No. T47 Field Name Vector Andesite

Name

Locality

Coll. TBN

1760 level Toro Ext. Year 29 1-21

Close to contact with WER

Megas. char. Dark greenish gray rk with peppers & salt appearance. White dull feldspars abundant. Effervescence slightly in dil HCl. Appears to have lenses of salt & the phenocrysts are not idiomorphic. Resembles a grit.

Micros. char. Albite phenocrysts in matrix of dark brownish glass filled with laths of albite? very little apatite noted.

Rk largely replaced by green chlorite in fibrous form together with much calcite. chlorite replaced by Matrix partly altered to albite? — wormlike ch of albite? + gf? (+) Sph (⊥ c axis biaxial < 001) There may be remnants of old laths in chlorite matrix. Bounding by ∥ or albite adularia? = 21° Max Ext 16°.

Clearly a clastic.

9-524

No. T51 Field Name Vector Andesite

Name

Locality

Coll. TBN

Year 29 1-23

In Fw of dike of WER.

Megas. char. dull light greenish gray porphyritic rk - rather very numerous dull white phenocrysts of rather irregular outline & bound by albite?

Micros. char. Slightly altered. Much chlorite, partially replaced? by microgranular adularia ~~albite~~ which shows ~~chlor~~ chlorite effects. Sericite also abundant & appears to be in part later than the chlorite. Remnants of phenocrysts are adularia? albite? + adularia ~~albite~~ where the rk. Matrix is sericite chlorite + ~~albite~~ adularia ~~albite~~ where altered. Appears to have been originally glass with plag laths. Glass → sericite? + gf? now.

Covered adularization but subord to chloritization

9-524

No. T82 Field Name Vector Andesite

Name

Locality

Coll. TBN

1540 level Toro Ext. Year 29 1-27

Megas. char. Pale greenish gray rk rather heavily charged with fine gr pyrite. Much sericitized + silicified - outlines of phenocrysts no longer recognizable with certainty

Micros. char. No section

9-524

4840 0928

No. T298 Field Name Keypeak Trachyte

Name

Locality Coordinates 2400W 2900S. Coll. TBN

400 Level Silver Top. Year 29 2-25

Megas. char. (Bleached - in HW of 'Valley' brow Vein) Hard little bleached tk with fresh feldspars - coated "limonite" coating -

Micros. char. Feldspars moderately fresh except for fair amount of adularization -

Fmcs → gfj c adularia -

Almost no chlorite on slide -

Gdt has a ~~fro~~ micro-recrystallization superposed on original lath feldspars + glass?

Brown apatite -

little ~~[illegible]~~ sericite + no carbonate.

9-524

No. T300 Field Name Keypeak Trachyte

Name

Locality Coordinates 2600W 2900S. Coll. TBN

300 Keypeak - Silver Top. Year 29 2-25

Megas. char. Bleached in FW of VV vein Hard little thoroughly bleached tk with fresh feldspars - locally stained pinkish.

Micros. char. Moderately fresh feldspar phenocrysts -

No femics or apatite could be recognized.

Gdt has tiny laths in a micro-recrystallized matrix?

No green chlorite recog but prob some colorless (or kaolinite?)

Mod amt of sericite + prob some adularia -

Local gfj patches -

9-524

No. T301 Field Name Keypeak Trachyte -

Name

Locality Coordinates 2050W 2850S. Coll. TBN

300 Level Keypeak. Silver Top. Year 29 2-25

Megas. char. (Bleached - in HW of 'Central' vein) Hard bleached tk with fresh feldspars - Splotched with pale purplish - "limonite" stained along fractures

Micros. char. Moderately fresh feldspars altered to adularia + sericite.

No femics or apatite -

Gdt laths + recrystallized?

Gdt - adularia veinlet.

9-524

No. T228 Field Name Contact between FDB & CA.

Name

Locality Coll. TBN

52-53 800 Level West End Year 29 2-13.

Megas. char. Both brown & green contain rk fragments & in one small specimen the two colors are interlayered. Prob oxidation effect? Both are sheared.

Micros. char.

T 228 Contact between BD and CA 800 WE.
The BD is a brown, much weathered, agglomeratic rock. The CA appears green, much chloritized and somewhat sheared, and also "pebbly". May show some chilling and shearing especially toward the contact. The line (color line) is rather sharp. Might this be an oxidation line, and this be all one rock?

9-524

No. T14 Field Name Extension Breccia

Name

Locality Coll. TBN

1540 Level Tons Ext. Year 29 1-17.

Megas. char. Rock is composed chiefly of inclusions, many of which are of massive white tuff in a very scant greenish matrix - Resembles WER or more than EB?

Micros. char.

T 14 EB, loc. on 3, Ton Ex 1540.
Coarse breccia. The matrix is very fine grained, greenish in color, and in relative small amount -- comp. to inclusions. These are of a variety of rks., the largest number are of white, chalky material (like WER inc.); others are of banded GT;

others of a dark green fine grained, andesitic? rk. All are generally quite coarse, up to 5cm. There may be a little primary qtz. in the matrix.

9-524

No. T230 Field Name Oddie Rhyolite

Name

Locality Coll. TBN

800 Level West End Year 29 2-13.

Megas. char. Pale gray rk with abundant qtz phenocrysts & one large feldspar in a very fine gr. matrix. Old feldspars altered - GM prob recrystallized?

Micros. char.

OR T 230 OR-36' SW of junction. 800 WE.
Fine grained white matrix, with numerous quartz phen., (av. 3mm) many showing large embayments. A few large feldspars - up to 2 cm. - sanidine?
Not unlike other rhyolites. Quartz phen. are very large and abundant - some much resorbed. A few feldspar phen. → sericite completely - except one which seems to have remnant of or. Groundmass mostly quartz and probably largely secondary. A few small scattering cubes of pyrite. One or two shreds of biotite → sericite. Ligt. - if present - is gone to specks of rutile.

9-524

No. T303 Field Name Bleached Skypak Trachyte
Name
Locality Coordinates 2750S 2420W Coll. TBN
200 level Skypak - Silver Top Year 29 2-25

Megas. char. Thoroughly bleached hard brittle tr with fresh feldspars - Oxidation banding -

Micros. char. Usual bleached tr
no pennes + almost no chlorite. No apatite -
coarse adularia, sericite, rare qtz -

9-524

No. T319 Field Name Skypak Trachyte
Name
Locality Coordinates 1800W 3300S. Coll. TBN
200 Skypak. Silver Top. Stone Cabin Year 29 2-27

Megas. char. Rather fresh. Moderately pale greenish gray tr with abundant more or less fresh feldspar phenocrysts - Sparse tiny py -

Micros. char. Phenocrysts rather thoroughly altered to sericite-chlorite
Groundmass textures (laths + chlorite) rather well preserved
Little if any adularia.

9-524

No. T326 Field Name MT
Name
Locality Coll. TBN
2500S, 940E
1300 Belmont Year 30 3-5

Megas. char. Fresh glassy feldspars + chlorite or epidote spots on a hard dense reddish purple g.m. Carbonate veins (thin)

Micros. char. Fresh ab phenocrysts pennes → chlorite + sericite
Gm. thus laths of feldspar w chlorite, iron oxide & carbonate.
Apatite -

9-524

No. T327 Field Name MT

Name

Locality 2100 S, 940 E

1300 Belmont

Coll. TBN

Year 30 3-5

Megas. char. (fresh? - 6' on FW of Belmont Vein)
Gray green rk with numerous yellowish chalky feldspars - bleached by ppt & pyritized -

Micros. char. Thoroughly altered
More or less thoroughly serecitized phen - some adularia
large patches of chlorite -
Glly crushed recrystallized - ad, qtz, chl + play?
Qtz phen well crushed ad, - mostly away from edge

9-524

No. T331 Field Name MT

Name

Locality 2015 S, 1100 E

1200 Belmont

Coll. TBN

Year 30 3-5

"with fresh feldspars?"
Megas. char. rather dark gray green rk somewhat pyritized - Numerous phenocrysts - None of feldspar, but rather fresh, mostly small but one 1 cm long - Also many small fresh phenocrysts -

Micros. char. Large fresh play phenocrysts partly altered to sericite & chlorite - some adularia
Numerous chlorite pst after biotite
Prismatic chlorite flakes abundant in a recrystallized feldspar.
Apatite -

9-524

No. T335 Field Name MT.

Name

Locality 2005 S, 885 E

1200 Belmont

Coll. TBN

Year 30 3-5

"partly bleached"
Megas. char. Pale grayish green matrix with fresh feldspars pyritized. Trace of dark qtz? cemented fragments of rk -

Micros. char. Slide resembles no more than MT - wrong section?
Epidote?
Qtz veins -
Fine gr matrix

9-524

No. T337 Field Name MT

Name

Locality 17805, 285E

1200 Belmont

Coll. TBN

Year 30 3-7

"with large + abundant phenocrysts."

Megas. char. Dark gray green matrix with abundant creamy white phenocrysts up to 7-8 mm long. Pyritized. Femics prob. altered.

Micros. char. Phenocrysts of ab? show incipient alt to sericite, chlorite + carbonate.

60% prob orig trachytic but now coarsely recrystallized.

Femics → chlorite etc.

9-524

No. T338 Field Name MT

Name

Locality 16605, 505E

1200 Belmont

Coll. TBN

Year 30 3-7

"unusual phase - due to alteration?"

Megas. char. Fine-gr pale gray to greenish gray, pepper + salt st without conspicuous phenocrysts. Stained by qtz.

Micros. char. Old phenocrysts almost completely obscured by extensive alteration. Thoroughly pyritized + much curious reddish brown chlorite? introduced. Coarse recrystallization of matrix. Relatively coarse qtz + some sericite.

9-524

No. T344 Field Name MT?

Name

Locality 14255, 2315E

1000 Seepeh Extension

Coll. TBN

Year 30 3-7

"dark phase"

Megas. char. Rather dark dull greenish matrix with pinkish or greenish feldspar phenocrysts that are locally rather poorly defined.

Micros. char. Plag (∼ > bytown) coarsely recrystallized.

Femics → carbonate, epidote chlorite etc.

Little or no epidote in plag.

60% mostly a brownish glass.

9-524

No. T343 Field Name MT.

Name

Locality 1400S, 2450E Coll. TBN

1155 Skypark Extension Year 30 3-7

"bleached"

Megas. char. Rather pale greenish gray matrix with abundant rather fresh feldspars. Covered py (pos po) esp in old fractures? which are otherwise nearly gone.

Micros. char. Feldspars rather fresh

Fractures → chlorite → sericite.

Groy has some introduced qtz but otherwise texture preserved. Covered chlorite remains.

9-524

No. T358 Field Name Breccia in MT

Name

Locality 1990S, 1170E Coll. TBN

1166 Belmont Year 30 3-11

("1' thick")

Megas. char. Mostly small white incl but some up to 1 cm in a much altered gray matrix. Covered py, qtz.

Micros. char. Rk + mineral fragments of TF in a sericite rich matrix that is largely qtz in large part clastic.

9-524

No. T359 Field Name MT

Name

Locality 1590S, 905E Coll. TBN

1100 Belmont Year 30 3-11

"soft, bleached"

Megas. char. Porph. textureless bleached rk – ~~[illegible]~~

Micros. char. Old phenocrysts largely gone to colorless chlorite.

Very little green chlorite left.

Much iron oxide after py.

Groy almost completely recrystallized.

9-524

No. T416 Field Name MT

Name

Locality 4025N, 8345E (WE co-ord) Coll. TBN

850 Rescue - Eula Year 30 3-17

Megas. char. "fresh" Hard dark greenish matrix with moderately abundant plagioclase phenocrysts, mostly rather dull.

Micros. char. Rather calcic? phenocrysts which have been extensively carbonatized + sericitized - much chlorite.
Matrix originally trachytic but appears to have been considerably recrystallized -

9-524

No. T415 Field Name MT

Name

Locality 2360S, 250E Coll. TBN

900 Belmont - Sim Butler. Year 30 3-17

Megas. char. "Bleached - supposed MA" Irregularly bleached - much in distinctly greenish.

Micros. char. Sericitized + carbonatized
Small chlorite content
Some colored apatites -

9-524

No. T414 Field Name MT

Name

Locality 2400S, 270E Coll. TBN

900 Belmont - Sim Butler Year 30 3-15

Megas. char. "supposed MA" A gray green matrix with abundant, moderately small altered feldspar phenocrysts.

Micros. char. Sericitized + carbonatized alt-d phenocrysts in a fine gr trachytic g.m.

9-524

No. 1437 Field Name OR.

Name

Locality 4150'E, 5325'N of SW corner of sheet 1 Surface

Coll. PON

Year 30 4-7

Megas. char. fresh feldspars + biotite with qtz abundant in dense light colored matrix

Micros. char. Mostly qtz. a few sanidine, small biotite phenocrysts in brown glass. One large grain of titanite.

9-524

No. T18 Field Name Vector Andesite

Name

Locality

Coll. TBN

1540 Level Vaus Ext.

Year 29 1-17

Megas. char. with fresh feldspars.
Pale greenish porphyritic rk with abundant white plag phenocrysts 2-3 mm. some of which are fairly well defined & show al reflections. Matrix dense. Femes appear to be lacking. Has a finer gr oral incl.

Micros. char.
Phenocrysts.
Biotite. - n < balsam 4) Max Ext 10° bronzed. abundant. moderate alteration to calcite & some sericite
Femes - rare & completely replaced. Biotite?
Ground mass.
Tiny feldspar laths within a matrix of recrystd? qtz + feldspar.
Some pleochroic apatite
Pyrite.
Qtz ests. secondary
chlorite. calcite + sericite

9-524

No. T28 Field Name Vector Andesite.

Name

Locality HW of Murray Brew Fault.
1540 Level Vaus Ext.

Coll. TBN

Year 29 1-19.

Megas. char. medium dark greenish porphyritic rk in which white phenocrysts are dull + for the most part poorly defined. Much iron stained. little or no effervescence with HCl (dil)

Micros. char. RK ~~almost completely~~ moderately replaced by qtz with fols of sericite + prob. considerable carbonate. Some chlorite esp in old femes which appear rather more abundant. Plag - ~~outlines~~ obscure altho' one piece of albite? noted.
Pyrite abundant locally.
Much apatite but is not pleochroic.
Orig gm coarse recrystd?

9-524

No. T411 Field Name OR? ~~or TB?~~

Name

Locality 25505, 1310W Coll. TBN

SB-54 900 Belmont Year 30 3-15

Megas. char. "rk with sparse wcl & matrix like OR."
Porphyritic textured rk with scattered rk fragments.
Some tiny qtz + (or) feldspars

Micros. char. Qtz & sanidine phenocrysts similar to OR
Matrix particularly similar but not as felsic as 410
Prob OR.

9-524

No. T388 Field Name ~~RTT?~~ or ORV

Name

Locality 5020N, 9550E (West End coord) Coll. TBN

SV-53 1000 Rescue Eula Year 30 3-13

Megas. char. "Well crushed:
Much sheared pale greenish rk with abundant feldspar & bio phenocrysts - May be some of qtz V - but mostly concealed by shearing -

Micros. char. Sanidine, qtz & bio phenocrysts, essentially unaltered - much shattered & fractured
in a glassy matrix that is locally spherulitic
& locally devitrified.

