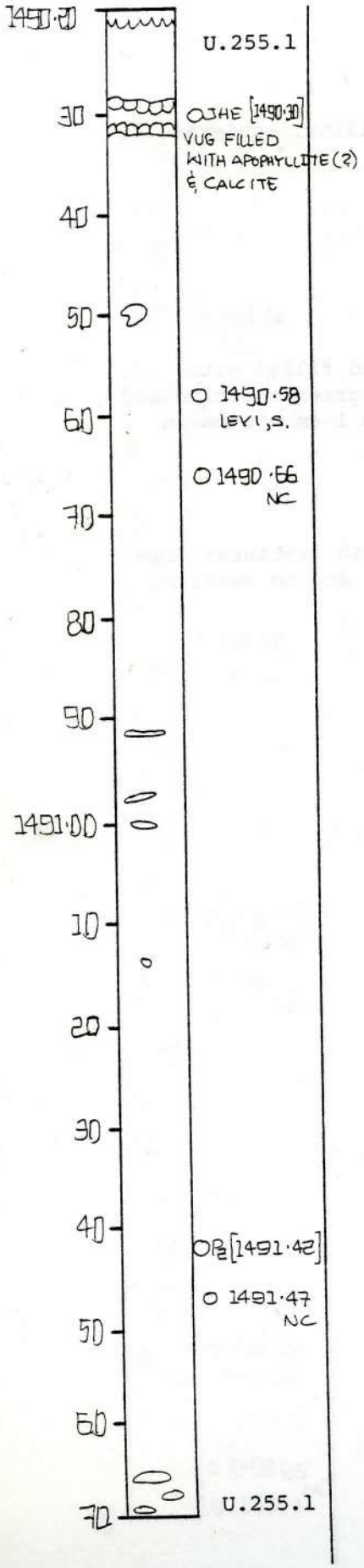
Visual Core Description Observer .....

Depth Interval 1490.21 cm to 1491.76 cm

Box 253, Section 4



LITHOLOGY-PETROGRAPHY

Continues U.255.1

1490.30 - Vug filled with apophyllite (?) and calcite.

Light-gray, fine-grained, holocrystalline, equigranular, aphyric basalt flow.

STRUCTURE

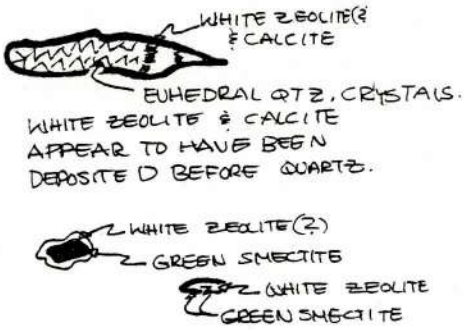
Massive

VESICLES/AMYGDALES

Vug at 1490.30 is filled with apophyllite and calcite, with calcite later than the apophyllite. Vesicles in this section are fewer in number but are larger with well developed quartz, calcite, apophyllite and green smectite.

Vesicles ∿ 1% of section. Vesicles randomly distributed. Vesicles elongated 2 cm-4 mm, equal dimensional. Smectite filled vesicles are 8 mm - < 1 mm in size.

Vesicles dip - 0.15°, angle varies.



FRACTURES - VEINS - BRECCIA

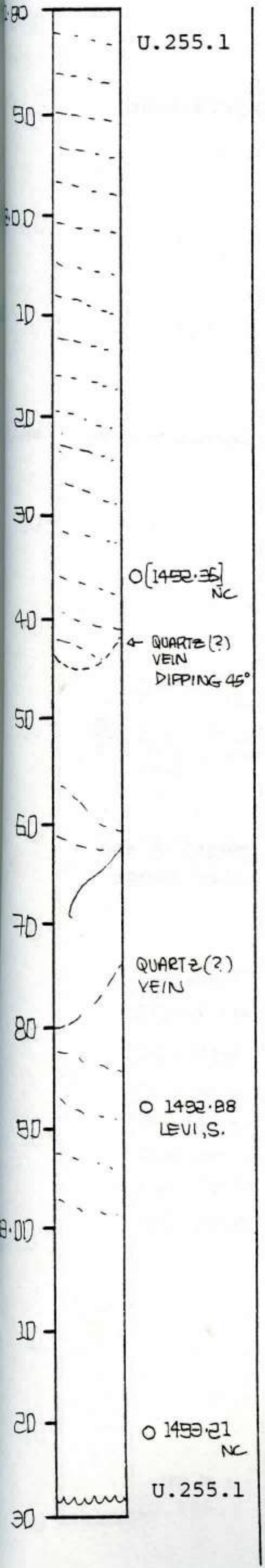
Rare

Visual Core Description   Observer ....

Depth Interval 1 4 9 1 7 7 cm to 1 4 9 3 2 8 cm

Box 256, Section 1

Graphic Representation	Sample



LITHOLOGY-PETROGRAPHY

Continues U.255.1

Light greenish-gray, fine-grained, holocrystalline, equigranular, aphyric basalt flow.

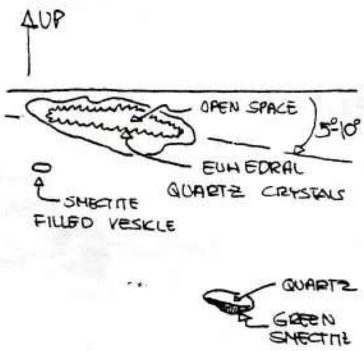
STRUCTURE

Faint flow banding. With flow banding dipping ∿ 15°.

VESICLES/AMYGDALES

Vesicles ∿ 1%. Size range 2 cm - 1 mm, partially filled by euhedral quartz crystals, with very little or no calcite and zeolite. Some vesicles show an increase in filling on the lowest portion of vesicle.

Vesicles distributed irregularly.



FRACTURES - VEINS - BRECCIA

Fractures, veins - rare.

Visual Core Description Observer .....

Depth Interval 1493.28 cm to 1494.80 cm

Box 256, Section 2

Graphic Representation

Sample

1493.30 U.255.1

40

50

60

70

80

90

1494.00 O 1493.99

10

20

30

40 O 1494.42 LEVI, S.

50

60

70 O 1494.69 NC

80

LITHOLOGY-PETROGRAPHY

Continues U.255.1

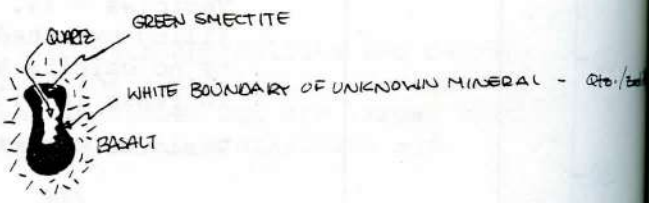
Light greenish-gray, fine-grained, holocrystalline, equigranular, aphyric basalt flow.

STRUCTURE

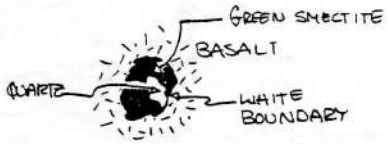
Faint flow banding, more massive.

VESICLES/AMYGDALES

1493.40



1493.75



Vesicles ∿ 1%. Semi-round, filled with smectite and quartz, smectite > quartz in abundance. Size range 1 cm - 2 mm.

FRACTURES - VEINS - BRECCIA

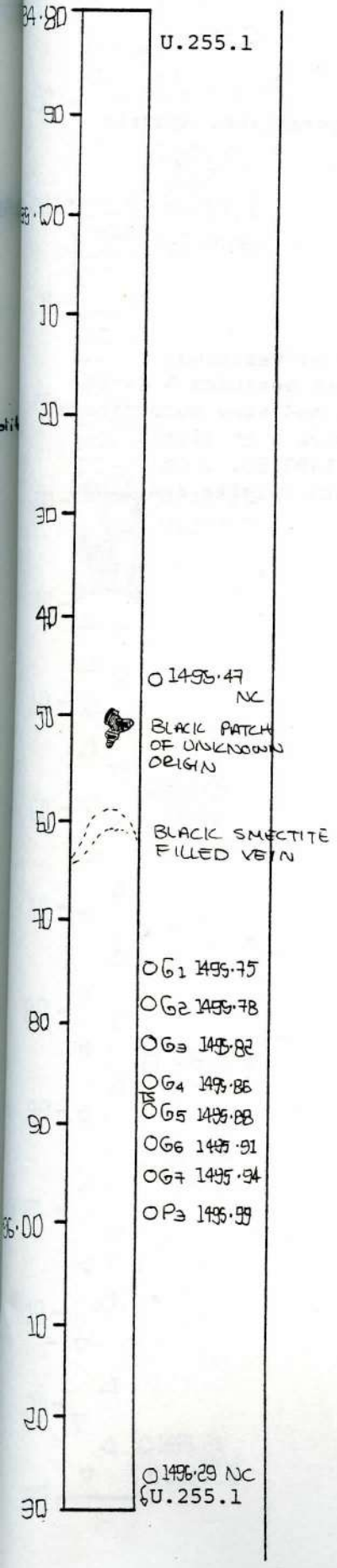
None.

Visual Core Description Observer .....

Depth Interval 1 4 9 4 8 0 cm to 1 4 9 6 3 5 cm

Box 256, Section 3

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.255.1

Light greenish-gray, fine-grained, holocrystalline, aphyric basalt flow.

STRUCTURE

Massive or possibly horizontal. Very faint flow banding.

VESICLES/AMYGDALES

Vesicles < 1%. Filled with quartz, < smectite, 1.5 cm-3 mm in size, irregular distribution elongated.

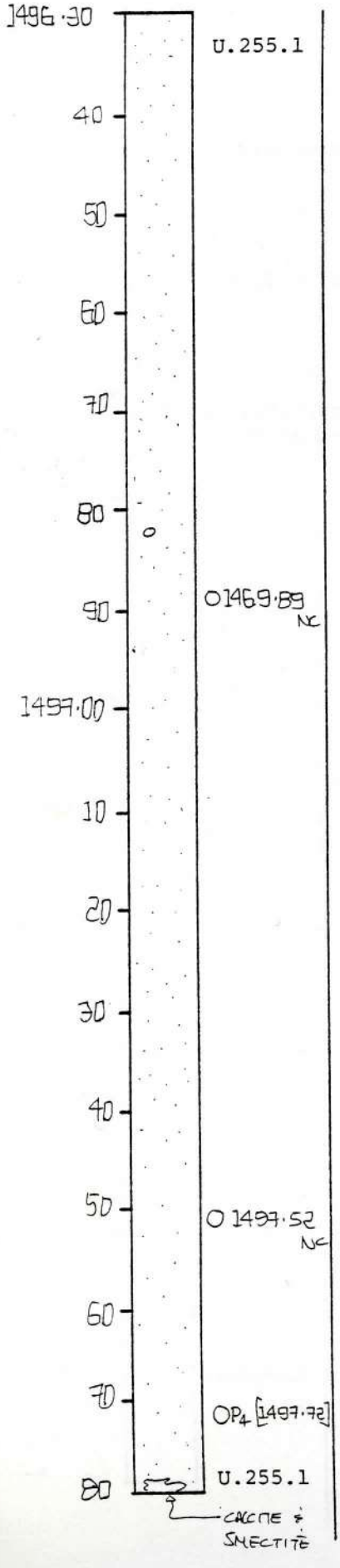
FRACTURES - VEINS - BRECCIA

Rare.

Visual Core Description Observer .....

Depth Interval 1 4 9 6 3 5 cm to 1 4 9 7 8 5 cm

Box 256, Section 4



LITHOLOGY-PETROGRAPHY

Continues U.255.1

Greenish-gray, fine-grained, holocrystalline, aphyric basalt flow.

STRUCTURE

Massive

VESICLES/AMYGDALES

Section # 4 is increasing in amount of vesicles. Vesicles ∿ 3%-2%, until 1497.30 where vesicles ∿ 4%-5%. Vesicles filled with green smectite and very subordinate amounts of quartz, 3-4 mm average size with little variation in size range, except at 1497.80, 2 cm irregular vesicle occurs, filled with calcite and lined with green smectite.

FRACTURES - VEINS - BRECCIA

Rare

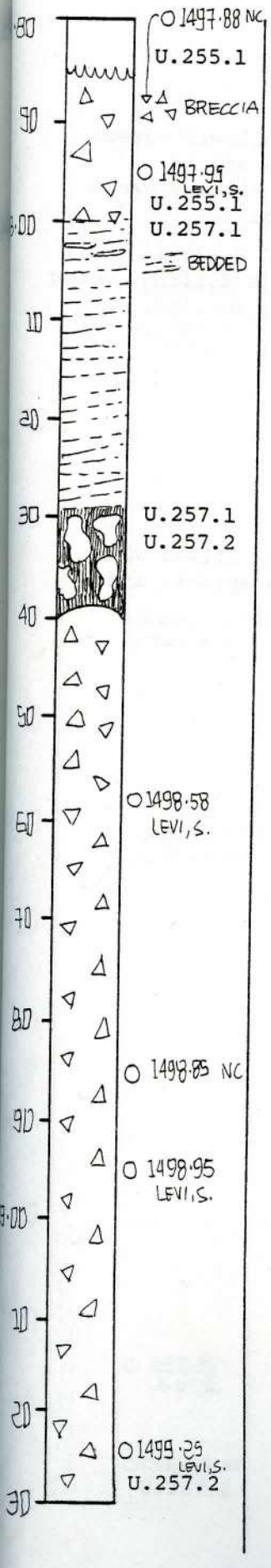
ICELAND RESEARCH DRILLING PROJECT - REYDARFJORDUR 1978

Visual Core Description Observer .....

