Mineral Resources Tasmania

Laboratory Report

LJN2020-016

MINERALOGICAL ANALYSES, BICHENO-BEAUMARIS AREA

An unpublished Mineral Resources Tasmania Report for:

Reece Bekue

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Date: 21 May 2020

Mineral Resources Tasmania
Department of State Growth

Tasmanian Government

SUMMARY

C111668 contains Tourmaline (probably schorl) with mica (muscovite?), quartz and feldspars.

C111669 is a mafic schleiren in granite and contains biotite (siderophyllite?), garnet (andradite? Pyrope?), with chlorite, quartz and feldspars.

C111670 contains biotite (phlogopite?), garnet (spessatine?), with chlorite and feldspars.

C111671 contains biotite (phlogopite?), with chlorite, quartz and feldspars. The blue miner is serpierite, c copper sulphate.

INTRODUCTION

Four samples of rocks were submitted for mineralogical analysis with details shown in Table 1. The main aim is to determine their mineralogy.

Table 1: Sample Details.

Reg. No	Location	Description
C111668	Bicheno	Tourmaline, mica
C111669	Bicheno	Tourmaline, garnet
C111670	Beaumaris	Garnet in Siltstone
C111671	Beaumaris	Cu mineral+ black?

SAMPLE PREPARATION

The samples were split into representative subsamples and examined by stereomicroscopy, and analysed for mineralogy. Analyses were done by XRD (X-Ray diffraction), in the Mineral Resources Tasmania (MRT) laboratories, Rosny.

SAMPLE DESCRIPTION

C111668 Bicheno Tourmaline, mica

This sample contains black prismatic tourmaline crystals to over 5 cm in length with mica (probably muscovite), quartz and feldspar (Figs. 1 - 2).

Figure 1: Sample C111668, showing black tourmaline with speckles of white mica, plus creamy feldspar and quartz. FOV: about 150 mm.

Figure 2: Sample C111668 showing black tourmaline, with some flakes of white mica. FOV: about 70 mm.

C111669 Bicheno Tourmaline, garnet

The rock appears to be a mafic schlieren (lens of country rock) in a pegmatitic granite and contains biotite, garnet (to ~4mm), with quartz and feldspars (Figs 3 -4).

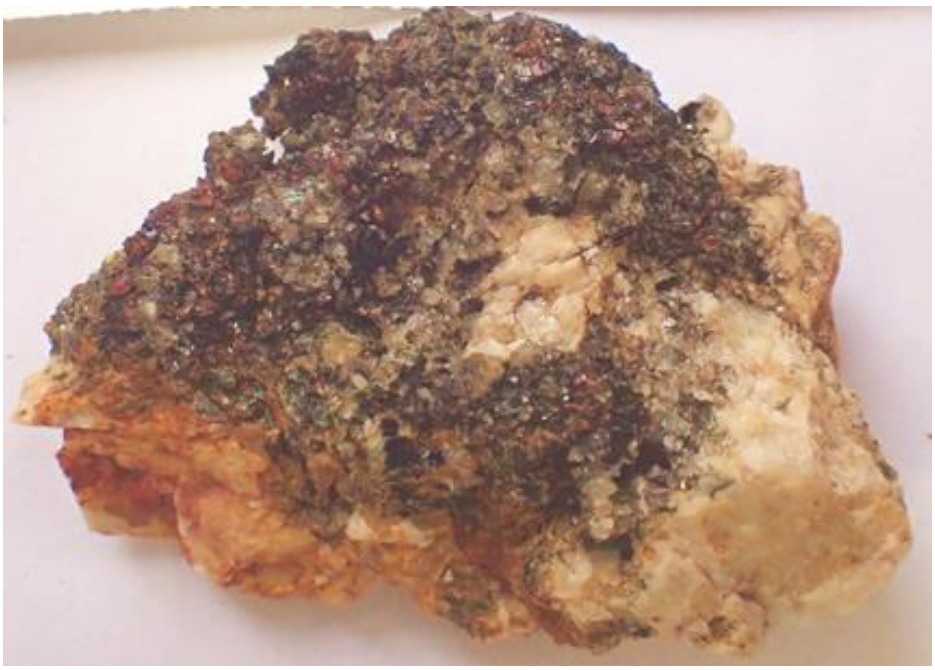

Figure 3: Sample C111669 showing red garnet, black intermixed biotite and tourmaline, and white feldspars and quartz. FOV: about 90 mm.

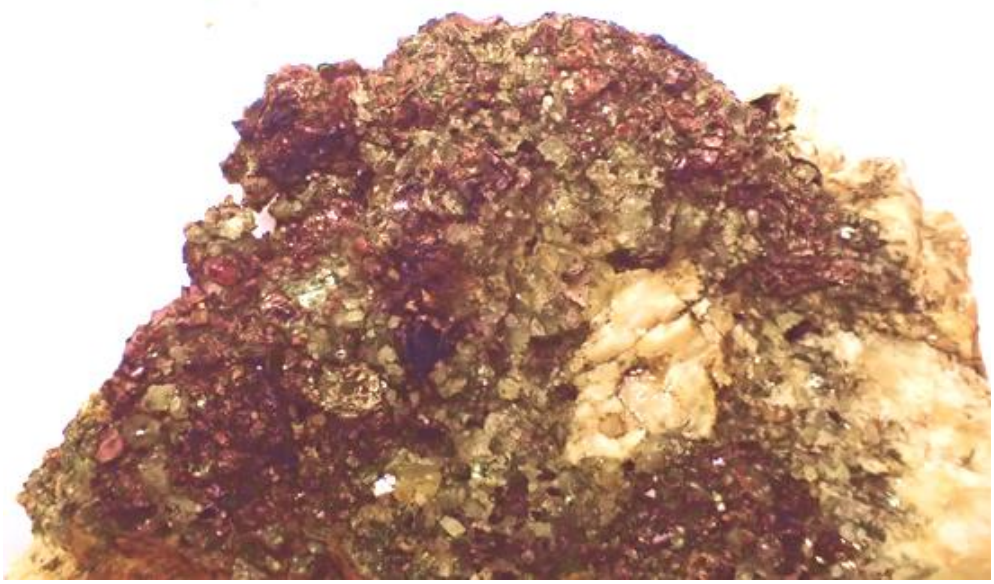

Figure 4: Sample C111669 showing red garnet, black intermixed biotite and tourmaline, and white feldspars and quartz. FOV: about 70 mm.

C111670 Beaumaris Garnet in Siltstone

The rock is a variably massive to banded black and white siltstone or hornfels with granular bands rich in pink-orange garnet (to ~1mm in size), to about 1mm in size (Fig. 5).

Figure 5: Sample C1116670 showing pink-orange garnet, in a fine grained, black biotite-rich rock. FOV: about 90 mm.

C111671 Beaumaris Copper-mineralised rock

The rock is a diffusely mottled black and white, pyritic sandstone with some limonitic patches and patchy thin coatings of blue and green minerals, appearing to be copper sulphates (Fig. 6 - 9).

Figure 6: Sample C1116671 showing white to black sandstone with some blue copper staining. FOV: about 90 mm.

Figure 7: Sample C1116671 showing white to black sandstone with some blue copper staining. FOV: about 80 mm.

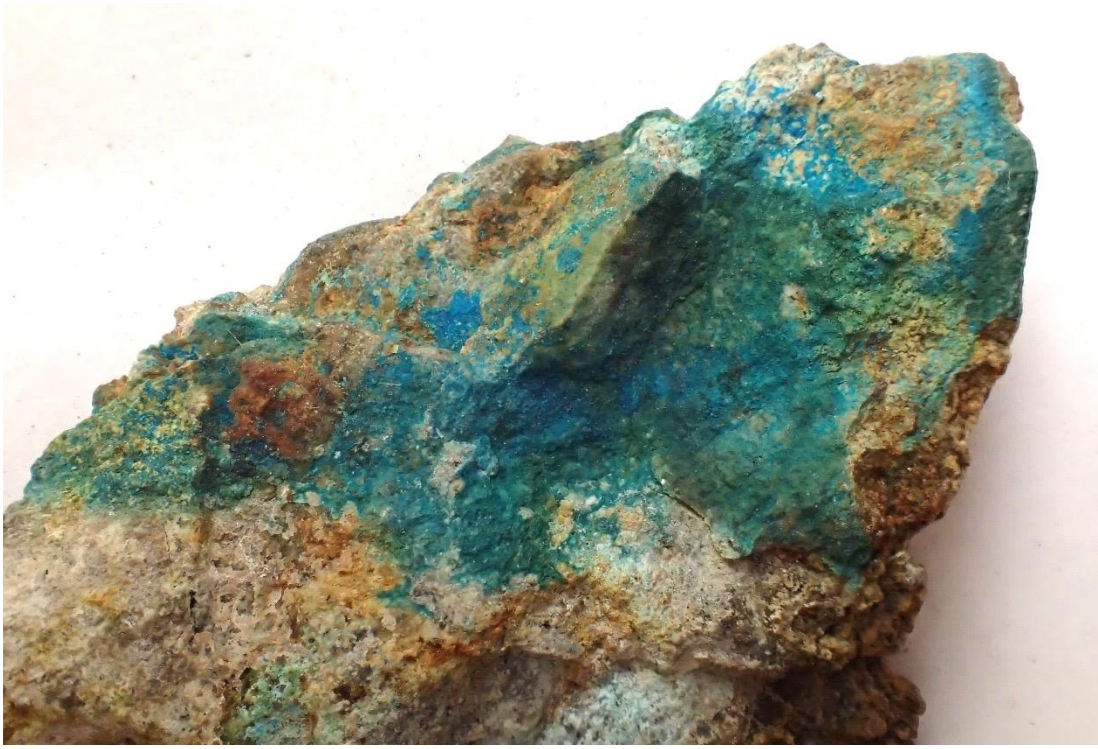

Figure 8: Sample C1116671 showing limonitic, pyritic sandstone with some blue copper staining. FOV: about 50 mm.

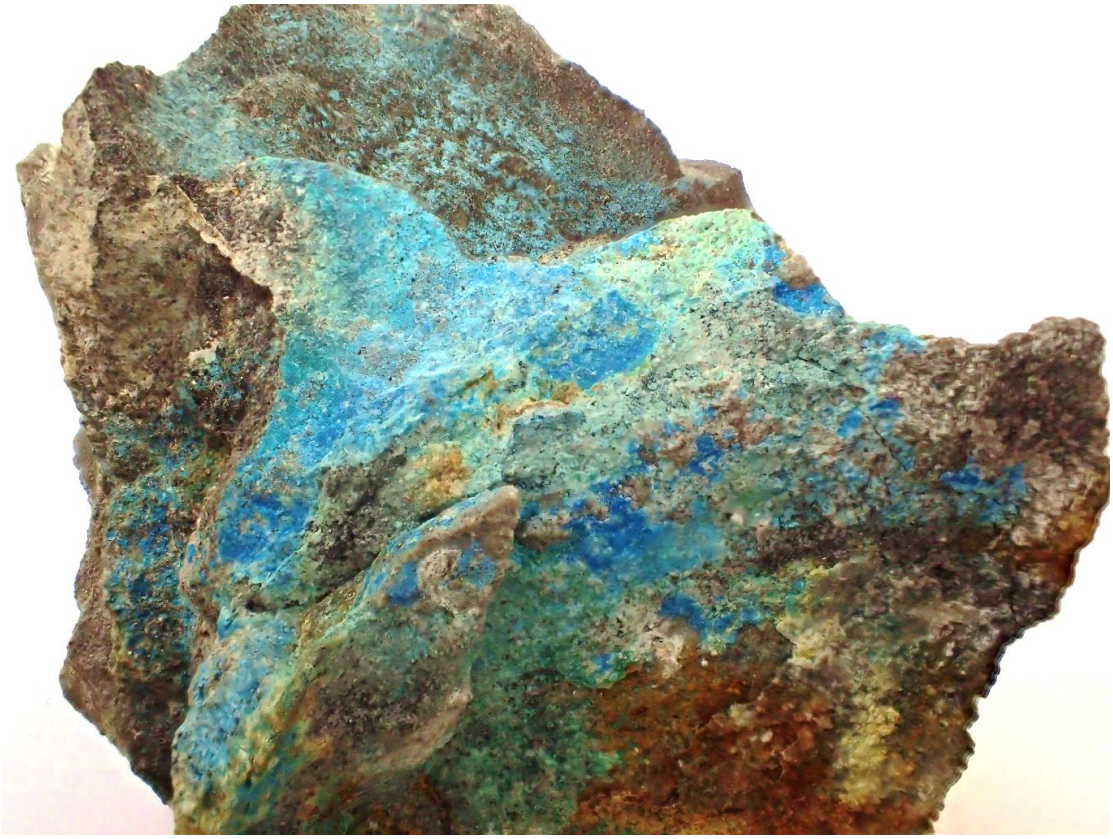

Figure 9: Sample C1116671 showing limonitic, pyritic sandstone with some blue copper staining. FOV: about 70 mm.

XRD ANALYSES

The samples were prepared, examined and analysed in the MRT laboratories, Rosny Park, Tasmania. They were run on a Rigaku Miniflex 600 X-Ray Diffractometer system: a 600W generator 150mm goniometer with a Cu tube; 40kV/15mA, sample spinner and a Scintillation counter (SC) with Be window, -3^{o} to 145^{o} 2Ø scanning range and 2^{o} - 145^{o} 2Ø measuring range, with a scanning speed of 0.01 to 100^{o}/min, a graphite counter monochromator and a Kß Ni- filter. The analysis software used is the PDXL2, using the ICCD database.

The results are shown in Appendix 1, and Table 2. They indicate mostly Biotite (possibly phlogopite-siderophyllite series), feldspars (possibly microcline and orthoclase), garnet (possibly spessartine, andradite and katoite?), Plagioclase, chlorite (chamosite?), quartz, andalusite and tourmaline (schorl?). The blue mineral in C111670 is probably serpierite, a copper sulphate.

Table 2: XRD Summary

Reg. No	C111669	C111670	C111671
Biotite	45(±7)	86(±19)	51(±5)
Garnet	1(±5)	7(±17)	<1(±5)
Plagioclase	<1(±16)	3(±15)	33(±4)
K-spar	45(±9)	2(±15)	3(±3)
Chamosite		1(±4)	2(±7)
Ankerite		<1(±4)	
Serpierite			<1(±4)
Quartz			10(±6)
Schorl	3(±13)		
Andalusite	5(±3)		

SUMMARY AND DISCUSSION

C111668 contains Tourmaline (probably schorl) with mica (muscovite?), quartz and feldspars.

C111669 is a mafic schleiren in granite and contains biotite (siderophyllite?), garnet (almandine?), with chlorite, quartz and feldspars.

C111670 contains biotite (phlogopite?), garnet (spessartine?), with chlorite and feldspars.

C111671 contains biotite (phlogopite?), with chlorite, quartz and feldspars. The blue miner is serpierite, c copper sulphate.

R S Bottrill — **MINERALOGIST/PETROLOGIST**

L Unwin — **TECHNICAL OFFICER**

Disclaimers

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Appendix 1: Laboratory Report: XRD Analyses

Client: Reece Bekue
Sample Source: Bicheno, Beaumaris
MRT Job Number: LJN2020-016
Analysis: Approximate Mineralogy
Method: X-Ray Diffraction
Analyst: L Unwin
Lab Manager: R Bottrill
Date: 3/3/2020

Analysis Results – C111669

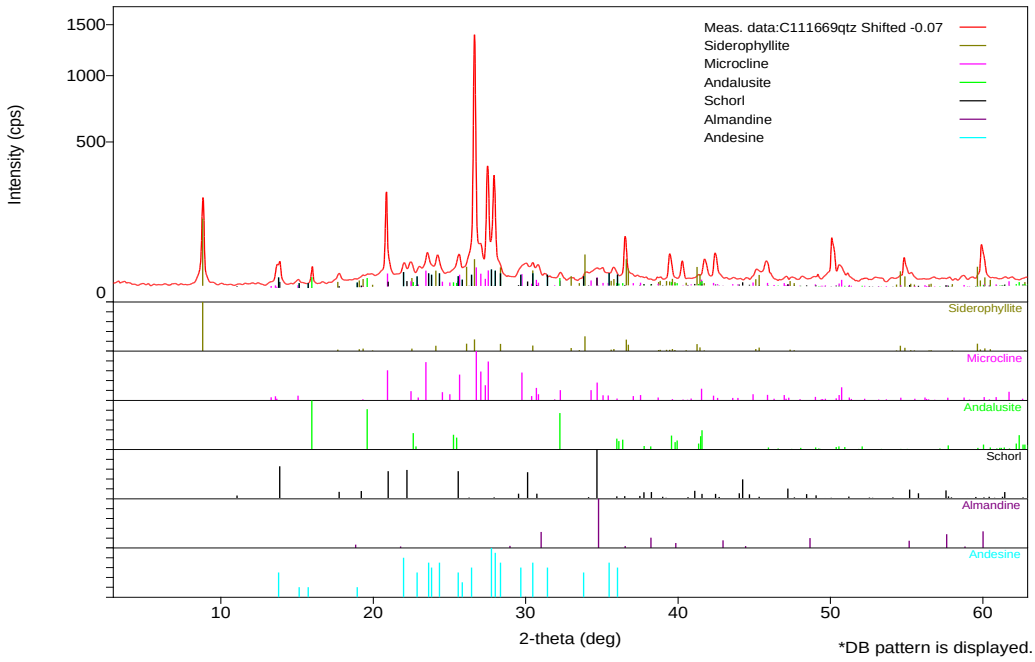
General Information

Analysis date	12/3/2020		
Sample name	LJN2020-016	Measurement date	12/3/2020
File name	C111669qtz.ras&C111669GDqtzgarnet.ras	Operator/Analyst	L Unwin
Comment	Shifted -0.07 with added Quartz		

Quantitative analysis results (RIR)

Phase name	Content (%)
Siderophyllite	45(±7)
Microcline	45(±9)
Andalusite	5(±3)
Schorl	3(±13)
Almandine	1(±5)
Andesine	<1(±16)

Phase Pattern



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Analysis Results – C111670

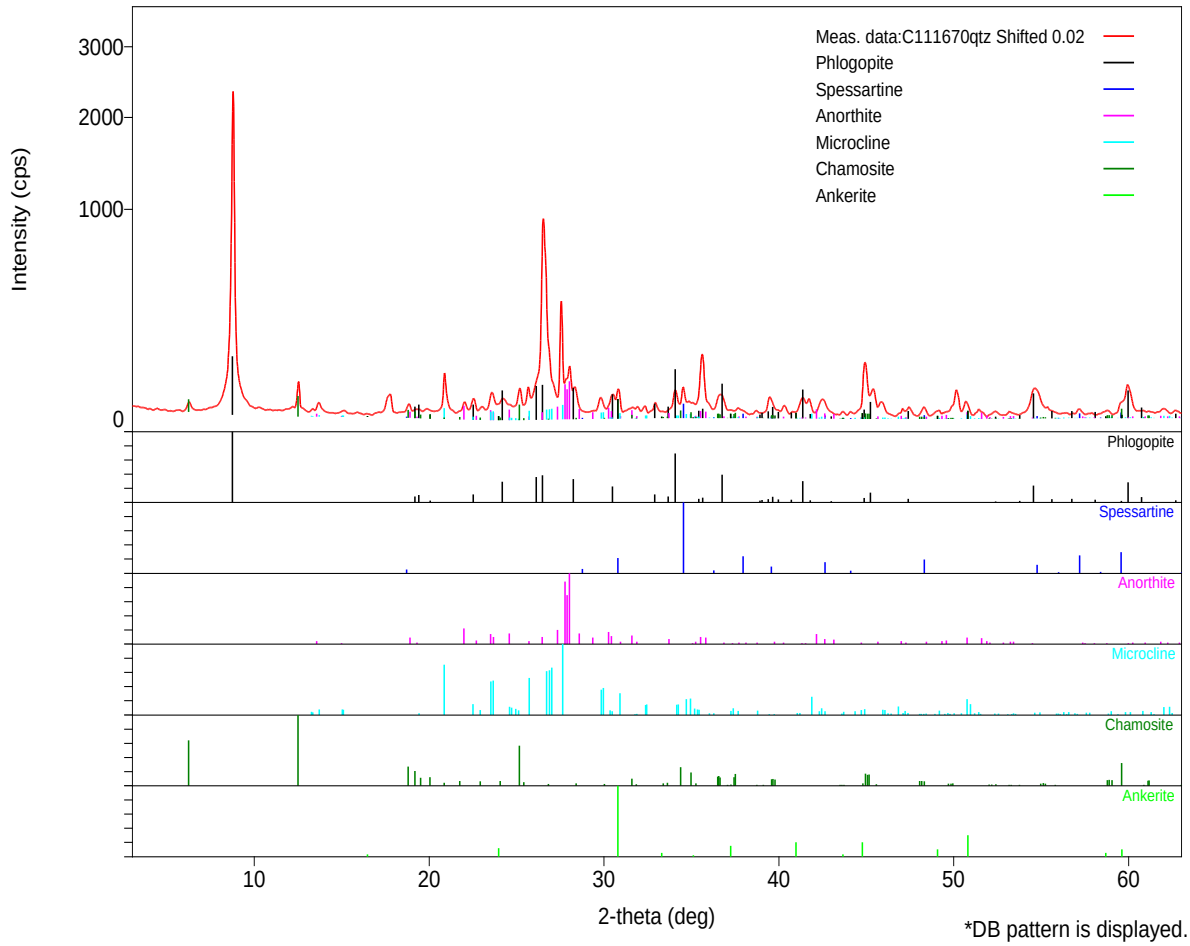
General Information

Analysis date	4/3/2020		
Sample name	LJN2020-016	Measurement date	4/3/2020
File name	C111670qtz.ras	Operator/Analyst	L Unwin
Comment	Shifted 0.02 with added Quartz		

Quantitative Analysis Results (RIR)

Phase name	Content(%)
Phlogopite	86(±19)
Spessartine	7(±17)
Anorthite	3(±15)
Microcline	2(±15)
Chamosite	1(±4)
Ankerite	<1(±4)

