

From Sect 4  
96(4)-72(5)  
elongated vesicles  
0200

All one large class type 2 continued from 7R 4A to 82.5cm

partial  
calcite  
infilling  
vesicles

markedly  
abundant

65-80 vial  
vesicle  
network  
0100

calcite  
partially  
infilling  
vesicles



End of class  
type 2

Slight alteration  
calcite filling vesicles  
Type 3  
92-100

Type 2  
107-110

Slight alteration  
calcite + green clay in  
vesicles  
Type 3  
110.5-118

Type 1  
125-141.5  
~10% calcite

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Type 1  
0-8

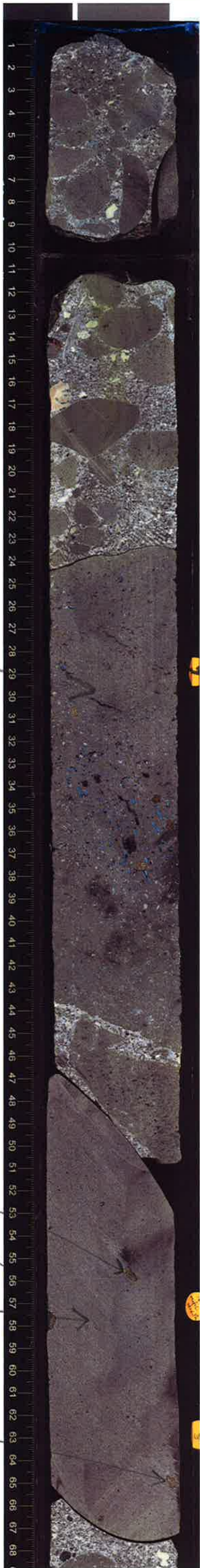
Slight  
alteration



Veneer 50%  
filled w/  
calcite



Blob of  
completely  
altered glass.



Type 7  
23.5 - 46 cm

MAFIC  
XENOLITHS  
(ALTERED)

8mm  
55.5cm

5mm  
58cm

TYPE 3  
46.5 - 67.5 cm

MAFIC  
XENOLITH  
6mm  
64.5 cm



TYPE 4  
80 - 87 cm

TYPE 4  
85.5 - 103.5 cm

TYPE 2  
99.5 - 134.5 cm

WEAKLY  
ALTERED  
OLIVINE

TYPE 2  
0-25.5

TYPE 7  
51-57

TYPE 3  
61-71.5

SEDIMENT  
TYPE 3  
72.5-85.5



TYPE 3

TYPE 7  
84-90.5

SEDIMENT

TYPE 4  
93-147.5

Vein  
hairline  
30-238

SEDIMENT

63-76cm

numerous geopetals  
but with irregular orientation  
within individual examples  
plus amongst different  
vesicles. Possibly due  
to their location near the  
top of the unit.



80-86cm:  
single vein  
70-120  
1-2mm wide

Large  
vesicles

Small  
vesicles

reddish

Scoriaceous  
top of  
Unit ①

Olivine-phyric  
basalt

1% olivine phenocr.  
altered

Max. 5mm

Modal. 3mm  
subhedral-euhedral

Vesicles 20%

Max 20mm

Modal 5mm

Elongate  
Subangular

Voids filled  
with sediment

1 large  
geopetal + several  
small examples  
azimuth 176°

Base of  
scoria 125cm

vesicular  
basalt

TYPE 4  
0-47.5

TYPE 2  
50-56

Flow top 62cm  
Lith. Unit  
①

↓ SCORIACEOUS TOP TO  
VOLCANIC ROCK  
EG. LAVA FLOW

Massive part  
of Unit (1)

Olivine-phyric  
basalt

1% ol phenos.

max 5 mm  
mode 3 mm

subhedral -  
euhedral

Vesicles

15%

elongate, rounded

40 mm max  
8 mm mode.

1/cm<sup>2</sup>.

vesicles  
unfilled

vesicles  
filled

93  
cm

109  
cm

filled vesicles

10% low sphericity  
sub rounded  
90% filled.

open vesicles

5% low sphericity  
very angular

50 mm max.  
5 mode.

