PROSPECTING REPORT

on

DIAMOND DRILLING

KILLALA LAKE SOUTH PROPERTY

THUNDER BAY MINING DIVISION

DISTRICT OF THUNDER BAY, ONTARIO

NTS 42D 15 SW

Marathon, Ontario	**Rudolf Wahl**
October 10, 2019	**Prospector**

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Map 1 - Claim map
2013 Soil Gas Hydrocarbon geochemical analysis
Drill section map DDH-01 to DDH-03

1.0 Introduction

Between May 29, 2018 and June 09, 2018 Chibougamau Diamond Drilling Ltd. drilled three diamond drill holes total of 1,203 meters for Prospector Rudolf Wahl on the Killala Lake South property. In 2008 Rudolf Wahl discovered over 60 macro diamonds including 8 commercial sized diamonds on cell claim 145712 and he located a kimberlite target #6 on cell claim unit137216 due to a SGH (Soil Gas Hydrocarbon geochemical analysis) survey that were conducted over the cell claim unit in May 2013 with results of 6 out of 6.

Chibougamau Diamond Drilling Ltd. drilled DDH-01 on the diamond drill tagged #6 on cell claim 137213 at location Zone 16 NAD 83 UTM 531709E – 5425443N Azimuth 106.1 degree and 60.3 degree dip for 402 meters. Drill holes DDH-02 was drilled at location Zone 16 NAD 83 UTM 530433E – 5427051N Azimuth 321 degree and 49.5 degree dip for 399 meters on cell claim 145712, 193834 and DDH-3 was drilled at location Zone 16 NAD 83 UTM 530294E – 5427191N Azimuth 297.4 degree and 50.5 degree dip for 402 meters on cell claim 193834, 260542. All drill holes were drilled in order to locate a Kimberlite pipes or kimberlite dyke on the property.

2.0 LOCATION AND ACCESS

The Killala Lake South property is situated in an area of rolling hills of relatively low relief. The maximum topographic relief is 120 meters. The property is forested with spruce and cedar. Parts of the claims have been logged. Access is by truck from the town of Marathon.
The property is centered approximately 62 kilometers from the town of Marathon. A network of logging roads provides access to most of the claim.

2.1 PROPERTY DESCRIPTION

The Killala Lake South Property consists of 46 mining cell claim blocks recorded in good standing in Thunder Bay Mining Division within Syine Killala Lake Township (G-0596) –Foxtrap Lake Area (G-0592)

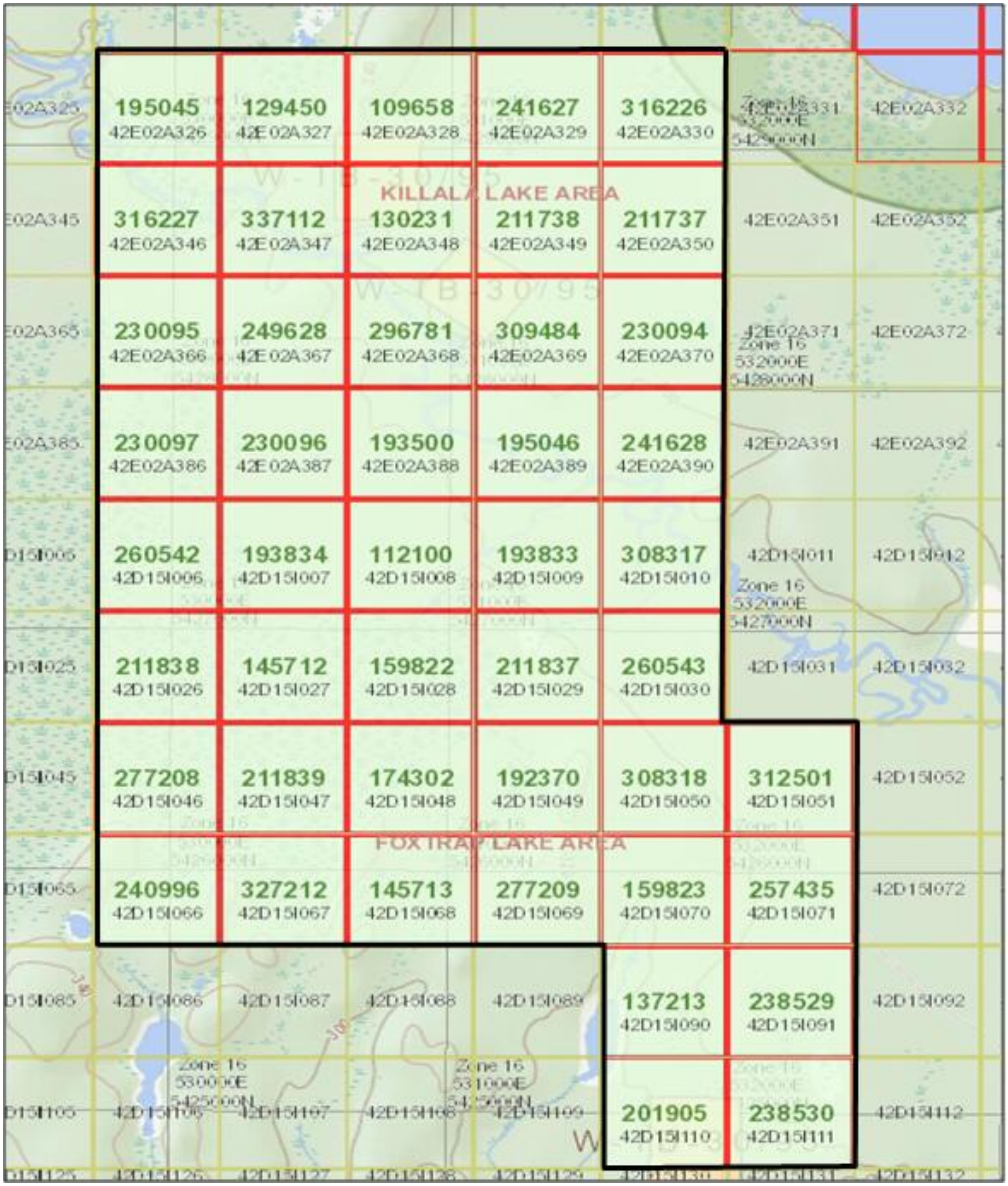
Claims/units

327212, 316227, 316226, 312501, 309484, 296781, 277209, 277208, 260543, 260542, 257435, 249628, 241628, 241627, 240996, 238530, 238529, 230097, 230096, 230095, 230094, 211839, 211838, 211837, 211738, 211737, 201905, 195046, 195045, 193834, 193833, 193500, 192370, 174302, 159823, 159822, 145713, 145712, 137213, 130231, 337112, 308318, 308317, 129450, 112100, 109658

Total 46 units

Killala Lake South Property Key Location Map

Killala Lake South Property
Killala Lake Area & Foxtrap Lake Area Twp



3.0 General Property Geology

The Killala Lake North claim block lies at the junction of the Wawa and Quetico subprovinces of the Superior Structural Province of the Canadian Shield. The rocks comprise east-west trending interbedded Archean meta-sedimentary and meta-volcanic rocks intruded by granitic and mafic intrusive rocks . Younger Proterozoic intrusions include the Marathon diabase dyke swarm and alkalic intrusions, of the Coldwell and Killala Lake alkalic-carbonatite complexes and lamprophyre dykes. The large number of dykes mapped in the area is clearly evident in the airborne magnetic survey as long linear anomalies with a variety of strikes. Including are some distinct magnetic lows that appear to reflect a north-northeast set of lamprophyre dykes.

The Trans-Superior Tectonic Zone (TSTZ) extends north-northeast through the area and appears to be the locus of the considerable intrusive activity present. The TSTZ is similar to other tectonic features in the Canadian Shield, such as the Kapuskasing Structural Zone and the Lake Timiskaming Structural, along which diamond deposits have been found. Indeed, diamondiferous kimberlites have been found in Michigan on the southern extension of the TSTZ. These major structures provide deep-seated zones of weakness that tap into the mantle and provide conduits along which kimberlites ascend. The bedrock is all of Precambrian age, but thick unconsolidated varved clays and silty sands of Pleistoncene and Recent age are found along the major drainage valleys. The Precambrian rock consist of acid and basic metavolcanics and minor metasedimentary units, intruded by serpentinite, granite, diabase, gabbro and alkalic gabbro, and syenite. The age sequence of the intrusive rocks has not been absolutely established. There is some doubt as to whether the diabase is older of younger than the alkalic intrusions and also doubt as to the position of the serpentinite in the sequence.

Rubidium-stronium age determinations on granite in the general area and on the alkalic syenite gave ages of 2,300 million years and 1,255 million years respectively. Copper-nickel and asbestos mineralization are associated with the serpentinite and copper and iron mineralization with the alkalic gabbro.

Nepheline natrolite syenites of the Coldwell and Killala lake alkaline complex exhibit rare wispy mafic-rich modal layering, extensive xenolith-rich zones and a wide variety of textural types, the latter resulting from the imposition of high temperature shearing and recrystallization on consolidated syenite. The textures developed range from allotriomorphic granular to porphyroclastic to mosaic granulob-lastic. The nepheline syenites are pyroxene-poor. Pyroxenes occur most commonly as corroded diopside to diopsidic hedenbergite cores surrounded by amphibole and less commonly as acmitic hedenbergite overgrowths upon cores of iron-rich amphiboles. Amphiboles are the dominant mafic phase and range from magnesian hastingsitic hornblende to hastingsite to hastingsitic hornblende to ferroedentic hornblende. Nephelines contain excess silica and have not equilibrated to compositions characteristic of low temperatures. Feldspars lack microcline twinning and perthites and have undergone extensive ion exchange at high sub-solidus temperatutes with sodium-rich fluids. Formation of late stage primary and replacement natrolite, muscovite and thomsonite is characteristic. The nepheline syenites are considered to be a part of a cycle of continental rift magmatism and to have been emplaced by cauldron subsidence as a hot hydrous magma. The rocks did not undergo long term subsolidus re-equilibration as the high temperature mineral assemblage has been preserved by uplift during post-intrusive regional block faulting. The nepheline syenites were probably dervied by extensive fractional crystallization of alkali basaltic magmas.

3.1 Glacial Geology

In glaciated terrain where much of the overburden is exotic it is important to understand the glacial history to establish the provenance of kimberlite indicator mineral anomalies. From glacial striae there are 2 ice flow directions at 220° and 170° – 190° with the 220° direction being the oldest (OGS, 2000a). The 220° direction is present throughout the area while the 170° – 190° direction is only present in the south. A sub-glacial ‘lodgement’ till with material derived from local bedrock is present almost everywhere, affords the best sample medium. Many of the glacial deposits related to glacial retreat contain carbonate in the matrix derived from the closest Palaeozoic rocks a long way away in the James Bay Lowlands. Both glaciofluvial and glaciolacustrene deposits are present that can re-arrange and mask indicator mineral trains. Post glacial landforms such as sand dunes and shoreline features, which can also affect the disposition of the till, are also present. In OGS (2000a), no glacial transport distance is offered for the area, so an estimate of the proximity of the kimberlite source rocks cannot be made.

Note from the OGS open file report # 6013 - 2000 page 45, where the new Diamond discover is located.

Caution is warranted, the upper part of the Little Pic River area may be a good place to explore for kimberlite for several reasons. These include: 1) there are not one, but 3 sites that have a strong KIM signature while other sites around them do not; 2) each site consists of more than one KIM type; 3) the river does cut to bedrock; 4) all 3 sites are located at a major intersection between structures associated with the TSTZ and the Killala Lake Deformation Zone; and 5) there are a number of magnetic anomalies (bull's-eye) immediately up-ice from the sites as illustrated on magnetic maps.

4.0 Diamond Drilling

Chibougamau Diamond Drilling Ltd. drilled DDH-01 on the diamond drill tagged #6 on cell claim 137213 at location Zone 16 NAD 83 UTM 531709E – 5425443N Azimuth 106.1 degree and 60.3 degree dip for 402 meters. Drill holes DDH-02 was drilled at location Zone 16 NAD 83 UTM 530433E – 5427051N Azimuth 321 degree and 49.5 degree dip for 402 meters on cell claim 145712, 193834 and DDH-3 was drilled at location Zone 16 NAD 83 UTM 530294E – 5427191N Azimuth 297.4 degree and dip 50.5 degree for 402 meters on cell claim 193834, 260542.

5.0 Work conducted on the Killala Lake South property.

The Killala Lake South Property consists of 46 mining cell claim blocks recorded in good standing in Thunder Bay Mining Division within Syine Killala Lake Township (G-0596) –Foxtrap Lake Area (G-0592). Chibougamau Diamond Drilling Ltd. drilled three diamond drill holes total of 1,203 meters on the Killala Lake South property.

Work conducted on claim:

Claims/units

137213, 145712, 193834, 260542

Total **4 cell claim units**

5.1 Work completed

a. Drilled three diamond drill holes total of 1,203 meters
b. Logged the core for DDH-01
c. Logged the core for DDH-02and cut core sections for Professor Dr. Roger Mitchell for petrographic examination.
d. Logged the core for DDH-03 and cut core sections for Professor Dr. Roger Mitchell for petrographic examination.

6.0 Results and Conclusion

Chibougamau Diamond Drilling Ltd. drilled three diamond drill holes total of 1,203 meters. DDH-01 did not intersect any potential diamond bearing rock. DDH-02 intersected a 2.79 meter section of potential diamond bearing altered ultramafic lamprophyre. DDH-03 intersected a 8.5 meter section of potential diamond bearing altered ultramafic lamprophyre that differ in their mineralogical and textural character they are undoubtedly parts of the same Madonna Dike system. Professor Dr. Roger Mitchell done the petrography on the drill core sections.

Drill results:

DDH-01 did not outlined any kimberlite / lamproite within the 402 meters of core and the drill core didn't explain the Soil Gas Hydrocarbon geochemical analysis (Code SGH) that was done on the property in May 2013. No sample where taken for diamond fusion. (See supplied SGH Report)

DDH-02 core box 53 outlined a 2.79 meter Porphyritic Ultramafic Lamprophyre, potential diamond bearing dyke at 157 to 159.79 meter down hole. The material is identical with the Madonna Diamond dyke 82 meters to the northeast of the drill section. At this time this core section will not be send for diamond fusion, since we need to find a company to show the core too before analyzing the short core section for the diamond potential since the complete core section need to be analyzed to receive the exact diamond count. ***Dorothy Campbell,*** Thunder Bay South Resident Geologist confirmed the length (2.79 meters) of the diamond potential core section.

DDH-03 core box 97 outlined a 8.5 meter Ocellar ultramafic lamprophyre dyke 289.5 to 298 meters down hole.

6.1 RECOMMENDATIONS

Because of the favorable stratigraphy within the property in regards to the diamond potential, the target # 6 DDH-01 on claim 137213 need to be re-drilled with an 200 meter diamond drill hole further to the south since the SGH survey returned results that were essentially exactly as the Impala kimberlite pipe on the Ekati Mine claim block and DDH-01 didn't explain the SGH survey results. Further prospecting and ground magnetic survey is recommended within the DDH-02 area to outline other potential drill targets within the area, we think that the diamond potential is high within the Killlala Lake area.

