PJB - Notes / maps

60008723

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5621

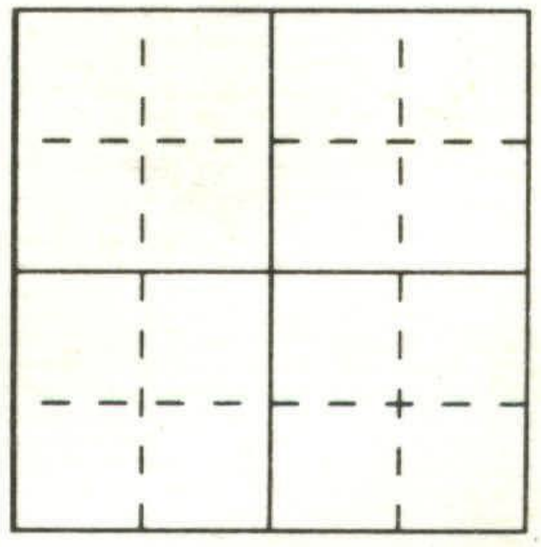
PROJECT Gator, Trench #1

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 17 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: A/tu ~~Andesite~~ Lbt + Fault plane

Andes - Flow banded w/ lithics

Fault Plane + Splays - Lam. strd w/ ± silicification.

ALTERATION: Silicification.

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

6000723

NEL-109

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ROCK CHIP SAMPLE

NWRA 5622

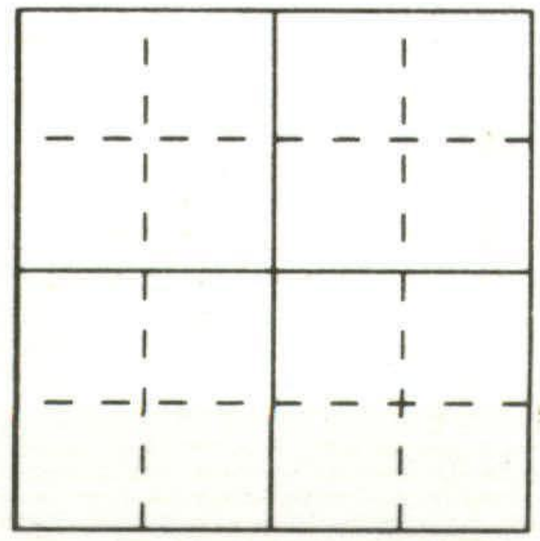
PROJECT Gator, Trench #7

SAMPLER P. Butterfield T. ____ N. S.

DATE 5 / 17 / 99 R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE ____



ROCK DESCRIPTION: Lbt ~~Andesite~~ host, S. Green clay altn

Sample taken over 3', subparallel along small fault/shear w/ Tan/Brn. Sandy gouge. Lsm. stn. along planes in green clay altn. Pos. w. silicification

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5623

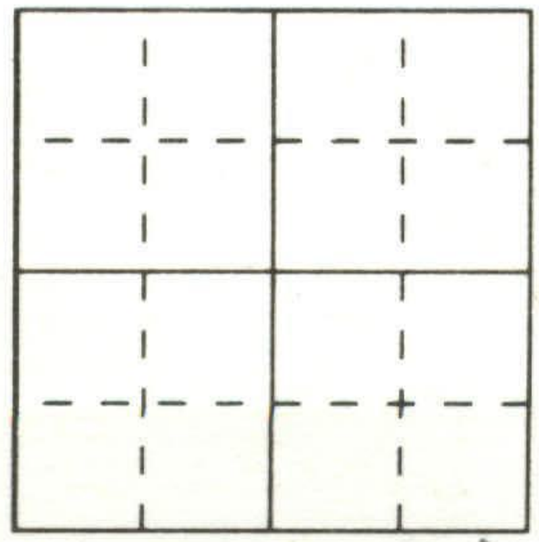
PROJECT Gator, Trench #1

SAMPLER P. Butterfield T. ____ N. S.

DATE 5 / 17 / 99 R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE RC.



ROCK DESCRIPTION: Contact zone b/w ~~Jasite~~ Lbt and Tuff/Bx unit. Fault zone w/ v.s. Lim to goethite, variable Sil. Sample includes splays further W. and 3' of m-s. silicified Tuff Bx in hanging wall. (This Sil. is flooding w/ mm. blebs of 100% replacement of host + m/m disem py., vesicle lining w/ Qtz, + some Jarosite Stn.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5624

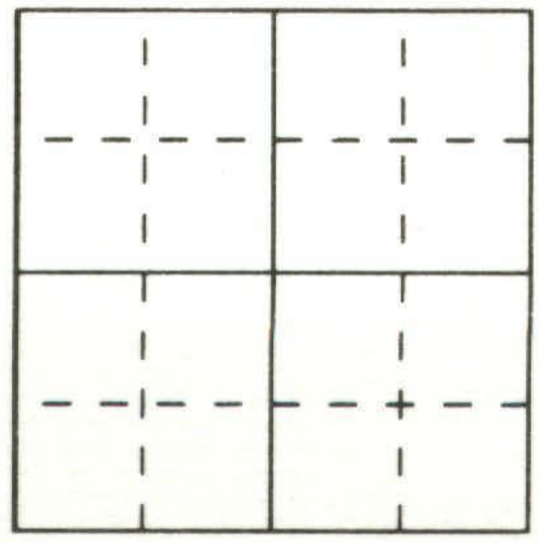
PROJECT Gator / Trench #1

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 17 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC.



ROCK DESCRIPTION: Channel Sample grab in volcanic unit - light/white, massive f.g. to aa to bx w/ red/rose matrix & white/light clasts. possible variable silicification of matrix. Some clasts appear to have been silicified prior to matrix sil. Sil. is light/white qtz. Random grab @ ~1' intvls over 26'

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5625

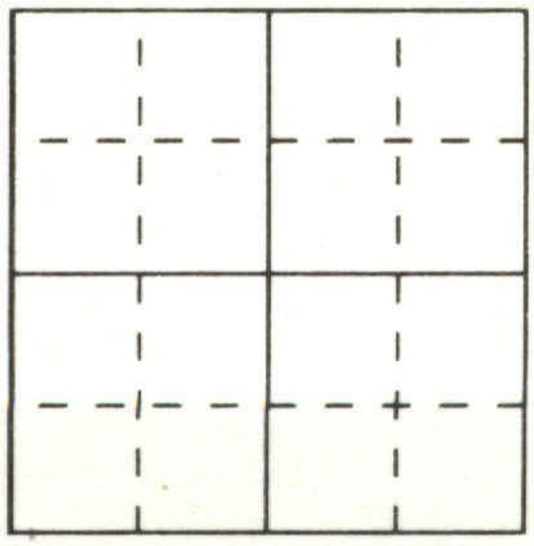
PROJECT Gator, Trench #2.

SAMPLER L. Butterfield T. ____ N. S.

DATE 5 / 17 / 99. R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE RC channel,



ROCK DESCRIPTION: Volc. Bx w/ varying matrix - from black to dk. grey, dk maroon, to light rose. Lithics are usually white/buff or hem. Stnd. Lithics are 55% to 85% of rk. Matrix is variably Siliceous, end most is ~Translucent maroon jasper. Around 55' Intvl, matrix + lithics are flooded w/ silica + contains py, disem, clots + in vugs. Some vugs lined w/ qtz.

ALTERATION: Lim, Hem, ± yellow (jar +/-?) stns present in rx thru Intvl. Samples begn @ 40', end @ 60'

MINERALOGY: on 5' Spacings.

STRUCTURE: 40' - 45'

ATTITUDES:

COMMENTS:

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P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5626

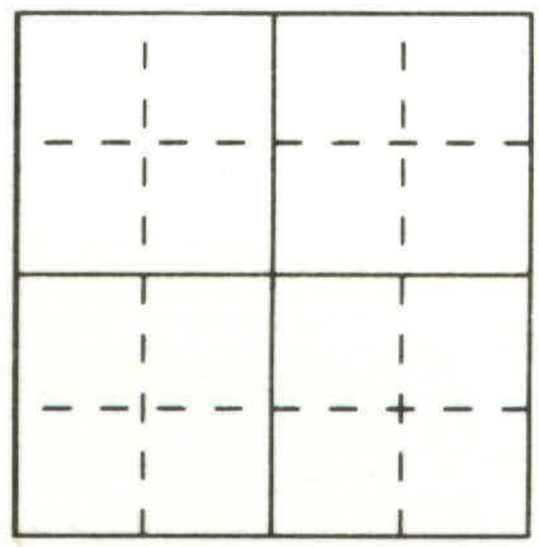
PROJECT _____

SAMPLER _____ T. _____ N. S.

DATE ___/___/___ R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE _____



ROCK DESCRIPTION:

See 5625

ALTERATION: 45-50'

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5627

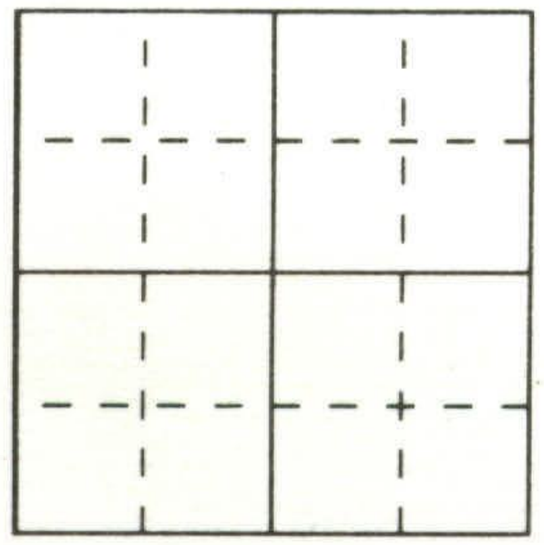
PROJECT _____

SAMPLER _____ T. _____ N. S.

DATE ___/___/___ R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE _____



ROCK DESCRIPTION:

See 5625

50-55'

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5628

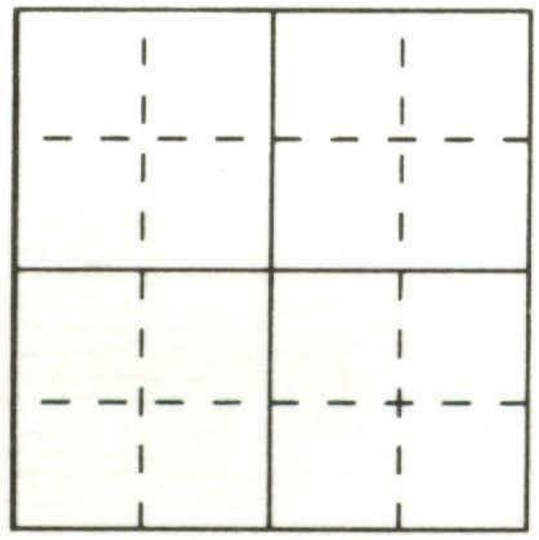
PROJECT _____

SAMPLER _____ T. _____ N. S.

DATE ___/___/___ R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE _____



ROCK DESCRIPTION:

See #5625

55 - 60'

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5629

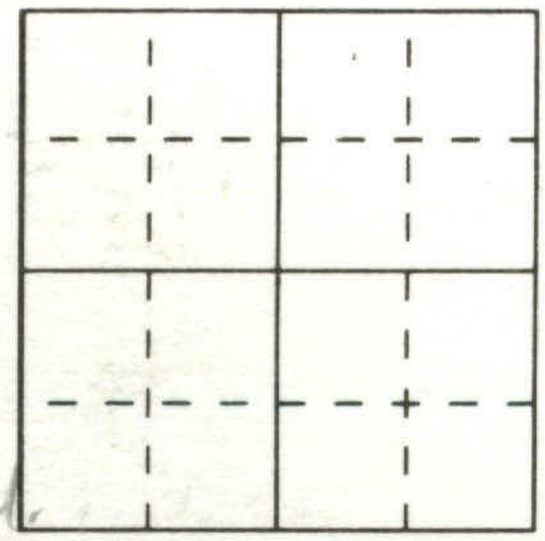
PROJECT Gator, Trench #3.

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 18 / 99. R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC channel



ROCK DESCRIPTION: Contact b/w ~~Andesite~~ Lbt & Badger units.
Zone of approx 1'+/ fractured rk, mix of badger clay
and altd (green clay) ~~andesite~~ Lbt. Also includes grab of
small clay seam + (4") adjacent 1dm, 2' W. of main
contact + wf in ~~andes~~ Lbt. Clay seam is white clay
vein w/ goeth crust. Taken ~75' from
1½' channel Samp'd.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

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ROCK CHIP SAMPLE

NWRA 5630

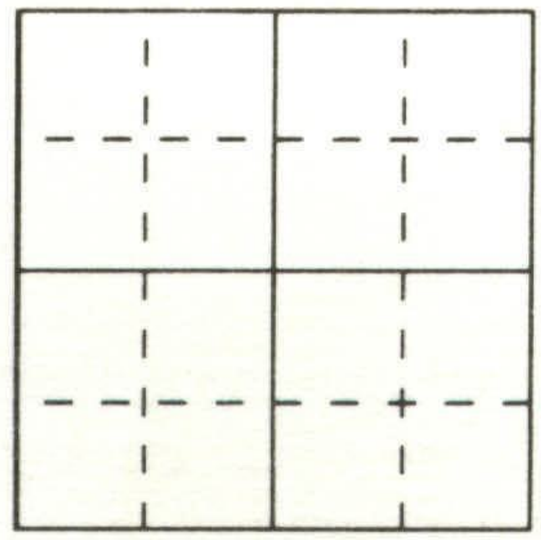
PROJECT Gator, Trench #3

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 18 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE _____



ROCK DESCRIPTION: Dacite(?) Intrus. - highly siliceous groundmass, buff in color but finely granular. Abdnt phenos of clay altd Plag & Sanidine(?). Leached vugs w/ remnant black matrics(?). Ce relatively unweathered boulder has thin qtz vnlt cutting all. Sample only of weathered rk.

ALTERATION: _____

MINERALOGY: _____

STRUCTURE: _____

ATTITUDES: _____

COMMENTS: _____

NEWMONT EXPLORATION LIMITED
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ROCK CHIP SAMPLE

NWRA 5631

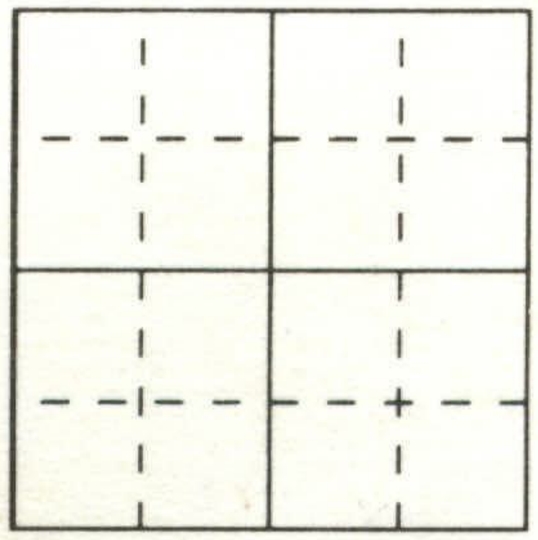
PROJECT For E. Rosebud

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 19 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE _____



ROCK DESCRIPTION: Combined Sample - 1) a 2" wide struct. w/ goeth + pss. V, weak SiO2 along fracts w/ Thkt outward altn creating needle txt. to altd. zone.
2) Similar fracts cut ~~Badger~~ but only to 1/2" Thick.
Trench #6

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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NEWMONT EXPLORATION LIMITED
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ROCK CHIP SAMPLE

NWRA 5632

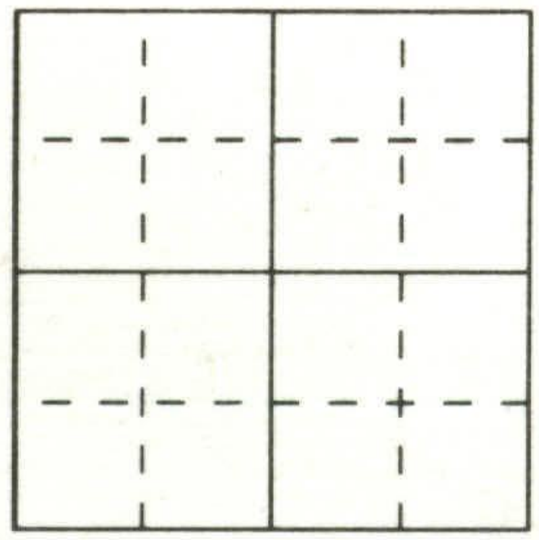
PROJECT Far E. Rosebud, Trench #6

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 19 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: Narrow sample of altd & bx w/ calcite fract fill. & dissolved vugs in bx of 'andes' rk @ ~55' along trench. Rk is mottled in color, mostly lk green grey w/ hem + ldsm stn.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
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ROCK CHIP SAMPLE

NWRA 5633

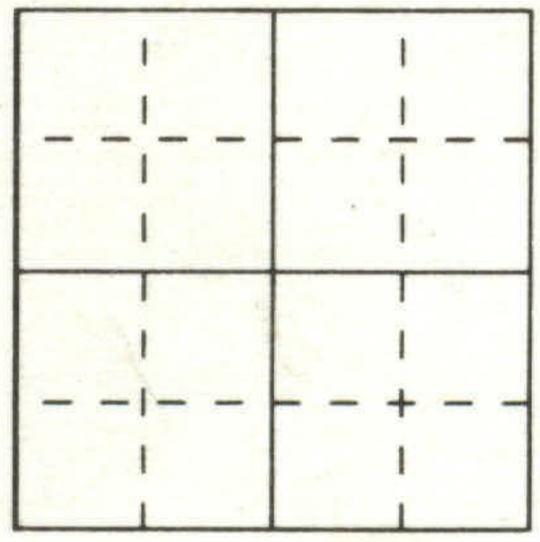
PROJECT N. Equinox, ZZ Top

SAMPLER P. Butterfield T. ____ N. S.

DATE 5 / 22 / 99. R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE Rk. Chip.



ROCK DESCRIPTION: Fault plane of ~30° dipping struct. Piece w/ slicks & up to 5" into footwall. Host is Badger Fm. Host is Sheared, Then Silicified, Then brecciated & re silicified w/ some clay (white) in Bx matrx. Slicks are qtz

ALTERATION: Silicification +/- arg/clay.

MINERALOGY: SiO_2 replaced red host.

STRUCTURE: Low ∠ fault.

ATTITUDES: ~N15E, ~-30°

COMMENTS: Multiple stages of altn + hopefully mn.

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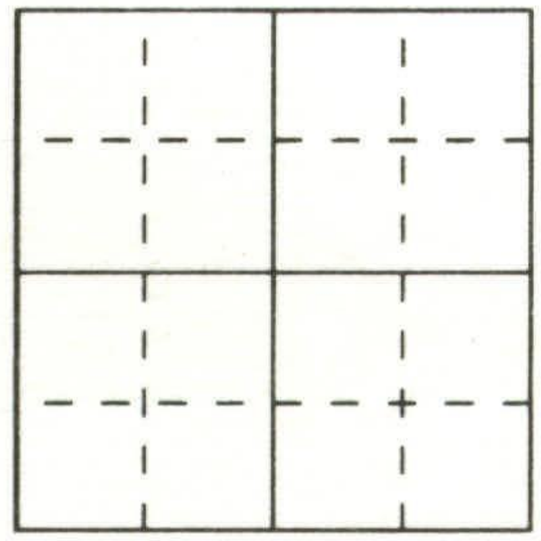
ROCK CHIP SAMPLE

NWRA 5634

PROJECT N. Equinox / ZZ Top.
SAMPLER J. Butterfield T. _____ N. S.
DATE 5 / 22 / 99. R. _____ E. W.
QUAD. _____ SEC. _____
STATE _____ CO. _____ SAMPLE TYPE Rk chip.



ROCK DESCRIPTION: Random chip from bedrock, focusing on abdnt fracts +/- beige veinlets filling a few fracts. Distance from 3' - 8' Mto foot wall, from Struct.

ALTERATION: Variable, mostly SiO_2 matrix replacement (1-3) Clay alt'd clasts (2-3). Rare SiO_2 replacing clasts.

MINERALOGY:

STRUCTURE:

ATTITUDES: ~ E/W. & vert fract sets.

COMMENTS: To test footwall., Sample collected over ~ 25' area, total.

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ROCK CHIP SAMPLE

NWRA 5635

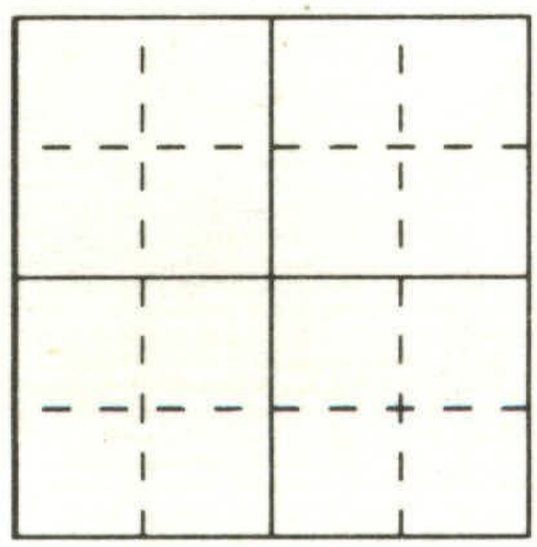
PROJECT N. Eg Wnox, 22Top.

