DREDGE SAMPLE LOG

			JD	LOCAL
CRUISE	KODOS97-4	DATE	244/248	9-2-97
STATION	19		GMT	LOCAL
DREDGE	D12	TIME	23:59-02:57	11:59-14:57
DEPTH INTERVAL(m)	3534-3050	LATITUDE	(N,S)	11°46.13'-11°45.83'
DEPTH(m) CORRECTED	3550-3100	LONGITUDE	(E,W)	161°43.73'-161°42.96'

TOTAL WEIGHT : DREDGE 150kg CRUST 15kg

%OF ROCK COVERED BY CRUST 100% patina, 30% w/ crust

%BROKEN FROM : OUTCROP 100% TALUS 0%

THICKNESS OF CRUST : MAX 20 MIN patina AVG 10

DOMINANT SURFACE TEXTURE Smooth → botryoidal, granular

SUBSTRATE LITHOLOGY ① red brown breccia > ② brown basalt >>> ③ yellow-green breccia

D12

NODULES PRESENT ∅

REMARKS:

Breccia w/Crusta →

← Breccia

← Kept & cut

← Basalt

← thrown back

Dredge Sample Summary Sheet

Sample ID	Bulk CC	Layer CC	Pt & Au	~~Mag~~ CFA Chem.	OC	DPTS/TS	XRD	35mm Photo	Archive	Paleo
DI2-1-1	✓						✓			
DI2-1-2							✓			
DI2-1-3					✓					
DI2-1-4							✓			
DI2-2-1A	✓									
DI2-2-2A				X	✓					
DI2-3-1A							✓			

SAMPLE DESCRIPTION

Cruise Id: KODOS97-4 Size(cm): ~100 Cobbles saved & cut Location: Lomilik

Sample Id: D12-1 Weight(kg): lots ~ 75 kg Depth(m): 3350-3100

~ 40 kg kept

Mn Crust Description

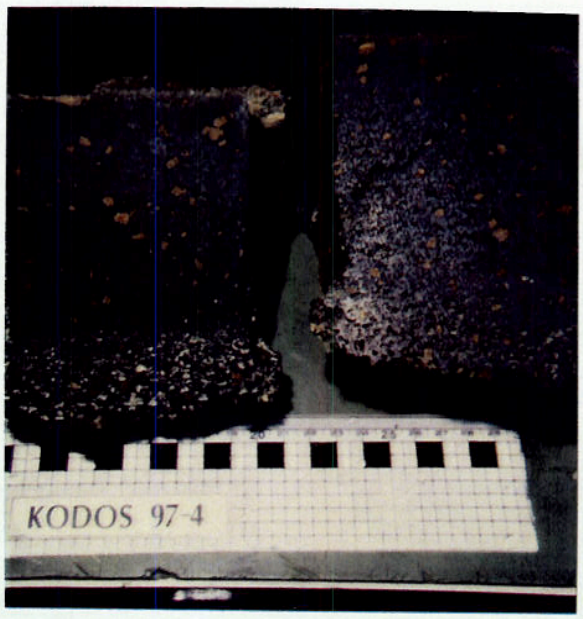
Surface Texture: Granular, subdued botryoidal, smooth, polished on some edges

Mn Crust Thickness(mm):

Min: patina Max: 4 Ave: 2

Outer to Inner Layers(mm)

	Min	Max	Ave	Texture & Color
1				massive Black
2				most Common
3				
4				Brown Black
5				2nd Common
6				



D12-1 Typical

Comments and XRD Mineralogy:

Substrate Description

RockType: Altered vesicular basalt

Pillow fragments mostly - likely clasts from Breccia in D12-1

Description: Brown to gray, moderate to very highly vesicular - Scoria for some rocks Lg. vesicles filled w/ orange-red Hematite(?) — many have altered glassy cooling rinds ± Rare CFA s/on Calcite veins; some vesicles lined w/ Calcite(?); one - very vesicular has large white - Translucent xstals - Rare yellow vug fill - biological?

