ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 178.1 INTERVAL(m) 1039.33 - 1039.50 THICKNESS(m) 0.17

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Greenish-gray, fine-grained, aphyric basalt with chilled margins. Lies between units 177.1 and 178.2.

UNIT NO. 178.3 INTERVAL(m) 1043.04 - 1043.80 THICKNESS(m) 0.76

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Greenish-gray, fine-grained, aphyric basalt with chilled contacts; lower contact dips 36°. Lies between units 178.2 and 178.4.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 179.1 / 180.2 INTERVAL(m) 1048.68 - 1054.86 / 1055.10 - 1056.54 THICKNESS(m) 6.18 / 1.44

INTERPRETATION Basalt flow (incomplete)

MACROSCOPIC DESCRIPTION

These two units comprise a single flow cut by a very thin dike (unit 180.1). Flow is reddish-gray, scoriaceous, flow top breccia with clasts of fine-grained basalt 3-5 cm across. Breccia grades downward into dark greenish-gray, fine-grained, highly fractured basalt, brecciated at 1050.0 m. At about 1052.50 m this passes into massive basalt. Unit 180.2 is basalt breccia composed of fine-grained, aphyric basalt clasts 3-5 cm across. Top of unit 179.1 is depositional with overlying flow of unit 178.4; basal contact of unit 180.2 truncated by dike of unit 181.1.

UNIT NO. 180.1 INTERVAL(m) 1054.86 - 1055.10 THICKNESS(m) 0.24

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled margins; lower contact dips 70°. Lies between units 179.1 and 180.2.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 181.1 INTERVAL(m) 1056.54 - 1071.61 THICKNESS(m) 15.08

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Greenish-gray, fine-grained, aphyric basalt with about 3% small plagioclase phenocrysts to 2 mm long. Many high angle fractures and unit is highly broken up in places. Chilled fractured margins with units 180.2 and 183.1.

UNIT NO. 183.1, 184.2 INTERVAL(m) 1071.61 - 1077.72, 1078.16 - 1079.34 THICKNESS(m) 6.11, 1.18

INTERPRETATION Icelandite flow (incomplete)

MACROSCOPIC DESCRIPTION

Lithologic similarity suggests that units 183.1 and 184.2 are part of the same flow, cut by thin dike of unit 184.1. Unit is greenish-gray, well indurated, basalt breccia consisting of angular, massive to vesicular, clasts a few millimeters to a few centimeters across. Becomes scoriaceous below about 1073.80 m. Grades downward into more massive, grayish-green, fine-grained basalt at about 1076.50 m. Contact of dike dips about 60°. Unit 183.1 truncated at top by 181.1; unit 184.2 in depositional(?) contact with underlying flow 184.3.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 184.1 INTERVAL(m) 1077.72 - 1078.16 THICKNESS(m) 0.44

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Aphyric, fine-grained basalt with chilled margins dipping about 60°. Probably part of thicker multiple dike unit including units 185.1 and 185.3. Lies between units 183.1 and 184.2.

	184.3		1079.34 - 1079.68		0.34
UNIT NO.	185.2	INTERVAL(m)	1079.97 - 1080.01	THICKNESS(m)	0.04

INTERPRETATION Icelandite flow (incomplete)

MACROSCOPIC DESCRIPTION

Petrographic similarity indicates that these units are part of single flow cut by a thin dike (unit 185.1). Unit is gray, fine-grained, aphyric basalt (icelandite?). Unit 184.3 overlain depositionally by unit 184.2 and unit 185.2 truncated at base by unit 185.3.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

	185.1		1079.68 - 1079.97		0.29
UNIT NO.	185.3	INTERVAL(m)	1080.01 - 1080.23	THICKNESS(m)	0.22

INTERPRETATION Basalt dike (unit 185.1 complete; 185.3 incomplete)

MACROSCOPIC DESCRIPTION

Both units probably parts of 1 dike, which may also include unit 184.1. Rock is grayish-green, fine-grained, aphyric basalt with very irregular, steeply dipping chilled margins. Unit 185.1 lies between 184.3 and 185.2 and unit 185.3 lies between 185.2 and 185.4. Unit 185.3 truncated at base by dike of unit 185.4.

