DATE: 22 August 1984 SAMPLE:
CRUISE ID: SO 33 66 DK
LOC: VII
AREA: E

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire o
ON BOTTOM =					
OFF BOTTOM =					

RECOVERY WEIGHT =

small recovery, 1 boulder and 1 sponge

CRUST THICKNESS =

SUBSTRATE =

COMMENTS:

* Bio sample (plastic bag)

66DK

SO33 65 GTV1	SO33 66 DK1
Rock Type: Tholeiitic(?) basalt	Basalt Scoria (AOB?)
Color: Brownish-gray (5YR 4/1)	→ do —
Texture: Aphyric; hyalopilitic	Sub-aphyric; ~~intersertal~~
Phenocrysts: rare clinopyroxene (augite?)	Olivine ±3% ± 1mm dia. ~~rare~~ Augite(?) <<1% ± 1mm dia.
Groundmass: Glass microlites? (not determined)	Groundmass: plagioclase, olivine, clinopyroxene, glass, opaques (not determined)
Vesicles: % (great variability from place to place) ± 20% Size: (locally very small) ± 0.30mm Shape: round Filling: empty (lined w smectite) another set: voids between Aa fragments, ±1 mm dia, ± 15%; filled with phosphorite	Vesicles: % ±50% Size: ±2mm dia. Shape: round filling: empty (zeolite lining) (phosphorite filling the upper contact exposed ves.)
Alteration: moderate: (oxidation, zeolitization, smectitization) → —do—	
Remarks: fragments dislodged from outcrop by dredge, bear ±8mm thick layer of ferromanganese oxide; rock appears to be a Aa-type flow with broken rock rubble included in the flow with numerous openings between the incorporated fragments	Recovery from this dredge was small, with only a few small fragments of substrate rock recovered; ~~the~~ one of the basalt fragment recovered may be a bomb fragment or flow top fragment (probably latter). One side of it still retains a fragment of orange phosphorite with phosphorite filling the vesicles on the exposed basalt surface beneath. no ferromanganese crust observed. very fresh basalt compared to other fragments recovered, though compositions appear to be related.

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Rock Type: Basalt (AOB?) Volcanogenic Breccia

Texture: clastic

Color: Moderate Brown (5YR 3/4) to white (N9)

Phenocrysts: Augite(?) ± 2% } in the glass
olivine ± 1%

Cement: chalk and phosphorized chalk ± 55%

Matrix: } palagonite(?) fragments ± 45%

Vesicles: % > 50% (?) (very small, rock body decomposed)
Size: < 0.50 mm
Shape: round
filling: Calcite, zeolites

Sorting: extremely poorly-sorted

Alteration: complete (Oxidation, zeolitization, hydration, smectitization, carbonation)

Average grain size: 2 cm? [range: 1mm – 5cm(?)]
" grain shape: Angular

Remarks: few fragments probably representing totally altered chilled (glassy) margin material (rind) from quick-cooled basalt — very similar to 66 DK 1 chilled margin material; pieces have adhering breccia made of glass rind pieces cemented with phosphorite. Some pieces have thin (probably abraded for the most part) ferromanganese deposits on them. One piece of crust has pieces of the palagonite adhering – perhaps this is dislodged crust material

* very likely derived from it – ~~one piece~~ finely cuspate, dendritic grades downward into a very altered amygdaloidal (spherical) amygdules same size as those in 66DK1

Porosity: ± 85%

Permeability: ± 80%

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chalk – Phosphorite

granular

Moderate orange pink (10R 7/4)

Matrix: Calcareous foraminifera

Cement: phosphorite (francolite?)

Avge grainsize: ± 0.50 mm
" shape: round

Sorting: moderately well-sorted

Porosity: ± 60%

Permeability: ± 30%

Alteration: complete (?) to partial (comparation of the phosphorite varies from place to place — phosphorization and infiltration to $FeOH_3$?)

Remarks: fragment with 66DK2-like material adhering to the under? side; ~~perhaps was part of a much larger bed of phosphorite separating volcanic [illegible]~~ * ferromanganese (now missing) depo.

* more likely serves as cement for volcaniclastic material of 66DK2 (similar, resting on devitrified palagonite glassy material, incorporating clasts of same material)

4

Rock Type: Basalt (AOB?), Vesicular

Color: Moderate yellowish-brown (10YR 5/4) to Dark yellowish-brown (10YR 4/2) to Light brown (5YR 5/6)

Texture: Intergranular (?)

Phenocrysts: Olivine, ±5%, ±1mm dia.
(dark green) Pyroxene, ±3%, ±0.75 mm dia.
Plagioclase, <1%, ±1mm dia.
(most not glomerophyric, but px does ophitically overgrown some ol)

Groundmass: as above, ol ~ 35%
px ~ 35%
pc ~ 20%
op ~ 1%

Vesicles: ±20%
±1mm dia.
round-to-oval, coalescing.
calcite linings, fillings, ±35% filled

Alteration: extensive (oxidation, argillation (smectite), hydration, zeolitization(?), carbonation(?))

Remarks: pebble-size chips of loose basalt (no adhering sedimentary matrix either); may be the same material as 66 DK 1, but looks considerably different (much more altered, different vesicularity, more groundmass px, ol; cross-cut by veinlets of calcite; appear to be shearings of upper, altered surface of basalt (upper surface is almost sublaterized; Mnoxide coating remnants preserved in vesicle hollow - main deposited abraded?

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Basalt (AOB?) Hyaloclastite

grayish orange (10YR 7/4) to Light brown (5YR 5/6)

Pyroclastic (?)

(matrix): AOB(?) shards, intraclasts ±90%

(Cement): zeolites, smectite, ±10%

(Average Grain size): ±3mm (range: sand - coarse gravel)

(" " shape): Subangular

Sorting: very poorly-sorted

Porosity: ±80%

Permeability: ±30%

Alteration: complete (?) (Argillation (smec...), oxidation, zeolitization(?), hydration

Remarks: small pebble-size clasts of bleached-looking hyaloclastite - one piece, darker than the rest appears to be a fragment of sheared-off (AOB?) palagonitized froth from a surface contact with adhering hyaloclastite like that observed in 64 DK 1; another piece bears a thin (±1mm) crust of dense, vitreous, botryoidal, 1 generation, dendritic ferro-manganese.