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 22 / 99. R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE Rk chip.



ROCK DESCRIPTION: Random 'High Grade' - most silicified, veining, multi event samples possible. Includes massive SiO2 flooded host, Resilicified Bx, & Poss openspace Bx later silicified + cut qtz vn.

ALTERATION: 3. argillic, 2-3+ Silic.

MINERALOGY: Lim + hem stn (heavy)

STRUCTURE:

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5636

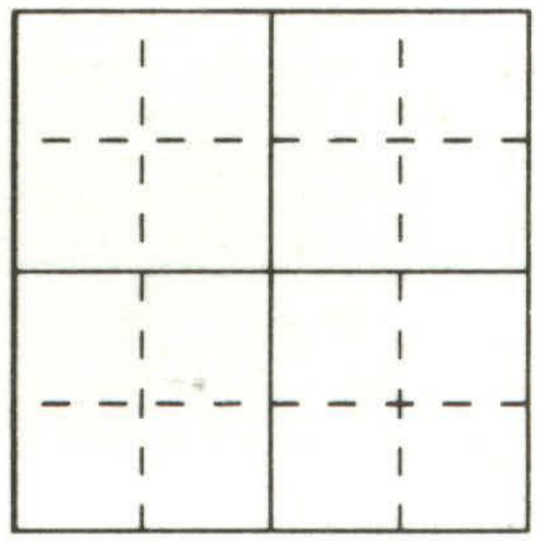
PROJECT N. Equinox / 22 Top

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 22 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE Rk chip.



ROCK DESCRIPTION: 1 ft. width accross main silicified fault. Includes underside (can not be complete foot wall) & send gossanous hanging wall.

ALTERATION: 3++ Silicification, some clasts are 3++ arg. Some vuggy (almost scoraceous) txts. Silicified Badger-1

MINERALOGY: red, hematitic matrix. also white/multicolored qtz cn sub // structure. + 1" wide.

STRUCTURE:

ATTITUDES:

COMMENTS: Extension of 5673, 40 S., several hund. ft.

NEL-109

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ROCK CHIP SAMPLE

NWRA 5637

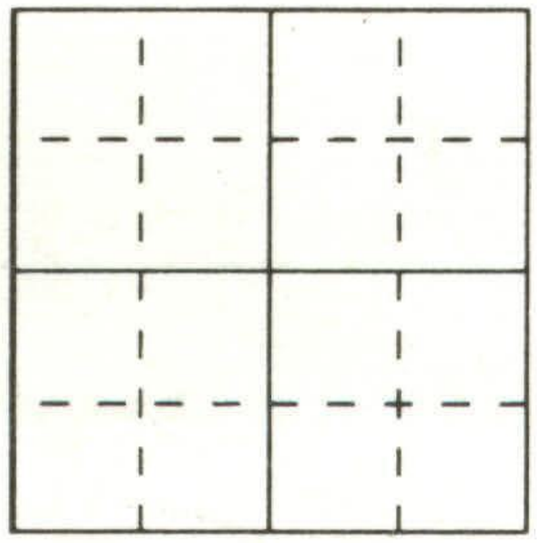
PROJECT N. Equinox / ZZ Top

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 23 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC.



ROCK DESCRIPTION: Random chip of intersection of 2 structs?
Area highly fract'd mod. altn. - not very juicy looking.

ALTERATION: 2-3 arg. 1-2 SiO2 (matrix).

MINERALOGY: Cakey Hem.

STRUCTURE: Mostly N20E

ATTITUDES:

COMMENTS:

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ROCK CHIP SAMPLE

NWRA 5638

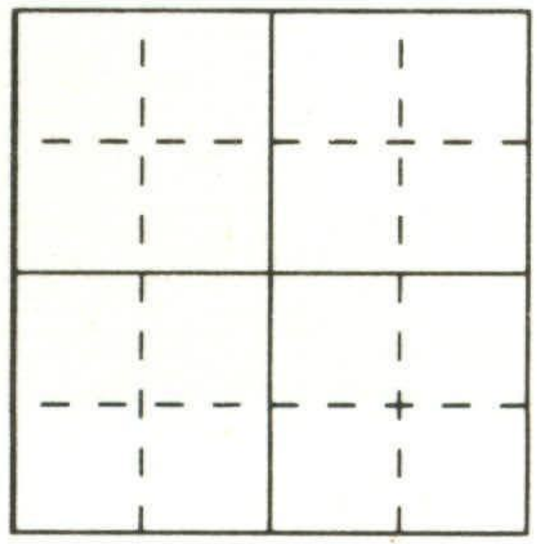
PROJECT N. Eq wnx, ZZ Top.

SAMPLER R. Butterfield T. ____ N. S.

DATE 5 / 23 / 99 R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE Rk chp.



ROCK DESCRIPTION: Mod. altd Budger. Some calth seems focused @ some fracts - more brecciated, cakey FeOxs. more silicads.

ALTERATION: Mod - 2 arg of dasts 2-3 SiO2 matrix. matrix d rose to chx/rosey grey.

MINERALOGY: Hem-cakey, Lsm. Stn.

STRUCTURE:

ATTITUDES:

COMMENTS:

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MAGGIE CREEK COMPLEX
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ROCK CHIP SAMPLE

NWRA 5639

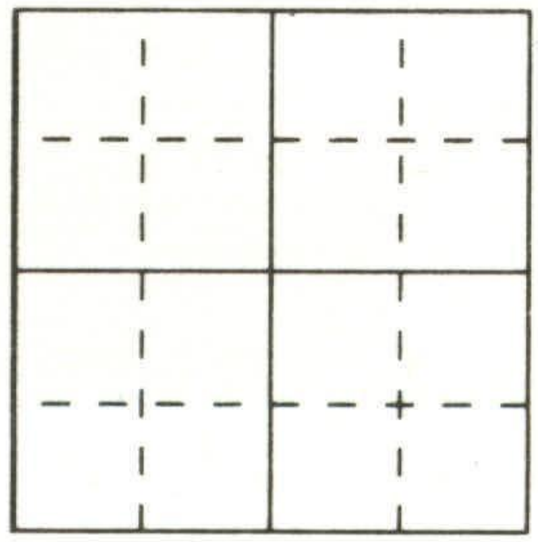
PROJECT N. Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 5/23/99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE R chip.



ROCK DESCRIPTION: Semi Select Dump Grab from Sm. prospect pit exposing S. altd Badger.

ALTERATION: 2-3+ SiO_2 matrix flooding (Lt-grey) Some ftz veining (same color/type) 3+ arg clasts - mostly dsty clay.

MINERALOGY: Mn. Hem/Lim stn.

STRUCTURE:

ATTITUDES:

COMMENTS:

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5640

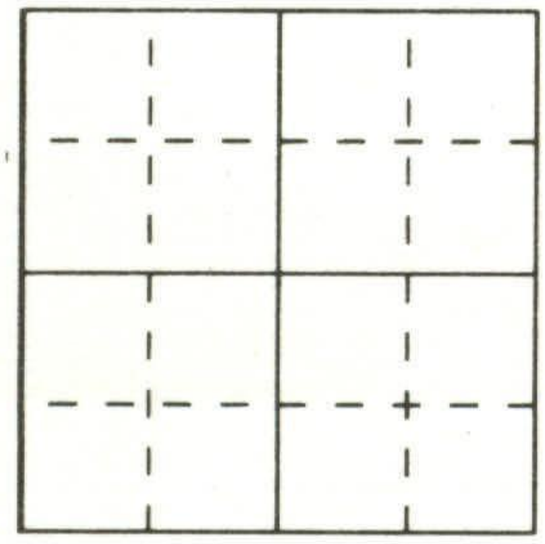
PROJECT N Equinox

SAMPLER P. Butterfield T. ____ N. S.

DATE 5/23/99 R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE Rk. Chip.



ROCK DESCRIPTION: Sample of ~ 20' of main structure

Rk is ~ 5% crackle fxt w/ complete SiO_2 of matrix (Backed)

~ 5% complete coag. of clasts - poss SiO_2 overprint. minor

redish matrix by veining near struct surfs.

ALTERATION: 2-3 arg 2-3 SiO_2 - may be much stronger,

just I overprinting other.

MINERALOGY: Cab/Ort Clm/Hem+/- Stn.

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5641

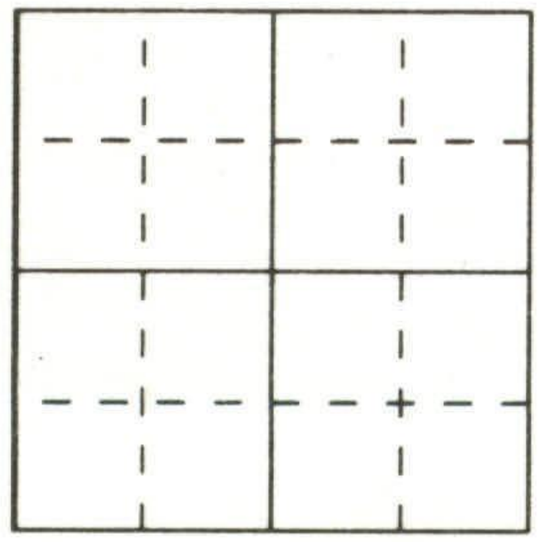
PROJECT N. Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 23 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE R chip.



ROCK DESCRIPTION: Silicified fault zone - Contact b/w Badger + Choc fms. Samples collected @ surf. Some were altd choc (2-3 SiO2 mtrx + 3 aq phenocrysts). Most were silicified shear to 1½" thick. Typically dk brn w/ lam. & mostly qtz, some banding visible 2 stages SiO2 present - 1st silicified almost completely. The

ALTERATION: dk (shear) later broken + re silicified w/ mtrx SiO2 brown grey w/ brown silicified clasts from 1st event.

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

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MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5642

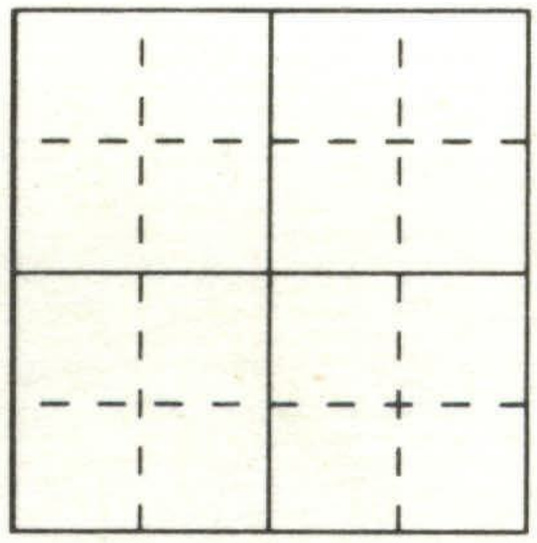
PROJECT N. Edwin

SAMPLER P. Butterfield T. ____ N. S.

DATE 5/22/99 R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE R chip.



ROCK DESCRIPTION: Vuggy/et and pervasive SiO2 cutting chalc. Indistinct zone along approx N30 Trend. Rusty-grey SiO2 Surrounding rk. 2-3" avg. wHd. Surfaces of qtz covered in black Mn? oxide - sooty. Hem. flooding in some samples - both S + W SiO2 portions

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5643

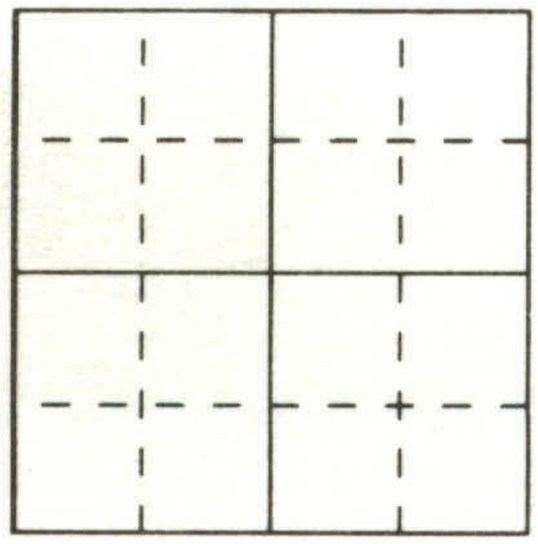
PROJECT N. Equinox

SAMPLER K. Butterfield T. _____ N. S.

DATE 5 / 24 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC.



ROCK DESCRIPTION: 1"-2" silica replacement along a major 130° striking struct. dipping steeply W. Hangs Hanging Strn. in qtz.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES: 130° Struct

COMMENTS:

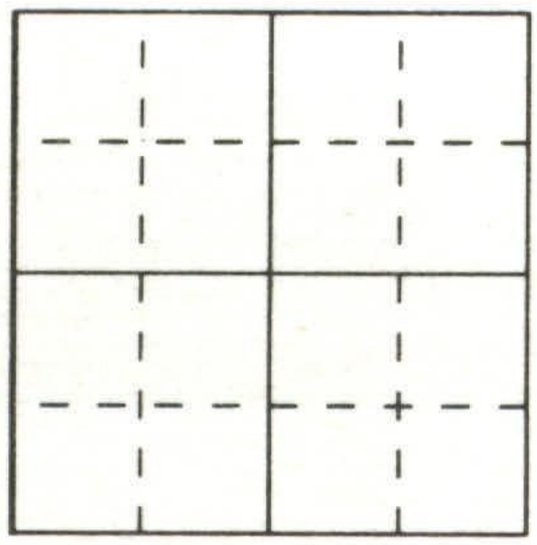
NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5644

PROJECT N. Equinox.
SAMPLER L. Butterfield T. ____ N. S.
DATE 5/24/99 R. ____ E. W.
QUAD. ____ SEC. ____
STATE ____ CO. ____ SAMPLE TYPE RC.



ROCK DESCRIPTION: 26° Struct of Lam; Thin Hem halo (inner to outer) around silica replacement + open space fxts w/ blk hem coat.

Effort made to sample ths + 130° struct smpl (5643) away from intersection.

ALTERATION: This sample has some host dk. frags. w/ ht.

MINERALOGY:

STRUCTURE:

ATTITUDES: 26° Struct

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5645

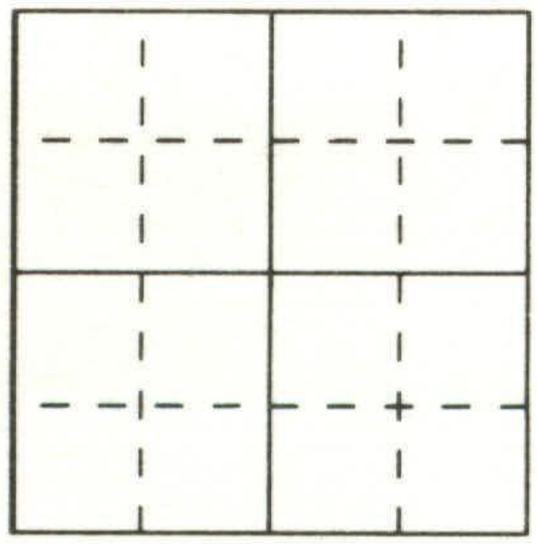
PROJECT N. Eagan

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 24 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC.



ROCK DESCRIPTION: Same local as 5643 + 44 but of host rk for comparison.

Host ds ~ 97% perv. silic. w/ 3% eq. phenos or clasts. Light tan color to sil.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5646

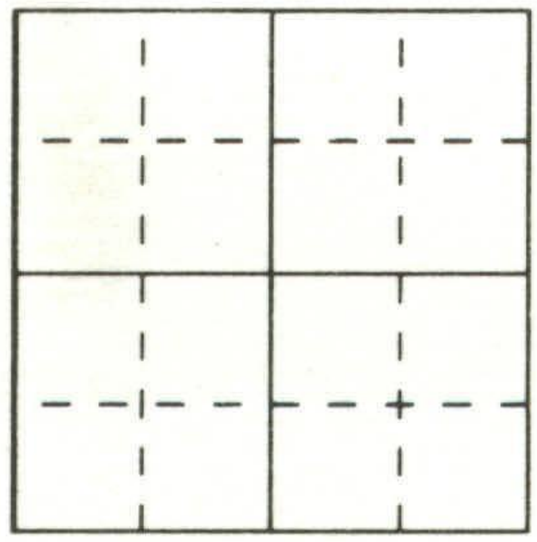
PROJECT N. Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 24 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC.



ROCK DESCRIPTION: Silicified Struct. 1/2" to 1 1/2"
Complete SiO2 replacement - mostly orngy brn
coloration. Min parts contain crsty aggregates
py -- possibly from prev. event due to partial
assimilation of pyritic blebs.

ALTERATION:

MINERALOGY:

STRUCTURE: 142°, 75W

ATTITUDES:

COMMENTS:

NEWMONT EXPLORATION LIMITED
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ROCK CHIP SAMPLE

NWRA 5647

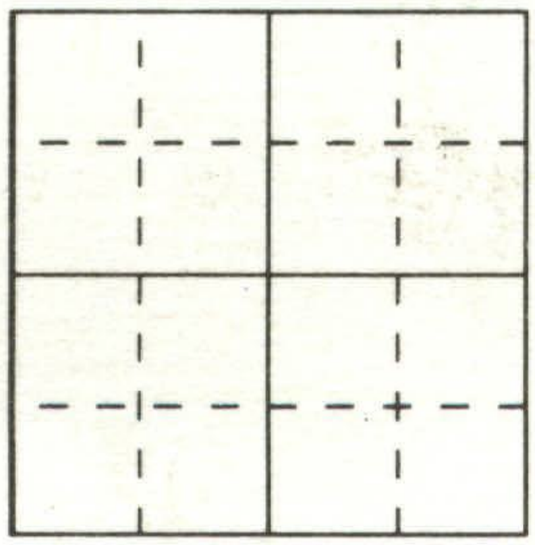
PROJECT N. Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 5 / 26 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC.



ROCK DESCRIPTION: Multi event silicification along major struct - west side of 212 US man. This sample is of host rk. Contains abdnt disseminated qtz +/- pyr. +/- veinlet flooding.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5648

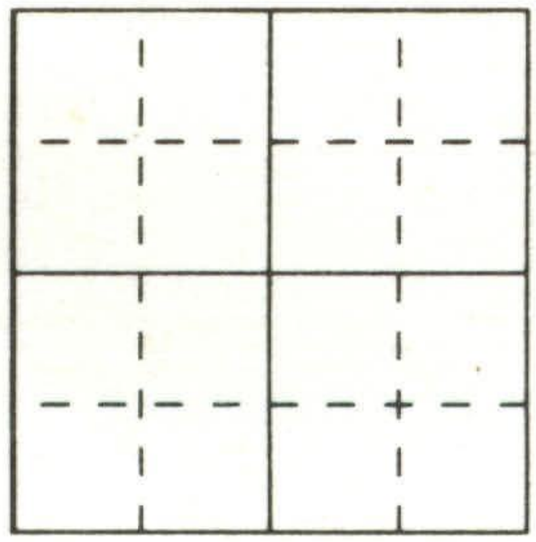
PROJECT N. Equinox

SAMPLER I. Butterfield T. _____ N. S.

DATE 5 / 25 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: Compliment to #5647 - a 280° vet ven, narrow w/ qtz after calcite + bx of prev. silicified rk. Only py, etc. found in host, Sample tries to minimize host.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5649

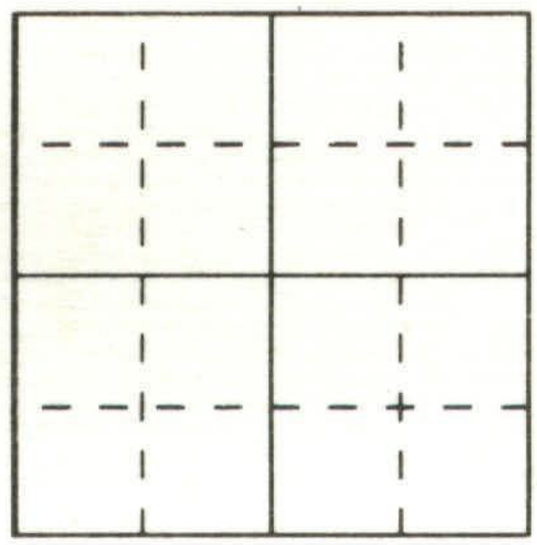
PROJECT N. Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 6 / 2 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: Siliceous, flow banded dike? w/ ?auto bx? (poss. 2nd ary bx). Bands are black silica + red jasper. Bx has green siliceous matrx. Also has true auto bx.

Brecciated Tbv, same as that in prospect pit.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS: Likely no values but check for certain. ~~Extension? off main Ti intrus.~~

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5650

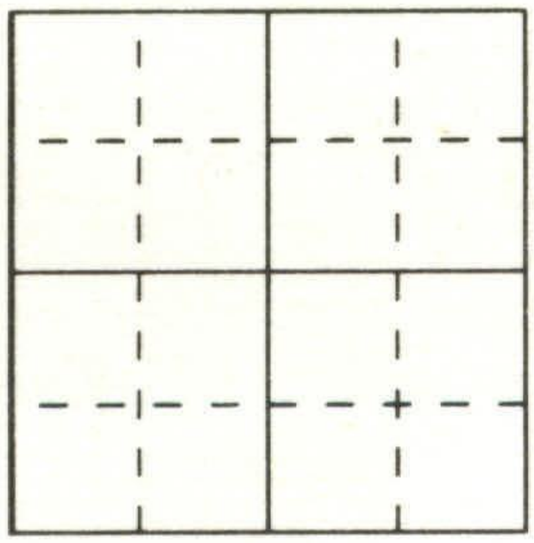
PROJECT N. Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 6 / 6 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: Random Select from SC/Ote.

Variably silicified + clay altd Rk in N 20 E Trending zone. Some pieces S. silicified w/ disem. py

Most pcs - 2+ SiO2, 1 clay (after phenos in 'gator porphyry' (Ragaonskas' term))

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5651

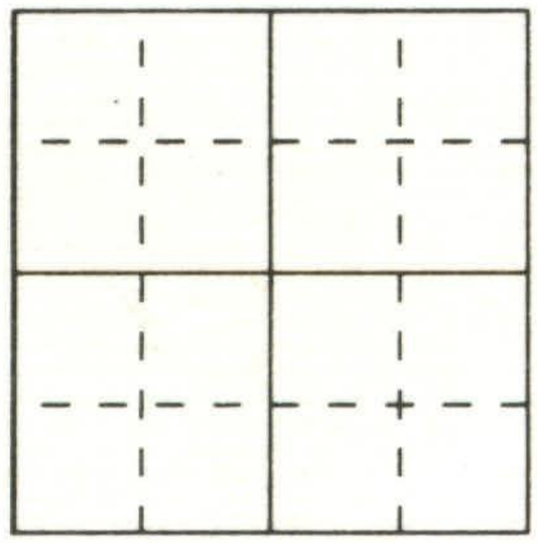
PROJECT N. Eq. Wax

SAMPLER P. Butterworth T. ____ N. S.

DATE 6 / 8 / 99 R. ____ E. W.

QUAD. ____ SEC. ____

STATE ____ CO. ____ SAMPLE TYPE RC



ROCK DESCRIPTION: 212 area - Fault bx that was V. S. silicified - subordinate structure to 212. white & clear/grey qtz, vugs of qtz xtls., w-s. altd clasts, Lim, Hem stn.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5652

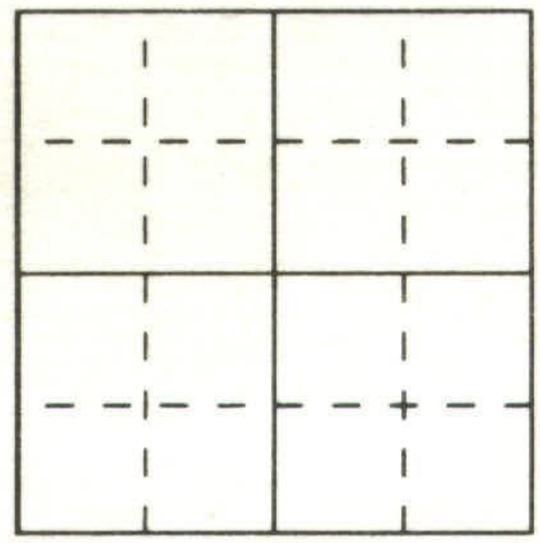
PROJECT N Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 6 / 8 / 99 R. _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: West end of 212 Struct, in Drng. Visible from air photo - red FeOx patch - Same porph host. Sample is ~212 Struct - bx w/ v.s, SiO2 flooding of mtrx. Clasts only weakly + affected - mostly variably pre altd. Poss. Tr. Py w/ SiO2. Clear/white to med grey qtz flooding

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5653

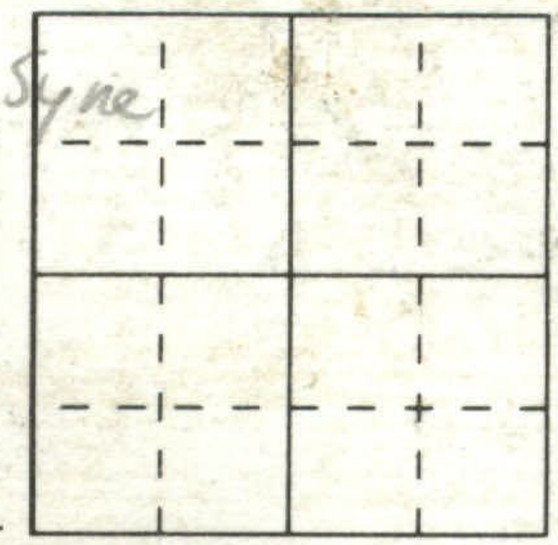
PROJECT Far East Side RB - Vinnold Lang Syne

SAMPLER P. Butterfield T. _____ N. S.

DATE 6 / 17 / 99 R. _____ E. W.

QUAD. _____ SEC. 15

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: Random grab of qtz veining in ALS float, along hillside blw ALS Trenches to N + Rhy/Buttes Trenches to S.

Qtz is 'Bull' type, [redacted] open spaces as result of weathered out host rk. Massive veining to stockwork to veinlets

ALTERATION: Some FeOx stn. of host.

ALS is Schists, Phyllites + qtzites.

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5554

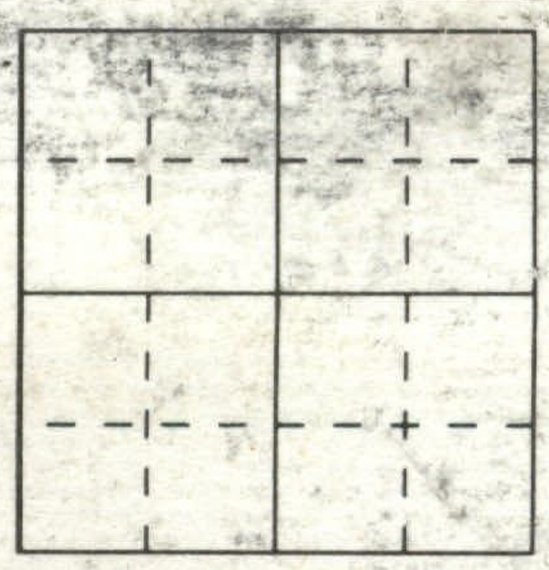
PROJECT N. Equinox

SAMPLER P. Butterfield T. _____ N. S.

DATE 6/27/99 R _____ E. W.

QUAD. _____ SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: B/w 22Top + Chocolate Ridge, SW most flat fault area; Random select of float below flat fault + high ∠ fault intersect. Silicified, brecciated, + residual ∠. Some w/ heavy hem, coat on narrow openings. Remnant host laths are 100% clay (white)

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

NEWMONT EXPLORATION LIMITED
MAGGIE CREEK COMPLEX
P.O. BOX 669 CARLIN, NV 89822

ROCK CHIP SAMPLE

NWRA 5655

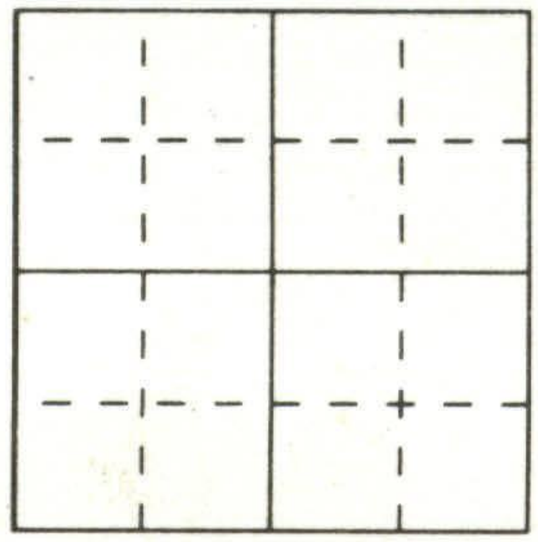
PROJECT N.EQ.

SAMPLER _____ T. _____ N. S.

DATE 6 / 27 / 99 R. _____ E. W.

QUAD. N. Battlefield. SEC. _____

STATE _____ CO. _____ SAMPLE TYPE RC



ROCK DESCRIPTION: B/w 22 Top & Choc. Ridge / Flat fault & high ∠ fault intersect. In Otc, smaller fault in Hangingwall of Flat Fault is Dipping ~60°W, ∠3° Multi silicified rk w/ Lbt host → clay (white) Fe ox (both) stains. Very brecciated. Sample taken along HW & immediate margins.

ALTERATION:

MINERALOGY:

STRUCTURE:

ATTITUDES:

COMMENTS:

NEL-109

North Equinox

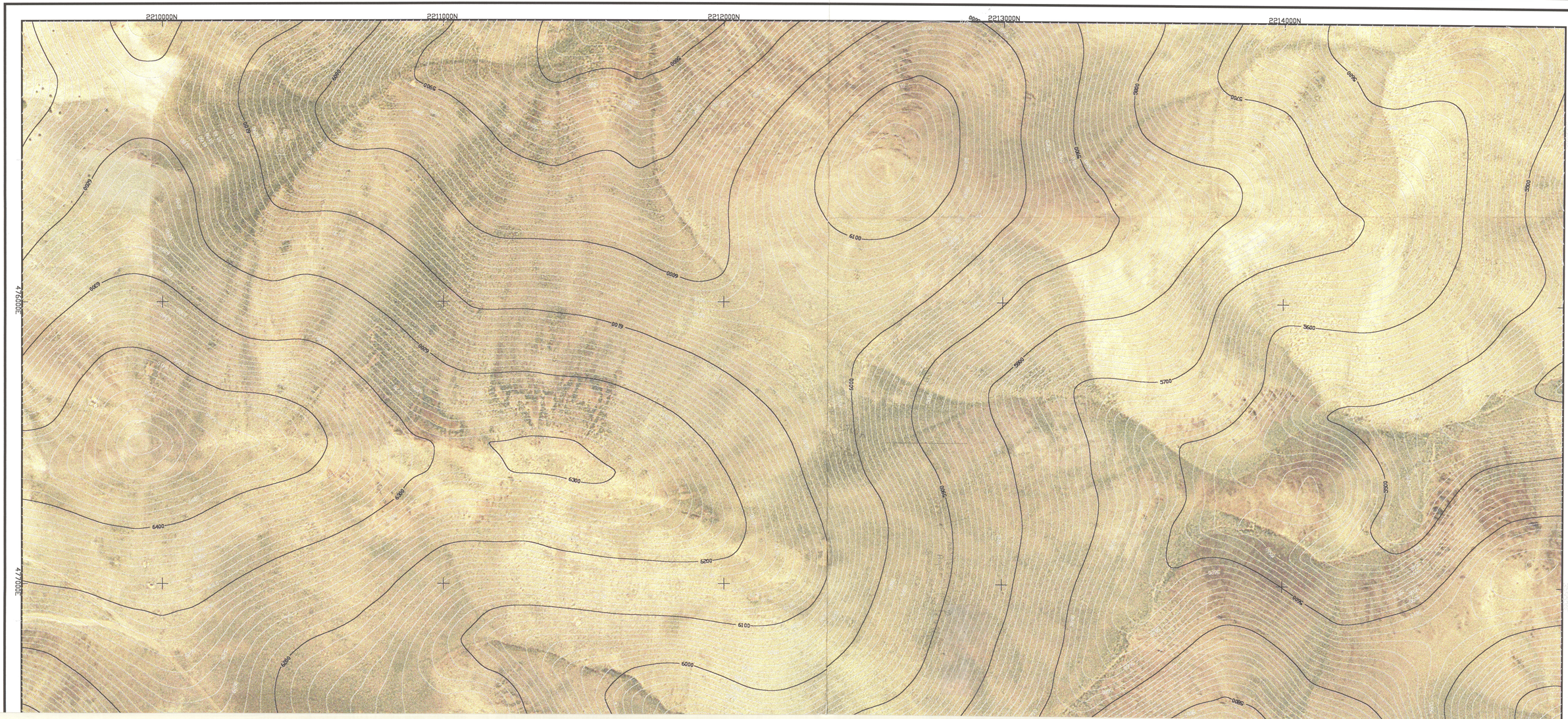
N

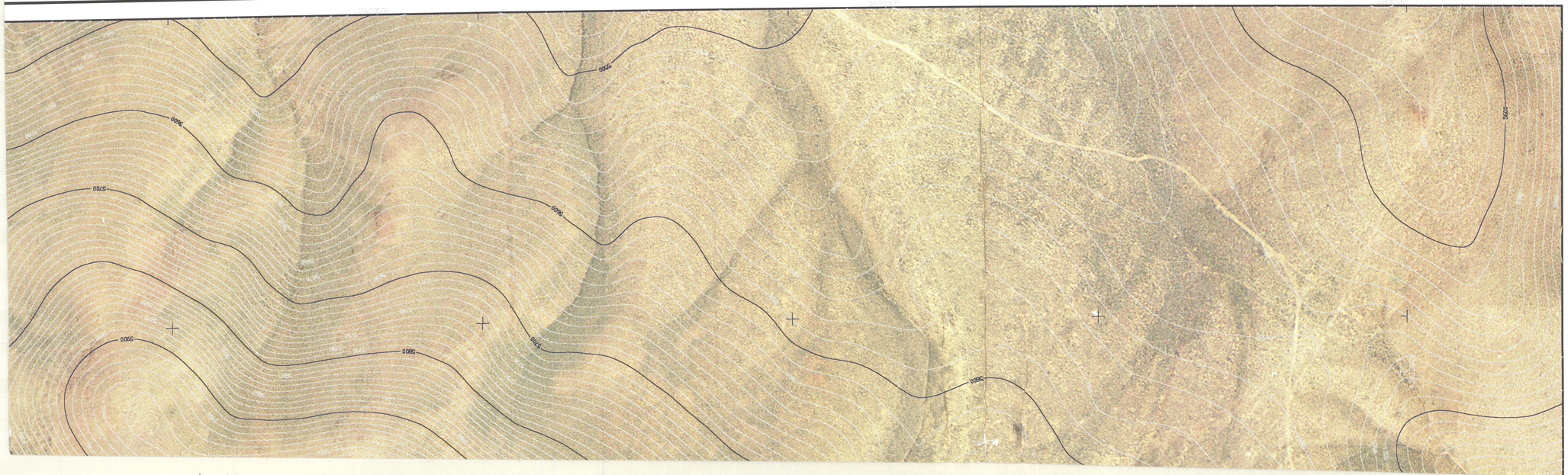
481000E

480000E

479000E

478000E


2210000N
2211000N
2212000N
2213000N
2214000N
475000E
477000E
6400
6300
6200
6100
6000
5900
5800
5700
5600
5500



EXPLANATION

Trench #10 / N. White Alps

1" = 30'

477441.04
2210279.73
Stake #1089

Old Trench

#1090

40°, 135'
Then 80°, 148' end
Total length 283'

Tbg

Trench #7 / E

Done

477354.3
2210176.3
Start

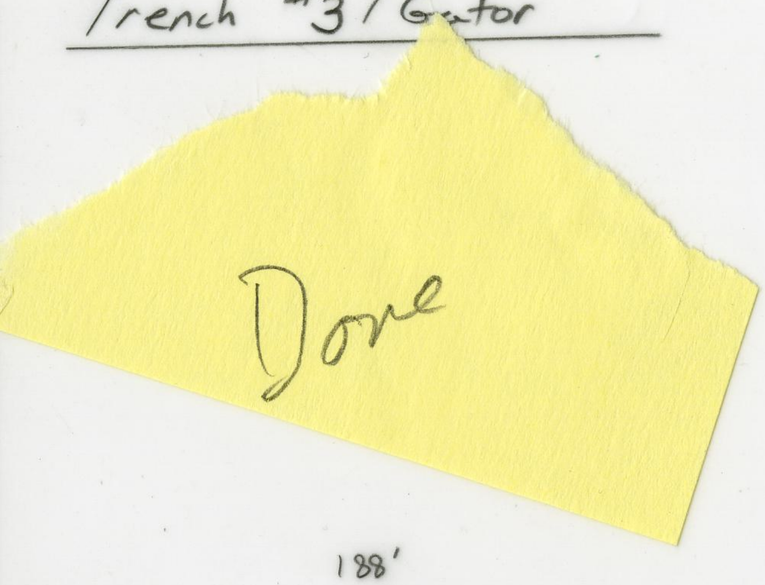
483601
2207276.1

1" = 20'
Trench @ 307°, 101'

Tbg
Rhy
36
49
28
70

483681.66
2207215.34
Start
Stake #1096

Trench #3 / Gator



188'

N

1" = 30'

Lbt

75

73

Tbg

282° ← → 280°

NWRA 5629

NWRA 5630

Start

Start is 191' S.
from N 2,216,800
E 482,400

Trench #9, NE Dreamland

480869.30
2208766.55

1" = 20'

Trench @ 313°

68'

72

85

Tbg?

Tcbx ?

65

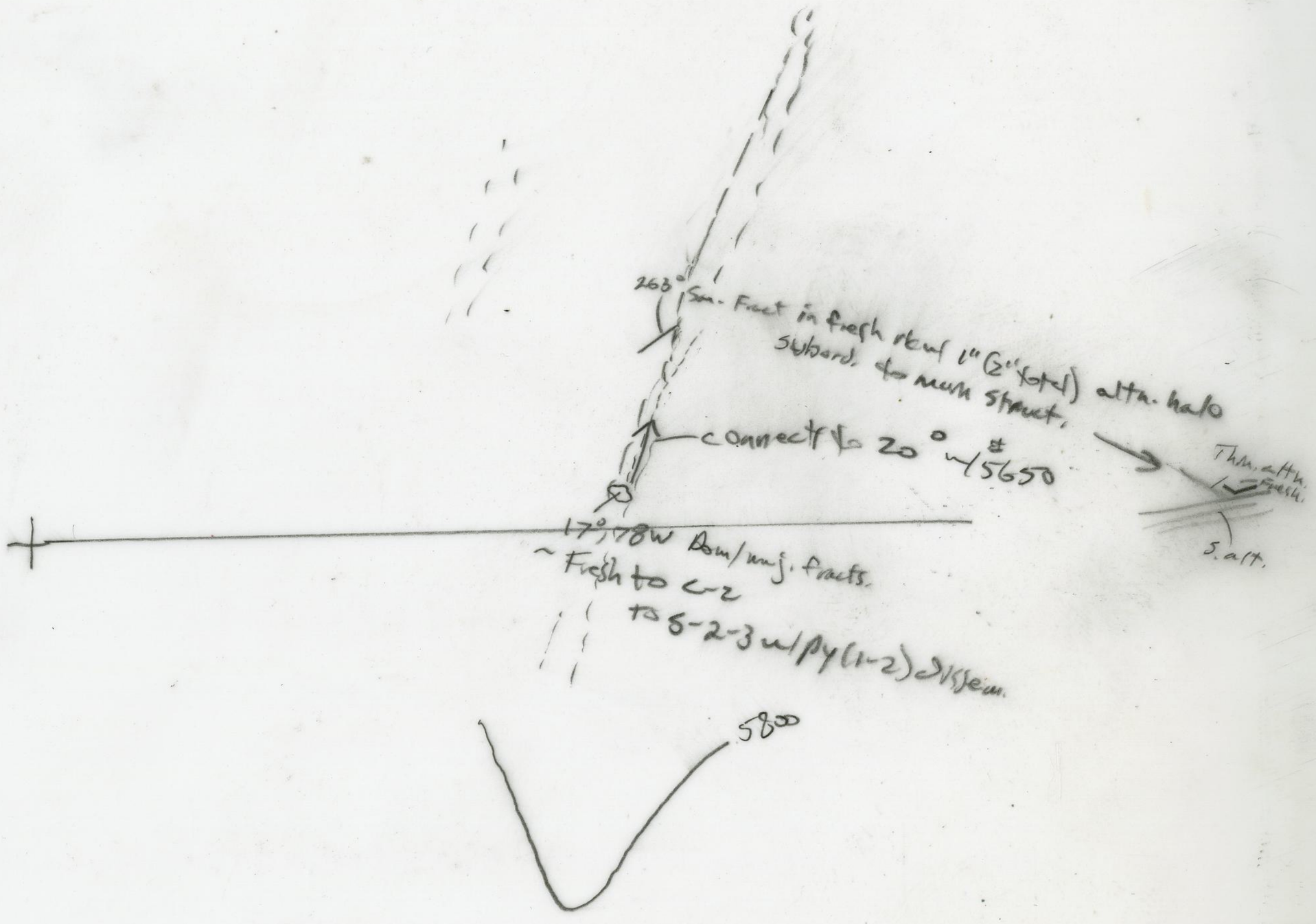
55

43

40

N

Start
stake #1091


263°
Sm. Fract in fresh rtwd 1" (2" total) attn. halo
SkBord. to main struct.
connect to 20° w/5650
Thm. attn. fresh.
5. att.
17°, 78W Dom/mnj. fracts.
~ Fresh to c-2
to 6-2-3 w/Py (1-2) Dissem.
5800

START_OF_REPORT 1.0

#NAME? Company Data

Company:	Newmont
Office:	WINNEMUCCA, NEVADA
Batch No.:	36364
Geologist:	VANCE,R
Project:	ROSEBUD
Project Code:	36364-477NEQ/D
Submittal Date:	25-May-99

#NAME? Laboratory Data

Laboratory name:	Chemex Labs
Samples submitted	Sparks, Nevada
Date samples recei	25-May-99
Lab batch ID:	A9918530
X-ref. batch ID:	
Samples prepped at	Sparks, Nevada
Seive units:	Tyler mesh
Number of samples:	50
Number of variables	30
Report number:	A9918530
Report version:	71
Report type:	PARTIAL
Report date:	3-Jun-99

START_OF_ASSAY_DATA

Element	or	compou	nd name:	Au	Au	As	Sb	Hg	Ag	Al	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo
Samples	an	alyzed	at:	Sparks, Nevada	Sparks, Nevada	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver, B.C.	Vancouver,
Laborat	ory	method	code:	99	1700	13	22	20	578	573	565	575	561	576	562	563	569	577	566	584	570	568	554
Analyti	cal	sample	weight(g):	30.000	30.0000	1.	2.0	1.	0.5	0.50	1.	0.5	1.	0.50	0.5	1.	1.	1.	0.50	0.50	0.50	1.	1.	0.
Reporti	ng	units:	ppm oz/ton	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	%	ppm	ppm	%	
Convers	ion	factor	to PPM:	1.0000	34.2857	1.0000	1.0000	0.0010	1.0000	10000.0000	1.0000	1.0000	1.0000	10000.0000	1.0000	1.0000	1.0000	1.0000	10000.0000	10000.0000			
Lower d	ete	ction l	imit:	0.005	0.0005	1.	0.2	10.	0.2	0.01	10.	0.5	2.	0.01	0.5	1.	1.	1.	0.01	0.01	0.01	5.	1.	0.01
Upper d	ete	ction l	imit:	10.000	20.0000	10000.	1000.0	99999.	100.0	25.00	10000.	1000.0	10000.	25.00	500.0	10000.	10000.	10000.	25.00	10.00	15.00		
Primary	di	gestion	:	FIRE-ASSAY	FIRE-ASSAY	AQ digestion	HCL-KCLO3	HNO3-HCL	HF digestion	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF digest	ICP - HF	
Seconda	ry	leach,	extraction or delivery:																				
Analyti	cal	method	:	FA+AAS finish	CALCULATION	AAS	AAS	AAS	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	IC

Sample ID	R	Type	Kg	Size-1	S	ize	d -2	Tem p	U	ry Primary prep	Secondary prep																				
NWRA5605	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.030	0.0009	D	9.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5606	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.075	0.0022	D	32	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5607	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.090	0.0026	D	43	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5608	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.130	0.0038	D	13.5	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5609	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.050	0.0015	D	12.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5610	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.100	0.0029	D	28	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5611	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.205	0.0060	D	68	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5612	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.065	0.0019	D	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5613	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.025	0.0007	D	4.4	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5614	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.020	0.0006	D	8.6	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5615	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.010	0.0005<	D	13.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5616	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.100	0.0029	D	22	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5617	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.065	0.0019	D	12.5	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5618	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.060	0.0018	D	14.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5619	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.020	0.0006	D	8.2	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5620	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.150	0.0044	D	36	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5621	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.020	0.0006	D	1.6	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5622	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.025	0.0007	D	3.2	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5623	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.460	0.0134	D	47	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5624	ROCK			90%			-1	50	6	0	C	OTHER	RING-CR	0.060	0.0018	D	19.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D

NWRA5625	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.100	0.0029	D	28	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5626	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.120	0.0035	D	56	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5627	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.115	0.0034	D	48	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5628	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.170	0.0050	D	160	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5629	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.020	0.0006	D	4.2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5630	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.030	0.0009	D	24	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5631	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.020	0.0006	D	1.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5632	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.015	0.0005<	D	0.6	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5633	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.100	0.0029	D	19.5	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5634	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.140	0.0041	D	25	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5635	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.040	0.0012	D	52	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5636	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.045	0.0013	D	6.2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5637	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.180	0.0053	D	42	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5638	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.090	0.0026	D	38	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5639	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.070	0.0020	D	11.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5640	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.045	0.0013	D	21	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5641	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.035	0.0010	D	37	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5675	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.100	0.0029	D	9.4	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5676	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.020	0.0006	D	2.6	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5677	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.040	0.0012	D	9.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5678	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.075	0.0022	D	32	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5679	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.095	0.0028	D	52	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5680	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.030	0.0009	D	5.6	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5681	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.210	0.0061	D	48	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5682	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.050	0.0015	D	11.5	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5683	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.470	0.0137	D	59	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5684	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.045	0.0013	D	11.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5685	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.120	0.0035	D	9.4	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5686	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.030	0.0009	D	8.2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
NWRA5687	ROCK	90%	-1	50	6	0	C	OTHER	RING-CR	0.050	0.0015	D	6.4	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

END_OF_ASSAY_DATA
START_OF_FOOTNOTES
END_OF_FOOTNOTES
END_OF_REPORT

Na	Ni	P	Pb	Sr	Ti	V	W	Zn	Se
.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.Vancouver, B.C.									
583	564	559	560	582	579	572	556	558	16
0	1.	1.	1.	1.	0.50	1.	1.	1.	2.0
ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
10000.0000	1.0000	1.0000	10000.0000	1.0000	1.0000	1.0000	1.0000	10000.0000	1.0000	1.0000	1.0000	1.0000
1.	10.	2.	1.	0.01	1.	10.	2.	0.2	
10000.	10000.	10.00	10000.	10000.	10000.	10000.	10.00	10000.	10000.	10000.	100.0	
digestICP - HF digestICP - HF digestICP - HF digestICP - HF digestICP - HF digestICP - HF digestICP - HF digestICP - HF digest	HF digestionICP - HF digestICP - HF digestICP - HF digestICP - HF digestICP - HF digest EXT extraction								
P	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	AAS
D	D	D	D	D	D	D	D	D	0.8
D	D	D	D	D	D	D	D	D	2.6
D	D	D	D	D	D	D	D	D	8.4
D	D	D	D	D	D	D	D	D	3.6
D	D	D	D	D	D	D	D	D	2.0
D	D	D	D	D	D	D	D	D	2.2
D	D	D	D	D	D	D	D	D	2.0
D	D	D	D	D	D	D	D	D	2.0
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	0.6
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	0.8
D	D	D	D	D	D	D	D	D	0.8
D	D	D	D	D	D	D	D	D	1.4
D	D	D	D	D	D	D	D	D	0.2
D	D	D	D	D	D	D	D	D	9.8
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	0.2
D	D	D	D	D	D	D	D	D	10.0
D	D	D	D	D	D	D	D	D	3.2

D	D	D	D	D	D	D	D	D	5.6
D	D	D	D	D	D	D	D	D	4.6
D	D	D	D	D	D	D	D	D	6.6
D	D	D	D	D	D	D	D	D	7.2
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	4.6
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	1.6
D	D	D	D	D	D	D	D	D	5.2
D	D	D	D	D	D	D	D	D	0.6
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	1.2
D	D	D	D	D	D	D	D	D	2.0
D	D	D	D	D	D	D	D	D	1.2
D	D	D	D	D	D	D	D	D	3.2
D	D	D	D	D	D	D	D	D	8.0
D	D	D	D	D	D	D	D	D	1.0
D	D	D	D	D	D	D	D	D	0.2<
D	D	D	D	D	D	D	D	D	1.4
D	D	D	D	D	D	D	D	D	3.0
D	D	D	D	D	D	D	D	D	4.2
D	D	D	D	D	D	D	D	D	0.8
D	D	D	D	D	D	D	D	D	8.0
D	D	D	D	D	D	D	D	D	2.2
D	D	D	D	D	D	D	D	D	16.0
D	D	D	D	D	D	D	D	D	2.0
D	D	D	D	D	D	D	D	D	1.4
D	D	D	D	D	D	D	D	D	0.2
D	D	D	D	D	D	D	D	D	0.6

Geo

Chemex Labs, Inc.

Analytical Chemists * Geochemists * Registered Assayers
994 Glendale Ave., Unit 3, Sparks
Nevada, U.S.A. 89431
PHONE: 775-356-5395 FAX: 775-355-0179

To: NEWMONT EXPLORATION LTD.

861 W. 6TH ST.
WINNEMUCCA, NEVADA
89445

A9918844

Comments: ATTN: CHARLOTTE BALLEW/RANDY VANCE PO#3637-477-NEQ

CERTIFICATE A9918844

(TNI) - NEWMONT EXPLORATION LTD.

Project: ROSEBUD
P.O. # : 3637-477-NEQ

Samples submitted to our lab in Sparks, NV.
This report was printed on 09-JUN-1999.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	7	Geochem ring to approx 150 mesh
226	7	0-3 Kg crush and split
285	7	ICP - HF digestion charge
287	7	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
99	7	Au ppm : Fuse 30 g sample	FA-AAS	0.005	10.00
1700	7	Au oz/T: calculation	CALC.	0.0005	20.00
13	7	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	7	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	7	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	7	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	7	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	7	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	7	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	7	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	7	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	7	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	7	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	7	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	7	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	7	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	7	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	7	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	7	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	7	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	7	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	7	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	7	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	7	Pb ppm: 24 element, rock & core	AAS	2	10000
582	7	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	7	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	7	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	7	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	7	Zn ppm: 24 element, rock & core	ICP-AES	2	10000
16	7	Se ppm: HCl-KClO3 digest, ext	AAS-BKGD CORR	0.2	100.0

The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geologic materials collected by the prospective investor or by a qualified person selected by him/her and based on an evaluation of all engineering data which is available concerning any proposed project
Statement required by Nevada State Law NRS 519

Chemex Labs, Inc.

Analytical Chemists * Geochemists * Registered Assayers

994 Glendale Ave., Unit 3, Sparks
Nevada, U.S.A. 89431
PHONE: 775-356-5395 FAX: 775-355-0179

To: NEWMONT EXPLORATION LTD.

861 W. 6TH ST.
WINNEMUCCA, NEVADA
89445

Project : ROSEBUD
Comments: ATTN: CHARLOTTE BALLEW/RANDY VANCE PO#3637-477-NEQ

Page Number :1-A
Total Pages :1
Certificate Date: 09-JUN-1999
Invoice No. :I9918844
P.O. Number :3637-477-NE(
Account :TNI

CERTIFICATE OF ANALYSIS A9918844

SAMPLE	PREP CODE		Au ppm FA+AA	Au oz/T calc.	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)
NWRA5642	205	226	< 0.005	<0.0005	3	10.0	710	0.2	6.91	700	2.5	< 2	0.38	< 0.5	3	57	3	1.41	2.67	0.05	1060
NWRA5643	205	226	0.010	<0.0005	22	14.5	2590	3.2	3.71	400	2.0	< 2	0.13	< 0.5	1	179	2	0.58	0.15	0.01	35
NWRA5644	205	226	0.110	0.0032	398	185	4810	4.6	5.21	210	1.5	< 2	0.13	< 0.5	1	205	1	3.36	0.25	0.01	100
NWRA5645	205	226	0.005	<0.0005	12	6.4	2760	0.2	5.77	150	1.5	< 2	0.07	< 0.5	< 1	99	1	0.40	0.10	0.01	30
NWRA5646	205	226	0.025	0.0007	19	20.0	1350	2.4	2.96	350	1.5	< 2	0.08	< 0.5	1	402	1	0.78	0.51	< 0.01	45
NWRA5647	205	226	0.070	0.0020	90	55	3620	0.2	6.08	790	1.5	< 2	0.16	< 0.5	< 1	82	1	1.46	2.85	0.01	25
NWRA5648	205	226	0.160	0.0047	331	125	2950	1.2	4.80	280	2.5	< 2	0.16	< 0.5	1	169	1	5.69	2.92	0.04	165

CERTIFICATION: _____

Chemex Labs, Inc.

Analytical Chemists * Geochemists * Registered Assayers

994 Glendale Ave., Unit 3, Sparks
Nevada, U.S.A. 89431
PHONE: 775-356-5395 FAX: 775-355-0179

To: NEWMONT EXPLORATION LTD.

861 W. 6TH ST.
WINNEMUCCA, NEVADA
89445

Project : ROSEBUD
Comments: ATTN: CHARLOTTE BALLEW/RANDY VANCE PO#3637-477-NEQ

Certificate Date: 09-JUN-1999
Invoice No. :I9918844
P.O. Number :3637-477-NE(
Account :TNI

CERTIFICATE OF ANALYSIS A9918844

SAMPLE	PREP CODE		Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)	Se ppm
NWRA5642	205	226	1	0.91	1	80	18	82	0.07	12	< 10	82	< 0.2
NWRA5643	205	226	2	0.07	1	110	4	56	0.04	6	< 10	8	0.4
NWRA5644	205	226	44	0.09	1	330	10	77	0.06	16	< 10	26	36.0
NWRA5645	205	226	< 1	0.09	< 1	160	4	40	0.06	10	< 10	8	< 0.2
NWRA5646	205	226	3	0.07	4	130	6	65	0.04	7	< 10	10	1.2
NWRA5647	205	226	4	0.48	< 1	140	14	100	0.06	14	< 10	16	1.2
NWRA5648	205	226	10	0.31	1	430	28	254	0.04	15	< 10	66	1.8

CERTIFICATION: David Lee

Chemex Labs, Inc.

Analytical Chemists * Geochemists * Registered Assayers
994 Glendale Ave., Unit 7,
Sparks, NV, U.S.A. 89431-5730
PHONE: 775-356-5395
FAX: 775-355-0179

To: NEWMONT EXPLORATION LTD.

861 W. 6TH ST.
WINNEMUCCA, NEVADA
89445

INVOICE NUMBER I9918844

BILLING INFORMATION

Date: 10-JUN-1999
Project: ROSEBUD
P.O. No.: 3637-477-NEQ
Account: TNI

Comments: ATTN: CHARLOTTE BALLEW

Billing: For analysis performed on
Certificate A9918844

Terms: Payment due on receipt of invoice
1.25% per month (15% per annum)
charged on overdue accounts

Please Remit Payments to:

CHEMEX LABS, INC.
994 Glendale Ave., Unit 7,
Sparks, NV USA 89431-5730

COPY

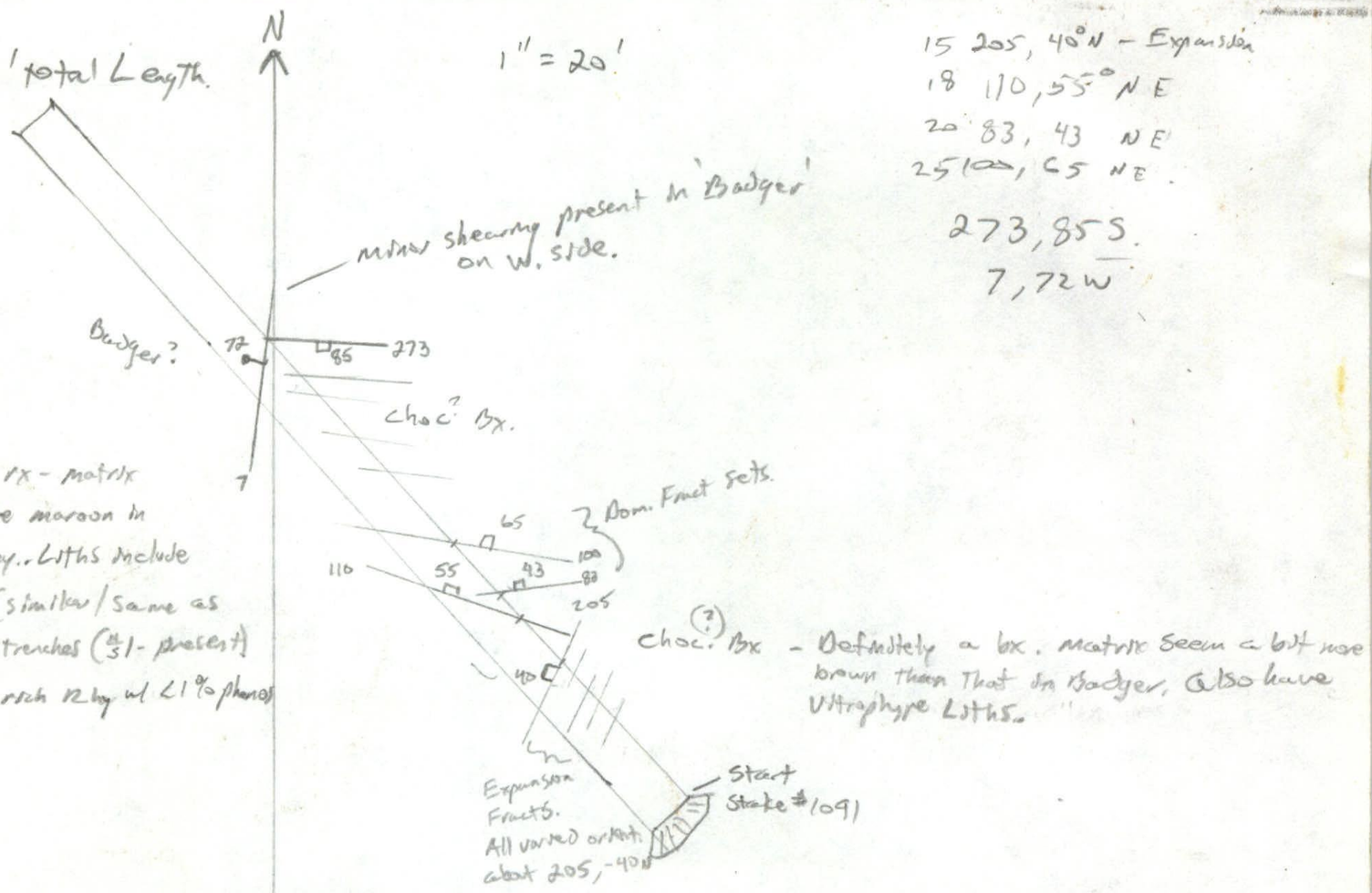
# OF SAMPLES	ANALYSED FOR CODE - DESCRIPTION		UNIT PRICE	SAMPLE PRICE	AMOUNT
7	205 - Geochem ring to approx 150 mesh		2.10		
	226 - 0-3 Kg crush and split		2.00		
	ICP-T27 total digest ICP		17.00		
	99 - Au ppm	FA+AA	8.25		
	1700 - Au oz/T	calc.	0.00		
	16 - Se	ppm	1.25	30.60	214.20

Total Cost $	214.20
Client Discount (40%) $	-85.68
TOTAL PAYABLE (U.S.) $	**128.52**

COPY

NE Dreamland.

Trench #9, N. of Repeater Station; 313°, 68' total Length.

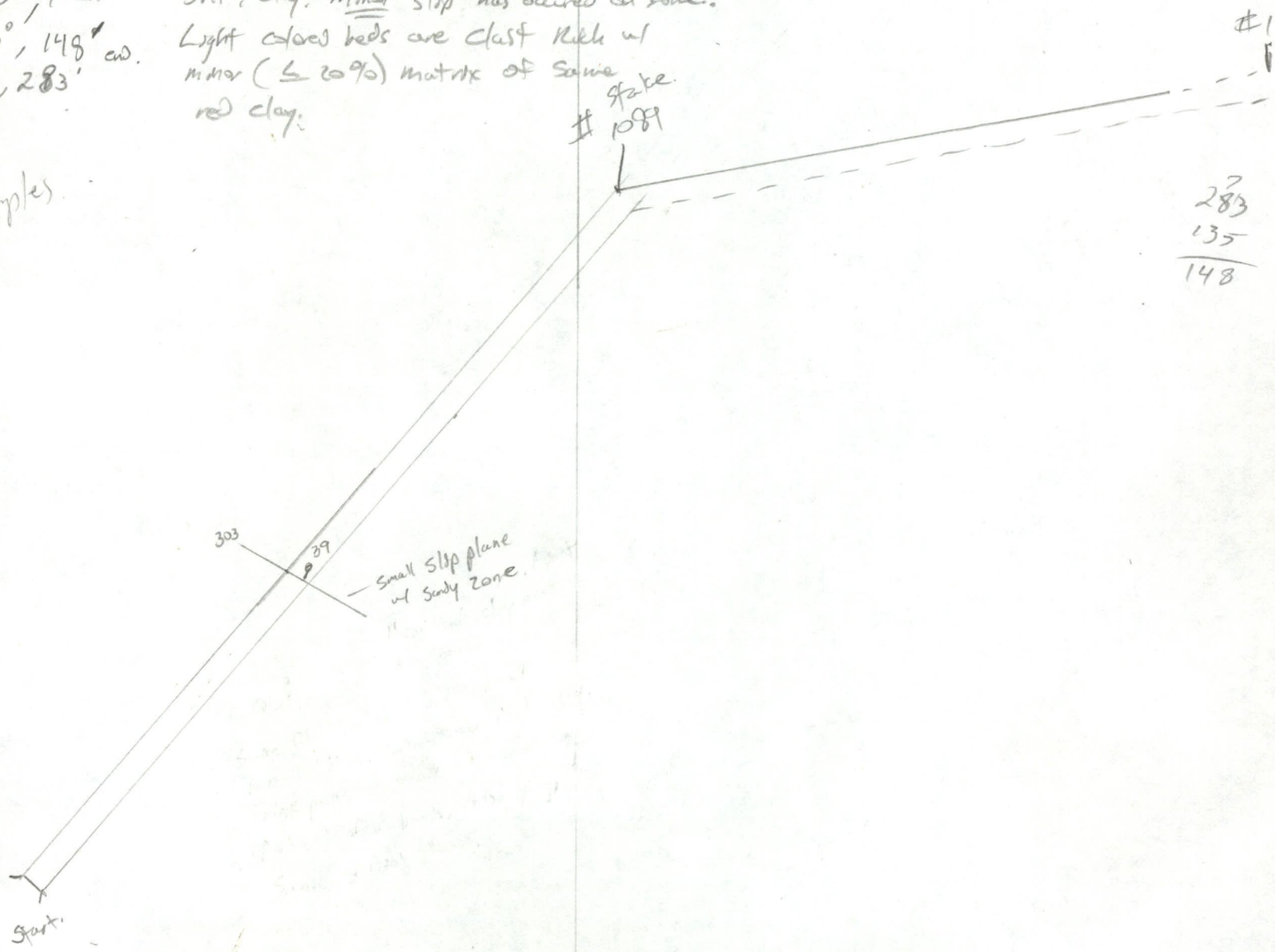


Trench #10 - N. white Alps - all Badger, has interbeds of maroon, silt/clay. Minor slip has occured on some. Light colored beds are clast rich w/ minor (≤ 20%) matrix of some red clay.

40°, 135'; Then Bend, 80°, 148' ewd.
Total Length, 283'

1" = 30'

303, -39 N.



NO Samples

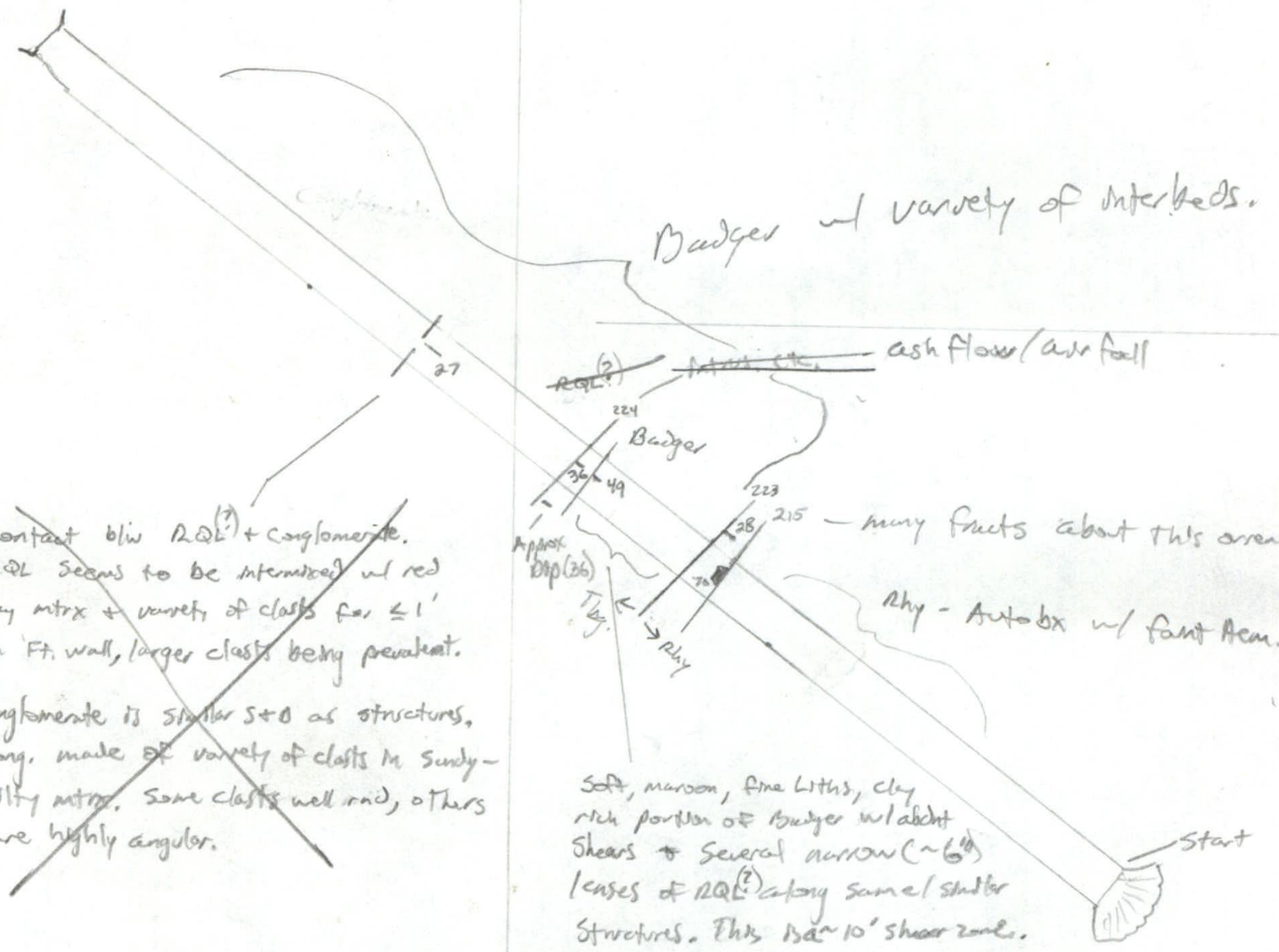
E. most RB Area Trench #7 – 307°, 101' length.

N

1" = 20'

215, 70W
223, – 28 E.

Samples
NURA



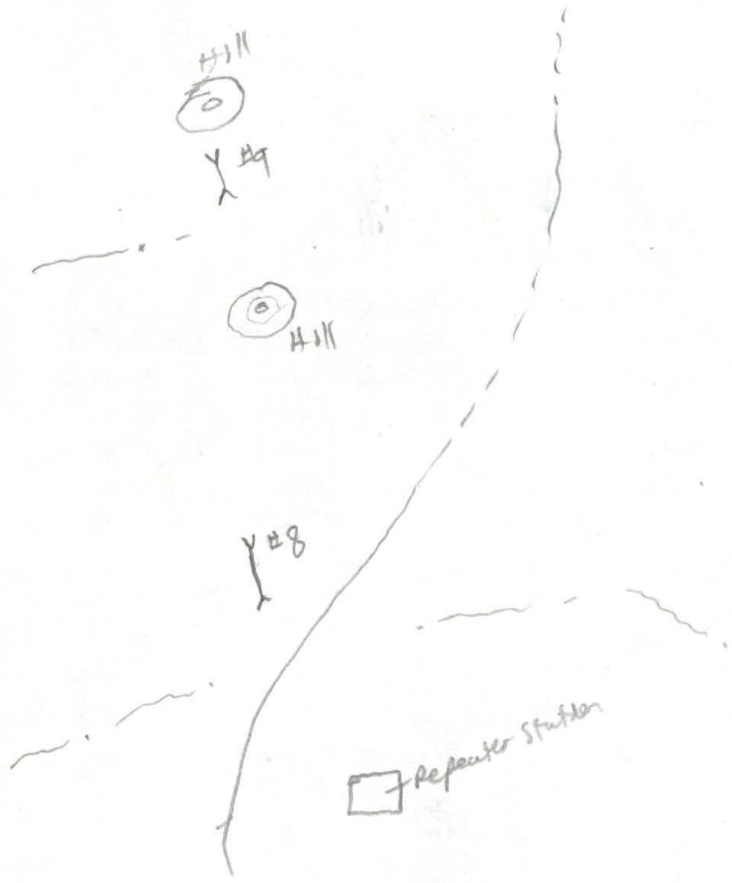
Trench #8, N. of Repeater Station – 335°, 50' tot. Length.

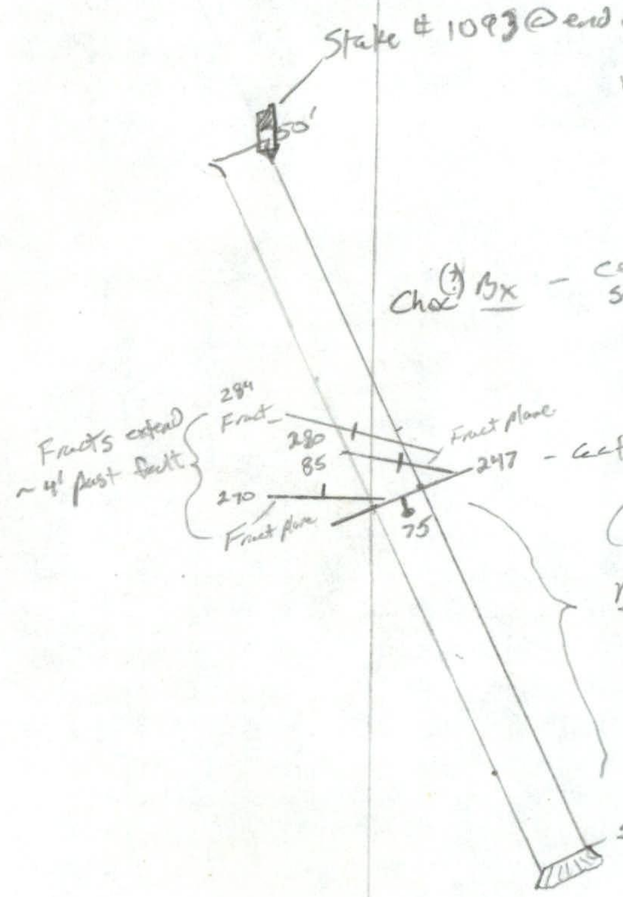
NE Oregonland.

N

1" = 20'

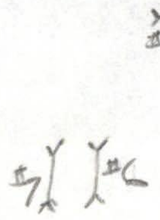
270, 85N
280, vert
284, 87S.



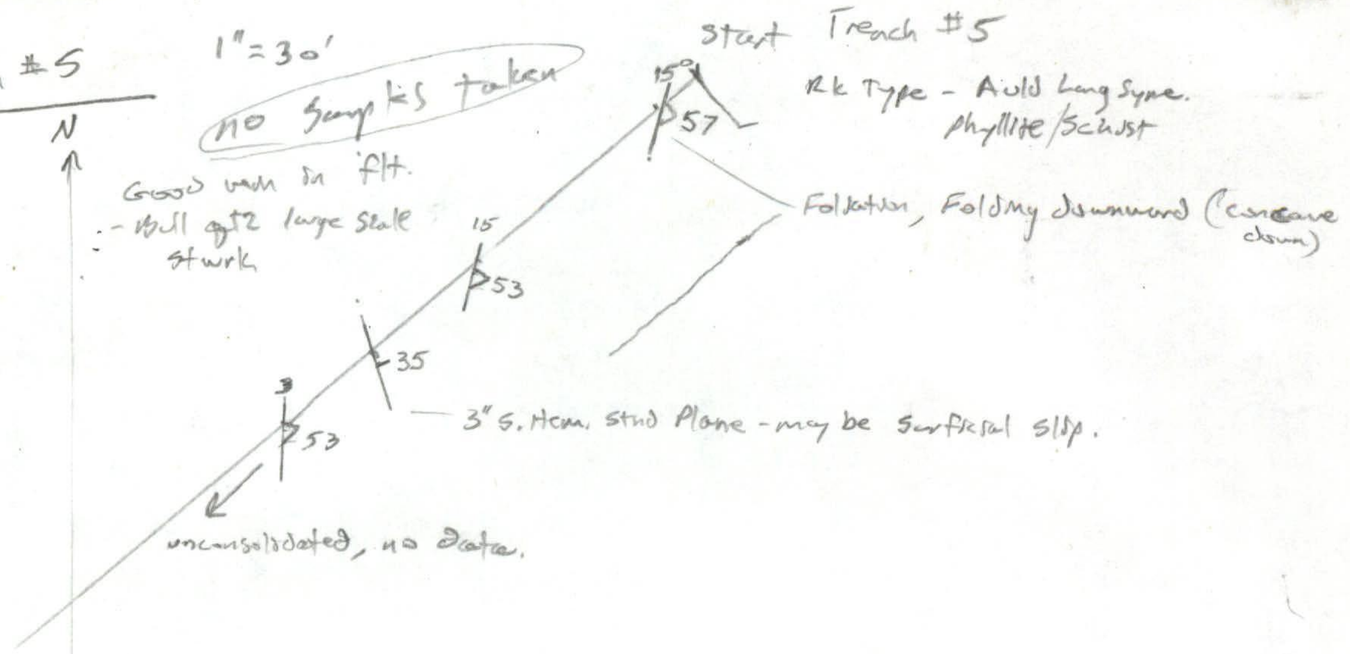


Trenches, Far E. of RB Property:

From Stake, 213°, 93' to Trench #5 (mapped) - ~105'
Trench #4 - no Bed Rk.
Trench #5 ~220°, 15' wide swath, NW wall only exposed
Trench #4 - ~225°, 117° to Stake (28'), Trench ~122'

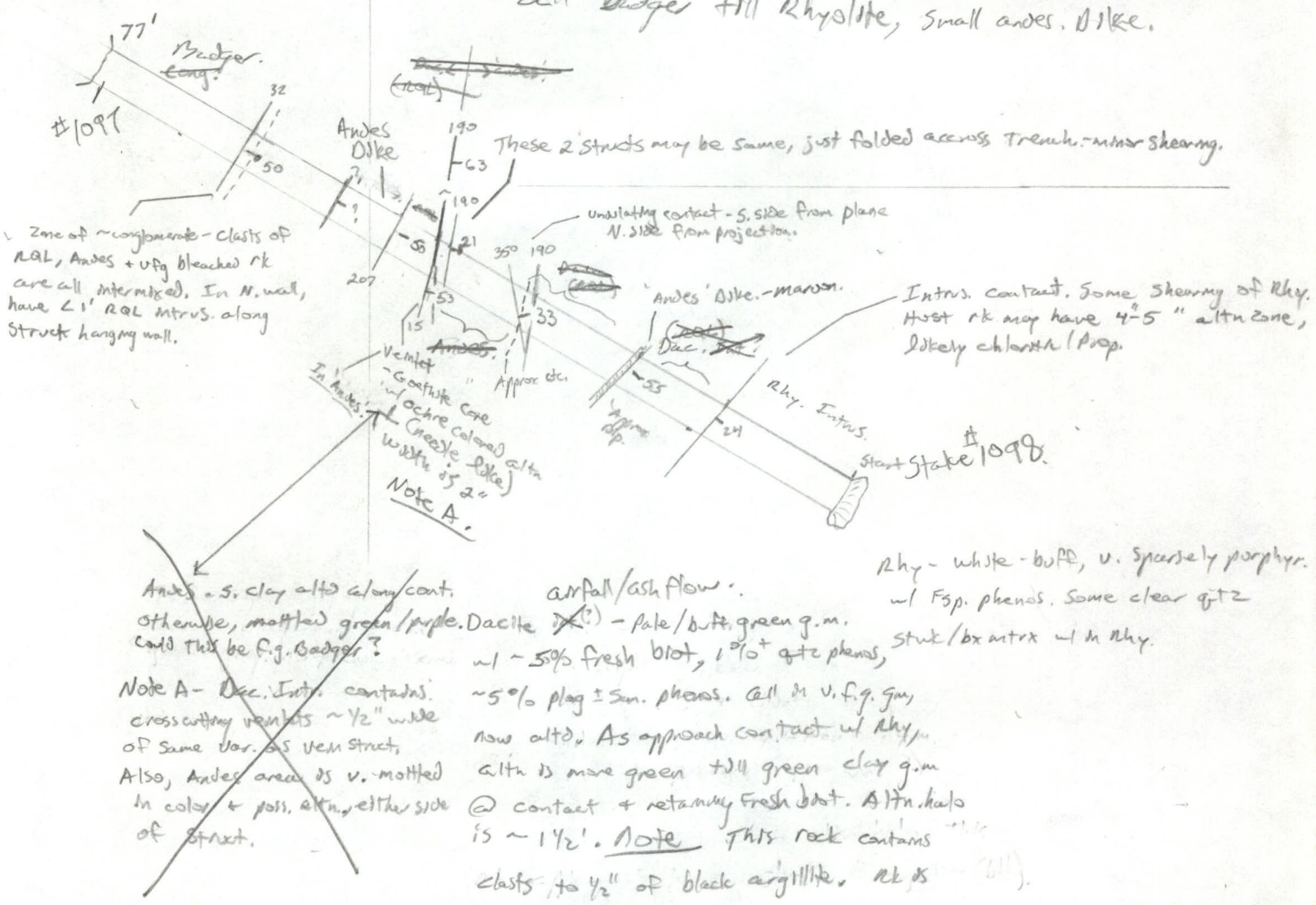


Trench #5



Trench #6 300°, start @ SE end., 77' total length

Trench heavily weathered + slumped on sides.



2 Samples & 5631 + 5632

5631 - The Goeth/ochre vein + RQL w/ similar veining. ~41'-42'
0 ppb

5632 - ~55' - narrow zone of alt'd and bx w/ calcite filling of fracts & dissolved vugs in andes. Swpl over ~1'. - likely 0.00
0 ppb.

Dacc/And. 190 +63 E. 43'
S. Str. 15 +53 E
N Str. 190 + 21 E 42'
207, -50 E.
32 +50 E

120
40.

40°

Twr.

Porph. Sc.

Qt

Tc??

QTwr.

Porph A'
Plag & San., Trc mafics
Above (up hill) Tc lava - poss
from badger or maybe Thm lava layer.
often, pcs are multiphyre (porph A).

120°

Green Epiclastics in Flt.
(Thin bed). Contains clasts of Twr.

Twr.

Tc?
(Porph).
w/ mm B's
Plag, San.
mostly clastic.
minor mafic

Thd does not seem to extend Thm.

Thd

Linear in field
Poss Low ∠ Flt.

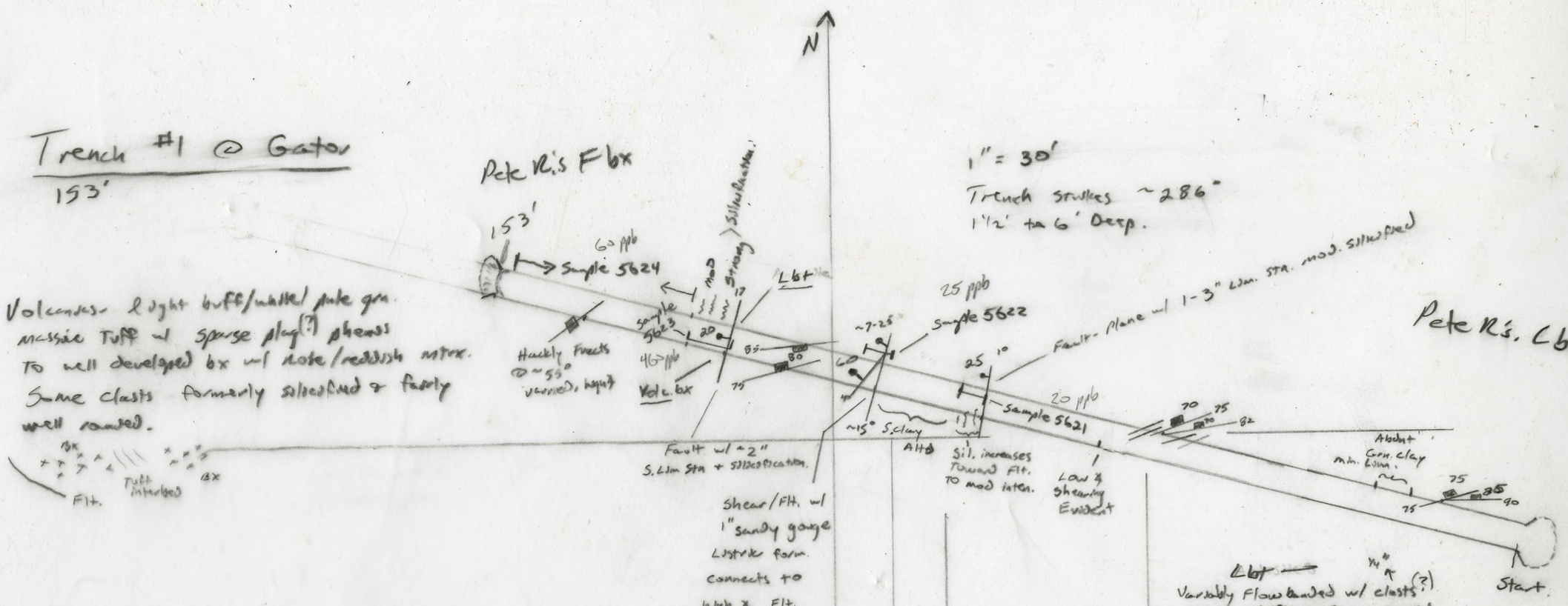
Tbg

Green Sc. in Flt.

353

Trench #1 @ Gator

153'



Volcanics - light buff/white/pale grn. massive Tuff w/ sparse plag(?) phenos To well developed bx w/ rose/reddish matrx. Some clasts formerly silicified & fairly well rounded.

Sample 5621 - 4' channel accross fault, splays + Sil. zone.
Sample 5622 - 3' channel sub// to fault, Grn. clay, Sandy Gouge.
Sample 5623 - 6' channel accross major fault + Lithologic boundary.
Sample 5624 - ~1' intvl over 26' variably silicified Bx + Massive Tuff.

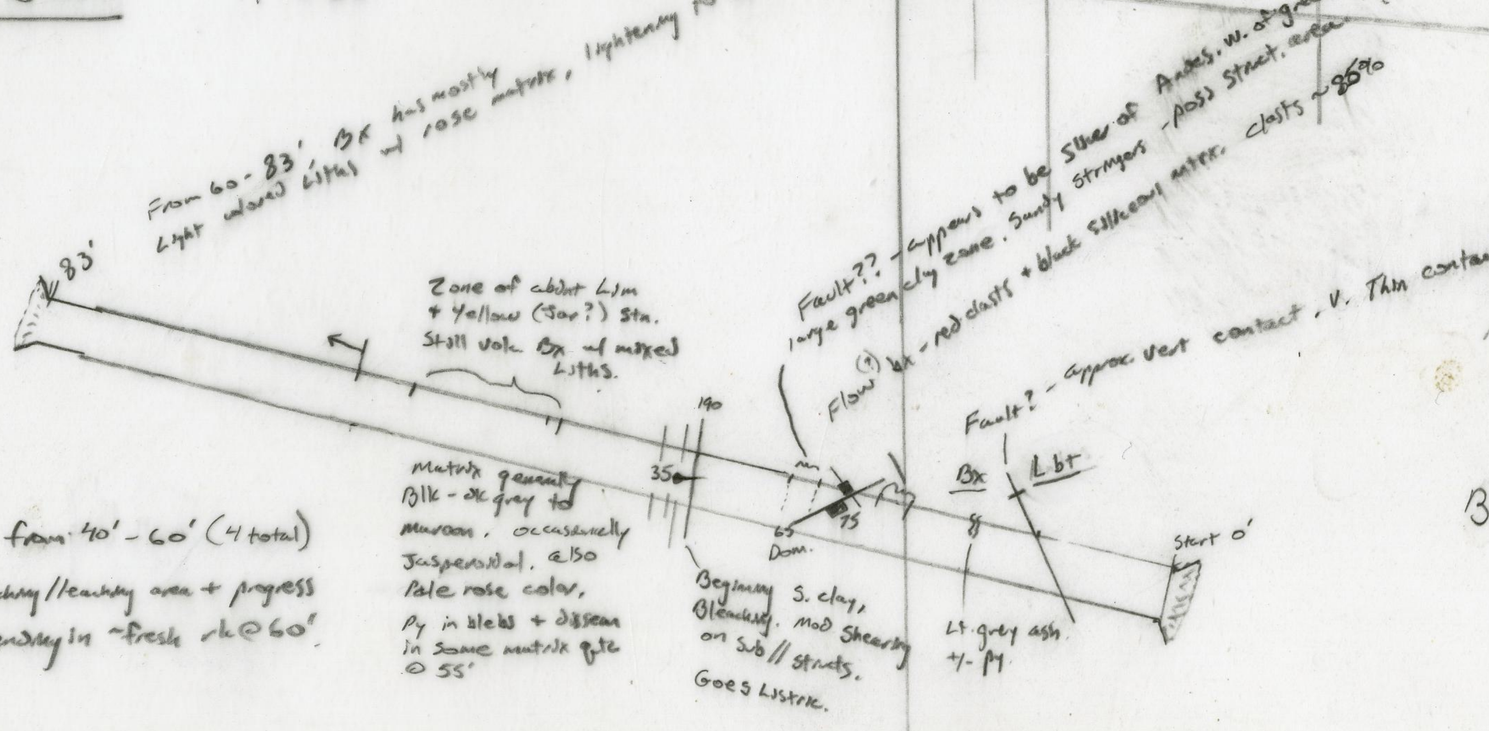
Start loca is 46.5' from Stake to the east @ 102°.

Trench #2 Gator

93'

1" = 20'

Samples 5625 - 5628



Samples taken on 5' from 40' - 60' (4 total)

Begin @ Fault/Bleaching/Leaching area + progress Thru silicious area, ending in ~fresh rk @ 60'.

Number	
40-45	5625
45-50	5626
50-55	5627
55-60	5628

#2 Gator

#1 #3

Lbt — Same as @ #1 Trench. Flow banded w/ clasts alto green. Purple/ maroon/dark groundmass.

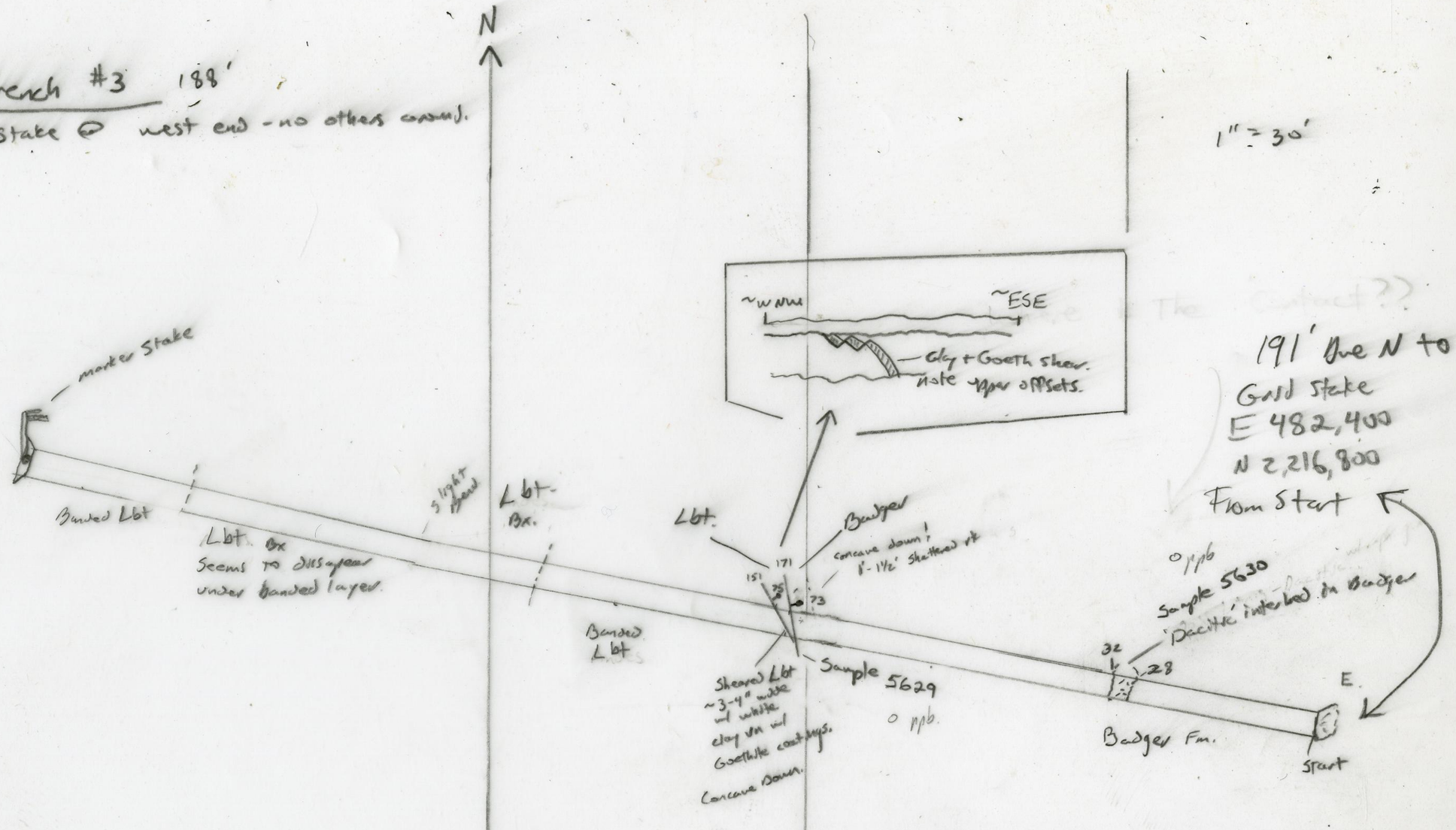
Bx: Red hued clasts of Tuff/ashflow and green Tuff clasts, Set in almost black matrix. Clasts ~80%. Also Lt. grey Listh ash flow? w/ banding & concentric banding around liths. This part cut by veinlets of rose gtz forming bx txt. Some Py. present as clots w/ rose gtz. - also in cavity linings.

Start is 115' from Geophys. Stake L3, +1-0 @ 58°

Gator Trench #3 188'

Marker Stake @ west end - no others around.

1" = 30'



191' due N to Grid Stake
E 482,400
N 2,216,800
From Start

Dacite Interbed - V. sl/crossed g.m (~40% qtz).
Phenos are ~20% - most plag, some anhedral ??.
~8% leached cavities ± residual black mtx (mafic)
Cold contact w/ badger(?) Fm. (also irregular ct.).

Badger - Typical well bedded, clast rich, w/ maroon silt matrix. Clasts vary in volc. Type. Found some w/ Volcs + andes of variety further W. in Trench. Bdg + Small Lithes, usu. 80% of rk.

Lbt's - @ contact, is variably flow banded. Further west, becomes highly brecciated w/ maroon clay/silt cement. Some bx is only stockwork like infilling, other bx has 1' andes clasts in well developed matrix to 1' blw clasts.
Andes has typical darker grn w/ bleached/clay altd blebs, clasts + bands.

Rcte R.'s Lbt (Lower Bad Tuff - Rhy - flow banded, red brn/purple w/ lithes!

APPENDIX 9. PROTRACTOR FOR INTERCONVERSION OF TRUE DIP AND APPARENT DIP

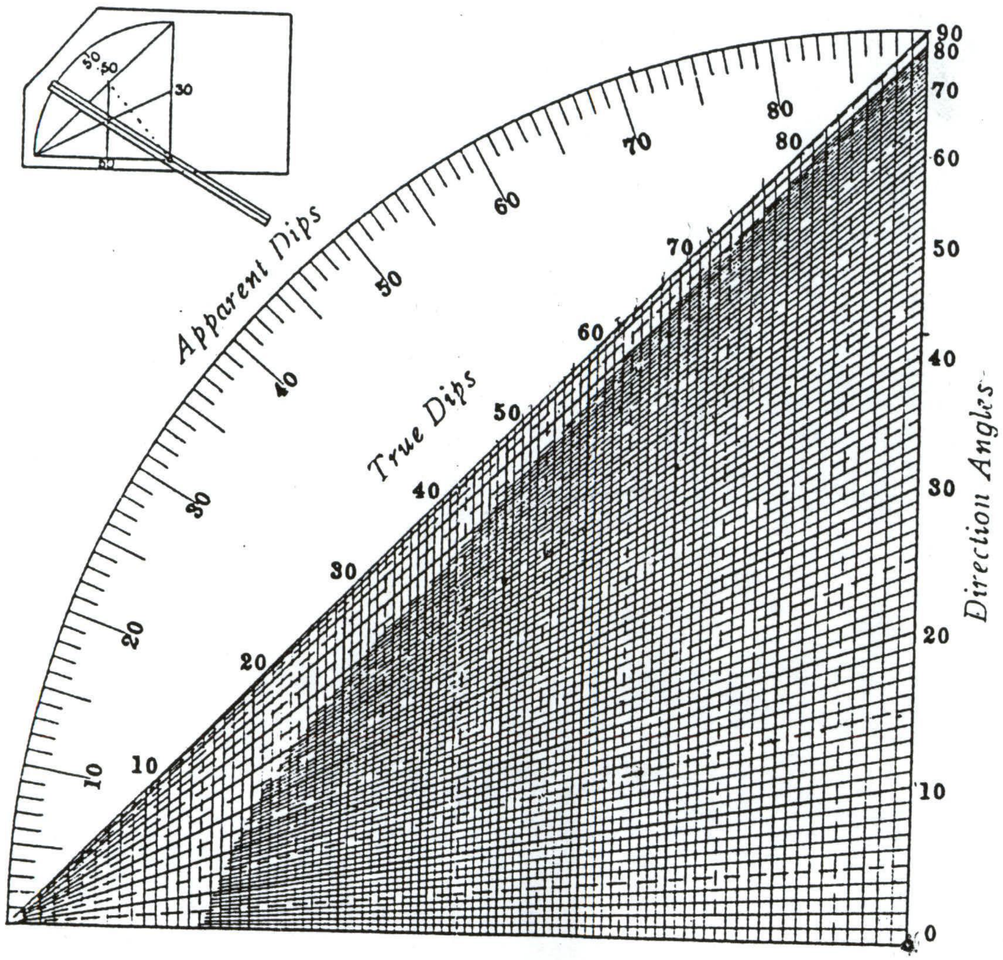
DIRECTIONS

True Dip = dip measured in the field.

Direction or Divergence Angle = angle between strike and direction of cross section.

Apparent Dip = inclination in the plane of cross section.

To determine the apparent dip, set a straightedge (or fine line drawn on a strip of celluloid) to pass through the lower right corner of the grid (point 0) and the point of intersection of the lines representing the true dip and the direction angle. Read apparent dip on the graduated arc.



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For plotting DH on Sect°
Direction ∠ minus 90° = Direction ∠ used
Set hole Dip = to 'Apparent Dip', follow Direction ∠ ↳
↳ Then up to 'True Dip' for ∠ to be plotted

For ∠ Sec. Lines Ex 45° sec. line., take ∠ b/w Sect. line + hole projection, subtract from 90° + use that # as direction ∠ for down hole drill trace.

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S 40 E
-68°

For X-sects. place line on 0 + set apparent dip = to True dip. Then follow Bearing [along Direction ∠] to line + read up to True Dip for down-hole ∠ to plot on sect.

S. end. of (long) silicified Struct @ ZZ Top, Heading N along otc.

N. Equinox, ZZ Top

180
42
222

97

2 Samples 5633 + 5634

PG 1

High	Fracts	Flat Fault.
6'	240, 70 SE	
8',	250, 54 SE	
11',	250, 64 SE	
	mixed Fx zone	18, 30 W
28',	265, 83 N	25°, 30 W
31',	260, 85 N	
38',	275, 70 N	
44',	282, 86 N	
50',	Mixed.	10, 31 W - Poorly dev. slicks - plunge 63°
52',	12, 82 W (continues N for rest of otc).	
59'-65	280, +/- vert.	22, 28 W
63'	→	15, 24 W (5") (large roll slicks w/ sm. slicks on top plunge 85°
70'	Mixed but Some trends (280 +/- vert)	16, 31 W well polished surface w/ good slicks plunge → 82
78' N End of otc.		

63 / 31 / 10

15 / 24 / 85

16 / 31 / 82

From S. end of long otc, S, 190°, 60' to otc. Badger, 2-3 sil. mtrx (reddish)
250°, ~vert (becoming minor fract)
210, 65 E More dominant but not as abdt.
mid otc to Grid pt. N 2,212,400 / E 480,800 176°, 135'

Then, 177', 277° (W.) to upper lone of otc, (Triangular pt) otc. - Siliceous bed? w/ m badger - Sphaerite porphyry w/ tan streaking of cherty portions w/ 'whiter' 'boudins'. Other areas show same but w/ weakly + siliceous matrixed bx w/ hem (rose) in mtrx.
Fracts @ 15°, 85 E + Subord. Fracts, same strike, dip to west @ ~43°

Then 110°, 23' (S.) to otc.
233, 85 E - few, large.
260, 65 N - some localized.

Then 188°, 23' (S)
N/S, 85 E
15, 80 E.

Then 113', 342° (S) (windy!!) Grid stake is 46° from here.
8°, 82 W (+ to vert) (numerous, small)
270, 75 N (few but prominent)

Then ~221° (S), 165' to middle of large subcrop/otc area ~200' N of Fyng. — ~153° to other grid pt.
322, 80° S + 316, 10° either side vert - abdt, small, cause 'fabric' to otc.
10, 74 E; 15, 82 W; 15, 80 W large Roll slicks + smaller ~25° N
329, 57° NE; 340, 60 E.; 324, 86 NE Note, 329 + 340 were larger fracts).
277, 46 N; 253, 35 N - not well defined but core. beds / planes of some sort.

Badger, highly silicified w/ whole - lt. grey qtz. Bx portions are 3rd stage in mtrx, withs are variably altd, either 2-3 arg or 2-3 sil. - variation w/ in single H.S., clast to clast.

Sample 5635

Then 322°, 125' to otc.
277, 78 S - Struct has abdt riedel shears splaying off to S (exposed side).
322°, ~vert - Fract set - small but mod abundance
37°, 63 SE; 20°, 77 E.
302, 67 NE w/ slicks @ 62 NE

Badger - M-S. silicified in arg. clasts

Then ....

N. Equinox, 22 Top.

PG 2.

Then 240°, 35' - otc, similar fracts.
40, 65°W - Dominant Trend.
~318, +/- vert - minor trend

Continuing 240°, Total of ~70' (includes 35' above) to N 2,211,200 E 480,400 stake.?

Then 105°, 98° (E) to otc.
40°, 67°SE - few but makes large fract.
348, vert to steep W. - few, Thin fracts w/ Hem

Then. 90°, 60' - near Contact w/ Ti. Just above in Badger.
25°, 33°W ; 30°, 35°W — Ft. wall of 22 struct. Sizzles Plunge 86° N

86

Sample NWRA 5636

Ti otc is ~ 7' below.
300, 70°S ; 273, 80°S. - few but larger scale.
353, 18°E - approx Bedding?
22, 66°E ; 214, 75°E - Polished Surfaces, no slicks

Then 165° (20'-cross silicified structures above), ~253' to Ti Otc. w/ more bleaching.
@ 178', Ti otc w/ 265°, 75°S Fract. ... @ 228', N/S, 85°W Fracts; 25°, +/- vert. This area has Ti w/ 1 arg and minor Hydro fract, Bx fxt (confined) w/ red Siliceous matrix!

@ AT otc ...
208°, 78°W
20°, 60W
350, 80 E
327, 76E
263, 77N - Poss major old Struct - wavy (ripply) plane
- sort of hodge Podge w/ 208° more dominant.

STILL Ti - 1+ arg. is cut by Thin stockwork qtz fracs grey - red siliceous matrix bx w/ Ti clasts, Seen to 1/4+" wide. Dk. goeth? on some voids in Bx.

Then 128°, ~220' to Stake - N 2,211,600 E 480,800. End Day.

5-23-99 N. Equinox/ZZ Top.

Begin just N/NE of Drill site on NW corner of ZZ Top hill., on/just E of main rd.

334, 61°S.; 325, 68°S; 329, 71°S } same struct.
Slicks Straight Down Dip, SE most. NW most middle

Normal Flt. 304, 20°N
206, 77°NW (Slicks 75°N

E most End of otc. { 124, 85°S; 200, 60°E; 247, 61°W; 187, 83°E +/-

Notes a 215-230° Trend cuts most of otc (entire)
But 325-335° is Dominant.
Rest of readings are likely noise.

(2-3) Badger otc. w/ red/rose Silicous matrx, bleached clast (2+ arg). minor areas of complete SiO2 replacement.

Small (3' x 1') otc on hill side, Fracts abdnt @ 186° +/- vert. Otc is Badger, var. Silicified (Loss Zr) 1-3+ SiO2 matrx clasts 0-3 SiO2 + 2-3 arg. Red Hem pods + color in matrx.
From otc, ~98° (E) ~173' to 2,212,400N 480,400E Stake

Triangulations 330° to upper Stake N221200, E 480,400 (?)
~123° to Lower (In Ti) Stake N221600 E480,800

> otc of Silicified Badger - 3 SiO2 matrx 2-3 clast arg.
Lots of choc. clasts in flt. on this side of hill.
Also, This is Sm otc (1½' diam), poor expos. but real otc. also, Sort of along contour of this loch, can find Larger boulders of S. Silicified material. Loose traces to S.

upper Stake

prosp pit ② Grid Stake N221600, E480,100 (near top of ZZ Top, S. of Struct. - Here is Badger w/ 0-1+ → SiO2 + 1-2 arg clasts.
Still Lots of Choc? clasts, Big too.
Chain 206°, 123' to prosp. pit. - Badger
approx 338°, approx 50°S Matrix red, unalt'd to 2 arg. Clasts generally bleached, 1 arg.

Then 167°, to SW most otc + ~ to Stake N221200 E480,400

From this Stake, otc. ds 145°, 30' Otc-Red-Okgrey/blk Silic. matrx.

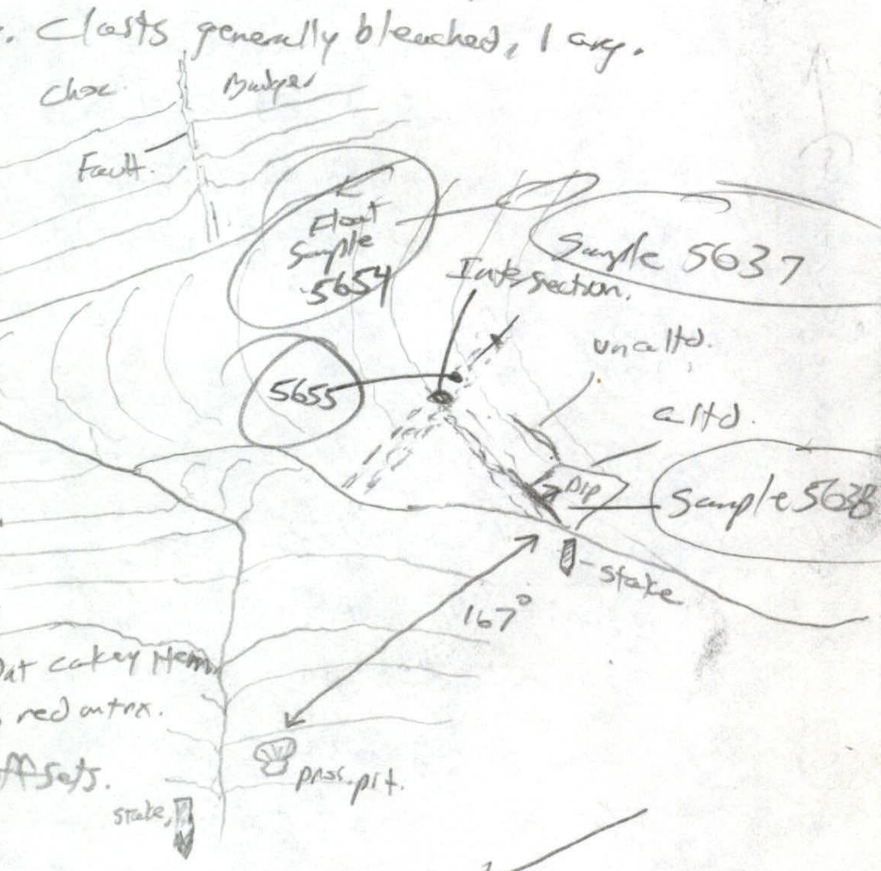
143°, 32 SW - approx 'Bed' Dip - not a fault surf.
223, ~vert; 247, ~vert; 231°/vert; 240°/vert. - V. Prominent Fract Set.
old Sample Tag ? (?E) A-6910

Walk up exp. ~130°,

② 64', weakly to mod altd Badger - red silty matrx, mixed clasts calc'k as purply hue.
272°; vert; 207, 75 E.; 220, vert.; > mixed orientations, 272 Thru-going.
172, 37°SW -

② 100' - ② Intersection - Extremly Fract'd blk' mod altd - highly variable about cakey Hem. 1-3 arg, 1-2 SiO2 Little to no red matrx.
~200° +/- + ~vert - Highly about Fract orientations w/ some 30° off sets.
other orientations not apparent. - likely overrated.

