

803545
R.V. KIRKHAM
SULPHURETS

R. V. KIRKHAM
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Book I - 1989

Summary (July 30/89 traverse) 545

- 1) Some Cu at start & some near end of traverse @ small gn, sp (+cp, mo???) veins in middle of traverse & some very interesting prism. minute x'tls in lower part of str.
- 2) Upper py alt. sed. are cut by numerous different generations of grn and/or basalt dykes (i.e. some alt. & oxid. ed, others barren.)
- 3) Middle section of stream some sedimentary rocks almost completely unaltered but highly fractured & faulted.
- 4) Pale serc. & sil pyrite altered rocks low in stream section are too highly altered to determine original rock types, but could be alt. sedi. (+ dykes ??).

Date	Sta. No.	Spec. No.	Location	Phys. / Other
July 10/89	-	10-19-34	H.B. Mtn - Glacier B.C.	1-2 sample
" 16/89	-	" 5-7	Ste Hill & Duffie Trm.	3-5
" 17/89	-	" 8-11	Ashman Ridge B.C.	5-11 2 f
" 18/89	-	" 13-18	Red Point, Doll, Vardick B.C.	(12-17) white hyp.
" 20/89	-	" 19-20	Torbrit Mine, B.C.	18-21 1/2
" 21/89	-	" 21-24	Willoughby Glacier B.C.	22-23 2 units
" 22/89	-	" 25-30	Kitswet Lake, B.C.	24-28
" 23/89	-	" 31-34	Homestake Prop., B.C.	29-31 1/2
" 24/89	-	" 35-39	Silver Butte & Big Mission	31-35 2 f
" 26/89	-	" 40-41	Summit Lake & Scottie B.C.	36-37 1/2
" 27/89	R9-14 2	" 42-46	Mt. John Walker & Matmit Golden	38-46 1/2
" 29/89	R9-3 105	" 47-49	S. of Quartz Hill to Napokan	47-51 1/2
" 30/89	R1-6 108	" 50-56	Middell-Sulph. Ridge - N. Sulph.	51-58 1/2

just
mean
and
a
L
20

54

~ 10m S down waterfall
same pale sil py alt porph
but @ minute of veins (10
(bismuthinite) (wh. laths) & tr
mo? [KQ-89-56B]
x-ray

~ 50m S down waterfall
1060m top of hill waterfall
weakly alt. (0.5% py)
pale monz. porphyre 56C
145°/25° SW por on bedded
overlying seds over por.

~ 30m N. lower base of waterfall
1020m KQ-89-56D
same pale alb. rtk (w-10%)
x-ray & minor grey needles

~ 80m S base of talus
56E in trees same pale alt
py rtk. but @ minute of stain
990m - 1 small of & then mountain
boulders down str. ~ 100m Cap
at 885m ~ 30m of py set.
alt. rtk 56E
~ 30m S 56E - 10cm ~ NS mas barite de. gray
~ 50m S? 56E - intense. Ears alt pale grey rtk no. 100m

H.B. Mountain

1

July 1988

Sunny

KQ-89-2 - grand. breccia sample
from D. Davidson

- with Don MacIntyre & Marjorie Malot (Alaska)
- photos upper cliff S. side
H.B. Mtn. massive and? units
separated by bedded units
- several photos fold - thrust
surface & break red fault
- several photos thrust plate
E side Toboggan Cr. Glacier
@ sill (dyke) stream about 1/2
duke & then landed
in Glacier - Catch W. Side just
below drill site - 200m
low alt - dipping 10° - no veins
in bed. no rapid metamorphic
~ 30° SW? 0.5 m of wall 5. m. 100m wide
~ 020

~ 7-8' inside
at top butt - field
initially in porph.
dyke - alt. dyke in
cut by dyke - no
veins

- seems to cut some
narrow steep veinlets &
is cut by steep & low/steep
W-dipping drusy qz-py &
qz-mo veins

- guess is intermineral but
qz & mo-bearing veins

* - if from H.B. Mtn stock
then a mo stage postdates
the main "post-mineral" stock
on the east side - i.e.
should perhaps explore top
& W side of H.B. Mtn stock.

- several photos of stockwork
(some veins @ mo) & of
blocky joint set that
dips $\sim 10-15^\circ$ W

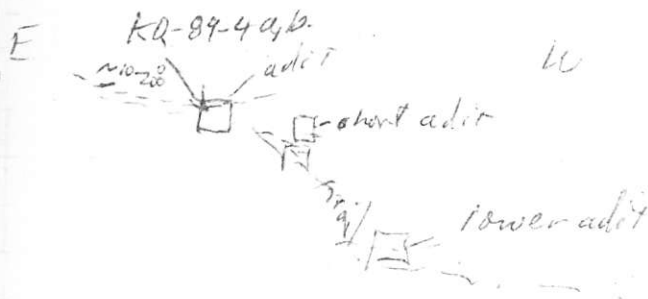
- saw bleached hornfelsic
quartz-eye unit & several
dark biotitic (thb) matrix
volcaniclastic lapilli tuff
units

2

- went down talus slopes
trail route (trail bed shape)
& sampled qz vein system
in main creek 100-300m?
below treeline at 1st & largest
log bridge (collapsed) - hornfelsic
alt. dark biot. vol. unit ^{with mo, mica}
with $\sim 5\%$ qz veinlets @ ^{potholes}
TRQ-84-3 (typical) ^{potholes}
v 10m E meta ^{containing copper} argillaceous
basalt unit

- $\sim 10-20$ m E probably
unconformity @ meta Steena
formation seds. - mainly
fig. SiS? @ still
abundant qz stockwork
veins all the way
to the Au-Pb-Zn showing
- seds very indurated by
contact meta @ some
wide bleached zones along
veins (ears - see at 1)

- Au-Bi-Te showing



view to S

- sampled veinlets ^{at upper adit} / low dip
KQ-89-4a,b - $\sim 10-20^\circ$ W

dip $\sim 2-1$ to 30 cm wide
veins $\sim 20-30$ cm apart
("b" above "a") @ pale bleached
frag. S.S.? of c between

- mainly calcite alt.?
some muscovite xls?

KQ-89-4a - lowest flat
qz? veinlets @ diss.
bismuthinite & Bi Tellurides
(+ Au?)

4b - upper vein calcite
@ abundant molybdenite

- continuing pro @ the Au
in Bi Tellurides

Ski Hill & Sil-Val Mine 3

Sun 7/Cloud

Sun July 16/89

@ Don MacIntyre

- drove to area of
Ski Cabins (photo)
(about 30-40) @
many sl. waste of c's
up road (somewhat alt.)

& then walked up most
westerly T-bar (green)-
variable alt. (sil.-clay after
feld.) pale grey & pink
sl. porph (qz-feld) rhy, ash-flow
Tuff

towards top of first
knob less alt. maroon
& pink qz-feld porph.
rhy ash-flow - then
walked to top of
highest knob CR206
(^{W. of} T-bar) calcite approx
N.W.E. of end of T-bar
rel. fresh ^{maroon} ash-flow

@ Fresh qz (1-30%) feld (5-10%)
phenos IKQ-89-5
- Dark sample ~~phenos~~
Phylite U/Pb zircon date

- fresh rounded qz & reasonably
fresh sh. pink k-spar phenos
but in all adjacent rocks
(50-100m away) feldspar
phenos are completely altered
to yellow white clay (epidote
& alunite??) minerals & in o/s
near cabins that Don Macintosh
obtained a 70 Ma ± z whole rock
K/Ar date feld. cavities are
lined by minute terminated
quartz crystals

- walked down st. run
immediately east of Paradise
(Orange T-Bar) - same
variably alt. pink & grey
(vel. fresh-maroon) qz - k-spar
porph., ash-flow tuff & 40-50°
dips to east (aligned frags.)

- then went down main 4
road (walked down it ~300m
starting ~70-80m E of Orange T-Bar)
- ~70-80m variably alt. pink
& grey lapilli ash-flow
tuff - a few minute druse
qz veinlets & minute br. veins
& some lined cavities
IKQ-89-6A & 6B ⁶⁰³ ~~Johnson?? E of it~~
- typical of pink & grey lap. ash-flow
tuff & veinlets & lined cavities

- then ~200m of maroon
dip (of lesser red) tuffs down
E? road to ~100m before switchback?
- near switch & power road course
maroon grey tuff or unit
~300m 135° / 25° E - fair to
NW good on
along road to bedded red tuff
new chainlift

- variable dark
relatively massive maroon
tuffs (some feldsp. phenos)
& some crowded ^{massive} tuff
lap tuff (on epiclastic)
units along entire road

* sequence from west side of
Sti Hill to E of chairlift (blue)
could dip uniformly east at
moderate angles

- then drove to above
mill & level above mill
to old overgrown road to
Ashman vein at Duthie
(Sil-Van) Mine (to be
obtain U/Pb sample of Sil-Van
Rhyolite) (KQ-89-7A) - pale grey
green ^{st. flow layer} Sil-Van Rhyolite ~100m W
of switchback end of above road to Ashman
96 - ~250m east grey st. pyrite
just to W of large
ZOO trench above road
near easternmost
switchback above mill
- grey ^{grey} alt, rhy. - some
pyrite in area

- then sampled less
altered patch of
Sil Van Rhyolite that
could find (KQ-89-7C)

- sample for U/Pb 5
Zircon date -
~200' E of base of mill
~50' W of branch in
road

- dark grey flow layers
dense rhyolite @
minor minute qtz & sp
phenocrysts
- much of rhyolite in
area is pale grey alt.
@ minor pyrite

Ashman Ridge

Sun + Cloud

Mon. July 17/68

- @ Don MacI. + Marylou
Raloff

- traverse to N
through section

- start at ridge due E (approx) of 89
down in ^{spate of RR-63-109} Tektwa

- pale grey dacite
to rhyolite? lapilli
ash-flow tuff

⊙ scattered f.g.
diss. py (± hem.)

