330-U1376A-13R-1-A_SHL [illegible]94061_20110201061903

Unit 15

Continued highly olivine-augite-phyric basalt

Piece 1-3d.

Description on previous core

No vesicles to end of Unit 15

3-5 V 1mm straight 40→336

8-18 V 1mm straight 80→060

30-52 cm vein 0.1mm straight 45→016

34-36 cm vein 0.3mm straight 50→070

58-61 fracture 60→145

63→66 vein 0.1mm straight 82→330

77cm V 1.5mm curved 54→350

99-103 V 0.5 curved 85→030

116-119 V 1mm straight 78→334

116.5-119 V 0.6 straight 70→210

21-23cm fracture 75→038

UNIT (15)
(continued)

highly olivine - augite - phyric basalt

Piece 1-2

330-U1376A-13R-2-A_SHLF2894091_20110201004043

0-1 fracture str 50→344

58-62 V 1mm step 30→124°

62 V 0.2mm curved 50→290°

24 V 0.5mm step 40→253

26.5-32 V 0.2mm step 60→230°

31 V 0.4mm str 50→170

31-62 V 0.6mm curved 75→270°

82-85 V 0.1mm curved 64→330°

probably same vein

87-90 V 0.4mm curved 60→030

100-105 V 1mm straight 80→126°

101 V 0.3mm curve 70→010

101-105 V 0.5mm straight 85→114°

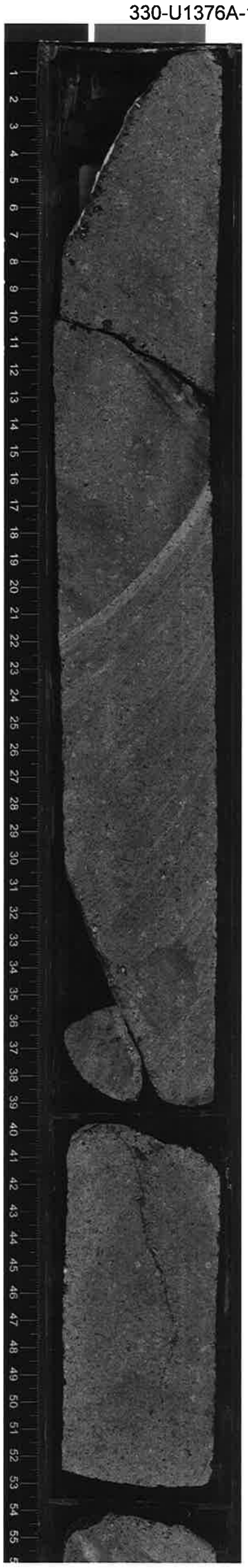
330-U1376A-13R-3-A_SHLF2894121_20110201004533

UNIT 15

(continued)

highly olivine-augite-phyric basalt

Piece 1-3



0-7 V 1.5mm straight 76→295

10-13V 0.2mm curvd 70→022

31-39 V 1mm straight 86→100

48-52 V 0.5mm straight 30→020

40-52V 0.3mm curvd 80→252

55-56 V 0.5mm straight 55→015

85-92 V 0.1mm curvd 60→220°

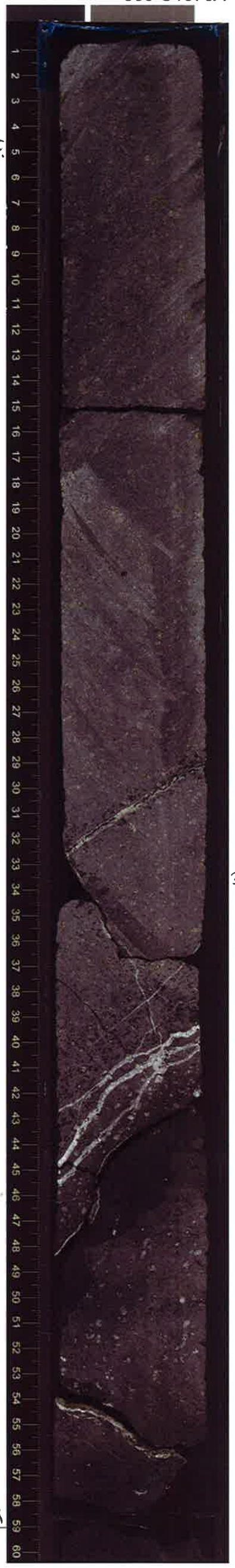
106-108 V 0.3mm straight 88→202°

330-U1376A-13R-4-A_SHLF2894151_20110201005147

UNIT (15)
(continued)