Phase Pattern



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Analysis Results – C111671

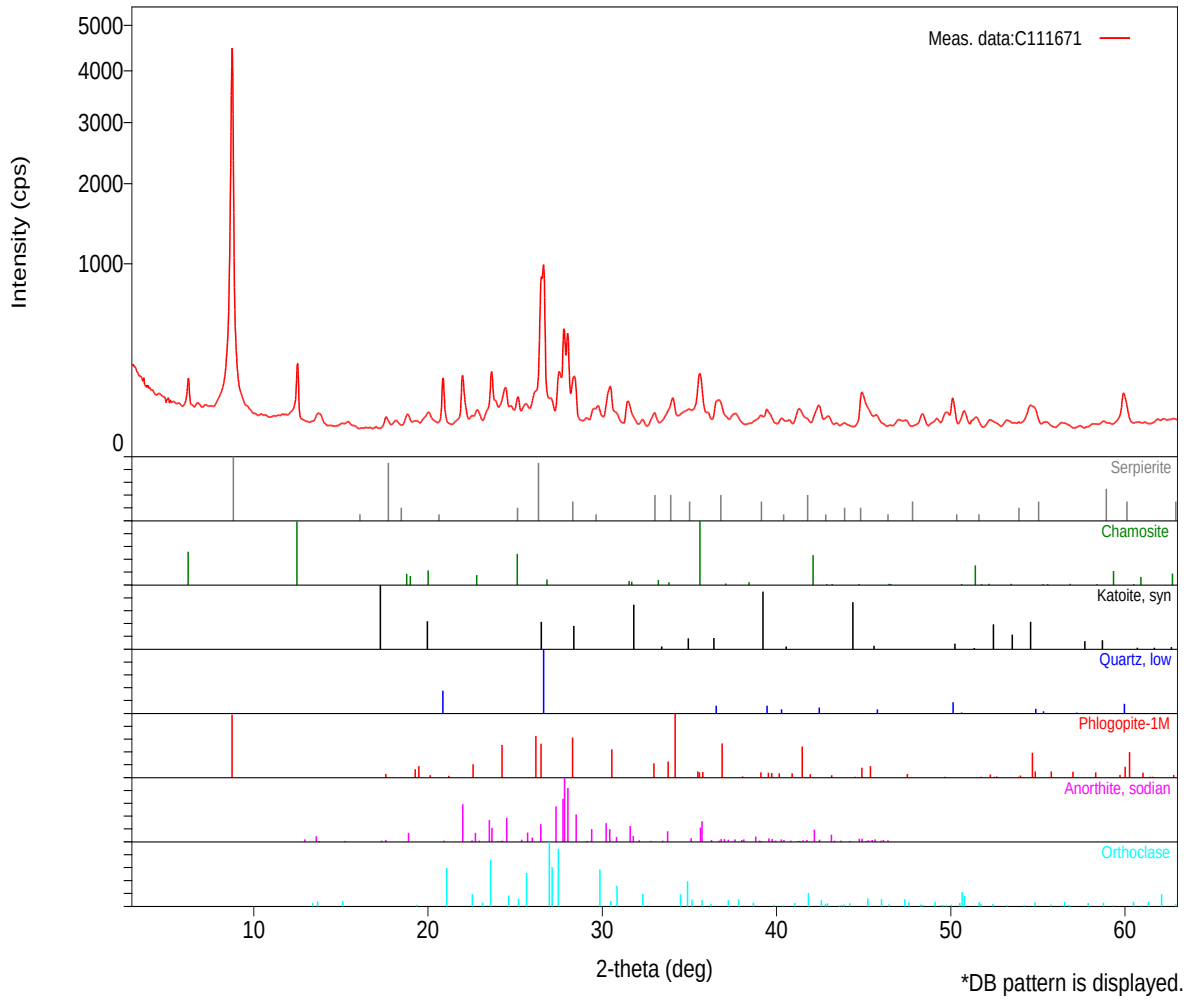
General Information

Analysis date	2020/03/04		
Sample name	LJN2020-016	Measurement date	2020/03/03
File name	C111671.ras	Operator/Analyst	lunwin
Comment			

Quantitative analysis results (RIR)

Phase name	Content(%)
Phlogopite	51(±5)
Anorthite	33(±4)
Quartz	10(±6)
Orthoclase	3(±3)
Chamosite	2(±7)
Katoite	<1(±5)
Serpierite	<1(±4)

Phase Pattern



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