RR-89-81

- some aligned
frags on good f.g.

- overlain by a to 5' ^{slightly welded}
dark maroon tuffs
rel. mas. + indistinct
bedding

^{ch. qtz}
- some qtz-filled 6
amgdules

RR-89-81A - typical
of upper part maroon

- shows amgdules

- ~ 80' strat. above 0

- ~ 5-10% small white feld (p)
phen.

- the 100' thick
grey (feld phenic)
welded tuff @ 100'
maroon oxidized
top. - some qtz phen.
(rhyolite to dacite)

- overlain by ^{2-3" thick} indense
welded pale-glass
weathering dark
maroon sil.
ash-flow tuff

RR-89-81B

~ 5' above base
of unit, elongate

- photo (frags)

11001
 overlain by ~ 70' of
 pale grey ^{weath. dent. m. gray} lap. tuff @ abundant
 aligned elongate clasts
 (photo)

- cut by NNW trending
 steep fault @ E
 side ~ 100m N?
 snowfield photo linear

- photo to N of
 bedded ls overlain by
 massive basalt

- dense red (amyg?) fels.
 phyr. tuff? flow
 (wed. beneath)
 ~ 25' above base
 of unit TKQ-89-9

- photo W of cliff
 showing section:

- grey weath. ^{wh. - dac.} lap. welded
 tuff overlain by ~ 100m red tuff
 overlain by 50' ls in fault
 block
 S
 mus. ^{wh.} X red tuff
 X ls

- very compact &
 dense rocks @ ~ 540%
 small feld. phenos

- possible mixed
 flow (amyg) - tuff
 unit?

- some 10' units @
 lap. frags

- recessive part of
 ridge

- ~ 100m thick ^{unit} maroon
 flows & tuff?

- TKQ-89-9A - dense
 sh. amyg. flow (for
 analyses) ~ 30' thick?
 strat. below is?

~ 15m thick unit ⁹¹⁴ towards
 base of

- cut by ~ 50cm N.W. /
 trending gap and dyke

- grey weath. recessive
to ls mason coats

- ls ~50' thick
pale grey weath. dark grey lithographic.
ls @ abundant strolites

- belemnite

- photo units ~10' above
base @ carbonate
clasts

- minute feld. (xtl tuff)
clasts (?) on pseudomorph
lenses after gypsum
hemimorph xtls?

- overlain by well-bedded
olive green-grey ssf
dark, immature, 20' thick
matrix supported cal.
(monomitic drab clasts
but @ scattered
lms clasts (3 photos)
well-bedded latic unit
overlain by drab green ssf

matic bedded tuff. 8
30-50'??

~30' thick to EW
draw (possible fault?)
before bluff to top
of hill to R

(not a site) numerous wh. zeolite
veins & chl. stickensides
surfaces up bluff
so could be fault
in EW draw

- drab sheared med.
green argite??
phenic basalt
~40' above base
(KQ-69-10)

possibly drab in green
- v. massive veined unit
@ smaller bronze weath.
phenos thru most
(argite & bich)

10A1 - typical unit
@ bronze phenos
nigh from top of unit

overlain by ~20-30m?
of same unit @

20-40cm amyg. clast.
flow top br.?

~38-40 m^{thick} deposit

maroon breccia

(w/ abundant
10-20cm amyg.)

(cal. ag.) clasts

10B - typical maroon
flow top - ~5m above

10C - ~30-40^m above ^{base} 10B

- calite (ags) + zeolite
needles (laumontite?)

- photo (Charlie on dc
bedding ~30° N)

- then general thin
10-15^{thick} highly vesiculated
flows @ ~50% flow is
flow top br. - characterized
by abundant amyg.,
matrix & minor vln
white calite fills

- photo dip S to E
white well-layered
flow in far background

cut by 30-50m? 9

wide rusty zone
to bedding

- photos white-weather
amyg. flows down
ridge to N. of Telthwa
Smithers Group
Contact (w/ fossil mountains
in background)

- had lunch on browe
of hill in amyg. flow

- ~100' of high ves.

(Chari: 10D) - large dense
flow block in amyg. flow
150' from lunch flow - bronze ag. etc

~100' N from lunch
typical amyg. flow br.

10E
~10 m well bedded

maroon fgs
overlain by a ~6m^{thick}
very amyg. flow @

large cal²-filled angr.
gas carthra
[110, E]

overlain by ~10m
of maroon tuffs
& flows? 110 E clens
(@ pink alt. pl. 110)

overlain by ~4m thick
highly amng. flow
~15-20m strat. cover

then numerous thin
highly amng. & br.
flows for
~20-30m?

cut by NNE trending
fault in draw (in)
maroon red tuffs on W
side cut by 50'

well-bedded porph. dyke?
at dist ~150m maroon red tuffs
3 photos iron conc. pi. flow soft close up
mainly Smithers fm

one to E Smithers 10 fm
9

2 to N
of well-bedded
dark ashmantu

~1600m sed.

lower 150-200m med

grey - grey fossil
Siltstone of

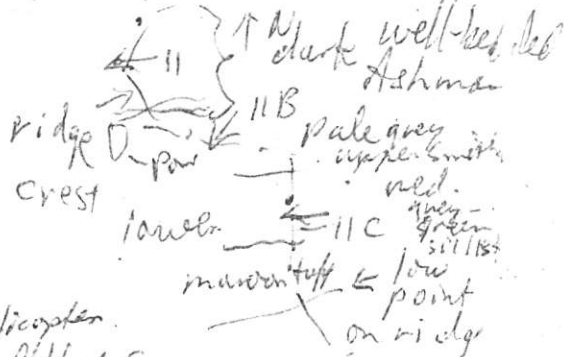
to 99
ss. Smithers - fairly dark
grey - grey colour & abundant
fossils - pectens,
trigonius, pelecypods,
belemnites, ammonites,
mytalus etc.

10-89-11A

typical of form. from
talus ~20-30m above
base & (w) heavy
ribbed pelecypod

II B ^{top of ridge?} ~ 70-80m strat.
 higher typical
 of upper gritty
 pale green fossiliferous
 S.g. S!S
 ~ 30-40m to Ashman
 contact??
 then highly fractured
 fine-gr. cherty? well bedded
 finely bedded dark
 grey argillite ^{silicified} _{belemnites}

II C - 3 spec. ^{30-40m? up in Ashman Fm}



from helicopter

photos faulted to S

Smithers Fm S side

Kittlington 40 E upper end

one II C spec. atypical

cherty felsp. phos. phos.

late lower (pale) tuff

- photos ^{Rocky} HB. 11A + D + H.C.
 Summary ^{Time - Henderson} _{vein dumps} **11**
 - excellent section through
 upper part of Teltwa
 Formation + Smithers
 Formation (interlayered
 relatively massive volcanic
 units + well-bedded beds
 on ridge to N of Smithers
 + Ashman Fm - photos to E from
 copter)

- lower rhyolite ash flow
tuffs
- overlain by red tuffs + amy flows ^(red weath)
- 50' bedded pale green weath
dark lithographic ls @ stylolite
- ~20' drab immature cgl
- ~30' " matrix tuffs
- ~100m aug. phytic mar. basalt
flow
- ~20-30m flow top br. (w/ amyg. lats)
- 30-40m massive talus flow top br ^{amy flows}
- ~50m? thick highly amyg. flow
- ~10m well-bedded tuff
- ~6-8m amy flow
- ~10m massive tuffs + flow
- ~4m amy flow
- ~15-20m coarse thin amy. flows

~150m? + rel. massive red &

maroon tuffs

- ~150-200 m ^{in a given year} _{pos. siltst}

~70-80m?? pale grey ^{yes} _{quartz siltst}

- ~200m?? well-bedded dark grey

arg. @ scattered blemishes

~1000m? seds. in total

(Smithers & Ashman Form.)

probably also several

hundred to plus 1000m

of relatively mas. vol. @

Some interlayered sed. rts.

- several samples were
collected suitable for
lithochemistry

- probably also more good
lower stratigraphy is
available to S down
main ridge

July 18/89 to Kitsault

- 2 Samples of Bowser L. Gyp
Rocks (typical dark s.s. siltst)

to test for Ni anomaly

KQ-89-12A - 22 km E of Kitsault on
mass 12B - 12 km E of Kitsault on

Red Point Shew 12

Alice Arm, B.C.

