MURGOR RESOURCES INC.

WYDEE PROPERTY

Argyle, Bannockburn, Hincks Montrose and Powell Townships,
Larder Lake Mining Division,
Northeastern Ontario, NTS 42 A/2

Report on 2014 Summer Field Work
Geological Mapping, Prospecting and Sampling Program

A.C. Tessier, C. Moore and R. Salo
September 2014

Table of Contents:

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Introduction:

During the summer of 2014, Murgor Resources Inc carried out a 4 week exploration program at its wholly owned WYDEE project. The project is located within the Larder Lake Mining Division of Northeastern Ontario, approximately 9 kilometres west of the town of Matachewan.

The exploration work carried out by Murgor consisted of reconnaissance geological mapping, prospecting and geochemical sampling at the property scale. The work was carried out in two phases; from June 8th to the 18th, 2014 with a crew of three and from August 18th to the 29th, 2014 with a crew of four.

The objective of the work program was to gain a better understanding of the geology of the area while testing geological targets outlined during the course of data compilation of the area.

The two types of targets identified by Murgor are:

1) Young-Davidson Type, syenite hosted disseminated gold deposits and
2) Shear Zone Hosted disseminated and lode gold deposits within the major and subsidiary structures.

Location and Access:

The Wydee property is located nine (9) kilometres west-northwest of the town of Matachewan and 65 kilometres south-southeast of the City of Timmins, Ontario (see Figure 1). The property is easily accessible from Matachewan and Timmins through Secondary Provincial Highway 566, an all-season gravel road that crosses the property from east to west. More remote areas of the property are accessed through seasonal roads and trails from past logging operations via 4x4 or all terrain vehicle. Located approximately six (6) kilometres east of the eastern boundary of the Wydee Property is Aurico's Young Davidson Mine where reserves and resources currently stand at 5.5 million ounces of gold at an average grade of 2.66 g/t combining underground and open pit operations. The Young Davidson Mine complex also includes a fully operational 10,000 tonne per day mill.

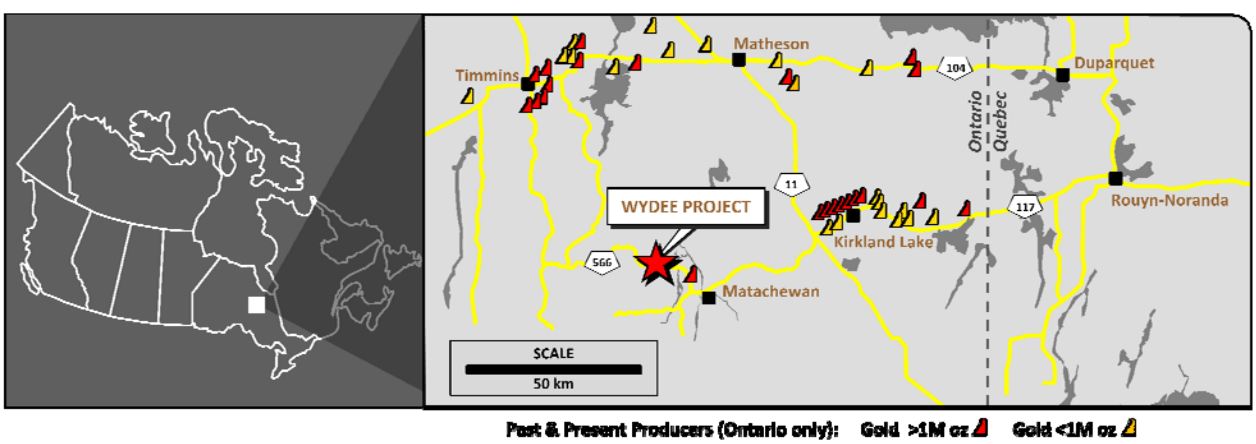


FIGURE 1: Wydee property location.

Property Description:

The Wydee Property consists of 45 contiguous unpatented mining claims on Crown land. The 45 claims include 302 claim units and cover 4,832 hectares in Argyle, Bannockburn, Hincks, Montrose and Powell Townships (Table 1 and Figure 2). Murgor owns a 100% interest in the property. Fifteen (15) claims (59 units) covering 944 hectares are subject to a 1% net smelter return royalty (NSR) of which Murgor has the right to buy back 0.5% NSR at anytime for $500,000. Murgor also holds a right of first refusal on the remaining 0.5% NSR. A complete list of the claims is shown at Table 1 including the claims that are subject to a NSR.

Township/Area		Claim Number	Recording Date	Claim Due Date	Units	Area (Ha)	Percent Option	Work Required	Total Applied	Total Reserve	Claim Bank	NSR
BANNOCKBURN	Murgor/Eves	4259438	2012-May-4	2014-May-4	14	224	100%	$5,600	$0	$0	$0	
HINCKS	Murgor/Salo	4270296	2014-May-21	2016-May-21	4	70	100%	$1,600	$0	$0	$0	
HINCKS	Murgor/Salo	4270297	2014-May-21	2016-May-21	3	55	100%	$1,200	$0	$0	$0	
ARGYLE	Murgor	4270298	2014-Apr-23	2016-Apr-23	4	64	100%	$1,600	$0	$0	$0	
BANNOCKBURN/ARGYLE	Murgor	4270299	2014-Apr-23	2016-Apr-23	10	160	100%	$4,000	$0	$0	$0	
POWELL	Murgor/Eden	4271122	2013-Jun-19	2015-Jun-19	6	96	100%	$2,400	$0	$0	$0	
BANNOCKBURN	Murgor/Harkin	4271278	2012-Apr-13	2014-Oct-13	1	16	100%	$400	$0	$0	$0	1%
HINCKS	Murgor/Harkin	4271279	2012-Apr-13	201p-Oct-13	MO	H08	M00%	Þ5,H00	Þ0	Þ0	$0	1%
MONTROSE/HINCKS	Murgor/Harkin	4271280	2012-Apr-13	2014-Oct-13	8	128	100%	$3,200	$0	$0	$0	1%
MONTROSE/HINCKS	Murgor/Harkin	4271281	2012-Apr-13	2014-Oct-13	5	80	100%	$2,000	$0	$0	$0	1%
MONTROSE	Murgor/Harkin	4271282	2012-Apr-13	2014-Oct-13	1	16	100%	$400	$0	$0	$0	1%
MONTROSE	Murgor/Harkin	4271283	2012-Apr-13	2014-Oct-13	1	16	100%	$400	$0	$0	$0	1%
MONTROSE	Murgor/Harkin	4271284	2012-Apr-13	2014-Oct-13	1	16	100%	$400	$0	$0	$0	1%
MONTROSE	Murgor/Harkin	4271285	2012-Apr-13	2014-Oct-13	1	16	100%	$400	$0	$0	$0	1%
MONTROSE	Murgor/Harkin	4271286	2012-Apr-13	2014-Oct-13	2	32	100%	$800	$0	$0	$0	1%
MONTROSE	Murgor/Harkin	4271287	2012-Apr-13	2014-Oct-13	1	16	100%	$400	$0	$0	$0	1%
BANNOCKBURN	Murgor/Harkin	4271362	2012-Apr-13	2014-Oct-13	2	32	100%	$800	$0	$0	$0	1%
BANNOCKBURN	Murgor/Harkin	4271363	2012-Apr-13	201p-Oct-1	1	25	[illegible]	[illegible]	[illegible]	$0	Þ0	1%
BANNOCKBURN	Murgor/Harkin	4271364	2012-Apr-13	2014-Oct-13	3	48	100%	$1,200	$0	$0	$0	1%
BANNOCKBURN	Murgor/Harkin	4271387	2012-Apr-13	2014-Oct-13	2	32	100%	$800	$0	$0	$0	1%
BANNOCKBURN	Murgor/Harkin	4271388	2012-Apr-13	2014-Oct-13	2	32	100%	$800	$0	$0	$0	1%
HINCKS	Murgor	4274017	2014-Apr-15	2016-Apr-15	6	96	100%	$2,400	$0	$0	$0	
HINCKS	Murgor	4274018	2014-Apr-15	2016-Apr-15	6	96	100%	$2,400	$0	$0	$0	
HINCKS	Murgor	4274019	2014-Apr-15	2016-Apr-15	4	64	100%	$1,600	$0	$0	$0	
HINCKS/ARGYLE	Murgor	4274020	2014-Apr-15	2016-Apr-15	12	192	100%	$4,800	$0	$0	$0	
ARGYLE	Murgor	4274022	2014-Apr-15	2016-Apr-15	4	64	100%	$1,600	$0	$0	$0	
ARGYLE	Murgor	4274023	2014-Apr-15	2016-Apr-15	1	16	100%	$400	$0	$0	$0	
ARGYLE	Murgor	4274024	2014-Apr-15	2016-Apr-15	6	96	100%	$2,400	$0	$0	$0	
ARGYLE	Murgor	4274025	2014-Apr-15	2016-Apr-15	6	96	100%	$2,400	$0	$0	$0	
ARGYLE	Murgor	4274026	2014-Apr-15	2016-Apr-15	12	192	100%	$4,800	$0	$0	$0	
ARGYLE	Murgor	4274027	2014-Apr-15	2016-Apr-15	3	48	100%	$1,200	$0	$0	$0	
POWELL	Murgor	4275077	2014-Jul-15	2016-Jul-15	9	144	100%	$3,600	$0	$0	$0	
ARGYLE	Murgor	4275400	2014-Apr-21	2016-Apr-21	1	16	100%	$400	$0	$0	$0	
BANNOCKBURN	Murgor	4275401	2014-Mar-24	2016-Mar-24	9	144	100%	$3,600	$0	$0	$0	
BANNOCKBURN	Murgor	4275402	2014-Mar-24	2016-Mar-24	15	240	100%	$6,000	$0	$0	$0	
BANNOCKBURN	Murgor	4275403	2014-Mar-24	2016-Mar-24	15	240	100%	$6,000	$0	$0	$0	
BANNOCKBURN	Murgor	4275404	2014-Mar-24	2016-Mar-24	15	240	100%	$6,000	$0	$0	$0	
POWELL/BANNOCKBURN	Murgor	4275405	2014-Mar-24	2016-Mar-24	16	256	100%	$6,400	$0	$0	$0	
POWELL	Murgor	4275406	2014-Mar-24	2016-Mar-24	9	144	100%	$3,600	$0	$0	$0	
POWELL	Murgor	4275407	2014-Mar-24	2016-Mar-24	3	48	100%	$1,200	$0	$0	$0	
ARGYLE	Murgor	4275408	2014-Mar-24	2016-Mar-24	3	48	100%	$1,200	$0	$0	$0	
HINCKS	Murgor	4275437	2014-May-21	2016-May-21	16	248	100%	$6,000	$0	$0	$0	
ARGYLE	Murgor	4275439	2014-Apr-23	2016-Apr-23	2	32	100%	$800	$0	$0	$0	
ARGYLE/BANNOCKBURN	Murgor	4275444	2014-Apr-23	2016-Apr-23	14	224	100%	$5,600	$0	5600	$0	
HINCKS	Murgor	4275633	2014-Jun-06	2016-Jun-06	15	240	100%	$6,000	$0	$0	$0	
TOTALS (45 CLAIMS)					***302***	***4,837***		***$120,400***				

TABLE 1: List of claims of the Wydee property.

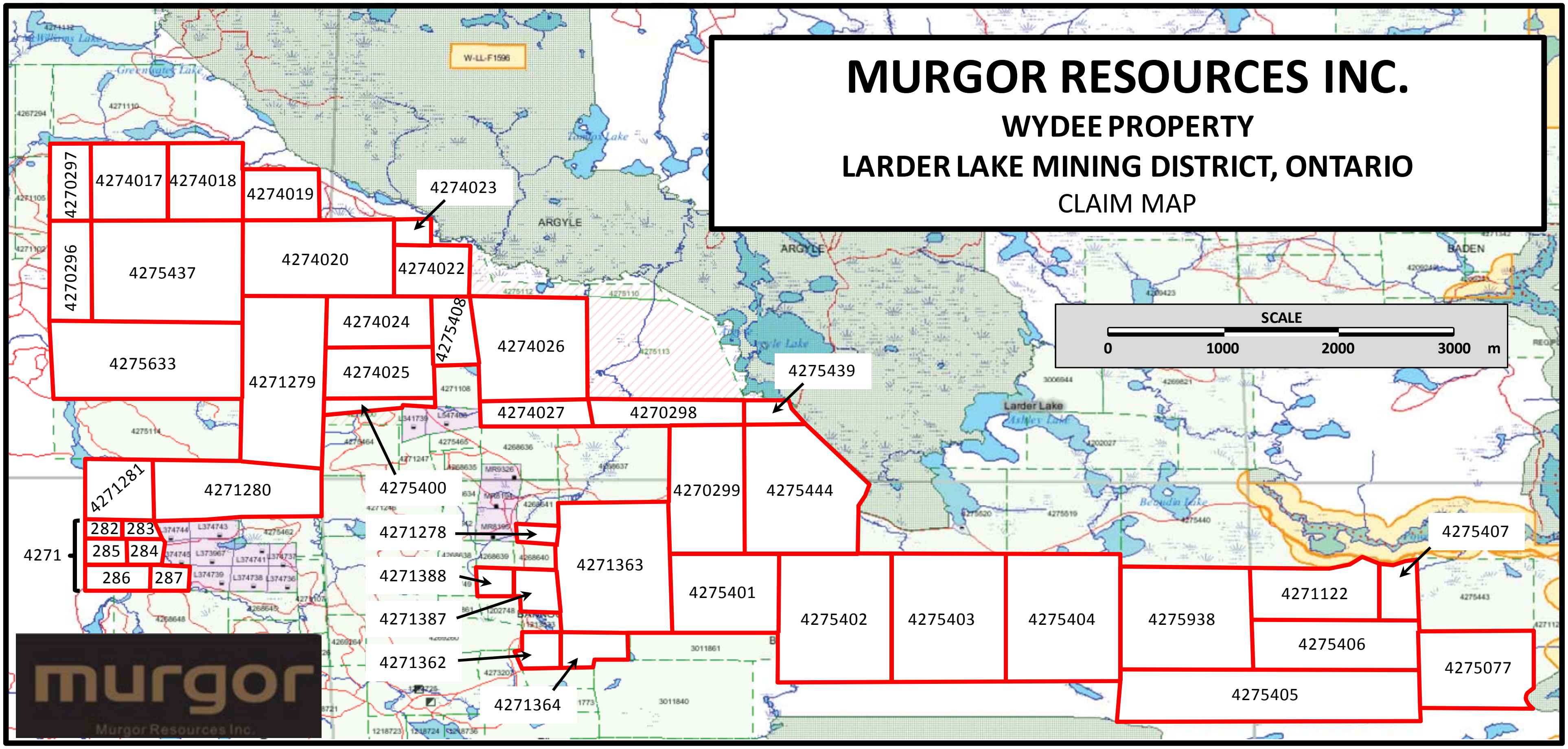


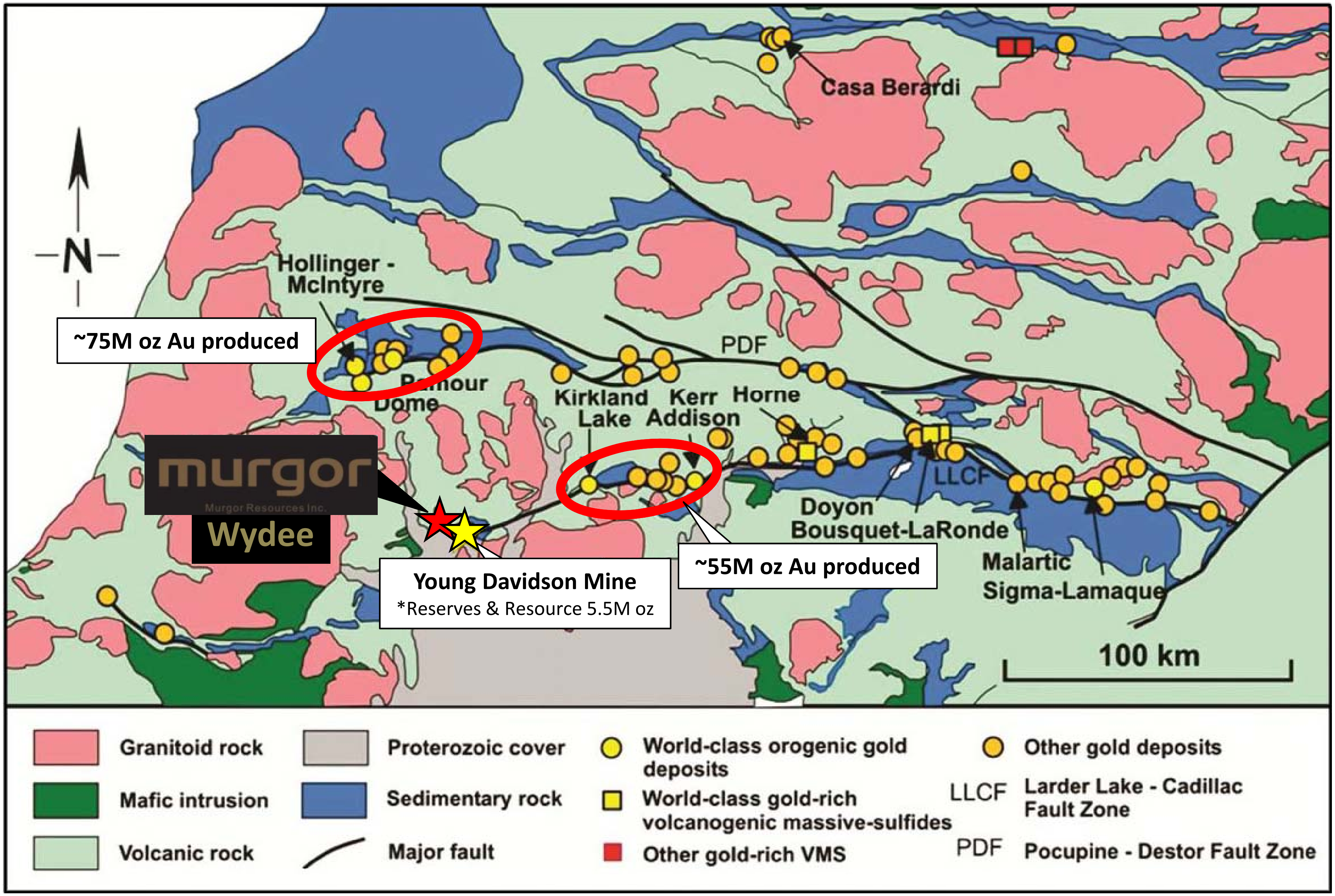
FIGURE 2: Claim map of the Wydee Property. Refer to the claim listing at Table 1.

Regional Geological Setting:

The Wydee Property is located in the southwestern portion of the Archean age, volcano-sedimentary Abitibi greenstone belt. The southern part of Abitibi belt is characterized by large E-W trending, sub-vertical deformation corridors of anastomosing high strain zones and $C0_2$ metasomatism, along which gold mining districts are located over a strike length of approximately 300 kilometres. In Ontario, 65 kilometres east of the Wydee property, along the Larder Lake-Cadillac Break, is the Kirkland Lake-Kerr Addison mining district from which over 55 million ounces of gold have been produced to date and approximately 65 kilometres north of the Wydee property, along the Porcupine-Destor Break, is the Timmins mining district from which over 75 million ounces of gold have been produced to date (see figure 3).

In the vicinity of the Wydee property, the Archean rocks consist generally of east-southeast, steeply dipping metavolcanic and metasedimentary successions that have been intruded by ultramafic to felsic stocks and dikes. The Archean rocks are overlain unconformably to the south by sub- horizontal Proterozoic sedimentary rocks of the Cobalt Group. In the general area, sediments of the Cobalt Group consist of conglomerates of the Gowganda Formation (figure 4).
Metamorphism within the Archean rocks ranges from sub-greenschist to lower amphibolite facies.
The Wydee property is located six (6) kilometres west of the Young Davidson gold mine which in turn is located adjacent to the western extension of the very prospective, east-west trending Larder Lake-Cadillac Break. A number of NW-SE, NE-SW and NS faults are observed in the area, cross-cutting and displacing lithologies and earlier EW-trending structures (figure 4).

*The most important gold deposit type in the immediate area of the Wydee property is observed at the Young Davidson Mine where the bulk of the mineralization occurs within a 1,000 x 300 metres syenitic intrusion, elongated in the EW direction and lying adjacent to the Larder Lake-Cadillac deformation zone. To a lesser extent, mineralization also extends within mafic volcanic and sedimentary rocks. Gold mineralization within the syenitic intrusion occurs in zones of intensely potassic-hematitic-pyritic alteration which confers a brick red color to the syenite. Gold occurs in arrays of folded quartz-pyrite and sub-horizontal quartz-carbonate veins and within intensely pyritized syenite, within pods of pyrite dissemination.
Volcanic hosted gold is mainly located in quartz-Fe-carbonate veins hosted in narrow sheared and pervasively albite-Fe-carbonate-pyrite altered volcanic rocks.
Gold mineralization is believed to be contemporaneous with the deformation which is responsible for the EW-trending fabric and sub-vertical stretching lineation in the area. This would account for the fact that mineralized pods at Young Davidson are consistently stretched parallel to the sub-vertical stretching lineation observed in the rocks at the regional-scale.
**Description of the Young Davidson mineralization from Martin, 2012.*



*From www.auricogold.com December 31, 2013

FIGURE 3: Wydee property, regional geology.

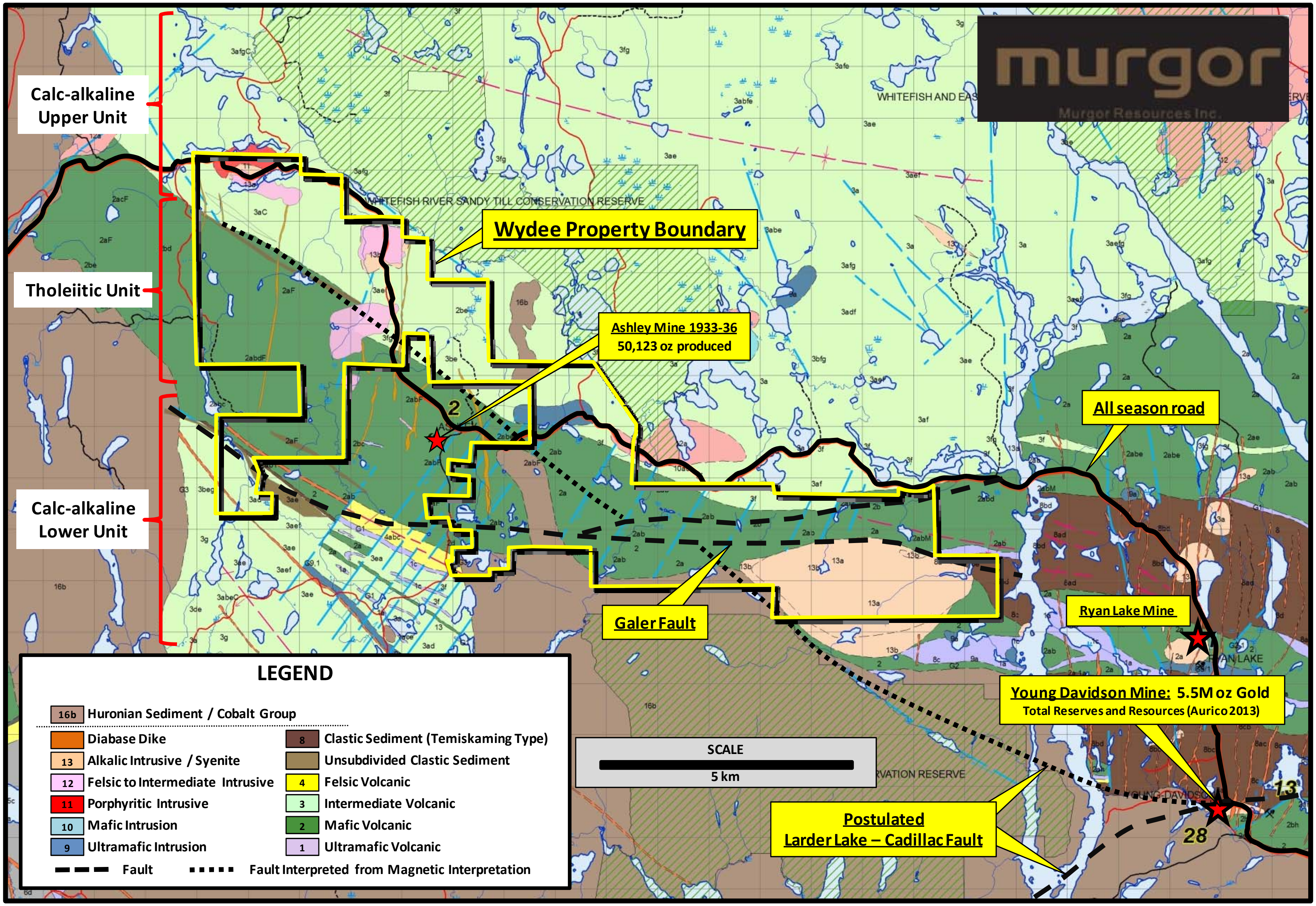


FIGURE 4: General geology of the Wydee property area.

Local Geology: (figure 4)

From north to south, mapping by the Ontario Geological Survey (Jensen, 1996) shows that the geology of the Wydee property area consists of a package of lower mafic calc-alkaline volcanic flows at least 4 kilometres thick, overlain by a 4-5 kilometre thick sequence of Mg-rich and Fe-rich tholeiitic massive to pillowed flows. In turn, the tholeiitic sequence is overlain by a second calk-alkaline succession of volcanic flows characterized by abundant feldspar-phyric flows, lapilli tuffs and tuff breccias. Fine grained sedimentary horizons occur along the contact between the upper calc-alkalic and tholeiitic sequences. These narrow bands of sedimentary rocks consist dominantly of mudstone, siltstones and cherts and have been documented as "Timiskaming-Type" sediments by previous workers (Jones and Wagg, 2002). The units are steeply north-dipping and younging to the north.
A number of syenitic intrusive bodies have been documented at the property and will be described in greater detail in the sections below.
The Archean rocks are overlain unconformably to the south by sub- horizontal Proterozoic conglomerates of the Gowganda Formation.
The Galer Lake fault crosses the south-eastern part of the property over a strike length of approximately 9 km. The ductile deformation zone is EW-trending, steeply north dipping and up to 200 metres in wide.

<u>Historic Gold Occurrences:</u>

The property hosts numerous gold occurrences that have yielded potentially economic grades of gold mineralization. Fourteen gold showings, assaying in excess of 1.0 g/t Au, have been located by previous workers (figure 5).

The majority of occurrences in the area consist of visible gold in narrow quartz veins ranging from 2cm to 70 cm in width. The veins have two dominant orientations throughout the area, trending South and dipping 45˚ to 50˚ towards the west (Ashley Mine and Ezra showing), or sub-horizontal to shallow dipping (Garvey veins, Sunisloe veins, Kiernickie veins).

A number of gold occurrences in the area consist of disseminated pyrite-gold mineralization within or at the contacts of syenitic rocks. The syenitic rocks commonly show potassic alteration along with hematization and silicification.

The best reported historical assays include.

- Grab samples assaying 3.29 g/t, 3.41 g/t, 10.46 g/t, 12.0 g/t, 12.1 g/t and 26.3 g/t gold taken from quartz vein-type occurrences,
- Channel samples of 4.6 g/t Au over 8.0m, 6.2 g/t Au over 6.0m and 22.6 g/t Au over 3m taken from the Galer Fault Zone, and

Drill intercepts of 67.6 g/t Au over 70 cm, within a mineralized section assaying on average 1.49 g/t Au over 34.75m at the Sunisloe Showing (figure 6).

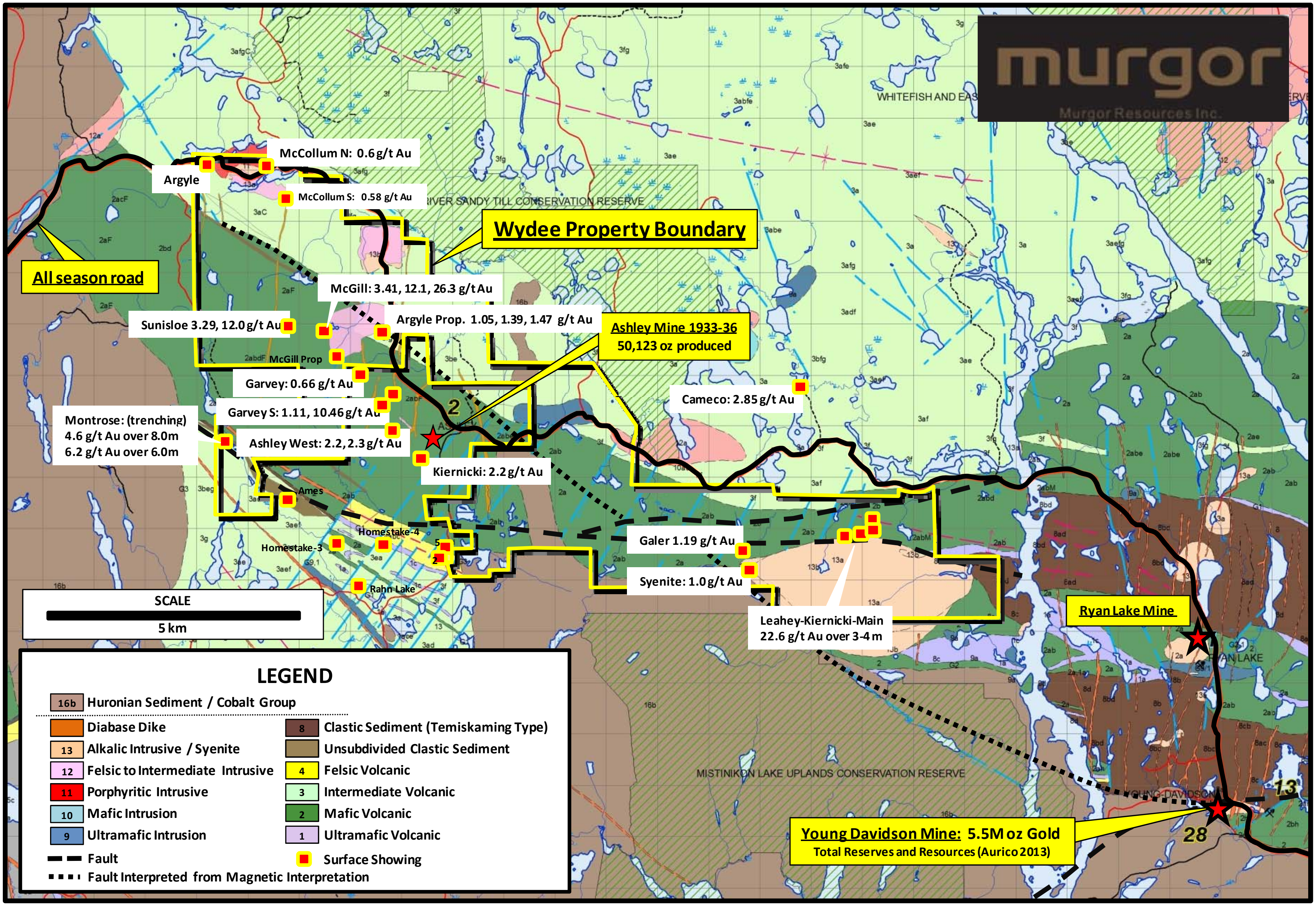


FIGURE 5: Historical surface gold occurrences of the Wydee property and area.

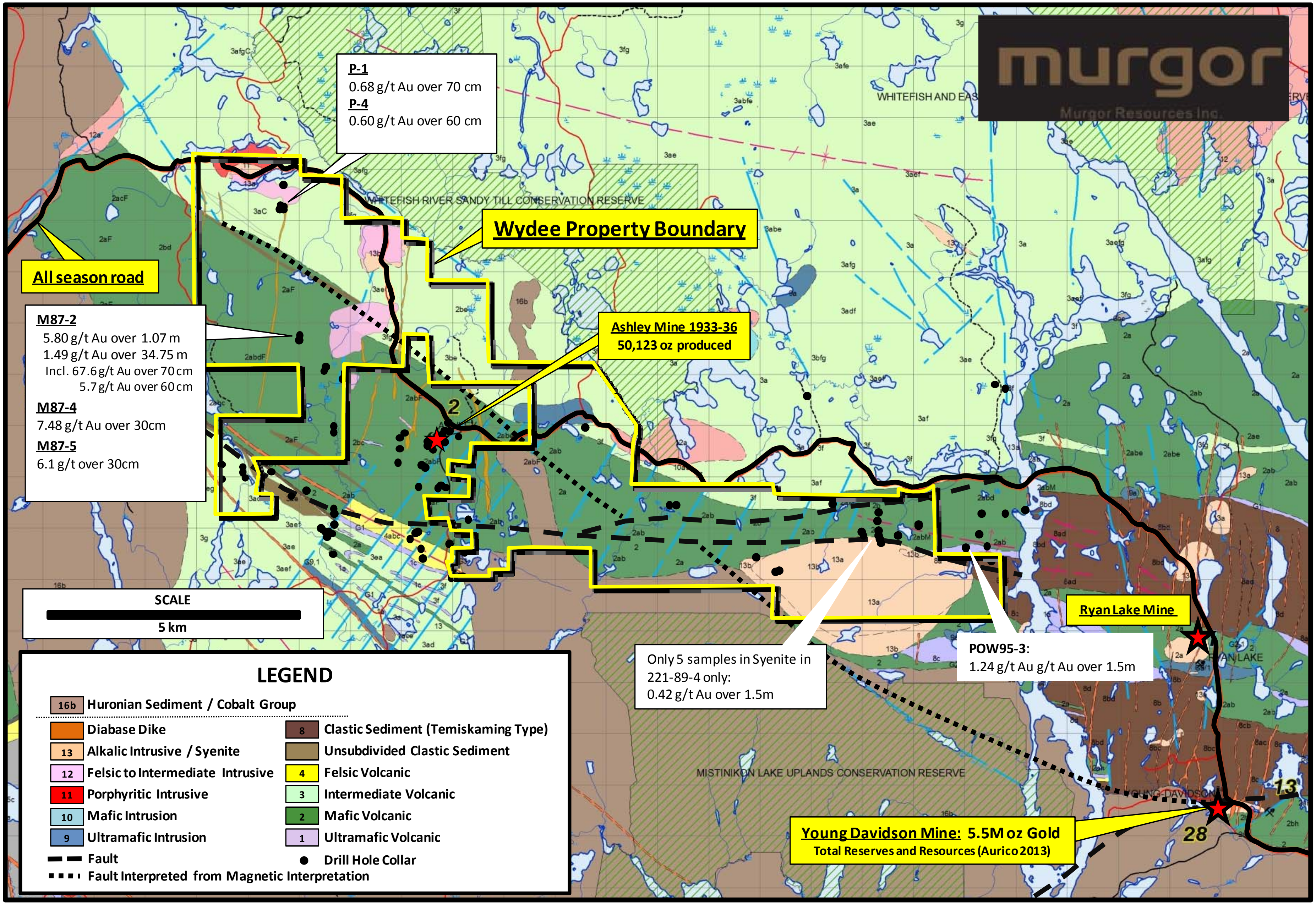


FIGURE 6: Significant historical drill intercepts of the Wydee property.

The most significant gold occurrence in the immediate vicinity of the Wydee property is the past producing Ashley Mine, located approximately 300m NW of claim 4271278 is described as follows by Harris *et al*., 1983.
Between 1933 and 1936, the mine produced 50,123 ounces of gold from an array of narrow parallel and interconnected quartz veins exhibiting millimetre to centimetre-scale quartz-carbonate and pyrite alteration envelopes. The mineralized structure at Ashley was trending 170˚ and dipping 30˚ to 55˚W. The vein system is approximately 60 cm wide on average. Gold is reported to occur as native gold within the veins . Although the host rocks are reported as pillowed and massive basalt flows (of the tholeiitic sequence), syenite dikes were commonly observed at the mine. The timing and spatial relationship between the syenite dikes and gold mineralization is however, unclear from previous work.

Murgor Resources Summer 2014 Work Program:

The exploration work carried out by Murgor during the summer of 2014 consisted of reconnaissance geological mapping, prospecting and geochemical sampling at the property scale.

The main objective of the field work was to evaluate the economic potential of the property by gaining a better understanding of the property geology and area, while testing geological targets outlined during the course of data compilation of previous work.

Murgor focused on two types of gold targets during the course of this exploration work:

1) Young-Davidson Type, syenite hosted disseminated gold deposits and
2) Shear Zone Hosted disseminated and lode gold deposits within the major and subsidiary structures.

Fieldwork was carried out in two phases, from June 8th to the 18th with a crew of three and from August 18th to the 29th with a crew of four. The field crew consisted of Andre C. Tessier (P.Geo), Charlie Moore (P.Geo), Randall Salo (P.Geo) and Alexandre Tessier (field assistant in August only). The field crew stayed at the Argyle Lake Lodge, situated on the south shore of Argyle Lake, approximately 700 metres north of the property boundary.

