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1976 1

PACIFIC

WATERPROOF

PROMONTORY HILL

Cruisers Transit Book

No. 340

W. J. M.

PACIFIC
WATERPROOF

W. J. McMILLAN

BC DEPT OF MINES

PARLIAMENT BUILDINGS

VICTORIA, B.C.

Product of

DOMINION BLUEPRINT & REPROGRAPHICS LTD.
1533 WEST PENDER ST., VANCOUVER, B.C. CANADA V6G 2T1

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PACIFIC
WATERPROOF

KEN SHANNON
626 SUPERIOR ST.
VICTORIA, B.C.

Promontory Hills

Late August 1976

Product of

DOMINION BLUEPRINT & REPROGRAPHICS LTD.

1533 WEST PENDER ST., VANCOUVER, B.C. CANADA V6G 2T1

1
AUG 29/76

SUNNY/BUT

COOL

- WEST OF MERRITT ON SPENCES BRIDGE
HIGHWAY ABOUT 20 MILES (PHOTO BC7102 - 203)
CANFØRD

76-KS-40 - intermed. to basic volcanoclastic rock
with numerous vesicular and angular fragments
(lapilli tuff or ash flow) The fragments vary
in size and composition.

-41 - more clastic, appears to be an ash flow
as there are very jagged edges on some of the frag-
ments

* -42 - ash flow with frags. from $\frac{1}{8}$ " to
5" in diameter. Fine-grained greenish-white
matrix

43 - $118^{\circ}/06^{\circ}S$ is approximate orientati-
on of bedding in volcanic fragmental. The fragments
are fairly well rounded and the rock is about
80% matrix of fine-grained sandy material. Layers
of white appear to be tuff with a large amount
of ash in the matrix. The beds are right side
up according to tops indicators of graded
bedding, load casts in beds and warping of
mud layers around fragment which fell into
the mud (took slides) (another est. bedding $\approx 020^{\circ}/25^{\circ}N$)

-44 - appears to be a thick sequence of
lapilli tuff or possibly volcanic agglomerate,
some of the fragments are in excess of 1' in
diameter and the seems to be a wide provenance
for the fragments.

* -45 - $025^{\circ}/26^{\circ}N$ is bedding in well-bedded
lapilli tuff with frags. up to 3' across. There
are zones exhibiting grad bedding and

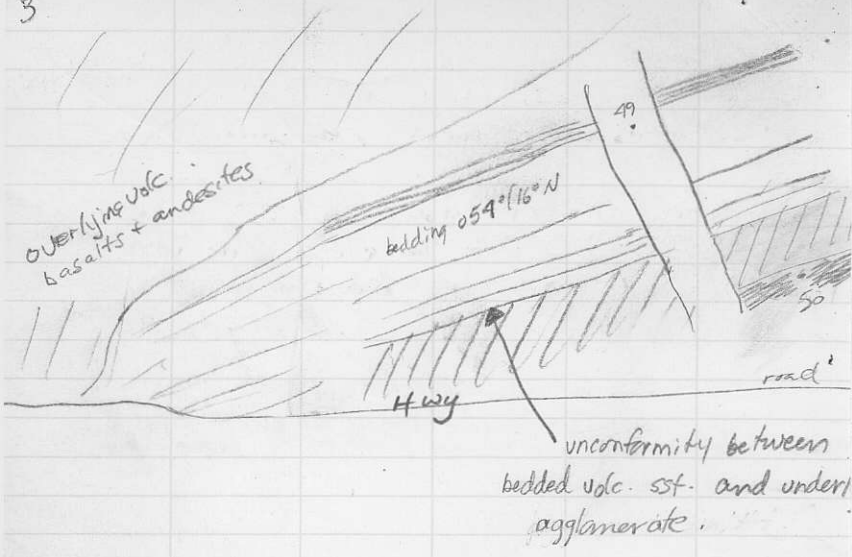
other zones which appear to be just jumbled together. The fragments are assorted volcanics and are set in a greenish-white matrix.

(took slides). Dike cuts through o.c. at 018°/75°W. It is about 2' wide and highly altered. It is green-gray in colour with some white amygdules.

* -46 - well jointed (057°/86°S) fine grained gray lava which appears to be micro-porphyrific

* -47 - fine grained dark-gray basalt

-48 - volcanodastic unit beside the basalt with many different volc. frag. and about 25% green-gray matrix.



Further west on the Spences Bridge Rd.

- * 76-KS-51 087°/34°S is orientation of bedding in sst. and interlayered chert pebble congl.
- 52 amygdaloidal andesite green-brown and very friable
- 53 073°/18°S is bedding in pebble-sst. Mostly green in colour with wide variances in matrix to pebble ratio over the outcrop.

*-49- large dike about 7' across, light brown-green in color which has phenocrysts of hornblende occurring in needles to 1" long

*-50- feldspar pp, basalt with hematitic alt.

-along road back to truck the o.c. was mostly volcanoclastic as up on the cliffs. However there was some intercalated flows of basalt and andesite in the sequence.

AUG 31/76

WARM + SUNNY

ON PROMONTARY HILLS TRACING EXTENT OF
LAPILLI TUFF UNIT TOWARDS CRAINMONT

- 76-KS-54 - in lapilli tuff with elongated fragments striking 033° as an avg. for the o.c. (from $28^\circ - 45^\circ$)
- 55 - lapilli tuff with elongated fragments and what appears to be bedding consistently running about 36° / dipping steeply south ($\sim 85^\circ$)
- 56 - lapilli tuff bedding (good) 021°
- 57 - " " " " $013^\circ / 88^\circ$ with quite a bit of specularite-epidote veining in both the above o.crops
- 58 - lapilli tuff with excellent fragment elongation 033° / dipping steeply south (85°) On the north side of the o.c. there is a cleft about 30' across and 30' deep with vertical walls which appears to run || to bedding
- 59 lapilli tuff, elongated frag. + bedding give strike of $049^\circ / 89^\circ S$
- 60 lapilli tuff, elongated frags. 033° / steep
- 61 approx bedding + fragment elongation is $005^\circ / 87^\circ S$ in lapilli tuff

AUG 31 / 76

- NORTH OF MERRITT IN HILLS ^(HIDDEN) AT ↓
 - TRAVERSED ON SEQUENCE OF
 GRAY VOLCANICS AND GRAY PLUG-
 AUGITE PPY WITH SOME OCCASIONAL
 VOLCANOCLASTIC UNITS. SOME OF
 THE GRAY VOLC. HAD UP TO 1% PY
 AND SOME OF THE PPY HAD GOOD
 MAGNETITE VEINS (033° / 80°N)

MASSIVE GRAY VOLC. 76-KS-62

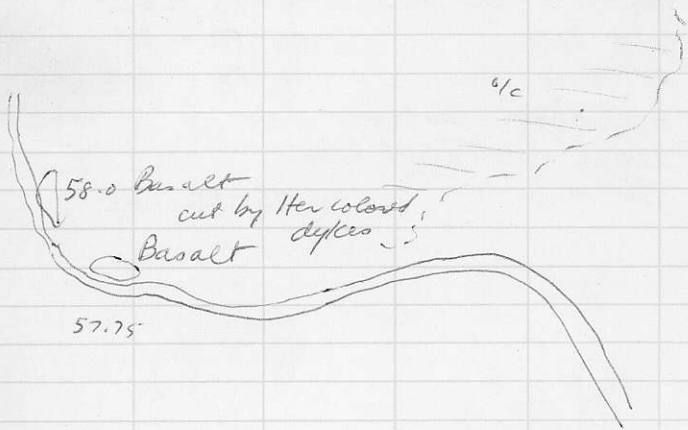
GRAY PPY 76-KS-63

PPY with some 76-KS-64

actinolite? fractures

LAPILLI TUFF VERY FINE-

GRAINED 76-KS-65



Sept 2/76

Hwy near Conford

mileage 55.35 white wtrg. hb needle

PPY - Kingsvale? Dyke?

55.45 Dk gray wtrg vfg black
basalt sp Bdge

56.65 Dk gray to Dk grn massive
to highly amyg lava sp Bdge
Amygs chalcedony - qtz - calcite

56.8 Cliffs to right above road
look like dk gray clastics -

loc Bedded - ESTIM bedding 055/30SE
partly volcaniclastic?

57.0 qc near Hwy ~~partly~~

red-gray wtrg gray, sl. amyg
reddish gray lava - looks like it
is autoxt'd in flow bx - all
one rock type.

57.75 Black basalt

Area mapped by Ken

to 58.4 mainly volcs

58.45 Bedded layer dips NW
see K5-65

58.70 7c

58.75 ~~road~~ road with washout goes off
to the right here.

59.1 Sst / Sltstne see notes on air photo

59.6 9c of different sst - yellow-brn
color - floppy wtrg smooth desk-shaped
fractures, fg, even grained sst

59.75 fg Sst dyke cut by black
dykes Bed ~ 135/03 SW
subconchoidal fractures
* plant fossil taken.

