HIGHLAND VALLEY NOTES
#1 - 1969

896428

McMillan Notes

#1, 1969

FIELD NOTES

HIGHLAND VALLEY PROJECT

1969 July 2 →

W. J. McMILLAN

DEPT. OF MINES

PARLIAMENT BLDGS

VICTORIA, B.C.

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Sample 69-5 Bethlehem nearly Skeena

(2 samples)

-11 Bsda

12 "

13 "

14 "

15 Skeena

16 Bm (nearly Sk)

17 Skeena or ul Ky Bsda

20 Bm (nearly Sk)

21 Guichon (Chatoid)

(2) Bm (nearly Sk)

22(?) Bethlehem

23 "

24 "

25 Skeena (I think)

(rest in notes)

o/c's 1→10 photo 7122-201

o/c's 11→12 photo 7122-225

Wed July 2 Showery

92I/10d:(1,2) & (1,3)

Travelling Bose Lake Road

Photo BC7122-201

Qc 1: Guichon Qc small bluff alongside road east of trench.

WM 69-27

Qc 2 Probable guichon mafics evenly scattered. Relatively massive.

most prominent joints 108/85 NE

WM 69-28

Following nearly contenous Qc northward

Qc 3 WM 69-29

Qc 4 WM 69-30

joint 138/86SW (best) shear joint?

009/85W

Qc 5 WM 69-31 joints v poorly developed.

The amt of altn and pink (Kspar?) in the rock varies slightly along the route

Turn west joint 010/85W

~~old~~ the road (rain)

%6 Guichon knoll

Joint 178/36W

Sample WM 69-32
WM 69-33

IP line - west

swampy narrow lake

≈ N-S

%7 up to top of next knoll

Guichon WM 69-34

175/V tourmenalized fracture with 2" altn halo. No good sample possible

Head Back

Road - head south

Truck 185 paces

Return down road to near %1 and along a new trench

At end head ~~120~~ 140

%7

o/c 8 Guichon sample WM-69-35

July 18 questioned - fine grained - Witches Brook?

Close-spaced joints 063/71NW
170/V
origin uncertain

o/c 9 west edge of sharp valley
joints 058/73NW
095/78N shear?
WM-69-36

o/c 10 across the draw
Guichon WM-69-37

Back to truck

near swamp, road followed north
see photo BC 7122-225

o/c 11 pace 85 Guichon WM 69-38
later July 18 Witches Brook? D2 dyke

o/c 12 pace 192 o/c probably Guichon
WM 69-39
possible Bethlehem or
finer phase of Guichon WM 69-40
150/74SW
076/3TNW
053/83SE shear

heading back - page 24
finer phase of Guichon ?
or Bethlehem ?

WM-69-41

shear(?) joints 150/70SW

Relatively fresh IP lines were seen in the area of outcrops 1 to 10.

Jim Allen says Bethlehem does occur with Guichon east of Bethlehem Mine.

Jim will make DDH logs + locations available for the area below TROJAN.

Feb/78

92I/7e July 3/69

Traverse roads South of Bethlehem Cloudy, showers

copper.

o/c 1 photo

Bethlehem q-d. No? July 18 Possibly P3 porphyry

o/c's on photo 7122-264 o/c's 1→9

Slickensided joints 030/47 NW

coated w. epidote WM 69-42

striae 236/16 Bm

close-spaced joints 132/72 NE

striae ? 297/13

– 109/69 SW

033/53 NW 255/32

097/48 SW coated w. malachite

photos PENTAX # 6

BW camera-shutter sticking

Pentax 7 + 8 views of Valley copper and hornex /

o/c 2 aplite 103/76 NE 1-2"

shear joints parallel it

aplite 160/34 SW 1"

joints 155/46 SW inch to foot spacing

Bethlehem ? with 20% pink WM·69·43 Type Colln

zones

Ppy to Bm

o/c 3
4-1

Trench Bethlehem + porphyry

163/56SW shear joint
110/75NE " " (?)
013/v closely spaced joints

almost all the joints are malachite stained.

Bxtd leucocratic Dyke WM-69-44

assos. with 2½ foot gouge zone (well-stained)

leucocratic Bethlehem?



4-2 o/c 4 114/v

4

The rocks are v. closely jointed + bk to ½" to fist-size.

N

North trending joints are closely spaced + assos. w. shears.

3

Pentax #9 trench - looking east

Feb/78

crowded mafic plag ppy

4-3
o/c 5 Lower road - dike WM-69-45

shear joint 178/63W striae 192/33
050/65NW
some malachite stains on joints
some shear joints coated with
epidote? serpentine?
Closely jointed
some Bethlehem screens.

Ppytic Bm

4-4
o/c 6 Closely jointed Bethlehem. WM-69-46

joint 177/585W - foot to inch r
closer spacing
" 158/475W coated w. chlorite

along a few ft joints 160/425W
are very closely spaced - in other places
they are more widely spaced.

4-5
o/c 7 Gouge zone 1½' 045/68 NW
is in a leucocratic dike WM-69-47
& separates two of them. mafic plag
ppy - aphan matrix

C.R. is epidotized, chloritized
Bethlehem WM 69-48

Bm

Feb/78

%c 8 Series of fault gouge zones
178/54W and steeper
over about 50 feet.

%c 9 End of road - Bethlehem.

WM-69-49

Prytic Bm

July 4/69
Rain

~~the~~ attempted to drive road past
Photo 7122-228
Beaver Pits to Bethlehem q.d. o/c but
the mud made it unadvisable.

Returned to the road which
cuts Beaver q.d. + traversed
eastward.

o/c 1 5-1 Beaver o/c coarser than
that seen earlier WM-69-50

o/c 2 5-2 Small bluff WM-69-51
Large serve-like hb xls.
050/64NW
152/74NE
109/85 NE
WM-69-52 Bm Gd sample discarded
qtz texture shows
foliated

Three Pentax Photos 7, 8, 9.

6-0 (7122 - 228)

o/c 3 further up the road

Beaver - foliated WM-69-53

Raining too much - turn back.

Visit Bin GP in afternoon.*

* Did not go - set up for an oil stove instead.

Feb/78

8 July 69
Sunny

Following Jericho road up the hill southward

o/c 6-1 above a swbk in the road
sample WM-69-54

The rock is porphyritic with mghb-biotite in a f.g. hbbi fs qtz matrix. Overall gray on fresh face. o/c lichen-covered. The matrix has ~~thin~~ needles laths of hb. It looks like f.g. Bethlehem.

joints
125/77 NE
032/70 NW
064/40 NW

BC 7128-73

uphill are good bluffy o/c's
talus sampled WM-69-55

Toss up whether it is D2 or Guichon
- favor D2 - matrix looks
vaguely aplitic.

Sec 7-1 Jericho production adit.

Rocks on the dump vary from porphyry w. f.g. matrix to m.g. rock with scattered, rounded mafic porphyroblasts & rounded qtz to sericitized ≡ of those to bx with sericitized frags. granitic matrix and chalcedonic matrix. Qtz veins are locally min. w. cpy & bornite. Calcite veins along joints & crushed & slickensided boundary are common.

WM-69-56

* nice solid little cabin but NITROCARBONITRATE CLASS 2 EXPLOSIVE in back room.

Feb/78

56 fg Guichon. Bmish + Chatoid overtones

56-1 Breccia CR dull dk grn altn - veins of chalcedony.

56-2 zeolite veined Guichon? +zeolite

56-3 } Mineralized veins - Cpy in qtz - cal.
56-4 }

56-5 Dull green - flakey ser + bn?

Both sides BC 7128-73

o/c 7-2 Joint 151/85 NE
143/52 SW
008/80 SE

aplite 040/v 8"

M-c.g. (rock with) evenly scattered hbl + bi in hb q.d.
Possibly Guichon
Matrix grayish to pink matrix
Possibly is faintly foliated.

o/c's separated by NW trending gullies

57-2 ⇔ Grubby Chataway WM-69-57 3 SAMPLES
57-1 pink aplete - loc. cg zones
57-3 mafic Chataway
o/c 7-3 Finer grained - much like 6-1

WM-69-58 Bmesh Guichon
like 59

Joint 038/85 NW
122/82 SW
Tension?

← 57-6 Bmesh Guichon

← 57-7 fg Guichon

Feb/78

o/c 8-1 North trending o/c ridge
Mg mafics w. indistinct outline and f.g. matrix w. thin needles of mafic. Like 6-1.
WM-69-59 Brush Guichon rel. fg, dark TYPE COLLN
055/57NW
107/83SW
150/V
041/40SE

o/c 8-2 Old Adit
Collared in f.g. rock w. scattered large hb xls. WM-69-60 Brush Guichon
fg → " "
joints 031/73SE
123/V
170/60E
BC 7128 - 095
photos 10, 11, 12 Pentax

o/c 8-3 rubbly qc in road
Same rock:
WM-69-61 Type Colln.
BC 7128 - 095
~~fg → Brush Guichon~~
ruded qtz in matrix — D2 (?)

Photo 7128 - 146

8.4 south end of Billy Lake. o/c of different - looking rock + DDH being drilled by BORNITE RIDGE

o/c is c.g. hb,bi g.d. Mafics too high 30%. The rock is flecked thru w. pink + strongly jointed. Mafics are u. separate but may be clustered.

shear joint 167/68NE
068/62NW
090/73S WM-69-62

— up the hill 50' Chataway

gouge zone 010/63NW
179/75E

shear joint 062/83SE
slickensides dip 11° NE

8/5 — bluffy o/c - the rock is finer grained + has some large hb xls

WM-69-63 3 samples
fg Chataway
mod good to scruffy
to mg Chataway

o/c 9-1 closely jointed rubbly o/c

086/v shear joints + gauge zones
038/67NW gouge
008/75SE

WM-69-64 Chataway, 7128-146 Guichoid Chat.

9-2 f-mg, some larger hb xls, gray color, rubbly o/c. Faint fol'n locally.

BC 7128-188

③ fg Chat or Chatoid Gu.
④ Chatoid Gu. 4 samples

WM-69-65 ① rel fg Bm or ② Bmish Guichon. Type Colln.

Stopped at Chataway Lodge.

Following road to Roscoe Lake.

Boulder - Bethlehem? Seive texture

Pentax 17, 18
B.W. two

Continued to Rosco Lake and Stellako Camp. The treatment given the camp (it was stripped) is a disgrace.

LORNEX, HIGHMONT, KRAIN July 9/69
Sunny

Visit to Lornex Pit.

9-3 Cat with ripper working on ?Bethsaida? o/c (WM-69-66) Skeena – Bs aka overtones Photo 7128-066

c.g. bi some hb local pods of cpy.

The pit is primarily in o/c still at the north end.

9-4 Old open pit Badly broken up Bethsaida (Skeena) (WM-69-67) cpy on fr.

Map fractures here later.

Visited HIGHMONT MINING
-had lunch-
Geologist
Gerhard Von Rosen.
Manager
Hec Waller

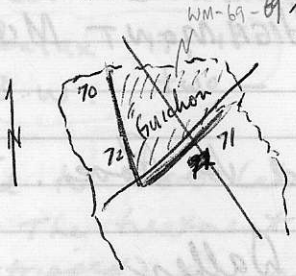
Krain turnoff - Trench angling back from road.

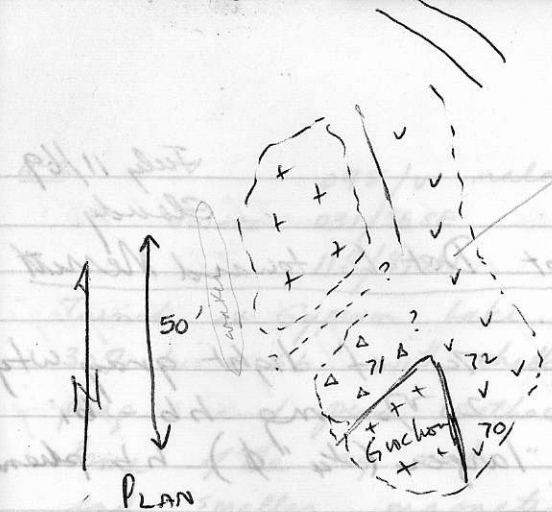
7122-162

10-1 Guichon? see earlier samples cut by fs 46 (irregular, equant xls) dike - matrix gray-green. WM·69·68 The dike trends 105 x occupies the bottom of the trench.

10-2 Guichon cut by porphyry dikes w. rel. chilled contacts

170/V 042/V





WM-69-70	like
WM-69-71	WM-69-121
WM-69-72	

Time relationships of dikes is not certain - both are the same composition.

July 11/69
Cloudy

Road past Dot L. toward Merritt

11-1 Bluffy o/c of light gray wtg rock w. 25% mg hb-bi and 2% larger (¼" ϕ) hb phenocrysts.
FS CHALKY WHITE ON WTRD FACE

Photos Pentax 5-6 (roll 2) BW # 17

WM-69-73

Small xenoliths of darker matic fragments occur - some are rounded up to 2" ϕ. WM-69-74 xenoliths 1% of rock. Some are elongated - all have diffuse borders. The rock attracts a magnet & some of the uneven dk grains are magnetite. The mafics have seive texture. Locally fs forms large poikilitic (fg - mg inclusions) xls.
* The chalky white fs could be kspar!

11-2 095/V malachite stained

Joints 031/56SE

115/81SW

Trench at Gypsum Lake. The rock is 30% bi + hb with chalky white wtrg plag. and pink orthoclase. (25% ?). Some of the mg "matic" is magnetite and smaller magnetite xls occur with the matics. A few xenoliths similar to those at 11-1 occur.

aplite 058/57SE - ½"

004/80SE - ¼"

large hb xls are uncommon.

WM-69-75 two

11-3 Ridge of boulders - morraine?

WM-69-76

12-1 Road o/c of magnetite bi hb kspar plag. rock. Magnetite same size as mafics, irregular. The plag. wthrs chalky white, the pink is interstitial with euhedral white poking into it.

12-2 WM-69-79

Joints 013/80NW tension
Chloritized face - 165/87SW striae dip 85° SE
later - tension - evidence calcite x/s
euhedral qtz on same face: 008/83NW striae dip 83°SE
103/87SW
The rock is fg with local plag laths up to 1/4" long but narrow. It is gray (fs wthrs chalky white) Mafics are dk green with local uneven pods and finer needles + blebs in the matrix.

Joints say shears then tension

Float pieces have malachite or chrysocolla on joints + in quartz veins.

12-3 Trench with boulders of rock similar to 12-2. WM-69-80
Joints are malachite-chrysocola covered. No otc post rubble.

