DATE: 19 August 1984 SAMPLE:
CRUISE ID: SO 33 54 GTV TV Grab
LOC: VII
AREA: E

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire ou
ON BOTTOM =	0953				
OFF BOTTOM =	1015				

RECOVERY WEIGHT = total 100 kg crust 10 kg

CRUST THICKNESS = 0.5 - 2 cm Avg = .7 cm

SUBSTRATE = hyaloclastite → 2 large round crust covered boulders
Largest boulder = (60 × 40 × 30 cm)

COMMENTS:
GTV damaged (battery case bumped). Also, didn't close completely because large boulder caught in its jaws — in fact lost several smaller rocks through the opening

* confidential

54 GTV

Sample Description

Cruise I.D: 5033

Sample I.D: Sta: 54 GTV

Location: "Kelu" Sm

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:

54GTV1 | 55DK1

Rock Type	Basaltic Hyaloclastite	→ -do-
Color:	Moderate Brown (5YR 4/4)	→ -do-
Texture:	Pyroclastic	→ -do-
Matrix:	Basaltic glass shards, ± 60%	→ ± 65%
	Basaltic rock fragments, ± 10%	→ ± 5%
Cement:	Zeolites, ± 20%	→ ± 25%
	Phosphorite, ± 7%	→ ± 3%
	Calcite, ± 3%	→ ± 2%
Average grain size:	± 0.75 mm (range: fine sand — fine gravel)	→ ± 0.50 mm
" grain shape:	angular	→ -do-
Sorting:	moderately poorly sorted	→ -do-
Porosity:	± 90%	→ -do-
permeability:	± 90%	→ -do-
Alteration:	extensive — complete (oxidation, hydration, zeolitization, carbonation, silicification)	→ -do-
Remarks:	pebble-to-boulder-size clasts dislodged by dredge from (doubtful) outcrop, probably a subaerially erupted vitric cinder deposit, possibly wind-sorted to some extent; probably deposited in water and subjected to hydrothermal activity which provided most of the alteration effects observed in the rock, including generation of cementing material, probably not disturbed subsequent to deposition; serves as substrate for encrustation by ± 5 mm-thick layers of knobby, warty ferromanganese oxide.	→ -do-

\# Crust is similar, but much thicker (± 25 mm)