UNIT NO.	185.4	INTERVAL(m)	1080.23 - 1082.97	THICKNESS(m)	2.74

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Grayish-green, fine-grained, aphyric basalt with chilled margins. Lies between units 185.3 and 185.5.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 185.5 INTERVAL(m) 1082.97 - 1094.46 THICKNESS(m) 11.49

INTERPRETATION Icelandite flow (incomplete)

MACROSCOPIC DESCRIPTION

Light grayish-green, very fine-grained, very sparsely phyric icelandite. Phenocrysts 1-2%, plagioclase, clinopyroxene, opaques. Local flow folding. Rock stained red particularly along fractures in lower part. Flow in depositional contact with unit 187.1 at base; upper contact truncated by unit 185.4.

UNIT NO. 187.1 INTERVAL(m) 1094.46 - 1095.52 THICKNESS(m) 1.06

INTERPRETATION Basalt flow (incomplete)

MACROSCOPIC DESCRIPTION

Plagioclase-phyric basalt with 30 cm 'sediment' on top and 20 cm 'sediment' on bottom. Depositionally overlain by unit 185.5; lower contact truncated by chilled dike of unit 187.2. Shown in stratigraphic section as 'sediment'; unclear whether unit is weathered flow or sediment with large clast.

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REYDARFJORDUR 1978

UNIT NO. 187.2 / 187.3 INTERVAL(m) 1095.52 - 1096.90 THICKNESS(m) 1.38

INTERPRETATION Basalt dike (incomplete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt containing one large piece of basaltic breccia with vertical contact between 1095.70 and 1096.90. In stratigraphic section the slivers of basaltic breccia (unit 187.3) are shown as separate unit. Unit truncates 187.1 above and is truncated by 188.1 below.

UNIT NO. 188.1 INTERVAL(m) 1096.90 - 1146.73 THICKNESS(m) 49.83

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Grayish-green, fine- to medium-grained, aphyric basalt; locally highly brecciated and broken up along high angle fractures. Sparse plagioclase phenocrysts, 1-2%, 1-2 mm. Lower chilled contact against unit 196.1 dips at 20°; upper contact chilled against unit 187.2.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 196.1 INTERVAL(m) 1146.73 - 1151.20 THICKNESS(m) 4.47

INTERPRETATION Basalt flow (incomplete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with 'marbled' texture, grading downward into breccia at about 1148.80 m. Followed at 1149.00 m by slightly vesicular basalt. About 20 cm of basal breccia. Depositional lower contact with unit 197.1, separated by 3 cm of sediment; upper part truncated by dike of unit 188.1.

UNIT NO. 197.1 INTERVAL(m) 1151.20 - 1156.90 THICKNESS(m) 5.70

INTERPRETATION Basalt flow (complete)

MACROSCOPIC DESCRIPTION

Red, scoriaceous, flow top breccia with highly altered, vesicular clasts grading into more massive, somewhat brecciated, aphyric, microvesicular basalt at about 1153.70 m. Irregular flow banding in central part. Lies between units 196.1 and 198.1. Boundaries indistinct and somewhat arbitrary.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 198.1 INTERVAL(m) 1156.90 - 1164.86 THICKNESS(m) 7.96

INTERPRETATION Basalt flow (complete)

MACROSCOPIC DESCRIPTION

Grayish-purple, fine-grained basalt; partly brecciated and flow banded with flow contortions similar to those of overlying flow. At 1159.50 m basalt grades into massive part of flow. Brecciated lower part starts at about 1162.60 m. This lower part highly altered and crumbly. Lies between flow of unit 197.1 and clastic unit 200.1.

UNIT NO. 200.1 / 200.2 INTERVAL(m) 1164.86 - 1165.70 THICKNESS(m) 0.84

INTERPRETATION Clastic unit (incomplete) intruded by very thin dike (unit 200.2)

MACROSCOPIC DESCRIPTION

Greenish-gray, fine-grained claystone and siltstone grading into lithic tuff at about 1165.12 m. Tuff is 9 cm thick, greenish-gray, well bedded and consists of lithic fragments up to 1 cm across. Below the tuff is dark red to maroon, fine-grained bedded claystone and siltstone with some sand size fragments. Unit 200.2 is an 8-cm-thick dike composed of gray, fine-grained, aphyric basalt intruded into unit 200.1. Sedimentary unit lies between unit 198.1 and 200.3.