12-4 Black altered material which is sericitized granitic rock. Possibly a mg. rock was altered. Does not look like 12-3. WM-69-81

12-5 Similar to 12-3, locally hematite stained

Joints 017/87SE strias 10° NE

035/23 strias

174/82E 04°NW

148/75SW

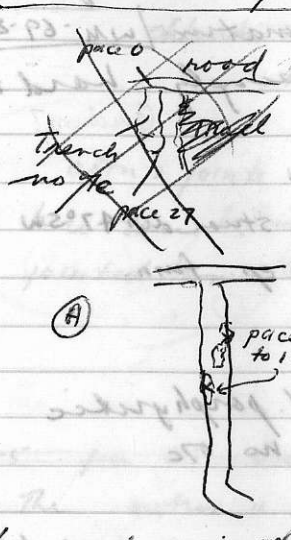
cpy bornite in qtz bx with euhedral qtz xls on open faces. Pit trends 172°. WM-69-82

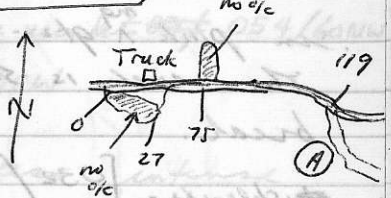
12- 13-1 o/c of rock sem. to 12-3

WM-69-83

July 14/69
Showery

Kiena Road ½ mile before Kiena Camp. (7122-162)





Bx with pink and green (chloritized mafic) gneissic frags in foliated chlorite - rich matrix —

the rock in the bottom of the trench is granitic with fair-spaced chloritized joints. The bx is evidently a more extreme version of this rock.

039/58 NW chloritized "joint"
streak 08 NE - in chlorite : post altn.
160/V joint

WM-69-84

bxtd quechon?

14-1 continuing in trench pace 160
just before corner
joints are green (chlorite)
The rock has chloritized mafic
in pink mg qtz-fs matrix WM-69-85
The rock is surprisingly hard to
break. Guichon?

~~sta~~ chlorite-epidote coated [032/64NW
010/58NW striae dip 47°SW
joints-sheared post chlor-ep. fmn.

14-2
186 Corner f-mg sl. porphyritic
dike rock float no o/c

14-3
223 Abundant Guichon + some porphyry
dike float.
~~[illegible]~~ diggings off to the left

Some of the Guichon has white
mica (secondary?).

14-4 o/c on both sides of the trench (which is along a gulley here)

joints 176/77SW

chlorite + epidote veinlets ~~054~~ 054/60NW

150/47SW

altn + joints are less intense here than before altho the rock is jointed on 6" to foot scale

WM-69-86

Brown fs-porphyry dike

14-5 pace 305 Border of ^ porphyry dike cutting Guichon. The matrix is fg The phenos are small to long hb needles and squarish fs. The rock is gray. The hb is dk green.

Dike of fig. Bethlehem? NO — gt 2 missing

WM-69-87

hb fs porphyry

The contact seems to trend 000

dep m, the dike has hex. mg hb X sections

Some epidotized cracks

054/83SE

pace 326 - 012/85SE epidotized

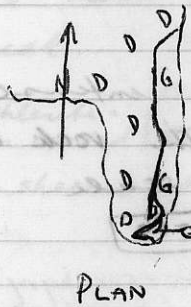
149/43NE

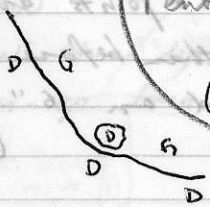
page 334 WM-69-88 dike

15-1 v. light gray hb fs porphyry (same dike as 86, 87)

337 Guichon / Dike contact

The contact is uneven but tends generally 015





Pentax Photos (2) roll 2 (7 + 8)

Dike chilled against guichon

395 Dike 171/61SW in Guichon.

The dike is green with white fs phenos. xfs & needles to equant hb phenos. Fresh bken faces are gray - are they?

WM-69-89 green hb-fs-porphyry

Guichon WM-69-90

altered - pink stain sericitized

15-2 On road angling up Valley wall
(398) 1" dike 035/50 NW chilled borders
to coarser interior
406
(intermittently) Dike pink w. some fm mafic
C.R. Gneiss?

Chlorite veins 160/43 SW cut the
CR + dike as well.

Joints: 143/51 NE
167/44 SW

C.R. sample WM-69-91 fine grained porphyritic Bethlehem?

The C.R. is rather fg to be gneiss
and on careful examination looks
more like porphyry. Large hb xls
are scattered here + there but
it doesn't look like Bethlehem.
CROWDED PORPHYRY?
some large chloritized bi xls

435 cg hb xls, pinkish Gneiss?
15-3
WM-69-92 Gneiss

455 Top of hill turn N.

16-1

524 road swings left

o/c of dk green augite (?) fs.

porphyry

WM-69-93 ✓

~50' wide contact 000

Drain

710 Road (IP Baseline)

LUNCH

736 Starting point

16-2 follow Base line south again

1039 left BL angled east

~~1039~~ Rubbly o/c of fg dk gray

1132 volc? rock

WM-89-94

~~spec. missing? or~~

~~else it is the same as 93~~

PORPHYRY DIKE!

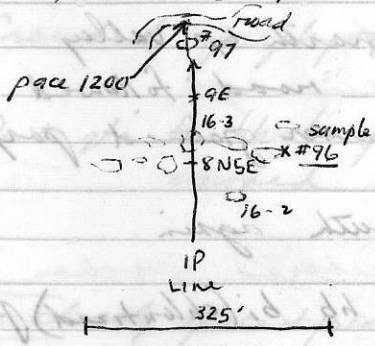
16-3 Porphyry - f-mg. Phenos qtz - fs - bi - hb(?) matrix richer in
(1164) Kspar? (pink). Same as 91 - Bethlehem? Witches Brook?

WM - 69 - 95

at station 8N 5E on IP Line

Lots of small o/c's here

WM. 69-96



same as 91

16-4 Crowded porphyry
augite?

WM - 69 - 97

same as 91

16-5
Fs porphyry overlking valley (wrong)
140/64NE chloritized ~~covered~~ joint
striae 13°SE
147/73SE striae 9° SE chloritized
010/V

Greenhorn WM - 69 - 98
f.g. version? ~~like~~

17-1 (1239) Valley bottom – good
o/c of fs porphyry – fg brown
wtrg matrix with white wtrg fs
WM-69-99
like 86

Heading north up valley
(1287) int. w. road followed earlier
slightly coarser grained porphyry

Head south again

qtz fs hb bi (chloritized) porphyry
Larger mafic clusters are uneven shape
Mottled w. pink.
009/64NW qtz-chlorite-epidote veins and joints
132/84SW malachite stained joints
WM-69-100

added = # 91 (?)

1317 120/73 NE striae
dip 73° N
Green mg serpentized rock
WM-69-101

91 = D2 ??
20/5/71

1321 Fg. Pink hb fs porphyry. Dissem. pyrite
gray mineral WM-69-102
Like 91 but altered pink

1329 fs porphyry

1355 Crowded porphyry WM-69-103
sl. coarser version of 91

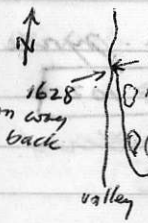
1377 Pink qtz fs hb bi porphyry ~~at~~
crowded WM-69-104
Witches Bk B ?
or like 91 (?)
favored

1395 closely spaced joints
018/63SE

1418 136/65NE containing in
033/67SE pink qtz fs bi hb
160/53SW porphyry

1433 Gray porphyry WM-69-105
Intrusive version of
91 (?)

(17-2)
1444 same as 1433
Head N - % continues but
time has run out.



Chlor. joint 130/53SW

18-2 complex dike - quechon interrelationships return again

18-3 sericitized quechon? recheck. WM-69-106

Head North

END

Krain Area July 15/69

Return to last o/c looked Cloudy
at July 14/69. 7122-162

18-3 Malachite in qtz vein
revisited open space-filling qtz 012/68NW

155/84SW green sub-polished face
striae? dip 79° NW

WM-69-107 040/77SE qtz vein 1/8"

167/86SW striae dip 28° SE

The rock is sericitized dike rock - not greisen as originally thought.

168/79SW early striae dip 77° W; later striae dip 55° and 52° S

012/53NW striae 43° SW

114/89SW striae 72 SW

165/65SW striae 60 SW

134/83SW " 17½° 27° SE → 139/78SW

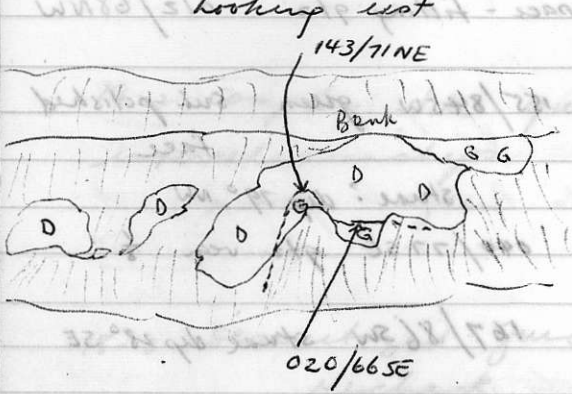
177/70SW " 61° W

green-coated shear joints

18-2 revisited 020/38NW

095/87NE

031/48NW striae 36, 275W



WM-69-107

pace from corner

valley

18-2

18-3

(19-1) 19-1 same as 17-2

pace 140 17-2 contact between pink & gray porphyries WM-69-108

like 105 - a dusternet phase?

153 southward the gray porphyry becomes mottled with pink - the fs phenos are yell-green and hb is dk green. Hb occurs as needles & as clusters of smaller xls with uneven outline & interstit. fs. WM-69-109

magnetite is v. the matrix.

pace 162 (19-2) joints 176/43SW
053/81SE

pace 184
(19-3) The rock is coarser (m-g) with some cg fs xls WM-69-110

a separate phase? it is v. unlike 108 + not v. similar to 91.

pace 200 o/c ends

pace 260 Turn east + cross valley

pace 319 (19-4) o/c of closely jointed volc. rock.

065/83NW "evenly" spaced on 1" scale joints

118/48NE more local but 1-2" spacing in places

gray wtrg dk gray slightly amyg volc. with subtle mafic fg phenoxsts (10%).

qtz fs augite? phenos amygs. inclusion - mg hb fs -diorite WM-69-111

pace 476 (19-5) Amygdaloidal and vesicular lava. Gas holes are elongated, very abund. small to large. Elongated ~ N-S; long dimension subhorizontal to steeply inclined.

a few grnish fs phenos WM 69-112

(20-1)

574 small outcrop of porphyritic amyg. lt reddish brown lava. Phenos are fs hb? and ~~[pink elong. unknown]~~?

elongated hex. Xsection

~~stan~~ surface stained by brown material

WM-69-113

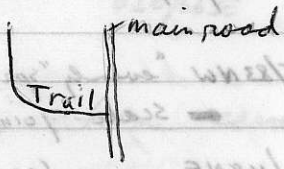


(20-2)

623 small % of gray amyg. vesic. lava

pace 699 Near line 16S-21E Noranda IP
20-3

Main road to Krain



pace 892 swamp - lake on main road
(20-4) Turnoff to left.

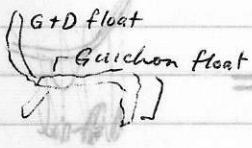
pace 1193 Road ends - go north
(20-5) (very nearly at IP 0N 18E

1340 (20-6) WM-69-114

Possible %c of guichon Guichon pink in matrix is prominent

Bi hb kspar plag rock.

onward is a series of trenches + a road - 1545 no %c to here - O/B is boulder-cobble till

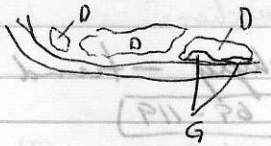


G = guichon
D = Dike

1567 (20-7) %c of pink mottled green mafic Guichon g.d. and finer porphyry of similar compsn (pink "crowded")

contact 142 / steep ~ V.

WM-69-115
Guichon ✓



000/62E cpy veinlets

Mal. chrysocolla are common on + in joints along the entire valley.

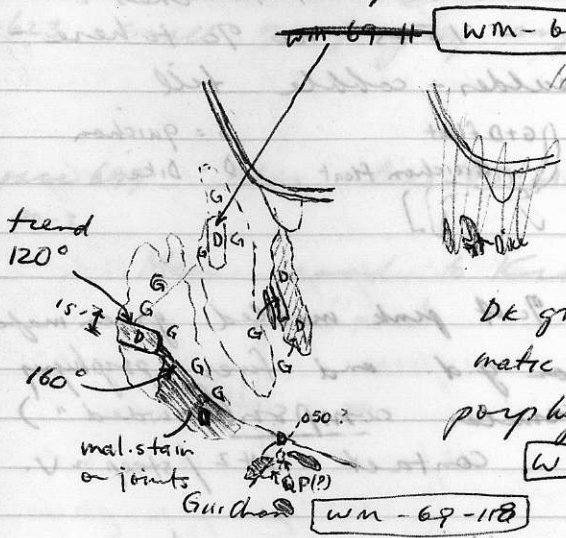
Guichon / Dike contacts are uneven.

1592 Intersection. Keep right

1710 Main road

1910 Truck.

21-1 Near Main Dump below camp.



21-2 possible quartz porphyry — trend uncertain

WM-69-119

look at the large specimen with 91 Group(?)

Q.P. doesn't seem to go anywhere

21-3

Above Krain DDH 66-2 in
DDH 530
amyg. porphyritic gray volc rock.
Phenoxsts - hb.

fs - bb phenos. WM-69-120

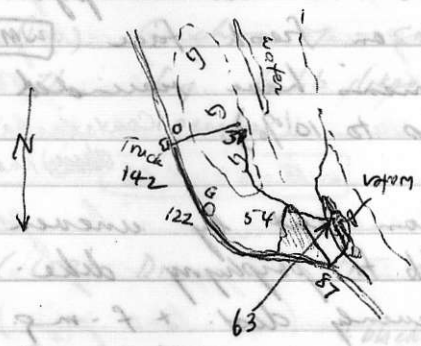
may not be v. amygdaloidal

92I/10d + 11a July 16/69
overcast

North Pacific - Cadco - Krain area

22-1 just below (south) of corner with dump south of Krain Camp

o/c's trend ~ 155



New pace-post N of Krain Camp

22-2 (29) probable o/c of m-cg quartz monzonite matrix 25% mottled w. pink. Mafics dk grn bi + hb - uneven outlines, clusters of xls. Rare scattered 3/8" across hb xls. Faint foln.