Depth Interval 1 4 9 7 8 5 cm to 1 4 9 9 3 5 cm

Box 257, Section 1

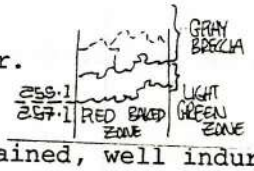
Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.255.1

Contact depositional and irregular.



U.257.1. Red, medium to fine-grained, well indurated sediments, with the bottom 10 cm reworked basalt clast in a yellowish green matrix.

Contact depositional and dipping 30°.

U.257.2 Grayish green flow top breccia, clasts larger than the diameter of core. Clasts are gray amygdale basalt fragments with amygdale filling, white zeolite and yellowish green epidote.

STRUCTURE

U.255.1 Brecciated

U.257.1 Bedded

U.257.2 Brecciated

VESICLES/AMYGDALES

U.257.2 Vesicles ∿ 30% of clasts and filled with white zeolite, ranging in size from 1 cm - 1 mm.
1498.68 Vesicles ∿ 10% of clasts and decreasing in average size, vesicles filled with green epidote and minor amount of quartz (?) and zeolite (?).

FRACTURES - VEINS - BRECCIA

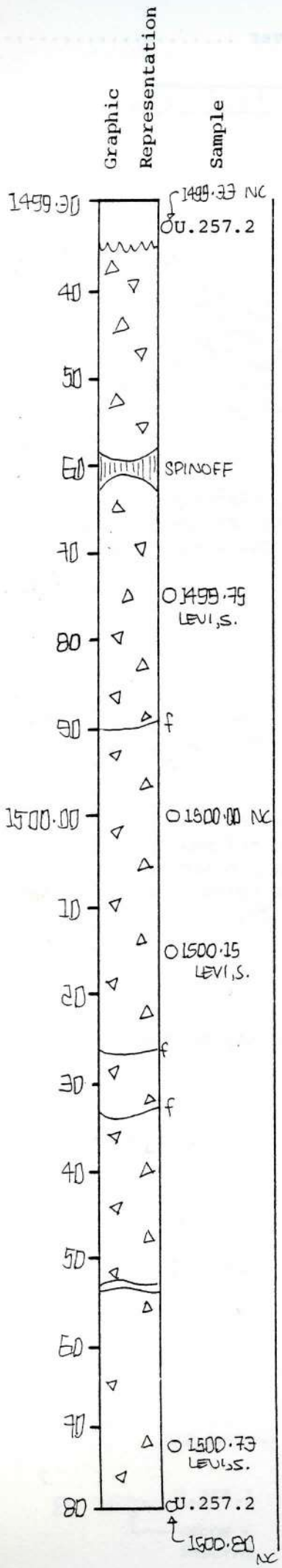
U.257.1 Rare

U.257.2 Fresh, irregular fractures that may be due to swelling clays.

Visual Core Description Observer .....

Depth Interval 1 4 9 9 3 5 cm to 1 5 0 0 8 8 cm

Box 257, Section 2



LITHOLOGY-PETROGRAPHY

Continues U.257.2

Brecciated flow top highly altered to yellowish-green coloration, due to epidote in groundmass and in vesicles down to 1500.50 meters, where vesicles are filled with green smectite and white zeolite.

1500.53 Transition from high brecciated to less brecciated and also transition in vesicle filling, going from epidote to green smectite and white zeolite.

STRUCTURE

1499.35-1500.53. Brecciated

1500.53-1500.88. Less Brecciated

VESICLES/AMYGDALES

Vesicles ∿ 15-20%, irregular and rounded filled with quartz (?), white zeolite (?) and green epidote and minor calcite.

FRACTURES - VEINS - BRECCIA

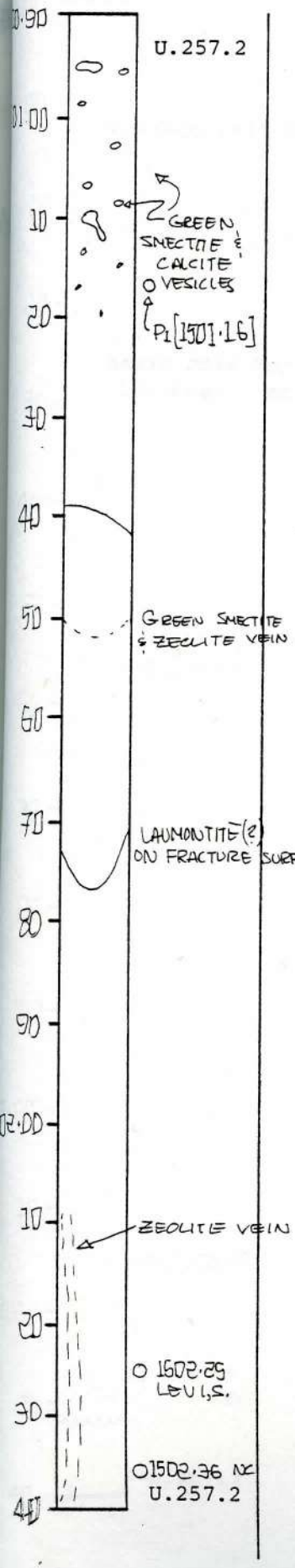
Fractures seem to be hammer breaks.

Visual Core Description Observer .....

Depth Interval 150088 cm to 150242 cm

Box 257, Section 3

Graphic Representation | Sample



LITHOLOGY-PETROGRAPHY

Continues U.257.2

Greenish-gray, fine-grained, holocrystalline, aphyric basalt flow.

STRUCTURE

Massive

1502.00 Some faint flow banding developing.

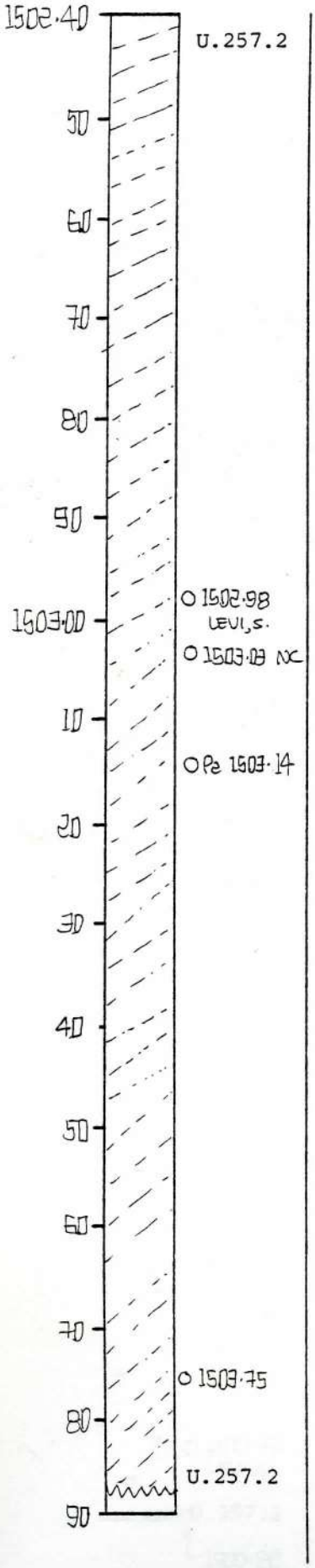
VESICLES/AMYGDALES

Vesicles ∿ 5-10%, 1 cm - 1 mm in size.
Filled with: laumontite (?), calcite, quartz (?), green smectite.
Lined with: green smectite.
Elongated, irregular, and rounded.
Decreasing in abundance downward.

Visual Core Description Observer .....

Depth Interval 150240 cm to 150388 cm

Box 257, Section 4



LITHOLOGY-PETROGRAPHY

Continues U.257.2

Greenish-gray, fine-grained, holocrystalline, aphyric basalt flow, with faint flow banding.

STRUCTURE

Flow banding, dipping 30°.

VESICLES/AMYGDALES

Vesicles ∿ 1%. Filled with calcite, lined with green smectite. Range in size from 1 cm - 1 mm. Randomly distributed. Minor amounts of quartz.

FRACTURES - VEINS - BRECCIA

None

Visual Core Description Observer .....

Depth Interval 150388 cm to 150532 cm

Box 258, Section 4

Graphic Representation | Sample

U.257.2

LITHOLOGY-PETROGRAPHY

Continues U.257.2

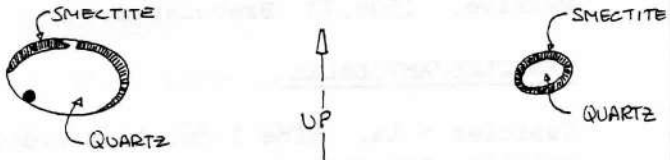
Greenish-gray, fine-grained, holocrystalline, aphyric basalt flow.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles < 1%. 1 cm - 2 mm in size, filled with green smectite and calcite and quartz.



Most vesicles rounded and irregularly distributed throughout core.

FRACTURES - VEINS - BRECCIA

None

○ 1504.57 NC

○ P3 [1505.15]

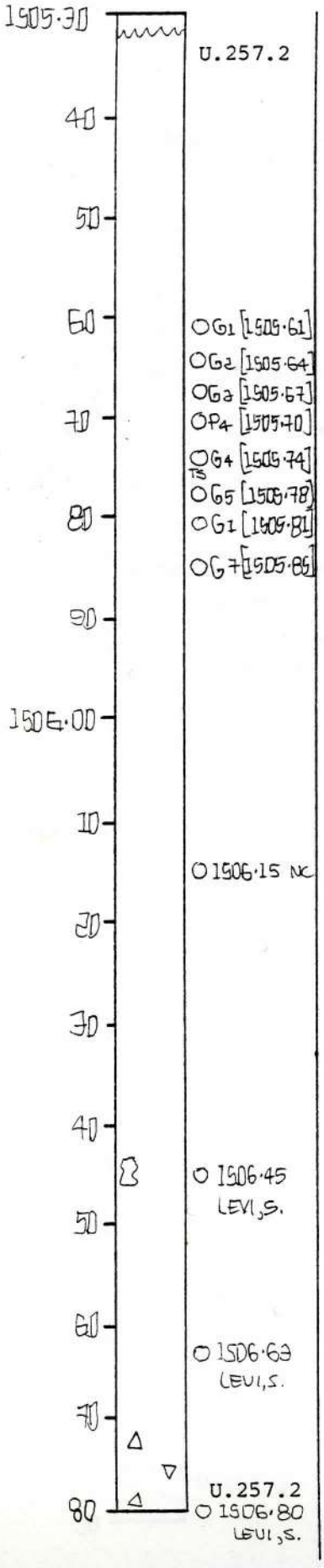
○ 1505.27 NC

U.257.2

Visual Core Description Observer .....

Depth Interval 150532 cm to 150683 cm

Box 258, Section 2



LITHOLOGY-PETROGRAPHY

Continues U.257.2

Greenish-gray, fine-grained, holocrystalline, equigranular, aphyric basalt flow.

1506.44 Vesiculated fragment with smectite filling vesicles.

1506.63 Slightly more vesiculated region

1506.73 Transition to flow bottom breccia.

STRUCTURE

Massive. 1506.73 Brecciated.

VESICLES/AMYGDALES

Vesicles < 1%. Size 1 cm, 1 mm rounded, filled with calcite, smectite and quartz.

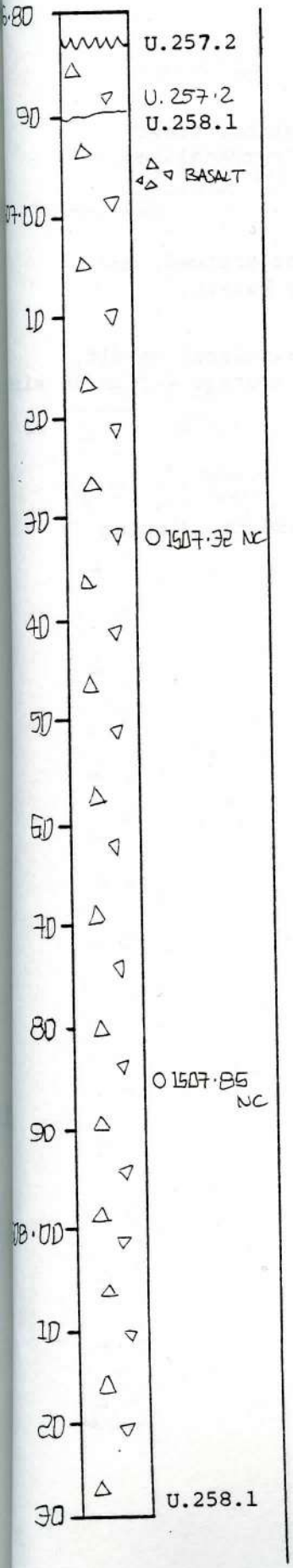
1506.73 Laumontite (?) filling irregular vesicles.

VESICULATED FRAGMENT WITH SMECTITE FILLING VESICLES.

Visual Core Description Observer .....

Depth Interval 150683 cm to 150835 cm

Box 258, Section 3



LITHOLOGY-PETROGRAPHY

Continues U.257.2

U.257.2 Deposited on Unit 258.1 with an irregular depositional contact.

U.258.1 Reddish brown - scouraceous flow top breccia with laumontite (?) filled vesiculated clasts. The vesiculated clast also contain minor amounts of calcite, but quartz and epidote was not noticed in this section (# 3) which may be due to the decrease in porosity of this flow top breccia verses other flow top breccias or portions of the breccia.

STRUCTURE

U.257.2 Brecciated

U.258.1 Brecciated

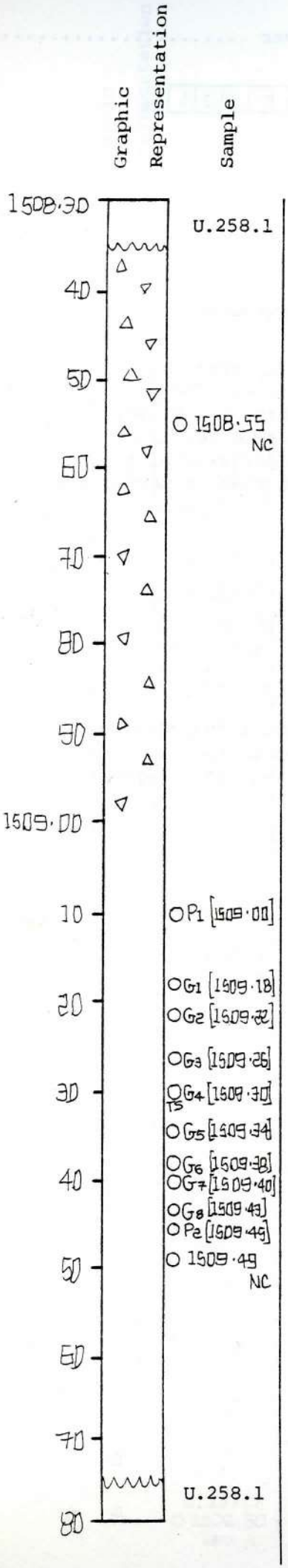
FRACTURES - VEINS - BRECCIA

U.258.1 Irregular fresh fractures throughout the section, with no secondary mineralization occurring on the fracture plane. Fractures may be due to swelling clays.

Visual Core Description Observer .....

Depth Interval 1508 35 cm to 1509 75 cm

Box 258, Section 4



LITHOLOGY-PETROGRAPHY

Continues U.258.1

Brecciated flow top greenish-gray coloration, clast not as vesiculated. Clast, aphyric, holocrystalline, fine-grained basalts. (1508.35-1509.00)

1508.60 Epidote appears and quartz.

1509.00 - 1509.51 Epidote and quartz not noticed, and transition to more massive greenish-gray basalt, holocrystalline, fine-grained, aphyric.

1509.51 Transition to slightly more vesiculated basalt, vesicles filled with green smectite and average 4-3 mm in size.

STRUCTURE

1508.35-1509.00 Brecciated

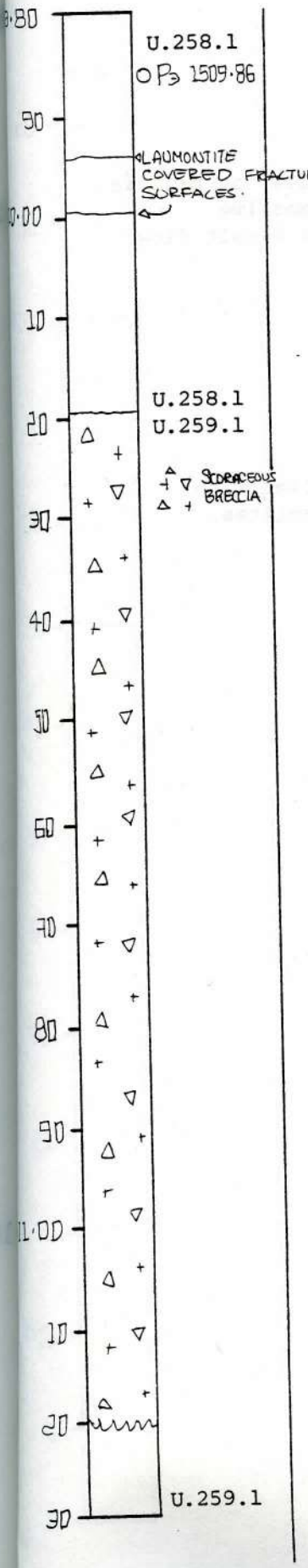
1509.00 Massive, possibly faint flow banding, dipping 40°.

Visual Core Description Observer .....

Depth Interval 150975 cm to 151120 cm

Box 259, Section 1

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.258.1

Light greenish-gray, holocrystalline, fine-grained, aphyric basalt flow, with green smectite blotches.

1510.19 Depositional contact.

U.259.1 Dark greenish-gray, scouraceous flow top breccia, breccia is highly friable and porous, high percentage of epidote in groundmass and vesicles. Clasts appear to have been more highly altered than the groundmass.

STRUCTURE

U.258.1 Massive

U.259.1 Scouraceous, breccia

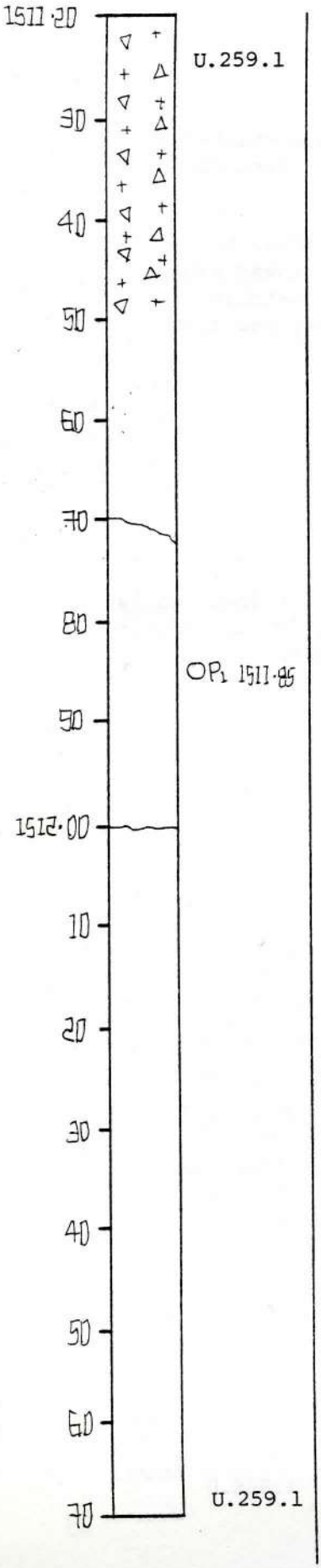
VESICLES/AMYGDALES

U.259.1 Extremely vesicular, due both to primary volcanism and extreme alteration. Epidote, quartz (?) and zeolite (?) in vesicles, epidote es extremely abundant.

Visual Core Description Observer .....

Depth Interval 1 5 1 1 2 0 cm to 1 5 1 2 7 5 cm

Box 259, Section 2



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Continuation of flow top breccia.

1511.50 Transition from scoraceous flow top breccia with red coloration to grayish-green massive holocrystalline, equigranular, aphyric basalt flow.

STRUCTURE

1511.20-1511.50 Brecciated

1511.50 Massive

VESICLES/AMYGDALES

Vesicles ∿ 5%. 3 mm average size, filled with green smectite and minor amounts of zeolites.

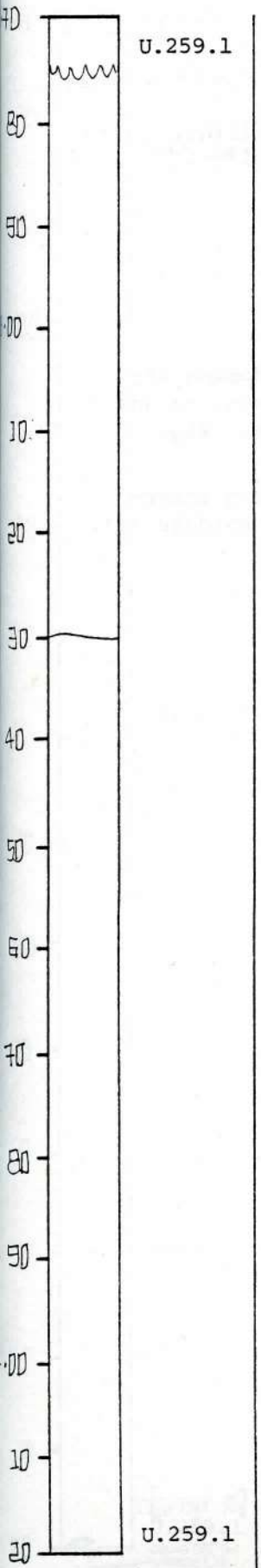
Visual Core Description Observer .....

Depth Interval 151275 cm to 151420 cm

Box 259, Section 3

Graphic Representation

Sample



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Greenish-gray, holocrystalline, medium-grained, equigranular, aphyric basalt flow.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles ∿ 5%. 1 cm - 1 mm size range, filled with minor amounts of calcite, quartz (?) and white zeolite. Predominantly green smectite. Vesicles predominantly equidimensional.

FRACTURES - VEINS - BRECCIA

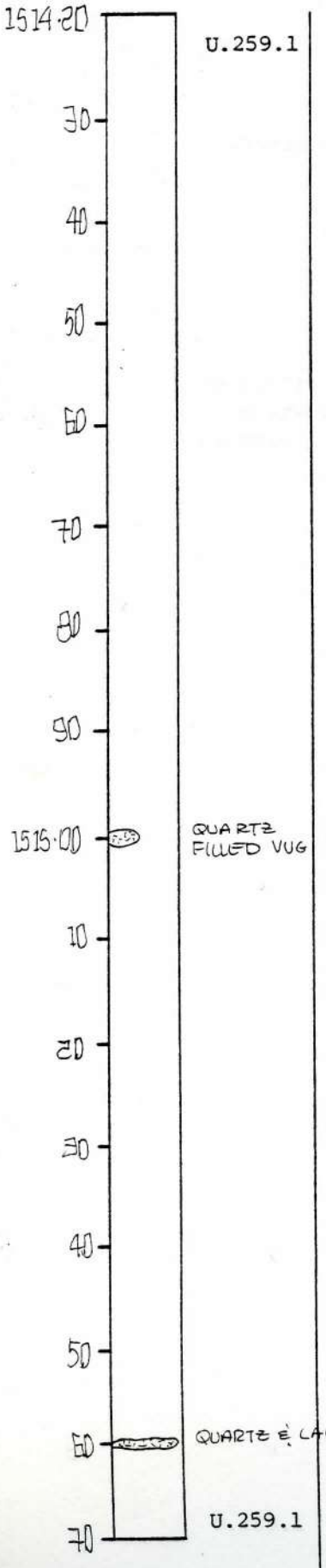
Rare

Visual Core Description Observer .....

Depth Interval 1514 20 cm to 1515 70 cm

Box 259, Section 4

Graphic Representation | Sample



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Medium-grained, greenish-gray, holocrystalline, equigranular, aphyric basalt flow. No epidote.

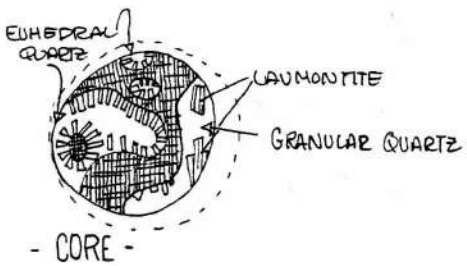
STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles ∿ 1%, partially filled with predominantly with quartz, euhedral crystals, some laumontite and and subordinant amounts of green smectite. Vugs are predominately opened.

1515.60 Euhedral 5 mm quartz crystals with intergrown laumontite crystals in large vug. Epidote (?).

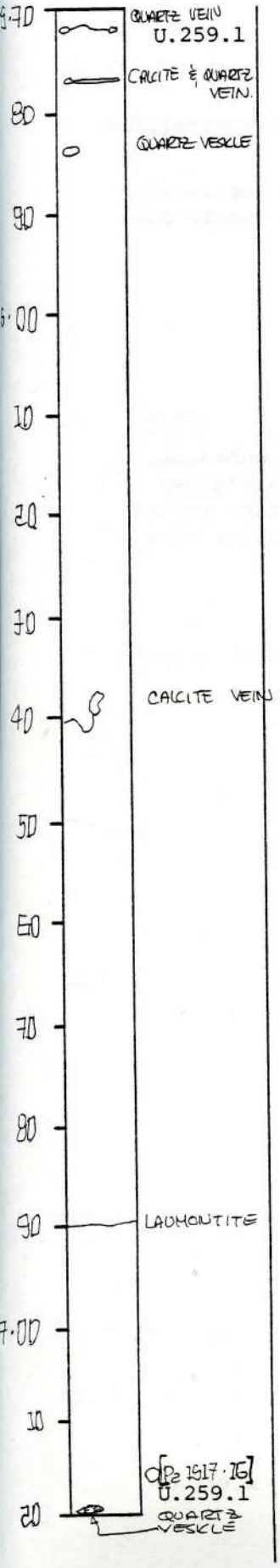


Visual Core Description Observer .....

