Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

Parliament Buildings
Victoria
British Columbia
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803521

July 5, 1987

Dear Rod,

Here are the photocopies of all your 1960 field notebooks and the related airphotos which you requested from Jim Britton.

We'll see you soon at Sulphurets.

Yours Sincerely.

Dani Aldrick.

R. V. Kirkham — Note Book #7

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OR249 Single outcrop
in good exp. on
other side of Creek.
??? well bedded?
granitic rk. K-209
070°/22°S
migmatic in part
on other side Creek
good exp. - seems
to be a massive
rk. with a fair
number of granitic
sills & dykes.

July 22, 1900 Cloudy & foggy

McTag Extension

Small Photo 2181-58

OR250 on photo there
seems to be an alignment
immediately west of outcrop
- the frags. & cherty bands
in rk are // the alignment
probably foliation 170°/vert ? whether bedding
- This appears to be a congl
or breccia of some sort
- frags. of variable composition
up to '1' in size.
- ave. ~ ½"
- H-210
- Some particles drawn out

others not but matrix seems to have flowed around particles
- some particles appear to be volcanic
- mainly sub rounded
- large outcrop ~300' long

⊙R251 from 250 the same sort of congl. or for 200 - 300'
- Then a light gray green feldspathic appearing rk
- has small phenocrysts ∴ probably volcanics
- massive
- maybe some deformed vesicules
- K-211

⊙R252 from 251 more of light aphanitic feldspathic material
Then another zone of the congl (breccia?) [037°/vert foliation?]

- Then in creek a section of extremely well bedded gray-blue argillite K-212 [070°/57° NW] very good
- some black - more carbonaceous
- some cherty or siliceous beds

N.B. This maybe reason for alignments (argillite weathers quicker & crumbles away)
- There are some carbonized material on some of bedding surfaces (beyond recogn. but probably plants)
- some granular S. S. bands also
- Then on next ridge at ⊙R252 some good massive chert K-213

went up draw with argillite init
then back to camp - everything followed
threw. ?? why congl. seems drawn
out or foliated while arg. fairly fresh.

July 23, 1960 Broken Overcast
Small Photo 2181 58

⊙R253 from Camp (near 250)
seems to be a sequence
of light green aphanitic
vol. ? for ~200-300'
- then good congl. for several
hundred feet (some coarse SS)
- one section of dark argillite
(not very wide) (no att.)

- Then are R253 a massive
band of siliceous light gray blue

I think these are queer Intrusives (89)

argillite which weathers
buff & has a few iron stains
- It forms breccia in places
& has some breccia or
conglomeratic section
with a black argillaceous
matrix (similar to specimen
collected at King Creek)
- K-214 a breccia with
black matrix (not
the same as congl. material)

⊙R254 many iron stained rks
- K-215 typical (diss min
in a chert breccia (maybe siliceous argillite)
on good congl. lens [060/vert] very poor

⊙R255 [155°/63°NE] fair to poor
dragfolds upright

from 254 a series
of drawn of breccias
+ congl.
- breccias mainly (chert)
- congl. - particles up to 1"
and variable in composition
- some beds have large
undeformed chert
nodules others have
them drawn out into
stringers
K-216 matrix of a breccia-congl horizon
K-217 chert or siliceous argillite
odd infrequent band.

OR 256 mainly black
carbonaceous argillite K-219
approaching slate
- some more massive qtzite bands K-218

bedding [NS / 50°W] fair
slatey cleavage [120° / 42°SW] good
dragfold plan view → 60°S E

OR 257 Just past 256 argillite
becomes interbedded with
+ bedded greywacke type
Sandstone K-220
[033° / 85°NW] good
- cross-bedding indicates
tops to NW.
- Then more massive
qtzite material again K-221
? maybe aplite
because seemingly cuts
across structure
- although maybe due
to dragfolding or many
small faults in vicinity

In sandstone - there are remenants of fossils although can't get out or tell there nature.

at ⊙ 257 [030°/65° NW] extremely good

- here cross-bedding extremely good but deceptive Top, NW after several observations

- N.B. after seeing this I would not trust a single occurence

- can't explain cross cutting nature of K-221 unless an intrusive or else possibly although not likely faulting

⊙ K 258 another thick section of carb. argillite & carb. sandstone.

- many many fossils but lks too highly scoured to get out have coll. some which are in bag. Fossil Loc. No 2

- diss. mins. also. [D42°/80° NW]

- Then wide band of of K-222 weathers buff & rusty much like K-221 in nature

- most of argillite is highly fissile

⊙R259 ~400' below
here is start
of sequence of
finely bedded, very
regularly bedded
alternating bed SS.
siltstone & shale
K-223
K-224 Coarser SS. fraction
- weather black & brown
- but is shades of
K- gray on fresh surface
K- 043°/60°SE - at contact
very good,
064/80°SE at ⊙R259
⊙ - I feel these rks would similar
to some near the mine
only not nearly so
highly deformed.

⊙R260 att ½ way good 065°/85°NW
ripple marks indicate upright
- same sequence to here
- some more massive
sandstone
- some small dykes
att at ⊙260 good 080°/82°SE
- some of the bands are limey
- sand may have graded bedding
- at ⊙260 fault up-draw
- rks. are brecciated

⊙ R261
- same seq.
- bluff (on photo) massive
SS. bed only one good
bed of dark matter in it 062°/75°NE
- some intraformational breccia.

⊙ R261 082°/85°SE

current bedding (channels?)
seem to be upside down
- not sure enough to be used.

⊙R262 - Same
088°/76°N
upright drag folds
plunge 75°N

⊙R263
on knob just below
here is end of well
bedded seq.
- in contact with
a very coarse congl.
maybe basal congl.
- has distinctive dark matrix.
K-225
055°/82°NW fair

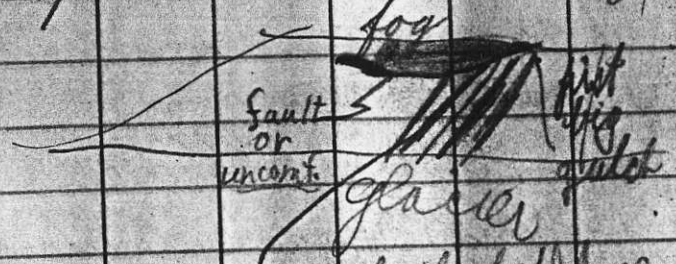
Then ~ half way
up bluff which ⊙263
is on is the start
of a massive + breccia
type rk K-226
- probably volcanics
with flow breccias
- fine grained felsic
- some diss. pyrite
- very massive outcrop

⊙R264 060°/55°NW
- exactly same well
bedded fine SS Siltstone
+ shale as on other
side
K-227
- massive rk. exposed
on lower side of outcrop
- a non-traceable band of augite

porphyry exp in this K-228

⊙R265 same seq
- here bedding
is being broken into
chunks which are being drawn out
$\boxed{\text{030°/74° NW}}$ good
(bedding was vert for
a short period
from ⊙264

on other side of
glacier & further east
from where we ended



same finely bedded seq

⊙R266 same seq.
all thru here
- no sign of massive
SS or augite Porphyry
- augite Porphyry must
be a dyke
good att $\boxed{\text{043°/81° NW}}$

⊙R267 volcanics
- an extremely fresh breccia
(possibly agglomerate)
- frags. ave. 3" across
- very slightly vesicular
- K-229 either augite or
olivine porphyry

⊙R268 ?? sediments above
porphyry (breccia) but
strike would bring them into

- mainly coarse SS.
K - 230
& congl. some arg.
bands [077°/87°NW good

OR 269. good vol porphyritic breccia

OR 270 coarse well bedded
seds. again [062°/80°NW good
- congl + coarse SS.

OR 271 no outcrop from 270
SS. & siltstones
weather buff + some iron stain
- odd argillaceous bed
[073°/vert good.

OR 272 from R 270
mainly siltstones
& shales

- shales at 272
have large fossils
in them
- some seem to be Pecten
- These are fairly
well bedded seds.
but not nearly
so well bedded
as the siltstone
on other side.
These are also more
fissile
- might be equal
th to first argillite
found in day but
probably not
projectable thru
[037°/78°NW] fair

Fossil Locality No. 3

July 24, 1960 Broken overcast looks like nice day

Small Photo A 2181 58

OR 273 from camp have been trying to follow vol - congl. contact but very hard to do same.

- Must have curves.

OR 223 congl.

- some coarse & some shale

- some K-231 & 232

N.B. ? where siliceous argillaceous material or some sort of intrusive they seem to display cross cutting relationships in the few places where contacts were exposed

OR 274 went east away & never saw to much outcrop on way down

- where exposed mainly coarse clastics, Congl & S.S.

- alot of these rks from camp have been sheared & the the pebbles are being destroyed

at 274 K-233.

? as to original nature - rather massive outcrop

∴ frags or crystals or something being drawn out into lens up to 3" long

⊙R275 ~½ way fair atl 168°/30°
- from 274 all congl.
maybe some agglomerate
(ie - one horizon boulders
& pebbles all vol.
& up to a 1½' dia.)
- at 275 many iron
- stained rks. due
to little veinlettes &
to some replacement
fine grained mineralization K-234
- silicification has also occurred
- K-235 country rk
- K-236 at 0255 & further
all congl. seems
to have been replaced
be silica or else it
is a new rk formation
at 275 · 170°/64° NE fair

⊙R276 same highly drawn
out & metasomatized
congl.

⊙R277 still same
~400' below 020°/84° SE
? fair but is it bedding
same place K-237
~10' dyke K120°/vert
good
- it has been sheared
- in congl
- odd phyllitic band
- " band which
maybe aggl. or vol.
breccia - since a
boulders & pebbles
similar & likely vol.

⊙R 278 from 277
same thing
- only much silicification
& metasomatism obscures
original nature of rk.
- odd good congl. lens left
K-238 meta. rk.
- 030°/70°NW fair 2' argillite bed
in K-238

⊙R 279 - highly altered
rk. K-239
foliation dir. 070°/40°NW
- odd pebble or Breccia
frag. still recog.

⊙R 280 same
foliation 023°/48°NW
K-240

⊙R 281 then all of
a sudden
well bedded coarse
Sandstones K-241
023°/56°NW good
- many little particles
in some samples
which maybe obliterate
fossils.

⊙R 282 well bedded sediments
043°/62°NW good
mainly Sl. with
some congl. & some
shale (carbonaceous)
- some of the Ss. is
Carb. & has specks of
pyrite in it
- pebbles & grains a drawn
out slightly

It has been foggy 77-79
are not located
accurately

⊙R283 from ⊙282
most altered massive
SS ~½ way bedding 012°/50°NW
- at 283 good bedding
& slatey clv
bedding 105°/32°NE
cleavage 028°/80°SE
K-242

⊙R284 from ⊙283
a bit of coarse SS -
then Congl. all the
way to 284
150°/24°NE poor bedding
- Congl. has been sheared & silicified

it has lost its
original nature
- shear planes or slatey
cleavage in congl. can
start to look like
bedding
K-243 altered congl.

⊙R285 same congl.
- some boulders up
to 3' in dia
- some of these are
drawn out

⊙R286 no apparent reason
for anomaly except
a little diss. sulphides
in congl. K-244.
- some fine phases are

coming into congl here
- these are like K-231 & 232
- maybe are mylonitic, bands of sheared up congl. no contacts seen (or gradation)

⊙R287 not much exposure from ⊙286
- coarse SS & fine congl interbedded grains highly drawn out
[030°/80° NW] poor
- K-245
- K-246 in Creek maybe mylonite in shear up creek

⊙R288 [065°/55° NW] good
- odd well bedded coarse dark green clastics

- most of rk here is dark & massive
K-247 & K-248 (diss-min)
- massive rk
- appears to be vol
- K-249 clastics well bedded

⊙R289 an iron stained formation
- shape of form would be a large upright dragfold plunging ~25° N
- the bedding last outcrop follows this as you go to west it steepens then dips NW again
- stain same as this morning exactly (same as sp. coll)

(112)

⊙ R290 – highly
cataclastic congl.
in some horizons
pebbles still visible
but not in others
– mostly same rock
from 289
foliation [012°/75° E]

⊙ R291 same sheared
congl.
foliation [007°/83° E]

– from here Loyd &
myself took
alternate roots home
(fairly dir. lines) & found
it all to be sheared
congl.

⊙R424 no outcrops from ⊙423

massive vol. K-365
breccias & flows?

⊙R425 [NS°/62°W] very good
well bedded rks.
Same as described
on other side

IV.B.

∴ I think we
have a large
regular anticline
with axis up
centre of glacier
& plunging slightly
to the north!

- vol. breccia & agglo.
to here - faulting here also

⊙R426 massive
volcanics
breccias? agglo?
K-366 & flows?

⊙R427 [140°/65°NE] good
on well-finely
bedded, carbonaceous
arg. & siltstones
(possibly could
be tuffaceous but
the extensive
carbonaceous matter
suggests sedimentary
processes.

⊙R428 [140°/65°NE] good
Same as ⊙427
exactly

(94) ⊙R 429 [145°/35°NE] good
on some seds.
only more
S.S. some
beds to 6' wide
odd single
band of intercalated
vol. but very
minor

⊙R 430 same seds.
mainly fine S.S.
[110°/74°N] poor
a few vol on
very top of the ridge

⊙R 431 sediment
mainly arg
+ some organic
clastic lms.

(95) (97)
black carbonaceous
some stellate shapes
init probably
some echinoderm
stems R-367
some fine S.S.
[170°/40°W] good

~½ way [145°/70°SW]
good on Seds.

⊙R 432 [120°/80°SW]
fair on seds.