23-1 Sharp corner overlooking canyon
(70)

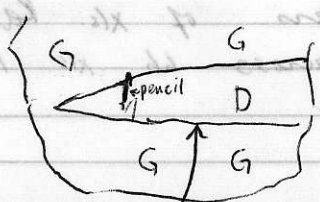
70% of dike rock with mg white wtg fs and cg anhedral subequant hb epidote aggregates. The fg version (contact?) is gray on fresh face & rich in pyrite (some magnetite) WM-69-122 A
the coarser version is less pyrite-rich and is pink on fresh face WM-69-121
some specimens have rounded qtz phenocrysts (up to 10%).

feldspar ± qtz porphyry
"crowded porphyry"
like 122
Contains accessory chalcopyrite

23-2 (101) Guichon cut by uneven dike of hb fs porphyry dike.
The hb is evenly dist. + f-mg.
The contact is chilled.

sample WM-69-122
see above

Pentax Photo 9(2) SW 14-17 shutter sticking again
Looking SW



128/44SW

* 123 the second sample shows a mafic-rich 91-type dike in contact with guichon

23-3 along contour 30' southward is an o/c of pyrite-rich fs-hb porph. dike WM-69-124.1 — f.g. Beth? fg guichon?
a second sample is like 121

The guichon is locally rich in pink feldspar WM-69-123 Guichon — the pink is really only a stain in part
accessory cpy

~~The cut sample shows a guichon/dike? contact~~

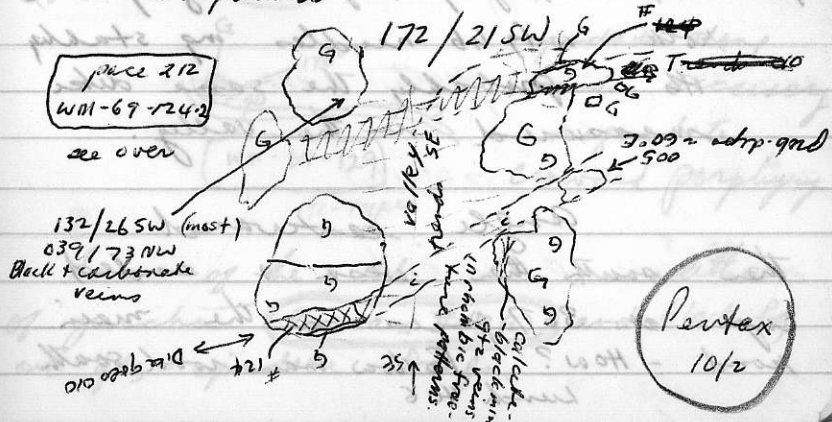
pace 107 at stn 40N 12W IP line ~~changed my mind~~ Aug/09
see above
check original sample

23-4 (120) Guichon o/c - small - elong. E.W. with thin f.g. fs hb dikes w. pyrite.
(pace 126)

23-5 (157) Draw w. o/c on both sides

WM-69-125 sample not seen

Guichon - carbonate & black dense mineral coated joints & shear joints. Some malachite stain



24·1 WM-69-124·2 the rock is finer than Quichon with scattered cg hb phenoxsts. In some respects it looks like Bethlehem but it is probably f.g. porphyritic quichon

(Pentax photo 11, 12 (2)) Br with epidote black carbonate (?) qtz matrix. Frags are tourmaline variously quichon and quartz porphyry with aplitic white matrix. The qtz porphyry varies from 0 to 6" wide

WM-69-126

Pyrite is locally common in the porphyry as cubes. The porphyry occupies the low angle zone. (see last page).

Heading south again

24·2 pace 259 Fg gray & pinkish gray dike rock w. fg hb needles mg stubby Hb - probably the same dike measured in the valley.

Angle eastward then south then west & ended up at 367 paces on the main road - How? Follow main road south

Lunch 406

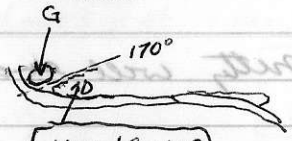
24-3
pace 416 (IP 32N 19W) o/c to rt. of road
Guichon below, fs hb porphyry at the station.
Porphyry WM-69-127
like 121 qtz-free

contact 160 Dike 40' + wide
west border not exposed.

24-4 pace 443-449 o/c on road porphyry
f-mg matrix m-cg phenos - fs, hb (stubby) hb (needles, finer)
"pseudobethlehem" WM-69-128
sample missing

525 intersection take
rt fork NE again.

(pace 659) 24-5 o/c of dike rock
epidote along joints. accessory magnetite
crowded porphyry



WM-69-129
91-type

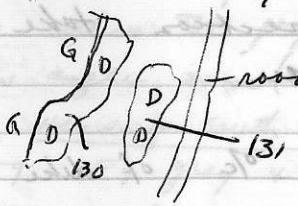
Some of the dike has xenoliths of guichon (Pentax #13(2)) and black fg or qtz-epidote frags.

25-1
pace 696

025/70SE striae 35°SE
024/68SE striae 60°SE
044/88SE " 88°SE

25-2
pace 715 Pentax photo #18 (2) of gneiss/dike contact. Dike chilled for 2". The dike is similar to that before but has rounded epidote "phenocrysts". WM-69-130 121-type - some qtz, pyrite replacing the dike. Gneiss adjacent to the contact is similarly altered.

contact 022/73NW Dike 10'+



WM-69-131
121-type qtz phenos common

pace 730 o/c pretty well ends

pace 774 IP 32N 11W

25-3
pace 841 road ends

760
840

25-4

903 Dam with pseudo bethlehem (Kroin) porphyry east of it. Scattered hb phenos or xl clusters are anhedral. Plag. grey-green, striated. Mottled with pink ~~stain~~. epidote/ft./chlorite along shear - some cpy WM-69-132 91-type

916 Gneiss o/c - pink ka stain WM-69-133
Just back of cookhouse
cpy also in mafics - accessory?

Tea Break

1027 Truck.

92I / 11a

Glossy Mtn area (Glossy "Mine")

Driving up toward Transvaal July 22/69
from the hwy Cloudy

Met Continental Cinch IP crew at
Ray Geophysics - Calgary. washed-out Bridge

Laura: Mike Stadnyk
Dave Coomba

Road washed out but was passable w.
4-wheel drive

Stn 26-1

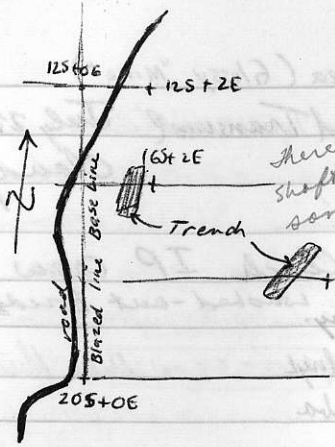
Low lying patchy o/c of m-cg
biotite-rich GUICHON.

Recently trenched in sericitized zone
joint 094/75NE
010/90
023/59SE 1-2" spacing

Line L16+00S + 2E - line trends 090

WM-69-134
WM-69-135

Bi occurs as grains + clots
and is >> hb. The matrix is variously white
pink + greenish fs. Mafics define a foln.
Qtz is interstitial. Fs wtrs chalky
white.



IP already done July 22/89

200 foot line & stn spacings

Stn 27-1

Second trench strikes 045-

same rock (altered [sericitized] zone in c-g. bi-rich quichon)

This trench has qtz-tourmaline veins w. local bornite pods + mal. on joints.

WM-69-136

lost

TL 18+00S + 4E

Then left a cat trail

Cut thru bush — cat road at main road int. BL 00+00+20S

27-2

Leave Truck pace 0

old Shaft - rx ~~cut~~ cut by epidote tourmaline veins, mal-stained

Bi-rich quichon

WM-69-137

joints 135/73 NE

086/75 NW

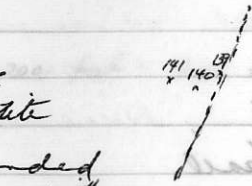
060/steep

pace 30

mafics cluster - uneven edges, f-mg finer than at last stn. Blocky jointing - mafics primarily chloritized biotite.

No measurable talc

28-1 Contact ~ 010 rather diffuse between bi-rich mg gneiss & fg matrix and less-mafic-rich hb > bi pink fg "Witches Brook"? page 51



WM-69-138
WM-69-139
WM-69-140
WM-69-141

gtz-rounded grains some with blueish cores
page 60

page 63 Cg mafic-rich rock with fg black xenoliths WM-69-142

page 66 fg less mafic rock and mg less mafic rock WM-69-143

Qtz ends pretty well

At the edge of the Qtz is an area of hb porphyry (some biotite) the xls are ¼" across & 40% by vol.

WM-69-144

page 78 yell grn + pink fs bb > bi mafics
30% GUICHON ≠ m-c.g.

page 85 Head back. 164 Truck.

The shaft is in qtz-calcite-tour-
maline zones with stringers +
pods of bornite + cpy + a soft gray mineral.

WM-69-145

July 23/69
Cloudy

Road south of Trojan which seems to lead to Krain followed.

29-1 Trench east of road
pace 38 Guichon (?) - quartz coarser than aerial but fn & interstitial fs hematite stained mafic 46 & 61 chloritized. Guichon WM-69-146
Epidote-Chlorite veinlets & coatings on joints Matics 20%
some malachite stain
016/08 striae
29-2 pace 52 040/57SE striae dip 28°
striae 112/63 curved surface

078/28NW	028/78NW striae dip 77°NW
111/64~~SE~~NE	156/47NE striae dip 41° + 45° NE

The rock at 52 is finer in the matrix with fewer matics (15%) and scattered fs phenocrysts. Possibly Witches Brook crowded K porphyry dike
WM-69-147
91-type
some pyrite, acc sphene(?)

170/73 NE strias dip 73° E

150/68 NE " " 33° SE

131/51 NE " " 31° SE

page 58 167/60 NE " " 51° NE

178/54 NE " " 53° SE

page 59 012/66 SE " " 64° NE

joints 086/80 SE

130/41 NE epidote/chlorite along joints

scattered pods of cpy occur in the porphyry WM-69-148

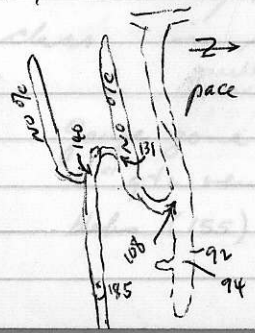
91-type

page 68 sample WM-69-149 pink-stained 91-type

page 72 strias 080/11 questionable

068/49 SE strias dip 11° NE

page 75 121/86 NE gouge zone 2"



→ page 92 7c endo

30-1 epidote vein 140/32 NE
pace 140

The rock is still porphyry but is slightly coarser and is cut by epidote veins

049/69NW
141/28NE
158/68NE

WM-69-150
91-type cut by vuggy qtz-epidote vein

pace 162 Similar crowded porphyry
WM-69-151
91-type

30-1a
pace 174 " " "
c.g. fs phenoxsts.
WM-69-152
91-type

pace 185 end of 7c

pace 357 Back at the Truck

Truck is at IP station

30-2 Goupe zone - end of
125/30 NE a few inch to
a foot across zones across 50' of
o/c.

163/73 SW Striae dip 81/305
" 68 W
" 66 W

Chlorite - coated joints
The rock is porphyry in places but seems m.g. in others. In neither case does it look like Guichon! Reversing feld, some is probably Guichon - biotite rich type

WM-69-153

aug. agree - altered Guichon

30-3 Joint 081/61 SE striae 59° SE
043/59 SE " 45° NE
The rock is seemingly not Guichon yet it has guichon-like chas. in some ways

guichon cut by qtz-feldsp veins - contact gradual

Gauge zone 2" assoc. w
6" qtz vein w. cpy
blebs (155)

WM-69-154
WM-69-155
WM-69-156

91-type porphyry altered

31-1 Trench west of road
Reddish stained crowded
porphyry? Quartz is mg + rounded
- not like quichon.

WM-69-157 91-type porphyry

joints 126/87NE
107/44NE

coated w. epidote, chlorite
065/74SE

002/62SE fault gouge 8" wide

31-2
Near upper end of trench %
ends - sample WM-69-158
The rock is mg - cg + qtz-rich
fs is creamy mafic predom. hb
~12%.

Bethlehem (?)

31-3 on the road just a few yards onward.

Guichon cut by tourmaline ~~vein~~ vein mantled by red-stained zone. The rock is mafic-rich. WM-69-160

#1

Just ahead the rock is apparently porphyry cut by qtz-epidote veinlets

WM-69-159

veined altered guichon
ep. qtz

Following trench system
pace 70 end of Trench 1

31-4 off the end of the cut are bluffy low lying o/c's of "pseudo bethlehem" porphyry. Mafics occur as anhedral fine grains and as uneven clots. qtz is interstit. but subequant. Mafics 20%. The matrix is mottled w. pink. WM-69-160

#2

048/42 NW Tourmaline veins

one sample is guichon the other may be 91-type porphyry

f.g. (?) Guichon

32-1 WM-69-161 slightly fewer mafics (mostly biotite) - as grains + clusters more pink in matrix med. grained. qtz small interstit. subequant.

Heading south

Betwn trenches - 1P stn 6+00E

32-2 058/63 NW vein - branching w. cpy + tourmaline occurs over one inch

Mafics - mostly biotite mg and less seriate texture 15%

qtz subequant interstitial

fs subequant laths pink - wtr white

WM-69-162 C.R. may have been guichon - qtz enlarged now

along a few ft the rock is very nearly bx with an epidote tourmaline veinlet matrix.

photos Pentax 18 (2)
BW 120 (1)

32-3 off the "road" to the left

% of porphyry similar to 32-1

WM-69-163

f.g. ~~gulchon~~ "Witches Brk"

IP 10 + 00E

Followed trench down to rt
no %.

33-1 small o/c in road
porphyry - pseudo Bethlehem type.
WM-69-164
f.g. guichon

French King right
IP 14+00E halfway along.

33-2 No o/c but float of guichon?
with blebs & stringers in chlorite
veinlets
WM-69-165 Guichon

Heading Back

33-3 Rubble of guichon - might represent o/c

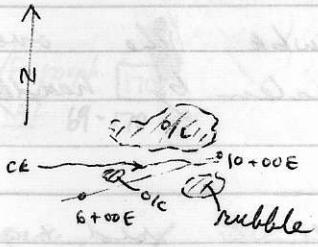
Follow IP line westward

10+00E rubble to south
o/c to north

33-4 Pseudobethlehem porphyry WM-69-166 ?
15% mafic f-mg fs pink gtz interstitial
grains + clusters evenly scattered hb > bi

cut by thin tourmaline veins

— further along the rock has some mafic cg clusters + looks like Bethlehem ✓



Road on IP line 725 at the Jeep.

— END OF DAY —

July 24 Ken Northcote visit

July 25/69
Rain, Cloudy

Visited Bethlehem Cu in the morning - got a map (Wood) from Dave Miller.

Afternoon Krain Road - north of camp travelling to Transvaal area

34-1

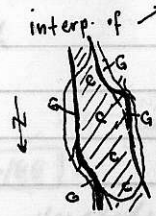
Around the swbk the overburden is pebble to boulder till underlain by hard-packed silty sand.

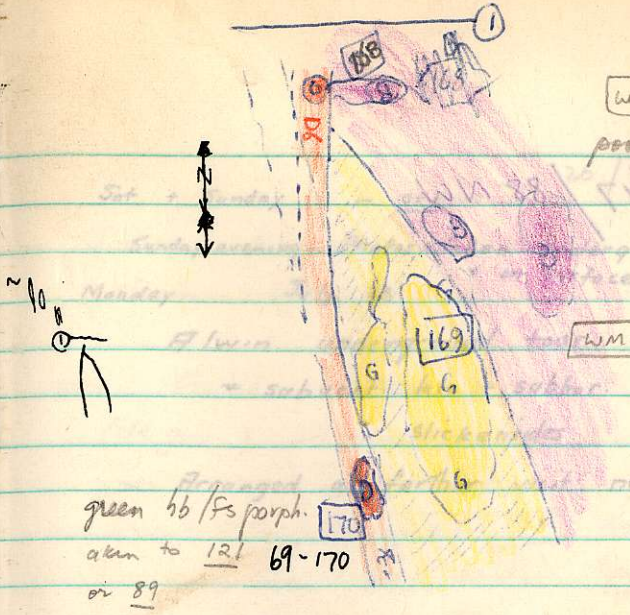
Boulder till w. red + gray boulders - which are predom. of volc. origin.