highly olivine-augite-phyric basalt.

Piece 1a-1e



15 v 0.1mm straight 88→000

grading

29-32 v 2.6mm straight 86→150

32.5-41 v 1mm curved 85→060

36-40 v 0.5mm straight 85→040

40-45.5 vein network branching recombining. n=4 2mm 85→145

58 cm igneous contact (no orientation)

54-57 vein n=2 curved 2mm 90→220

End of UNIT 15
Recovered bottom

A little piece of UNIT 15 lava fragment in the top of UNIT 16 (piece 2a)

Olivine is more altered in the bottom of lava flow.

End of UNIT (15)
Fractured bottom of lava

UNIT 16

Hyaloclastite breccia (59cm (13R4A-2a) —.
(Piece 2a-3b.)

Color:
Dark greenish gray.

65-67 cm v n=1 0.1mm 70→350

grading.

59-~91 cm baked contact

80-82 v n=1 0.1mm straight 85→340
MODERATELY OLIVINE-PHYRIC BASALT CLAST

Angular, CLAST
Max; 45 mm
Mod; 20 mm.
PHENOCRYST: OLIVINE-2%
MAX: 2m, MOD: 1mm.

- 0,5%. - vesicle
max 1.5 m, mod; 0,5mm
high sphericity, rounded

94-98 v.ntwk n=10 0.1mm 78→340

possibly some fitting rotation between piece

104-108 v network n=6 0.1mm 68→348

330-U1376A-14R-1-A_SHLF2894521_20110201053521

UNIT (16)
(continued)

hyaloclastite breccia

with clasts up to 22 cm
4 mm modal

mottled dark green - brownish gray

100% volcanic clasts

Low sphericity

v. angular

glass moderately altered in clasts
totally altered in matrix

Clasts:

moderately olivine-augite-phyric basalt

phenocryst abundance varies; typically
5% olivine
1% augite

Olivine:
4 mm max.
2 mm modal
subhedral
100% altered in smaller clasts.
fresh in large clasts

Augite:
3 mm max
1 mm modal
subhedral, fresh

3 pieces

6-28 vein network, n=8, max 4 mm, mode 0.4 mm, irregular, thin clast

large clast of moderately olivine-augite-phyric basalt

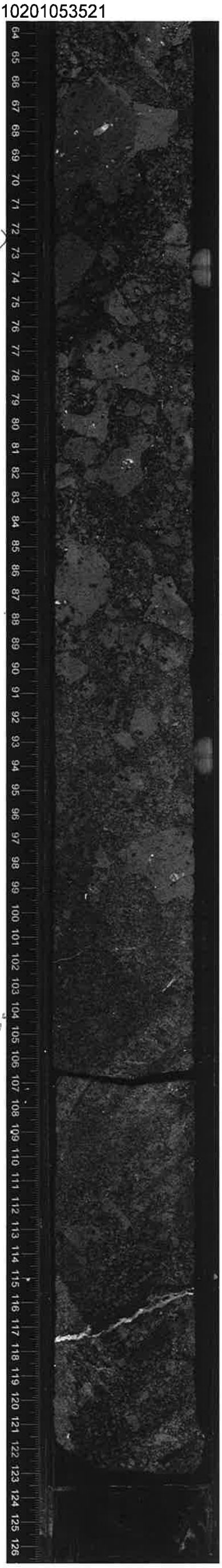
moderately altered

31 vein, n=1, 0.8 mm, straight, 70 -> 008

40 vein, n=1, 0.1 mm, straight, 89 -> 190

42 vein network, n=2, 0.1 mm, 75 -> 800, branched

57-58 vein, n=1, 0.1 mm, straight, 70 -> 194



64-89 vein, n=1, 0.2 mm, irregular, vertical

101-102 vein, 0.2 mm, n=1, slipped, 70 -> 353

115-118 vein, n=1, 2 mm, 55 -> 337, branched

330-U1376A-14R-2-A_SHLF2894551_20110201054230

Unit (16)
(Continued)