Respectfully submitted

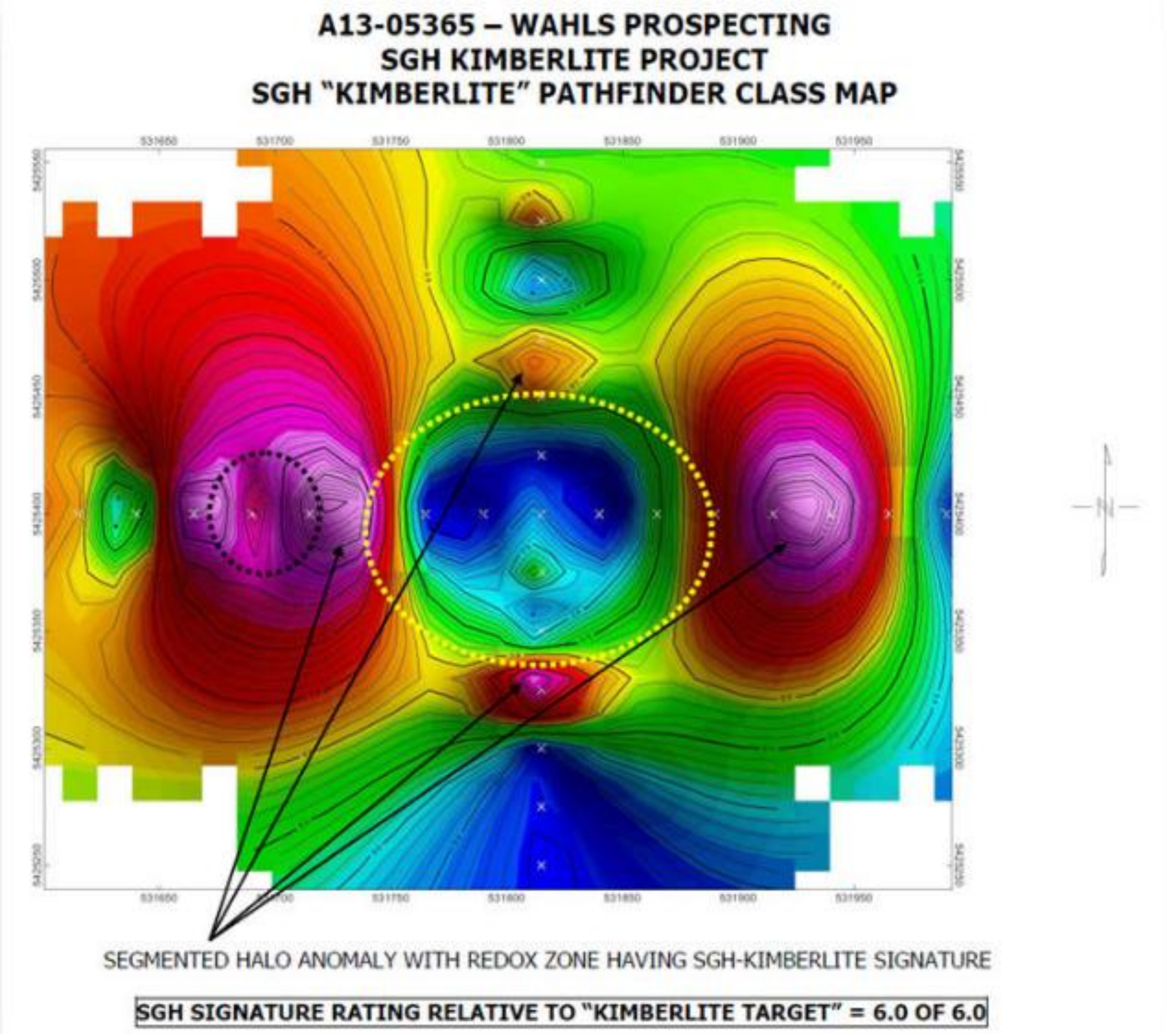
Marathon, Ontario

October 10, 2019

Rudolf Wahl

Rudolf Wahl
Prospector

6.2 SGH KIMBERLITE AREA TARGET # 6 on cell claim 137213


A13-05365 – WAHLS PROSPECTING
SGH KIMBERLITE PROJECT
SGH "KIMBERLITE" PATHFINDER CLASS MAP

SEGMENTED HALO ANOMALY WITH REDOX ZONE HAVING SGH-KIMBERLITE SIGNATURE

SGH SIGNATURE RATING RELATIVE TO "KIMBERLITE TARGET" = 6.0 OF 6.0

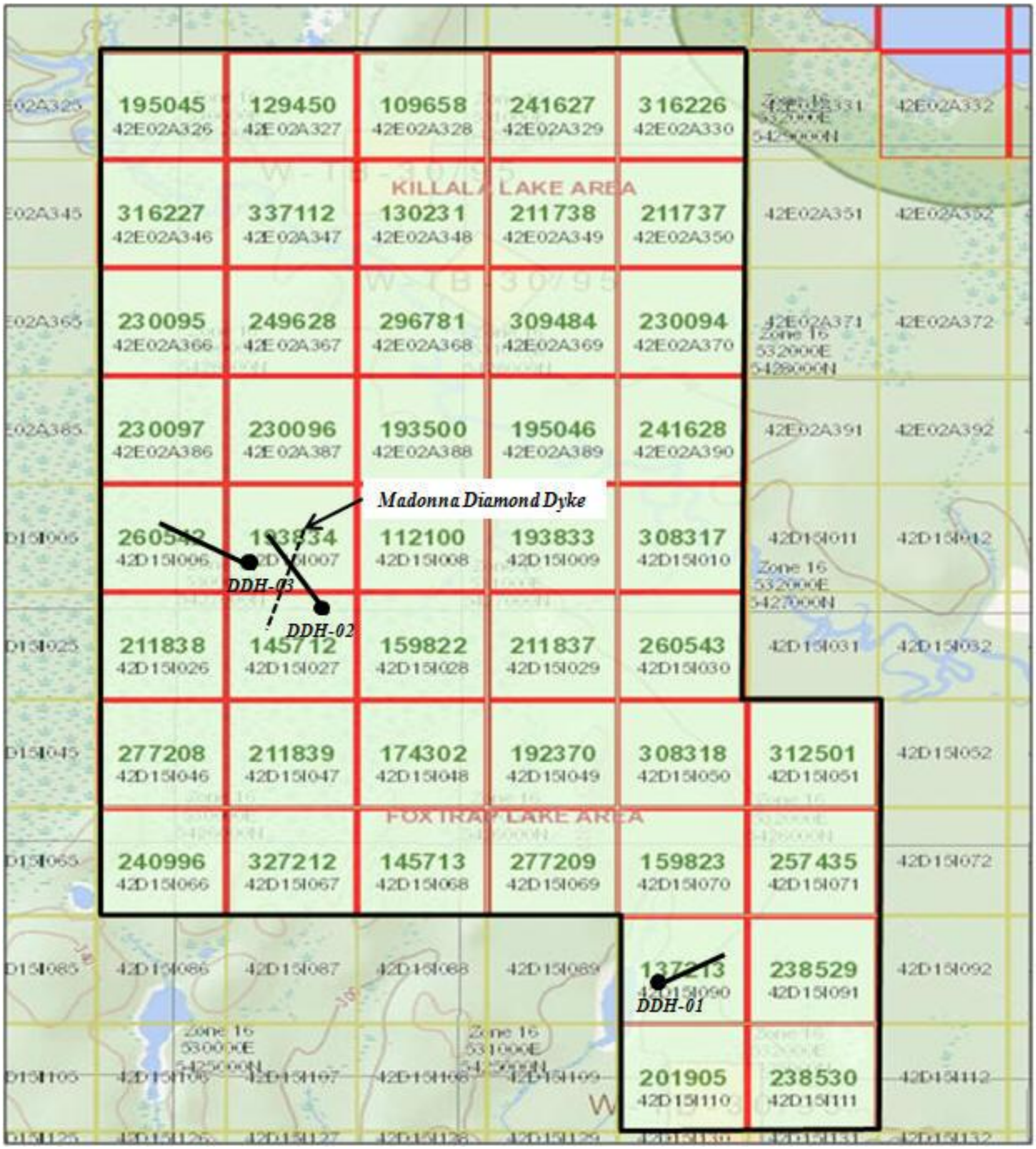
6.3 PICTURE DDH-02 core box 53 outlined a 2.78 meter potential diamond bearing dyke at 114meter down hole. The core mineralization is identical with the Madonna Diamond dyke 82 meters to the northeast of the drill section.

Appendix I

Killala Lake South Property Diamond Drill Hole Locations

Killala Lake South Property Diamond Drill Hole Location

DDH-01 on the diamond drill tagged #6 on cell claim 137213 at location Zone 16 NAD 83 UTM 531709E – 5425443N Azimuth 118.8 degree and 60.3 degree dip for 402 meters.
DDH-02 was drilled at location Zone 16 NAD 83 UTM 530433E – 5427051N Azimuth 321 degree and 49.5 degree dip for 402 meters on cell claim 145712.
DDH-3 was drilled at location Zone 16 NAD 83 UTM 530294E – 5427191N Azimuth 297.4 degree and 50.5 degree dip for 399 meters on cell claim 193834.



Appendix II

Diamond Drill Core Log DDH-01 to DDH-03

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DIAMOND DRILL CORE LOG

DDH: 01 Drill target #6

NTS: **NAD83**
UTM **Easting** **531709**
Northing **5425443**
Elevation (m): **302**
Dip at Collar: **60.3**
Azimuth: **118.8**
Total Depth: **402 m**
Core Size: **HQ**
Remarks:

Cell Claim: 137213
Property: **Killala Lake South Property**
Zone: **16**
Drill Date start: **05/26//2018**
Drill Date finish: **05/30/2018**
Drill Contractor: **Chibougamau Diamond Drilling Ltd.**
Core Log Date: **06/20/2018**
Logged by: **Harvey Buck B.Sc.**
Assistant: **Rudolf Wahl**

DDH-01	**GEOLOGY**		
From	**To meters**	**Major Rock**	**Minor Rock**
0	13	Overburden	
13	37.85	Mafic Volcanic	massive to moderately banded, nonmagnetic, abundant granitoid dyklets to dykes
37.85	39.25	Granite	medium-grained, strongly silicified, moderate to strong potassic alteration
39.25	56.8	Mafic Volcanic	massive to sometimes moderately banded, nonmagnetic, abundant granitoid dyklets to dykes
56.8	66.5	Syenite	medium-grained, some thin late carbonate veinlets associated with the pyrite
66.5	127.3	Mafic Volcanic	generally massive to sometimes moderately banded, nonmagnetic, breccia/fault zone between 69.1-70.3 m above which were thin carbonate veinlets,
127.3	128.5	Granite	orange to pinkish, medium-grained, strongly silicified, moderate to strong potassic alteration
128.5	131.7	Mafic Volcanic	weakly banded, weakly magnetic in and out, some granitoid dyklets, fine-grained, weak biotite alteration
131.7	134.2	Granite	lowermost 20 cm granitic pegmatite, orange to weakly cream coloured, medium-grained, strongly silicified
134.2	137.5	Mafic Volcanic	massive, weakly magnetic in and out, some granitoid dykes, fine-grained, weak biotite alteration
137.5	144	Granite	orange to shades of grey, medium-grained, intensely silicified, weak potassic alteration
144	154.2	Mafic Volcanic	weakly banded to massive, weakly magnetic in and out, some granitoid dykes under 20 cm wide
154.2	157.3	Granite	weakly banded by numerous granitic and feldspar porphyry dykes to dyklets, weakly magnetic, fine-grained, strongly to rarely intensely silicified
157.3	160.95	Feldspar Porphyry	5-7% subhedral porphyritic K-feldspars to 4 mm, weakly magnetic in and out, between 158.6-159.2 m is a granite
160.95	168.4	Mafic Volcanic	weakly banded by numerous granitic and feldspar porphyry dykes to dyklets, weakly magnetic
168.4	172.8	Feldspar Porphyry	3-5% subhedral porphyritic K-feldspars to 3 mm in porphyry, nonmagnetic, intensely silicified
172.8	175.55	Mafic Volcanic	massive, nonmagnetic, four small granitoid dykes, fine-grained, moderately silicified, strong chlorite
175.55	189.9	Feldspar Porphyry	5-10% subhedral porphyritic K-feldspars to 4 mm, weakly magnetic in and mostly out
189.9	198.9	Mafic Volcanic	massive, weakly magnetic in and out, a few granitoid and feldspar porphyry dykes under 30 cm wide
198.9	201.45	Granite or Syenite	orange, medium-grained, intensely silicified, 20 cm granitic dyke at 200 m, moderate to rarely strong potassic alteration

201.45	208.4	Feldspar Porphyry	4-6% subhedral porphyritic K-feldspars to 3 mm, weakly magnetic in and mostly out, a few pegmatic granite dykes to 10 cm wide
208.4	216.3	Mafic Volcanic	massive, non magnetic, granitoid dykes between 214.3-214.8 m with shallow undulating contacts, fine-grained
216.3	221.6	Granite	generally cream coloured, medium-grained, interbedded with mafic volcanics and feldspar porphyry, intensely silicified, weak to rarely moderate potassic alteration, weak to moderate biotite and chlorite in mafic xenoliths and feldspar porphyry, foliated at 30 degrees TCA, lower contact is sharp, slightly undulating at 33 degrees TCA
221.6	269.2	Mafic Volcanic	massive to banded especially near granite (ex. 257.4, 260.4 m), granitic pegmatite (ex. 225.4, 252.0 m), syenite
269.2	270.9	Feldspar Porphyry	5-10% subhedral porphyritic K-feldspars to 4 mm, non magnetic, intensely silicified, weak biotite alteration, weak bandy K-alteration
270.9	302.75	Mafic Volcanic	massive to banded by dyking and veining, weakly to moderately magnetic in and out, granitoid dykes centered at 274.1, 278.3, 278.8, 282.3, 290.4 297.3 and 299.5 m,
302.75	304.1	Feldspar Porphyry	~10% subhedral porphyritic K-feldspars to 7 mm, non magnetic, intensely silicified, weak biotite alteration, weak bandy epidote alteration with weak K-alteration at the contacts
304.1	313.8	Mafic Volcanic	massive to weakly banded by dyking and veining, moderately magnetic, syenite dykes centered at 305.9 and 307.7 m
313.8	326.6	Syenite	medium-grained, nonmagnetic, some thin late carbonate veinlets associated with epidote
326.6	327.8	Mafic Volcanic	massive, weakly magnetic in and out, fine-grained, weak biotite alteration, K-alteration in some granitoid dykelets
327.8	330.9	Syenite	**gr**ey, medium-grained, nonmagnetic, some thin late carbonate veinlets, strongly silicified, weak potassic alteration
330.9	335.45	Mafic Volcanic	massive, weakly magnetic, fine-grained, weak biotite alteration, K-alteration in some granite and syenite dykes
335.45	337.5	Granite	greenish-grey, medium-grained, nonmagnetic, intensely silicified, weak epidote alteration in feldspars, weak biotite
337.5	345.15	Mafic Volcanic	massive, weakly magnetic, fine-grained, strongly K-altered, 90 cm wide aplite centered at 353.1 m
345.15	347.15	Granite or Syenite	orange-grey, medium-grained, nonmagnetic, some thin late carbonate veinlets with pyrite, intensely silicified, weak potassic and biotitic alteration
347.15	358.9	Mafic Volcanic	massive, weakly magnetic, fine-grained, moderate to strong silicification, weak to moderate biotite alteration, K-alteration in some granite dykes
358.9	361.75	Aplite	massive, fine-grained, upper 55 cm is a granite dyke intruded by the aplite, 20 cm granite dyke and 25 cm of mafic volcanic xenolith
361.75	364.1	Mafic Volcanic	massive, weakly magnetic, fine-grained, lowermost 90 cm is an early granite dyke with weak potassic alteration
364.1	365.95	Aplite	massive, fine-grained, intense silicification, strong potassic alteration, trace to 2% disseminated pyrite
365.95	367.6	Feldspar Porphyry	5% ghosty subhedral porphyritic K-feldspars to 2 mm, nonmagnetic, moderately silicified, weak biotite and chlorite
367.6	368.85	Granite	cream to shades of grey, medium-grained, strongly silicified, moderate biotite
368.85	370.45	Feldspar Porphyry	3% ghosty subhedral porphyritic K-feldspars to 3 mm, nonmagnetic, strongly silicified, weak biotite and chlorite
370.45	372.2	Granite	ream to shades of grey, medium-grained, strongly silicified, moderate biotite
372.2	373.3	Feldspar Porphyry	3% ghosty subhedral porphyritic K-feldspars to 3 mm, nonmagnetic, strongly silicified, weak biotite and chlorite
373.3	376.55	Granite or Syenite	orange-grey, medium-grained, nonmagnetic, some granitic pegmatite and feldspar porphyry?
376.55	393.3	Granite	cream to shades of grey, medium-grained, common syenite and rare feldspar porphyry dykes to 50 cm wide, strongly silicified
393.3	395.1	Aplite	massive, fine-grained, intense silicification, strong potassic alteration, rare to 1% disseminated pyrite
395.1	402	Granite	cream to shades of grey, medium-grained, cut by syenite, granitic pegmatite and aplite dykes to 50 cm wide

DIAMOND DRILL HOLE- 01 Target #6

NTS:		**NAD83**
UTM	**Northing**	**531709**
(Nad83)	**Easting**	**5425443**
Elevation (m):		**302**
Dip at Collar:		**60.3**
Azimuth:		**118.8**
Total Depth:		**402 m**
Core Size:		**HQ**

Remarks:

DDH: 01

Lease/Claim: 137213

Property: **Killala Lake South Property**

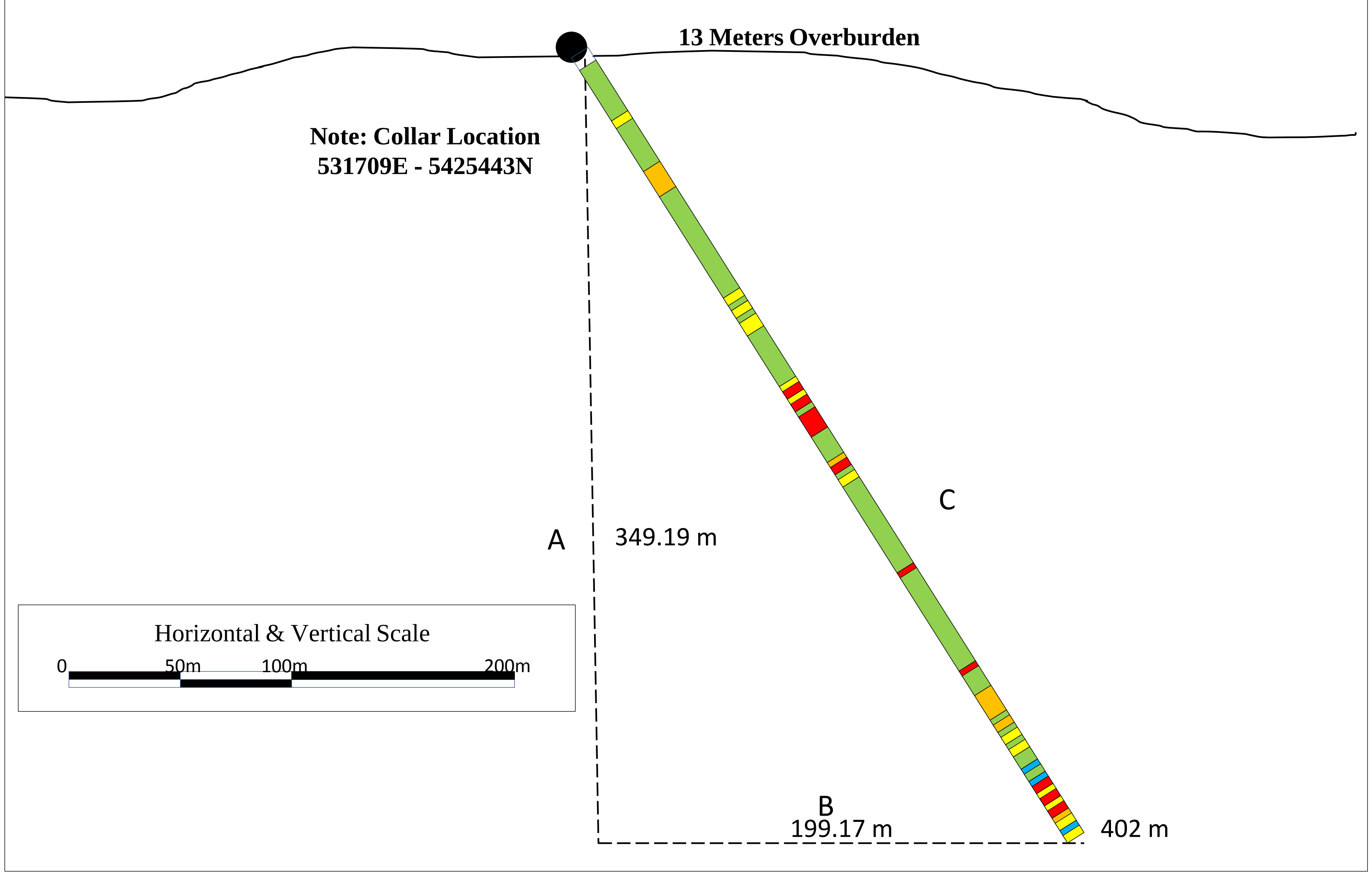
Zone: **16**

Date start: **05/26//2018**

Date finish: **05/30/2018**

Drill Contractor: : Chibougamau Diamond Drilling Ltd.

