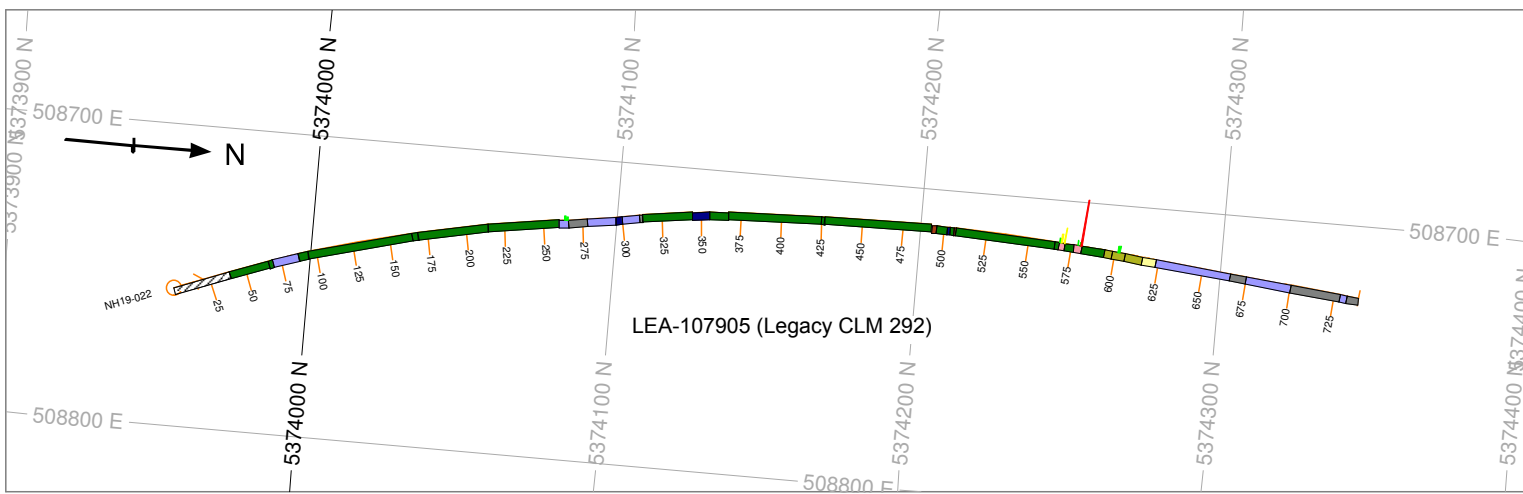
KIRKLAND LAKE GOLD



NH19-021A		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 335.6°	Dip: -50°	EOH: 720m

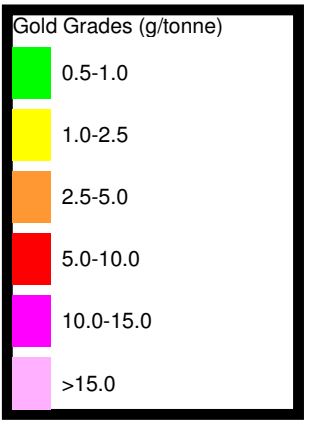
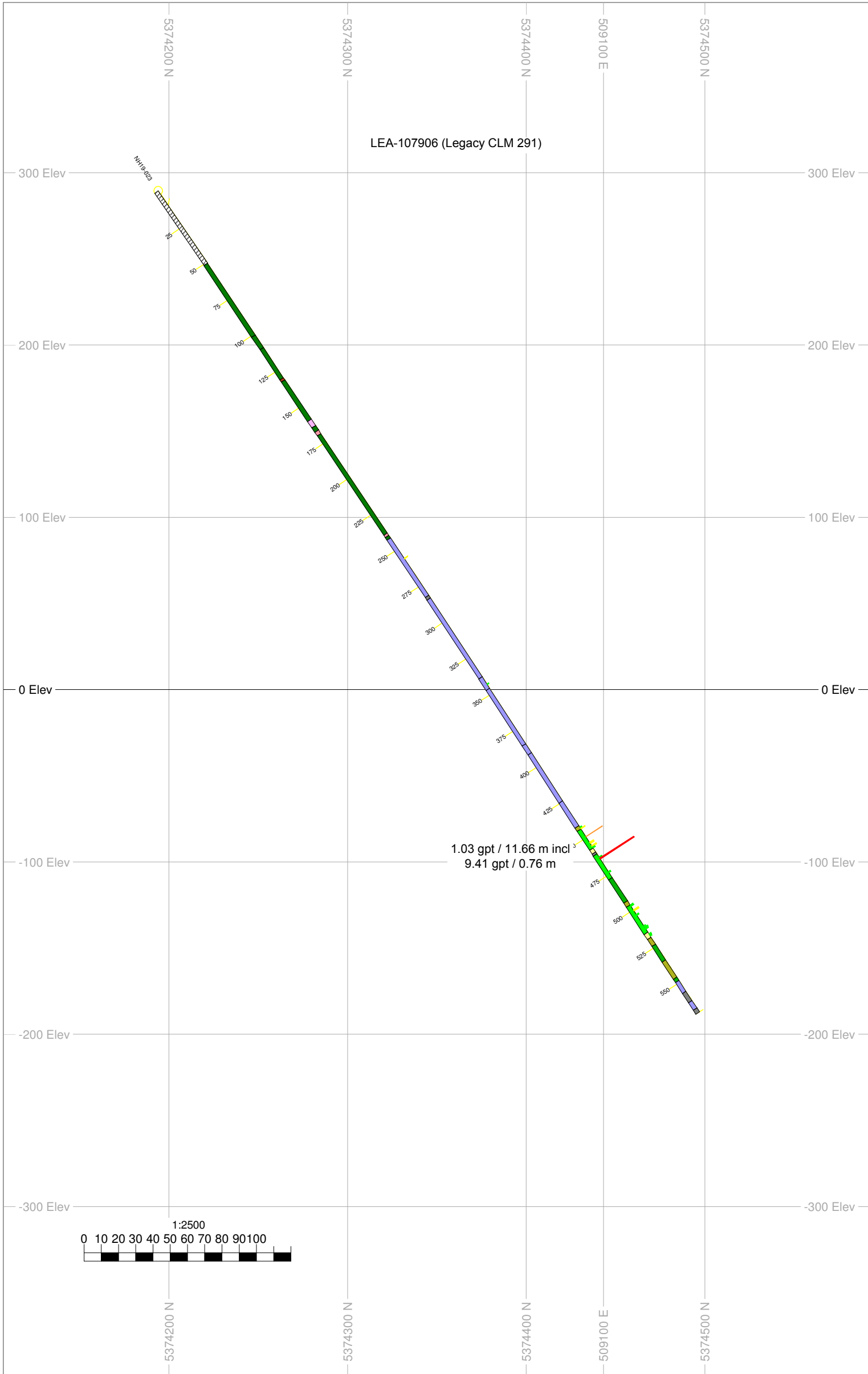
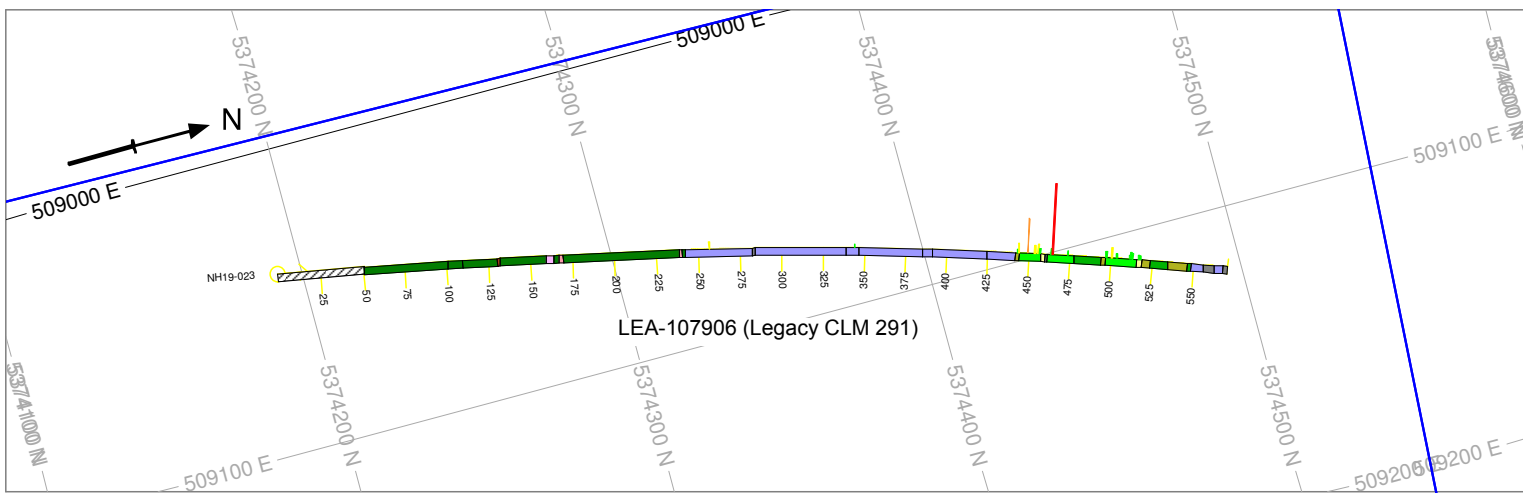


KIRKLAND LAKE GOLD



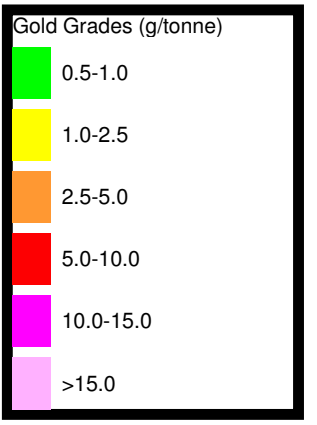
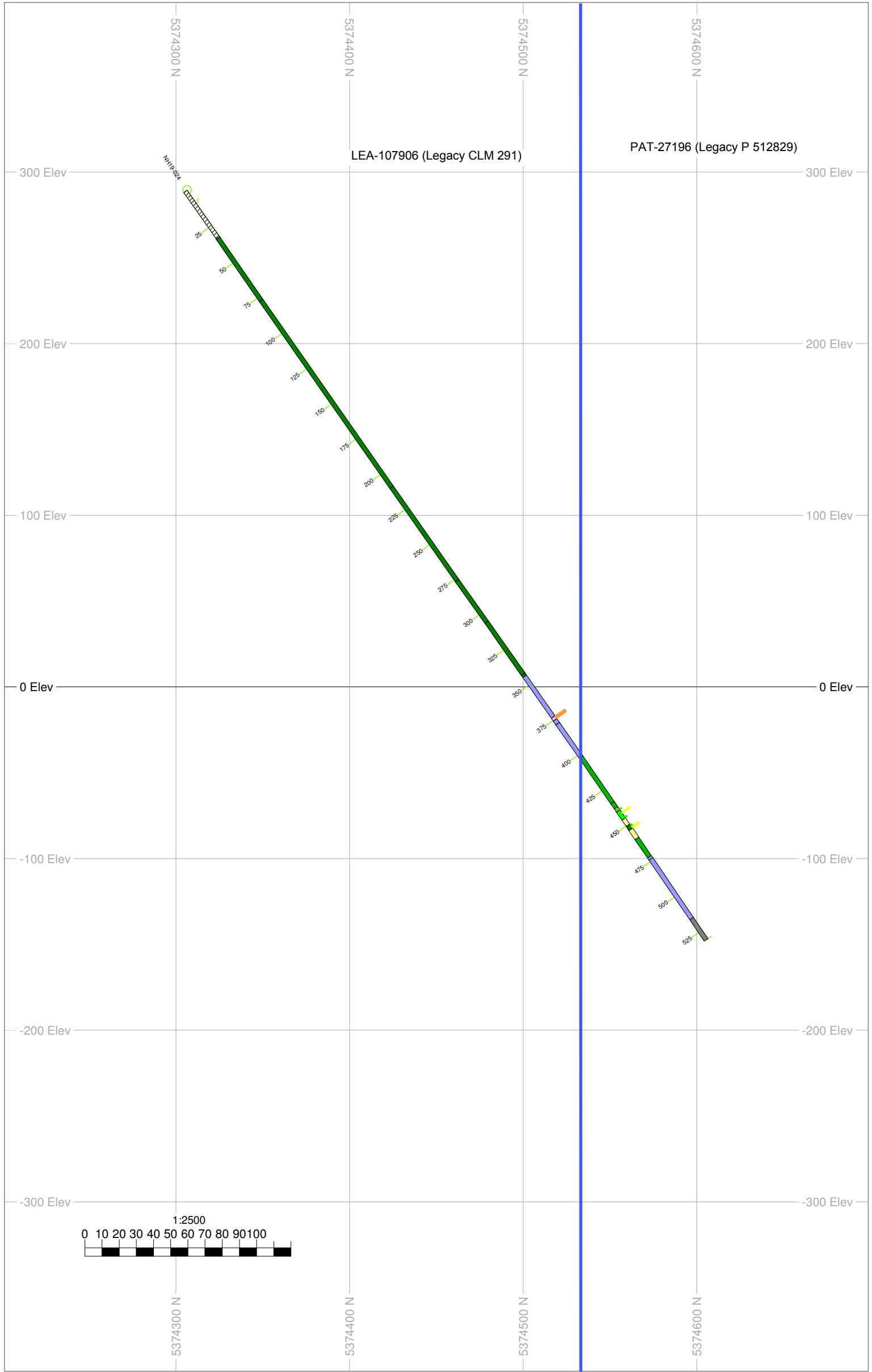
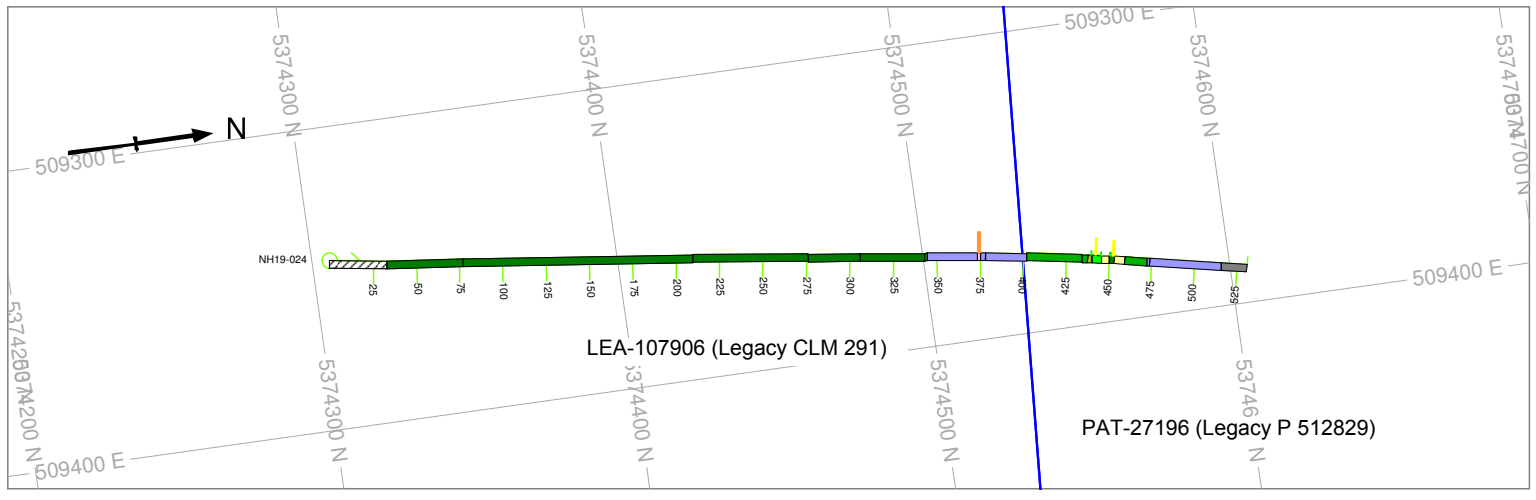
NH19-022		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 339.3°	Dip: -60°	EOH: 739m





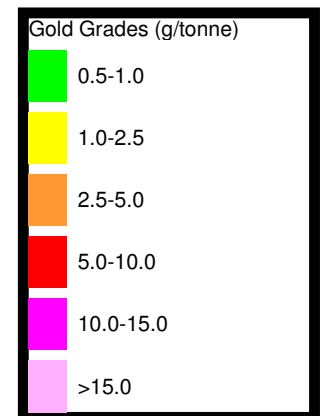
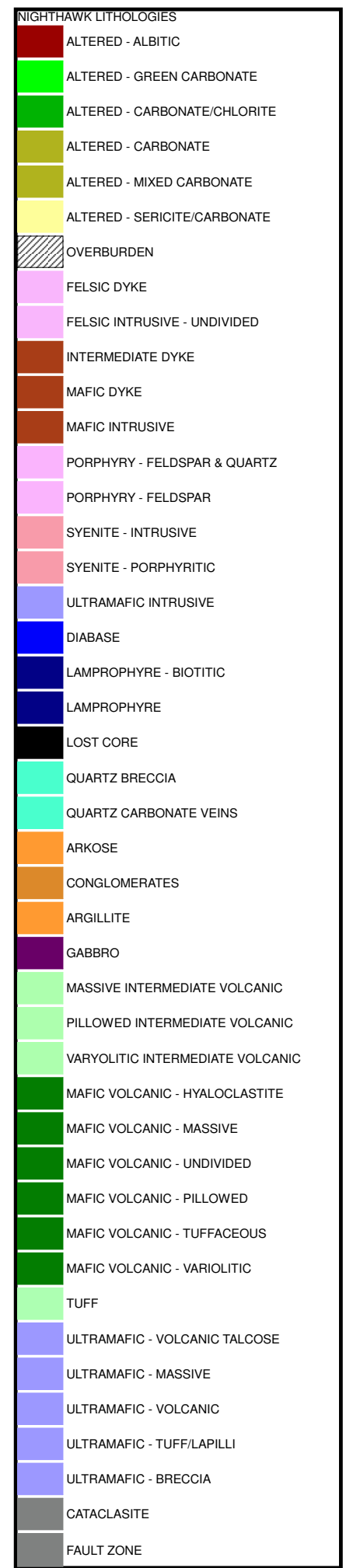
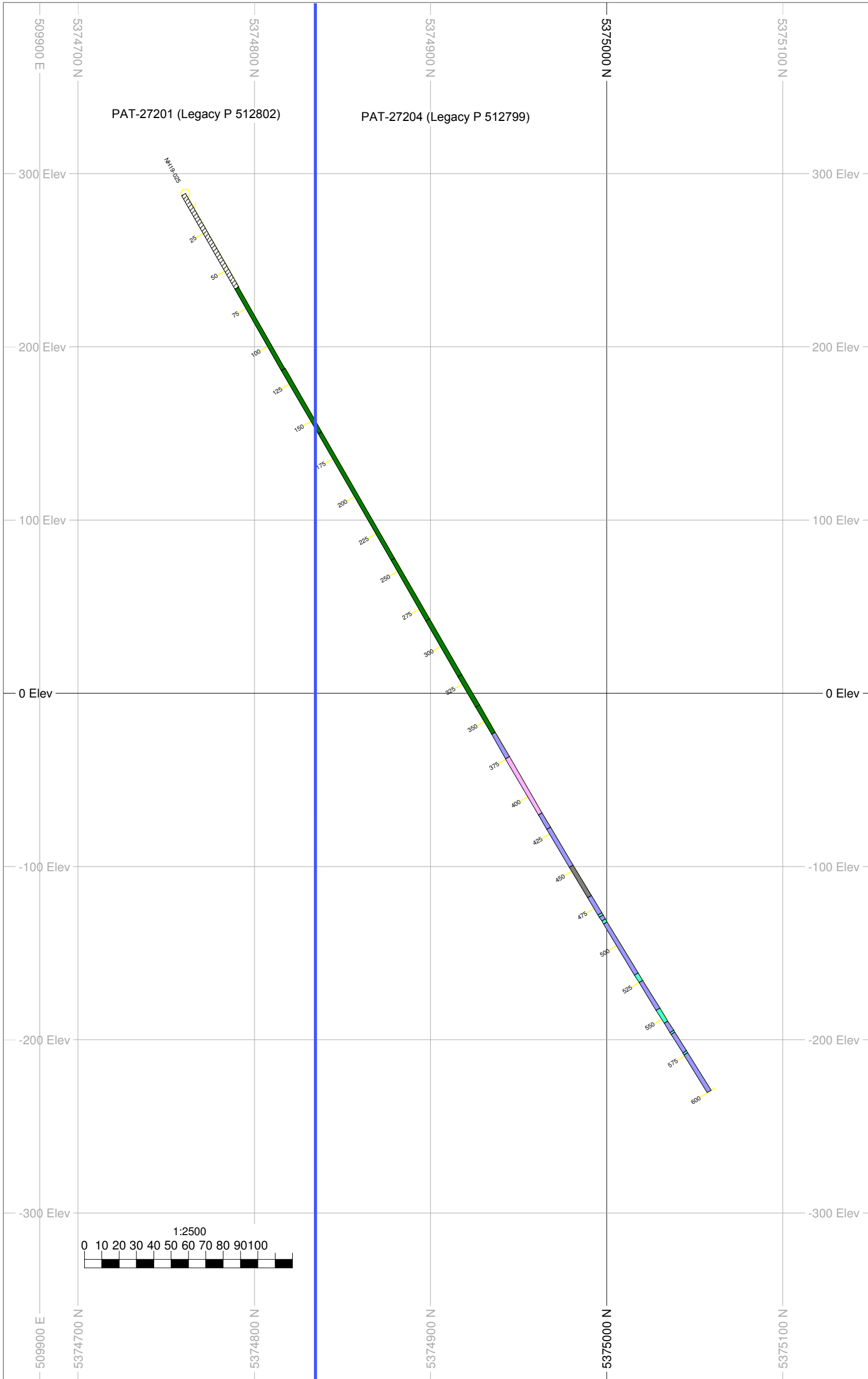
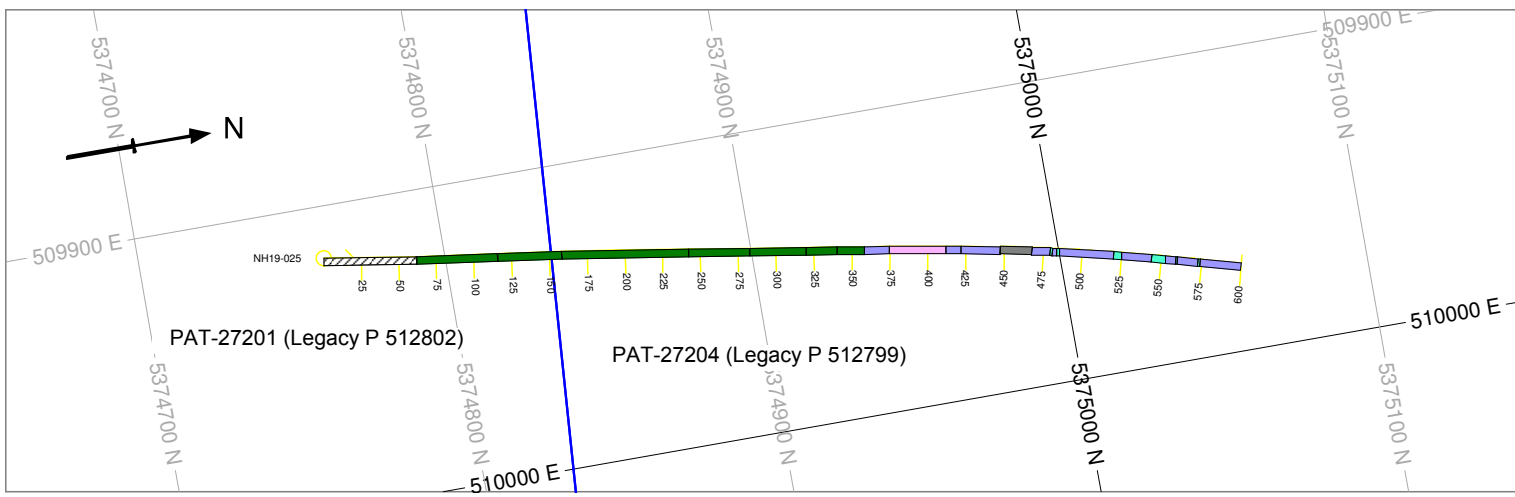
NH19-023		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 9.7°	Dip: -55°	EOH: 570.77m





