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
ON BOTTOM =		15°35'50"	169°12'53"	1536	
(uncorrected) OFF BOTTOM =		15°35'59"	169°12'38"	1282	
mean dredge data (corrected):		15°35'41"	169°12'52"	1432 (783 fm)	

RECOVERY WEIGHT:

small recovery, 1 boulder and 1 sponge

CRUST THICKNESS:

SUBSTRATE:

COMMENTS:

* Bio sample (plastic bag)

66DK

Sample Description

Cruise I.D: So 33

Sample I.D: Sta: 65 GTV, 66 DK Location: "Keli" Ridge area

15° 35' 41" N
169° 12' 52" W
(-)1432 m.

Size: _____ Weight: _____

Mn crust thickness:

Total: min: _____ max: _____ ave: _____

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: _____

Internal structure: _____

layered: _____
laminated: _____
massive: _____
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: _____

Description: _____

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:

65GTV1

Rock Type: Tholeiitic(?) basalt

Color: Brownish-gray (5Y 4/1)

Texture: Aphyric; hyalopilitic

Phenocrysts: rare clinopyroxene (augite?)

Groundmass: Glass
microlites? (not determined)

Vesicles: % (great variability from place to place) ± 20%

Size: (generally very small) ± 0.30 mm

Shape: round

filling: empty (or lined w smectite)

another set: voids between Aa fragments, ± 1 mm dia, ± 15%; filled with phosphorite

Alteration: moderate: (oxidation, zeolitization, smectitization)

Remarks: fragments dislodged from out crop by dredge, bear ± 8 mm thick layer of ferro manganese oxide; rock appears to be a Aa-type flow with broken rock rubble included in the flow with numerous openings between the incorporated fragments

66DK1

Basalt Scoria (AOB?)

→ do –

Sub-aphyric; intersertal

Olivine ± 3% ± 1 mm dia.
~~rare~~ Augite(?) << 1% ± 1 mm dia.
Groundmass: plagioclase, olivine, clinopyroxene, glass, opaques } (not de

Vesicles: % ± 50%

Size: ± 2 mm dia.

Shape: round

filling: empty (zeolite linin
(phosphorite filling the upper contact expose

→ do –

Recovery from this dredge was small, with only a few small fragments of substrate rock ~~recovered~~; ~~the~~ one of t bas fragment recovered may be a bomb fragm flow top fragment (probably latter); one side it still retains a fragment of orange phosp with phosphorite filling the vesicles on the exposed basalt surface beneath; no fer manganese crust observed; very fresh ba compared to other fragments recovered, compositions appear to be related.

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Sample Description

Cruise I.D: S033

Sample I.D: Sta: 66DK

Location: "Kelli" R.dg

15°35'41"N
169°12'52"W
(−) 1432 m.

Size: _____ Weight: _____

Mn crust thickness:

Total: min: _____ max: _____ ave: _____

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: _____

Internal structure: _____

layered: _____
laminated: _____
massive: _____
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: _____

Description: _____

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:

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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 badly 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 quickly-cooled basalt — very similar to 64DK1 chilled margin material. pieces have adhering breccia made of glass rind pieces cemented w/ 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 if finely cuspate, dendritic

Very likely

* derived from it – ~~one piece~~ grades down ward 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 (composition of the phosphorite varies from places to place — phosphorization and infiltration by $Fe(OH)_3$ (?))

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

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

Sample Description

Cruise I.D: So 33

Sample I.D: Sta: 66 DK

Location: "Keli" R. dg
15° 35'41" N
169° 12'52" W
(−) 1432 m.

Size: _____ Weight: _____

Mn crust thickness:

Total: min: _____ max: _____ ave: _____

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: _____

Internal structure: _____

layered: _____
laminated: _____
massive: _____
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: _____

Description: _____

Mineralogy (XRD): _____

Analyses and subsamples:

analysis:	analyst:

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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%
±1 mm 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?

was the guyot top volcano an island? - prob.!

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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(?), hydra

Remarks: small pebble-size clasts of bleached-looking hyaloclastite - one piece, darker than the rest appears to be a fragment of sheared-(AOB?) palagonitized froth from a surfa 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.