Showers, cloudy
& then rain & fog

Wed. July 19/89

- @ Tom Dracen

- 3/4 mill exploration

program of gold leasing

- Alan Rathoe's Exploration

Manager of American

Pacific Mining Corporation

- option on property

- large pyritic,
sedimentary, siliceous
alteration zone

@ scatter gold &
base metal zones

- Barry Devlin did
soil geochemical
survey in area in
1988 & now geology
frenching & d.d.

- Red Point Extension North
siliceous bold knob on
E side of area
with pale grey sil. (ser?)
py (5-10%) alt. rock
cut by ~1 to 10%
qz veinlets - some
with small buckle
folds - locally minor
cp - mineralized zone
cuts across knob at
~320° & dips NE chl.
qz - cp - py zone 1-3m
with gold values 0.3-0.6
oz Au/t @ lower grade
qz stringer zone off either side

Red Point Extension North

Rock cut #2
old trench ~40'
above base of
cliff
130°/140° / 75°-80° NE
~ trend of zone

~ 2.1m wide 13
0.4 - 0.5 oz / t Au
~~alt.~~ ~ 1 1/2% Cu?
ven siliceous
chl. rock (w 7-10%
diss. py 7-8%
KR-89-13B

- underlain by
5m wide slab over
py sil ser. Flt
rock (13A) ~ 2m
below good grade
also
LC
sample
chlorite zone
low Au 0.04-0.05 g/t

- ~ 13m HW zone
grey sil. sericitic
qz veined veins?
py (~10%) trap chl
~ 0.06 - 0.08 oz Au
(@ zone 18' section
0.25 oz / t Au)
also
LC
sample
KR-89-13C ~ 3.2m
above zone (typical)
~ 7m N of L3+155 0.175E

~ 10m W of 13A
same elev. in Fr.
KQ-89-13 typical
pale grey
sil. py alt
intrusive at?
Uniform phanitic
texture (w reticled
phenocr?)
~ 7-8% diss. py.
& pos. traces
f.g. diss. dark
min.???

- to W of mineralized
zones some

KQ-89-14

Red Point Ext.
showing
- new trench #9
sp gn pc box
low Au & Ag
over 2m

very sil qz vein 14
Zone in same pale
grey sil py alt. rock

~ 75' m S
Trench #12
Red Pt. E

KQ-89-14A

14A

1m-wide
qz py gn sp
vein

5m wide
zone

Au in soil?

FW alt
pale grey
py alt
intrusive 14B - 2m
rock? 1m
alt

3-4% py
relic hb phenas
between 2 Red Point Ext. Zone low
grade gn sp Ba trenches of old show in
new trench st W @ Prospect, Ba & probably
Red Pt. Showing An. value

Trench #5 (East)
TKQ-89-15

2-3 m 2g Au
@ gn sp (sp) py
some ch
in qz stringers
br zone
in alt pale
py rock
5m wide qz vein
zone @

W ch. alt. holes
in valley bottom
N. Pt. (5m ss) in alt. holes
TKQ-89-15 Arch

above pad 15
Trench #3
~ 3-4m good qz
py low gold
one ~ 25cm 3% Au
py qz vein
TKQ-89-15 B

Trench #2
Top of cliff
at ~~alt~~ pad
above Erickson
Creek

4-5 m min. zone
2-3% Cu
(low Au?) (but near 1000 ppm)
ppb soil sample

TKQ-89-15 C

good cp + py
in very sil. zone
photos str. val. ^{Evindsey}
in vein ^{cracks}
#2 of high cp
chl. dz vein py
zones in trend (#2)

Lithochim. sample
high grade Cu
from 3 places
in trench (i.e. above
average grade)

- ~50m E similar pale grey sil. py
alt. rock cut by py veins
@ some sp

old "V" vein area
~ 64155 1450E

steep cliffs ¹⁶
① rusty o/c
for ~30m along
hillside
pale py all.
it is ~8-10%
#2 gn + sp
14Q-89-16

no new or old trenches in
area & rock is somewhat
oxidized - difficult to
sample because of steep
cliffs - but similar
to other o/c's in area

Trench #70 ~10m
- just ^(east) N of picket
4480° S 0745E
Same pale grey
intensely
altered sp
(qtz) cut by
NW-15° of
qz veinlets
partly
contorted

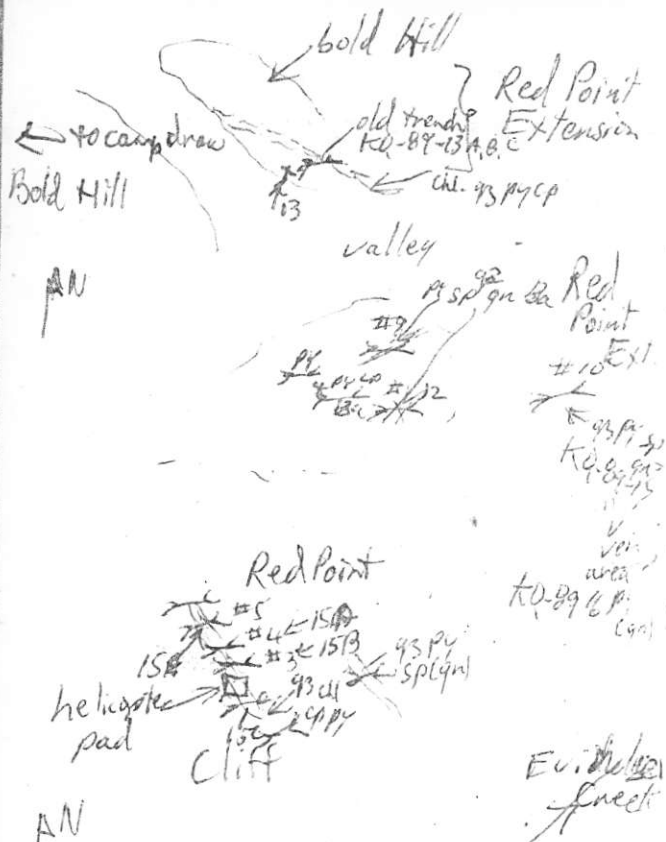
10-89-17

lithochemical sample probably
high in sp
- minor sp, gn tip ± other fig.
diss. dark minerals in
qz veinlets - some
buckled contorted veinlets

Summary

17

- somewhat similar to parts of Sulphurets & possibly Big Missouri & other areas - could be siliceous pyritic (ser?) altered part of a large porphyry system outside of main Cu zone???
- it is a large, intense, coherent system - nevertheless, the main mineralized zones seem to be crosscutting qz stringer vein systems @ variable cp, so, ± gm - best Au values seem to correlated @ qz vein systems @ py tip & dark chloritic alteration halos
- the dark chloritic alteration is similar to that found in massive sulphide feeder zones
- the weakly buckle folded quartz veinlets suggest that the system is quite old & has undergone some deformation



Sketch Location Map

~100'

KQ-89-18

0+75' W "mon2" / div? intr. relic

Maud Phee

Torbrit Mine 18
Cloud & fog Thurs July 20/60

- went up N side of G long hole
- maroon, plag. phytic high fractured mass andesite

KQ-89-19 ~50' E of road - base of 15m high rock face

- wall cut by faults, barite - cal veins & 3 small Tertiary? basalt dikes
- dark Mn(?) stains on block top/s make details difficult to see

- what underground in Torbrit adit ~1000' in to same "slope" (face ^{15-20'} above level) that was @ Barry Devlin
- photographed face to NE general of then in series vertically up through measured section

- seems to be a series of xtl line (barite blades to rds) f.g. hematitic barite layers @ some ^{radiating} xtl masses & colloform growth shapes indicating growth up

- many coarsely xtl line beds, can't tell growth direction

Measured Section

top to bottom of exposed section
 0-50cm ^{base not exposed} clark pinkish barite @ 2-3cm long xtl's.

