National Argon Map: an AuScope Initiative
$^{40}Ar/^{39}Ar$ Geochronology Laboratory Sample Submission Form

This form must be completed and returned to Marnie Forster (Marnie.Forster@anu.edu.au) before any work can be commenced in the Argon Laboratories.

Person submitting samples: Ian T Graham
Affiliation: UNSW Sydney
Project Title: Sapphire Project
Sample Number(s) (including IGSN if one exists): BL-HBDb
Mineral separation required? Yes or No: No
Date submitted:

GEOGRAPHIC AREA/ PROVINCE/ BASIN : Drummond Basin	
1:250k SHEET NAME: Emerald	**NUMBER:** SE-55-15
1:100k SHEET NAME: Zig Zag	**NUMBER: 8351**
LOCATION METHOD: (GPS: WGS84 / AGD66 / AGD84 / GDA94) GDA-94	
ZONE: 55	
EASTING: 147.29472E	**NORTHING:** 23.59855S
LATITUDE:	**LONGITUDE:**

STRATIGRAPHIC UNIT FORMAL NAME *:
STRATIGRAPHIC UNIT INFORMAL NAME: Billaboo Volcanic
LITHOLOGY: Hornblende

DRILLHOLE ID (if applicable):
PROSPECT (if applicable):
DEPTH FROM (metres):
DEPTH TO (metres):

* Stratigraphic Unit names can be searched and checked within the Australian Stratigraphic Units Database via the following link: https://asud.ga.gov.au/

Dating Objective

What is the geological question $^{40}Ar/^{39}Ar$ analysis will address? Dating of the hornblende from the hornblende lamprophyre sample will give information concerning the magmatic processes responsible for the formation and evolution of this lamprophyre. It will also greatly complement the wholerock Ar-Ar dating of the same sample.

What type of age(s) are expected? (e.g. magmatic crystallisation, metamorphism, fluid alteration/mineralisation, cooling, shearing etc): Age of the crystallisation of the hornblende megacrysts.

Mineral target(s) for dating: Hornblende (sent as a mineral separate).

Estimated $^{40}Ar/^{39}Ar$ age (e.g. Cenozoic, Mesozoic, Paleozoic, Proterozoic, Archean – provide estimated numerical age range if possible): The age is expected to be in the Paleogene Period in the Cenozoic.

Sample Information

Location description (e.g. a sample of x was collected from y, z km from abc town): The rock sample was collected 45km SW of Rubyvale, Central Queensland.

Lithological characteristics (rock description): Lamprophyre with large idiomorphic black hornblende phenocrysts to over 2cm.

Relative age constraints (pertinent geological relationships with surrounding rock units and any previous geochronology): The volcanic edifice intrudes upper Devonian to lower Carboniferous sedimentary rocks of the Drummond Basin.

Thin section description (if available):
NA

Photograph(s) e.g. field site, hand-specimen, photomicrograph:

SEE BL-HBD-a.

Relevant bibliographic references: