USGS DREDGE OPERATIONS LOG

D7

			JD	LOCAL
CRUISE	KODOS 98-3	DATE	237	8/25/98
STATION		CHIEF SCIENTIST	Lee	
DREDGE NO.	D7 (Page #1)	TECH ON WATCH		

DEPTH INTERVAL (m) on-off bottom: 2280 – 1778 2250 – 1950

	ON STATION	DREDGE ON BOTTOM	DREDGE OFF BOTTOM	OFF STATION
GMT	21:05.44	21:50.59	00:32:14	00:03:59
latitude	8°44.002 N	08° 43.423 N	8°42.690 N	8°42.511
longitude	138° 44.502 E	138° 44.855 E	138°45.231 E	138° 44.268
water depth	2621 m	2280 m	1778 m	

Site Description and Target: Mineralization at The Deformation front of Western Caroline Ridge

Operation*	GMT	Depth (m)	Wire Out (m)	Tension	HDG/SPD	Comments
Repositioning		2348	2498	1.3		
Repositioned	21:56.14	2212		1.2		
Forward	22:03.29	2201	2850	1.6		8°43.275 / 138°44.888
Bite		2126	2827	2.0		
Bite	22:22.29	2051	2818	2.0		8°43.085 / 138°44.898
small Bite	22:29.29	2004	2808	2.0, 2.1, 2.2		8°43.033 / 138°44.917
small Bite	22:31.14	2030	2806	2.1, 2.2	123.6 / 0.7	
"	22:32.44	1996	2805	2.1, 2.2, 2.3 2.4		8°43.034 / 138°44.943
"	22:34.44	1984	2803	2.5, 2.6	128.9 / 0.7	8°43.004 / 138°44.958
Bite	22:36.29	1974	2800	2.0	131.6 / 0.6	8°42.998N / 138°44.96
Bite	22:40.14	1956	2794	2.0	137.0 / 0.4	8°42.982N / 138°44.94
"	22:43.59	1958	2791	2.0, 2.1	138.6 / 0.5	8°42.965 / 138°44.967
"	22:46.44	1944	2788	2.1, 2.2	138.5 / 0.4	8°42.963 / 138°44.95
	22:48.29	1944	2787	2.2	129.7 / 0.5	8°42.945 / 138°44.95

*on/off bottom, bites, etc.

Other Comments:

USGS DREDGE OPERATIONS LOG

		JD	LOCAL
CRUISE KODOS 98-3	DATE	237	8/26/98
STATION	CHIEF SCIENTIST	Lee	
DREDGE NO. D7 (Page #2)	TECH ON WATCH		

on-off bottom

DEPTH INTERVAL (m)

	ON STATION	DREDGE ON BOTTOM	DREDGE OFF BOTTOM	OFF STATION
GMT				
latitude				
longitude				
water depth				

Site Description and Target:

	Operation*	GMT	Depth (m)	Wire Out (m)	Tension	HDG/SPD	Comments
1st	Bite	22:50	1939	2781	2.3, 2.6, 3.0	122.5/0.7	8°42.938 / 138°44.964
	Bites con. to 2.2		~~1919~~ 1934	2779 - 2781	to 2.2		
	Bites		1916	2779	2.3, 2.4		
	Bite	22:59.44	1906	2775	2.5	111.7/0.8	8°42.868 / 138°45.078
	Bite	23:02.59	1864	2759	2.4	119.4/0.8	8°42.851 / 138°45.114
	"	23:04.59	1858	2752	2.2, 2.3, 2.5, 2.7	114.5/0.4	8°42.846 / 138°45.121
	"	23:07.14	1842	2745	2.6		
	"	23:09.29	1839	2733	2.4, 2.5, 2.7	120.6/0.7	8°42.816 / 138°45.156
					to 2.9, 3.1		
2nd	Broken	23:14.44	1825	2715	2.6, 2.7, 2.8	116.4/0.7	8°42.884 / 138°45.167
	Bite	23:16.29	1822	2709	2.7, 2.8, 2.9	124.6/0.5	8°42.897 / 138°45.107
	"	23:28.29	1789	2647	2.5, 2.6, 3.1	107.6/0.7	8°42.948 / 138°45.372
	"	23:32.59	1782		2.9, 3.1	136.5/0.6	8°42.972 / 138°45.33
	"	23:33.14	1780	2634	3.4, 3.5, 3.7, 4.0	133.8/0.5	8°42.916 / 138°45.343

*on/off bottom, bites, etc.