50-80cm $\frac{1}{2}$ to 10cm thick beds white f.g. & darker pinkish layers @ 2-3cm long xtl's

cut by some 10cm by wh. barite gash vein ~ 1 bedded xtl line

80-93 hematitic (spec) baritic beds

1KQ-89-20B ~ 86 to 96cm, some disrupt. (near vein)

beds lense out

193-113cm 19

93-130cm ~ 1 to 3cm thick pink ^{xtl} barite beds @ hematitic

20E partings & layers 113-120cm
 21-33cm 130-132cm hematitic (spec) ^{20D} ^{cherty beds}

127-145cm baritic bed
 100-89-20F

132-172cm pink red clark

162-172cm xtl line (1-3cm xtl's) barite layer (3 chert?) ^{20G} ^{cp veinlet}

172-215cm relatively

massive white f.g. barite bed without prominent xtl's ^{20H} ^{cp veinlet}

215-280cm sheared, bedded, ^{welt}

(0.5-2cm) hematitic white & pink barite (± chert beds?) ^{20G} ^{279cm} ^{20I}

280-300cm lense of xtl line

303-310 (25cm) barite cm + ~ 2m of disrupted barite in back

colloform layers 056° / 28° NW ~ attitude of bedding ^{20J}

~ coarsely xtl line below

- Some lower (but not upper) barite beds are cut by 35cm wide lense

barite vein set

KQ-89-20K - large spec. well layered material from dump

- ~40-50m WSW? along drift another face above level ~20'?? strat. higher in chert barite unit but colloform layers definitely point down!!! 20L

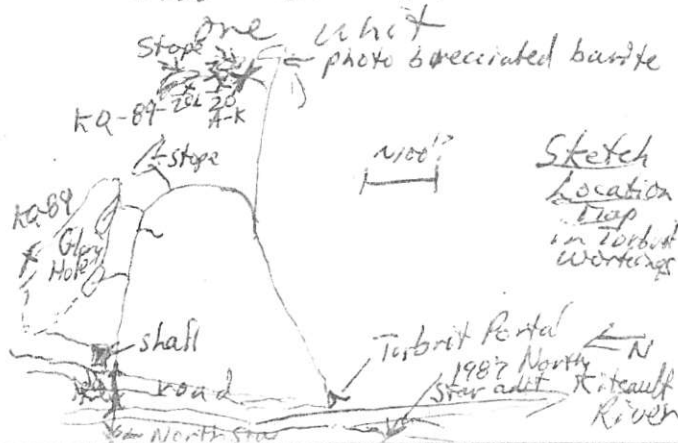
* This locality speds some doubt on the bedded none vein origin. for the deposit.

- ~100m? NE?? 3 photos of typical brecciated barite (some layered blocks) near HW?
- some of brecciation could be caused by young mafic dykes 30cm to 1.5m wide
- intense swarm ~70-80m from portal to North Star - near

shaft

20

- 3 photos layered & br. barite, cut by dikes
- some dikes are good diabase
- " cut by remob. / Be. gash very
- had lunch at portal
- ~50m down river & 60-70m upstream massive to sl. fol. med. subf of green-grae and, (pl & hb phytic)
- on some well-washed stream o/c's can see some subtle blocks in and. br. 1 to 30 cm dia. - (ie. good vol. br.)
- no evidence of



North Star Hole #11-98

220' 10 boxes

- up hole at +55°

0-49' ~~xx~~ arrows on core point
unsplit to collar (i.e. down)

med. green-grey
mass. pl. phytic (t.g.)
and?

cut by ~10% cal.
± bar. veins

some @ sulph.

some small
bacterial folds

Spec. 2', 15', 19', 27', 36',
42', 46', 48'

49' - ^{169 1/2} 170' split core
qz + Ba? + carb. veins
cutting whole alt. intermed
lapilli tuft? tuft & Ba br.

Spec. 51', 55', 57', 58', 63',
65', 69', 72', 75', 77', 80',
84', 85', 87', 89', 93', 96', 98',
99', 100', 105' (Ba), 108',
110', 112', 114', 117'

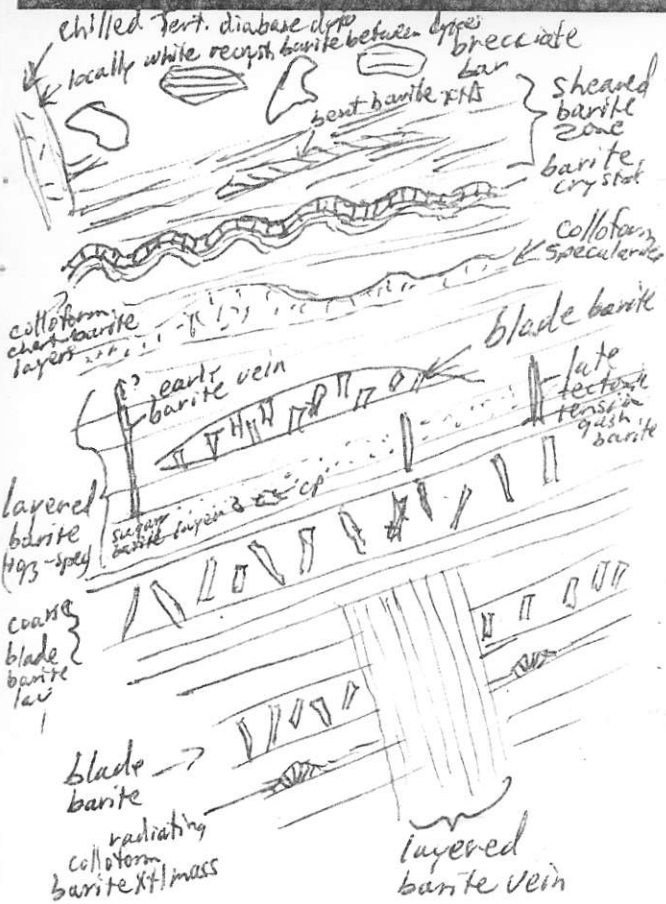
21

119', 122', 123', 125', 129',
131', 133', 138', 143', 146', 149',
151', 154', 163(2),

169 1/2 - 190' unsplit
buff tuft br? dacitic?
highly veined (sheared ^{in place})
Spec. 170', 174', 181', 186'

190' - 220' (end) unsplit
sheared & veined (195-200')
maroon and ^{grading dip} 45°
195', 200', 205', 210',
214', 216', 220'

- hole contains both
hanging wall and
footwall formations
- both show some good
angular lapilli frags. (some
unusual rocks in H.W.)
- F.W. of mineralized zone
(in qz br. zone) is a good
qz (+) vein br. zone @ wall rock
lithic frags. between Ba veins
- some high H₂O in upper part of



Willoughby Glacier 22 Area (Bond Gold Canada)

cloud, strong winds pm,
fog am, minor snows

Fri. July 24/89

Dave Kennedy, Brad Wilson
& "Dixie's Bistro!"

- see separate maps in file for specimen locations (4 stuck)
- found Dave Kennedy on South Willoughby glacier (checking moraines)
- [KQ-89-21] typical med. grey (maroon & grn varieties) andesite breccia (for representative rock types & possible chemistry) (also ice worms) - a few pyritic sil & ser rocks in moraine but mostly unaltered
- NS belt of Hazelton and vol. br. overlain by Bowser Lake Group sedimentary dipping ~30°-40°E (similar ^{rock} E dip along entire belt)
- then examined main

Some Sketched Relations Observed at Locality KQ-89-20

- Still uncertain about origin of deposit.

showing in rock island
between arms of Wiloughby
Glacier - most of island
seems rusty (carb + py veins/diss)

Main Zone ~ EW 20m-wide steep
zone traced for ~ 80m up cliff
- evidently cuts bedding at high
angle

- photos icefield & sedcs. to S
Cropping steady
dusty

KQ-89-22 @ helicopter landing
site ~ 100m S of Main Zone across

snow pale grey alt. serc. py (2-4%)
andesite cut by Fb carb. + py schists
122th - ~ 20-30m E of 122 calcite st. fault
Main Zone by Wilson

~ EW Zone ~ 20m wide
~ 20m wide

KQ-89-23A - ~ 2m S

semi-massive 0.5m ³ fault LC
py, po (cp)

~ 6m N 23B (HAC)

~ 1m pit in
semi-mas. py, po (cp)

23C - ~ 2m N
pale wht py
fract. (br) and host rock

~ 6m NW below 23
~ 5m pit

mas. po py (gn)
23D question of gubena-
bearing sample from here

23E - fly rock E side from blasted pits
py, po, gn, sp bearing
material from upper
showing WSW of Main
Showing

- KQ-89-24 small piece
of float from moraine
from Main Zone area?

py, sp, gn, cp, asp (x-ray)
- also a ? x 15 layered py, sp,
cal??, asp boulder that conceivably
could be bedded??