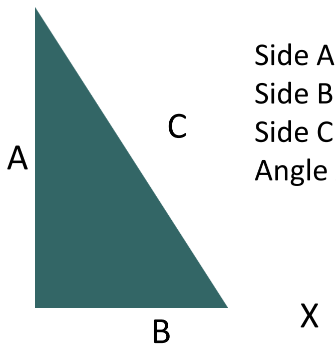
Drill Hole Section Legend Looking Northeast Azimuth 118.8 Degree
Claim 137213



Drill Hole Section Legend
Killala Lake South Property

DDH- 01

- 🟩 *Mafic Volcanic*
- 🟨 *Granite*
- 🟧 *Syenite*
- 🟥 *Feldspar Porphyry*
- 🟦 *Aplite*
- ⬜ *Overburden*



Side A = 349.19
Side B = 199.17
Side C = 402
Angle X = 60.3 degrees

DIAMOND DRILL CORE LOG

NTS:	**NAD83**		**DDH: 02**	
UTM	**Easting**	**530433**	**Cell Claim: 145712, 193834**	
	Northing	**5427051**	**Property:**	**Killala Lake South Property**
Elevation (m):		**303**	**Zone:**	**16**
Dip at Collar:		**49.5**	**Drill Date start:**	**05/30/2018**
Azimuth:		**321**	**Drill Date finish:**	**06/04/2018**
Total Depth:		**402 m**	**Drill Contractor:**	**Chibougamau Diamond Drilling Ltd.**
			Core Log Date:	**07/23/2018**
Core Size:		**HQ**	**Logged by:**	**Rudolf Wahl**
Remarks:			**Assistant:**	

DDH-02	**GEOLOGY**		
From	**To meters**	**Major Rock**	**Minor Rock**
0	12	Overburden	
12	157	Granite	greenish-grey, medium-grained, nonmagnetic, intensely silicified, weak epidote alteration in feldspars, weak biotite
157	159.79	Lamprophyre	Porphyritic Ultramafic Lamprophyre
159.79	171.2	Granite	greenish-grey, medium-grained, nonmagnetic, intensely silicified, weak epidote alteration in feldspars, weak biotite
171.2	171.7	Diabase	Fine grained Ocellar diabase
171.7	192.1	Granite	medium-grained, strongly silicified, moderate to strong potassic alteration
192.1	196.6	Diabase	fine to medium grained diabase, 0.5% sulphide
196.6	312	Granite	cream to shades of grey, medium-grained, strongly silicified, moderate biotite
312	320	Granite	weakly banded by numerous granitic and feldspar porphyry dykes to dyklets, weakly magnetic, fine-grained, strongly to rarely intensely silicified
320	326	Diabase	fine to medium grained diabase, 0.5% sulphide
326	362	Granite	greenish-grey, medium-grained, nonmagnetic, intensely silicified, weak epidote alteration in feldspars, weak biotite
362	402	Syenite	grey, medium-grained, nonmagnetic, some thin late carbonate veinlets, strongly silicified, weak potassic alteration
		End of Drill Hole	

DIAMOND DRILL HOLE- 02

NTS:		**NAD83**
UTM	**Northing**	**530433**
(Nad83)	**Easting**	**5427051**
Elevation (m):		**303**
Dip at Collar:		**49.5**
Azimuth:		**321**
Total Depth:		**399 m**
Core Size:		**HQ**
Remarks:		

DDH: - **02**

Lease/Claim: 145712, 193834

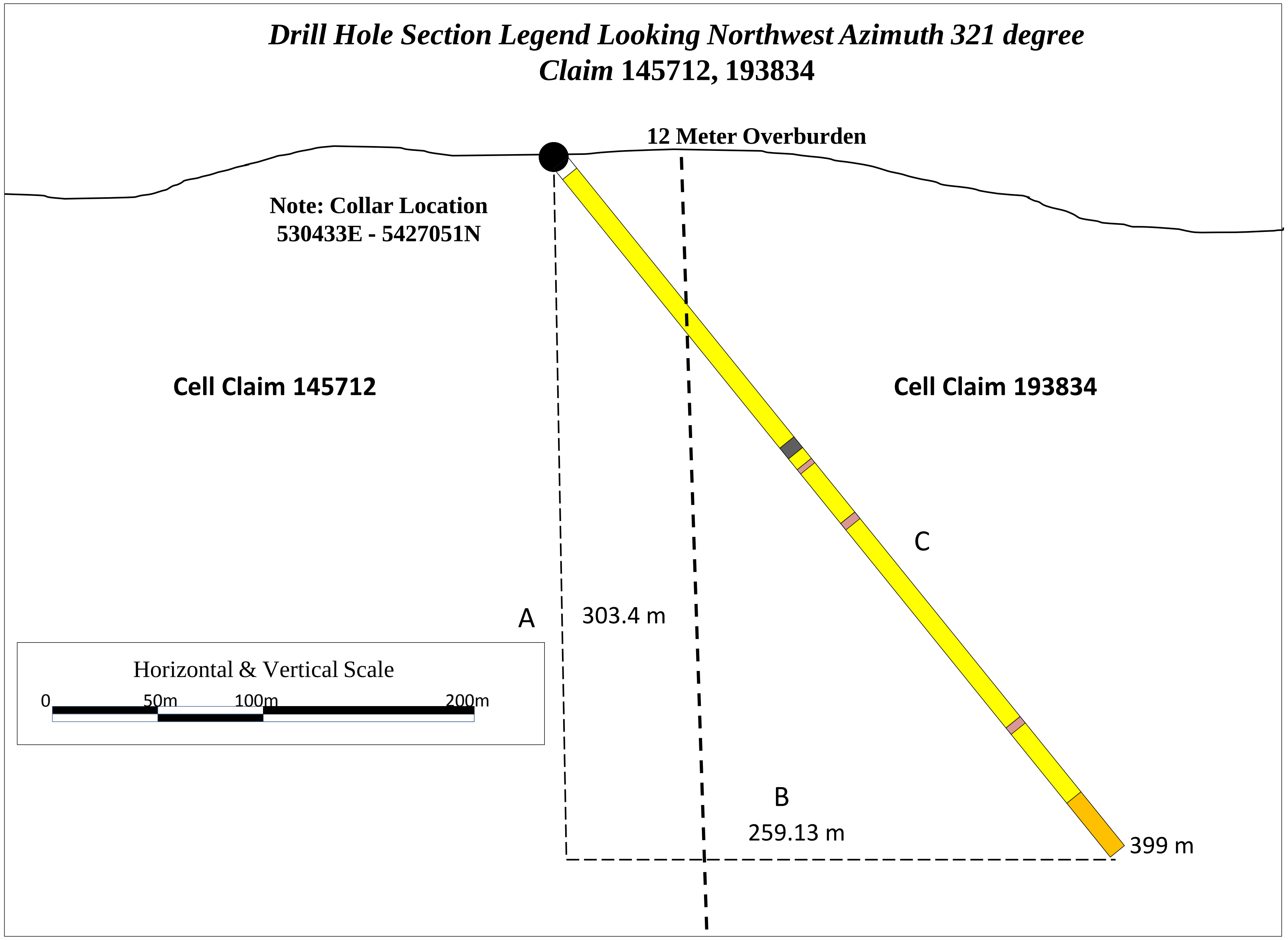
Property: **Killala Lake South Property**

Zone: **16**

Date start: **05/30/2018**

Date finish: **06/04/2018**

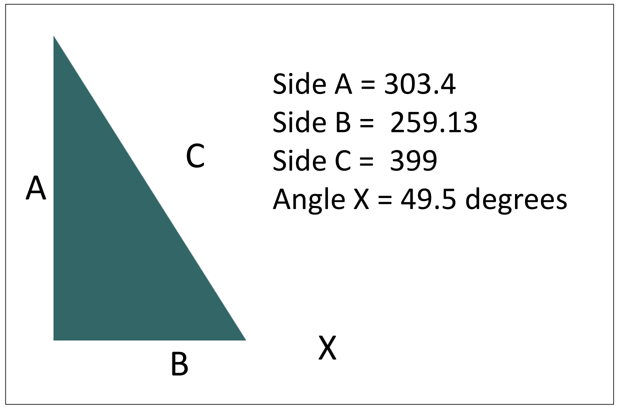
Drill Contractor: : **Chibougamau Diamond Drilling Ltd.**



Drill Hole Section Legend
Killala Lake South Property

DDH- 02

- 🟨 ***Granite***
- ⬛ ***Lamprophyre***
- 🟧 ***Syenite***
- 🟥 ***Diabase***
- ⬜ ***Overburdon***



Side A = 303.4
Side B = 259.13
Side C = 399
Angle X = 49.5 degrees

DIAMOND DRILL CORE LOG

NTS:		**NAD83**	**DDH: 03**	
UTM	**Easting**	**530294**	**Cell Claim: 193834, 260542**	
	Northing	**5427191**	**Property:**	**Killala Lake South Property**
Elevation (m):		**304**	**Zone:**	**16**
Dip at Collar:		**50.5**	**Drill Date start:**	**06/04/2018**
Azimuth:		**297.4**	**Drill Date finish:**	**06/09/2018**
Total Depth:		**399 m**	**Drill Contractor:**	**Chibougamau Diamond Drilling Ltd.**
			Core Log Date:	**07/27/2018**
Core Size:		**HQ**	**Logged by:**	**Rudolf Wahl**
Remarks:			**Assistant:**	

DDH-03	**GEOLOGY**		
From	**To meters**	**Major Rock**	**Minor Rock**
0	36	Overburden	
36	102.1	Granite	weakly banded by numerous granitic and feldspar porphyry dykes to dyklets, weakly magnetic, fine-grained, strongly to rarely intensely silicified
102	144.3	Granite	medium-grained, strongly silicified, moderate to strong potassic alteration
144.3	183.4	Granite	cream to shades of grey, medium-grained, strongly silicified, moderate biotite
183.4	216.3	Granite	orange to pinkish, medium-grained, strongly silicified, moderate to strong potassic alteration
261.3	289.5	Granite	greenish-grey, medium-grained, nonmagnetic, intensely silicified, weak epidote alteration in feldspars, weak biotite
289.5	298	lamprophyre	Ocellar ultramafic lamprophyre
298	324.4	Granite	greenish-grey, medium-grained, nonmagnetic, intensely silicified, weak epidote alteration in feldspars, weak biotite
324.4	353.1	Granite	medium-grained, strongly silicified, moderate to strong potassic alteration
353.1	372.7	Granite	orange to shades of grey, medium-grained, intensely silicified, weak potassic alteration
372.7	399	Granite	cream to shades of grey, medium-grained, strongly silicified, moderate biotite
		End of Drill Hole	

DIAMOND DRILL HOLE- 03

NTS:		**NAD83**
UTM	**Northing**	**530294**
(Nad83)	**Easting**	**5427191**
Elevation (m):		**304**
Dip at Collar:		**50.5**
Azimuth:		**297.4**
Total Depth:		**402 m**
Core Size:		**HQ**
Remarks:		

DDH: - 03

Lease/Claim: 193834, 260542

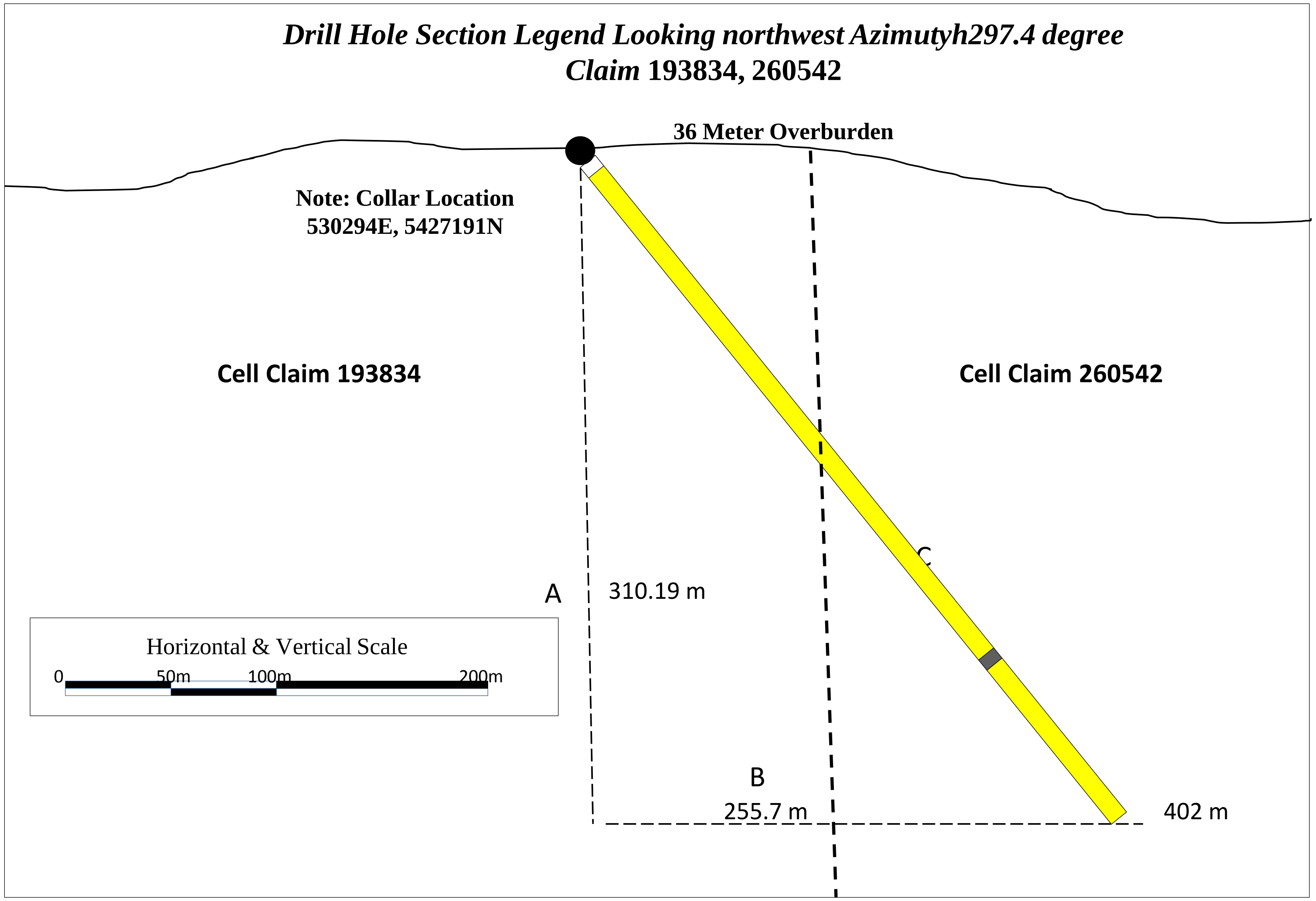
Property: Killala Lake South Property

Zone: 16

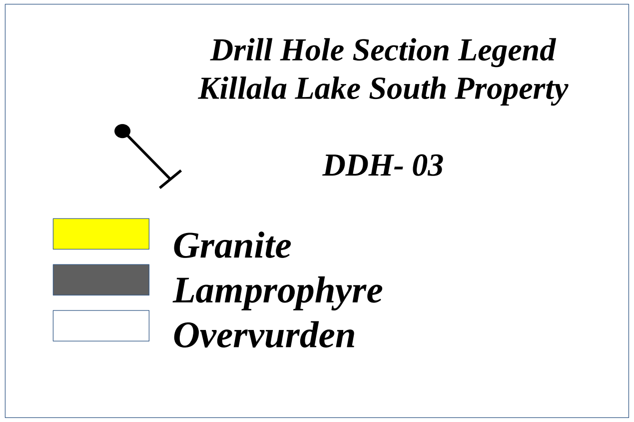
Date start: 06/04/2018

Date finish: 06/09/2018

Drill Contractor: : Chibougamau Diamond Drilling Ltd.