Remember Actinolite skarns at Craigmont
make best ore

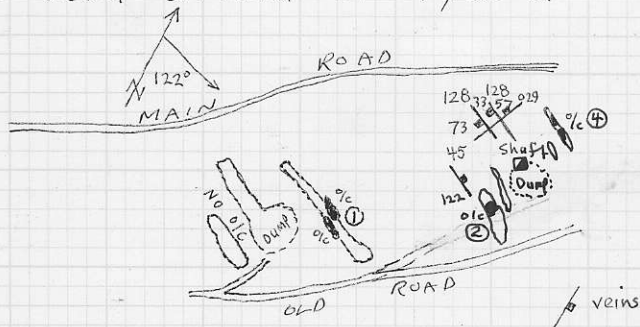
Lost related to marble in hole
around Craigmont
(Drummond Thesis)

Shades of north
of Highland
Valley!

ERIC SHOWING 92 I/2e

Located off Craigmont Road

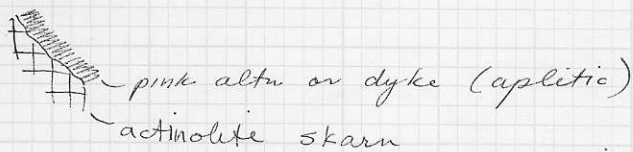
Explored by hand and bulldozer trenches and a short shaft. May have been drilled in 1930's.



- ① %c is ppytic with plag phenos in a rexllb dk (chloritized biotite?) matrix - chlorit. hornfels??
- Varies to fg volc rock with cg secondary hb phenos or even amphibolite. Local pegmatoid fs-hb zones occur along fractures, some hb-pyrite fract. coatings
- Local quartz veins with pytic bleached chloritic halos. occasional quartz-tour. veins in apple green sericitized zones. (some fairly massive tour. ~~zones~~ veins in crackled rock)

Min/zn - dissem. cpy in qtz-tour zones
- specularite on fractures.

- ② Massive epidote skarn pods and pink to white "aplite" occur.



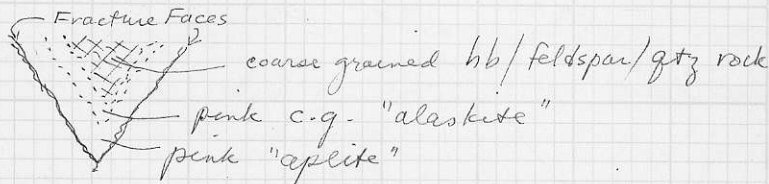
Zones of actin/ep/specularite
ep/qtz/pyrite/pale green
actinolite zones have almost
tourquoise grading to pink "aplite"
halos.

③ ERIC SHAFT

Pink ksparr alt zones 128/735W

Actin/feldspar/epid. skarn pods 128/335W

Spec/epid./actin. veins 029/57NW



MINLZN Spec./Actin./cpy/tour
veins and Vug-fillings.

- ④ Lower o/c is gray vfg "aplite"
chl along fractures have coarser grained
halos
upper o/c variably textured diorite (chlout. hb)
—METANICOLA?

Lapilli Tuff

% rock frags, % plag xls color of
matrix vary slightly.

18/6/76 ³

Sunny, warm

Start at Promontory lookout and follow the powerline down.

Immediately below the road - ^{laminated pale grn to dk gray cherty seds} 1st R gives way to gtz plug ppy which gives way to pale green cherty-looking rock with some plag xls in it. (tuff?)

A few feet onward it is Shede aphanitic locally bxt'd with fg gtz + wh. plag phenos (Thin gtz veinlets)

units $\approx 100^\circ$ / steep

The rock varies from the cherty-looking lt colored ppytic type to crystal-lapilli tuff to ^{gtz-plag} ppy with dk green matrix. The xl-lapilli tuff has been plag + volc rock frags.

Slightly to the east 112/85 NE Beds Fit 17²/83 W has blebs of lot with rock frags in it. Frags lt gray aphan. volc + some 1st pods or clasts.

Then discont. recessive units to 8" - look like ppy but prob. xl tuff. Beds 084/75 SE

Lap. tuff - subdivide into cherty - wtrg
call it "cherty"
and "pyritic" types perhaps

Recessive units are pyritic with dk green
matrix - are less competent than cherty
tuff so are now sheared out -
their original variability in thickness
is unknown.

Near the power pole the rock is rusty wtrg -

Pyritic tuff with local chl, ep, acton. etc.
gives way to thin bedded, pyritic,
rusty wtrg chloritized argillite.

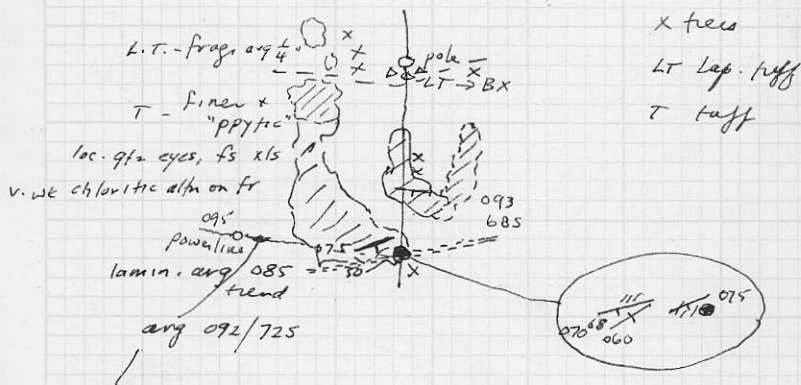
under the first power pole south of the road the rock is fairly coarsely fragmental - clasts angular, up to 2" ϕ , mostly $\frac{1}{2}$ " + less though.

NOTE ONLY SHOWS ON WTRD FRACTURES

-OTHERWISE LOOKS LIKE ORDINARY
Lap. Tuff.

west of powerline

cherty Lap. tuff with loc. cal-pyrite veinlets



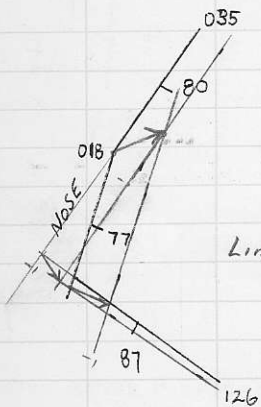
thin to thick bedded arg, variably pyritic - laminae defined by graphitic zones.

Beside power pole Beds 092/87N

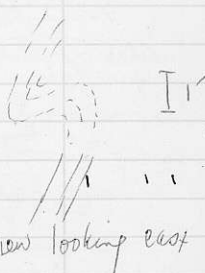
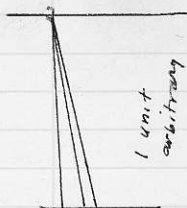
Beds graded TOPS TO NORTH

Power House Beds 086/755E tops north?

Local sandy w/ky skarn actinolite lenses



Limbs intersect + give
axis $\sim 140/77$



Just above road

Beds 085/66 SE Rusty arg rx
+ tuff w. limy lenses

sidehill SWd → green cherty rx to fq dk
gray massive "graywacke"

Back up again - just below
second little shed are sedo - thin
bedded arg. which strike 092/80 S

and are tightly folded

Fold - beds 038⁵/80 SE

018/77 SE nose

126/87 SW

calc ~ 140/77

axis (195/73) approx

other beds 038/58 SE

Sample of refolded fold taken
across the hilltop past the shack the
fq tuffac to argill. sedo have local
highly silic. 1st pods.

sedo largely med. gray sl. pyritif.
vfg with buff interlayers locally

Local areas of "gtz - plag ppy" -
possibly xl tuff of sst grain size

18A

Powerline from arg to lunch spot (A)

predom. mixed gray cherty tuff with xl tuff layers (float shows thick bedding, suggestion of cross bedding + graded bedding.) occasional 1st pods continues to + beyond next power pole (cliffy o/c just beyond the pole.

2 PHOTOS 81W

Local rusty pyritic layers are med gray lap. tuff (frags 1/4") with dk gray + dk green vfg volc frags.

some rusty zones have actin. altn.

Base of o/c 158/775W bedding? pods of limy mar'l (some are highly epidotized)

Better-Beds 079/61 SE

uneven depressions + mounds (sole markings) on bedding face suggests tops to north. ~~is beds upside down~~ overturned.

Beds - then, in black, sl. pyritic vfg argillite

2 PHOTOS 81W

Continuing to base of o/c is felds. dk vfg tuff - local limy pods.

There is obviously deformation but whether
tectonic or slump folding is unclear.

(18B)

(B) Feldspathic to aphanitic st. pyritic tuff
brown to almost white in color.

Next o/c is similar to B ~~with~~

~~limy pods~~

The powerline crosses a road
just below this o/c.