- went to top of ridge to NNE
just below ice ~ 20-30m thick
bryozoan? (partly fragmental)
Paleozoic reefal ls (many photos) (one strong?)
interlayered with drab green
grey andesite breccia (1 photo)
py in area - photo SW of Main
Showing rock island

Showing

Summary ^{Bob Anderson} thinks that ^{Proterozoic} LS ^{might be Proterozoic.}

- 1) age of deposit & host rocks are uncertain because of older Paleozoic rocks in area associated with similar drab andesite breccias as in Hazelton Group
- 2) possible general sequence (faulted & contorted) dips steeply (in W) to moderately (int) to east with older rocks near Cambria Icefield (Paleozoic vol. & sed.?), overlain by Triassic? dark contorted turbiditic greywackes & argillites cut by numerous dykes & sills (few 100 to 1000m?), overlain by Hazelton Group Vol. rts. (few 100 to 1000m?) in turn overlain by Bowser Lake Group turbiditic sed. rts cut by a few ^{granite} sills? (Tertiary) (photos) near south Flat Glacier north of Kitsault Lake possibly some

Kitsault Lake, BC24

low cloud, showers Sat. July 22/89

- landed near West Showing walked to Showing Lake & Conico Camp

- landed at d.d.h. K88-7 ^{By 160-170} to west of West Showing - no o/c

- narrows between 2 small lakes small dks SW of showing pale green-que sericitic ^{diss} ps (-5-10%) altered and (pl-~~act~~) relic small phenos)
KR-89-251

- to ~~the~~ E of Lake &
str. dark green
grey and lapilli
tuff (S of showing) 4)
- in NW pits beds
in showing
NEW by 15°-20°S
i: KQ-88-26

Spec. are apparent
from stratigraphic
top to bottom over
~20m [26A] -
upper dark grey
bedded tuffs

~7-8m? lower (N)
[26B] - dark grey
lithic xtl tuff @ minor
diss. py & asp xtl

~7-8m? lower (N)
[KQ-89-26C]
~3m wide pit fairly
lake hydrozincite
& greenochite stains

dark lithic xtl 25
& lapilli tuff? (debris
flow features but
uncertain) (w/ diss.
py sp gn & small
asp xtl) (LC sample)

~ same strat. position
as base of 26C

~6-7m of 2m / lower
dark
[26D] LC same lithic
SP, gn, asp? lapilli tuff or debris
flow overlying

[146°/20° SW] fair or contorted beds
well-bedded py (sp. gn.)
lithic (xtl?) tuff
or immature sed

some 10%
py unit

[26E]

~15m E [26F] LC
~ same strat. position
grey disrupted

tuff or sed (w/ disrupted
py (± sp) beds)

[162°/25° SW] fair or contorted beds

- showing could be in
small fault block
between streams
i. explaining S dip?

- o/c is near lake
dacite to and. pale
green sil alt. cut
to reach
- veins probably make more
siliceous than vein system
040/58 ~~NW~~ NW fault
in creek
slitkensis plunge
steeply S

- downstream ~ 60m
below lake
pyritic (5-10%)
alt. zone exposed
in pit

- bluffs of similar
material E side
str. ~ 100m to
next small lake

26
small 1KQ-89-27
bluff east side small
- pale green alt.
dacitic tuff @
mus. after biotite
books? (chem)
weathers buff (carb?)
can see some
0.5 - 2cm lapilli frags
in weathered o/c's

- similar rocks
to 1KQ-89-28
showing
~ 120m S of Lake
pale green - green
alt. dacitic tuff
@ scattered lapilli
frag. - interesting
sharply texture

- bar SE corner
Showing Lake
1KQ-89-29A dark gray
typical
- 7-8mE (strat.) diamictite
lower 29B similar to

KO-89-29C - East
side of lake
small bluff dark
weath. diamictite
@ diss. pt
- some lap. - sized
frags. clearly visible
on weathered surface
but not on fresh surface
- agree @ mapping
to main showing
- 3 photos but too
dark

- walked ~ 1500m?
along & over hills
to Cominco camp
mainly med. pink-grey
and 4 frag. andesite
@ some greenish clasts
& relic hb. & plag. phenos?
- some areas weath. alt.
- high hill SE of Cominco
camp laharic & breccia
@ some large bedded

limestone clasts 27

Cominco Holes

reverse log ^{for} ^{rhodite} ^{isomorph}
K87-4 - 148.23 - 144.8
med. grey qz - feld porph
rk (dyke)
3 large samples for
potential U/Pb zircon
date KQ 87-1 147.73,
147.53, 147.53

144.18 - 141.83
pale clay alt. wt.

141.83 - 138.70
some med. grey qz - feld
porph. (small qz eyes
dyke?)

138.7 - 133.68
clay alt. fault

133.68 - 106.6
black graphitic
diamictite b. @ some

bedded clasts
(photo ~126m)
Spec. 125.68m

106.6 - 106.5? uniform
med. green-grey
sl. alt (~1-3% f.g. display)
massive uniform hb
porphyry (flow?)
buff grey near base

Spec.
75.8m, 84.5m, 31m
~~177.8m~~ 52m

- could be thick uniform
hb porph and. flow
but couldn't tell
from the contact
zones

Hole #87-1 28
only boxes 18-21
(101.39 to 123.82 (end))
only boxes on site
from hole #87-1 must
in Vancouver

101.39 - 107.3m

maroon ^{-grey} plag. phytic
and. @ scattered small
frags. calcite veins
Spec. 101.7m

107.3m - 123.82m
med. green-grey
pl. phytic coarse
and ^(porphyry?) br. - locally
numerous cal. veins

Spec. 113.71m, 112.2m
(typical)

Gratiated o/c's along
shore at ^{white quartz. relevant}
massive adacitic
shards full - minor
KQ-89-30 - ~30lb
sample for possible
U/Pb Zircon dating
(1st check for zircon)
30A + 30B same rock
only ~30-40' W along
shore just E of camp
& gas drums

Summary

- 1) West Showing could be
in small fault block
& could be cut off in
all direction (except towards
to S.)
- 2) Some of Gerry's rhyolites
are probably pale altered
andesites
- 3) most of core for dth
#87-1 is probably in
Vancouver
- 4) No obvious mat. for Zircon because
needed in better matrix #4 would be better

Homestake Property, BC29

Sun & cloud

Sun. July 23/89

- visited Homestake am.
& flew to Stewart about
noon
- Noranda Exploration
has option on property
- 3 owners, old Crown
Grants & 100 units
- Jim Mustard put
put ground together
- previously worked
on by Searchlight
Expl. and Neimont
- Robert Baer project
geologist for Noranda
- old Homestake Property
(Au, Cu) and Vanguard
to S (only Cu) but otherwise
similar to Homestake

- broad zone of severe sil. alteration @ diss. + vein py pale grey altered andesites
- cut by ^{3-4m wide} NW-trending qz stringer + breccia vein zone @ high cp + py (minor sp, gn and relatively abundant barite)
- some prominent dark chl. alteration
- very well-developed vein brecciation in places
- Homestake seems to be more intense system than those on Red Point
- some > 300m wide > 600-700 ~~ft~~ Au anomalies on property - o/c not sampled yet
- some 0.4 to 0.8 oz Au/ft over 4 to 10m & at 1st dump that we went to they mined 8-8 tonsies of 24 oz Au/ft

- KQ-89-31 30
- several samples ^{from} ~~transit~~ + dump
 - ~~abundant~~ abundant cp + py @ qz + minor sp, gn + Ba
- KQ-89-31 (near trench above Myberg adit)
(from where 8-8 tons were mined averaging 4 oz Au/ft)
- very well-developed breccia vein system @ heavy sulphides (malachite stains)

KQ-89-32 Similar material from dump of Myberg adit (near below trench)
- some ^{hematite} hematite + along with? or ^{felispar?} felispar? veinlet

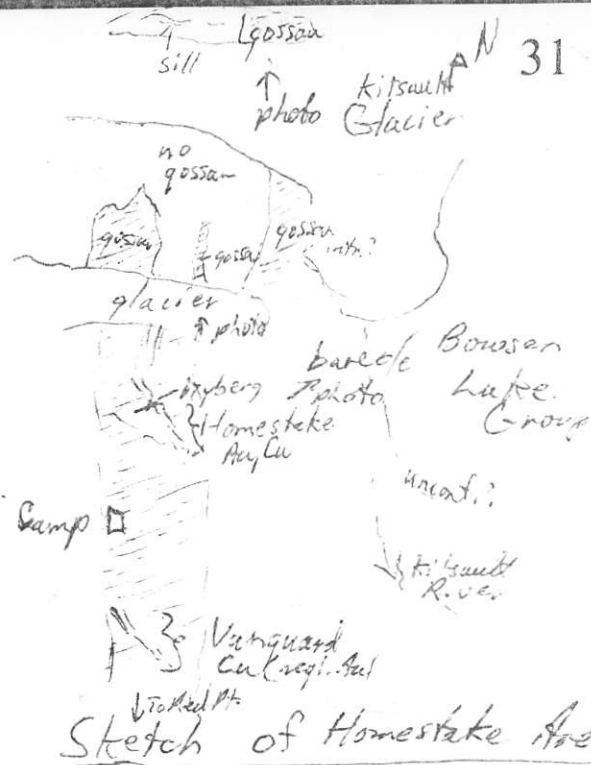
KQ-89-33 (33A) from trench near S of 31 veins + breccia vein material @ py, cp, sp, gn - some massive white 10-20cm-wide barren barite veins (33A)

- ~30m west uphill
 paleomed grey pl phyrific
 alt ser py (~1%) andesitic
 wallrock - 34A -
 possible (H₂O) feldspar
 porph. dyke?? @ minor
 diss. py (typ) - rocks
 in area don't have a
 a high sulphide content

- photos - Camp from helicopter
- high μ at SW of camp
- gossan zones across glacier
north of Homestake
- Kitsault Glacier to NE
(Bowser Lake Group unconfined)
- gossan zone on rock
island in icefield possibly
on strike @ Homestake Zone
(possibly in sed)
- photo Stewart from S.

Summary

- 1) Homestake zone seems
 very strong @ more mineral
 than at Red Point (e.g. py cp gn, st, etc.)