1% filled

Massive part  
of Unit (2)

olivine-phyric  
basalt.

1% olivine phenos.  
euhedral.  
max. 10 mm  
mode. 3 mm

ABUNDANT  
GROUNDMASS  
OLIVINE

5% vesicles

elongate, subrounded

18 mm max  
8 mm mode

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

base of Unit (1)

70-7030 52 cm

Unit (2)

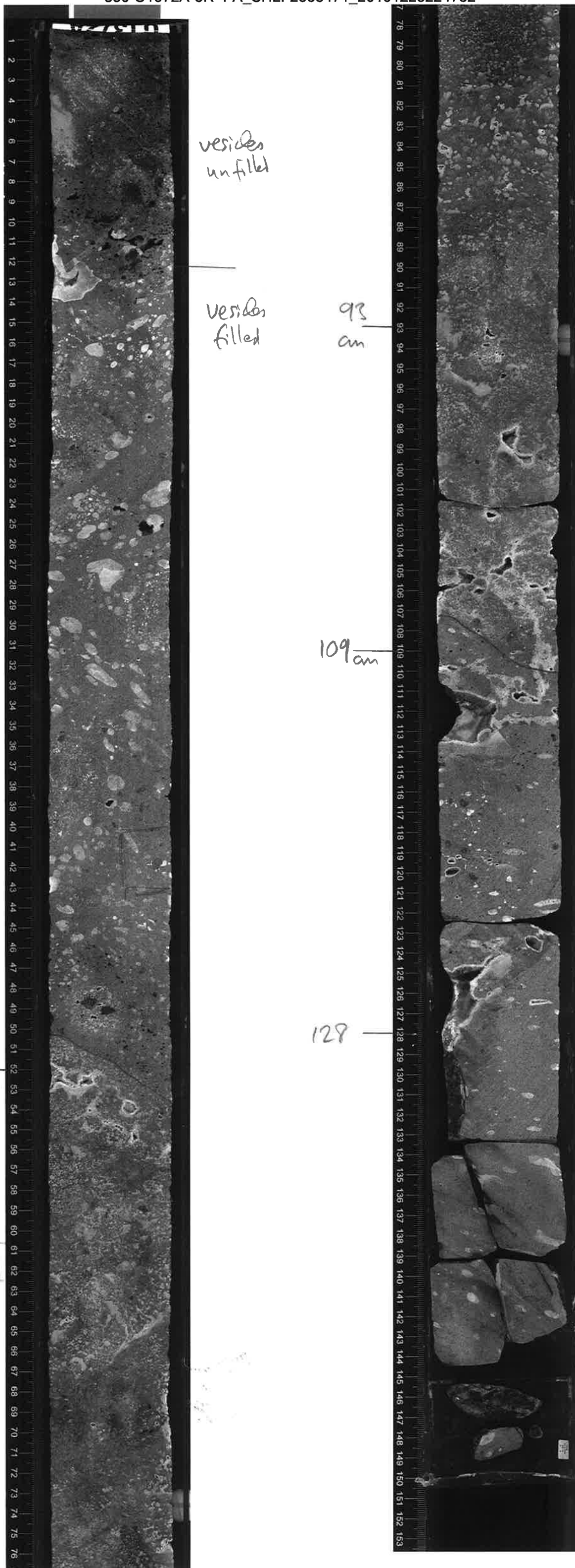
Scoriaceous top

aphyric basalt

0.5% olivine  
phenos.

3 mm max.  
2 mm modal.

128



UNIT 2

Continued

ABUNDANT  
GROUNDMASS  
OLIVINE

34 cm base of Unit 2

UNIT 3

ophytic  
0.5% al. phenos.

Scoriaceous  
top.