ICELAND RESEARCH DRILLING PROJECT

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200.3	1165.60 - 1168.20		2.60
200.5	1168.40 - 1168.72		0.32
200.7	1169.00 - 1169.80		0.80
200.9	1170.10 - 1173.50		3.40
UNIT NO. 201.2	INTERVAL(m) 1173.70 - 1173.83	THICKNESS(m)	0.13

INTERPRETATION Basalt flow (incomplete)(cut by numerous thin dikes)

MACROSCOPIC DESCRIPTION

Dark-green to grayish-green, slightly brecciated, scoriaceous flow top material to 1166.0 m, grading into highly vesicular and amygdaloidal aphyric basalt. Vesicles decrease to about 5% at base of flow. Vesicles filled with smectite/chlorite, calcite, prehnite(?) and garnet(?). Fractures present throughout, lined with smectite/chlorite, epidote, calcite and garnet(?). Dikes cut the flow at 1168.20, 1168.72, 1169.80 and 1173.45 m. Flow is overlain by sediments of unit 200.1 and rests on sediments of unit 201.3.

UNIT NO. 200.4 INTERVAL(m) 1168.20 - 1168.40 THICKNESS(m) 0.20

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled margins; lies between units 200.3 and 200.5.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 197-

UNIT NO. 200.6 INTERVAL(m) 1168.72 - 1169.00 THICKNESS(m) 0.28

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled margins; lies between units 200.5 and 200.7.

UNIT NO. 200.8 INTERVAL(m) 1169.80 - 1170.10 THICKNESS(m) 0.30

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled margins; lies between units 200.7 and 200.9.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 201.1 INTERVAL(m) 1173.45 - 1173.70 THICKNESS(m) 0.25

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled margins; lies between units 200.9 and 201.2.

UNIT NO. 201.3 INTERVAL(m) 1173.83 - 1173.87 THICKNESS(m) 0.04
201.5 1174.50 - 1174.78 0.28

INTERPRETATION Clastic unit (incomplete) (cut by dike of unit 201.4)

MACROSCOPIC DESCRIPTION

Black to dark red, fine- to coarse-grained claystone, sandstone and granule conglomerate. Lies between unit 201.2 and 201.6. Lower contact truncated by dike.

N.B. Unit 201.5 is mislabeled as 201.4 in the core.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 201.4 INTERVAL(m) 1173.87 - 1174.50 THICKNESS(m) 0.63

INTERPRETATION Basalt dike (complete)(cuts sedimentary units 201.3 and 201.5)

MACROSCOPIC DESCRIPTION

Gray, very fine-grained, aphyric basalt. Chilled margins dip about 70°, against sediments of unit 201.3 and 201.5.

N.B. This dike is misnumbered in core as unit 201.3.

UNIT NO. 201.6 INTERVAL(m) 1174.78 - 1179.45 THICKNESS(m) 4.67

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, very fine-grained to medium-grained, aphyric basalt. Upper contact chilled against unit 201.5, dips about 10°; lower contact chilled against sediment of unit 202.1, dips about 15°.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 202.1 INTERVAL(m) 1179.45 - 1182.08 THICKNESS(m) 2.63

INTERPRETATION Clastic unit (incomplete)

MACROSCOPIC DESCRIPTION

Thick, heterogeneous series of bedded, light to dark colored, silt- to sand-size tuffaceous sediments. Truncated at top by dike of unit 201.6; in depositional contact with unit 202.2.

UNIT NO. 202.2 INTERVAL(m) 1182.08 - 1193.23 THICKNESS(m) 11.15

INTERPRETATION Basalt flow (incomplete)

MACROSCOPIC DESCRIPTION

Reddish-gray, scoriaceous, flow top breccia with moderately porphyritic basalt clasts;grades downward at about 1182.35 m into greenish-gray, medium-grained, massive, porphyritic basalt. Phenocrysts 3%, plagioclase, 1-4 mm. Vesicles abundant in flow top breccia, sparse elsewhere, filled with smectite/chlorite, calcite and zeolite. In general, flow rather massive and homogeneous. Steeply dipping fractures common near dike contact. Flow banded between 1192.70 and 1193.23 m. Overlain depositionally by unit 202.1; lower contact truncated by dike of unit 204.1.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 204.1 INTERVAL(m) 1193.23 - 1220.32 THICKNESS(m) 27.09

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Grayish-green, sparsely phyric, fine-grained basalt. Phenocrysts 1-2%, plagioclase, 1-2 mm. Vesicles 1%, filled with zeolite, calcite, smectite/chlorite. Pyrite disseminated throughout. Generally massive and uniform. Upper margin chilled against unit 202.2; lower margin chilled against unit 209.1; contacts dip about 70°.