Chl/ep blobs and barren grt
stingers (narrow) in the
gray cherty tuff

NOTE few rock frags if any in
the last few o/c's.

~60' beyond road & just beyond power

pole - o/c of dk - med gray

volcanic siltstone or tuff - has

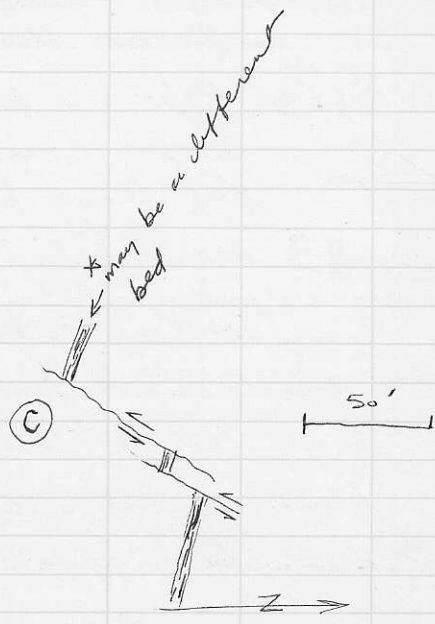
local pods of pyrite + dissem. pyrite

next o/c is the gray pyritic tuff

Crystal tuff with local
islets of
well bedded, elongated, argillite
other zone has bedded or also but
not sure whether they ~~have~~ beds
or bedded clasts.

Rough beds 113/84 SW

um



PLAN

In places the matrix of the rock is foliated + looks igneous (sample)

WM-76-5



109/705 Beds

Handwritten scribbles at the bottom left corner.

Good beds on forward edge of 0° - black
 & rusty beds in thick ^{beds in} colored, sl. rusty
 cherty tuff. Beds 068/67SE

overturned? grading, * tiny
 "flame" structures (found in
 cracks in sst)

CREST OF HILLOCK

Gray to almost white vfg cherty
 tuff with local thin bedded argillite
 layers.

Beds 104°/71° NE

tops to north
 grading, load casts

offset by minor faults 047/very steep
 apparent minor left lateral offset usually.

A bit to the west

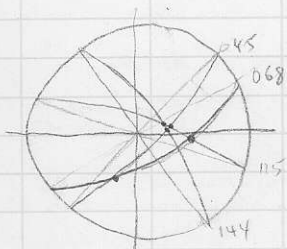
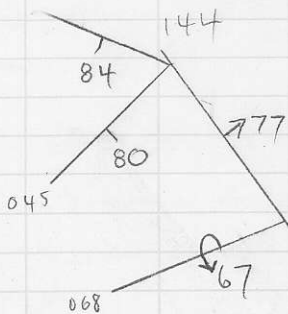
Beds 045/80S

18C

① At least some lapilli tuff with green
 to red frags - loc thin bedded
 arg zones, some highly contorted.

Beds 144/77 NE tops north

occasional arg frags; lap tuff bed 2' in
 thin bedded argillite



Possibly have steep easterly
-directed folds!

Going down hill - abundant aeg / ss / stn
in talus slope.

small, massive o/c consisting of
lapidite tuff with green to purple
+ red fragments

WM-76-2

matrix epidotized + ep-gtz veinlets
± pyrite

locally clasts → chlor. + epidote
(ep on edges)

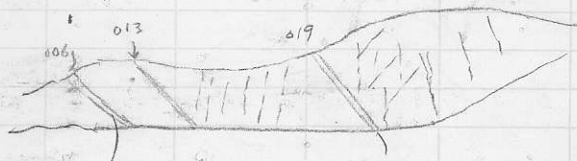
18D Pg dk green to almost black
volc sed? rock with gtz ± ep ± magnetite, specularite,

veins + veinlets

Hematized, some pyrite

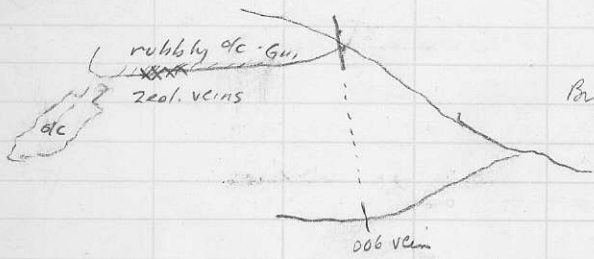
sheared - looking

18D



qtz - act - bn
2" - 6" wide

1-1/2"

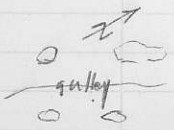


Bar 030 125'
Gu o/c
225' Gu o/c
400 Gu o/c
700 Gu o/c

PLAN

west wall of gully,
ep veins wk
chl altn

loc kfs ady to fr
Fract 147/90



19/6/76

All Star Resources Property

cloudy, cool

128/90

Ken Shannon
with Ted Charlesworth

154/83SW

* some data in
Ken's notebook.

zeolite 160/78 SW

170/63 SW

Pink zeolite veins to fracture
coatings to 1" wide - often with
some cel on fr.

Minted fractures

019/60 SE

013/63 SE

qtz veins shear with bn + cct
+ heavily stained by malachite

006/65 E

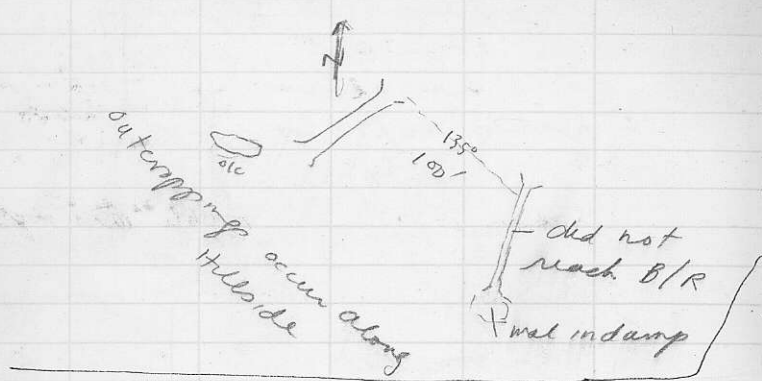
fr w. chl 056/54 S

slidensides subhor.

CR is fairly mafic - rich bi hb

gd - GUICHON

Rock fairly fresh between veins



- o/c

Fractures 2"-1' apart

032/705E

Some have chl coatings on chl-cal veinlets

- Trench 2 055 trend

Guichon + other rx rubble throughout

20L cont'd

SW edge of o/c has beds 060/78S

alternating red vfg + red with 40% plag xls (white)

TOPS SEAST - Excellent -

Bedrock

- next % pale pink w/try pale green vfg

20M

"bed", "dyke(?)" goes 062 across the

o/c

% dips steeply (has rounded qtz eyes + plag phenos (sample))

o/c

% predom. red vfg xl lapilli tuff

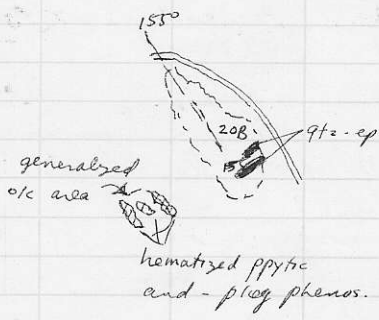
- local lapilli-rich zones. (ie frags to 1" +

lots of them)

Beds (recessive amt) 060/v. steep

Two small % of fq lapilli tuff - red matrix

a few feet onward



June 20/76
Sunny, High
clouds

Work ~~from~~ⁱⁿ Prom. Hells area - start from
point where powerline x's the lookout
road

/ locally I think I see fine fragments

✓ (20A) Purple (red when wet) lava(?) with 15-20%
greenish plagioclase - cut by och hem
+ Qtz-ep veins locally.

(20B) Next corner NW rd is similar - looking rock
augite
plagioclase
pyroxene
and of plagioclase look closely fractured

when dry + held at arms length the matrix
has a reddish cast + hem. blebs occur locally

Qtz, Qtz-ep veins, blebs of och hem
" wide 130/50 NE altm

scattered 3% m-cg pyroxene (?) phenocr

a few ft onward the rock is purple again

with much more Qtz-ep + some assoc ~~mag~~ speckles
veins, blebs, dessem.

Qtz-ep permeated bleb 2' x 8' 055/steep

" " "layer" 10' x 25' 050/steep

QtzEp vein minor spec. 163/73 SW

Between 20C + 20D

Going across due S

green heavily epid.

" mottled w. hem altn

" all massive, fq pheno hematized

matrix green + hematized (40%)

Dk green (looks gray when not wet) cut by
anastomosing^{och} hem. veinlets

similar but lighter colored because
more ep. altn.

" but matrix looks holoxilne now
still few phenos (5%) + lt.

mottling of matrix by hem.