Then 190°(S), 78' Then 210°, 107' Then ~182°, 86' to prosp. pit.



more prom. 328°, 65°NE V. Sm. exp. Brk w/ 280-295 Subordinate Fracts.

— S. altd Badger - Lt. grey SiO2 3 SiO2 matrx - 2-3 arg. clasts.

ZZ Top

Sample 5639 - Semiselect Dump Grab.

Then 207°, (@ 156', cross Drng) 190'. to large blocks of Rk - not? otc

Then 81°, 134' To junction of Drngs.

Then 3°, 40' to otc - 'Scoria' txt, S. SiO2 Badger @ fault zone

20°, -60°W - only Struct avail. - quite variable (undulates) - likely w/ in 20' of main Struct. (on Drng)
Slicks go SW

Sample 5640

Then to Ridge to E - @ Fault blw Choc Fm + Badger - Sample 5641
Head along Ridge (of Choc Fm) - from fault, ~40°.

② Prosp. pit to SE of Ridge (w/ about yellow Lim Stn) — 260, 50°N; 80, 62N; 62, 75N

② Dike on Choc Ridge - otc Strikes 320, Fracts Go 315/vert + ⊥ to 315 @ odd ds. Slicks on 315 go 37N

over ↓

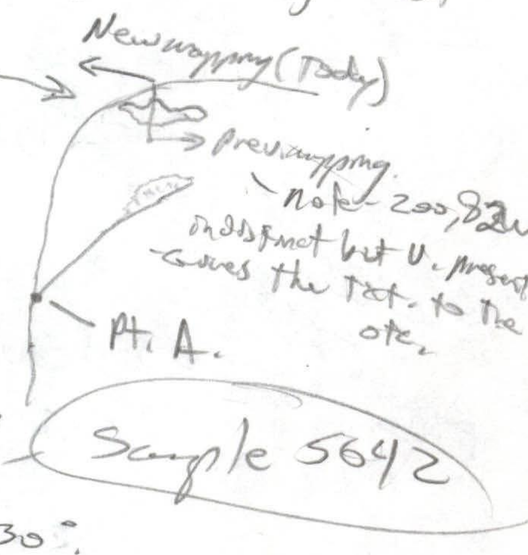
Choc. Ridge (Cont)

@ Trench just past Dike (60' on 40°)
all fracts (v. cabbt) around 230-240°, 80+° to NW. complefracts @ ea ~220, 225 + ~25-80 NW
Is choc Fm. - SiO2 - 1 (perv. vein flooding) Org - 2 No Sample Taken.

Head down to N to Ti otc. on S. side of Drng.
Ti - 'Bedding' v. probably 5°, -52E.
162, 52°W - major Jt/slip plane - need more for otc - passed for time now.

5-24-99 ZZ Top, Beginning @ otc Immed. N. of ±87? DH (spur off main Rd) Start + go west from where last was @ same otc.

138°, 66°S - same (contmation) of major fract. - inadequate slick exposure.
122°, 76 SW - cabbt sm. fracts somewhat localized.
155°, 75W - fract w/ well zoned SiO2 - complete replacement in middle, less intense + Ext. outward. fr ~2" + (one side)



Beginning @ pt. A., heading ~N along Rd
@ 108' - Begin otc - Choc fm - Variegated bx w/ red (red brn.) matrix. cutting wkg. variably laminated, grey tuff w/ variable Hematite.
@ 120' - ~1½' wide alt'n zone w/ irregular veinlet + Perv. SiO2 - Trends ~30°.
@ 130' - min. fracts @ 130°, 50 N.
@ 139 - v. thin SiO2 veining like Sample 5642
B/w 140 + 155 - fan fract set - Nearest 130, 62 N, Thin 120, 48 N, Thin ~105, 55 N, and ~115, 48 N.
@ 165, ~122, 57N
@ 173; 165°, vert.
@ 188'; 327, 77W } major fract - single, well dev.
@ 316'; 153°, 77E
@ 318'; 147°, 65E } Dom. fracts but not major. 150°, 73°
@ 329'; 160°, 72E - distinct, dom. - not major.
@ 362'; 168, 63W - distinct - w/ hem + (siliceous) Lim. surf. - note - choc bx is 'inversed' - clasts w/ hem, matrix is grey + most matrix w/ thin qtz veins.
@ 367'; 27, 80E + 225, 72°E - maj. fract set w/ thin, siliceous goeth/lim + hem on some fracts - others in same direct - no.
* @ 423 - ⅓ into bend in rd. - 170°, 82°E - prominent fract w/ goeth/lim on surf. - no silica. - cuts crackle fracts of 115-125°/+- vert.
@ 442 - ~160°, ~70°W - ¼" qtz vn w/ hem along fract (fills), recurrent fract.
@ 500' ~ 185°, +/- vert. - Silicified Bx
@ 785 - Large float blk of Lbt - weak. weathered, Plag phenos +/- min. banding, purply grey. glom's. + single.
@ 853 - Lbt otc. + Stake # 2,212,800 N, 480,000 E, # 1053
193, 83E - Prom. fract w/ Subordinates w/ Silic/Hem.

From back of 142' on Rd (above - w/ ¼" vn), head ~308°, 100' (corrected) to otc. (Silic. bx (212 struct on E side of road)
@ otc. - 110°-120° crackle fract +/- vert, cut by 2-3°, 65E
Pace 35', 208° to Sm. otc. - 130°, 70W - Major Struct - slicks 80° NW. Struct is silicified w/ ~1-2" qtz.
26°, ~vert struct poss. cuts 130° struct. This 26° struct has central qtz veining + bx w/ well dev. Lim then hem. ~~Halo outward. Halo appears to be~~ present in silica of 130° struct.

2 Samples - NWR 4 5643 - 130° Struct
5644 - 26° Struct
5645 - Host

5-24-99 Cont

From otc w/ crackle fracts, 90 35°, 13'
125°, +/- vert? - major fract, in middle of otc. area.
will follow w/ otc.
200°, 62E - mjr crossing fracts - also. 220, 40W + 210, 60W - sort of V like a dike jt. set. ~⊥ to main struct - large fracts

Then 355°, 11' to N edge of Sil. otc.
300°, vert.
302°, 72° SW, slicks - 38° W. (NW)
40' to N - otc of ~~Lbt~~ Tc - fresh fracts @ ~153 +/- 5-10 + ~vert

Then 19' downhill along Strike.
125°, 75S., slicks 47° W — major Trend.
215, 45E Subordinate fract.
164, 70NE, slicks 50°

Then 24' (same heading)
300, 70S. - note 5" wide Bx - suspended clasts, well rnd'd, red matrix (chem) - ~~Eggsuk~~ Sil./calc?
194, vert.
Fine dissem py occasionally in matrix Silic
Then 32'. note edge of struct has ~⊥ jts which curve inward toward E from margine
Edge - 280, 85S. — likely Sub. Fracts common @ edge of dikes (15°-25° from true edge)
Jt - 207/vert. Then 195 inward.

Sts/fracts. Edge

Then 70' to Stream bottom (along otc. edge) Then up stream to mid otc. - next to Stream ...
Drng
142°, ~~75W slicks~~ @ 60°N. Struct S, Silicified. w/ 1/2" to 1 1/2" perv. 100% SiO2
Sample SG46 - silicified Struct.

Then 45' up hill, back Through center of otc (heading E).
115° - crackle fracts.
15' Northerly. - 107°, 83S. slicks 25° W
+ up 10'

Then 120°, 15' 200°, 85E - v. poor slicks + mullions, gently (~15°) to N.
Then same~ bearing, 22' - 5-20°, 85E to vert. minor but prevalent.
Back to Loch 45' up from Drng. btm, Then. ~20°, 155° - E/W Struct, 75°S, slicks 50° W.
(Fairly sm. (Thin) Struct).
Then up hill 21'
20°, 82W clean fract, no slicks. - has 30° subordinates (V. minor in this otc area).
Then up hill 15' 122°/~vert crackle fract.
Then up hill 47' to beginning otc just below rd,

Note, @ / 5'N of beginning otc - silicified bx w/ odd blebs of dissem. py, some w/ white/cream silicious clasts. This Bx (I think) is at least 3 stages of silicification, bx, resilicification, etc...
From This otc., 40' Due E - sub crop - ~160° crackle bx. poss sub// silicious struct (buried).
Just (5') E - 205°/± vert.

PG 6

5-24-99 - New location (E/NE of ZZ Top)

In Ti - V. strong cleavage @ ~5° - all ∅'s.

upper otc. 276 +/-, 22°N to vert - Several large Jts @ this ~orientation cutting clvg.

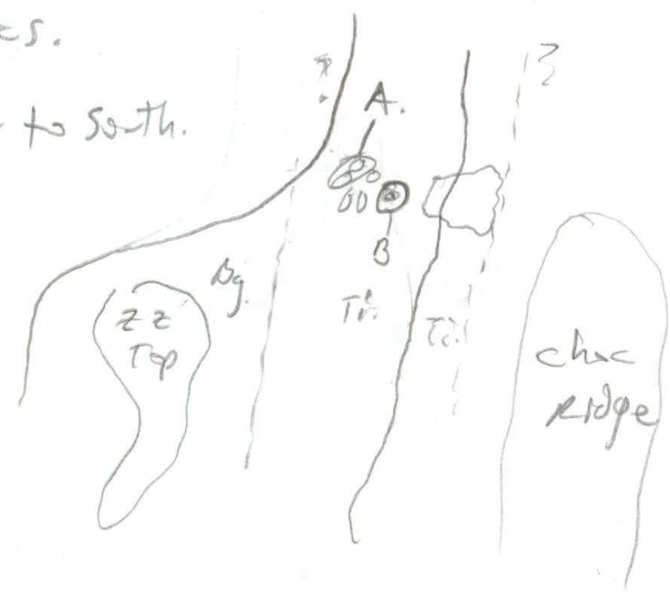
~A uphill toward ZZ fault (best exp). - Ti - 10°, 64N - V. S. cleavage.

~72°, 80N - occasional long fract + forms mod abnt x cut for blocky pattern.

300 + 30°S - forms the Low ⅄ hill to the otcs.

about ½ way down hill b/w upper exposure + Dmg - Ti otcs. + to South.

7°, 67°E - m-S. cleavage - ^B →



alth paragenesis -

Ex. Choc Bx - fresh rk w/ red matrix + Gray clasts

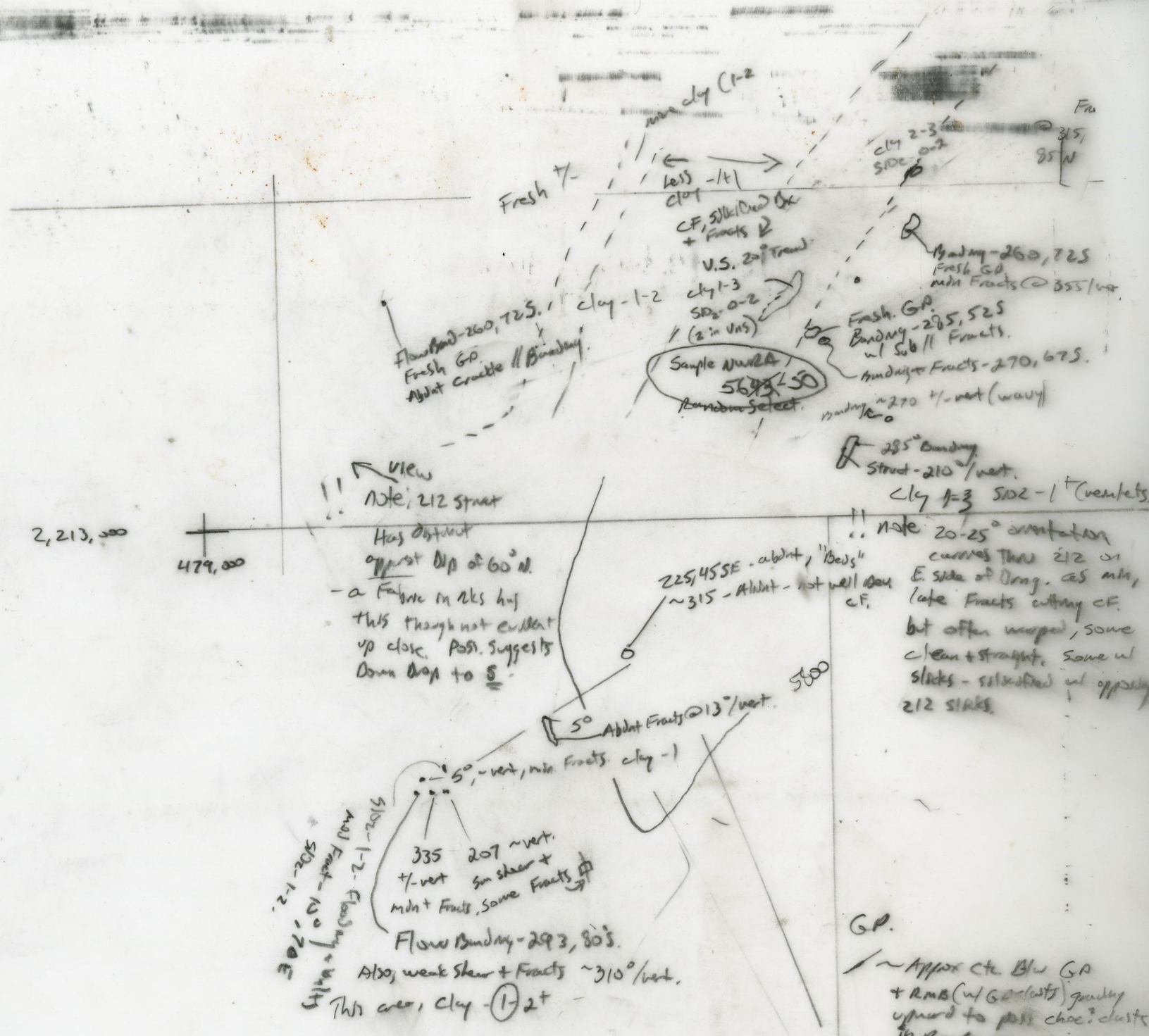
I. 3 possibilities - A. weakest - matrix bleaching + clasts gaining hem (inversed pattern from fresh rk).
B. Inversed pattern w/ hairline qtz cutting matrix +/- some clasts
C. SiO_2 flooding of matrix + hairline cutting clasts (fresh).

II. Corr of I, either w/ all rk becoming variably bleached or perv. flooded w/ hem.
also, rose qtz veinlets more prominent (larger + more cross-cutting).

III White qtz following initial rose qtz veinlets, either x-cutting, center fract fill of rose veinlets or as blebs, connected by v. thin stringers. Blebs eventually appear as phenos in final product. By now, original clasts are usually unrecognizable - rock has been homogenized + new veinlets (rose + white) w/ rose forming bx txt gives rk new bx txt, misstaken for protolith.

IV More silica - lt. grey +/- other colors (locally) rebrecciate rk, also usu. perv. SiO_2 flooding - variable, Stage III clasts further bleached + usu. SiO_2 flooded.

V Extreme - qtz vns cut rk w/ s. perv. SiO_2 flooding along selvage w/ complete replacement of host. (IV + occasionally III).


Fresh +/-
clay (1-2
Less clay, -/+
CF, Slick/Grad Bx + Fracts
U.S. 20° Trend
clay 1-3
SD2- 0-2
(2 in Vns)
clay 2-3
Side out
315, 85 N
Flow Band-260, 725.
Fresh GP
Ablat Cradle // Banding
Sample NW24 56 of 150
Random Select.
Banding-260, 725
Fresh GP
min Fracts @ 355/vert
Fresh. GP
Banding-285, 525
w/ Sub // Fracts.
Fracts-270, 675.
~270 +/- vert (wavy)
285° Banding
Strat-210°/vert.
clay 1-3 SD2-1+ (vertical)
View
Note, 212 Strat
Has Obstruct
Apparent Dip of 60° N.
- a Failure in 2Ks but this though not evident up close. Posn. Suggests Down Drop to S.
2,213,000
479,000
225/455E - ablat, "Beds"
~315 - Ablat - not well shown
CF.
Note 20-25° orientation curves Thru 212 on E. Side of Drng. as min, late Fracts cutting CF. but often warped, some clean + straight, some w/ slicks - slickensided w/ opposing 212 slicks.
5°
Ablat Fracts @ 13°/vert.
5°, vert, min Fracts. clay -1
335 +/- vert
207 ~vert. Sm shear + min + Fracts, Some Fracts
SD2-1-2- Flow Band + Vein
Flow Banding-293, 80's.
Also, weak Shear + Fracts ~310°/vert.
This area, clay - (1-2+
GP.
~Approx Ctc Blw GP + RMB (w/ GP clasts) grading upward to pss choc? clasts in RMB, Thin w/ Badger on top.
RMB
Tby.
2,212,000
479,000
315, 85 N

Bx Dike like one under chac. ridge
chalts are auto bx +/- Lbt.

Lbt

123,805

60,35E
Lbt.

clay + flow boundary

64,34E

Lbt

335, SW

215

Solosioz ~ Elev.
+675 ← v. approx.

maj. Fract + Shear 77°/vert.
SiO2 bx on same trend.

123,805 Shears, CF, etc. comes thru from ~N set to SE (ctd) (curving ↑)

~ N. 56 set from Trend to S.

major sets

275,68 N

Numerous crossing Fracts
@ 145,65E

98,775
Shear/SiO2

Continuation of Struct. Steep NW to W.

337°

53

350

Silicified fault/
Dilatent lense
CF, etc.
all on this orient.

ultraphyre porph
in
etc.
Bud should be below.

Bx + SiO2
Flooding + veins filled by

Sample 5652

Sample 5651

Bud in FA

335, 62 W, Slks 20° N - Poss. Reverse motion.
mullions + slick (-64 N, on 166°, 57 W

mullions + slick

162°, 57W Slks 62° N & S. silicified fault

5800

70°, -80 N
Super High Polish
slkks + mullions -
63° E

Area of change! - some confusion.

original (?)
Trend goes
Thru - SE.
IS ~ 20-25'
from N 2,212,600
E 478,200

Dying out
slip + more
Silic. NW on
NW struct.
This lower area
more just alt'd (clay)

CF
& others Splay to 315°

Leads.

Large altn. zone

Silicified + clay altd fault bx + host rk
v. similar facts as in lower Struct to S.W. - likely dips same direction (E?)

325°

310° - poss splay to end @ 55' from pt.

Poss. Fault

~335°

— either slight offset to W
or slight bend or both
from ~337 to ~333.

337

— Struct Bends.

173

5900

CF Subll Trend

Struct Trends 347 From Apex

~150'

~122°

Smaller struct/alt

GP

TC

Struct Trends 153° to Drng, Thin ends?

Porph. Rk.
like @ 'Porph A' loca
to west of Chac Ridge.

L + Grey porph.
v. slc. w/ some
RMB (like @ Chac. Ridge)

x Sect.