20% vesicles  
8mm max  
1mm nodal  
20/cm<sup>2</sup>  
80% filled  
low sphericity  
subrounded

63 cm

massive  
part of  
flow



vein 0-7cm  
90 → 090  
2mm thick

vein 0-7cm  
network 0.1mm thick

steep → 110,  
dip

vein network 8-17cm  
1mm thick  
irregular,  
steeply dipping

vein 18-26cm  
0.5mm thick  
40 → 118

MB10

vesicles, some  
with geopetal  
structures.  
azimuth 180°

geopetal @ 132-133  
azimuth 180

base of  
UNIT 3



vesicles mostly  
open

15% vesicles  
10mm max  
3mm nodal  
3/cm<sup>2</sup>

5% filled

elongate  
subangular

vein 83-89cm min 0.5 max 3mm  
thick, 70 → 310

87 cm  
vesicles mostly  
filled

20% vesicles

12mm max  
5mm nodal  
2/cm<sup>2</sup>  
80% filled

elongate,  
subangular

ol-phyric  
basalt.

1% ol. phenos.  
6mm max  
4mm nodal  
equant  
euhedral

134 cm

Unit 17  
④

Scoriaceous top.

Vesicles

5%

low sphericity  
Subangular.

10 mm max

1 mm nodes

10/cm<sup>2</sup>

80% filled.

irregular  
vein  
1mm  
azimuth  
080°  
steep  
dip

voids 1

1%

20 mm max

15 mm nodes

low sphericity  
very angular.

10% filled.

voids 2

10%

60 mm max

30 mm nodes

low sphericity  
very angular

100% filled

with sediment.

1/cm<sup>2</sup>

vein  
53-59cm  
55-56°  
2mm thick

aphyric  
basalt

0.5%

olivine phenos

8mm max

3mm nodal

alteres.

elongate

enbedral



to end of  
Section 7A

geopetal @ 81cm  
azimuth ~ 080

vein network 97-111cm  
max 4mm wide  
irregular  
steeply dipping

121-126 cm, vein, max 2mm wide  
irregular

geopetal ~ 180  
@ 123cm

geopetal @ 62cm  
azimuth 173°

geopetal @ 67cm  
azimuth 180°

vein 135-139cm  
irregular lam width  
steeply dipping

vein 139-147cm  
max 5mm  
dip direction 060  
steeply dipping



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Unit (4)  
Continued.



vein + vesicles  
6-9 cm  
irregular.

10.5-14 cm  
vein + vesicle  
irregular

15-24 cm  
vein + vesicle  
irregular



25.5-30 cm  
vein + vesicle  
irregular



Vein 1-9cm  
1mm wide  
76-80°  
steeply dipping  
azimuth 240°

Vein 11-32.5cm  
2-3mm wide  
sigmoidal  
steeply dipping  
azimuth ~100°

UNIT (4)

sparsely  
ol-phyric  
basalt.

1% olivine

6mm max.

3mm nodal  
(for Units 4&5)

Vein 34-37cm, 2mm wide, 80-184°

Peperitic top  
down to  
73 cm

Light reddish  
gray

fine grained,  
ground mass

0.1mm  
geopetal 45.5cm  
azimuth 180°

Vein 32.5cm  
<1mm wide  
90-120°

Vein 37cm  
1mm wide  
85-120°

Vein network  
(branching)  
41-49cm  
max 5mm  
azimuth 60°  
steeply dipping

Vein 50-53cm  
2-3mm wide  
80-126°

Vein 62-65cm  
>3mm wide  
(other half is  
lost)  
straight frame



Vein 66.5-72  
(other half of vein in 62-65cm?)  
>3mm wide  
fairly curving.

Vein 73-77cm >2mm wide  
(other half missing)  
74-80°

Massive base  
of Unit (4)

Sparsely  
ol-phyric basalt.

2% vesicles

elongate,  
very angular

20mm max

3mm nodal

1/cm<sup>2</sup>

5% filler

(lined with  
calcite crystals)

Vein 96-106cm  
1mm wide azimuth 260 steeply dipping

Vein 106-114.5cm  
>2mm wide (other half missing)  
75-120°

Vein 116-126mm  
>2mm wide (other half missing)

Base of Unit (4)

Top of Unit (5)



UNIT (5)

fine-grained ground mass (0.1 mm)

sparsely ol-phyriz 1% (as for (4))

peperitic upper part Unit (5)

vesicles as for upper part of Unit (4)



peperitic upper part of unit

massive base of unit.