Mapping traverses were carried out throughout the property (Map Pocket 1) with the following objectives:

1) Relocating and documenting significant historical gold occurrences already reported on the property,
2) Searching, documenting and evaluating the economic potential of syenitic intrusions at the property (either those already documented or interpreted from the government geomagnetic maps). Whole rock geochemistry and petrographic work was also done on these intrusions to better discriminate between them.
3) Searching, documenting and evaluating the economic potential of known shear zones at the property and shear zones interpreted from Murgor's extensive compilation of previous work in the area.

A total of 277 lithogeochemical samples were collected from outcrops for gold assay. Gold analyses were performed at Activation Laboratories Ltd in Timmins, Ontario, using Atomic Absorption fire assay with a gravimetric finish for assays exceeding 3000ppb. A total of 10 samples from outcrops were also collected for whole rock analyses. The analyse were performed at Activation Laboratories Ltd in Ancaster, Ontario using ICP with lithium metaborate/tetraborate fusion ICP for major oxydes and ICP/MS for trace elements. Location maps of the samples are provided in Map Pocket 1, results of gold analyses and whole rock analyses are provided at tables 2 and 3 respectively while assay certificates are provided in Appendix I.

To further help in identifying and discrimating lithologies, 10 fresh samples were collected for petrographic analysis. The samples were prepared and examined at Queen's University in Kingston by Angela Dobosz. The full petrographic report is shown in Appendix II.

A more detailed description of the lithologies at Wydee is provided below while geological maps of the property are provided in Map Pocket 2.

TABLE 2: List of samples and assay results.

Sample	Easting	Northing	RockType	Au ppb
549427	516928	5316694	Sheared Sediments 1% Pyrite	< 5
549428	516901	5316683	Fine Grained Basalt	< 5
549429	516901	5316683	Sediment	< 5
549430	516158	5315942	Schist	< 5
549431	516158	5315942	Hematite Pyrite Silicified schist	9
549432	515912	5315898	Sericite Schist - 2-3% pyrite	6
549433	515912	5315898	Sericite-Silicified Schist - 5% pyrite	25
549434	515912	5315898	Silicifed schist - 1% pyrite	7
549435	515912	5315898	Silicious schist - 1% pryite	< 5
549436	515918	5315906	Silicious schist - 1% pryite	< 5
549437	515875	5315886	Schist - 1-2% pyrite	< 5
549438	515661	5315864	Schist - 1% pyrite	< 5
549439	515642	5315860	Crumbly gossan	64
549440	515642	5315855	Gabbro	51
549441	515642	5315850	Silicified intrusive	33
549442	514233	5315247	Mafic syenite - 1% pyrite	9
549443	514233	5315250	Mafic syenite - 1% pyrite	< 5
549444	514227	5315002	Hematite altered syenite	< 5
549445	514013	5314867	Fine grained sediment	< 5
549446	512919	5315372	Mafic volcanics - 1-2% pyrite	< 5
549447	512919	5315372	Vitreous quartz vein	< 5
549448	512818	5315323	Mafic volcanics - 1% vfg pyrite	< 5
549449	512065	5315886	Quartz vein in mafic volcanics	< 5
549450	511997	5315877	Shear in mafic volcanics	< 5
551051	511224	5315606	Pillowed volcanics - 1% pyrite	< 5
551052	511224	5315606	Pillowed volcanics - 3% pyrite	< 5
551053	511167	5315192	Silicified fine grained volcanics	< 5
551054	511145	5315176	Fine grained volcanics - 0.5% pyrite	< 5
551055	511117	5315117	Volcanics - 1% pyrite	< 5
551056	505075	5320399	Pyritic quartz veins in mafic volcanics	< 5
551057	504778	5320876	quartz-feldspar porphyry in contact with volcanics	< 5
551058	504778	5320876	quartz-pyrite fractures in mafic volcanics	< 5
551059	504676	5320871	Feldspar Porphyry	< 5
551060	504698	5320871	Mafic volcanics with dusty pyrite	< 5
551061	504682	5320897	Fine grained mafic volcanics	< 5
551062	505136	5319549	Silicified mafic volcanics - 1% pyrite	< 5
551063	505117	5319535	Quartz-epidote pyrite vein	< 5
551064	505117	5319535	Mafic volcanics	< 5
551065	506567	5321400	Quartz veinlets in grey syenite	54
551066	506592	5321325	Quartz vein - 1% pyrite	43
551067	506558	5321120	Lapilli tuff	< 5
551068	506560	5321128	Sulfide pocket @ contact of syenite and lapilli tuff	187
551069	506560	5321128	Pink syenite- 2% pyrite	49
551070	506790	5321004	Lapilli tuff breccia	< 5

TABLE 2: List of samples and assay results.

Sample	Easting	Northing	RockType	Au ppb
551071	507004	5321121	Aplite dike in syenite	29
551072	507001	5321113	Aplite dike 1% pryite	< 5
551073	507060	5320808	Lapilli tuff breccia	< 5
551074	507060	5320808	Pink syenite	< 5
551075	507063	5320743	Pink syenite	< 5
551101	518227	5315608	Quartz vein	< 5
551102	518240	5315604	Sheared ultramafic	< 5
551103	518232	5315608	Sheared ultramafic	< 5
551104	518236	5315608	Sheared ultramafic	< 5
551105	518240	5315608	Sheared ultramafic	< 5
551106	518205	5315640	Sheared ultramafic	< 5
551107	518268	5315447	Mudstone	< 5
551108	518280	5315240	Mudstone	< 5
551109	518280	5315240	Mudstone	< 5
551110	518190	5315520	Sheared ultramafic	< 5
551111	518191	5315581	Quartz vein	< 5
551112	518191	5315581	Quartz vein	< 5
551113	518202	5315583	Sheared Ultramafic + quartz vein	< 5
551114	518200	5315601	Sheared Ultramafic + quartz vein	< 5
551115	517777	5315428	Syenite	< 5
551116	516492	5316676	Sheared Sediment	< 5
551117	516477	5316669	Sheared ultramafic	< 5
551118	515582	5315857	Altered mafic	< 5
551119	515582	5315853	Altered mafic	20
551120	515582	5315844	Quartz vein	5
551121	515582	5315838	Silicified Diorite	146
551122	515582	5315838	Silicified Diorite	76
551123	515582	5315838	Silicified Diorite	< 5
551124	511267	5315725	Sheared Mafics	< 5
551125	511267	5315725	Sheared Mafics	< 5
551126	511320	5315757	Sheared Mafics	6
551127	511325	5315758	Sheared Mafics	< 5
551128	511325	5315758	Sheared Mafics	< 5
551129	511407	5315848	Sheared Mafics	19
551130	511407	5315848	Sheared Mafics	8
551131	511407	5315848	Sheared Mafics	13
551132	511449	5315978	Blocky Mafic	< 5
551133	511449	5315978	Blocky Mafic	6
551134	505096	5320374	Fine grained basalt	< 5
551135	505128	5320268	Mafic volcanics - 2% pyrite	< 5
551136	505081	5320409	Iron Tholeiite	< 5
551137	505074	5320485	Quartz Feldspar Porphyry	< 5
551138	505212	5320609	Feldspar phyric lapilli tuff	< 5
551139	505332	5319537	Volcanics/porphyry contact	< 5

TABLE 2: List of samples and assay results.

Sample	Easting	Northing	RockType	Au ppb
551140	505323	5319571	Gabbro	< 5
551141	505111	5319504	Mafic volcanics	< 5
551142	505106	5319492	Silicfied feldspar porphyry	< 5
551143	505106	5319492	Brecciated porphyry	< 5
551144	505106	5319492	Silicified mafic volcanics - 2% pyrite	< 5
551145	505106	5319492	Silicified mafic volcanics - 2% pyrite	< 5
551146	505103	5319492	Mafic volcanics - 1% pyrite	42
551147	505048	5319510	Mafic volcanics and epidote veinlet	< 5
551148	504812	5319604	Syenite - 1% pyrite	< 5
551149	505837	5320573	Lapilli Tuff	< 5
551150	505837	5320573	Lapilli Tuff	< 5
551151	517353	5316834	Sediment/Schist	< 5
551152	517353	5316834	Sediment/Schist	< 5
551153	517353	5316834	Sediment/Schist	< 5
551154	517353	5316834	Sediment/Schist	< 5
551155	518212	5315612	Shear Zone in ultramafic	< 5
551156	518212	5315612	Shear Zone in ultramafic	< 5
551157	518212	5315612	Shear Zone in ultramafic	7
551158	518212	5315612	Shear Zone in ultramafic	< 5
551159	516815	5316664	Sediment/Schist	< 5
551160	516815	5316664	Sediment/Schist	< 5
551161	516815	5316664	Sediment/Schist	< 5
551162	511128	5315116	Mafic volcanic	< 5
551163	511128	5315116	Mafic volcanic	< 5
551164	511128	5315116	Mafic volcanic	< 5
551165	505112	5320023	Pillowed volcanic	< 5
551166	505154	5320082	Feldspar Porphyry	< 5
551167	505207	5320113	Mafic volcanic	< 5
551168	505207	5320113	Mafic volcanic	< 5
551169	505207	5320113	Mafic volcanic	< 5
551170	505210	5320152	Mafic volcanic	< 5
551171	505210	5320152	flat extension vts	< 5
551172	505210	5320152	steep vein at 320/80N	< 5
551173	505238	5320180	Quartz veinlets	< 5
551174	505448	5320386	Quartz veinlets - pyrite carb selvage	< 5
551175	505470	5320445	barren but check anyway	< 5
551176	506329	5319853	Quartz Vein - py+Te	18
551177	506329	5319853	Quartz Vein - Lots of Py	260
551178	506329	5319853	Quartz Vein - Lots of Py	88
551179	506329	5319853	Quartz Vein- Te no Py	22
551180	506329	5319853	Syenite Wall rock	< 5
551181	505753	5319551	Mafic volcanic	< 5
551182	505764	5320015	Pink Syenite	< 5
551183	505826	5320372	Pink Syenite	25

TABLE 2: List of samples and assay results.

Sample	Easting	Northing	RockType	Au ppb
551201	505837	5320573	Lapilli Tuff	< 5
551202	505837	5320573	Lapilli Tuff	< 5
551203	505742	5320653	Sediment	< 5
551204	505742	5320653	Pyritic mafic volcanic	< 5
551205	505742	5320653	Pyritic mafic volcanic	< 5
551206	505742	5320653	1cm quartz vein	< 5
551207	505742	5320653	Iron formation	< 5
551208	506329	5319853	Quartz vein, pyritic, tellurides, syenite inclusions	45
551209	506329	5319853	Quartz vein with pyrite	403
551210	506329	5319853	Quartz vein with pyrite	202
551211	506329	5319853	Quartz vein with pyrite	162
551212	506329	5319853	Quartz vein breccia, syenite quartz fragments	61
551213	506620	5319972	Aplite dike in syenite	8
551214	506604	5319963	Sediment	< 5
551215	506604	5319960	Syenite sediment contact	< 5
549301	516172	5315489	Hematite altered syenite	< 5
549302	515753	5315302	Pink syenite	< 5
549303	515753	5315302	Pink syenite	16
549304	514634	5314453	Pink-red syenite	< 5
549305	514634	5314453	Chert	< 5
549306	516265	5315297	Hematite altered syenite	< 5
549307	516231	5315911	Carbonate altered volcaniclastic/sediment	41
549308	516218	5315868	Cherty volcaniclastics - 5% pyrite	371
549309	516254	5315878	Quartz-carbonate veining in volcaniclastic	1240
549310	515603	5315316	Hematite altered syenite	7
549311	515793	5315251	hematized syenite	7
549312	515769	5315194	hematized syenite	< 5
549313	513846	5315271	hematized syenite with quartz veins	< 5
549314	513846	5315271	silicified syenite	< 5
549315	513846	5315271	silicified syenite	< 5
549316	513846	5315271	syenite	< 5
549317	513846	5315271	quartz vein	< 5
549318	513862	5315320	hematized syenite - 3% pyrite	69
549319	513846	5315271	Syenite	< 5
549320	513808	5315292	sheared volcanic, carbonate alteration	< 5
549321	513862	5315342	deep red magnetic syenite	6
549322	513853	5315335	silicified syenite with quartz vein	10
549323	513853	5315335	hematized syenite - 1% pyrite	7
549324	507821	5317223	silicified intermediate flow	19
549325	508125	5317072	gabbro?	< 5
549326	508152	5317096	carbonatized mafic volcanic -1% pyrite	< 5
549327	508009	5317295	pillowed basalt	< 5
549328	508442	5317019	pillowed basalt	< 5
549329	510850	5315502	Ankerite altered sheared Volcanics	< 5

TABLE 2: List of samples and assay results.

Sample	Easting	Northing	RockType	Au ppb
549330	510850	5315502	sheared volcanics with quartz veins	< 5
549331	505933	5319436	mafic volcanic, rusty quartz veinlets - 1% pyrite	< 5
549332	505659	5319466	Mafic Volcanic with quartz-pyrite veinlets	154
549333	505659	5319466	Mafic Volcanic with quartz-pyrite veinlets	65
549334	505659	5319466	Mafic Volcanic with quartz-pyrite veinlets	37
549335	504766	5320049	sunisloe showing - quartz vein	8700
549336	504766	5320049	sunisloe showing - quartz vein	9650
549337	504766	5320049	sunisloe showing - contact - syenite-volcanic	22
549338	511016	5315857	Fe-Carbonate sheared volcanics	10
549339	511015	5315923	sheared mafic volcanic - 2-3% pyrite	< 5
549340	511065	5315905	sheared mafic volcanic - 1% pyrite in quartz veins	< 5
549341	511074	5315954	shear within mafic volcanic - 3% pyrite in vein selvages	< 5
549342	511074	5315954	2-3% pyrite along quartz vein selvages	< 5
549343	511092	5315992	silicified mafic volcanics	< 5
549344	511073	5316054	sheared volcanic	< 5
549345	511049	5316062	mafic volcanic 2% quartz-pyrite chlorite veinlets	< 5
549346	511068	5316645	mafic volcanic	< 5
549347	511321	5317055	mafic basalt - 1% pyrite	< 5
549348	511321	5317060	5% pyrite in volcanic	7
549349	510985	5315805	Fe-Carbonate sheared volcanics	< 5
549350	511064	5315906	sheared volcanics - 2% pyrite	< 5
549351	511061	5315954	fine grained basalt	< 5
549352	511056	5315990	sheared volcanic	< 5
549353	506770	5318081	qtz-chalcopyrite-pyrite vein in massive basalt	2360
549354	506741	5318097	quartz stockwork in massive basalt	1320
549355	506684	5318106	mafic intrusive - 1% pyrite in veins	158
549356	506990	5317969	diabase	< 5
549357	506876	5318486	hematite altered vein selvages	1740
549358	506876	5318486	quartz pyrite vein with pyritic selvage	902
549359	506876	5318486	quartz pyrite vein	3830
549360	506785	5318677	quartz pyrite vein	2510
549361	506785	5318677	pillow basalt	1520
549362	508231	5318238	pillow basalt	< 5
549363	508373	5318268	pillow basalt	< 5
549364	508239	5318521	volcanic-porphyry contact	< 5
549365	508385	5319080	felsic Intrusive	< 5
549366	507581	5319775	mafic volcanic - 2% pyrite	< 5
549367	507581	53197758	sediment/mylonite	< 5
549368	507423	5319691	sediment	< 5
549369	507423	5319691	feldspar poprhyry	< 5
549370	507431	5319686	silicified feldpsar porphyry - 3% pyrite	< 5
549371	505657	5319376	quartz vein - 1% fine pyrite	750
549372	507581	5319780	mafic volcanic - 1% pyrite	< 5
549373	505653	5319403	quartz vein - 1% pyrite	< 5

TABLE 2: List of samples and assay results.

Sample	Easting	Northing	RockType	Au ppb
549374	505653	5319403	quartz-vein - pyritic selvages	< 5
549375	505668	5319367	quartz vein in basalt	< 5
549376	505679	5319334	basalt - 1% pyrite	9
549377	505679	5319334	quartz-pyrite vein- telluride	1260
549378	505766	5319883	pink syenite	< 5
549379	506766	5320399	hematized syenite - 1% pyrite	< 5
549380	506774	5320612	mafic intrusive - 1% pyrite in veins	< 5
549381	506652	5321353	syenite	18
549382	506693	5321472	sulfide pocket in syenite - 10-15%	55
549383	504299	5322963	grey syenite, malachite on fractures	< 5
549384	504299	5322963	syenite dike	< 5
549385	504185	5322896	quartz-pyrite chalcopyrite vein	33
549386	503862	5322864	pink syenite	6
549387	503034	5323203	diabase	< 5
549388	502709	5322434	brecciated syenite	< 5
549389	502709	5322434	Sheared Sediments 1% Pyrite	< 5
549390	503006	5322038	mafic volcanic flow - 1% pyrite	< 5
549391	503112	5322074	basalt	< 5
549392	503209	5322034	shear zone, sediments with syenite dike	< 5
549393	503209	5322034	shear zone, sediments with syenite dike	7
549394	503209	5322034	shear zone, sediments with syenite dike	< 5
549395	503209	5322034	shear zone, sediments with syenite dike	< 5
549396	506665	5320596	silicified porphyry	< 5
549397	506665	5320596	silicified mafic volcanic	6
549398	513772	5315227	syenite	< 5
549399	513772	5315228	quartz vein	44
549400	513772	5315229	quartz vein - 1% pyrite	143
549401	513772	5315230	silicified syenite - 2% pyrite	< 5
549402	513772	5315231	silicified syenite - 0.5% pyrite	< 5
549403	513772	5315232	quartz vein - 2% pyrite	< 5
549404	513772	5315233	quartz vein - 0.5% pyrite	< 5
549405	513772	5315234	silicified syenite - 2% pyrite	< 5
549406	513772	5315235	silicified syenite - 2% pyrite	9
549407	513774	5315236	silicified syenite	< 5
549408	513774	5315237	silicified syenite - 2% pyrite	< 5
549409	513774	5315238	silicified syenite - 0.5% pyrite	< 5
549410	513774	5315239	fractured syenite	< 5
549411	513774	5315240	fractured syenite	< 5
549412	513774	5315241	fractured syenite	< 5
549413	513774	5315242	silicified syenite - 3% pyrite	5
549414	513774	5315243	syenite breccia	< 5
549415	513766	5315258	brecciated syenite - 0.5% pyrite	20
549416	513749	5315259	hematized syenite - 0.5% pyrite	17
549417	513749	5315259	hematized syenite	< 5

TABLE 2: List of samples and assay results.

Sample	Easting	Northing	RockType	Au ppb
549418	513749	5315256	hematized syenite	< 5
549419	513746	5315260	syenite - 5% pyrite	5
549420	513746	5315257	hematized syenite - 1% pyrite	33
549421	513761	5315281	quartz-syenite breccia	< 5
549422	513761	5315281	quartz vein with syenite breccia	< 5
549423	513761	5315281	quartz vein with syenite breccia	< 5
549424	513761	5315281	quartz vein with syenite breccia	< 5
549425	513761	5315281	mafic volcanic - 0.5% pyrite	< 5
549426	513761	5315281	syenite dike	< 5
551001	515808	5315281	sericite-hematite syenite	< 5
551002	511059	5316018	sericitized volcanic quart-pyrite veinlets	< 5
551003	511002	5316477	mafic intrusive - diabase?	< 5
551004	511073	5316682	silicifed volcanic - trace pyrite	< 5

Sample No	Easting 83	Northing 83	Field Name	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P205	LOI	Total
Unit Symbol				%	%	%	%	%	%	%	%	%	%	%	%
Detection Limit				0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01		0.01
Analysis Method				FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
ASHLEY	507642	5317710	Central Sy	70.1	14.64	188	0.027	0.98	177	5.87	3.04	0.174	0.1	2.04	100.6
RDOC-10	506820	5319490	Xtal lap Tuff -f	57.48	15.16	6.27	0.093	6.83	6.03	3.05	0.75	0.472	0.11	2.45	98.69
RDOC-12	506766	5320399	Central Sy	67	14.16	3.42	0.057	2.44	2.85	4.89	3.38	0.302	0.19	145	100.1
RDOC-17	506700	5321485	Grey Sy	69.05	14.43	4.11	0.065	175	3.39	3.77	2.17	0.45	0.13	151	100.8
RDOC-19	506505	5322199	X-HL tuff Bx-f	59.7	14.33	6.47	0.1	5.45	5.35	3.13	1.11	0.532	0.1	2.61	98.88
RDOC-29	503862	5322864	Ezra-Sy	68.34	15.2	2.74	0.03	0.83	2.27	5.53	3.08	0.409	0.24	0.71	99.39
AT-14-06	5315361	515885	Powel-Sy	66.9	15.78	2.61	0.058	0.82	187	6.24	4.37	0.245	0.12	0.88	99.9
AT-14-21B	5315281	515808	Powel-Sy	72.71	14.25	13	0.024	0.41	0.46	5.85	4.17	0.105	0.06	0.61	99.94
AT-14-73	5319080	508385	X-HL tuff Bx-f	59.54	14.16	6	0.11	6.36	5.83	3.09	0.74	0.454	0.13	3.71	100.1
PO-30	516265	5315297	Powel-Sy	7176	14.95	138	0.031	0.39	0.73	5.53	4.6	0.114	0.06	0.92	100.5

Sample No	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	1	1	5	20	1	20	10	30	1	1	5	2	2	2	4	1	2
Analysis Method	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS
ASHLEY	3	3	27	80	5	30	< 10	40	19	1	< 5	59	409	6	88	3	< 2
RDOC-10	16	< 1	94	550	32	360	30	80	16	2	< 5	23	211	9	94	4	4
RDOC-12	7	3	57	180	12	60	< 10	60	20	2	< 5	77	763	12	112	4	2
RDOC-17	8	1	52	100	10	60	30	70	17	2	< 5	71	242	18	151	6	3
RDOC-19	16	< 1	107	400	29	280	50	90	16	1	< 5	34	251	11	109	4	2
RDOC-29	3	2	39	50	5	< 20	< 10	90	26	1	< 5	43	1642	4	134	3	2
AT-14-06	3	5	41	30	4	< 20	10	40	22	2	< 5	143	861	11	168	7	< 2
AT-14-21B	1	4	20	100	3	< 20	< 10	40	21	1	< 5	149	273	6	83	14	3
AT-14-73	20	< 1	109	720	38	370	40	70	13	1	< 5	23	236	8	82	7	< 2
PO-30	1	3	21	50	3	< 20	< 10	30	21	1	< 5	136	373	5	60	6	< 2

Sample No	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	0.2	1	0.5	0.5	3	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
ASHLEY	< 0.5	< 0.2	< 1	< 0.5	0.8	2093	19.6	38.7	4.73	18.7	3.6	0.81	2.3	0.3	12	0.2	0.5
RDOC-10	0.6	< 0.2	1	< 0.5	14	203	12	23.2	2.73	10.4	2.3	0.68	18	0.3	17	0.3	0.9
RDOC-12	0.6	< 0.2	< 1	< 0.5	0.7	1643	317	63.3	7.6	29.5	5.5	125	3.4	0.4	2	0.4	0.9
RDOC-17	0.8	< 0.2	2	0.6	18	560	24.2	46	5.16	19.8	3.9	0.9	3.1	0.5	2.7	0.6	16
RDOC-19	0.7	< 0.2	3	0.5	12	308	14.3	28.3	3.23	12.9	2.5	0.75	2.2	0.3	2	0.4	12
RDOC-29	0.9	< 0.2	1	< 0.5	< 0.5	2348	40.1	919	10.5	42.3	7.3	161	3.7	0.3	12	0.2	0.4
AT-14-06	12.5	< 0.2	< 1	35.2	2.6	1624	45	82	9.22	33.2	5.4	129	3.3	0.4	2	0.4	1
AT-14-21B	0.5	< 0.2	< 1	0.7	5.3	1570	16.8	30.6	3.48	12.2	2	0.47	13	0.2	0.8	0.2	0.5
AT-14-73	0.6	< 0.2	< 1	0.6	0.7	185	12.1	24.1	2.89	10.9	2.2	0.65	17	0.3	17	0.3	0.9
PO-30	< 0.5	< 0.2	< 1	0.7	17	1652	17.1	30.9	3.38	12.1	2	0.45	12	0.1	0.8	0.1	0.4

Sample No	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.05	0.1	0.04	0.2	0.1	1	0.1	5	0.4	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
ASHLEY	0.08	0.5	0.06	2.2	0.3	1	0.4	6	< 0.4	3	17
RDOC-10	0.15	0.9	0.14	2	0.3	1	0.1	< 5	< 0.4	18	0.5
RDOC-12	0.14	0.9	0.13	2.6	0.3	< 1	0.4	10	< 0.4	6.4	16
RDOC-17	0.26	17	0.23	3.5	0.8	1	0.4	7	< 0.4	5	14
RDOC-19	0.17	1	0.16	2.5	0.4	2	0.2	< 5	< 0.4	2.5	0.7
RDOC-29	< 0.05	0.2	< 0.04	3.4	0.2	1	0.2	15	< 0.4	5.8	11
AT-14-06	0.15	1	0.17	4.3	0.3	1	0.6	33	< 0.4	14	2.5
AT-14-21B	0.08	0.5	0.09	2.6	0.2	1	0.7	74	0.5	11	3.8
AT-14-73	0.14	1	0.14	18	0.3	1	0.2	< 5	< 0.4	15	0.4
PO-30	0.06	0.4	0.07	18	0.2	2	0.6	21	< 0.4	7.8	2.8

TABLE 3: Whole rock geochemical data

RESULTS OF 2014 FIELD WORK PROGRAM:

Geology of the Wydee Property:

Observations on the Volcano-sedimentary assemblage:

Lower Calc-alkaline sequence:

The rocks of the southernmost portion of the Wydee property consist of a calc-alkaline sequence of volcanic flows, described by Jensen (1996) as intercalated massive and pillowed flows with flow top breccias and tuff breccias. The flows are locally amygdaloidal and feldspar phyric. This sequence was only observed in the western part of claim 4275402 during the course of Murgor's field work of 2014 where fine grained pillowed flows were observed along with one outcrop of a massive feldspar-phyric basalt.

Tholeiitic sequence:

The lower calc-alkaline sequence is overlain by a mafic volcanic sequence of intercalated massive and pillowed basalts with local variolitic and amygdaloidal pillowed flows and flow-top breccias are also observed within this sequence. Jones and Wagg (2002) describe this sequence of basaltic flows as, 4km to 5km in thickness and consisting of Fe-rich and Mg-rich tholeiites. Only the upper portion (2km thickness) of the sequence is observed at Wydee. The Fe-tholeiites of this sequence are primarily located in the western part of the Wydee property and are geophysically characterized by magnetic highs (figure 7). In the field, the rocks are fine grained, black to dark green and most often moderately magnetic.

Upper calk-alkalic sequence:

The sequence of tholeiitic basalt flows is overlain by a sequence of calc-alkaline volcanic rocks (Jones and Wagg, 2002) observed over a minimum thickness of 2 km and covering the whole northern part of the Wydee property from east to west for a minimum strike length of 11 km. The calc-alkaline sequence is characterized by the ubiquitous presence of anhedral to sub-hedral, white feldspar phenocrysts ranging from 1mm to 1 cm. The base of this unit typically consists of massive feldspar-phyric flows (Jones and Wagg, 2002 also note some pillowed flows) intercalated with feldspar crystal-heterolithic ash and lapilli tuffs grading into feldspar crystal-heterolithic lapilli tuffs and tuff breccias in the upper part of the sequence. Except for up to 10% feldspar crystals, the matrix for the tuffaceous rocks of this sequence is typically fine grained and consists largely of devitrified glass (Dobosz, 2014) Because the lithic fragments of lapilli and tuff braccias are also feldspar-phyric, it is locally very difficult, depending on outcrop exposure, to distinguish between the massive, lapilli tuffs and tuff breccias.

Archean sedimentary Units:

The contact between the lower tholeiitic unit and the upper calc-alkaline unit is characterized by the presence of a thin (no more than 50m in thickness) sedimentary horizon of thinly bedded mudstones, cherts (locally sulphide rich) and locally siltstones. Typically, the sediments display pervasive, weak to

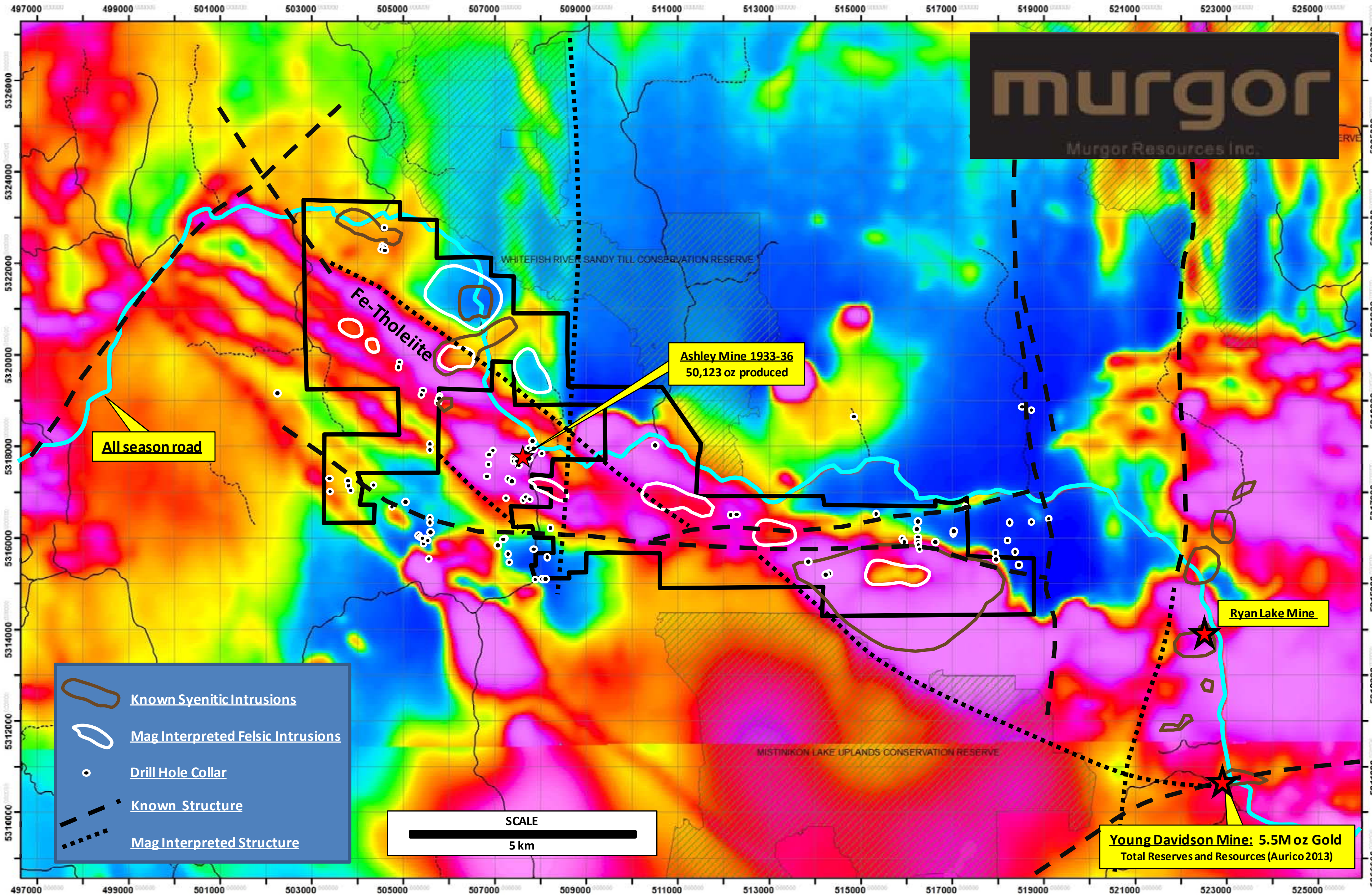


FIGURE 7: Geomagnetic map of the Wydee property.

strong Fe-carbonate alteration and local chloritic alteration. Similar horizons of fine grained sediments are observed intercalated within the calc-alkaline unit. It has been postulated that some of these sedimentary horizons occur along early E-W to NW-SE trending structures. Jones and Wagg, 2002 have referred to these sediment horizons as "Temiskaming sediments" in the western part of the Wydee property while Jensen (1996) refers to them as "Graben-Hosted" metasedimentary rocks in the eastern part of the property along the Galer Branch Fault.

Intrusive rocks:

The volcanic rocks are intruded by ultramafic to felsic intrusions of various sizes, and by late N-trending diabase dikes. Of particular economic interest, at least four (4) poorly documented syenitic intrusions of various sizes have been located and are described in more detail below. A number of similar felsic intrusions are postulated through geophysical interpretation, these intrusions typically have a magnetic signatures that cut through stratigraphy.

The Powell Syenite:

The Powell syenite intrusion is the largest syenitic intrusion at Wydee and is located in the eastern part of the property. The Powell intrusive is 4 x 2.5 kilometres in size with its long axis trending E-W. The Powell syenite is pink, equigranular, medium grained and is characterized by ubiquitous Fe-oxide alteration (Dobosz, 2014) of magnetite and hematite where the hematite typically replaces the magnetite. The Powell intrusion generally cuts through the Mg-rich tholeiitic basalts of the volcanic sequence at Wydee. The intrusion is characterized geophysically by a magnetic high, cored by a magnetic low (Figure 7). It is postulated that the magnetic highs are probably associated with areas where magnetite is predominant while the magnetic low may be associated with rocks where hematite alteration is dominant (Figure 8). As the Young Davidson gold mineralization is associated with magnetite destructive alteration, the magnetic low portion within the Powell syenite is considered as a potential target for gold mineralization.

The Ezra Syenite: (Figure 9)

The Ezra intrusion is approximately 1,500 x 300 metres in size, with its long axis at 110˚az. and straddles Ezra Lake in the north-western part of the property. The intrusive rock consists of a pink syenite porphyry containing 10-20% pink, sub-hedral to euhedral orthoclase phenocrysts up to 0.5cm in size (rare phenocrysts reach 1cm). Dobosz (2014) describes one sample as a hornblende-bearing syenite. The Ezra syenite is located entirely within the upper calc-alkaline unit of the volcanic sequence.

The syenite is typically weakly to moderately magnetic and consistently displays moderate to strong potassic alteration either along fractures and veinlets or as dark pink feldspars. The Ezra showing is located at the south east contact of the intrusion and is documented as a ns-trending quartz vein grading 42.17g/t gold in a grab sample (McCannell, 1973). During a lithogeochemical survey conducted by Phoenix Matachewan Mines Inc in 2002-2003, 14 samples were collected from the Ezra syenite for assay. Of the 14 samples collected only 2 returned values below detection limit while all other samples returned gold values ranging from 0.01 to 3.91g/t gold (Jones and Wagg, 2002-2003). One sample collected by Murgor returned 33ppb gold.

FIGURE 8: Samples of the Powell Syenite approaching the south fault showing increasing hematization approaching the structure. The Syenite gold occurrence is located within the south structure.