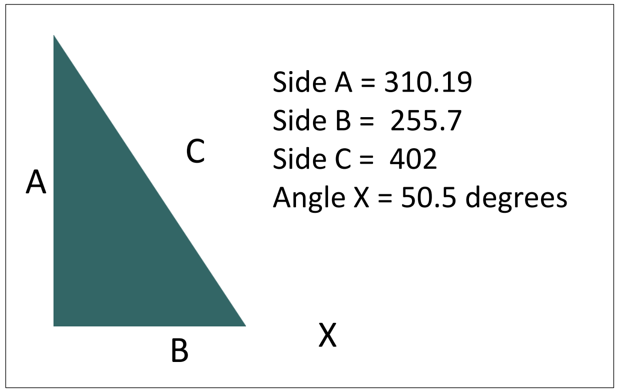


Drill Hole Section Legend Looking northwest Azimutyh297.4 degree
***Claim* 193834, 260542**



Drill Hole Section Legend
Killala Lake South Property

🟨 ***Granite***
⬛ ***Lamprophyre***
⬜ ***Overvurden***



Side A = 310.19
Side B = 255.7
Side C = 402
Angle X = 50.5 degrees

Appendix III

PETROGRAPHY OF MADONNA DYKE - DRILL CORES 2018 by Professore Dr. Roger Mitchell.

PETROGRAPHY OF MADONNA DIKE - DRILL CORES 2018 by Professore Dr. Roger Mitchell.

Core 02 - Box 107 - Ocellar diabase

This sample consists of euhedral prisms (c. 1.5 x 0.2 mm) of polysynthetically-twinned plagioclase feldspar set in a matrix of ophitic clinopyroxene and Ti-magnetite together with magnesian siderite, ferroan dolomite, albite, biotite and trace chalcopyrite. The plagioclase is weakly zoned in BSEimages with a composition of $An_{69-72}Ab_{28-32}$ i.e labradorite-bytownite. Pyroxene is diopside (with 3.6- 4.5 wt.% Al_2O_3 with Na, Ti and Mn less than 0.3 wt.% oxides. Weak zoning towards Alenrichment of the crystals is present. Commonly the diopside is replaced and veined by carbonates and altered to Mg-Fe-Al-chlorite. The spinels are Ti-magnetite which have been extensively replaced by carbonates and chlorite. The final stages of crystallization are represented by small laths and plates of biotite set in a matrix of pure albite and Fe-bearing carbonates. The rock also contain large ocelli (1-2 mm) composed entirely of fine grained quartz or quartz cores with ferroan dolomite margins contiguous with rock matrix. This sample is an ocellar basaltic rock - diabase - that is unlikely to be co-genetic with the main Madonna Dike . It is probably one of the regional diabase dikes,

Core 02 - Box 53 Porphyritic Ultramafic Lamprophyre

This sample consists of large (up to 5 mm) euhedral phenocrysts of clinopyroxene and minor pseudomorphed olivine set in a fine grained complex matrix. The olivine phenocrysts are now completely replaced by serpentine. The pyroxenes are aluminous diopside which are zoned from low Al cores (4-5 wt.% Al_2O_3) to Al enriched up to 10 wt.% Al_2O_3 margins. A few pyroxenes contain discrete cores of green cr-bearing pyroxene - presumably of high pressure origin. Melt and/or spinel inclusions were not observed in this sample.

The groundmass of this sample is very complex and complete characterization requires extensive investigation. The major components are 100-150 um laths of a pseudomorphed phase which might represent former melilite . This material has a very variable composition and range from Ca-rich (9 wt.% CaO to Ca-poor varieties (2 wt.% CaO). However, some also contain significant K_2O and might represent K-chlorite. The laths are set in a mesostasis which contains small (< 20 um) euhedral apatite, Ti-magnetite altered by complex silicate replacements with pure magnetite rims , Na-zeolite, albite,Ba-bearing biotite, ferro-pargasitic amphibole, Mg-Fe-Al-chlorite, dolomite and quartz . See the attached PowerPoint File for images of te groundmass and replaced Ti-magnetite.

Core 03 - Box 97 Ocellar Ultramafic Lamprophyre

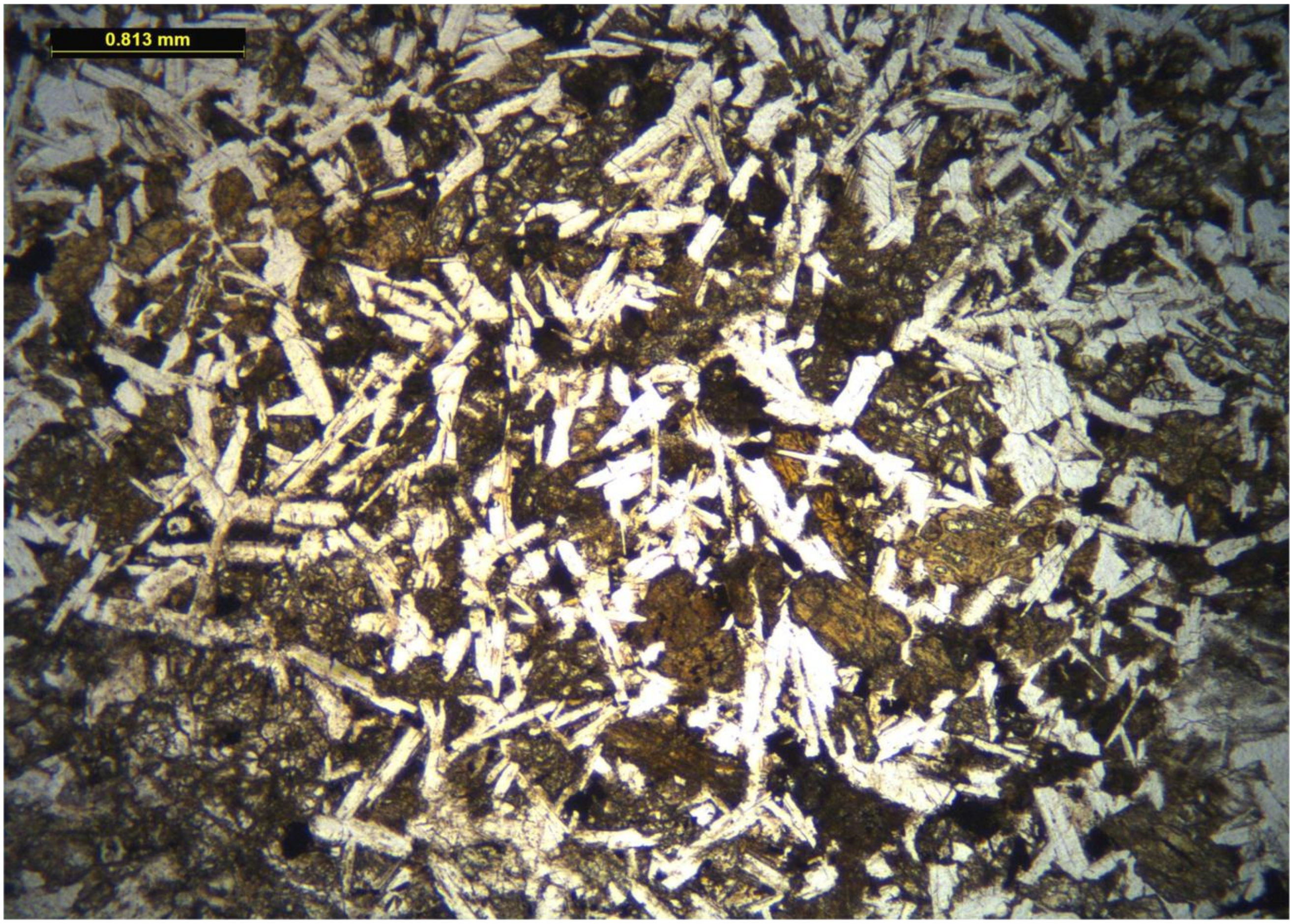
This sample consists of microphenocrystal olivine and small crystals of anhedral clinopyroxene set in a fine grained complex matrix of altered opaque oxide minerals, clinopyroxene, skeletal apatite, ferropargasitic amphibole, alteration products (diverse Na-Ca-Al silicates) after melilite (?), and Fedolomite together with ocelli of residual serpentine and calcite. Mica is not evident in the groundmass but any formerly present is probably now completely altered to chlorite. The phenocrystal and groundmass clinopyroxenes are of diverse composition and contain from 2.8- 8.9 wt.%Al_2O_3, 0.7 - 3.4 wt.% TiO_2, and 0.61-1.4 wt.% Cr_2O_{33}. Any zonation is towards margins enriched in Al and depleted in Cr. These clinopyroxenes are thus similar in composition to the very large clinopyroxenes in sample 02-box53. This sample also contains more serpentinized olivine than is present in sample 02-box53. The oxide assemblage is a late-stage crystallizing phase and consists of a complex intergrowth of ilmenite (c. 1 wt% MnO, 1-2 wt.% Al_2O_3 and V-bearing (< 1 wt.% V_2O_5) magnetite.

COMMENTS

Although the two samples of these altered ultramafic lamprophyres differ in their mineralogical and textural character they are undoubtedly parts of the same Madonna Dike system. This observation is based upon the presence of primary minerals of similar composition, together with similar groundmasses, occurring in both samples,. The magma which formed this dike has thus undergone rheological differentiation during intrusion resulting in different portions of the dike being texturally different. Other samples of the dike can be expected to have a similar mineralogy but different textures and modal abundances of phenocrystal and groundmass phases.

The diabase sample is considered to be unrelated to the ultramafic lamprophyre.