34-2 To south of the road porphyry w some 1/2" hb needles The matrix is granularly mp fs and stubby to needlelike hb.

WM-69-167

Spec. missing

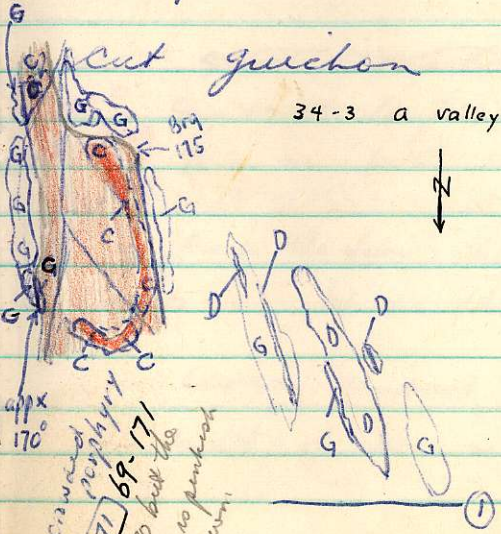




a series of thin to wide dikes varying in trend from 165 - 180

Cut guichon

34-3 a valley in crowded porphyry



Foln 017/88 NW



26/27

Sat + Sunday – OFF

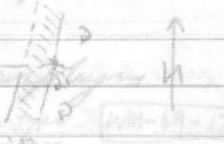
Sunday evening - Photos taken undergrd at Valley Copper. * on surface

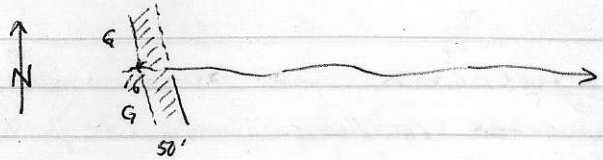
Monday July 28

Alwin underground tour

* subvert. late + subhor. earlier slickensides

Arranged a farther visit next Monday.




N
G
G
G
50'

July 29/69
Sunny

SW of Krain in steeply incised stream valley.

36-1 Guichon poorly ~~non~~. fol. mafics 25%
(dk green) sl. mottling in pink
main joint set 160/steep
WM-69-173 ~~[illegible]~~ guichon
foln 045/48NW POOR

36-1 is at the s. end of the trench at which the truck was parked.

36-2 pace 16 Crowded porphyry
Gray o mafic plag ppydyke
contact 160/86SW 121-type qtz-poor WM-69-174 ?
o/c's on both sides of the valley.

Inside the dike there are epidote clots + lab needles

eastern contact also trends ~160
width of dike ~50'.

pace 21.

37-1 On the ~~[illegible]~~ south side of the valley the Guichon o/c is only 2' wide + goes way to a dike trending 145/V

Dike is gray w. wh. fs + magic phenos (dk gm) and clots of epidote

the contact shows - the dike is green when wet hb fs porph (qtz - poor)

WM-69-175
WM-69-176

G / Dike contact

6' wide - then into Guichon again

pace 27 o/c ends for the moment

---

pace 67 Continuous o/c for some time on both sides of the valley

37-2 pace 75 Guichon foln 079/83 SE poor

WM-69-177

~~Dike~~ Joint set 025/V

pace 78

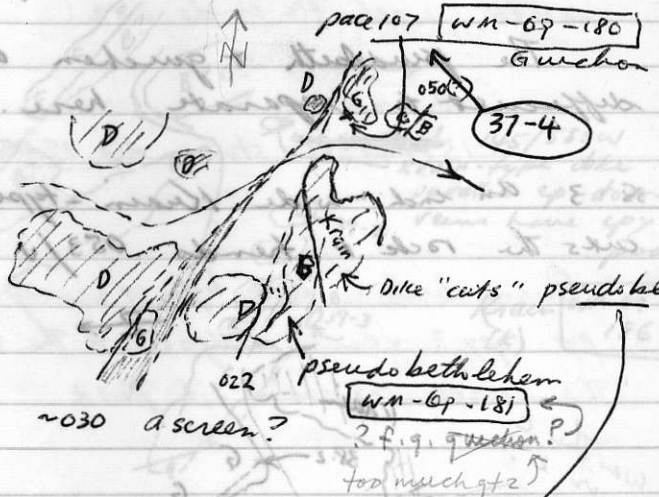
37-3 Dike 155/80 NE dip guesstimated crowded porphyry w. epidote clots + pyrite. Fs phenos pinkish 60%, mafics anhedral dk gn (hb).

WM-69-178

Epidote w. mafics (ruins) + qz clots up to 1/4" ϕ

core of dike WM-69-179

occasional fs phenos reach 3/8" long.



the dike is krai porphyry + seems to be chilled against pseudobeth.

WM-69-182

? f.g. gneiss?

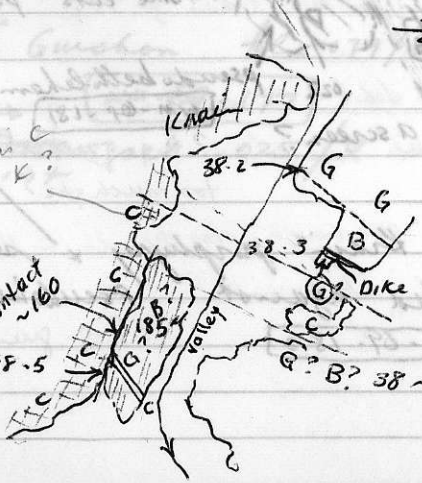
now along south side from pace 106 on.

38-1 aplite 140/83SW 6" wide
felsic in gneiss 010/78SE
possibly in contact w. pseudobeth
WM-69-183
south wall 170/75SW striae
dip 05°SE on
epidote coated joint

38-2 Gneiss pseudobeth. contact
apparently trends 050/steep

The pseudobeth + gneiss are
different to separate here.

38-3 An inch-wide Kmain-type dike
cuts the rock + trends 053/V



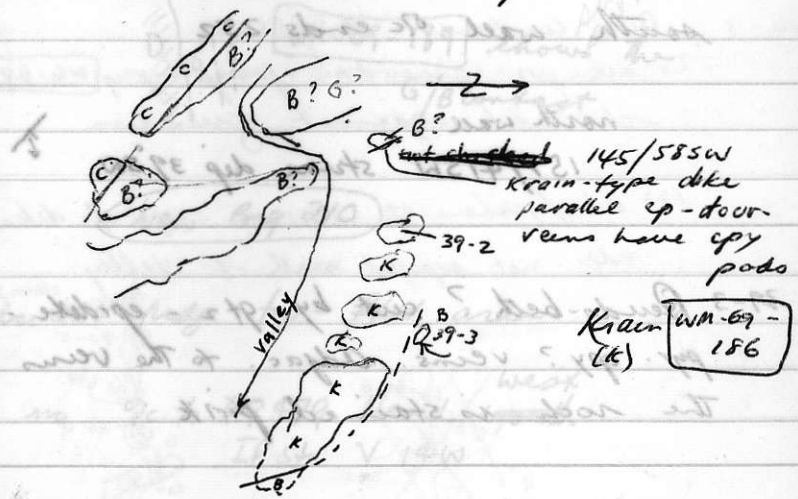
C crowded porphyry.

38-4 The rock is either fg gneiss or pseudobeth. I favor p-b.

WM-69-184
WM-69-185

Veins 150/85 SW strike 88° SE

38-5 Joint 154/88 SW
strike dip 85° NW



38-6 a few ft along the dike is bken & crossed by tourmaline-pyrite-cpy veins and forms a gossan.

39-1. pace 218 Guichon? Pseudobeth?
southern wall of valley
WM-69-187

northerly wall
39-2 The o/c is dike but altho it is
sim. to Kraen type it has a gray
matrix + hb needles
WM-69-188

south wall o/c ends 252

north wall
157/41SW striae dip 39°SW

39-3 Pseudo-beth? cut by qtz - epidote -
pyr. cpy? veins. Adjac. to the veins
the rock is stained pink

39-4 epidote veinlets in Krain-type dike
058/71NW - joint set //'s this
Some veinlets are rich in specular hematite

39-5 North wall end of %c
Dike/Guichon(?) contact

Contact 170/60SW
Foln 052/51NW



WM-69-189 shows the supposedly G/B contact

New Brg 210

pace 264 ridge top - flat area

no %c to ~~49~~ 479 Head ~~north~~ west
IP Stn V 14W
?

pace 592 V 18W
The valley is 100' north

in the valley stn ~~[illegible]~~ L 56N OE

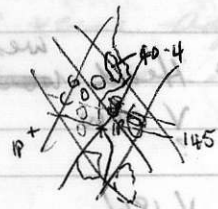
Follow valley down (east) to end of o/c @ 612.
Then head west up the valley

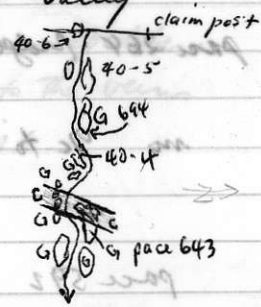
40-1 Guichon m-cg, foliated
foln 090/62 N (poor)

40-2 pace 621 Guichon sample
$\boxed{\text{W M-69-190}}$ Guichon epaltn
joints 118/V most prom. set up

40-3 Dike contact 145/88NE may be wrong it does not fit the map sketch
The dike is crowded porphyry $\boxed{\text{WM-69-191}}$
chilled against guichon

643 dike/guichon o/c - west edge of dike
edge not exposed north of valley





40-4 676 aplite 100/47NE
o/c is along the S edge of the ck only



f.g. porphyry dike 115/steep

K - Krain type dike

WM-69-192 Krain type dike

40-5 Fola 041/80SE Guichon

40-6 page 720 cut claim line
COPPER MAC staked by L. McNabb
Aug. 68
horiz line brg ~160°
lots of malachite stain on joints
at this stn.

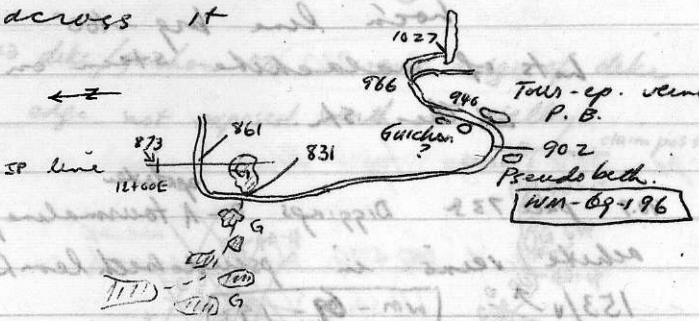
40-7 page 738 Diggings on 1 epidote tourmaline/malachite veins in pseudobeth lehem?
153/V ↗ WM-69-193

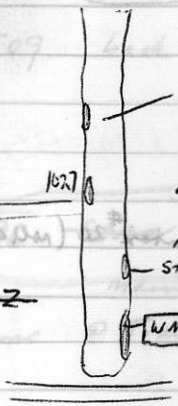
page 736 fg Guichon? pseudobelthlehem?
to here

41-1 crowded porphyry dike
on south side
contact ~125/steep WM-69-195
Pseudobeth on north cut by
WM-69-194
the dike.

41-2 m-c.g. gulchon
pace 787

41-3 Road pace 831
Gulchon to the road +
across it





The bxtn & alth are less intense here & the CR seems to be pseudobeth.

Altered pseudobeth. which may be more truely a breccia

Mal. stains & chrysocalla? are found but not prom. The bx matrix is black & fg (tourmaline-rich?)



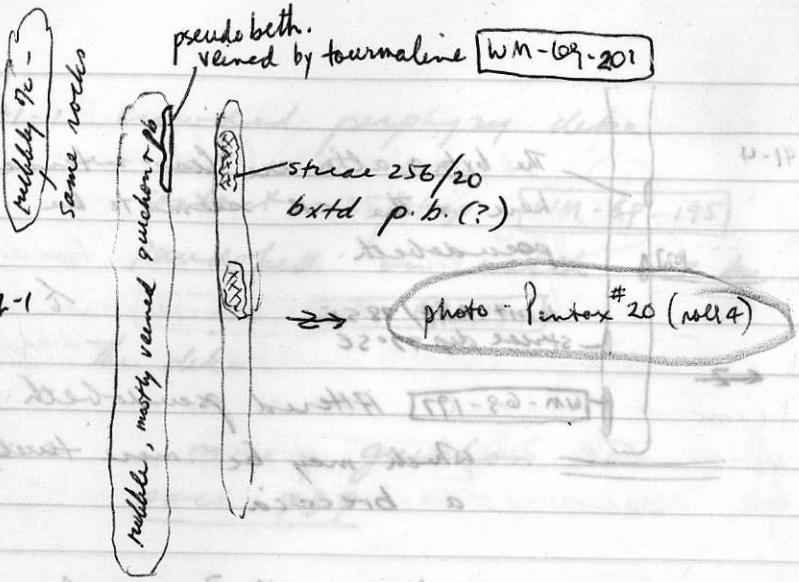
The C.R. here is gouchon in part and p.B. (?) possibly as well.

Bx as before (41-4)

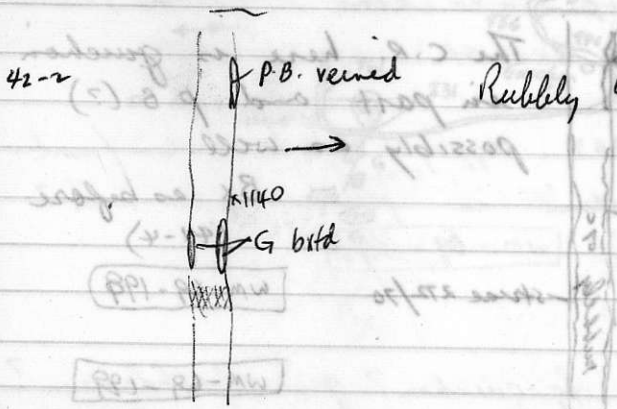
WM-69-199

WM-69-199

sample w. p.B/gouchon contact (not in place)



epidote + tourmaline veining



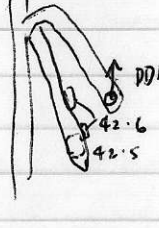
pace 1227 ~~valley~~ Intersection of two valleys and the road
42-3
Time ran out - head back

1509 back where we came onto the road

1696 ~~Odan~~ corner left
main road - walk N past head-frame @ Transvaal to trenches

42-4 DDH @ 165/-60

42.5 Next trench at north end
46 B: porphyry of uncertain assn
WM-69-202
out by stringers of lake (Kamloops Group?)
In the bank is a probable Tc of
42.6 Kamloops Gp volc. rx.
WM-69-203

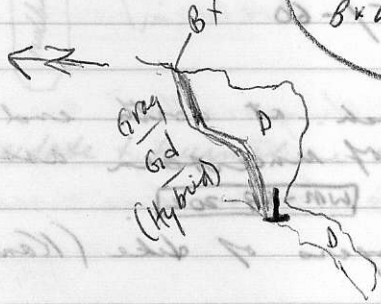


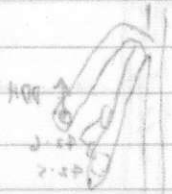
July 30/69
Sunny

Traversing on Dansey Property
c/w Pat McAndless

Stn 435+20E (approx)
43-1

Pentax photo
1, 2 (Roll 5)
B+W 2 photos





July 31/09
Sunny

Following the road which goes up the hill adjacent to Mary's Cafe.