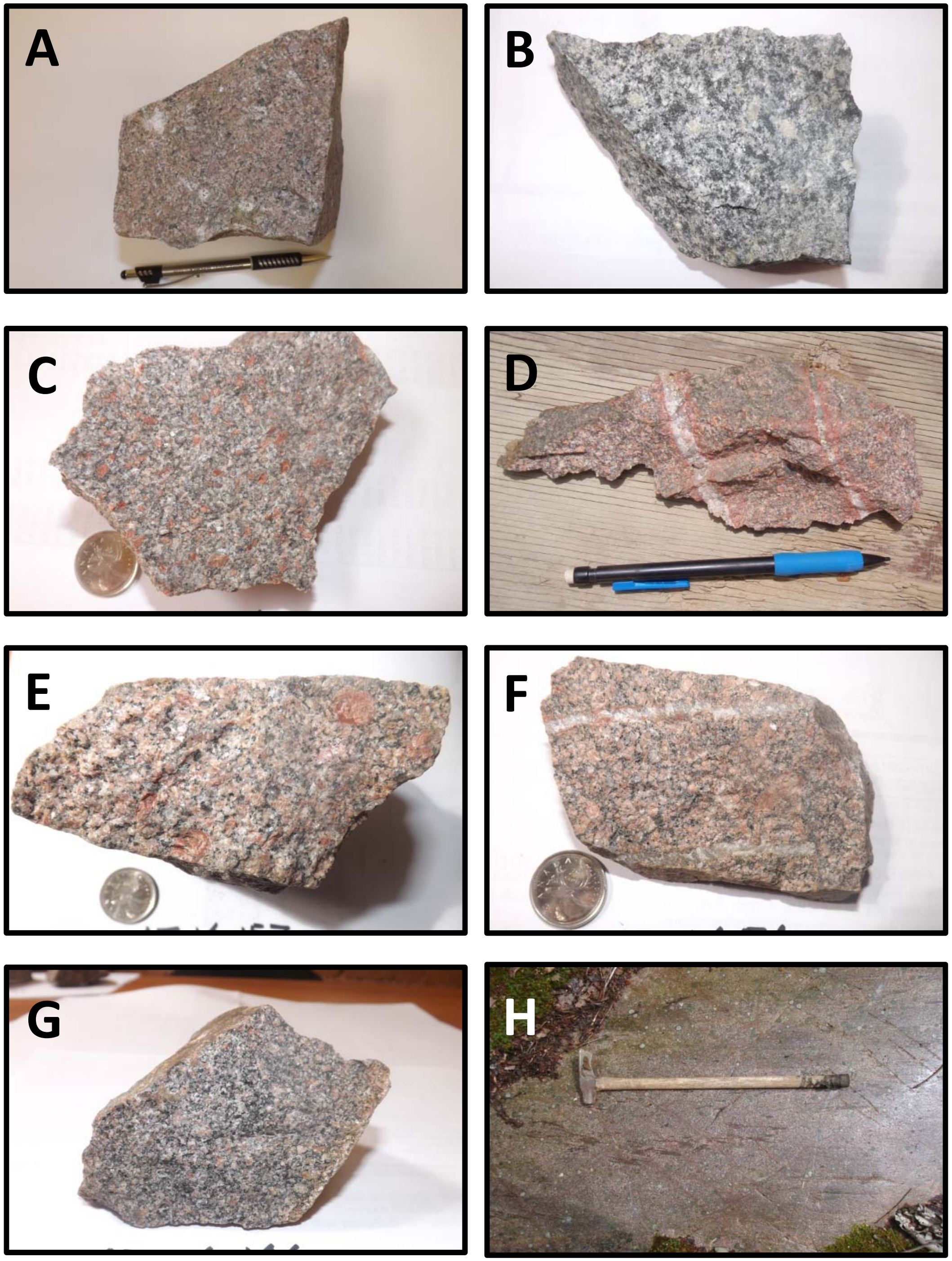


FIGURE 9: Syenitic rocks of the Wydee Property.

A) Ashley Syenite collected at mine shaft.
B) Grey Syenite (fresh, unaltered sample).
C) Ezra Syenite (fresh sample showing some potassic alteration of the orthoclase.
D) Ezra Syenite (strong potassic alteration intensifying along vein selvages).
E) Porphyritic facies of the Central Syenite (fresh).
F) Porphyritic facies of the Central Syenite with quartz veins and moderate potassic alteration.
G) Mafic facies of the Central Syenite (fresh).
H) Exposure of the Central Syenite showing quartz veining with moderate potassic alteration of the rock intensifying along vein selvages.
I) Syenitic dike of the Central-Type near the Sunisloe gold occurrence. Dike shows pervasive moderate potassic (hematitic?) alteration.
J) Quartz vein in the Central Syenite assaying 0.4g/t Au. Note the strong potassic (hematitic) alteration of the vein selvages and syenite inclusions within the vein.

The Central Syenite: (Figure 9)

Another intrusion very similar to the Ezra syenite porphyry is centered on claims 4274024 and 4274025 dominantly west of highway 566, in the central part of the Wydee property. The intrusive body is approximately 1,900 x 900 metres in size with its long axis at 055˚ az. The intrusive rock consists of a pink syenite porphyry containing 10-20% pink, sub-hedral to euhedral orthoclase phenocrysts of up to 1cm. The Central syenite straddles the contact between the tholeiitic and the upper-calc-alkaline units of the volcanic sequence.

The Central syenite is typically weakly to moderately magnetic and consistently displays moderate to strong potassic alteration either along fractures and veinlets or as dark pink feldspars. Petrographic observations also show low to moderate Fe-oxyde alteration in a fresh sample collected by Murgor (Dobosz, 2014). Samples collected by Phoenix Matachewan Mines Inc in 2002 and 2003 returned gold values of up to 2.99 g/t gold in quartz veinlets and pyrite seams within this intrusion (Jones and Wagg, 2002-2003). Murgor discovered a 50cm quartz vein within the Central syenite intrusion with assays of up to 0.4g/t gold.

Numerous dikes of Central syenite-type are observed in the south-western part of the property. Often, a spatial association is noted with gold mineralization within the Fe-tholeiitic basalts. Dikes are documented at the Ashley Mine and in proximity to the Garvey veins. Similar dikes, displaying strong potassic and hematitic alteration, have been observed in close proximity to the McGill and Sunisloe gold occurrences.

The Grey Syenite: (Figure 9)

The Grey syenite is located in the north-central part of the Wydee property, bisected by highway 566 and centered on claim 4274022. The size of the intrusive body is unknown but a magnetic low suggests it may be a circular body of up to 2km in diametre (Figure 7). To date, outcrops of the Grey syenite have been observed in the central part of the magnetic low signature, over a diametre of approximately 500m and entirely within the upper calc-alkaline unit of the volcanic sequence.

The Grey syenite is medium grained, equigranular and non-magnetic, with some anhedral to sub-hedral, greenish white orthoclase phenocrysts are observed up to 0.5cm. In hand sample, the rock has a granodioritic texture and appears to contain equal parts of greenish white to grey felsic minerals and chloritic mafic minerals. Petrographically, however, the rock consists of 50-55% orthoclase (altered to muscovite, sericite and Albite), 20% Albite, up to 15% quartz with mafic minerals accounting for approximately 10-15% of the rock and consist of hornblende, now completely altered to chlorite and biotite (Dobosz, 2014). Zones of pink potassic alteration are observed within the Grey syenite, typically along the western and southern exposures, west of highway 566.

Grey aphanitic aplitic dikes are observed within the grey syenite, containing up to 3% finely disseminated pyrite.

Quartz veinlets, zones of finely disseminated pyrite and aplitic dikes within the Grey syenite intrusion consistently return assays that are anomalous in gold. During a lithogeochemical survey conducted by Phoenix Matachewan Mines Inc in 2002-2003, 16 samples were collected from the Grey syenite for assay, all returning gold values ranging from 0.01 to 0.48 g/t and averaging 0.113 g/t gold (Jones and Wagg, 2002-2003). Murgor collected seven (7) samples from quartz veins, zones of disseminated pyrite and aplitic dikes within the Grey syenite intrusion during the course of its 2014 field work, with all assays returning between 0.018 to 0.187 g/t gold.

Geochemistry of the Syenitic Intrusions:

Whole rock analyses were performed on selected volcanic rocks and syenitic rocks of the Wydee property. Murgor's whole rock geochemical results were combined with those of Phoenix Matachewan Mines' 2002 report by Jones and Wagg for a better sample representation.

The affinity of the Tholeiitic and Upper Calc-alkaline volcanic rocks was confirmed (Figure 10).

Geochemically, the syenite intrusive bodies at Wydee appear to be part of an evolving intrusive suite with the Ezra, Ashley and Powell syenites at one end of the spectrum while the grey syenite and aplitic dikes are at the other end of the spectrum (Figure 11).

Structures:

EW- and NW-SE Trending structures:

At least three EW-trending, steeply north dipping deformation zones are observed and interpreted in the eastern part of the property. Steeply plunging lineations within these structures suggest a dominantly vertical sense of motion. In the western part of the property, these same structures appear to take a NW-SE trend (much like the lithologies). All three structures are believed to be splays of various order off the Larder Lake-Cadillac break to the south.

North Fault: (Figure 12)

The northernmost EW-trending structure straddles the northeastern boundary of the Wydee property and coincides locally with a band of deformed fine-grained cherty sediments and/or volcaniclastics. Although Jensen (1996) refers to the sediments as "Graben-Hosted" metasedimentary rocks, it is difficult to interpret if the sediments were deposited as a result of vertical movement on the structure or if the sedimentary rocks provided a zone of weakness where deformation was preferentially focused . Field observations by Murgor would suggest the latter as the western extent of the structure documented by Jensen (1996) could not be located in the field where instead, Murgor observed undeformed mafic volcanics of the tholeiitic sequence.

Galer Fault: (Figure 12)

The Galer fault, a "branch" of the Larder Lake-Cadillac fault (Jensen, 1996), is located in the eastern part, and extends to the south-central part of the Wydee Property, over a nine (9) kilometre strike length. The Galer fault is characterized by ductile to brittle-ductile deformation textures, locally with very strong Fe-carbonate alteration and local gold mineralization. In the eastern part of the property, the Galer Fault is located along the northern contact of the Powell Syenite, where channel samples grading up to 22.6 g/t gold over 3m have been documented at the "Main, Leahey and Kiernicki" showings (Newmont 1989). Approximately 300 metres west of Powell Creek, in the south-central part of the property, the structure reaches 200 metres in width. Samples from that area did not return anomalous gold values despite a strong Fe-carbonate and pyrite alteration.

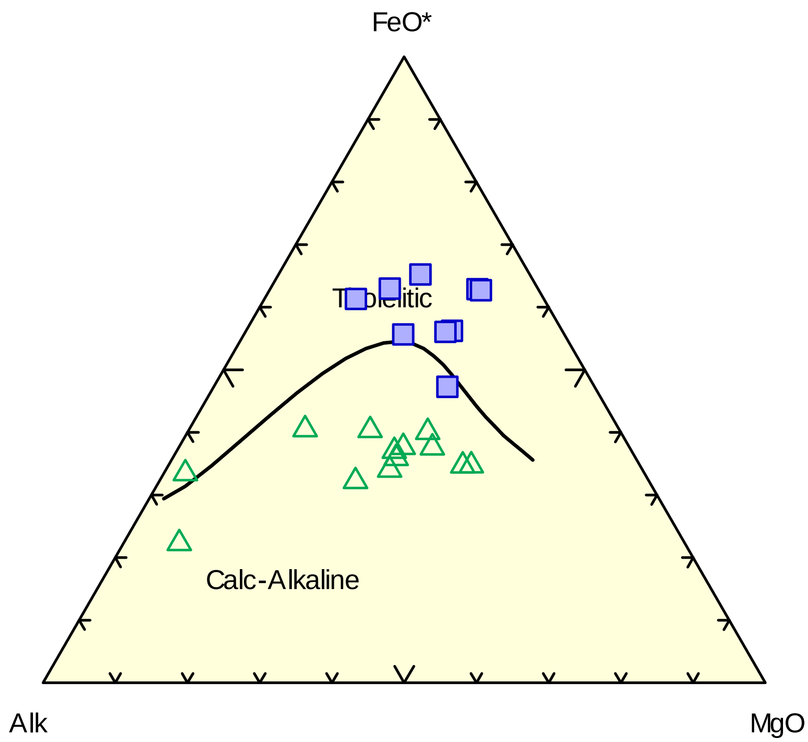


FIGURE 10: Irvine & Baragar (1971) plot showing the respective Tholeiitic and Calc-Alkaline affinities of the volcanic rock sequence at the Wydee property:

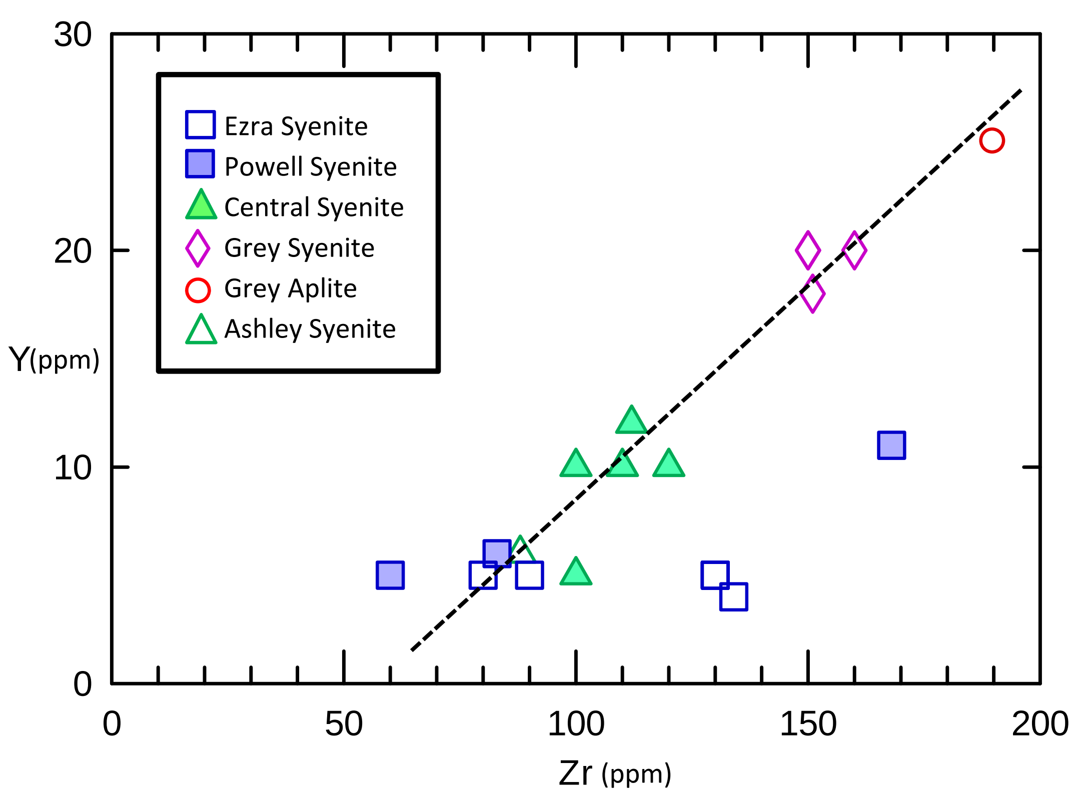


FIGURE 11: Y-Zr plot of the Syenitic intrusions at Wydee. The linear distribution suggests a single intrusive suite with the Grey Syenite at one end of the spectrum and the Ezra, Powell and Ashley syenites at the other end of the spectrum.

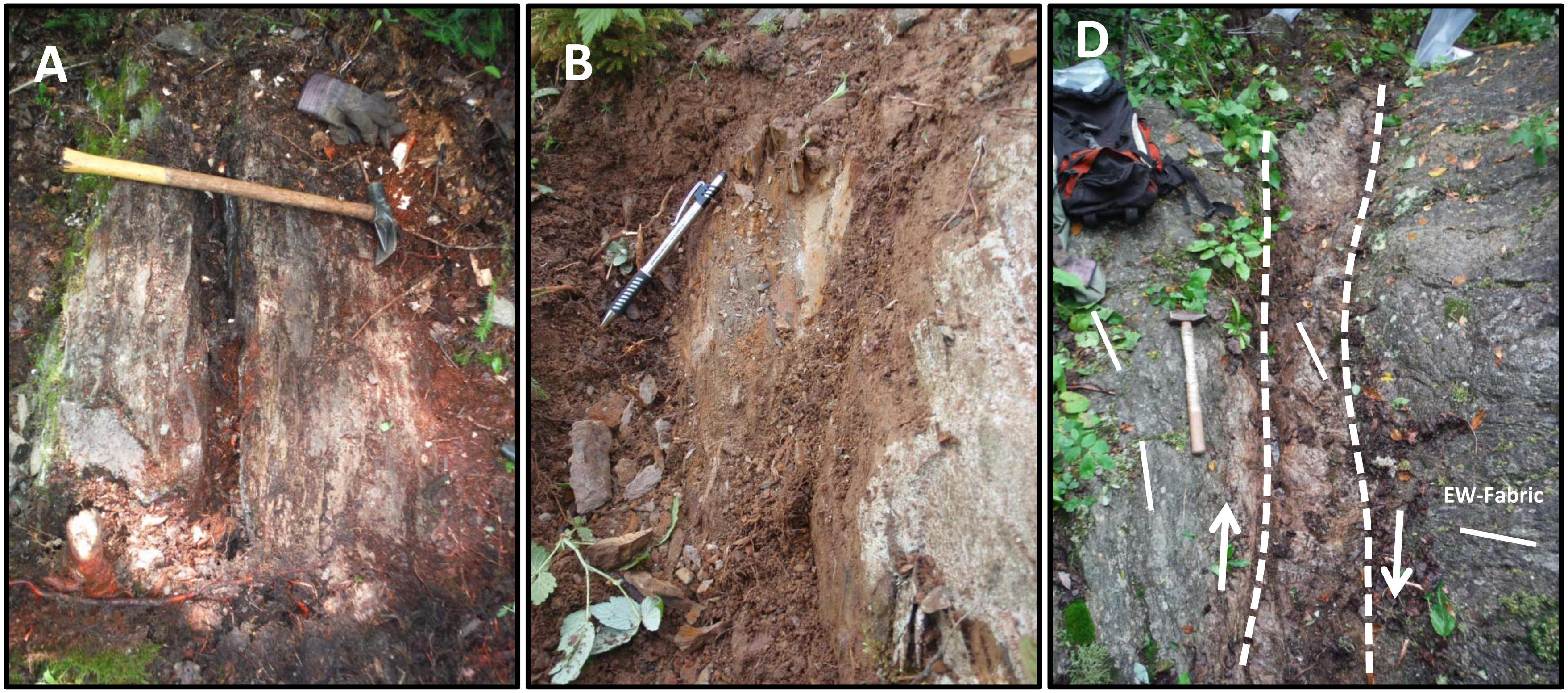


FIGURE 12: Faults of the Wydee Property.

A) Exposure of the North Fault looking west. Rock is a deformed, Fe-carbonatized fine grained sediment.

B) Exposure of the Galer Fault looking east. Rock is an intensely deformed, Fe-carbonatized mafic volcanic.

C) Exposure of the South Fault at the Syenite gold occurrence. Photo looking east. Rock consists of an intensely hematized and deformed syenite from the Powell intrusion.

D) NW-trending structure crosscutting the EW0trending fabric of the Galer Fault. Drag folding indicated a right-lateral horizontal component on the NW-trending structure. Photo looking SE.

South Fault: (Figure 12)

A third EW-trending structure is located 600 to 800 metres south of the Galer Branch fault. This structure has not been documented before but was observed in outcrop at the "Syenite" showing in the southern portion of claim 4275404. There, the structure is EW-trending, steeply north dipping and approximately 12 metres in width. The syenitic rocks within the structure show intense hematization and Fe-carbonate alteration with boudinaged quartz-carbonate veins and disseminated pyrite. The structure cuts through the Powell Syenite and has offset its western contact with a right lateral sense of motion. Combined with the sub-vertical lineations, it is believed the structure had a dominantly vertical movement with a minor right-lateral horizontal component.

Past exploration work at the Syenite showing has returned channel samples grading up to 0.41 g/t Au and 0.32 g/t Au over a metre length (Cameco, 1996). Murgor's best assay returned 0.14 g/t gold.

East of the Syenite showing, the structure is interpreted based on linear topographical features such as creeks and topographical lows. At the core of the Powell syenitic intrusion, the structure is characterized by a coincident magnetic low geophysical anomaly.

To the west, the structure is believed to disappear below Proterozoic sediments of the Gowganda Formation, only to reappear in the southern portion of claim 4275402 where Jensen (1996) documents a NW-SE-trending structure that merges into the Galer Lake fault to the north.

NW-SE Trending structures:

At the property-scale, it appears the EW-trending structures from the eastern part of the property, turn into NW-SE-trending structures of the same generation in the western part of the property. However, distinct NW-SE-trending shear zones have been observed at two localities during Murgor's 2014 field season. Where observed, the structures have orientations of 143˚/55˚W and 136˚/80˚W. At the one location, the 40cm wide NW-SE structure crosscuts the EW-trending fabric and shows drag folding suggesting a horizontal component of movement with a right-lateral sense of motion (Figure 12 D).

At both localities, moderate to strong Fe-carbonate alteration is observed with minor quartz-carbonate veining or fine disseminated pyrite. Neither of the localities returned gold values.

Although linear topographical features suggest other larger-scale structures in the NW-SE orientation, none were observed during the course of Murgor's field work. More work is required to better understand the history and potential economic implications of these structures.

Gold Mineralization:

Gold mineralization occurs in three main settings at the Wydee property and in its immediate area.

Volcanic hosted vein-type gold occurrences:

Gold occurs in quartz-carbonate veins with accessory pyrite, local tellurides and visible gold. The veining is associated with Fe-carbonate alteration typically within the immediate vein contacts and up to 10cm within the volcanic host rocks. At the Ashley Mine, the main quartz vein had an orientation of 170˚/30˚-

55˚W. Everywhere else at the property and in the area, veins are extensional and sub-horizontal, often showing open-space filling textures.

The veins are typically less than 50cm in width and followed over a strike length of up to 200m (Lefort personal communication). Artisanal mining has been carried out historically on some of these veins, such as the Garvey vein.

The sub-horizontal orientation implies a sub-vertical extension during the time of emplacement, which is consistent with the second phase of deformation in the area (responsible for the EW-trending fabric and sub-vertical stretching lineation). Gold mineralization at the Young Davidson Mine is believed to have been emplaced during the same deformation event (Martin, 2012).

Examples of this type of gold mineralization are: the Sunisloe (on the Wydee property), the Garvey, Garvey East, Garvey South and Kiernickie veins.

Minor foliation parallel veins of this type have also observed such as the McGill showing but these veins are typically less than 5-10cm in width and show little alteration.

Shear zone-hosted gold occurrences:

Shear zone hosted gold has been observed within the Galer Lake fault and within the South fault by Murgor and by previous workers.

Within the Galer Lake fault, gold mineralization consists of zones of pyrite dissemination within moderately to intensely deformed and Fe-carbonate altered rocks. Minor foliatin-parallel quartz-carbonate veinlets are also commonly observed. At the Wydee property, the gold occurrences are located immediately north of the Powell syenitic intrusion at the "Main, Leahey and Kiernickie" occurrences where (Newmont, 1989) documents channel samples of up to 22.6 g/t gold over 3-4m in width.

Murgor samples have returned 0.37 g/t and 1.24 g/t gold from this structure. Other samples from the same area have returned anomalous gold of 25 to 64 ppb gold.

Within the South fault, gold mineralization has only been observed at the Syenite Gold occurrence as described above. Rocks at the Syenite occurrence consist of highly deformed syenitic rocks of the Powell intrusion showing strong Fe-Carbonate and pyrite alteration with boudinaged quartz-carbonate-pyrite veins of up to 5cm in width. Cameco (1996) sampling returned channel samples grading up to 0.41 g/t Au and 0.32 g/t Au over a metre length.

Syenite-hosted gold mineralization:

The syenite hosted mineralization has been observed within the Ezra, Central and Grey syenitic bodies. The mineralization consists of quartz veins and veinlets of four general orientations:

- NE-trending (040˚-065˚)with steep SE dips (65˚-80˚),
- EW-trending and sub-vertical,
- NS-trending and sub-vertical, and
- Sub-horizontal (0˚-30˚ dips).

The veins and veinlets consist of quartz-carbonate-albite? with accessory disseminated pyrite and locally tellurides. The veins show strong to moderate, pink to brick red potassic alteration selvages.

The syenite-hosted mineralization also occurs as zones of pyrite dissemination (typically 1-2% disseminated pyrite and locally up to 5%) within zones of potassic and hematite alteration.

Both vein-type and disseminated-type of mineralization are often spatially (and probably genetically) associated.

Examples of the vein-type mineralization are the Ezra gold occurrence where past workers have sampled up to 42 g/t gold, Phoenix Matachewan assays of 1.37 g/t and 2.99 g/t gold from the Central syenite. Murgor also discovered a 50cm wide vein within the Central syenite which returned assays of up to 0.4g/t Au (this work). Within the Grey syenite, five samples of quartz veins varying in width from 2cm to 12cm, have returned assays of 52, 143, 291, 341 and 482 ppb gols (Jones and Waggs, 2003).

Examples of the disseminated-type of gold mineralization occur mostly within the Grey syenite and aplitic dikes. Two samples from the Grey syenite returned 49ppb and 187ppb gold in zones of 2% and 5% disseminated pyrite respectively (this work).

Conclusions:

Murgor's exploration program of June and August 2014 was highlighted by the following assay results:

1) Grab samples returning assays values:

- 9.65 g/t Au and 8.70 g/t Au from the Sunisloe gold occurrence in sub-horizontal extension quartz veins.
- 0.75 g/t Au from the McGill gold occurrence in NW-SE-trending, sub-vertical quartz veinlets.
- 1.26 g/t Au on from a new gold occurrence located 47 metres away from the old McGill gold occurrence also in NW-SE-trending, sub-vertical quartz veinlets.
- 1.24 g/t Au and 0.37 g/t Au from the Galer Fault, at the north contact of the Powell Syenite Intrusion.
- A number of anomalous assays returned from quartz veinlets within the Central syenite, Including up to 0.4 g/t Au on a newly discovered 50cm quartz vein.
- Anomalous gold assays from every sample collected from quartz veins, zones of disseminated pyrite and aplitic dikes within the Grey syenite intrusion. All seven (7) samples collected returned assays between 0.018 to 0.187 g/t Au.

2) The delineation of a new EW-trending, vertical shear zone cutting through the Powell Syenite Intrusion (the South Fault).

- The structure is defined over a minimum strike length of eight (8) kilometres and is based on one large outcrop and linear topographical features such as creek, lakes and topographic lows.
- Past exploration work on the one outcrop has returned channel samples grading up to 0.41 g/t Au and 0.32 g/t Au over a metre length.
- The Powell Syenite is increasingly hematized approaching the topographic lows where the structure is interpreted.
- The structure is characterized by a coincident magnetic low geophysical anomaly.

3) The recognition of an altered and mineralized syenite intrusive suite (Powell, Ezra, Central and Grey syenites).

An intrusive suite of four (4) syenitic intrusions is observed on the Wydee property. The three smaller syenite intrusions in the western part of the property show significant amounts of potassic and hematitic alteration along vein selvages, near their contact and on a number of zones associated with disseminated pyrite.

Additional syenitic intrusions are suspected at the property through magnetic interpretation but could not be verified in the field due to lack of outcrop.

Recommendations:

Initial results from Murgor's exploration at Wydee are deemed to be of sufficient interest to warrant a fairly extensive follow-up exploration program. A follow-up exploration progam with budget is recommended below.

To help with geological mapping, to better locate potential new syenitic intrusions, to help better locate the contacts of the known syenitic intrusions and to help in locating structures, a high resolution magnetic survey is recommended to cover the whole property. The magnetic survey should be coupled with an electro-magnetic survey to detect zones of heavily mineralized shear zones and/or zones of sulphide accumulations within the volcanic succession. Flight lines should be NS or NE for better resolution.

The magnetic low which is coincident with the south EW-trending structure within the Powell syenite should be further investigated. A summary geological mapping of the area suggests there is a limited number of outcrops in the area. The area should be mapped systematically and outcrops should be sampled for whole rock geochemistry to define possible alteration patterns within the intrusion. A grid should be cut with lines at 100m spacing in the NS direction. The grid should also be covered with an induced polarization survey in an attempt to detect zones of pyrite dissemination. It is recommended that the grid be extended to the postulated eastern contact of the Powell intrusion to investigate the area where the structure will cross the contact of the competent intrusive rocks with the volcanic/sedimentary rocks of lesser competence.

Geological mapping, prospecting, sampling and mechanical trenching is also recommended at the Ezra, Central and Grey syenites following the high resolution magnetic survey. Of particular interest for follow-up are: the contacts of the intrusions, any possible structures that may cut through the intrusions and areas where preliminary and historical work have outlined areas anomalous in gold. During the course of this mapping, outcrops should be sampled for whole rock geochemistry in an effort to decipher potential alteration patterns within the intrusions.

A systematic program of geological mapping, prospecting and sampling is recommended NW of the Sunisloe-Ronald Lake area to cover the tholeiitic unit of the volcanic sequence. There is a clear spatial association between the volcanic-hosted gold mineralization and the Fe-rich tholeiitic units in the central to the western part of the Wydee property. All the significant volcanic-hosted mineralized occurrences in that area are hosted by the Fe-rich tholeiitic rocks including the Ashley Mine, all Garvey veins, the Kiernickie veins, the McGill occurrence and the Sunisloe occurrence. The government geomagnetic maps strongly suggest the Fe-rich tholeiitic unit continues to the NW until the western boundary of the Wydee property. The area is poorly accessible and as a result has been poorly explored.

The geological mapping and geochemical sampling will be followed with mechanical trenching and drilling of areas of interest.

A proposed exploration program and budget is provided at page 36.

Proposed Exploration Program:

WORK PROPOSAL AND BUDGET	***Amount***
Property-Scale High Definition Mag / EM coverage	
(75m spacing Heli-borne HD-Mag-VLF = 975 line km @ $55 /km)	$53,625
Mob-Demob	$7,000
LINE CUTTING:	
- Cut grid total of 30 kms @ $650.00 (all base lines & tie lines)	$19,500
GEOPHYSICS:	
- Dipole-Dipole Induced Polarization on grids: 27 kms @ $1,800.00 / km	$48,600
- Data interpretation and report:	$2,000
DETAIL GEOLOGICAL MAPPING & PROSPECTING OF GRIDS:	
- Professional Geologist: 30 person days @ $700.00	$21,000
- Prospectors/Labourers: 45 person days @ $400.00 / day	$18,000
- Accomodations: 6 weeks @ $800.00/week	$4,800
- Living expenses (food, minor equipment...): (6 weeks @ $1,500 / week)	$9,000
- All terrain vehicle rental (6 weeks @ $200 per day)	$8,400
- Truck rental & fuel (6 weeks @ $1,250 per week)	$7,500
LITHOGEOCHEMICAL SAMPLING	
- 300 Whole rock assays at $70.00	$21,000
- 350 Au assays @ $25.00	$8,750
TRENCHING:	
- POWER STRIPPING and Washing: 40 days @ $2000.00 / day	$80,000
(Backhoe, 2 Labourers, pressure pumps, fuel, transportation, food & accomodation)	
- GEOLOGICAL MAPPING of trenches: 40 days @ $1500.00 / day	$60,000
(1 Geologist, 2 Labourers, rock saws & blades, fuel, transportation, food & accomodation)	
DRILLING:	
- 2500m NQ core @ $200.00 / m all inclusive	$500,000
(1 geologist, 1 technician, rock saw, blades, assays, core boxes, core racks...)	
Sub-total:	$869,175
ADMINISTRATION & CONTINGENCIES: (15%)	$130,376
TOTAL PROPOSED BUDGET FOR THE WYDEE PROPERTY: (rounded to nearest $1,000)	**$1,000,000**

Respectfully submitted: A. C. Tessier, P.Geo
C. Moore, P.Geo
R. Salo, P.Geo

References:

Dobosz, A. 2014. Petrographic Report – Wydee Property; Unpublished Report Prepared for Murgor Resources.

Faber, A., Turcott, M., Chubb, P., and Brunne, D. 1996. Report on the 1996 Field Exploration Program Powell Project; Cameco Corporation, Assessment File 42A02SE0041.

Harris, D.C., Sinclair, W.D. and Thorpe, R.I. 1983. Telluride minerals from the Ashley deposit, Bannockburn township, Ontario; Canadian Mineralogist, Vol. 21, pp.137-143.

Jensen, L.S. 1994. Precambrian Geology of Cleaver and Hincks townships; Ontario Geological Survey, Open File Map 236, scale 1:20 000.

Jensen, L.S. 1996. Precambrian geology of Bannockburn Township; Ontario Geological Survey, Preliminary Map P.3355, scale 1:20 000.

Jensen, L.S. 1996. Precambrian geology of Powell Township; Ontario Geological Survey, Preliminary Map P.3356, scale 1:20 000.

Jones, P.L. and Wagg, C.A. 2002. Report on 2002 Summer Mapping-Prospecting Program at the Argyle Property; Phoenix Matachewan Mines Inc, Assessment File 42A02SW2010.

Jones, P.L. and Wagg, C.A. 2003. Report on 2003 Summer Mapping-Prospecting Program at the Argyle Property; Phoenix Matachewan Mines Inc, Assessment File 42A02SW2011.

Kresz, D.U. 1994. Precambrian geology of Argyle and Baden townships; Ontario Geological Survey, Prelimnary Map P.3235, scale 1:20 000.

Martin, R.D. 2012. Syenite-hosted gold mineralization and hydrothermal alteration at the Young Davidson deposit, Matachewan; Ontario; Master's Thesis, University of Waterloo.

McCannell, J.D. 1973. Geology Report on Hincks Township Property; Prestige Mines Limited, Assessment File 42A02SW0131.

Wood, P. C., 1989. Report on the 1989 Diamond Drilling Program on the Powell Project; Newmont Exploration of Canada, Assessment File 42A02SW0303.

André C. TESSIER, P.Geo.
President and CEO, Murgor Resources Inc.

Statement of Qualifications

I André C. Tessier, employed as President and Chiel Operating Officer with Murgor Resources Inc. having a place of business at 178 Ontario St., Suite 203, Kingston, Ontario, Canada, K7L 2Y8 do hereby attest and certify that:

1. I am a graduate of Ecole Polytechnique in Montreal, Quebec, Canada (1986) with a Bachelors of Engineering degree in Geological Engineering.
2. I am a graduate of Queen's University in Kingston, Ontario, Canada (1990) with a M.Sc. degree in Geology.
3. I am a registered Professional Engineer in the Province of Quebec since 2003 (O.I.Q. number 043540) and a Registered Professional Geologist in the Province of Ontario since 2003 (A.P.G.O. number 0934)
4. I have been practicing my profession continuously in Canada and abroad since 1986.
5. My report on the Wydee Property is based on my direct knowledge of the property including two property visits (19 days) in June and August of 2014.
6. At the time of writing this report, I hold the position of President and CEO of Murgor Resources Inc. and hold a direct interest in the company.

Dated this 30th day of September 2014, at Kingston, Ontario.

André C. Tessier, P.Geo.

Statement of Qualifications

I, Charles Moore, MSc., P.Geo, do hereby certify that,

1. I am employed as a Project Geologist with Murgor Resources Inc.,

   #203 – 178 Ontario Street
   Kingston, ON
   K7L 2Y8

2. I graduated with a BSc (Hons) in Geology from Acadia University in April, 2004

3. I graduated with a MSc in Mineral Exploration from Queens University in November, 2008.

4. I am a registered Professional Geoscientist (Membership #2218), with the Association of Professional Geoscientists of Ontario.

5. I have worked in the mineral exploration industry in Canada for 8 years. For the purpose of this report relevant work experience in Northern Ontario includes:

   November 2009 – September 2011 - Project Geologist, Queenston Mining Ltd. Kirkland Lake, ON

   September 2011 to Present – Project Geologist, Murgor Resources Inc., Kingston, ON

6. I have physically been on the property and have contributed to the interpretation of the exploration results described in this report.

7. I do not hold equity in Murgor Resources Inc.

Respectfully submitted,

Charles Moore, MSc., P.Geo

Project Geologist

Murgor Resources Inc.

October 3, 2014

Statement of Qualifications

I, Randall W. Salo of 800 Gervais Street North, Porcupine, Ontario do hereby certify that I:

- am a graduate of Lakehead University with an Honours Bachelor degree in Geology/Physics (1998).
- have been involved and working in mining exploration for more than 30 years in Canada, Mexico and Asia.
- am a member of the Association of Professional Geoscientists of Ontario with member number 1265.
- have included in this report all relevant data derived from both private and public sources.
- have been physically on the property and have expressed personal opinions in this report.

Sincerely disclosed,

Randall W. Salo, P.Geo

September 30, 2014

APPENDIX I

Assay Certificates for gold assays and whole rock analyses.

Quality Analysis ... **Actlabs** *Innovative Technologies*

Date Submitted:	18-Jun-14
Invoice No.:	A14-04105
Invoice Date:	25-Jun-14
Your Reference:	Wydde

Murgor Resources Inc.
178 Ontario Street, Suite 203
Kingston ON K7L 2Y8
Canada

ATTN: Andre Tessier (Inv-mail only)

CERTIFICATE OF ANALYSIS

130 Rock samples were submitted for analysis.

The following analytical package was requested: Code 1A2-Timmins Au - Fire Assay AA
Code 1A3-Timmins Au - Fire Assay Gravimetric

REPORT **A14-04105**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

kiwa ISO 9001 QUALITY
QUALITY MANAGEMENT

ACTIVATION LABORATORIES LTD.

1752 Riverside Drive, Timmins, Ontario, Canada, P4R 1N1
TELEPHONE +705 264-0123 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Timmins@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Results

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Detection Limit	5	0.03
Analysis Method	FA-AA	FA-GRA
549301	< 5	
549302	< 5	
549303	16	
549304	< 5	
549305	< 5	
549306	< 5	
549307	41	
549308	371	
549309	1240	
549310	7	
549311	7	
549312	< 5	
549313	< 5	
549314	< 5	
549315	< 5	
549316	< 5	
549317	< 5	
549318	69	
549319	< 5	
549320	< 5	
549321	6	
549322	10	
549323	7	
549324	19	
549325	< 5	
549326	< 5	
549327	< 5	
549328	< 5	
549329	< 5	
549330	< 5	
549331	< 5	
549332	154	
549333	65	
549334	37	
549335	> 3000	8.70
549336	> 3000	9.65
549337	22	
549338	10	
549339	< 5	
549340	< 5	
549341	< 5	
549342	< 5	
549343	< 5	
549344	< 5	
549345	< 5	
549346	< 5	
549347	< 5	
549348	7	
549349	< 5	

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Detection Limit	5	0.03
Analysis Method	FA-AA	FA-GRA
549350	< 5	
549351	< 5	
549352	< 5	
549353	2360	
549354	1320	
549355	158	
549356	< 5	
549357	1740	
549358	902	
549359	> 3000	3.83
549360	2510	
549361	1520	
549362	< 5	
549363	< 5	
549364	< 5	
549365	< 5	
549366	< 5	
549367	< 5	
549368	< 5	
549369	< 5	
549370	< 5	
549371	750	
549372	< 5	
549373	< 5	
549374	< 5	
549375	< 5	
549376	9	
549377	1260	
549378	< 5	
549379	< 5	
549380	< 5	
549381	18	
549382	55	
549383	< 5	
549384	< 5	
549385	33	
549386	6	
549387	< 5	
549388	< 5	
549389	< 5	
549390	< 5	
549391	< 5	
549392	< 5	
549393	7	
549394	< 5	
549395	< 5	
549396	< 5	
549397	6	
549398	< 5	
549399	44	

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Detection Limit	5	0.03
Analysis Method	FA-AA	FA-GRA
549400	143	
549401	< 5	
549402	< 5	
549403	< 5	
549404	< 5	
549405	< 5	
549406	9	
549407	< 5	
549408	< 5	
549409	< 5	
549410	< 5	
549411	< 5	
549412	< 5	
549413	5	
549414	< 5	
549415	20	
549416	17	
549417	< 5	
549418	< 5	
549419	5	
549420	33	
549421	< 5	
549422	< 5	
549423	< 5	
549424	< 5	
549425	< 5	
549426	< 5	
551001	< 5	
551002	< 5	
551003	< 5	
551004	< 5	

QC

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Detection Limit	5	0.03
Analysis Method	FA-AA	FA-GRA
OXL93 Meas		5.64
OXL93 Cert		5.84
OxD108 Meas	403	
OxD108 Cert	414.000	
OxD108 Meas	420	
OxD108 Cert	414.000	
OxD108 Meas	436	
OxD108 Cert	414.000	
OxD108 Meas	400	
OxD108 Cert	414.000	
SG66 Meas	1040	
SG66 Cert	1090	
SG66 Meas	1070	
SG66 Cert	1090	
SG66 Meas	1110	
SG66 Cert	1090	
SG66 Meas	1100	
SG66 Cert	1090	
OxK110 Meas		3.57
OxK110 Cert		3.602
549310 Orig	5	
549310 Dup	8	
549320 Orig	< 5	
549320 Dup	< 5	
549330 Orig	< 5	
549330 Split	< 5	
549330 Orig	< 5	
549330 Dup	< 5	
549344 Orig	< 5	
549344 Dup	< 5	
549350 Orig	< 5	
549350 Split	< 5	
549354 Orig	1290	
549354 Dup	1340	
549360 Orig	2510	
549360 Split	2700	
549364 Orig	< 5	
549364 Dup	< 5	
549377 Orig	1170	
549377 Dup	1360	
549387 Orig	< 5	
549387 Dup	< 5	
549390 Orig	< 5	
549390 Split	< 5	
549397 Orig	6	
549397 Dup	7	
549400 Orig	143	
549400 Split	152	
549410 Orig	< 5	

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Detection Limit	5	0.03
Analysis Method	FA-AA	FA-GRA
549410 Dup	< 5	
549420 Orig	33	
549420 Split	31	
549420 Orig	34	
549420 Dup	32	
551004 Orig	< 5	
551004 Dup	14	
Method Blank	< 5	
Method Blank	< 5	
Method Blank	< 5	
Method Blank	< 5	
Method Blank	< 5	
Method Blank	< 5	
Method Blank	< 5	
Method Blank	< 5	
Method Blank		< 0.03
Method Blank		< 0.03

Quality Analysis ... *Innovative Technologies*

Date Submitted:	29-Aug-14
Invoice No.:	A14-06096
Invoice Date:	11-Sep-14
Your Reference:	Wydde

Murgor Resources Inc.
178 Ontario Street, Suite 203
Kingston ON K7L 2Y8
Canada

ATTN: Andre Tessier (Inv-mail only)

CERTIFICATE OF ANALYSIS

148 Rock samples were submitted for analysis.

The following analytical package was requested: Code 1A2-Timmins Au - Fire Assay AA

REPORT **A14-06096**

Notes:
If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.

1752 Riverside Drive, Timmins, Ontario, Canada, P4R 1N1
TELEPHONE +705 264-0123 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Timmins@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Results

Analyte Symbol	Au
Unit Symbol	ppb
Detection Limit	5
Analysis Method	FA-AA
549427	< 5
549428	< 5
549429	< 5
549430	< 5
549431	9
549432	6
549433	25
549434	7
549435	< 5
549436	< 5
549437	< 5
549438	< 5
549439	64
549440	51
549441	33
549442	9
549443	< 5
549444	< 5
549445	< 5
549446	< 5
549447	< 5
549448	< 5
549449	< 5
549450	< 5
551050	< 5
551051	< 5
551052	< 5
551053	< 5
551054	< 5
551055	< 5
551056	< 5
551057	< 5
551058	< 5
551059	< 5
551060	< 5
551061	< 5
551062	< 5
551063	< 5
551064	< 5
551065	54
551066	43
551067	< 5
551068	187
551069	49
551070	< 5
551071	29
551072	< 5
551073	< 5
551074	< 5

Analyte Symbol	Au
Unit Symbol	ppb
Detection Limit	5
Analysis Method	FA-AA
551075	< 5
551101	< 5
551102	< 5
551103	< 5
551104	< 5
551105	< 5
551106	< 5
551107	< 5
551108	< 5
551109	< 5
551110	< 5
551111	< 5
551112	< 5
551113	< 5
551114	< 5
551115	< 5
551116	< 5
551117	< 5
551118	< 5
551119	20
551120	5
551121	146
551122	76
551123	< 5
551124	< 5
551125	< 5
551126	6
551127	< 5
551128	< 5
551129	19
551130	8
551131	13
551132	< 5
551133	6
551134	< 5
551135	< 5
551136	< 5
551137	< 5
551138	< 5
551139	< 5
551140	< 5
551141	< 5
551142	< 5
551143	< 5
551144	< 5
551145	< 5
551146	42
551147	< 5
551148	< 5
551149	< 5

Analyte Symbol	Au
Unit Symbol	ppb
Detection Limit	5
Analysis Method	FA-AA
551150	< 5
551151	< 5
551152	< 5
551153	< 5
551154	< 5
551155	< 5
551156	< 5
551157	7
551158	< 5
551159	< 5
551160	< 5
551161	< 5
551162	< 5
551163	< 5
551164	< 5
551165	< 5
551166	< 5
551167	< 5
551168	< 5
551169	< 5
551170	< 5
551171	< 5
551172	< 5
551173	< 5
551174	< 5
551175	< 5
551176	18
551177	260
551178	88
551179	22
551180	< 5
551181	< 5
551182	< 5
551183	25
551201	< 5
551202	< 5
551203	< 5
551204	< 5
551205	< 5
551206	< 5
551207	< 5
551208	45
551209	403
551210	202
551211	162
551212	61
551213	8
551214	< 5
551215	< 5

QC

Analyte Symbol	Au
Unit Symbol	ppb
Detection Limit	5
Analysis Method	FA-AA
OxD108 Meas	409
OxD108 Cert	414.000
OxD108 Meas	423
OxD108 Cert	414.000
OxD108 Meas	426
OxD108 Cert	414.000
OxD108 Meas	419
OxD108 Cert	414.000
OxD108 Meas	413
OxD108 Cert	414.000
SF67 Meas	814
SF67 Cert	835.000
SF67 Meas	808
SF67 Cert	835.000
SF67 Meas	815
SF67 Cert	835.000
SF67 Meas	827
SF67 Cert	835.000
SF67 Meas	794
SF67 Cert	835.000
549436 Orig	< 5
549436 Dup	< 5
549446 Orig	< 5
549446 Dup	< 5
551055 Orig	< 5
551055 Split	< 5
551055 Orig	< 5
551055 Dup	< 5
551070 Orig	< 5
551070 Dup	< 5
551075 Orig	< 5
551075 Split	< 5
551075 Split	< 5
551105 Orig	< 5
551105 Dup	< 5
551110 Orig	< 5
551110 Split	< 5
551115 Orig	12
551115 Dup	< 5
551130 Orig	8
551130 Dup	7
551140 Orig	< 5
551140 Split	< 5
551140 Orig	< 5
551140 Dup	< 5
551150 Orig	< 5
551150 Split	< 5
551150 Orig	< 5
551150 Dup	< 5

Analyte Symbol	Au
Unit Symbol	ppb
Detection Limit	5
Analysis Method	FA-AA
551165 Orig	< 5
551165 Dup	< 5
551170 Orig	< 5
551170 Split	< 5
551175 Orig	< 5
551175 Dup	< 5
551202 Orig	< 5
551202 Dup	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5
Method Blank	< 5

Date Submitted:	25-Jun-14
Invoice No.:	A14-04302
Invoice Date:	11-Jul-14
Your Reference:	WYDEE

Murgor Resources Inc.
178 Ontario Street, Suite 203
Kingston ON K7L 2Y8
Canada

ATTN: Andre Tessier (Inv-mail only)

CERTIFICATE OF ANALYSIS

10 Rock samples were submitted for analysis.

The following analytical package was requested: Code 4LITHO (1-10) Major Elements Fusion ICP(WRA)/Trace Elements Fusion ICP/MS(WRA4B2)

REPORT **A14-04302**

Notes:
We recommend using option 4B1 for accurate levels of the base metals Cu, Pb, Zn, Ni and Ag. Option 4B-INAA for As, Sb, high W >100ppm, Cr >1000ppm and Sn >50ppm by Code 5D. Values for these elements provided by Fusion ICP/MS, are order of magnitude only and are provided for general information. Mineralized samples should have the Quant option selected or request assays for values which exceed the range of option 4B1. Total includes all elements in % oxide to the left of total.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

SCC Accredited LAB
LAB Accrédité CCN

ACTIVATION LABORATORIES LTD.

41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Results

Analyte Symbol	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P205	LOI	Total	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As
Unit Symbol	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01		0.01	1	1	5	20	1	20	10	30	1	1	5
Analysis Method	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
ASHLEY	70.10	14.64	1.88	0.027	0.98	1.77	5.87	3.04	0.174	0.10	2.04	100.6	3	3	27	80	5	30	< 10	40	19	1	< 5
RDOC-10	57.48	15.16	6.27	0.093	6.83	6.03	3.05	0.75	0.472	0.11	2.45	98.69	16	< 1	94	550	32	360	30	80	16	2	< 5
RDOC-12	67.00	14.16	3.42	0.057	2.44	2.85	4.89	3.38	0.302	0.19	1.45	100.1	7	3	57	180	12	60	< 10	60	20	2	< 5
RDOC-17	69.05	14.43	4.11	0.065	1.75	3.39	3.77	2.17	0.450	0.13	1.51	100.8	8	1	52	100	10	60	30	70	17	2	< 5
RDOC-19	59.70	14.33	6.47	0.100	5.45	5.35	3.13	1.11	0.532	0.10	2.61	98.88	16	< 1	107	400	29	280	50	90	16	1	< 5
RDOC-29	68.34	15.20	2.74	0.030	0.83	2.27	5.53	3.08	0.409	0.24	0.71	99.39	3	2	39	50	5	< 20	< 10	90	26	1	< 5
AT-14-06	66.90	15.78	2.61	0.058	0.82	1.87	6.24	4.37	0.245	0.12	0.88	99.90	3	5	41	30	4	< 20	10	40	22	2	< 5
AT-14-21B	72.71	14.25	1.30	0.024	0.41	0.46	5.85	4.17	0.105	0.06	0.61	99.94	1	4	20	100	3	< 20	< 10	40	21	1	< 5
AT-14-73	59.54	14.16	6.00	0.110	6.36	5.83	3.09	0.74	0.454	0.13	3.71	100.1	20	< 1	109	720	38	370	40	70	13	1	< 5
PO-30	71.76	14.95	1.38	0.031	0.39	0.73	5.53	4.60	0.114	0.06	0.92	100.5	1	3	21	50	3	< 20	< 10	30	21	1	< 5

Results

Analyte Symbol	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	2	2	4	1	2	0.5	0.2	1	0.5	0.5	3	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1
Analysis Method	FUS-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
ASHLEY	59	409	6	88	3	< 2	< 0.5	< 0.2	< 1	< 0.5	0.8	2093	19.6	38.7	4.73	18.7	3.6	0.81	2.3	0.3	1.2	0.2	0.5
RDOC-10	23	211	9	94	4	4	0.6	< 0.2	1	< 0.5	1.4	203	12.0	23.2	2.73	10.4	2.3	0.68	1.8	0.3	1.7	0.3	0.9
RDOC-12	77	763	12	112	4	2	0.6	< 0.2	< 1	< 0.5	0.7	1643	31.7	63.3	7.60	29.5	5.5	1.25	3.4	0.4	2.0	0.4	0.9
RDOC-17	71	242	18	151	6	3	0.8	< 0.2	2	0.6	1.8	560	24.2	46.0	5.16	19.8	3.9	0.90	3.1	0.5	2.7	0.6	1.6
RDOC-19	34	251	11	109	4	2	0.7	< 0.2	3	0.5	1.2	308	14.3	28.3	3.23	12.9	2.5	0.75	2.2	0.3	2.0	0.4	1.2
RDOC-29	43	1642	4	134	3	2	0.9	< 0.2	1	< 0.5	< 0.5	2348	40.1	91.9	10.5	42.3	7.3	1.61	3.7	0.3	1.2	0.2	0.4
AT-14-06	143	861	11	168	7	< 2	12.5	< 0.2	< 1	35.2	2.6	1624	45.0	82.0	9.22	33.2	5.4	1.29	3.3	0.4	2.0	0.4	1.0
AT-14-21B	149	273	6	83	14	3	0.5	< 0.2	< 1	0.7	5.3	1570	16.8	30.6	3.48	12.2	2.0	0.47	1.3	0.2	0.8	0.2	0.5
AT-14-73	23	236	8	82	7	< 2	0.6	< 0.2	< 1	0.6	0.7	185	12.1	24.1	2.89	10.9	2.2	0.65	1.7	0.3	1.7	0.3	0.9
PO-30	136	373	5	60	6	< 2	< 0.5	< 0.2	< 1	0.7	1.7	1652	17.1	30.9	3.38	12.1	2.0	0.45	1.2	0.1	0.8	0.1	0.4

Results

Analyte Symbol	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.05	0.1	0.04	0.2	0.1	1	0.1	5	0.4	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
ASHLEY	0.08	0.5	0.06	2.2	0.3	1	0.4	6	< 0.4	3.0	1.7
RDOC-10	0.15	0.9	0.14	2.0	0.3	1	0.1	< 5	< 0.4	1.8	0.5
RDOC-12	0.14	0.9	0.13	2.6	0.3	< 1	0.4	10	< 0.4	6.4	1.6
RDOC-17	0.26	1.7	0.23	3.5	0.8	1	0.4	7	< 0.4	5.0	1.4
RDOC-19	0.17	1.0	0.16	2.5	0.4	2	0.2	< 5	< 0.4	2.5	0.7
RDOC-29	< 0.05	0.2	< 0.04	3.4	0.2	1	0.2	15	< 0.4	5.8	1.1
AT-14-06	0.15	1.0	0.17	4.3	0.3	1	0.6	33	< 0.4	14.0	2.5
AT-14-21B	0.08	0.5	0.09	2.6	0.2	1	0.7	74	0.5	11.0	3.8
AT-14-73	0.14	1.0	0.14	1.8	0.3	1	0.2	< 5	< 0.4	1.5	0.4
PO-30	0.06	0.4	0.07	1.8	0.2	2	0.6	21	< 0.4	7.8	2.8

QC

Analyte Symbol	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P205	LOI	Total	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As
Unit Symbol	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01		0.01	1	1	5	20	1	20	10	30	1	1	5
Analysis Method	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
NIST 694 Meas	11.11	1.84	0.73	0.013	0.33	43.59	0.87	0.55	0.117	30.14					1661								
NIST 694 Cert	11.2	1.80	0.790	0.0116	0.330	43.6	0.860	0.510	0.110	30.2					1740								
DNC-1 Meas	47.21	18.28	9.95	0.148	9.95	11.35	1.91	0.23	0.488	0.07			31		159	250	58	250	100	60			
DNC-1 Cert	47.15	18.34	9.97	0.150	10.13	11.49	1.890	0.234	0.480	0.070			31		148	270	57	247	100	70			
GBW 07113 Meas	72.58	12.56	3.18	0.141	0.14	0.60	2.43	5.37	0.278	0.04			5	4	7								
GBW 07113 Cert	72.8	13.0	3.21	0.140	0.160	0.590	2.57	5.43	0.300	0.0500			5.00	4.00	5.00								
LKSD-3 Meas																	31	50					
LKSD-3 Cert																	30.0	47.0					
W-2a Meas	52.34	15.17	10.95	0.166	6.24	11.00	2.19	0.62	1.069	0.15			35	< 1	278	100	44	80	110			2	
W-2a Cert	52.4	15.4	10.7	0.163	6.37	10.9	2.14	0.626	1.06	0.130			36.0	1.30	262	92.0	43.0	70.0	110			1.00	
SY-4 Meas	49.98	20.78	6.26	0.107	0.50	7.88	7.00	1.69	0.293	0.15			1	3	9								
SY-4 Cert	49.9	20.69	6.21	0.108	0.54	8.05	7.10	1.66	0.287	0.131			1.1	2.6	8.0								
CTA-AC-1 Meas																			50				
CTA-AC-1 Cert																			54.0				
BIR-1a Meas	47.36	15.42	11.23	0.171	9.37	13.19	1.81	0.02	0.948	0.02			43	< 1	338	360	52	160	130	70	15		
BIR-1a Cert	47.96	15.50	11.30	0.175	9.700	13.30	1.82	0.030	0.96	0.021			44	0.58	310	370	52	170	125	70	16		
NCS DC70014 Meas																	26	70	2600	7400	25		
NCS DC70014 Cert																	26	70	2600	7400	25.2		
NCS DC70009 (GBW07241) Meas																	3	< 20	950		16	11	72
NCS DC70009 (GBW07241) Cert																	3.7	2.8	960		16.5	11.2	69.9
OREAS 100a (Fusion) Meas																	17		170				
OREAS 100a (Fusion) Cert																	18.1		169				
OREAS 101a (Fusion) Meas																	49		430				
OREAS 101a (Fusion) Cert																	48.8		434				
JR-1 Meas																		< 20			16		16
JR-1 Cert																		1.67			16.1		16.3
SARM 3 Meas																							
SARM 3 Cert																							
PO-30 Orig	71.90	14.94	1.38	0.031	0.39	0.73	5.54	4.62	0.113	0.06	0.92	100.6	1	3	21	50	3	< 20	< 10	30	21	1	< 5
PO-30 Dup	71.63	14.97	1.38	0.031	0.39	0.73	5.52	4.58	0.115	0.05	0.92	100.3	1	3	20	50	3	< 20	< 10	30	21	1	< 5
Method Blank																< 20	< 1	< 20	< 10	< 30	< 1	< 1	< 5

QC

Analyte Symbol	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	2	2	4	1	2	0.5	0.2	1	0.5	0.5	3	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1
Analysis Method	FUS-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
NIST 694 Meas																							
NIST 694 Cert																							
DNC-1 Meas		141	17	34								105				5.1		0.59					
DNC-1 Cert		144.0	18.0	38								118				5.20		0.59					
GBW 07113 Meas		40	46	405								501											
GBW 07113 Cert		43.0	43.0	403								506											

Analyte Symbol	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	2	2	4	1	2	0.5	0.2	1	0.5	0.5	3	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1
Analysis Method	FUS-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
LKSD-3 Meas	74					< 2					2.4		52.0	97.4		43.3	7.8	1.37			4.9		
LKSD-3 Cert	78.0					2.00					2.30		52.0	90.0		44.0	8.00	1.50			4.90		
W-2a Meas	21	192	19	85		< 2	0.9				0.9	172		24.3		14.3				0.7	3.9	0.8	2.3
W-2a Cert	21.0	190	24.0	94.0		0.600	0.0460				0.990	182		23.0		13.0				0.630	3.60	0.760	2.50
SY-4 Meas		1209	116	525								352											
SY-4 Cert		1191	119	517								340											
CTA-AC-1 Meas													> 2000	> 3000		1110	163	45.3	123	14.5			
CTA-AC-1 Cert													2176	3326		1087	162	46.7	124	13.9			
BIR-1a Meas		107	14	15								7				2.5	1.0	0.52					
BIR-1a Cert		110	16	18								6				2.5	1.1	0.55					
NCS DC70014 Meas						> 100	16.7			180			48.3	93.8	10.2	38.5	7.7	1.66	7.2	1.1	6.3	1.2	3.4
NCS DC70014 Cert						270	16.7			180			45.3	87.0	10.8	39.9	8.0	1.8	7.4	1.1	6.7	1.3	3.5
NCS DC70009 (GBW07241) Meas	503							1.3	> 1000	3.0	43.7		23.4	58.6	7.29	29.8	11.9		13.9	3.1	20.1	4.1	12.2
NCS DC70009 (GBW07241) Cert	500							1.3	1701	3.1	41		23.7	60.3	7.9	32.9	12.5		14.8	3.3	20.7	4.5	13.4
OREAS 100a (Fusion) Meas						24							284	509	46.4	149	24.3	3.72		3.6	22.9	4.9	14.4
OREAS 100a (Fusion) Cert						24.1							260	463	47.1	152	23.6	3.71		3.80	23.2	4.81	14.9
OREAS 101a (Fusion) Meas						20							878	1510	130	393	50.7	8.35		5.4	31.9	6.5	19.2
OREAS 101a (Fusion) Cert						21.9							816	1396	134	403	48.8	8.06		5.92	33.3	6.46	19.5
JR-1 Meas	244				15		0.5	< 0.2			20.7		20.9	48.9	5.72	22.6	5.4		5.5	1.0	6.0		3.9
JR-1 Cert	257				15.2		0.031	0.028			20.8		19.7	47.2	5.58	23.3	6.03		5.06	1.01	5.69		3.61
SARM 3 Meas					979																		
SARM 3 Cert					978																		
PO-30 Orig	136	374	5	60	7	< 2	< 0.5	< 0.2	< 1	0.6	1.7	1655	16.7	30.4	3.31	12.0	2.1	0.47	1.2	0.2	0.8	0.1	0.4
PO-30 Dup	135	373	5	59	6	< 2	< 0.5	< 0.2	< 1	0.7	1.7	1649	17.5	31.4	3.46	12.2	2.0	0.42	1.2	0.1	0.8	0.1	0.4
Method Blank	< 2				< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	< 0.5		< 0.1	< 0.1	< 0.05	< 0.1	< 0.1	< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

QC

Analyte Symbol	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.05	0.1	0.04	0.2	0.1	1	0.1	5	0.4	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
NIST 694 Meas											
NIST 694 Cert											
DNC-1 Meas		1.8									
DNC-1 Cert		2.0									
GBW 07113 Meas											
GBW 07113 Cert											
LKSD-3 Meas		2.6	0.39							11.2	4.4
LKSD-3 Cert		2.70	0.400							11.4	4.60
W-2a Meas	0.36			2.7		< 1	0.3		1.7	2.5	
W-2a Cert	0.380			2.60		0.300	0.200		0.0300	2.40	
SY-4 Meas											
SY-4 Cert											

Analyte Symbol	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.05	0.1	0.04	0.2	0.1	1	0.1	5	0.4	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
CTA-AC-1 Meas		10.3	1.08	1.8						23.8	4.1
CTA-AC-1 Cert		11.4	1.08	1.13						21.8	4.4
BIR-1a Meas		1.5						< 5			
BIR-1a Cert		1.7						3			
NCS DC70014 Meas		3.3	0.49					> 10000			
NCS DC70014 Cert		3.3	0.50					27200			
NCS DC70009 (GBW07241) Meas	2.16	14.8				2200				26.9	
NCS DC70009 (GBW07241) Cert	2.2	14.9				2200				28.3	
OREAS 100a (Fusion) Meas	2.32	14.8	2.12							53.3	137
OREAS 100a (Fusion) Cert	2.31	14.9	2.26							51.6	135
OREAS 101a (Fusion) Meas	2.88	17.7	2.46							37.0	421
OREAS 101a (Fusion) Cert	2.90	17.5	2.66							36.6	422
JR-1 Meas	0.60	4.4	0.65		1.8		1.6	19		26.6	8.6
JR-1 Cert	0.67	4.55	0.71		1.86		1.56	19.3		26.7	8.88
SARM 3 Meas											
SARM 3 Cert											
PO-30 Orig	0.06	0.4	0.07	1.9	0.2	2	0.5	21	< 0.4	7.8	2.8
PO-30 Dup	0.06	0.4	0.06	1.7	0.3	2	0.6	21	< 0.4	7.8	2.8
Method Blank	< 0.05	< 0.1	< 0.04	< 0.2	< 0.1	< 1	< 0.1	< 5	< 0.4	< 0.1	< 0.1

APPENDIX II

Petrographic Report by Agatha Dobosz, 2014.

Petrographic Report

Wydee Property

August 7, 2014

Prepared for:
Murgor Resources
178 Ontario Street, Suite 203
Kingston, Ontario, Canada
K7L 2Y8

Tel: (613) 546-7503

Prepared by:
Agatha Dobosz, M.A.Sc.
58 Brock St.
Apt 3
Kingston, ON

Phone: 343-333-1968
agatha.dobosz@gmail.com

Background

Fourteen hand samples collected from the Wydee property were received for petrographic analysis, prepared as thin sections by Jerzy Adwent at Queen's University for basic transmitted and reflected optical microscopy. Petrographic analysis was conducted by Agatha Dobosz at Queen's University, Kingston, ON. Samples are rated on their degree of alteration and iron oxide (or sulfide) content relative to the other samples, not an overall degree of metamorphism and alteration – which is regionally greenschist.

Sample List

Sample Name	***Lithology & Degree of Alteration***	***Petrographic Description – Page #***
ASHLEY	Syenite *Low-Moderate Alteration* *Low-Moderate Iron Oxides*	3
RDOC-10	Porphyritic Quartz Syenite (?) *High Alteration* *Moderate Iron Oxides*	7
RDOC-12	Hornblende-Bearing Syenite *Moderate Alteration* *Low-Moderate Iron Oxides*	11
RDOC-17	Altered Syenite *Moderate-High Alteration* *Low Iron Oxides/Sulfides*	15
RDOC-19	Volcaniclastic Breccia *Moderate Alteration* *Very Low Iron Oxides*	19
RDOC-29	Hornblende-Bearing Syenite *Low-Moderate Alteration* *Moderate Iron Oxides*	23
AT-14-06	Pyroxene-Bearing Syenite *Moderate Alteration* *Abundant Iron Oxides*	27
AT-14-21B	Microfractured Syenite *Moderate Alteration* *Moderate-Abundant Iron Oxides*	31
AT-14-21B SZ	Microfractured Syenite *Moderate Alteration* *Moderate-Abundant Iron Oxides*	35
PO-30	Syenite *Low Alteration* *Low Iron Oxides*	39
PO-78	Volcaniclastic Breccia *Very High Alteration* *Very Low Iron Oxides*	43
AT-14-73	Welded Tuff *High Alteration* *Low Iron Oxides, Moderate Iron Sulfides*	47
AT-14-75s	Sheared Altered Basalt *Very High Alteration* *Abundant Iron Sulfides*	51
AT-14-75i	Porphyritic Basalt *High Alteration* *Moderate Iron Sulfides*	55

Sample: ASHLEY - Syenite

Low-Moderate Degree of Alteration
Low-Moderate Iron Oxides

Hand Sample Description:

Light pink syenite with slightly rounded seriate phenocrysts of tabular plagioclase and potassium feldspar with inclusions of mafic minerals. The interstitial minerals are primarily elongate mafic minerals and quartz. The potassium feldspar has red blemishes surrounding fractures composed of goethite. Comparatively more interstitial material than other samples.

Thin Section Description:

The section is predominantly composed of medium-sized, seriate orthoclase grains with rounded inclusions of plagioclase and quartz within. These are intergrown with tabular plagioclase displaying albite twinning that are fine to medium grained, together forming a cumulate texture. Interstitial space is filled predominantly with fine grained quartz and accessory minerals. Small, well-formed titanite (sphene) is found disseminated throughout the rock, primarily within orthoclase grains.

Mafic phenocrysts have been altered to chlorite, which appears as pseudomorphic tabular mats - likely replacing hornblende and biotite. Orthoclase, quartz, and to some extent plagioclase display recrystallization textures along grain boundaries due to the low-grade regional metamorphism. The feldspars are sericitized (preferentially along zoning boundaries), and the orthoclase displays very fine fractures possibly filled with red Fe oxides such as goethite. Late (post chlorite) calcite is found locally in interstitial regions.

The primary opaque mineral is minor amounts (trace) of fine magnetite, primarily in the form of tabular to bladed pseudomorphs - likely replacing biotite that is now altered to chlorite. Magnetite is incompletely altered to hematite, particularly along fractures and grain boundaries. There is further red staining surrounding some Fe oxide grains.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	60	1-5	Medium (2-5mm) sericite-altered twinned k-feldspar anhedral grains with rounded inclusions of plagioclase and quartz. Recrystallization and suturing on boundaries of largest grains. Sub-mm fractures filled with goethite within large k-feldspar grains, with titanite inclusions. Some k-feldspar is heavily altered with very fine reddish mineral (goethite?) and chlorite
Albite	20	0.5-4	Tabular medium (1-4mm) sericite-altered grains. Some recrystallization and replacement textures, and a mixture of euhedral and subhedral seriate grains.
Quartz	12	<0.1-2	Predominantly interstitial, fine-grained (<1mm), displaying metamorphic recrystallization, with some larger phenocrysts.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Chlorite	7	<0.05	Mostly interstitial anhedral mats (1-3mm), occasionally radiating form. Can be found within the core of most altered k-feldspar with very fine-grained reddish alteration (goethite?). Pseudomorph replacement of tabular mafic phenocrysts is common.
Calcite	1	<0.05-1	Minor, mostly fine-grained late anhedral calcite, post chlorite. Within voids.
Hematite	Tr	<0.2	Small amount of very small, tabular inclusions found within pseudomorphic chlorite (<50um). Predominantly associated with chlorite, mostly anhedral. It is partially replacing magnetite locally.
Magnetite	Tr	<0.2	Small, tabular pseudomorphs completely replacing biotite, or partially in association with chlorite.
Titanite (Sphene)	Tr	0.2	Well formed, high relief euhedral grains (<0.5mm) within orthoclase.
Zircon	Tr	<0.1	Small, well-formed prismatic grains with characteristic high relief and form.
Muscovite	Tr	<0.05	In the form of very fine-grained sericite alteration within feldspars.

Images
Sample: ASHLEY

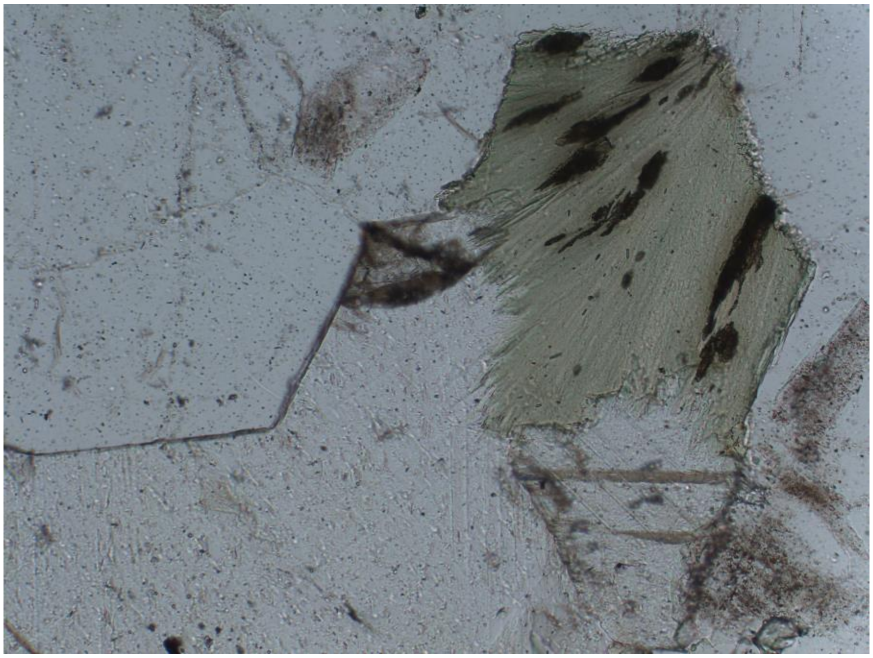


Photo 1: Biotite replaced by chlorite with Fe-oxide within cleavage planes. Radiating from orthoclase, before calcite. Dusty sericite alteration visible. PPL, 10x.

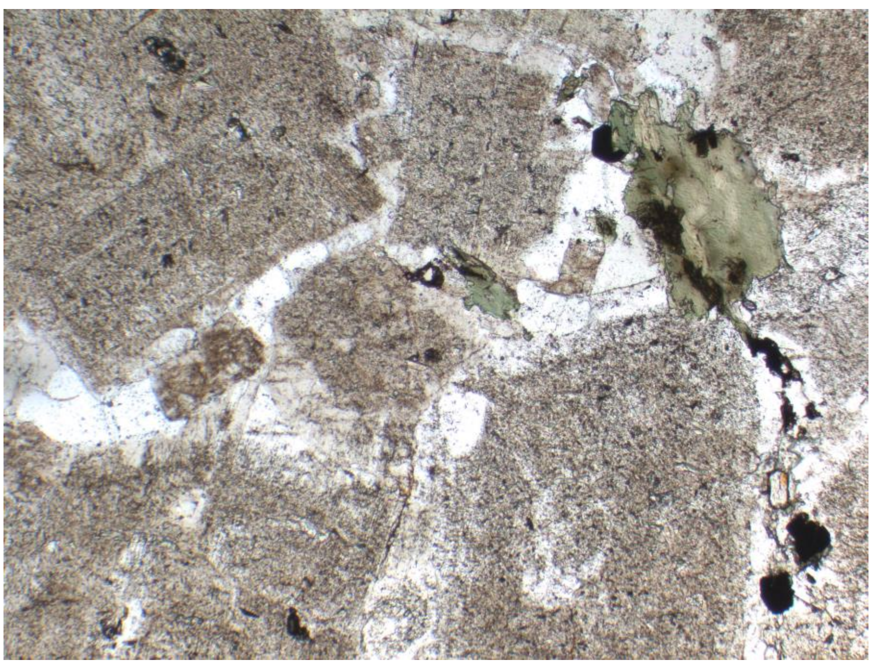


Photo 2: Orthoclase with significant sericite alteration, with quartz between grain boundaries and mat of chlorite. Zircon visible in the lower right, with Fe oxides (opaque). PPL, 4x.

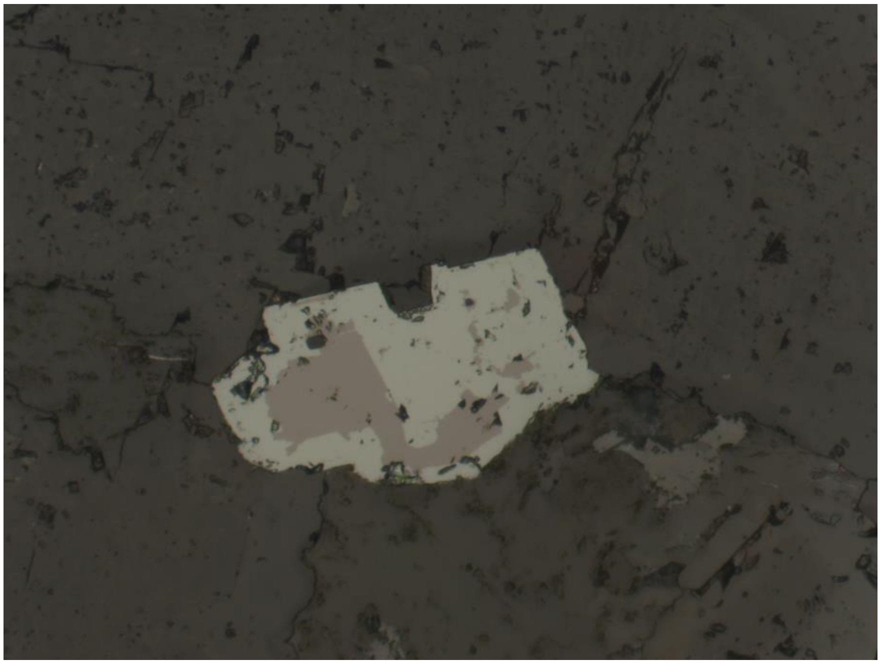


Photo 3: Brown-grey magnetite crystal altering to bluish grey hematite. RPL, 20x.
ASHLEY ref_09

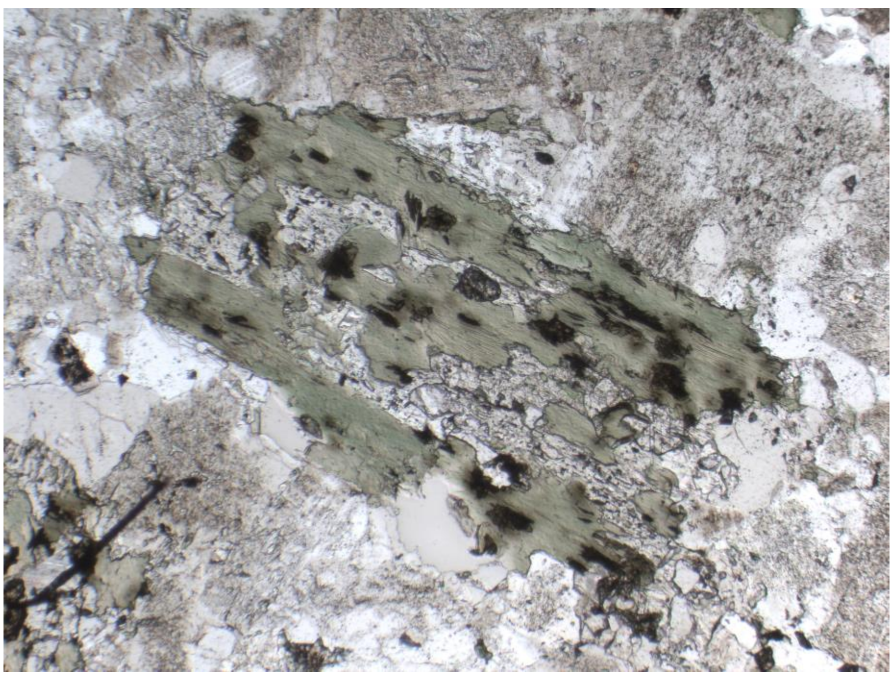


Photo 4: Relict tabular grain now replaced by chlorite and calcite. Surrounded by sericitized feldspars. PPL, 4x.

<u>Sample:</u> RDOC-10 –Porphyritic Quartz Syenite (?)

High Degree of Alteration
Moderate Iron Oxides

Hand Sample Description:

Dark green fine-grained groundmass with porphyritic white feldspar and dark mafic clasts (<0.5mm-4mm). Some large pink clasts have been almost completely replaced. Throughout the fine-grained matrix, there are slightly larger (0.3mm) small, white, angular grains (quartz). Overprinting/alteration makes identification challenging.

Thin Section Description:

Very altered rock composed of variable phenocrysts and fine grained groundmass now altered almost completely to chlorite, tremolite-actinolite, and sericite (Photo 1). Clasts consist of more rounded orthoclase clasts that are extremely sericitized, relict skeletal ?pyroxene(now altered to talc-serpentine with quartz embayment) that host relict plagioclase clasts (Photo 2), and some rounded quartz clasts between the other minerals – all of which that is later overprinted by chlorite and muscovite (sericite) alteration. Thin, bluish acicular crystals overprint some clasts selectively – similar to the tremolite-actinolite found in other sections.

There are small 'veinlets' or fracture-fill of hematite + goethite between clast boundaries (Photo 3), and otherwise it in the form of a micaceous pseudomorph or fine anhedral grains of magnetite altering to hematite. Minor pyrite is disseminated throughout.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase (Sericite)	30	1-4	Rounded phenocrysts, heavy chlorite-sericite alteration throughout. Mostly alteration minerals now - somewhat perthitic texture and zoning defined by alteration implying orthoclase precursor. Now almost entirely sericite.
Talc-Serpentine	17	<0.3	Replacing relict ?pyroxenes, now completely altered to serpentine, chlorite, and minor talc. Fine acicular crystals growing epitaxally within relict angular fragments.
Chlorite	13	<0.05	Chlorite alteration throughout phenocrysts and groundmass, some totally replacing mafic phenocrysts, possibly after biotite. Otherwise overprinting over feldspars.
Quartz	10	<0.1	Small(<0.5mm) rounded crystals within groundmass, recrystallization and suturing textures evident

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Muscovite	2	<0.1	Seems to totally replace certain grains, very fine-grained. Hard to distinguish from chlorite.
Hematite	1	<0.3	Fine-grained, altered magnetite, or disseminated throughout groundmass and within phenocrysts. Also occurs as micaceous pseudomorphs.
Pyrite	Tr	<0.1	Anhedral pyrite overgrowing grain (relict pyroxene?), or small inclusions within large porous clast.
Titanite (sphene)	Tr	<0.3	Small, wellformed crystals within orthoclase.
Magnetite	Tr	<0.3	Small anhedral magnetite grains altering to hematite disseminated throughout. Some total replacement of tabular to bladed crystals.
Tremolite-actinolite	Tr	<0.5 length	Very fine radiating acicular crystals replacing plagioclase and overprinting rock Somewhat blue with distinct pleochroism, high-relief, with slightly inclined extinction.

<u>Images</u>

Sample: RDOC-10

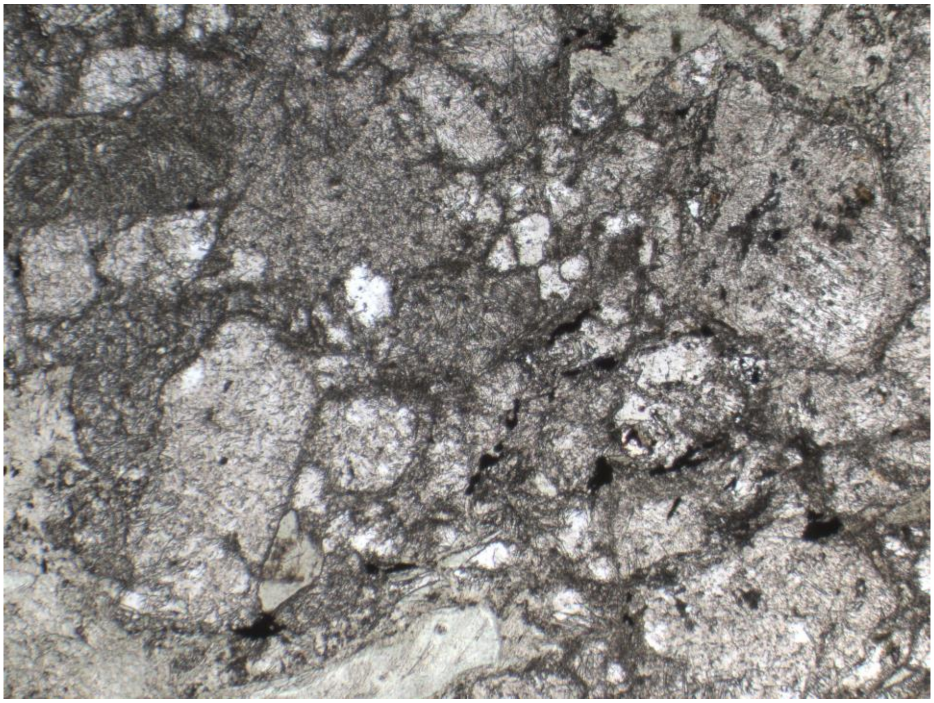


Photo 1: Displaying general morphology of sample with albite/orthoclase phenocrysts, some smaller quartz grains, and fine groundmass, with a heavy chlorite overprint throughout.

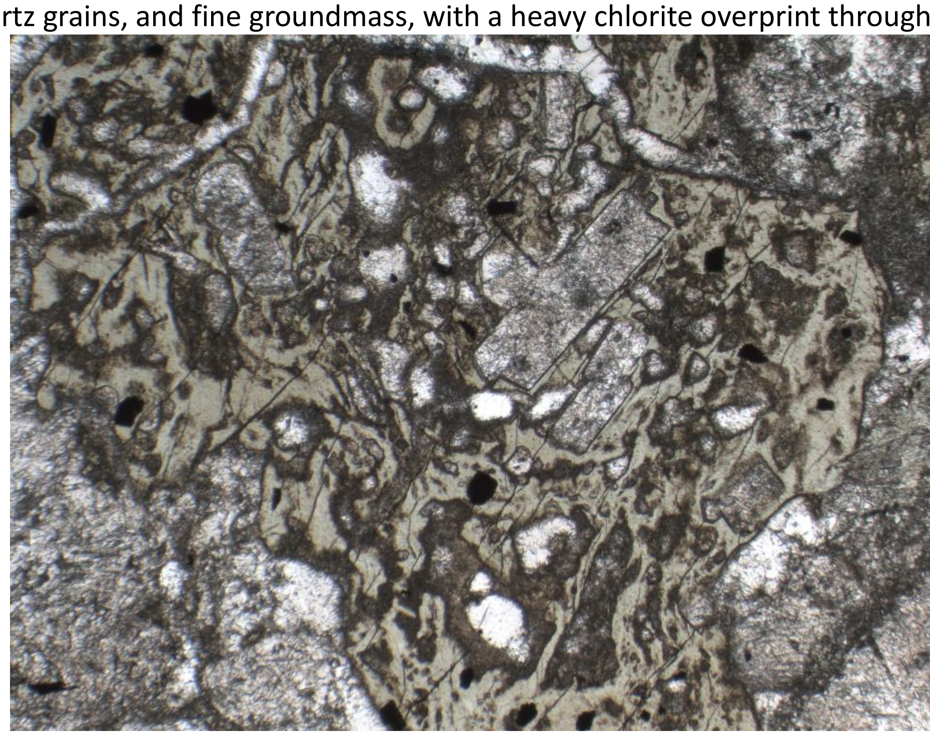


Photo 2: Large relict pyroxene phenocryst altered to serpentine/talc. Tabular crystal inclusion of plagioclase within (displays polysynthetic twinning) and moderate to heavy seritization throughout. PPL, 4x.

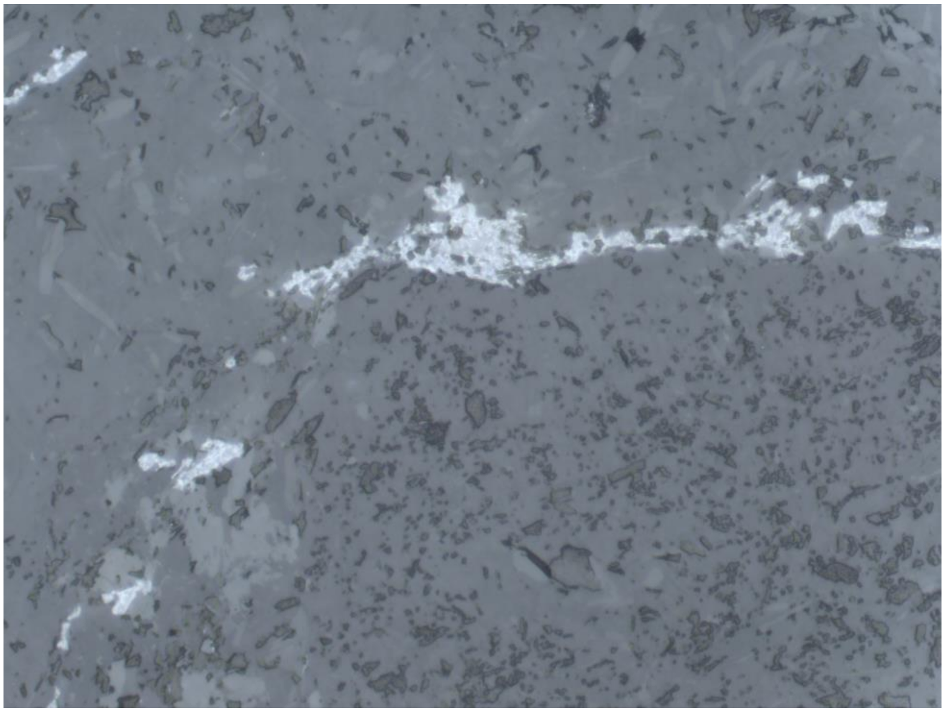


Photo 3: Veinlet or grain boundary fracture-fill of hematite-goethite. RPL, 10x.

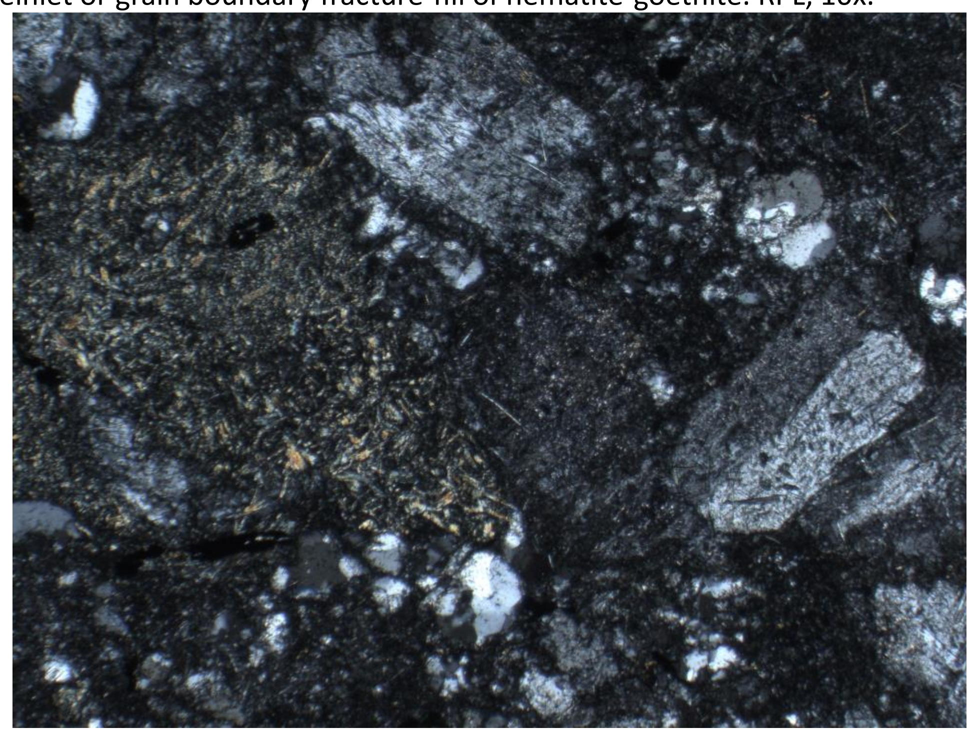


Photo 4: Altered clasts of feldspar and a mafic mineral completely overprinted by chlorite. XPL, 4x.

<u>Sample:</u> RDOC-12 – Hornblende-bearing Syenite

Moderate Degree of Alteration
Low-Moderate Iron Oxides

Hand Sample Description:

Light pink rock with darker, fine grained mafic crystals interstitially. Slightly rounded tabular zoned potassium feldspar crystals are mostly seriate in size distribution (medium to fine) and form a cumulate texture. Throughout the sample there are small reddish blemishes (goethite) contained within the feldspar crystals, particularly in some zoned crystals. Dark, fine grained minerals surround the feldspar grains. Some larger feldspar grains contain dark, enongate mafics (hornblende).

Thin Section Description:

Large tabular to subhedral zoned grains of orthoclase displaying albitization along their edges, and intense sericitization within the core, with visible blades of fine muscovite. These are intergrown with some larger tabular albite phenocrysts, but it appears that some of the albite is metamorphic. Mostly euhedral hornblende is found within the interstitial spaces between the larger orthoclase grains, or in some cases included within orthoclase, altering to biotite and chlorite, with quartz embayment (Photo 1). Biotite is mostly tabular (pseudomorphic), with oxides within cleavage planes. In some cases, can see complete alteration to chlorite. (Photo 2) It is sometimes bent, again with some quartz recrystallization of the grain boundaries.

Locally, several grains of amphibole display a blue core with a greenish boundary (Photo 3). This may be due to chemical composition variation, possibly glaucophane or actinolite.

Hematite is primarily associated with biotite/chlorite within cleavage planes (Photo 2, Photo 4), along with magnetite.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	55	3-7	Some zoned crystals with zones displaying reddish (goethite?) alteration (a dusty reddish region in certain grains). Cores display more significant sericitic alteration in general.
Hornblende	17	0.2-1.5	Medium (0.5-2mm) tabular to bladed euhedral to subhedral grains displaying distinctive cleavage, altering to biotite -> chlorite Displays simple twinning and some well-formed crystals.
Quartz	15	<0.3	Recrystallized, sutured, and interstitial fine-grained anhedral grains.
Albite	10	2-5	Intergrown, long tabular crystals with polysynthetic twinning, as well as alteration along the rims of large orthoclase grains.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Chlorite	2	<0.1	Chlorite completely replacing kinked or bent biotite, with significant larger (0.1mm) hematite crystals overgrowths as in photo, possibly after pyrite
Calcite	1	<0.02	Minor finegrained calcite filling interstitial space, late. In some altered grains of hornblende, calcite can be found within the fractured skeletal hornblende.
Hematite	0.5	<0.03	Primarily hosted in chlorite replacing biotite, also hornblende, partially or completely replacing magnetite in biotite cleavage planes.
Goethite	Tr	<0.03	Some with hematite in chloritized biotite, some as very fine alteration in k-feldspar, causing reddish blemishes.
Magnetite	Tr	<0.03	Altered to hematite in most cases, still see in altered biotite layers locally – in some cases fairly well formed, but mostly anhedral.
Titanite (sphene)	Tr	0.1	Small wellformed crystals within k-feldspar.
Apatite	Tr	0.2	Small, subhedral to euhedral grains within the interstitial matrix.

__**Images**__

Sample: RDOC-12

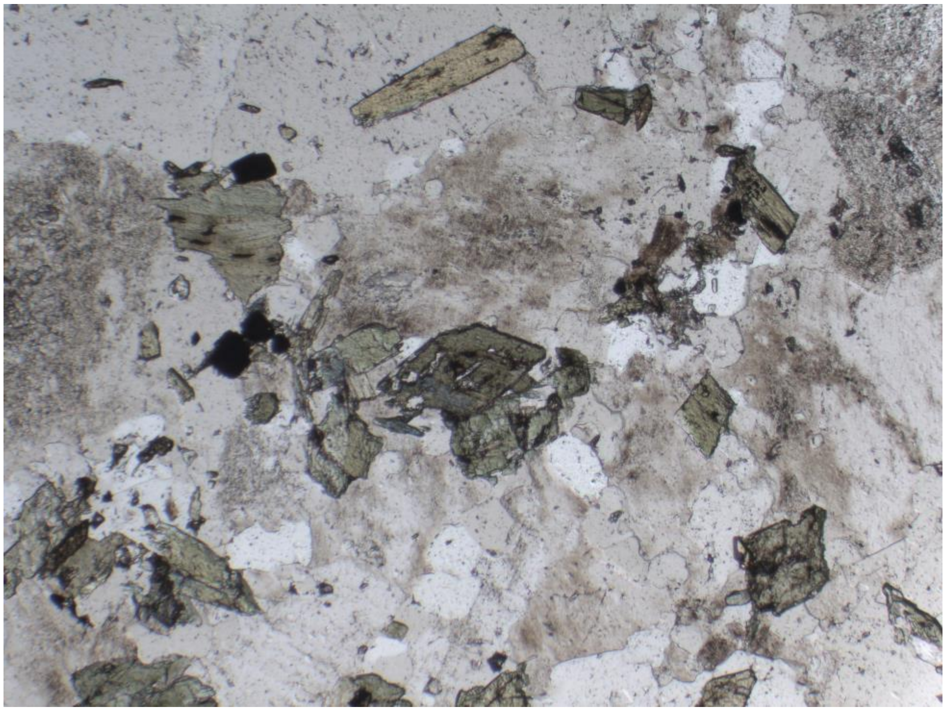


Photo 1: Hornblende crystals within quartz, between feldspar crystals. Feldspar is dusty, with sericite-goethite alteration. PPL, 4x.

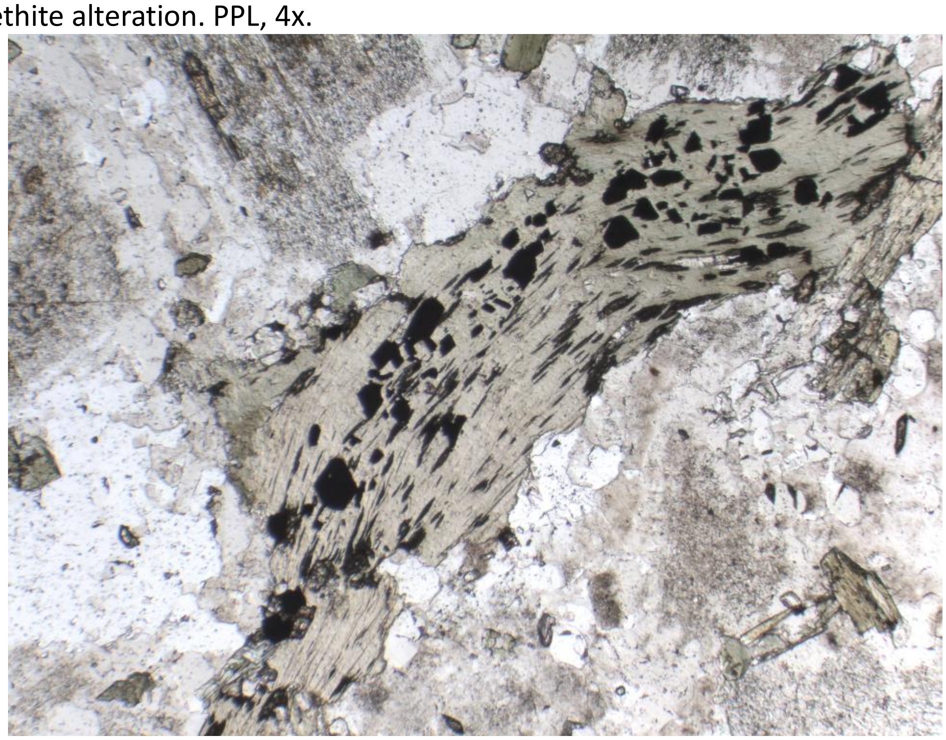


Photo 2: Bent biotite grain altered to chlorite with Fe oxides within cleavage planes. Some quartz embayment visible, with sericitized feldspars surrounding. PPL, 10x.

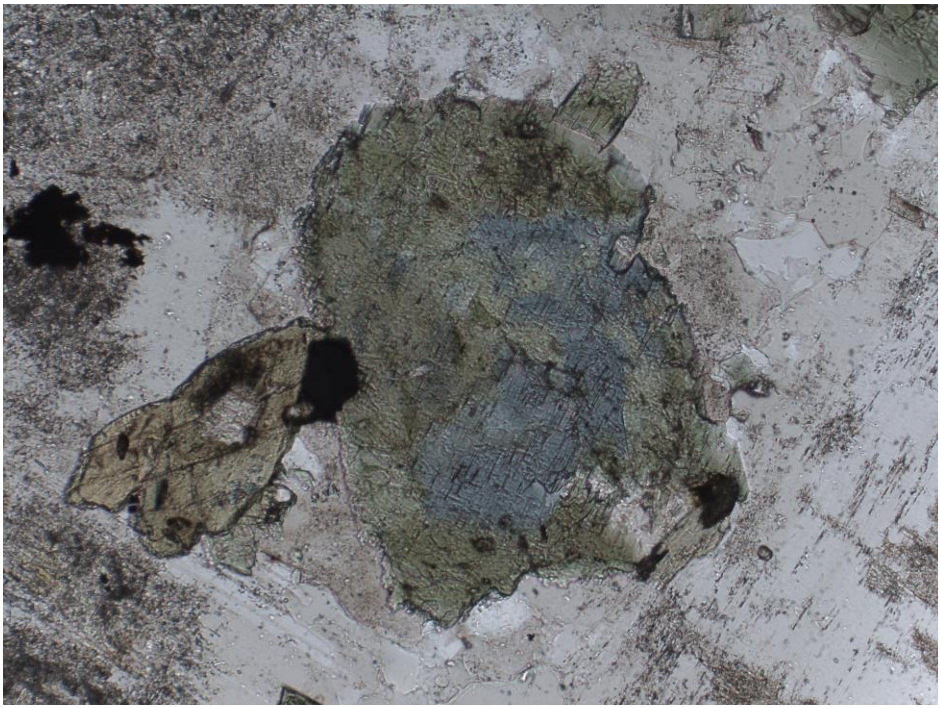


Photo 3: Amphibole crystal, with hornblende along the grain boundary and a blue core possibly of glaucophane or actinolite.

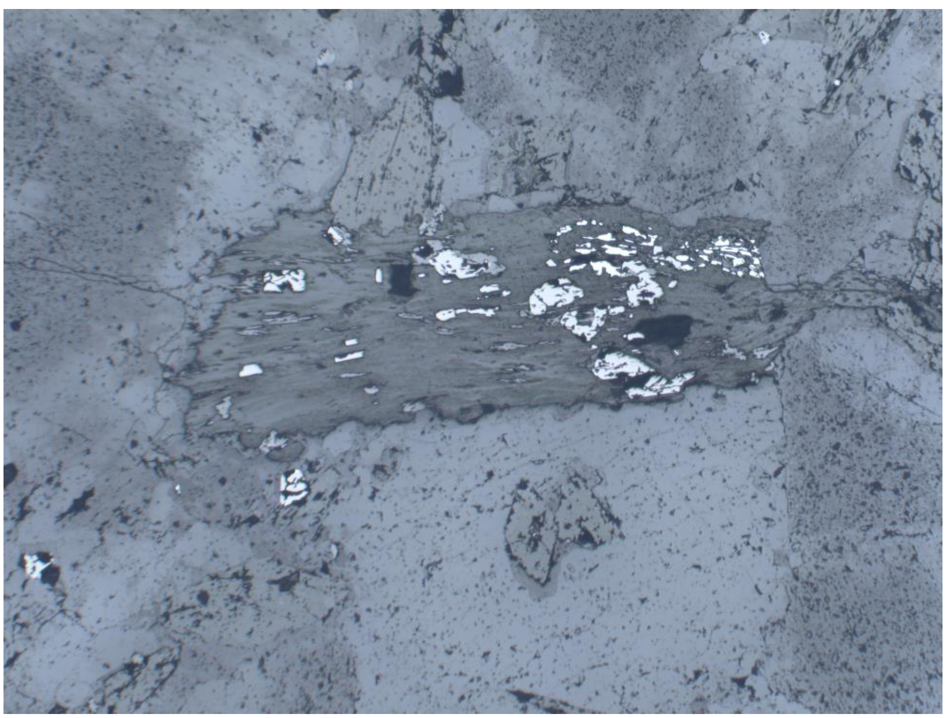


Photo 4: Hematite and magnetite hosted in biotite pseudomorphic chlorite. RPL, 10x.

<u>Sample:</u> RDOC-17 – Greenstone Syenite

Moderate-High Degree of Alteration
Low Iron Oxides/Sulfides

Hand Sample Description:

Grey rock with rounded white feldspar and quartz crystals (2-3mm) and anhedral mafic minerals varying widely in size(<5mm-4mm). Alteration overprints original textures, making grain boundaries harder to distinguish. The larger white crystals are altering to light green epidote and chlorite. Some small pyrites can be seen associated with the mafic minerals.

Thin Section Description:

Heavy alteration throughout the sample makes it difficult to determine features (Photo 1). Zoning within feldspar grains is mostly defined by the degree of sericitization, and there is chlorite and very fine epidote throughout, as well as in aggregates (Photo 2). Seriate medium-grained euhedral feldspars were intergrown, and the alteration makes it difficult to tell the abundance of each (Photo 3). Between the feldspars in the matrix, there are primarily quartz and hornblende (now almost completely altered to biotite and chlorite) with a variety of accessory minerals as described below. Slight foliation seen in hand sample is not readily apparent in thin section.

Anhedral ilmenite grains are reddish-grey in reflected light, with an alteration rim of rutile-leucoxene (Photo 4). Small pyrite grains are disseminated throughout.

<u>Modal Mineralogy</u>

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	55?	2-5	Heavily altered zoned phenocrysts now predominantly muscovite and sericite. Possibly perthitic texture, now overprinted. Patchy sericitization, some albitization. Phenocrysts range from euhedral tabular crystals to angular.
Albite	20?	1-3	Heavily altered tabular crystals. Zoning evident in some, but heavily overprinted with alteration. Appears to be some albitization of orthoclase, polysynthetic twinning evident, but alteration makes this difficult to see.
Quartz	15	<0.2-1.2	Varying grain sizes but more on the larger end. These display undulose extinction and suturing as well as minor fracturing. Larger grains than in many of the other samples.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Muscovite	4	<0.2	Alteration of feldspar cores into muscovite and patchy sericite. Lower relief and bladed habit differentiates from epidote.
Chlorite	3	<0.05	Chlorite primarily replacing interstitial biotite.
Biotite	3	0.3-2	Small biotite masses, altering to chlorite. Host ilmenite grains.
Epidote	Tr	<0.4	Minor anhedral masses. Small crystals may be disseminated throughout the groundmass. Some epidote is replacing the most altered feldspar cores. High birefringence and relief is diagnostic.
Pyrite	Tr	<0.1	Small, anhedral grains of pyrite disseminated throughout altered orthoclase.
Titanite	Tr	<0.2	Small slightly rounded crystals within k-feldspar.
Tremolite-Actinolite	Tr	< 0.4	Bladed to acicular small crystals, locally within plagioclase clasts.
Ilmenite	Tr	<0.5	Small tabular to anhedral grains. Pinkish-grey in reflected light with an alteration rim of rutile/leucoxene. Disseminated throughout, particularly associated with biotite.
Hematite	Tr	<0.1	Found within layers of biotite and rarely disseminated throughout the section.
Apatite	Tr	0.1	Small, subhedral, high relief grain within matrix. Coloured pale yellow.
Hornblende	Tr	1-2	Few localized masses of hornblende partially altered to biotite and chlorite, displaying distinctive cleavage.

<u>Images</u>
Sample: RDOC-17

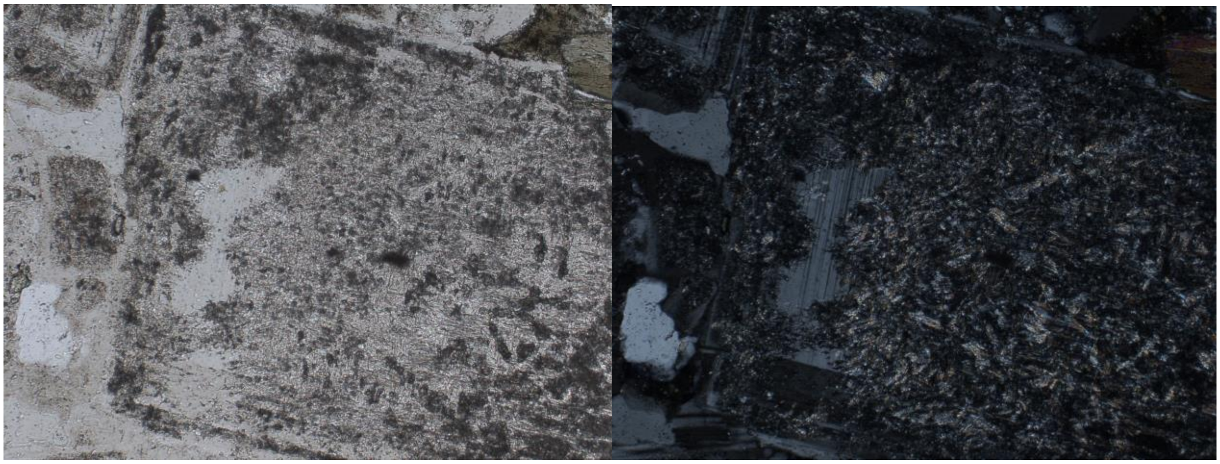


Photo 1: Heavily altered feldspar (possibly albitized orthoclase, possibly originally albite) with sericite/muscovite alteration throughout. PPL/XPL, 10x.

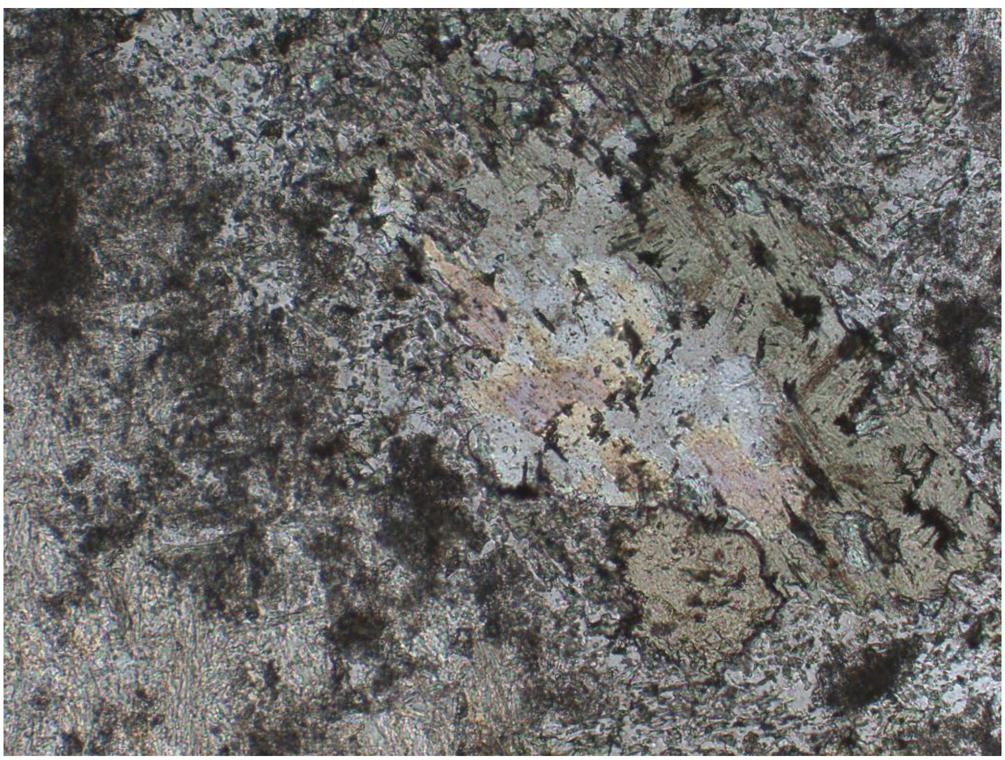


Photo 2: Epidote and chlorite aggregates with sericitized feldspars surrounding. Yellow hexagonal apatite seen in lower right. PPL, 10x.

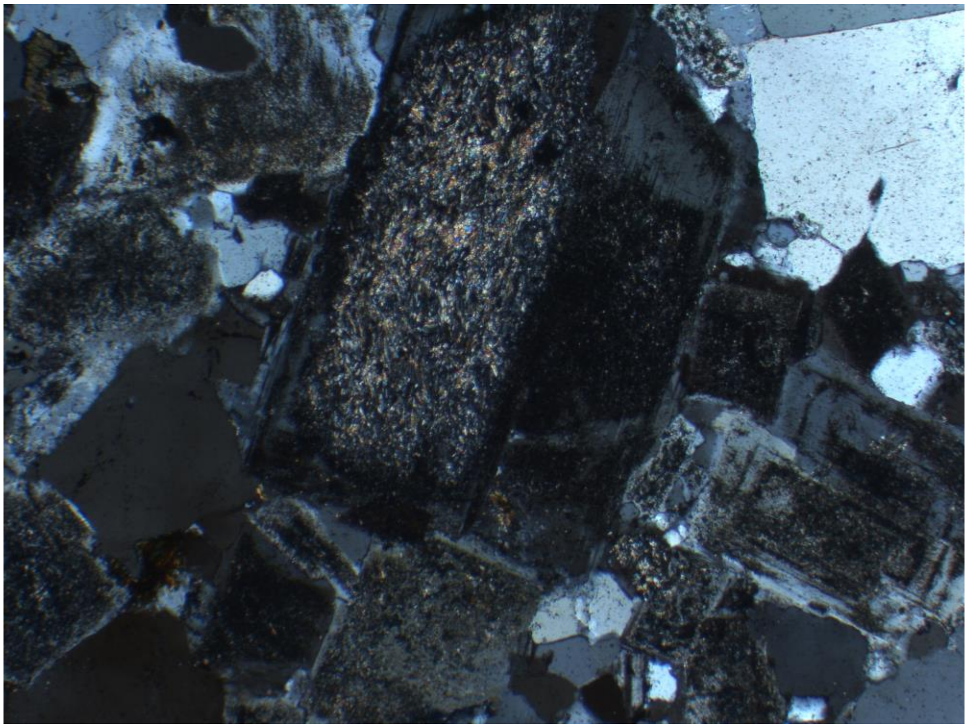


Photo 3: Tabular feldspar grains with interstitial quartz. Can see zoning and can use presence or absence of twinning to roughly determine proportions of albite to orthoclase. Sericite/muscovite alteration within most feldspar cores, with more anhedral orthoclase generally showing more significant sericitization. XPL, 4x.