Biology:

Described by: Hein

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D12-1-1	CC	0-3	
D12-1-2	XRD	red vesicle fill	
D12-1-3	OC	Bulk Basalt	
D12-1-4	XRD	yellow Vug fill	

10% USGS
90% for RDD

Subsampled by:

D12-1

SAMPLE DESCRIPTION

Cruse Id: KODOS97-4 Size(cm): ~75 Cobbles Saved 2 Cut Location: Lamilit

Sample Id: D12-2 Weight(kg): ~175kg Depth(m): 3350 - 3105

~40kg kept

Mn Crust Description

Surface Texture: Subdued botryoidal, Granular, botryoidal & smooth; Current polished on edges

Mn Crust Thickness(mm):

Min: patina Max: 4 Ave: 2

Outer to Inner Layers(mm)

	Min	Max	Ave	Texture & Color
1				Black massive
2				
3				
4				
5				
6				

D12-2 Typical

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D12-2-1A	CC	0-2.5	
D12-2-2A	OC	Rock Substrate	

Substrate Description

RockType: Brown Breccia

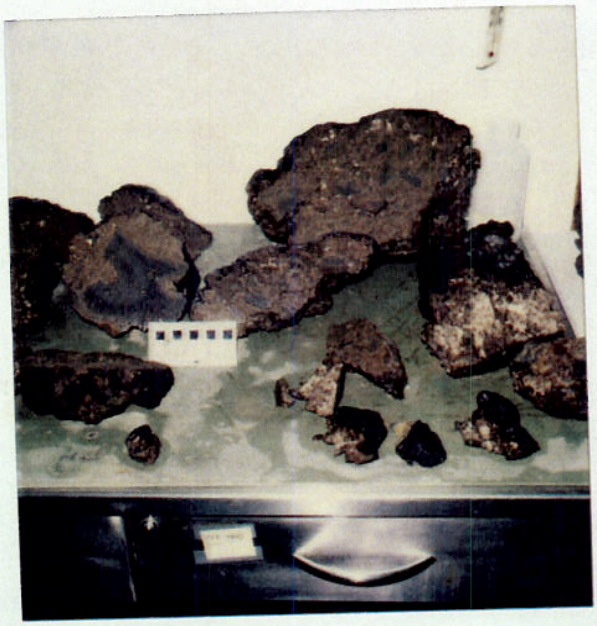
90% HORDI
10% 4545

Description: Gray vesicular basalt clasts to 160 mm & brown basalt vesicle clasts w/ hematite vesicle fill w/ CFA(?) &/or Calcite cement - clearly CFA in some places

ology:

Described by: Dein

Subsampled by:



D12-2 - 25% of samples saved

SAMPLE DESCRIPTION

Cruse Id: KODOS97-4 Size(cm): 5 Cobbles Location: Lamilik

Sample Id: D12-3 Weight(kg): 1.5 kg Depth(m): 3350-3100

D12-3

Mn Crust Description

Surface Texture: microbotryoidal, botryoidal skin; botryoidal

Mn Crust Thickness(mm):

Min: patina Max: 4 Ave: 2

Outer to Inner Layers(mm)

	Min	Max	Ave	Texture & Color
1				Black massive
2				
3				
4				
5				
6				

Comments and XRD Mineralogy:

also grains in breccia's

Substrate Description

RockType: Green-gray Breccia Interbedded w/ v-altered greenish-gray basalt

Description: Coarse-grained Breccia w/ gray altered Basalt, green-gray basalt, Translucent crystals, ± Mn oxide clasts in calcite?, Cement IB w/ yellow-green basalt? w/ elongate Translucent crystals + V. vesicular - fine-grained - Same Translucent crystals as in one of the fresher basalt clasts from D12-1

ology:

Described by:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D12-3-1A	XRD	Translucent elongate crystals - Feldspar	

50% USGS
50% NORDI

Subsampled by:

DREDGE OPERATIONS LOG

			JD	LOCAL
CRUISE	KODOS97-4	DATE	244 to 245	9-2-97
STATION	St. 17	CHIEF SCIENTIST	Moon / Hein	
DREDGE NO.	D/2	TECH ON WATCH	Chi	
DEPTH INTERVAL(m)	3534-3050			

Corrected depth 3350-3100

ON STATION	DREDGE ON BOTTOM	DREDGE OFF BOTTOM	OFF STATION
22:10	23:59	02:57	04:02
11°46.345	11° 46.127	11° 45.827	11° 45.229
161°44.088	161° 43.729	161° 42.960	161° 42.286
3,629 (Tide 1.3)	3,534	3050	2538

Site Description and Target: retry

dredging from 3.600 ~ 2.100 m

normal condition = 2.1 ~ 2.4

	Operation*	GMT	Depth(m)	Wire Out(m)	Tension	HDG/SPD	Comments
	on Bottom	23:59	3534	4250	1.6	312.9/1.5	11° 46.127, 161° 43.729
	wire out	00:01	3572	4300	1.8	303.5/1.9	11° 46.162, 161° 43.618
	Start to dredging	"	"	"	"	"	"
	dredging	00:10	3285	"	1.7	230.8/1.4	11°46.124, 161°43.355
①	Bites	00:17	3246	4390	2.3, 2.4	207.3/1.7	11°45.967, 161°43.178
②	Bites	00:28	3112	4326	2.4, 2.4	177.5/1.5	11°45.669, 161°42.961.
③	Bites	00:39	2948	4256	2.3, 2.4	207.8/0.5	11°45.417, 161°42.750
④ ☆	Bites	00:45	2852	4231	2.5, 2.6, 2.8	173.6/1.0	11° 45.334, 161°42.651
					2.9, 3.4 4.0	→ 2.1	
⑤	Bites	00:47	2720	4216	2.7, 2.7	170.0/0.9	11° 45.294. 161° 42.621.
⑥	Bites.	00:51	3050	4182	2.9, 2.8	169.4/1.2	11° 45.164, 161° 42.565
					3.3, 3.4, 3.6		
⑦	Bites	00:57	2509	4150	3.4	172.5/0.8	11°45.060 161° 42.446.
⑧	Bites	01:06	2300	4058	2.7	144.3/1.2	11° 44.861, 161°42.374

*on/off bottom, bites, etc.

Other Comments:

DREDGE OPERATIONS LOG

		JD	LOCAL
CRUISE	KODOS97-4	DATE 245	9-2-97
STATION	St. 17	CHIEF SCIENTIST	Moran / Hei~
DREDGE NO.	D12	TECH ON WATCH	Chi
DEPTH INTERVAL(m)			

ON STATION	DREDGE ON BOTTOM	DREDGE OFF BOTTOM	OFF STATION

Site Description and Target: Continue (D12)

Operation*	GMT	Depth(m)	Wire Out(m)	Tension	HDG/SPD	Comments
Bites.	01:14	2219	4009	2.7	189.8 / 0.9	11°44.658 161° 42.307
Dredging	01:24	2158	3913	2.3	180.3 / 1.0	11°44.523 161° 42.123
Dredging	01:35	2116	3802	2.3	172.2 / 1.5	11°44.329 161° 42.034
Bites	01:38	2105	3795	4.5, 4.7, 4.8, 5.2	210.7 / 0.6	11°44.219 161° 42.016
pull out work	01:[illegible]					
		2097	→ 2265	→ 2400 →	[illegible] → 250[illegible]	→ 2600 → 2700 (02:43)
off Bottom	02:57	3050	→ 3100	2.2	249°, 3.3 → 24	11°45 829, 161°42.960

*on/off bottom, bites, etc.

Other Comments: