



Province of  
British Columbia

885709 MEMORANDUM

TO:

Bill McMillan  
BCGS  
Victoria

FROM:

Tom Schroeter  
BCGS  
Vancouver

SUBJECT:

Age Dates - Mt. Milligan

DATE:

Apr. 13/89

FILE:

For Your Information

Please O.K. and Return

Please Discuss With Me

Per Your Request

For Your Signature

Please Process

Return With More Details

Investigate and Report

Please Answer

For Your File

Bill,  
As per your suggestion - the samples  
from Mt. Milligan.  
I would certainly appreciate your follow  
up suggestion.  
Thanks, Tom

REPLY:



TO:

Tom Schroeter

FROM:

Bill M. Mullen

File →  
M. Mullen

SUBJECT:

Mt Mullen

DATE:

89/4/18

FILE:

- |   |   |   |   |   |
|---|---|---|---|---|
| <input type="checkbox"/> For Your Information | <input type="checkbox"/> Please O.K. and Return   | <input type="checkbox"/> Please Discuss With Me | <input type="checkbox"/> Per Your Request | <input type="checkbox"/> For Your Signature |
| <input type="checkbox"/> Please Process       | <input type="checkbox"/> Return With More Details | <input type="checkbox"/> Investigate and Report | <input type="checkbox"/> Please Answer    | <input type="checkbox"/> For Your File      |

Tom

I plan to send the Mullen samples to Toronto for zinc work. Can you please send me the rock chips & their sections

REPLY:

that I returned to you. Thanks.

Apr. 21/89

Sorry, Bill - I didn't realize you needed them - here they are

Bill

Tom



TO:

BILL McMILLAN  
BCGS  
Victoria

FROM:

TOM SCHAROETER  
BCGS  
Vancouver

SUBJECT:

MT. MILLIGAN Age Dating - Zircons

DATE:

June 5/89

FILE:

- |  |   |   |   |   |
|--|---|---|---|---|
| <input checked="" type="checkbox"/> For Your Information | <input type="checkbox"/> Please O.K. and Return   | <input type="checkbox"/> Please Discuss With Me | <input type="checkbox"/> Per Your Request | <input type="checkbox"/> For Your Signature |
| <input checked="" type="checkbox"/> Please Process       | <input type="checkbox"/> Return With More Details | <input type="checkbox"/> Investigate and Report | <input type="checkbox"/> Please Answer    | <input type="checkbox"/> For Your File      |

Bill:

I'm submitting 2 further 'samples' from the Mt. Milligan project for possible zircon age determination. Both samples were supplied very kindly by the company (via Mark Rebagliati). Mark informed me that they come from the central, 'barren' core of the monzonite intrusion.

REPLY:

Let's hope we have better luck this time.  
Thanks for your help.

Cheers,  
Tom

K-Ar

Sample Number(s) and Reference(s)	material	Date	error
Lab No: <u>TGS 89-2</u>	decay constants: (W. Rx.)	<u>66.3</u>	$\pm 2.3$ Ma
	$\square 4.72/.584/1.19$	( )	$\pm$ Ma
Ref: <u>Tom Schroeter</u>	$\square 4.72/.584/1.18$	( )	$\pm$ Ma
<u>MEMPR.</u>	$\blacksquare 4.96/.581/1.167$	( )	$\pm$ Ma

Record No: \_\_\_\_\_  
 Suite No: \_\_\_\_\_  $\square$  not reported  
 Sample Name: \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: (X° Y' Z" or X° Y.Y')  
 (55° 07' " N, 124° 02' " W ( $\pm$  )); Elev. \_\_\_\_\_  
 UTM Zone 10 6108819E 434101N; Province B.C.  
 Sec. \_\_\_\_\_, T. \_\_\_\_\_, R. \_\_\_\_\_; Co., State \_\_\_\_\_.

