DATE: 6 August 1984 SAMPLE:
CRUISE ID: SO 33 17 DK box dredge
LOC: II
AREA: B

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire on
ON BOTTOM =	1816	9°40.8916	162°11.0632	2706	3000
OFF BOTTOM =	2002	9°41.7736	162°10.4810	2003	2104

RECOVERY WEIGHT = total 100 kg crust 5 kg

CRUST THICKNESS = ~ 0.5 cm
1 generation

SUBSTRATE = hyaloclatic breccia, basalt, altered trachyte, carbonate sediment

COMMENTS: Some highly polished areas on the crust, different than seen before (biogenic coating?)

* 1 microbio sample

Rock Type:	Basalt (AOB), I, massive	Basalt (AOB?) Breccia I	Basalt (AOB?) II (Breccia I also)
Color:	(glassy rind) moderate brown (5YR 3/4) (interior) ~~grayish~~-brown (5YR 3/2)	→ do.	Medium gray (N5) to dark gray (N3) →
Texture:	Subaphyric, hyalopilitic subtraclytic	→ -do-	Aphyric intersertal (?)
Phenocrysts:	Plagioclase – ±2mm, <1% Olivine – ±3mm, <1%	not observed	not observed
Groundmass:	(not resolved) (glass? plagioclase? olivine?)	→ -do- not resolved glass!	not resolved. → looks glassy
Vesicles:	irregular, rare ±1%, ±1 mm (rare in dense part. areas of high vesiculation in palagonitized cores.)	→ -do- ± 0.5 mm round - irregular	absent (N3) → ±20% (N5) irregular, ±1 mm dia.
Alteration:	Fe-stage Oxidation, zeolitization, smectitization, hydration	→ -do-	looks very fresh altered peripherally (±2-3 mm) to $Fe(OH)_3$, smectite (weathering?) zeolite
Remarks:	Subrounded clasts up to boulder size, showing much evidence of hydrothermal activity (vesicles having gas cavities, fracture fills $Fe(OH)_3$ - goethite deposits on fracture fills, indicate alteration of glass ferromagnesians to goethite $Fe(OH)_3$; of special interest are pillow basalt fragments likely in a hard, glassy displaying former chilled margins and rx'tll phenocrysts; these admixed with hyaloclastic breccia; ±1 mm thick coating of ~~black~~ γ-MnO_2	→ -do-	subangular to subrounded clasts of very irregular shape (probably most-frequent) rounded to subrounded to subangular coarse sand to small pebbles component of a altered AOB? breccia. appears to be a later-formed reva. one piece is altered (weathered?) peripherally to moderate brown (5YR 3/4) to a depth of 2-3 mm with thin (±1 mm) layer of crustal γ-MnO_2 coated →
Current weak sorting Grain size range Grain shape porosity permeability		very pale yellowish-orange 10YR 8/4 phosphorized coral ooze/calcite (same rock) moderately poorly sorting ± 5 mm subangular - subrounded ±15% ±5%	

SO33 17DK1 SO33 17DK2 SO33 17DK3

SO33 17DK4

Rock Type: Basalt AOB? Breccia III

Color: Dark gray (N3) to Brownish-gray (5YR 4/1)

Texture: clastic

Matrix: Aphanitic, glassy basaltic rock debris

Cement: calcareous ooze(?) or calcite, perhaps phosphorized, smectite?, zeolites

Avge grain size: ± 5 mm

Sorting: very poorly sorted

Alteration: appears to be superficial since lithification (zeolitization)

Grain Shape: Angular to subrounded.

Porosity: ± 15% (?)

Permeability: ± 10% (?)

Remarks: Quite different material from anything else (breccia) in the dredges from this seamount; brown basalt fragment component probably older, remobilized, redeposited in a turbidite-like deposit with younger, a[illegible] altered chemically if not mechanically clastic debris from another volcanic source (?)

Basalt (AOB?) Breccia IV

SO33 17DK5

Brownish-black (5YR 2/1) to deeply yellowish-brown (10YR 2/2) to pale grayish-orange (10YR 7/2) to light brown (5YR 6/4) (phosphorite) } basalt fragments

— do —

— do —

phosphorite colored with FeOH(?) includes, locally, some small (≤ 1mm dia) basaltic fragments

Small pebbles (2-4 cm) poorly sorted

(basalt) intense oxidation, hydration, zeolitization? smectitization (carbonate ooze cement) probably complete alteration to phosphorite

angular to subangular

± 10%

± 10%

Apparently breccia made of larger clasts fragments of basalt (AOB?) massive I; look glassy, general aphanitic, some are somewhat finely vesicular/amygdalar; thick (± 1cm) phosphorite cement between clasts generally colored pastel shades of orange, brown by included or staining FeOH(?) covered with a few mm thick layer of carbonate α-MnO_2(?) which reflects the rough relief of the outcrop substrate

Rock Type: Volcanogenic(?) Siltstone SO33 17DK6

Color: Light olive gray (5Y 5/2)

Texture: clastic

Matrix: basaltic glass shards - 50 ?% ±0.25 smectite/zeolite? - 30%; basaltic rock fragments - 20 ?% ±0.25

Cement: smectite (nontronite(?)) zeolites (?)

Avge grain size: 0.05 mm (?)

Sorting: moderately well-sorted

Alteration: purification by Fe & Mn (OH) phases, Intense smectitization

Grain Shape: equant - rounded to angular

Porosity: ± 30 ?%

Permeability: ± 25%

Remarks:

faintly bedded, flattened clasts; apparently a fine, gritty sedimentary, semi-indurated rock, large clay component (nontronite?) crude softness and in parts greenish color, perhaps a past cement has resulted from devitrification of basaltic glass shard component; well-sorted nature of matrix material indicates some degree of working by currents(?); fractures coated by and serve as penetration points for remobilized(?) Fe & Mn(OH) phases (some pieces are coated with ±5 mm of α-MnO_2?)