PHOTOS
7128-033
7128-064

No o/c to 44.1

44.1 survey ? stn 003 EW 003 NS

44.2 end of offshoot road DDH
@ 265/-55 Not labelled.

44.3 o/c of Bethsaida g-d. (porphyritic)
25% quartz forms rounded to almost square xls up to 3/8" ϕ
10% Bi books up to 3/16" in ϕ ~~but~~ with ~ the same depth



65% fs most is mg but scattered laths are up to 1/4" long

Three samples - in one bi is chloritized and blebs of cpy - magnetite - bornite? occur

WM-69-204 3 samples

Joints 080/V
131/steep

Bsda

page 62 (44-4) Trench

Photos of Bethlehem Copper Mine
#3 B+W #4 Roll 4 Pentax

tourmb 015/78 NW

The qtz is sl. smaller here but still forms phenocrysts. [WM-69-205]

The rock is yellow-brown wtrq and bi is altered to chlorite + sericite some fs is yell-green (alteration)

page 131 (44-5) Trench - no qtz in it but outcrops above it.

large shield-shaped and obvious interstitial quartz occur side by side. Quartz also occurs as grains ranging from 1/8 → 3/8" across.

[WM-69-206]

Small sheared rubbly-looking zones
110/80 SW 138/76 NE
w. assoc. green + pink altn

tourmb 015/72 NW pink altn

qtz vein 2" with yellow (sericite) altn adj. to it
004/80 NW

45.1
o/c continues to trench (pace 197)
The trench has no o/c
End of o/c $\boxed{\text{WM-69-207}}$

45.2 Just above 44.5
Epidote vein $\frac{1}{8}$" 015/v
Joint 000/77W
122/655W
sample showing ~~ss~~ square qtz xsection
$\boxed{\text{WM-69-208}}$

45-3 Rubbly o/c intermittently
sample $\boxed{\text{WM-69-209}}$
above the first trench
qtz finer grained?

Back to main road - cut
right at next intersection

45-4 Rubbly o/c of porphyritic Bethsaida
joints 018/68NW inch-foot scale
WM-69-210

45-5 Similar rock WM-69-211

45-6 Pit Trench Bethsaida - porphyritic wit qtz
page 6
joints 022/57 NW

45-7 Trench
page 28
joints 014/46 NW
Porphyr. Bethsaida - some of the qtz eyes have hex x sections
WM-69-212

45-8 Beth. Porphyritic - bi is chloritized
The amt of bi varies from 5-25% but o/c is too poor to show interrelationships
joints 025/78 NW WM-69-213
some Fe stain along them

45-9 Pentax photos 8 roll 5 (445)
Porphyritic Bethsaida
joints 026/65 NW WM-69-214
Bi chloritized
Fs wtrs chalky white + is mg.

46-1 Porphyritic Bethsaida - bi is fresh and chloritized

joint 050/49NW | Joints 025/steep

striae 305/46

Rusty wtg.

46-2 joints 132/70NE

035/78NW

WM-6P-215

46-3 Porphyr. Bethsaida qtz slightly smaller than before Biotite fresh

joints 123/835W

076/785E

022/88NW iron stained

WM-6P-216

Tried the N fork - too muddy & no otc

On main road again

46-4 qtz on the road + south of it

Joints 028/79SE

Porphyritic Bethsaida Bi chloritized

Both qtz + bi form eq phenos.

WM-69-217

The qtz in the bush is similar but biotite is unaltered + jointing is not well developed.

WM-69-218

46-5 Rock as at 46-4

Joints 021/80 Striae 07°SW dip

46-6 Intersection

47-1 o/c 100' south of the road

Joints 115/V

1/8" scale sheeting 100/38 NE

The rock is ~~a~~ str. porphyritic Bethsaida but qtz eyes are not as pronounced here as before

Matrix mottled w. pink WM-69-219 mineral.

smashed-up Bsda

47-2 Joints containing white veins which wtr in relief 100/V

qtz?

very much like 47-1

bi slightly chloritized

Drove the road to Simanous

take them back to camp

Via Lornex.

Air Photo
7128 - 106

AUG 1/69
Sunny.

Calling Lake Road - working on Bethsaida - drove down to the road which is half way from Calling to Pimanus Lakes & traversed eastward to the road we worked on yesterday.

48-1 leave truck

pace 698 (48-2) o/c ? IP 8N 8E
Porphyritic Bethsaida - big sl. chloritized bi books - matrix mottled with pink. WM-69-220 Bsda

at the road is IP ~~Sth~~ 5th 12N 10E

pace 1038 (48-3) small o/c
same rock as 48-2
Joint 150/82SW
053/83NW
WM-69-221
Bsda

pace 1290 Intersection
48-4 keep right
Claim Posts Lorex 16 1964
Final Post 509316
1962 Norex 76 & 78

48-5 Porphyritic Bethsaida
(1450) WM-69-222 Bsda
Joints 128/85NE

48-6 Glacial Striae 140°
Aplite vein ¼" 013/68NW
(1489) WM-69-223 Bsda
Some of the qtz in the porph. bethsaida country rock is interstitial-type.

pace 1500 Pentax photos 6 & 7/35 of
qtz fs bi textures
qtz looks gray.
Then two photos of a green thing

48-7 Joints 138/87NE
Porph. Bethsaida
WM-69-224 Bsda
qtz coarser than 48-6

49-1 (1581) Porph. Bethsaida - fs is slightly gell-green here.

49-2 1611 Lorex 11, 12, 13, 14
1964
claim Post

pace 1700 There may be some Qc here but pebble is too pronounced to be sure

pace 1750 Back at ent. reached at pace 640 on the way out.

49-3 Porphyritic Bethsaida WM-49-225
~~Joints~~ 005/V
000/70E widely spaced
130/V

bsdv

49-4 Joints 111/89NE
(1871) qtz is not quite as large as in earlier samples

003/74SE two 8" aplite veins

sample WM-09-226

Joints 069/V
149/43SW

propyl. altn of plag - Bsda

Porphyritic Bethsaida - bath
qtz + bi phenos.
Bi v. sl. chloritized
much of the qtz is interstit-type

49-5 Possible % of porph. Bethsaida
(1985)

49-6 (2061 ~~2021~~) Foliated porph. Bethsaida
foln 105/45SW defined by bi + fs

49-6 is cut by stringers of pegmatite with qtz + pink fs (graphic)

WM-69-227 163/85SW 2' aplite dike
Bsda 090/66N aplite + graphic pegmatite

much of the CR qtz is of interstitial type

Joints 134/67NE

50-1 (2165) large d/c on both sides of road trends north and are en echelon.

Slightly porphyritic Bethpaida - qtz is mostly interstitial but only sl. larger than matrix matl.

Joints 113/V are the only good ones.

WM-69-228

next o/c Joints 145/85SW

WM-69-229 Bsda

50-2 strike 265/29 Porph. Beths.
(2285) interstit-type qtz.

WM-69-230 Bsda

Fs yell. with altn

2395 TRUCK

Heading Back

50-3 Off the end of the small lake an outcrop (?) in float and contains a qtz porphyry boulder

WM-69-231 Bsda

50-4 Porphyritic Bethsaeda
interstit qtz, biotite phenos
joints 174/63NE (best set) WM-69-232
115/83NE

Bsda

51-1 Porph. Bethsaida

WM-69-233

Bsda

Joints 116/83 NE
053/88 SE

234 omitted?

51-2 The % trends ~020
Slightly porphyritic Bethsaida - the fs is greenish (sericitized?) + bi is partly altered to chlorite
Joints 020/46 NW (Best set)
118/81 SW
084/80 NW

WM-69-235

Bsda

51-3 Similar Rock loc. em. grn ser. altn adj. to chl fr
Joints 130/86 NE
112/85 NE

WM-69-236

Bsda

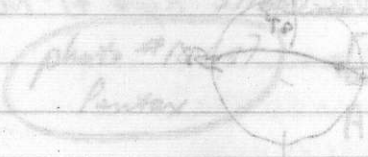
51-4 Porph. Bethsaida with qtz + Bi phenocrysts.
Joints 074/80 SE
147/48 SW
131/71 NE

Bsda

WM-69-237

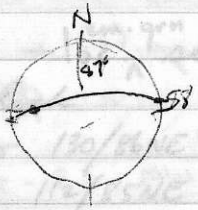
Aug 4/69

– END –



52-3 Sh 63 Samples [WM-69-239]
Alwin – Bsda
tore

✓ reading checked for local attn by comparing the rdg to faults on the undergrd maps.



Aug 4/69

Underground visit to Alwen with Ed Shannon.

at the portal, deeply wtd crumbly Bethsaida is intruded by a dike w. uneven pl. sheared borders which seems to strike 095 (local attraction may be a problem)

End of 503 Drift

52-1 046/77SE ✓
slickensides rake 34°SW
photo #10 (5) Pentax
WM-69-238 (2)
Alwin - Bsda + ore

52-2 088/87N ✓ strike dip 13° W
103/70NE ✓ " " 18° W

52-3 Sta 63 samples WM-69-239
Alwin Bsda + ore

? unable to check - not on underground maps

53-1 135/61SW ? streak dip 34° SE

53-2 095/88N " " 8° W

Two samples of MoS_2 (?) gouge

WM-6f-240

Sericitic Gouge Discarded

53-3 Stn 59 Black gouge

WM-6f-241

Sericitic Black streak gouge - discarded

53-4 Stn 58+20 073/88 NW ✓ striae dips 41° NE

Gray gouge zone

53-5 ✓ 068/80SE striae dip 10° W

✓ 190/22 hematite striae face

✓ 016/13 " " "

✓ 122/62SW striae dip 62°

53-6 ? 074/85 SE striae dip 11° SW

53-7 ✓ 125/63 SW striae dip 43° SE

53-8 ✓ 109/81 SW striae dip 79° SE
sample WM-69-242
prop. altn of Bsda

53-9 ✓ 123/v striae dip 6° NW
50° SE
early
late

53-10 ✓ 081/42 NW striae dip 33° NE
✓ 205/24 striae
022/09

53-11 Raise
Top of ~~Step~~ ✓ 201/25 striae
46 "Samples" Taken
photos ~ 6(?) (up to 16)
roll 5

53-12 End of 502 drift west - m crosscut
✓ 110/89 NE striae dip 88° NE
✓ striae 183/29
prop. altn of Bsda
WM-69-243

54-1 SOZ Drift West

✓ 100/88NE striae dip 17°SE

WM-69-244

Porphyry + C.R.

yell. propy alt'n of Bsda

Grnish " " fs ppy dyke

54-2 ✓ 037/83SE striae dip 64°SW

54-3 ✓ 059/80SE striae dip 4°SE (NE?)

043/06 striae

54-4 ? 045/82SE striae dip 76°SE

54-5 end of drift

✓ 161/41NE striae dips 35°SE

WM-69-245

Alwin Bsda

54-6 019/89NW 80° SW striae dip that way

WM-69-246

strong ser + prop alt of Bsda

54-7 168/70NE striae dip 64°NE very near the intersection

54-8 ? 030/87NW striae dip 86°NW

WM-69-247

Bsda w. flaky ser zone & prop. alt.

54-9 075/85SE striae dip 6°NE

WM-69-248 Bsda w. flaky ser veinlets striae dip 33° toward the SW (parallel to drift)

54-10 125/75SW striae dip 79°SE

120/80 SW " " 48° SE

178/43 W " " 40° SE

249 Bsda Propyl. Alt.

55-1 ✓ 087/89SE strae dip 013 toward the east

55-2 stn 51 ✓ 112/60SW strae dip 53°SE

WM-69-250 Porphyry? Plagioclase Dyke

55-3 strae 243/53 stn 16

55-4 WM-69-251 Sed + prop alt of Bsda

55-6 strae 227/48
314/49

55-7 WM-69-252 ? lost ?

55-8 Stn 42 strae 302/51

55 - 9 $\boxed{\text{WM-69-253}}$ MoS_2 in goupy zone
from 57 x cut

55-10 60' from stn 37
085/76N striae dip 22° W
striae 100/07

55-11 331/09

55-12 $\boxed{\text{WM-69-254}}$ Bsda mild
prop. altn

Stopped at stn 15

-END-

Note Don Pringle (N. Pacific)
was at Alwin. See Visitor's Book

Aug 5/69

Dansey Visit

Aug 6/69

South of Bethlehem Copper Ltd looking for a Bethsaida Dike.

SC 7128 - 027

SB-1 Leave truck - put in center of road.

The rock is veined by qtz - epidote + pods are malachite stained. The rock appears to be a porphyry dike. Hb is altered to chlorite (?) The matrix is fg fs + qtz. Qtz seems to be subequant albeit some is interstitial (but forms "open" textures).

Bm? ~~Crowded Porphyry~~? WM-OG-255

Feb/78 shear (½" gouge) 041/78 NW

Sept/78 Rom 040/50 NW striae dip 43° NW in the mud gouge ie the last ones

Feb/78

57-1 The rock is badly altered & of uncertain (porphyry?) origin but contains qtz, chlorite, & specularite veins. second. Cu mins $\boxed{\text{WM-09-256}}$ tourmaline?
Qtz cuts black veins

57.2 The next sample could be Guichon
$\boxed{\text{WM-09-257}}$ Bxtd veined altered Guichon (?)

Cu mnlzd Rusty Rock
$\boxed{\text{WM-09-258}}$

081/45NW

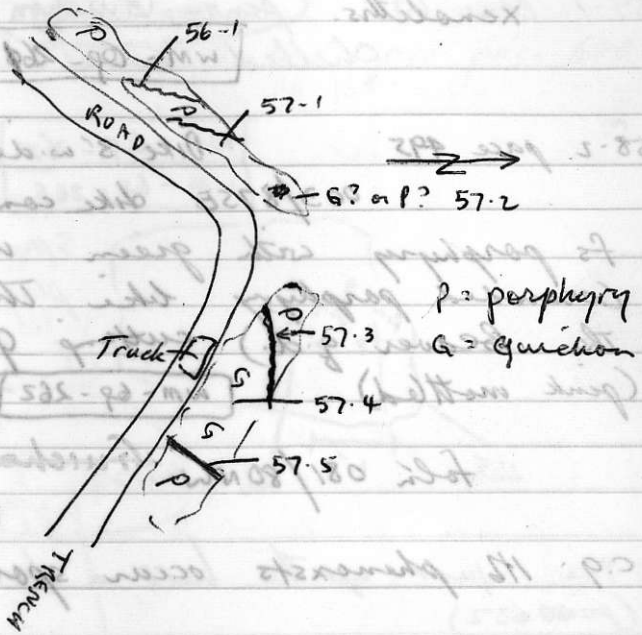
57.3 Guichon/Dike contact - shearing along it & the rocks are difficult to recognize

57.4 In guichon $\boxed{\text{WM-09-259}}$ Guichon
040/65NW striae are down the dip

early striae 213/16
Later " 285/68

57.5 Guichon/porphyry contact
033/77NW - not certain

260- not sure - looks ppytic -
may be fg Gu or dyke.
Mal, neoto cute on cracks
Feb/78



pace 0-43 no %c

pace 43-93 %c porphyry + gneiss?