Depth Interval 1 5 1 5 7 0 cm to 1 5 1 7 2 2 cm

Box 260, Section 1

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Greenish-gray, medium-grained, holocrystalline, aphyric basalt flow. No epidote.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles < 1%. 1.5 cm - 2 mm. Filled with quartz, calcite and minor smectite, bedding in vesicles at 1517.20, rounded and veinlike shape.

FRACTURES - VEINS - BRECCIA

1516.40 Calcite vein and vesicle and smectite.

1516.90 Laumontite.

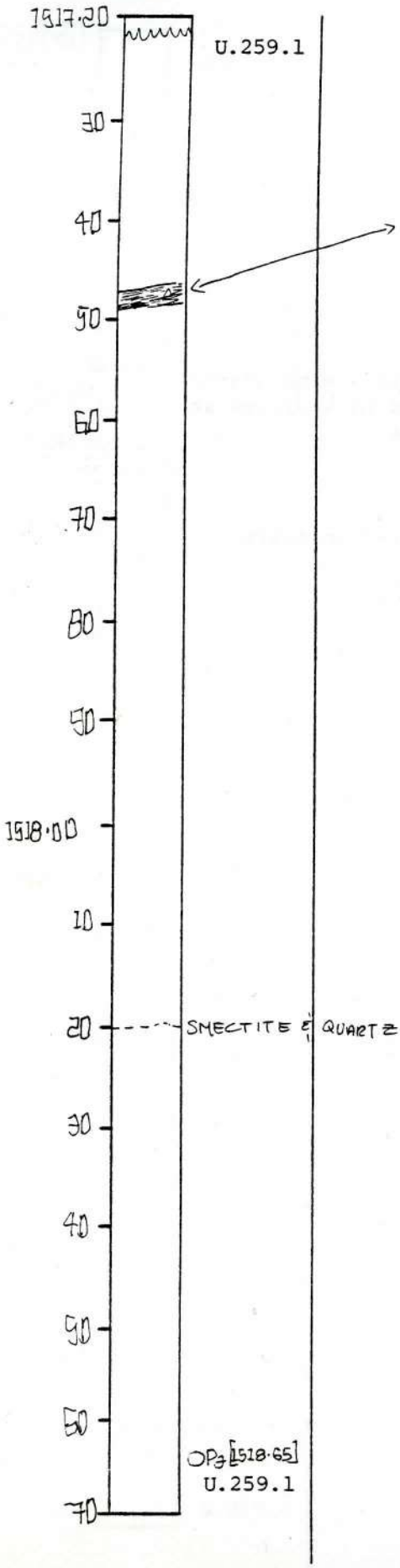
1517.20 Quartz vesicle.

Visual Core Description Observer .....

Depth Interval 1517.22 cm to 1518.75 cm

Box 260, Section 2

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Light greenish-gray, medium-grained, holocrystalline, equigranular, aphyric basalt flow.

1517.48 Coarser-grained porphyric zone surrounding vesicles. Vesicles lined with euhedral quartz and filled with laumontite and calcite.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles 1%. Partially filled with euhedral quartz, and 1 vesicle at 1517.28 with intergrown quartz and laumontite. Some green smectite filled vesicles lined with white, quartz or zeolite also occur.

FRACTURES - VEINS - BRECCIA

Rare

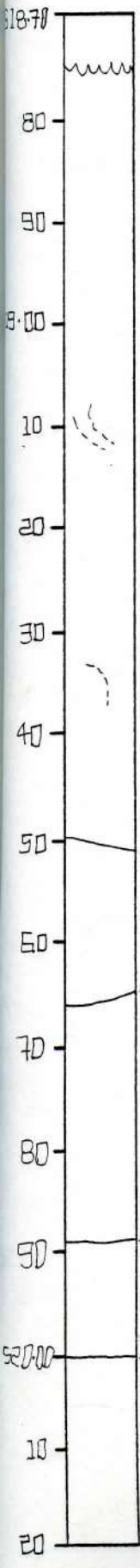
1518.19 Smectite and quartz vein.

Visual Core Description Observer .....

Depth Interval 1518.75 cm to 1520.25 cm

Box 260, Section 3

Graphic Representation | Sample



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Darker greenish-gray, holocrystalline, medium-grained, equigranular, aphyric basalt flow.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles ∿ 2%. Vesicles ∿ 3 mm < 1 mm, vesicles filled with white zeolite and green smectite. Vesicles rounded.

FRACTURES - VEINS - BRECCIA

1519.09 Green smectite filled vein.

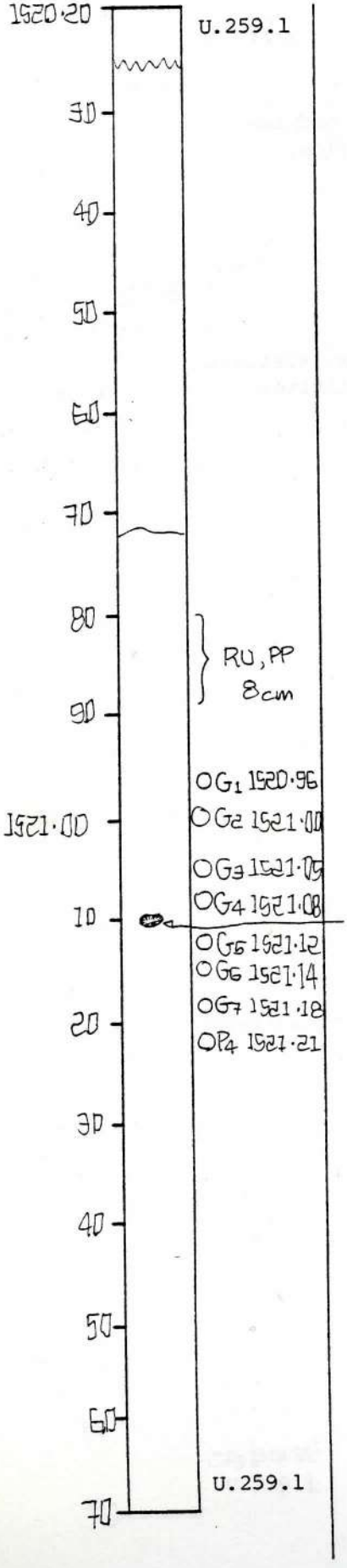
1519.34 Green smectite filled veins.

Visual Core Description Observer .....

Depth Interval 1 5 2 0 2 5 cm to 1 5 2 1 8 0 cm

Box 260, Section 4

Graphic Representation | Sample



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Medium-grained, holocrystalline, greenish-gray, aphyric basalt flow. Minor decrease in grain size.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles <<1%. Round, laumontite smectite filled 5 mm - 1 mm.

FRACTURES - VEINS - BRECCIA

Rare

ICELAND

Visual Core Description Observer .....

Depth Interval 1 5 2 1 8 0 cm to 1 5 2 3 3 3 cm

Box 261, Section 1

Graphic Representation | Sample

U.259.1

LITHOLOGY-PETROGRAPHY

Continues U.259.1

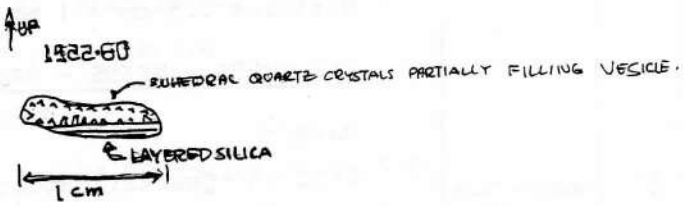
Greenish-gray, holocrystalline, fine-medium grained, equigranular, aphyric basalt flow. No epidote.

STRUCTURE

Massive

VESICLES/AMYGDALES

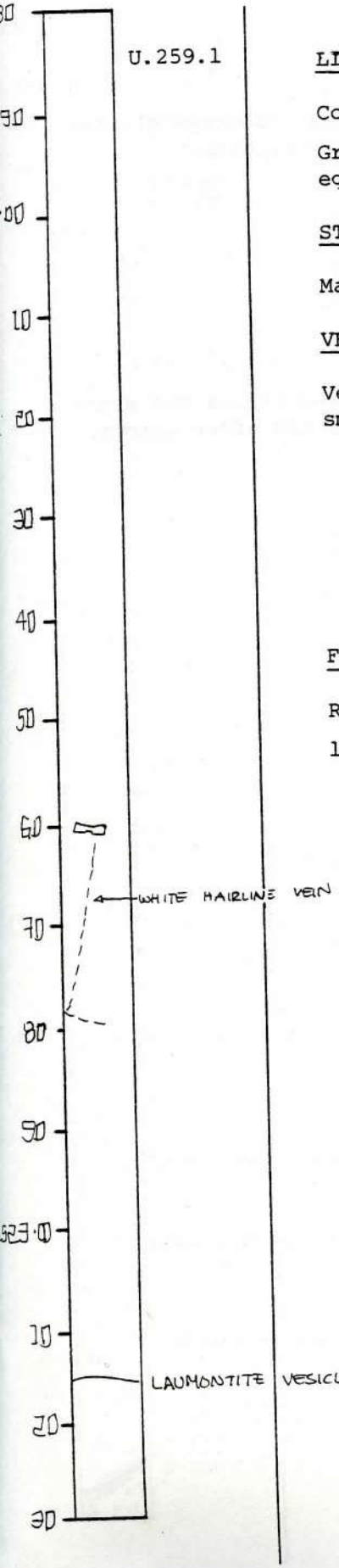
Vesicles <1%. Round and elongated filled with green smectite, quartz and laumontite. 1 cm - 3 mm.



FRACTURES - VEINS - BRECCIA

Rare

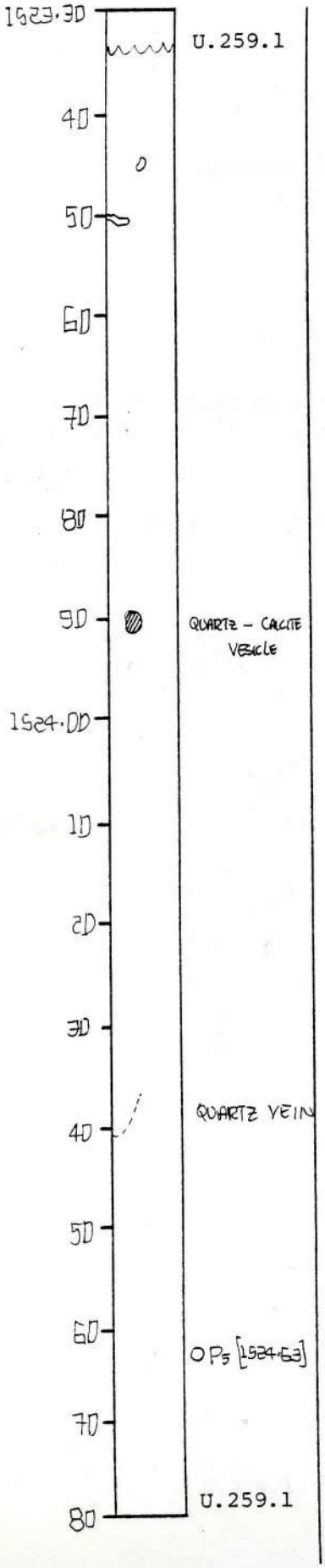
1523.15 Laumontite vesicles along fractures.



Visual Core Description Observer .....

Depth Interval 1 5 2 3 3 3 cm to 1 5 2 4 8 0 cm

Box 261, Section 2



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Greenish-gray, fine to medium-grained, holocrystalline, equigranular, aphyric basalt flow. No epidote.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles ∿ 1%.

Filled with euhedral quartz and layered silica and minor calcite, 1 vesicle shows calcite crystals after quartz. Vesicles 1.5 cm - 1 mm rounded.

FRACTURES - VEINS - BRECCIA

Rare

1523.90 Quartz, calcite vesicle.

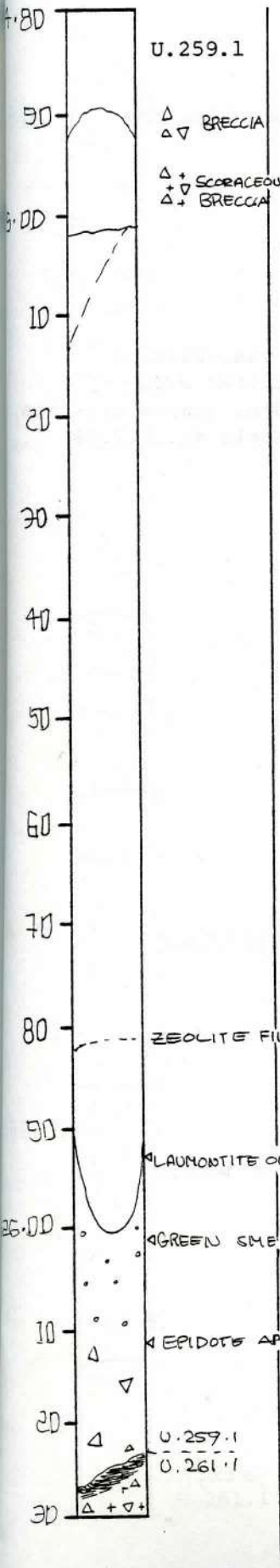
1524.40 Quartz vein.

Visual Core Description Observer .....

Depth Interval 1524.80 cm to 1526.35 cm

Box 261, Section 3

Graphic Representation | Sample



LITHOLOGY-PETROGRAPHY

Continues U.259.1

Fine-grained, greenish gray, holocrystalline, equigranular, aphyric, basalt flow.

1526.24 Depositional contact dipping 30°, with red oxidation zone.

U.261.1 Scouraceous flow top breccia, reddish-green, highly friable.

STRUCTURE

U.259.1 Massive

1526.11 - 1526.23 Brecciated

U.261.1 Scouraceous breccia.

VESICLES/AMYGDALES

Vesicles < 1% at 1524.80 to 10% at 1526.00.

Vesicles 1 mm - 7 mm in size, filled predominately with green smectite, subordinate zeolite with epidote occurring in the brecciated zone at bottom of flow (1526.10).

Vesicules rounded and elongated until 1526.10, then vein-like.

Quantity of vesicles increasing downward.

1526.00 Green smectite filled vesicles.

1526.11 Epidote appears

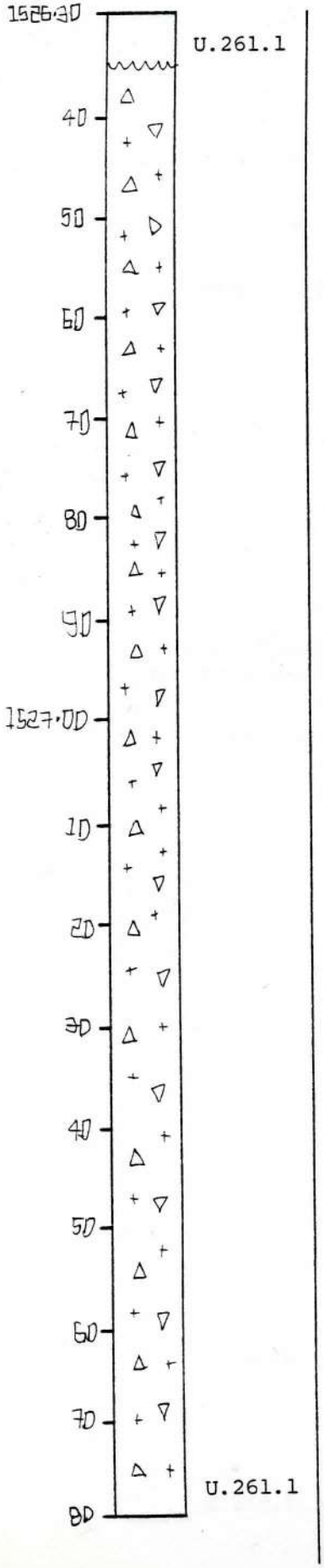
FRACTURES - VEINS - BRECCIA

1525.81 Zeolite filled vein.

Visual Core Description Observer .....

Depth Interval 1526.35 cm to 1527.80 cm

Box 261, Section 4



LITHOLOGY-PETROGRAPHY

Continues U.261.1

Highly friable, yellowish-green, scouraceous flow top breccia, pervasively altered.

STRUCTURE

Scouraceous, breccias.

VESICLES/AMYGDALES

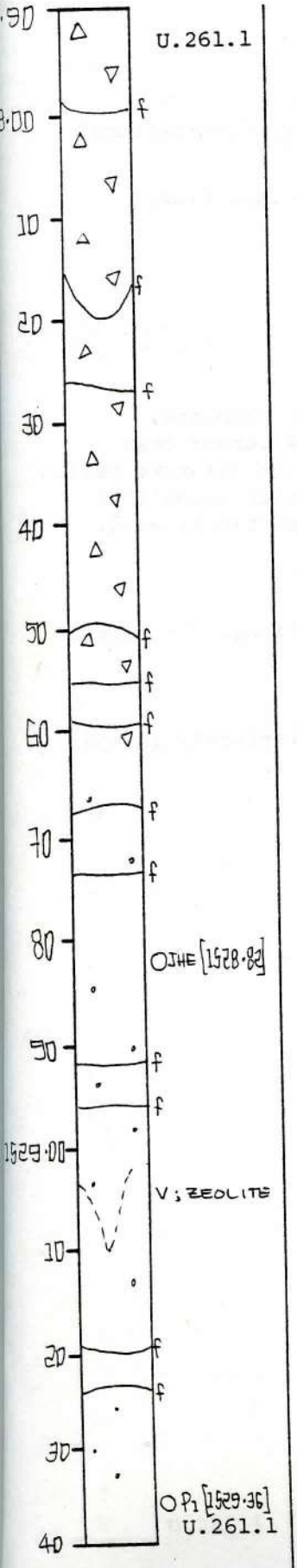
Extremely vesiculated due to both primary vesiculation and due to extreme alteration. Vesilces filled with yellowish-green epidote crystals and euhedral quartz crystals, quartz crystals 5 mm long, heulandite crystals at 1527.09.

Visual Core Description Observer PTR

Depth Interval 152787 cm to 152943 cm

Box 262, Section 1

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.261.1

Upper part of section to 1528.51 is green, porous, crumbly, highly altered basalt breccia. Rock is pervasively altered to chlorite (?) abundant epidote and quartz.

Interpreted as altered flow top breccia.

From 1528.51 to base of section rock is gray to slightly reddish-gray, fine-grained, moderatley vesicular, aphyric basalt.

Massive central part of a lava flow.

STRUCTURE

Brecciated.

From 1528.51 - Massive

VESICLES/AMYGDALES

In upper part vesicles are partly open, make up ∿ 5% and range from 2-10 mm. Most are lined with green sphere on which grows well formed crystals of quartz and epidote projecting into an open central cavity.

From 1528.51 vesicles 3-4% to 1-2% at base of section. Most are 2-20 mm, spherical to irregular, filled with chlorite (?) and some calcite. Some vesicles with open centers are lined and partly filled with quartz and laumontite.

FRACTURES - VEINS - BRECCIA

No obvious primary fractures or veins. Rock breaks and crumbles easily.

From 1528.51 most fractures subhorizontal, due to drilling. One zeolite filled veinlet dips about 75°.

ROCK ALTERATION

Extensive pervasive altered to epidote.

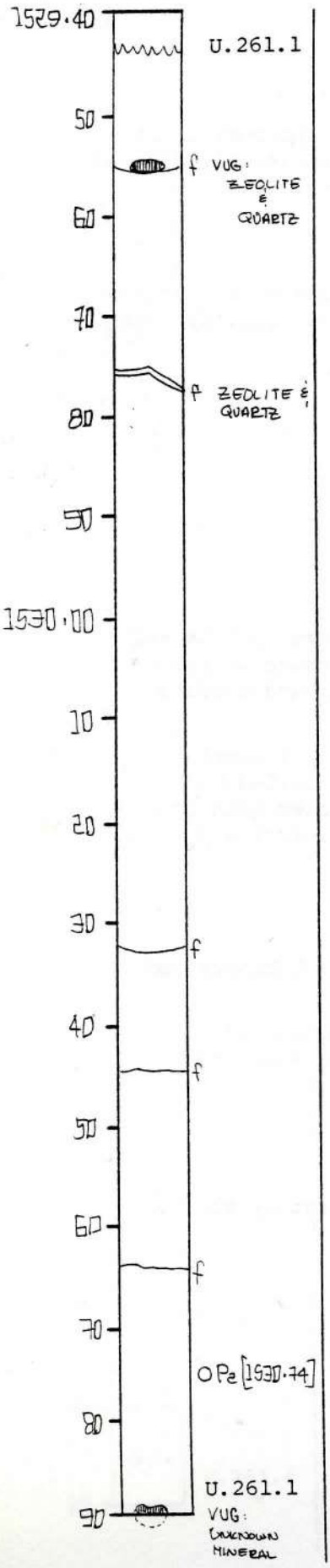
From 1528.51 - Rock is reddish-gray, moderately altered.

Visual Core Description Observer PTR

Depth Interval 152943 cm to 153096 cm

Box 262, Section 2

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.261.1

Gray to faintly reddish- or greenish-gray, fine-grained aphyric basalt.

Interpreted as massive central part of a lava flow.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles 1-3%, 2 mm to 5 cm, spherical to elongate, smaller ones filled with chlorite (?) and larger ones lined with chlorite and filled with zeolite (laumontite?). Large vugs @ 1529.55 and 1529.77 filled with laumontite and quartz. One @ 1530.96 filled with unknown mineral.

FRACTURES - VEINS - BRECCIA

Fractures all sub-horizontal, due to drilling. No veins.

ROCK ALTERATION

Rock is weakly to moderately altered. Distinctly fresher than altered flow top breccia of Section 1.

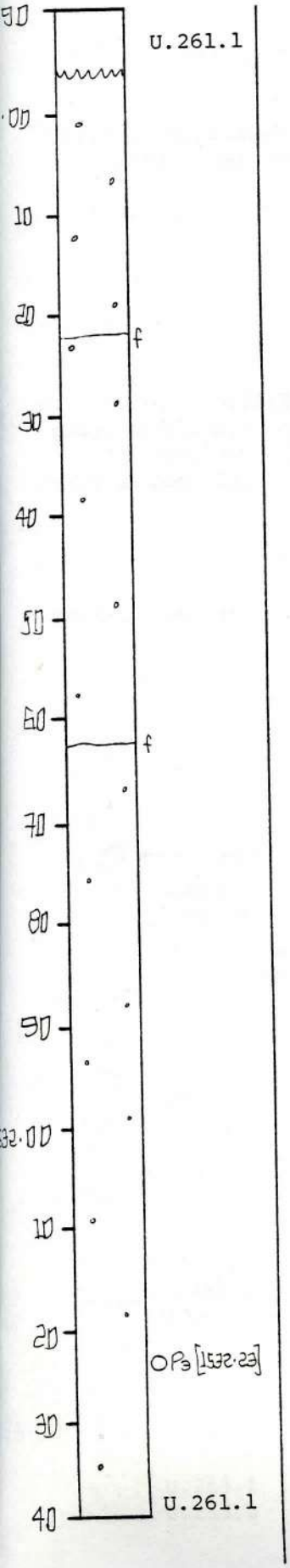
PTR

Visual Core Description Observer .....

Depth Interval 1 5 3 0 9 6 cm to 1 5 3 2 4 0 cm

Box 262, Section 3

Graphic Representation | Sample



LITHOLOGY-PETROGRAPHY

Continues U.261.1

Greenish-gray, fine-grained, moderately vesicular, aphyric basalt.

Flow center.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles 1-2% mostly 3-20 mm, somewhat oval in shape, filled or partly filled with zeolite and quartz.

FRACTURES - VEINS - BRECCIA

No veins. A few subhorizontal fractures due to drilling.

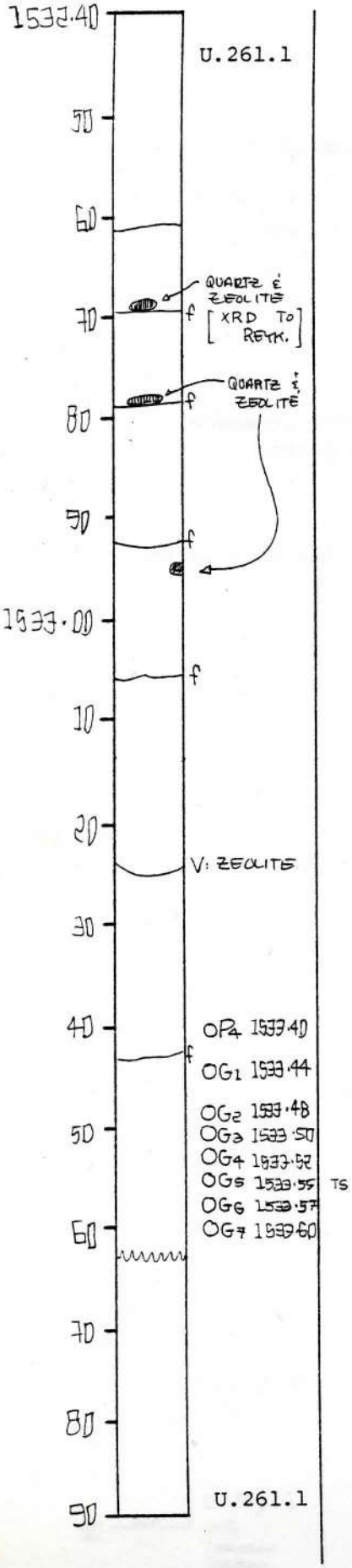
ROCK ALTERATION

Weakly altered massive basalt.