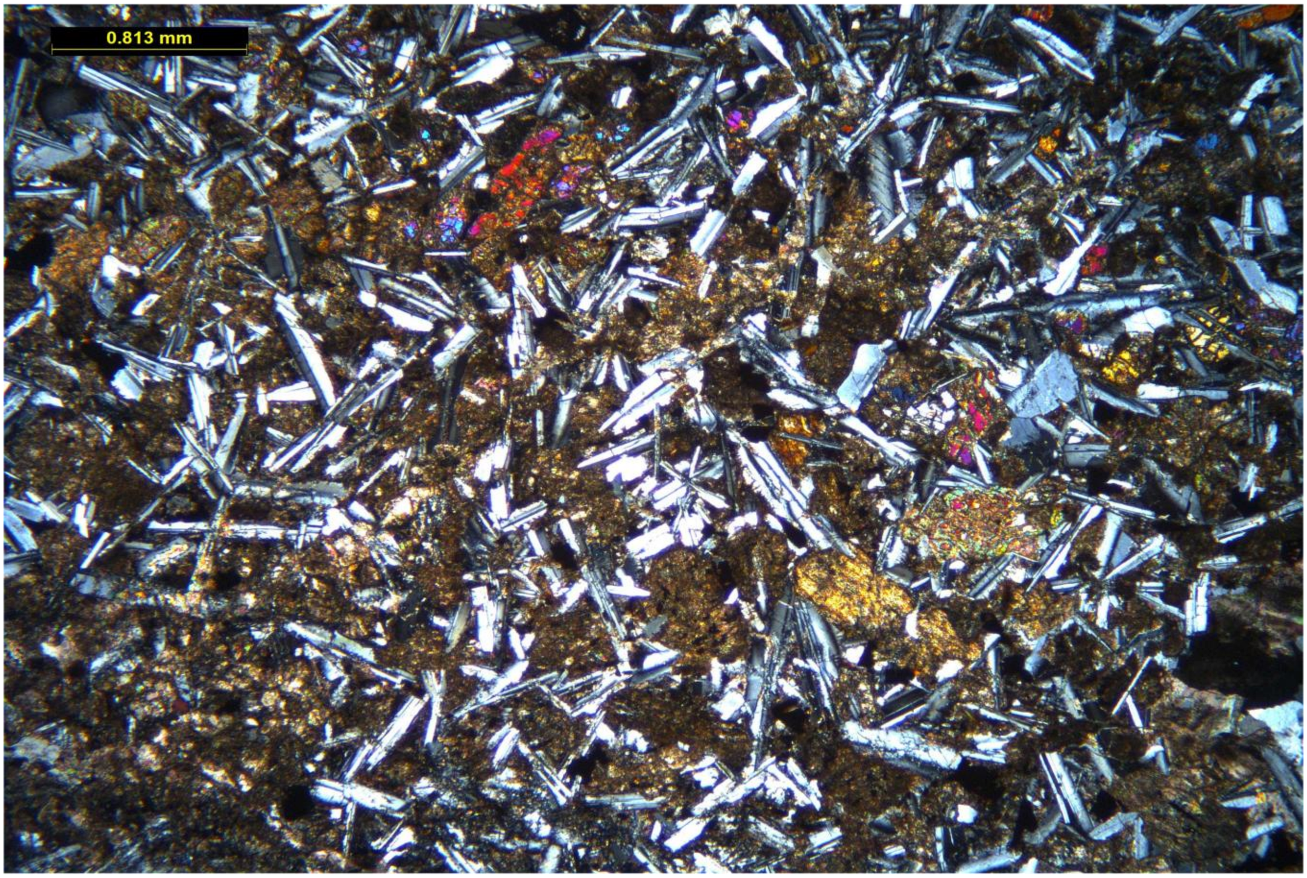
Core 02 – box 107 ocellar diabase



Optical ppl

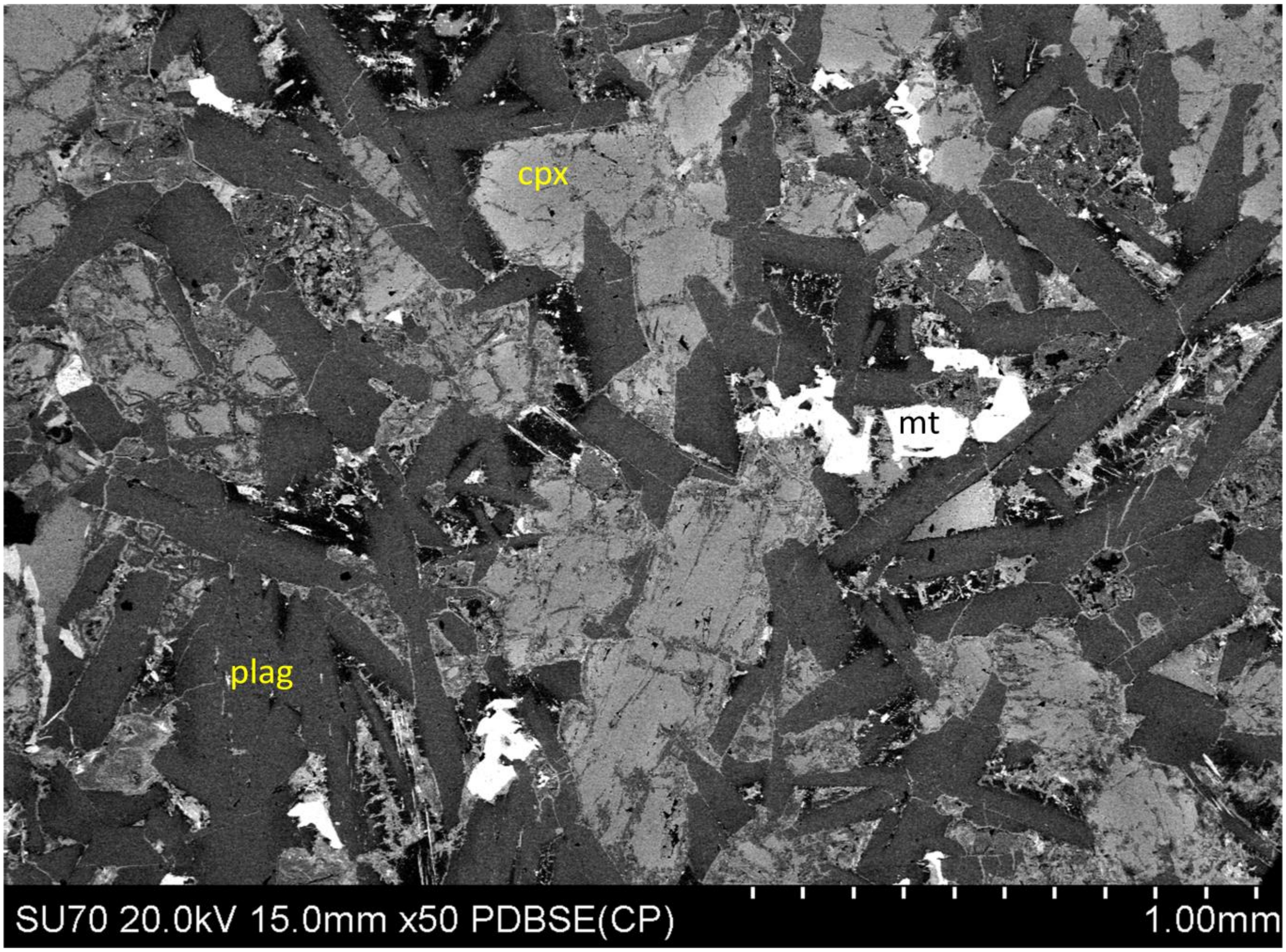
Plagioclase laths with ophitic cpx

Core 02 – box 107 ocellar diabase

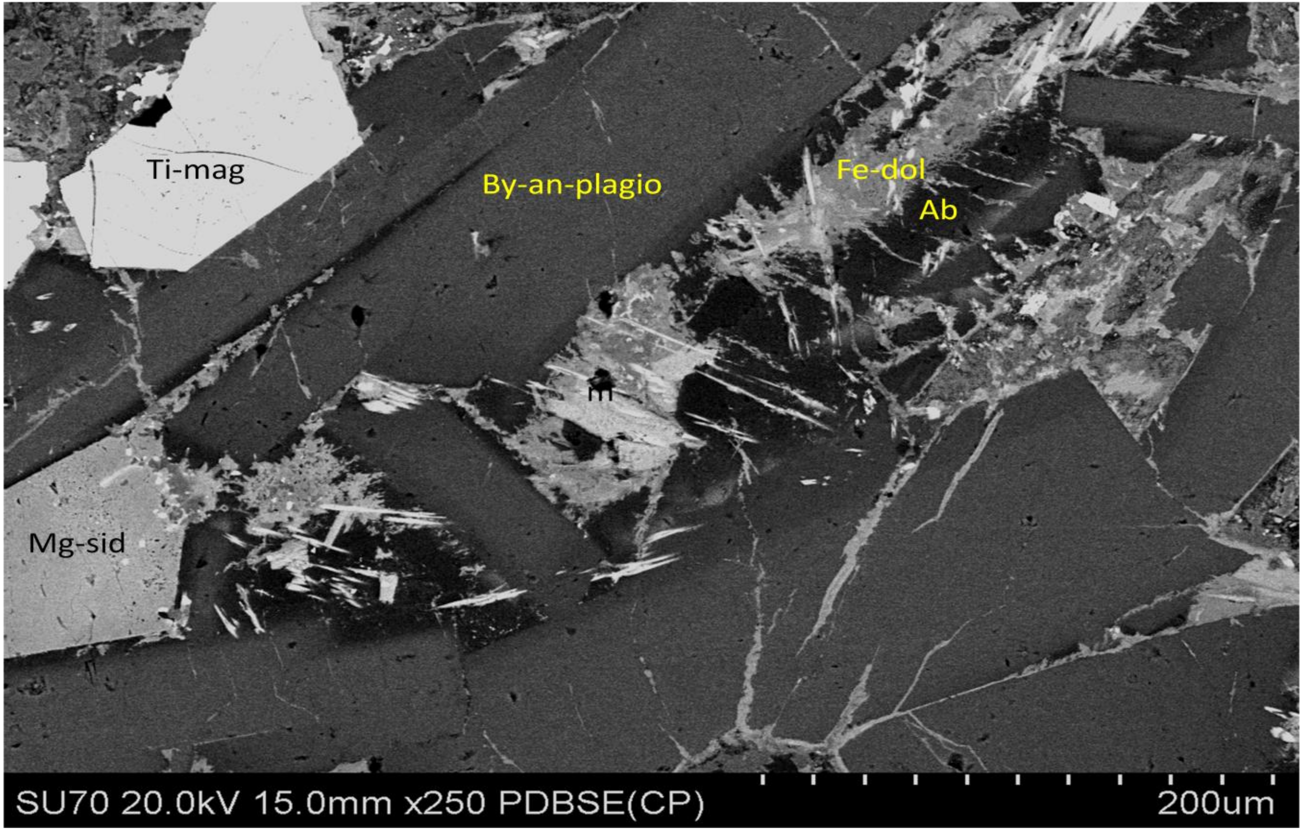


Optical xp

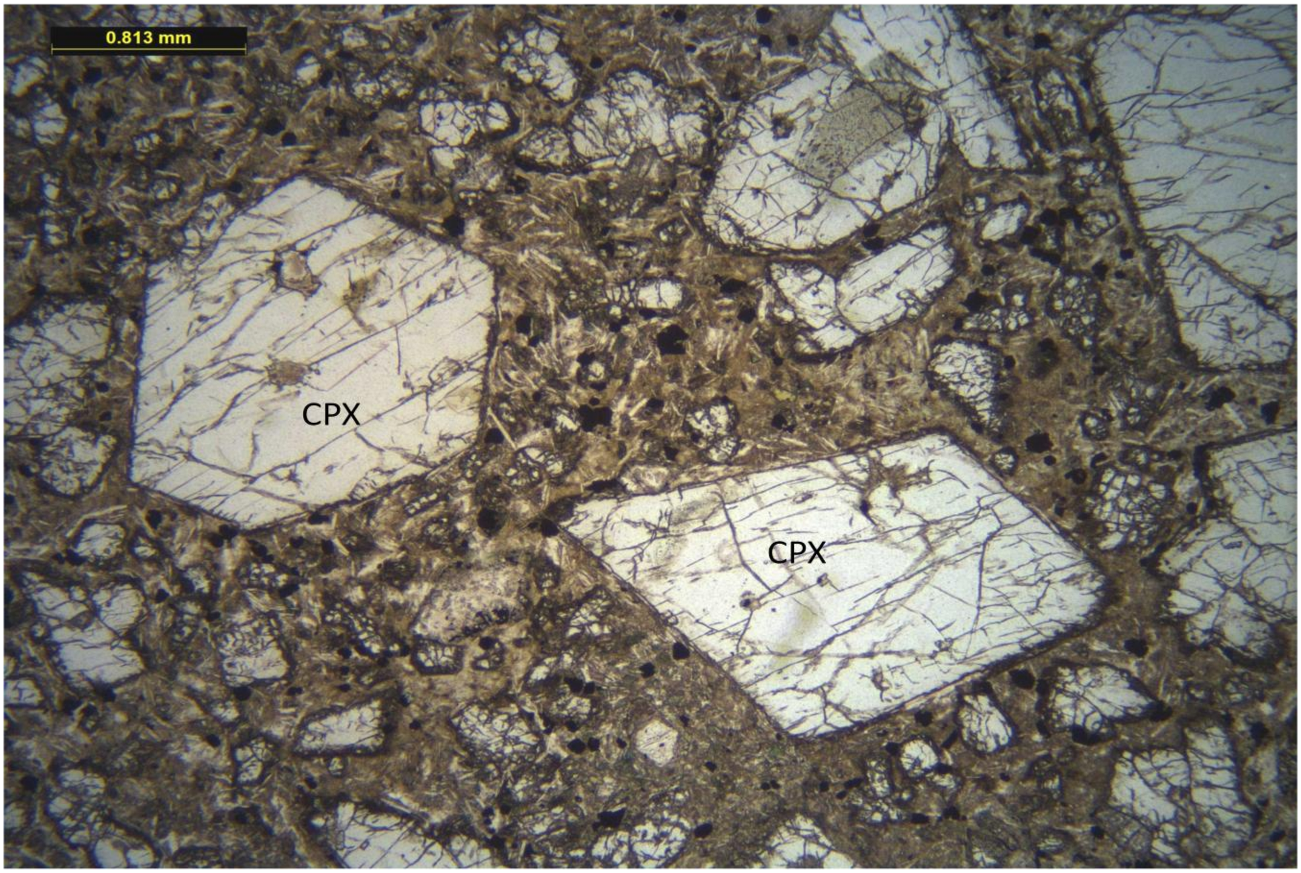
Plagioclase laths with ophitic cpx



Matrix is Fe-dolomite + Mg-siderite+ albite+mica

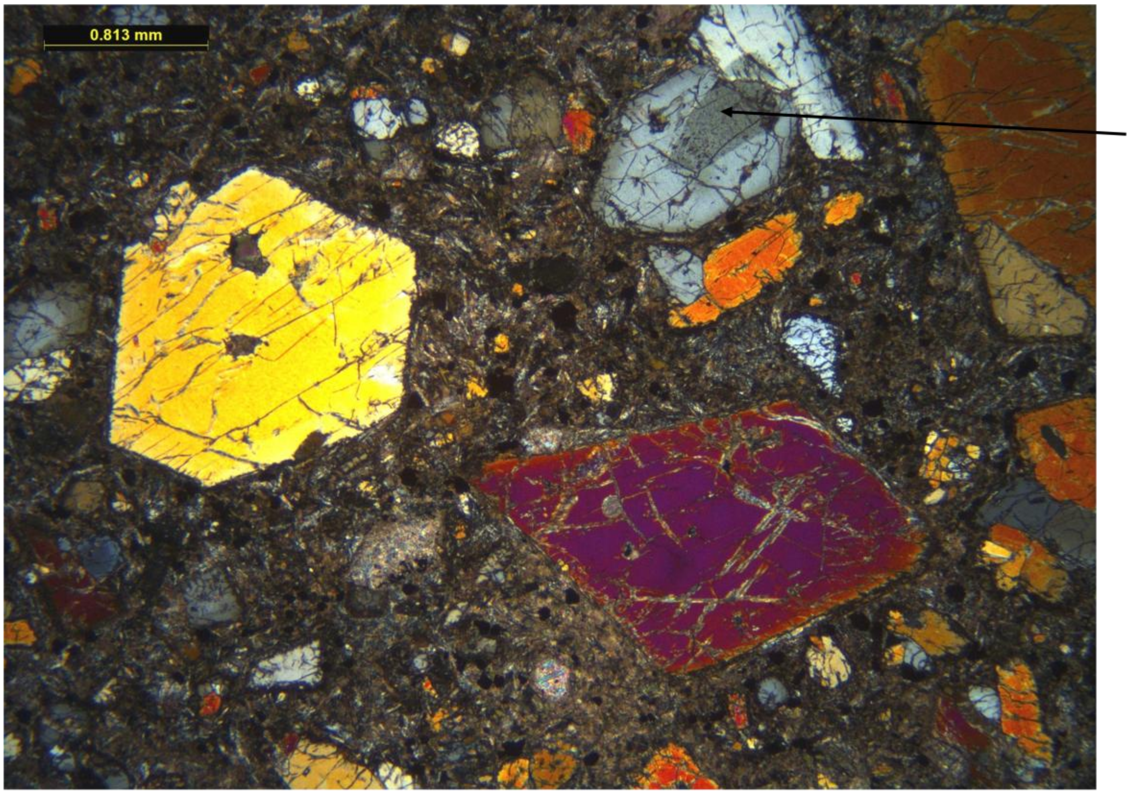


MADONNA 02-BOX 53



OPTICAL PPL

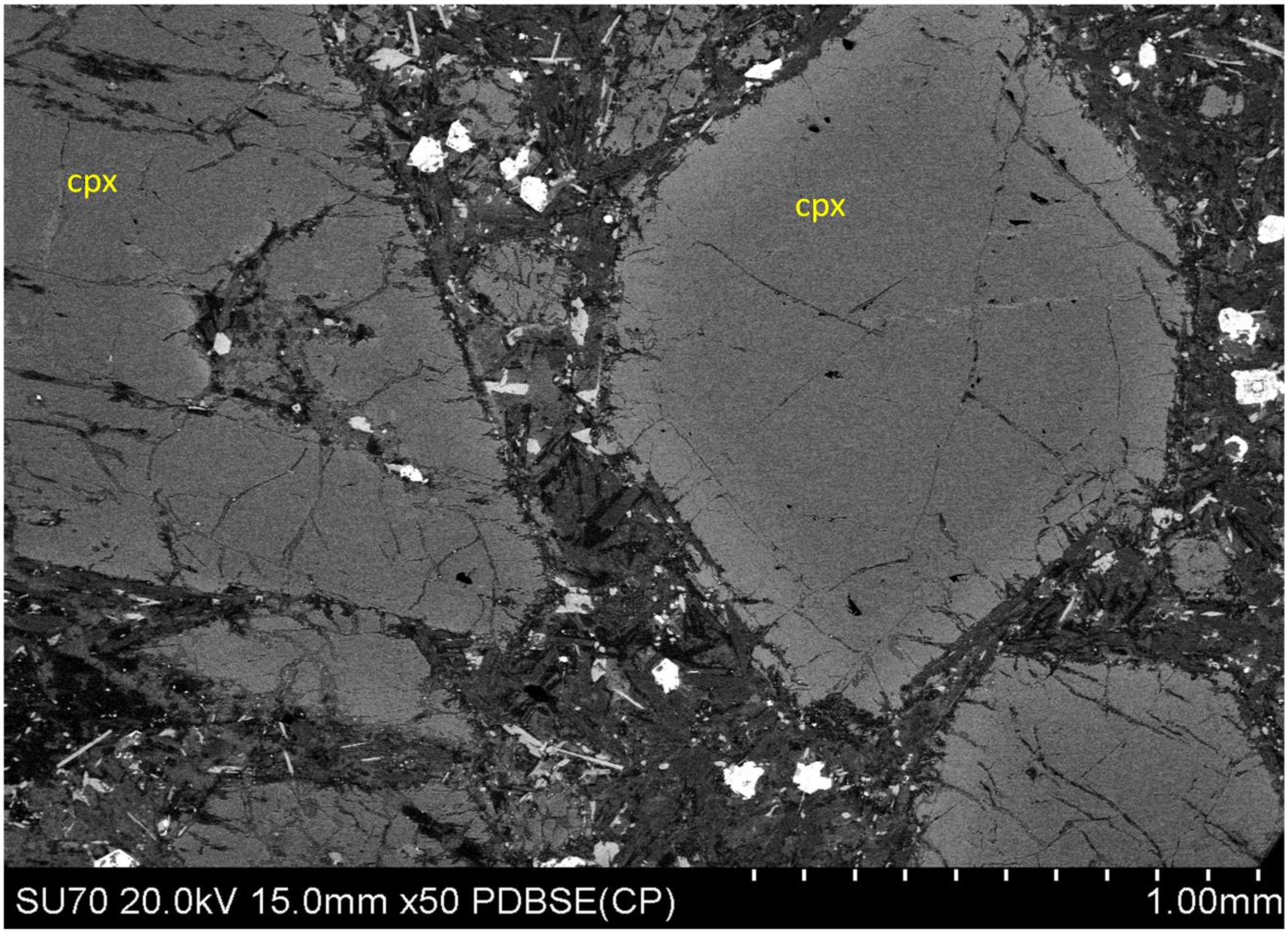
MADONNA 02-BOX 53



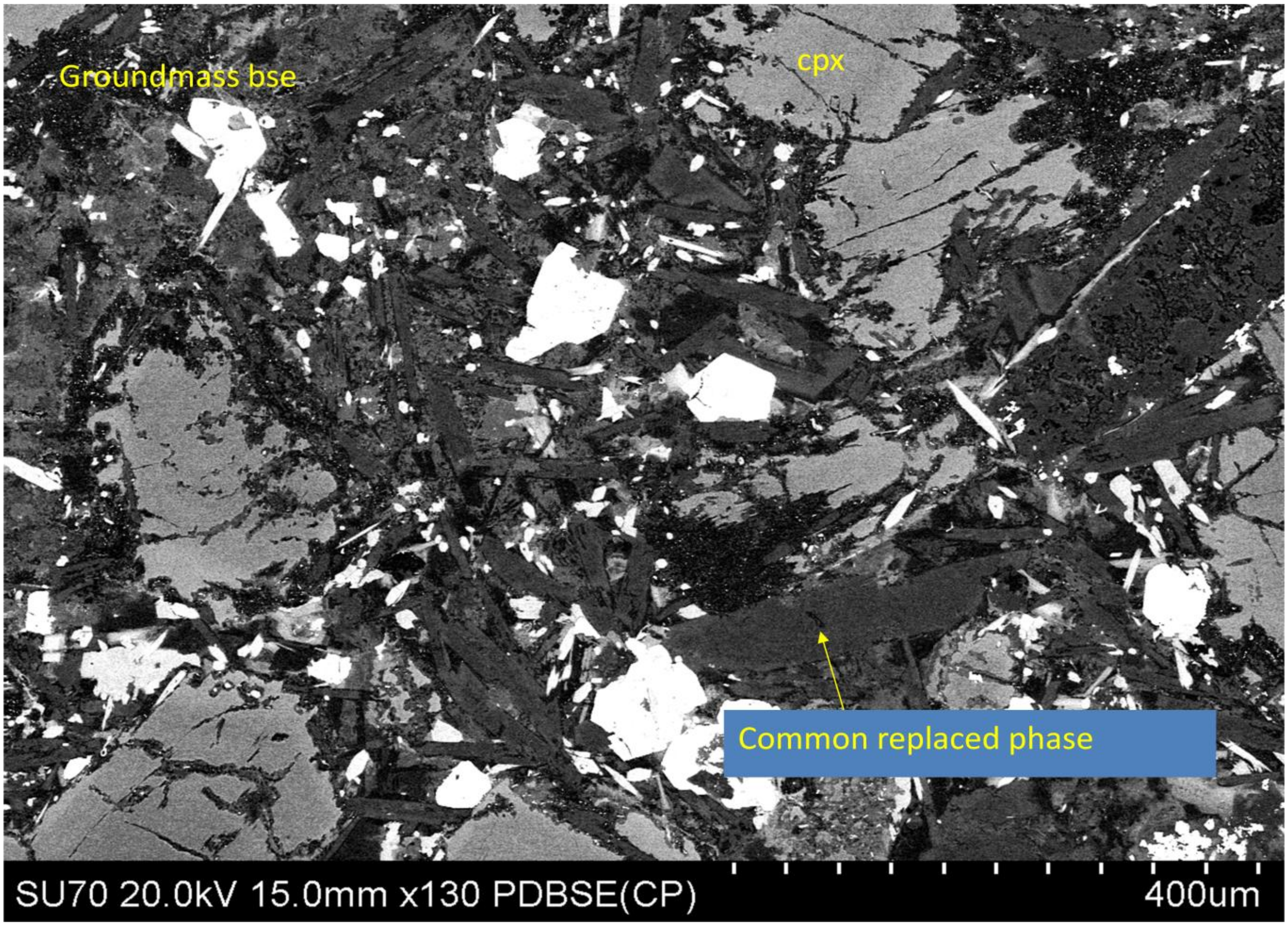
Green cores to some cpx of high pressure origin