9-524

No. T410 Field Name OR

Name

Locality 26205, 1560W Coll. TBN

900 Belmont Year 30 3-15

Megas. char. Numerous qtz, bio & feldspar phenocrysts in a pale grayish felsic matrix.

OR. shows faint banding. Rather abundant biotite? phen.
Sanidine and quartz phen. (up to 3 and 4 mm) and a few of biotite (3 mm the largest) in ~~typical rhyolitic~~ groundmass. Sanidine shows a few carlsbad twins, not many. Quartz sometimes shows very equal development of two rhombohedrans α an quartz? Apatite assoc. w. biotite in small crystals - rare. Very occasional phen. of plagioclase (oligoclase) u. badly altered to ~~ct~~ calcite. The calcite on any one plag. phen. is all in crystallographic orientation but bears heterogeneous relation ship to the plag. Quartz shows "enlargements". Possibly a primary feature. Phen. as a whole only 10% of the rk. O ne qtz. crystal shows a small inclusion of orthoclase. Otherwise alt. phen. rather free from inclusions. Many small grains of limonite - possibly derived from mgt. No noticeable orientation of phen. or groundmass. GM holocrystalline, allotriomorphic

9-524

No. T363 Field Name OR

Name

Locality 21405, 1490 E Coll. TBN

1100 Belmont Year 30 3-11

Megas. char. Rather soft whitish dense rk with obscure small feldspars + soft qtz. Recrystallized slightly.

Micros. char. Numerous small qtzs - most angular, some embayed. Feldspars entirely altered, mostly to colorless chlorite?

Slight flow structure.

Rare bio. (altered)

9-524

No. T373 Field Name OR? ✓

Name

Locality 17505, 305W Coll. TBN

1100 Belmont Year 30 3-11

Megas. char. pale gray rk, with altered feldspars, with a number of qtz areas, - some of which are 5 mm long of glassy fractured qtz.

Micros. char. Rounded resorbed qtz

Completely altered feldspars + biotite

Chlorite (recrystallized?)

9-524

No. T194 Field Name Rhyolite dike OR

Name not separately mapped since down not cut floor

Locality Coll. TBN

54-55 600 Midway Year 29 2-9

Megas. char. Gray rk with conchoidal fracture qtz phenocrysts up to 3 mm diam. Abundant rounded Altered feldspars

Micros. char. See Campbell's notes.

T 194 Rhyolite dike in roof of XC about 30' north of red plume connection Midway, new, 600.

Dense light gray groundmass. Quartz phen. are numerous, av. 1-2 mm. Possibly some fresh feldspars; others are altered to a chalky white material. They are not as abundant as quartz. Quartz phen. and rock in general rather similar to T 40 & 50. But groundmass is almost entirely silicified - and part of this show in "enlargements" of quartz phen. A little sericite intermixed. Pyrite sparingl present in small cubes.

9-524

No. T237 Field Name Oxide Rhyolite

Name

Locality Coordinates 4970N 1070E Coll. TBN

800 level West End Year 29 2-13.

Megas. char.

Micros. char.

T 234 OR 4970N 1070E 800 WE

Rather like 230. The quartz phen. are neither so large nor so abundant. Some biotite and possibly a few feldspar phenocrysts are distinguishable.

About same as 230. Quartz phen. not so abundant. Several phen. of sanidine. (n ∠ C.B. - optic angle very small 30° ±, opt. -) Some altering to calcite. Also one of albite -> calcite. A little calcite in groundmass. Biotite altered to quartz with a rim of sericite. A few grains of pyrite present - a little limonite.

9-524

No. T341 Field Name OR

Name

Locality 1630S, 1960E Coll. TBN

1155 Keyport Extension Year 30 3-7

"Banded - at contact with WE"

Shows chilling and fine flow banding, developed chiefly by fluidal layers of different grain sizes. This phase does not extend over 8 - 10" from contact, where ordinary phase appears. Quartz and sanidine phen. are evidently intra-telluric as they appear in this chill phase in same distribution as in normal phase. Biotite is much less developed and when it occurs seems to be altered chiefly to quartz - a brownish, rather opaque, high index material - might be either siderite or rutile.

very fresh

The phen. show somewhat ~~more~~ resorption here than in the freshest normal phase. Some of the banding faintly resembles brecciation. Might it have developed from vein quartz picked up in intrusion? XX - Flow breccia developed -

much less

9-524

No. T342 Field Name OR

Name

Locality 1750S, 1910E Coll. TBN

1155 Keyport Extension Year 30 3-7

"fresh"

Megas. char. Very pale purplish gray matrix (dense) with abundant rounded qtz (2-3 mm) & numerous white dull feldspars. Altered biotite? less common -

Micros. char. Resorbed qtz.

A few fresh sanidine ~~many~~ locally -> carbonate.

Moderately fresh biotite.

Groundmass very fine grained + undoubtedly altered.

Has much dark rods + specks -

9-524

No. T361 Field Name MT
Name
Locality 19705, 890E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. Moderately greenish gray rk with rather fresh feldspars

Micros. char. Rather fresh rk
Good at feldspars (a or bad am)
Altered ferms
Trachytic g m.
Sparse carb, sericite, etc.

9-524

No. T365 Field Name Inclusion in MT
Name
Locality 22605, 905E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. Oval incl (1½" diam) of pepper + salt rk in greenish MT with abundant incl -

Micros. char. Incl has at laths in matrix of sericite + chlorite with apatite needles -
Host MT similar to others, - at phenocrysts + altered bio (sericite + chlorite)
Texture partially recrystallized?

9-524

No. T370 Field Name MT
Name
Locality 15005, 320E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. rather dark gray "fresh" green matrix with abundant fresh feldspars + obscure altered ferms -

Micros. char. Good at phenocrysts, - slight epidote
Ferms → chlorite + carbon epidote.
Gm good trachytic texture with much chlorite.

9-524

No. T382 Field Name MT
Name
Locality 34555, 935E Coll. TBN
1100 Rescue Eula Year 30 3-11

"banded"

Megas. char. Gray green rk with abundant pink dull feldspars. Rk is banded by layers of discontinuous lenses of darker greenish dense material

Micros. char. Phenocrysts prot sodic oligoclase. largely → calcite.
Biotite → completely chlorite + rutile
golden brown apatite common
Matrix very fine gr or cryptocrystalline with lenses + veins of coarser but still fine gr qtz. This prot causes the banding

9-524

No. T372 Field Name MT
Name
Locality 16005, 5E Coll. TBN
1100 Belmont Year 30 3-11

"bleached"

Megas. char. Pale grayish rather lecherulous rk with almost no trace angular of the old phenocrysts.

Micros. char. Good ol phenocrysts partly → carbonate
Femics → qtz + carb
Apatite remnants (frayed.
Matrix fine gr lecherulous with local concentrations of coarser gr qtz — No chlorite.

9-524

No. T393 Field Name MT
Name
Locality 20855, 460E Coll. TBN
1000 Belmont Year 30 3-13

"banded"

Megas. char. Porphyritic, foliated gray green rk. Faint banding shown by variations in color of matrix.

Micros. char. Phenocrysts considerably recrystallized + locally carbonatized. Old clearly an large part a devitrified glass. — now has coarse chlorite.
locally shows an old trachytic texture
Prot has banding reflects old alternation of glass + trachytic texture in g.m.

9-524

No. T423 Field Name

Name

Locality 24303, 460W
800 Belmont

Coll. TBN

Year 30 3-17

Megas. char. "Thoroughly bleached"
Rather clayey, sgt white rk, with irregular somewhat lenticular darker streaks.

Micros. char. Phenocrysts entirely altered to pumite + clay?
Gdm recrystallized + altered
Very little chlorite.
Streaks probably due to irregular aggregates of introduced qtz.

9-524

No. T422 Field Name MT

Name

Locality 15603, 50E
700 Belmont

Coll. TBN

Year 30 3-17

Megas. char. "carbonatized"
Very pale greenish, porphyritic MT with obscure phenocrysts
Effervesces very weakly with dil HCl

Micros. char. Groundmass carbonatized + carbonatized.
Chlorite remnants
Trachytic g.m.

9-524

No. T421 Field Name MT

Name

Locality 13803, 235E
700 Belmont

Coll. TBN

Year 30 3-17

Megas. char. Pale greenish porphyritic rk with abundant moderately fresh? feldspars.

Micros. char. Rather fresh ab-or phenocrysts locally carbonatized.
Very little anorthite - moderate chlorite.
Trachytic g.m.
Sparse colored aggregates

9-524

No. T387 Field Name MT

Name

Locality 30005, 1560 E Coll. TBN

1150 Rescue Year 30 3-13

"fresh"

Megas. char. Dark dull greenish gray tk with fresh small feldspars + altered femics. Effervesces freely with dil HCl.

Micros. char. Good ad phenocrysts

Bio - almost completely altered.

Gm Hyalotic with fairly aged Cattos

Consid chlorite + carbonate + opaque sericite.

Colorless apatite.

9-524

No. T383 Field Name Contact of bx + MT

Name

Locality 75N, 975E (Rescue coord) Coll. TBN

1100 Rescue Eula Year 30 3-13

Megas. char. Sharp regular contact bet tk MT + a TF bx. Latter, however, has a fragment of tk that closely resembles the MT.

Micros. char. Specimen appears to be chiefly of the bx. Much carb + sericite + local qtz. Prob some adularia?

9-524

No. T405 Field Name MT

Name

Locality 7100 N, 7270 E (WE coord) Coll. TBN

1250 North Star Year 30 3-15

"rather fresh"

Megas. char. Rather dark greenish porphyry with abundant feldspar phenocrysts, a few of which appear to be fresh. Altered femics.

Micros. char. Rather fresh ~~[illegible]~~ olig? phenocrysts in a trachytic gm.

Consid introduced carbonated - rare sericite.

Several veins of rather coarsely altered qtz

No. T401 Field Name MT

Name

Locality 7040X, 7840E (West End coord) Coll. TBN

1120 North Star Year 30 3.15

"supposed MA"

Megas. char. Rather soft slightly stained greenish gr. with abundant somewhat poorly defined altered feldspars –

Micros. char. All phenocrysts considerably replaced by calcite. Coarse qtz, sericite, + chlorite in the g.m. which appears to have had orig a trachytic texture –

9-524

No. T400 Field Name MT

Name

Locality 1815S, 315W Coll. TBN

1600 Belmont Year 30 3-15

"thoroughly altered - hard"

Megas. char. pale greenish gray hard brittle porphyry with abundant moderately dull phenocrysts.

Micros. char. All ~~[illegible]~~ phenocrysts largely sericitized. Remnants of fine gr trachytic texture but locally recrystallized?
Apatite abs corroded but good amts of fine gr chlorite remain in g.m.

9-524

No. T426 Field Name MT

Name

Locality 1340S, 160W Coll. TBN

800 Belmont Year 30 3-17

"rather bleached"

Megas. char. hard, pale greenish gray, porphyry with some fresh feldspars –

Micros. char. Probably fresh all phenocrysts, with minor sericite + carbonate + rare adularia –
All hydrothermal, some later – some introduced qtz.
Remnants of chlorite, apatite (some colored)

9-524

No. T408 Field Name Contact of tuff + MT

Name

Locality 6560N, 7280E Coll. TBN

1250 North Star Year 30 3-15

Megas. char. Hand specimens do not show conclusively nature of contact altho it appears to be essentially conformable.

Micros. char. Nature of rk in slide thoroughly masked by extensive alteration to sericite, carbonate + chlorite - Good amt of qtz also introduced -

9-524

No. T283 Field Name Supposed Midway Andesite

Name

Locality Coll. TBN

500 Mizpah. Year 29 2-23

T 283 Supposed MA XC to Ext. and MacNamara.
A=lighter 500 Mizpah-RP
B=darker

A: dark gray groundmass, with numerous white feldspars, all somewhat altered. Could be MT.

B: Light greenish gray groundmass, abundantly shot with calcite veinlets. Would not be recognizable as closely related to A. (Taken 100' apart). much altered Feldspars not recognizable

A- Feldspar phen. partially adularized, and sericitized on non-adul. portions. Slight kaolinization. Femags scarce -> sericite and quartz rutile. Groundmass chiefly sericite and silica. Some colorless and faint brown apatite. One feldspar gave max. = ∠ 15°. Pyrite very abundant. Some relatively large patches of pale yellow-green chlorite. Coarse introduced qtz. Rh-ad veinlets.

B = Fairly fresh spars (partly gone to calcite) make up the numerous phen. in a trachytic groundmass. Femags gone to calcite and chlorite. Some secondary quartz. Much secondary chlorite - some on feldspars. Ap. common - some faintly colored.

surprisingly fresh rk except for abundant carbonate.

9-524

No. T294 Field Name Mizpah Trachyte

Name

Locality Coordinates 2000 W 3600 S Coll. TBN

600 Level Silver Top. Year 29 2-25

T 294 MT (Gold Hill type) face of S XC 200W, 3600S. 600 Silver Top. The groundmass is dense, grayish green. The feldspars are much larger than u. Some up to 1 x 1/2 cm. Relatively numerous small oval to elongated reddish altered areas -- possibly from femags. One or two incl. of fine grained purplish andesite ($2\frac{1}{2}$ x 1 cm). Small irregular dark green patches of chlorite are fairly common. The smaller specimen shows a faint banding in the streakiness and parallelism of the chlorite patches. Some pyritization.

Prob. MT. Phen. feldspars in sericite porphyritic type. Except for faint kaolinization and locally a few carbonate patches, they are quite fresh. (max. = ∠ = 14°). Some show a peculiar concentric band of secondary quartz as if it were a zonal growth. [illegible] quartz. Femags rather sparse, w. rim of black Fe. oxide (as in CA) and chlorite sericite or carbonate interior. Some brown apatite. Secondary quartz in groundmass - w. is heavily kaolinized. Pyrite quite abundant.

Hard with conchoidal fracture.
Moderate amt of adularization of phenocrysts
Matrix so micro-xline from recrystallization?
Patches of chlorite + carbonate abundant.

9-524

No. T285 Field Name Mizpah Trachyte
Name
Locality Coordinates 2960W 2220S Coll. TBN
500 Level Mizpah Year 29 2-23

Megas. char. (Bleached in HW of Mizpah vein) Hard + brittle pale cream-gray rk with obscure sparse feldspars that appear to be unaltered locally.

T 285. Bleached MT. HW of Mizpah vein. 500 Mizpah-Silver Top.
Grayish white porcellaneous groundmass, with some feldspar phen. showing faintly. Limonite stained.

MT - u. type. Spars rather smaller and sparser than in some. Some partly adularized. Incipient sericitization. Pyrite spars, in small cubes.

Phen show an almost complete expulsion of chlorite. Phenocrysts quite fresh but locally are replaced by sericite + adularia.
6H notably holo-altered with feldspars? + qtz.

9-524

No. T286 Field Name Mizpah Trachyte
Name
Locality Coordinates 2650W 2500S Coll. TBN
500 Level Mizpah. Silver Top. Year 29 2-23

Megas. char. (Incomplete alteration) Hard brittle pale greenish gray rk with phenocrysts hard to distinguish

T 286. Incomplete alteration of MT, south XC to Beta fault. 500 Mizpah-Silver Top.

Altered MT. Groundmass has become chalky, in large part, elsewhere it is fine grained and gray, possibly much silicified. The feldspars are almost obliterated by becoming chalky, like the groundmass.

Very fine grained and much sericitized rock, consid. kaolin over all. Feldspar phen. rather less abundant, and femags more so than usual. Pyrite conc. esp. in these. Quartz veinlets.

Chlorite expelled. Thorough sericitization.
6H finely altered but no kaolin - no alunite?

9-524

No. T287 Field Name Mizpah Trachyte
Name
Locality Coordinates 2675W 3230S Coll. TBN
500 Level Mizpah. Silver Top. Year 29 2-23

Megas. char. (Nr end stage of alteration) Soft chalky cream colored rk with dulled feldspars

T 287. Nearly end stage of bleaching in hard MT 2675W, 32308.
500 Mizpah-Silver Top.

Altered MT., grayish white groundmass, with chalky white feldspars. Quartz phenocrysts?

Not nearly as much altered as two preceding. Feldspar phen. of u. type and not much altered. A little adularization, slight sericitization and later kaolinizatio over all (phen. & groundmass). The groundmass is much silicified. Femags very sparse --> sericite and quartz. Pyrite here. Brown apatite rather abundant.

Chlorite expelled
Phenocrysts fresh - only slightly sericitized.
6H around sericitized locally.
Much kaolinite?

9-524

No. T288 Field Name Breccia within MT?
Name
Locality Coll. TBN
400 Level Sim Butler Year 29 2-23

T 288 Breccia within MT? 60' SE of shaft. 400 JB.
Dakr. greenish gray groundmass, with numerous chalky white areas, mostly very small others up to 1 cm -- many of these larger ones are highly angular.
Relations not clear. Might have been a breccia. Now highly silicified and sericitized - w. original texture obscured. Much pyritization in swarms of small cubes. Kaolinization locally heavy.
Clearly a clastic.

9-524

No. T292 Field Name Hypab Trachyte.
Name
Locality Coordinates 2200W 3200S. Coll. TBN
600 Silver Top. Year 29 2-25

Megas. char. Gray green rk with abundant dull feldspars. Rather fresh.

T 292. Rather fresh MT? 2200W, 3200S. 600 Silver Top.
Dense, siliceous? gray green groundmass, with numerous chalky white feldspar phenocrysts clearly outlined. Rock also contains a few small specks of what may have been femags, outlined in dark green. Faint evidences of banding.
MT of u. types: some adularization; consid. sericitization - silicification in gm. kaolin. Femag phen. now abundant thruout. ~~Groundmass chiefly~~ Gone chiefly to chlorite, w. some sericite - pyrite notable in these areas. Also siderite. Brown apatite abundant. Zr. noted.
Rather fresh feldspars -
Consid chl in gm + also from old femics phenocrysts.
Gar prob all replaced
Sparse sericite + rare adularia?

9-524

No. T260 Field Name Andesite from Fracture Breccia
Name
Locality Coll. TBN
D-56 500 Level West End. Year 29 2-19

Megas. char.

Micros. char.

T 260 Andesite, at face of west drift. 500 WE.
Andesite bowlder in FDB. A purplish gray groundmass with abundant, white altered feldspars (up to 1 cm) and smaller amounts of a dark constituent, in which is a large (12 cm) subrounded boulder of a greenish andesite.
~~Highly~~ altered rock - veryreminiscent of CA. Large to small sericite porphyri spars - completely altered to sericite. Femags more abundant - now heavily coated w. brown Fe oxide - some of these may have come from pyrite w. does not occur as such. Pleochroic apatite. A little zr. Much kaolin and chlorite. A few small areas suggest amygdules? These are filled w. chlorite sericite.

9-524

No. T289 Field Name Bleached Mizpah Trachyte?
Name
Locality Coordinates 2500 W 2525 S. Coll. TBN
55-56 600 level Mizpah. Silver Top. Year 29 2-25.

Megas. char. Hard brittle rock - more or less dark gray in color. Very fine gr matrix in which are a few small dull feldspars. Qtz veined. Resembles parts of TF?

T 289 Bleached MT? 2500W, 2525S. 600 Mizpah-Silver Top.
Somewhat banded. One band is grayish white, uniformly finegrained; another contains numerous whiter looking feldspar phenocrysts -- this latter band is much pyritized; the former is not. The rock as a whole shows some kinship with GT.
GT or MT. Much altered. Sericitized and kaolinized - with much secondary quartz in groundmass. Quartz adularia vein common. A few large pyrite crystals.

Rather abundant phenocrysts → adularia, sericite + abundant pale chlorite -
Gdm wholly recrystallized to fine gr aggregate - not much chlorite?
Veining by qtz + adularia, - qtz clearly youngest -
Could easily be an altered MT

9-524

No. T295. Field Name Contact of MT + breccia
Name mapped as MT but - may be MT-BE contact
Locality Coordinates 2000 W 3400 S Coll. TBN
55-56 600 level Silver Top. Year 29 2-25

T 295. Contact of MT. and "MB". 2000W, 3400S. 600 Silver Top.
The MT is whitish, with saccharoidal texture; some "ghost" feldspars are recognizable. Dark green specks and shreds of chloride stand out prominently. The breccia sends tongues of pinkish glassy material into this. Elsewhere it contains numerous fragments of the andesite.

Contact shown in slide - MT with recrystallized gr. an sharp contact with very fine gr matrix of br. This contains fragments of TF as well as MT. Chlorite veinlets + also several of qtz-adularia-sericite.

9-524

No. T299 Field Name Mizpah Trachyte.?
Name
Locality Coordinates 2000 W 3600 S. Coll. TBN
57-58 400 level Silver Top. Year 29 2-25

(altered - dark)

Megas. char. Moderate pale dull gray altered rk with almost all of original textures destroyed - Probably thoroughly kaolinized - Veined. No calcite.

Micros. char. Qtz - sericite + kaolinite? rk - with original textures almost completely destroyed. Old feldspar phenocrysts suggested by concentrations of sericite -
Apatite gone completely -

9-524

No. T258 Field Name Contact of MT & underlying breccia

Name

Locality Coll. TBN

55-56 500 Level West End. Year 29 2-19

Megas. char. The specimen could equally well represent various stages in bleaching or silicification of MT.

Micros. char.

T 258. Contact of MT and underlying Breccia. HW XC from shaft XC. 500 WE. The MT appears about as usual. The breccia is a very fine grained phase, with dark gray matrix, with a few small white feldspar phenocrysts? Seems to intrude and engulf the MT. Much calcification along joint planes. Are the spars in the breccia developed from contact?

Apparently alt. MT - with considerable carbonate alteration - both in phen. and thruout rock. Pyritization abundant too - especially in swarms of small cubes. Some silicification. Very little sericitization. Some adularization in larger feldspar phen. ab- Heavy kaolin and chlorite in places. all MT.

9-524

No. T129 Field Name "Redway Andesite"

Name

Locality Coll. TBN

800 Level Sand Grass Year 29 2-5

Megas. char. Rather thoroughly altered groundmass, locally gray green with remnants of white feldspar phenocrysts.

Micros. char. See Campbell's notes.
Coarse carbonatization of feldspar phens
Recalcified, gn m?

T 129 MA face of stub cutting Ext. fault. 800 SG.
MA Badly altered rock. Outlines of feldspar phen. are just recognizable in a limonite stained, chloritized ground.

Ap. - all colorless - very abundant. No zr. noted. Femags scarce. One feldspar gave matrix = ∟ 15°. All lower n than CB. Distribution about like MT.

9-524

No. T112 Field Name "Redway Andesite"

Name

Locality Coll. TBN

1000 Sand Grass Year 29 2-3

Megas. char. Much altered greenish gray rk in which are abundant thoroughly altered feldspar phenocrysts. Partially once veined by calcite - now leached out.

Micros. char. No slide.

T 112 MA HW of Merger vein near Ext. line. 1000 SG.
MA Much altered. Apparently an andesite -- very like MT, with dark gray groundmass, and light chalky feldspars. Much silicification, and locally limonite stained.

9-524

No. T123 Field Name Skypark Trachyte
Name
Locality Coll. TEN

700 Level Sand Grass Year 29 2-5

Megas. char. Coarse altered porphyry, much veined by qtz.

Micros. char. No slide

T 133 MT? in FW of N vein just east of Ext. fault. 700 SG?
MT? In dense gray siliceous groundmass, some pinkish gray tabular feldspars are recognizable.

9-524

No. T153 Field Name Skypark Trachyte
Name
Locality Coll. IC

1070 Level Merger Year 29 2-7

Megas. char. Gray green matrix in which are numerous only partially dulled feldspar phenocrysts. some smaller poorly defined darker areas that may represent old femics - Rk is of brittle type. Stks are full of pyrite & such stk. Sparse fine gr py -

Micros. char. See Campbell's notes
Stk. adularia veins are clearly later than chloritization.

Grayish green matrix, fairly fresh feldspars. Contains an inclusion of equigranular (white and green grains) rock -- another andesite? Diam. 2 cm.
Typical MT. Here chief alteration has been to sericite (and sometimes a little quartz) following an earlier rather complete adularization
Several amygdaloidal areas - showing a first filling - around edges - of a zero birefracting green chlorite; then sericite, finally quartz. In a few cases, quartz seems also to have been early.
Quartz adularia (chiefly quartz) veinlets and aureoles occur thruout the section.
Neither pyrite nor Ti as abundant as usual.

No. T154 Field Name Skypark Trachyte
Name
Locality Coll. IC

1070 Level Merger Year 29 2-7
(altered)

Megas. char. Lgt gray green rk in which powdery white feldspars are locally recognizable in abundance - Py rare -

Micros. char. Appears rather fresh in plain light - sharp outlines of feld phens & of laths in gm. But ~~phens~~ with X-nicols seem to be thoroughly altered (phens & gm & in isotropic fine gr mosaic) & coarse irregular small dusty qtz areas in gm.

T 154. MT altered 520 N of Merger shaft. Merger 1070
Greenish gray matrix. Small, faintly outlined whitish feldspars. A little pyrite.
Probably MT. much altered. Feldspars sericitized - much secondary quartz in groundmass. Some pyrite and considerable Ti.

9-524

No. T167 Field Name Keyport Trachyte
Name
Locality Coll. TBN

600 Level Tono Ext. Year 29 2-7

Megas. char. porphyritic with red inclusions.
Rather bleached brittle rk with phenocrysts fairly well evident. Very fine gr reddish purple mat.

Micros. char. No slide

T 167. MT porphyritic rock with red inclusions. Same locality as T 166.
600 Ton Ex.
Rather like 166. Feldspars more altered, seem to average larger size. Contains an inclusion of fine grained purplish rock, 2 cm.

9-524

No. T182 Field Name Keyport Trachyte
Name
Locality Coll. TBN

500 Level Tono Ext. Year 29 2-9

Megas. char. Fragmental?
Hard brittle ± MT only partially bleached but features completely gone.

See Campbell's notes.

Micros. char. Very little mineralization? on gm or fine gr. No albite.
Sparse sericite

T .182 MT Fragmental? MT Western XC 500 Ton Ext.
Mt still more altered. Feldspar outlines indefinite. Many streaks of secondary chlorite and quartz.
Mt fine grained. Feldspars (almost albite) altered chiefly to carbonate. Brown apatite present sparingly. Quartz veinlets common - much in groundmass. Pyrite abundant.

9-524

No. T216 Field Name Nygpak Trachyte

Name

Locality Coordinates 3225 E 1750N Coll. TBN

400 Level Tono Ext. Year 29 2-13.

Megas. char. Pale greenish gray matrix with abundant rosy white ex feldspars. No trace of trachytic texture in gm - Now realtyed.

Micros. char.

T 216 MT 3225E, 1750N 400 Ton Ex.
More pyrite than in 215, otherwise very similar.
Similar to 215 - but more thoroly sericitized. In areas of former femags? now sericitized - there appear small high index yellowish brown, somewhat pleochroic crystals. Siderite? Pyrite in large cubes. Quartz veinlets.

9-524

No. T215 Field Name Nygpak Trachyte

Name

Locality Coll. TBN

270 Level Tono Ext. Year 29 2-13

Megas. char. "hard green." greenish gray matrix with abundant clay-like feldspars. Much py.

Micros. char. old trachytic gm rather thoroughly realtyed. Campbell's kaolin in vein = cololess chlorite? Much chlorite in gm + coarse adularia? on old phenocryst

T 215 Hard green MT 3460E, 1650N 270 Ton Ex.
Light gray groundmass, with the u. tabular feldspars.
MT. Rel. few, but large feldspar phen. completely alt. to sericite and kaolinite. Groundmass shows abundant small lathlike spar outlines - sericitized - in heterogeneous arrangement. Locally - a conc. of med. sized tabular spars - also gone to chlorite and sericite. Quartz veinlets w. later filling of kaolinite. Pyrite scattered thruout - some w. quartz enlargements. Zr. present. Ap. rather abundant - some in unusually long slender needles (colorless). A few stouter prisms show the u. brown pleochroism. Prob. secondary quartz in groundmass.

No. T210 Field Name Nygpak Trachyte.

Name

Locality Coll. TBN

500 Level Tono Ext. Year 29 2-11

Megas. char. Bands 1/2-2 cm wide Banded of pale purplish gray dense matrix alternating with white porphyritic bands, with sparse phenocrysts

Micros. char. Diff in bands = one is sericitized + very fine-gr - other much coarser gr + realtyed with coarse introduced qtz + some adularia

The matrix varies from dark gray to grayish white, in alternate parallel layers, which give a strongly banded effect. The bands are quite sharp, but both have the usual tabular feldspars, and in some instances, a feldspar phenocryst crosses from one band into the next. The bands are very regular, and average about 2 cm wide.

Andesite - with faint suggestion of sub || arrangement in feldspar phen. and also in groundmass. Latter largely sericite - quartz. Phen. practically all sericite. One or two hb. x sect. inner core quartz - next rim of Fe oxide - then sericite - then final outer rim of Fe oxides. Some quartz veinlets. Pyrite scattered thruout.

No. T225 Field Name Nypah Dacite.
Name
Locality Coll. TBN
800 Level West End Year 29 2-13

Megas. char. Pale greenish gray matrix with abundant dull white feldspars
Pegmatized.
OM prot. ang. glass with tiny laths, - and rexllzed. Conard
calcite - Phens all altered. Hbr. most common.

Micros. char.

T 225. MT from E face of drift 836. 800 WE (Ohio).
MT. Usual type, with gray groundmass, and chalky white feldspars.
Chiefly associated with some large pyr. cubes - showing small quartz haloes.
Some silicification in groundmass.