Visual Core Description Observer .PTR.....

Depth Interval 1 5 3 2 4 0 cm to 1 5 3 3 6 3 cm

Box 262, Section 4



LITHOLOGY-PETROGRAPHY

Continues U.261.1

Greenish-gray, fine-grained, moderately vesicular, aphyric basalt. Grain size uniform throughout section. Flow interior.

STRUCTURE

Massive

VESICLES/AMYGDALES

2-3%, 5-50 mm round to elongate, partly filled with zeolite and quartz. Most partly open with quartz crystals growing toward center. At 1532.69 and 1532.79 the zeolite (?) is chalky, dull and without crystal form. XRD sample taken from 1532.70 m.

FRACTURES - VEINS - BRECCIA

Fractures subhorizontal, due to drilling. One vein 1-2 mm wide of zeolite @ 1533.26 m.

ROCK ALTERATION

Weakly altered, massive basalt.

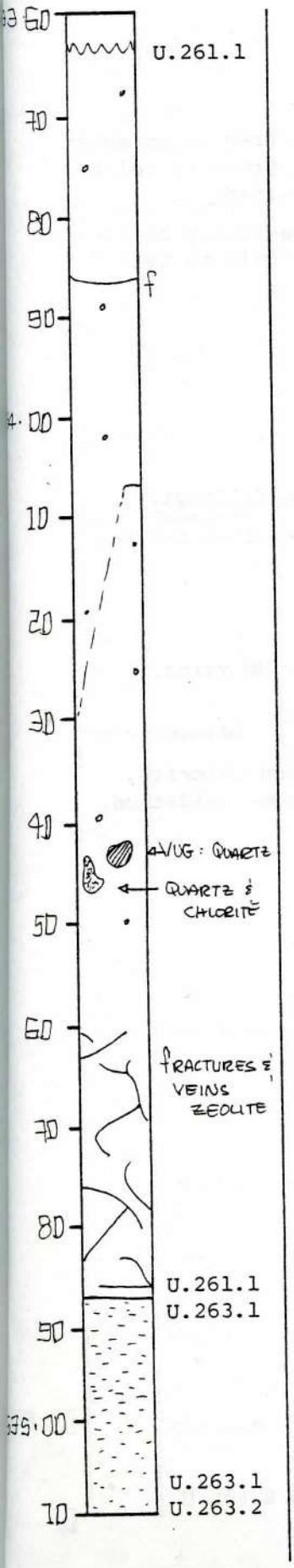
Visual Core Description Observer ...PTR.....

Depth Interval 153363 cm to 153512 cm

Box 263, Section 1

Graphic Representation

Sample



LITHOLOGY-PETROGRAPHY

Continues U.261.1

Greenish-gray, fine-grained, aphyric, sparsely vesicular basalt.

Depositional contact with sedimentary interbed. No apparent chilling.

U.263.1 Red, silty to sandy, moderately to poorly bedded sedimentary interbed. Deposition contact with underlying flow.

STRUCTURE

U.263.1 Bedded

VESILCES/AMYGDALES

U.261.1 Vesicles sparse, 1-2% mostly 4-30 mm. Most are somewhat oval or elongate, filled or partly filled with zeolite and quartz. Larger ones usually have open centers with crystals projecting into cavity.

U.263.1 None

FRACTURES - VEINS - BRECCIA

U.261.1 Veins and fractures sparse except in lower 30 cm where rock is highly fractured along zeolite veins dipping about 70°.

U.263.1 None

ROCK ALTERATION

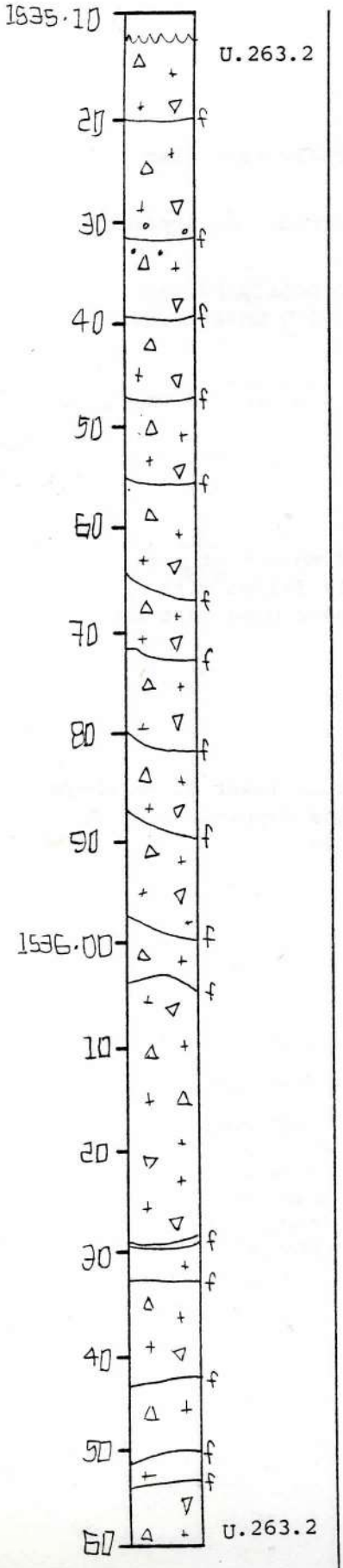
U.263.1 Some cavernous zones.

Visual Core Description Observer PTR

Depth Interval 1535.12 cm to 1536.65 cm

Box 263, Section 2

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.263.2

Red and green, highly altered scoriaceous breccia to about 1536.30 m. Below rock is highly altered, green in color, highly vesicular but not apparently brecciated.

1536.30 Green, highly altered, crumbly vesicular basalt. Does not appear to be brecciated but difficult to tell because of high alteration.

STRUCTURE

Brecciated

VESICLES/AMYGDALES

Highly vesicular, with epidote and zeolite fillings.

1536.30 Highly vesicular, 15-20%, most vesilces 1-2 mm, round, filled with chlorite and epidote.

FRACTURES - VEINS - BRECCIA

Fractures subhorizontal, due to drilling. No veins.

ROCK ALTERATION

Entire section highly altered to epidote and chlorite, upper parts somewhat reddish, suggesting some oxidation.

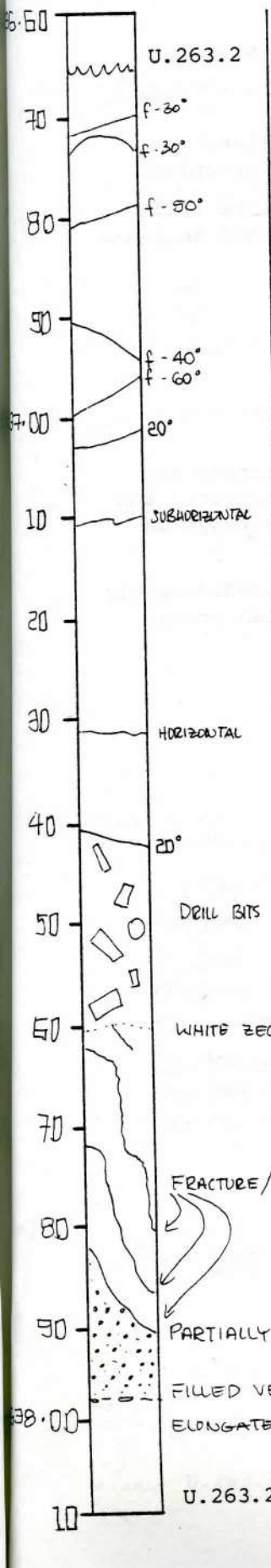
Graphic Representation

Sample

Visual Core Description Observer JM

Depth Interval 1536650 cm to 1538700 cm

Box 263, Section 3



LITHOLOGY-PETROGRAPHY

Continues U.263.2

Green, highly altered and crumbly vesicular basalt down to 1537.60, due to the highly altered and crumbly nature of the section primary features are difficult to observe.

1537.58 Transition from green crumbly altered basalt to less altered light grayish green vesicular basalt. Medium- to fine-grained, holocrystalline, aphyric basalt flow.

STRUCTURE

Vesicular

VESICLES/AMYGDALES

Highly vesicular, with epidote and green smectite completely filling vesicles, down to 1537.88 then vesicles only partially filled with epidote and quartz and green smectite at 1532.92. Calcite also fills vesicles and vesicles are completely filled.

At 1538.10 white zeolite (laumontite) is filling irregular vesicles, along with minor calcite, smectite and epidote (?).

FRACTURES - VEINS - BRECCIA

Fractures may be due to drilling, but due to their similarity to other fracture systems in the core, they are interpreted as pre-drilling features.

No veins recognized until 1537.60.

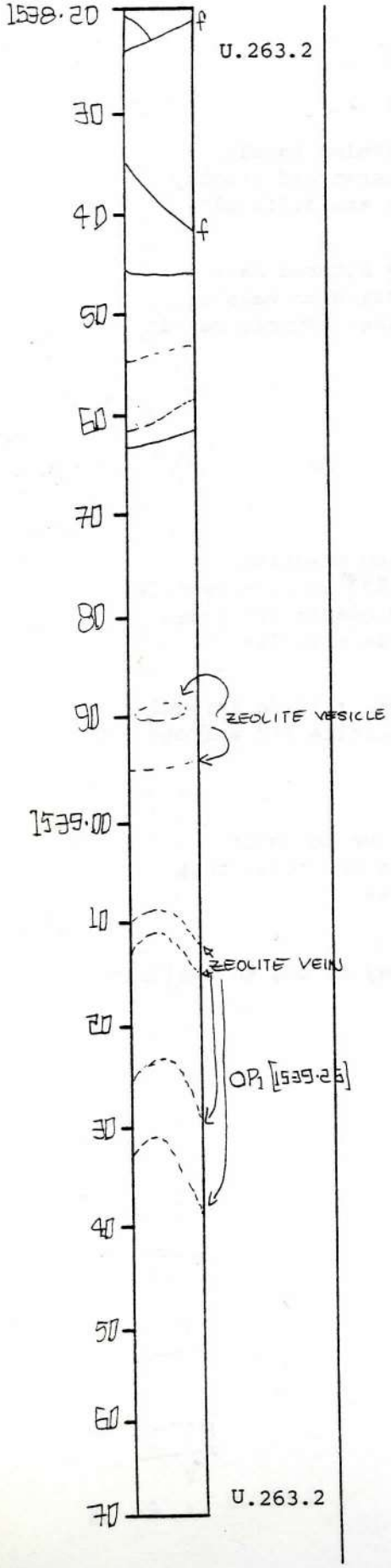
1538.13 Fresh, irregular fractures, may be due to swelling clays.

Visual Core Description Observer .....

Depth Interval 1538.20 cm to 1539.75 cm

Box 263, Section 4

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.263.2

Greenish-gray, medium-grained, holocrystalline, equigranular, aphyric basalt flow, highly vesicular.

1539.10 Transition from predominately zeolite filled vesilces to green smectite filled vesilces and decrease in size of vesicles.

STRUCTURE

Massive

VESICLES/AMYGDALES

1538.20 - 1539.10 Highly vesicular, with irregular veinlike vesicles filled with zeolite (laumontite) and smaller smectite filled vesicles. Vesicles range in size from less than 1 mm to ∿ 1 cm.

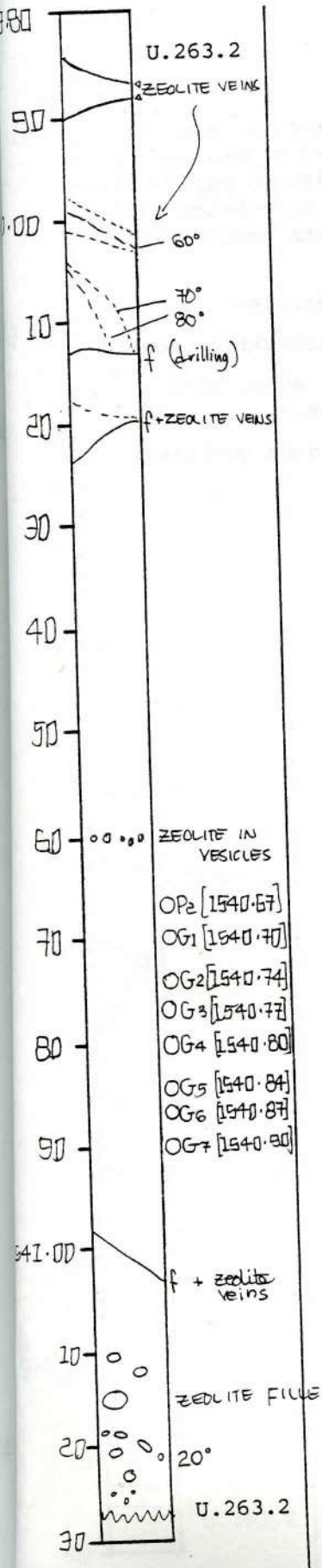
1539.10 - 1539.75 Vesicles - smaller and predominately filled with green smectite and some yellowish green epidote.

