

Checked against partial computer  
log saved on Flash Drive used to  
Construct Thesis Figures. 12/08

Paper Log

18x D.S.  
1x D.S. → 0.5  
14x 0.5.  
5x S.S.

Computer Log

17x D.S.  
18x 0.5.  
5x S.S.

**ML 14-23**

444'-447'	Andesite flow
447'	Andesite tuff
497'	Andesite flow highly vesicular <u>no</u> filling
552'- 624'	Andesite <sup>air</sup> <del>ash</del> fall tuff
604'	Fracture andesite tuff dip 62°
624'	Dense andesite flow, no filling
642'	andesite AA dip 27°
672'	andesite AA dip 68
690'	Basaltic andesite
725'	Basaltic andesite vesicular dip 68°

1187- obsidian

~~1202.5~~

1202.5' Ash fall tuff - fine well sorted tan

1208'- frothy obsidian

1228'- Air fall tuff

1240'

1240'

~~1240'~~

1296

obsidian - gray splintery loose  
spands to loosely consolidated globs

1296 - rhyodacite

1460' - 1470' - Andesite

1470' - 1479' - obsidian

1461' fracture dip ~ 56° no slip ind.

chlorite

1479 -

~~1485~~ 85

1485 -

~~lithic ash flow tuff~~  
lithic rich ash flow tuff - welded  
lithic tuff - non welded  
porphy to

1497-1514 non welded vitric air fall? tuff  
1514  
~~1511~~-1592' 1503' Sample

1497'-  
~~1511~~' rhyolite flow  
glassy ~~welded~~ ~~AA~~ (frothy obsidian)  
full of healed fractures

1511' fracture dip ~ 52° no slip ind.  
clay mineral surface

1522' ~~1582~~-1586' flow banded obsidian  
~~frac glassy~~ ~~AA~~ rhyolite flow top

1592'-  
1612' - Devitrification texture in glassy  
~~AA~~ flow top vuggy no mineral filling

1609' photo sample AA

1612' - rhyodacite flow top  
top vuggy - devitrification texture  
no fill

~~1560.3~~  
1560.3  
1560.3'-  
1572' glass frac 60°  
possible fault zone

1612-1889

1733'	ryodacite	?	60° <del>41°</del>
1751.5'	AA	?	41°
1753'	AA	chlorite?	35
1757'	AA	chlorite	dip 58°
1767'	AA	AA	66°
			35°
1817'	AA	chlor?	54°

1850-  
1889 — Contact <sup>flow</sup> and obsidian glass flow  
1900' fracture glass flow dip 58°

1903 — Contact ash flow tuff

1907 — Sample 1903-~~1908~~ 1914  
densely welded

1918.5 — Sample 1914-1931 moderately to low

1935.5 — Sample 1931-1936 unwelded tuff

150

1936' - ~~mud flow~~ soil horizon  
1977 reworked pyroclastics

1945' Sample

1965' Sample

1977' tuff

1985.5'

1985.5' mud flow

1993' - Basalt - highly vesicular - no filling

2004' - mud flow

2020.5' > Sediments - fine grained ss.

2028 fining upward w/ isolated  
angular clasts of glass + rhyolite, clay

Sample

2028' - Andesite flow top - auto breccia

2069'

2047 fracture, Andesite, ~~clasts~~ hematite  
oblique slip, dip 43°

2069'

flow banded andesite foliation 55°

2293'

flow bnd andesite, brown <sup>rhyolite probably</sup> micas <sup>chlorite / smectite</sup>  
present in small nugs + on  
fracture planes photo

2301'

fracture dip 75° - chlorite?  
flow bnd andesite

~~2338'~~

2332'

<sup>rhyolite</sup>  
Andesite auto breccia

2353

Debris flow photo  
bottom appears baked 3'

2373

Basalt - vesicular - no filling

lightly to non-welded Ash flow

2408

Debris flow top 1 1/2' baked  
Oxidized

2456'

~~Andesite~~ ~~breccia~~ ~~clast~~

2456.852

contact angle 25° ash flow

2456.85'

Debris flow lightly welded - non w.