UNIT NO. 209.1 INTERVAL(m) 1220.33 - 1225.80 THICKNESS(m) 5.47
210.2 1228.20 - 1230.25 2.05

INTERPRETATION Icelandite(?) flow (incomplete)

MACROSCOPIC DESCRIPTION

Units 209.1 and 210.2 are interpreted as parts of single flow intruded by dike of unit 210.1. Flow is greenish-gray, fine-grained, aphyric basalt or icelandite. Upper part to about 1224.90 m is scoriaceous flow top breccia, highly vesicular, highly altered, and crumbly. Massive zone extends to about 1129.62 m with lower part of flow brecciated. Epidote abundant in breccia matrix and amygdules. Fractures lined with smectite/chlorite, calcite, zeolite, epidote, and garnet(?). Upper margin truncated by unit 204.1; lower contact rests depositionally on clastic unit 211.1.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 210.1 INTERVAL(m) 1225.80 - 1228.20 THICKNESS(m) 2.4

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Greenish-gray, fine- to medium-grained, aphyric, generally massive basalt. Pyrite disseminated throughout. Chilled upper and lower contacts dip 20-30°; rock at contacts partly altered to smectite/chlorite. Intruded between units 209.1 and 210.2.

N. B. In core photographs boxes 211, 212, 213 should be relabelled to 210, 211, and 212, respectively.

UNIT NO. 211.1 INTERVAL(m) 1230.25 - 1234.73 THICKNESS(m) 4.48

INTERPRETATION Clastic unit (complete)

MACROSCOPIC DESCRIPTION

Dominantly dark, unusually thick, fine-grained, well-bedded tuffaceous silt and sandstone with a few 10-20-cm-thick layers of coarser material. Depositional contacts; lies between units 210.2 and 211.2.

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REYDARFJORDUR 1978

UNIT NO. 211.2 INTERVAL(m) 1234.73 - 1241.30 THICKNESS(m) 6.57

INTERPRETATION Basalt flow (complete)

MACROSCOPIC DESCRIPTION

Greenish-gray, fine- to medium-grained, plagioclase-phyric basalt. Highly vesicular at top. Pervasive alteration to greenish-gray smectite/chlorite. Lies between clastic units 211.1 and 213.1 with depositional contacts.

UNIT NO. 213.1 INTERVAL(m) 1241.30 - 1241.50 THICKNESS(m) 0.20

INTERPRETATION Clastic unit (complete)

MACROSCOPIC DESCRIPTION

Brown, bedded siltstone and sandstone, highly tuffaceous. Lies between units 211.2 and 213.2 with depositional contacts.

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	213.2		1241.50 - 1242.02		0.52
	213.4		1242.22 - 1243.16		0.94
	213.6		1243.26 - 1248.22		4.96
	214.2		1248.25 - 1251.70		3.45
UNIT NO.	214.4	INTERVAL(m)	1252.50 - 1256.92	THICKNESS(m)	4.40

INTERPRETATION Basalt flow (incomplete) (intruded by 4 thin dikes)

MACROSCOPIC DESCRIPTION

Because of petrographic similarity these units are interpreted as parts of a single flow cut by a series of thin dikes (units 213.3, 213.5, 214.1, 214.3). Unit is grayish-green, amygdaloidal, fine-grained, aphyric basalt becoming sparsely plagioclase phyric in middle part. Lower part again aphyric. Somewhat brecciated and vesicular near basal contact. Vesicles filled with smectite/chlorite, epidote, and minor calcite. Alteration variable, rock often soft and crumbly. Plagioclase phenocrysts partly replaced by calcite and epidote. Top of flow underlies clastic unit 213.1 and base of flow truncated by dike of unit 215.1.

UNIT NO. 213.3 INTERVAL(m) 1242.02 - 1242.22 THICKNESS(m) 0.20

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, very fine-grained, aphyric basalt with chilled margins; lies between units 213.2 and 213.4.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 213.5 INTERVAL(m) 1243.16 - 1243.26 THICKNESS(m) 0.10

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Dark gray, fine-grained, aphyric basalt with chilled margins; lies between units 213.4 and 213.6.

UNIT NO. 214.1 INTERVAL(m) 1248.22 - 1248.25 THICKNESS(m) 0.03

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Dark gray, fine-grained aphyric basalt with chilled margins; lies between units 213.6 and 214.2.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 214.3 INTERVAL(m) 1251.70 - 1252.50 THICKNESS(m) 0.8

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Black, very fine-grained basalt with small plagioclase phenocrysts. Chilled margins; lies between units 214.2 and 214.4.