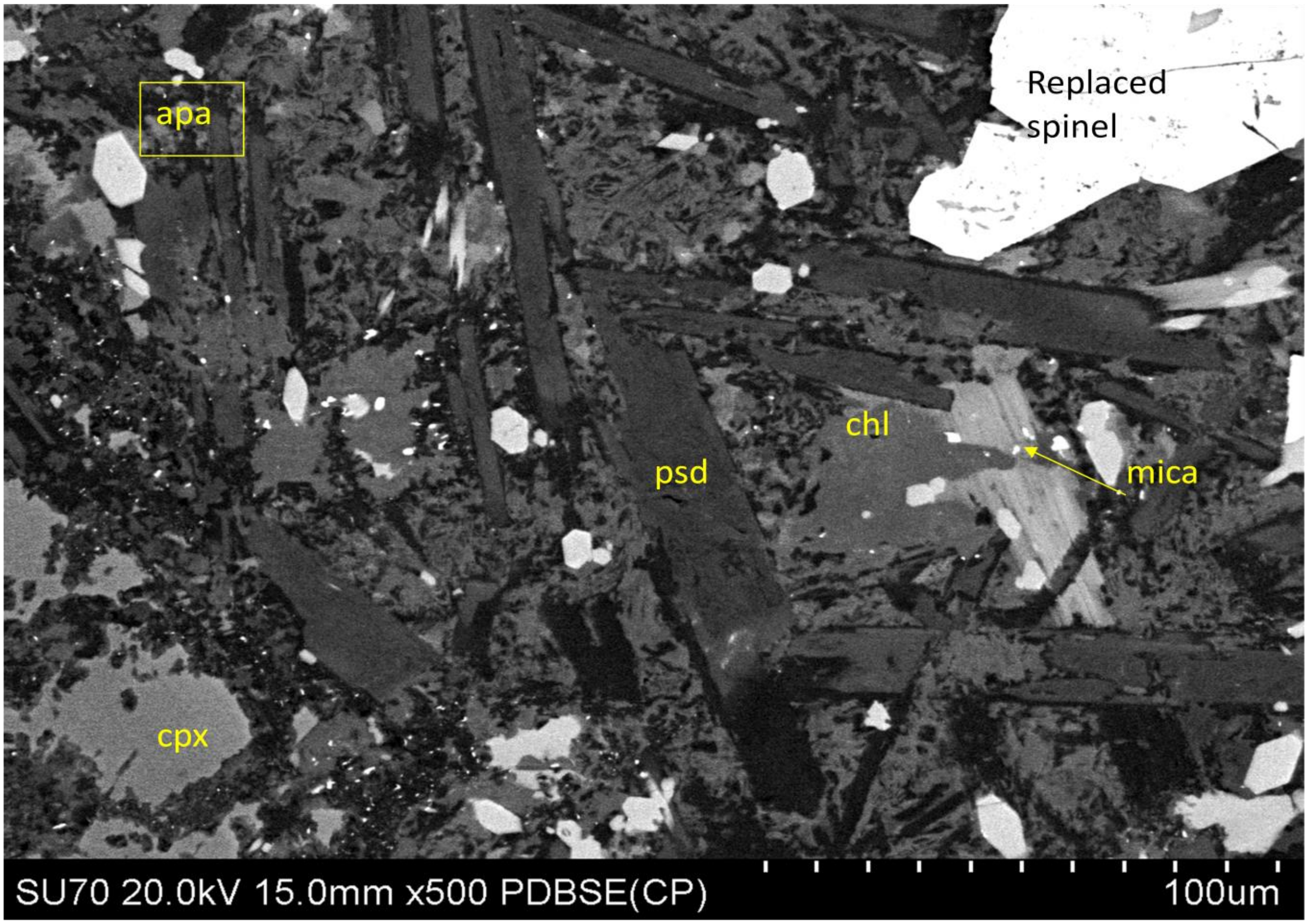
OPTICAL PPL

MADONNA 02-BOX 53

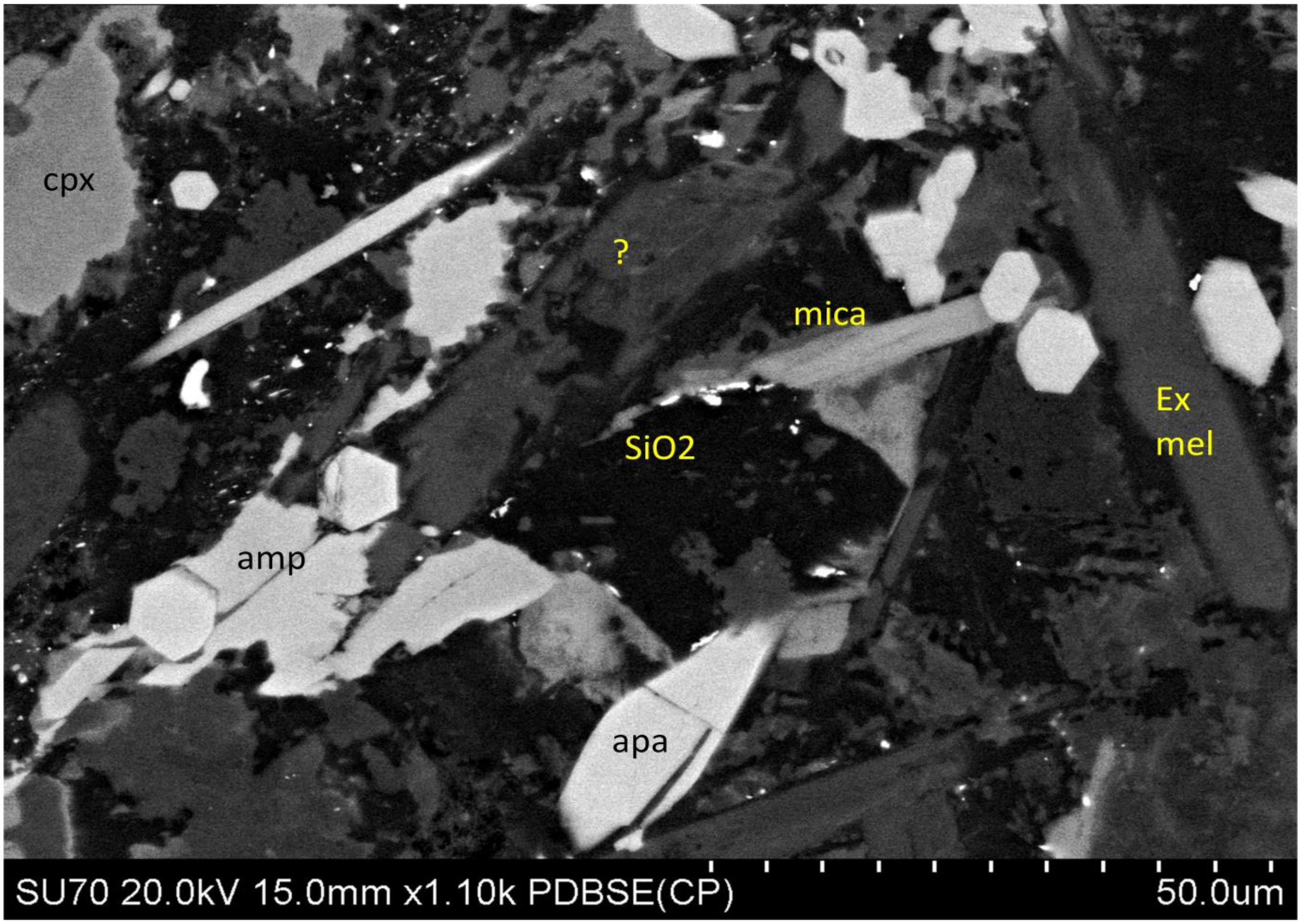


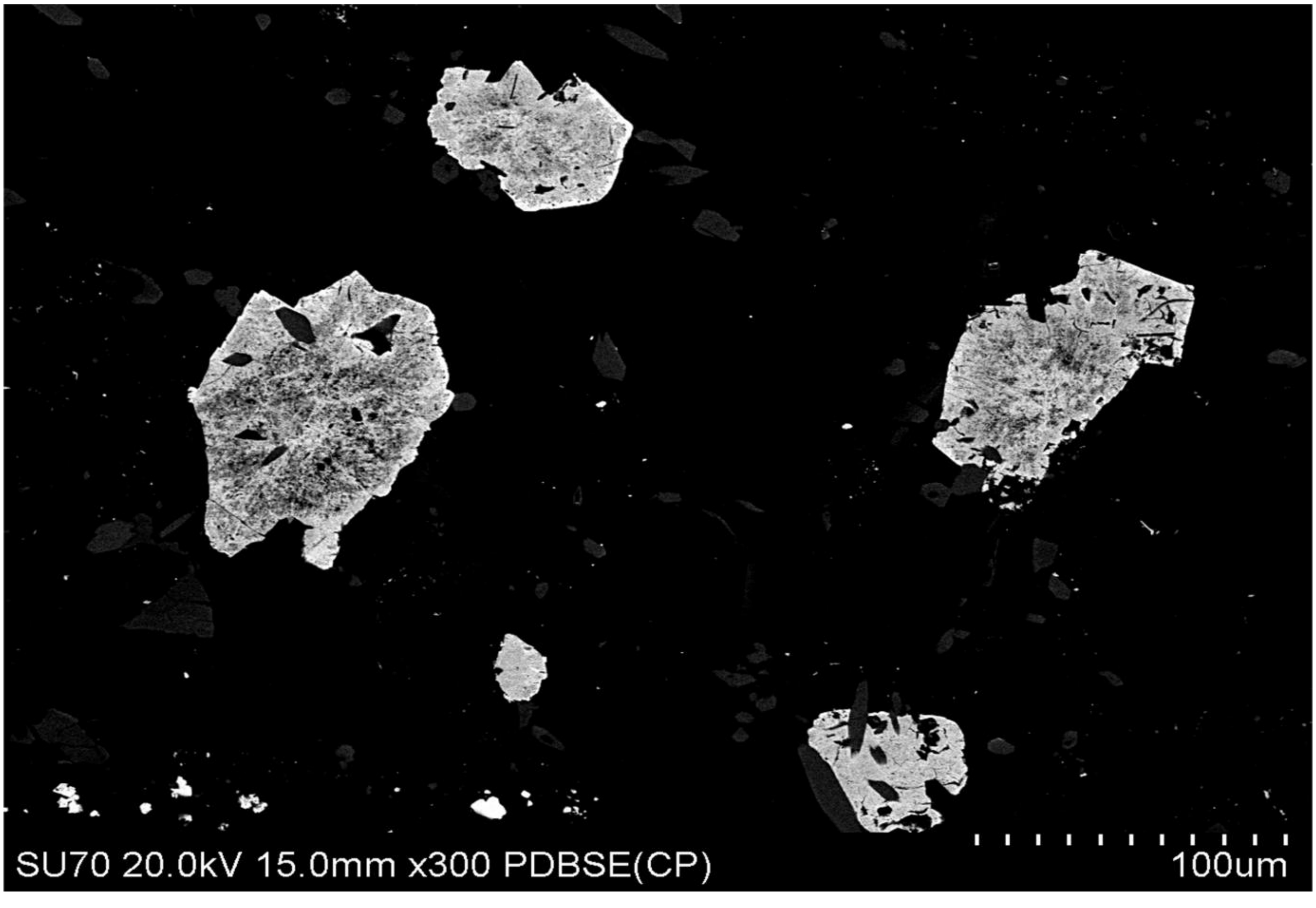
Bse-image





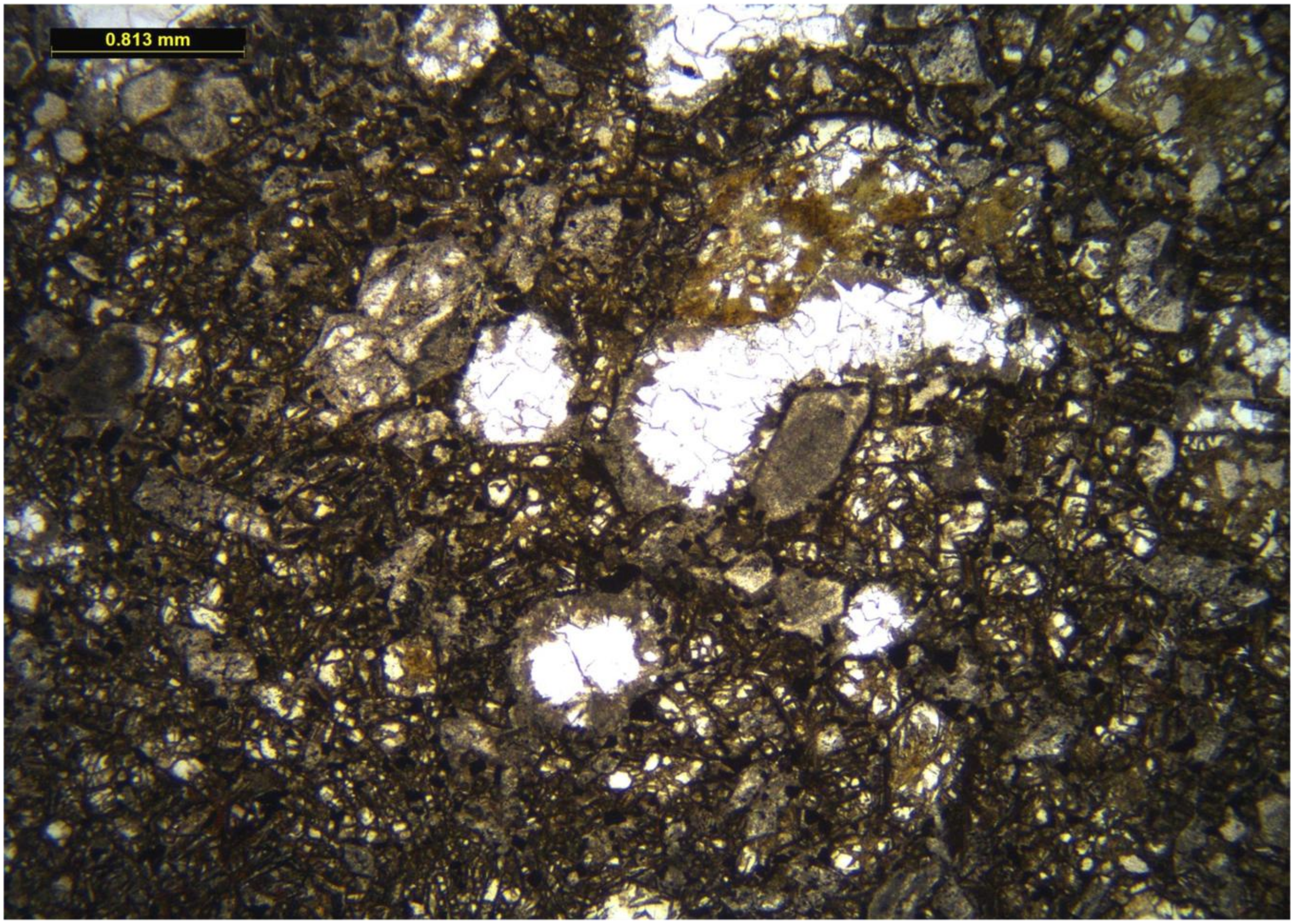
Psd = unknown pseudomorphed phase(s) – diverse compositions