3% vesicles low sphericity elongate

15 mm. max 2 mm modal 1/cm<sup>2</sup>

80% filled on average 100% filled in centre, 0% filled in parts

66 to 66.5cm vein network 0.5mm wide 86 → 352

vein 74.5-80cm 0.5mm wide 70 → 092

unfilled vesicles



filled vesicles

slightly to moderately altered

unfilled vesicles

Base of Unit (5)  
Peperitic top of Unit (6)

ol-phyr  
basalt  
15% ol phenos.  
10mm max.  
5mm modal  
sub-euhedral  
olivine altered to  
Section 5, 43 cm

UNIT (6)

120-135  
straight, irregular  
vein

drilled margin  
219°

19

20% vesicles  
moderate spherichs  
subroundal  
2mm max  
1mm modal  
20/cm<sup>2</sup>  
100% filled

3335  
single vein, ~ 1mm, irreg.  
non-oriented  
highly to completely  
altered

Calcite  
inclusions  
Some are  
brownish,  
mix of  
calcite +  
clay

62

67-68 single straight  
vein, 350/69

70-77  
2mm vein with  
extreme nodal,  
338/79



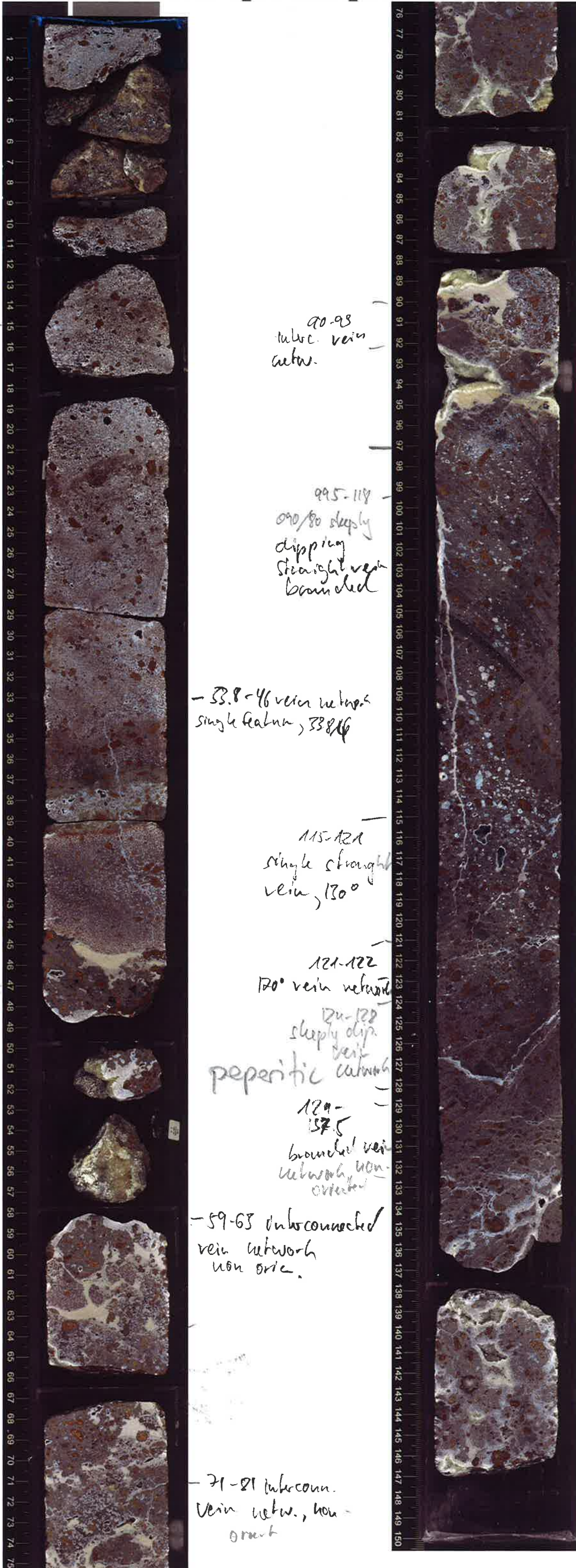
10% ve. le  
low spherichs  
subangular  
Calcite in vesicles  
10mm max.  
3mm modal  
2/cm<sup>2</sup>  
70% filled  
moderately altered