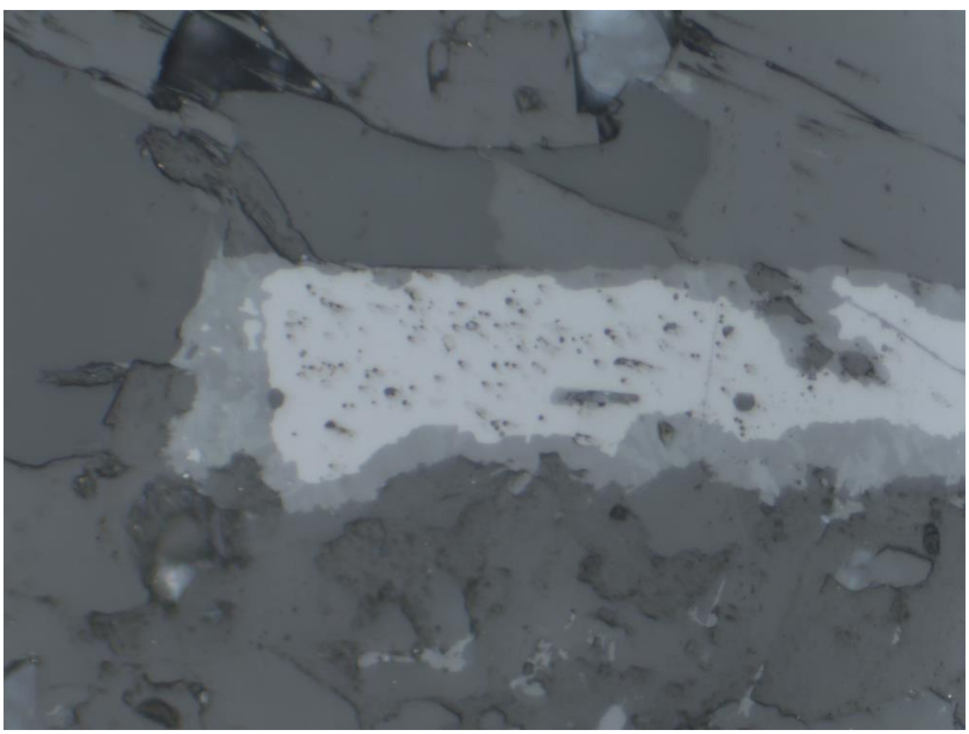


Photo 4: Tabular ilmenite altering to rutile and leucoxene. RPL, 20x.

<u>Sample:</u> RDOC-19 – Volcaniclastic Breccia

Moderate Degree of Alteration
Very Low Iron Oxides

Hand Sample Description:

This sample is a variable volcanic breccia composed of large (<15mm) clasts of fine-grained chloritic rock with mafic phenocrysts. The matrix is mostly coarse (4-8mm) pinkish-white feldspar laths and mafic clasts within a quartz and chlorite matrix.

Thin Section Description:

There are a wide variety of clasts within this breccia, hosted in a matrix that is predominantly quartz, with minor amounts of epidote, calcite and feldspar with sericite alteration. Relict hornblende is incompletely altered to epidote and quartz (Photo 1). The matrix has small (0.3mm) rounded crystals of calcite that may be filling late voids as well as larger grains (1-2.5mm).

The largest clast (3cm) is a porphyritic mafic volcanic, with silicified amygdules and medium-grained relict clinopyroxenes? entirely replaced by biotite and chlorite, with some epidote and possibly serpentine (Photo 2). There are very fine veinlets of quartz cutting across the clast, one expanding to 0.4mm before terminating at the clast-matrix interface. The groundmass is a devitrified glass displaying somewhat perlitic texture (Photo 3) and is primarily sericite, chlorite, and quartz.

Smaller clasts include glassy angular fragments with silicified vesicles (Photo 4) and monomineralic fragmented crystals of relict ?pyroxene now altered to serpentine and talc. Clasts vary in size greatly from <0.5mm to 3mm or more.

Very few opaque minerals were visible under reflected light (only a couple of very fine pyrite grains).

Modal Mineralogy

MAJOR MINERALS – LARGE CLAST

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Groundmass	80	<0.05	Devitrified glass, with relict perlitic textures, now primarily sericite and chlorite
Relict CPX?	10	0.5-2	- now entirely replaced by biotite and chlorite (and serpentine+talc in others), biotite preferentially growing near edge of grain
Albite	5	0.1-0.3	Some tabular twinned albite, somewhat sericitized.
Quartz	5	<0.1	Primarily in round amygdules, also late fracture infill through clast and surrounding matrix.

Breccia Matrix

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Quartz	30	<0.1	Primary component of groundmass is of anhedral fine grains surrounding angular and rounded fragments
Chlorite	30	<0.1	In matrix and completely replacing some angular breccia fragments.
Pumice Clasts	20	0.5-2	Altered very fine-grained glassy matrix, with silicified vesicles and hornblende. Angular, often deformed clasts.
Epidote	10	0.02-1	Patchy, replacing relict grains and angular fragments. Replacement within some clasts, but also as larger grains visible throughout the matrix.
Serpentine/Talc	7	1-4	Relict rounded, fractured and deformed pyroxenes replaced epitaxally by serpentine and talc.
Calcite	3	0.1-0.3	Discontinuous veinlets and masses of calcite between quartz and clasts, possibly later void-filling but not definitive
Hornblende	Tr	0.5	Within ‘pumice’ fragments, minor.
Orthoclase	tr	0.5	Possibly perthitic clasts within breccia, now almost entirely sericitized
Albite	Tr	1	Few subhedral tabular grains within the matrix, sericitized and partially resorbed by quartz.

<u>Images</u>
Sample: RDOC-19

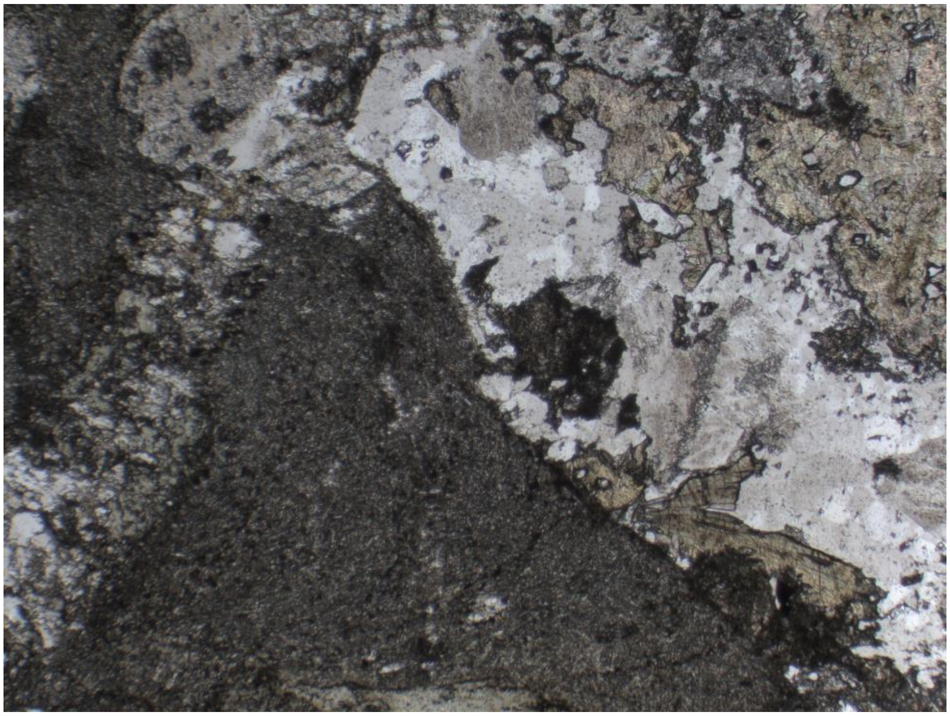


Photo 1:Boundary between large basaltic clast and matrix containing quartz, epidote, and sericitized orthoclase. Note the quartz vein within the darker clast.

Photo 2: Porphyritic rock with perlitic fractures within groundmass. Clasts are altered to biotite-chlorite, and to serpentine-talc. Few small albite crystals scattered throughout groundmass, and minor quartz amygdules – some round, some flattened. PPL, 4x.

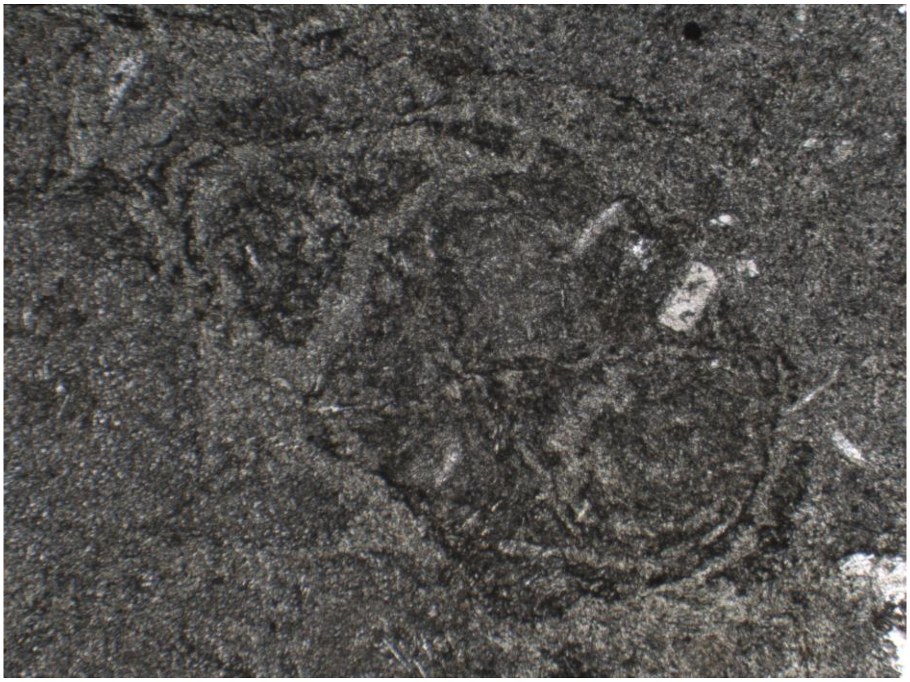


Photo 3: Glassy, devitrified matrix within large clast displaying perlitic texture. Tabular albite scattered throughout. PPL, 4x.

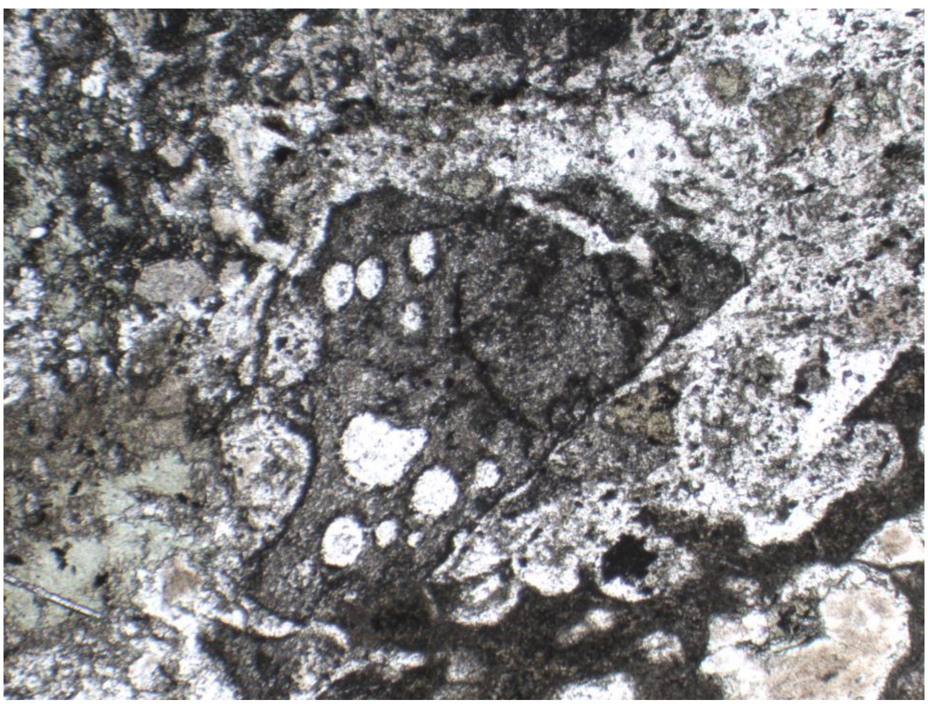


Photo 4: Angular fragment of vesicular basalt (?) surrounded by feldspar, quartz, and chlorite matrix. Clasts are variably altered. Clast in the bottom right is likely a very altered pyroxene grain with significant quartz embayment, sieve texture, and complete alteration to serpentine-chlorite.

<u>Sample:</u> RDOC-29 – Hornblende-bearing Syenite

Low-Moderate Degree of Alteration
Moderate Iron Oxides

Hand Sample Description:

Lightly pink rock predominantly composed of seriate medium to fine plagioclase and potassium feldspar – often perthitic. Dustier, whiter appearance than the other syenites may indicate more sericitization. Several large (1.5cm) porphyroblasts of fine-grained green mineral (chlorite) which are not represented in the thin section. Fine dark mineral found between feldspar grains. A porous, yellow mineral is also found interstitially (ankerite?).

Thin Section Description:

Medium-grained seriate-inequigranular orthoclase and twinned plagioclase are intergrown with inclusions of quartz. Sericite alteration is comparatively minor. Recrystallized and sutured fine-grained anhedral quartz surrounds the feldspar grains. Accessory minerals such as titanite, apatite (possibly ankerite?), staurolite, and zircon are found both within the orthoclase and the quartz matrix. Hornblende with characteristic cleavage can also be found with rounded inclusions of quartz and occasionally titanite within (Photo 1).

Magnetite is partially altered to hematite. Most magnetite ranged from subhedral, rounded octahedral grains to anhedral grains. (Photo 2) It is generally found in association with hornblende (Photo 3), but not necessarily growing within. Brownish-red "dust" is possibly goethite, and may be somewhat associated with apatite locally.

<u>Modal Mineralogy</u>

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	65	0.7-8	Granular, subhedral zoned grains, zones defined by sericite/reddish goethite alteration, formed after plagioclase and hornblende. Mostly medium grained with a few very large grains.
Albite	20	0.2-2mm	Tabular, euhedral, with sericitized cores and zoning
Quartz	15	<0.02mm-0.5mm	Interstitial Recrystallized quartz with suturing as the majority of the matrix between feldspar grains.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Hornblende	10	0.5-2	Deep vibrant green, bladed to tabular, Locally growing within fractures of plagioclase
Titanite (sphene)	0.5	<0.05	Wellformed crystal within plagioclase and k-feldspar, disseminated throughout. Differentiated from zircon by form and colour. Some anhedral titanite can also be found.
Chlorite	0.5	<0.01	Very fine acicular greenish alteration mineral
Magnetite	0.3	<0.1-0.3	As above, altering to hematite. Appears to be slightly more magnetite than hematite.
Hematite	0.2	<0.03	Replacement of magnetite, reaction rim of magnetite to complete replacement, disseminated throughout Some wellformed magnetite (now hematite) crystals within plagioclase. Others within interstitial quartz somewhat associated with titanite
Apatite	Tr	0.5	Anhedral, pebbly texture. Colourless with high relief.
Staurolite?	Tr	0.05-0.1	Small, included in orthoclase, yellow in plane-polarized light
Zircon	Tr	<0.02	Distribution similar to titanite, differentiated by more rectangular form and lack of colour.

Images

Sample: RDOC-29

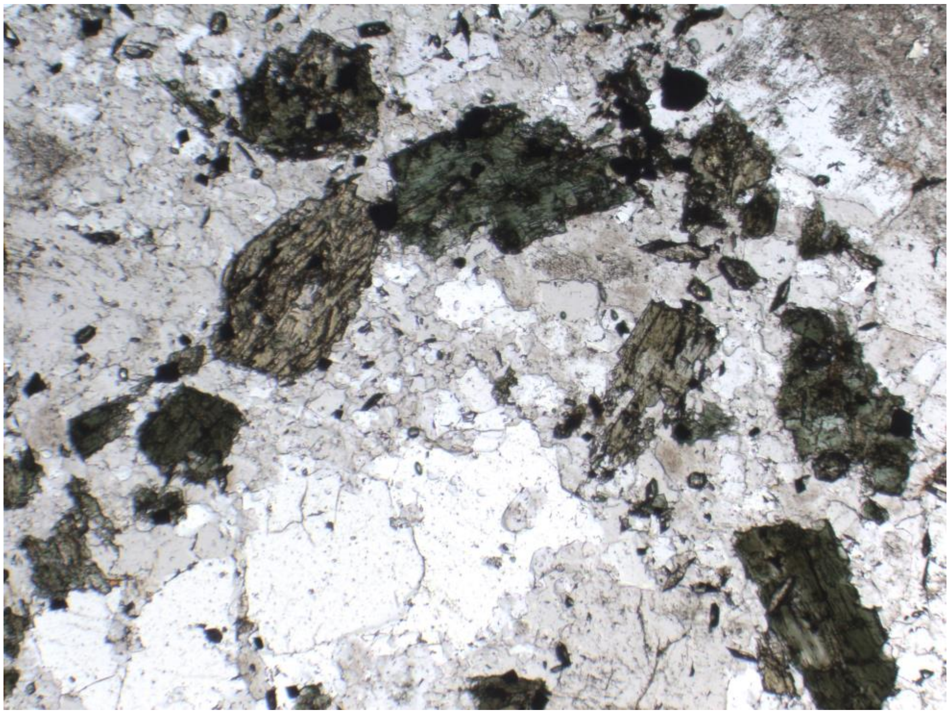


Photo 1: Euhedral hornblende within quartz matrix, some sericitized feldspars seen along borders of the image. PPL, 4x.

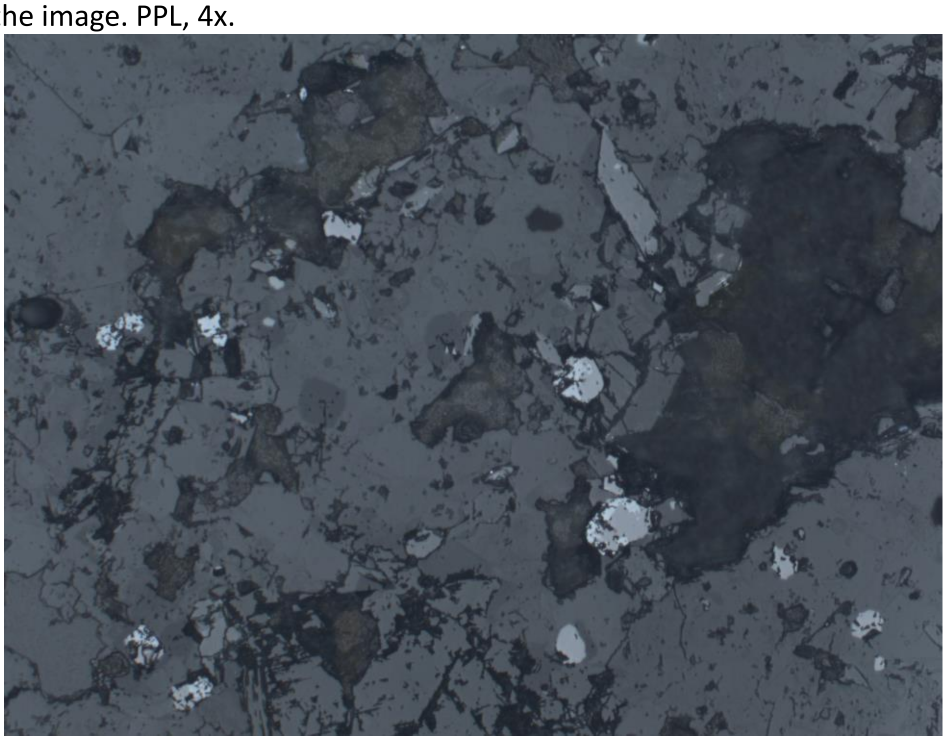


Photo 2: Hematite/Magnetite disseminated throughout the sample. Hematite is blue-grey, magnetite is slightly darker pinkish grey. RPL, 10x.

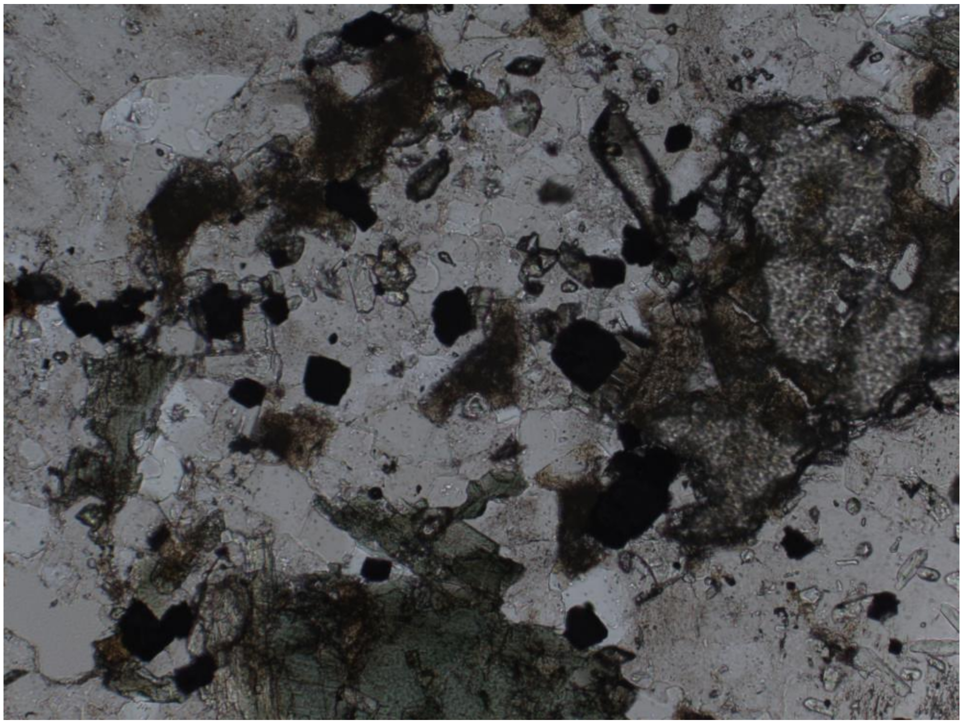


Photo 3: Hematite and magnetite somewhat associated with hornblende (bottom) and apatite (right). Goethite ‘reddish dust’ is found throughout. Zircon in the upper right. Same FOV as Photo 2. PPL, 10x.

<u>Sample:</u> AT-14-06 - Pyroxene-bearing Syenite

Moderate Degree of Alteration
Abundant Iron Oxides

Hand Sample Description:
A light pink-grey syenite with mostly euhedral pink feldspar crystals with a seriate size distribution. Mafic minerals formed between the cumulate feldspars, with some larger areas that are greenish and porous. Some more angular clasts are very sericitized. Boundaries between crystals can be difficult to see. Mafic crystals are comparatively large, and quite porous.Small fractures filled with a reddish mineral crosscut the sample.

Thin Section Description:
Perthitic, subhedral orthoclase grains form the majority of the sample. Some are concentrically zoned, and are pervasively altered by sericite and reddish goethite. Crystal boundaries are resorbed by interstitial quartz. Sericite alteration is patchy, with larger grains displaying heavier alteration and somewhat fine fractures with reddish infill (Photo 1).

There is a significant amount of an acicular to fibrous, somewhat high relief blue mineral. It bears striking resemblance to fibrous sillimanite, but that is unlikely in the locality. It is more likely to be metamorphic tremolite-actinolite, which can display both the habit and the colour. It can be found overprinting the majority of minerals in the section, including quartz. It appears to mostly concentrate along discontinuous veinlets, growing into the host rock (Photo 2). There are also discontinuous veinlets/fractures of a reddish brown mineral, likely goethite.

Magnetite is found concentrated near relict clinopyroxene (augite?) that have now been heavily altered to biotite, quartz, magnetite, and minor epidote (Photo 3). A wellformed titanite can be seen in this photo as well. Photo 4 also shows significant Fe oxides associated with the relict minerals.

<u>Modal Mineralogy</u>

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	75	2-8	Granular, subhedral feldspar grains with patchy reddish sericitization . Often showing someone perthitic texture. Fine fractures throughout. Fractures within most significantly altered grains contain ?goethite (a fine-grained reddish mineral). Some albitization of orthoclase crystal rims (AT-14-06 28) and concentric zoning.
Albite	10	0.7-3	Medium-grained granular subhedral grains with minor sericitization.
Quartz	6	<0.03	Fine interstitial recrystallized quartz grains, partial replacement/embayment of pyroxene.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Tremolite-Actinolite	8	<0.4 length	Acicular/fibrous blue actinolite altering to biotite. Bears significant similarity to fibrolite. (sillimanite) in some cases. Found throughout the sample, both as fine overprinting of other minerals indiscriminately (AT-14-06 29), as larger masses , or associated with discontinuous veining (AT-14-06 24). Replaces magmatic pyroxene (photo AT-14-06 22).
Hematite (+Magnetite)	0.5	<0.1-0.3	Magnetite altered to hematite (often incompletely). Possibly completely replacing pyrite in some cases due to cubic form. Larger grains associated with relict pyroxene altered to biotite, quartz, and minor epidote.(Photo AT-14-06 11) Fine veinlets sometimes associated with reddish goethite. (AT-14-06 rpl 28).
Goethite	0.5	<0.05	A very red fine-grained aggregate seems to be in fractures or local veinlets, possibly related to fracturing in k-feldspar.
Augite	0.5	2-6	Relict skeletal grains of pyroxene now significantly altered to biotite, quartz, magnetite, and minor epidote. (AT-14-06 32) (AT-14-06 ppl 03)
Epidote	Tr	<0.05	Minor fine grained epidote replacing augite, high birefringence and relief are diagnostic.
Titanite (sphene)	Tr	<0.03	Well-formed crystals disseminated throughout. Possibly somewhat associated with pyroxenes.
Zircon	Tr	<0.03	Fine, slightly rounded euhedral grains disseminated throughout.

<u>Images</u>

Sample: AT-14-06

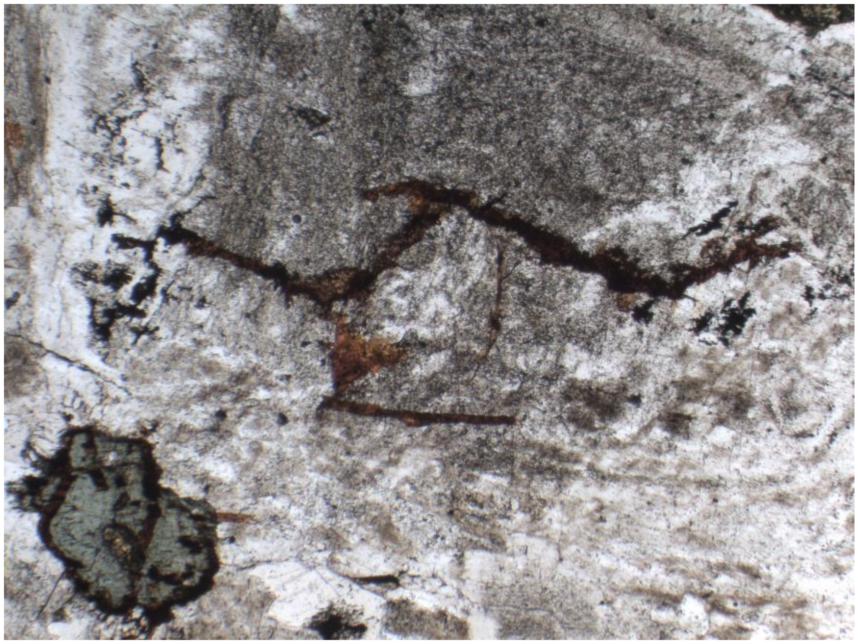


Photo 1: Larger orthoclase grain with fractures containing goethite. Dusty reddish appearance to alteration may also contain fine goethite. In the lower left, a small pyroxene-pseudomorphic blue amphibole with a titanite within is rimmed by very fine biotite and/or goethite. PPL, 4x.

Photo 2: Anastomosing vein of tremolite-actinolite, with the amphibole also growing into the sericite-goethite altered orthoclase. Orthoclase contains small opaque inclusions of hematite-magnetite, which may be somewhat more concentrated near the vein but not definitively. PPL, 4x.

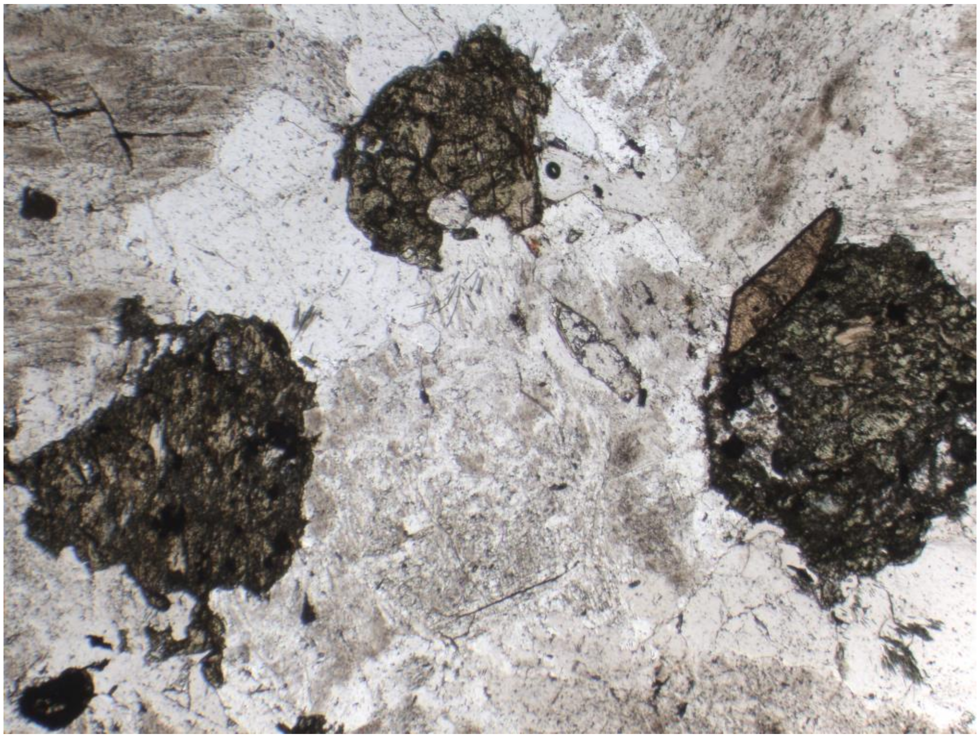


Photo 3:Relict pyroxene grains now altered to biotite, quartz, magnetite, and minor epidote. Yellow, well-formed titanite crystal to the right. Hosted within sericitized orthoclase and fine-grained quartz. PPL, 4x.

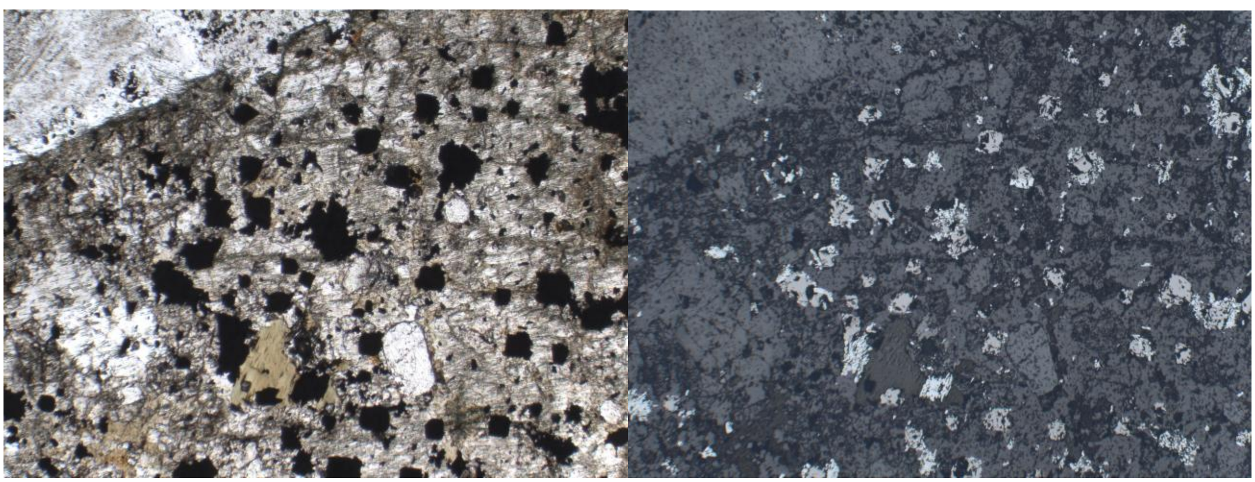


Photo 4: Magnetite and hematite associated with relict pyroxene clasts. PPL/RPL, 4x.

<u>Sample:</u> AT-14-21B – Microfractured Syenite

Moderate Degree of Alteration
Moderate-Abundant Iron Oxides

Hand Sample Description:

Pink medium-grained (3-6mm) syenite comprised predominantly of large, well-formed potassium feldspar, with minor quartz and plagioclase phenocrysts, and finer-grained white groundmass that is somewhat 'dusty'. Darker mafic crystals (~1mm) found throughout the groundmass, with several larger 4-8mm sized rounded, porous phenocrysts. Someone more porous than the other samples.

Thin Section Description:

Medium intergrown inequigranular perthitic orthoclase and some tabular albite compose the majority of the sample. They are somewhat sericitized. Quartz varies in size, with larger grains displaying undulose extinction. Fractures in some large orthoclase grains are filled with undulose quartz. Albite shows bent polysynthetic twinning. Another orthoclase grain has fine biotite infilling a fracture (Photo 1). Other fractures have a reddish appearance, likely from goethite (Photo 2). More fractures than in the majority of the other samples indicate a brittle, stressed environment.

Pyroxene relicts are almost entirely altered to blue amphibole, minor biotite, some with a core of quartz. Blue amphibole also is found as an alteration mineral independently, with fibrous actinolite altering to biotite and minor chlorite. (Photo 3)

Fe oxides occur primarily as partial replacement of biotite, and are generally micaceous pseudomorphs if not associated with biotite directly, or associated with relict pyroxenes altered to actinolite and biotite within the quartz matrix. (Photo 4)

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	65	3-8	Large subhedral perthitic grains that have been somewhat sericitized. Cores and very large grains are most altered. Brittle fracturing visible with very fine fracture fill, and some biotite growth. Some grains are heavily altered and have ?goethite filled fractures.
Quartz	18	<0.1	Fine recrystallized interstitial quartz displaying suturing textures and undulose extinction. Resorption of larger orthoclase crystals common.
Albite	15	1-4	Mostly euhedral tabular grains with stressed/bent polysynthetic twinning and inclusions of quartz.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Tremolite-Actinolite	2	0.3-1	Bluish amphibole (possibly glaucophane?) altering to biotite. Pseudomorphs of relict pyroxene common, with cores of quartz and rims of fibrous actinolite.
Titanite	Tr	<0.1	Small, well-formed grains found throughout.
Biotite	Tr	<0.4	Larger grains of biotite with typical but slightly bent micaceous cleavage, partially replaced by magnetite/hematite. Occasionally as a replacement rim or within fractures of actinolite.
Hematite	<0.5	<0.1-0.3	Mica pseudomorphs common, with incomplete replacement. Associated with relict pyroxenes now altered to biotite and actinolite. Some complete replacement of well-formed magmatic magnetite,.
Goethite	<0.5	0.01	Very fine reddish dust, and reddish fracture infill
Apatite	Tr	0.5	Rounded subhedral grains with a pebbly texture.

Images

Sample: AT-14-21B

Photo 1: Fractured perthitic orthoclase grain in the lower left with a fracture containing biotite. Bent polysynthetic twinning can be seen in the albite crystal that has been partially resorbed. Undulose extinction can be seen in the larger quartz crystals, to the right. XPL, 4x.

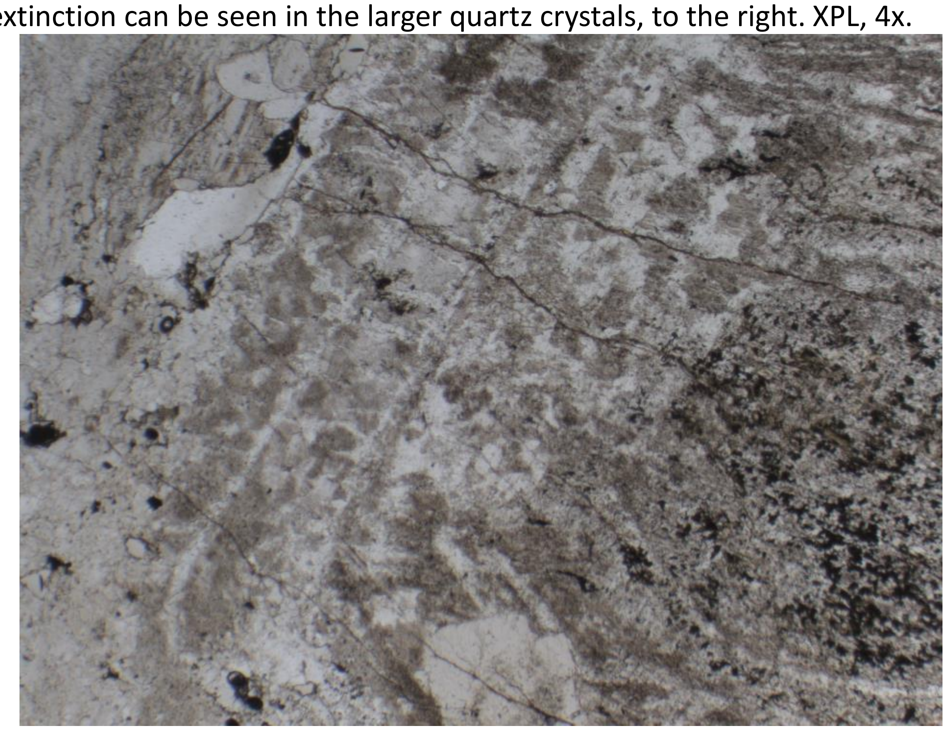


Photo 2: Large zoned orthoclase with aligned fractures with very fine ?goethite infill. Reddish dusty sericite-goethite alteration throughout the grain. Core altered partially to biotite. PPL, 4x.

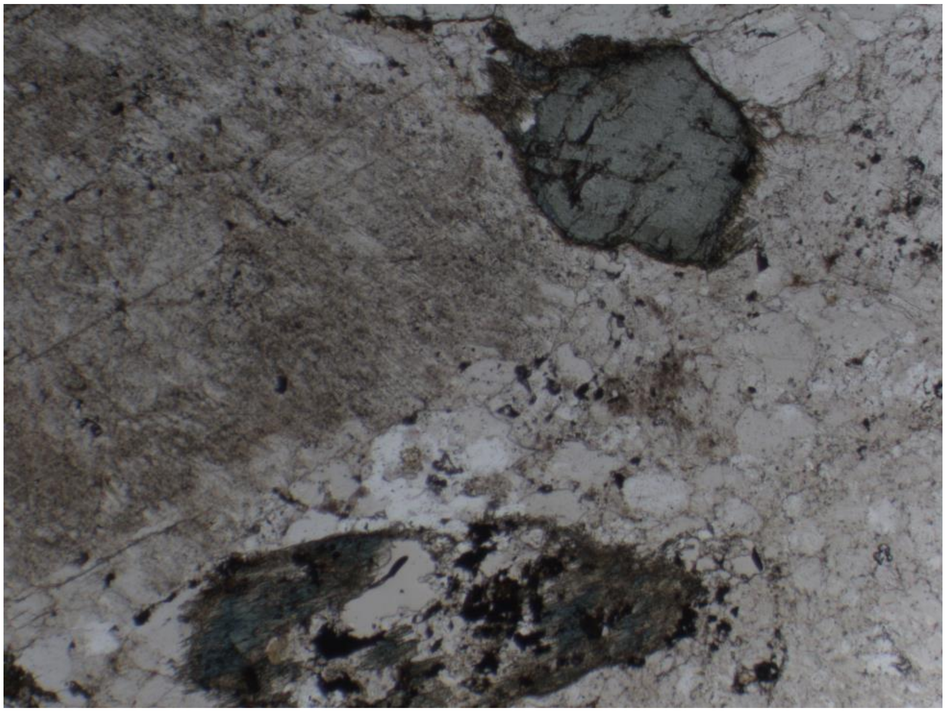


Photo 3: Blue amphibole replacing pyroxene, altering to biotite with quartz resorption and recrystallization along the upper edge. Associated Fe oxides are opaque. Perthitic altered orthoclase grain to the upper left. PPL, 4x.

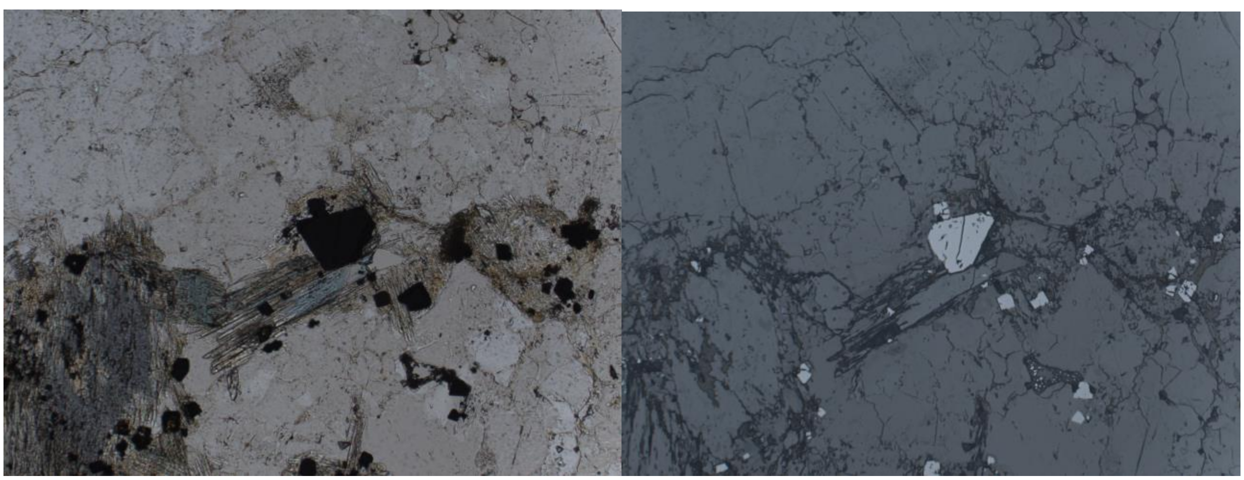


Photo 4: Blue amphibole with associated Fe oxides, primarily magnetite with some altering to hematite. Amphibole is altering to biotite. Hosted within the finegrained quartz. PPL/RPL, 10x.

<u>Sample:</u> AT-14-21B SZ – Microfractured Syenite

Moderate Degree of Alteration
Moderate-Abundant Iron Oxides

Hand Sample Description:

Pink, medium-grained (4-7mm) zoned cumulate potassium feldspar crystals with interstitial quartz and mafic minerals. Feldspar grains are fairly fractured. Larger mafic phenocrysts are porous and partially altered to a brown fine-grained mineral. Foliation is not obvious in sample.

Thin Section Description:

Orthoclase grains are medium-sized, perthitic, and relatively fractured. Albite is generally bent and displays significantly less fracturing. Quartz is found between many grain boundaries and is a wide variety of sizes and resorption is common, as are suturing and undulose extinction (Photo 1). Many of these fractures display goethite staining.

Relict pyroxene grains are partially replaced by actinolite and kinked biotite (and possibly some greenish hornblende), but in this sample they are also very porous (Photo 2). Well-formed titanite and zircons are disseminated throughout. Apatite appears to have slight association with biotite and subhedral Fe oxides, but this is possibly coincidental.

Fe oxides are predominantly associated with biotite within cleavage planes (Photo 3) or slightly displaced from the grain connected by a veinlet (Photo 4). They are also associated with the same relict pyroxenes that are replaced by actinolite and biotite. Goethite-filled fractures occur within orthoclase grains.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	60	2-5mm	Patchy, sericitized medium-sized perthitic grains of feldspar. Very sericitized grains also contain fractures with a reddish mineral, possibly goethite. Cores are generally more altered. More fractured than in other samples, likely due to brittle failure in a shear zone.
Quartz	20	<0.1-0.5mm	A more significant amount of quartz in this sample vs others. Still generally interstitial, displaying embayment into k-feldspar grains and significant suturing and undulose extinction. Deformation textures are visible in (AT-14-21B SZ 18)
Albite	15	0.3-2mm	Tabular, euhedral albite grains with bent polysynthetic twinning.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Biotite	5	0.2-1	Biotite is kinked and associated with oxides, particularly between cleavage planes. Kinked biotite is found within a relict pyroxene grain. (AT-14-21B SZ ppl 04). In some cases it is found as an alteration rim on actinolite or possible partial replacement. (AT-14-21B SZ 08) (AT-14-21B SZ 12)
Magnetite	0.3	<0.2	As above. Hematite as reaction rims and within fractures of somewhat euhedral magnetite.
Hematite/Goethite	0.2	<0.2	Grains of magnetite that have a reaction rim of hematite are prevalent. Commonly associated with biotite as a partial replacement or within cleavage planes. Goethite occurs as a reddish dusting or fracture infill.
Titanite	Tr	<0.3	Well-formed yellowish crystals with very high relief.
Zircon	Tr	<0.3	Similar to titanite, but colourless.
Apatite	Tr	0.4	Apatite grains that are somewhat elongate, subhedral are slightly associated with hematite and biotite within the interstital material.

<u>**Images**</u>

Sample: AT-14-21B SZ

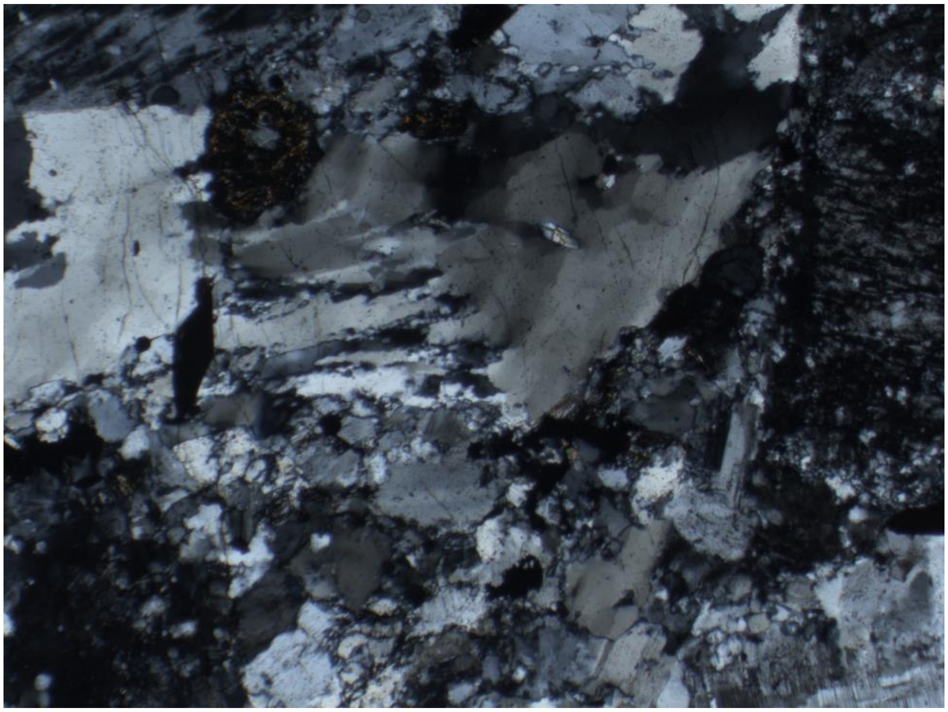


Photo 1: Stressed, recrystallized and undulose quartz showing slight foliation. Foliation is weak, often not visible. XPL, 4x.

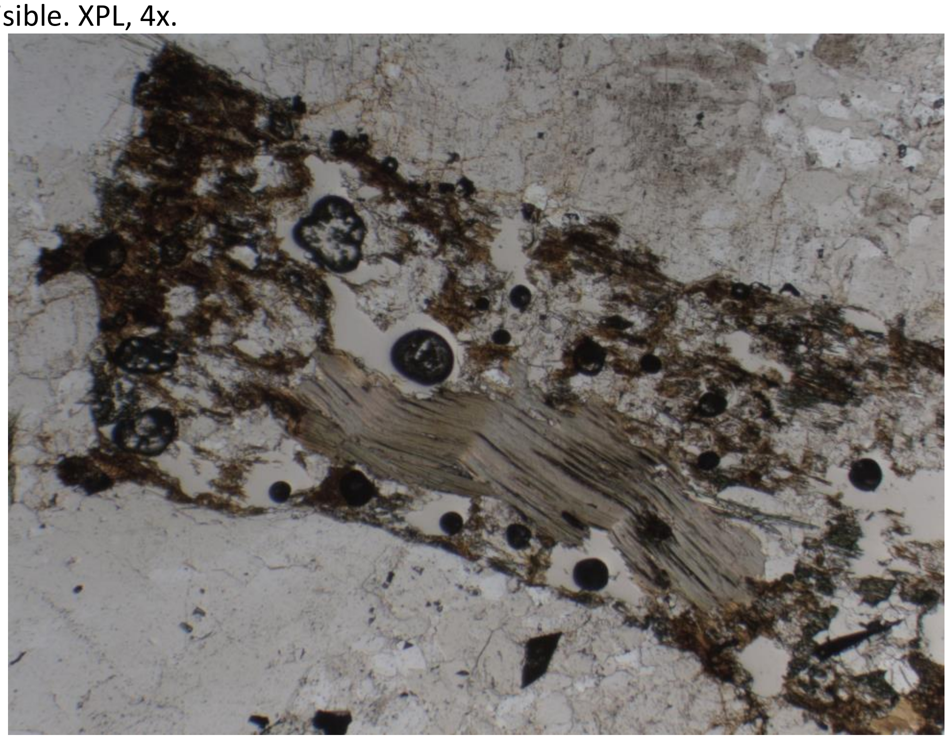


Photo 2: Relict pyroxene grain now altered to biotite, minor magnetite, goethite, and quartz. Displays significant porosity. Reddish staining of sericitized, fractured orthoclase. PPL, 4x.

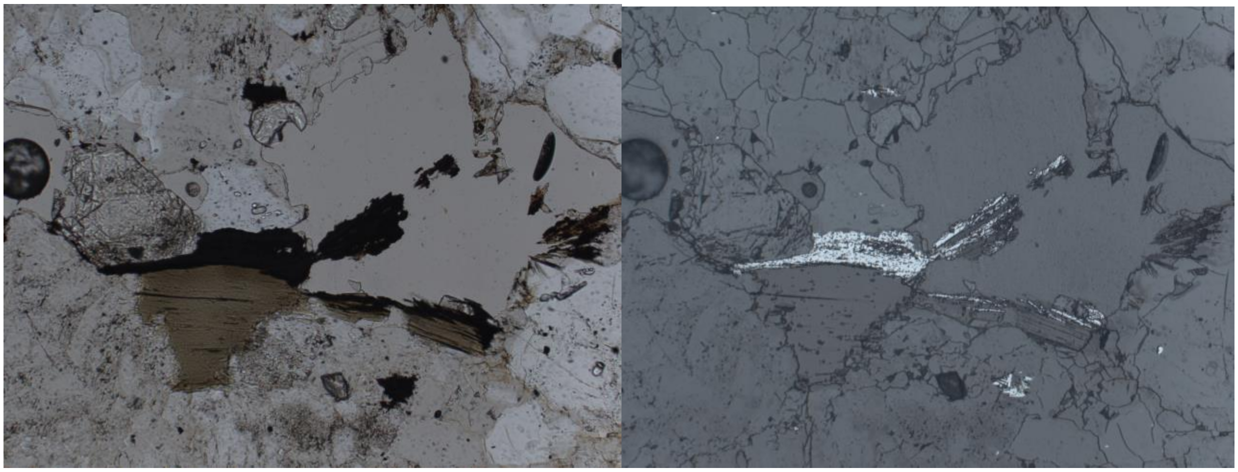


Photo 3:Porous hematite replacing biotite pseudomorphically. Apatite to the left. PPL, 10x.

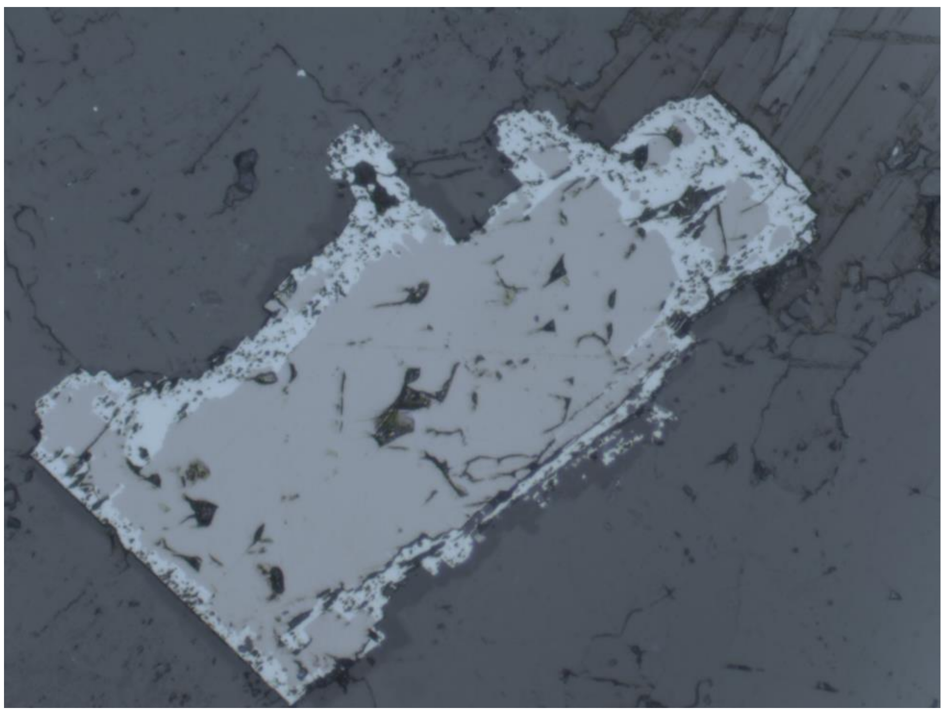


Photo 4: Magnetite grain (brownish grey) partially replaced by porous hematite. RPL, 20x.

<u>Sample:</u> PO-30 - Syenite

Low Degree of Alteration
Low Iron Oxides

Hand Sample Description:

A medium grained (2-4mm) cumulate intrusive rock composed predominantly of pink potassium feldspar and porous mafic phenocrysts (1-2mm), with grey quartz composing the groundmass. Some of the large feldspar grains contain a mafic crystal in their core. Darker and less altered than the other syenites. Very little interstitial space, and few mafics.

Thin Section Description:

Medium-sized inequigranular subhedral perthitic orthoclase grains define the texture of this sample. Orthoclase is moderately to heavily sericitized, with larger fractured grains displaying more alteration and a dusty red appearance (due to goethite) (Photo 1). Fine anhedral quartz is found between orthoclase grains, but there are also several larger rounded phenocrysts of quartz displaying undulose extinction (Photo 2). Relict pyroxene is now altered to epidote, chlorite, with rounded quartz resorption features forming a sieve texture in these grains.

Somewhat fibrous blue-green amphiboles are distributed throughout the quartz matrix, in some cases replacing pyroxenes and in others growing independently, occasionally with titanite association. In some cases, there is association of calcic amphibole and calcite, possibly in a relict grain (Photo 3). Minor inclusion rich, fractured garnets are found within the matrix, locally surrounded by amphiboles, calcite and somewhat tabular apatite (Photo 4). There are rare anhedral chlorite mats with associated reddish-brown staining and yellow stained calcite (dolomite/ankerite?).

Opaque oxides such as hematite and magnetite are predominantly associated with the relict pyroxene grains, but are rare compared to other samples.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Orthoclase	70	2-6	Large concentrically zoned variable perthitic euhedral grains with partially embayed and recrystallized boundaries. Linear fractures throughout. Cores are more heavily sericitized. Some crystals are very heavily sericitized, and seem to be more associated with fracturing.
Quartz	19	<0.1, rarely 3	Bimodal size distribution. Fine-grained interstitial quartz with some evidence of recrystallization and embayment into k-feldspar. Within relict pyroxenes. Larger quartz phenocrysts display undulose extinction.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Actinolite	4	<0.5	Bluish fibrous calcic amphibole as pyroxene pseudomorphs. Interior of the grains are often porous. (PO-30 11), some display an alteration to biotite.
Calcite/Ankerite	2	0.3-1	Anhedral calcite found in discontinuous voids and veins. (PO-30 12) is a relict grain partially replaced by calcite and partially by actinolite. -reasonable association with a calcic amphibole. Possibly ankerite due to yellowish pebbly appearance.
Chlorite	0.5	<0.05	Greenish, low birefringence mats with some veinlets of reddish brown material (?goethite) (PO-30 14)
Hematite	Tr	0.1	Minor amounts of hematite as micaceous pseudomorphs associated with relict pyroxenes.
Titanite	Tr	0.5	Rare,well-formed yellow crystals with high relief.
Garnet	Tr	0.7	Minor, inclusion-rich subhedral isotropic grains, associated with amphibole and calcite
Epidote?	Tr	<0.01	Relict pyroxene crystals now altered to quartz, epidote and hematite.

Images

Sample: PO-30

Photo 1: Sericitized fractured orthoclase grain with reddish dusty goethite. Calcite in upper left. PPL, 4x.

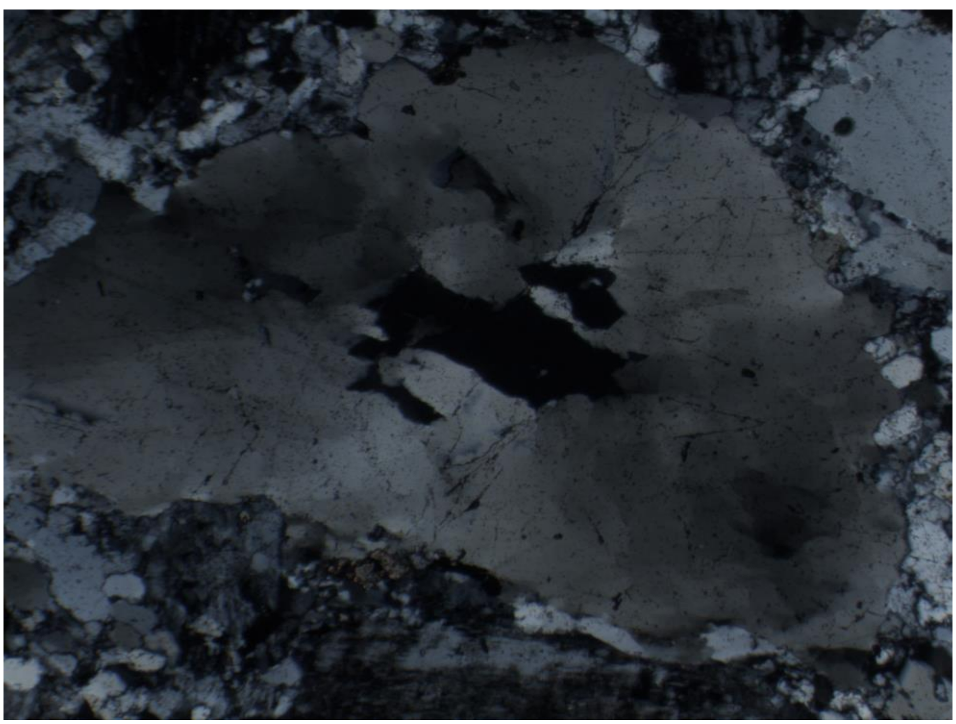


Photo 2: Quartz phenocryst surrounded by smaller quartz, displaying undulose extinction and possibly some flattening. XPL, 4x.

Photo 3: Relict pyroxene with blue amphibole altering to biotite. Reddish dusty material indicates minor goethite.

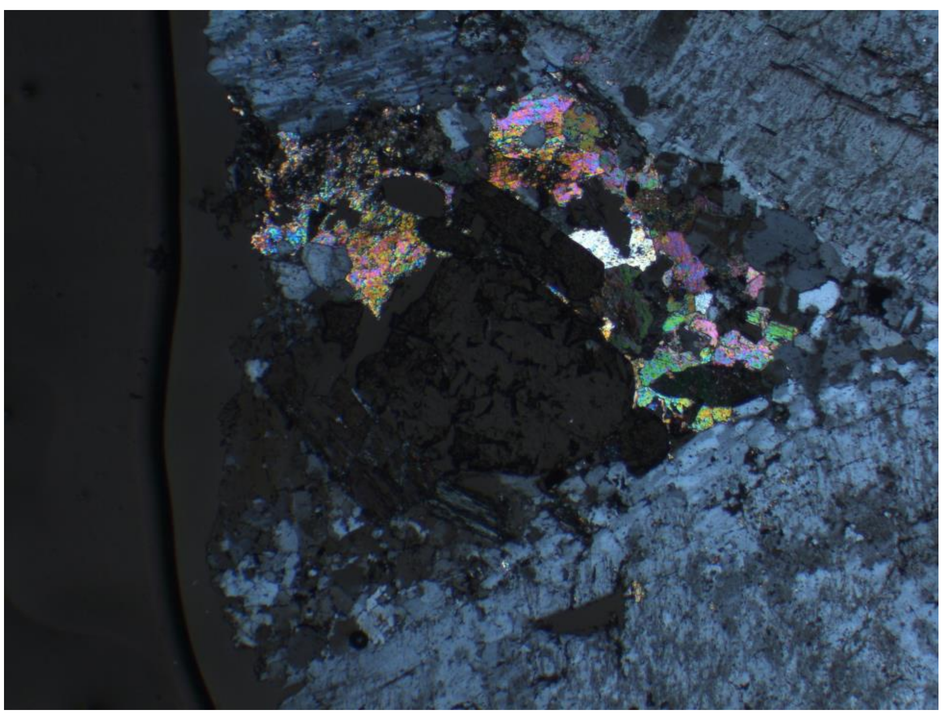


Photo 4: Garnet surrounded by amphibole, epidote, and calcite. Apatite and titanite grains also surround the garnet. XPL, 4x.

<u>Sample:</u> PO-78 – Volcaniclastic Breccia

High Degree of Alteration
Very Low Iron Oxides

Hand Sample Description:
A volcaniclastic composed predominantly of a greenish blue groundmass with coarse (2-5mm) white plagioclase clasts and black hornblende crystals. Brecciated, variable clasts that are heavily chloritized, making boundaries difficult to distinguish in hand sample. Breccia clasts are smaller than in RDOC-19.

Thin Section Description:

Volcaniclastic breccia with variable clasts – some are rounded, some are angular devitrified glass fragments (Photo 1), some contain many vesicles, and some relatively well-formed subhedral pyroxene grains with simple twinning (now altered to serpentine and talc) (Photo 2). Size varies from 0.5mm to over 6mm. Generally, the smaller clasts are monominerallic crystals (some with rounded grain boundaries, some that are angular), and the larger clasts are fine-grained, porphyritic fragments of fine-grained volcanics. (Photo 3)
The matrix is a mixture of quartz and fine grained orthoclase which is heavily sericitized and chloritized. The sample overall is clast-dominated.

Opaque minerals visible under reflected light are rare, with only local occurences of fine hematite, magnetite, and rutile.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Quartz	25	0.03-0.1	Vesicles filled with quartz in some clasts. Matrix likely predominantly fine-grained quartz. Vesicles vary in size dependant on the clast. Maximum size is 1mm.
Chlorite	16	<0.02	Chlorite overprinting nearly the entire sample, especially in the more altered clasts where there is a combination of chlorite, epidote, and quartz. Some clasts are entirely replaced by radiating masses of chlorite with little else present.
Sericite	15	<0.02	Matrix and clasts are heavily altered giving a patchy, dusty appearance over the whole sample.

MINOR MINERALS

Mineral	*Abundance (%)*	*Average Size (mm)*	*Description*
Muscovite	5	0.1mm long	Very heavily sericitized – fine grains of muscovite and clay minerals are overprinting almost everything in the sample (clasts and matrix). Some clasts contain longer grains growns epitaxally. Similar to chlorite when fine-grained, but colourless. Separated from sericite due to some longer bladed crystals in some clasts.
Serpentine	5	<0.05mm long needles	Fibrous, low-medium birefringence mineral replacing pyroxene. Altering to talc along fractures.
Talc?	3	<0.1mm	Highly birefringent mineral in fractures associated with fibrous ?serpentine replacing rounded clasts – likely relict pyroxene. Several grains are totally replaced by talc.
Orthoclase	1	0.5-1mm	Some rounded clasts with vaguely perthitic texture which are almost entirely sericitized with epidote alteration.
Epidote	1	<0.05mm	A mineral that is very fine-grained, anhedral, and has high birefringence that is very faintly green in plane light. Predominantly within heavily sericitized rounded clasts with vaguely perthitic texture.
Augite	0.5	3-6mm	Now predominantly talc and serpentine. Relict shape is often visible.
Tremolite-Actinolite	Tr	<0.1mm	Few fine acicular, bluish crystals within silicified vesicles.
Opaque Minerals	Tr	<0.05mm	Very rare disseminated iron oxides (magnetite altering to hematite) amd rutile.

Images
Sample: PO-78

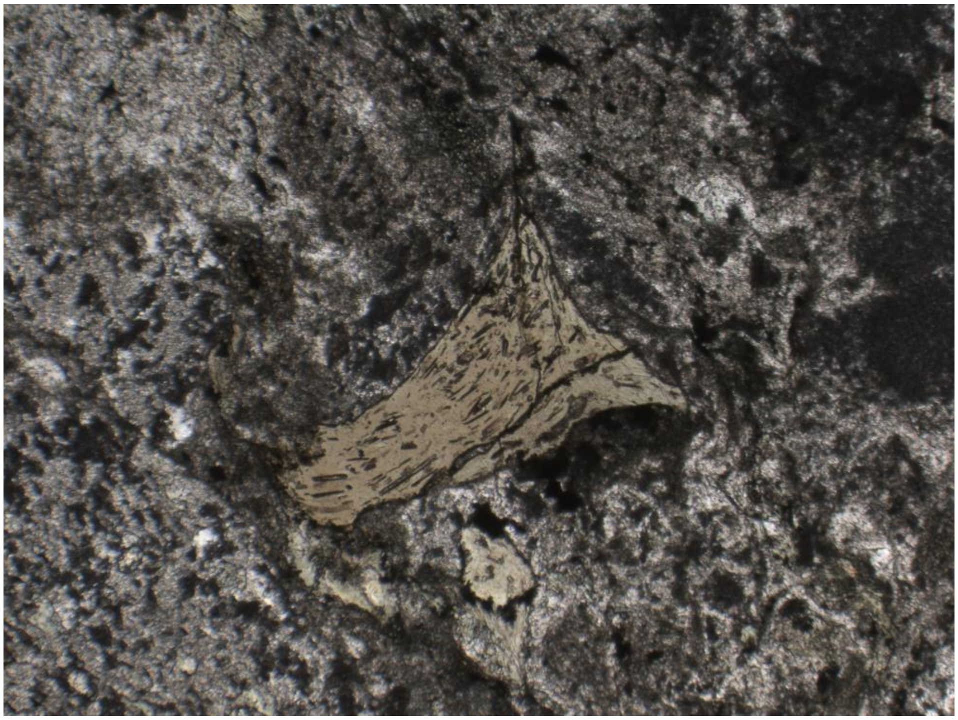


Photo 1: Angular, bent serpentinized fragment in a convolute, altered matrix of feldspars, quartz, and chlorite. PPL, 10x.

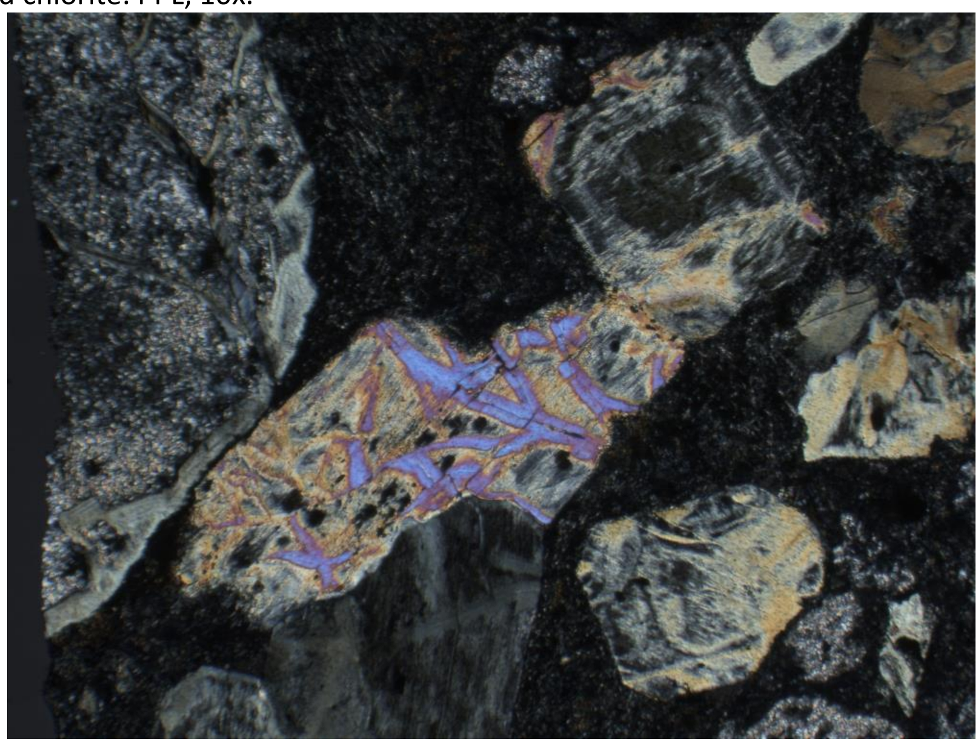


Photo 2:Rounded relict pyroxene now altered completely to serpentine and talc in a finegrained devitrified groundmass. XPL, 4x.

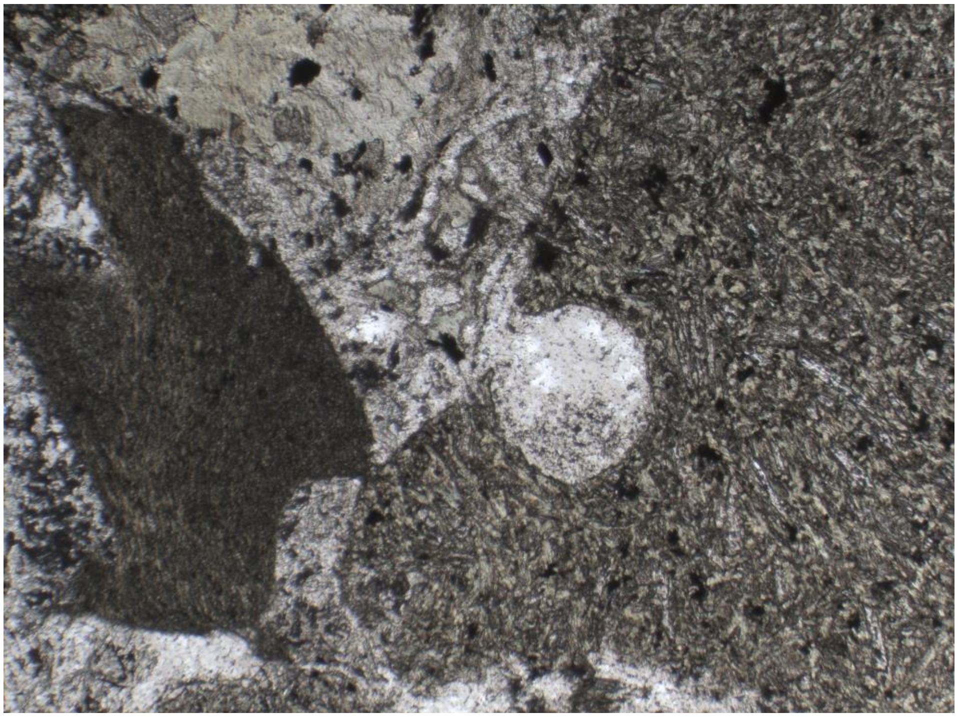


Photo 3: Angular clasts of vesicular basalt with long muscovite grains possibly replacing original plagioclase. Sample is chloritized throughout. Matrix is mixture of quartz, feldspar, and chlorite. PPL, 4x.