" - strong hem veining

~ 35'

Bk in o/c 20'

↑ Strong qtz-ep veining green volc
10' v. sl. ppytic

↓ Dk green less ep @ edge of o/c

then into fairly strong hematized
epidolitized zone

up around the corner N of road

✓ 20C) vfg ep-qtz veined purplish lava with
etched-still fg plap lthos showing trachytic texture.
looks like lava

20C-1 varies to dk gray, sl. coarser grained lava

qtz Ep vein with hematized halo

qtz - ep - chl vein

Xls in matrix fg, hem- or epidotized
Hem. veinlets

qtz - ep - chl hem vein 1" 125/90

200 Epidotized lapilli tuff - frags pale
green to purplish, matrix lt green

matrix looks foliated & some feature which

look like flattened scoria frags occur

ASH FLOW TUFF ??

3' west - Frags coarsen to $\frac{1}{4}$ to 1" ϕ & the

rock wtgo deep red - the rock is steel

epid. but now the matrix is dark
hematite - red.

Fragment alignment suggests

bedding 060 / steep

local foliated zones with boulders

(bombs?)

060 / 85 NW

Qtz - Ep veins $\sim \frac{1}{2}$ to 2"
wide in Volc unit

Slickensides } see p - in
Ken's notebook

NOTE setup has massive

30' fragmental

massive

50' fragmental

red
lapilli

Tuff

UNIT

200-20E

T.S. { sample has dk, stretched-looking
black vfg frags in a greenish
matrix - buff on etched face

A few ft along we are following the contact between massive purplish to green lava + the fragmental unit. "Foliation" 053/85NW

Locally the top of the flow is heavily veined by Qtz - ep (scoriaceous flow top?)

Going NW →

Local zone ~ 10' into the frag. unit is still fragmental but well foliated (measure - ment above. Foliated zone to 15' wide locally 20' blk in o/c

Gives way to purplish volc with

a few fragments

5' o/c blk

purplish red fragmental volc -

frags to 1/4" foliated matrix

(20E) lava?

2' blk then gray looking (sl. hemat. matrix in detail) almost massive lava.

amyg., sl. vesicular - chertic amyg.

becomes pyritic with 15% plag + pyroxene phenos a few ft onward. Locally hematized.

30' blk in o/c

Fragmental - overall green, green +

(20E-1) some dk red frags. IGNIMBRITE?

Elong. frags 025/steep ~ 75NW

N edge of o/c 030/85NW



20F Foliated lapilli tuff - green matrix.

Across the cow trail eastward is

qtz - ep veined

Foliation 055/90

* Gives way to pale gray green pyrite
vfq rock - looks bedded locally.

VOLCANIC SEDS?

next o/c to N is dk gray vfq pyritic

(pyrite f-ing) and massive - tuff?

Looks like it carries rock + xl

frags.

✓ (20G) - same dk gray rock sample

not sure after

etching either continuing uphill Nwd - similar

dk gray rock but more fs x/s

+ some dk frags(?) - xl tuff or

smashed up pyritic lava.

20H o/c? dk gray lapilli tuff - frags

lt colored matrix fq, pyritic

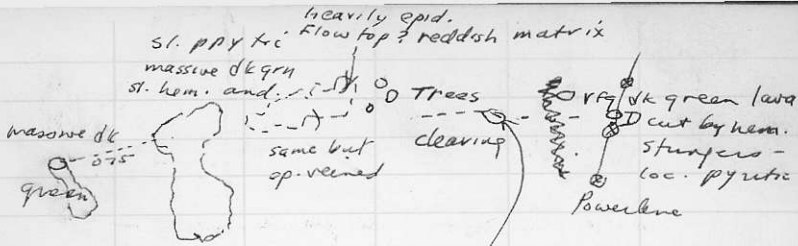
* (20I) pale gray, pyritic, looks like lava but
sed?

When wetted is seen to be fine grained

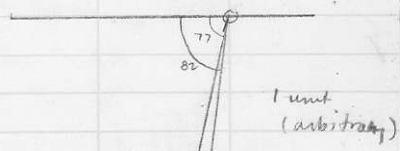
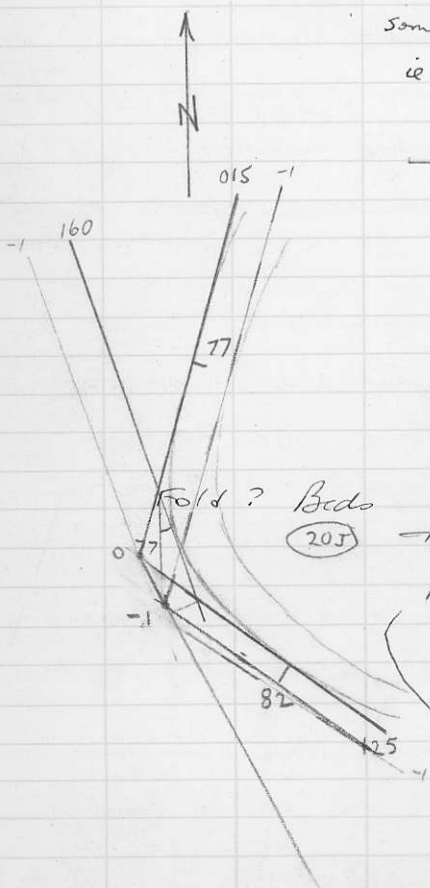
volcaniclastic rock sample

Sim. to starred o/c above.

Next o/c is like 20H - lt gray pyritic fragmental



massive grt
dk red pyritic and.
Some has 40% phenos which
are strongly epidotized
Some volc rock clasts, locally
ie tuff zones?



one of these is wrong
because axis is either
W/steep or S/steep
depending on limb used

015/77SE
160/77SW
125/82SW

deleted
open to error

Look down: plunge
(plunge steep S)

~150/70

Below is thin bedded dark and light gray, pyritic tuff

Beds 035/90

— comments on left to powerline —

o/c .D sample
see other traverse
for description

walked up to foliated lapilli tuff etc
apparently the fol is 023/steep
(very difficult to determine!)

50' east of P/L Foliated lap tuff Bm
040 from last o/c

next o/c foliated green crystal tuff
- epidotized

20J

Upper pt of o/c has laminated black + white argillite layers - layers broken + contorted
115°/79 NE

20K-N dk red plog pyritic andesite or vfg fragmental volcanic
20K-S.

20K

S edge of o/c is dk red - looks like

sampled rx
to S + N

pyritic lava but has some lithic frags
or xl lapilli tuff?

Grade nwd to red frag lapilli tuff w.
epidotized matrix - no bedding possible
toomuch lichen 90' exposed across xc (not true)
Then red "lava" to north - small o/c ~20'

Strong ep altn
common

CORE SHED

Elev 3000' west of Powerline
on Prom-Hill
General Resources

2 or 3 holes in nicola volds
some py/cpy mntzn

Oct / 65 Shed almost collapsed.

Traversed 135° roughly

(20L) % on hilltop is red lapilli tuff
poor sorting
lots of with frags to 1" ϕ - not well foliated
frags (note odd colored green one)
but locally can get foln \sim $\frac{0.45}{0.50}$ / steep

frags angular, red or green, xl frags
common

on the east edge of the % the rock
is red vfg with scattered green frags

% frag varies locally
aggr on 70' + wide

(20M) on page 11 in error -

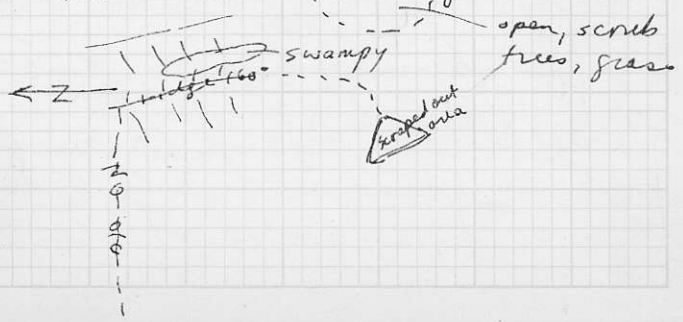
21 June 76

Sunny Sirius clouds

looking for Kingsvale etc's

Traversed eastward from Dry lkr

Prom Hill Lookout road ifn -



Cinderella showings - on slope
overlooking Merritt.

Access to them exists but Wayne
does not know it.

21C is adj. to an area where Wayne
has an aeromag high & thinks he
will have a mag high (a meadow, with
no o/e)

Met Wayne Jwingstone of Quintera
for lunch, then we went on a
tour of Quintera's 90 unit
property N of Merrut

21A On the way in we looked at
a qtz fs py dyke (glassy qtz) cutting
lapilli tuff or flow bx with exotic clasts.

21B We stopped at a trench in
rusty, skarnified Nicola limy sed.
Sample from here checked for fluorescence
but no reaction.
Possible diopside skarn?