6 pieces
1 vein, n=1, 1mm,
straight, 80->165
3-12 vein network n=6
0.3mm, irreg., sub-vertical

3-11 vein network, n=2
3.2mm, branched, 80->175

12-16 vein network, n=12
max 1.2mm, mode 0.3mm
71->158

21-27 fractured, n=13
branching
21-25 vein network 6b
n=4, 0.1mm, irregular
20-23 vein, n=1, 0.3mm
straight, 86->280
27 vein, n=1, 1.5mm,
straight, 73->179

0.2mm
34-38 vein network, n=9
branched, 70->030

54-56 vein network n=9
0.1mm, straight,

66-80 fractured

Conjugate
70-73 vein, n=2, 1mm,
irreg. 69->202

Straight, 69->204
82-84 vein, n=1, 1mm,
84-86 vein n=1, 1mm, straight
65->169
84-86 irgn. contact, 1mm, straight
69->204

Unit (17)

Highly olivine-augite-phyric basalt.

10% ol. phenos.

2% augite
Fine-grained (0.1mm)

olivine

6mm max.
2mm modal
subhedral, fresh

augite

6mm max.
2mm modal
subhedral, fresh

Medium gray
No vesicles

Flow lobe?

84-85 fractured, straight
86-100 vein, n=1, 0.3mm,
straight, 40->280
100-102 vein, n=1, 3mm,
irregular, 80->014
103-108 vein, n=1, 1.5mm
straight, 211->020
108-115 vein, n=1, 2mm,
straight, 62->120
113 vein, n=1, 0.1mm,
straight, 83->360

330-U1376A-14R-3-A_SHLF2894581_20110201055032

Unit (17)
(Continued)

Highly olivine-augite-phyric basalt.

as in section 2

4 pieces

8-11 vein, n=1, 0.1mm, straight, 85 -> 156

15-25 vein network, n=2 2mm, branched, 59->321 branching & reconnect.

17-39 vein, n=1, 0.5mm irregular, vertical

Slightly altered Mn-Fe oxide

45 vein, n=1, 1.5mm, straight, 28->002

53 vein, n=1, 0.1mm, straight 80 -> 008

58-65 vein, n=1, 0.5mm, straight, 80 -> 052

65-66 vein, n=1, 1.5mm, straight, 90 -> 010

78-84 vein, n=1, 1mm, straight, 83 -> 348

86-92 vein, n=1, 0.4mm, curved, 21-30 W

87-92 vein, n=1, 2mm, straight, 90-22

90.5 vein, n=1, 0.1mm, straight 61 -> 356

93-96 vein, n=1, 0.4mm, straight, 56 -> 014

92-97 Vein, n=1, straight, 0.1mm, 80 -> 312

92.5-99 fracture, n=1, curved, 74 -> 016

100 fracture network, n=2, straight, horizontal

102-107 vein, n=1, 0.1mm straight, 90 -> 304

107.5-110 vein, n=1, 1mm straight, 20 -> 191

110-112 vein, n=1, 0.3mm, irregular - straight, 19 348

113-114 vein network, n=2 irreg. 0.1mm-

Flow fractured at base.