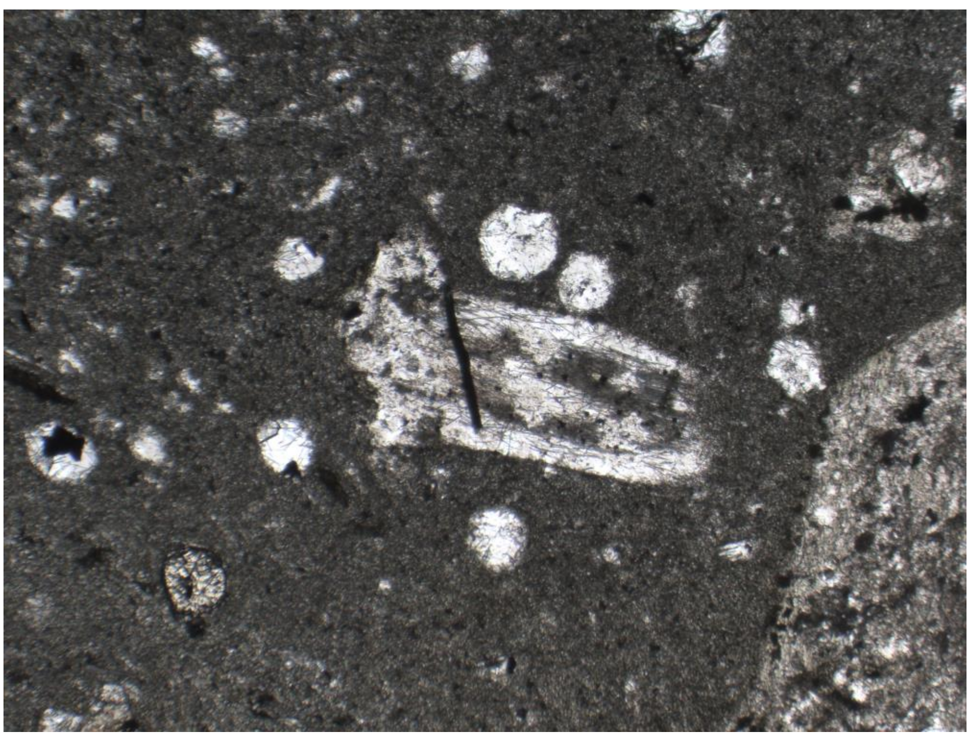


Photo 4: Vesicular basalt fragment with amygdules of quartz and tabular clasts now replaced with quartz. PPL, 4x.

<u>Sample:</u> AT-14-73 – Greenstone-altered Welded Tuff

High Degree of Alteration
Low Iron Oxides, Low to Moderate Iron Sulfides

Hand Sample Description:

A grey-green porphyritic rock with rounded clasts (2-4mm) of pinkish-white feldspar that are overgrowing mafic crystals in some cases. Darker rounded clasts display slight foliation. The matrix is composed for chlorite and quartz. Fine fractures are filled with a fine-grained white mineral and in some cases, a mafic mineral.

Thin Section Description:

The matrix is a devitrified groundmass now predominantly very-fine grained sericite, quartz, and chlorite. Discontinuous veinlets and vugs are rimmed by very fine-grained quartz, with a core of calcite (Photo 1). Clasts of ?amphibole are now almost entirely altered to epidote and chlorite. Some other angular clasts are replaced by quartz, chlorite, and biotite. One or two large (7-10mm) relict pyroxenes are apparent displaying quartz resorption and complete alteration to chlorite. Fiammes (Photo 2) (or otherwise foliated, somewhat flattened clasts) are partially replaced by feldspar and epidote. Colour may indicate high Fe epidote.

Somewhat porous, anhedral to subhedral pyrite (Photo 3) and hematite are found disseminated throughout the sample, possibly somewhat proximal to calcite veining. There are some fractures filled with reddish-brown material (goethite). (Photo 4)

<u>Modal Mineralogy</u>

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Chlorite + Sericite Groundmass	65	<0.01	Primarily within groundmass, fine radiating crystals, possibly replacing spherulites but difficult to tell. Also found replacing larger clasts.
Epidote	10	<0.01	Replacing fiammes, radiating crystals or anhedral masses. Partially replacing pyroxenes.
Quartz	13	0.01-0.2	Fine grained anhedral grains lining vugs and veinlets filled with calcite. Also within some relict grains.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Calcite	7	0.2-0.5	Large rectangular grain totally replaced by calcite aggregate. Within the cores of discontinuous veins and vugs.
Titanite	0.2	<0.2	Well formed, high relief crystals disseminated throughout.
Potassium Feldspar	0.5	<0.05	Very fine grained, along with quartz and epidote within fiammes
Pyrite	Tr	<0.1	Very fine anhedral grains disseminated within groundmass somewhat proximal to calcite
Hematite	Tr	<0.05	Very fine anhedral grains, in the same areas as pyrite – possibly replacement of pyrite
Goethite	Tr	<0.01	Very fine reddish-brown grained aggregate within some fractures.
Biotite	Tr	0.1-0.3	In relict pyroxene grains, subsequently being replaced by sericite/chlorite
Pyroxene (augite?)	Tr	1-6	Almost entirely replaced by chlorite or epidote
Ilmenite/Rutile	Tr	<0.02	Very small ilmenite cores surrounded by radiating rutile grains.

<u>Images</u>

Sample: AT-14-73

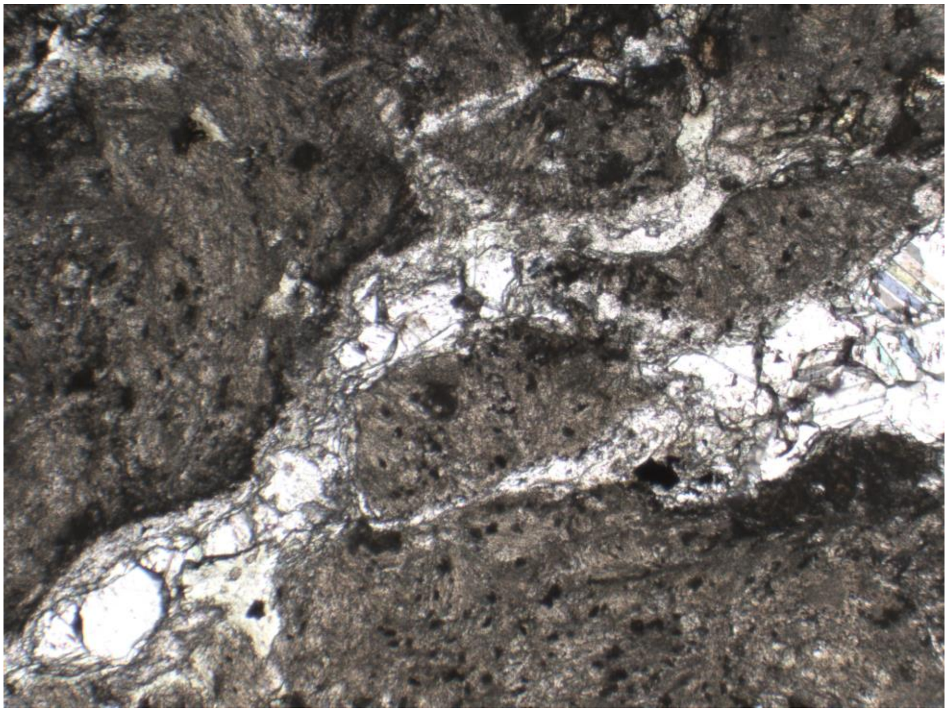


Photo 1: Veins and vugs lined with fine-grained quartz, with larger calcite crystals in the core. PPL, 4x.

Photo 2: “Fiamme” textured grains, replaced with feldspar and epidote. PPL, 4x.

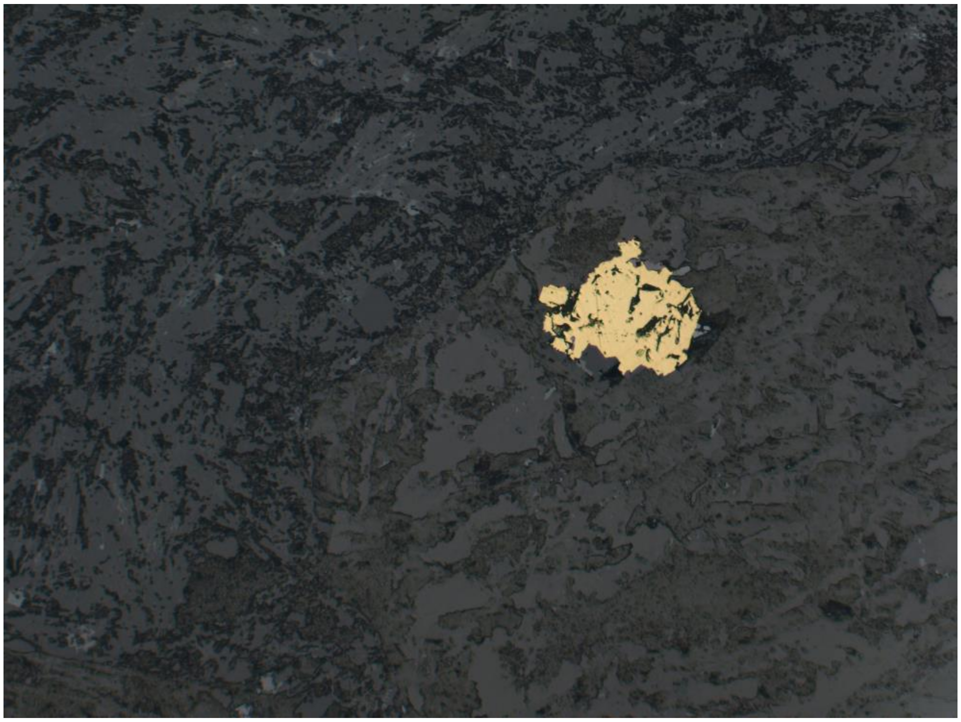


Photo 3: Slightly oxidized, anhedral porous pyrite within groundmass. RPL, 20x.

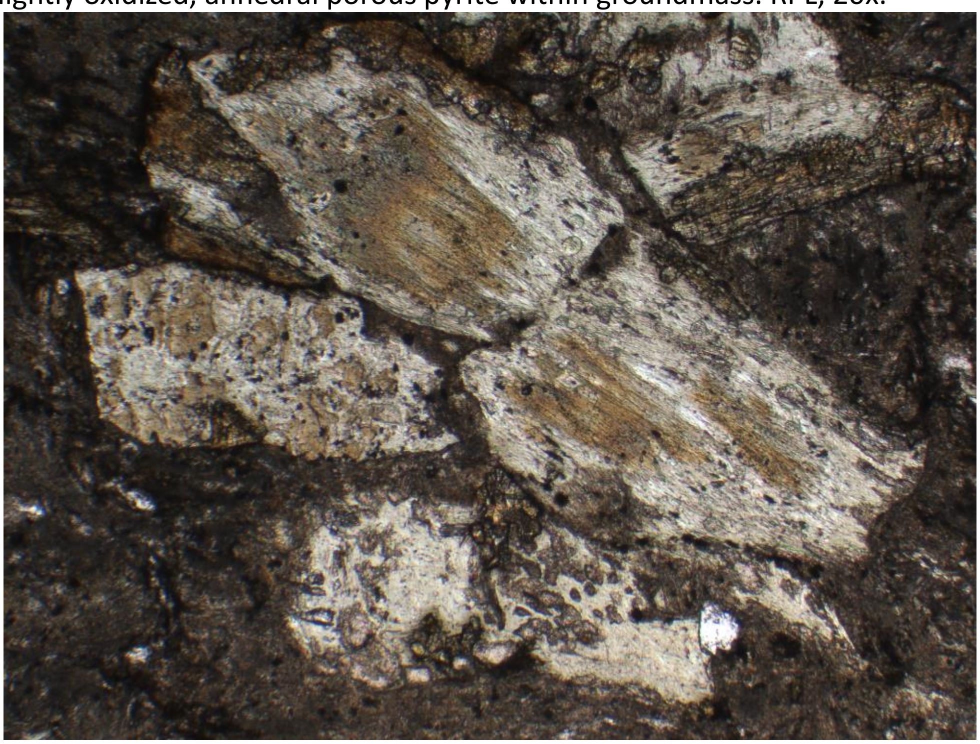


Photo 4: Angular clasts with cores of biotite and epidote zoning to feldspar? and quartz towards the grain boundaries.

<u>Sample:</u> AT-14-75s – Sheared Mafic Volcanic

High Degree of Alteration
Abundant Iron Sulfides

Hand Sample Description:

Fine grained, grey-green altered rock from a shear zone. Composed of a very fine dark green groundmass (chlorite + epidote) with lighter pink feldspar largely altered to chlorite near veins and abundant euhedral pyrite in more porous horizons. Fine late fractures filled with a white fine mineral.

Thin Section Description:

A fine grained mafic volcanic with a large vein crosscutting the sample. The rock has been heavily altered, so original features are largely obliterated. The host is now composed of quartz, epidote, chlorite, and minor sericite which are generally very fine grained. The contact between the wallrock and vein is somewhat more fine-grained and more chloritized (Photo 1).

The vein is composed of larger bladed crystals of tremolite-actinolite, with anhedral epidote, quartz and calcite aggregates between amphibole grains. (Photo 2) Smaller veins of epidote are slightly sheared (sinstral) and crosscut older quartz veinlets that are now largely overprinted by alteration. (Photo 3)

Compared to the other samples, pyrite grains are fairly large with rounded inclusions and appear to have formed after the primary veining event, possibly overgrowing previous smaller pyrite (Photo 4). They are often euhedral, and commonly show alteration around boundaries and fractures of magnetite. Very fine hematite and ilmenite altering to rutile are disseminated throughout the wallrock. Reddish veinlets define the boundary between vein and wallrock locally.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Tremolite-Actinolite	30	0.2-1	Bladed, radiating intergrown crystals within a vein with sharp contact to the wall rock. Wall rock clast within the vein is almost completely obliterated by blade crystals. Greenish blue colour with parallel to low angle extinction.
Chlorite	29	<0.01	Fine radiating acicular crystals are distributed throughout the wall rock, with lower birefringence than the bladed crystals within the vein system. Intergrown with epidote and quartz to almost totally replace the fine-grained wall rock.
Epidote	15	<0.3	High birefringence mineral within the amphibole vein that is higher relief and mostly colourless. Anhedral to subhedral grains. Very fine birefringent material within the wallrock.
Quartz	15	<0.1	Quartz within the vein is interstitial to the amphibole crystals. Very fine-grained quartz is found throughout the wall rock, and there are fine quartz veinlets throughout the sample that do not crosscut the amphibole vein. In one case, there may be a slight sense of shear as the quartz vein continues on the other side of the amphibole vein with an offset of roughly 1-2mm.
Sericite	10	<0.01	Very fine grained dusty appearance within wallrock.

MINOR MINERALS

Mineral	*Abundance (%)*	*Average Size (mm)*	*Description*
Pyrite	1	0.05-0.5	Subhedral, slightly rounded grains found within amphibole vein, overprinting amphibole crystals. Also see both wellformed and anhedral porous grains disseminated throughout the wall rock indiscriminately.
Fe oxides	0.5	Rims:0.04 Dissm: <0.01	There are reddish veinlets along the boundary between the wall rock and amphbole vein in some areas. There are also reddish veinlets associated with pyrite altering to magnetite. Pyrite is also altered to magnetite along fractures and rims, and there are very fine-grained grains disseminated throughout the wallrock.
Ilmenite/ Rutile	Tr	<0.02	Very fine disseminated anhedral grains disseminated throughout the wallrock. Slightly pinker than hematite.

Images

Sample: AT-14-75s

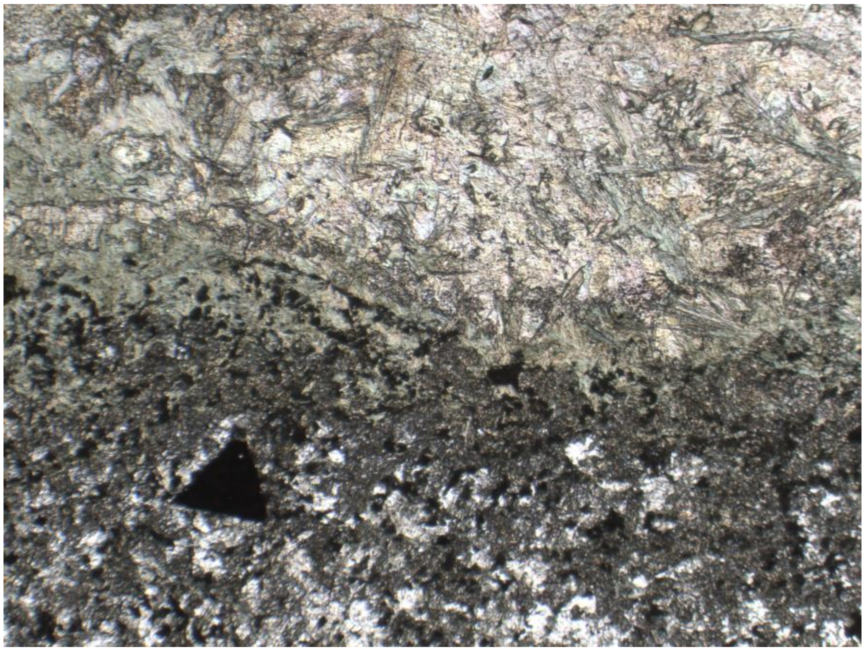


Photo 1: Interface between vein(top) and wall rock. Vein consists of calcic amphibole, calcite, and epidote. Wallrock is fine grained quartz, epidote and chlorite. Contact contains more significant chlorite and epidote.Opaque triangle is pyrite with magnetite alteration. PPL, 4x.

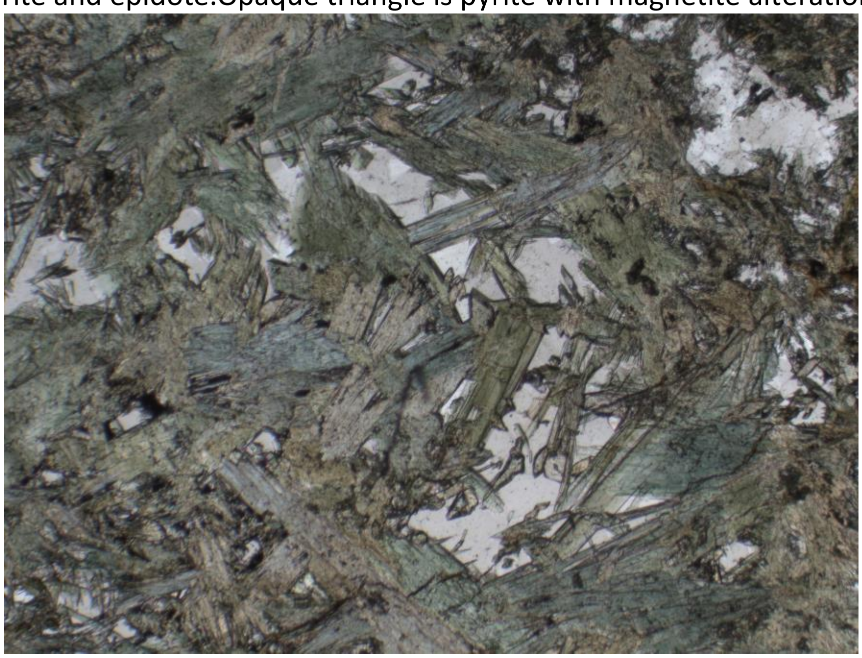


Photo 2: Interior of vein, with bladed, intergrown amphibole and interstitial calcite and quartz. PPL, 4x.

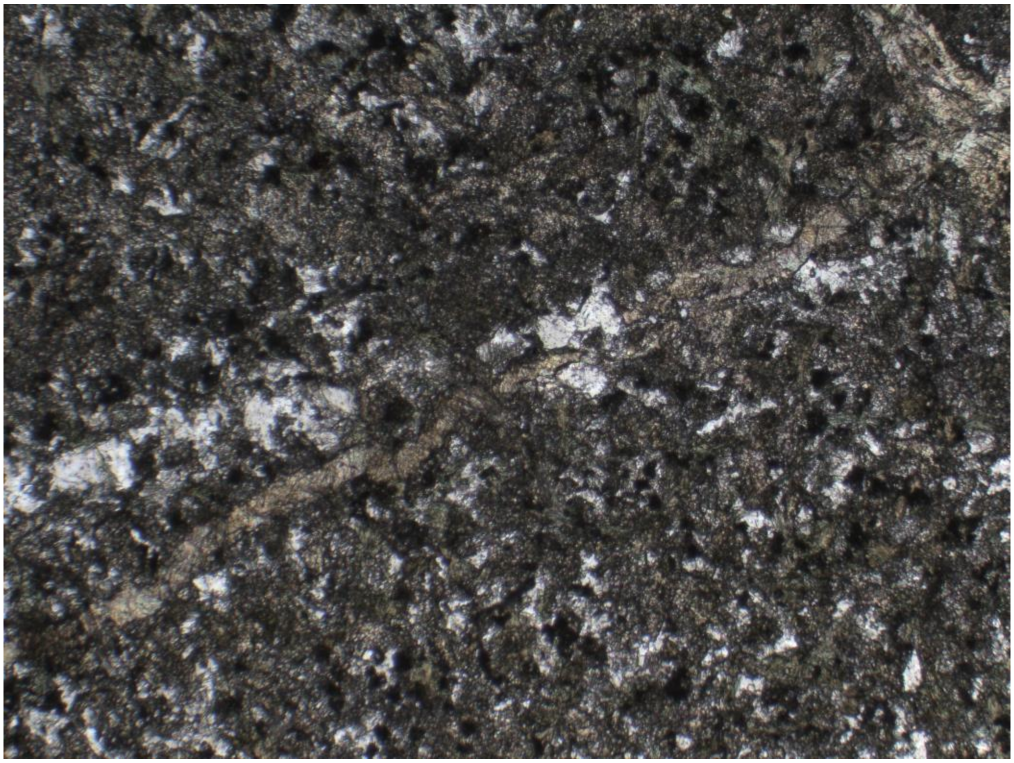


Photo 3: Discordant quartz vein in the heavily altered wall rock crosscut by epidote vein. PPL, 10x.

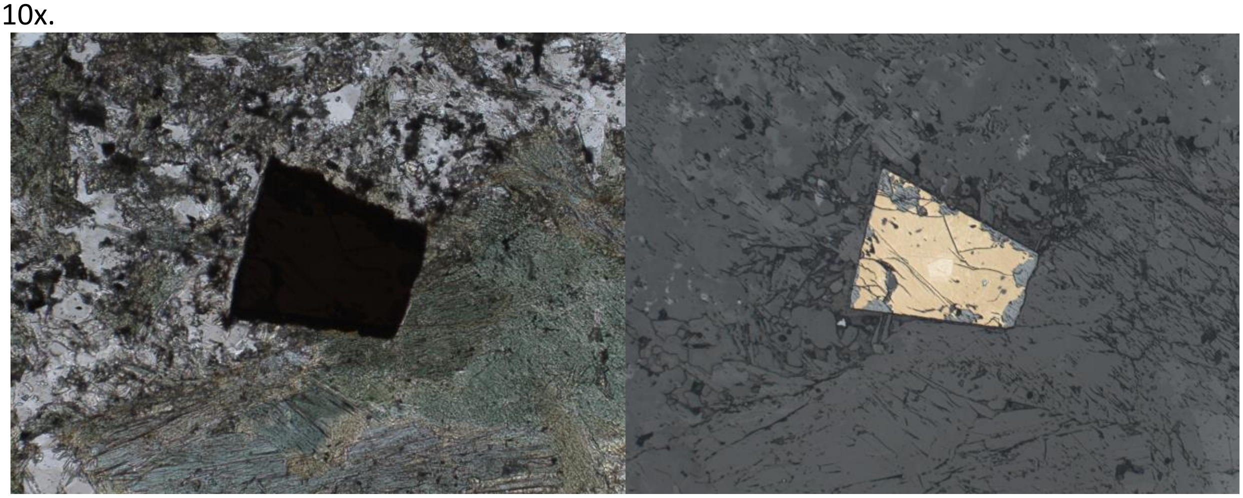


Photo 4: Pyrite growth on the interface between wallrock and vein. In reflected light, the grain is variably oxidized and allows for zoning to be visible – appears that the pyrite grew over an earlier grain. Grain boundaries are altered to magnetite. PPL, 10x.

<u>Sample:</u> AT-14-75i – Altered Porphyritic Basalt

High Degree of Alteration
Moderate Iron Sulfides

Hand Sample Description:

Fine grained grey-green rock with rounded white clasts (1-3mm). There are darker linear, somewhat aligned features composed of mafic minerals in the groundmass, which is predominantly chlorite and hornblende. Small (<0.5mm) pyrite is disseminated throughout the matrix.

Thin Section Description:

Porphyritic, heavily altered rock with many clasts and a fine-grained altered matrix. Tabular grains, likely original pyroxene and albite? are now predominantly quartz and tremolite-actinolite, with some chlorite alteration (Photo 1). Some pyroxene pseudomorphs contain cores of green hornblende and boundaries composed of anhedral quartz (Photo 2). Some rounded clasts appear to be almost complete sericitized perthitic feldspar clasts (Photo 3). There are several small veinlets of quartz cutting through original igneous textures.

Matrix is composed predominantly of very fine grained, anhedral quartz, chlorite, and epidote. Slightly larger, long tabular grains may be relict plagioclase grains, but no longer display characteristic twinning. Possibly a basaltic protolith, but texture is largely overprinted.

Pyrite is disseminated throughout the matrix, and mainly appear to be later hydrothermal minerals overgrowing original textures (Photo 4). They are somewhat more abundant near clasts of relict pyroxene. They do not display the same magnetite alteration as AT-14-75s, but distribution is similar.

Modal Mineralogy

MAJOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Tremolite-Actinolite	26	<0.05 – 0.6mm in length	Fine, bluish and high birefringence acicular crystals randomly oriented within the matrix. Bluish grains are considered actinolite, greenish lower-relief grains are considered chlorite. Actinolite also replaces original pyroxenes along with chlorite.
Chlorite	25	<0.05	Fine acicular crystals within the matrix. Slightly lower relief and more greenish colour than actinolite that is also present. Chlorite replaces some larger (1mm) grains nearly completely.
Quartz	17	<0.1	Very fine grained crystals within the matrix and incomplete resorption of some clasts.
Orthoclase	<10	1	Relict rounded perthitic orthoclase grains now almost completely altered. Fuzzy sericite defines the boundaries of the crystal. Epidote alteration is primarily within these grains.
Muscovite	3	<0.2	Heavily altered matrix with relatively large acicular muscovite crystals.

MINOR MINERALS

Mineral	*Abundance (%)*	*Size (mm)*	*Description*
Pyrite	0.5	0.1-0.4	Anhedral, rounded grains disseminated throughout the sample.
Epidote	0.5	<0.02	Very fine grained, high birefringence, high relief mineral within relict orthoclase clasts with sericite alteration.
Clinopyroxene	Tr	3-5	Almost entirely replaced by other minerals. Only a very small amount of original pyroxene remains visible, and it shows significant resorption and tremolite-chlorite alteration.
Hornblende	Tr	1	Some cores of pyroxene pseudomorphs contain a more greenish amphibole.

<u>Images</u>

Sample: AT-14-75i

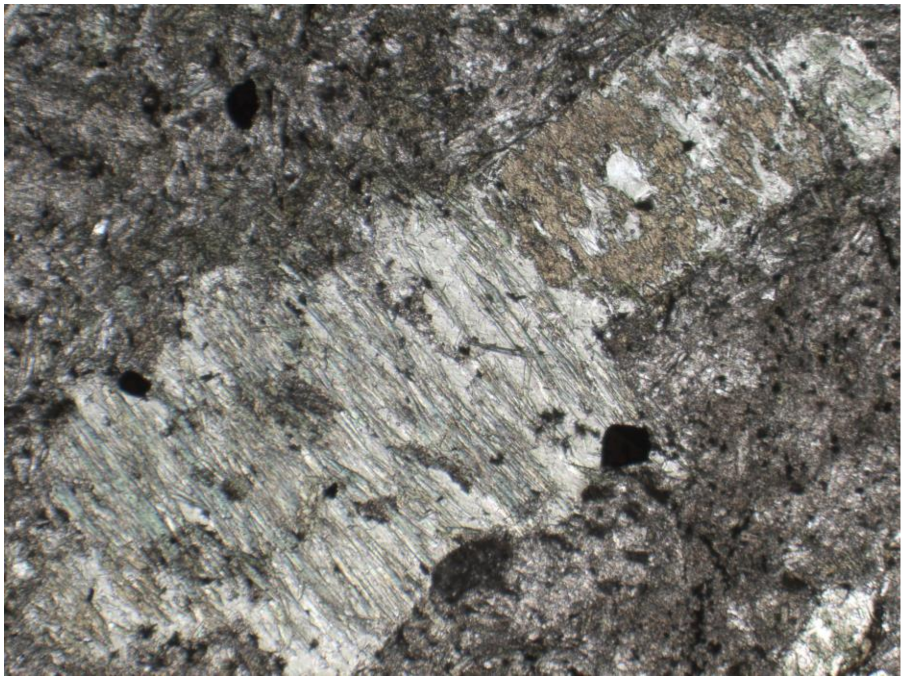


Photo 1: Relict pyroxene now nearly completely replaced by quartz and tremolite-actinolite. Some remains in the upper right. Surrounded by very fine-grained groundmass composed of quartz, epidote, and sericite. Black rounded minerals are pyrite. PPL, 4x.

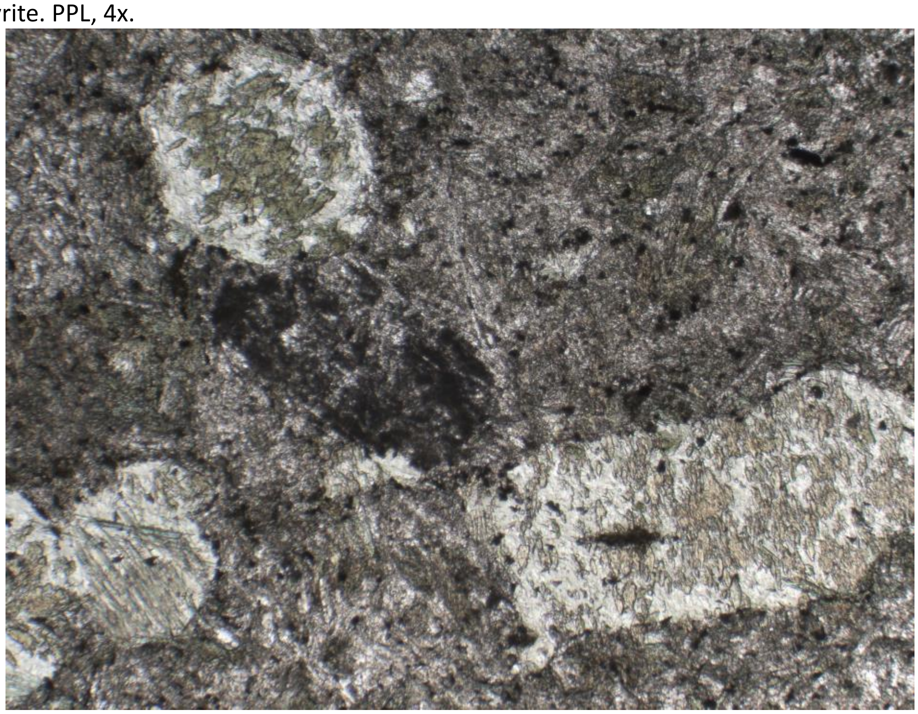


Photo 2: Hornblende pseudomorphically replacing pyroxene in the upper left and lower right, with boundaries of quartz. Tremolite-actinolite replacing the crystal in the bottom left. Elongate shapes in the groundmass are a combination of epidote, chlorite, and recrystallized quartz.

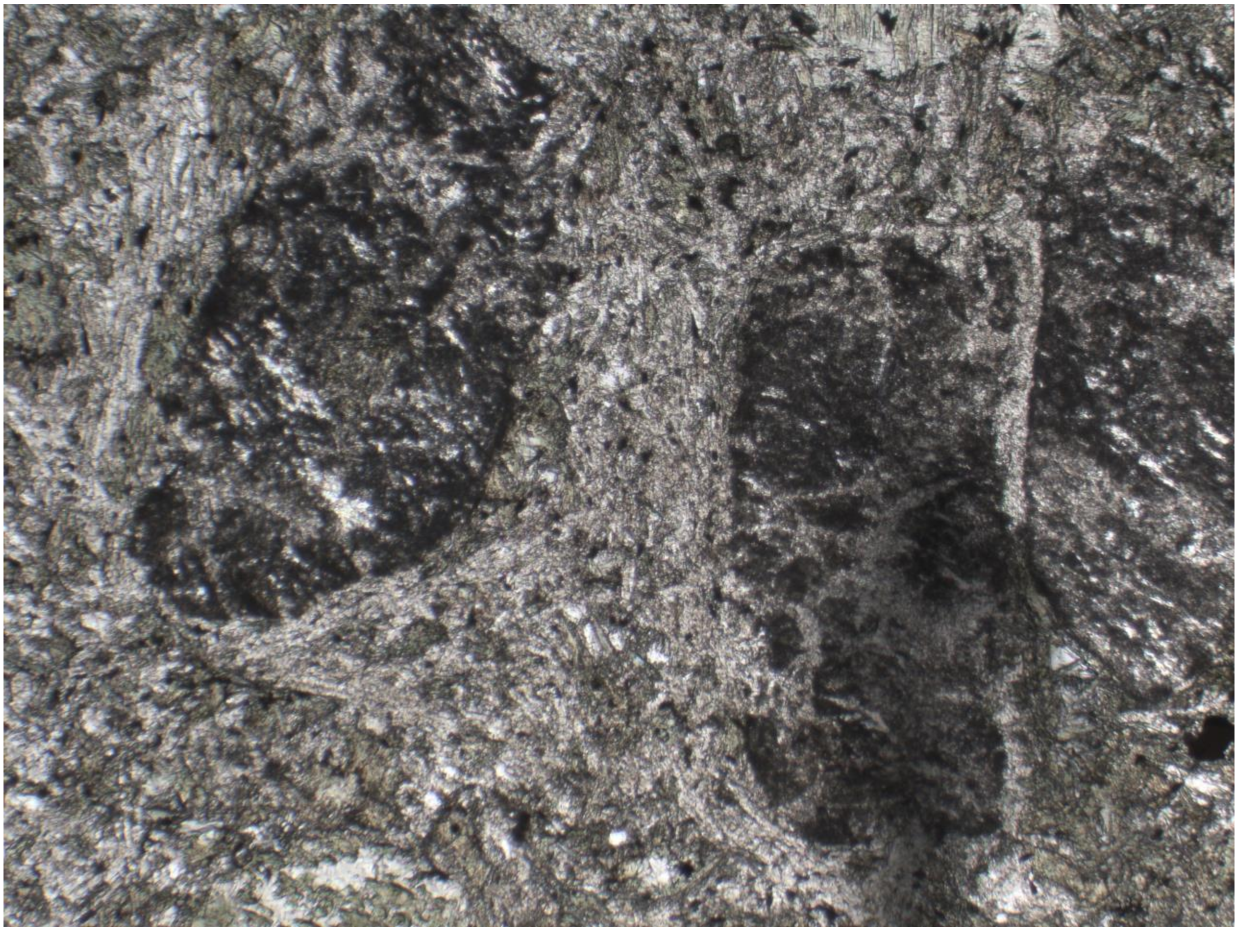


Photo 3: Clasts of relict perthitic orthoclase. Rounded, heavily sericitized with quartz alteration as well. PPL, 4x.

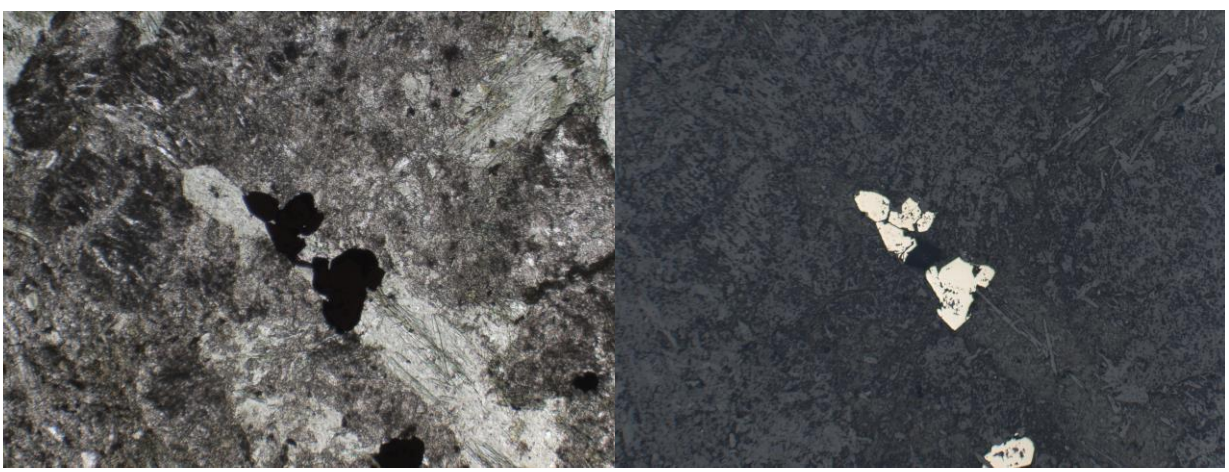


Photo 4: Pyrite grains overgrowing larger clast of plagioclase (?) with tremolite-actinolite and quartz alteration. Groundmass of quartz, chlorite, and epidote. PPL/RPL, 4x.