Visual Core Description Observer ....HUS.....

Depth Interval 153975 cm to 154127 cm

Box 264, Section 1

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.263.2

Gray-greenish, medium-grained holocrystalline, aphyric equigranular basalt.

Most vesicles small and filled with green chlorite ?, ca 10%, with red mineral (hematite ?) vesicle filling?

Top 1/3 with < 1 mm ϕ discontinuous zeolite veinlets.

1540.59 Minor zeolite vesicle zone.

1541.11-1541.26 Major zeolite vesicle zone, vesicle sheets with zeolites.

STRUCTURE

Massive

VESICLES/AMYGDALES

Mostly < 2 mm ϕ , smectite/quartz-filled.

FRACTURES - VEINS - BRECCIA

Dip ∿ 50°.

ROCK ALTERATION

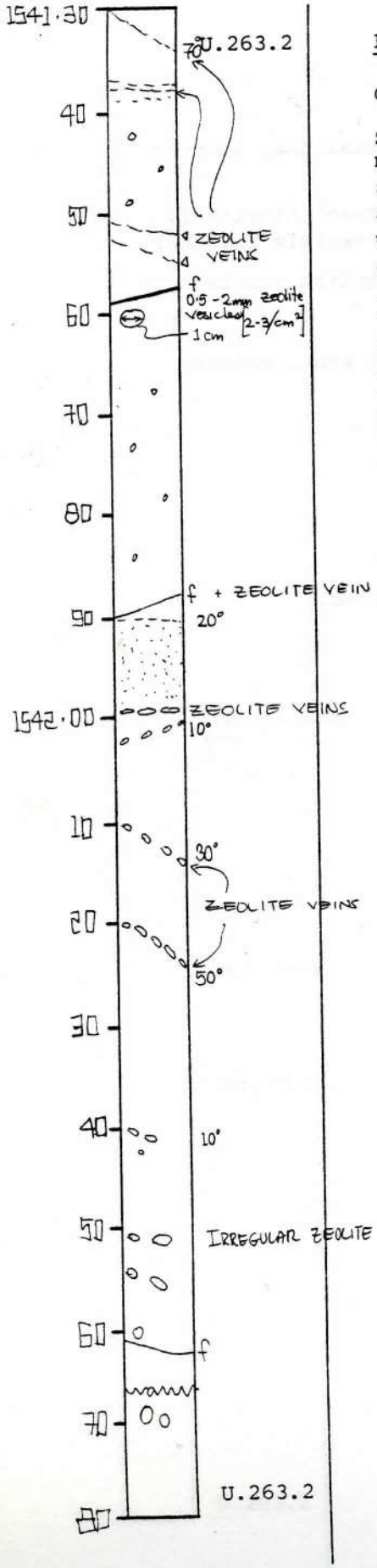
Quartz.

Visual Core Description

Observer HUS

Depth Interval 154127 cm to 154267 cm

Box 264, Section 2



LITHOLOGY-PETROGRAPHY

Continues U.263.2

section similar to section 1: gray, massive, aphyric, medium-grained basalt with abundant .5-3 m greenish specks (= chlorite ?, mesortasig and altered mafics ?) and round vesicles or fractures, often an echelon filled with zeolite. Some fractures filled with smectite? chlorite?

1541.41-1541.90 Zone of small round vesicles.

1541.90-1541.99 Many small vesicles (transition zone).

1542.13-1542.56 Zone of subhorizontal, en echelon fractures, commonly filled with zeolites.

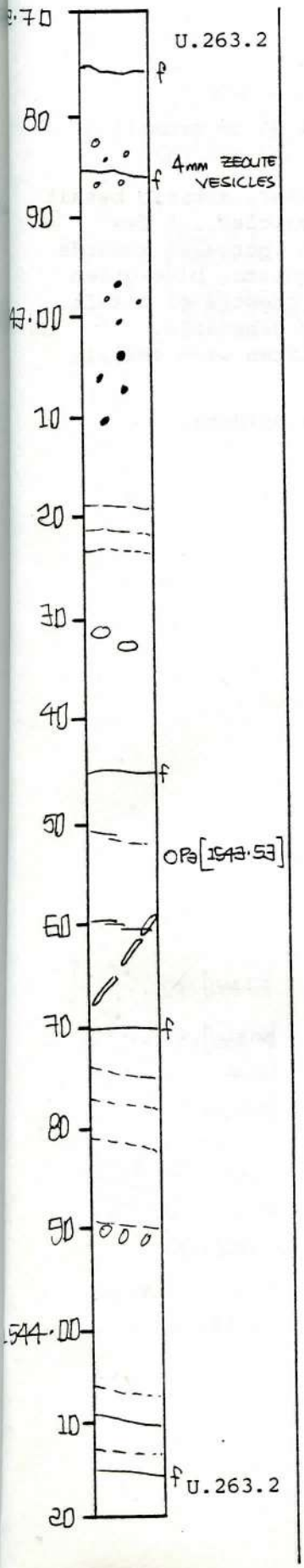
1542.60-1542.70 Large, partly filled round vesicles.

Visual Core Description Observer HOS

Depth Interval 1 5 4 2 6 7 cm to 1 5 4 4 2 0 cm

Box 264, Section 3

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.263.2

Similar to section 2: massive gray greenish (chlorite ? groundmass), aphyric, equigranular medium-grained basalt.

Steep fractures filled with zeolites, subhorizontal fractures beginning flow-banding?, filled with chlorite ?

1942.96-1543.60 Few with round chlorite (?) filled vesicles, dark rims, light green cores. Some epidote.

1943.81-1943.90 zone of large 1 mm ø vesicles, mostly zeolite filled.

1543.90-1944.20 Chlorite filled vesicles.

STRUCTURE

Massive

ROCK ALTERATION

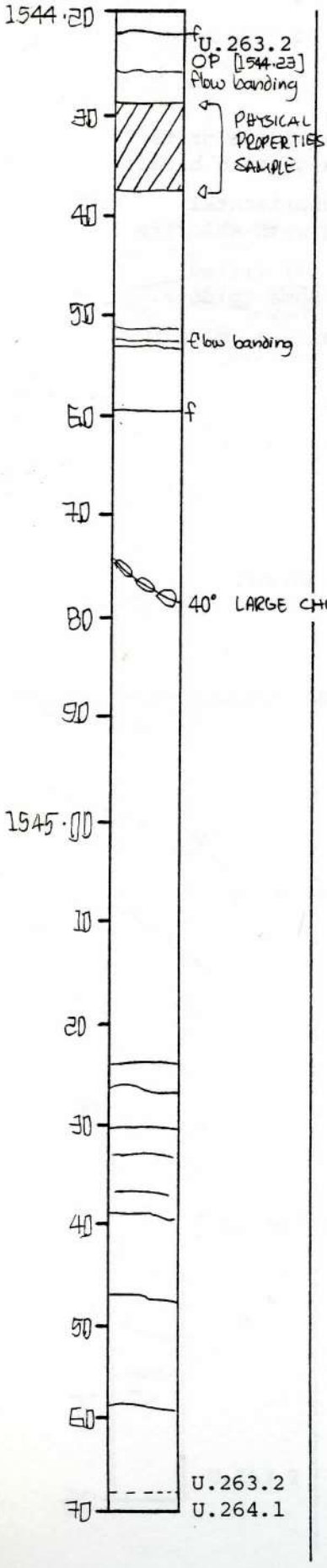
Quartz/smectite/zeolite.

Visual Core Description Observer HUS

Depth Interval 154420 cm to 154570 cm

Box 264, Section 4

Graphic Representation | Sample



LITHOLOGY-PETROGRAPHY

Continues U.263.2

Massive, similar to Section 3, but basal 40 cm crumbly and highly altered.

General: gray medium-grained, equigranular, aphyric basalt with irregular mostly chlorite-filled vesicles. A few large vesicles with zeolite. Alteration increases towards bottom where rock consists of epidote, quartz, blue-green chlorite (?) and a pink mineral. Basal breccia of basalt. Base of unit and top of next unit highly debatable. Subhorizontal "flow-banding" fractures often with vesicle poor "selvages".

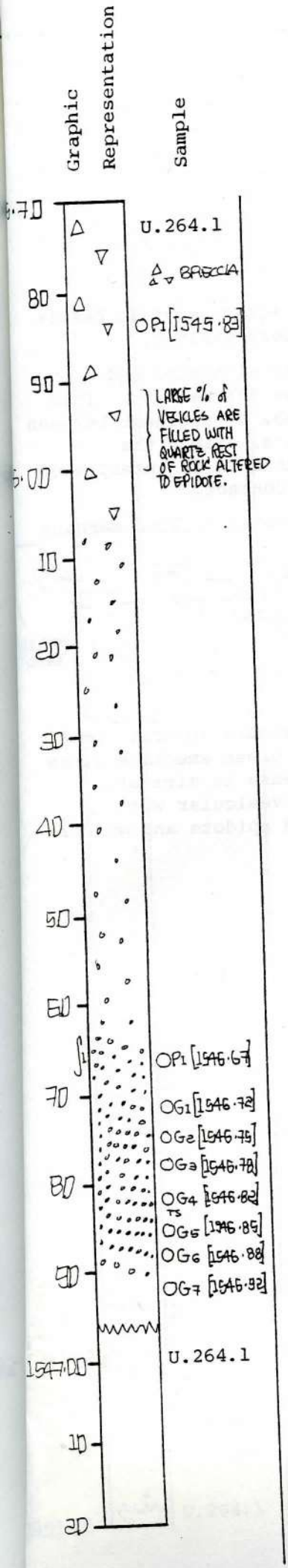
1545.25-1545.59 Crumbly zone with large epidote, quartz and chlorite.

ICELAND RESEARCH DRILLING PROJECT - REYDARFJORDUR 1978

Visual Core Description Observer .....

Depth Interval 1 5 4 5 7 0 cm to 1 5 4 6 9 6 cm

Box 265, Section 1



LITHOLOGY-PETROGRAPHY

Continues U.264.1 Green flow top breccia grading down to green amygdale basalt flow.

STRUCTURE

1545.70-1546.10 Brecciated

1946.10 - Beginning amygdale

VESICLES/AMYGDALES

Vesicles 20%. Range in size (2 cm - 1 mm), elongated and rounded, green smectite, yellow-green epidote, large euhedral quartz crystals fill vesicles.

Quartz and epidote intergrown with smectite lining vesicles.

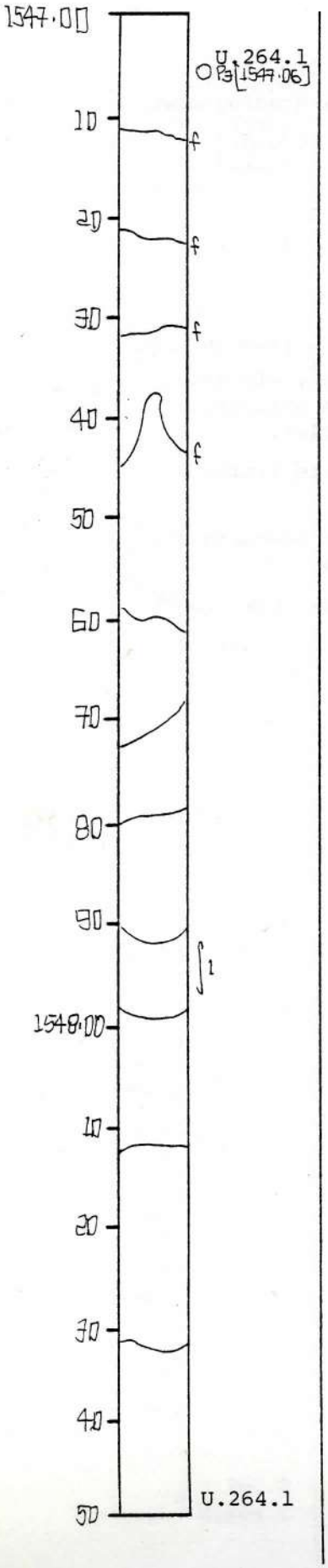
1546.65 Vesicles filled predomintly with smectite and decreasing in size downward and abundance.

Visual Core Description Observer .....

Depth Interval 154696 cm to 154850 cm

Box 265, Section 2

Graphic Representation | Sample



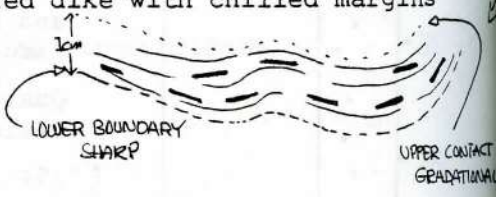
LITHOLOGY-PETROGRAPHY

Continues U.264.1

Alternating between green and greenish-gray amygdale basalt flow. Coarse- to medium-grained, holocrystalline.

1547.61 - Light greenish-gray band with elongated and oriented smectite vesicles (?) and flow (?) banding. This zone may be a contact between two flows, or sediment between two flows or alteration along a fracture. Since the lithology doesn't change across this zone it is interpreted to be a highly altered zone and not a contact.