87 cm

Vesicles from  
87 cm to  
Section 5, 36 cm

Very patchy  
5% on average  
low spherichs  
subangular  
10mm max  
2mm modal  
80% filled.

highly to  
completely  
altered.  
Calcite &  
clay mixtures  
in void spaces



highly altered

90-93  
tuberc. vein  
netw.

99.5-118  
90/80 steeply  
dipping  
straight vein  
branched

- 33.8-46 vein netw.  
single catwalk, 33.8/46

115-121  
single straight  
vein, 130°

121-122  
120° vein network  
121-122  
steeply dip  
vein  
peperitic catwalk

129-  
137.5  
branched vein  
network, non-  
oriented

- 59-63 interconnected  
vein network  
non orient.

- 71-81 interconn.  
vein netw., non-  
orient

Calcareous  
veins

97

moderately altered

MASSIVE

moderately  
altered

moderately  
altered

Calcareous  
veins



Calcite  
infilling  
in vesicles

36 cm  
Vesicles from  
36 cm to  
Section 7, 30 cm

1% vesicles  
elongate  
subrounded  
25 mm max,  
3 mm modal  
0.5/cm<sup>2</sup>  
90% filled

47-54  
network of joints

dull  
dist?

light green  
clay in  
vesicles

olivine phenos  
altered to here  
43

olivine phenos  
fresh from  
here to Section 6  
125 cm.

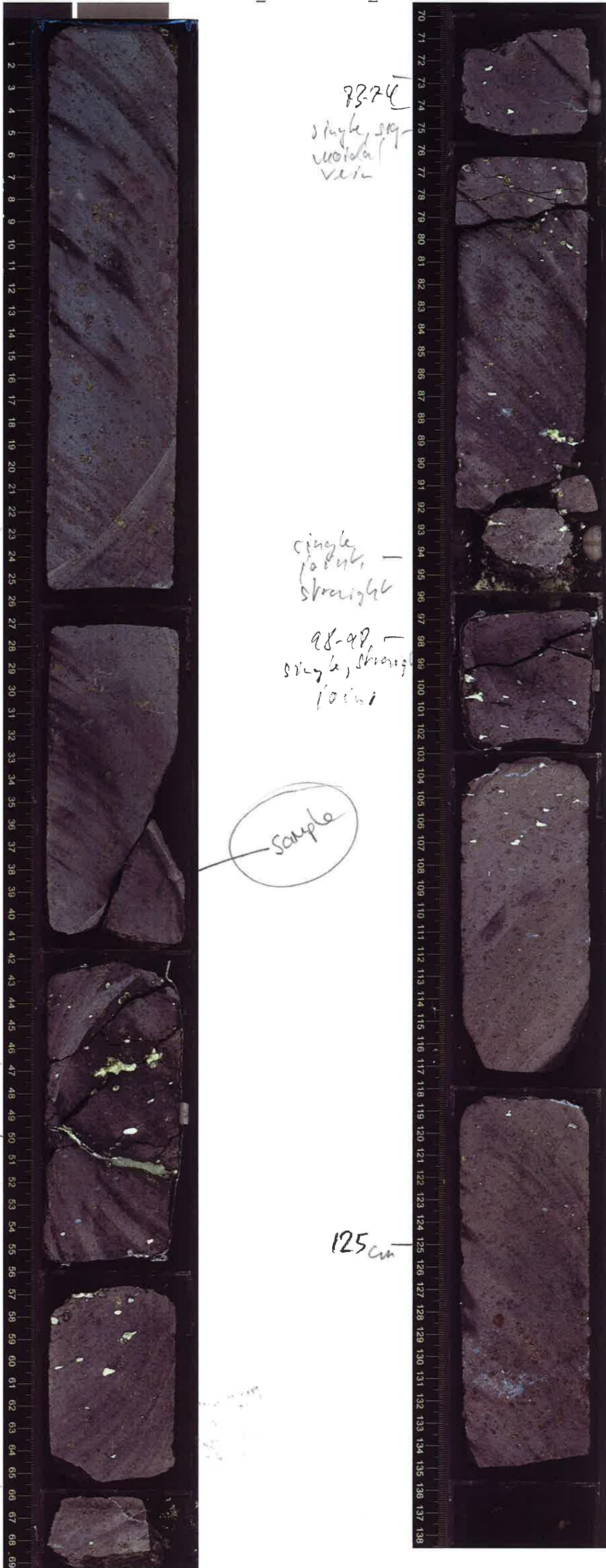
ol-phyric  
basalt.