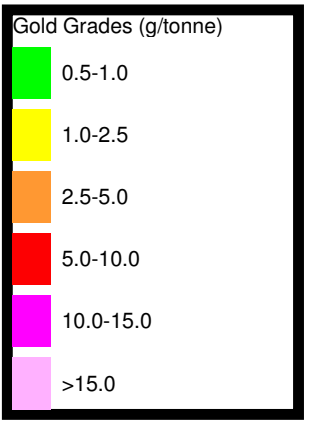
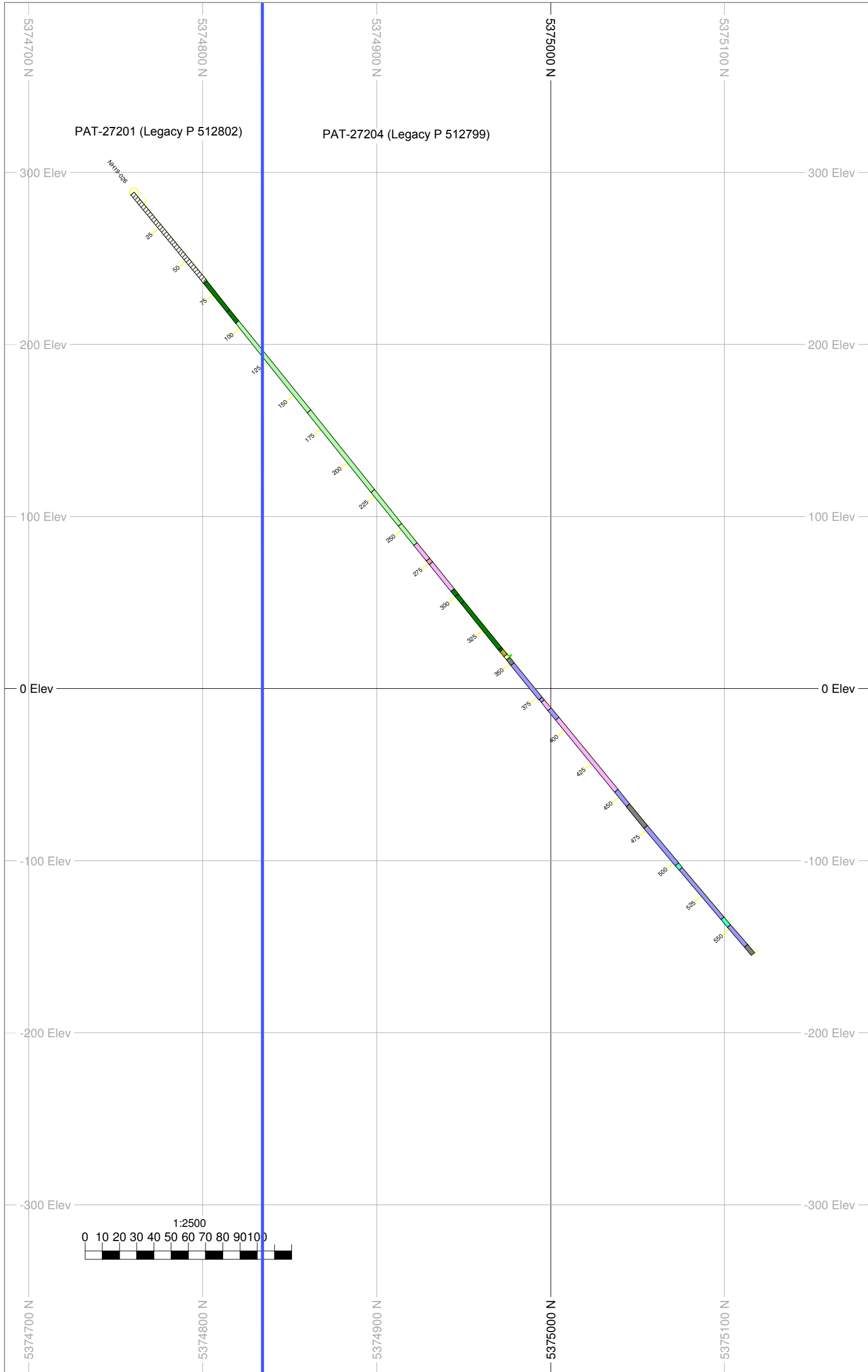
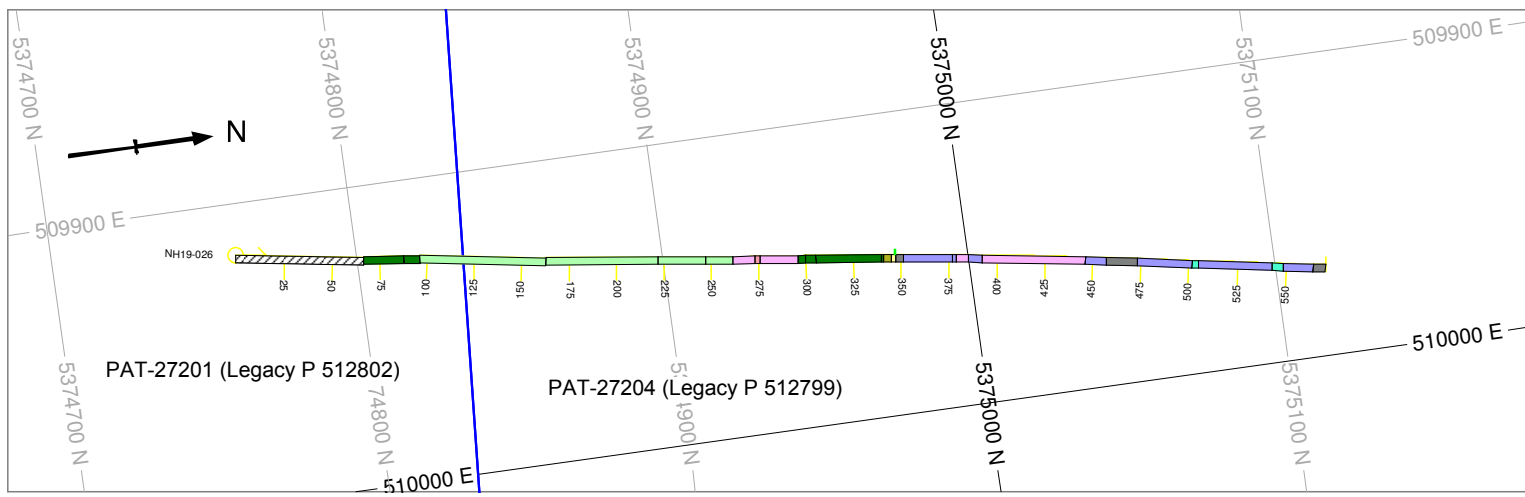
NH19-024		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -55°	EOH: 531m





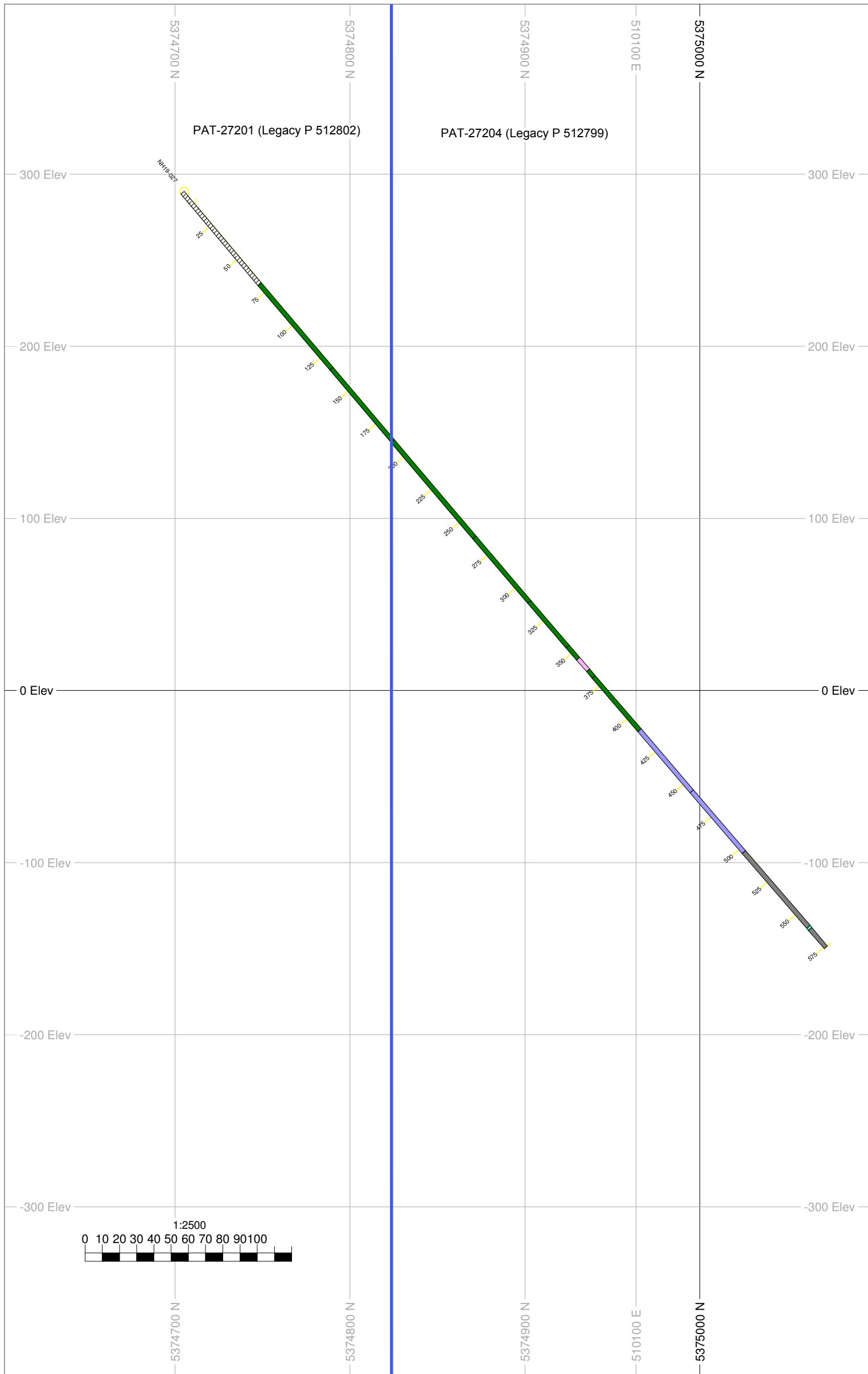
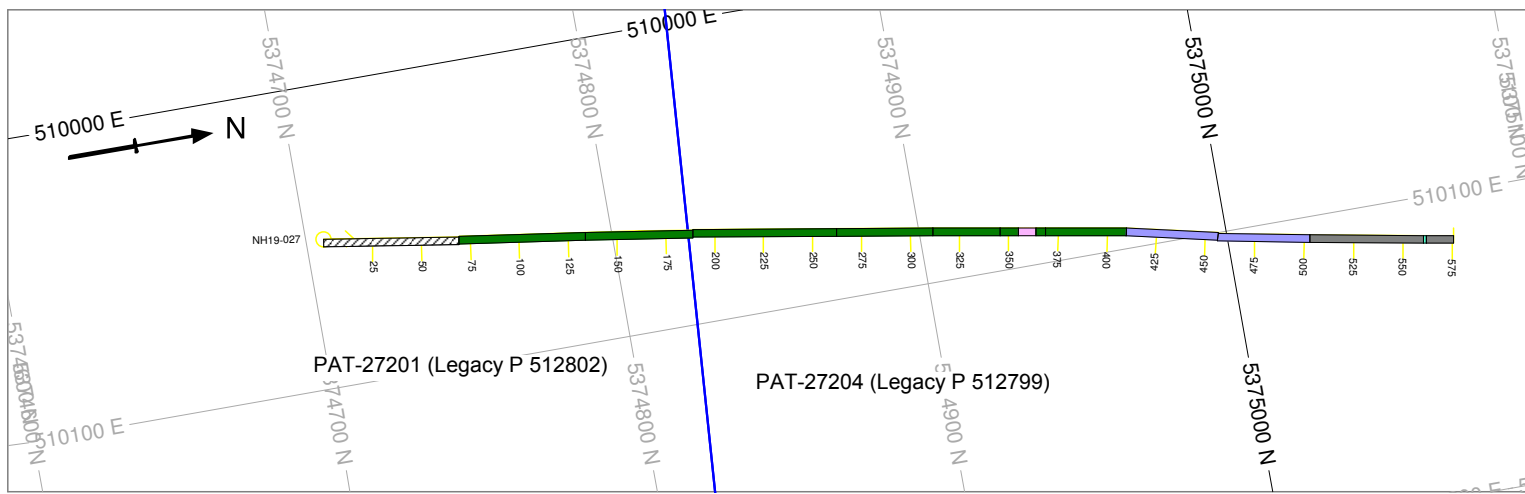
NH19-025		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -60°	EOH: 600m





NH19-026		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -50°	EOH: 570m



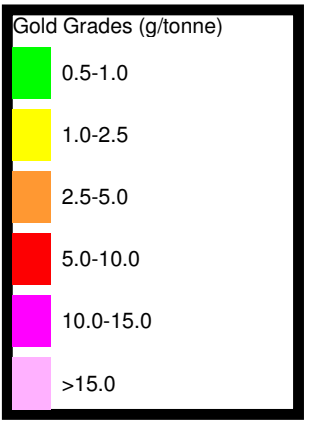
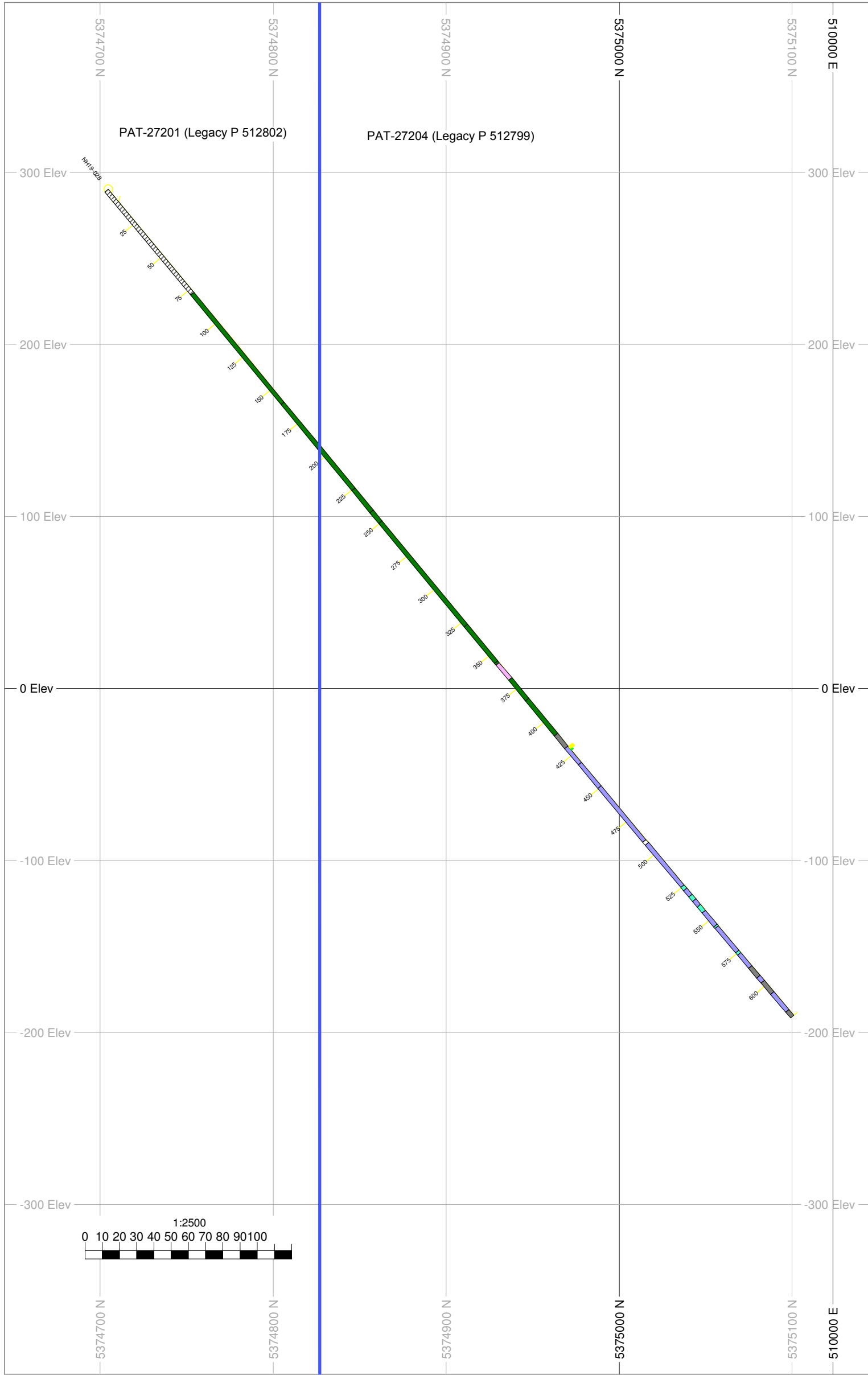
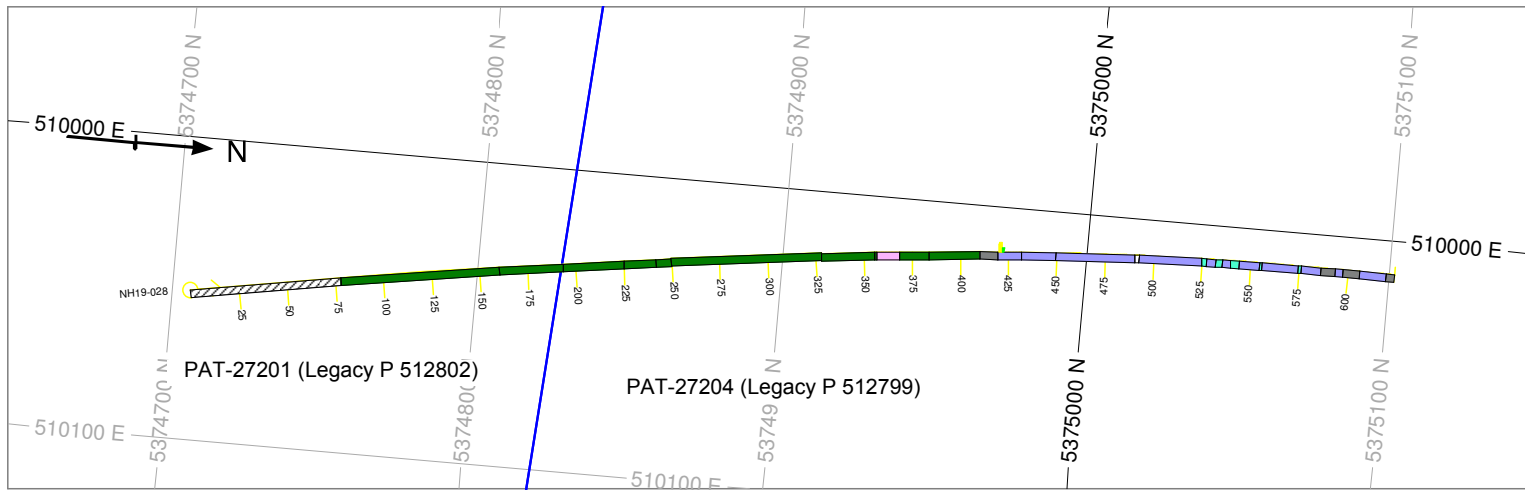


- NIGHTHAWK LITHOLOGIES**
- ALTERED - ALBITIC
 - ALTERED - GREEN CARBONATE
 - ALTERED - CARBONATE/CHLORITE
 - ALTERED - CARBONATE
 - ALTERED - MIXED CARBONATE
 - ALTERED - SERICITE/CARBONATE
 - OVERBURDEN
 - FELSIC DYKE
 - FELSIC INTRUSIVE - UNDIVIDED
 - INTERMEDIATE DYKE
 - MAFIC DYKE
 - MAFIC INTRUSIVE
 - PORPHYRY - FELDSPAR & QUARTZ
 - PORPHYRY - FELDSPAR
 - SYENITE - INTRUSIVE
 - SYENITE - PORPHYRITIC
 - ULTRAMAFIC INTRUSIVE
 - DIABASE
 - LAMPORPHYRE - BIOTITIC
 - LAMPORPHYRE
 - LOST CORE
 - QUARTZ BRECCIA
 - QUARTZ CARBONATE VEINS
 - ARKOSE
 - CONGLOMERATES
 - ARGILLITE
 - GABBRO
 - MASSIVE INTERMEDIATE VOLCANIC
 - PILLOWED INTERMEDIATE VOLCANIC
 - VARYOLITIC INTERMEDIATE VOLCANIC
 - MAFIC VOLCANIC - HYALOCLASTITE
 - MAFIC VOLCANIC - MASSIVE
 - MAFIC VOLCANIC - UNDIVIDED
 - MAFIC VOLCANIC - PILLOWED
 - MAFIC VOLCANIC - TUFFACEOUS
 - MAFIC VOLCANIC - VARIOLITIC
 - TUFF
 - ULTRAMAFIC - VOLCANIC TALCOSE
 - ULTRAMAFIC - MASSIVE
 - ULTRAMAFIC - VOLCANIC
 - ULTRAMAFIC - TUFF/LAPILLI
 - ULTRAMAFIC - BRECCIA
 - CATACLASITE
 - FAULT ZONE

- Gold Grades (g/tonne)**
- 0.5-1.0
 - 1.0-2.5
 - 2.5-5.0
 - 5.0-10.0
 - 10.0-15.0
 - >15.0

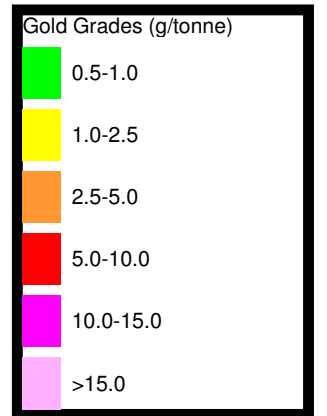
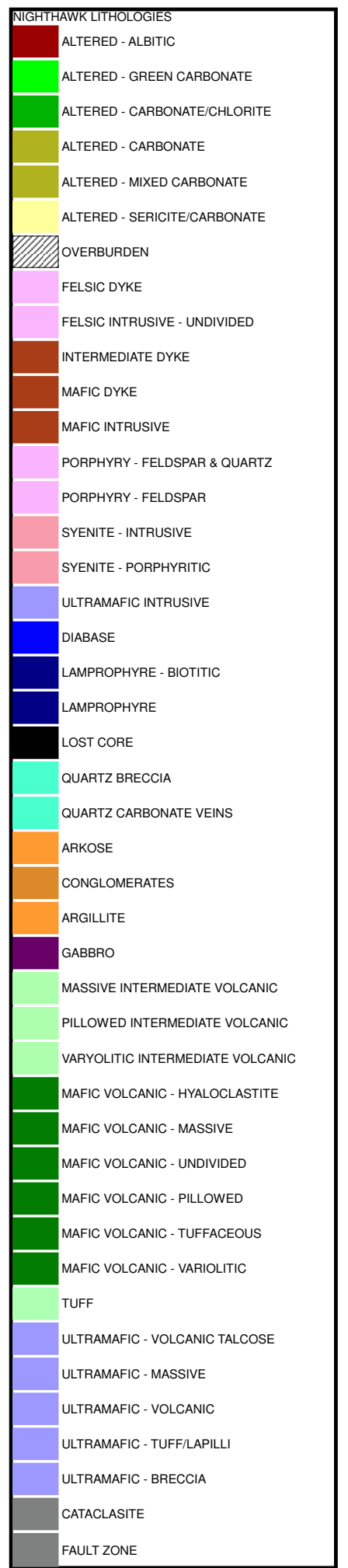
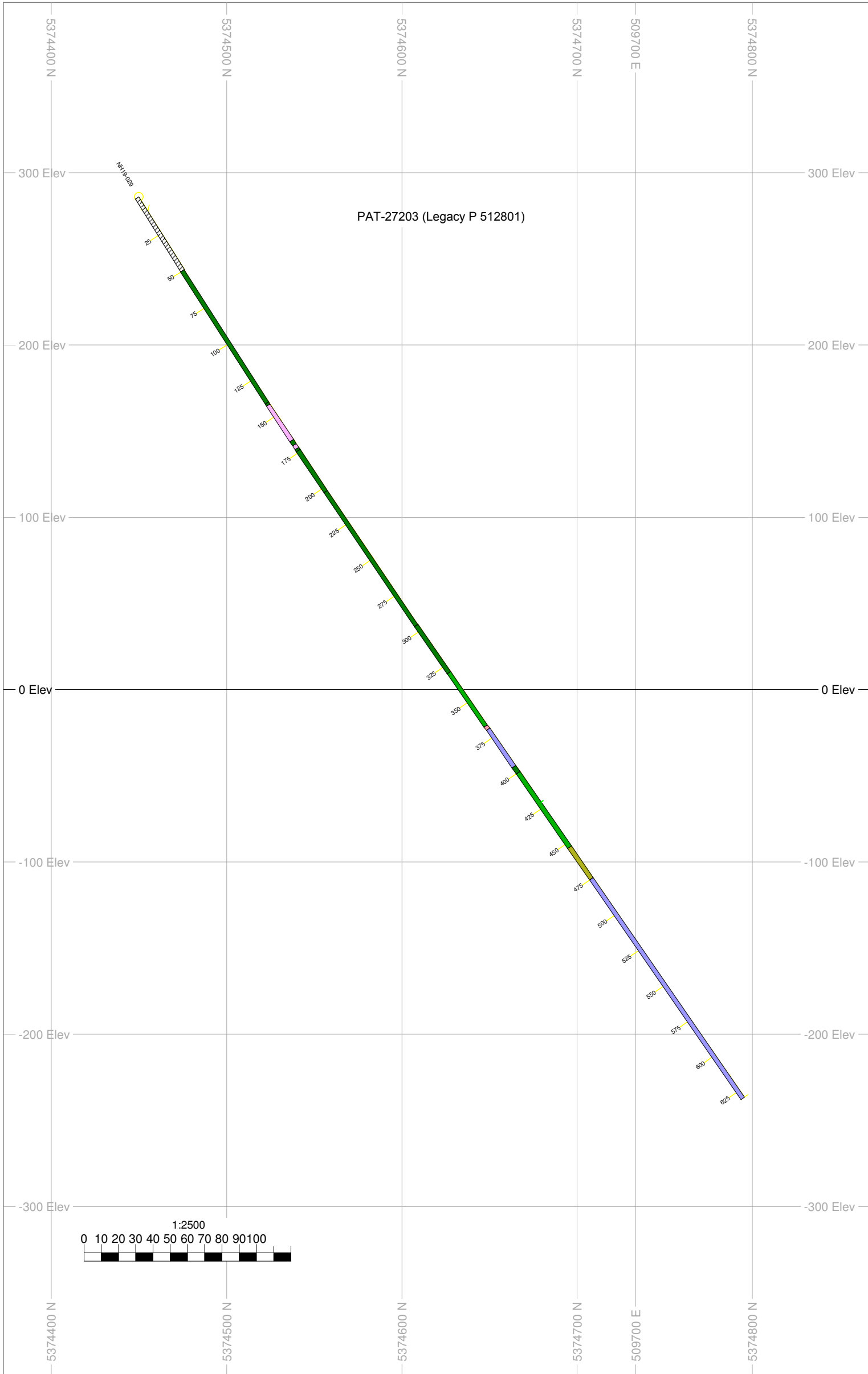
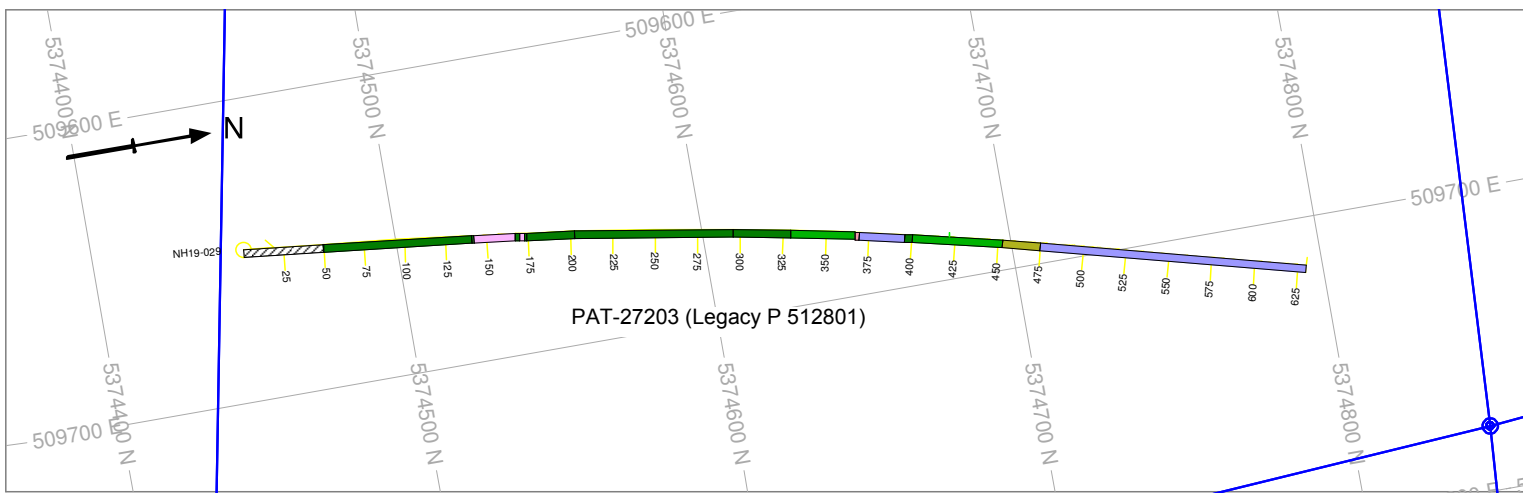
NH19-027		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -60°	EOH: 576m





NH19-028		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 350°	Dip: -50°	EOH: 624m

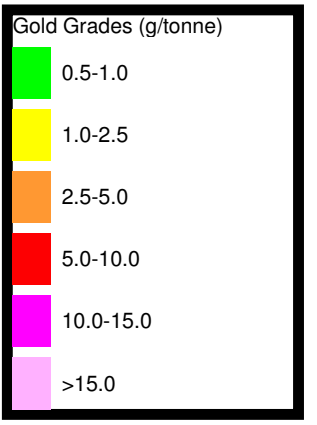
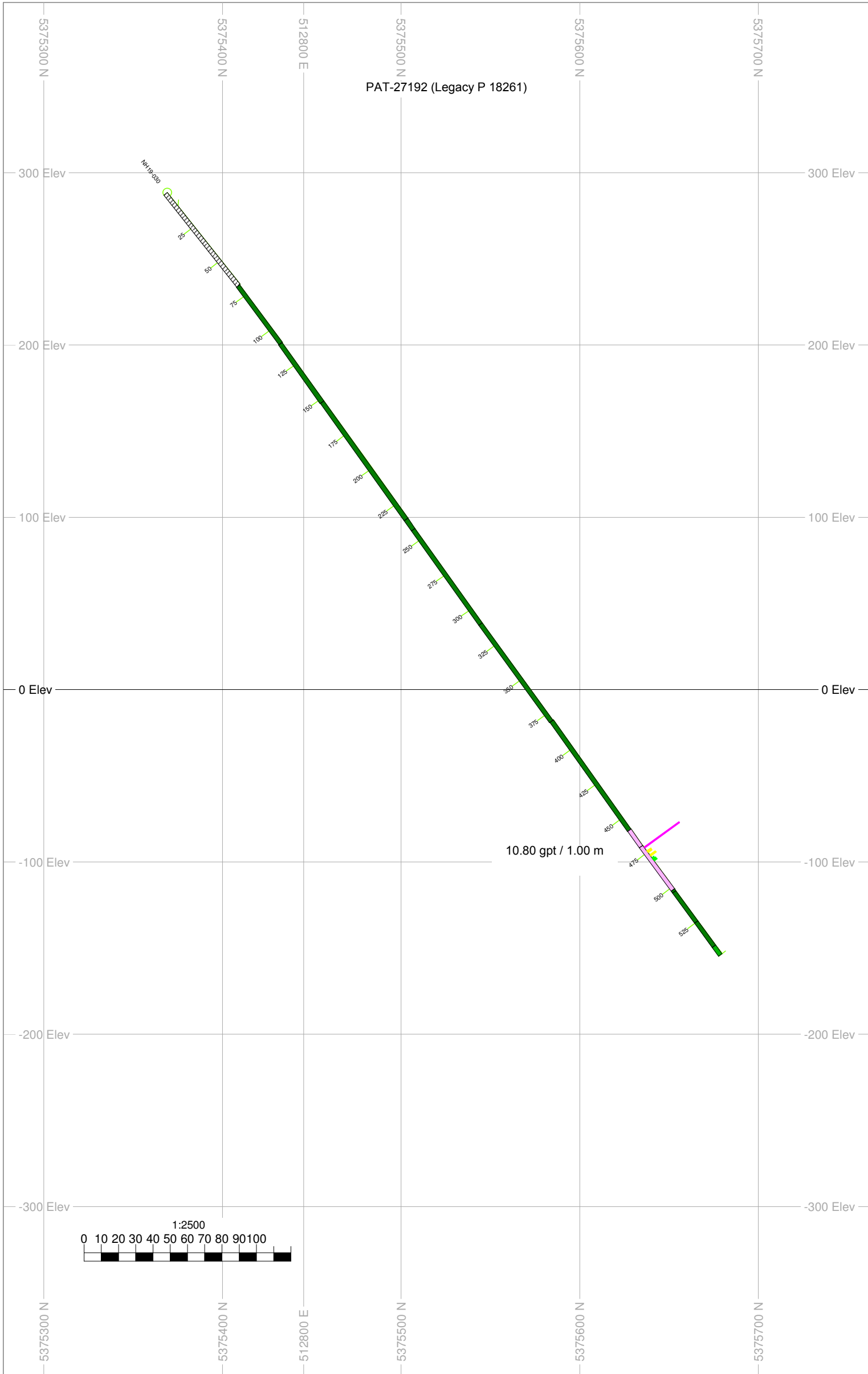
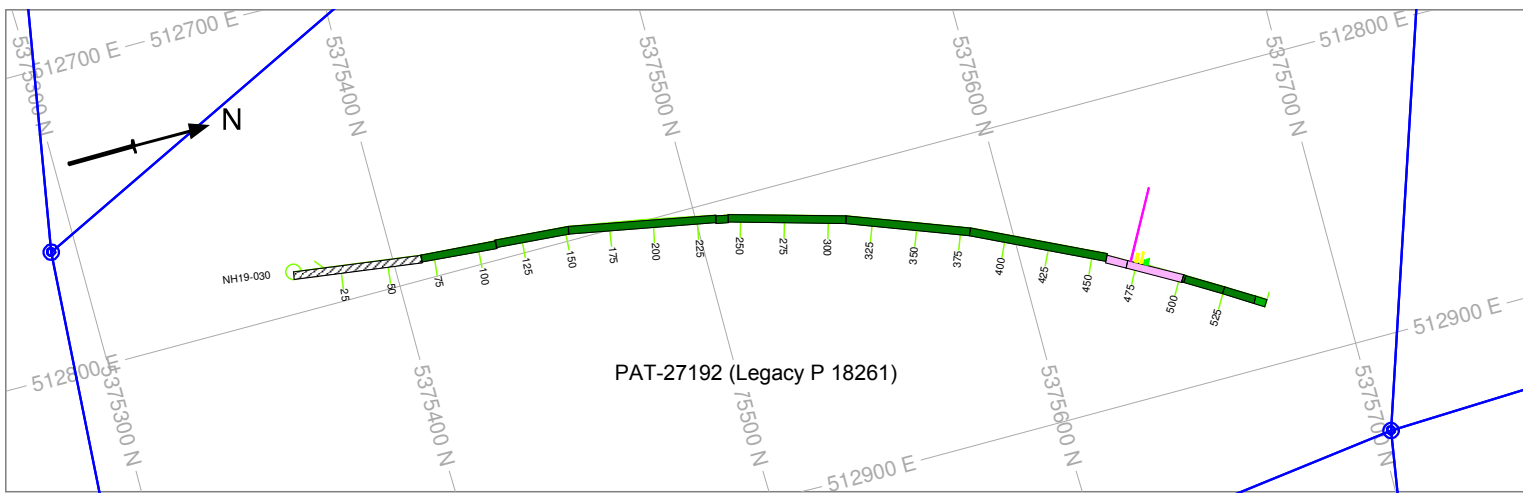




NH19-029		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -55°	EOH: 630m

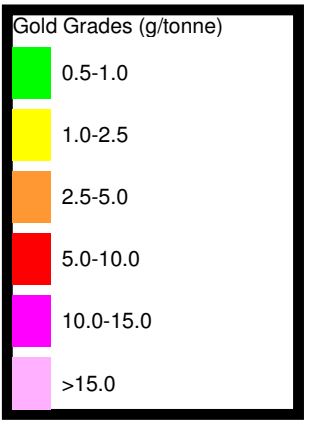
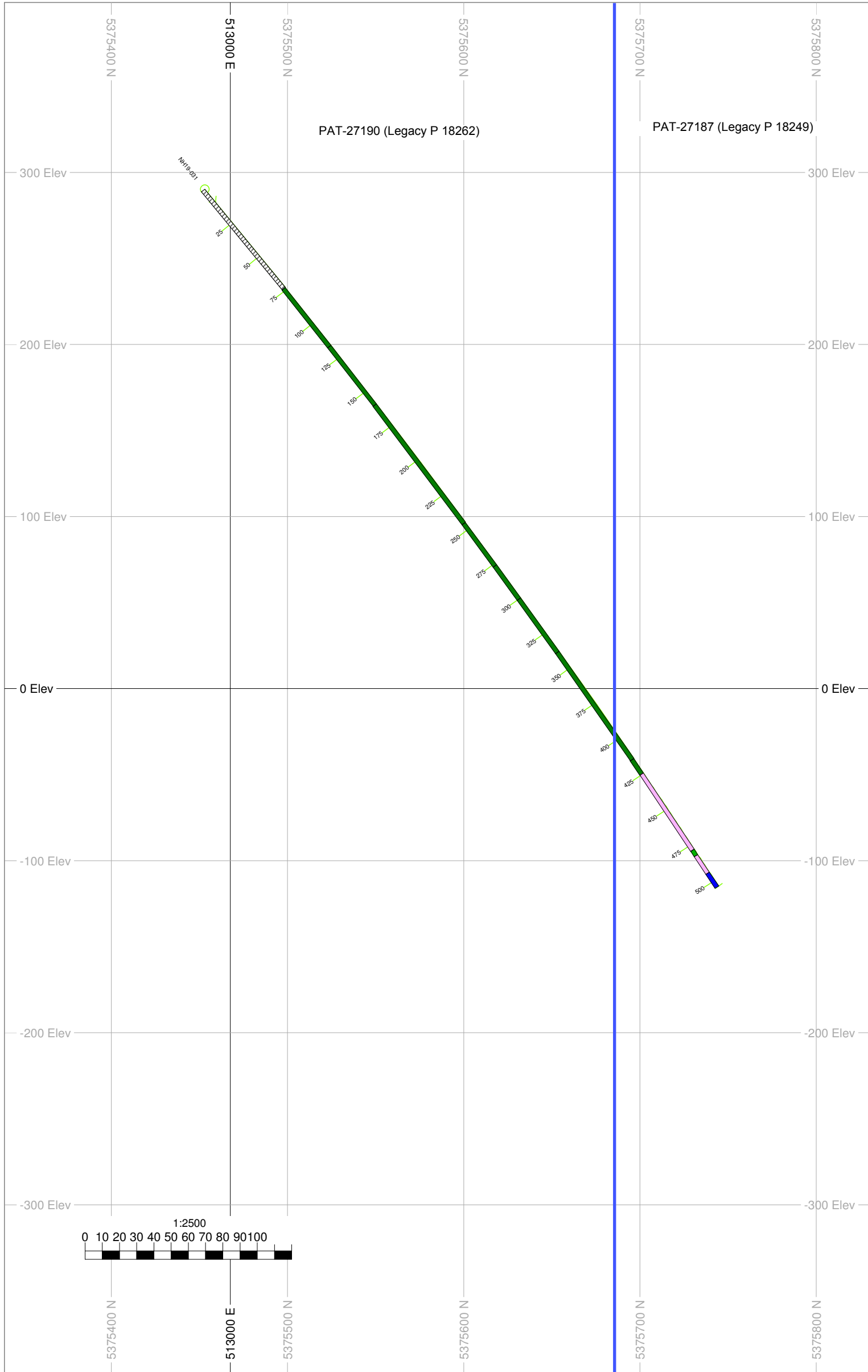
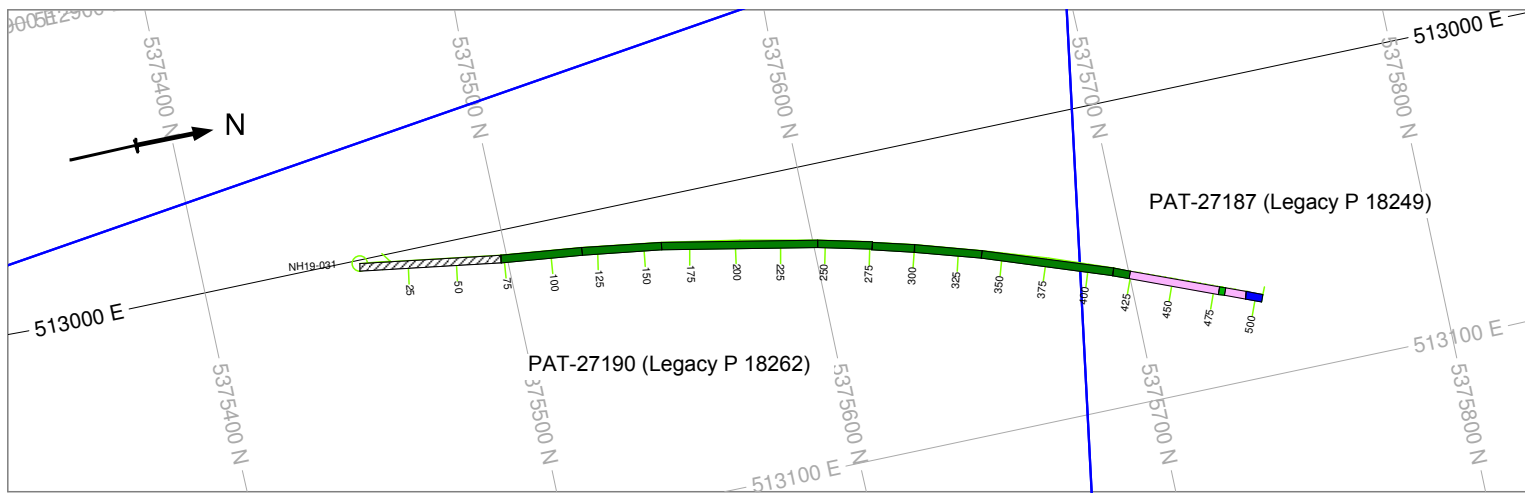