111 - 125 %c (Gneiss)

158 %c (Gneiss)

224 altered gneiss

247 gneiss

425 end of road

Feb 6/78

58-1 pace 437 small o/c of pink mottled quechon with hybrid xenoliths. Quechon-hybrid xeno.

WM-69-261

58-2 pace 495 Dike 3' wide

003/87SE dike contact - fs porphyry with green matrix (crowded porphyry like that cutting the Beaver q.d.) cutting quechon (pink mottled)

WM-69-262 crowded ppy or ppy tic Bm.

foln 081/80NW ~~Quechon~~ Chlorite fr.

c.g. Hb phenocrysts occur sporadically.

58-3 pace 526

Quechon o/c Quechon?

joints 174/78 NE

foln 090/76N

WM-69-263

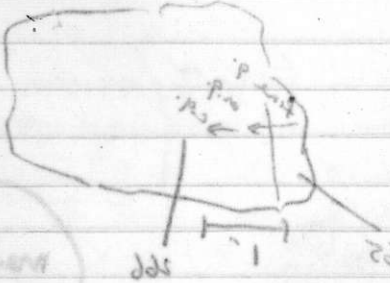
pace 540 Malachite-stained float

168/85 NE ~~SE~~ pink chilled dyke

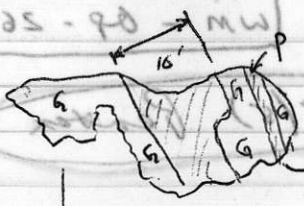
aplitic matrix crowded (maybe plag) ppy "Iona-type (Kraun type) dike

WM-69-264

MW - Gp - 261



MW - Gp - 262

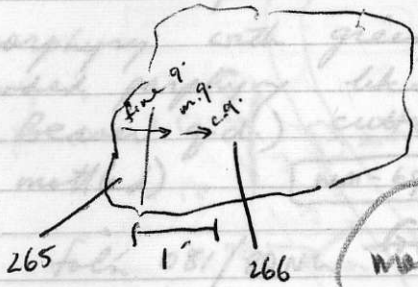


and mafic-rich fg feldspathic rock - Xenolith?

610 East edge of "Bethsaeda" dike.

59-1 pace 639 pentax # 17 (5)
chilled border of dike

WM - 69 - 265
WM - 69 - 266 - arg alt'd
Spud Lake Dyke
plag yellowish.
Feb/78



mafic qtz plag
ppy - D1/D12

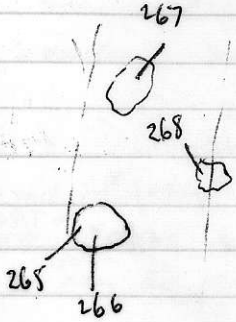
59-2 just up the hill a trench
(pace 652)
has been blasted into the
Spud Lake Dyke
Bethsaeda WM - 69 - 267 Type. coll.

Photo 18(5) Pentax

59-3
East border. semi-chilled type
WM - 69 - 268

The Bethsaida dike trends
~ 010

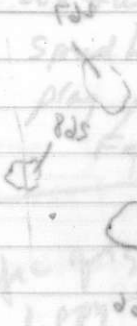
Back in the blasted pit pace 696



Aug 7/69

Rock sorting

Visit to Highmont



Aug 8/69
Sunny

Finishing the "Transvaal" Trenches

Air Photo 7122 - 198

Left truck & walked out to trenches.

pace 701 End of Trenches

ON THE WAY BACK

Met Pechiney Geologists - working on TROJAN

pace 1105 a/c with trend 160°

61-1

WM-69-269

Guichon - 61 z 66 not foliated

nearly Chatoid Gu.

61-2 pace 1332 Slightly coarser with fs yellow or pink stained: guichon - * some 66 xls are well formed.

Chatoid Guichon

WM-69-270

1456 - TRUCK

Highland Valley workings

NOW THE TRENCHES NEAR THE OLD TRANSVAAL(?) SHAFT

61-3 % between two trenches is epidotized bxtd pink stained guichon. The bx matrix is black (tourmaline?)

WM-69-271

61-4 TRENCH

Tourmaline veins 172/65 SW
035/57 NW
also as pods 004/88 NW

In the second trench
Tourm. Veins 056/88 NW
025/85 NW
01B/steep

Some of the tourmaline veins have epidote pods assos. with them



Photos 19, 20 Penter 4+5 B+W

62-1 o/c between trenches
closely spaced joints 057/85SE
inch scale
The host rock is f.g. quichon
or "pseudobethlehem" here. Tour.
veining is ~~absent~~ less common than ~~some~~
epidote veining is present
WM-69-272 060/62 NW
tourmaline

62-2 The adjacent trench has
a small outcrop of quichon
WM-69-273 Quichon
chl epd
veltn p 2

62-3 o/c at end of trench
f.g quichon?
bken, veined w. tours. stained
pink.
WM-69-274

Heading northerly

50' fm last o/c pink-stained Guichon

62-4 Rubbly o/c f.g. "Guichon"

Headed 280

Old Cabin then trenches beside the old shaft & core shed.

62-5 Rock o/c

Joints 040/85SE

Four veins reduce the rock almost to 6x stakes. Malachite stained.

WM-69-275 MISSING?

o/c blasted open

Pseudobethlehem? f.g. Guichon?

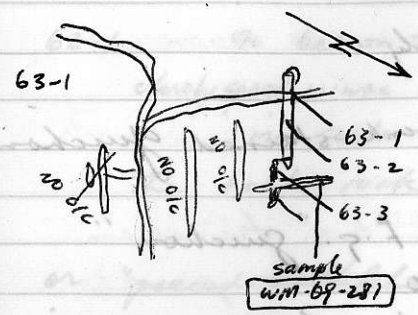
62-6 F.g. Guichon - pseudobethlehem

WM-69-276

Joints 025/62NW

62-7 Samples from the tailings at the shaft

WM-69-277



WM-69-278

fine grained gneiss ~~rubb~~ rubbly O/C malachite stain

63-2 Light-gray wtrq hb qtz "porphyry" The rock is actually rel. even grained. apparently trends 175° + is about 20' wide WM-69-279

a second 10' ± gray zone occurs near the ~~to~~ end of the trench

63-3 The trench has a black (tour?) zone down its center — 060° Rock is fg gneiss (?) qtz is rel. equant albeit with angular edges. Rubbly O/C

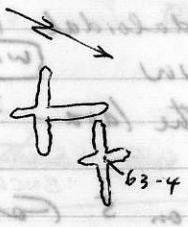
WM-69-280

Near the end of the trench the affiliation of the rock is puzzling

WM-69-281

Next trench

63-4 1 joint 013/61 NW
110/71 NE
037/48 NW four-epidote-chlorite vein



Some malachite stain
fg gneiss (?)

WM-69-282

Face 053/88 SE striae rake 11° and 58° SW

WM-69-283

63-5 Small o/c between trenches.
fg gneiss ?d. porphyritic wk hornblende

WM-69-238

64-1 next trench.

022/14NW

tourmaline vein

One face has tiny calcite xls

64-2 Tourmaline-hematite (?) vein

038/57NW

64-3 F-g gray slightly amygdaloidal lava

028/61NW WM-69-284

layering in the lava - 3/8" wide

obvious (deuteric alt'n along cracks)

"BN church"

Very nearly on S. Forge peak.

— 002/52NW 50' south of lost ridge.

Banded "lava" WM-69-285

? DIKE?

"layering" is deuteric alt'n along joints

STOPPED TO HELP FRENCH S. SEAS GEOLOGISTS WITH CLUTCH PROBLEMS.

Pluto 7122-163 type 11

New area - south of the trenches mapped previously

64-4 Gneiss with dk green hb matted w/ pink & cut by epidote veinlets - a few feet along the rock is f.g. gneiss

wm-69-286 wm-69-287

Speculante vein 1/4 - 1" wide
067/58NW
slickensides 05°SW
55°NW / maybe younger
these are imposed on the speculante

Going south along the gulley

64-5 Small diggings on west wall -

the c.k. is fg gneiss, the "ore" is mal. stained tourm. veined C.R. The tourm. contains cpy & pyrite and is veined by calcite.
The grade is v. low.

IP Stn 10+00E is just N of the adit

65-1 South end of Gulley
page 53 adit trends 030 at its entrance & swings right in about 30' from the portal. (it swings to 040)

Shears 020/48SE
050/70NW

022/68SE Tour. vein

The rock also has a few qtz veins
050/85NW

The ck is fg Guichon which is often punk-stained.

Followed an old trail to an overgrown cat road.

65-2 The rock is fg guichon with hb phenocrysts, then WM-69-288
true guichon. WM-69-289

119 Good o/c area

65.3
153 west edge of good o/c fg Gu.
sericitized rock [WM-69-290]
- altered fg guichon
a few ft along [WM-69-291]

65-4 East edge of o/c [WM-69-292]

The rx is sl. porphyritic
f.g. guichon.

Head North again

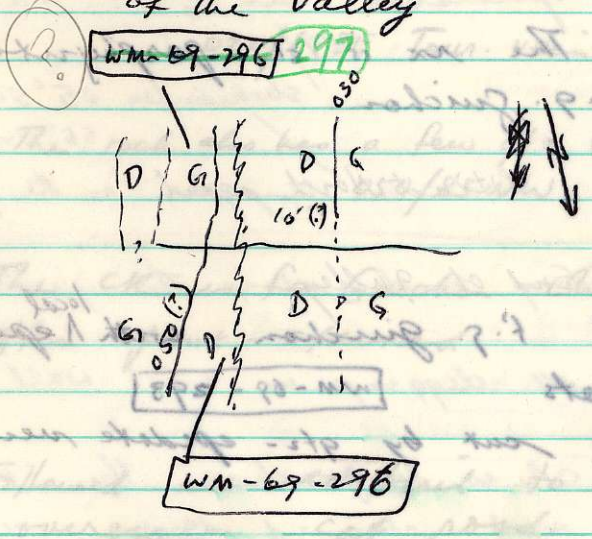
430 End of gulley

65-5 f.g. guichon with local epedote
clots [WM-69-293]
cut by qtz-epedote veins

65-6 Dike with chilled contact
trends ~003 [WM-69-294]
slickensides 135/09
only a couple of ft wide

66-1 ~~strae~~ slickensided epidote
vein in fg gruchon
274/03

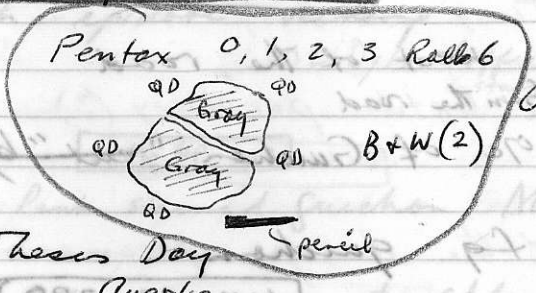
66-2 Dike WM-69-295
trends 030/v south
of the valley



Aug 9/69

Dansey visit

66-3



Aug 11/69

Transvaal Trenches

Sunny

Photo 7122 - 163

67-1 west of the road
100' from the road
o/c of Guichon "~~cut~~" by

and fg guichon

WM-69-298

Aplite dike 153/62SW (9" wide) WM-69-301
Small pit in Tourmaline veined rock.
Vein 030/58SE
The rock nearly is pink stained like rx in the nearby bx trenches
Next o/c to the west
67-2
The o/c is a mixture of

f-g. and ordinary Guichon

WM-69-299 qtz-ep veined Gu.

The west side of the o/c/ nearly Chat-Guich

is pseudobeth lhem(?)

WM-69-300 Bmish Guichon like at Skeena

use 2-2 Type collr
Contact 175/steep - uncertain

67-3 WM-69-302

Pink stained fg quechon (?) with epidote veining

02 Dyke (office study)

67-4 WM-69-303

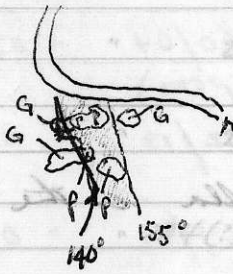
Pink stained quechon. Mafics have all gone over to chlorite (?)

67.5 along the road

Crowded Porphyry WM-69-304

Quechon WM-69-305

IP BL base line 445



68-1 Old Headframe

Pentax (Photo 4/6)

Just west of it is

altered bxtd porphyry (?)

WM-Op-306

* 306 below

Off the dump - specimens are siliceous - tourmaline - epidote - chlorite (?) veins + altn. Also calcite veins

WM-Op-306



~~Only~~ Chrysocolla is the only Cu mineral seen to date.

Pacing started at the northeast end of the pit

68.2 (pace 0) The o/c is chloritized pink-stained guichon. The trench was blasted & presents a 70' rock face. They apparently followed a tourmaline & vein-system along.

WM-69-308

slickensides 265/47 on epidote covered face

face 012/62NW slickensides 293/59 on chlorite covered face

The C.R. is guichon	slickensides 250/53 face 003/56NW
	" 240/42 face 020/54 NW
	" 253/36 " curved
	" 235/54 " 022/73NW
	" 234(?)/63 " 031/75NW
	" 180(?)/69 " 023/73SE

a shear parallels this face

Throughout
The C.R. A Thrust trench is
altered gouchon.

Slickensides 189/38 face curved

page 12 Shear zone 130/78NE 3" gouge zone
" 225/42 " 165/45SW
↑ uneven
" 253/63 " 008/67NW
shear 000/88E
joint 083/85SE
chlorite-filled

page 34 strial 262/18 face 051/39NW
serrate(?) green joint WM-69-309
filling is slickensided

slickensides 194(?)/74 face 174/79SW
" 260/04 " 078/43NW
(poor)
" 272/13 " 085/46NW
" 259/21 " 056/53NW

69-1

pale 73 sample of qtz-tourm-cpy ± cando chrysocolla rock.

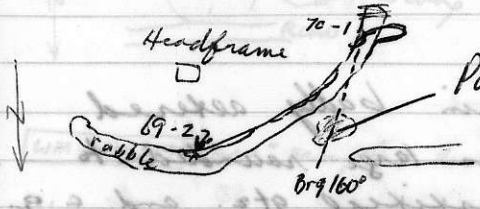
HIGHLAND VALLEY WORKINGS area 2-2 TRANSVAAL SHOWING.

wm-69-310

Two photos (Pentax 5,6 /6) in Krain area showing chrysocolla-coated face

Tourmaline veining
150/v.
082/65NW

~~69-2~~ Next trench to the north



69-2 striae 293/56 face 030/58NW
The C.R. is f.g. quichon (altered)
wm-69-312

slickensides 275/61 (poor)

" 250(?)/76 face 007/77NW

WM-69-237 S. of Calling Lake

Porphyritic wrt qtz, plag, biotite, hb

30% qtz phenos are as much as 0.4" across and some coalesced xls are present. Matrix qtz sometimes overgrows phenos producing large complex xl masses.