9-524

No. T219 Field Name Nypah Dacite.
Name
Locality Coll. TBN
400 Level. Tons Ext. Year 29 2.13.

Megas. char. Pale greenish matrix with abundant altered feldspars
Not unlike other specimens of Alt.
Much sericite + chlorite.

Micros. char.

T 219 MT FW XC of Egyptian vein. 3225E, 1550 N 400 Ton Ex.
MT Dark greenish gray matrix. Some large and numerous small feldspars. General texture very similar to the MA preceding.
Thick section - much altered - Texture entirely obscured. Sericitized and silicified chiefly w. some chloritization, locally, carbonate developed. A few xls. of pyrite.

9-524

No. T218 Field Name "Midway Andesite."
Name
Locality Coordinates. 3100 E, 2150 N Coll. TBN
400 Level Tons Ext. Year 29 2-13.

Megas. char. Rather dark green matrix (dark") in which are abundant altered feldspars
Much sericite
Feldspars not completely altered but much introduced calcite -
Conard sericite + sparse qtz in gm, which is rather fine qtz.

T 218 MA? Supposed MA (dark) 3100E, 2150N 400 Ton Ex.
Dark gray matrix: generally similar to 218, but more altered.
Feldspar phen. → calcite. Femags sparse → sericite, rutile and little quartz.
Groundmass chiefly sericite and secondary quartz. Pyrite. Colorless ap. quite abundant.

T 218 Midway.
Rather similar to 217. Gm. much sericitized. Some silicification. Feld. phen. not all entirely gone to carbonate. A few indicate that both or and albiclase are present. Femags sparingly present, gone to sericite rutile and quartz, sometimes chlorite. Irregular replacement areas of quartz mosaic occur, practically no adularia. Ap.and py. quite common. Pyrite shows faint aura of limonite.

No. T247 Field Name Keypah Trachyte
Name
Locality Coordinates 4560 E 4120 N Coll. TBN
700 Level Sam Butler Year 29 2-15

Megas. char. Hard, pale greenish gray rk with abundant ~~rock~~ rather fresh feldspars + chlorite streaks - fnel.
Phenocrysts show resorption locally. Gdl on holo allotrio with laths in mesostasis of chlorite (very fresh gl) + patchy feldspar?

Micros. char.

Quite fresh MT. The phen. are mostly of good size and show max = ∟ 15°. ng = CB, np < CB, np < CB. +.
The groundmass is holocrystalline, but finer grained than #240. (Consists mostly of small tabular feldspars - a majority seem to be plagioclase (albite), but some or. may be present. A few flakes of biotite have been alt. to sericite and/or chlorite. Ap. & zr. are common in and around these. Ap. is sometimes pleochroic: brown to colorless. Rutile conc. & pyr. occur especially here too. Locally there has been some kaolinization. Chlorite in small shreds in the groundmass is rather abundant. Locally a few aureoles of secondary quartz. Pyrite faintly limonitized. Principal alt. on feldspar phen. is sericitization - not far advanced.

No. T240 Field Name Keypah Trachyte
Name
Locality 6 Coll. TBN
600 Level West End Year 29 2-15.

Megas. char. Hard gray green ~~"normally"~~ fresh rk with sporadic fresh feldspars + abundant oriented chlorite streaks -

Micros. char.

Freshest MT yet seen. Phen. are large & alt. of plag. feldspar: max. = ∟15°, ng practically = CB; np lower. Ext ⊥ Z on ool = 20°. Optically +, 2 V = 75° ±. Some show patchy alteration to sericite. The groundmass is holocrystalline. It is made up chiefly of small lathlike to rod-like plagioclase feldpars (practically same comp. as phen.) with a little or, and possibly some quartz - though this may be alt. secondary. Interspersed between the spars are small shreds of the usual much chlorite. Femag phen. may have been sparingly present, if so, are now gone to chlorite and sericite - or quartz and rutile conc. A small amount of kaolinization over all. Ap. & zr. present. Pyrite scattered in a few large grains.

laths in a reclyzed matrix?

9-524

No. T239 Field Name Keypah Trachyte
Name
Locality Coll. TBN
600 Level West End Year 29 2-15

Megas. char. in FW of vein.
Much fresh feldspar - relatively little sericite - considerable chlorite - appearing in - Sparse adularia in phenocrysts.

Micros. char.

T 239 MT in FW of vein. 600 WE.
Small shreds of chlorite are more abundant than in most spec. of MT, and some of the feldspars show a zonal alteration to chlorite. Pyrite present thruout. Otherwise generally similar to u. MT.
Practically like #240 - but somewhat more sericitized. Feldspar phen. fairly fresh.

No. T254 Field Name Hypsh Trachyte

Name

Locality Coll. 778N

800 level Lim Butler Year 29 2-19

Megas. char. Fresh Doesn't seem to be particularly amygdaloidal

Texture prog. to mortrop. Many g/B seeds & many veinlets.

T 254 Fresh MT, might be amygdaloidal. HW XC 800 JB.
Large feldspars, some rather fresh, stand out quite prominently in a grayish green groundmass. Numerous small brownish black pits are distributed over the surface, but they do not appear particularly amygdaloidal in the hand specimen. Pyrite is quite abundant, and quite fresh, so it is not likely that the pits have resulted from alteration of pyrite. Much silicification.

MT. Groundmass heavily kaolinized. Feldspar phen. less so (Some adularization). Much secondary quartz - same as pyrite halos - a few replacing pyrite. A little sericite. Some strongly pleochroic apatite. Patches of chlorite and sericite? occur similar to amyg. areas found, esp. in CA. These are small and of irregular shape.

No. T252 Field Name Hypsh Trachyte

Name

Locality Coll. 778N

800 level Lim Butler Year 29 2-15

Megas. char. Similar to 251 but feldspars are all small.

Adularization of all phenocrysts shows well. Much chlorite.

Texture mainly laths in no particular class? but some recrystallization

Micros. char.

T 252. Andesite, resembling MT. 170' from shaft, south shaft, XC.
800 JB.
Andesite, rather similar to 251, but having a slightly tuffaceous appearance.

Small flakes of biotite are rather common.

Like preceding MT's. Here are excellent examples of adularization of the feldspar phen., w. those portions remaining free of kaolinization. How much of of this process has affected the groundmass is difficult to say. In view of considerable kaolinization thruout - probably not much. A few flakes of green chlorite may represent sericite biotite - but not common.

No. T251 Field Name Hypsh Trachyte

Name

Locality Coll. 778N

800 level Lim Butler Year 29 2-15

Megas. char. Pale gray green matrix, abundant feldspars, some fresh, most chalky - chlorite specks. Py sparse.

Gm mostly of laths in part recrystallized - May be some adularization of phenocrysts. Much tiny chl in gm. Rather sparse sericite. Some new g/B -

Micros. char.

T 251. Andesite, resembling MT. 270' from shaft, S shaft XC,
800 JB.
Gray green matrix, with abundant feldspars, a few somewhat larger than u. fo: MT (up to 1/2 cm). All chalky. Small chlorite flakes rather common; pyrite thruout.

Same general type. Feldspars partially sericitized. Chlorite abundant. Numerous quartz aureoles.

9-524

No. T263 Field Name Dark tuff? from MT

Name

Locality Coll. TBN

600 level Jim Butler. Year 29 2-19

Megas. char. Might be a thoroughly ~~[illegible]~~ serecitized & somewhat altered gy-rich fine gr chloritic -

Micros. char.

T 263 Supposed dark tuff. HW XC from fraction vein. 600 JB.
Supposed tuff -- altered MT?
Featureless grayish green rock. Much secondary quartz.
Thoroly altered rock. Cut by quartz veins (with a very little adularia) and entire mass is silicified and sericitized. Sericite has later been partially kaolinized. Locally some carbonate. Pyrite very abundant, also some TiO_2.

9-524

No. T257 Field Name Typical Wadleigh.

Name

Locality Coll. TBN

700 level Jim Butler. Year 29 2-19

Megas. char. "Light colored, fresh":
GM recrystd? & has numerous clear areas of relatively coarse gr qz + adularia

Micros. char.

T 257 Light colored, fresh MT, 30' from face of S XC from shaft. 700 JB.
Typical MT, with rather fresh feldspars in a gray, fine grained groundmass. Small phen. of biotite are rather abundant.
U. MT. Some excellent examples of adularization, both of phenocrysts + g.m. Pleochroic ap. zr. Heavy kaolinization in places. Sericite rather scarce. Assoc. w. quartz and adularia in secondary groundmass. Pyrite. Biotite -> sericite.

9-524

No. T256 Field Name MT.?

Name

Locality Coll. TBN

700 level Jim Butler Year 29 2-19

Megas. char. Banded. Brittle hard pale green matrix with many fresh feldspars. Numerous rather large chlorite streaks. One red mica (biotite) - Apparent banding due to orientation of feldspars rather than chlorite -

Micros. char. Much tiny chlorite as streaks in the fine gr to cryptocrystalline gm - local alteration of gy along mutually ∥ bands -
Phenocrysts of all very fresh - Fumes opaque → chlorite
Pleochroic apatite.
One gy vein lined with sparse adularia.
A little py -

9-524

No. T267 Field Name Mizpah Trachyte.
Name
Locality Coll. H&F
600 Level Jim Butler. Year 29 2-19

Megas. char. Rather dark gray green rk with mod fresh feldspars.

Micros. char. Consid chlorite in the moderately silicified & sulfidized gm.

T 267 MT face of most easterly drift. 600 JB.
Rather similar to 266, but with a much darker green groundmass, and somewhat coarser feldspars.
Like 266 - but more heavily kaolinized, not so much ap.

9-524

No. T266 Field Name Mizpah Trachyte.
Name
Locality Coll. H&F
600 Level Jim Butler. Year 29 2-19

Megas. char. Rather rk with apparently fresh feldspars.
GM very fine gr. RK lined by parallel(?) discontinuous gg seams -

Micros. char.

T 266 MT 250' NE of Wandering Boy shaft. 600 JB.
Quite typical MT, with fine grained gray groundmass, and numerous small white feldspars. A few dark green chlorite spots. Considerable pyrite in bunched aggregates.
MT. much kaolinized. Some quartz veins and secondary quartz in groundmass.
Good Feldspars of u. type, ~~partially adularized~~ - and small sericite veinlets, running thru. A few chlorite ~~Quartz~~ patches bordered by suggest amygdules. Deep brown apatite unusually abundant. Pyrite scattering.

9-524

No. T265. Field Name Breccia from MT
Name
Locality Coll. VBN
400 Level Jim Butler. Year 29 2-19

Megas. char. Small rk fragments in a matrix that resembles MT.
Carbonatization & sericitization dom. Consid qz -
Much altered but prob had orig a fine gr porphyritic matrix -

Micros. char.

T 265 Mizpah Breccia. HW XC from fraction vein. on coordinate 4300E.
400 WE.
At first sight, rather like WER with small abundant white inclusions. Groundmass is somewhat coarser, however, light green in color. The numerous white phen. or inclusions are all kaolinized. (some up to 1 cm).
Too much altered to be sure of original character. Probably a breccia - contains a few small fragments of quartz. A few large plagioclase phen. (altered to adularia) gone principally to carbonate. Some chlorite flakes. Much secondary? quartz. Heavy kaolinization. Consid. pyrite.

9-524

No. T278 Field Name Keyport Wachapreague

Name

Locality

Coll. TBN

530 Level Midway. Year 29 2-23

Megas. char. Rather dark greyish green matrix

T 278 MT HW XC N from shaft 530 Midway.
Very numerous fresh looking feldspars -- a few up to nearly 1 cm. Grayish green groundmass. Comb. quartz vein cuts the spec.

MT. w. unusually high prop. of plagioclase phen. (max. = 16°). Faintly sericitized. Much apatite - all colorless. Pyrite abundant in swarms of cubes -- but noticeably absent from feldspar phen. U. kaolin and chlorite. Some secondary quartz. in nests.

GM orig glassy? now locally obscurely recrystallized.
Sparse adularia esp on borders of thin qtz vein.

9-524

No. T277 Field Name Fragmental? MT

Name

Locality

Coll. TBN

600 Level Red Plume. Year 29 2-23

(with interbedded lens of tuff?)

Megas. char.

T 277 Fragmental? MT with interbedded lenses of tuff? Most westerly HW XC, 425' N of RP vein. 600 Red Plume.
Rather featureless rock, due to extensive alteration. Some suggestion that it may have been a coarse breccia.

9-524

No. T 274 Field Name Keyport Wachapreague

Name

Locality

Coordinates 5705N 3130E

400 Ohio Year 29 2-21

Megas. char. Hard brittle rk (Fresh. with abundant feldspars, some of which appear fresh. matrix mostly pale gray to greenish gray, pale purplish gray along sm qtz? veinlets.

T 274 Fresh MT 5705N, 3130E 400 Ohio.
Grayish groundmass, with the outlines of the larger feldspars blurred by alteration. Shows a greenish phase in contact.

MT. Feldspars partially adularized. Consid. kaolinization. Thin sericite veining. Pyrite locally abundant in swarms of small cubes.

Very sparse sericite veinlets - Consid fine gr chlorite both in phenocrysts & in g.m. GM orig perl glass with sparse feldspars but now obscurely recrystallized. A few chlorite? after biotite?

9-524

No. T 202 Field Name Keypah Trachyte mapped as MT

Name

Locality Coordinates 2300 E 3200 N Coll. TBN

54-55 630 level Midway Year 29 2-11

Megas. char. Pale greenish gray R full of tiny white & dark mel which might be altered phenocrysts or clustic melanosomes.

See Campbell notes.

Micros. char. Considerably sericitized.

Texture partly recrystallized & textures so destroyed that orig nature doubtful.

T 202 MT 2300E, 3200N 630 Midway.
Andesite. Green matrix. Feldspars mostly very small. Faint suggestion of banding. MT (?) Sub sericite text. with phen. completely sericitized and groundmass kaolinized. Locally a little carbonate and a little quartz. Pyrite scattering.

9-524

No. T243 Field Name Andesite mapped as MT

Name

Locality Coordinates 4120 E 4605 N Coll. TBN

54-55 600 level West End. Year 29 2-15

Megas. char. Pale greenish gray R with abundant poorly defined dull feldspar? phenocrysts.

Very thoroughly sericitized MT. Ground fine gr qtz & gm & also in feld phenos. Chlorite relatively rare.

Micros. char.

T 243. Andesite. 4120E, 4605N. 717Int? WE.
Andesite (looks like MT). Greenish gray groundmass, with abundant chalky white feldspar phenocrysts. They show a faint suggestion of orientation. Consid. py.?? very fine gr.
Quartz sericite aggregate. Original character very doubtful. Zr. and ap. present. A few flakes of biotite. Seem to have been converted into one single large flake of sericite. Locally heavy patches of kaolin. Pyrite rather abundant.

9-524

No. T280 Field Name Victor Andesite

Name

Locality Bottom of shaft. Keystone. Coll. TBN

Year 29 2-23

Megas. char. Banded altered phenocrysts small and abundant.