UNIT NO. 215.1 INTERVAL(m) 1256.92 - 1277.10 THICKNESS(m) 20.18

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Grayish-green, fine-grained, aphyric basalt. Moderately to highly fractured with smectite/chlorite on fracture surfaces. Disseminated pyrite throughout. Upper and lower margins chilled; lies between units 214.4 and 219.1.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 214.3 INTERVAL(m) 1251.70 - 1252.50 THICKNESS(m) 0.80

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Black, very fine-grained basalt with small plagioclase phenocrysts. Chilled margins; lies between units 214.2 and 214.4.

UNIT NO. 215.1 INTERVAL(m) 1256.92 - 1277.10 THICKNESS(m) 20.18

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Grayish-green, fine-grained, aphyric basalt. Moderately to highly fractured with smectite/chlorite on fracture surfaces. Disseminated pyrite throughout. Upper and lower margins chilled; lies between units 214.4 and 219.1.

ICELAND RESEARCH DRILLING PROJECT

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219.1	1276.46 - 1276.72		0.26
219.3	1277.10 - 1280.60		3.50
219.5	1280.70 - 1280.85		0.15
219.7	1280.95 - 1281.50		0.55
219.9	1281.55 - 1282.80		1.25
UNIT NO. 220.2	INTERVAL(m) 1283.60 - 1284.09	THICKNESS(m)	0.49

INTERPRETATION Compound basalt flow (incomplete) (cut by 5 small dikes)

MACROSCOPIC DESCRIPTION

Gray, medium-grained, aphyric, spotted, massive, practically non-vesicular basalt. Fractures common, lined with smectite/chlorite, dip 60-70°. Sparse veinlets dip 30 and 60°, filled with calcite or smectite/chlorite. Rock typically mottled with white spots, 2-5 cm across, in dark matrix. Grain size relatively coarse compared to other flows ; somewhat finer grained in unit 219.1 and in fragments between units 219.9 and 220.2. Vesicles less than 1%, 1-10 mm in diameter, filled with black smectite/chlorite. Units thought to be part of one flow based on overall texture, homogeneity and thinness of intrusive bodies cutting the sequence. Unit 220.2 is somewhat coarser-grained and massive than other units but is included because of sparse vesicles and similarity of overlying units. Mega-unit lies between unit 215.1 and unit 220.3 and is truncated top and bottom by dikes.

UNIT NO. 219.2 INTERVAL(m) 1276.72 - 1277.10 THICKNESS(m) 0.38

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled top and bottom contacts. Lies between units 219.1 and 219.3.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 219.4 INTERVAL(m) 1280.60 - 1280.70 THICKNESS(m) 0.10

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled top and bottom contacts.
Lies between units 219.3 and 219.5.

UNIT NO. 219.6 INTERVAL(m) 1280.85 - 1280.95 THICKNESS(m) 0.10

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled top and bottom contacts.
Lies between units 219.5 and 219.7.

ICELAND RESEARCH DRILLING PROJECT

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UNIT NO. 219.8 INTERVAL(m) 1281.50 - 1281.55 THICKNESS(m) 0.05

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Gray, fine-grained, aphyric basalt with chilled top and bottom contacts. Lies between units 219.7 and 219.9.

UNIT NO. 220.1 INTERVAL(m) 1282.80 - 1283.60 THICKNESS(m) 0.80

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Dark gray, fine-grained, aphyric, homogeneous, non-vesicular basalt. Internal fractures common, some coated with calcite and zeolite. Upper chilled contact dips 50° against unit 219.9; lower chilled contact dips 60-70° against breccia of unit 220.2.

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UNIT NO. 220.3 / 220.5 INTERVAL(m) 1284.10 - 1285.58 / 1285.61 - 1286.90 THICKNESS(m) 1.48 / 1.29

INTERPRETATION Basalt dike (incomplete) (cut by thin dike of unit 220.4)

MACROSCOPIC DESCRIPTION

Light gray, fine-grained to medium grained, slightly phyric basalt. Grain size increases from upper and lower chilled contacts toward center of unit. Plagioclase phenocrysts 1-2%, 1-3 mm. Mottled texture with irregular dark spots less than 2 mm acrosss in light colored matrix. Finely vesicular, vesicles filled with green smectite/chlorite. Fractures dip up to 40°, common, filled with carbonate and zeolite. Upper contact chilled against unit 220.2, subhorizontal; lower chilled contact dips 60-70° against unit 220.6. Five-cm-thick chilled zone at base with subparallel vesicle bands.

