

P.M. 79

896451



Peter Mustard



S 360  
FIELD BOOK

6  
5  
4  
3  
2  
1

Traverse PM. 79-A  
RIDGE N. of Nicola Lake  
Start on West end  
Sunny w. scattered clouds

PM. (1) Elev 2670'

no o/c  
located on road start traverse to east  
bearing  $130^\circ$

PM (2) Elev 2800

SAMPLE

PM 79-1

- (1) + 500 ft on line - good o/c  
Spotted dark - light Grn.  
xtalline mafic volcanic  
(basalt or andesite?)  
- much epidote alteration  
+ ep filled fractures } common but  
+ Carb. fractures } not abundant  
- slickensides on rare surfaces

(2) + 250'

trail @  $0^\circ$   
still bearing  $130^\circ$

# Brunton sticking badly

No.....

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PM3 Elev 2830'

in trees: Triangulated location  
sighted on road<sup>Hwy</sup> intersection

in Nicola town. =  $201^\circ$

" on road-Hwy intersection  
Sth of Nicola Lake =  $168^\circ$   
sight on Hwy N. Lake paved road  
intersection =  $192^\circ$

- Same rock type as PM2

- andesite or basalt  
matrix dark green

plagioclase light green + tabular

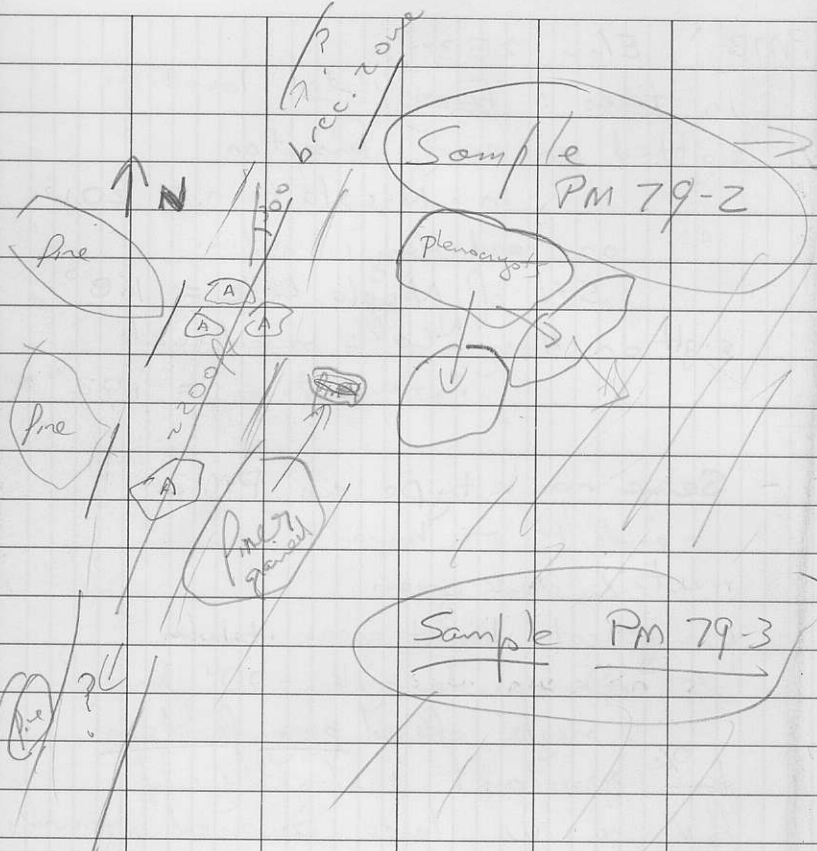
↓ often subangular -  $90^\circ$  cleavage?  
maybe altered plag. feldspar

~~rock~~ resistant + slightly cliff  
forming w. large covered intervals  
between o.c.

jointing (cleavage?) consistently  
strikes  $40^\circ$  + vertical  
bearing  
 $\sim 90^\circ$

fair exposure of o.c. along line  $\sim 300'$   
all S.O.S. perhaps more qtz than  
before.