15% olivine  
elongate  
fresh.

10 mm max  
4 mm modal

sub-embayed

77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153



73-74  
single, straight  
vein

-drill dist.

Red granular  
unaffected  
clay

single  
joint -  
straight

98-99 -  
single, straight  
joint

sample

light green  
clay

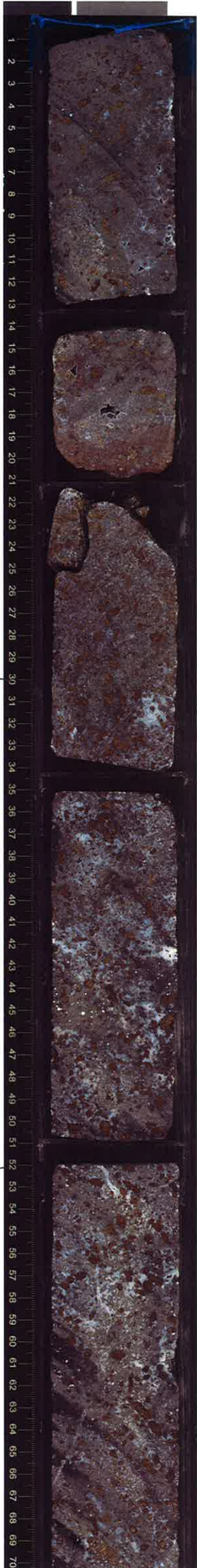
50-52  
single vein

125 cm

olivine phenos  
fresh to here  
olivine phenos  
alters from  
here

fresh, with altered  
olivine to  
reddish

66-68  
2 single near  
connected -  
non-oriented  
vein



highly  
ol-phyric  
basalt

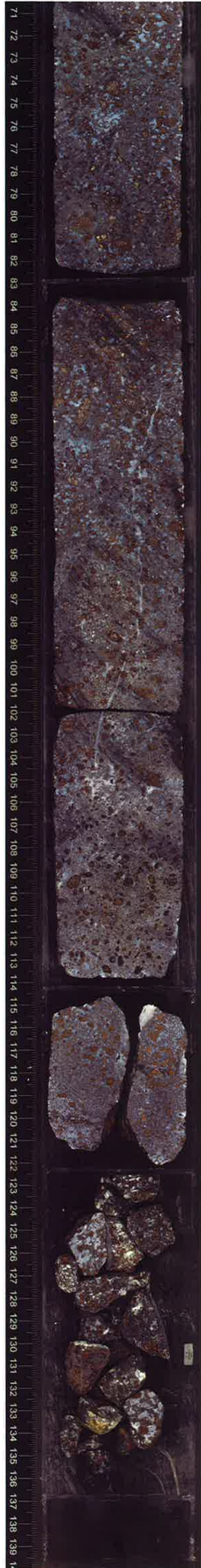
20% ol  
phenocr

20 mm max  
5 mm modal

sub- to  
euhedral  
elongate

30 cm  
vesicles to  
end of section  
20% vesicles  
elongate,  
subrounded  
8 mm max  
1 mm modal  
15 / cm<sup>2</sup>  
100% filled

52-62 cm  
single vein  
irregular.  
114°



calcite  
vesicles  
84-105 cm  
single straight  
vein  
2 mm 115°