Geoscience Australia

Geochronology Laboratory Sample Submission Form

This form must be fully completed before any work can be submitted to the Laboratory. It is a requirement that sample location and description data be entered into the GA databases before laboratory work begins.

Person submitting samples:	A Clark		
Project Code:		**Project Name:**	
Sample Number (SITE ID):	2018411029 / 2799765		
Date submitted:	29 Apr 2019		

GEOGRAPHIC AREA/ PROVINCE/ BASIN:	Warramunga Province		
1:250k SHEET NAME:	Alroy	**NUMBER:**	SE5315
1:100k SHEET NAME:	Dalmore	**NUMBER:**	6058
LOCATION METHOD: (GPS: WGS84 / AGD66 / AGD84 / GDA94)	GDA94		
ZONE:			
EASTING:		**NORTHING:**	
LATITUDE:	-19.699144	**LONGITUDE:**	135.537205

FORMAL NAME:	N/A
INFORMAL NAME:	Biotite-garnet schist
LITHOLOGY:	Schist

DRILLHOLE ID:	DD80 AL3	**DEPTH FROM:**	320.4
PROSPECT:		**DEPTH TO:**	320.5

Dating Objective

What is the geological question Ar-Ar analysis will potentially solve?

These rocks are part of a low-mid amphibolite facies assemblage that was metamorphosed at ~1845 Ma. Biotite ages should provide an estimate of when these rocks were exhumed to the upper crust. The relative timing of cooling between this sample and other samples from the Alroy/Barkley/East Tennant and Murphy areas may also provide insight into whether these areas were uplifted together or at different times.

What type of age(s) are expected? (e.g. magmatic crystallisation, metamorphism, maximum depositional age, detrital age spectrum):

Cooling age (biotite)

Mineral target for dating:

Biotite

Sample Information

Location description (e.g. a sample of x was collected from y, z km from abc town):

Lithological characteristics (rock description):

This sample is a quartz-biotite-garnet schist. Quartz ribbons and biotite define a well-developed schistosity that wraps garnet porphyroclasts.

Relative age constraints (pertinent geological relationships with surrounding units and any previous geochronology):

A single population of metamorphic monazite from a nearby drill core (DDH005) that intersected similar lithology has an age of 1844 ± 3 Ma (in prep). No other age information is available.

Thin section description (if available):

See sample description above.

Photograph(s):

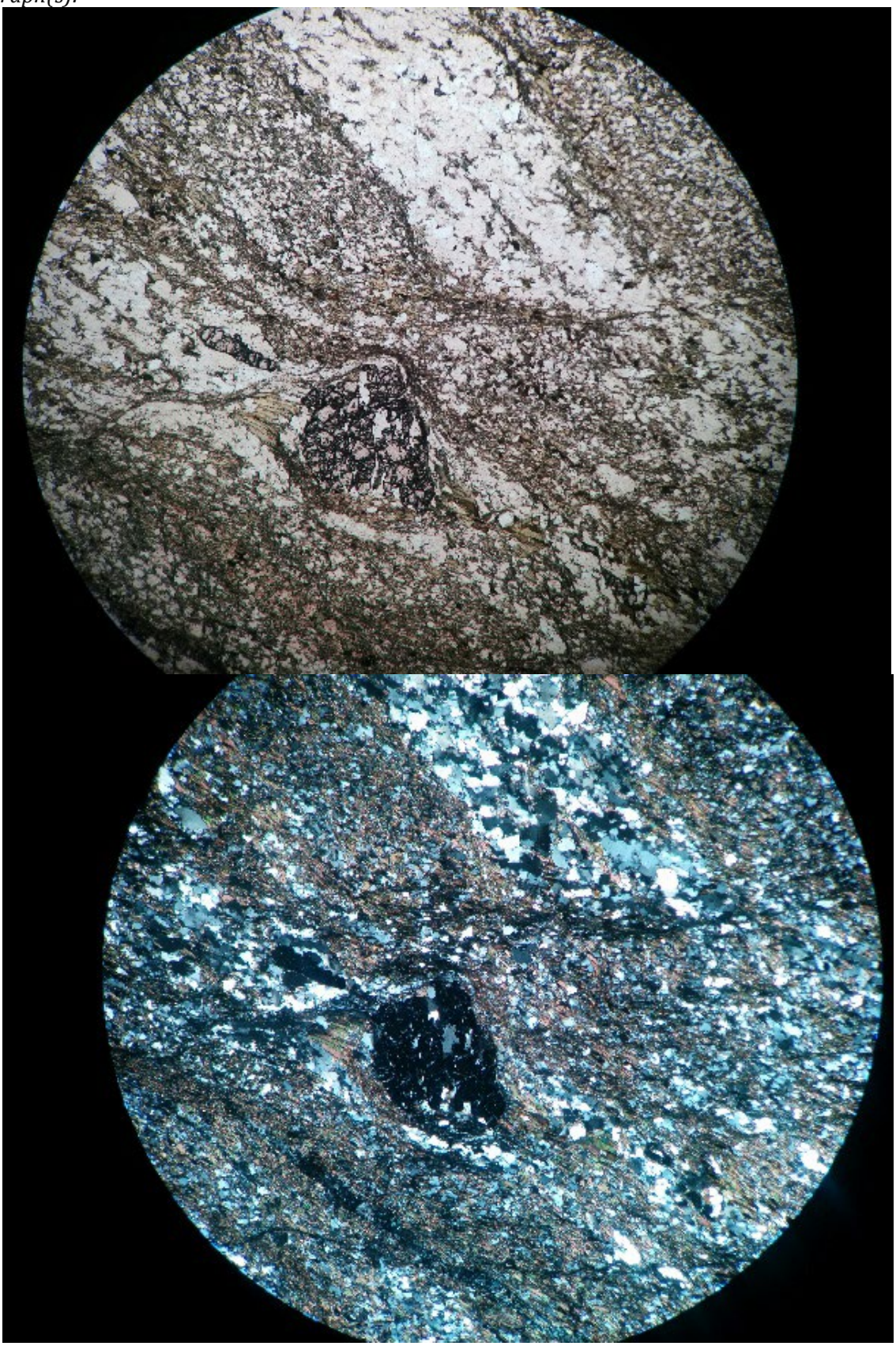

Figure 1: PPL and XPL image of sample showing quartz-biotite matrix surrounding garnet porphyroclast. FOV approx. 3mm across.

Relevant bibliographic references:

Confidential Data

Is this sample confidential? No

If so, until what date and reason?