21C Stopped to look at xllne 1st
(almost marble) and a massive
zone of cgy specularite and magnetite.
(local cgy in next trench up the hill)

21D Visited several olic's of intrusive - 1st two
show extensive rusty wtrg + potassic alter
along fr - matrix subaplitic, kspen-rich

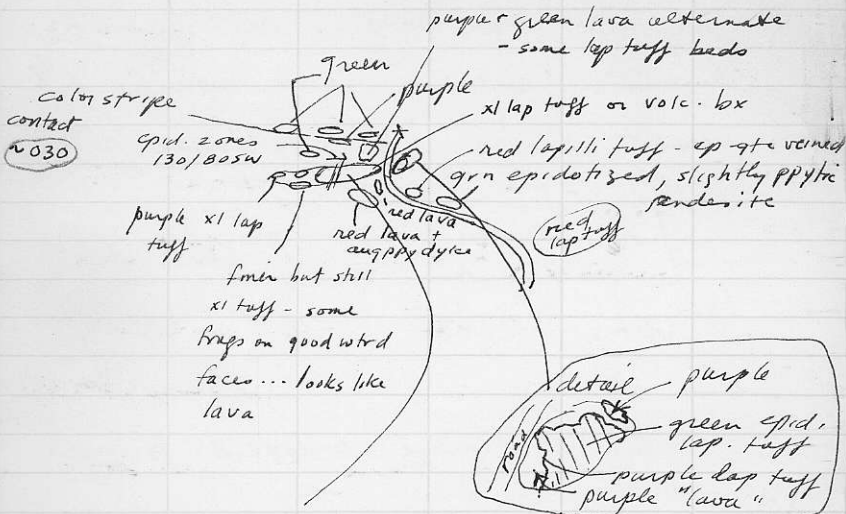
210 best 9c was mafic - rich with
cont'd

highly variable mafic texture &
about 10% cpy ($\frac{1}{8}$ " feldspar phenos
(Kspar?)

sl. chlorite altn one spec cpy seen
local actin. veins

Qtz — poor

We then continued onward to their
camp, thence back to a much better
road which we followed back
to town (comes out near water-
flume xing about a half-mile
east of the motel.



wild guess at bedding 045/75NW
Good face shows alternating coarser
& finer xl lapilli tuff overall
red, loc. grn.

Beds? 066/57NW

wild ass guess from elong. clasts

Beds? 022/~~75NW~~
?

Some specularite w. gtz - ep

23/6/76

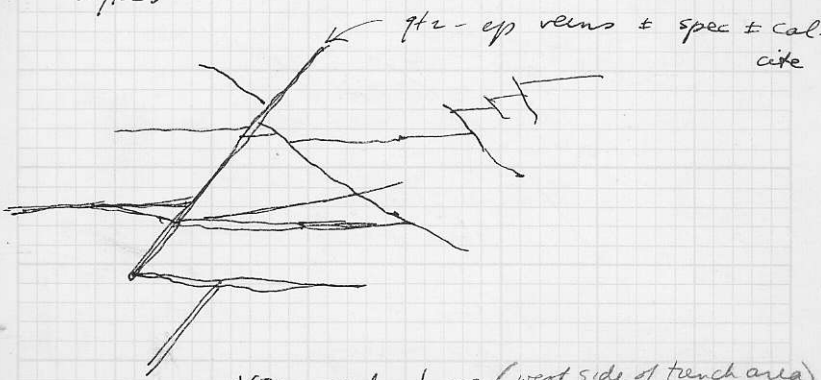
Sunny →
Cool

Promontory Road

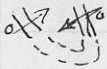
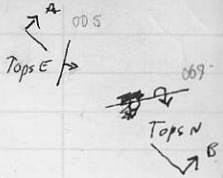
In the x1 lap. tuff frags vary to 1 ft of (red to lava) & there are a variety of rock types (red to gray, a. pyritic plap andesites pred.)

Judging from trying to follow zones there are fault offsets every 15 + 30' along the face.

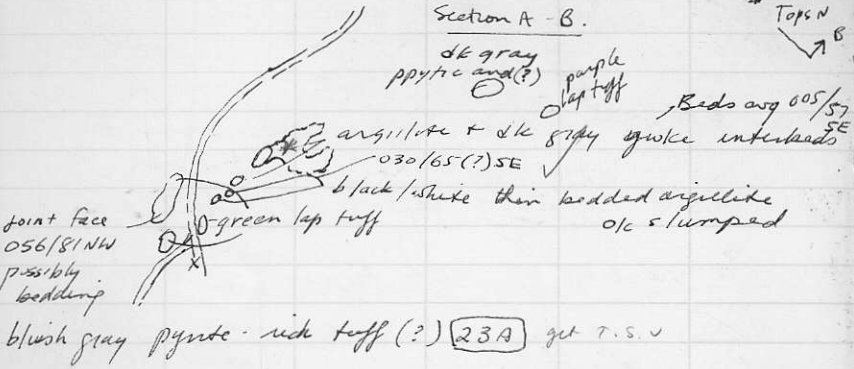
"Dyke" - augite porphyry - forms uneven-edged pods rather than persistent dykes



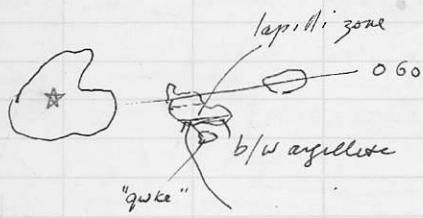
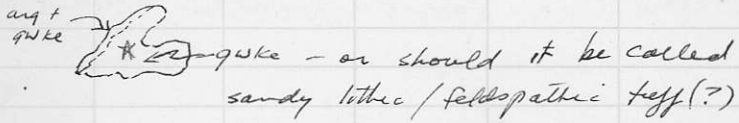
vein relationships (west side of trench area) adf. to road
look west face dips 40° east



Section A - B.



DETAIL OF O/C ABOVE



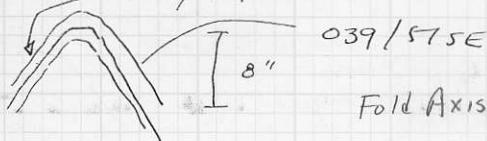
Beds 069/69 SE
 Tops North
 /
 grading +
 sole markings

} Sample 23B
 slab for tops
 check
 TOPS NORTH

6wke beds to several feet

Beds 005/57SE TOPS TO EAST & UPRIGHT.
Grading

Fold $118/86$ NE



Fold Axis (calc) $\sim 110/50$

Looking Eastward

- ✓ 23C Slightly pyritic gray green lapilli
tuff - frags range to $3/8$ " but
mostly coarse sand size.

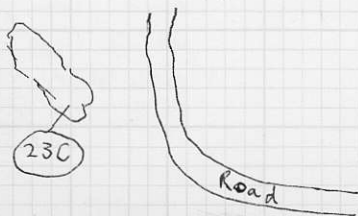
Beds ~~047~~⁰⁶⁰/78SE

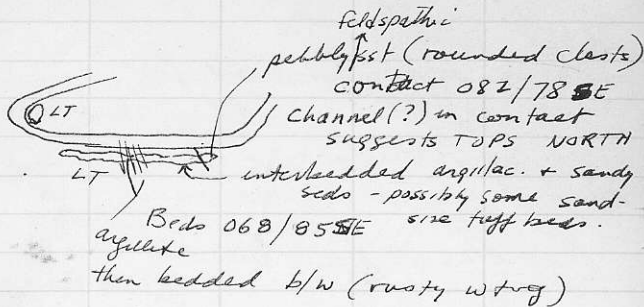
Thin bedded lamina. cherty argillite vs "guit"

(looks like tuff - Guit + arg are dk to light
but some abrasion of grains evident)
gray ~~green~~

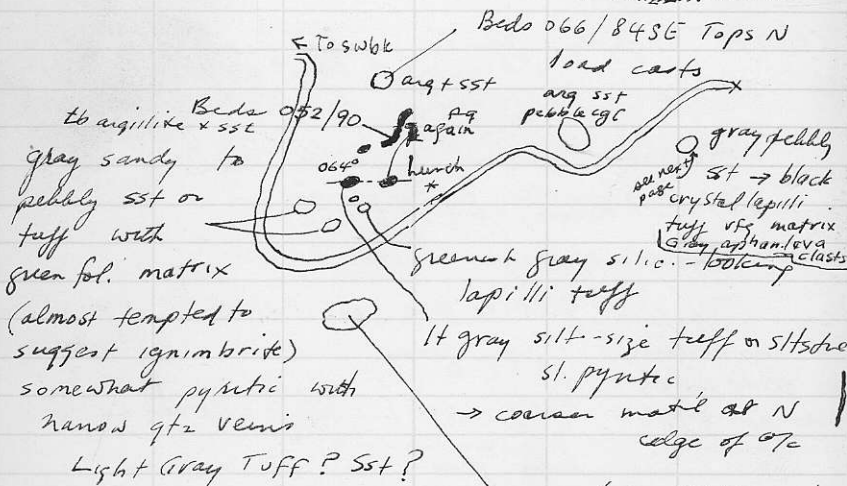
*test matrix of Guit - TOPS NORTH is overturned
is it dolomitic?