KIRKLAND LAKE GOLD



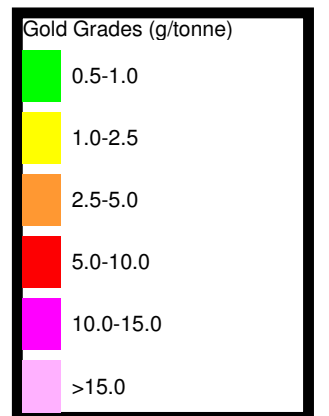
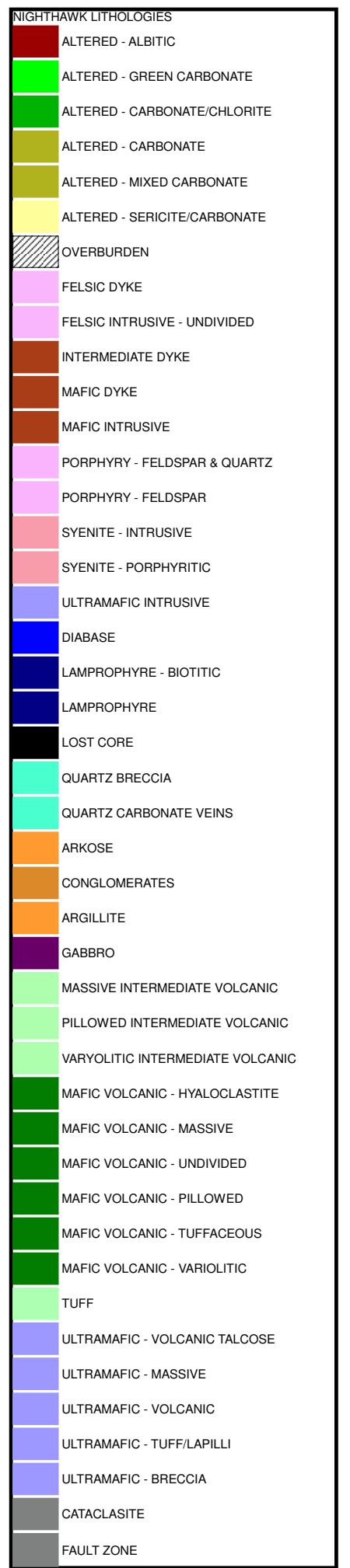
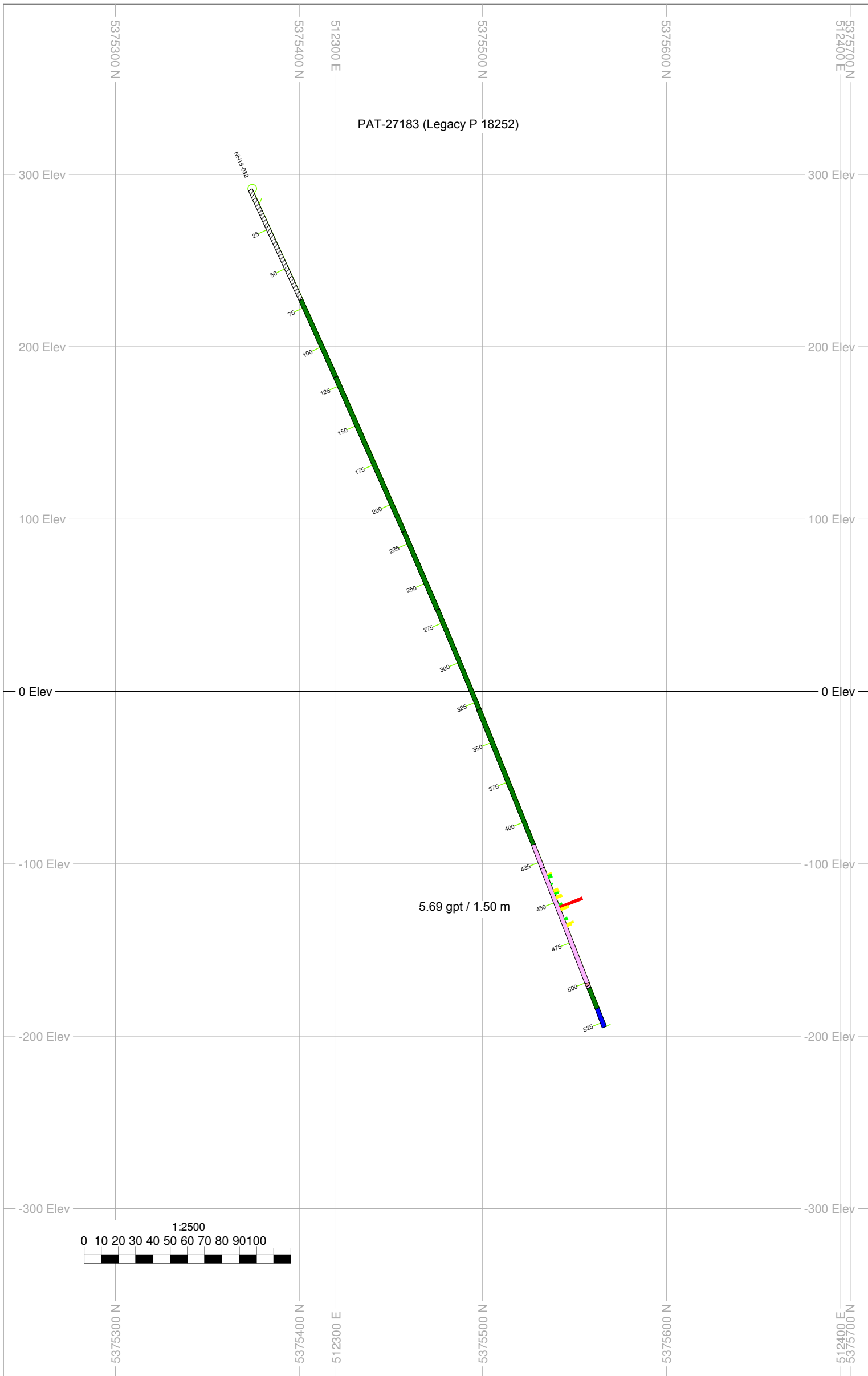
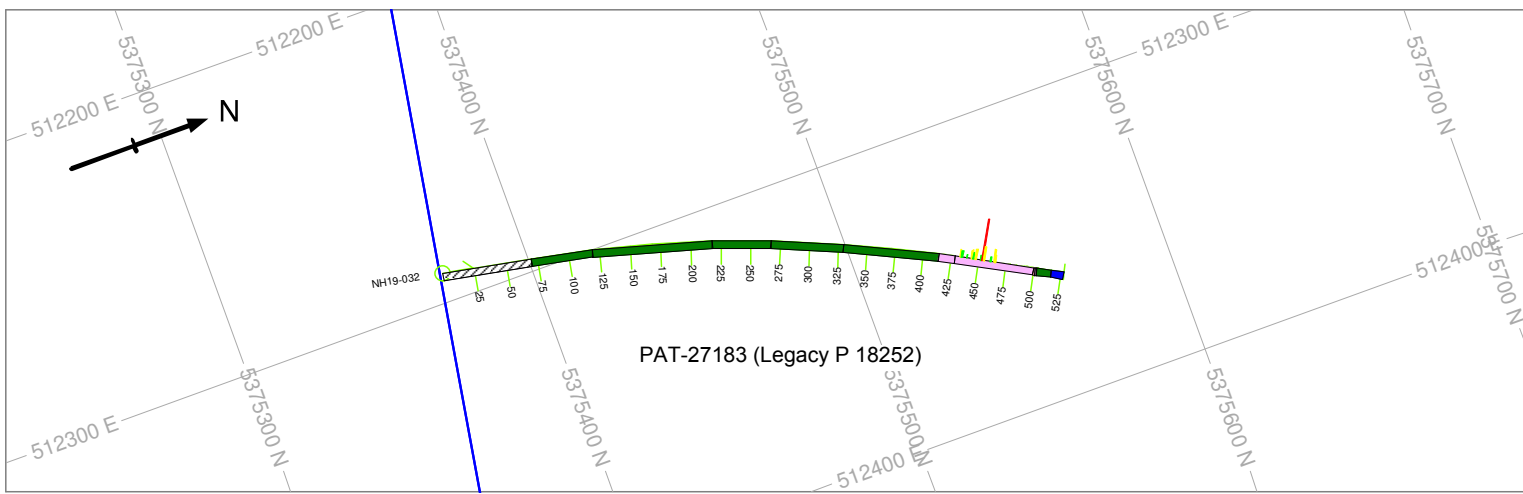
NH19-030		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -50°	EOH: 549m





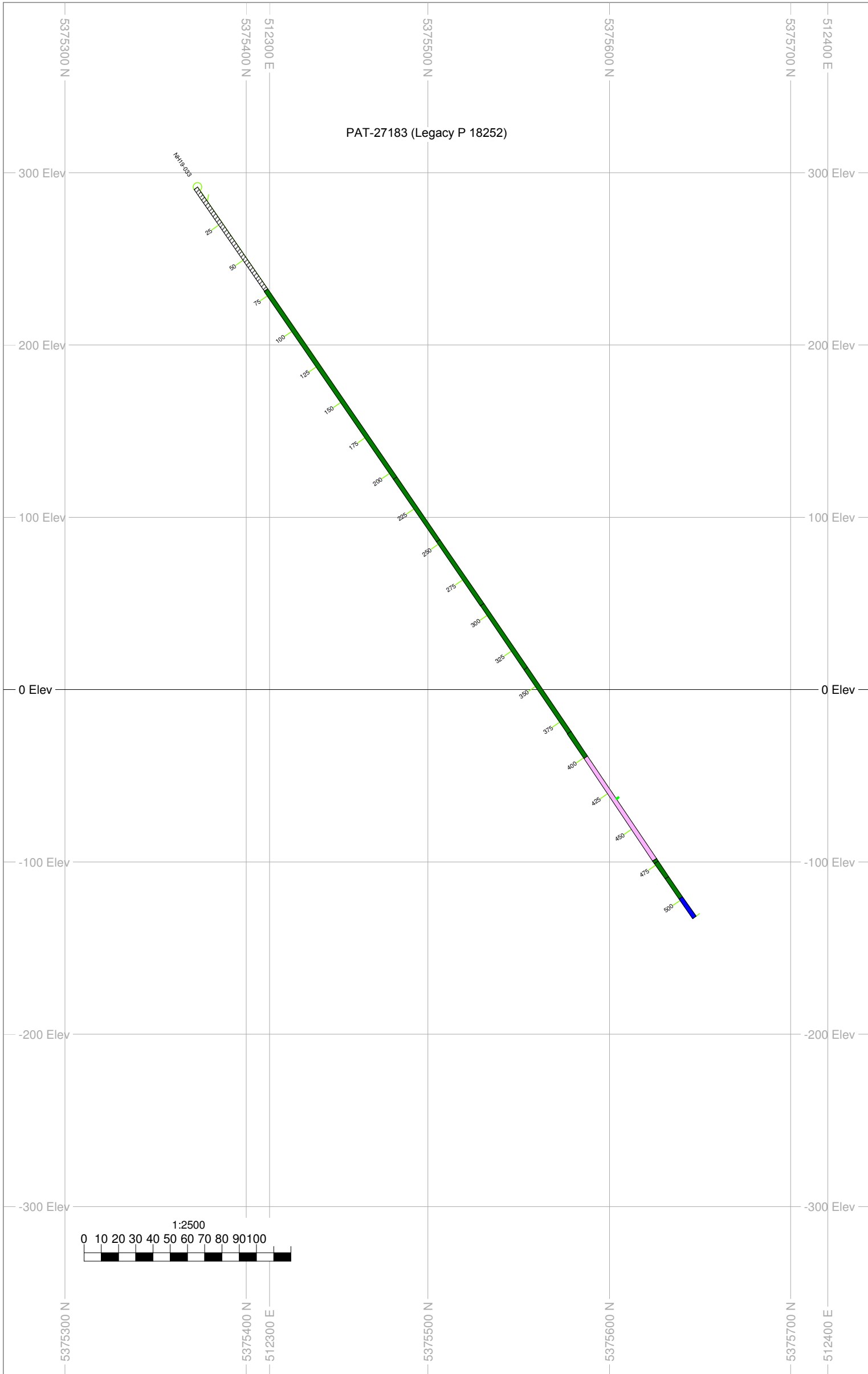
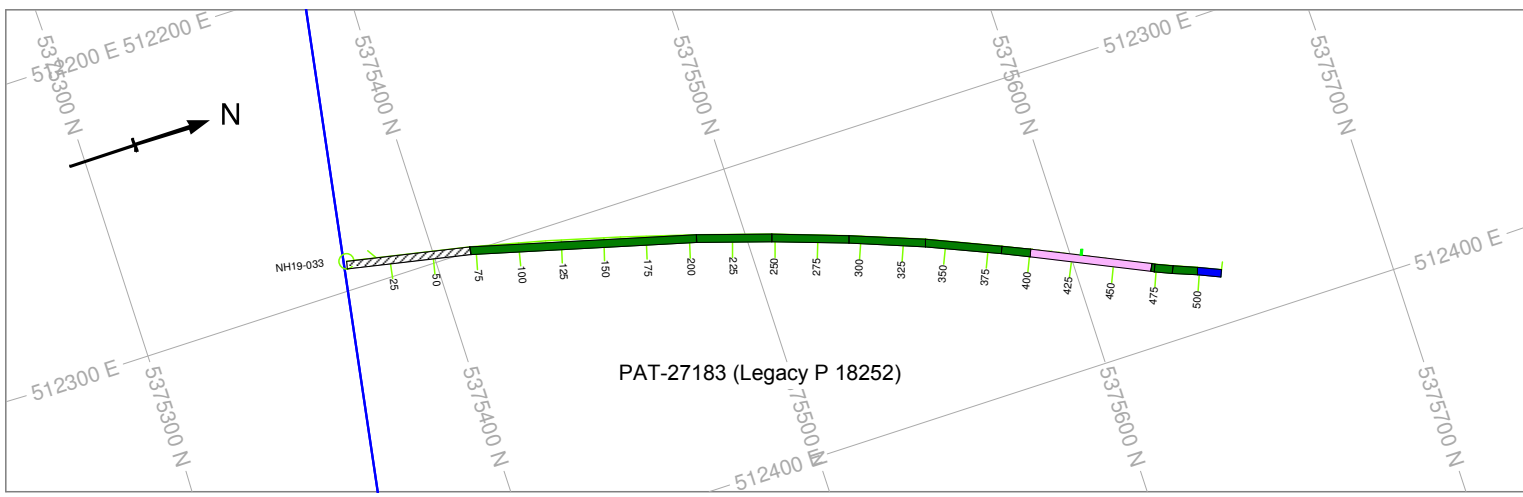
NH19-031		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -50°	EOH: 504m



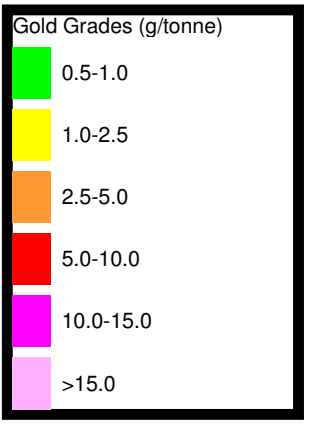


NH19-032		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -65°	EOH: 528m



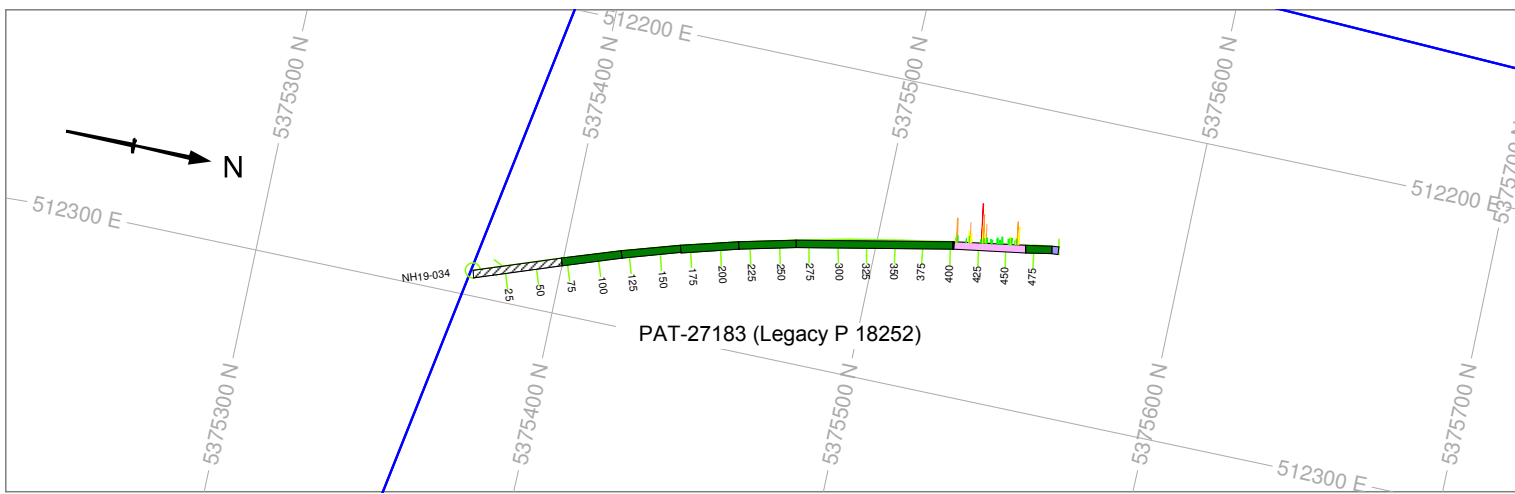


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- ALTERED - ALBITIC
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 - OVERBURDEN
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 - FELSIC INTRUSIVE - UNDIVIDED
 - INTERMEDIATE DYKE
 - MAFIC DYKE
 - MAFIC INTRUSIVE
 - PORPHYRY - FELDSPAR & QUARTZ
 - PORPHYRY - FELDSPAR
 - SYENITE - INTRUSIVE
 - SYENITE - PORPHYRITIC
 - ULTRAMAFIC INTRUSIVE
 - DIABASE
 - LAMPORPHYRE - BIOTITIC
 - LAMPORPHYRE
 - LOST CORE
 - QUARTZ BRECCIA
 - QUARTZ CARBONATE VEINS
 - ARKOSE
 - CONGLOMERATES
 - ARGILLITE
 - GABBRO
 - MASSIVE INTERMEDIATE VOLCANIC
 - PILLOWED INTERMEDIATE VOLCANIC
 - VARYOLITIC INTERMEDIATE VOLCANIC
 - MAFIC VOLCANIC - HYALOCLASTITE
 - MAFIC VOLCANIC - MASSIVE
 - MAFIC VOLCANIC - UNDIVIDED
 - MAFIC VOLCANIC - PILLOWED
 - MAFIC VOLCANIC - TUFFACEOUS
 - MAFIC VOLCANIC - VARIOLITIC
 - TUFF
 - ULTRAMAFIC - VOLCANIC TALCOSE
 - ULTRAMAFIC - MASSIVE
 - ULTRAMAFIC - VOLCANIC
 - ULTRAMAFIC - TUFF/LAPILLI
 - ULTRAMAFIC - BRECCIA
 - CATACLASITE
 - FAULT ZONE