T 280 Banded "Victor Andesite" from bottom of shaft. Keystone mine. Banded VA. Very Like an altered MT. Distinct banding shows in alternation of dark gray with light greenish gray layers, av. 1/2 to 3 cm. The dark predominates. Composition and character of both doubtful.

Very fine grained probably feldspathic; now partially sericitized and kaolinized Some secondary quartz. Phen. are sparse. Some of feldspar? gone to sericite and kaolinite - w. peculiar conc. of swarms of small rhombs of siderite? Several flakes of biotite- sericite. Brown apatite. Pyrite scattering. Zr.

Comd altered - Flow structure remains -
Matrix orig fine gr but now altered & finely xlline in part

9-524

No. T250 Field Name ~~Andesite~~ MT

Name

Locality Coll. TBN

53-54 800 Level Jim Butler Year 29 2-15

Megas. char. Pale greenish gray rk with abundant feldspar phenocrysts & chlorite specs. Pyritized. Phenocrysts locally fresh. Others yellow = kaolinized?

Micros. char. Old porph orig had tiny laths in isotropic matrix. Now large patchy grains of feldspar (ab?) with shreds of chlorite & sericite.

T 250. Andesite 370' in S shaft XC 800 JB.
(looks like MT) Greenish gray rock, with some rather fresh feldspars, and others of a yellowish tinge.
Generally rather similar to 248 - but sericitization (of feldspars) and chloritization (in groundmass) are much farther advanced. In a few instances there has been partial? adularization of the feldspar phen. It is notable that the slight? kaolinization which effects them does not touch these adularized portions.

9-524

No. T198 Field Name ~~Andesite~~ TT boulder in by MT?

Name

Locality Coll. TBN

54-55 600 Level Midway Year 29 2-9

Megas. char. Inclusion of white tuff? in an andesitic matrix.

Micros. char.

T 198. Boulder in andesite matrix. '630 Midway old.
The matrix is dark greenish gray, with numerous white feldspar phenocrysts. There is a large, roughly oval inclusion (10 cm) mostly of chalky white material, with a few shreds of chlorite.

9-524

No. T197 Field Name Breccia (MT) mapped as MT

Name

Locality Coll. TBN

54-55 600 Level Midway. Year 29 2-9

Megas. char. Numerous light inclusions in a dense dark gray matrix. Has a rude schistosity that may have developed along bedding.

Micros. char. Very thoroughly altered rk.

See Comp bills notes.

T 197 Breccia from well layered phase of MT, about 125' N of connection btw. 600 and 630. Midway.
Breccia. Dark gray matrix, with abundant gray white inclusions -- the whole showing a rough banding. Limonite stains are developed locally. Inclusions are up to 2 cm. in length, apparently mostly of same type of material, tho all badly altered.
Heavily sericitized rk. w. later kaolinization. Practically all original texture obscured. Locally aureoles of quartz. Some areas seem to show trachytic textures. Py. rather abundant.

No. T221 Field Name ~~Andesite~~

Name

Locality Coordinates 4315 E 5190 N Coll. TBN

50-51 960 West End Year 29 2-13.

Megas. char. Rather pale greenish gray matrix with moderate no of feldspars, some with cl reflections + the larger ones chloritized, lop in cores Pyritized
→ Pronounced flow structure w gr. Slight recrystallization.

T 221 Andesite 4315E, 5190N 960 West End.
Andesite. (looks like CA). Gray green groundmass, many very small feldspars; others fewer and somewhat larger, some chloritized in cores.

U. albitized (?) feldspar phen. in groundmass of small (but larger than average) lath like spars. Prob. ab? Both large and small show sub || arrangement. Much chlorite in groundmass. Other larger irreg. patches of chlorite - green w. ultra blue interference + elongation? A few suggest biotite - but femag. phen. seem not to have been abundant. Chief alteration of spars is to carbonate. Femags carbonate + chlorite + TiO. One amyg? area w. outer rim chlorite, then calcite, center is quartz. Pyrite fairly abundant in med. sized cubes.

No. T374 Field Name Qtz-bearing HT? ? mapped as HT

Name

Locality 2250S, 160E Coll. TBN

51-52 1100 Belmont Year 30 3-11

Megas. char. Rather pale green thoroughly altered rock with very obscure phenocrysts. Also small irregular areas of clear glassy qtz

Micros. char. Qtz-sericite rk with no textural remnants of HT
larger areas of coarsely altered qtz.
Could equally well be TF?

9-524

No. T255 Field Name WER Br? Prob interbedded HT br.

Name

Locality Coll. TBN

53-54 800 Lake Lin Butler Year 29 2-19

Breccia. Consists of subangular fragments (from very minute up to 3 cm) of andesite, ~~trachyte~~ and black shale, the latter now converted into a chlorite mica schist, in a dense gray ~~siliceous~~ matrix. More like TF br?

T 255 WER
Doubtful rock. In much of the groundmass there seems to have been abundant development of adularia and quartz. Possibly some kaolin. There are some large feldspar phen. of or chiefly of ab. These are sericitized to a greater or less degree. No recognizable quartz phen. were noted, tho there is much secondary quartz in irregular mosaics. A few flakes of green chlorite from biotite? occur. Ap. sparingly present. No zr. noted. There are many angular patches of a more kaolinized rock, which might have been a trachyte. These contain a few or phen. and many small lath like spars, well oriented and gone to sericite. Quartz adularia veinlets are quite common, cutting both types of rock. Margins of the darker rock are sharp against the other. Pyr. fairly common thruout, some crystals with iirregularly developed quartz haloes

The very few qtz + rather pinkish qtz-sericite. fel? chlorite matrix has no resemblance to HT, recently recrystallized? or silicified?

9-524

No. T 322 Field Name MT. ✓
Name
Locality 1720S, 1100E
49-50 1300 Belmont
Coll. TBN
Year 30 3-5

"Somewhat better than average".

Megas. char. Gray green matrix with abundant dull feldspar phenocrysts. Considerable pyrite.

Micros. char. Feldspar phenocrysts show a little alteration but are otherwise completely sericitized.
Fumes → chlorite.
Groundmass shows some laths + much chlorite but also as round recrystal.
Hyalite (colorless) present.

9-524

No. T 320 Field Name Supposed amygdules ~~CA~~ for MT
mapped as ~~MT~~
Name
Locality 1940S, 605E
49-50 1300 Belmont
Coll. TBN
Year 30 3-5

Megas. char. Soft, pale greenish rk spotted with dark gry areas up to 8mm + light altered feldspars.

Micros. char. Feldspar phenocrysts entirely altered to sparse sericite + abundant pale chlorite.
Matrix texture well preserved - laths + chlorite -
large gry areas with minor amounts of chlorite might well represent amygdules.
prob CA.

9-524

No. T 321 Field Name ~~MT? with fresh feldspars~~ ~~CA?~~
mapped as ~~MT~~
Name
Locality 1875S, 485E
49-50 1300 Belmont
Coll. TBN
Year 30 3-5

Megas. char. Rather dark gray green rk with abundant phen. of apparently fresh feldspar + smaller pale greenish soft areas (ex-fumes?).

MT w. fresh feldspars. Look for epidote.
Phen. of ab. relatively fresh (some kaolin and sericite) in distinctly rhyolitic groundmass, prob. or and/or quartz. Possibly some albite. Chlorite and quite a little epidote, mostly bunched.

Feldspar phenocrysts notably fresh. Contain varying small quantities of epidote but bulk of that mineral is found as aggregates of xls associated with calcite. Comes from gr chlorite.

9-524

No. T437 Field Name Andesite.
Name
Locality 1300' E, 2350' N of SW corner of sheet 1
Surface
Coll. TBN
Year 30 4-7

Megas. char. Dark grayish brown rock with abundant fresh feldspars + altered ferms -

Micros. char.

T 437 Andesite Surface SW of Tonopah.
Large phen. of labradorite and smaller biotite (w. heavy opacite border) in fine-grained chloritized groundmass. Calcification also common. Mgt. Texture prob. but obscured by alteration.

Some altered amphibole hornblende -

9-524

No. T264 Field Name (~~Tuff? in~~) MT.?
Name
Locality
mapped as in MT
Coll. TBN
55-56 600 level Sim Butler.
Year 29 2-19

Megas. char. Hard brittle thoroughly bleached MT. Very minor silicification or carbonatization - Notable feature is nearly complete absence of chlorite - Contains FS + a little ad. Phenocrysts relatively well preserved.

Micros. char. Clearly MT -

T 264 Tuff? in MT 600 JB.
Light colored, fragmental appearing rock. Might well be MT itself. Much calcified. MT - very similar to those showing adularization and kaolinization. Phen. relatively sparse. Considerable secondary quartz.

9-524

No. T276 Field Name Breccia in MT?
Name
Locality
or WT?
mapped as MT
Coll. TBN.
55-56 500 level Tonopah Ext.
Year 29 2-23

Megas. char. Resembles WER more than MT -

T 276. Breccia in MT Ton Ex. 500, most easterly HW XC, 250' N of North vein
Groundmass is green and much silicified. Contains numerous highly angular chalky white fragments (very like those of WER) av. 1 cm. and less. Also one larger (3 cm) fragment of a fine grained andesite.
Doubtful character. Probably a breccia. Seems to contain some fragments of G.T. to MT - adularized. Irregular a few large feldspar phen. that might have patches of pale blue-green chlorite. Some kaolinization. Siderite and sericite from former femags. Much silicification and sericitization thruout. Pyrite scattering.

Very thoroughly altered rk. - much adularia introduced together with chlorite, FS, sericite & a colored carbonate - There are almost no phenocrysts remaining if they were present & what few features seem to be distinguished suggest WT
Incl are of TF.

9-524

No. T350 Field Name MT or CA? Mapped as MT

Name

Locality 5950, 10280 E (WE co-ord) Coll. DBN

SD-SV 1000 Halifax Year 30 3-7

Megas. char. Dull, dark, greenish gray matrix with abundant feldspars, some altered + white, others fresh + microspic.

Micros. char. Chlorite rich ck with coarse aggs of sericite + carbonate.
Many of feldspars + all of ferrics altered.
GM rather coarse gr but not recrystallized.

9-524

No. T352 Field Name MT or CA? Mapped as MT

Name

Locality 5615 N, 10285 E (WE co-ord) Coll. DBN

SD-SV 1000 Halifax Year 30 3-7

Megas. char. Dark greenish gray rk with numerous altered ferrics + obscure feldspars - much carbonate.

Micros. char. phenocrysts of andesine (ME 20° N > CB.)
Biotite not entirely converted to chlorite.
Good gm.
Coarse carbonate agg in biotite.

9-524

No. T354 Field Name CA or MT? ? MT?

Name

Locality 5940 N, 10585 E (WE co-ord) Coll. DBN

SD-SV 1100 Halifax Year 80 3-7

Megas. char. Dark greenish matrix with abundant phenocrysts of feldspars (largely fresh) + altered ferrics.

Micros. char. Freshest specimen yet seen.
Andesine phenocrysts
Numerous large remnants of augite or hornblende (brownish green)
partly chloritized.
Relatively coarsened gm.
Good amt of carbonate.

9-524

No. T442 Field Name "MA"

Name

Locality 2700' west of north from summit of Mt. Oddie. Coll. TBN

Year 30 4-13

Megas. char. Purplish matrix with abundant fresh feldspars (up to .8 cm) long + moderately fresh phenocs.

Micros. char. Rather large olv. and phenocrysts + others of trotite + augite in a f.g.m. of glass + feldspar laths. Colored opaque also. Introduced FB + carb. Ap. remarks or chlorite.

9-524

No. T348 Field Name MT? mapped as MT

Name

Locality 6200N, 10460E (WE co-ord) Coll. TBN

S1-5V 1000 Halifax Year 30 3-7

Megas. char. "Breccia-like rk. - result of alteration of bl MT?" Gray green MT irregular invaded by a dense dark green textureless rk. Carbonate veining.

Micros. char. Relatively little altered MT irregularly veined by a fine gr. aggregate that in plain light appears to differ very little from normal g.m. but in X-nicols is seen to have destroyed the old trachytic texture entirely. Has no apparent dynamic effect but is apparently due to penetration by solutions causing a fine gr. recrystallization or replacement.

9-524

No. T349 Field Name MT or CA mapped as MT

Name

Locality 6270N, 10470E (WE co-ord) Coll. TBN

S1-5V 1000 Halifax Year 30 3-7

Megas. char. Very dark, slightly greenish, gray matrix with abundant inconspicuous fresh feldspars.

Micros. char. Rather good feldspars a > bolsam p. overshot altered to chlorite, sericite + carbonate. Relatively unaltered matrix (tiny laths in redbrown glass?)

9-524

No. T196 Field Name Andesite (dark)

Name

Locality Coll. TBN

600 level Midway Year 29 2-9

Megas. char. Dark greenish gray gm in which are abundant feldspar phenocrysts with a pale greenish cast. Sprinkled with fine gr py -

Micros. char. Phens of feld → carb + some sericite - Femics → chl.
Gm has a few laths of feld but is mainly a dark glass. Locally is undistinctly recrystallized + is lighter colored -
See Campbell's notes.

T 196 dark Andesite, about 50' W of N from connection between 600 new and 630 old. Midway.

Andesite. Dark greenish gray groundmass, with greenish white feldspars. Still darker specks of green chlorite. Abundant pyrite. Calcite in fracture planes.

Possibly MT. Fine grained groundmass heavily kaolinized - possibly some sericite. Phen. feldspars largely carbonatized. Py. scattering. Locally consid. secondary quartz.

No. T217 Field Name "Midway Andesite"

Name

Locality Coll. TBN

400 level Tons Ext. Year 19 2-13.

Megas. char. Rather pale gr "light. with numerous sugr feldspar + abundant small chlorite patches

Micros. char. Old trachytic texture in part destroyed by alteration - Convert into fine, carb, sericite, etc, esp in old phenocrysts. Colored apatite.

Groundmass here seems slightly coarser grained than most of the others, tho this may be due to a degree of silicification thruout the entire section. Sericite and chlorite are also present as alteration products in the groundmass. Possibly some kaolin. The large rectangular feldspar phen. are almost completely gone to carbonate, sometimes sericitization appears as an earlier stage of the alteration, but this is generally obscured by carbonate. Femags gone to chlorite and or carbonate. Ap. very abundant. Quite a little pyr. Irreg. concentric structures in quartz replacements, as in 155. In some cases here calcite appears as a central core within the main quartz filling.

9-524

MA? Greenish gray matrix, with white feldspars, some rather small; others of u. size and tabular shape. Chlorite occurs in patches in irregular areas. Much pyrite. Prob. MT. Groundmass partly silicified, partly sericitized. Groundmass texture like MT. Feldspar phen. alt. to sericite completely - later partly gone to carbonate. Femags sparse → chlorite. Calcite veinlets occur. Apatite mostly colorless. Zr.

T 217 Midway.