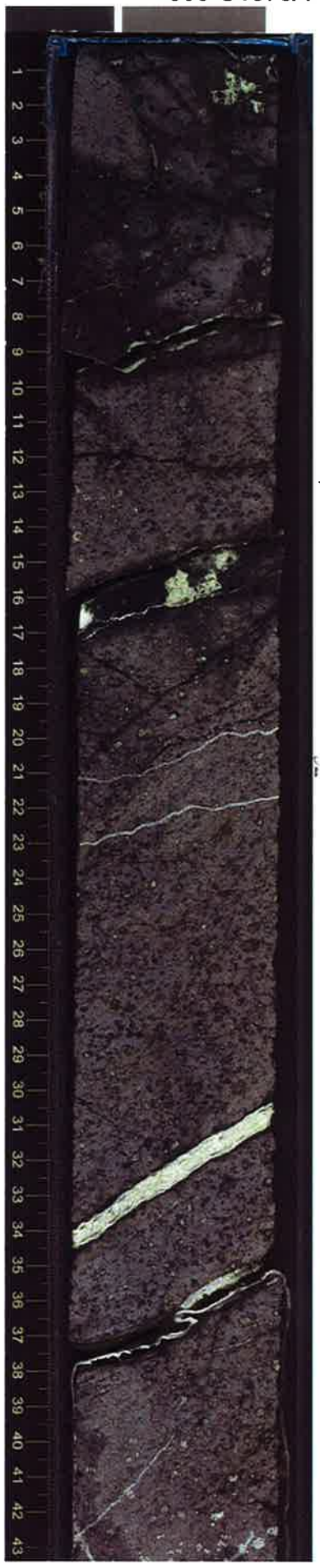
112-116 conjugate vein network, n=6, 1mm, 25 -> 016, straight

330-U1376A-14R-4-A_SHLF2894611_20110201055358

Unit (17)
(Continued)

Fractured base of flow lobe

as in Section 2 but olivine altered.

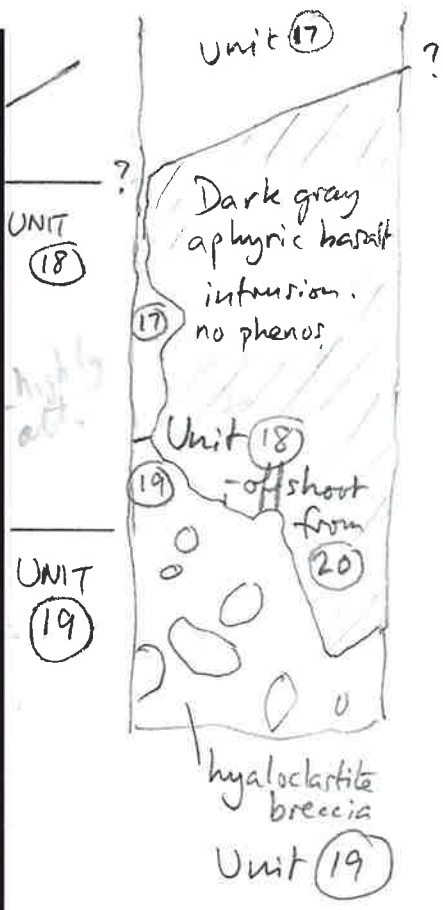


6 pieces

piece

8-10 vein, n=1, 1mm irregular, 78->162
10 vein, n=1, 1mm, branched, 76->350
12 vein, n=1, 1mm, branched, 90->175
15-17 vein, n=1, branched, 10mm, 29->160
17-21 vein network, n=8, 1mm max, 1mm mod, 0.5mm, 62->318
20-21 vein, n=1, 0.5mm irregular, 82->161
22-23 vein, n=1, 0.5mm straight, 80->171
23-34 vein network, 0.8mm, irregular, n=11
31-34 vein, n=1, 6mm straight, 90->142
36-32 vein, n=1, 2mm, straight, 80->334
38-43 vein, n=2, 0.8mm, network, irregular, 80->135
43-46 vein network, n=2, 0.8mm, irregular, 70->139
47-49 drilled contact, n=1, straight, 89->166
46-58 fractured, n=>25 irregular
61-65 vein network, n=12, 0.1mm, irreg., in clast.
75.5-80 vein, n=1, 0.1mm irregular 80->036
77-82 vein network, 0.1mm, irreg., network, n=7

Nature of contact between (17) and (18) not clear. Is (17) intrusive or extrusive?