1 1547.93 Appears to be an altered dike with chilled margins or alteration along fractures.



STRUCTURE

Amygdale

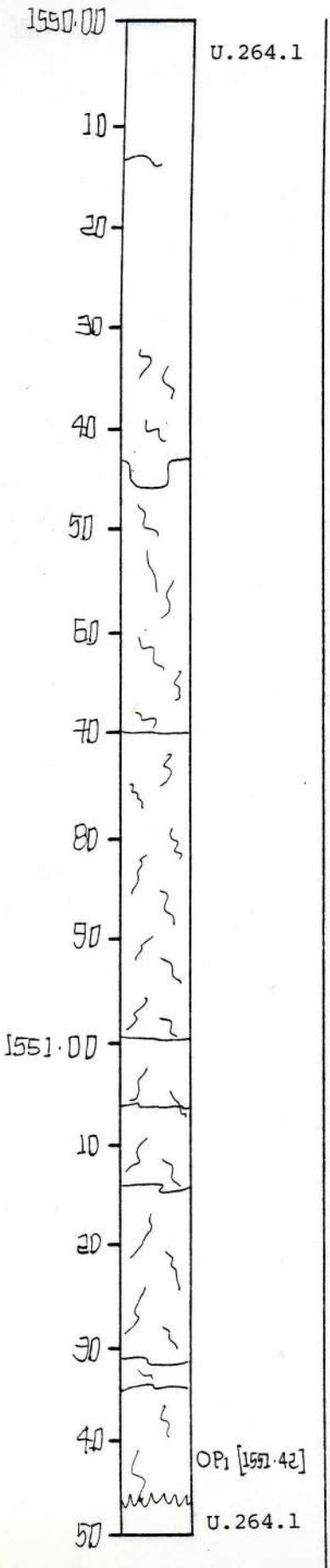
VESICLES/AMYGDALES

Vesicles ∿ 15-20%, laumontite fills vesicles in gray zones and epidote and quartz in green zones, green smectite lines vesicles in both zones. Vesicles increase in size at 1547.20-1548.50. Below 1547.50 highly vesicular with vesicules filed with green smectite and epidote and quartz.

Visual Core Description Observer .....

Depth Interval 1 5 5 0 0 0 cm to 1 5 5 1 4 7 cm

Box 265, Section 4



LITHOLOGY-PETROGRAPHY

Continues U.264.1

Green, highly altered, amygdale basalt flow with pervasive epidote alteration.

1550.32 Transition from highly altered green amygdale basalt flow to grey less altered basalt flow with a decrease in vesicles.

Fine- to medium-grained gray, holocrystalline, equigranular, aphyric basalt flow.

STRUCTURE

Amygdale - becoming more massive and less amygdale

VESICLES/AMYGDALES

Vesicles filled with quartz and epidote.

Vesicules irregular, rounded and elongated, filled with green smectite and white zeolite (laumontite). 2 cm - 1 mm size range. 10% of section. Minor amount of calcite with laumontite in vesicles.

FRACTURES - VEINS - BRECCIA

1550.32 downward. Irregular fresh fractures with no secondary mineralization, and fracturing may be due to swelling clays.

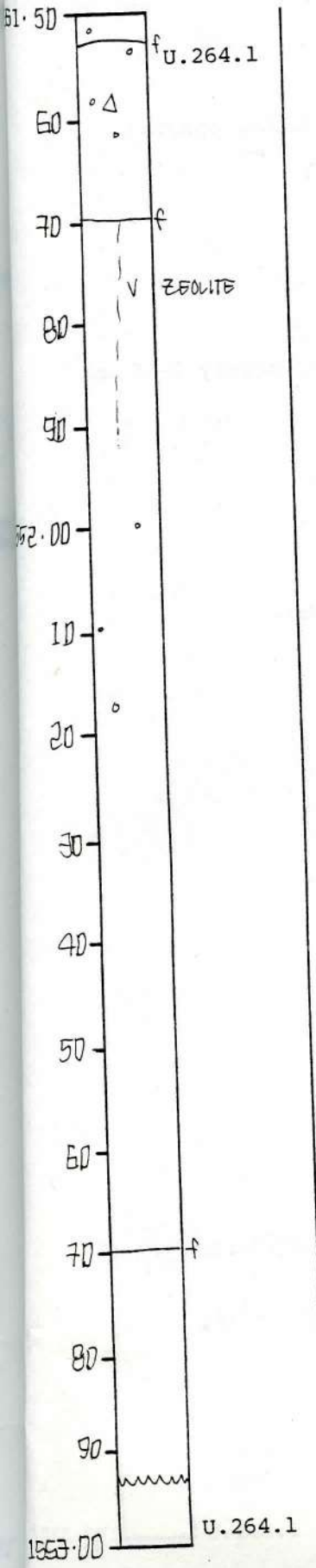
ICELAND RESEARCH DRILLING PROJECT

Visual Core Description Observer .....

Depth Interval 1 5 5 1 4 7 cm to 1 5 5 2 9 3 cm

Box 266, Section 1

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.264.1

Greenish-gray, fine-grained holocrystalline, aphyric basalt.

STRUCTURE

Very slight flow banding in center of section defined by stringers of chlorite or smectite.

VESICLES/AMYGDALES

Vesicles about 2%, most 3-15 mm, some 25 cm, round to oval, filled with zeolite and some with quartz crystals. Several amygdules at top of section - others scattered.

FRACTURES - VEINS - BRECCIA

One veinlet of zeolite dips 80°.

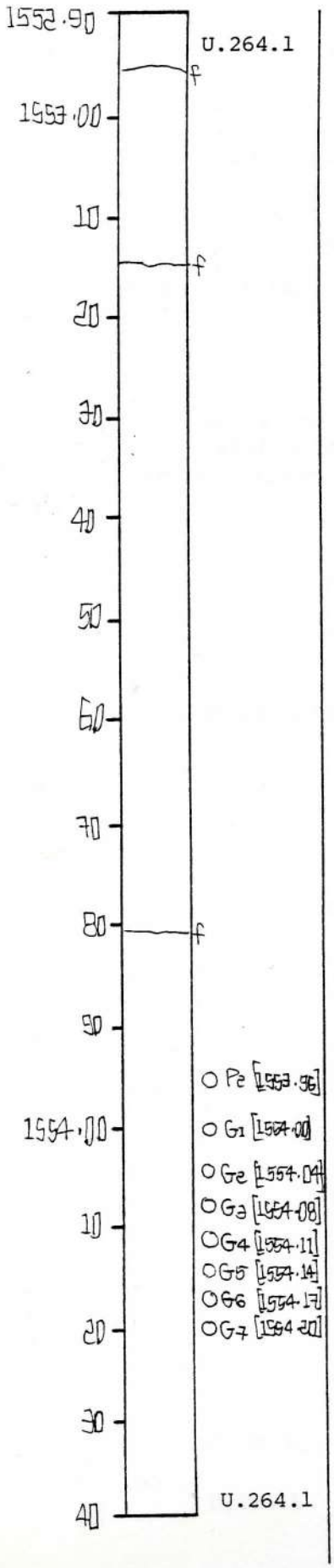
ROCK ALTERATION

Moderately fresh - chlorite or smectite in groundmass.

Visual Core Description Observer .....

Depth Interval 1553.93 cm to 1554.45 cm

Box 266, Section 2



LITHOLOGY-PETROGRAPHY

Continues U.264.1

Greenish-gray, fine-grained, holocrystalline, aphyric basalt.

STRUCTURE

Massive

VESICLES/AMYGDALES

Sparsely vesicular ∿ 1% of round vesicles mostly 5-15 mm, filled with zeolite and minor quartz.

FRACTURES - VEINS - BRECCIA

No primary fractures. No veins.

ROCK ALTERATION

Minor green chlorite in interstitial zones.

ICELAND RESEARCH DRILLING PROJECT - REYDARFJORDUR 1978

Visual Core Description

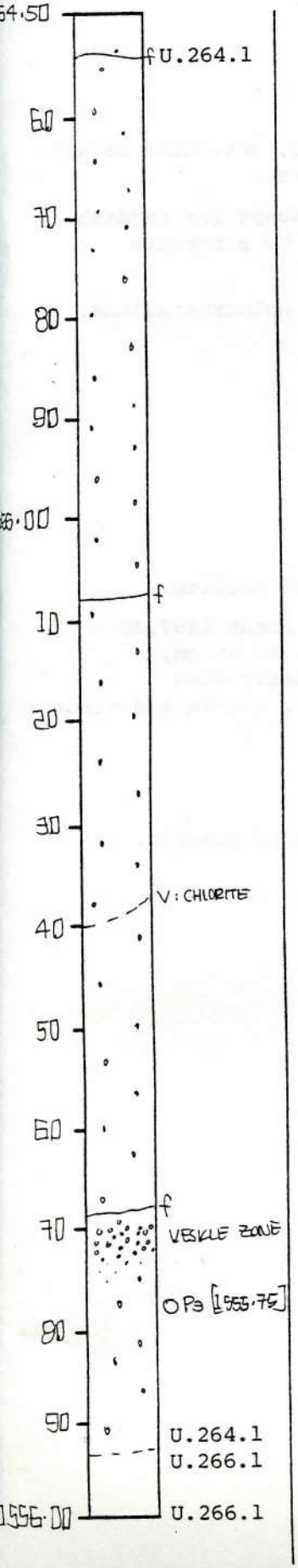
Observer PTR .....

Depth Interval 1 5 5 4 4 5 cm to 1 5 5 6 0 0 cm

Box 266, Section 3

Graphic Representation

Sample



LITHOLOGY-PETROGRAPHY

Continues U.264.1

Greenish-gray, fine-grained, holocrystalline aphyric basalt.

Contact dips about 40-45°. Contact is depositional in breccia of next lower unit. There is a fine-grained base but not a chill zone. Vesicles are very small at base.

U.266.1 Gray to reddish gray, brecciated aphyric basalt.

STRUCTURE

Massive (U.264.1)

U.266.1 Brecciated

VESICLES/AMYGDALES

U.264.1 Moderately vesicular, 5-10%, most are 2-3 mm round; some about 10 mm, and oval. Smaller ones filled with chlorite, larger ones with zeolite and quartz at base of unit. Vesicles are small and somewhat flattened.

U.266.1 Very sparse.

FRACTURES - VEINS - BRECCIA

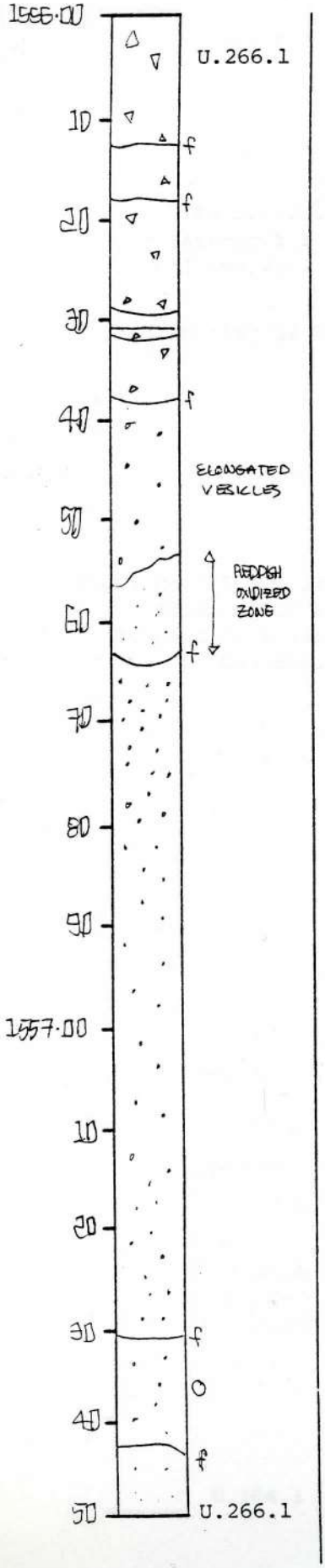
U.266.1 Much zeolite in breccia matrix.

Visual Core Description Observer .....

Depth Interval 1556.00 cm to 1557.53 cm

Box 266, Section 4

Graphic Representation Sample



LITHOLOGY-PETROGRAPHY

Continues U.266.1

Upper 30 cm somewhat brecciated, aphyric, vesicular basalt. Mostly light gray to slightly reddish gray.

Below about 1556.30 m rock is massive except for reddish zone; oxidized zone at 1556.60 which may be a breccia fragment.

Rock is grayish-green highly vesicular, holocrystalline, fine-grained, aphyric basalt.

U.266.1 is interpreted as a lava flow.

STRUCTURE

Weakly brecciated.

VESICLES/AMYGDALES

Vesicles filled with calcite, epidote and zeolite.

Vesicles abundant from about 1556.40 to about 1557.30 m then sparse below. Most are 1-2 mm some to 15 cm, subround to oval or irregular, filled mostly with chlorite, a few larger ones have zeolite, quartz and minor calcite. Some of these are lined with chlorite.

FRACTURES - VEINS - BRECCIA

Calcite, zeolite and epidote form matrix of breccia.