Local limy pods - one well exposed
is up to 2" wide + 3' along strike





23D large o/c - Beds 061/59 SE
050/63 SE
vtg seds
massive to bedded
pyritic gray w/ tuff on siltstone



067/84 SE Tops N
sole markings
bluish gray sst to pebble cgl - look like xl + lapilli tuff on fresh face

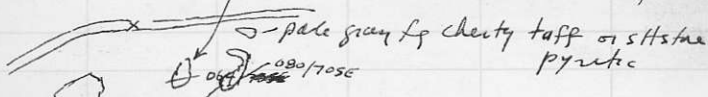
on swbk

Rock which we would call gray lapilli tuff but it carries some angular clasts as well as volc rock + xl fragments.

Judging fm wtd faces, it has a limy cement (does not fizz in 5% HCl) crude bedding defined by sandy layers but are not good enough to measure it. local dk gray dolomitic (?) zones + finer grained zones is like the rock at the swbk but no beds seen.

The "cgl" + "sst" are highly variable in degree of rounding - variable from angular to well rounded - zones showing water worked clasts are less common

gray "lapilli tuff" with finer zones & local bedding in cherty zones 064/70SE



argillac zone 12' wide Beds 025/85NW poor almost massive, bedding from differential wtng dk gray - looks like lava - prob. gneke

pyritic lt gray "siltstone" to fine "lap. tuff" with black pyritic "argillite"

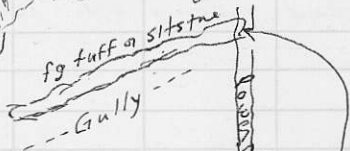
Beds 080/70SE TOPS NORTH

The "argillite" is massive to thin bedded channelling + load casts of sst / arg contact

lt gray pyritic "lap tuff" - pred lt - dk gray frags some frags pyritized some seem to be fg massive pyrite



fract swarms 141/90 1"-3" apart in zones 7' apart or more



"crystal tuff"

103/52SW argillite interlayer

92c up the hill a bit

vfg pyrite - rich black to dk, fg

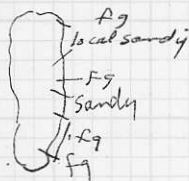
gray "argillite" - massive at least locally.

Pyrite veining

Local pyritized off white clasts

Some

fg some sandy

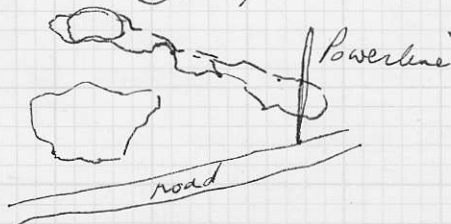


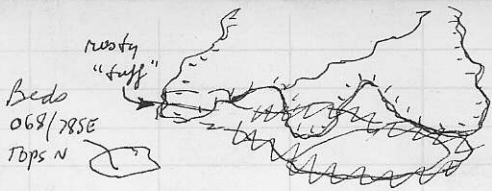
Becomes feldspathic with sst grain size uphill

argillite interlayers ~1' thick then bedded

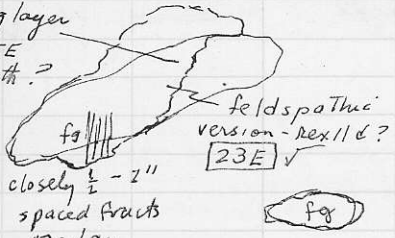
Beds 883/805E

mainly fg
float w. argillite laminae beds
fairly common

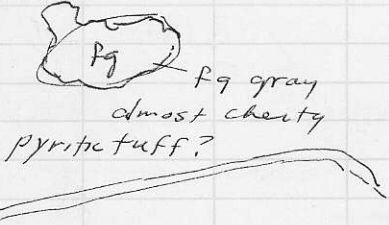




sandy vs fg layer
 062/67SE
 TOPS north?
 Grading



closely $\frac{1}{2}$ - 2" spaced fracts
 130/90
 Makes rock look like ribbon chert



m
e
a
d
o
w

Beyond split in Road - took rt fork
 + just beyond bulldozer line is
 etc of ep altered + veined andesite
 plag pyritic andesite - dk green.

✓23F etc in Bulldozer line - purplish
 matrix - lepilli tuft - at least
 5 kinds of gray to red volc frags
 ranging to 2" ϕ but most $\frac{1}{2}$ " or less.
 Angular frags typical, occasional
 rounded - one has uneven borders
 which suggest was originally scoria

checked large etc left of road beyond
 junction.

Epidotized plag pyritic andesite -
 green matrix (looked biotized)
 local ^{qtz}ep veins + fairly massive
 alt zones ... some specularite
 Phenos 15 - 30%

June 24/76

Promontary Hills

Sunny, High clouds, Cool

Continuing eastward from yesterday's work ~~small~~ try to trace the stratigraphy further eastward.

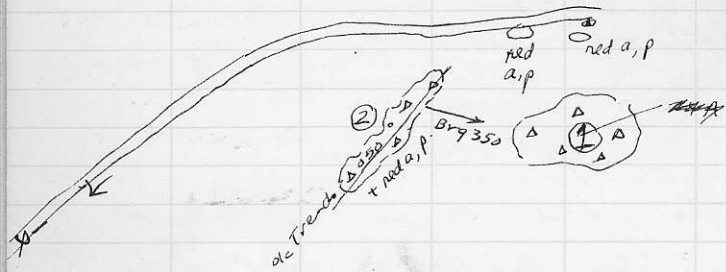
M/C traverse


small ore


on the road it is epidotized green, fine lapilli xl tuff - a few feet off the road is dk red ppytic andesite (epidotized + ep-grt veined) with a few volc frags.

ore on hillside is variably textured fragmental volc with dk red matrix Volc frags red to green, angular vary from few to 40%, matrix often crowded with plag xls it varies from lapilli to sandy tuff albeit some areas look like lava flows

Item veining or fg hem. segnis (beds)
080/15 steep



③  - strike of fine hematitic laminae & beds 058° / no dip possible -

 sharp jroff.
 Coarsely fragmental glaciated face.
 Locally (frags 50% to 1 1/2" φ)

→ one w/ large (2" b) rounded clast + rectangular clast

photos - two of beds
 - one of red tuff with white plag xls and scattered epidotized frags (or epidote clots)
 - one of boulder ^{unsure} w. ep clots (replacement origin) & lapilli

13-118
 1872281
 Two photos
 rounded to angular white worked
 Tops probably to north
 rip-up clasts, possibly grading

sample 24A

variable grain size
 Beds (clasp. frags) roughly 060°

2 purple volc with some volc rock frags
 large etc with sandy ^{fragmental} volcanic and
 red pyritic (plag 15% mg) andesite (could
 be an odd fragmental but looks like
 a flow.

NOTE POOR SORTING IS STANDARD FEATURE
 IN THE LAP. TUFF

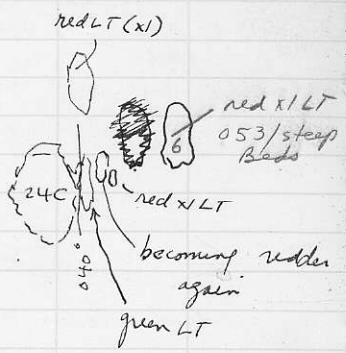
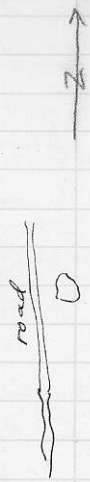
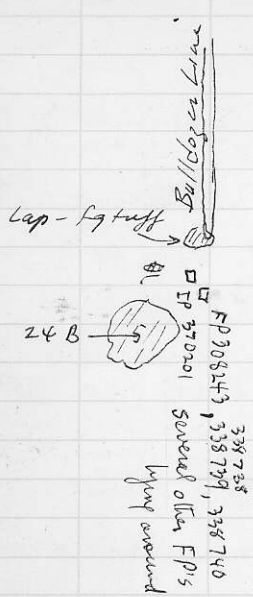
Red, less fragmental zone
 seems to go about 035° across 9c

- ③ Red sandy to lapilli tuff again
 some frags w/ry gray & faint depressions -
 do not fizz in HCl - scoria or
 tuff?
 Appx elong of frags 055°

13-118 Beds 053/87N

Red sandy to lapilli tuff with a
 few thin silty interlayers $\frac{1}{8}$ - $\frac{1}{4}$ " wide.
 local "pebbly zones" also define beds