Other Comments:

USGS DREDGE OPERATIONS LOG

CRUISE KODOS 98-3 | DATE JD 237~238 LOCAL 8/26/98

STATION _____ | CHIEF SCIENTIST Lee

DREDGE NO. D7 (page #3) | TECH ON WATCH _____

on-off bottom

DEPTH INTERVAL (m) _____

	ON STATION	DREDGE ON BOTTOM	DREDGE OFF BOTTOM	OFF STATION
GMT				
latitude				
longitude				
water depth				

Site Description and Target: _____

Operation*	GMT	Depth (m)	Wire Out (m)	Tension	HDG/SPD	Comments
Broken	23:38:29	1784	~~2575~~	1.8	149.8 / 0.4	8°42.699 / 138°45.291
Bite	23:44:59	1775	2577	2.9, 3.1, 4.2	134.1 / 0.3	8°42.692 / 138°45.281
Bite	23:49:14	1773	2560	2.8, 3.0, 3.6, 3.7, 4.0	131.7 / 1.1	8°42.684 / 138°45.340
"	23:52:29	1753	2548	3.4, 3.5	142.1 / 0.8	8°42.639 / 138°45.361
"	23:54:59	1765	2521	3.7	146.9 / 0.9	8°42.633 / 138°45.361
"	00:03:29	1740	2409	2.4, 2.5		
"	00:04:44	1775	2397	2.7	172.6 / 1.0	8°42.711 / 138°45.294
"	00:06:59	1776	2363	2.6, 2.7, 2.9, 3.1	160.2 / 0.4	8°42.684 / 138°45.317
Small bite	00:10:29	1781	2334	2.8, 3.0, 3.2, 3.3, 3.4, 3.5	165.9 / 0.3	8°42.702 / 138°45.291
4th Big bite	00:12:14	1773	2319	4.0, 4.3, 4.5	162.0 / 0.4	8°42.706 / 138°45.298
Small bite	00:19:59	1783	2193	2.6	164.7 / 0.9	8°42.707 / 138°45.244

*on/off bottom, bites, etc.

Other Comments:

USGS DREDGE OPERATIONS LOG

		JD	LOCAL
CRUISE	KODOS 98-3	DATE 238	8/26/98
STATION		CHIEF SCIENTIST	Lee
DREDGE NO.	D7 (page #4)	TECH ON WATCH	

on-off bottom

DEPTH INTERVAL (m)

	ON STATION	DREDGE ON BOTTOM	DREDGE OFF BOTTOM	OFF STATION
GMT				
latitude				
longitude				
water depth				

Site Description and Target:

Operation*	GMT	Depth (m)	Wire Out (m)	Tension	HDG/SPD	Comments
small bite	00:22:59	1979 m	2163	3.4, 3.5	161.9 / 1.0	8°42.1696 / 138°45.250
off Bottom	00:32:54	1978	1897	1.14	186 / 0.5	

*on/off bottom, bites, etc.

Other Comments:

DREDGE LOG

CRUISE KODOS 98-3

STATION

DREDGE D7

DATE JD 237 LOCAL 8/26/98

TIME GMT on-off bottom 21:50.59 / 00:32:14 LOCAL on-off bottom 7:50 / 9:32

DEPTH INTERVAL (m) on-off bottom 2280-1778

DEPTH (m) CORRECTED 2250-1950

LATITUDE on-off bottom 8° 43.423'N - 8° 42.690'N

LONGITUDE 138° 44.855'E - 138° 45.237'

TOTAL WEIGHT: DREDGE 150 (122 ~~120~~ actual) CRUST 10

% OF ROCK COVERED BY CRUST 75

% BROKEN FROM: OUTCROP 100 TALUS

THICKNESS OF CRUST: MAX 10 MIN <1 AVG 1

DOMINANT SURFACE TEXTURE granular

SUBSTRATE LITHOLOGY (1) Basalt →
(2) foraminiferal limestone - friable, poorly consolidated
(3) Breccia

(1) ~~68.8%~~ ~~67.7%~~ 68%
(2) ~~29.8%~~ ~~30.9%~~ 31%
(3) ~~1.4%~~ 1%

NODULES PRESENT

REMARKS: Basalt - from 1st series of bites
limestone - from last series of bites
- Rattail fish - ~~160~~ 50 cm - unhappy

D7

DREDGE 7

Sample #	CC	PGE	REE	OC	CFA	PTS	Paleo	XRD
D7-2-1A				X				X
D7-6-1A				X				X
D7-8-1A								X
D7-10-1A								X
D7-10-2A								X
D7-10-2B								X
D7-10-2C								X
D7-4-1A				X				X
D7-11A	X							
D7-9A1A				X				X
D7-9-1B						X		

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 200× 125× 100 Location: 8° 43.561′ N 138° 45.046′ E

Sample Id: D7-1 Weight (kg): ≈ 3.5 Depth (m): 2280-1778

Mn Crust Description

Surface Texture: Granular

Mn Crust Thickness (mm): Patina

Min: -0- Max: 1 Ave: <1

Outer to Inner Layers (mm)