~½ way
⊙432 good small
chevron
type folds
3 of them
exposed.

just below here
large section exposed
dip ~ 60° S.W.
SW [illegible] dragfolds
upright

⊙R433 [115°/42°NE] very good
on S.S. & Arg.
either large fault or
anticline with a
much sheared axis
intervening

⊙R434 no outcrop from ⊙433
appears to be much folding
on ridge top.
[⊙90°/25°N.] good
on interbedded
cyclic Arg. & S.S.
& massive S.S.

much minor faulting
& many small calcite
veinlets

⊙R435 [110°/30°NE] very good
on S.S.
& some congl.
from ⊙434 the rocks
are extremely highly
brecciated & faulted
yet still highly indurated
maybe this brecciation
& flowage of argillaceous
layers was caused
by the volcanism

⊙R436 ???
what think
is vol. intercalated
with seds then
more massive

vol fragmentals
mainly vol breccia
which in part
has undergone
some sedimentary
processes.

K-368, 369 & 370
what I think
constitutes the vol.
portions (most of
these from breccia

⊙R437 [110°/63°N] very good
on large congl.
section on N side
of fault.

There is some faulting
here but on the

ground you cannot
see the movement
as indicated on the
photo.

Aug 22/60 Sunny Light Clouds
Small Photo
B.C. 2180:108

⊙R438
[120°/60°NE] very good
on same cyclic seds
with the odd andesitic
sill.

⊙R439 [115°/65°NE] very good
on same cyclic seds
extremely well bedded
hard to get close to outcrop because

of large canyon [illegible]

OR440 [072°/65°NW] very good on cyclic seds. mainly S.S. odd large bed of S.S.

no outcrop seen from ⊙439 going extremely tough it has taken us over 3 hours steady going to get here.

OR441 extremely good cyclic seds. [073°/55°NW] very good

creek run down bedding.

— same as cyclic seds. west of here near big glacier

OR442 mainly S.S. exposed in odd single small outcrop some finely bedded float containing some arg. [080°/55°NW] possible bedding surface but ??

~½ way (in creek) [090°/45°N] all S.S. good on S.S

OR443 Ls. well bedd
in part.
some arg.
[061°/46°N] good.

Creek runs along bedding

OR444
[117°/58°NE] good
interbedded arg, Silt
& S.S.
in cyclic fashion,
some large S.S. beds

OR445 volcanics K-371 fairly typical
S. S. to these
- massive.
- they seem to form
all the knoll

- mainly porphyry
but think these are
perhaps crystal tuffs.

OR446 vol.
& where exposed
all vol. to pel.
- some sort of crystal
tuffs material
some vesicular porphyritic
flows K-372
very typical

OR447
[100°/65°N] good
in cyclic beds
with odd 20-50'
sill K-373

⊙ R 448 [095°/65°N] good
on same seds.
- a fair number
of porphyry sills
have been exposed
to here.

⊙ R 449 [115°/55°N] good
on well bedded
seds. somewhat
cyclic - but
mainly fine
S.S.

Book III

R. V. Kirkham — Note Book #3

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Monday McTag ①

Foggy

July 25, 1960

Small Photo A2181 58

⊙ R292 from camp mainly sheared congl & coarse clastics some finer phases

at ⊙292 [115°/50° NE] fair to poor on Arg. bed.

⊙ R293 K-250 massive rk from 292

- looks like siliceous carb argillite but I guest. this

- silica possibly derived by replacem

- rk. mass. next to glacier below here maybe equalivalent to that just west of 259

②

⊙R294 from 293 some
breccia with a limey
matrix, fissile & massive
argillite & some congl.
but ? as to original
nature of all these rks.
no att. It appears
as bedding here is
highly contored
some iron stained rks.
due to pyrite in slittle stringers
& replacements.
- max width exp. is 10'
but not all mineralized
- some pyrite, odd speck
of galena & a white
mineral of the nature
of arsenopyrite
K-251

③

⊙R295 no outcrop from 294
here mainly S.S.
some Shale & Congl.
bedded good but
becoming faint
$\boxed{085° / 65° N}$

⊙R296 outcrop further
down creek & on other
side mainly shale
or arg. ~100' bed
of carb. Arg
intl

- at ⊙296 massive
altered coarse Clastic
(ie Congl & coarse S.S. K-252

⊙R297 ~½ way well
bedded - cross bedded
fairly fresh Congl. & Sandstone

④

033°/vert/ fair

x-beds tops NW

- had fossils in it but too hard to get out

at ⊙ 297 some SS.

& cong

- poor 125°/80° SW bedding

- appears to be the highly silicified ?? seds

- has odd little veinlette of mineral in it but very infrequent. K-

① - can't get streak

- & doesn't affect compass

- also some pyrite

⊙ R 298 some altered sediments ??

odd twisted argillaceous bed. K-254

⑤

- it also seems silicified

115°/80° NE poor

⊙ R 299 good coarse congl. with odd twisted S.S. bed. 043°/82° SE poor

- odd veinlette of pyrite

⊙ R 300

~½ 060°/75° NW fair on what seem to be small flows & intercalated sediment to the porphyritic flow breccia ~10' wide

K-255

- after this some congl. or agglomerate? frags drawn out & massive green rk. K-256

at picket 7+05

⊙R 301 from 300 vol + congl
for few hundred feet
Then good flow
Breccia of the Porphyry
K-257 matrix
at picket 0+00
att. on what looks
like flow of flow breccia
[085°/67°N] fair to good

⊙R 302
~½ way vol. in contact
with highly indurated
well (thin) bedded seds
- mainly shale & siltstone
[037°/82°SE] good
then wide band of
massive rk K-258
which maybe

S. S. or volcanics
- appears recryst. or even granitic
at ⊙R 302 highly
indurated cyclo-
seds extremely
well bedded [058°/88°NW]
mainly S. S & siltstone
K-259
& some shale - some
carbonaceous horizons

⊙R 303 Seds to here more shale
[080°/80°N] good
then more volcanics
mainly flow breccia K-260
- att on flow good [076°/83°NW

⊙R 304 end of flow breccia
then start of ???

faintly but distinctly bedded
regular & fine & doesn't
look like flow banding
[057°/87°NW]
- This is interbedded
with K-261 which
could be a congl.
but look more like
beds ½" to 1' flow breccia
- The other rk.
K-262 appears to
be a Sl. but
maybe is a tuff.

⊙R305 these grade into good
sediments (some carb. arg)
- then did see rk for quite
- then at ⊙305 good
seds. some of cyclical

nature K-263
[065°/84°SE] good.
- it is very foggy but
sediments seem to continue
for aways

⊙R306 Vol.
& has more mystery
rks. - I think they
might be pyroclastics
from agglo. & br. to tuff

⊙R307 cyclo seds
mainly Sandstone
& siltstone
[085°/80°NW] good

⊙R308 foggy hard to locate
- some vol. br. porphyry
as this morning

⊙R309 accurate location
same vol. br - porph.

⊙R310 out of vol into
massive K-264
has bedding (faint) on
one side 064°/83°NW
- maybe vol. or poor
massive S.S.

⊙R311 from a good
series of well bedded
dark greywacke such
as K-264 & good
coarse boulder
Congl. with the odd
flow near the top
~½ way 050°/70°NW
good

at ⊙311 good
cyclic sed
mainly SS & Siltstone
with some large
congl bed
067°/68°NW good

⊙R312 070°/47°SE fair
from 311 massive
bed? ~100' wide I
think was congl. or coarse
- then good cyclic seds
SS & Silt. then mostly
Shale with some
clastic then fossiliferous
shales & SS
- Then shale
- Then SS.
- Then Shale

} at ⊙312 maybe plunging
[illegible] to N[illegible]

(12) Bruce Jack Lake

Friday
July 29, 1960

Photographic Day (So far not a cloud in the sky)

Small Photo BC 2180-87

①R313 On uppermost end of showing (will coll. sample when do in detail)
- completely covered with iron stains so can't see nature of rk. until break chunks off.
- diss pyrite throughout
- completely altered to carbonate & perhaps a small % of sericite & silica
(Yesterday saw parts of showing which

(13)

appeared to be coarse clastic probably pyroclastic (frags. up to 10 mm)
- much purple tuffaceous boulders in morraine
- So may have similarity to Pioneer

①R314 and small outcrops prior to this
- good volcanic breccia with tuffaceous matrix & minor amts. tuff.
some frags up to 1' av - 2-3"
- frags mainly vol. odd one pyroclastic [illegible]

in some case
weather with a
purple cast which
would give rise to
purple breccia.
- K-265 matrix of breccia
- appears recrypt.
[155°/34°NE] fair to poor

⊙ R315 [035°/45°SE] fair to poor
dragfold Tops SE
plunge to N but ? how much
- some vol. Br. from ⊙314
some purple Tuff horizons
& some green coloured breccia
- odd qtz. stringer up to
an inch wide with
a small % of diss
min.

K-266 good some
of breccia with
- tuffaceous matrix
- some frags up to 6" here

[145°/045°SW] very good regular

~ 300' up outcrop
from ⊙ 315

⊙R316 from ⊙ 315
There is a series
of small qtz veins
att. [~130°/45°NE]
- They are in pyroclastics
with perhaps the
odd flow
- some pyroclastics have
jasper matrix K-267
up to 2' frags. K-268

qtz veins - max 3'
- ave 3"-4"
- usually far apart
- at ⊙316 great
conc. - all close
together
- coarsely crystalline
- some calcite
- mins. sparse
- some chloritic patches
- K-269
- pinch & swell

⊙R317 altered massive
feld. porph. (epidotized)
K-270
- probably volcano
- continues for a short
dist.
- Then a good coarse

fragmental agglo
or flow breccia
K-271 & K-272 (selvedge on 2 of 1)
fragments,
& K-273 matrix

⊙R318 - at ⊙R318 many
small qtz. epid
veins up to 3' wide
K-274
irregular - pinch & swell

⊙R 319 good well bedded
tuffs, breccias & agglo
120°/35° SW
- exactly same as
those at ⊙R215
K-275

N.B. - I the red color in some of

tuffs & breccias is
finely divided hematite

~ ½ way 060°/63°SE good

⊙ R320
- some well
bed pyroclastics
- parts of it
may have been
worked by water
at 320 020°/68° SE good

⊙ R321 more vol.
breccia &
some light gray
amg & ves. (in part only)
andesitic flows
K-276

rks highly epidotized
here (every fracture
surface covered
with small ep. xtls)

⊙ R322 - extremely fine
but well bedded
(regular) large sequence
of tuffs K-277
040°/56°NW good

⊙ R323 same
082°/26°N good

⊙ R324 175°/84°W fair
end of fine tuffs
& start of some
breccias

⊙R 325 - I think all
coarse pyroclastics
but rks near ⊙325
highly sheared &
original nature
destroyed K-278
at ⊙325 some iron
stained rks which
seem to run in
a band to showing
- maybe shear zone

⊙R 326 once you cross
creek most of rks.
completely altered
- odd patch recogn
as Tuff
- odd small carbonate vein
- some iron stained some not

K-279 sample of altered rk

⊙R 327 from ⊙326
all pyritized
- all iron stained
except for odd patch
- has many small
qtz. stringers
- some which
bear minerals
- some barren appearing
- mineralization also
comes in in little
pockets beside qtz
stringers - max
width 3"
- in many cases
qtz. veins form stock
work & form high % of rk.

K-280 & K-281 - best sample
- can't get anything
but metallic streak
- some galena seen
in some specimens

July 30/60 Sunny
Small Photo 2180-87

⊙R328 Camp. K-282 SS? appears
to sheared slightly altered sed?

⊙R329 from 328
highly altered rks.
mainly silicified, carbonatized
& pyritized
- some qtz. veins
but very barren
appearing

- one med. gray diabase
dyke K-283 (near ⊙329
~6' wide.
- a start of out before
⊙329 highly sheared
light gray rk
K-284.
I think it is sheared
tuff.
[006°/vert] fair but questionable

⊙R330 [005°/83°W] fine + fair
from ⊙329 grade
out of coarse
tuff into either fine
tuff or fine Sandstone
sediments K-285 + K-286
these rks are not
sheared very much

R 331 [165°/89° SW]
good dragfolds
tops NE ∴ beds
upside down
plunge 92° SE
very good
- Disharmonic dragfolds
- in well bedded
carbonaceous, argillaceous
limestone K-287
(only 3' wide
mainly argillaceous
rk in vicinity
grade from Sandstone

- N.B. many small
folds exposed in
Creek from Lake.

O R 332 out of seds
(K-288) back into sheared
Tuff & Vol. B. (some not sheared)

- similar to sheared Tuff
before (only saw at a dist. ∴ won't map)

O R 333 band of well
bedded sediments
go thru there

N.B. Impossible to
cross creek
& Impossible to
get around on
glacier ∴ going
back above
Ice falls

O R 334 appears to be
massive outcrop
of more sheared
tuff & breccia but ??

on closer inspection
definitely altered
breccia & tuff
carbonatized & pyritized
in part.

⊙ R 335 still can't
cross glaze
- all good coarse
vol. breccia
- some high pyritized
but not iron stained
K-284 matrix

⊙ R 336 K-290
⊙ R 337 K-291
- a questionable sequence
I think the majority
is a crystal tuff

with a fair out
of breccia frags K 3"
with tuffaceous
matrix
- some brecciated
argillite bands
& some S. S. & Congl.
appearing material

⊙ R 338
K-292 - vol breccia
- same sort of altered
tuff 33 to 100-200'
before 338 then coarse
breccia frags up 2'
- where bedding was
seen it was highly
broken up & in small
sections.

⊙ R 339 out of Breccia
into altered
flows, tuff & breccia ??
K-293 K-294
- mud on obscures its
structural nature

⊙ R 340 K-295
- altered pyritized
rk - not much iron
staining (??? possibly odd
grain could be chalco.)
- some remnants
of frags left ∴
probably originally
Tuff & Breccia

⊙ R 341 seems to same
altered Tuff & some
breccia (appears very minor)

K-296
- pyrite, carbonate & sericite
visible
- a little iron staining

⊙ R 342 same sort of altered
only silicification also
- The rks are covered
with extensive
iron stain
- no mineralized qz
veins noticed.

July 31/60 Broken Overcast

Tape & Compass - survey of showing 100'=1"

Start at uppermost south easterly corner

Base line bearing 132°

offsets every ± 50'

31' to 41' snow

K-297 +11'

K-298 +63'

K-299 +100' silicification

- Rock as whole is covered by thick iron stains & can't

see megascopic structural nature at all

most of rk. has been highly carbonatized & pyritized & silicified in patches

silicification increases near 100'

- there are only the odd ½" qtz. stringers prior to this.

L - 50' SW +85'
NE +5'

- all some altered carb.-pyritized rk.
- odd small pyrite veins

L - 100' SW +145'
NE +15'

same altered rk.

100' – 200'
same

L – 1+50' + 20' NE
+90' SW
same rk.
20' snow
then 5' rk

L – 2+00' 90' SW
20' NE
2' to 63' SW snow
K-300 + 84' SW
same rk.

235' to 305' snow
same rk.
less qtz stringers

L-2+50' 0-45' SW snow
45-86' rk. same

L 3+00 0-35' snow
SW 35-95' rk
NE – 35'
same rk some small
barren qtz stringers to
4" in width
K-301 85' SW same
silica
init

3+00 – 4+00 same rk.

L-3+50 25' NE
0-48' rk
same. 48-85' snow
tip of rk
SW

L-4+00 15' NE
66' SW
K-302 – 27' SW weather slightly different

otherwise relatively same altered rk.

4+00 to 5+00 same rk.

4+13' to 4+70' snow

L 4+50. 0-23' snow NE
3' qtz vein barren
23-43' rk.

0-42' snow SW
K-303 54' SW 42'-97' rk
same altered rk.
some 3" qtz stringers
pinch & swell.

L 5+00 32'-60' snow
60'-106' rk. S.W.

130°/88° SW +20' SW start of a series of qtz veins here ~1" wide in 50' up to 1' wide

vein (mostly barren)
K-304
18" to 3' qtz vein 34' NE to snow

120°/83° SW series of qtz veins
3" to 3' wide split & join

pinch & swell
form ~50' of rk over 10' width

5+97 ← 3' qtz vein the starts to pinch out

L 5+50 97' SW
34' K-305 1' qtz vein
20' NE
5' NE 3' qtz vein

L 6+00 120' SW
67' qtz veins come thru only as very small stringers 1/2 in
37' NE

- all the same rock.
pyritized altered rk.
some qtz. veins & silica repl.

by 6+50 side lines
both vein systems
pinch out to just a
series of small
stringers thru out
rk.

6+55 to 7+00 snow

L 6+50 140' SW
10' NE

L 7+00 175' SW 0+10' snow
130' NE
0-85' snow
85-130' rk

K-306 100' SW
same altered rk.
only much more silica
init

L - 7+50 176' SW
0-32' snow

125' NE 0-55' snow
same altered rk
some silica init

L-8+00 136' NE
129-136' cutting
across 3' qtz
vein fair % of mins
init (~~[illegible]~~ 15%) spotty
105°/77°N
- continues under the
snow
- minerals seen are
galena, tetrahedrite
pyrite & ~~[illegible]~~ chalco
If high in silver there
are probably others
- best samples put
sep. bag

K-307 wall rk (footwall)

210' SW
0+32' snow
Same altered rk

(38)

grouped would give a width of 2-3' still mineralized in part only.

110' SW
0'-10' NR
10'-67' snow
67-110' outcrop covered by moraine

9+00 to 10+00 & on side Lines most of it covered by thin layer of moraine

L-9+50 35' SW
130' NE
(mostly moraine

(39)

8+88 end of snow

L-8+50 SW 0-43' snow
216' then 30' no angle outcrop

NE 0-28' snow
140' mineralized
at 115' bit qtz vein 0-1½' wide
in centre of shear zone
fault? quartz offset vein 4'
then 10' (14' in all
vein still mineralized
but smaller in size
(pinches & swells.

L-9+00 115' NE
76' qtz vein
first of series
of 3" stringers

11+00 snow starts

L-10+00 130' NE
50' SW

10+22 a series 125°/84° NE gen. att.
of small qtz
veins cut base
line 4" wide
still small
ants of mineralization

L-10+50 170' NE
partly covered
by moraine
84' SW

L-11+00 142' SW
around 80-70'
many small
qtz veins
only sparsely mineralized
120' NE
partly covered by moraine
0-26' snow

at + 110' network of
qtz veins ~695°/vert
after much hammering
seem to be barren
K-308

11+00 to 12+00
all snow

L-11+50
100' NE tip of
outcrop
0-110' snow
195' SW
0-20' snow
~100' network of qtz
stringer barren
barren qtz at 173' + 147'

L-12+00

215' SW

0-34' snow

K-309 50'

after 125' many small qtz. stringers a few feet apart

NE 0-70' snow

70-125' rk

K-310

out to point 225'

more cherty type of silica replacement

some qtz. stringers

12+00 to 13+00 on snow.

L-12+50

110' NE

0+60' snow.

K-311 +70'

highly silicified rk.

some qtz stringers

230' SW

0-28' snow

-28' start of many dense masses of qtz stringers to end of line where highly pyritized & shear

L-13+00

110' NE

0-37' snow

at +75' K-312

108°/78°NE

what seems to be a fairly large shear zone highly pyritized & silicified & others.

215' SW

0-24' snow

+47' start of many closely packed qtz stringers barren

110°/76°NE

gen. att.

much qtz & many
stringers from here
to end of line K-313
at +795'

13+00 — 14+00 snow

no 13+50

L-14+00 0-15' NE
rk
15'-40' snow
40-65' rk.
93' SW
0-77' snow
77-93' rk. end.

⊙R 343 well [illegible]
SS K-314 [illegible]
good [030° / vert]
but maybe twisted by
faulting

some iron stained area

⊙R 344. many
barren qtz
veins same as in
highly altered zone
gen att [090° / 70°N]
av. 1' wide

N.B. In part cut Limestone
same appearing material
shows up in altered
area

slightly altered
Tuff
some pyroclastic K-315

even amt of sed + pyrocl to
camp

(46)

still question whether the good alignment is a fault or not.
- if is qtz veins later.
- if isn't sediment would constitute high % of altered rk.
- limey material evidence to suggest this is so.

Sat
Aug. 6/60
Small 2180:87

Foggy (47)
Overcast

⊙R345 just north of camp.
finely well bedded rks. K-316 [113°/37°NE] good
- recryst. & altered sediments of or very fine pyroclastics

⊙R346 ~½ way [105°/27°NE] good
at ⊙346 [135°/20°NE] good
- same finely bedded rks.
- most are aphanitic & seem limey (some silica)
some x-bedded siltstone
Tops NE fair to poor

⊙R347 ~½ way some argillite & still some seds.
[140°/76°NE] good

then start to grade
into more massive
rks with same general
composition & texture
- then massive sheared
vol. breccia with extensive
tuffaceous matrix (at ⊙ 347)
frags. up to (3")
(possibly a conge) average (½ - ¼")
on tuff [160°/Vert.] poor

⊙ R 348 in "alignment"
~ for ~ 200' before
entering gully - highly
altered rks. much
silicification & pyritization
K - 317 although
much of it is slightly
diff. a lot is same

as found on
showing (July 31)
- ~ ⅓ way one 15' barren qtz vein [020°/82°]
- sheared pyroclastics here
tuff & fine very breccia K - 318

⊙ R 349 still sheared pyroclastics
K - 319
- altered zones also
on this side of alignment
but "patchy" arrangement
- maybe on offshot structure (faults)

⊙ R 350 same sheared pyroclastics
- some fairly fresh volcanic
breccia (not as highly sheared)
- at ⊙ 350 a fairly good
alignment

⊙ R 351 same altered & sheared
volcanics?
- some qtz veins

⊙ R 352 in alignment

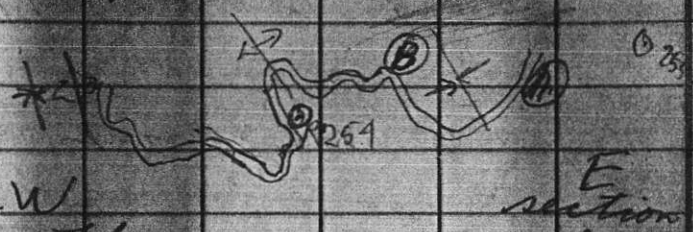
alteration zone to east several hundred feet wide

- in alignment there are some highly fractured argillaceous bands. & some massive K-320 at ⊙ 352 (just west of alignment appears to be a altered clastic rk.

⊙ R 353 Contact between vol. & sediments [005°/74°W] good (argillite & interbedded sandstone (& siltstone)

- it is mainly fine grained S.S. K-321

⊙ R 354 extremely deformed sediments in Creek Canyon



These are capped by a massive rk which is exposed as the outcrops on the hillside above the creek. K-322

- The seds are of a cyclic nature inbedded SS & shales K-323 K-324

- There is much faulting & folding exposed

at ⊙ 354 [025°/80° SE]
dragfolds upsided
plunging 49° N
others measured
at 18° & 37° N

(A) ~ ½ 043°/82° NW
(B) ~ ¾ 015°/67° E

ripple marked & X bedded

⊙ R 355 contact between
cyclic seds & ??
massive rk K-325
~ att poor [030°/65° NW]
it twists around
- altered & (sheared) volcanics tuff

- N.B. structure I
think is very
complicated & it is

not just a
simple band of
seds going thru the
country.

⊙ R 356 discontinuous
outcrop from ⊙ 355
~ ½ [020°/30° NW] fair on S.S. & some arg

at ⊙ 356 seds [120°/50° NE] good on S.S. & some Arg

Then massive
feldspar porphyry K-326
some laths of plag.

⊙ R 357 out of porphyry intrusive
& seds. & into
Volcanics? K-327, 328 & 329

MAG.

⊙R358 massive rks
vol ? no
contacts or atl
K-330 + 331 hb. visible
- maybe fine fragmentals
& flows

Thur
Aug. 11/60

McTagg Extension

small Photo 2180 94

Broken Overcast
Moved Camp

⊙R359 K-332
- massive rk.
- ether S. S. or (Crystal (tuff) horizon
likely not very
wide
- massive outcrop.
- some frags up
to 3" init.
- these frags are
usually argillaceous

a bit further interbedded
with finely bedded
black argillite
158°/44°NE good

⊙R360 feldspar (altered to chlorite) hornblende porphyry K-333

N.B. - probable reason for anomaly

- To here mainly S.S. & Siltstone with some small argillite (relatively same att.

⊙R361 still porphyry but somewhat diff. in nature
- fewer feld phenocrysts
- some have up to 20% good euhedral hb. phen.

others, the majority is like K-334 which is darker finer grained & has only the odd feld. lath.
- some of the finer phases seem to be sheared rk.

⊙R362 feld. porph.
- fresh - fine grained & abundant phenocrysts from ⊙361 to ⊙362 some coarse fresh porph. & some dark sheared porph.

⊙R363 contact not exp. some argillaceous seds. then a breccia or congl.

K-335
- frags up to 3"
- vol. of arg. frags seen
- highly decrypt.

⊙ R364 flows, flow breccia K-336
- frag. breccias
& intercalated sediments
[150°/38° NE] good
arg & siltstones
& fossiliferous lms.
(small brach shells)
in small lens.
(distinct but too poor to coll.)
- N.B. very poor discontinuous
exp. in this area.

Aug. 12/60 Thick fog

Small Photo 2180:94 hard to locate didn't go out until 11:00

⊙R365 from ⊙359 same
S.S (or tuff) & some Arg. & Silts.
at ⊙365 fresh, coarse
feldspar, hbr. porphyry
same as K-333
too foggy to see
any direction or att.
[125°/54° NE] good on
seds. just past ~200' ⊙365
same S.S. type Seds
no Idea which way
porphyry goes

⊙R366 fine S.S.
& Siltstone & some Argillite

finely bedded [110°/54°NE] good
- all are
black & carbonaceous
then another f.p.
dyke or sill
~50' 100' wide then massive
fine S.S. again exp.
only for short distance
- no exp. to ⊙ 367

⊙R367 cyclic fine
S.S. & siltstone
some shale
single outcrop
[100°/54°N] good

⊙R368 good cyclic
seds. [110°/65° NE]

no exp. from 367

~½ way [120°/64°NE] very good
- coarse S.S. & some
congl. interbedded
with cyclic seds
- some mud balls?
ripple marks
X-channel bedding
no tops det.
good graded bedding
Tops NE

⊙R369 [120°/63°NE] very good

same well bedded
congl & S.S. interbedded
with a few cyclic
seds.

(62)

K-337 well bedded
S.S. & nothing
else but.

to ⊙ 370
many small
faults & some
small (3-4') feld.
porph. dykes
& sills
back in cyclic-sed.

⊙R 370 a maze of
feld. porph dykes
some 10's of feet
across much
faulting & fracturing

(63)

seems to have
accompanied their
emplacement.
(or vice-emplacement)
- there are some
cyclic sed. xenoliths
& blocks left
intervening

⊙R 371 no exposure
from 370 (morraine)
160°/63°NE very good
cyclic sed. some
more massive
S.S.

⊙R 372 156°/45°NE fair but only general
- many contortions
- extremely highly sheared &

fractured ck (cyclic sed
with some highly
sheared feld. porphyry

~½ way [167°/52° NE] good
on cyclic seds.
these are interbedded
with more massive
S.S.
(maybe some volcanics
+ fine tuff near 373
but too highly fractured
to tell.)
- some fair size highly sheared feld
porph. bodies
up to 100' in width

⊙ R373
[160°/20° NE] fair
on west side
of ridge

[100°/42° NE] fair
on
east
side of ridge

(maybe some complicated
structure here but
not obvious)
likely small fault
- Mostly fairly large
beds of sandstone
very fossiliferous
Fossil Locality #6
- some conglomerate
+ maybe some
very coarse volcanic
breccia
- ammonites
- pelecypods
- gastropods.

some
limey
horizons

#6 fossil loc

⊙ R374 ~½ way | NS/75°E
fair

Volcanics
mainly coarse vol
breccia K-338 frag. / porphyritic K-339-340
flows some tuffs
- some copper K-341
stained rks. in separate bag just
past ½-way
believe it or not
but the malachite
seems assoc. with
cuprite. (could most anything but saw in 2 other places)

⊙ R375 volcanics
breccia & flows
feld. [illegible]
which so similar
to that near

camp & which
is definitely volcanic
here & dark grn flows
K-342 K-343

⊙ R376 volcanics
flow & breccia
K-344

⊙ R377 volcanic breccia
some tuff.

⊙ R378 volcanic flow
pyritized
- in outcrop
has feld. phen.
scattered throughout
K-345

(68) Aug. 13/60 Overcast

Small Photo
Z180-94

OR 379 Volcanics
- some altered
K-346 ~½ 500' 600' west of ⊙379
- black mineral? rutile?
- at ⊙379 single band of argillite
- breccia, andesitic porph flows
- some Tuff

OR 380 Sediments
bedded S.S & Argillite & massive S.S. (may have some poor fossils in it) K-347
143°/52°NE fair

(69)

OR 381 from ⊙381
massive congl.
K-348 (typical)
- right at ⊙381
the congl. has been completely silicified the pebbles leaving cherty spheres.
130°/54°NE good
on bedded S.S in contact with congl.
- some brecciated cherty beds

ammonite seen here
immediately into cyclic siltstones & black argillite
some fine sandstone
extremely well bedded
~½ way 130°/47°NE

OR382 no exp. from 381 but many large color bands of moraine indicating a large sequence of black argillite.

at OR382 good black argillite some belemnites

728°/40°NE good

OR383 140°/46°NE very good

well bedded sandstones & thin argillite bands - many argillite flags

in S.S. forming intraformational breccias

OR384 140°/45°NE good

massive bedded sandstone (If positive this is massive S.S.!! K-349)

OR385 Sandstone some outcrops too weedy to get at.

OR386 Sandstone

⊙ R387 exposure is poor along this ridge
— S.S. – Argillite contact
bedding [105°/70°N] good
interbedded S.S. & Argillite

⊙ R388 mainly highly sheared Argillite
[070°/90°N] fair to poor

~½ way [065°/67°NW] good
fair on argillite & some fine S.S.

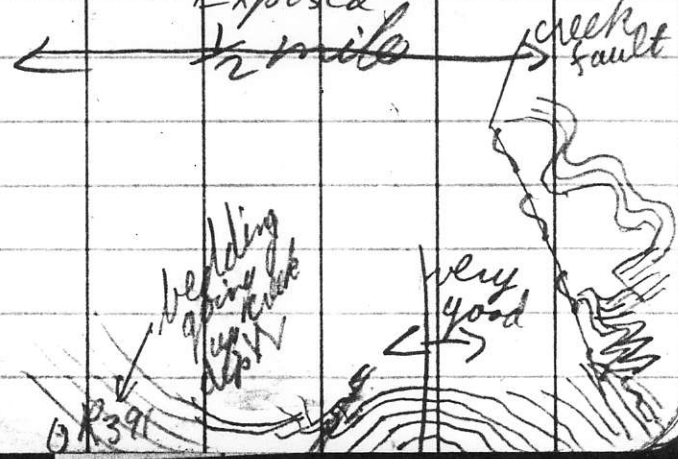
⊙ R389 [055°/60°NW] good
S.S. & argillite in less

amt.
— some small qtz. vein

~½ way good on S.S. & Arg.
[055°/85°NW]

⊙ R390 [025°/72°NW] good
on S.S. & Arg ~3" to 1' beds.

N.B.
On other side of valley there is ~½ mile of Section Exposed



(74) ⊙R391 [126° / 55°W] fair to good

mainly argillite
some Sandstone
in 3' beds
excellent structure
except raining
& very foggy at this
moment!

⊙R392 [095° / 65°N] very good

S.S. & Argillite
interbedded
beds 10's of feet
wide
∴ S.S. might be
only thing exp. 487
back on ridge 386

~½ way [125° / 7° NE] (75)
very good
S.S.
& Argillite in
fairly large bands

⊙R393 same
only here some
argillite bands
up to 50 & even
100' wide with
much faulting &
contortion this
is likely indication
of bedding plane
slips
[085° / 45°N] fair to poor
concretions with
~~marcasite~~ pyrite coatings

(76) OR 394 in corner
(105°/65° N) very good
cyclic S.S.
& arg.
1' beds
these only go for
~100'
then massive
S.S. for ~300'
then black argillite
to ⊙ 395
OR 395 fault in
black argillite
with highly
silicified (some pyrite)
rk on West
side of fault.

(77) OR 396 from 395
highly sheared
& faulted & silicified
congl. K-350

OR 397 volcanics
K-351 & 352

OR 398 (125°/85° NE) good
on bedded Tuffs.
good vol. breccia
to here.
then good feld porph.
3-5% feld phen
large

(78) Tues
August 16/60
Small Photo 2180-94

Foggy
Overcast
Blub, Blub, Blub

⊙ R399
[120°/46°NE] good
on well bedded
Sandstones
- mostly fine grained
- some are slightly
cyclic in nature

⊙ R400 Some seds.
Some argillite
& siltstone
[120°/70°NE] good

(79)

⊙ R401 sediments
with perhaps the
odd band of vol.
- mainly S.S. with
some highly
contorted argillite
(faulting

⊙ R402 volcanics
- breccia &
porph. K-353
- highly faulted.
K-354 massive rk.
few 100' feet past
R402
- odd band of arg. init
[160°/40°NE] good

~ ½ way [690°/80°W]
good on bedded arg.

OR 403 interbedded
S. S. & arg
but mainly arg
140°/68°NE good
slatey clv. 095°/60°N
~ same on last
att.

010°/70°NW
good ~100'
further
don't know what
abrupt change is
due to here
mainly S. S. some
arg

~½ way 015°/77°W
good
interbedded Arg. & S. S

in large bed
from here to OR 404
mainly arg

OR 404 arg
very slatey
[illegible]
105°/70°[illegible] good
slatey clv
090°/15°N good
bedding

OR 405 ~½ way
055°/70°SE
good
arg & S. S.

Arg & S. S. but mainly
S. S. finely bedded

massive
somewhat cyclic
in part

⊙ R 406 [110°/70° N] fair
at 405 well developed
clv.
maybe anticline
here with axis
between ⊙405 & 404
closer to 405
at ⊙406 S.S. & Arg.

~½ way [147°/60° NE] good
mainly S.S.

⊙ R 407 mainly
massive S.S.

some bedded
argillite & siltstone
[065°/82° NW] fair

⊙ R 408 [125°/53° NE] good
cyclic type
S.S., Siltstone, & Arg.

Prior to this mainly
S.S. - some Arg.
& Congl. K-355

⊙ R 409 bedded S.S.
[090°/47° N] fair

~½ way [160°/80° SW
S.S. good

[illegible]

⊙R410 [130°/84° NE
very good
S.S. & Arg.

in alignment
bedding 11 it
∴ 085°/60°N
good deep gulch
— on line with
fault seen the
other day

⊙R411 bedding good
with abrupt
changes

eg [055°/80° NW
& [110°/55°N]
in faulting ??
S.S. & Arg. (very slatey

~½ way [075°/60°N] fair

⊙R412 [080°/65°N]
fair
S.S. & Arg.
Mainly large
S.S. beds.

⊙R413 [115°/vert poor
strike good
Arg. in some
contact with Cong.

there are 2 good
gulches [illegible]
faults sprg'd [illegible]
S.S. & Arg. to here

⊙ R414 good breccia
& vol.
some porphyry K-358
probably fragmental
after congl. good gulch
then vol. ??
massive rk. K-356 & K-357
S.S. like in nature
like this morning

⊙ R415 — good
vol. breccia
some with K-359
tuffaceous matrix

only feld. porph
is as fragmental

Aug. 17/60 Rainy
Packed Camp down
to tree line below
glacier (west)
— most of way cylic
seds. with odd
feld. porphyry sill
— we're camp on
one of these sills
now which seems
to run right back
to just below our
previous camp
all cylic seds.
regularly dip to NE
— (maybe in creek just above discount)

cyclic seds also go to post
below our other camp

⊙416 here it is a hb porphyry
probably andesitic in comp.
- bedding & sill [100°/62°N]
hb po sill K-360 very good

Aug. 21/60 Spring
Small Photo" Broken Overcast
BC 2180-108

⊙R 417 [095°/42°N] good
congl. & coarse
S.S. - cyclic seds
on other side
of creek
- in places it is a
boulder congl.

⊙R418 Same S.S.
& Congl.
att. ~ same
(but no good att. seen)

⊙R419 small single
outcrop no exp.
from ⊙R418
- here cliff to steep
to get down
∴ going along
this ridge.
- S. S. & some arg. breccia
with limey matrix
(no att.)

⊙R 420 no outcrop from 419
- volcanics
breccias, tuffs & flows
K-361

(90)

[080°/55°N] fair to poor on bedded Tuffs & Breccias

⊙R421 extremely well bedded rks. K-362 [110°/74°N] very good.

- I think they are well bedded tuffs grading into sediments - ie: water lain tuffs some arg. & S.S. & some good flows (brecciated) K-363

⊙R422 massive vol. flows & breccia K-364

(91)

⊙R423 [090°/75°NW] fair bedded pyroclastics & some carbonaceous beds which appear sedimentary many small faults & calcite veinlets it might be about contact between well bedded rks & massive vol. on other side

N.B. - there are bedded rks with very flat dip to N on top of this ridge could be congl. & S.S. but ??? 417 to 419

R. V. Kirkham
1960 Notes
Book 10?

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①

Aug 30/60 Treaty Creek Sunny

B.C. 2180:97

⊙R450

050°/52°NW good
sheared & slightly
altered rks
- mainly congl.
K-374

same as ⊙R368 only sheared & altered

little agglo.
att. taken on
1' band of cyclic
seds. some 3"-4"
beds of arg.
- pyritized zones
to 10" wide K-375
- some of congl.
carbonatized & sericitized
K-376

②

⊙451 from ⊙450
morraine no
outcrop

⊙451 [120°/45°E] fair
on altered finely bedded
rk
either originally
tuffs or fine S.S.
K-377
- float with tetra?
roll. here.

- some arg.
with 10-15% pyrite init (good cubes)

~200' further
[185°/40°W] fair

③

⊙452 K-378
epidote ? vol. or intr.
altered rk. assoc.
with it pyritized
up to 15-20%
some vol. breccia
but not well
exposed I think
K-378 is vol.

⊙R453 from ⊙452
diorite of gabbro
intrusive
similar to what
I thought was
vol. K-379

at ⊙453 iron stained
rk. completely
K-380 altered usually
10% pyrite
- one massive vein
1' wide K-381 matrix
right on corner good vol. br.

(4)

there are also quite a few shears

⊙R454 altered & slightly sheared good vol. breccia K-382 & 383 mainly matrix frags to 3"

⊙R455 mainly breccia from ⊙454 some altered some fresh odd tuff & flow band at ⊙455

⊙R456 no outcrop from 455 at ⊙456 good fresh vol. breccia iron staining on ridge above

(5)

⊙R457 feld porph large albite xtls scattered K-384 thru out outcrop up to 3/4" in length - great large iron stained area above this but hard to get at porph only goes for ~ 100' then good vol. breccia again

⊙R458 volcanic - fair amt. of purple tuff - mainly tuffs & massive vol. - rocks somewhat similar to some of Bruce Jack.

(6)

⊙R459 [060°/30° NW] fair
on bedded
pyroclastics with
odd thin arg. bands
mainly purple tuffs
& breccias
- some faulting just
past here

⊙R460 last of outcrop
still same vol.

Aug. 30/60 chilly overcast

Small Photo
B.C. 2185 : 26

⊙R461 Camp
At Old Claim Post
Final Post
A 46817

(7)

Large area here
of altered rk
completely iron stained
K - 385
some small pyrite
veinlets
- mainly carbonate & sericite

⊙R462 [043°/55° NW] fair
on arg.
from 461 mainly
altered rk (silicified)
- not much pyrite
- some arg. & S.S.
bands.
- just above here
same light green
agglo - congl.
hor.
~1/4 way [080°/46° N] good
this agglo hor. becomes

(8)

bedded into tuffs
or S.S

⊙R463 same agglo
with highly
iron stained silicified zone on NE
side ~100-200'
wide & presumably
a fault along this
upraw
below this ~50'-100'
massive rk. (S.S.?)
then bedded arg & S.S.
for ~100-200'

⊙R464 [095° / 62° N] good
from ⊙463 all
arg contact
with S.S at ⊙464

(9)

~3 way [130° / 45° NE] very good
on S.S. & odd
arg. band; mainly
S.S. from 464

⊙R465 [135° / 70° NE] very good
on S.S. & Arg. (slightly in minority)

⊙R466 [095° / 60° N] fair
from ⊙465
Arg & S.S. in
equal amts
for a few
hundred few
then S.S. to ⊙466
with infrequent
arg. band.

(10) OR467 100°/70° N fair
from OR460 mainly arg
some S.S.
- beds contorted
OR468 discontinuous
outcrop from
OR467 All Arg. where
exp.
- no att.

~1/3 way 125°/65° NE good
on bedded Arg.
a little S.S.

arg exp for 200'
down creek
roughly H.t

(11)

OR469 no exp.
from last oc.
OR469 highly faulted
& sheared Arg
(major faulting,
2 branches
obvious here

OR470 155°/66° SW
fair
on single arg
outcrop no
exposure from
OR469

~1/2 way 127°/57° NE good
all arg
many diff att.
from OR470

(12)

⊙R471 [030°/65°NW] very good
Arg. to here
a little fine S.S.

⊙R472 [090°/65°N] very good
same arg.
- many minor
structures here (folds)

⊙R473 [105°/67°N] good
- same bedded
Arg. a little fine S.S.

~½ way [110°/78°N] very good
on Arg & S.S.
mainly Arg. to here

(13)

⊙R474 [110°/62°N] very good
on S.S. & Arg.
in equal amts
~6' beds

⊙R475 [100°/67°N] best bedding I've seen in my life
uniform & regularly
bedded arg & S.S.
with perhaps a little
more S.S. than Arg.

⊙R476 [115°/50°N] good
on interbedded
S.S. & Arg.
(equal amts)
faulting in Creek
with noticeable
offsets of 15-20'

(14)

① R477 [115°/56°N] very good
Arg & S.S.
coarsely cyclic
in nature
beds to 3'-4' in
thickness - usually
a few inch
some faulting & folding
evidence higher on
exposure

to ⊙ 461 or Camp
~½ way interbedded
S.S. & Arg in Cyclic
fashion
then no sign
of Arg to Camp
only an altered
~¾ way massive rk K-386
which I feel

(15)

assured represents
altered black
carb. arg.
~100 before ⊙461
rks completely
silicified - small
cross shear highly
pyritized is also
present.

Sept. 1/60 Overcast
Small Photo
B.C. 2185:24 (425)

① R478 Completely altered
Rks. Silicified
& Pyritized

⊙R479 Single outcrop
Breccia (likely vol.)
K-387 fragment
matrix siliceous-argillaceous

Section across plain



⊙R480 morraine
from ⊙479
at ⊙480 completely silicified
rk (no pyrite)
then what I believe

is altered vol.
K-388
- some fine breccia
green in color
same as agglo.
band Aug 31/60
in part.

⊙R481 single outcrop
same as K-388

⊙R482 single outcrop
altered vol. K-389
- some completely silicified

⊙R483 from ⊙482
discontinuous
outcrop - mostly
fairly fresh volcanics

(18)

some bedded (inaccessible)
- at ⊙383 vol contain
a highly % of jasper
some blebs & veinlets
to 3' wide K-390

⊙R484
vol. - sed. contact
rks. too highly deformed
to get att.
- massive vol. K-391
from ⊙483

~300' past [655°/63°SE] fair
arg. & ? some
mass rk
interbedded
but can't get
to all o.c.

(19)

⊙R485 sheared & altered
K-392 rks likely volcanics
- many small disharmonic
folds from ⊙484

⊙R486 [150°/12°SW] good
but att. is change
quickly
massive S.S. K-393
& a little arg.
- well bedded rks
above here
- much contortion of bedding

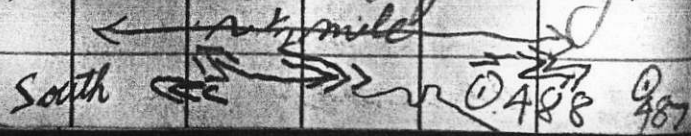
~¼ way [040°/70°NW] good
on arg.

⊙R487 moraine from
last att
at ⊙487 arg. no att. vis.

⊙ R488
[065°/40°NW] very good
on S.S. & some
arg.

⊙ R489 [110°/41°N] very good
mainly welled
fine carb. S.S.
- some massive S.S.
& some Arg
- there is a regular
anticline to South.

- back on ridge - I
just came from
much disharmonic
recumbent folding



⊙ R490 massive arg
K-394
no att
- some blebs of
pyrite ¼" by 3"

⊙ R491 [025°/40°NW] good
- same arg
- some horizons
very concretionary

⊙ R492 [070°/38°NW] poor
same arg

⊙ R493 [023°/80°NW] fair to poor
single outcrop
of S.S. & Arg
moraine from ⊙ 492
- sediments exp.
on ridge

⊙R494 [025°/80° SE] fair
on S.S. & Arg.
moraine from 493
but good interbedded
S.S. & Arg. Exposed
on ridge
much disharmonic folding on ridge

⊙R495 [NS/53° E] very good
- much disharmonic
dragfolding
- couples usually
indicate Tops east
but reversals.
- Arg.
- Arg from ⊙ 494

⊙R496 [170°/52° E] very good
on beautifully
bedded pyroclastics
- highly silicified
in part
- tuffs & fine breccias
- some very
Jaspery horizons
giving deep red purple
color.
- K-395 altered bedded
tuffs (positively, dogmatically, so)
- K-396 Jaspery
hor.
mass. ~40' wide

⊙R497 [NS/66° E] fair
- on same hor. as
just described

⊙R498 good vol.
br. of agg.
frags. to 1"
ave. ~½"
[NS/75°E] fair
massive outcrop
with some banding
unit - some mass flows (minor) K-397
~100' further 15' band
of interbedded S.S
& Arg. (030°/77°SE) good

then ~40' mass vol.
then ~100' of cyclic
type S.S & Siltstone
& Arg. very
[010°/80°E] good

these grade to tuffs
- then ~30 mass. vol.
- then ~15' seds.
- then ~50-60 massive agglo
to ⊙R499

⊙R499
[005°/52°E] good
on cyclic seds. on
low contact of agglo.
- These seds. continue
for at least 100' past
499.

Sept. 5/60 smoky & foggy till noon
- ½ day work
Small Photo
BC 2185:26

⊙R500 [NS/37°E] very good
on bottom
seds. - agglo contact
Agglo. or breccia has
sediment frags. with

what appears to be recryst. Bezemnites init. - frags. up to 2' ave. ~ 3"-4"
fault ~ ½ way to ⊙R499 has an apparent offset of 50' with south side moved east

⊙R501 from ⊙500 a few sedimentary bands but mainly altered volcanics - usually good breccias or agglo K-398 matrix of good breccia
- much faulting indicated
- bedding on south side of faults

bend to the west indicating southerly blocks have moved east (no big offsets noticed yet

⊙R502 130° / 50° NE very good on bedded tuffs K-399
morraine from 501 at ⊙502 ~ 50-70' of light green agglo K-400 same as horizon near ⊙463
- then ~ 30' finely bedded tuff (K-399)
- then K-401 a congl ~ 30' to end of exp. This congl. had some very good extremely

large pelecypods
scattered thruout
~4" across (look like [illegible]
& some smaller
Belemnites which
we couldn't get out
all these rks have
been pyritized

~½ way [145°/30°NE] good
on arg.

no exp from ⊙502
- no jasper horizon come
down to glacier
but can see above
moraine

⊙R503 [105°/75°N] very good

extremely well
bedded arg. grading
to siltstone at ⊙503
taking on a "cyclic"
nature
- perfect exp. showing
bedding to making
many wide bends
& overturns producing
non-mapable steeply
plunging open
anticline & syncline

~½ way [105°/70°N]
very good
on cyclic seds.

(30)

40° across very large

⊙R504 dragfold (excellent
plunging 58° NW
axis bearing 160°
- on cyclic seds.
- useless taking
strike & dip because
changes within 3'
- general strike
of unit is 115°
very good
follows thru for
at least 500' E & 200'
W

⊙R505 [090°/83°N] very good
fairly regular
& about the same
as this from ⊙ 504

(31)

interbedded S.S.
& Arg - fairly coarse
beds - usually 2-3'

⊙R506 [125°/80°SW] very good
- same S.S. & Arg
(no large fault
structures seen to
here

⊙R507 [170°/67°W] very good
- Tops W
by ripple marks
& X-beds.
S.S. & Arg - much variation
in att. around
here.

⊙R508 [140°/84°SW] very good
- Same S.S. & Arg
- some faulting creek before
here but don't know extent

OR509 [150°/vert] good
att. varies much
- same S.S. & Arg.

OR510 [033°/45°NW] very good
- on same S.S & Arg
beds to 10' wide
- was down
stream ¼ mile
from here
same thing

~½ way [145°/vert] good
Arg to here
then some S.S from
here on

OR511 [130°/vert] good
same S.S & Arg
Some Congl. K-402

~½ way [040°/75°NW] good
- same S.S & Arg.

OR512 [130°/80°NE]
good
- same

OR513 [140°/80°SW] good
- same
- att's taken at random

OR514 [080°/70°N] good
- same S.S. & arg.
- some Congl.
- mainly S.S.

~½ way [095°/75°N] good
- same

⊙R515 [120°/57°NE] very good
- same S.S. & Arg.
- mainly S.S.

⊙R516 moraine from ⊙515
- highly altered
& sheared rk.
- breccia frags.
but ?? whether
primary or secondary

Sept. 6/60
Small Photo
2185 : 24

⊙R517
[040°/74°SE] very good
on bedded Tuffs & S.S.
- Agglo., Congl., & Tuffs
K-403
very closely
related (interbedded)
- sheared & slightly altered

⊙R518 ~¼ way to ⊙518
massive vol.
- maybe andesite
K-404
very typical

OR519 all altered, sheared, iron stained rk. from OR518.
- pyritized & carbonatized mainly
- a little silica in place
- very large zone
- runs up hill.
~5-10% pyrite

OR520 - altered vol.
- mainly microcrystalline silica
- mainly vol. breccia & or agglo.
- some frags completely silicified (up to 2')

~1/4 way [illegible]
[illegible] altered congl. & S.S.
145°/63°NE good
(right on pt. of o.c.)

OR521 110°/63°NE very good
on cyclic S.S. & siltstones
- from last att. highly altered rks.
- probably mainly seds. but some where massive & could have been volcanic.
mainly silified & carbonatized & none or little pyrite

⊙ R522
- massive volcanics
- altered in part
- mainly fine breccia + agglos. K-405
- some flows.

⊙ R523 highly altered, massive rks.
- mainly silicified

⊙ R524 all altered massive rks.
from ⊙233
K-406 typical
- can see some feld. phenocryst
- ∴ silicified volcanics
- some small altered breccia zones

- a little iron staining but pyrite is present only in very small amounts.
- possibly just acid volcanics

⊙ R525 [025°/90°N] fair arg.
- with some siltstone

~½ way [110°/38°N] good
- on fairly massive arg.
- fissile
- same carbonaceous

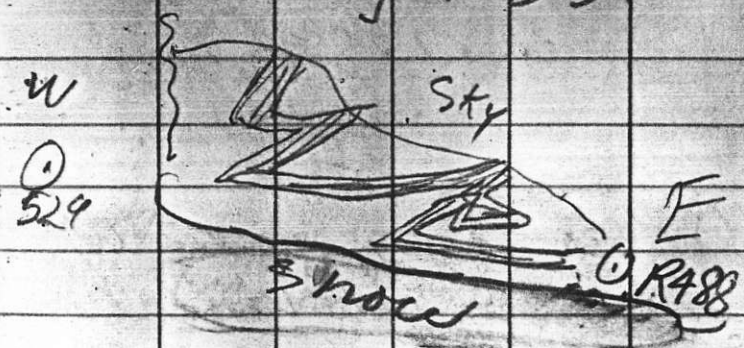
⊙R526 [045°/30°NW] very good
- on carb. siltstone of
~~[illegible]~~ Arg.
- some fine S.S.
- some good recumbent folding

⊙R527 [100°/45°N] very good
- same beds come straight thru to here.

~1/4 way up
[095°/40°N] very good
on same
rks tightly disharmonically folded
from here to top

⊙R528 S.S. & Arg.
S.S. & Arg from about 3/4 way up
- too much snow to get any att.

⊙R529 general strike
050°
- highly contored sediments
Arg. & S.S.



Section view

(42) - Dip varies much in disharmonic folding
- these also likely follow thru to what I called massive appearing rks which form the peaks.
- one fold measured as plunging 45° dir 155° good

① R530 Same tightly disharmonically folded S.S. & Arg.
- a little congl.

(43)

2½ way [050°/30°N] good
on same

① R531 same
- Δ POST
WP
- SWI
5581
TOP
5 S50

- L 5588 TIP 3
- RP

① R532 [080°/32°N] fair
- on same
- only mainly Arg.

O R 533 from O 532
- the S.S. & Arg. grade into highly altered rks.
O R-407 & 408 typical

O R 534
from O 533
- same type of rks.
- mainly breccia like K-409
- frags. to 6" usually about 1"

- The mtn. was ascended with difficulty

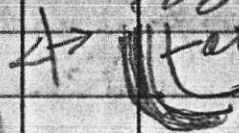
O R 535
[060°/45° NW] fair on large beds of S.S. & Arg.

- volcanics to here mainly bands of breccia some seds. showed up in crests of 2 folds (in vol.)

O R 536 massive agglo K-410
& K-411 which could have been a pillow lava but "pillows" so highly distorted cann't tell.

seds to here
but only in
small bands
with massive
rk between

⊙R537
025°/50°SE fair
on ~~what~~
massive
vol. bands



It's snowing
too hard to
see which way
units go or
what they are

- on closer
inspection
~~appears to be~~
some massive
Sed S S mainly
(with vol.)

⊙R538
massive K-412
- didn't see o.c.
from ⊙537
but massive rk.
like this

⊙ R539
015°/25°E
fair but turn
in short dist.
~100'
- a few seds
showing up
in contact with vol.

(48) some of these seds
(~10' exposed)
have been altered
& pyritized
- seds (S.S. & Congl.

- sed. only mena
~ 50' wide
- then agglo.
- then good
vol breccia
then good
pillow lavas
good tops
South
~ att 075° (30°S)
very poor
① then ⊙ R 540
- mainly breccia

here
⊙ R 541 [080° / 45°S]
good
on bedded Tuffs
& fine breccias (pyro)
- some good
carb. arg
after ⊙ 540
then agglo
- then Tuffs.

⊙ R 542 moraine
from ⊙ 541
⊙ 542 small
outcrop of
agglo. (type which is found
close to seds)
- pyritic in part
slight ironstaining

(49)

(50) sept. 7/60

Small Photo 2180:108

OR 543 massive vol.

- landed with copter

- K-413

- ∴ the line of knolls is the vol. band

Sept 10/60 Johns Peaks Broken Overcast

Small Photo B.C. 2181:96

OR 544

[140°/70° NE] very good

on S.S. & Arg

- 3" beds

- approaching cyclic in nature

(51)

OR 545 from O 544

~ 200-300' of mainly Arg. (a little S.S.

then ~ 180-200' of boulder congl.