Elev. 2900'



PM 79-2

Some volcanic

but zone of fairly coarse angular breccia matrix is dark gray fine volcanic fragments vary from whitish, clay to dark green hole like matrix - walked to all surrounding outcrops -

EW of breccia is fine grained rock as before E is small fine grained zone then large outcrops of fine grained dark green - gray matrix with large (2 cm) tabular phenocrysts (plagioclase feldspar?) light green to white.

Found breccia again below 1st outcrops & get general strike by hanging up outcrops =  $30^\circ$

- breccia

zone ~ 25 m wide - less coarse fragments away from core.

PM 5 Elev 2900

good + extensive o.c. of  
tabular <sup>plagioclase</sup> plagioclase + phenocrysts bearing dark green volcanic  
(andesite)?

phenocrysts not noticeably aligned usually  
this is now the country rock (possibly)  
rarely contains Ep-calcite veins

- impossible to stay on a bearing at this point - am following andesite outcrops hopefully  $\perp$  to strike

PM 6 Elev = 2820

phenocrysts decrease gradually  
to here.

- few to no tabular plagioclase
- light green fine grained volcanic  
includes some calcite

Calcite-Ep veins still seem to be more common.

Trangulation to PM 6

6 to N end paddock of farm =  $235^\circ$

6 to Hwy intersection w. road to pipelike Stn of Lake  
=  $184^\circ$

6 to Hwy - with lake road intersec. =  $214^\circ$

Sample Pm 79-4

~ 3m cliffs in creek bed.

Pm 7 Elev 2740 but to each different green  
similar to PM6 - massive fine grained  
apple green andesite (basalt?)  
very fine plagioclase  
some calcite veins + epidote alterations  
some black spotting too  
tot

- talus slope E of PM7  
had some similar looking rocks  
with calc. eyes within

PM8 Elev 2840'

small (2-3m) zone of volc brecc.  
large (up to 10cm) light green - white  
clasts in a light green matrix  
- clasts floating in matrix + very  
angular  
- on both sides of brecc. are zones  
of porphyritic andesite?  
- plagioclase of plagioclase - tabular white  
to light green  
- also Qtz eyes throughout

QAP

lined up 3 brecc. zones over 500 ft  
strike = 35° no dip

Samples

PM 79-5

PM 79-6

jointing common 057/52NW

Pm 8B Elev 2920'

Still Q.F.P. but much finer texture  
 i.e. phenocrysts still visible but small (<10µm)  
 LARGE RAVIDE CLIFFS ON BOTH SIDES

Pm 9 Elev 2720'

larger <sup>(up to 3mm)</sup> feld. tabular white phenocrysts  
 in a green fine grained matrix  
 still some etz eyes + some etz veining  
 still Q.F.P.?

tabular feldspars ~~aligned~~ oriented on an  
 average of  $148^\circ$  in one spot ( $\sim 4$  sets)  
 but in most places seem random  
 - rock is very similar to Sample 79-3

no change over next 100 m or so  
 + good O.C. perhaps more  
 epidote alteration esp. in fractures

SAMPLE  
PM 79-7

PM 10 Elev 2800

Light gray to purple fine grained volcanic (andesite) still quite rich but not with feld. plagioclase common calcite & Epidote fractures - some large (3-5cm) purple clasts seen but these are rare

PM 11 only 100 ft E of PM 10  
Volc. prec.

subangular fragments up to 15cm - rounded

Sample  
PM 79-8

PM 11 Elev 2850

gray-purple banded Limestone!!  
1-2m thick sporadic outcrop  
- locally heavily calcite veined  
- no obvious corals or other fossils  
bedding: 000 / vertical  $\pm 5^\circ$  (LST)  
\* \* \*

LST (overlies) is E of ~1m of a volcanic Pebble Conglomerate clasts well to sub rounded most ~ 1-4cm largest ~ 20cm clasts suspended in a lime mud matrix couldn't see tops.

Sample  
PM 79-9



No.....

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SAMPLE PM 79-10

No..... NICOLA LAKE PM 79-1

Date..... 21/8/79..... Page..... 8.....

PM 12

due E of LST

is dark green volcanic

← w of (B) plerogysts

Following LST + COWG down  
to road its dip is no longer  
vertical below origin of spot

@ Elev 2700'

bed = 354 / 35 E

beds look fissile  
perhaps cleavage?

looks close to vert. again  
further down dip ~ 80° E

@ Elev 2540 bed 009 / 90

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TRAVERSE PM. 79-2 NH.

No. .... NICOLA LAKE RIDGE .....

Date. .... 22/8/79 ..... Page 9 .....

SUNNY + HOT

TRAVERSE PM 79-2

- Following LST + CONG of 79-1
- from Hwy NH of Nicola Lake - up
- ridge as far as possible
- bearing Nicola Lake Road to 1st LST OC
- = 004°

PM 21 Elev 2380'

Contact of LST w. (overlying)

Eastern / apple green locally  
spotty fine grained Andesite  
Contact is very sharp  
(as is a sudden flow?)

SAMPLE PM 79-11

PM 22 Elev 2680

fine grained apple green Andesite  
but occasionally see small LST (not calc)  
spine fillings + clasts ~ 10-15 cm long  
elongate + irregular gray LST  
also some calc veins, fractures

PM 2-3 Elev 2740 ?? (is much higher than PM 2!!!)

small OC of LST massive gray blue  
triangular in station + looks right  
but is way out of line with bottom LST  
- perhaps normal fault?  
- there is more LST OC just above this

looked for tops  
+ fossils + also different  
good bedding planes but  
couldn't find any of these  
things.

PM 2-3 (cont)

Long on <sup>w</sup> side of Ravine  
- fine w. rounded clasts mostly (all?)  
volcanic clasts avg 3-6cm  
- in ravine are small OC of LST

above PM 3 to Elev 3100  
outcrop is poor & all I saw  
was massive light green andesite  
However there is lots of room for  
the LST-congs to sneak through

PM 2-4 Elev 3250'

fairly cont. OC of gray green  
spotted Andesite  
some calcite or + epidote in patches  
spotted with qtz mostly (?)

PM 2-5 Elev 3480'

following a small road not on map  
still gray grn Andesite  
looks like LST doesn't go through

reached ridge top @ 1:30pm No LST

Altimeter reads 3620 but on map it is 3540  
so reset altimeter | Still gray grn Andesite

SAMPLE PM 79-12

Sample Pm 79-13

PM 2-6 S.O.S. Elev 3450'

took sample to show  
country rock

- perhaps has more purple colour (?)

in cliffs it all appears to be andesite  
again. entered cliffs @ ~3000' elev

PM 2-7 Elev 3050'

on a lower cliff

- dark gray-grn fine grained andesite

- cliffs covered in black lichen + white  
powder (calcite?)

probably all andesite

TRAVERSE  
PM 79-3

No.....

Date..... 24/8/79..... Page..... 12.....

FOGGY + DAMP but Blue sky to the SW  
Airphoto BC7102 226

Start at switchback traversing @  $20^{\circ}$   $12^{\circ}$   
headed for hill top. No visible outcrop  
in any direction + can see a long way  
as is all open meadow MOO!

Pm 3-1 Switchback - no o.c.

bearing  $012^{\circ}$

Elev 3050'

from map

Pm 3-2 Elev. 3420

~1800 ft along line from 3-1  $\rightarrow$  <sup>approximately located</sup> on photo!!

Crest of slope - appears to level out  
into meadow + woods

- ridge to Nth has some good o.c. on it <sup>- get it</sup> on way <sub>back.</sub>