Hyaloclastite breccia

Moderately olivine-phyric basalt
3-2 ol.
olivine in clasts
4 mm max
1 mm modal
altered

Clasts up to 15 cm in next core
5 mm modal

Mottled dark green - brownish gray
100% volcanic
Glass moderately altered.

no augite visible in clasts

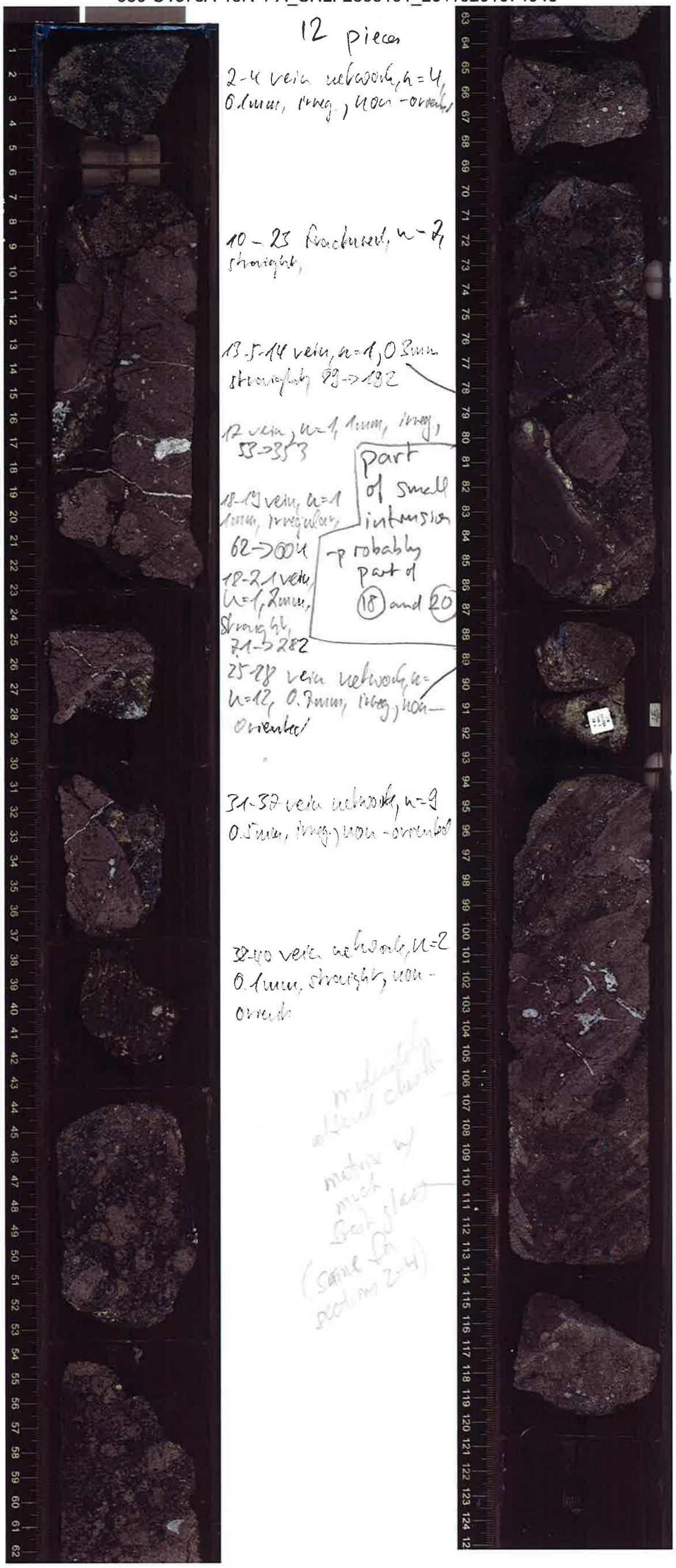
Vesicles in Unit (18)
20% in bands parallel to margin
Max 0.5 mm, modal 0.2 mm
elongate, subangular 100/cm²
100% filled

330-U1376A-15R-1-A_SHLF2895191_20110201074945

Unit (19)
(continued)

hyaloclastite breccia

as in 14R-4



12 pieces

2-4 vein network, n=4, 0.1mm, irreg., non-oriented

10-23 fractured, n=7 straight,

13.5-14 vein, n=1, 0.8mm straight 89->192

12 vein, n=1, 1mm, irreg, 58->353

18-19 vein, n=1 1mm, irregular, 62->004

18-21 vein, n=1, 2mm, straight, 71->282

part of small intrusion - probably part of (18) and (20)

25-28 vein network, n=n=12, 0.3mm, irreg, non-oriented

31-37 vein network, n=9 0.5mm, irreg, non-oriented

38-40 vein network, n=2 0.1mm, straight, non-oriented

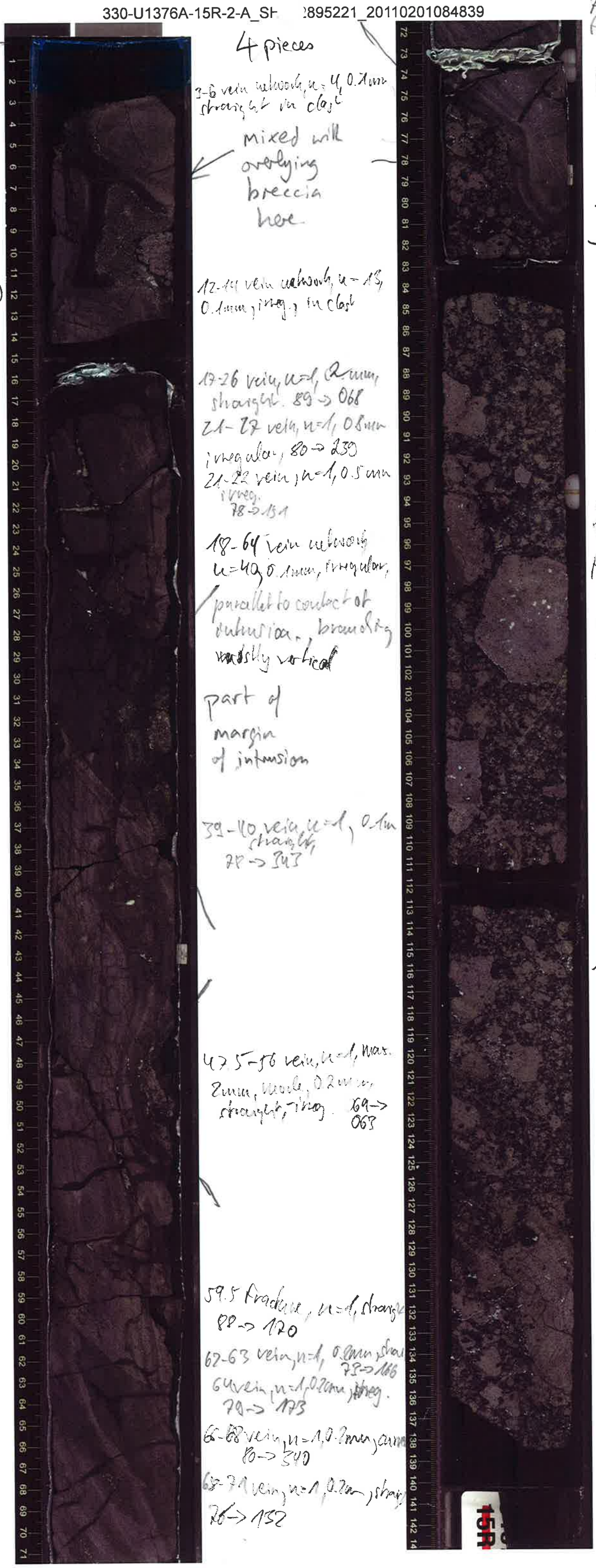
25-29 vein network, n=4, 0.1mm, irreg., non-oriented