2484 - sample - 2563

2434 - sample -

2519'

Reworked debris flow / Sediment

Sample pumaceous

2523'

~~Debris~~ Ash flow AA

2583'

Basalt

2595'

fracture Basalt dip 67° oblique

2595.5'

" " " " dip 47° dip slip

2596'

chlorite - hematite

2596.5'

" strike, 67°, hematite

2597.5'

dip 33° chlorite

2598.5'

dip 16°, dip slip, chlorite

2599'

fracture dip 10° oblique chlorite hematite

2599.5'

dip 30° strike " "

SEE NE PAGE

2593.75  
2594.0

√ 2593.75'

~~2593.75~~  
fracture Basalt, vesicular  
dip 10° oblique chlorite, hematite

√ previous  
2594.0'

dip 30°, strike slip, " "

√ 2594.2'

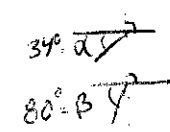
dip 23°, two generations of slick  
one oblique, one dip slip

sample

Cannot determine  
which set of slick  
is older.



α oblique strike = 34°  
β dip slip strike = 80°



√ 2594.4'

dip 39° no slip indicators

2595.0

dip 68°

√ 2596.5



dip 05° strike slip

√ 2597.3

dip 37° no slip in.



↓2598'	fracture dip 69°, strike, hematite
2598.3'	dip 30°, oblique, chlorite
↓2600'	dip 25, none, ""
↓2601'	dip 11, dip, ""
2602.5'	dip 33, dip, hem
↓2606.5'	" " dip 13°, dip, chlorite
↓2606.75'	" " dip 76°, dip, ""
	vesicular basalt has little or no filling, chlorite f. 11 < 10%
2607.4'	vesicular basalt dip 54, <del>strike</del> <sup>dip</sup> , chlorite
↓2607.6	clay vein, dip 05°, dip hem. chlorite
↓2607.7	clay vein dip 29° <del>dip</del> <sup>oblique</sup> chlor. hemat
<del>2607.85</del>	
↓2609'	vesicular basalt dip 85°, oblique, chlorite
↓2610'	" " dip 49°, none, hem. chlor
2610 -	quartz in vugs
2611-2630	vugs 30% filled -qtz.
↓2613.4	basalt dip 60, dip slip, chlorite

↓2620.5	basalt, dip 60°, none, chlorite
↓2633.	" " dip 61°, oblique, " "
↓2634.8	" " , 53° dip, " "
↓2638'	basalt/andesite dip 39°, none, chlorite
↓2638.5'	" " dip 53°, <sup>dip somewhat</sup> oblique, chlorite
↓2639.5'	" "  dip 57° oblique, rake 20°, chl
↓2640.3'	" "  dip 55°, none, chlorite
↓2643'	" " dip 35, dip, chlorite
↓2645.2'	" " dip 44, none, " "
↓2646.7'	" " dip 35 oblique rake-45° chl

- ↓2648.2 Basalt/Andesite, dip 56, none, chlorite  
 ↓2649 " " rake 35, dip 69, oblique, chlorite  
 ↓2650 " " dip 57, dip, chlorite  
  
 ↓2650.2 " " dip 75, none " "  
  
 ↓2651.5 " " dip 50, none, chlorite  
  
 ↓2651.8 " " dip 47, dip slip, " "  
 ↓2653.0 " " dip 40, " " " "  
 ↓2657.0 " " dip 54, none, chlorite  
  
 ↓2669.6 Andesite dip 85°, ~~dip slip~~, chlorite  
  
 ↓2670' Andesite dip 80 oblique chlorite  
 ↘ ↓2667' Contact Basalt/And with Andesite  
 also fracture dip 54°, dip slip  
  
 ↓2672' And dip 80° strike slip

2673' Andesite becoming vesicular  
60-70% filled - Qz Calcined,  
calcite + chlorite

fracture - 2673' - 15° oblique chlorite  
2673.5 - 15° dip slip chlorite  
2673.75 - 30° — chlorite  
2678 - 56° dip slip " "  
2680 - 62° — " "

2677' - 2686' - Vesicular And AA Photo  
2686' -  
2691' Red oxidized intraformational  
breccia, elastic vesicular  
andesite flow top / bottom

fracture - 2681 - 17° - oblique - chlorite  
2682 - 56° - " " " "

2724' -  
2741' AA in 2686' - 2691'

2746' - lahar - reworked basalt/andesite  
2768' clasts which are amygdole  
filled - ashes & soils reworked

2769' - auto brecciated and/basalt flow  
300' TD series of thin flows  $\approx$  3-5  
thick

fracture J2984 - And - 50° - chlorite  
J2987 " " " " "

lique

1001