UNIT NO. 220.4 INTERVAL(m) 1285.58 - 1285.61 THICKNESS(m) 0.03

INTERPRETATION Basalt dike (complete)(cuts dike of units 220.3 and 220.5)

MACROSCOPIC DESCRIPTION

Dark gray, fine-grained, aphyric basalt with top and bottom chilled margins.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 220.6 INTERVAL(m) 1286.90 - 1287.10 THICKNESS(m) 0.20

INTERPRETATION Clastic unit (incomplete)

MACROSCOPIC DESCRIPTION

Medium red in upper part to blackish-red in lower part, fine grained sediment containing more than 50% lensoid, vesicular, lapilli-size fragments whose outlines become very fuzzy upwards. Fine-grained matrix increases from less than 10% in lower part to more than 50% in upper part. Lies between units 220.5 and 220.7; top contact dips about 70°; basal contact subhorizontal. Unit interpreted as sedimentary interbed, but could possibly be flow top of underlying unit with some airfall or epiclastic ash, baked by overlying intrusion. Evidence for latter interpretation is large grain size, gradational contact with underlying unit, and presence of similar red, fine-grained matrix between larger lapilli in underlying thick flow top breccia.

UNIT NO. 220.7 INTERVAL(m) 1287.10 - 1306.66 THICKNESS(m) 19.56

INTERPRETATION Icelandite flow (complete)

MACROSCOPIC DESCRIPTION

Dominantly light gray, fine- to medium-grained, homogeneous, practically aphyric, non-vesicular icelandite. Scoriaceous flow top breccia to 1289.00 m, dominantly violet colored lapilli-size fragments set in a fine-grained red matrix which makes up about 10%. Vesicles filled with zeolite and epidote. From 1289.00 to 1291.00 m is brecciated basalt with light gray 'lava' matrix and indistinct reddish-bluish fragments, commonly with subvertical interfingering relations and indistinct contacts. From 1291.00 to 1305.90 m massive greenish-gray, fine-grained icelandite with irregular to vertical or subhorizontal vesicle sheets or zones. Flow banding common, wavy, dips subhorizontal to 60°. Fractures sparse, range from hair line to 1 cm wide, subvertical to horizontal. Thick veins at 1292.60, 1296.70 and 1291.30 m filled with zeolite and silica with minor calcite. From 1305.90 to 1306.66 is breccia consisting of dense to moderately vesicular, irregular fragments up to 20 cm across, becoming smaller and less abundant near base of flow. Breccia matrix reddish, fine-grained. Lies between units 220.6 and 224.1 with subhorizontal, depositional contacts.

ICELAND RESEARCH DRILLING PROJECT

REYDARFJORDUR 1978

UNIT NO. 224.1 INTERVAL(m) 1306.66 - 1306.75 THICKNESS(m) 0.09

INTERPRETATION Clastic unit (complete)

MACROSCOPIC DESCRIPTION

Reddish-brown, bedded sediment with lapilli-size vesicular clasts up to 1 cm across. 1-cm-thick layer of ash-size material. Some layers well sorted some poorly sorted. Lapilli in upper part flattened (fused by overlying lava flow?). Vesicles in clasts filled with bluish-green smectite/chlorite. Top contact subhorizontal, depositional with unit 220.7; basal contact dips 45°, shows slickensides on smectite/chlorite, may be small fault. Underlying unit is 224.2.

UNIT NO. 224.2 INTERVAL(m) 1306.75 - 1311.30 THICKNESS(m) 4.55

INTERPRETATION Basalt flow (complete)

MACROSCOPIC DESCRIPTION

Highly vesicular, amygdaloidal basalt with many changes in color, grain size, texture and vesicularity. At least two flow units present:
a) 1306.75 - 1308.15 m: Top part to 1307.10 is breccia with scoriaceous clasts up to 10 cm across, vesicles filled with bluish-green smectite/chlorite and zeolite. Grades into grayish-green, medium grained basalt with 10-20% vesicles; vesicles irregular to round, less than 2 mm across, filled with green smectite/chlorite, carbonate and some chalcedony.
b) 1308.15 - 1311.30 m: Heterogeneous zone of reddish-gray (to 1309.30 m) or grayish-green (below 1309.30 m) medium-grained, highly vesicular basalt, brecciated in upper part and massive in lower two-thirds. Possibly consists of 2 or 3 flow units. Feldspar microlites are up to 2 mm, mostly in lower part. Vesicles up to 30%, filled with carbonate, zeolite and green smectite/chlorite in upper part and chalcedony in lower part.
Fractures in both subunits irregular. Unit lies between 224.1 and 225.1, contacts depositional. 3-4-cm-thick tuff layer at base is interpreted as fused tuff.