(good congl. with many granitic pebbles & cobbles up to 8-10" in size well rounded)

K-414

then ~100' of green beds S.S. size probably tuffs

at O 545 K-415

fine grained diorite - fresh

at ⊙ 546

⊙ R546 145° / 75° NE
good on limey
S. S. & Arg.
fossils coll. pelecypods
so 5-6" across
pecten-like

Fossil Locality #9

from ⊙ 545
diorite for ~100'
feet or so then
what I think
was a series
of fine tuff
to ⊙ 546
- some purple K-46
but mainly green

at ⊙ 546
ammonites found
in arg zone
which goes for
~200' past ⊙ 546

then K-417
for ~100' which
appears to be
a sill
⊙ 547 then S. S. & arg.
or other side of
this
highly sheared no att.
also good similar
ammonites & small
pelecypods

large dragfold
plunging 39° bsg 165°
fair

⊙ R548 from ⊙ 547
mainly massive rks.
K-418 & 419 which
I think constitutes

an alter. fine
grained diorite
int. which
forms most of
this side of John's
Peaks
- there is the old
band of lines arg
int.
at ⊙ 548 mainly arg (some S.S.)
no alt.
- iron stained
~200' past 010°/70°E fair
some sig. little
S.S.

⊙ R549 15°/70°W fair
- on altered tuff
& fine breccias

K-420
also could have been
coarse S.S. & Congl
but ??

⊙ R550
on NE side of
creek altered
& sheared fine
congl. (good rounded cherty frag.)
on SW side of
creek what
I think is altered
K-421 border phase of
a tube large intr.
which I think
forms this side
of John's Peaks

155° / 35° NE poor

⊙ R551 ⊙ from 550
altered congl. & SS
for ~100'
then highly
altered completely
silicified rks
these then graded
into half altered
vol. - some
good breccias
at ⊙ 551 single
outcrop of sheared
& altered rk on
other side of creek
but is a breccia
~~with~~ & there

seems to be some
pillow shape tops
but questionable

⊙ R552 ~~altered~~
sheared
congl - agglo.
type of sp
K-422 - congl. poor
frags. to 1'
- no bedding

⊙ R553 170° / 72° E poor
from ⊙ 552
congl. agglo
rk & completely
altered rks - (sil & pyrit)
- at ⊙ 553 ~100' avg

to end of exp
below falls.

OR554 (165°/63°E) good
on single outcrop
of Arg.
- no o.c. from ⊙553

OR555 not accurately
located
- no o.c. from 554
(one small arg. o.c.

- at ⊙555 single arg.
o.c.

OR556 no o.c. from ⊙555
- not accurately located
- qtz-feld-mica schist
or phyllite.
K-223 - all rks. seen have
been highly sheared

no o.c. to be on
in creek but all
the pebbles in creek
are schistose, phyllite
or slatey - some
are bedded.
- some of the o.c.
seemed fragmental
but too highly
sheared to be sure.
- some could sheared dia. or and

OR557
(110°/35° N) slatey
cleavage
very approx.
slatey argillites K-424
good exp down
creek here.

⊙R558 K-425 typical
Massive Andesite
- some have phenocrysts
- no pillows observed

Sept. 11/60 McTagg Ext. Sunny
Small Photo
B.C. 2180:110
& 2181:43

⊙R559
005°/70°W very good
almost cyclic on well bedded
siltstone
some fine S.S & Some Arg

fresh - unaltered
~ 50' f.p. Sill
- dyke
same as ⊙~360

⊙R560 010°/75°W very good
on same Seds.
- from ⊙559 all same
exposed on ridge regular seds

⊙560 start of fracturing
& much dyke intr.

⊙R561 odd sed pendant
~ same att. as before
from ⊙560
mainly intrusive
bodies varying in
nature K-426, 427 & 428
K-427 ~~[illegible]~~ has brecciated

many sed bands
& has incorporated
the fragments.
- likely these are
closely assoc.
with a volcanic seq.

⊙R562 finely bedded
cyclic S.S. & Siltstone
black blds for
ridge from ⊙56-
probably mainly
Arg.

⊙562 $\boxed{030°/85°W}$ good.

⊙R563 $\boxed{025°/80°W}$ very good
& regular

from ⊙562
to ~ ½ way cyclic

S.S., Siltstone & Arg
then S.S. & a little
congl. to ⊙563 where
cyclic again.

⊙R564 $\boxed{030°/72°W}$ very good

on limey Arg
& S.S.
- slightly more Arg.
- all seds. exp. on
ridge from ⊙562
some ~~[illegible]~~ overturned
folding seen

⊙R565 $\boxed{175°/67°W}$ fair
(for ¾ distance) mainly Arg from
⊙564
but mainly massive S.S.

at ⊙ 565
- a high degree of fracturing & Induration around here.

⊙R566 010°/65° W very good
on highly indurated but well bedded Arg. & S.S.
mainly S.S. to here
some folding
slightly recumbent

⊙R567 005°/65° W very good
on same
some fracturing

⊙R568 highly indurated
S.S. & Arg.
K-429 & K-430
where S.S.
no att.
- highly fractured

⊙R569 025°/40° NW very good
on same
only well bedded

⊙R570 020°/45° NW very good
on same
Arg. & S.S.

⊙R571 ½ Carry 030°/55° NW very good
on highly indurated
finely, well bedded
seds (possibly some Tuff

⊙ R572

107°/65°N very good

on highly ~~ch~~ indurated Seds.

- some cyclic K-431
- some massive K-432
- relatively same from ⊙ R571

Photo 2181:43

⊙ R573

090°/80°N very good

- Congl. & S.S.
- well bedded
- all sedimentary

⊙ R574 075°/80°N very good

from ⊙ 573 highly indurated Congl & S.S. & odd band of cyclic seds.

& perhaps odd band of agglo at ⊙ 574 which contains good Lms boulder (6" in size) which contain fossils (Bryzoa type) like Fenestrellina

- some mud ball horizon
- just past ⊙ 574 K-433 which I think is vol. breccia
- 3" frags
- but not well exp

OR575 moraine
from ⊙574
- but welled rks
exposed on ridge
probably Arg & S.S.
in ~3' beds.
- at ⊙575 single outcrop
of massive vol.
K-434
- a little breccia
(many breccia
boulders same as
[illegible] other side)

OR576 discontinuous
poor muddy
o.c. from ⊙575

massive vol. (a little
breccia)
at ⊙576 slightly altered
breccia
similar to other
pt. on this o.c.
K-435 & 436 typical
type.
- I never saw any
of the good fresh
porphyry breccia in
place but this is
much of its float
on the glacier
- there are some
interclated seds. in the
vol. sequence.

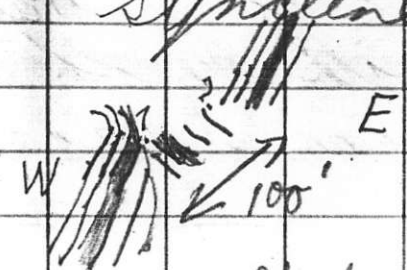
OR577 080°/68°W
good on Congl & S.S.
adjacent to vol. contact

OR578 $\boxed{090^\circ / 75^\circ N}$ very good
- on same congl
- & S.S
& some agglo.
volcanics above
here - some agg
in the vol.
- lots of the good
porph. - breccia
floats as coll. on
other side of big
glacier (1st Trip to
McTagg Ext.)

OR579 $\boxed{170^\circ / 20^\circ E}$ very good
on cyclic seds
mainly S.S.
to east very regular

dip to W ∴
believe is small
syncline

OR580 $\boxed{050^\circ / 70^\circ NW}$ good
- on cyclic seds. mainly S.S.
this structurally
is immediately
below the overturned
syncline



It could be a fault.

72

⊙R581 135°/55°SW very good

- on cycline
- poor discontinuous o.c. from 580 & where exposed usually massive S.S.
- one exposure of a good breccia with all the frags. being Lms.

⊙R582 NS/50°W very good

mainly S.S.
some Arg. + a little congl.

⊙R583 17.5°/45°W fair

73

on S.S, Arg. & Congl.
some faulting here
contact is at least 200' further down hill

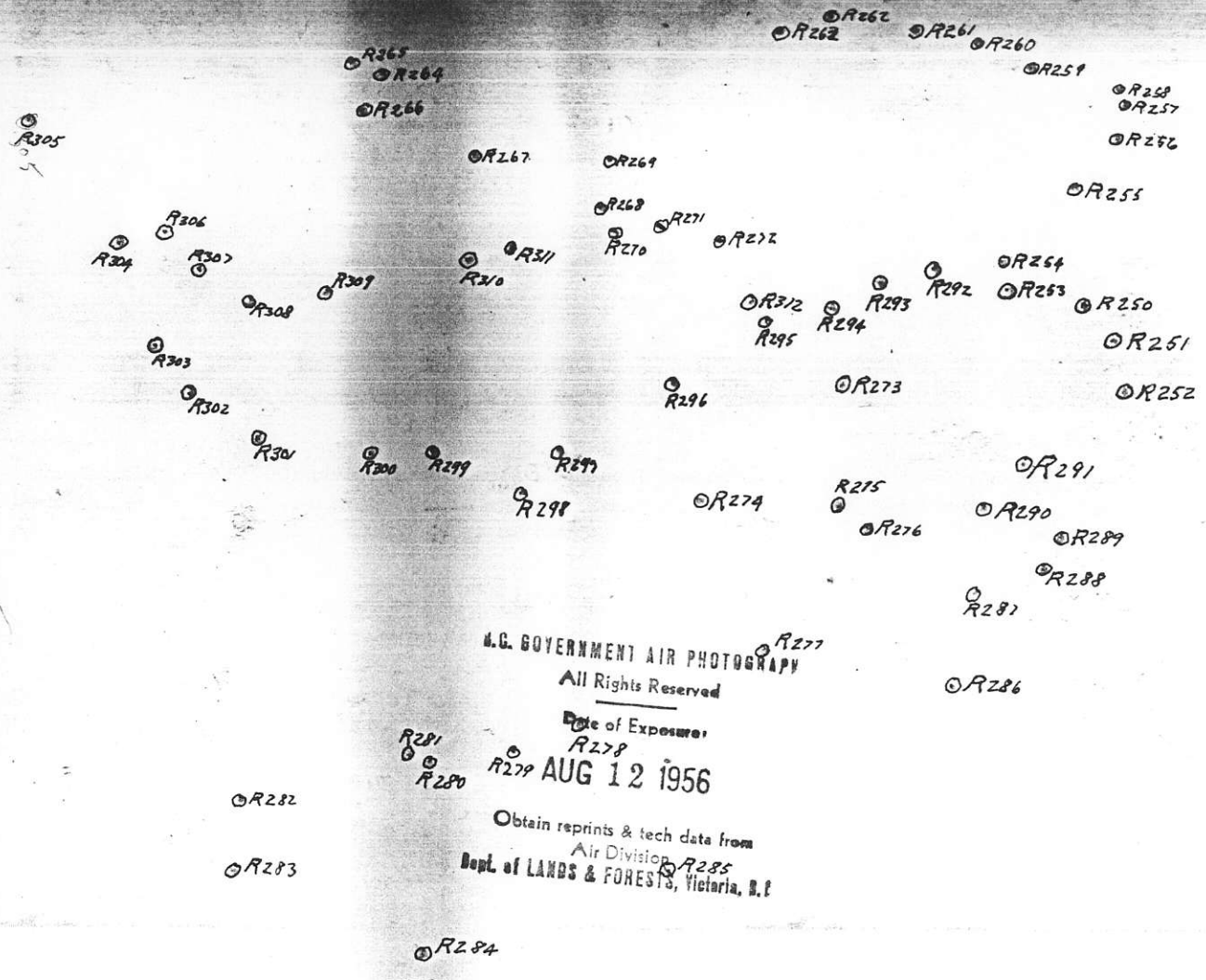


BC 2185-25


BC 2185.25


BC2185:25

BC 2181-58


R262
R262
R261
R260
R259
R258
R257
R256
R255
R254
R253
R250
R251
R252
R291
R290
R289
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R305
R306
R304
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R311
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R308
R312
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R297
R298
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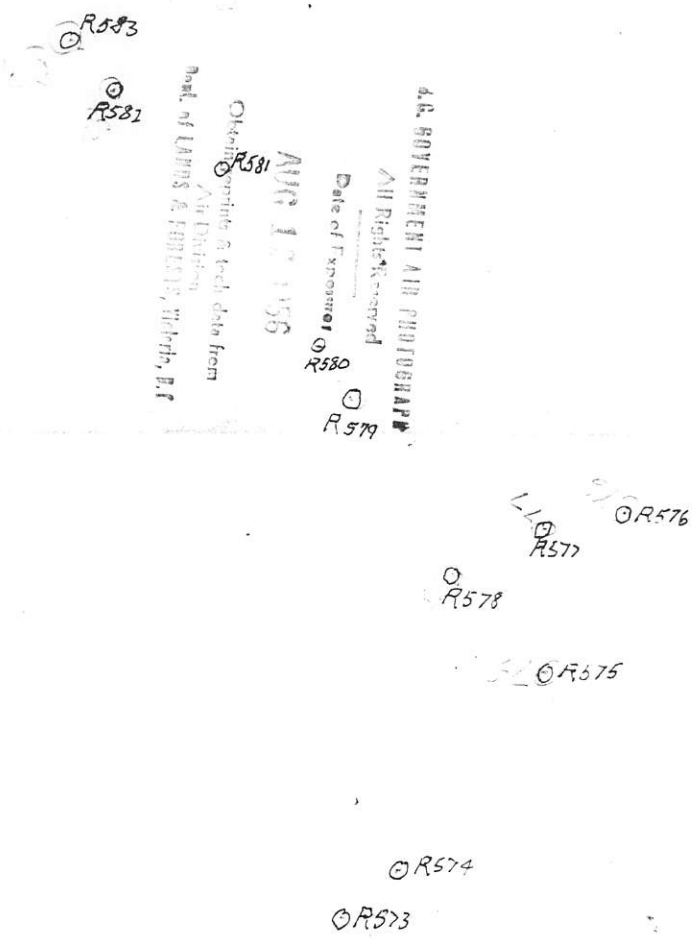
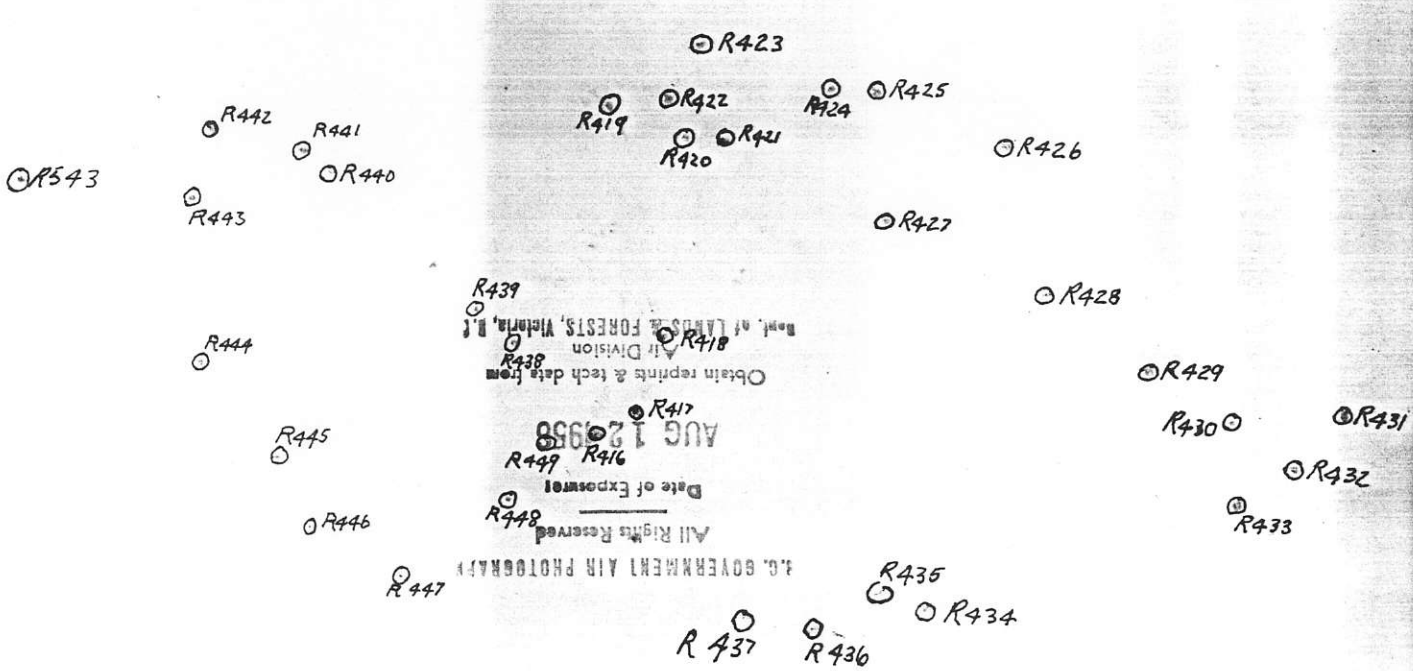
BC 2181-43

BC 2181:43
Volcanics


R583
R582
R581
R580
R579
R576
R577
R578
R575
R574
R573

BC 2180-108

DC 2180:108
18001



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BC 2180-94


R389
R386
R387
R388
R385
R390
R384
R383
R391
R392
R382
R393
R374
R394
R411
R410
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R381
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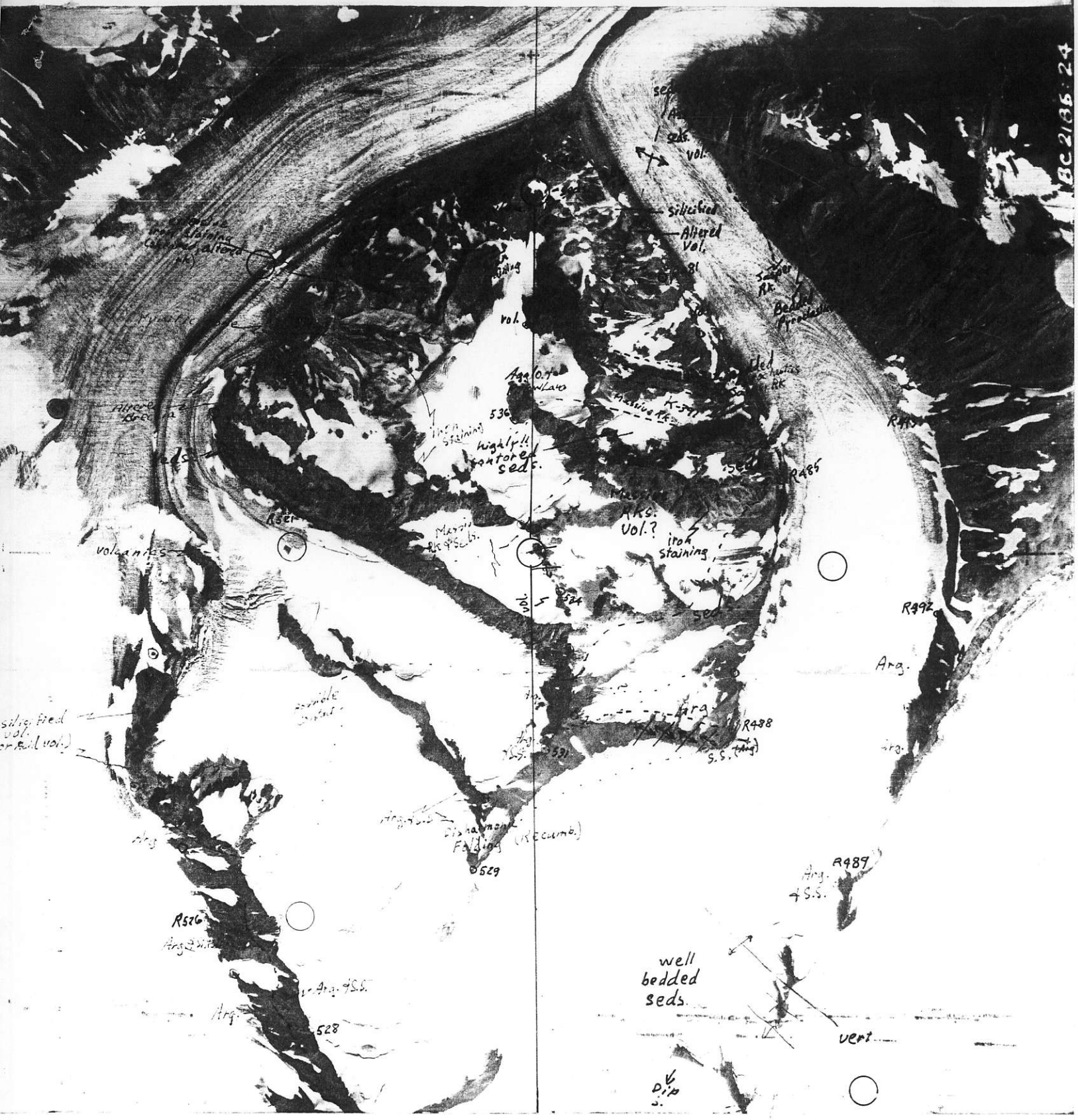
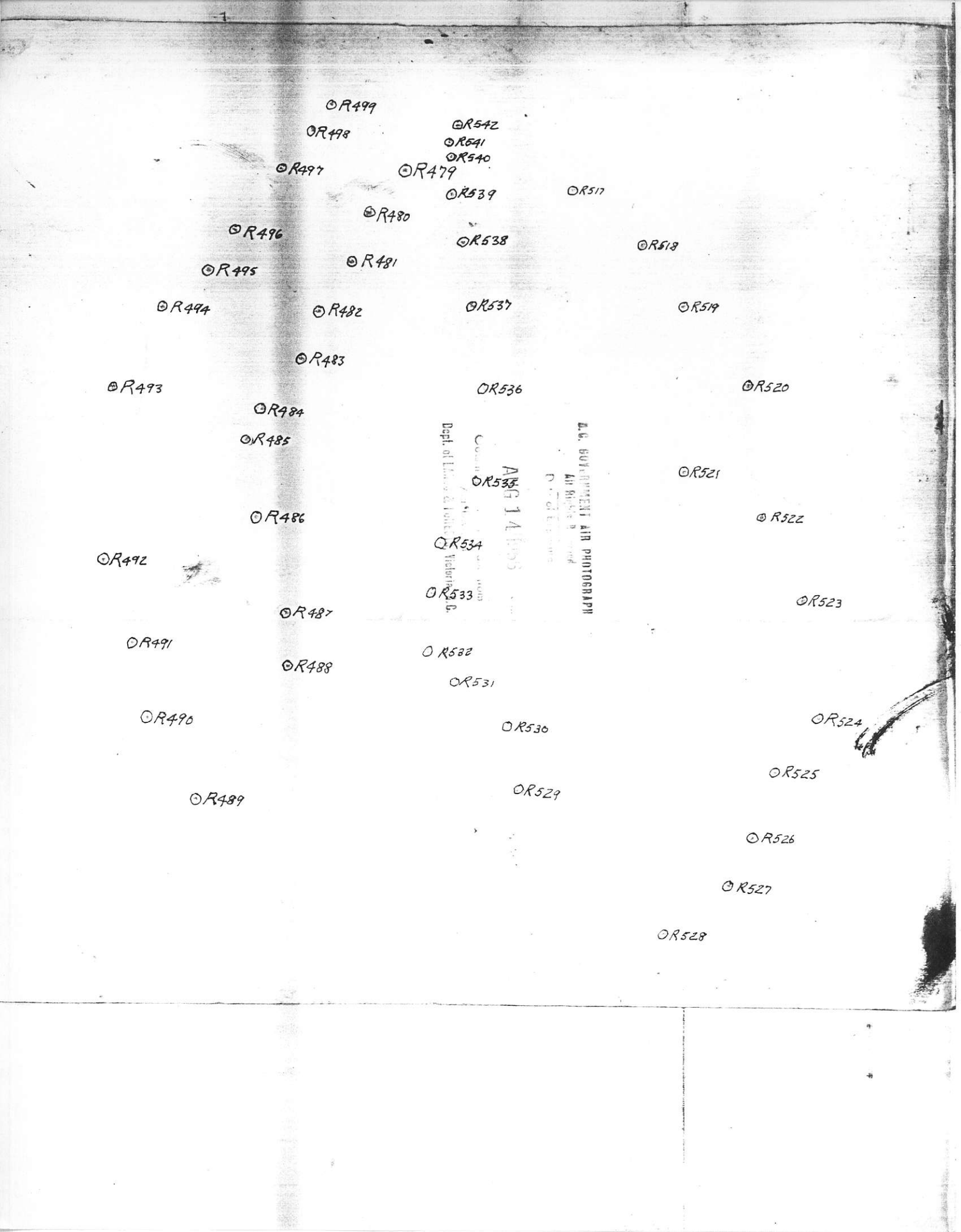
R373
R361
R362
R404
R414
R372
R371
R363
R415
R360
R403
R364
R370
R359
R365
R369
R366
R399
R402
R367
R368
R400
R401


BC 2186:24
silicified
Altered Vol.
Jasper Rk.
Bedded Pyroclastics
vol.
Agglo. to Pillow Lava
Massive Rk.
K-391
536
highly!! contored seds.
R485
Massive Rks. Vol.?
iron staining
R561
volcanics
524
R492
Arg.
R488
S.S. (Arg)
531
529
R489
R526
well bedded seds.
vert
528
Dip

BC 2185-24


BC2186:24
vol.
silicified
Altered Vol.
vol.
Agglo.
536
iron staining
highly!! contored seds.
R485
Rks. Vol.?
iron staining
R492
Arg.
R488
S.S.
Disharmonic Folding (Recumb.)
529
R489
Arg. & S.S.
R526
Arg. & S.S.
528
well bedded seds.
vert
Dip