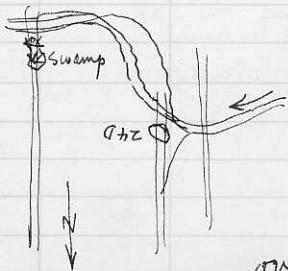
Below the road the matrix is green,
 & epidotized, frags white, grey, red - mostly $\frac{1}{4}$ - $\frac{1}{2}$ "



6 pale green cherty-looking rock 1' wide used to give bedding
qtz - ep veins 1' wide
|| to beds



The rock has finer zones that wtr in relief contacts uneven matrix of sandy to lap. zones green or red
ie looks a little different - more fine grained rx



overall better bedding

(5) 24B 0% of sandy tuff - frags volc rx (red, black, feldspar - matrix vfg red, epidotized locally. Frags 30 to 60%.
Zones look like pyritic lava
other zones carry lapilli

(6) 24C 057/755E Red slightly recessive unit
24-C-1 sandy tuff w. scattered lapilli
24-C-2 interbedded with vfg brick-like red tuff
Gives way to green matrix (ap. tuff to the south - finer grained zones in the green tuff look igneous until one sees small "pebbles" throughout (10%)-

24D Red fg tuff band in lapilli tuff with red or green matrix - some clasts in lap to 8 or 10" across (bigger ones are plag and - (dk green matrix)
Beds 057/835E
one line left of rd

line
Krab
24/4
road

Beyond the Lake

24F red & lap tuff

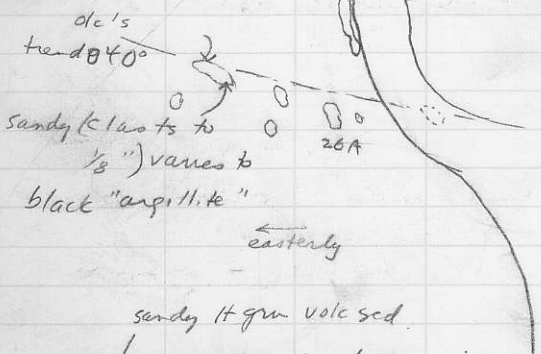
bright colored fragmental
zone. Beds 060

In contact with LT ~~of~~ on
the N + finer red tuff to S -
both contacts gradual

Too much hail + snow +

I'm freezing - pack it in.

Bedding not ^{obvious} evident but rock } color bands 085/81 NW
 variably pebbly to
 dk gray vfg pyritic



lt gray green lap tuff
 matrix of feldspathic clasts dk + lt gray → wh + subf'n
 Above is a road cut + more of
 fggwke and dk → med gray arg (pyritic)



same
 sandy gray gwk
 clasts white "Subf'n sloop, tal's"
 matrix sandy
 buff w/tra siltstrs 266
 well bedded dk-lt gray arg
 more massive gray silt
 (local well bedded zones) med
 sandy → (apill, ngray
 "gwk" or "tuff"
 Fractures (R. cleav?)
 145/80 ^{SW} arg
 gravelly to sandy
 clasts plag; some qtz,
 cherty-looking pale gray clasts
 matrix green,
 "foliated"

Promontary Hill

26/6/76

Sunny, cool
cumulus clouds

Ken forgot his m/c keys so I
am working up the road from the
extreme SW

26A fq dk → greenish gray possibly bedded
somewhat feldspathic rock

Volc. Sediment

sandier sized zones look almost ignimbritic
pyritic (1%)

26B lam to thick bedded dk gray ^{→ lt grn-gray} 1

loc. cherty-looking argillites

argillaceous laminae outline

disharmonic folded areas which are

very likely soft sed deform structures

all rusty but southern half of etc

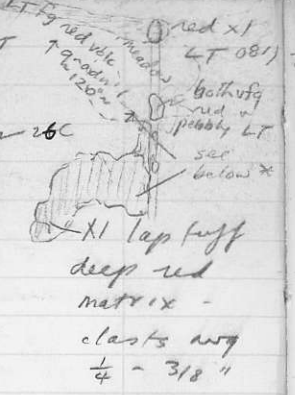
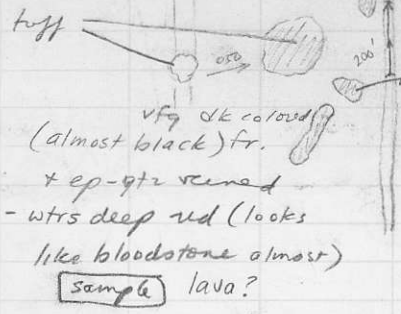
has fq "quike" zones & is poorly bedded

Beds 060/00SE

clasts 7/8 to subrounded
poorly sorted, massive

Elong 073

x1 lapilli tuff
frags to 1"
angular to
bounded,
very poorly
sorted
matrix
epid in
clots
red to gray fg volc clasts



* a ~~wtrd~~ ^{wtrd} boulder shows that a crude bedding is defined by local concns of larger clasts but this does not show on the lichen-covered o/c

Frag elongation 063
clasts avg 40-50%
Plag x15 avg 25%

75N (appr)

Back to trenches east of Powershine

26C 0% has purplish red fq matrix
sand-size green greens + some
red clasts to $\frac{1}{4}$ "

Ep + some actin. alt - mild
in patches

Continuing along the line -

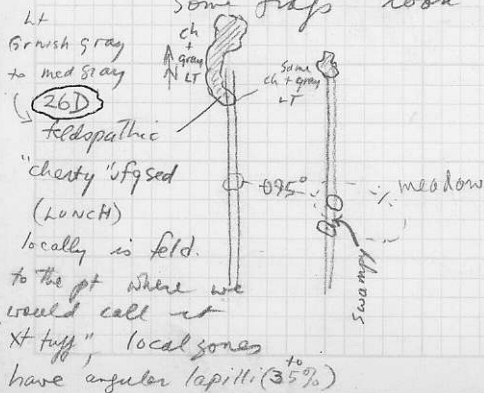
Halfway up the hill is gray
crystal lap tuff - Still has
hematitic overtones

next line over + a bit down

sim. rock - % lap. varies considerable

rounded to sharply angular
matrix gray gm vfg

Some frags look like pale gray chert



grn
silty vfg sed

076/795 *QFP
dk gray arg
nose
066/795
056/875

Peak
mixed +26F
cherty sed
finy grit
+ arg 1st

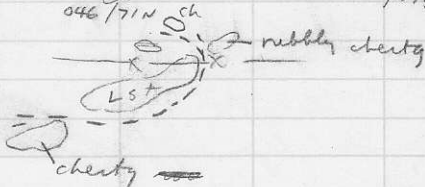
012 of
sandy arg
silt 1st

gray LT

ppr, chl
ch. buff

ch. tuff
ppr, chl
046/71N

057/89SE



Grit - cherty rounded to ang frags
in buff-gray wtry 1st matrix

* QFP = gts amp plaq ppy - dyke (?)

26E sample

next o/c is in clump meadow &

is variably sandy to cherty gray

rusty wtrg silic. sed, local lapilli zones

sample looked reworked - slab to see texture

* not typical * lower but more
common to north near peak (note -
also carries some grt x15 (phenos??))

o/c at fence to north is black fg argillic

lst (gray wtrg) with silic. layers to $\frac{3}{8}$ "

Rubby

039/62 NW

017/46 NW

Back to bikes & carry on eastward

26G

103/77 NE but dip variable

clump frags - almost a schistosity
(sample)

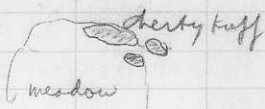
but vfg red zones are subparallel

also

o/c is ~~more~~ red x1 lap frags with
vfg purplish red sed. interlayers



Beds 069 / v steep
good



esp veinert + altn
clast clong. 065°

many frags wtr gray but
are red on fresh face

26H + crowded w frags most 1/2-1"
loc to 2" φ

gray gm xl + lap Tuff

grnsandy tuff

grnsh red LT + fg zones

067/76 NE

LT.

fol. zone 075/85 NW

zone w. limestone pods

ch/outr to grunge
+ limy layers

prv 409 - massive
conch 201580w + 10y

flds. cherty tuff

17
prv-nub

118
590

+51
158/80



add bold
072 Mt+c

Top of meadows is cherty tuff again crossed
by a "schistose" carbonate - cemented
zone trending $\sim 085^\circ$ Fault Zone

Next etc is also cherty - vfg sed rock
lt colored w/ry surface rock variably
gray to almost wh - mottled

next line - etc of red xl lap tuff -
local green layers.

near end of line - small etc of gray Lap
tuff w. chl matrix, xl tuff (plog) w. chl
matrix and lots small (foot scale) 1st pods
Some vfg gray cherty arg layers

- 26I -

Next line - red "shale" in red / gm xl lap tuff
just N of it is mixed limy, cherty,
bedded rx.

The interbeds of limy arg are
modified to banded ep - acton - chl
skarn.