No. T207 Field Name Andesite

Name

Locality

Coll. TB N

630 Level Midway. Year 29 2-11

Megas. char. Gray green much altered rk with obscure feldspar & femic phenocrysts. Considerable carbonate.

Micros. char. Cannot count on phenocrysts.
Gm very fine gr with sparse long laths - little alt or recrystallization prod.

9-524

T 207 Andesite 100' from face of neasterly long HW XC. 630 Midway.
Andesite. Granular, greenish gray groundmass, with white tabular areas -- might be feldspars -- not well defined, and considerable secondary calcite. Specks and shreds of darker green chlorite are common in small units thruout.
Probably C.A. Large, multiple and single plag. phen. and smaller lath like ones, ab. in a fine grained groundmass of sericite, feldspar and chlorite. Phen. largely altered to carbonate. Some fairly fresh. Max = ∠ 17°. Small femag. phen. fairly abundant - alt. to chlorite and carbonate. Ti scattered thruout the rk. in med. to small aggregates. Pale yellowish green chlorite in irreg. patches shows + elongation - biref. about .01. Pyrite practically absent, altered to siderite in heavy patches.

No. T177 Field Name Trypak Wrachyte

Name

Locality Coll. IC

700 flow Red Plume
fine grained phase Year 29 2-9

Megas. char. Hard bleached little phase in which feldspar phenocrysts are obscure. Cemented veined by qtz + locally sulphides?

See Campbell notes.

Micros. char. Little sericitization or chloritization of groundmass but abundant recrystallization

Some qtz (+ ad?) + calcite veining.

9-524

T 177. MT fine grained phase. Loc. same as 176 RP 700.
Very dense, hornstone like, light gray MT, forming bands with T 176. This may be a different stage in the alteration. The contrast is quite sharp, and the structures are lens like.

Prob. MT. - altered much as in preceding except that no chloritization of feldspars. Quartz in groundmass rather abundant. Kaolin abundant over all. Several veinlets of quartz. Carbonate veinlets too - evidently coarsely crystallized calcite. In one instance a thin stringer of calcite follows a quartz veinlet for part of its way - then branches off into rock. No marginal effects. Calcite plainly later than quartz.

No. T195 Field Name Andesite Breccia mapped as HT

Name

Locality Coll. TBN

54-55 600 level Midway. Year 29 2-9

Megas. char. Hard dark gray rk with sharp contact between phenocryst-rich & phenocryst poor portions.

Micros. char. See Campbell's notes.

Ot. + adularia have largely destroyed old textures.

9-524

T 195 Andesite fragment in dark siliceous matrix. Sta. 1038. 600 Midway new. Andesite. Shows a considerable variation in grain. Groundmass is generally dark gray, fine grained. Parts have only small (p&s var) feldspars, while elsewhere the u. tabular type of average size prevails. There are one or two large biotite flakes.

Prob. MT. Highly altered by silicification and adularization (?) all show ÷ sign. Slight sericitization locally. Pyrite abundant - both large and small cubes - evidently conc. where femags were. Here is found too a little chlorite. Apatite very abundant.

No. T176 Field Name Keyport Trachyte
mapped as RT
may be tongue of WR?
Name
Locality Coll. 100' from contact

SD-55 700 Level Red Plume Year 29 2-9

Megas. char. including white fragments.
Rather darker gray green rk with numerous inclusions of white ff rks in a dense ~~gray~~ green matrix - locally resembles RT on borders of the elastic area - top or bottom of a flow?

Micros. char. See Campbell's notes.
Matrix closely resembles WER in fine wavy sericite lines, crackled appearance & fine gr character.
Has a number of anhedral incl & a few of rks.

9-524

T 176. MT, including white fragments in drift connecting HW XC with New Midway. RP 700.
Dark gray groundmass. Rock seems to include angular fragments of white material, up to 1 ½ cm. Others of similar character, very small.

A portion of section shows rk. rather similar to 174. Alt. somewhat from the advanced. Another portion shows more kaolinized and sericitized rk. Feldspars partially altered to almost colorless (faint green) and isotropic chlorite. Biotite alt. to alt. bands of bleached micra and quartz mosaic. w. ti. concentration. Considerable secondary quartz thruout. Relation not entirely clear. Rk. probably MT. Small pyrite cubes abundant as in 175.

Most of groundmass very fine grained with wavy sericite streaks - looks much more like WER. Some small inclusion of "spotted" rk. and albite fairly abundant.

No. T229 Field Name Fraction Breccia ("BD")

Name

Locality

Coll. TBN

800 Line West End Year 29 2-13.

Megas. char. in contact with OR + CA
light colored soft rk (prob altered) with abundant small mineral & a few large rk fragments.

Micros. char.

T 229. BD in contact with OR and CA 800 WE

BD Coarse, agglomeratic looking rock, with white, kaolinic matrix material, like 227. Contains angular green andesitic pebbles up to 2 cm. Thruout the rock there are numerous reddish specks of hematite? developed from femags? Reddish biotite? flakes are common.

9-524

No. T227 Field Name Fraction Breccia ("BD")

Name

Locality

Coll. TBN

800 Line West End Year 29 2-13

Megas. char. light colored soft full of ~~soft~~ small mineral & rock fragments & a few large rk fragments.
Crk has a faint banding locally. Very fine gr.

Micros. char.

T 227 Brougher Dacite. 800 WE

A much altered, white agglomeratic rock. Seems to have contained heterogenous pebbly material, tho this may be partly due to the alteration. Large and elongate streaks of chlorite. The groundmass may have had primary quartz? and feldspars.

Coarse breccia. Contains fragments of a fluidal appearing rock (much sericitized w. phen. of albite and quartz). Remainder is a mixture of L quartz fragments in very fine grained, largely siliceous matrix. Some small patches of calcite - & limonite. Pyrite not recognized.

No. T241 Field Name Breccia (FB.)

Name

Locality Coordinates 3780E, 4215N Coll. TBN

680 Intermediate, West End Year 29 2-15

Megas. char. Soft gritty rk (rich in ferr) with scattered large rk fragments—

T 241. Breccia with fresh biotite in HW of vein, just west of Winze station. 3780E, 4215N. 680 Int, WE.

Breccia. Very like BD. Contains pebbles? of varying andesitic material in a greenish white matrix, with some chlorite shreds, and specks of hematite? May have primary feldspars?

Coarse breccia - with large L fragments of quartz. Or. & a little plag. (ab) and ~~possibly~~ fragments of a fine grained andesitic (?) rock - cemented by a matrix now largely fine grained sericite - with locally a little chlorite & carbonate. Some limonite staining around shreds of what may have been biotite. A few stout grains of apatite. Pyrite present in very small amount.

9-524

No. T233 Field Name Fracture Breccia

Name

Locality Coordinates 5560N 2180E Coll. TBN

800 Level West End Year 29 2-13.

Megas. char. Dull greenish or purplish gray rk with numerous small L + mineral fragments—

Micros. char.

T 233 Breccia (same loc. as 232) . 800 WE

Reddish matrix, like that in the tongues in 232, except that this contains fairly njmerous small white feldspars? There are inclusions of green to white andesitic rock, one limonite stained. There is some shearing in the rock, with development of chlorite.

Very thick section. Apparently much carbonatized and chloritized. Might be same as 232 - but more altered. Some kaolinization. Not satisfactory.

9-524

No. T232 Field Name Andesite from Breccia

Name

Locality Coordinates 5560N 2180E Coll. TBN

800 Level West End. Year 29 2-13

Megas. char. Rather soft greenish rk with abundant, moderately large altered feldspars.

Texture very fine gr - may be porphyritic in part - traces of fell + much chlorite in very tiny shreds.

Micros. char.

T 232 Andesite from Breccia. 5560N, 2180E . 800 WE.

Grayish green matrix, with coarse to fine tabular, chalky white feldspars, some up to 1 cm. in length. Some areas appear to be fragmental, and there are interpenetrating tongues of a reddish andesitic? material, not unlike EB matrix.

Highly altered andesite porphyry? The groundmass is very fine grained - consisting now of minute shreds of sericite in a faintly chloritized mass. Phenocrysts are of good size but are scarcely altered. Plagioclase to albite and carbonate. Femags (of which there were considerable) to talc and epidote and sometimes chlorite, with breccia of mgt. Locally too, there are thin veneers of a reddish brown mineral (goethite?). Apatite is quite abundant. Pyrite? doubtful.

No. T270 Field Name Fraction Breccia (coarse)
Name
Locality Coordinates 3375 E 5030 N Coll. TBN
300 Level West End Year 29 2-19

T 270 Coarse FDB 3375E, 5030N, 300 WE.
Rather coarse breccia, with fragments up to 2 cm very numerous. Inclusions are of dark shaly? material, purplish and a greenish andesite. The matrix is in small proportion, and difficult to distinguish from the rest of the rock -- probably of a fine grained, somewhat pinkish character, and may have primary quartz.

Apparently an almost glassy flow rock, w. has yielded up fragments of much weathered (chloritized rks. - trachytes, and possibly andesites). In the crystalline matrix, of pale brownish color, are phen. of sanidine - and a few of quartz and albite. Not much alteration - but a few cubes of partly lim. pyrite are present.

Slide shows two breccias, one with a fine gr or protogenic matrix + one with matrix more xlline as described above by EC. Relations between them doubtful.

9-524

No. T269 Field Name Fraction Breccia
Name
Locality Coordinates 3225 E 5310 N Coll. TBN
300 Level West End Year 29 2-19

Megas. char. Crumbly + clay like
Matrix is scanty + very fine gr with much clay - Rk fragments show different types of alteration as do the

T 269 FDB 3225E, 5310N. 300 WE.
Light greenish, somewhat andesitic appearing matrix, with numerous small and a few larger (up to 2 cm) white kaolinic fragments. One small (1 cm) angular fragment of dark quartz or black shale present. Pyrite is present, in part altered to limonite.

Breccia, w. a variety of fragments - some like C.A - some like GT, etc. w. numerous L quartz and sanidine fragments, and a few of albite. Also a shred or two of biotite --> sericite. The matrix material is rather indeterminate. Sericite and carbonate alt. is present and there seems too to have been silicification. Locally there is heavy kaolinization. A few scattering crystals of pyrite, lim. are present.

Doubtful

Matrix is very fine gr + or protogenic - Alteration of included RK fragments stops abruptly at their borders.

9-524

No. T249 Field Name Siebert tuff?
Name
Locality from DD hole 400' S of shaft Coll. TBN
800 Level Sam Butler Year 29 2-15

Megas. char. Fine + even gr gray rk with conchoidal fracture
Comp tells granules prob carbonate? May be organic?

Micros. char.

T 249. Siebert? from DD core, in S XC from shaft, 800 JB.
Very thick section - much of it indeterminate.
Fine grained, apparently holocrystalline groundmass of light color and mass index below balsam. Contains numerous green granules of higher index. Might be a silicified and - in part - devitrified? tuff. Contains pyrite, in a few small cubes. Silica all appears secondary.

9-524

No. T434 Field Name Fraction Breccia -
Name
Locality 125'E, 750'N of SW corner of sheet 1 - Surface Coll. TBN
Year 30 4-7

Megas. char. Hard little rk, with angular inclusions of andesite + other rks in a dense grayish matrix -

Micros. char. Angular mineral grains in a fine gr chlorite rich matrix -

9-524

No. T275 Field Name Fraction Breccia
Name
Locality Shaft station 400 Level Ohio Coll. TBN
Year 29 2-21

Megas. char. Dry clay-like light colored matrix with mineral & rk fragments quite small. A few larger ones, chiefly of green MT?

T 275 FDB at shaft station. 400 Ohio.
Much like T 269.

Rather like 270 - but foreign fragments are not so common - in fact, only one or two - possibly of a fine-grained trachyte - were noted. Mostly the rock consists of a fine-grained prob. kaoline gm. with max. index lower than CB but higher than ng of sanidine. The phen. - or fragments - are very numerous, chiefly of sanidine altering to calcite. Quartz too is abundant, and there are a few of albite and biotite. Albite is little altered. Biotite -> chlorite and calcite and small rhombs of siderite. Pyrite sparingly present.

Rk + mineral fragments notably altered + fine gr matrix not affected by that alteration -

9-524

No. T272 Field Name Siebert Tuff.
Name
Locality Northeast slope of Siebert Mt. Coll. WCM
Year 29 2-21.

Megas. char.

T 272 Siebert Tuff from NE slope of Siebert Mt.
Well bedded tuffaceous rock, one layer is of fine grained volcanic ash or diatomaceous earth; another layer of much coarser grain. This is made up mostly of subrounded quartz grains (av. 1 mm), with a few subrounded fragments of a dark green to brown rock, and a few biotite flakes -- possibly another femag also -- all in a matrix of fine material similar to the first bed. There is a thin limonite zone at the contact.

No slide.

9-524

No. T441 Field Name Rhyolite Breccia.

Name

Locality north slope of highest of Red Hills north of Tonopah Coll. TBN

Year 30 4-19

Megas. char. Crowded with lk + mineral fragments in a dense dark grayish brown matrix

Micros. char. Glassy matrix with qtz + plag phenocrysts shows flow structures. Somewhat altered -

9-524

No. T438 Field Name Jasperoid (silicified Esmeralda)

Name

Locality 100'W, 2300'N of SW corner of sheet surface Coll. TBN

Year 30 4-7

Megas. char. Banded fine gr lk with conchoidal fractures resulting from silicification of Esmeralda -

Micros. char. clastic character beautifully preserved ? detritus ? lk is very fine gr. part in large part ~~qtz~~ as in in slightly below Tok -

9-524

No. T440 Field Name Breccia (FB?)

Name

Locality 1750' NW of Belle of Tonopah Shaft Coll. TBN

Year 30 4-9

Megas. char. "Sparrs TR" Altered lk (dry andesite) + mineral fragments in a dense brownish gray matrix

Micros. char. lk (phenocryst) bearing glassy matrix that includes lk fragments (among them other breccias)

Matrix is locally spherulitic + shows flow structures

9-524

No. [illegible] Field Name Flow banded glassy rhyolite –

Name

Locality Siebert Mtn Coll. TBN

Year 30 4-7

Megas. char. Grainulated gray & black banded glass.

Micros. char. Kfs, andesine? & sanidine, few phenocrysts in a clear cracked glass.

9-524

No. T435 Field Name Basalt

Name

Locality W side Siebert Mtn Coll. TBN

Year 30 4-7

Megas. char. Dense black rk with obscure hazy phenocrysts one larger bubble vol.

T 435 Basalt Surface W. side of Siebert Mt.
Well developed flow texture in small plagioclase phen. and biotite flakes. Form typical tabular and lath like andesine labrador. (max. ∟ = 32°). Biotite in large flakes w. heavy opacite border.

Groundmass made up of feldspar microlites, aujite granules &glass. The whole faintly chloritized. Locally a little calcite. Also a few small phen. of olivine and pale px. Former shows serpentinization along fracture cracks. Latter frequently twinned.

Mgt. present.

9-524

No. T443 Field Name Tuff? X

Name

Locality 4350S, 1290W Coll. TBN

500 Sim Butler (Gold Hill) Year 30 3-21

Megas. char. "Dark green - fine-gr."
greenish gray fine-gr textureless rk.