R499
R498
R542
R541
R540
R497
R479
R539
R517
R480
R496
R538
R518
R495
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R482
R537
R519
R483
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R520
R484
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R486
R522
R534
R492
R533
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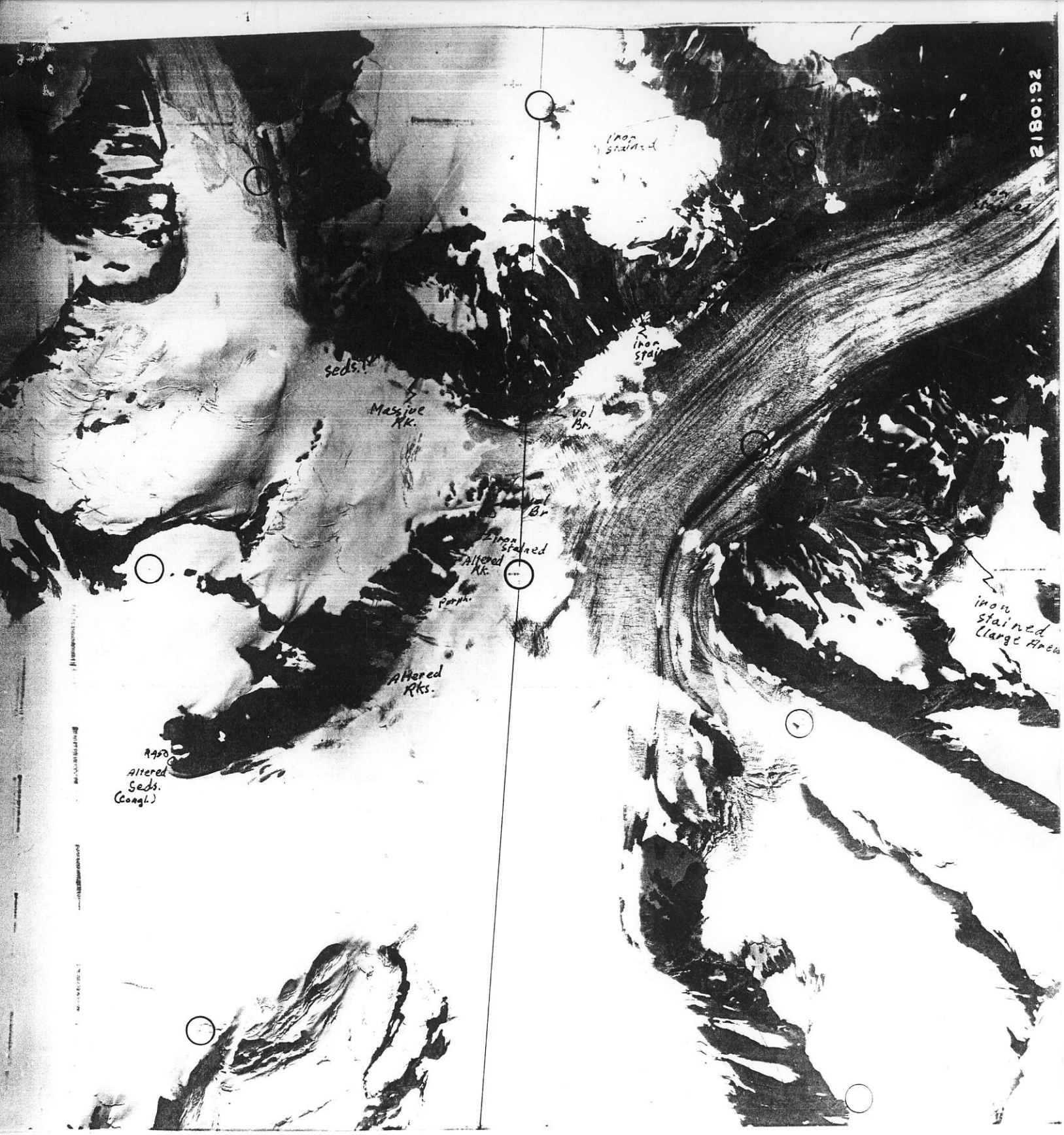
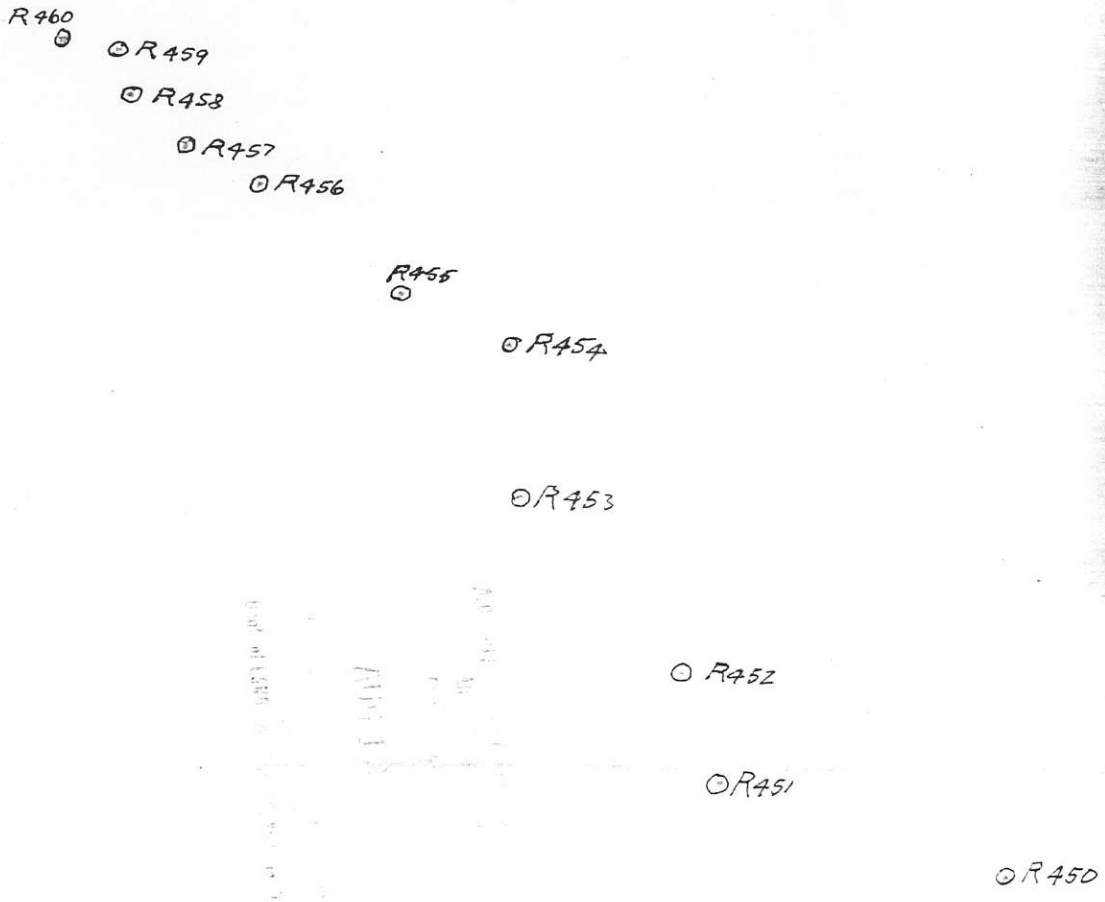
R489
R529
R526
R527
R528


2180:92
iron stained
iron stai
seds.
Massive Rk.
vol Br.
vol Br
iron stained
Altered Rk.
Porph.
Altered Rks.
R450
Altered Seds. (Congl.)
iron stained (large Area

BC 2180-92

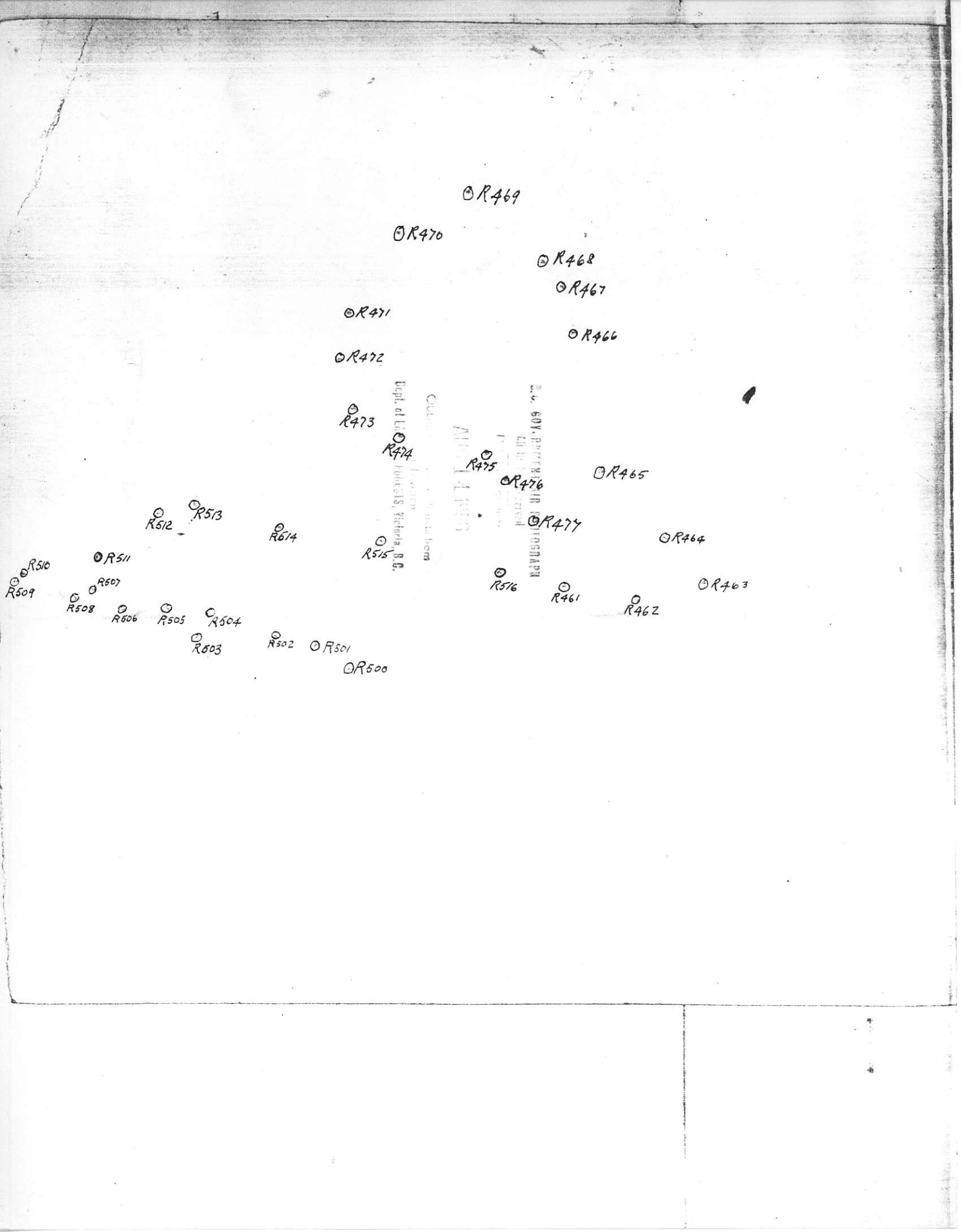

R460
R459
R458
R457
R456
R455
R454
R453
R452
R451
R450



BC 2185-26


L160W
1195?
S.S.
silicified
(bedded rks.)
Agglo
seds.
R500
Bedded
Tuffs
& seds.
BC 2185-26


L160
(bedded rks.)
BC 2185-26


R469
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R477
R464
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R614
R515
R511
R510
R509
R507
R508
R606
R505
R504
R503
R502
R501
R500
R516
R461
R462
R463

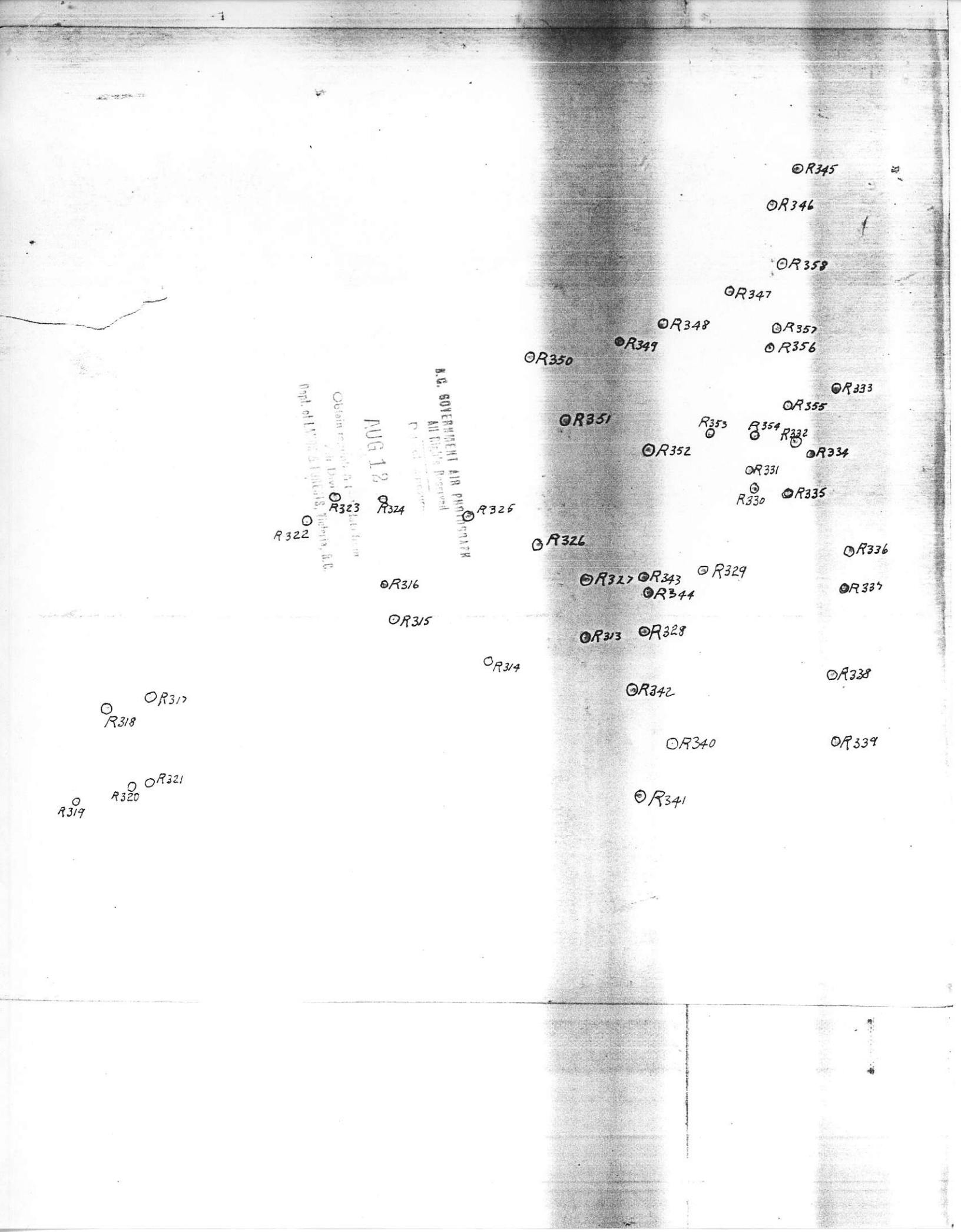


Altered Vol.
Jasper Rk.
Bedded Pyroclastic
vol.
Agglo. to Lvo
536
R485
R561
Vol.?
iron staining
R492
R488
S.S.
R489
R526
well bedded seds.
vert
Dip

BC 2185-24

BC 2180-87


BC2180:87
???
322
Vol. Br.
Tuff
Vol. Breccia, Agglo. & some Tuff
Tuff & Br.
Vol. Breccia
Vol.
Feld. porph.
Some Andesite
Vol. Breccia & Tuff (Agglo.)


R345
R346
R358
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R352
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