This is the hill due south of the Lake on the map

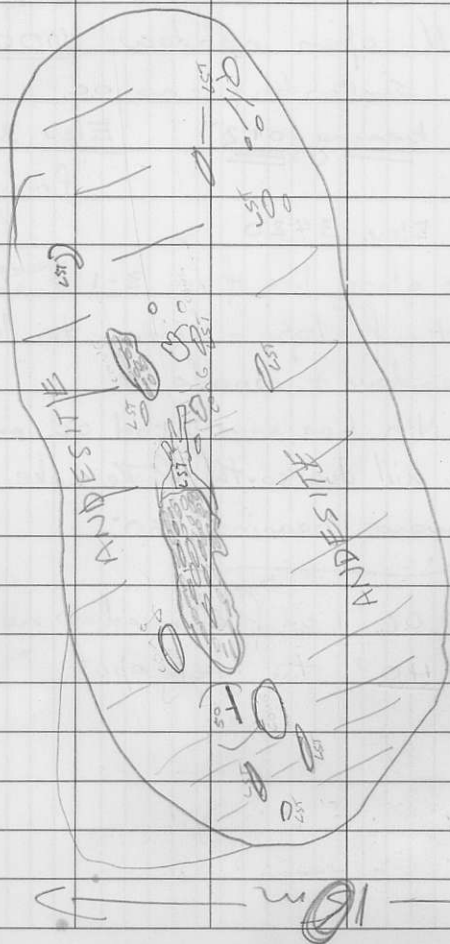
- cont. traverse bearing  $060^{\circ}$

+ 1400' no o.c. + in flat meadow near Elev 3430

bear  $110^{\circ}$  to likely spot

El

SAMPLE PM 79-14



SAMPLE PM 79-15

PM 3-3 Elev: 3220' 800 ft along 110° bearing

Outcrop at last!!! (11am!!)

- 2 fair sized patches of ac. on slope break
- one brown weathering, black lichen covered, dark gray green andesite.
- fine grained matrix w/ white tabular plagioclase(?) phenocrysts < 1cm on average
- fizzes slightly in acid so has some carb.?

BUT

This is the country rock. It is full of LST + <sup>crystals</sup> fragments - many (dozens) > 10 cm long, often > 1m most are elongate + tabular fragments + very angular.

Is one very large fragment (surely not in place...?) <sup>of LST?</sup> ~ 4 m by 1m thick

It weathers into a pattern of sharp, slab-like surface features which are all parallel + perhaps represent bedding?

- took an orientation even though this fragment must not be in place. It is.

015/50 W but this is on the weathering features too - perhaps it is cleavage?

So this <sup>oc</sup> must represent some type of stamping or breaking off of the LST into the Andesite flow at the time of the volcanic event (?)

- can't find any fossils or other noticeable structures in the LST - looks pretty massive + blue gray colour.

There is another - smaller oc of the same rock ~ 150' NW of here.

Pm 3-4 E 100' 3200'

LST again

- Not the same as in 3-3

- This is massive pink LST which is med cse texture + has some red clasts + is locally fragmented. It look in place + has an orientation of

|| 354 / 90 || This is either bedding or cleavage. Couldn't see any good layering but some colour changes suggested.

This is the bedding direction.

LST interfingers with overlying Andesite which is dark gray green + has feld, plagioclasts as at 3-3. With the LST continues but changes

Samples Pm 79-16  
Pm 79-17

PM 79-3  
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colour to a gray green + <sup>contains</sup> some  
red tabular to angular ~~plac~~ clasts (?)  
up to 1cm long.

The whole outcrop is only 2.5 m long +  
~ 40m wide so it is possible that this  
LST is just a very large fragment in the  
Andesite. It looks like a good LST unit  
in place to me though. 4m thick at one spot

It is also just below the outcrop 33  
~ 20 vert feet + 400' NE of 33

PM 3-5 Elev 3190 Just 100' NE of PM 4

On side of large gully full of trees  
Slope is heavily trencched but trenches <sup>are</sup>  
+ overgrown

- Hard gm. volcanic. Mostly fine  
grained w no phenocrysts but locally  
has dished calcite and black (quartz)  
needles + beds in these areas are strongly  
foliated in the same direction  
foliation = 351/54 W

SAMPLE PM 79-18 →

Greenschist?  
Rocks?

SAMPLE PM 79-19 →

Also some Qtz veins in these rocks  
One ~ 1 foot thick in one trench + it contains  
some mineralization re. Malachite, Pyrite



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Azurite, Chalcopyrite

Am starting to see ep. fractures in the dark green (azurite) country rock as I go Nth

From here I walked NW + looped back west to just south of the lake. There was no O.C. anywhere - just meadows + trees. Lots of O.C. on the hill south + SW of the lake but that has been mapped already. I walked + anyway till I hit the road I started from. Then walked down to the main road to meet Paul. Also no outcrop between PM 1 + main road to the south.

END OF TRAVERSE PM 79-3.