Micros. char. Kfs, feldspar & small rk fragments in a glassy matrix with a distinct suggestion of flow structure

9-524

No. T53 Field Name Ore stringer.
Name
Locality Coll. TBN
1850 level Tono Ext. Year 29 1-23

Megas. char. 1/2 - 1 1/2" veinlet of pink carb, qtz, sulphides + wall rk on a thoroughly bleached dense wall rk

Micros. char. wall rk adjacent to vein has little or no adularia
w of pink carbonate is close to 1.778

9-524

No. T48 Field Name Stalactites.
Name
Locality Coll. TBN
1760 level Tono Ext Year 29 1-21.

Megas. char. yellowish-gray granular irregular cylinders up to 1" diameter - several inches long

Micros. char. probably at least 3 minerals
one of which is gypsum.

9-524

No. T39 Field Name Barite xls.
Name
Locality About 50' in FW of Merger vein along main haulage way 1540 level Tonopah Extension Mine. Coll. 7/22/29 Year 21

Megas. char. Xls up to 1/4" long resembling flat rhombohedra - Rest upon a thin film of silica qtz which coats a fracture in Extension Breccia.

Micros. char.
n close to 1.64.
γ-α rather low.
|| extinct.

Barite.

9-524

No. T27 Field Name Chalcanthite.

Name

Locality Sheet 14
1540 Level
Tonopah Extension

Coll. 7/17/29

Year 19

Megas. char. Fractured qtz - Bluish-green chalcanthite on fractures. Covered locally by tiny blebs of a light brown mineral.

Micros. char. Blue-green Y close to 1.54.
α lower than 1.54.
mod large Y-α
incl ext. chalcanthite.

light brown prob iron oxide

9-524

No. T25 Field Name Carbonate on qtz.

Name

Locality 1512 XC
1540 level Tono Ext.

Coll. TBN

Year 29-1-19

Megas. char. Fragments of much altered rk. prob WKR veined & replaced by rather coarse grained qtz. - Qtz locally vuggy & lined with well formed terminated qtz xls upon which rest rhombs of pale pinkish brown carbonate that is localled coated with a dark brown material - Analyze carbonate?

Micros. char.

Slide + chip are of rather good rkt.

9-524

No. T10 Field Name Fibrous Gypsum

Name

Locality HW of Extension Fault
1508 XC 1540 Level
Tonopah Extension Mine

Coll. 7/16/29

Year

Megas. char. Felted mat of fine white fibrous material on bleached & altered rk in fault zone.

Micros. char. α ~ 1.52
Y slightly greater than 1.52.
mod low bref.
ext ∠ extinc over 30°
Tests for Ca, SO_4, H_2O.
Gypsum.

9-524

No. T 84. Field Name Barite

Name

Locality

Coll. IC

1540 Level Tono Ext. Year 29 1-27

Megas. char. with many fences, - a little copper staining on sk beneath drusy yellow barite also abundant

Micros. char.

9-524

No. T390 Field Name clay mineral

Name

Locality 5175N, 9320E (WE coord) Coll. TBN

900 Rescue Eula Year 30 3-13

"in HW of qtz".

Megas. char. Bright white powdery aggregate

Micros. char. Prob qtz secondary aggregate

9-524

No. T6 Field Name Oh vein

Name

Locality Victor Vein Coll. TBN

1540 Level Tono Ext. Year 29 1-17

Megas. char. Numerous thoroughly altered angular inclusions in coarse gr qtz - locally vuggy - Does not show cart or sulphides bordering inclusions.

Micros. char. Coarse + fine gr qtz with very tiny inclusions, some in strings - Consid pale gr or isotropic chlorite + relatively rare sericite. Also tiny remnants of carbonate

T 6 VEIN in VA, located on 2. Ton Ex. 1540.
Coarse to medium xllized qt. mosaics - with a few small "nibbled" residuals of adularia or a few specks of sericite.

9-524

T412 Field Name FB? Mapped as FB

Name Coll. TBN

Locality 25505, 1260W

53-54 900 Belmont Year 30 3-15

Megas. char. Pale grey rock of fine grain with numerous up to 1-2 cm of TF, andesite, etc. some qtz.

Micros. char. Prob FB since there appear to be a few glass shards on the matrix –

9-524

No. T291 Field Name Qtz.

Name Coll. TBN

Locality

Intermediate West End Year 29 2-25

Megas. char. H6 specimens – most of the rocks prob. aqueous –

Micros. char.

9-524

No. T271 Field Name Sulphide Qtz

Name Coll. TBN

Locality

400 Level West End Year 29 2-19.

Megas. char. Shows coarse pink carbonate, fine gr dark qtz full of fine gr sulphide or white qtz, (coarser gr & locally vuggy – Possible order of deposition as above –

Micros. char. Numerous areas of very fine gr qtz-sericite surrounded & embayed by coarsely allotriomorphic (±) qtz – Sulphides (mostly py) with which is associated a ~~newly~~ more or less transparent mineral of very high index but prob isotropic, have no ~~clay~~ outlines but appear as remnants in both kinds of qtz.

9-524

No. T262 Field Name Orr.

Name

Locality

Coll. TBN

460 level West End. Year 29 2-19

Megas. char. Thoroughly bleached wall rk. veined & cut by qtz together with larger veins of relatively clear qtz. Bands and irregular areas of qtz filled with dark sulphides appear to be limited to areas in which much clear qtz is common.

Micros. char.

9-524

No. T171 Field Name Pebble dike

Name

Locality

Coll. TBN

600 level Tono Ext. Year 29 2-7

Megas. char. Angular fragments, chiefly of qtz, of all sizes closely packed in a fine gr. brown matrix.

As slide

Micros. char.

T 171. Pebble dike in HW of Contact vein 600 Ton Ex.
Pebbles up to 1 cm, chiefly of white quartz, or quartzite, and a few of black slate? in a limonite stained matrix. Mostly subangular to angular.

9-524

No. T169 Field Name Orr

Name

Locality

Coll. TBN

600 level Tono Ext. Year 29 2-7

Megas. char. About 2" wide. Central part (outside of qtz walls) has a rhyolite-like band of dark sulphides on each side & with an inner & wider band of pink carbonate. Central portion is more qtz.

Micros. char. The pleochroic high index carbonate was deposited (as long needle, or plate-like xls) either upon or replacing coarsely silica qtz showing growth lines. It in turn replaced very evidently by fine grained qtz. Sulphides appear to be related to last stage & possibly also the carbonate stage.

9-524

No. T2 Field Name Incl in Or

Name

Locality HW of 1531 vein 160' above 1540 level Tono Ext. Coll. TBN

Year 29 1-17

Megas. char. Thoroughly altered rk of compacting aspect. Much resembles the maroon white tuff, but some is a dense pinkish rk with conchoidal fracture. Locally small green areas similar to WER inclusions.

Micros. char. Very fine gr rk with completely recrystd small feldspar crystals. Somewhat pyritized. Much carbonate (fine gr) introduced locally. Locally cut by thin qtz veinlets. Some of the py xls show wings of carb?

T 2 INCLUSION in HW of 1531 vein, 160' above 1540 level, Ton Ex.
Dense, fine grained, pinkish gray rock, which grades into a grayish white, featureless rock, rather like some of the tuff series, of WER inclusions.

9-524

No. T160 Field Name Pebble dike

Name

Locality Coll. TBN

600 Level Tono Ext Year 29 2-7

Megas. char. Subangular rk fragments (one of WER, one of GT) in a fine gr powdery to gritty matrix. Resembles a fault br

Micros. char. No slide

T 160. Pebble dike XC to SG shaft 660 Ton Ex.
Pebbles are mostly quartzitic, av. 2 mm, but run up to 1 cm. in diam. Subrounded to subangular, in a grayish yellow matrix.

9-524

No. T134 Field Name Marcasite ? v melanterite ?

Name

Locality Coll. TBN

600 Sand Grass Year 29 2-5

Megas. char. Ore vein coated by yellow qtz locally v one or both coated by fine gr anglesite + white powdery melanterite?

Micros. char. Prob a clay or a very fine gr n > 1.50 or isotropic
xl faces look like pyrohedrons.

9-524

No. T433 Field Name Clay mineral?

Name

Locality 21205, 1710 W

600 Keyport

Coll. TSN

Year 30 3-21

Megas. char.

Micros. char. very fine gr fibrous? aggregates of low biref - n > 1.54

9-524

No. T346 Field Name Rh

Name

Locality 14155, 2005 E

1000 Keyport Extension

Coll. TSN

Year 30 3-7

"in FW of OR".

Megas. char. Really a qtz. breccia. Angular fragments up to 1 cm of different types of qtz in a very fine gr light colored siliceous matrix -

Micros. char. Qtz + nks of pre-Oddie age embedded in alltromorphic qtz of uniform grain size.

9-524

No. T.1 Field Name Ore.

Name

Locality 1531 vein on FW 170' above 1540 level. Tonopah Ext. Coll. TBN.

Year 29. 1-17

Megas. char. Inclusions of bleached, altered rock, prob MT around which are rudely concentric bands of pink carbonate and quartz. ~~Bands~~ There is a tendency for the sulphides to be localized on the quartz along the boundaries of the carbonate bands.

Micros. char. Inclusions are fractured & orientated parts must represent very fine granite.

Fine grained carbonate aggregates in accular groupings that are normal to the edges of the inclusions. These are for the most part cut by coarsely xline quartz, but locally appear to be molded on the quartz. Quartz is full of inclusions & one grain of qtz appears to have these radially arranged but with a relatively clear center.

9-524

T.1 ORE with trachyte inclusions, from 1531 vein, on FW 170' above level and E of high raise.

Inclusions look like bleached MT, with light gray matrix, small chalky feldspars. Ore is largely pink carbonate, with borders of black sulfides, in concentric structures. Some fine grained silica.

No. T4 Field Name Ore
Name
Locality Bermuda vein Coll. TBN
1622 level Tono Ext Year 29 1-17

Megas. char. Inclusions of GT rimmed by minor pink carb and sulphides. Most of spec is dense fine grain qtz with sporadic sulphides and areas of the white clay? mineral. Local coarse grain glassy qtz. Both varities of qtz are vuggy and lined with terminated qtz xls with sparse pyrite -

Micros. Char. Mostly fine grained qtz with local coarser grained areas. Much of the qtz appears to be elongated and there is a tendency for the long xls to be orienated in two directions at right angles. There is a considerable amount of sericite much of it apparently interstitial to the small semi rounded qtz grains. Carbonate is very rare.

No. T80 Field Name Ore
Name
Locality Paymaster vein Coll. TBN
1540 level Tono Ext Year 29 1-27

Megas. char. 1"± seam of qtz and sulphide, locally rather thoughly leached in highly altered, bleached WR.

Micros. char. Polish?

No. T83 Field Name Barite, etc.
Name
Locality 1540 level Tono Ext Coll. TBN
Year 29 1-27

Megas. char. Minerals occur on as many as three sides of a block. Silicified WR and qtz coated with tiny terminated qtz, xls, upon which rest xls of white barite and pyrite.

Micros. char.

No. T3 Field Name Ore
Name
Locality 1531 vein 188' vein Coll. TBN
1540 level Tono Ext Year 29 1-17

Megas. char. Inclusion of grayish altered rock probably silicified that fainly resembles Mt surrounded by very poorly defined rudely banded qtz and black sulphides. Little or no pink carbonate. Moderate amounts of a white soft clay like mineral with 11± extinction, indices close to 1.55 and birefringence about 30± sericite or clay.

Micros. char. Mostly fine grain allotromorphic qtz in which are poorly defined stringers and veinlets of more coarsely crystalline qtz. Considerable sericite throughout the qtz which might be roughly contemporaneous? Carbonate shreds and patches appear to be definately older.

See over for more information**********

T3 *****Ore in raise from stope on 1531 vein, 188' above 1540 level and 150' E of high raise, T Ex.

Mostly fine grain silica, some specks and masses of black sulfides. Oval shaped inclusions of rock occur, look like bleached and silicifed MT -- evidently VA when close to vein takes on light gray silicifed character, rather than u. dark green phase.

No. T423 Field Name Hg stringer
Name
Locality 1520S 210E Coll. TBN
700 Belmont Year 30 3-17

Megas. char. "FW of shoestring vein"
1-2" stringer-white qtz (fine grain) boundary and central portion of dark qtz filled with fine grain sulphides. May be some carbonate.

Micros. char. No slide

No. T432 Field Name Cavernous qtz
Name
Locality 2875S 139SW Coll. TBN
600 Silver Top Year 30 3-21

Megas. char. qtz and altered wall rock surrounded by box work qtz. The interstices of the box work lined by aggregates of tiny qtz xls.

Micros. char. Coarsely xlline qtz (may be after carb?) growing out from much silicifed wall rock, slightly replaced and or embedded in fine grain qtz and sericite.

No. T424 Field Name High grade ore
Name
Locality Morrison-Polen lease Coll. TBN
in FW of Favorite vein 1000 Belmont Year 30 3-17

Megas. char. Verly little qtz. Thoroughly altered and rather shattered clay dikes rock filled with dark sulphides. Locally coated with powdery ruby silver.

Micros. char.

No. T379 Field Name Amethyst
Name
Locality 3030S 1290E Coll. TBN
1100 Rescue - Eula Year 30 3-11

Megas. char. " in qtz stringer carrying sulphides - Rather coarsely xlline qtz veinlet, white on borders and amethystine in center. Sulphides along edge of veinlet -

Micros. char. Coarsely xlline qtz older than fine grain qtz with which is assoicated pyrite, sl and cp? The amethystine qtz is coarsely xlline and seems to be distinguished from the white bj an abundance of discontinuous curing cracks.

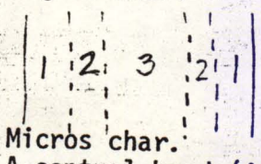
No. T394 Field Name Ore?
Name
Locality 2280S, 715E Coll.
1000 Belmont Year 30 3-13

Megas. char. "pillar in Belmont vein"

Micros. char. Slide is largely adularia in (thin) or large xls, with which is some fine grain sericite. veined by coarsely xlline qtz.

No. T395 Field Name Amethyst
Name
Locality 2850S 50E Coll. TBN
1000 Belmont Year 30 3-13

Megas. char. "Occidental? Vein"



1 white gray dense qtz with lines of sulphides
2 amethyst
3 white (cream) qtz

Micros char.
A central hard (in slide) of fractured and recemented qtz with coarsely xlline qtz on either side (growth lines). Both varieties appear to be older than and finer grain clear qtz.

No. T367 Field Name veinlet of qtz
Name
Locality 2000S 360E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. "after Lamellar calcite?"
3" veinlet of white qtz. Central portion vuggy and penetrated by thin plates of rough qtz.

Micros. char. Altered(sericitized chloritized and adularized) Mt cut by coarsely xlline qtz which shows old xl boundaries later enlarged. This in turn is cut by fine grain qtz and sericite.