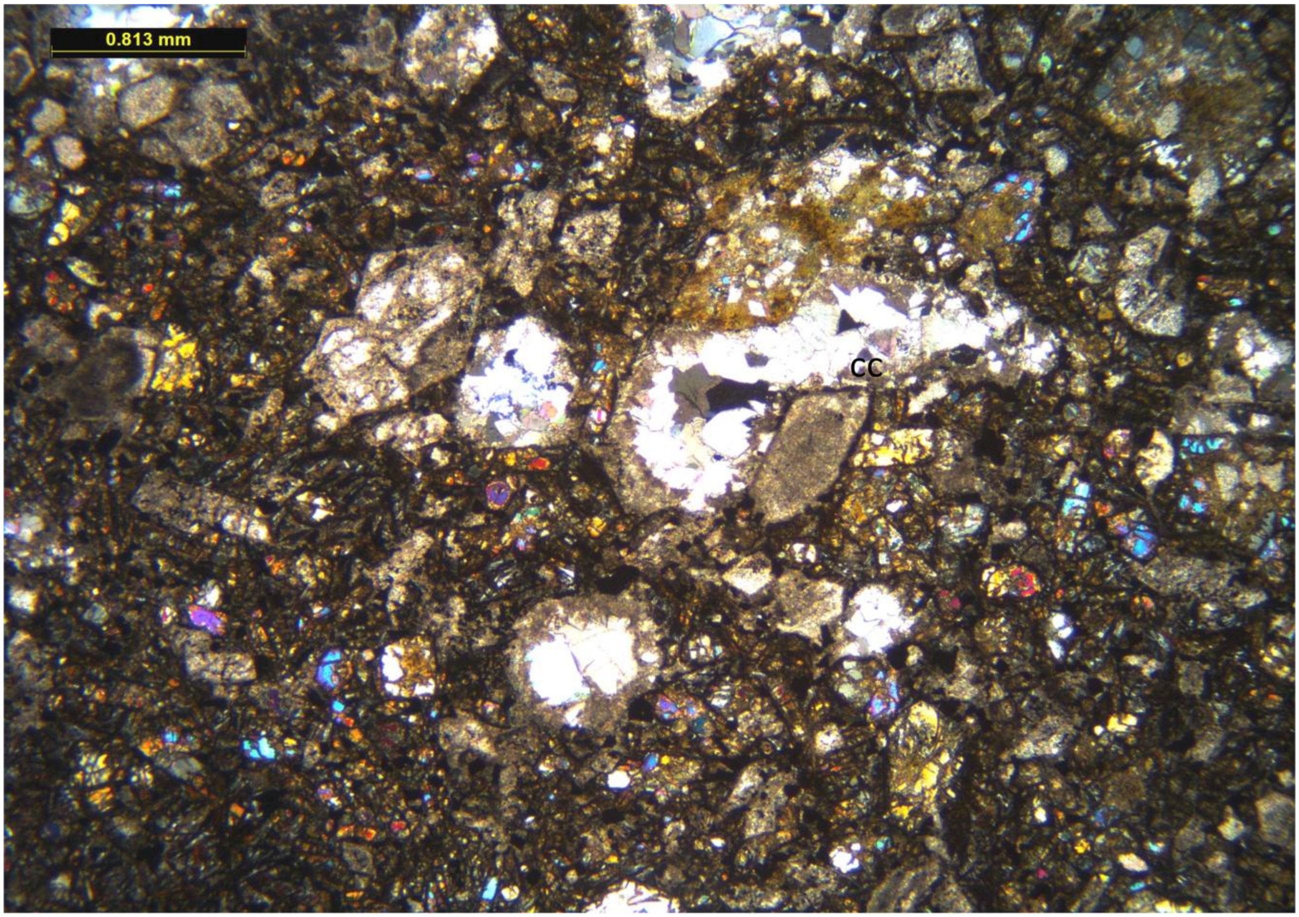


Pseudomorphed Ti-magnetites

Madonna -03 box 97

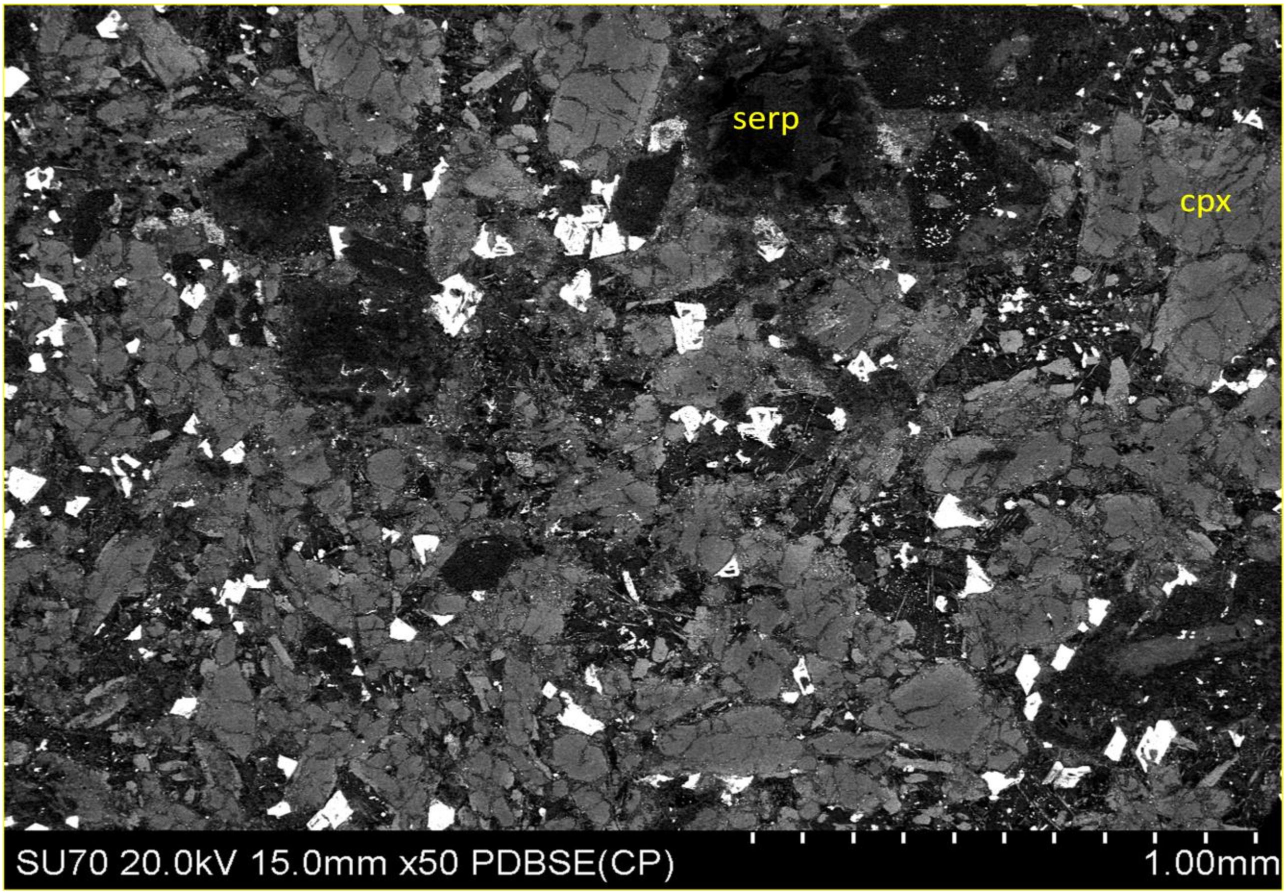


Optical ppl



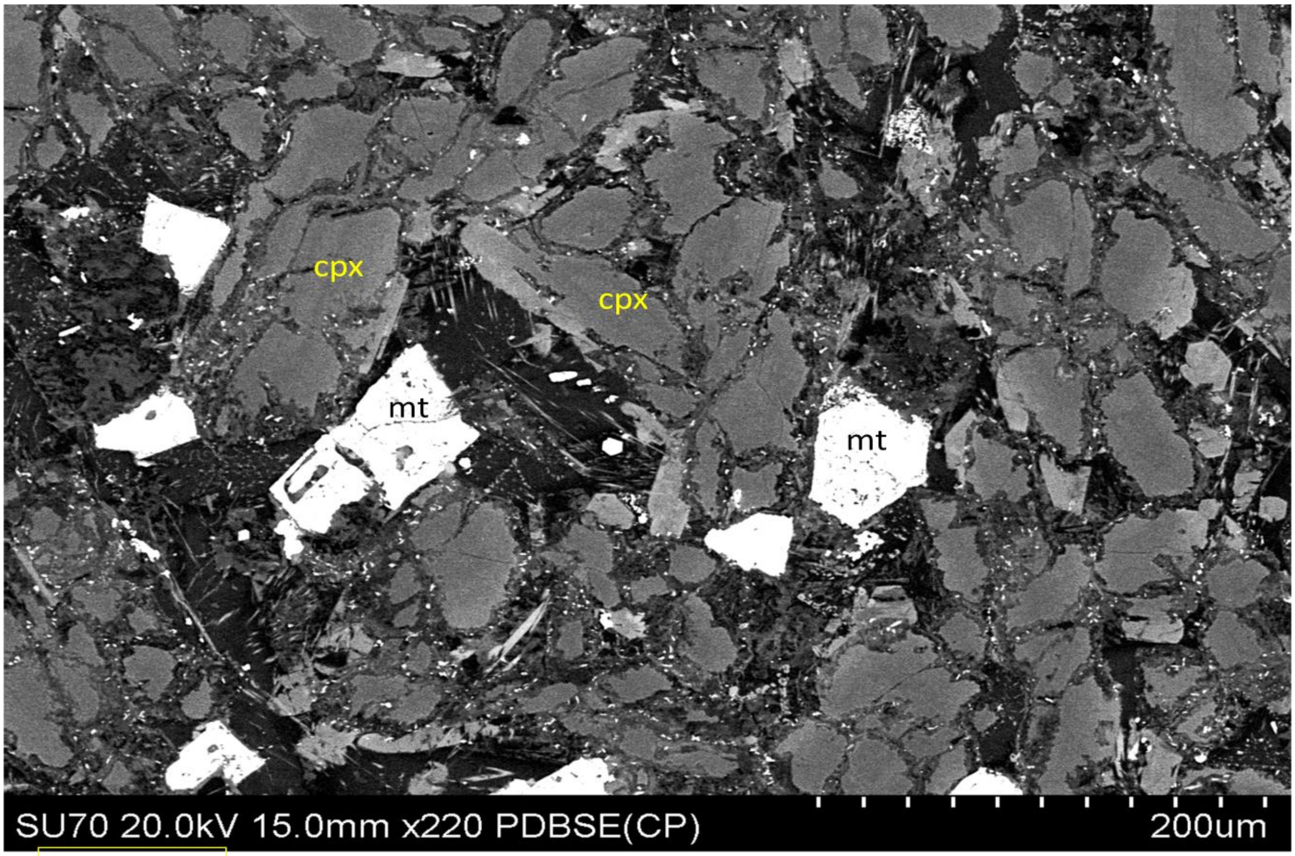
Optical xpl

Madonna -03 box 97

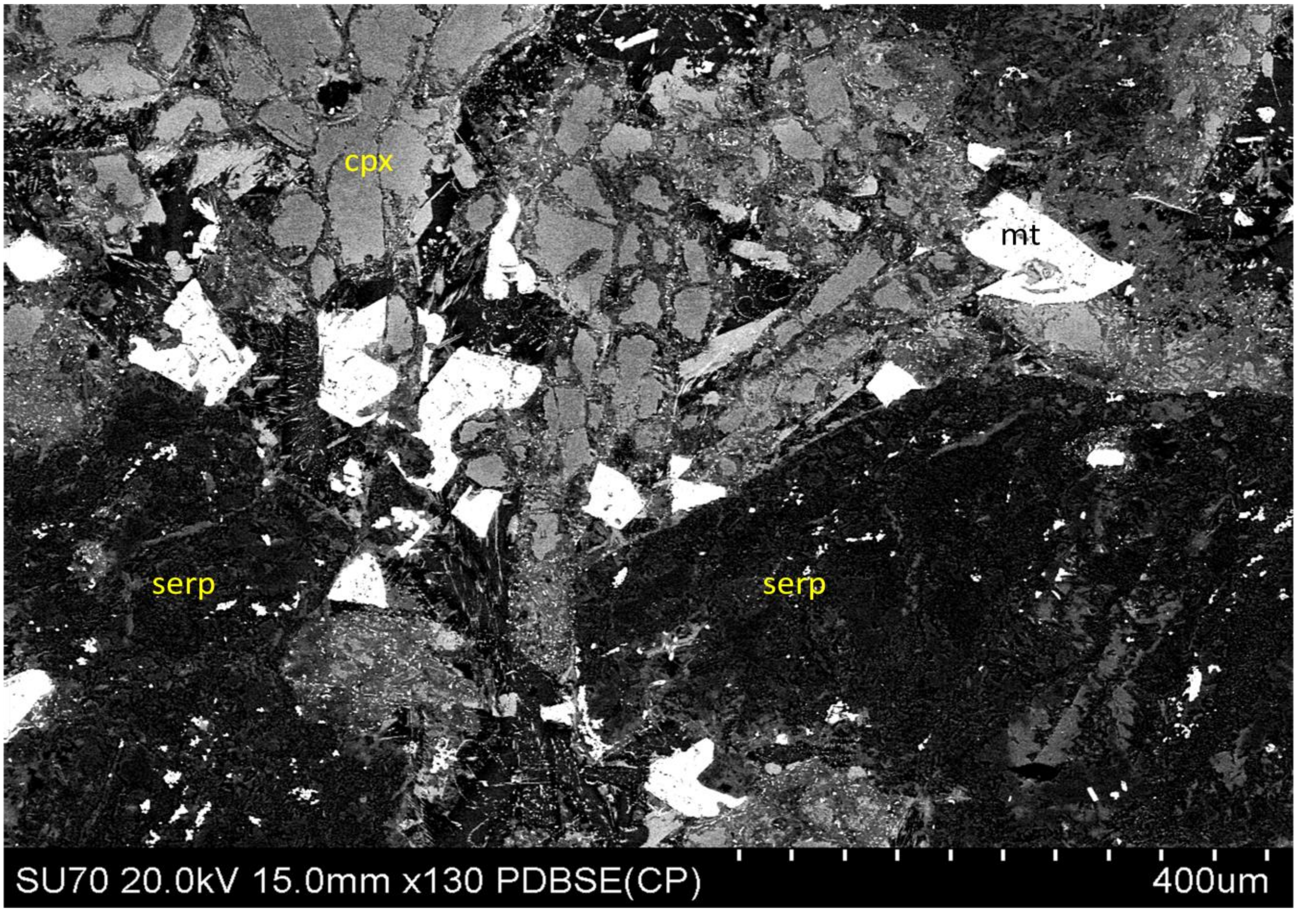


Serp = serpentine pseudomorphs after olivine

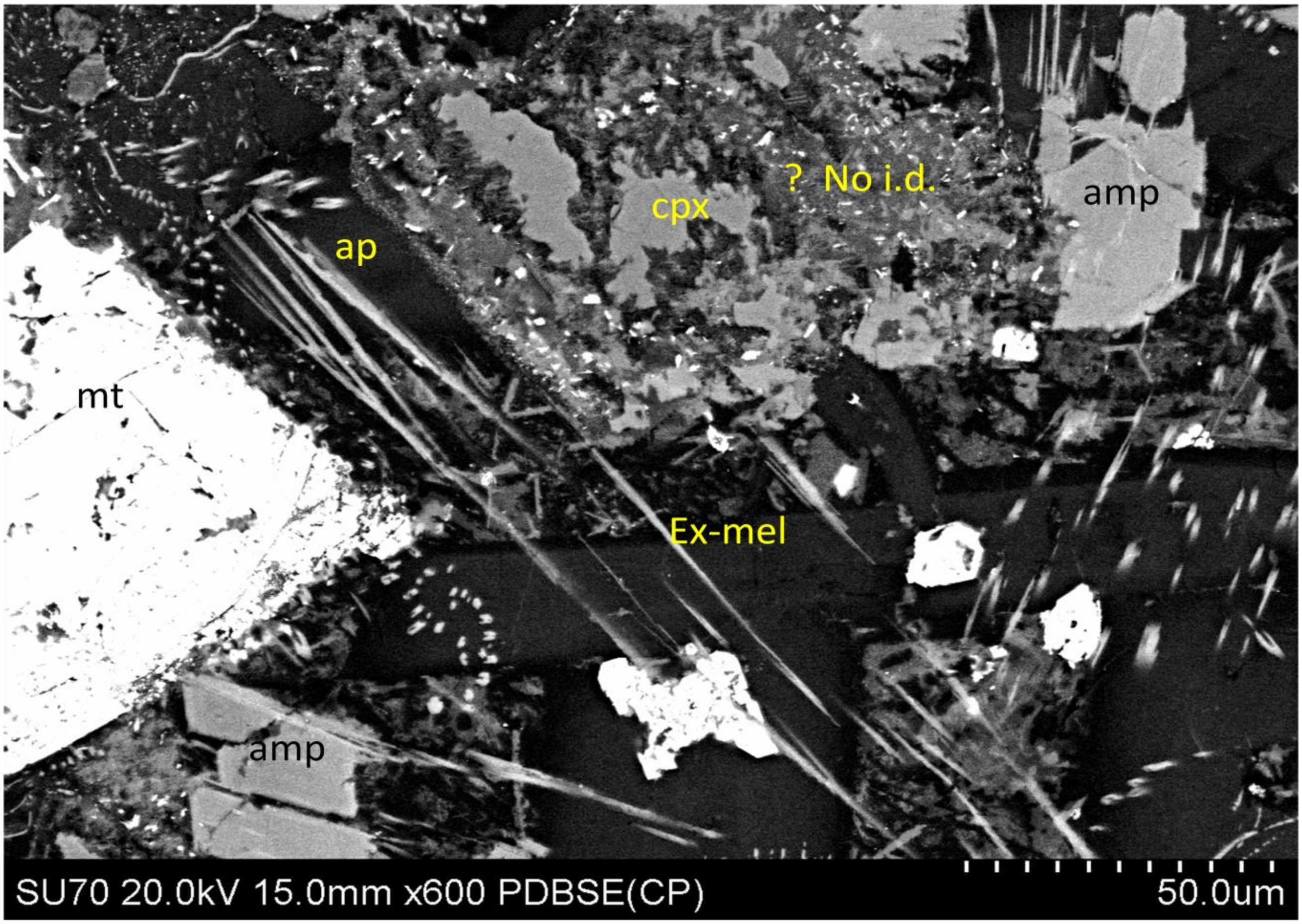
Madonna -03 box 97



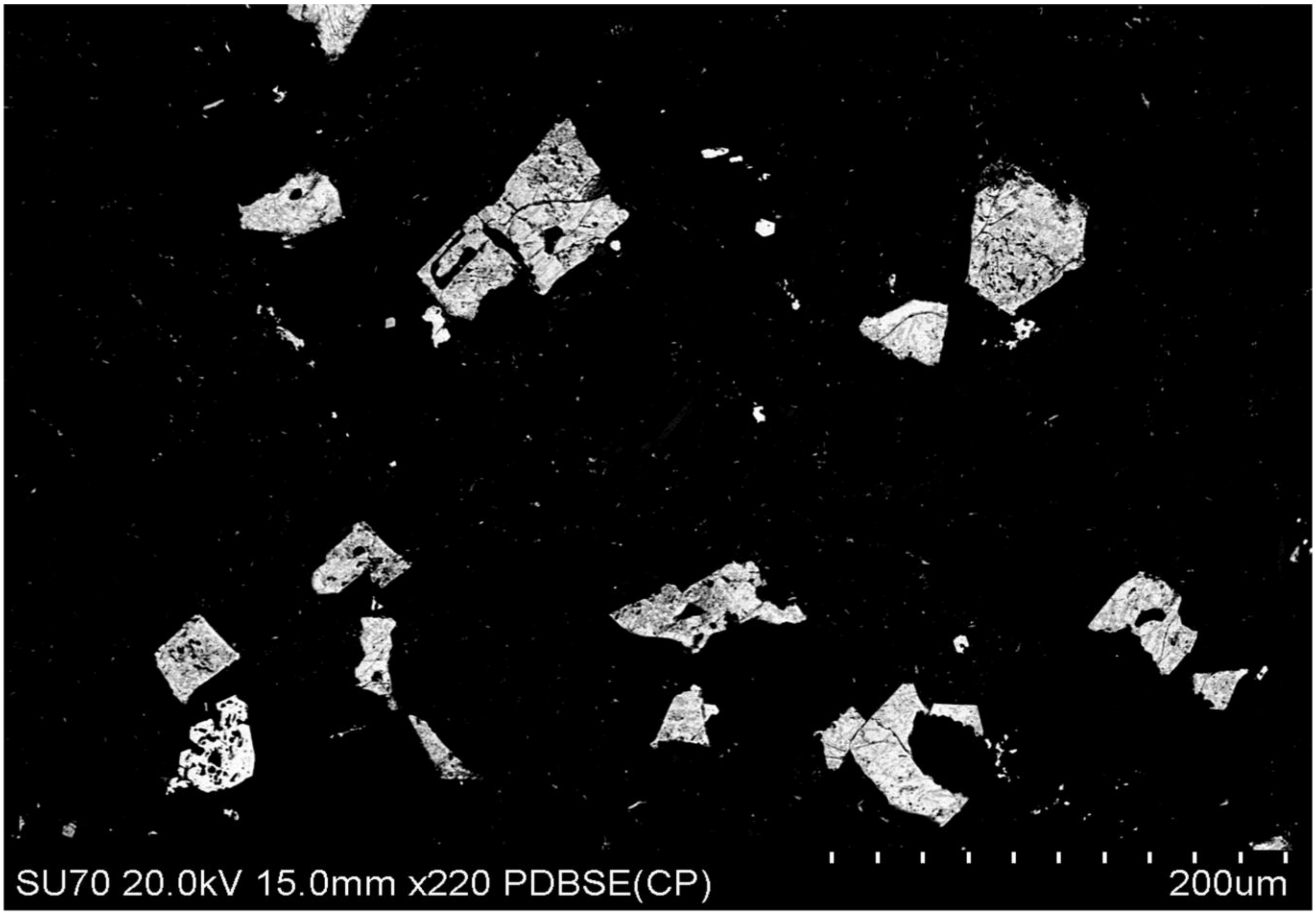
Bse-image



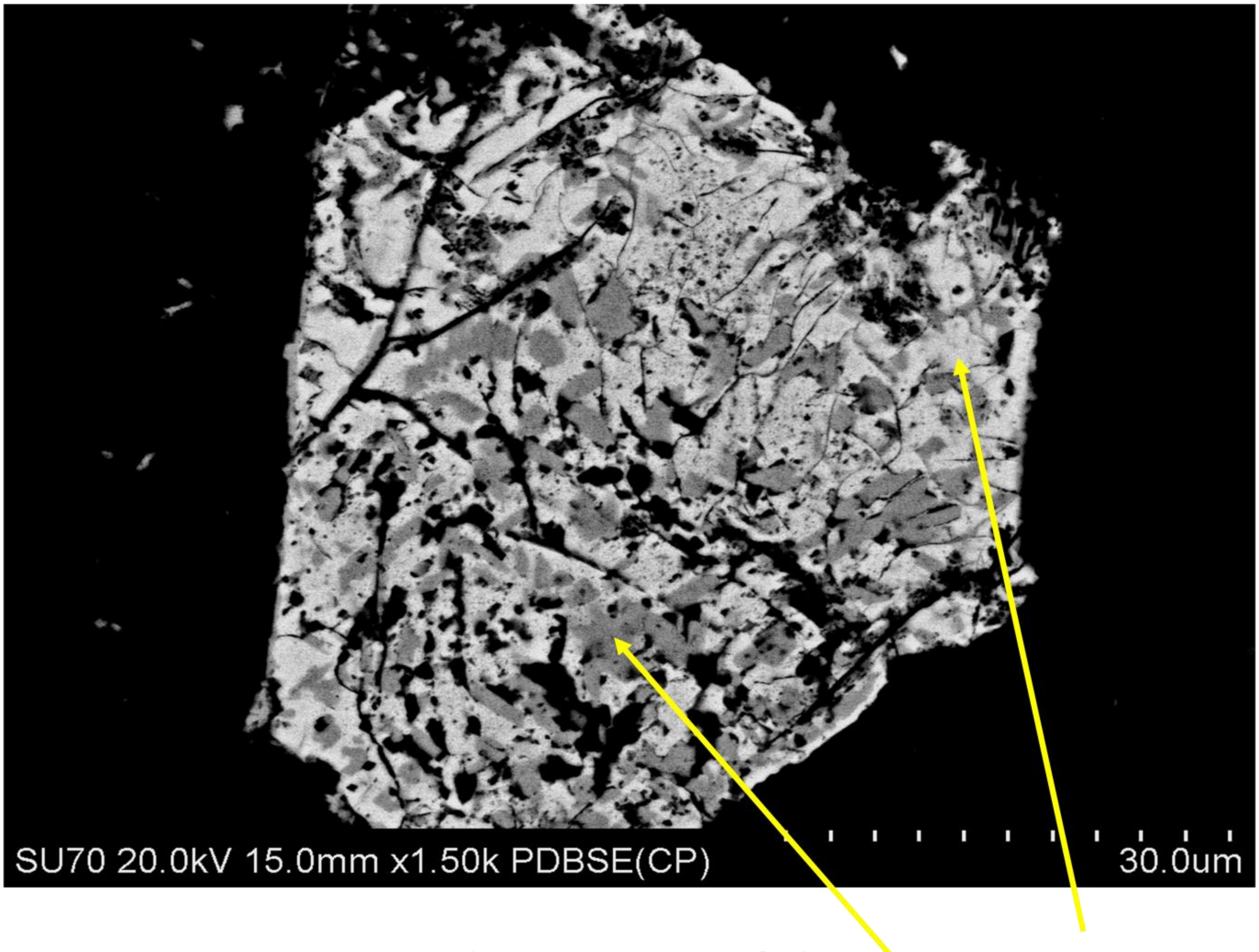
Madonna -03 box 97



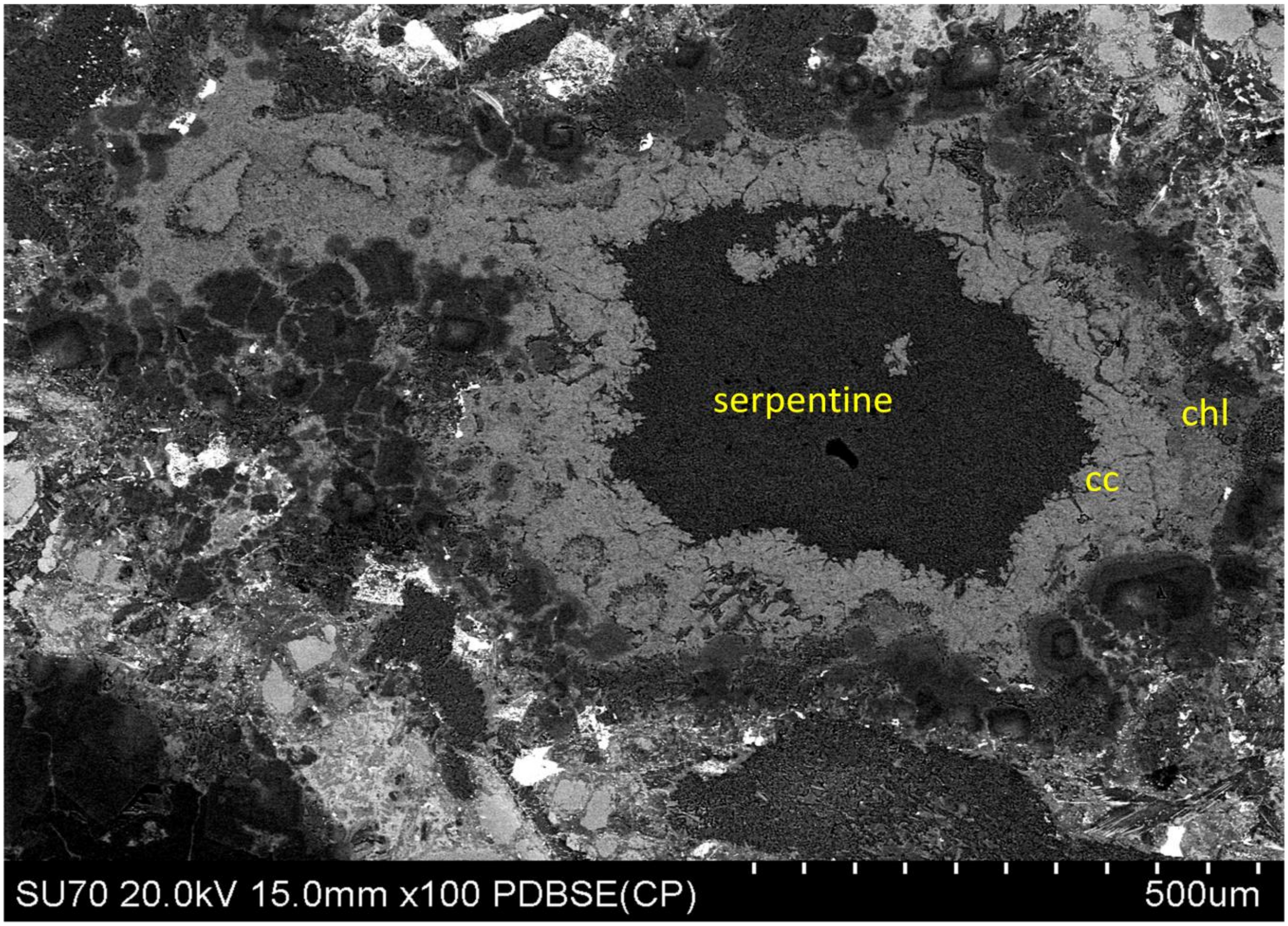
Groundmass extremely altered with skeletal apatite