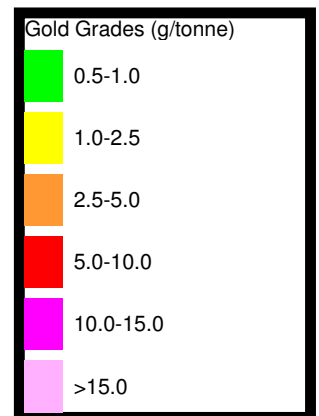
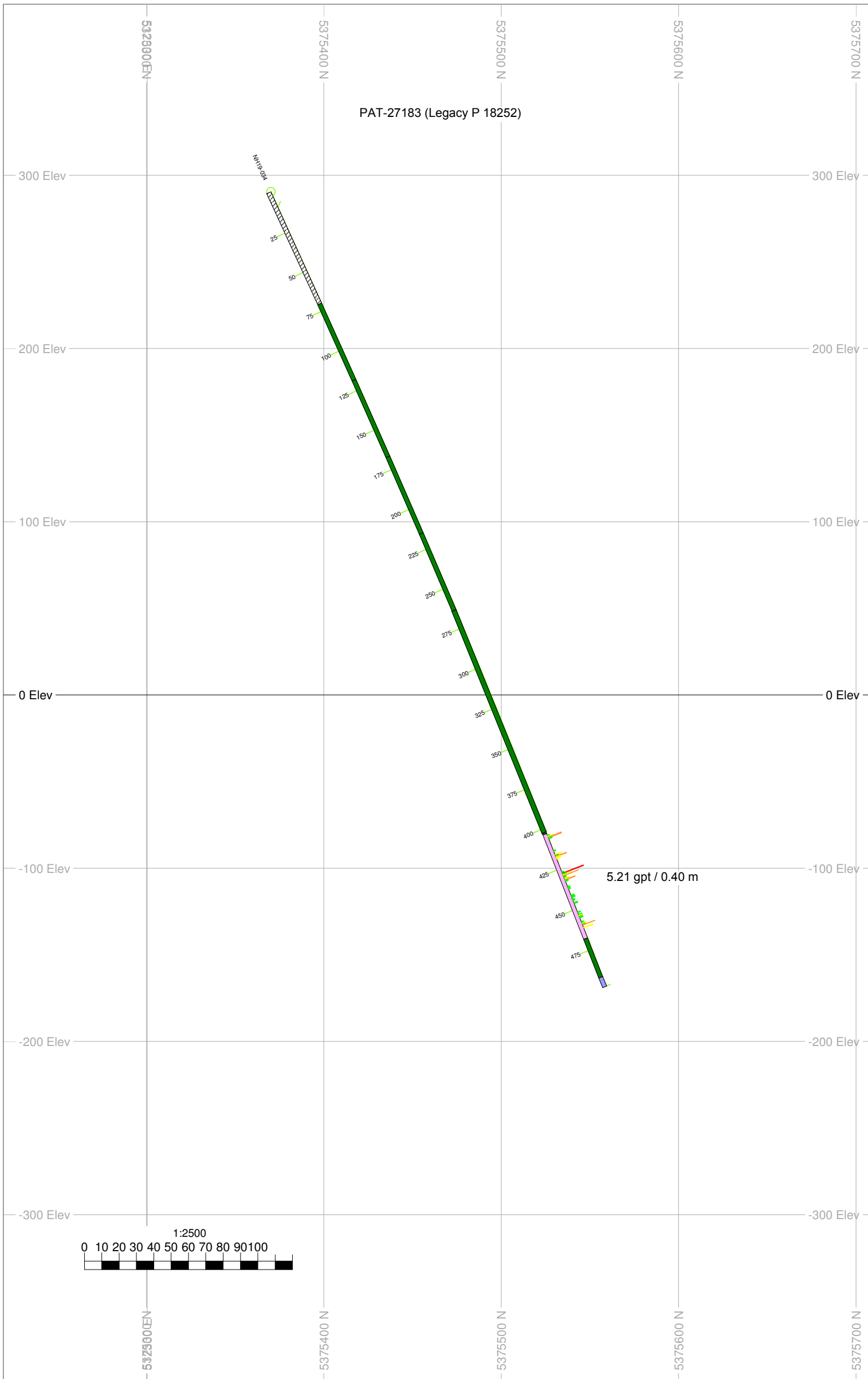


NH19-033		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -55°	EOH: 513m



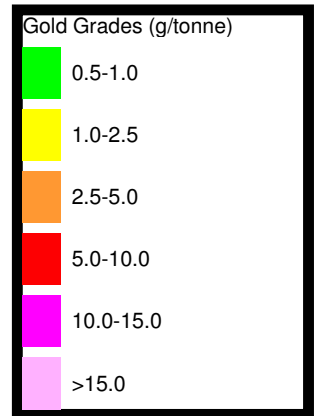
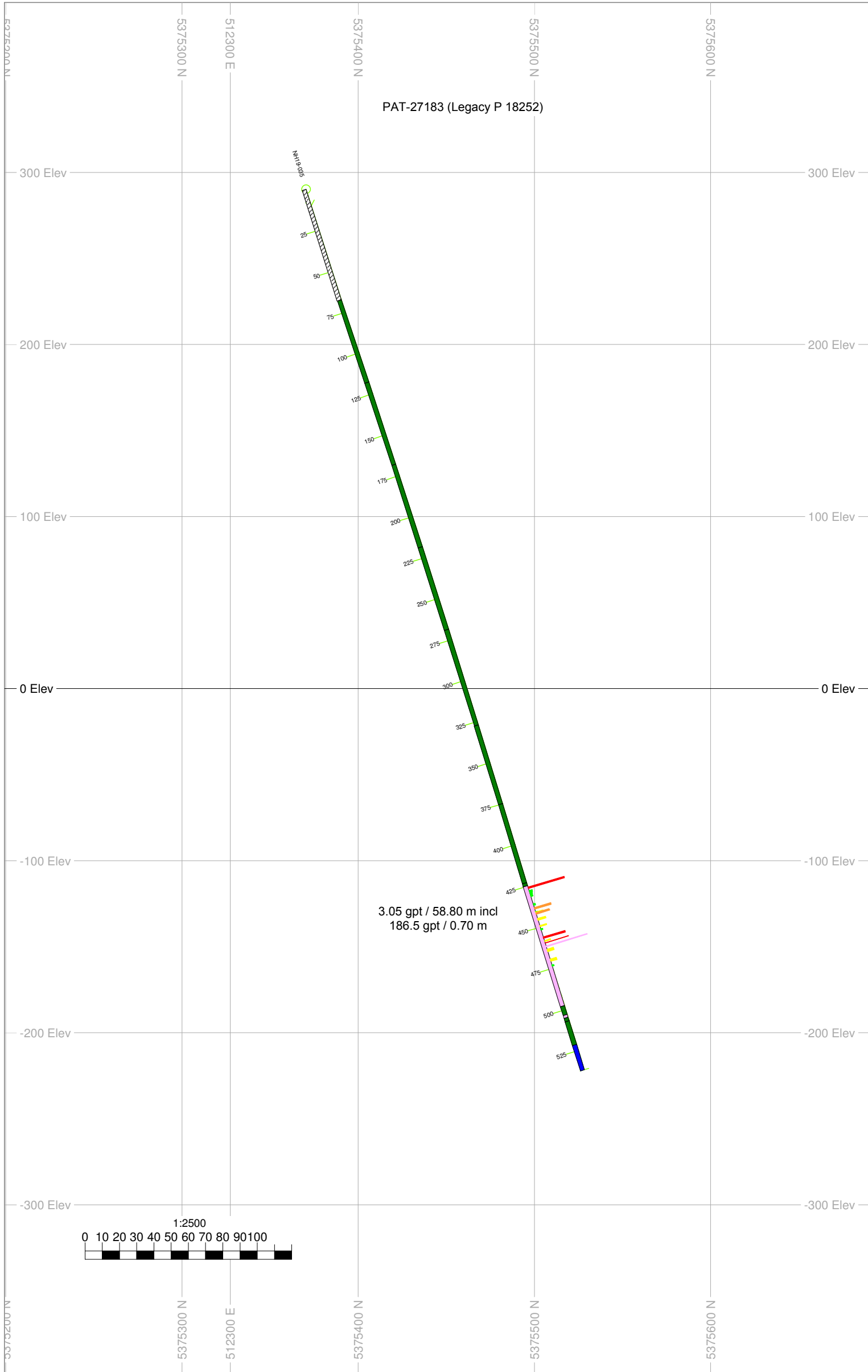
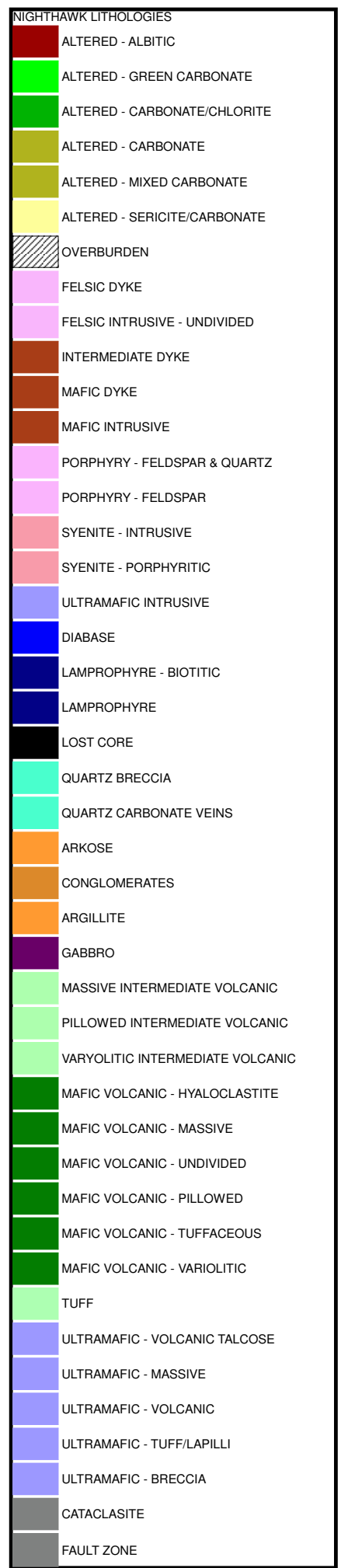
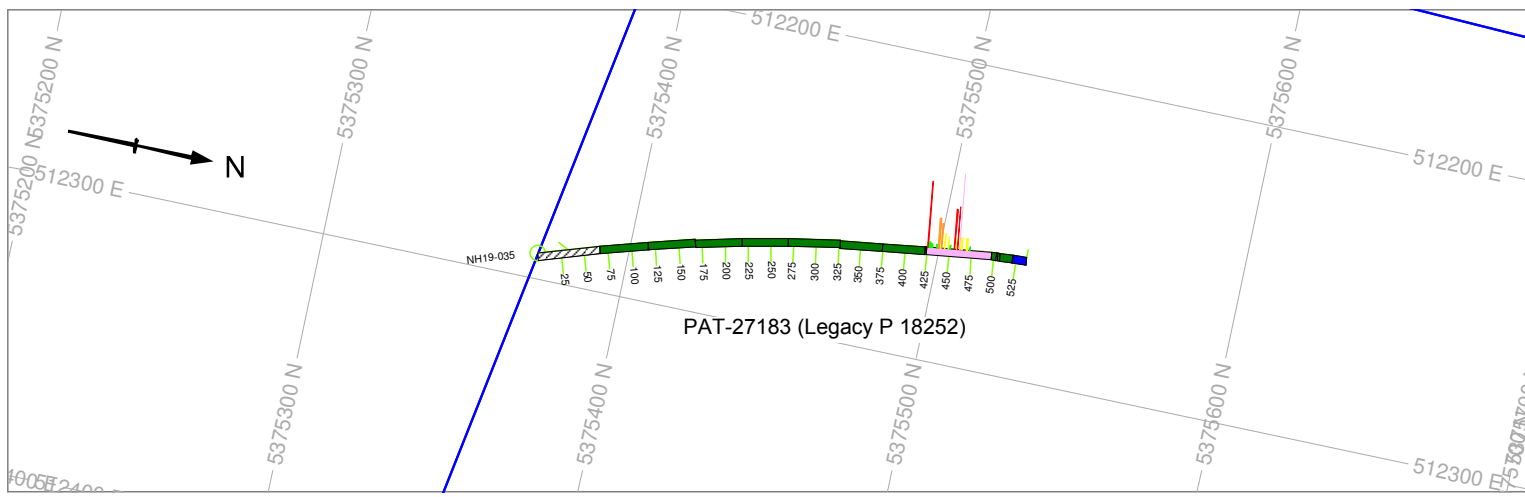


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 - ALTERED - CARBONATE/CHLORITE
 - ALTERED - CARBONATE
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 - ALTERED - SERICITE/CARBONATE
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 - FELSIC DYKE
 - FELSIC INTRUSIVE - UNDIVIDED
 - INTERMEDIATE DYKE
 - MAFIC DYKE
 - MAFIC INTRUSIVE
 - PORPHYRY - FELDSPAR & QUARTZ
 - PORPHYRY - FELDSPAR
 - SYENITE - INTRUSIVE
 - SYENITE - PORPHYRITIC
 - ULTRAMAFIC INTRUSIVE
 - DIABASE
 - LAMPROPHYRE - BIOTITIC
 - LAMPROPHYRE
 - LOST CORE
 - QUARTZ BRECCIA
 - QUARTZ CARBONATE VEINS
 - ARKOSE
 - CONGLOMERATES
 - ARGILLITE
 - GABBRO
 - MASSIVE INTERMEDIATE VOLCANIC
 - PILLOWED INTERMEDIATE VOLCANIC
 - VARYOLITIC INTERMEDIATE VOLCANIC
 - MAFIC VOLCANIC - HYALOCLASTITE
 - MAFIC VOLCANIC - MASSIVE
 - MAFIC VOLCANIC - UNDIVIDED
 - MAFIC VOLCANIC - PILLOWED
 - MAFIC VOLCANIC - TUFFACEOUS
 - MAFIC VOLCANIC - VARIOLITIC
 - TUFF
 - ULTRAMAFIC - VOLCANIC TALCOSE
 - ULTRAMAFIC - MASSIVE
 - ULTRAMAFIC - VOLCANIC
 - ULTRAMAFIC - TUFF/LAPILLI
 - ULTRAMAFIC - BRECCIA
 - CATACLASITE
 - FAULT ZONE



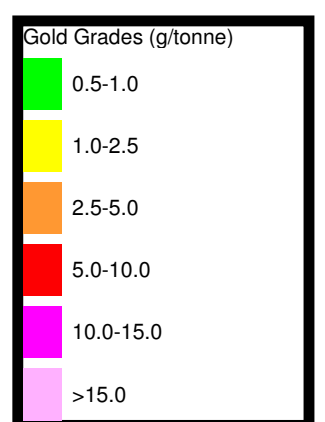
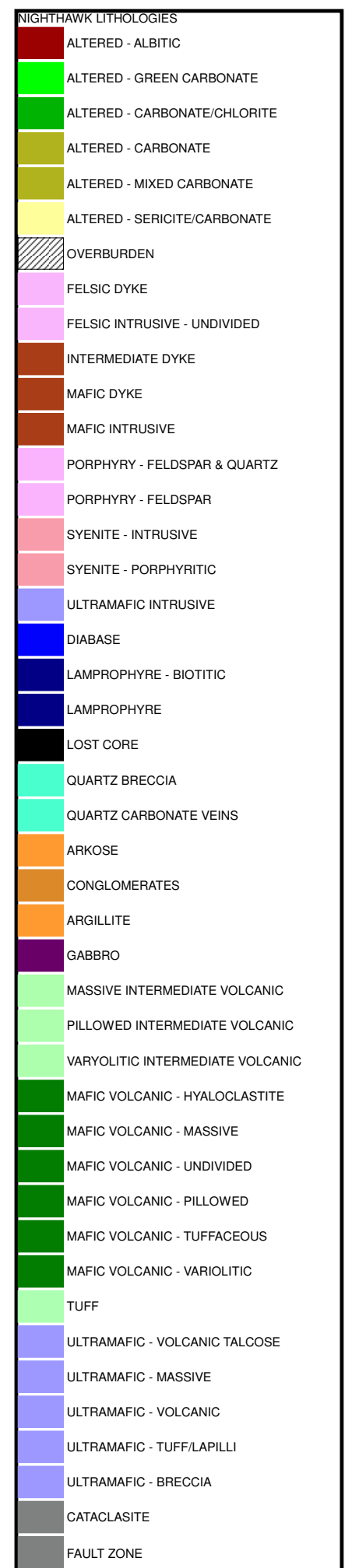
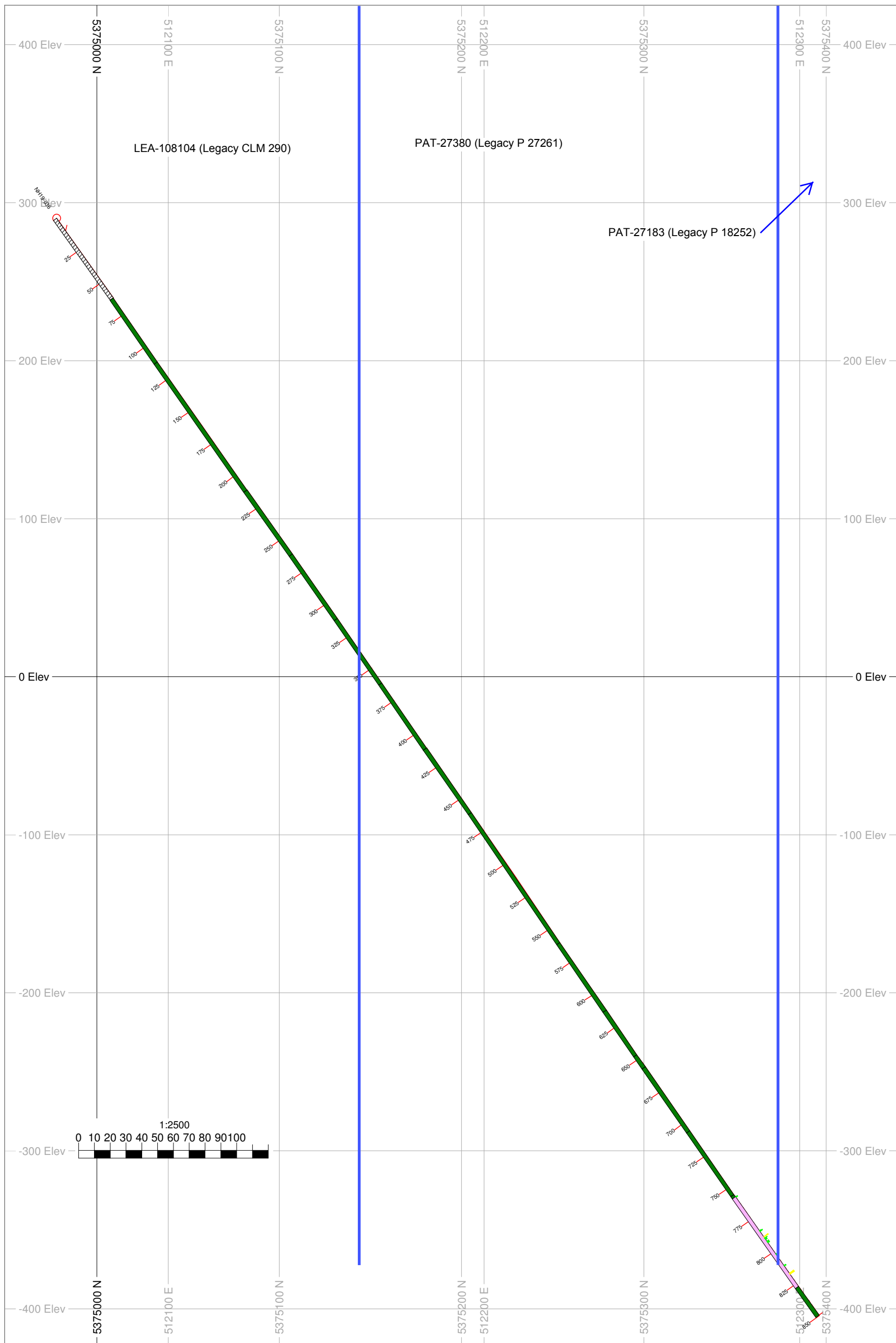
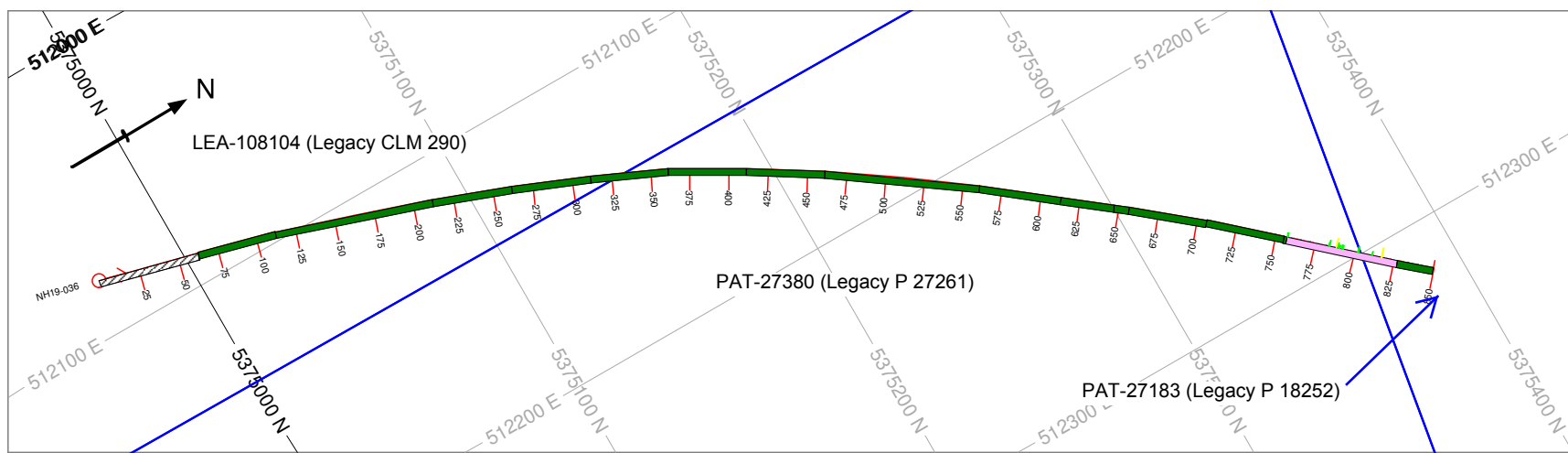
NH19-034		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 340°	Dip: -65°	EOH: 498m