- probably same alteration
zone as Red Point area
- possibly not fault bounded
on W - gradational
contact?
- high Au values in
Homestake, make it an
excellent exploration target

- wide zones 0.04 - 0.05% buff at Silver
- about 220,000 tons ^{at 30% Au} _{at 30% Au} very low Ag (about 11 ppm)
- underground went through several splays of the Anomaly Creek fault (dip 55°)
- evidence of late stage reverse movement
- Western geologists evidently feel that there has been about 1.5 km movement along the fault
- supposedly adularia halo for ^{20-30m} _{around} all ^{20m} _{only}
- just S of fault about 20-30m of Premier Porphyry (med. green @ abundant (5-10%?) scattered white (to 2cm K-spar phenocrysts)
- then uniform medium green-grey (sl. pt) andesite breccia host rock for sulphide body (med. to dark green clasts)
- fragmental texture

33

was clearly visible in many places that we visited

- one zones tend to be high sulphides (~30-50%) - mainly py (~50% sp (~2% Zn au)) + gn (~0.5% Pb) + cp (~0.4% Cu)
- near the - main zone is also quartz vein breccia zone with sulphide and altered rock fragments
- some reprecipitated sulphides in late metamorphic gasb veins but only near the ore zones
- ~5%? metamorphic, deformational quartz/carbonate veins and essentially all of them are barren
- the mineralization is relatively early - probably syncl.

Specimens

KQ-89-35 - BM Zone surface
100m vert. about adit
level (800m?)

KQ-89-36A - typical of
high sulphide part of
Face cut 35 zone
underground in sub-level
drift py, sp, cp, qz? (w ~ 0.4-
0.5% Auft? over 2-3m?)

36B - from qz-breccia
vein system hanging wall;
(E side) over 2-3m? (w
sulphide + wallrock frags.
set in a siliceous matrix
- this material could be

rel. early - possibly approx.
syn sulph. - " sulph. frags.
caught up in a silica
gel (???) - shows similarities
to vein breccias at
North Star and Homestake
- late metamorphic gash
veins cut both sulphide and

this vein breccia 34
material

KQ-89-37 - from 6-7m
wide zone high
pyrite (w ~ 0.8% Auft
- some wallrock
andesite fragments set
in pyritic matrix
show evidence of
penetrative deformation
(elongated) and others
do not

KQ-89-38 - selected pieces
from ore stockpile
- shows sulph frags. in siliceous
matrix

Summary

- 1) Very different from West
Zone at Brucejack Lake
- i.e. Silver Butte - early
high sulphide system (vein on ¹² ~~vein~~
West Zone - late metamorphic
high silver tetrahed. ~~vein~~ ¹² ~~vein~~ silver
electrode ~~on vein~~ ¹² ~~vein~~ ¹² ~~vein~~

2) Silver Butte shows similarities to Two Level high sulphide system at Premier & "Sulphide Cuts" (name?) and Province Zone at Big Missouri

3) late gash veins at Silver Butte (& Big Missouri) cut one and are barren

4) Quartz-breccia vein system material might be similar to North Star & Homestake

5) High sulphide zones @ Silver Butte and Big Missouri (S-1) could be the centres of zoned systems @ lower grade quartz-carbonate halos.

- in afternoon went @ Marcos to Dago, start of S-1 Pit and Province Zone on top of hill - photos Province Zone late gash veins, minor remobilized sulphides

35

cut high sulphide and early quartz-breccia vein material - also to S of rustv of above Face cut zone at Silver Butte & Portland Canal dyke swarm across Selma Glacier

- Up haulage road - now clearly visible both green-grey and massive area's slightly foliated massive and/oritic units

- Dago Pit - not much to see ^{low} quartz-vein systems in med. green-grey py alt. and

- some early dark g₃ and quartz-breccia vein material that presumably carries the values - this type of material is exposed in old Dago adit

- zone is also cut by post-mineral green-grey dykes

- S-1 - start of ^{small} new pit
in core zone of better
grade values (0.1 to 0.2 g/t?)
in fault blocks ~20-40m
below surface - zone
is cut by postmineral dykes

Province Zone ~0.08-0.09 g/t

- excellent exposure top
of hill - old Cominco
shaft & adit - entire
top is hill is mineralized
(@ high sulphide (KQ-89-39A)
and quartz breccia vein
material [KQ-89-39B])
(specimens also show
late meta. gash qz veins @ minor
sulphides)
- numerous late steeply
dipping metamorphic
gash veins (photos) (10-30%)
probable reason that Cominco
& Westmin geologists in early
stages thought that zone
was steeply dipping

Summit Lake, 36
& Scottie Gold

Sunny, warm Wed July 26/89

- photo to W across
Salmon Glacier
of Portland Canal
dykes

- photo N of
Dillworth section
E side of Summit
L. @ toe of Salmon G.

- photo E dipping,
(~164°/70°E)
grey & maroon
volcaniclastic rocks
~ section up

- ~70-20m interval
maroon grey & grey-green
volcaniclastic rocks

lyl SS lap tuff
to dense red tuff

~30m (single thin)
KQ-89-40 graded lap. to dense
~3m above - in narrow
tuff?

v3-4th necessary and by unit 30
 @ 10-30cm and blocks
 overlain by ~ 20m

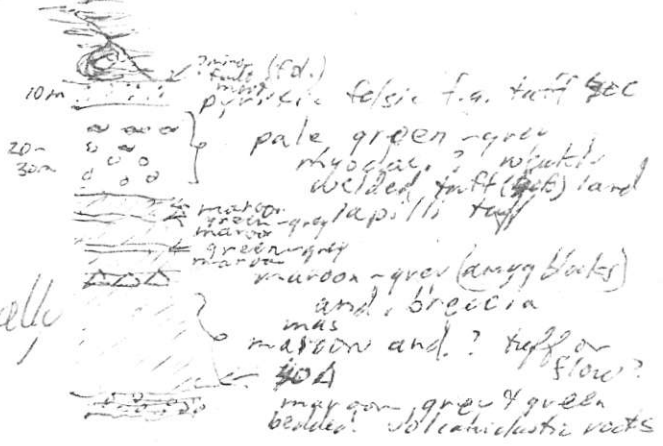
pale green Gsl alt?
 dark poorly welded
 former hydroclastic? in 7-8m
 LC HQ-39-40B
 welded
 - near top of unit
 qz + feld. phenos

- overlain by ~ 10m
 of pale pyroclastic
 strongly alt. tuff
 LC HQ-39-40C
 ~ 10-10% fig. diss. unit

> 100m
 - overlain by highly
 deformed / disharmonic alle
 + faulted Bowser
 detrit. f.g. S.S.
 siltst. + argillite
 Bowser Seds

py. tuff 40C
 PI 40B
 mus. poorly welded
 hydroclastic
 ~ maroon + green tuff
 ~ br. mas.
 ~ maroon unit 40A
 ~ maroon dark tuff

- section is rather faulted
 - some areas @ N1:2
 aspect ratio
 - nevertheless there is
 sufficient good c/c in
 area to piece things
 together



- units are somewhat
 different than Mitchell of
 Treaty Glaciers but they
 could be the equivalents
 at the top of the
 Hazelton Group volcanic
 pile

Scottie Gold

- mine road still blocked by snow
- Frank? watchman ^{8 yr.} Grand
- relatively massive py, po vein material (some carb. top, frgn) @ chloritic alteration?
FRQ-89-41

- many of core boxes seem to contain ^{red gray gng} altered f.g. hb (zpl) porphyry @ ~1% diss. po top 141A
- might be major wallrock to vein
- f.g. porphyry might be similar to one west of West Zone??
- could be intrusive or extensive?

Mount John Walker 38

Sunny & Golden Marmot July 27/89

- 0290 assumed declination ^{Thur.}
- 1533m assumed elev.