Mullion Data

6 3 3 2½ 4½ 7½

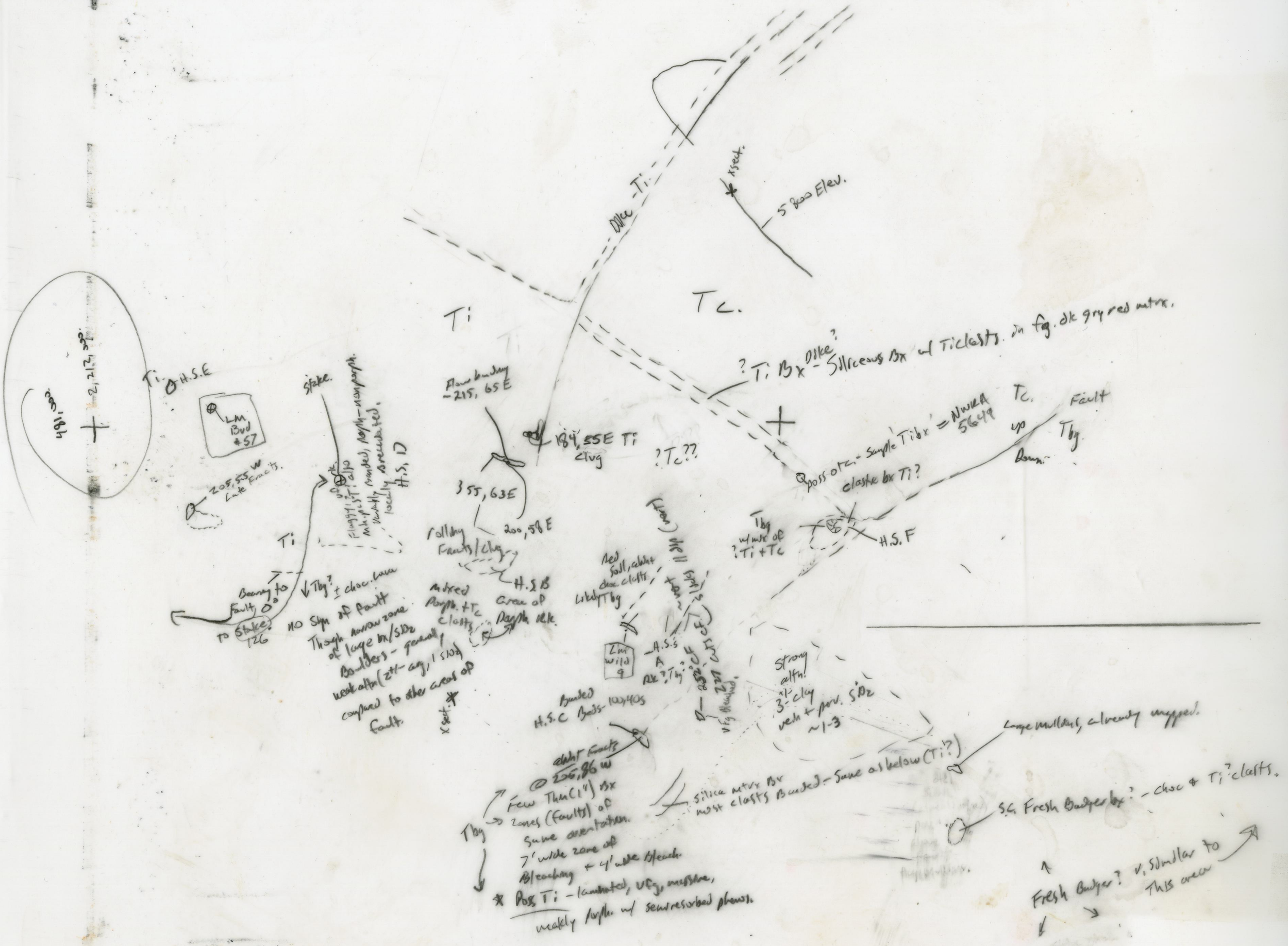
2½

24½

6

5½

Blw large mul. valley w/ smaller
peaks tends to flatten leaving
1 large valley.



Dike - Ti
xsect.
5800 Elev.
Ti
Tc.
? Ti Bx Dike? - Siliceous Bx w/ Ti clasts. in fg. dk gry red mtrx.
Flow banding
-215, 65E
184, 55E Ti
clug
?Tc??
355, 63E
200, 58E
Rolling
Fracts/clug
H.S.B
Area of
Porph. Rk.
Mixed
Porph. + Tc
clasts
Ti
H.S.E
LM
Bud
#57
205, 55 W
Late Fracts.
Stake.
Flaggy, ufg
Mh. pcs? Ti also
variably banded, porph - nonporph.
locally brecciated.
H.S. D
Bearing to
Fault 0°
to Stake
126
Tbg? ± choc. Lava
No Sign of fault
Though narrow zone
of large bx/SiO2
Boulders - generally
weak altn (2+/- avg, 1 SiO2)
compared to other areas of
fault.
xsect.
Qposs otc. - Sample 'Tibx' = NWRA 5649
clastic bx Ti?
Tc.
Fault
up
Tbg.
Down
Tbg
w/ mix of
? Ti + Tc
H.S.F
Red
Soil, abnt
choc. clasts
Likely Tbg
Lm
wild
9
H.S.S
A
Rk? Tbg?
Banded
H.S.C Beds - 100, 40S
abnt Fracts
@ 205, 86 W
Few Thin (1") Bx
Zones (faults) of
same orientation.
7' wide zone of
Bleaching + 4' wide Bleach.
Tbg
* Poss Ti - laminated, vfg, massive,
weakly porph. w/ semiresorbed phenos.
Strong
altn!
3+/- clay
vein + perv. SiO2
~1-3
Silica mtrx Bx
most clasts Banded - Same as below (Ti?)
Large mullions, already mapped.
S.C. Fresh Badger bx? - choc & Ti? clasts.
Fresh Badger? v. similar to
This area

Note - unaltd / v. wk altd rk
about 80-100' w. of Top.
Not all of area is altd!

185-190, +/- vert. - x cutting, few
120° +/- 10° + +/- vert - CF. - v. com./major.
105 +/- vert - large block fracts on N side.

Top.

Fracts Roll!
Strk - 230, 205, 200
Dip - 43, 52, 58

135, vert - about but cut by major → 110, 85S - vert

CF ~130
288, 75N

145, ~vert - about.
217, 50W prevalent
288 80S - Thru going

175, 78E

297, vert - about, mod size. (1-10")

288, 52W, slicks - 37W

Bigger JTs - 210-220, all ½ - like cooling JTs on lake.

CF. 130+/-vert

CF 302/vert.

110/vert
V. significant.

5°, 75E
Slicks 50N
major
Normal slip.

130/vert
Largest CF.

maj 22/70W
CF - 335/60E

CF → 33/vert
305/78W

15, 50W
major 275/vert
sub - 92+

2 sets, 3 Arg.
35-40 + 67W - About - major

W. altd Tc. some bendey
some bx. some massive.
335, 47E TO 85W - about.
cut by 42, 45N - sparse

280, 80N also 263, 75N.
unaltd Tc (same as S side - porph, etc...
274, 70S, slicks 35W - veined w/ perv flood selvage - major struct.
110°, 64S, slicks 53W - min. structs. → Both struct cut CF.
108, 73S, slicks 60W - Huge! - weakly veined. CF - 130 - 145.
Sample Tag - PM - SUL - GO

293, 65N - Major! - 2 others +/- 5m, about.
Slicks 32W
213, 20 NW
278, 78N - w/ qtz vn.
C.F. - 315, vert.

2°, ~vert - minor but present.

313/vert - maj. + minor - all flow current.
332, 5W S + vert (2 diff sets)
similar.

also 2nd ary - 300°, 82N +/- - major fracts.

130, vert.
Shears + Fract Combined
w/ Un Gl
also 125, 80S.

75, vert.
Prom.

curves and cuts 105, 82N → 307, +/- vert.

unaltd Tc. - 315° clvg. +/- vert.

Sig. Struct @ 280° ~vert
has qtz after calcite
Angle wing + Bx at prev.
Silicified rk.
Host contains about.
dissem. py.
Samples 5647/48

376, 57W
Vor. SiO2, Bx + Arg.

unaltd porph - Alog, Brec, Pork Sma; Hbld.

CF, 3 +/- vert.

22, 80E
Silicified porph.
Same as @ other Locus.
V. Sm. expl. - poss struct. area.

295, 63S cuts CF.
CF ~ 0°
Fresh to altd. - in Fresh, flow band Sub// 303 strike & ~75-80N.

weak Trend @ 315° ~vert.

303, 55S - major.
2-3+ Silicified
Calc seam.

355 +/- vert CF.
10, 78W - min
70, 70S - cuts CF.
SiO2 ~3+
perv. + some veining.
3-5% Alog + S and ? phenox → clay

SubCrp -
purply grey rk.
Biot, Sericite
3-5%.

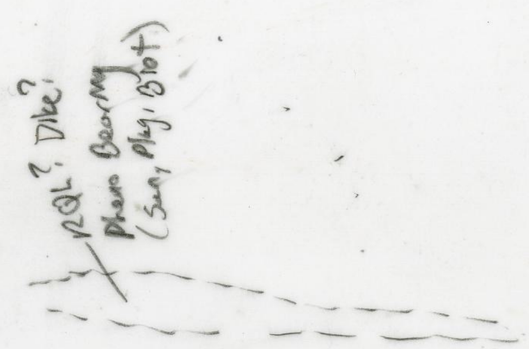
5, SiO2, pass along struct.
has 10% perv. SiO2 - confined.

337 +/- vert CF.
w/ 2-3 SiO2

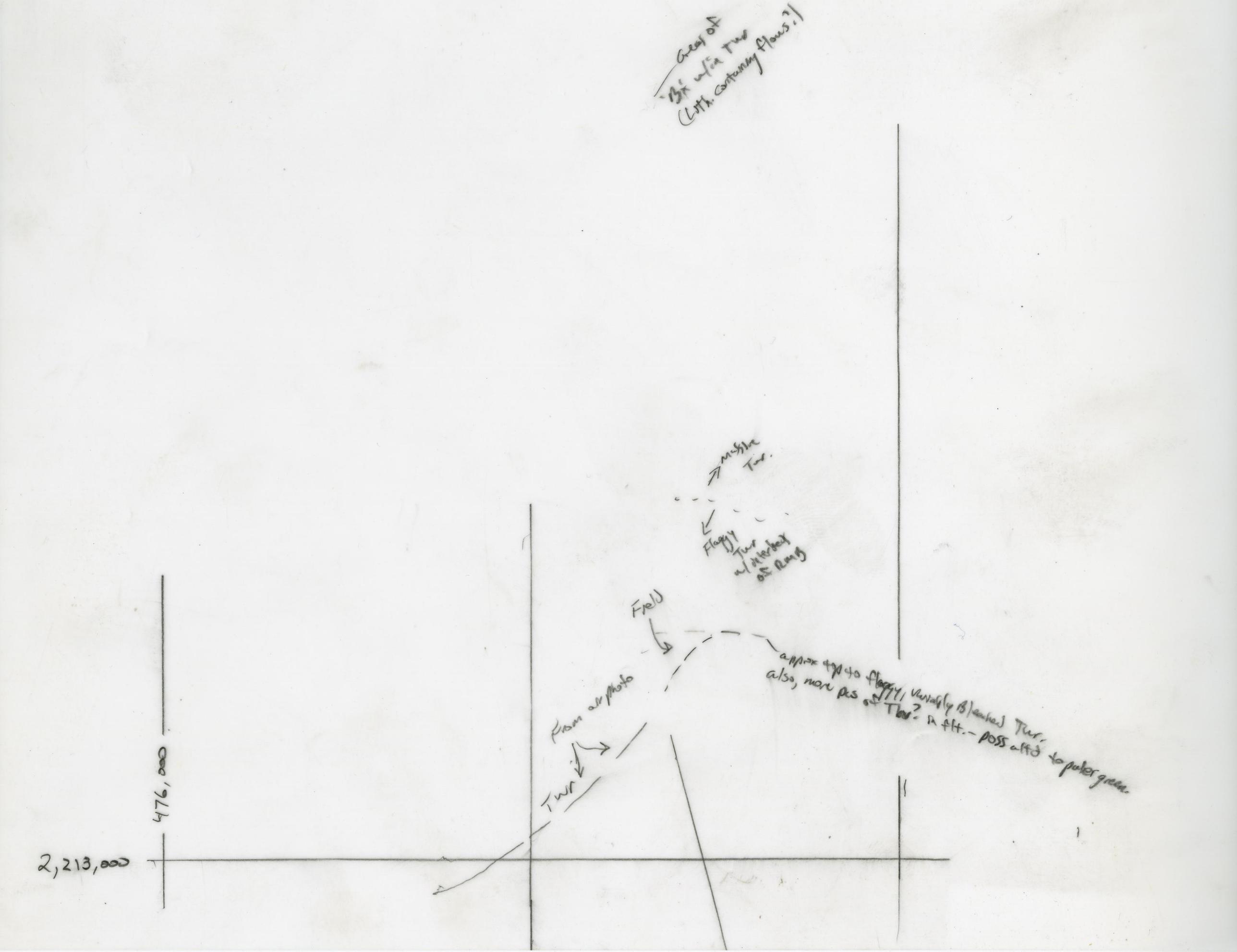
43, 35E
15, 67W
2, 75W
352, 79W

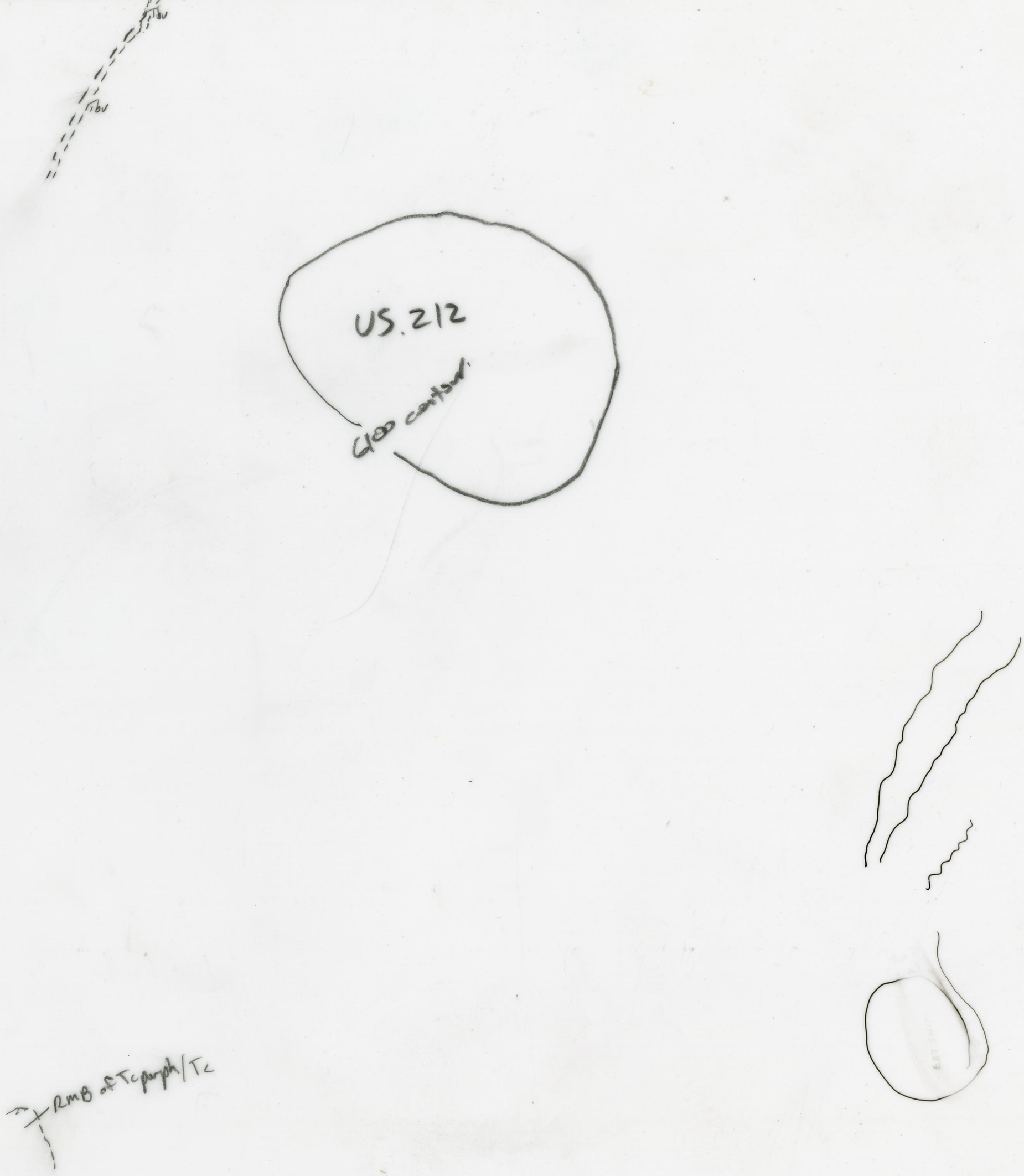
Pos. pit w/
Tc bx + v. local
arg (2-3) + hair line
Qtz veins.

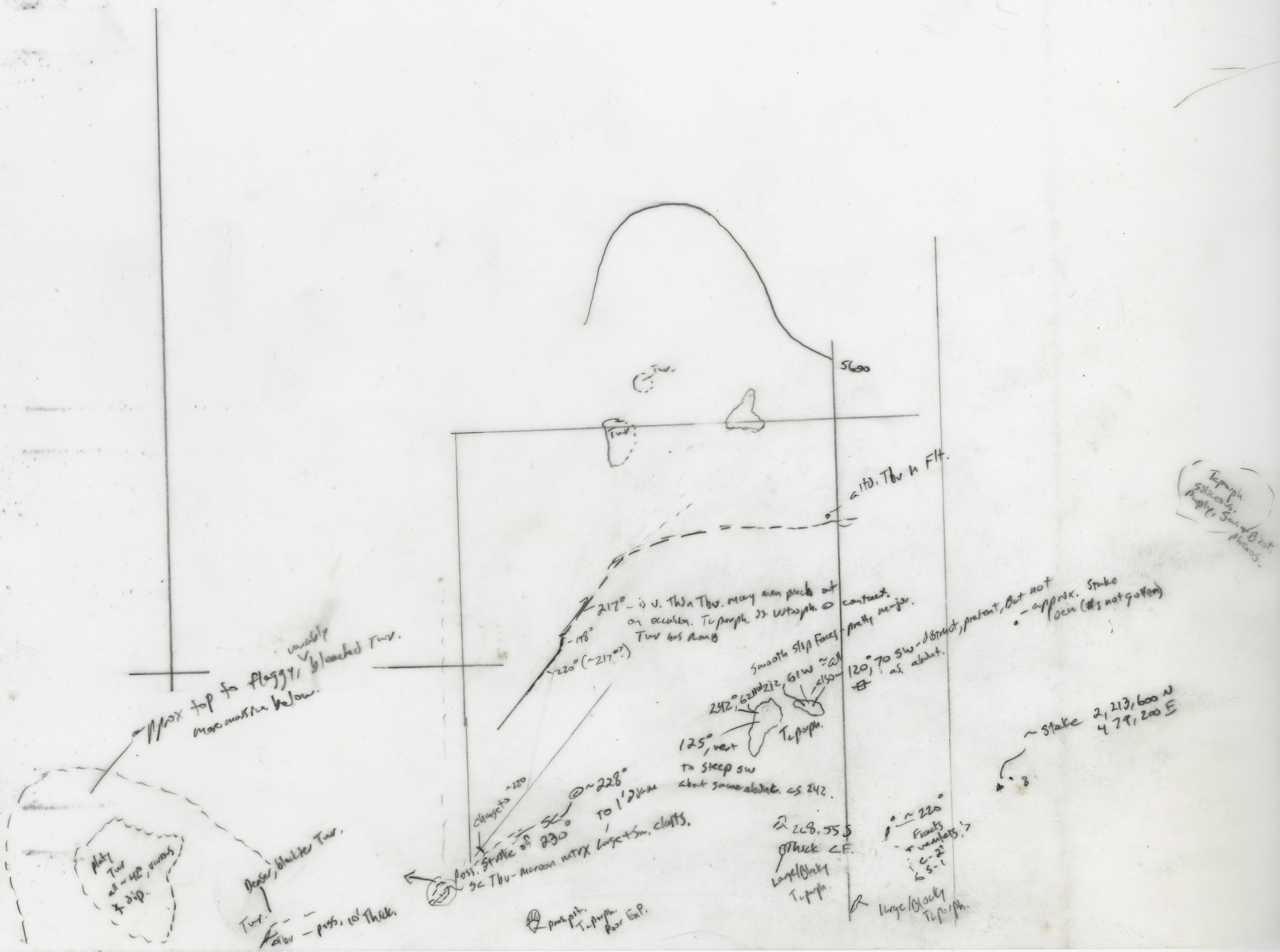
315, +/- vert
Crackle Fract. C.F.
Carries thru most ores.
& Ti.


Dike?
Pheno Basalt
(Sun, Phy, Biot)

Gabbro
Bx unit in Tur
(Lith. contains flows?)


Mafic Tur.
Flaggy Tur w/ interbed of Ramp
Field
from air photo
Twr
approx top to flaggy, variably B/anked Tur.
also, more pos. of Tbx? ? ft. - poss. add'l to paler green.
2,213,000
476,000


US.212
6100 contour
RMB of Tc porph/Tc



5600
Twr.
Twr.
altd. Tbu in Flt.
Tc porph. Siliceous, Purply, Sand Biot. phenos.
217° - is v. thin Tbu. may even pinch out on occasion. Tc porph. is vitroph. @ contact. Twr has Rmb
~198°
~220° (~217°?)
Smooth Slip Faces - pretty major.
242°, 62NW
212, 61W ≈ all
also - 120°, 70 SW - distinct, present, But not as abdnt.
• - approx. Stake Ocn (#s not gotten)
125°, vert to steep SW about same abdnt. as 242.
Tc porph.
~ Stake 2,213,600 N 4 79,200 E
approx top to flaggy, variably bleached Twr. more massive below.
changes to ~220
SC @ ~228°
Poss. Strike of 230° to 1' diam
SC Tbu - maroon mtrx Large + Sm. clasts.
268.55 S
Thick CF.
Large/Blocky Tc porph.
~220° Fracts + veinlets ?
c-2
6 S-1
Large/Blocky Tc porph.
platy Twr all ~42°, various ∡ dip.
Denser, blockier Twr.
Twr.
Tbu - poss. 10' Thick.
pros. pit. Tc porph. Poor Exp.