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UNIT NO. 225.1 INTERVAL(m) 1311.30 - 1317.55 THICKNESS(m) 6.25

INTERPRETATION Complex basalt flow with thin tuff layers (complete)

MACROSCOPIC DESCRIPTION

Compound basalt flow with 5 subunits with generally indistinct boundaries.
a) 1311.30 - 1313.53 m: Upper 80 cm greenish, very vesicular sparsely phyric basalt grading into less vesicular, medium-grained, mottled part of flow. Plagioclase microphenocrysts 1%, olivine microphenocrysts 1%. Vesicles up to 40%. Contact with underlying subunit defined by decreasing grain size and vesicularity and color change.
b) 1313.53 - 1314.33 m: Reddish, highly vesicular basalt becoming finer-grained and less vesicular towards base. Abundant olivine and plagioclase microphenocrysts.
c) 1314.33 - 1315.40 m: Grayish-red, highly vesicular basalt with 40-cm-thick layer of massive basalt at base.
d) 1315.40 - 1315.83 m: Highly vesicular basalt similar to that of subunit c.
e) 1315.83 - 1317.55 m: Massive greenish-gray, basalt similar to that of unit a. Fractures occur throughout flow, usually lined with zeolite(?). Feldspar-rich 1-cm-thick layers of air fall tuff(?) separate subunits b and c and c and d. Vesicles filled with green smectite/chlorite, zeolite, silica and minor calcite. Epidote occurs in central part of unit. Depositional contacts top and bottom; lies between units 244.2 and 226.1.

UNIT NO. 226.1 INTERVAL(m) 1317.55 - 1332.60 THICKNESS(m) 15.05

INTERPRETATION Basalt flow (complete)

MACROSCOPIC DESCRIPTION

Unit consists of 2 sub-units with indefinite boundary.
a) 1317.55 - 1327.60 m: Reddish-gray, fine-grained, aphyric scoriaceous breccia to brecciated lava to 1320.30 m, becoming increasinly greenish-gray and coarsely vesicular downward; some vesicles 0.5 to 1 cm in diameter between 1320.80 and 1321.50 m. Basalt is reddish-gray, finer-grained and less vesicular in lower part. Sparse sub-vertical hair-line to 0.5-cm-wide fractures filled with smectite/chlorite and zeolite(?). Smectite common in highly vesicular central part of subunit.
b) 1322.60 - 1332.60 m: Fine-grained top with small vesicles, gradually increasing to medium grain size; highly mottled, subophitic rock with 1-2 mm spots in green background. Olivine microphenocrysts less than 1%, less than 1 mm, altered to hematite(?). Lower 1-2 m of subunit is fine-grained and grayish-green. Flow banding in upper half of subunit. Top and bottom contacts depositional; lies between units 225.1 and 228.1.

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UNIT NO. 228.1 INTERVAL(m) 1332.60 - 1335.48 THICKNESS(m) 2.88

INTERPRETATION Basalt flow (complete)(similar to unit 226.1)

MACROSCOPIC DESCRIPTION

Olivine basalt with 20-cm-thick layer of fine-grained, reddish-gray material at top, followed by 20 cm of highly vesicular basalt which grades downward into greenish-gray, massive basalt with gradually increasing grain size. Vesicles in middle zone 10-30%, 1-4 mm , filled with calcite. Bulk of flow medium-grained, mottled basalt with subophitic texture. A few large vesicles up to 1 cm in this zone. Olivine microphenocrysts to 2 mm, subhedral, altered to hematite(?). Basal 30 cm of flow is light gray to reddish-gray, brecciated basalt. Fractures very sparse. Unit lies between 226.1 and 229.1 with depositional contacts. Upper contact gradational and somewhat arbitrary, based mainly on color and grain size change. Basal contact marked by 4-cm-thick dark brown clastic unit. Flow probably from same source as overlying thick flow, but a distinct cooling unit separated by a time break of a few years(?).