(NTS 93N/015) Manson River Map Area, Scale 1:250,000

Location: Mt. Milligan (Phil, Heidi) property  
 Source Type: Drill core DDH 88-26 -18m  
 Rock: Porphyritic latite (monzonitic?)  
 Geologic Unit: Takla group andesitic pyroclastics. (Dike) intrudes  
 Geologic Age: \_\_\_\_\_  
 Material Analyzed: Whole rock (-40+60), sulphides removed

Analytical Data: (list duplicate analyses or indicate n = 2, n = 3, etc.)

K = $\bar{X} = 6.74 \pm 0.03$	%; (Ar <sup>40*</sup> = $17.695 \times 10^{-6}$ cc/gm )	
K <sub>2</sub> O = $n = 2.$	%; $7.896 \times 10^{-10}$ mol/gm )	( $91.2$ % Ar <sup>40*</sup> )
K =	%; (Ar <sup>40*</sup> = $\times 10^{-6}$ cc/gm )	( % Ar <sup>40*</sup> )
K <sub>2</sub> O =	%; $\times 10^{-10}$ mol/gm )	( % Ar <sup>40*</sup> )
K =	%; (Ar <sup>40*</sup> = $\times 10^{-6}$ cc/gm )	( % Ar <sup>40*</sup> )
K <sub>2</sub> O =	%; $\times 10^{-10}$ mol/gm )	( % Ar <sup>40*</sup> )
K =	%; (Ar <sup>40*</sup> = $\times 10^{-6}$ cc/gm )	( % Ar <sup>40*</sup> )
K <sub>2</sub> O =	%; $\times 10^{-10}$ mol/gm )	( % Ar <sup>40*</sup> )

Comment on Analyses: \_\_\_\_\_

M

Interpretation: Early Cretaceous date expected. May be younger or non-retentive or altered and reset.  
Rock has abundant disseminated sulphides.

Collected by: Mark Rebagliati, for T. Schroeter

Dated by: T. Harakal & D. Runkle.

Listed by: \_\_\_\_\_ (name, institution)

Date: 03.28.89.

### K-Ar

Sample Number(s) and Reference(s)	material	Date	1σ error
Lab No: <u>TGS 89-3</u>	decay constants: (W.Rx.)	<u>109</u>	<u>± 4</u> Ma
	<input type="checkbox"/> 4.72/.584/1.19	( )	± Ma
Ref: <u>T. Schroeter</u>	<input type="checkbox"/> 4.72/.584/1.18	( )	± Ma
<u>MEMPR.</u>	<input checked="" type="checkbox"/> 4.96/.581/1.167	( )	± Ma

Record No: \_\_\_\_\_  
 Suite No: \_\_\_\_\_  not reported  
 Sample Name: \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: (X° Y' Z" or X° Y.Y')  
(55° 07' " N, 124° 02' " W (± ); Elev. \_\_\_\_\_

UTM Zone 10 6108819 E 434101 N; Province B.C.  
 Sec. \_\_\_\_\_, T. \_\_\_\_\_, R. \_\_\_\_\_; Co., State \_\_\_\_\_.

(NTS 93 N/01E) Manson River Map Area, Scale 1:250,000

Location: Mt. Milligan (Phil, Heidi) property  
 Source Type: Drill core DDH 88-25-90m  
 Rock: Hornfels - altered volcanic with secondary biotite  
 Geologic Unit: Takla Group  
 Geologic Age: \_\_\_\_\_  
 Material Analyzed: Whole rock (-40+60), magnetite and sulphides removed

Analytical Data: (list duplicate analyses or indicate n = 2, n = 3, etc.)