036/76S
Lst

Bedded cherty +
stannified seds
gray LT

chert

ch + ep-ch + stann
rubby etc

resistant,
massive gray
wtg xl lap
tuff - same as
26H

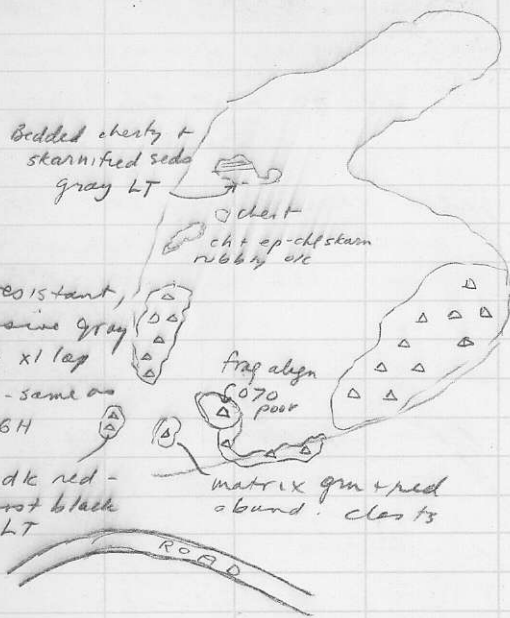
frag align

6070
poor

v. dk red -
almost black
LT

matrix gm + red
abund. clasts

ROAD



26J overtop of hill to east -

poor exp at S end of line

rusty w/strg light gray pyritic siltstone(?)

shallow gully



28A

Field

130
650

matrix of tuff is
cream → buff colored.

28/6/76

Sunny, High Clouds

Promontory Hill - Chasing southern
contact of red LT unit.

28A Variably red/d + cal veined
dk gray arg lst (pale gray w/str) with
abundant fossil debris - crinoids,
pelecepods, ostracods,

Beds (silic layers) 060/65SE

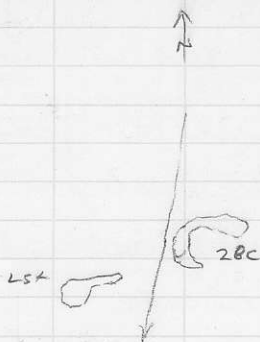
Followed ridge Nwd, then stopped
and went 130 for 550¹⁴⁰ (110) to a N-trend-
ing road then 090 looking for etc

¹⁴⁰
parcel ~~140~~ scruffy Lst sub/c

170 uphill to left been lst
(at 210)
rubble (prob. not ~~140~~ etc)

Follow ridge 065 to 290 where

28B (290) there is rubble Lst interbedded
with rock with fs + ^{xls} gtz^{grains or xls} in a vfg matrix
Possibly xl tuff possibly rhyolitic flow (tuff more likely)
The lst is vfg, rich in smooth-shelled elliptical
pelecepod remains; it is black, arg. lst
NO BEDDING POSSIBLE Lst N of "tuff"



New Brg 150° 375 old Road bry 075

in gully
Continue @ 150°

530 Small 1st rubblely sub/oc

550 Limy grey rubblely in tree root hole

570 - More or less top of knoll

Go 190° Now

(28C) 640 Edge of sharp dropoff - 1st of
gray w/ry somewhat silic.

dk gray fangy x/lr wh cal veinlets

Beds? 080/855

Not so fossilif here

750 $\frac{1}{2}$ in it - hit meadow 800

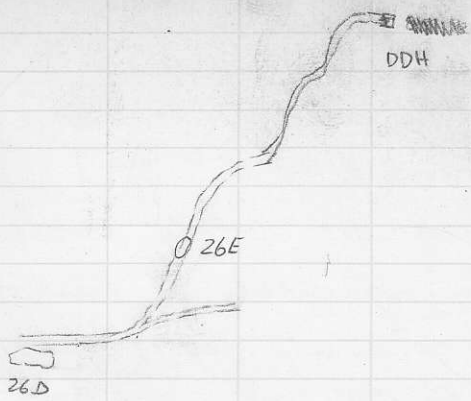
Truck 950

Next leg - Mic traverse

28D
28D Noranda Drill road - green foliated matrix

sample mostly green some red frags - some
look like squashed pumice -
green fol. lapilli tuff.

Spec on juts locally



Fault face
145/90
stickensides 22° NW

81.0 Start

82.6 % of plag - rich mafic in interstices
(28E) rextld lava or intrusive
cut by qtz - chl stringers.

82.8 Road ends in Creek Valley at
DDH site

pace

330

about 100' short of road - pic of

28F


pink + gray mottled + red wtq horizon -
the Kingsvale flows and red wtq
(frags red also + vesicular) "clinker"
volc. agglom. on bx ON TOP OF SMALL
KINGVALE PEAK

Brg 270° for 1000' (pace 530) then go
180°

Pace 730 overlooking steeply incised ck valley
Head eastward

28G

823% in ck on south bank

vtg gray to pinkish rock - in places it
is seen to be fs-rich holox (fine fg with
mafic interst. Qtz as xls, some well
formed + as egg-shaped to -shaped
zones - amygdaloes??

Local bx zones - faulting?

830 Whitish gray w/try flaggy arg 1st

Beds on Parting 267/75 SE

835 Sandier with many fossil fragments.
(mostly small, none diagnostic)

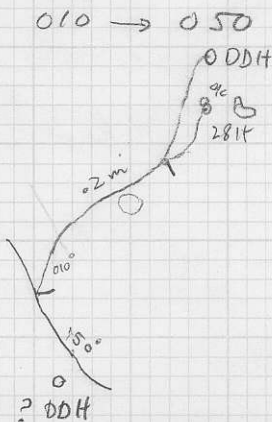
840 - 850 Back in the mystic silic.

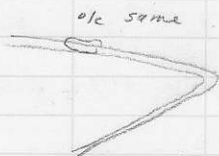
fg Qtz eye feldspathic rock
again. Qtz eyes v. glassy

along a ways then steeply down
to ch 940 mic's.

next rd has 1st / silic up seq
etc

+ across the ch is play and





○ 29A

✓ Photos of fault
by
and Ken

Cloudy, Suetry

Traversing from old Naranda camp on
m/c's to area west of Winney Ck
fault.

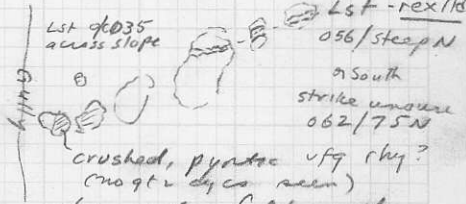
29A 90% of red wtrg vesic to sl. pyritic
red Kingsvale lava - rock
resembles that at 28F

29B left bikes + hikamp up meadow area
w scattered trees

a few
frags

3 samples
for T.S.

29B



29B Pale gray gray wtrg vfg felds pathic
quartz eye rock is same as
at 28G. (rhy?)

Fault 166/82 NE

slickensides plunges 38°N
west side moved North??

Crushed fault bx zones - pyritic
CR almost cherty (sample)

Local less broken zones.

% plag xls varies 5 - 30% across ok locally

29c Small etc of sandy frag volc
 vfg chl matrix, pyritic, frags
 of plap xls + vfg volcs

Scattered 1st pods ^{some}
 ranges loc to LT with λ dk gray frag,
 overall light green - grey
 Glassy qtz frags

29D Beds 054/845 (good)

Mixed 1st, arg + limy pebble gut
 bl arg vfg silic (dissem. small areas)

snuffy qc? of gray LT with some reddish
 clasts

KEN - chert - dk gray-green cherty - looking
 pyritic frag volc - clasts angular
 to $\frac{1}{2}$ " ϕ . - mostly sand size - clasts 35%.

- 1st, limy pebble gut, "cherty" vfg sand

Beds 088/85SE good

KEN on way down @ gray pyr. "chert" @ 9ft - dk - of
 possibly garnet (qtz)
 "skarn"

29E 028/90 Beds

Pale gray sandy - looking pyr. fragmental volc
 (Tuff)

Local thin bedded zones \approx 1' wide

\sim 75 vert feet above 29B

200' up to skarn

50' more to pyr. "chert"

Back to purple XI LT area

29F "c purple mainly loc from XI LT -

local 3-8" ϕ elliptical "bombs"

Frag along 040 ^{-epidatized}

Red fg zone 049/85SE

qtz - ep some spec. veins + clots
(up to 2" ϕ)

South of Snow Knob

Red XI L.T. Fg gray wty zone

Brg 040 / v steep dip

29G Bedding 020/90

more folded now, local thin
bedded zones but still volc
silty to lapilli sized frag. volc.

Nea Δ instn Beds 023/90

Beds 018/87SE

Possible X fault 138/90

Frag volcs mostly red loc green
mostly sandy - lap tuff some silty layers

Σ.
Σ



29H

Following Lene 1

294 7% of green to red x1-LT with red +
green frags 40% most 1/4 - 3/8" ϕ

lene 2 - going south

294 Feldspathic pale gray "chert"