Kerr camp - plug (marker) at helicopter pad

- photo Twin Solins Sunde
- " Knipple Gl. an
- pilot Dan (Northern Mountain)

QR9-1 - 22.98m

- low point in ridge
- high contrast (color of f.g. etc.)
- black ss, siltst
- argill. ls. bedding
- 10°/52° E - east
- 2°/10° E - east
- 1080°/vert. fault or spread plane etc.
- some immature f.g.
- 1-2m thick col beds
- ~10m thick and. br E

~70-80m of F
 station KQ-89-42
 typical drab green-
 grey med. and.

am. ^{cal. activity} flow
 - probably similar
 flows @ interlayered
 sed. to peak -
 200m NE

- med. wh. and.
 + dark sed units
 interlayered on
 ridge to E (steep)

42A - ^{xtlline ls & ss}
 no LC ^{1cm chert}

- ~70-80m SW middle,
 start of ~40-60m
 long o/c of
 med. grey plagi.
 phoric (~30% wh. med. grain)
 porph. KQ-89-42B (40)

2335m

tr. pt ^{plagi}
 ~1-2% scattered lap. frags
 (appear ungranitized)
 - no obvious evidence
 in th. for intrusive origin

- ~200m SW along
 contour - across
 snow large o/c
 vein + sheared butt
 wh. weath. pl.
 porph. (2345m)

- followed o/c
 around hill at
 200m to west
 side base of snow
 1285m

same wh. med.
 med. grey med. is
 pl. porph. KQ-89-42C

typical striae
 dark inclusion 0.5 to
 7-8cm - some
 are xtlline limits?

pl. porph down steep
 slope to W for
 ~200m vert.
 perhaps incr. frag.

to west - some irregular
2200m elev 10cm bombs

1004°/63°W fair
strike & dip on
layering pl. porph.
and breccia
- either bedding
or flow layering
~30-40m vert.
above dark seeds
in gut

- ~10m vert. lower

1K0-89-421 typical
- more frags,
& similar to dipping
crude layering

- some 10-30cm
porph. blocks
- photos Cutear & Brucejak in ^{W.} _{Hand}
- same porph. to ^{Cl.}
dark seeds in
bold steep wh.
weath. (+ dark lichens)
to contact

- conformable 40
~~not~~ intrusive contact
probably thick bedded

1004°/54°W fair
on contact between
grey pl. porph
~2-3m of deformed
bedded chert (w dark chert
10cm nodules) ^{bed} _{contact} or
before
~25m of dark
well-bedded
black graphitic
sed. rocks

~15m 10
1065°/55°W
fair strike & dip
on dark seeds
~3m bl. xfilline
bed - much of
dark unit is dark ls

1K0-89-43 typical
of 2 beds ~15m apart
- some chert nodules
& col. cherts but no fossils

seeds. somewhat contorted

① R9-2 - 2/15/11

- sl. knob below steep slope
- Li e. bench @ seeds
- then ~20m thick poly-lithic drab grey-green volcaniclastic debris flow or tuff br.?
- appears to overlie seeds.
- (conformably)
- seeds. are faulted around S side of drab br. (mod. dip N fault, 15° steep dip)
- ~20m high contorted seeds
- then ~100m of drab pale green-grey dacitic tuff
- (w) lapilli & dark irregular pyramine clasts (not green) FR-89-44A
- then maroon & green-grey andesite poly-lithic br. for ~200m - 300m to W down slope

~100m WNW of 44A 44B green-grey 41 br.
~70-80m " " 44B 44C maroon breccia

- maroon breccia to bedded tuff unit (centre snow patch) photo br.
~200-300m?

~1955m down snow

~200-300m before Br. Lin

113°/54°N good

on maroon-grey xtl & lap tuff overlying course maroon grey volc. br. (clasts 5-30cm @ some

photo under br. under tuff) FR-89-44D (bedded xtl - lithic tuff)
~20m NW

109°/50°N good on bedded green-grey tuff & br.

then highly contorted maroon lap. - xtl tuff & f.g. dense brick red tuff(?)
& then ~100m SW massive maroon lapilli tuff

- mostly massive
plagioclase phric
andesite lap tuff,
breccia & possible
massive flows(?)
down slope to Lin.

- under waterfall
1860m ^{100m before Brucej. Lin} - pale to med
grey (sl. maroon in dc)
massive pl. porphyry
1KQ-89-44E

~30-30m vertically to Lin.
scattered of grey
pl. phric unaltered
andesite

near same elev. but not precisely
same Btu.
CR713 - 1800m

- ~20m W of Brucej. Lin
- top of ridge on bench

- pale alt. sil. rk.
@ ~10% diss. py
& 5-10% qz veinlets

~100m SW of sta. 42

174°/86°E

fair on ~30-40cm
wide qz vein
@ ~2 trenches ~10-12m
apart

1KQ-89-45A typical
of vein @ ~5-7% py
& minor derts f.g. asp?

~25m W of top trench
hole # S88-283

1770m drilled NE at ~80°
in sed.

~80m NW uphill to just below
ridge crest

160°/70°NE fair
well on bedded pale

green grey cherty
horstfelsic, sect

- some limy beds

- then down ridge
to W rusted sil.
py ser alt. rk

d.d.h \$88-284 near snow
- possibly drilled through
alt. py sed

Trench #274 \$750m
~3m trench @ qz
~EW / 85°S

~20-80 cm wide
qz stringer system

@ py sp cp qz
fuby Ag? ten.

KQ-89-45B vein
material?

45C typical py ser.
alt. wall rock
possibly minor f.g.
diss & asp??

Trench #273 ~3m
not much to see
py ser sil alt. ut.
(@ some qz stringer 45D)
trace asp?

down snow slope to
45E trenches #271 & 272
pyritic qz veins
minor diss cp

actually one long trench 43
Trench #269 270 1700m
~100m long
KQ-89-45E

same sil. alt. wall rock
alt. hornfels. cp sed. r.f. ^{NS-10%}
q scattered ~1 to 2 cm
qz veins through trench

45F - from 10 cm wide
plus qz vein @ cp qz
in block from trench

- generally qz veins in area
just contain pyrite
- didn't examine rocks just
went to original Golden
Marmot Trench #266

KQ-89-46 - samples determined
qz veins (1705cm) py
1510m ~9-10m
trench

- pale grey sil. serc ^{NS} pyrite
altered rock @ small
qz veinlets every metre
or so. but no
obvious minerals that
could be associated @
precious metals (but didn't check)

- walked Catear Camp
via upper water supply
lake - NW trending
lin. NW of lake @
typical dark clust. ^{green} sand.
Breccia on SW side & green
poly lithic and br. on NE side
- could be same units as S of

Catear Camp
Capital Hill

1500m
Jack Winder, Bobbie
n 200-300 by the?? sh. road

1515m Kerr Camp (Ripad)

Summary

- 1) Medium grey play. phytic and
at the top of Mount Johnlatter
is almost surely not an intr.
It has dark sed. (bl. ls + arg. + chert)
in sharp (well-exposed!) conformable
unmetamorphosed contact on
west side & probably also
on east side but contact
is covered. Similar dark limy sed. ⁱⁿ
- 2) Bedding on maroon-grey tuffaceous br. indicate
complex structure. ^{Also many truly meso}
units well m. in
- 3) None of Golden Marmot trenches look ^{like} _{quartz}

Quartz Hill to ⁴⁴
Napoleon Zone ^(to S) twalk to
Newhawk Camp

Sun & Cloud ^(heavy rain) Sat. July 29/89

QR9-3 - 1470m

- E side Sulph. Gl.
just S pt. of rock
into ice

- pale seric pt. (-34°
(minor qz??) alt.
pl-hk porph.??
(can't see relic
xtls too alt)
- some relic large br-
sized frags

KU-89-477

n 7-8m N

n 1-1.5m druse

qz - carb br. vein
system (w/ pt. + some
frags. (w/ dark f. q.

- asp. **[47B]** ^{sample is} higher
 than av. grade
- main drusy qz + cal doesn't contain asp
 - i.e. asp is early
 - vein is probably too narrow ^{to have any potential} to have any potential
 - vein 108°/60° off good
 - calcite is late after drusy qz

~18-20m N similar
 br drusy qz cal vein
 110°/80° N fair
 from 1 to 7m zone
 of ~15-20% qz veinlets
 i.e. marker thickness
 variations

[FQ-89-47E]
 is high-graded
 sample w abundant
 early asp + qz frags

- sample localities AS marked
- some green stains from arsenic
- local sp, qz, terr?
- photo vein - dark (sl green stain) frags. between late drusy qz-cal veins are asp-rich qz vein (± wallrock) frags.?
- * even though ~~sample~~ is high grade vein is ^{very} well-mineralized over 77m in places & should contain good grade

[FQ-89-1 Newhawk Assay sample]
 0.302 g Au/t & 0.43 g Ag/t

- could trace vein to ~60m W to ice but mainly 21m wide (2 vns 1m wide 5m apart) only ^{in one place} ~20m wide in places

~15-20m E strong
2 1/2 - 3m wide
@ min. vein
cut by "tight"
fault 030°/vert.
~5m barren alt. pl-lb
porph
then ~NS fault
& then on same
trend strong 6-7m
cont'd qz py stringer
system for ~6m
under snow

- probably same vein
but couldn't confirm
asp (it present not as
abundant) (i.e. not
dark frags.)
- wrong vein!

Asp-rich vein faulted
~25m E on 030°/vert
vein

- then trends ~115°
bv steep up the hillside

under snow only 46
~5m strike length
before snow but
vein ^{is strong} is strong ~8m
wide ~15-20% ^{cont'd} qz (cont'd)
stringers & some br
veins (2 photos stringers)
- some asp along
qz stringers & as
greenish weath.
high grade frags
between veins

1K0-89-47D

- good grade grab
Newhawk #89-2

py asp trap 0.44703 Au/t
& 0.6103 Ag/t

- total length of
exposed vein
~80-90m?

- ~20N along base
of ice
~8-9m wide
strong ~EW vein system

but W of 030° fault
i.e. ∴ not same
fault block as 47D
- this vein system
however has much
late barren cal.
but still some
asp in early
frags. & along early
veins to $cp + km$

KQ-89-47E

- sample probably higher
grade than vein

^{small V.}
~ 2-3m mafic dyke in snow

- ~ 10m NW down snow
small qz & carb
stringers @ py asp ?