4% Biotite forms moderately large books most are near 0.2" some reach 0.3". Magnetite closely associated with biotite

2% Hb occurs as elong. laths (black)

B:Hb - 2:1

64% Fs. - plag. is beautifully zoned - concentrically

The matrix is extensively mottled with crappy pink matl - Kspar? alt? Some is evidently Kspar poikilitically enclosing plag & qtz.

WM-69-235

Porphyritic wrt quartz fs biotite

65% Fs - most phenos are ~0.15", matrix fs is f.g., complexly zoned.

25% Qtz phenos (former β qtz?) up to 0.35" across display somewhat ragged borders but were euhedra. Borders are partially resorbed and overgrown by matrix quartz. Matrix qtz is open interstitial

a fracture across the rock has a half inch zone of pastel green alt'n of the fs. A second green zone has no obvious fracture assoc'n.

10% Bi occurs as cg books + as fine matl scattered thru the matrix - the finer x/s sometimes form anhedral clusters

NO OBVIOUS FOLIATION.

WM-69-232

The rock is porphyritic but quartz phenos are not striking (most ~ 0.25" across)
Matrix qtz open interstitial textare
10% Biotite books reach 0.25" but most is smaller and matrix biotite is fairly prominent

60% Fs - A few fs's reach phenoxst-size but most are f-mg.

30% qtz - combined

Pink mottling is general thru the matrix

slickensides dip 70° SE face 015/71SE

" 261/53 " 019/62NW

" 287/40 " uneven

" 294/45 shear 177/31 NE
uneven

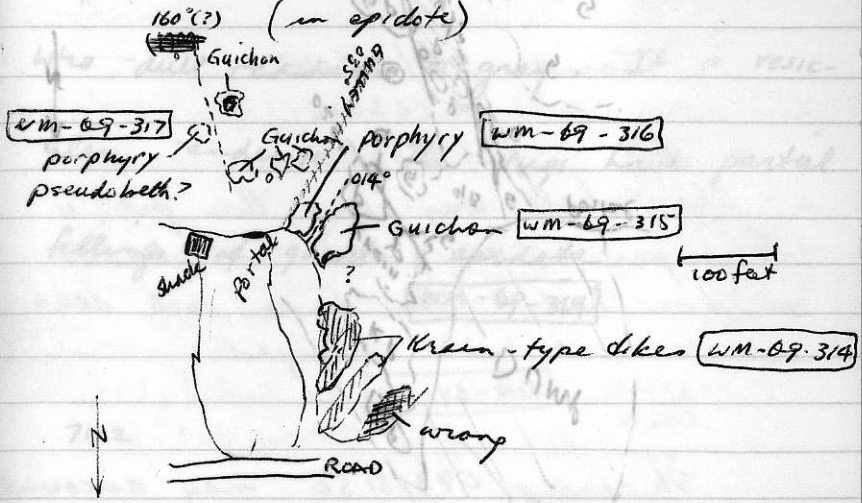
70-1
The last ok in the trench seems to be altered porphyry.

70-2 Trench in badly altered rock which has large rounded to equant interstitial qtz. and c.g. biotite crystals. Possibly a dike.

WM-69-313

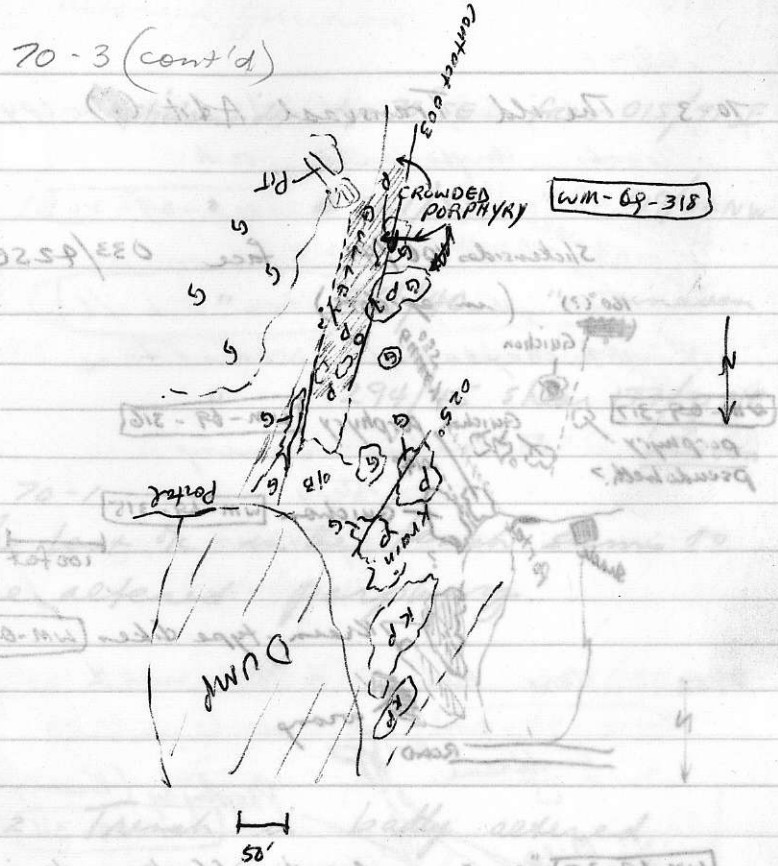
70-3 The old Transvaal Adit

Slickensides 106/41 face 033/42SE



wm-69-317 "ore" sample - the black matrix is largely specular hematite. The chryso-colla fills vugs & is interlayered with agate.

70-3 (cont'd)



Crowded porphyry 50' wide

Kraem " ~75' wide

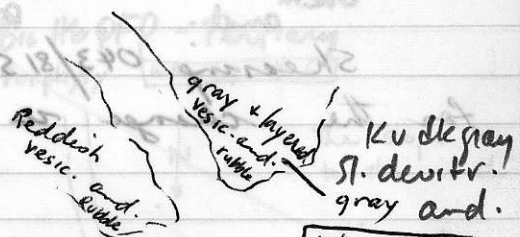
Photo 7122 - 164

Following the road on which the bridge is washed out.

71-1 The trench is in vol rock which wts dull reddish to gray. It is vesicular "andesite". The vugs have partial fillings of quartz & epidote.

WM-69-319

71-2



WM-69-320

The rubble represents 0% but is so scrappy nothing can be measured.

1P
⊕
100N
141E



The truck was at 100N 132E

72-1 Trench across the road
The bottom is in red wtg vesicular and.
glacial striae 130°

Joint 153/57NE
140/63SW
053/84SE

about half-way along the pit is 7-8' deeper for 25' and is redder in the "hole". The basic rock does not seem to have changed.

WM-69-321 Kv red light porous dac. and.
chem anal.

Shearing 043/81SE may account for the change in the pit area.

72-2 Next trench
biotite smokey quartz feldspar porphyry with slender hb xls. Kamloops Gp.

WM-69-322 QFP stock
chem anal.

Joint 143/73NE
040/80NW

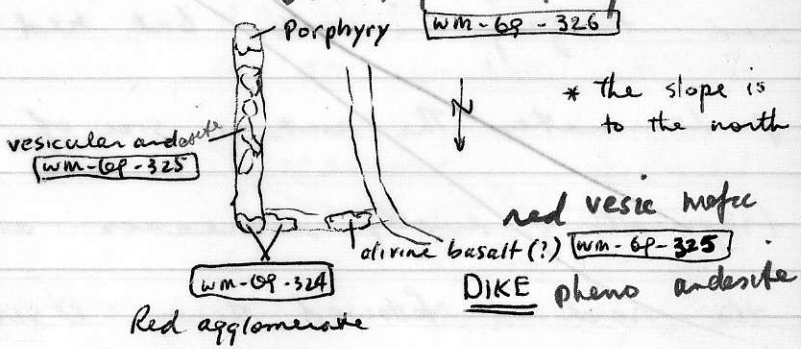
An inclusion of cg bi granodiorite was noted (1½" ϕ)

like WM-69-313

72-3 fg v dk gray brittle volc rock.
It sounds like glass when it breaks.
It is either porphyritic or amygdaloidal.
It has black layers on ⅛" scale - persistent.
dense flow layered basalt WM-69-323 007/82° SE
chem anal
Green xls could be olivine
OLIVINE BASALT (?)

DIKE

Bio Hb QFP - Tertiary



NO CONTACTS EXPOSED.

74-1 Long trench Page 7.
Red agglomerate (?) cut by
black fg porphyritic vesicular dike
WM-69 327 dike Band. Byke-dk
no attitude possible gray cuts ag.

74-2 Page 98 Dk gray vesicular
dike cuts the agglomerate.
Trends ~095 / steep.

The agglomerate varies from
red to gray in color but red
predominates. The amt. & size of
fragments gradually increases as
the rock is followed down. A series
of Pentax photos ~~as~~ represents changes
up the slope & presumably up
section. Pentax #7/6 dike/agglom

Sample
D = discarded

Pentax #8/6 agglomerate

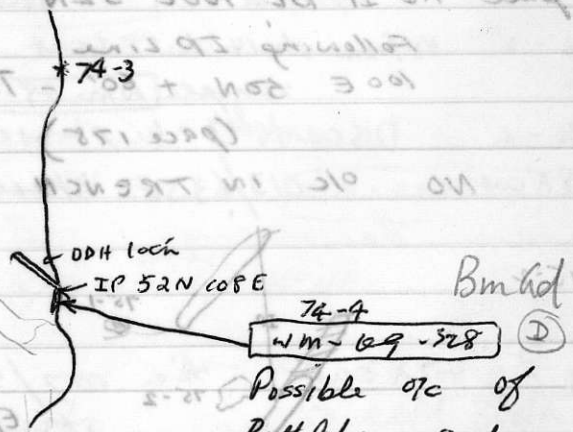
" #9/6 large fiaps gray matrix

" #10/6 rel. close-up

" #11/6 agglomerate

7122.7% line 10

74.3 Possible o/c of red wtg vesic. volc rock (agglomeratic?)



D Sample Discarded

75-1 Next trench – leave truck + head for it (pace 39)

Porphyritic wrt hb; bi hb g-d. The rock is much like that near Alwin on the road + is labelled Bethlehem.

WM-69-329

Bm Grd (P)

Joints 058/82 NW

NO o/c IN TRENCH

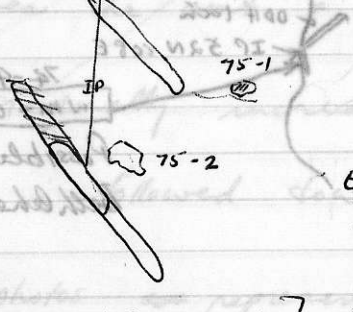
pace 116 IP BL 100E 52N

Following IP Line

100E 50N + 60' – Trench

(pace 178)

NO o/c IN TRENCH



Epidote/qtz vein

150/71NE

3/4" + less

[Scattered cg hb mg bi hb needles]

Bethlehem g.d. (?)

WM-69-330

Joints 040/48NW

Foln 023/62NW

Bm Grd ✓ (P)

at IP line 44N 107E ~~108E~~

Leave truck pace 96

75-3 Qc on both sides - Bethlehem

WM-89-331 BM

Poikel. 46 - big

POORLY JOINTED

Trenches - at roads end

- NO O/C

Aug 12/69

Alwen Underground

Stn 15 → Portal

76-1 Beside 15 a porphyry is exposed (WM-69-332)
Pdy Dyke

76-2
49 Crosscut 017/88SE striae dip 15° NE
south side
DYNAMITE STORAGE AREA

76-3 1/3 from stn 14 to 48 X cut
sample WM-69-333 nearly

76-4 Discarded fresh Bsda
48 X cut 013/63 SE striae dip 17° SW

76-5 47 X cut face 007/59SE
striae dip 15°NE

* strike is ~ll to length of the X cut

76-6 46 X cut Shear zone Bsda.
sample WM-69-334 prop, ser
SAMPLE NOT ~~SH~~ BIKEN UP altn
TOO BADLY. cut by vfg
dyklett

76-7 44 x cut stn 10
WM-69-335 Bethsaida
mild prop altn

76-8 WM-69-336 41 X cut
Bethsaida

76-9 Foliated zone @ 40 X cut Strike 000
(see map) Dip 45 W
WM-69-337

76-10
6-50' ✓ 070/80 NW strike dip 36° NE

qtz vein WM-69-338
ser. altd Bsda

76-11
X cut 38 WM-69-339
(Bethsaida)

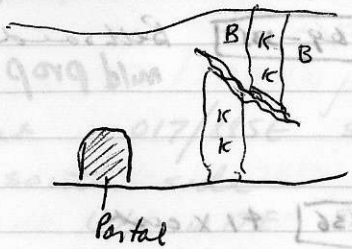
76-12 qtz-cpy-galena vein Vein
west of 38 X cut WM-69-339

77-1 Sample $\boxed{\text{WM-69-340}}$ a Kamloops

dk gray vesicular like cutting

rotten wtrd Bethsaida.

At the Alwin Portal.



Pentax
Photos 12 13
14
BW 11
12 13 14

Spent the afternoon with Ron

Nichols looking at maps & rocks &

getting the Arlington DDH's pinpointed.

The data is now on my map.

Aug 13/69 Highmont Visit

Rock sorting

77-2 A series of photos of the Cornex Pit near the road above the old pit (almost at the Highmont turnoff) were taken

Aug 14/69
Sunny

Road from near 101 Ranch to the Kraic Property

78-1 [First Photo 7122 - 193 then 7122 - 166]

no one - Pit in cobble to boulder till (?) with sand matrix.

78-2 DDH 000/-60°
claim posts

Bear 54 609154
Final Post

Aug. 1965 Bear 55 609155
Final Post

Bear 56 609156
Locator A. Eustey
Agent for ESTEY AGT's

also a fraction tag
537883 NO DATE
Bear 3 Fraction

78-2 Near the Krain Camp
Trench N. from ⌐ turn
north of camp
The first 150' are in
red severely ~~altered~~ weathered volc.-
almost mud-

pace 30 o/c of dk gray brittle
volc rock w. inclusions of
granitic rock and pockets
of quartz. HbFs phenos. WM-69-340

pace 40 The rock is now reddish
and less competent - a
wtrg effect (?) WM-69-341

pace 45 The rock is gray again. Locally it is vesicular.
WM-69-342 2 specs

Layering on 1/4 to 2" scale
168/38NE

pace 70 almost at the end. The
rock wtrs gray + is dk gray with brush
anastomosing "veinlet" systems. Fs + qtz
phenos + qtz in vugs. WM-69-343

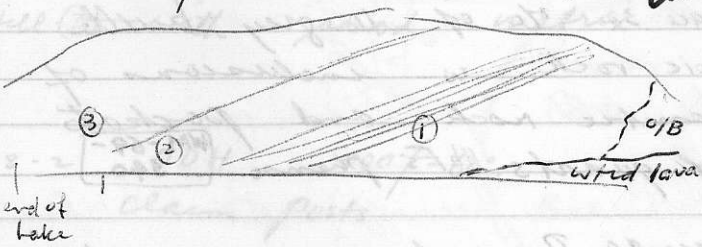
Feb/78
med gray andesite - plag ppytic
with vuggy, tan inclusions

79-1 at the end of the Lake.