No. T371 Field Name Lamellar qtz
Name
Locality 1705S 10E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. "stringer in the HW of steep Favorite vein"
Crust of qtz (coarsely xlline) on alt wall rock. Much of qtz is in terminated xls but a considerable portion of the surface shows a qtz box work that apparently represents a qtz infiltration along calcite cleavages, with subsequent removal of the calcite.

Micros. char. No slide

No. T375 Field Name Qtz.
Name
Locality 2160S 340E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. Dense, mostly dark fine grain qtz of variable appearance and poorly defined boundaries between the different types. "dense, barren, - unusually thoroughly shattered"

Micros. char. Two chief phases -
An older coarsely xlline qtz veined and embayed by very fine grain qtz which is locally considerabel sericite.

No. T357 Field Name HG stringer
Name
Locality 1970S 270E Coll. TBN
1166 Belmont Year 30 3-7

Micros.char. Aggregate of fine grain qtz, carbonate, sericite and sulphides in association with coarse grain qtz. A little evidence to indicate that the latter is the earlier. In plain light appears to preserve remnants of an older texture not now reflected in grain boundaries.

Megas. char. Similar to 356 except that carbonate is somewhat more abundant.

No. T364 Field Name vein material
Name
Locality 2140S 1080E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. "FW of Belmont vein"
Dense grayish much altered rock - oxidized.

Micros. char. No slide

No. T366 Field Name Ore
Name
Locality 2040S 550E Coll. TBN
1100 Belmont Year 30 3-11

Megas. char. "pillar in shaft vein"
Bands of glassy qtz. lamellar qtz. Min pink carb. and fine grain qtz with sulphides etc.
Considerable altered wall rock.

Micros. char. Mostly qtz of variable grain size. Sparse sulphides and sericite but very rare carbonate.

No. T333 Field Name HG stringer
Name
Locality 1900S 975E Coll. TBN
1200 Belmont Year 30 3-5

Megas. char. Shows some remnants of pink carb? but considerable leached-oxidized with considerable quantities of a white clay?

Micros. char. No slide

No. T355 Field Name Carbonate & qtz from Rhyolite vein
Name
Locality 1500S 270E Coll. TBN
1166 Belmont Year 30 3-7

Megas. char. Clarsely xlline white carbonate enclosing fragments of thoroughly altered wall rock veined by fine grain qtz or qtz and carbonate? calcite?

Micros. char. Remnants of coarse grain twined calcite in mod. fine grain qtz.

No. T356 Field Name HG stringer
Name
Locality 1600S 275E Coll. TBN
1166 Belmont Year 30 3-7

Megas. char. 4" stringer containing several fragments of altered Mt. Filling chiefly qtz but there are several bands of pink carb. (narrow). Dark sulphides irregularly distributed through central part of vein.-none on outer 1/4".

Micros. char. Mostly qtz of variable grain size in which are irregular small patches of carb., sericite,and sulphides.

No. T317 Field Name Haloids?
Name
Locality 3150S 1800W Coll. TBN
100 level Silver Top Year 29 2-27

Megas. char. White qtz (oxidized) with abundant block MnO and locally a bluish coating that might be haloid.

Micros. char.

No. T318 Field Name Ore
Name
Locality 100 level Silver Top Coll. TBN
Year 29 2-27

Megas. char. White rather coarsely xlline qtz (locally) somewhat leached, with splatches of dark qtz containing sulphides.

Micros. char. Coarse to fine grain qtz. most of it dirty with irregular small areas of sulphides, (mostly sl and py?). Qtz mostly very dirty and shows old textures that no longer conform to present grain boundaries.

No. T332 Field Name HG stringer
Name
Locality 1990S 1200E Coll. TBN
1200 Belmont Year 30 3-5

Megas. char. 1" seam of qtz parly white and notably vuggy terminated qtz xls and partly dark (with sulphides) together with sparse altered wall rock. Ore specimen shows a thin line of probable pink carbonate but most of the specimens show normal leaching and ozidation.

Micros. char. No slide

No. T 309 Field Name Qtz & sulphides
Name
Locality 3700N, 1220W Coll. TBN
1880 level Tono Ext Year 29 2-27

Megas. char. Dark dense qtz cutting and replacing G.T.
Suggestion of a film of ruby?

Micros. char.

No. T311 Field Name Ore
Name
Locality 1531 stope 200± aban. Coll. TBN
1540 level Tono Ext Year 29 2-27

Megas. char. Usual type of HG ore, - pink carbonate, white qtz, and dark qtz with abundant sulphides, - some of which is ruby-

Micros. char. No slide

No. T312 Field Name Ore
Name
Locality from 502 stope on Mizpah vein Coll. TBN
abandoned 500 level Tono M Co. Year 29 2-27

Megas. char. White oxidized qtz with much MnO

Micros. char. No slide

No. T306 Field Name Qtz with carbonate?
Name
Locality 2475N 1100W Coll. TBN
1880 level Tono Ext Year 29 2-27

Megas. char. Dense flaky gray qtz locally pinkish in color.

Micros. char. No carbonate found in crushed pink material.

No. T307 Field Name Qtz
Name
Locality from Merton vein Coll. TBN
2500±N 1200±W 1880 level Tono Ext Year 29 2-27

Megas. char. Dense fine grain white and gray qtz. locally almost chalcdonic a few vugs and almost no sulphides. One specimen has abundant white clay-like areas of mod. biref and u >1.54 prob. sericite.

Micros. char.

No. T308 Field Name Qtz & sulphides
Name
Locality 3700N 1220W Coll. TBN
1880 level Tono Ext Year 29 2-27

Megas. char. Grany dense qtz with abundant veins lined with terminated qtz xls - Py moderately abundant especially in streaks of darker qtz.

Micros. char. Sparse tiny remnants of carbonate in qtz of variable grain size. Considerable irregular areas of py and sulphides

No. T296 Field Name Ore?
Name
Locality pillar in Mizpah vein Coll.
500 level Mizpah Year 29 2-25

Megas. char. Fine grained leached qtz of rather variable texture (light colored) with considerable amounts of black Mn oxide and smaller amounts of other sulphide minerals.

Micros. char. Except for small amounts of sericite slide is all qtz. Is allotromorphic and of extremely variable grain size. There is a slight but by no means universal tendency for the more coarsely xlline qtz to vein the finer grain material. Qtz is full of inclusions. There appears to be a number of old textures shown by the distribution of the inclusions material aren't reflected in the present grain boundaries. Some of the larger qtz grains show continuous extinction as in spherulites. No carbonate or adularia noted.

No. T297 Field Name Ore?
Name
Locality Valley veiw vein Coll.
500 level Silver Top Year 29 2-25

Megas. char.
Similar to 296 but not so much Manganese. Has locally a clear white qtz that is more coarsely xlline and that has sulphide remnants.

Micros. char.
Similar to 296. Lack of concordance but old textures and present grain boundaries marked.

No. T302 Field Name Qtz - Hübnerite veinlet
Name
Locality 2300W 3225S Coll. TBN
300 level Mizpah Silver Top Year 29 2-25

Megas. char. Thin qtz veins with abundant reddish black hübnerite (shcaller) especially on borders. Veins are very vuggy, vugs lined with terminated qtz xls. Much Mn oxide.

Micros. char. Hübnerite remnants in coarsely xlline qtz.- sparse sericite. Also a high index mineral in association with the hübnerite.

No. T284 Field Name Qtz veinlet w/carbonate?
Name
Locality 500 Red Plume Coll. TBN
Year 29 2-23

Megas. char. (in "MA")
1/2" veinlet of qtz and rather coarsely xlline carbonate, some of which weathers to a pale brown.

Qtz replaces carbonate?

Micros. char. Carbonate appears locally to have xllized as long blades?

No. T290 Field Name Ore
Name
Locality 400 level West End Coll. TBN
Year 29 2-25

Megas. char. Much altered wall rock probably W.E. seamed by qtz (fine grain) in which are local concentrations of dark sulphides. Qtz seams strikingly controlled by fractures both as to coarse and as to width. Seams of ruby silver on surface.

Micros. char.

No. T293 Field Name Qtz & sulphides
Name
Locality Coordinates 2000 W 3400S Coll. TBN
600 level Silver Top Year 29 2-25

Megas char.
Coarsely xlline white and amethystine qtz with scattered(rudely band like arrangement) of dark sulphides.

Micros. char.

No. T220 Field Name Qtz and sulphides
Name
Locality 960 level West End Coll. TBN
Year 29 2-13

Megas. char. Fragments of altered rock surrounded by rudely concentric rings of dark sulphides and corasely xlline qtz. some with an amethyst tinge.

Micros. char.

No. T180 Field Name Ore
Name
Locality 640 stope Coll. TBN
600 level Sand Grass Year 29 2-9

Megas. char. Mostly dark dense qtz with poorly defined white qtz inclusions. Rusty seams thoughout.

Micros. char. No slide

No. T245 Field Name Qtz with sulphides & amethyst
Name
Locality Coordinates 4330E 4810N Coll. TBN
600 level West End Year 29 2-15

Megas. char. Rock fragments, largely silicified surrounded by rudely concentric bands of white qtz, sulphides, white qtz and central deposit of amethyst.

Micros. char. In places the coarse white qtz continues across the old rock fragment boundaries.

No. T124 Field Name Ore
Name
Locality Merger vein Coll. TBN
1140 level Sand Grass Year 29 2-5

Megas. char. Considerable local sulphide-pink carbonate, qtz, altered wall rock. Straight sharp contact with thoroughly altered brownish wall rock.

Micros. char.

No. T178 Field Name Ore
Name
Locality 640 stope Coll.
600 Sand Grass Year 29 2-9

Megas. char. Find grained dense qtz veined by dark qtz which probably carries sulphid3s and both bordered by coarse grained white qtz.

Micros. char. No slide

No. T179 Field Name Ore
Name
Locality 600 level Sand Grass Coll. TBN
Year 29 2-9

Megas. char. Banded white qtz and pink carbonate that has weathered to dark chocolate brown. Sulphides appear to be limited to qtz-carb contacts chiefly.

Micros. char. No slide.
Additional Info: Ore from roof of drift below stone from stringer to south of main vein. Shows a notable banding of oxidized Mn carbonates, qtz and sulfides. Locally almost colloform. Main vein is zone of branching stringers that has a variable steep dip. Stope on contact vein is in the 3 to 4' immediately below the HW. Ore consists of rusty qtz, crushed rock and pebble dike. Pink carbonate veinlets, and blebs in the crushed rock. Pebble kike is clearly later than the qtz, but is itself complexly faulted. Ore is very spotty--up to $220 per T. Considerable water along the HW.

No. T93 Field Name Ore
Name
Locality 1200 level Tono Ext Coll. TBN
Year 29 2-1

Megas char. White, locally rather coarsely xlline qtz seamed by dark qtz. Probably some adularia and carbonate locally vuggy some sulphide - mostly pyrite?

Micros. char. No slide

No. T94 Field Name Ore?
Name
Locality 1200 level Coll. TBN
Year 29 2-1

Megas. char. Massive py, sl, cp, gl with qtz in spherical aggregates in white bull qtz. Some evidence of qtz replacement of platy calcite.

Micros. char. Restudy with slide and polish?

No. T111 Field Name Ore
Name
Locality 1000 Sand Grass Coll. TBN
Year 29 2-3

Megas. char. Pink carbonate and fine grain qtz in which are consid. amounts of altered wall rock. Patches (irreg.) of dark sulphides.

Micros. char.

No. T13 Field Name Ore
Name
Locality 1511 XC Coll. TBN
1540 level Tono Ext Year 29 1-17

Megas. char. Fine grained dense flinty qtz with numerous small qtz lined vugs. Some fine grained pyrite. Qtz contains numerous dull white fine grain inclusions that are cut by thin veinlets of qtz. then black seams cut across the qtz.

Micros. char. Find grained inclusions in coarsed grained qtz. Inclusions poorly defined and are veined and replaced by qtz. Much sericite in inclusions and the qtz contains numberous remnants of both sericite and carbonate. No adularia recognized. One of the black seams shows in the section. Is similar to a rhyolite in habit, and is a zone charged with very tiny dark particles.

SEE OVER FOR MORE INFORMATION********

******* Qtz from 1511 XC, sheet 3, Ton Ex 1540

T13 "Qtz replacing WER" Specimen seems to be entirely silica now -- no vestiges of WER remaining, except possibly in the variation from patches of lighter to darker green qtz, which latter might represent the former incl. of the WER. Numerous small vugs are present.

No. T20 Field Name Dark brecciated qtz
Name
Locality HW of Merger vein Coll. TBN
1540 level Tono Ext Year 29 1-17

Megas. char. Angular fragments of altered gray wall rock included in a moderately dense light qtz and min in turn included as angular fragments in a dark gray to black qtz. Locally vuggy and joint planes lined with euhedral qtz slx. Minor pyrite.

Micros. char. Mostly fine grain qtz with minor sericite and remnants of a high index carbonate with veinlets and veins of a coarsed grain qtz which shows numerous stages of growth. These larger xls show an initial large xls which has been coated with numerous thin skins of radiating qtz.

SEE OVER FOR MORE INFORMATION*****

T20

dark, brecciated qtz from HW of Merger vein. 5, 1540, Ton Ex. ~~Large spec. of fractured and rehealed qtz vein. Originally white~~ vein qtz, rather massive, fractured, and fractures healed, and further veinlets introduced of a dark qtz. The whole, especially where in slabs, finally coated with a druse of rather fine grained euhedral qtz. xls.

A second spec. shows a few angular incl. of whitish rock in the light gray qtz.

"The contact between the WER and the EB on the west edge of sheet 5 cannot be clearly determined as it is in the FW of the vein: but it does not appear to be a sharp one -- the impression is a gained because of apparent inclusions of the rhyolite in the breccia, that the breccia is later"

Undoubtedly the whitish inclusions so common in both the WER and EB led to this early impression.

No. T419 Field Name Or? mapped as OR
Name
Locality 1780S 900W Coll. TBN
1050 North Star Year 30 3-17

Megas. char. "qtz - bearing rock"
Definately OR - shows characteristics reaction rims around the qtz phenocrysts. Qtz originally glass.

Micros. char. Qtz. bearing rk. - it is Oddie or TF. CF. w. OR. and with qtz bearing breccia from D.Q. 1100. Probably Oddie - as qtz phen. do not look as angular as in breccia, yet some measures up to 1/4" in diam. Unusually large for OR. Classic char. not demonstrable, due to sonsiderable silicification and sericitization. Groundmass mostly sericite and qtz - very fine granular. In this are rounded qtz phenocrysts showing qtz enlargements due to secondary silica in g.m. Also pseudomorphs of feldspar phen. stand out because entirely sericite (g.m. qtz - sericite) - somewhat coarser grained than g.m. Also one excellent pseudomorph of sericite after titanite in w. most is sericite, but grains of yellow brown rutile are conc. around borders. Rutile shows practically no pleo-
over********

T419
chroism but probably is - although bieref. exceedingly high.
Qtz veinlets, but no adularia.