

UNIT (31)  
PIECE. 1-3

330-U1374A-61R-6-A\_SHLF2822401\_20110119174036



50% vesicles



62-65 cm vein N=1 4-3mm  
mag 90-230



UNIT (D)  
PIECE 1 - b



UNIT (131)

PIECE 1a-5

330-U1374A-61R-8-A\_SHLF2822461\_20110119180821



11-43 cm vein n=3 0.5 mm irregular



UNIT (131)  
(continued)

Volcaniclastic breccia

4 mm nodal  
clasts up to 25 cm  
100% volcanic clasts  
greenish dark gray  
low sphericity  
subangular  
bimodal

Clasts:

Moderately plagi-  
phyric basalt

4% plag.

7mm max  
2mm nodal  
subhedral, fresh

0.1% divine microphenos  
0.8mm max  
0.5 mm nodal  
subhedral, altered

No angular phenos  
visible.

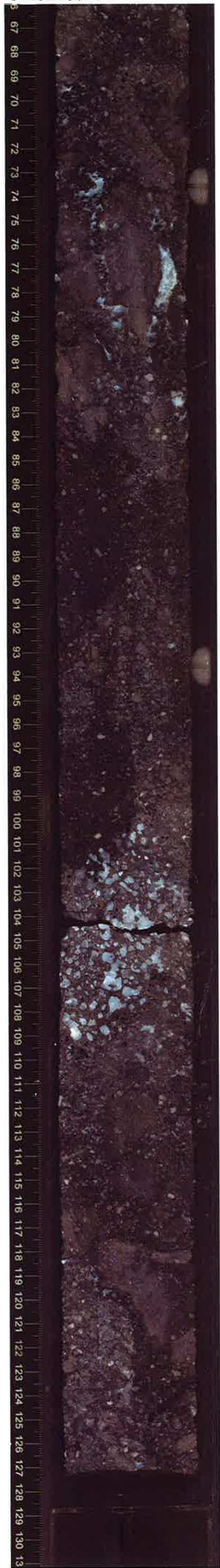
Medium gray  
aphanitic

Vesicles

present in 5%  
of clasts.  
Typically  
1mm max  
0.5mm nodal  
moderate sphericity  
rounded  
10/cm<sup>2</sup>  
50% filled



3cm vein 0.1mm  
irregular, piece, un-veiled



76-78cm vein network n=3  
0.2mm branch



Unit (131)  
(Continued)

as section 1



10-13cm vein 0.3mm curved  
35-7150

14-19cm vein branched 0.5mm  
curved  
40-094

15-23cm vein 1mm curved  
20-7300

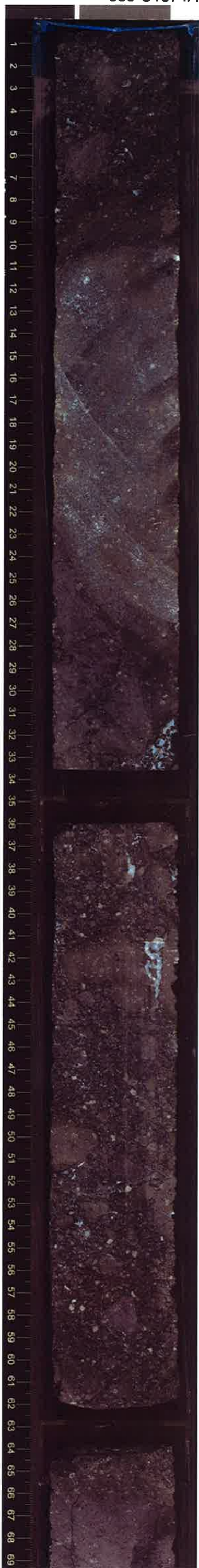


77-79cm vein n=1 0.1mm irregular

93-109cm vein n=1 3-4mm  
80-078



Unit (131)  
(continued)  
as section!



73-75cm vein 3-5mm  
n=1 irregular  
75-81cm vein 2mm irreg  
76-79cm vein 1mm irreg

96-97cm vein 1mm straight  
80-125°  
96-100.5cm  
vein 0.1mm straight steep -> 090°

102-122cm vein 1mm straight  
80-110°



Unit (131)  
(continued)  
on section 1

BUT

Aphyric basalt  
clasts form a  
significant  
proportion of  
clasts from 74cm

Aphyric clasts

Medium gray  
aphanitic  
no phenocrysts  
no vesicles

tend to have  
sharp margin  
in contrast to  
plag-phyric  
clasts, which  
have irregular,  
lobate margins.



74-89 vein calc. irregul  
50-7300

aphyric  
basalt

aphyric basalt



Unit (131)

Continued

as section 4

2 clast types:

1. mod. plag-phyric basalt

2. aphyric basalt

aphyric clasts

now slightly more abundant than

plag-phyric clasts

2-4cm vein 1mm irregular in clast



136-137cm vein  $n=1$  2mm curved in clast

137-138cm vein  $n=1$  0.2mm straight



Unit (131)  
(Continued)

as in sections





Unit (131)

(continued)

as in previous section.



2-4cm vein n=2  
0.2mm image



75-80cm clast with magmatic fabric



Unit (131)  
(Continued)

as in previous  
section.

Still 2 clast  
types.

330-U1374A-62R-8-A\_SHLF2823841\_20110119234839



19-22 cm vein n=2 0.5mm  
irregular, branch



46-52 cm vein network n=10  
0.1mm branch  
radiating away from center of clast



UNIT (131)  
(continued)  
Volcaniclastic breccia

description same as 62R-8

two clast types

- 1. mod. plag-phyric basalt
- 2. aphyric basalt



4-15cm vein n=1 0.3mm irregular, in vein

2

3

45cm

UNIT (132)

Basalt lava

?lobe or fragment?

Moderately plag-phyric basalt

5% plag phenocrysts

5mm max

2mm nodal

subhedral fresh

0.1% olivine phenocrysts  
1.5mm max, 1.5mm nodal  
euhedral, altered

No augite phenocrysts

Medium gray  
aphanitic

47-54cm vein n=1 0.1mm curved 80-100°

4

Vesicles

0.5%

moderate spherulitic rounded

0.8mm max

0.2mm nodal

2/cm<sup>2</sup>, 100% filled

70-72cm vein 0.2mm n=1 curved 75-90°



75-80cm vein n=1 branched  
irreg. sharp dip

upper contact not recovered

5 lower contact between pieces 6a and 6b

ISC1 (D)

no sign of chilled margin / baked contact  
∴ probable fragment

91cm

UNIT (133)

6

Volcaniclastic breccia

Greenish medium gray

nodal 4mm

clasts up to 10cm

bimodal

low sphericity angular

Two clast types:

7

1. Moderately plag-phyric basalt

5% plag phenocr.

5mm max

2mm nodal

aphanitic

No vesicles

medium gray

2. Aphyric basalt

medium gray

aphanitic

129cm vein n=1 0.3mm irregular, in clast

134-138cm veins n=3 0.1mm irregular, in clast

Upper contact between

pieces 6a and 6b

lower contact in 63R-3, piece 2

8



Unit (133)  
(Continued)

as for  
section 1

330-U1374A-63R-2-A\_SHLF2825441\_20110120022824



1

2

3

4



4 (cont)

X5

72-78cm magnetic foliation in clast

X6

X7

52-59cm magnetic foliation  
in clast

This piece may  
be upside down →  
as had red marks  
on both top & base



Unit 133  
(Continued)  
as for section 1



34-38cm vein n=3  
0.1mm irregular, in clast

51-53cm vein n=1 2-lam  
straight, h. clast

55-63cm vein n=1 1mm  
straight, steep  $\rightarrow 90^\circ$

82-84cm vein n=1 0.1mm  
straight 30 $\rightarrow$ 200

82-95cm vein network n=4  
max 6mm avg 4mm branch  
80 $\rightarrow$ 060

91-97cm conjugate vein 0.2mm 70 $\rightarrow$ 130  
5% plag. phenos

5mm max  
2mm modal  
subhedral, fresh

0.1% olivine  
microphenos.

1mm max  
0.5mm modal

3a euhedral,  
altered.

medium gray  
aphanitic

Vesicles

0.5%  
moderate spherulite  
rounded

0.8mm max  
0.2mm modal  
2/cm<sup>2</sup>  
100% filled

Upper contact  
in piece 2

Lower contact not  
recovered.

3b

end of Unit 134

140 cm  
118-131cm vein n=1 3mm irregular  
90 $\rightarrow$ 286

127-129cm vein n=1 2mm straight  
70 $\rightarrow$ 060

128-135cm vein network  
n=6 avg 1mm 2mm irregular branch

54cm  
Unit 134  
basalt lava  
lobe  
Moderately  
plagioclase-  
phyric basalt

2



Unit (135)

Volcaniclastic  
breccia

Same as Unit (133)

See Section 1



12-19 cm vein network  
4 mm max 2 mm avg  
irregul, branch, in clast

1

46.5-47 cm vein n=1 0.5 mm  
straight, in clast.

2



83-84 cm vein 1.5 mm n=1 curved

3

4

133-137 cm vein n=1 0.2 mm  
irregul

5



Unit (135)  
(Continual)  
as for (133)  
(section 1)



3

4

88-90cm  $n=3$  0.2mm  
radiating from center of clast

5

97-99cm  $n=2$  0.3mm  
irregular

108-110cm  $n=3$  0.4mm irregular

6

7

Unit 135

as for Unit 133  
(see section 1)

aphyric  
basalt clasts  
now more  
abundant  
than plagi-  
phyric clasts



vesicle →

32-33cm vein n=1 1mm  
irregular



76-77cm vein n=3 0.2mm  
radiating from center of clast

85-86cm vein n=1 2mm straight  
in clast

← vesicles

← vesicles in two clasts





0-4cm vein 0.4mm irregul

14-16cm vein branch 0.4mm



68-72cm vein n=1 1mm  
straight, on chert

87-94cm vein network n=5  
0.1mm irregul

123-127cm  
vein network n=8 0.1mm irregul

Unit (135)  
(Continued)

as for Unit 133  
(See section 1)

Mostly  
cryptic basalt  
clasts

330-U1374A-63R-8-A\_SHLF2825621\_20110120043652



6-8cm magnetic clasts  
in clay





UNIT (135)  
(Continued)  
Volcaniclastic breccia

Greenish dark gray

5 mm nodular clasts up to 50 mm

Low sphericity

Angular

100% volcanic clasts

Poorly sorted

Clasts:

Aphyric basalt

No phenocrysts

Vesicles:

0.1% Max 1 mm  
inside 0.5 mm

Low sphericity

Subrounded

0.01/cm<sup>2</sup>

Dark gray aphanitic

bottom of unit at  
64R-2, 1cm  
(piece 1)



1

2

3

4

5

6a



6b

6c

6d

7

glass-rich matrix

moderately  
alt  
clasts