UNIT NO. 229.1 INTERVAL(m) 1335.48 - 1344.75 THICKNESS(m) 9.27

INTERPRETATION Basalt flow (complete)

MACROSCOPIC DESCRIPTION

Unit consists of three parts distinguished by color, texture, and vesicularity.
a) 1335.48 - 1337.90: Red, slightly scoriaceous, flow top breccia with large irregular vesicles up to 2 cm; vesicles filled with green smectite/chlorite and carbonate in lower part. Basalt is fine- to medium-grained.
b) 1337.90 - 13344.45m: Typically mottled, greenish-gray, medium- to relatively coarse-grained, massive basalt with minor altered olivine crystals in groundmass. Mottling consists of white spots up to 2 mm across in dark matrix. Vesicles up to 10%, 1- 10 mm, round, filled with green smectite/chlorite except between 1341.00 and 1342.30 m where calcite predominates. Large calcite vein, about 1 cm across, at 1338.35 m. Fractures rare except in lower part where they dip 10-20°. Flow banding locally present.
c) 1344.45 - 1344.75 m: Gray, fine-grained basalt with pronounced flow banding, dipping 10-20°.
Unit lies between 228.1 and 230.1; upper contact depositional, dips about 30-40°; basal contact irregular, depositional(?). Flow is part of series of olivine-bearing flows with coarse-grained, subophitic textures.

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UNIT NO. 230.1 INTERVAL(m) 1344.75 - 1348.15 THICKNESS(m) 3.40

INTERPRETATION Basalt flow (complete)

MACROSCOPIC DESCRIPTION

Dominantly gray, fine- to medium-grained, highly brecciated and altered basalt consisting entirely of slightly vesicular clasts 1-15 cm across. Possibly several flow units present. Top 60 cm have abundant, finely disseminated epidote, large vugs filled with zeolite; vesicles and veinlets in lower part dominantly filled with calcite and some zeolite. Rock soft and crumbly between 1345.35 and 1345.80 m and between 1346.20 and 1346.30 m. Smectite/chlorite present throughout. Fractures common, highly irregular, lined with smectite/chlorite. Lies between units 229.1 and 231.1; upper and lower contacts irregular, subhorizontal.

UNIT NO. 231.1 INTERVAL(m) 1348.15 - 1348.45 THICKNESS(m) 0.30

INTERPRETATION Clastic unit (complete)

MACROSCOPIC DESCRIPTION

Brick red, bedded clastic material ranging from silt to lapilli size. Bedding on cm scale. Irregular mm-size vesicles concentrated in bands, probably in clasts. Interpretation of unit uncertain because clasts difficult to define. Probably clasts are large and unit may be part of flow top of underlying unit rather than separate pyroclastic or epiclastic unit. Lies between units 230.1 and 231.2; top and bottom contacts irregular, horizontal, depositional.

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UNIT NO. 231.2 INTERVAL(m) 1348.45 - 1351.74 THICKNESS(m) 3.29

INTERPRETATION Basalt flow (incomplete)

MACROSCOPIC DESCRIPTION

Fine- to medium-grained basalt ranging from brick red in top half to gray at base. Entire unit made up of 1-20 cm scoria fragments ranging from finely to extremely vesicular, with degree of vesicularity decreasing downward. Carbonate, zeolite and smectite/chlorite common in vesicles. Fractures common, irregular. Unit lies between 231.1 and 231.3. Top contact poorly defined, but subhorizontal, depositional(?); lower contact dips 20°, truncated by dike.

UNIT NO. 231.3 INTERVAL(m) 1351.74 - 1357.79 THICKNESS(m) 6.05

INTERPRETATION Basalt dike (complete)

MACROSCOPIC DESCRIPTION

Light gray in upper and lower parts, greenish-gray in central part. Fine- to medium-grained, aphyric, homogeneous, rather fresh basalt. Grain size increases from chilled margins toward center of unit. Fractures dip 0-10° and 45-60°, some lined with calcite and/or epidote and/or chlorite/smectite. Unit lies between 231.2 and 232.1. Upper contact dips 10-20°; lower contact dips 50°; both intrusive with chilled zone. Slice of country rock between 1353.20 and 1353.80 m is fine-grained, amygdaloidal scoriaceous breccia; amygdules filled with carbonate and smectite/chlorite; probably slice is part of overlying basalt flow.