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

D7-1
Kodos 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
	100% HORD-P		

Substrate Description

Rock Type: Vesicular, gray Pillow Basalt Section

Description: 4-8mm alteration rim (green-brown) some glass 10-15 mm chilled margin (Black) = glass; interior mod. altered; Fe-oxide line line vesicles; Both Rims, but especially outermost lace with Calcite + smectite veins; just below glass is zeolite amygdules

Biology (?): Planktonic + Encrusting foraminifera (few)

Described by: M Burrows

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 13 Cobbles 150X115X105 Max Location: 8°43.561'N 158°45.046'E

Sample Id: DR-2 Weight (kg): 11 Depth (m): 2280 – 1498

Mn Crust Description

Surface Texture: granular

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1	<1	2	<1	patina
2				
3				
4				
5				
6				

DR-2
KODOS 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
DR-2-1A	OC, XRD		19.6

OC = XRF-102, FeO, CO_2, H_2O^+, H_2O^-
90% HORDI
10% USGS

Substrate Description

Rock Type: Pillow basalt sections w/ chill margins

Description: gray to yellow-brown alteration rim of calcite & clay minerals; underlain by red-brown altered glass; underlain by dark-gray glass. Basalt is massive w/ sparce large vesicles elongate ⊥ to chill margin & filled w/ clays ± Fe oxides, others w/ lattice or boxwork structures. Mn-oxide of hydrothermal (?) origin. Limestone breccia on the surface; Clasts of breccia are volcanic, Lms,

Biology (?):

Described by: S. Park

Subsampled by: Hein

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 200×165×135 Location: 8°43.561′ N 138°45.046′ E

Sample Id: D7-3 Weight (kg): 3.75 Depth (m): 2280-1778

Mn Crust Description

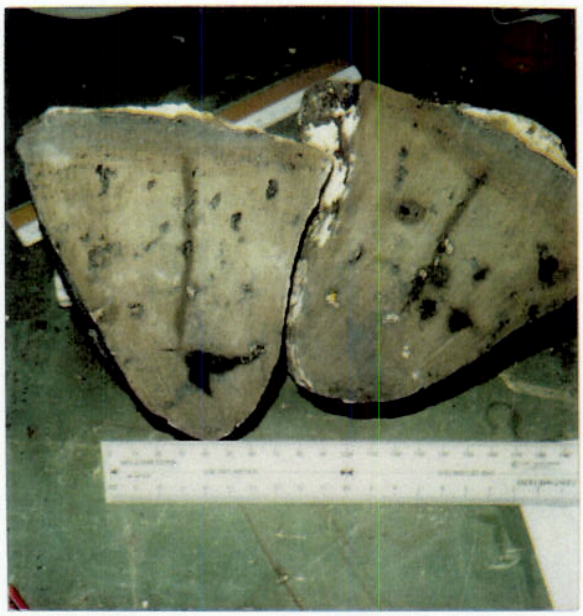
Surface Texture: patchy, smooth patina

Mn Crust Thickness (mm):

Min: <1 Max: <1 Ave: <1 mm

Outer to Inner Layers (mm)

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



D7-3 KODOS 98-3

Comments and XRD Mineralogy:

Capped by foraminiferal Limestone

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
	100% HORDI		

Substrate Description

Rock Type: Pillow Basalt wedge Massive, brown

Description: brown; upper 1-2mm a red-brown alteration rim; underlain by 13mm gray to black glass rind, underlain by small vesicles for 13 mm - vesicles are aligned in layers - Some large vesicles filled w/ boxwork hydrothermal(?) Mn;

Biology (?):

Described by: Dowling

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 4 cobbles 140×120×75 (MAX) Location: 8043.561'N 138° 45.046'E

Sample Id: D7-4 Weight (kg): 3.9 Depth (m): 2280 – 1778

Mn Crust Description

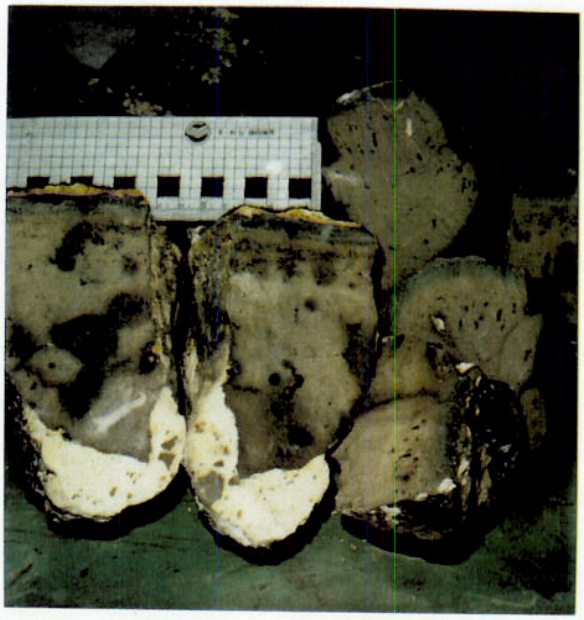
Surface Texture: patchy granular patina

Mn Crust Thickness (mm):