The rock is lt gray with criss-crossed, brown elongated augite (?) crystals

WM-69-344 ← Feb 78 | hornblende plag ppytic dacite (?) - brown CHEM. ANAL.

Looking across



79-2 Coming back along the west side of the lake

Lt gray wtrg rock with white altn (sim. ix were seen along the NE corner of the lake

WM-69-345

pace 153 Now in gray to volc rock
w granitic inclusions

160 wtrd zone - no gray at
first then gradually gets
reddish WM-69-346
Anomaly the wtrd zone seems
to extend UNDER THE GRAY

190 o/c ends

Back to truck

79-3 Offshoot road to the east of
the main one + closer to the
Krasen camp.
Vert. DDH at its end

* DDH 20 519' vertical

79-4 next road o/c half way along.
Gray wtrg vaggy to volc rock
with large hb needles and some
rounded qtz amygdules.
WM-69-347

Friday - Drove to Princeton
aug 15 saw Vic V and Jim Fyles
Prets

Sat. Sunday VICTORIA
aug 16, 17

Monday Aug 18/69
Office Day.

NEW BOOK
BEGUN

NEW BOOK
BEGUN

TYPES

✓ Guichon Boss Lk HV road

* Chataway Dot Lk Chat Explns camp
75?

✓ Hybrid W. Brk road

✓ Wts. Brk. Boss Lk HV Road

* LeRoy 63 Chat + LeRoy 75 also

✓ Bethlehem Adera Ground
* also c.g.(?)
* Bethsaida Beths. claim

✓ Crowded Porphyry Adera

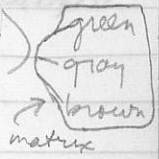
* Not Done yet Aug 24/69

DIKES

① gray andesite porphyries

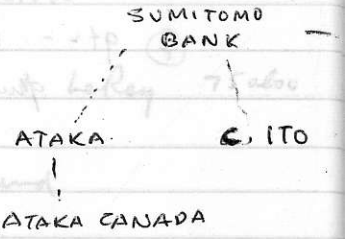
② hbfs porphyry (crowded) ± qtz

probably one + the same



③ qtz-poor hbfs porphyry

④ qtz-rich hbfs porphyry
quite rich in mafics locally


SUMITOMO
BANK
ATAKA
C. ITO
ATAKA CANADA

SOURCE Gordon Hilchie.
of Neumont - going to go
with Sumitomo

Yokose
Y. (George) Hirata Chief Geologist
K. (Harry) Otani Geologist

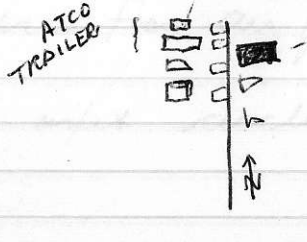
(5th)
SUMITOMO SHOJI — Sumitomo Metal Co. Ltd. (Tokyo)

[SUMITOMO CONS.]

SUMITOMO METAL MINING Co. of Canada Ltd.
|
CONCENTRATES (TECHNICAL)

IZUMI METAL MINING Co. LTD
(exploration arm)

BENCREST
|- 70% IZUMI
|- 30% { Benson
Earlcrest
Gen. Res.



North Pacific Don Pringle

Why couldn't they fele

flying to produce topo maps

etc.

cost $16.60/claim



Doug Chapman

Granville across from B of M

Stress patterns (N. Pacific)

Computerized – based on

fractures from air photos – # cutting

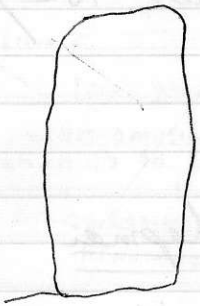
a unit circle

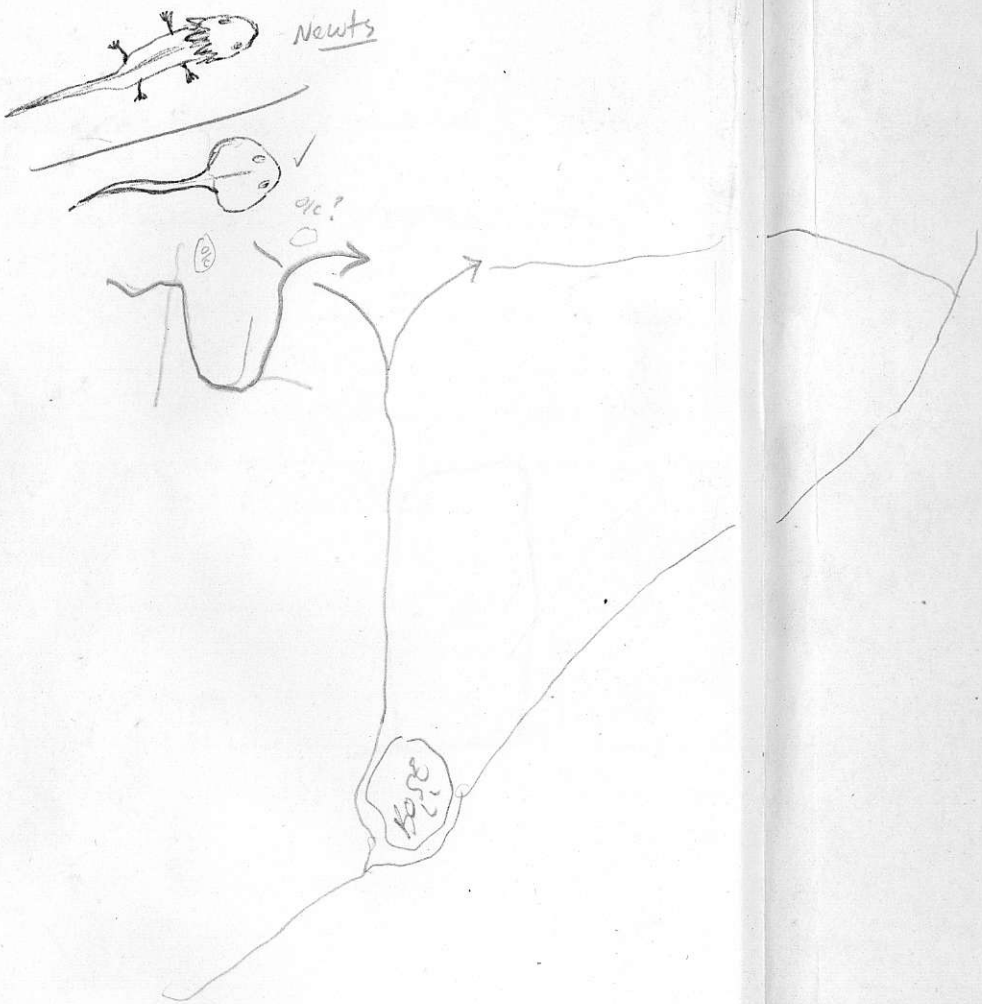
Bethlehem would like the assays & logs for

GR 1 – 6

ER 6 – 7

ER 1 – 5





BLUELINE

No. 56½

Dominion Blank Book Co. Ltd.

BETHLEHEM COPPER

Blast every 24 HRS, near noon.

Rocks

Bethlehem Qd / (grain size, proportions) vary

uneven distn of mafic crystals + clots - hb some biotite

→ quartz - rounded blobs

dappled or open texture

Hb - small to large sub-euhedral poikilitic locally

- altered to epidote in another sample

Plag - twinned

- one xl looked like it has concentric zones

- rarely xls are c.g.

cpy in some (rel. common) mafic minerals (malachite stain)

Grain size varies f - c

GUICHON - BETHLEHEM CONTACT

Guichon mg, Bethlehem apparently chilled is finer. Contact is sharply gradational

GUICHON - GRANITE CONTACT

granite chilled

The granite forms a small plug and is pink, mg, with 10% mel. uniformly distributed biotite Quartz is glassy, subeuant. Wtrq produces yellow and pink fs in ratio 1:2.

GUICHON

#7 quartz - glassy
- very angular, interstitial

magnetite - in with mafics
- anhedral
- several %

yellow metallic - one grain
cpy?

fs - white with local chloritzn producing green cores
- euhedral laths with interlath spaces filled by qtz and kspar

kspar - pink - interstitial - amt present less than it seems because some plag. is hematite - stained.

matic - hb > bi single crystals and clusters
- local chloritzn - esp bi
- clusters & crystals anhedral
3-15mm most ~7mm

7 second specimen - it has one subhedral bb phenoxst mantled by later bb

Some of the plag. shows concentric color zoning

Plag occurs both as phenos and small euhedral laths. The larger xls are partially resorbed + rounded.

mafics are NOT markedly poikilitic albeit some enclose qtz + fs.

Yellow mineral slightly more common

Foliation is absent in one subtle in the other

compsn. avg. mafics 25%
quartz 18%
feldspars 55%
magnetite cpy (?) 2%

WM-69-8 Similar but mafic clusters enclose much foreign matl

Plag shows unresorbed rounded cores enclosed in younger white feldspar.

mafic clusters and feldspars ~~---~~ form phenocrysts

69-9 The finer of the two specimens

PORPHYRITIC

quartz - interstitial and as equant
15% grains

mafics - med. to c.g. anhedral clusters
25% of hb and biotite (?) (green) and
magnetite

- mafics occur as mg xls + clusters
and as fine xls scattered thru
the matrix - much of the fg mat'l
is biotite + magnetite. Finer mat'l
~~[illegible]~~ speckles the rock.

seriate texture

feldspars of the matrix are white to gray-
60% green - some rounded phenos. occur
+ finer laths are v. closely packed.

plag / kspar unknown

69-9 Coarser Specimen

c.g. → m.g.

qtz (15%) - interstitial but subequant

mafics (20%) - clustered
- hb > ~~biotite~~ biotite ; some chloritization, epidote
- contain equant magnetite xls + green apatite xls
- one cpy (?) grain assos. with an altered mafic cluster.
- outlines of grains + clusters rapped.

feldspars (65%) - pink interstitial kspar [15%] pink areas c.g. - some may be staining
- subhedral plag. laths, mg usually. [50%]
- white to gray ; some xl cores green

cut by v. thin qtz + hematite veins

July 1/69 (0)

Wood

Alwin – Calling Lake turnoff 106.85

Trench left of road 107.25 WM 69-10

(see notes on BL map)

Pass Calling Lake

108.55 Trench left of road trends 131

Bethsaida

biotite chloritized

epidote in some joints

105/82NE epidote – tension?

East end of Trench

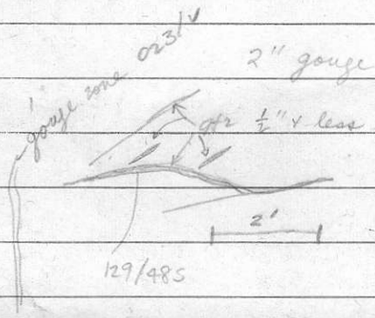
Slickensides 111/08 joint 103/47SW

" 358/43 351/37 " 040/61NW

115/02 127/30SW

125/00 125/37SW

2" gouge zone 065/70SE



qtz vein – discontin. 115/30SW

o/c just east of trench

gray biotite 5-10% porphyritic wrt qtz feldspar

Hb occurs as laths & is about 1-2%.

Joints widely spaced. WM 69-11

Claim line 330°

East Nancy 4 1959

South " 5+6 259193 In Post

1 Post Stewart #4 1956

~~Two~~ Six claim posts – old ones. B74486 In Post

B74483 " "

July 1/69 (1)

Trench east of road

108.95 Bethsaida - local boulders of purple wtg
slickensided sericitized Bethsaida
(shear zone?)
Not as cg as WM 69-11

073/71SE 1-½" aplite (pink) vein
050/54SE ½-¼" " " "
C.R. sample WM 69-12

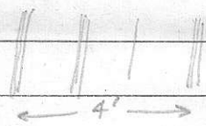
Lunch Parked truck headed due west

Pace 107 o/c west of swampy ground
Fairly massive poorly jointed
m-cg Bethsaida
no hb seen
speckled with pink orthoclase?

Pace 195 o/c of slightly finer Bethsaida gd
Jointing on foot scale + larger
aplite 018/53SE WM 69-13

Pace 232 large o/c area
aplite 1 inch 048/48SE
in Bethsaida with some hornblende

Pace 260 Best devel joints 162/86SW - on foot scale but
sometimes several faces are devel. close together



092/14N lesser joints WM 69-14

aplite veins with quartz pods - veins split
135/V(?)

277 Stadnyk CP Nov 68
960527

July 1/69 (2)

pace 305 Bethsaida some hb porphyroblasts -
aplite 060/V

WM 69-15

overlooking valley - N-S

314 aplite 140/32 NE ½"
aplite veins trending ~060 are more common here
(~20' + apart).

324 valley - o/c of slightly more mafic Bethsaida

aplite veins 094/78S fg 1" WM 69-16
175/60 W cg ½"

355 Bethsaida o/c willow grouse
New Brg 250

433 Finer (mg) Bethsaida(?) WM 69-17 contact phase

497 ~~Bethsaida~~ Guichon(?) just before downslope WM 69-18 on examination the spec. looks like Bethlehem (Skeena)

528 Guichon (?) o/c head south (210)
skeena WM 69-19

584 Foliated with sieve hb + elong laths - large + thin laths
foln 075/V

WM 69-20

621 Mafics 30% faintly foliated
Foln 152/53 NE WM 69-21
in contact with more leuco - with large + small hbs
CONTACT 150/? eastward
Leuco variety is to the west WM 69 22
Photo - Pentax 4+5

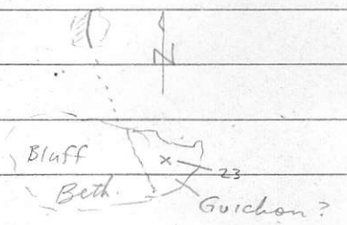
(21) If this is GUICHON it is anomalous! see descriptions notebook

July 1/69 (3)

662 Contact 150/43 NE

mafic east leuco. west WM 69-23

sample a few ft east of contact



745 continuing in Bethlehem WM 69-24

Turn to 090

813 Valley

845 Bethlehem

* Bethlehem occurs as anastomosing dikes in Guichon. No chilled borders

913 Possible guichon X o/c WM-69-25 No X in Bethsaida

July 9/69 opp

1014 Bethsaida outcrop WM 69-26

1160 Valley

1171 o/c of guichon - no probably a boulder

1329 old road

1420 Lake (Trench) and bethsaida o/c

1514 TRUCK END

Section fm Bsda → Guchon (?)
south of Calling Lake