K = $\bar{X} = 3.31 \pm 0.04$ %	(Ar <sup>40*</sup> = $14.459 \times 10^{-6}$ cc/gm)	
K <sub>2</sub> O = $n = 2.$ %	(Ar <sup>40*</sup> = $6.452 \times 10^{-10}$ mol/gm)	( $94.5$ %ΣAr <sup>40</sup> )
K = _____ %	(Ar <sup>40*</sup> = _____ x10 <sup>-6</sup> cc/gm)	( _____ %ΣAr <sup>40</sup> )
K <sub>2</sub> O = _____ %	(Ar <sup>40*</sup> = _____ x10 <sup>-10</sup> mol/gm)	( _____ %ΣAr <sup>40</sup> )
K = _____ %	(Ar <sup>40*</sup> = _____ x10 <sup>-6</sup> cc/gm)	( _____ %ΣAr <sup>40</sup> )
K <sub>2</sub> O = _____ %	(Ar <sup>40*</sup> = _____ x10 <sup>-10</sup> mol/gm)	( _____ %ΣAr <sup>40</sup> )
K = _____ %	(Ar <sup>40*</sup> = _____ x10 <sup>-6</sup> cc/gm)	( _____ %ΣAr <sup>40</sup> )
K <sub>2</sub> O = _____ %	(Ar <sup>40*</sup> = _____ x10 <sup>-10</sup> mol/gm)	( _____ %ΣAr <sup>40</sup> )

Comment on Analyses: \_\_\_\_\_

A  
M(P)

Interpretation: Contact mm related to Naver intrusion.

Collected by: M. Rebagliatti for T. Schroeter

Dated by: J. Harakal & D. Runkle.

Listed by: \_\_\_\_\_  
 (name, institution)

Date: 03.22.89

for zircon  
(+ rutiles - TiO<sub>2</sub>)

SEPARATION APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_

10-3: GEOCHRONOLOGY REQUEST FORM

Submitted by: TOM SCHROETER

K/Ar \_\_\_\_\_ Zircon X Other \_\_\_\_\_

MT 93N194

Sample Number TGS-89-5

Lab Number \_\_\_\_\_

Location Lat 55° 07' N Long 124° 02' W NTS 93N/01E

UTM Zone 10 Easting 610889 Northing 43410

Kind of Sample Hand specimen \_\_\_\_\_ Drill core X Other \_\_\_\_\_

Rock Type MONZONITE

Rock Unit/Formation/Group TAKLA GROUP ANDESITIC PYROCLASTICS

Mineral to be separated (specify if whole rock) zircon

Geologic Age Estimated Early Cretaceous?

Comments MT. MILLIGAN (Phil, Heidi) property  
DH-89-129 (154-164 m)

Note: Previous K/Ar dates (TGS-89-2 + TGS-89-3)  
Mar. 1989

Collected by Mark Rebagliati → Tom Schroeter

Dated by \_\_\_\_\_

Listed by \_\_\_\_\_

Name/Institution

June 5/89

for zircons

SEPARATION APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_

10-3: GEOCHRONOLOGY REQUEST FORM

Submitted by: TOM SCHROETER  
K/Ar \_\_\_\_\_ Zircon X Other \_\_\_\_\_

MI 93N 194

Sample Number TGS-89-4  
Lab Number \_\_\_\_\_

Location Lat 55° 07' N Long 124° 02' W NTS 93N/01E  
UTM Zone 10 Easting 1108819 Northing 43410

Kind of Sample Hand specimen \_\_\_\_\_ Drill core X Other \_\_\_\_\_

Rock Type MONZONITE

Rock Unit/Formation/Group TAKIA GROUP ANDESITIC PYROCLASTICS

Mineral to be separated (specify if whole rock) zircons

Geologic Age Estimated Early Cretaceous?

Comments Mr. MILLIGAN (Phil, Heidi) property  
ADH-89-123 (108-123 m)

Note: Previous K/Ar dates (TGS-89-2 + TGS-89-3)  
Mar/89

Collected by Mark Rebagliati → Tom Schroeter

Dated by \_\_\_\_\_

Listed by \_\_\_\_\_  
Name/Institution

June 5/89