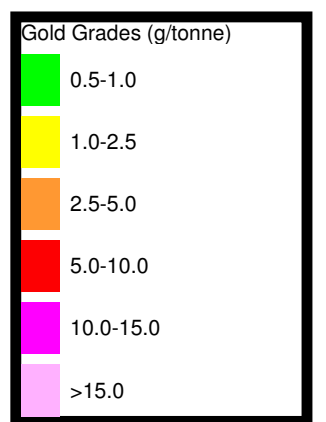
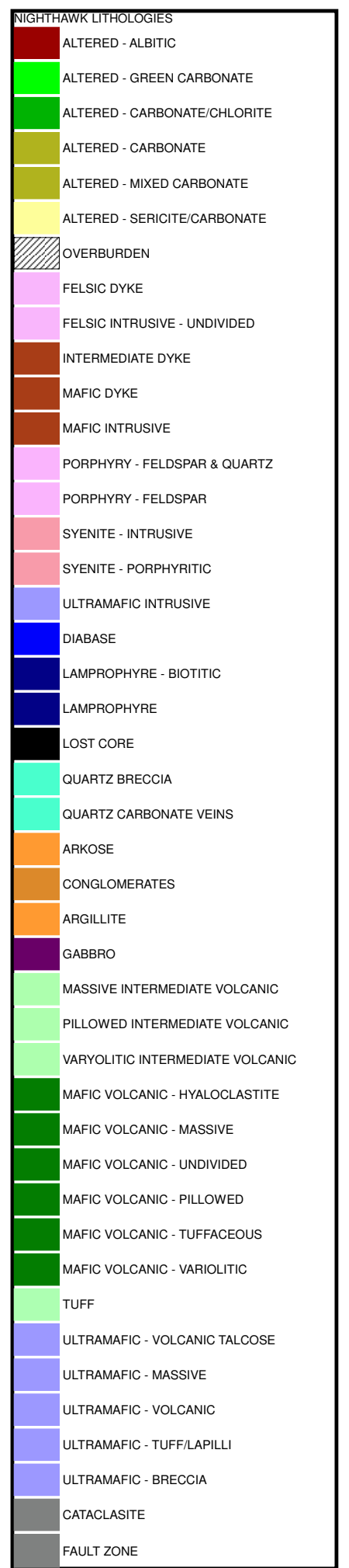
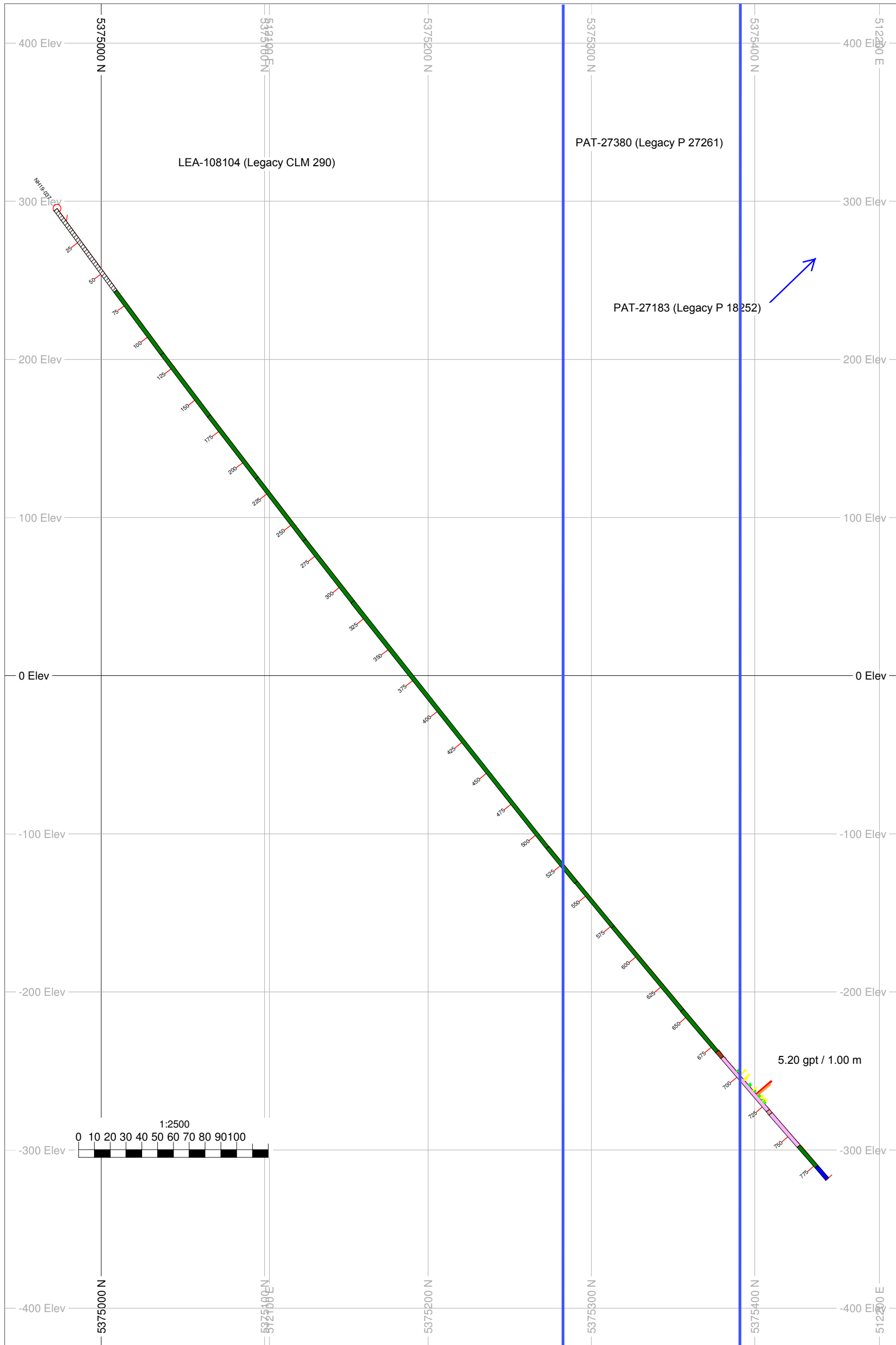
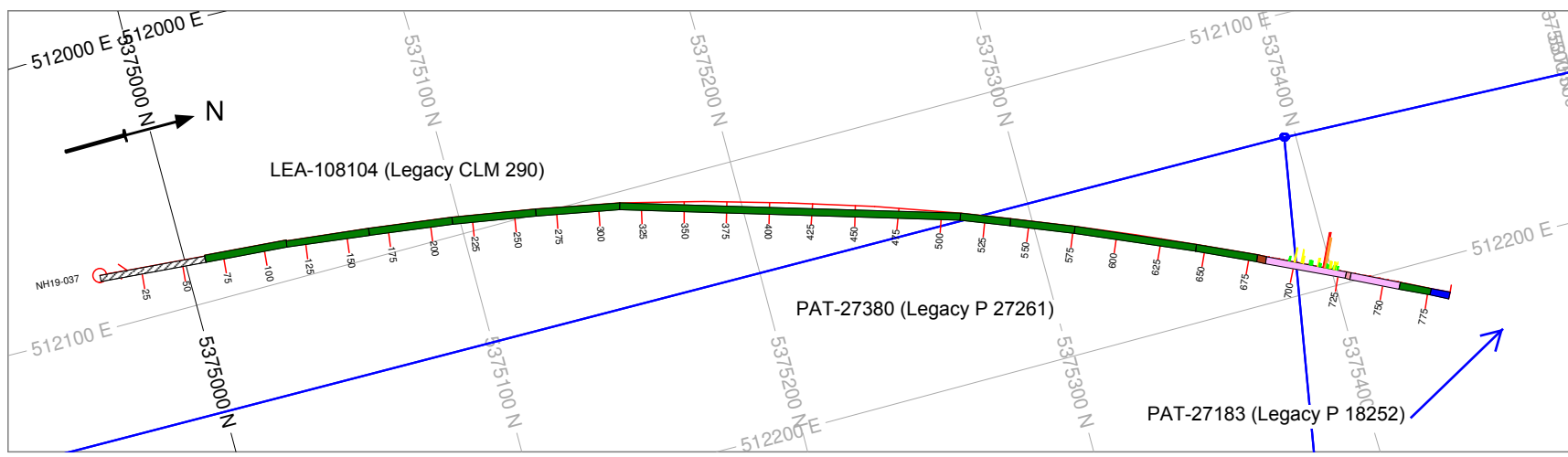
NH19-035		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 340°	Dip: -73°	EOH: 537m





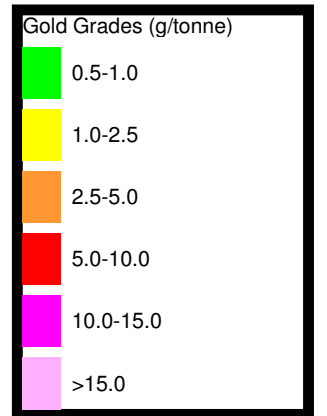
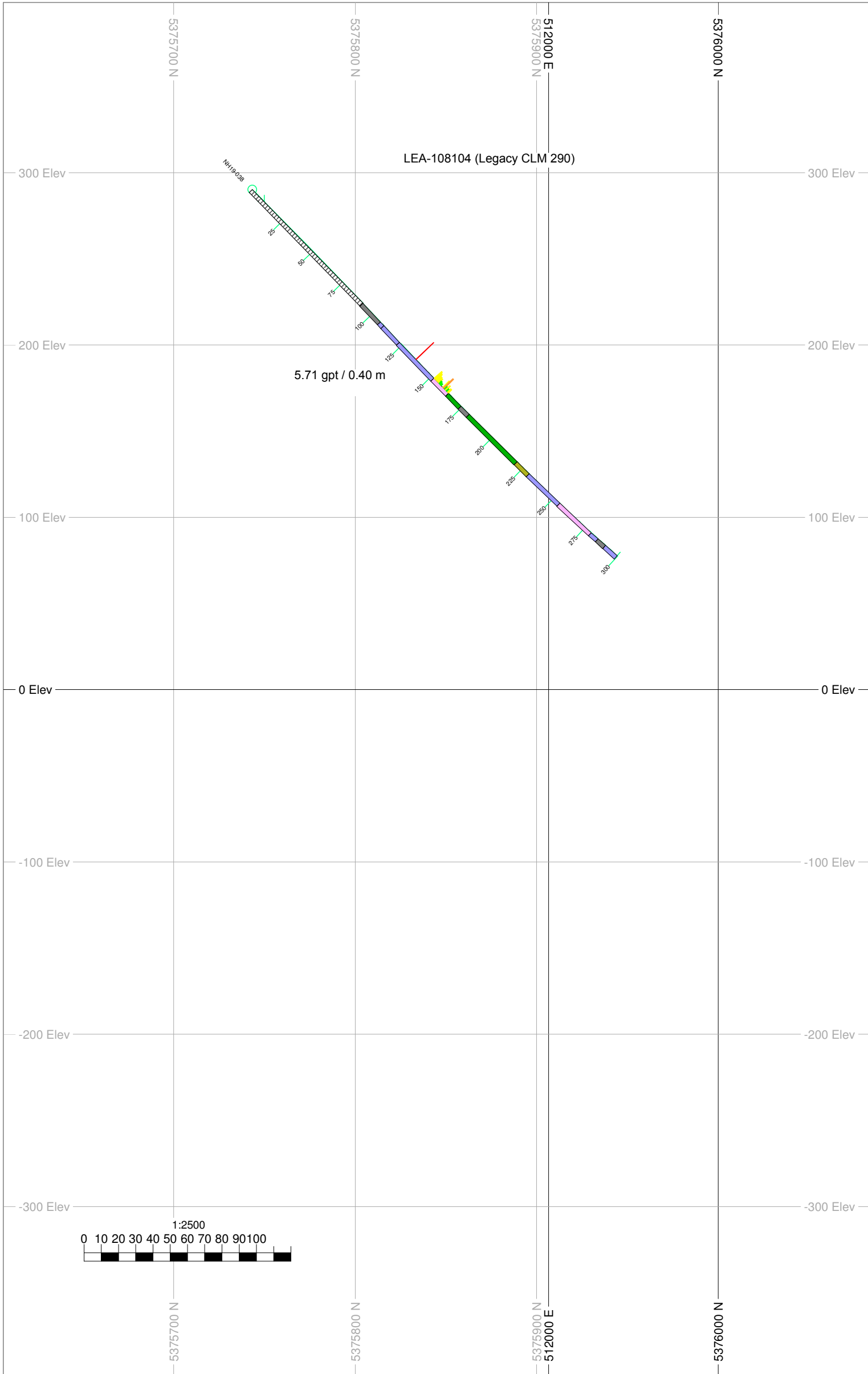
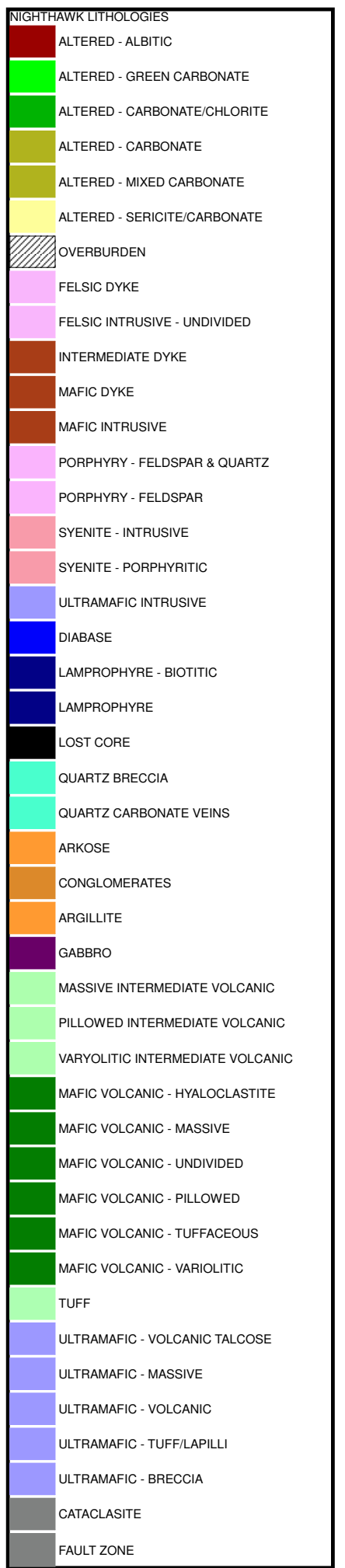
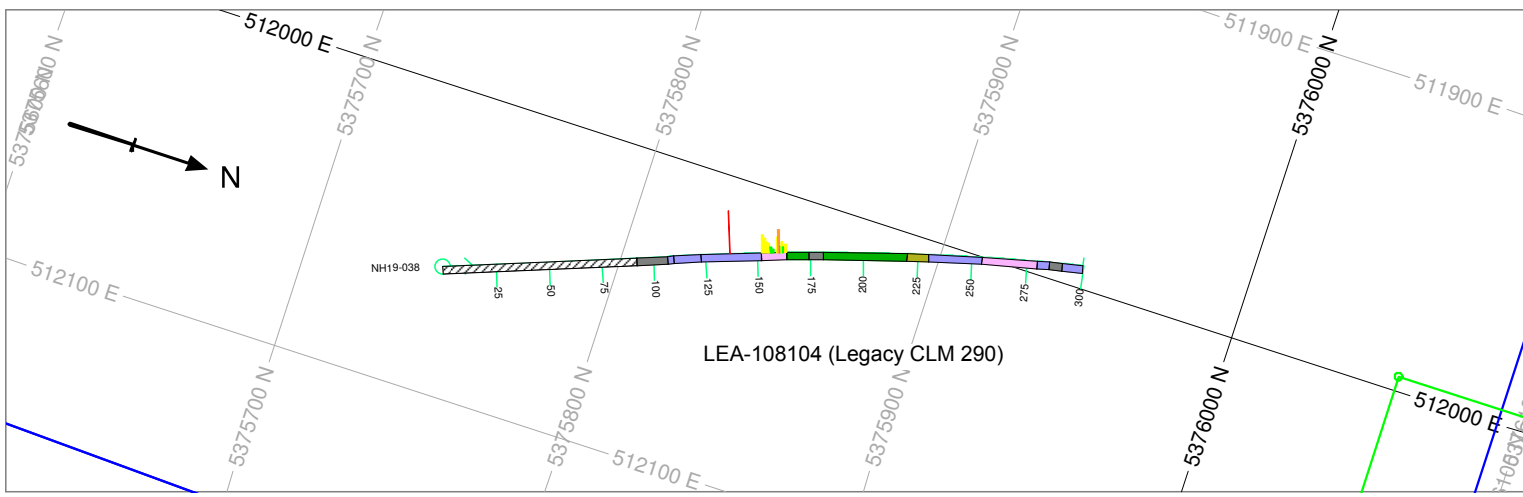
NH19-036		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 15°	Dip: -53°	EOH: 850m





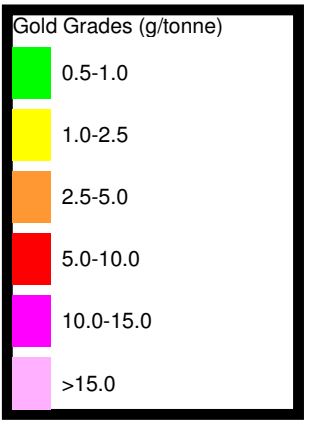
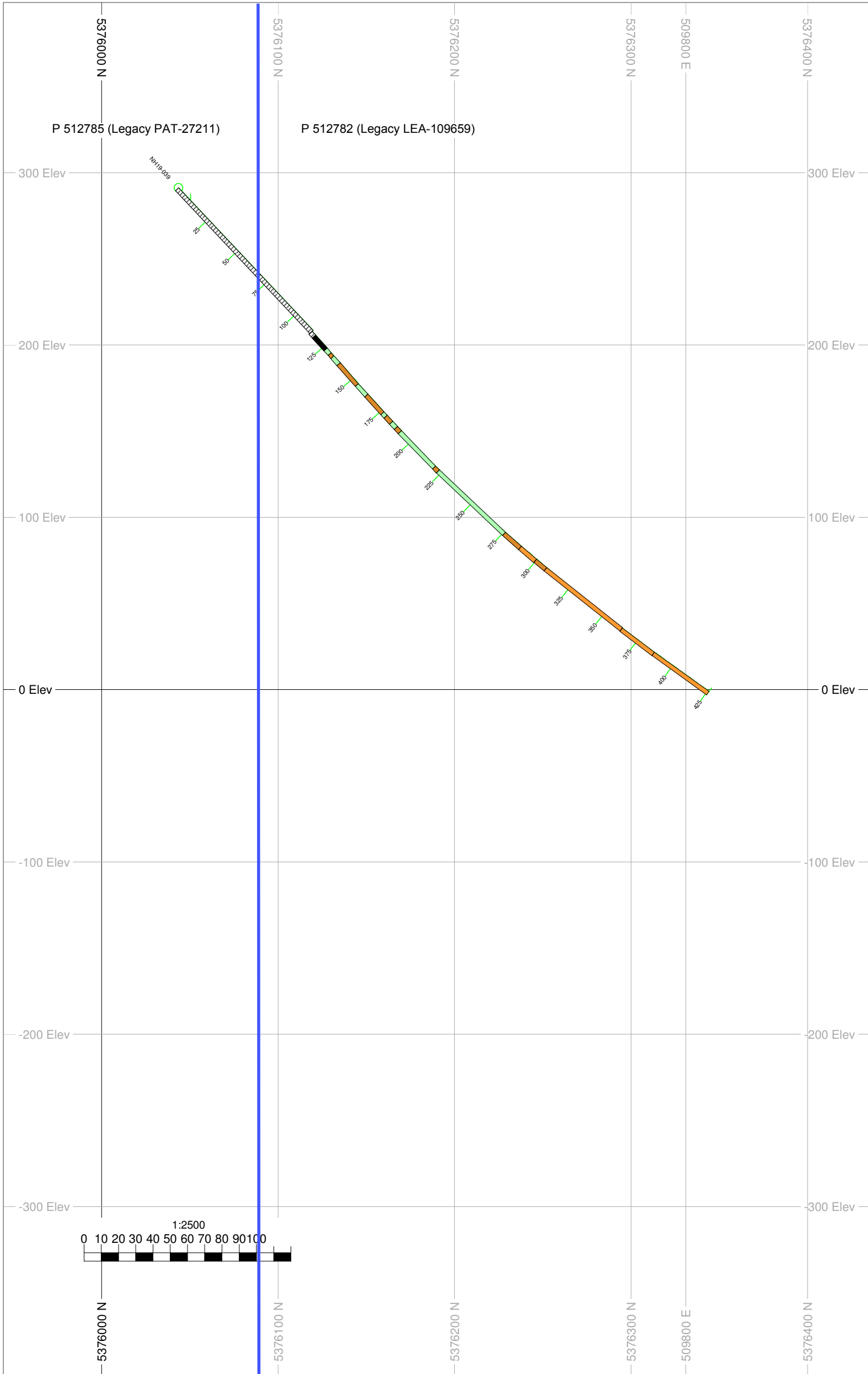
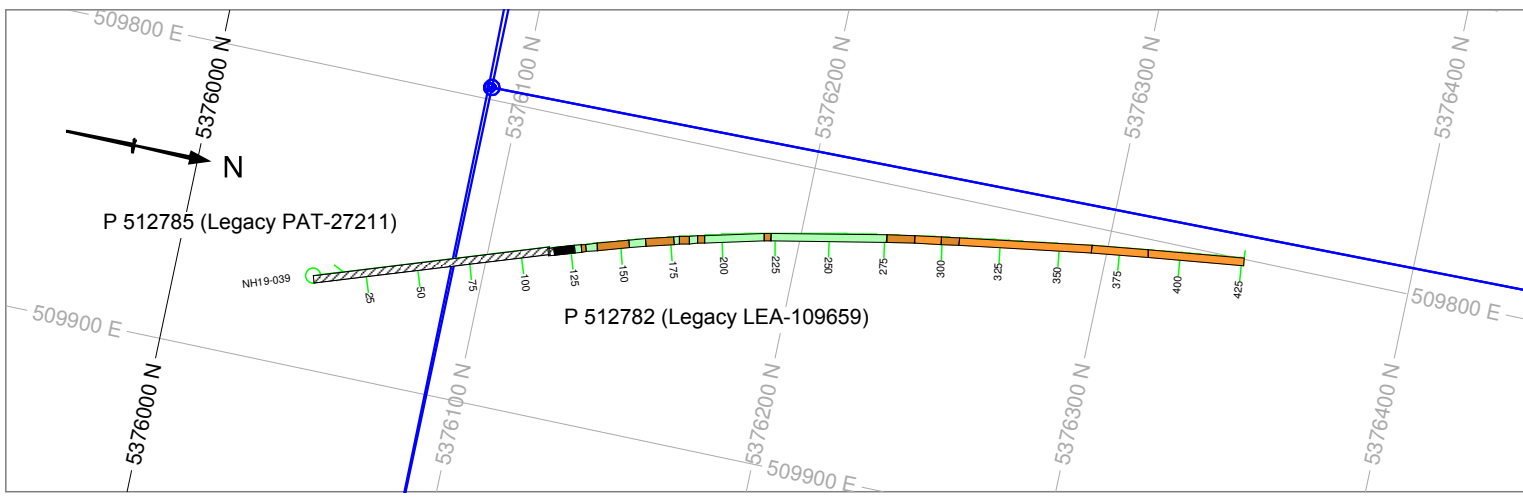
NH19-037		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 5°	Dip: -53°	EOH: 787m





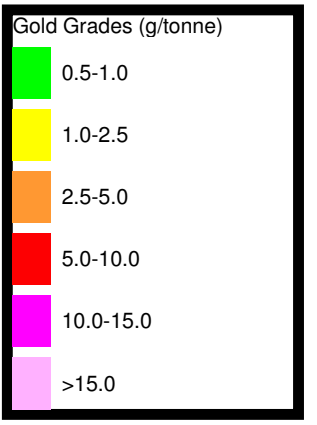
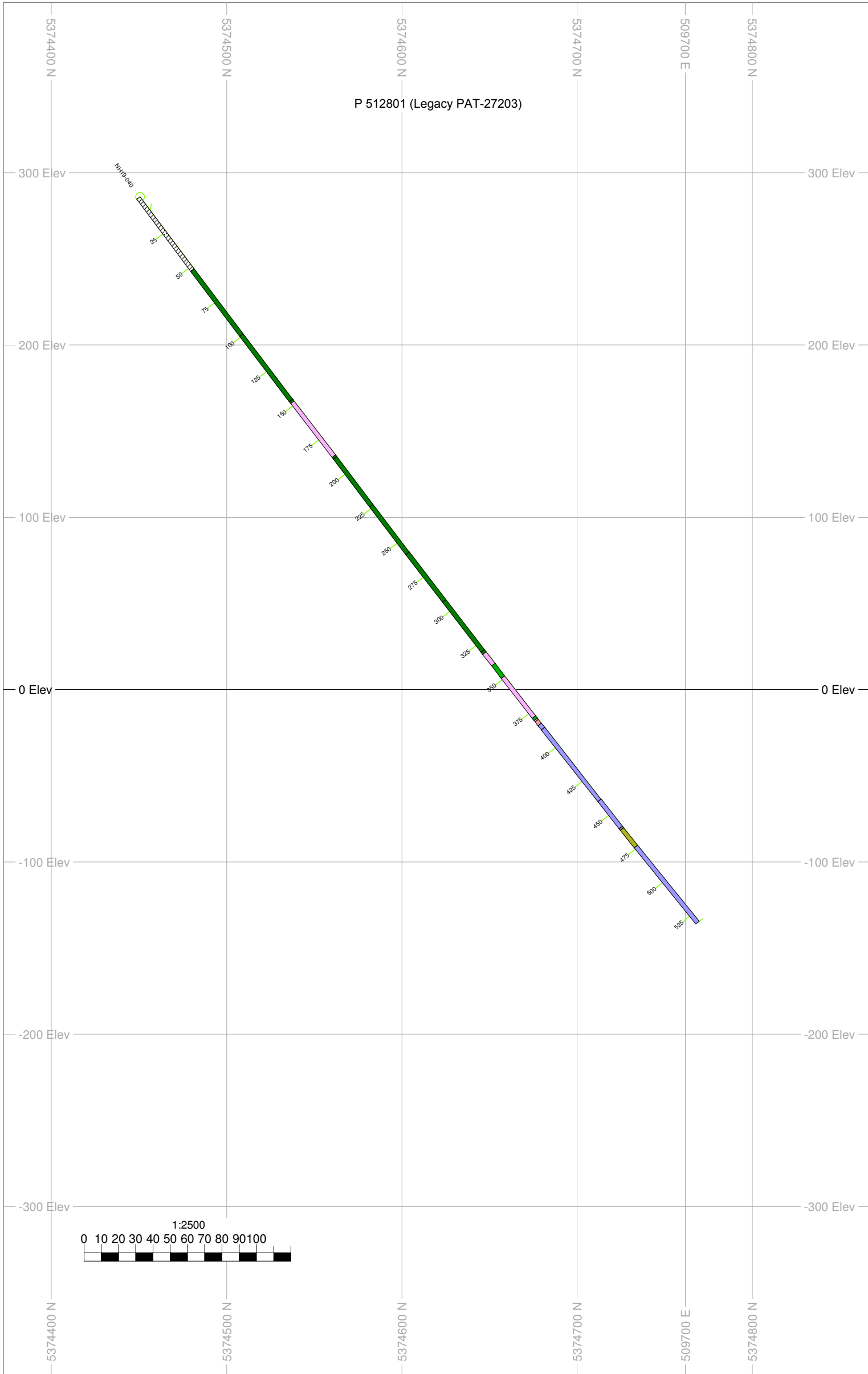
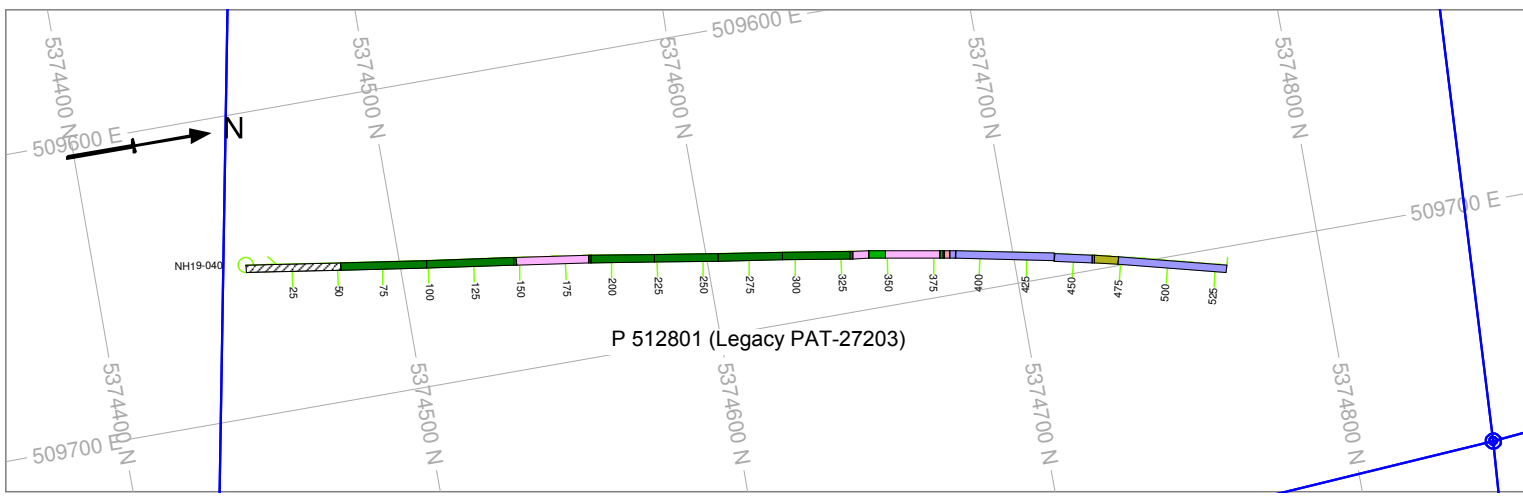
NH19-038		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 340°	Dip: -45°	EOH: 300m





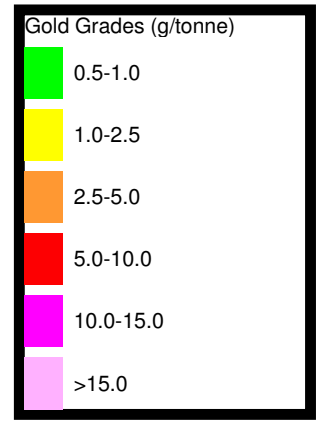
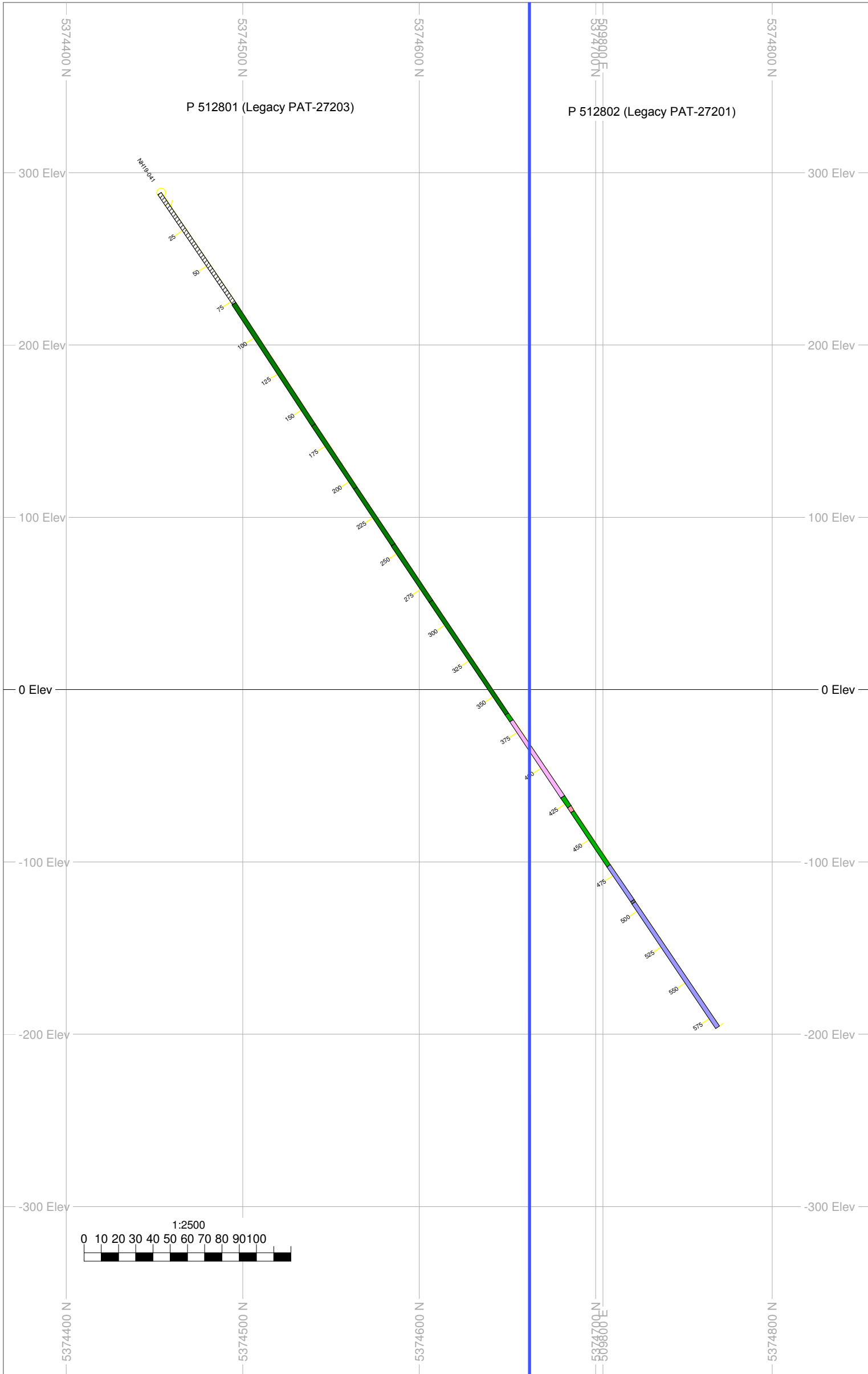
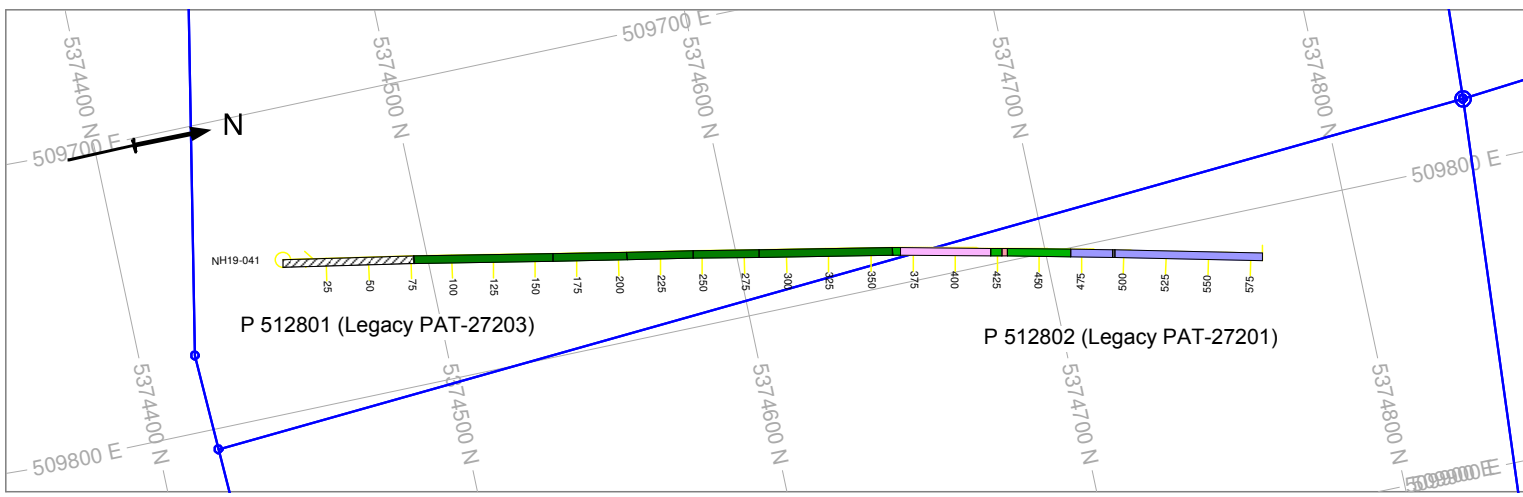
NH19-039		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 340°	Dip: -45°	EOH: 426m





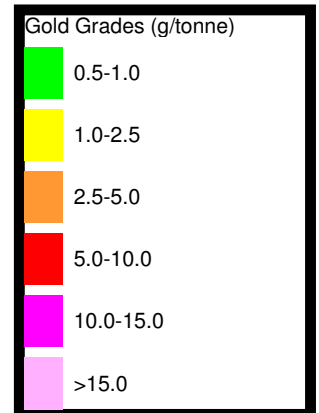
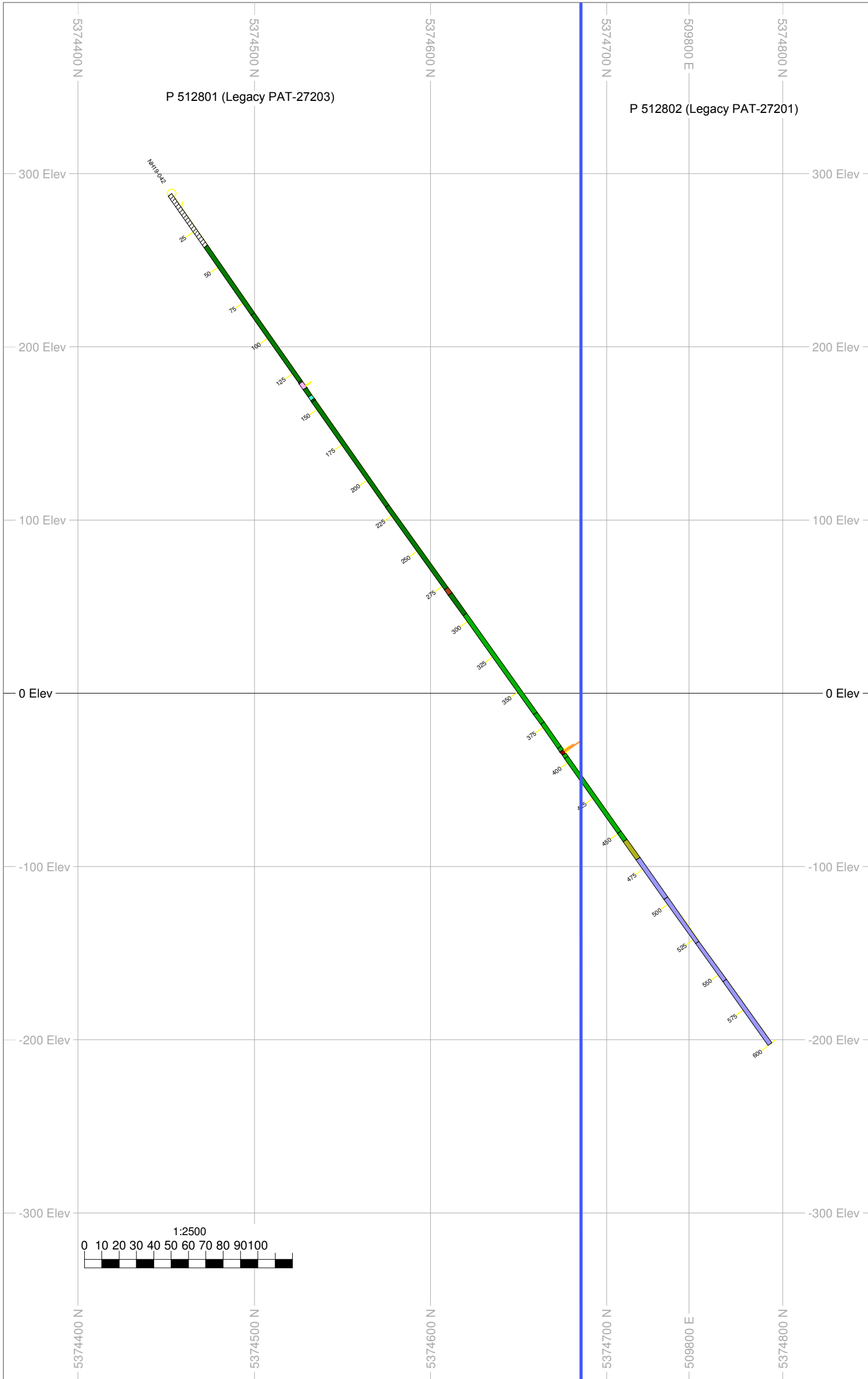
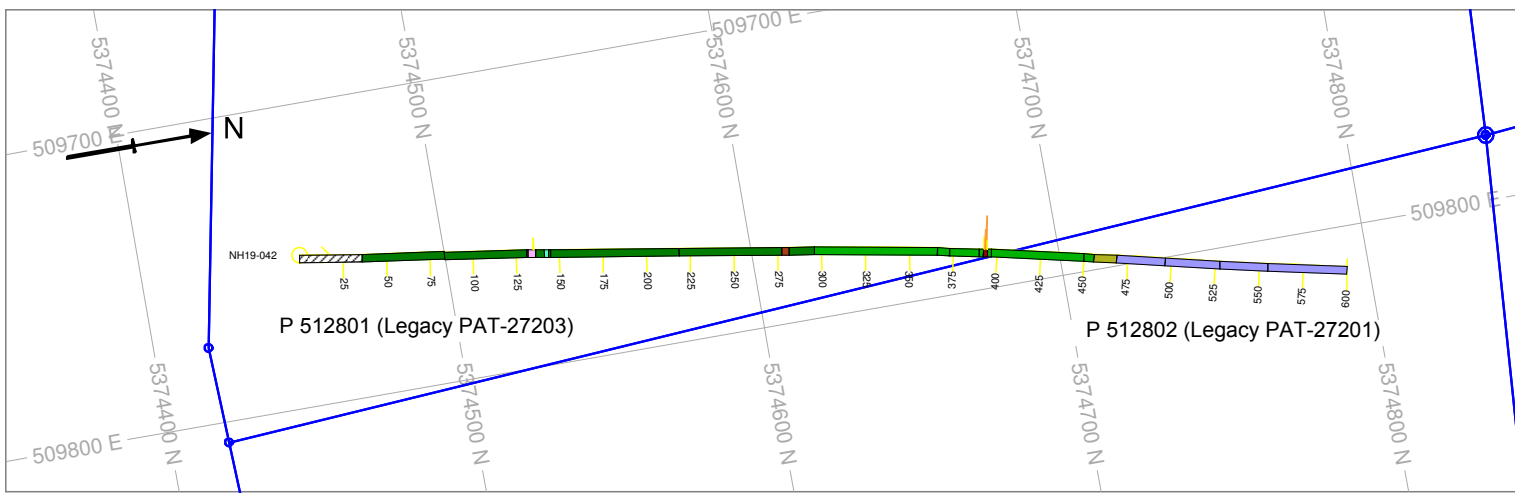
NH19-040		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -50°	EOH: 531m