Altered opaque phases - no perovskites



Opaque phases consist of ilmenite + magnetite

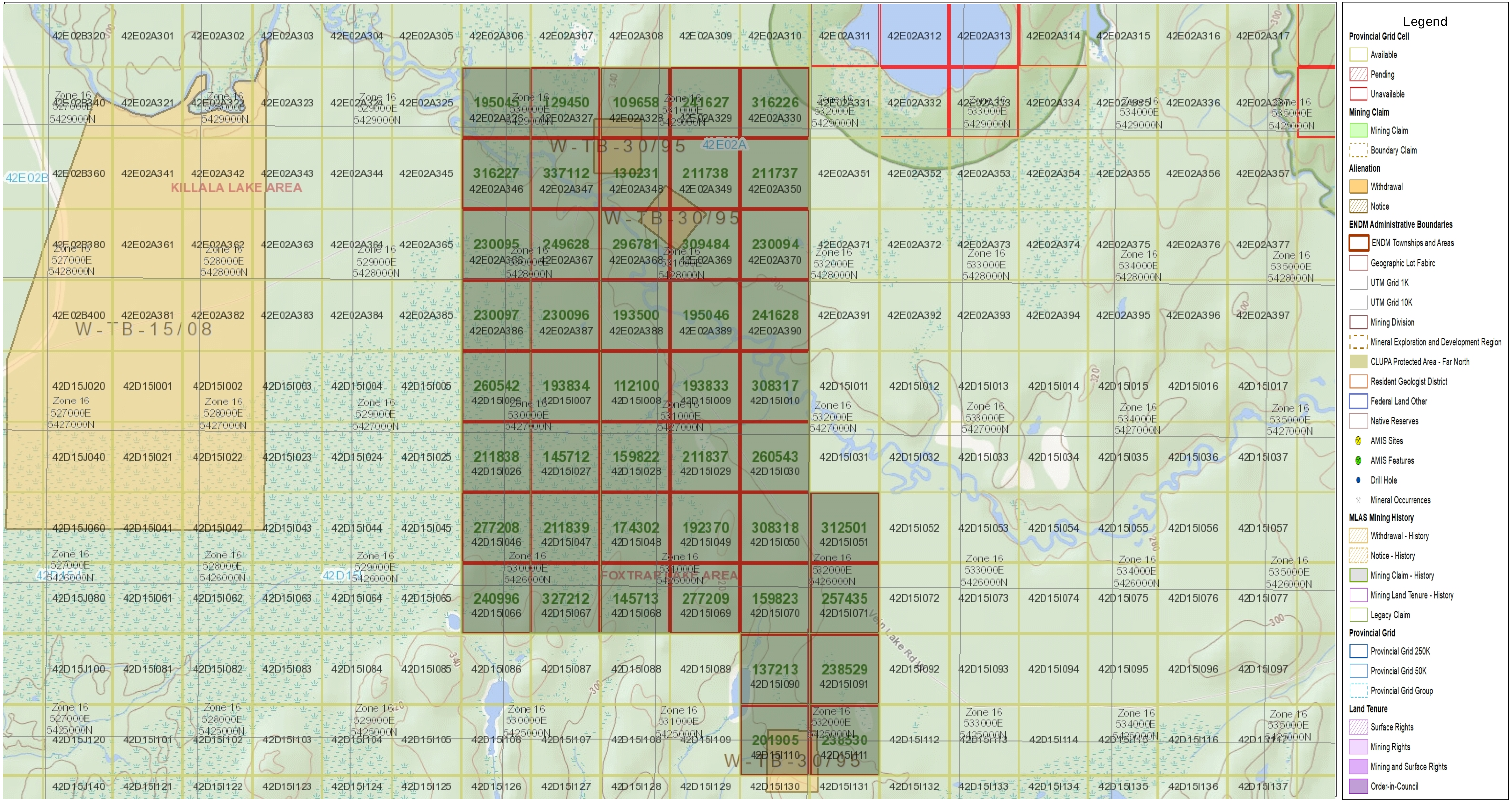


Ocellus margins are calcite (cc) + chlorite (chl)

Ontario MINISTRY OF NORTHERN DEVELOPMENT AND MINES
MLAS Map Viewer

MLAS Map

Notes:



0 1.20 km

Projection: Web Mercator

Imagery Copyright Notices: Ontario Ministry of Natural Resources and Forestry; NASA Landsat Program; First Base Solutions Inc.; Aéro-Photo (1961) Inc.; DigitalGlobe Inc.; U.S. Geological Survey.

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