(i.e. not a
well-developed vein
system but rather
a sparse stockwork.
@ py asp ($\pm cp$?) ??

- ~ 15m NW

1478m

KQ-89-47F

47

- pale green green
carb. serc? alt?

$pl-hb$ porph

cut by ~ 1-5%

carb (\pm qz stringers)

(w ~ 3-5% dics py

minor asp ? (\pm minor py)

- photo carb. stringers

- if sample contains

Au could be a
bulk tonnage situation

- some layered (import crustal)
veins

- ~ 20m N along edge

of ice ^{with} med qz $serc$
alt. porph @ py asp cp
& minor py

094° / 74° N good

on strong 2m wide

(1-2m) qz - carb vein

but considerable

late carbonate - py

some early asp - py

frags. KQ-89-47G ^{strong} _{crustal} ^{high}

~10m then ^{good} pale grey
alt (k-spar?) porph. FREE
(not a green as ^{small} ^{interch} ^{crystals} ⁱⁿ ^{spars} ⁱⁿ ^{texture})

↑
might be similar to k-spar
to Hb
to N.
pl-hb porph
& more crowded phens
only minor p-d
no obvious ep)

- Some qz py po veins

- ~30m N to small
str. ~15-20m S
of main str.

~110°/80°
~12m wide string
qz-cal. vein

(to py & asp)
KQ-89-47H

- 2 ~ 20cm to 1m?
~NS dark mafic
dikes below it

- porph. is so highly
alt. to N can't see
porph. texture

- highly sil. pale grey
(a) diss by py

~40m N KQ-89-47I 48
typical alt. sil
pale porph. @

pu & po
- scattered qz veins
in area some
probably contain
asp

~30m N to str.

① R9-4-1420m

- at ~~str~~ 2nd str.
below ice just before
rusty dk + talus slope
to N & E

- same alt. sil
porph.

- ~20m N (~80m W
of Ice)

~5m wide string
~EW qz stringer
system @ pu ^{modest}
asp & minor Fe
SP4CP 147J

- ~30m NE change
in weathering
characteristic to
pale rusty jarositic
ofc @ ~17-10% diss.
+ some vein py.
- rock is pale
& more sericitic
@ less silicification
& qz veins

- ~100m N end of
ice. EO-87-48A
1475m typical of pale
serc. py alt. wt.
below rusty bluffs

- ~30m ? N ~2m wide
bl. of ofc?? in
moraine - heavily
qz veined @ py & asp
(i.e., either
similar ^{EW} asp qz veins
or from uphill to E?)

- ~70-80m N (just above 49
S end of snow)

48B - same py serc
alt. wt @ some
qz veins (trasp?)

- most EW veins
are leached &
difficult to sample

- 48C ~50-60m N
1505m above snow
W of OR7-51
~100m S of where
stream comes out
of snow

- could be some
min. veins on this
slope but difficult
to find & sample

- ~60-70m N to sta
cover but large
qz vein blocks W of ^{py & asp} moraine

DR9-5 - 1515m w
 - str. at end
 of lake near top
 of snow
 - same py pale grey
 sil. & serc. alt,
 porph.
 - 481D is 100cm
 qz vein zone
 at str. at outlet
 lake ~5% py
 (str asp??)

~40m ^{E of str.} - ~40m W
 1510m of Br^g lin &
 S. of str.
481E

- ~EW intensely
 sil. & qz - veined
 o/c ~20m
 wide o/c
 @ same high py qz
 veins but couldn't
 see any other

50

Minerals - rock is
 too hard to sample
 easily

- went around W
 end of Electrum
 & N Spine Zone
 - could see v. py serc.
 - then to E around
 E end of Crater
 Stockwork Zone
 - few qz veins ~35m
KO-89-49A ^{litare}
 1532m typical of py serc
 schist
 116°/75°N poor on
 schistosity

- down along ice

for ~100m
 1st py ser. rk.
 & then py greenish
 alt. and br. ^{white} inside

- Newhawk dump

1370m

- Kerr Pad 1527m

most of way down slope
for ~200 - 250 m
massive highly altered
ser. py (5-10%) andesite
breccia (clasts selectively
replaced by py clearly
visible on good glaciated
o/c's - a few scattered
qz veins but generally
not as intense as farther
S & SW

Summary

- 1) Some excellent arsenopyrite bearing quartz-calcite vein systems! Hopefully they contain gold!
- 2) On west slope of gravel hill poor o/c but probably also same veins (also-bearing qz)

51

vein system. Found
2 major boulder trains
of asp-bearing qz veins
each @ blocks to 2m dia.
With E-W strike of veins
& E-W ice movement, blocks
should be close to being
over the veins.

- 3) Between K0-89-47F & H
seems to be in reasonable
(0.05-0.3% ???) Au zone
but didn't sample best
material (intergrown @ py).
Could be on edge of
significant Au & some
samples seem to contain
diss. asp (or assoc @ small
qz veins) @ diss. cp & py
hence, could have
some bulk tonnage
Au potential??

- 4) Area could have excellent
potential if some samples
run > 103 Au/t. Veins
are strong & very systematic E-W

- 5) Except for dark sed. at KQ-87-133 (Napoleon Zone) - no sed. were seen (mainly highly alt. pl-hl. porph.??)
- 6) KQ-89-47 II porph. could be similar to K-spar-hl porph. farther north along Sulphurets Glacier.

Mitchell - Sulphurets Ridge North of Sulphurets Gl.

Sunny Sunny July 30/89

① KQ-6 - 1640m

~100m vert below ridge crest ~25m E of str. near snow patch

5014 equiv. KQ-89-5014 dark gossanous of highly fractured & altered pale maroon-grey monzonite @ ~1-3% v.f.g. diss. (+pv)

2)

traversed east @ ~same elev⁵² for ~30m similar ep-py bearing rock & then pale py serc.?? alt. monz.

~100m E of sta. 1648m

KQ-89-5013 - med. qtz-grn f.g. alt. equiv. pl. (hl) por (chl) @ ~5-7% diss. py to ep

~30m E to down py rktoll in fault contact (~NS) @ med. to dark qtz pl porph. (less alt. but ~1-2% diss. py)

porph. is ~20m wide

then a series of high faulted and to diabase dikes cutting ^(10%) py alt ch. sed. KQ-89-5111

1633m - head of str. ~100m E of str.

~20m SE (135°/74° NE) fair on

faulted pale qtz (alt) py alt. some dark dikes. high fractured

~80-100m E (104°/53° N) fair

on bedded alt. qtz-grn

~10m E 1595m KQ-89-5113 pale qtz

qtz, py (5%) alt. f.g. S.S.

~70m E flat (045°/140° NW)

1565m on 1.5m sh. porph. diabase

dike

1547m - ~20m E ~35m W of str

100% KQ-89-5110 pale green - grey

py alt. qtz

① OR9-7-1530m

- in str. above snow
- KQ-89-51D - pale alt. ptz-4% med. gr. S.S. ? - E of creek
- s.s. silty & arg.
- o/c uphill & NE are rel. mas. & grn - green - probably alt. seeds but could be and.

no obvious fault in creek from OR9-6 to 7 negl. qz veins across entire slope

- mainly py alt. grn and dykes downstr. (w. rusty pebbles sed.)
- 1460m ~ 100m below str. below snow top of trees above waterfall KQ-89-52A

- 10% py alt. chl. med. grn and dyke?? cut by minute qz veins left @ 5' py min. up (+ mo??)

- ~ 50m S downstr. mainly med. green alt. and dykes but some rusty sed. o/c to grn in qz stringers

110m further 1418m

53A
KQ-89-53A v. py (10%) pale alt. sed. cut by qz adularia? veins.

- @ minor py & to grn & qz and dyke downstr. 5-10m wide? uphill but only in wide here
- around small waterfall & 2nd side creek from west
- qz rich py schist + mus. sil. alt. rk (can't tell if sed.) cut by many qz - veins some 5 mas. ten. wide barite ven.

grn. - then numerous barren and (?) (bas?) dykes cutting alt. chl. grn or (sed?) d. h. med. 1240m

~ 30-40m downstr. pl-hls 53. porph. 40 ~ 120m ~ 70m above waterfall rel. unaltered med. grn - green bedded in massive S.S. + siltst

~ 30m further 080°/40°N poor - or beddy, ~ 30m to str.

② OR9-8-1268m

- top of waterfall (along or EW 1 step fault)
- highly fractured med. grn - green rel. unaltered in medst KQ-89-55A, siltst + f. q. S.S.

1230m ~ 2 way down 040°/55° NW waterfall poor bedding in waterfall

base of waterfall

1170m 1060°/36°NW fair pale & med. green very siltst 55B + f. q. S.S.

- also 2 or 3 thin ls beds
- more small o/c unalt. sed.

then ~ 150m cover part str. junction 1082m to

1078 top of waterfall in cr. of KQ-89-56A pale grn highly sil & alt. rk. @ 19-19% diss py (poor) up

54A