NH19-041		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -55°	EOH: 582m

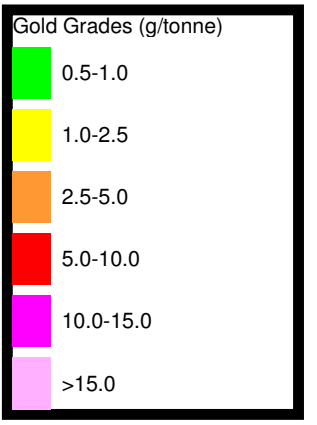
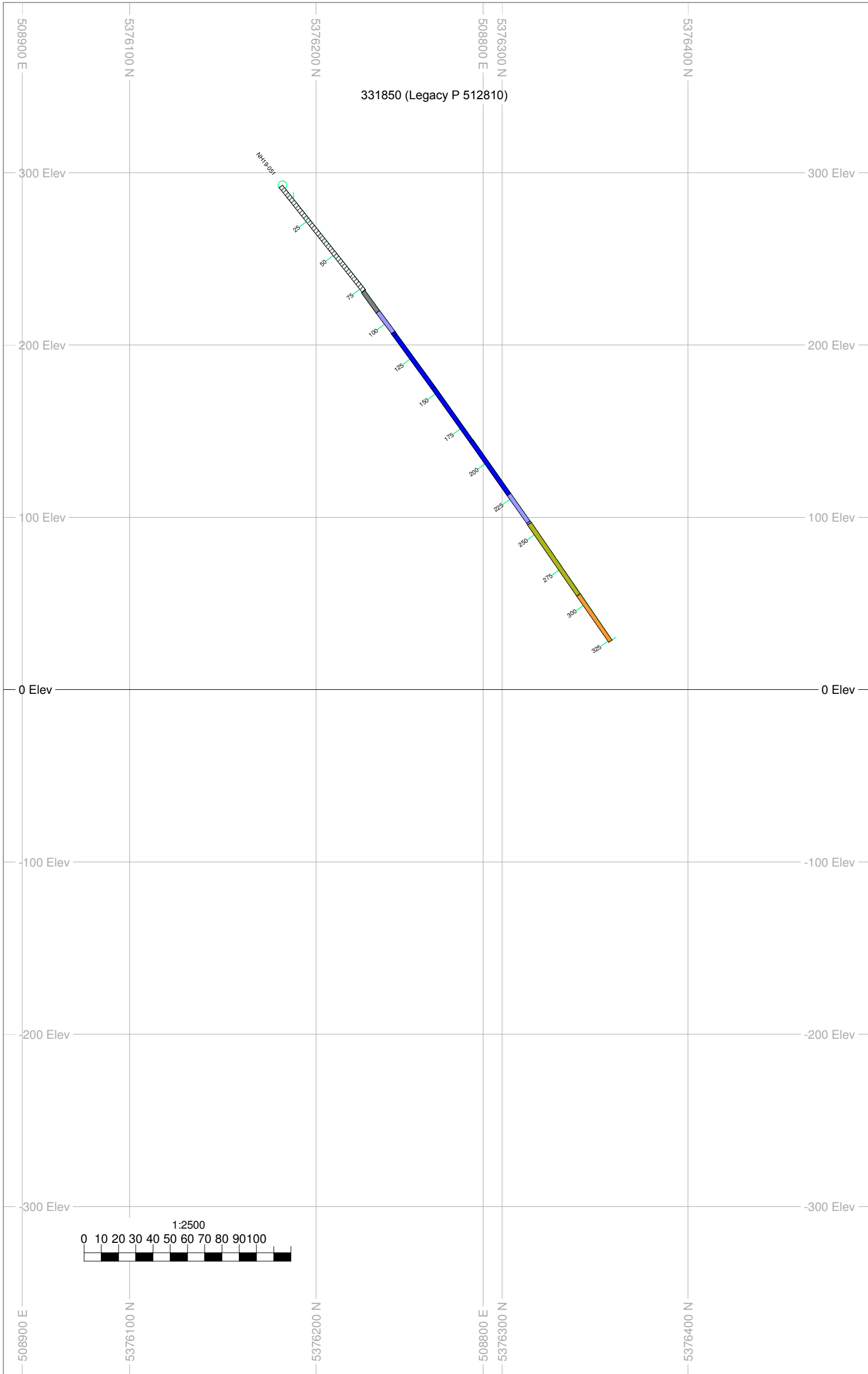
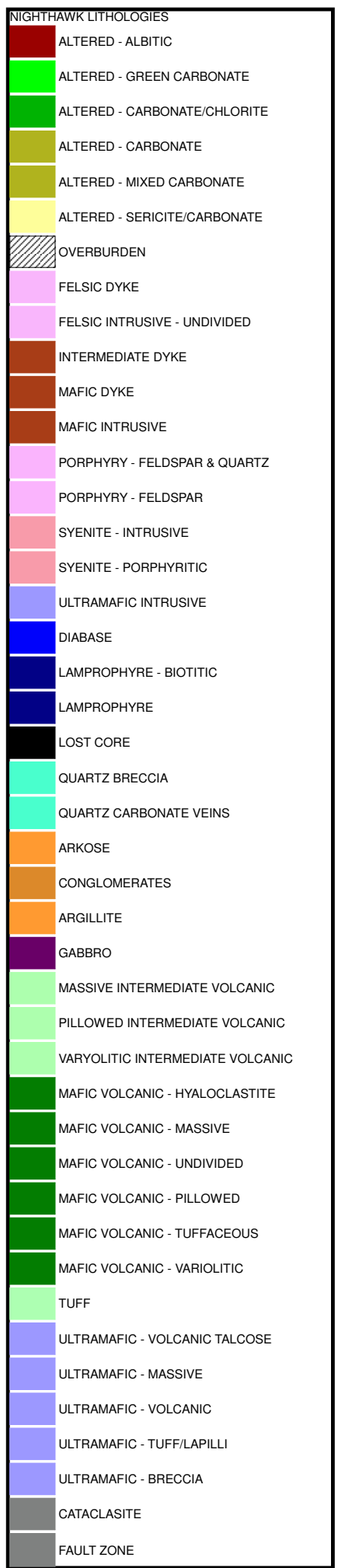
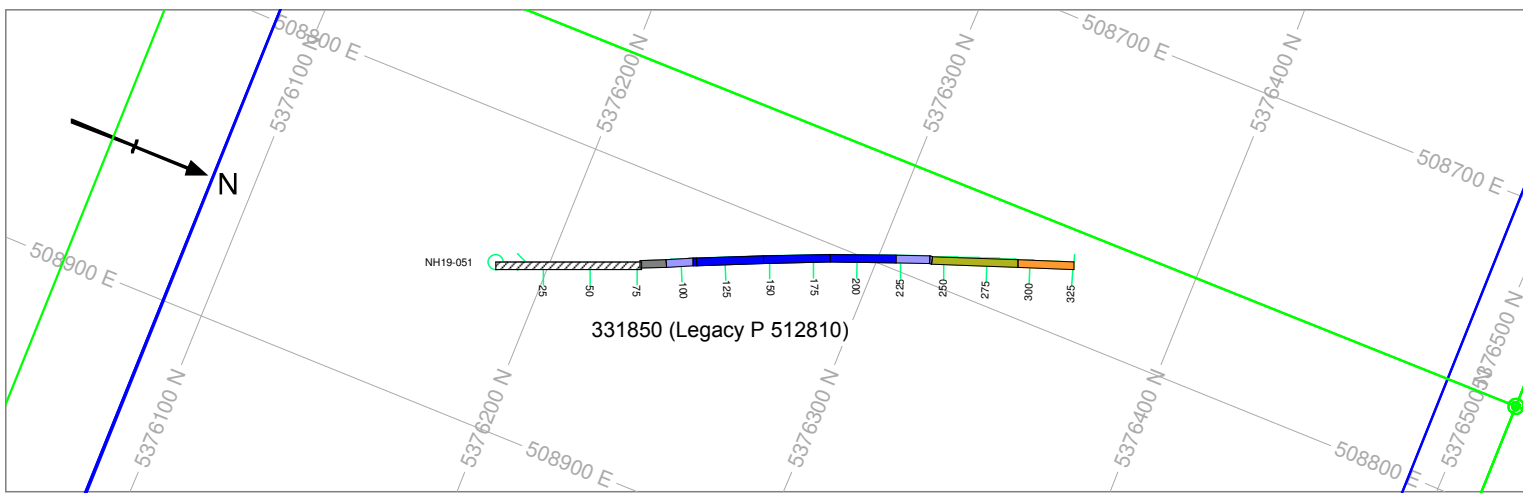




NH19-042		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 10°	Dip: -55°	EOH: 600m

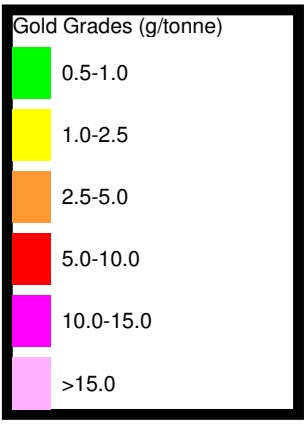
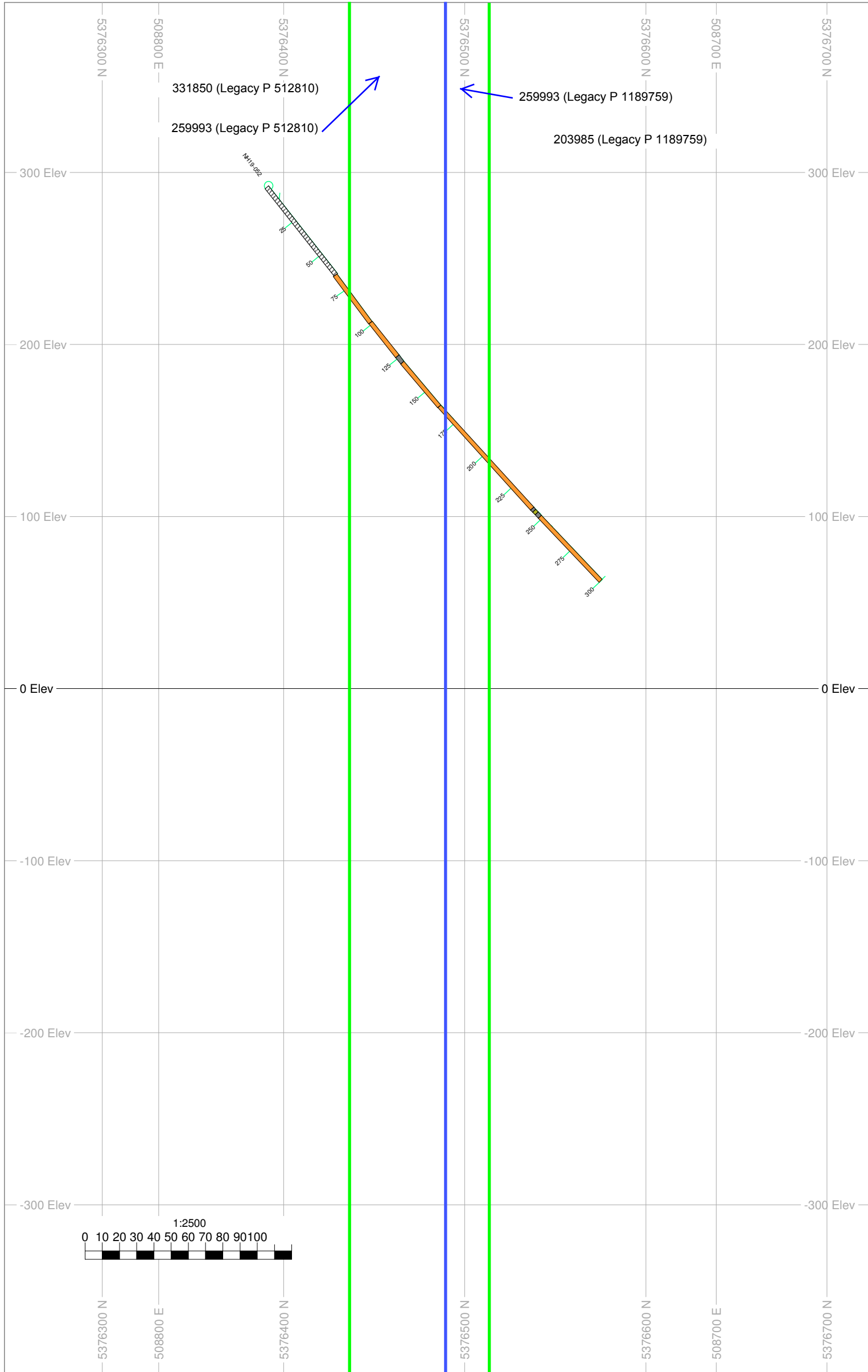
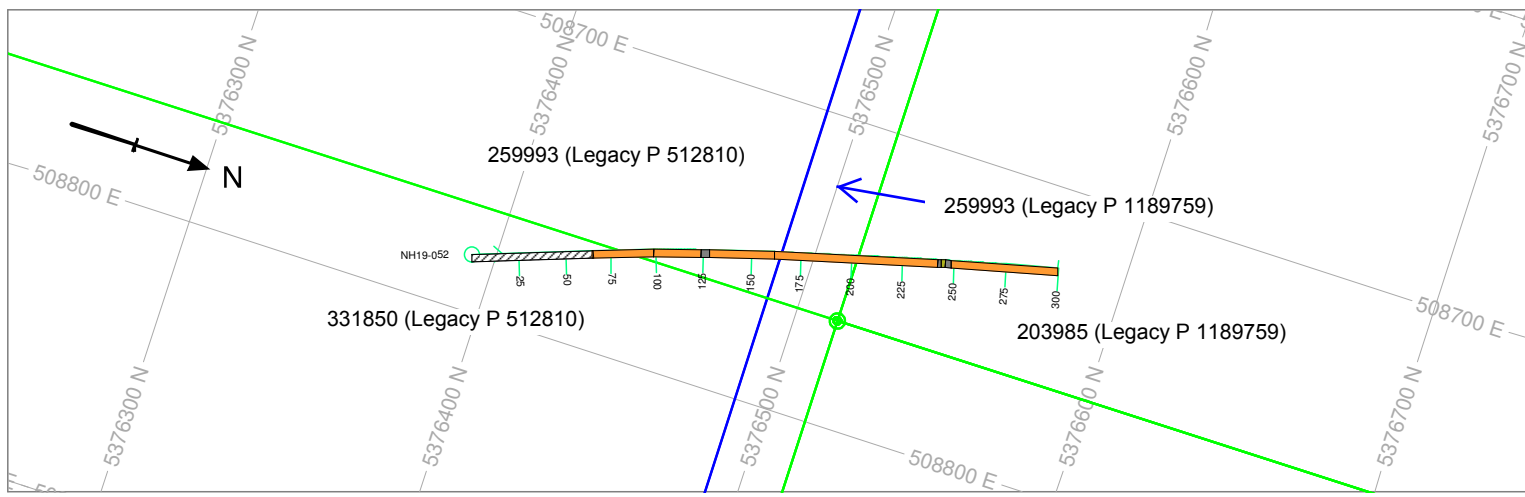


KIRKLAND LAKE GOLD



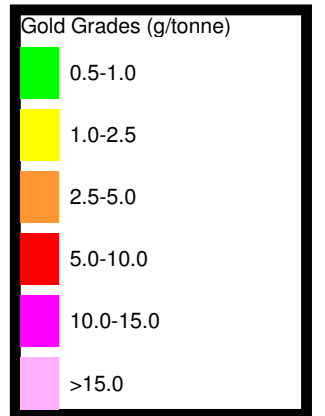
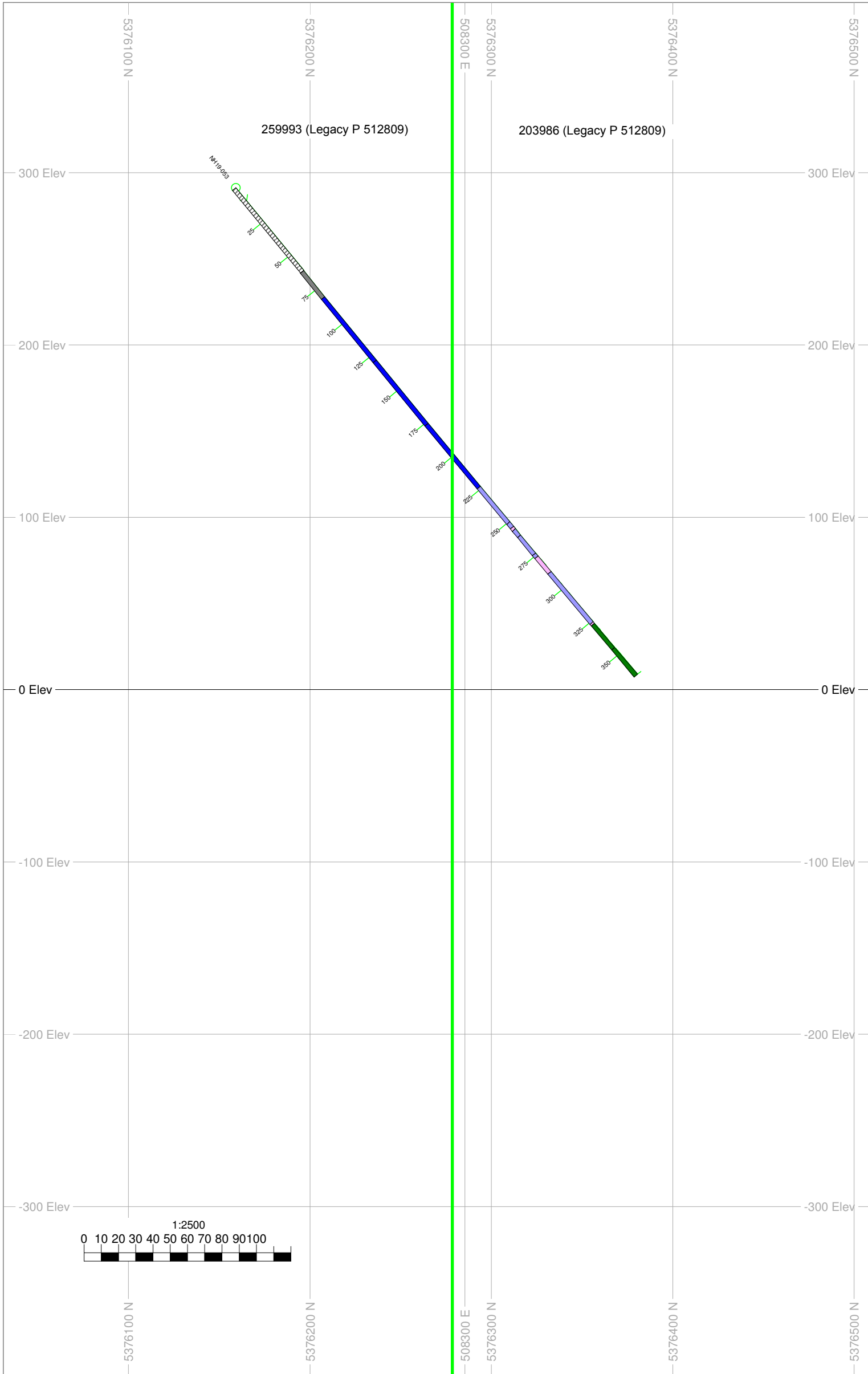
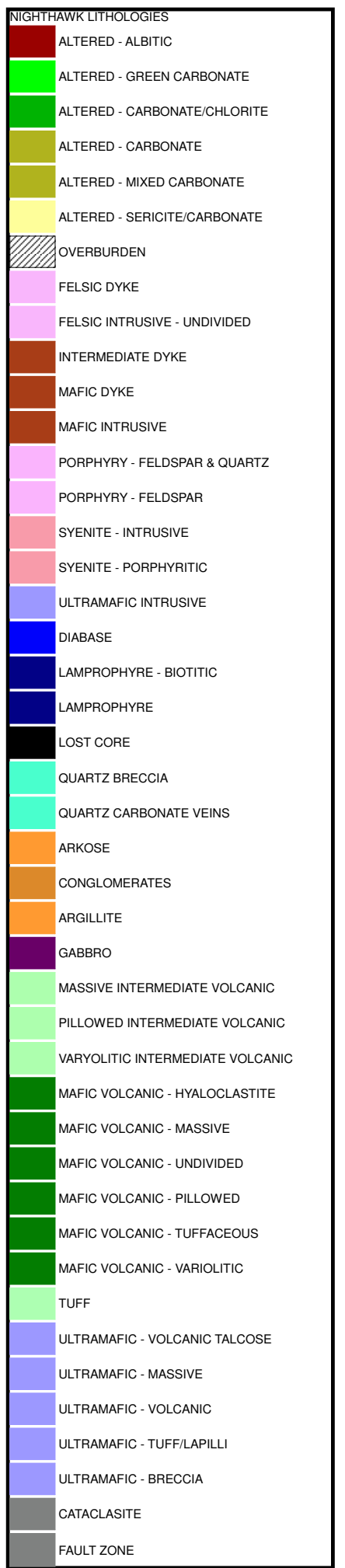
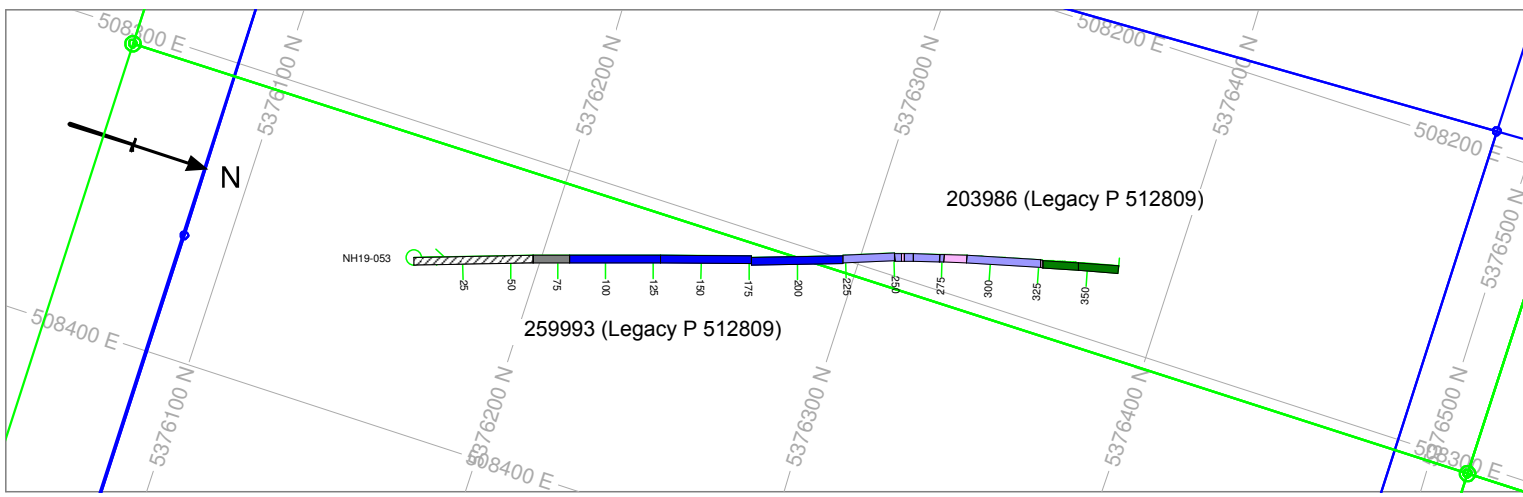
NH19-051		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 340°	Dip: -50°	EOH: 326m





NH19-052		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 340°	Dip: -50°	EOH: 300m





NH19-053		
Scale 1:2500	Date: 11 Mar 2020	Au Scale: 1mm = 1gpt
Azimuth: 340°	Dip: -50°	EOH: 366m