80-86 vein network, n=10, max 1mm, most 0.1mm curved, parallel in clast

101-107 vein network, n=12, max 2mm, most 1mm irreg., ~~non~~ in clast

matrix with small clast (same as 2-4)

330-U1376A-15R-2-A_SH 2895221_20110201084839



Unit (20)

Aphyric basalt intrusive sheet

Dark gray
fine grained (0.1mm)
no phenocrysts

Vesicles as in Unit (18)

4 pieces

3-6 vein calcareous, n=4, 0.1mm straight ⊥ to clast

mixed with overlying breccia here

12-14 vein calcareous, n=3, 0.1mm, irreg. ⊥ to clast

17-26 vein, n=1, 2mm, straight. 89 -> 068

21-22 vein, n=1, 0.8mm irregular, 80 -> 230

21-22 vein, n=1, 0.5mm irreg. 78 -> 151

18-64 vein calcareous n=49, 0.1mm, irregular, parallel to contact of intrusion, broadly vertical

part of margin of intrusion

39-40 vein, n=1, 0.1m straight, 28 -> 343

47.5-56 vein, n=1, max. 2mm, calc, 0.2mm, straight, irreg. 69 -> 068

59.5 fracture, n=1, straight 88 -> 120

62-63 vein, n=1, 0.2mm, straight 73 -> 166

64 vein, n=1, 0.2mm, straight. 79 -> 173

66-68 vein, n=1, 0.2mm, gypsum 80 -> 340

68-71 vein, n=1, 0.2m, straight 76 -> 152

72-75 fracture, n=1, 0.1mm, straight 71 -> 163

piece 2b

Unit (20) Bottom 18 cm

bands of vesicles parallel to margin

Unit (21)

same as Unit (19)

Hyaloclastite breccia

75-81 chilled contact curved, 1mm, sub-vertical

74-79 vesicle band, n=4, parallel to contact, sub-vertical

95-98 vein, n=1, 0.1mm irreg., in clast

101-102 vein calcareous n=2 0.1mm, irreg., in clast

116-118 vein calc., irreg. n=4, 0.1mm, in clast

128-136 vein calc, n=9, irreg., in clast, 0.1m-

Intrusion brecciated at margin

330-U1376A-15R-3-A_SHLF2895251_20110201085421

Unit (21)
(Continued)

as in Unit (19)

3 pieces

5-12 vein, w=1, 0.3mm, straight,

15-25 vein, network, w=2, 0.5mm, irregular, in clast, 288

33-36 vein, network, w=2, 0.2mm, irreg., in clast

40-43 vein, network, w=4, 0.1mm, irreg., in clast

51-54 vein, w=1 / 1mm, straight, 70 -> 210

57-58 vein, w=1, 1mm, straight, 86 -> 219

56-60 vein, network, w=8, 0.1mm, irregular,

57-76 vein, w=1, 0.1mm, straight, 64 -> 264

71-76 vein, w=1, 1mm, straight, 89 -> 018

77-80 vein, w=1, 1mm, straight, 64 -> 224

85-97 vein, network, w=11, 0.1mm, irreg., network in clast

89-98 fracture, w=1, straight

97 vein, w=1, 0.2mm, straight, 81 -> 271

330-U1376A-15R-4-A_SHLF2895281_20110201085917

Unit (21)
(Continued)

as in Unit (19)

3 pieces

1-6 vein, w=1, 0.1 mm
network, 20 -> 119, irreg.

6-8 vein, w=1, 1 mm,
straight, 88 -> 330

9-12 vein, w=1, 1 mm,
straight, 80 -> 146

61-81 vein, w=1, 0.1 mm,
irregular, 31 -> 268

97-101 vein, w=1, 2 mm (irreg.)
58 -> 154