Min: _____ Max: <1mm Ave: <1mm

Outer to Inner Layers (mm)

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



D7 – 4 KODOS 98-3

Comments and XRD Mineralogy:

pebbly foraminiferal limestone coating up to 25mm

Substrate Description

Rock Type: Pillow basalt wedge massive, brown

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-4-1A	OC, XRD		20.8

OC = XRF-102, FeO, CO_2, H_2O^+, H_2O^-

20% USGS

70% KORDI

Description: brown; upper 1-2 mm red-brown alteration rim; underlain by 8-11 mm gray to black glass rind; underlain by small vesicles for up to 20 mm - vesicles aligned in layers - some large vesicles filled w/ boxwork hydrothermal (?) Mn

Biology (?):

Described by: Hein

Subsampled by: Hein

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 240X140X100 Location: 8°43.561' N 138.45.046' E

Sample Id: D7-5 Weight (kg): 6.7 Depth (m): 2280-1778

Mn Crust Description

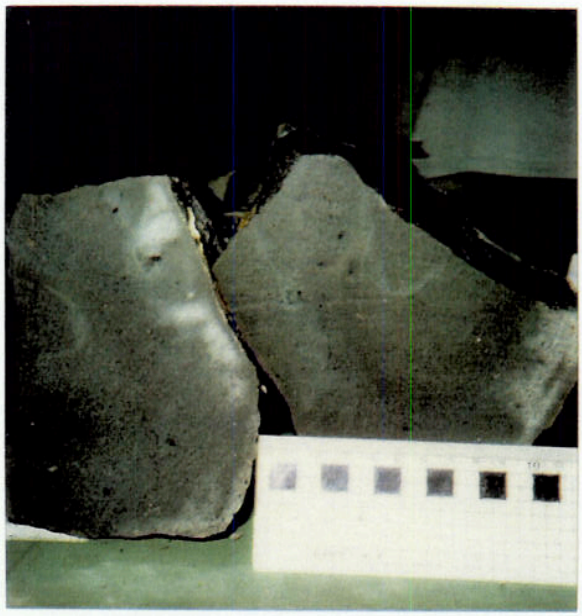
Surface Texture: granular

Mn Crust Thickness (mm):

Min: <1 Max: <1 Ave: <1

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				v. Porous black
2				
3				
4				
5				
6				



D7-5 KODOS 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
	100% HORDT		

Substrate Description

Rock Type: Basalt

Description: Gray, mod. altered, small plagioclase phenocrysts, + tiny vesicles filled w/zeolites; minute calcite veins

Biology (?):

Described by: Hein

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): ~ 52 coated cobbles 40-120 diameter Location: 8° 43.561' N 138° 45.046' E

Sample Id: D7-6 Weight (kg): 36 Depth (m): 2280 - 1778

Dominant Basalt type

Mn Crust Description

Surface Texture: smooth (few) to granular (most) to microbotryoidal (few)

Mn Crust Thickness (mm):

Min: -0- Max: 4 Ave: Patina

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1	-0-	4		Asicular, Black
2				porous
3				
4				
5				
6				

D7-6
Kodos 98-3

Comments and XRD Mineralogy:

Sparse coatings of Carbonate and/or Smectite (green) where not coated with Fe-Mn crust

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-6-1A	OC Bulk Rock		32.7
	XRD		

OC = XRF-102, FeO, CO_2, H_2O^+, H_2O^-

1% USGS

99% HORD

Substrate Description

Rock Type: Vesicular Basalt medium-to-dark gray - Pillow fragments

Description: no-to incipient alteration rims (brown-gray); ~~fine-to-large~~ <1mm (4mm) (mean 1mm) vesicles, random to linear orientation; vesicles rimmed with Fe-oxides, some w/ anhedral, fine-grained, plagioclase, olivine, phenocrysts - Rare CFA veins; Limestone on some surfaces

Biology (?): few Planktonic and Encrusting Foraminifera

Described by: M Burrows

Subsampled by: Hein

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 5 Cobbles Max: 8x7x6 Location: 8° 43.561'N 138° 45.046'E

Sample Id: D7 -7 Weight (kg): 3 Depth (m): 2280 - 1778

Mn Crust Description

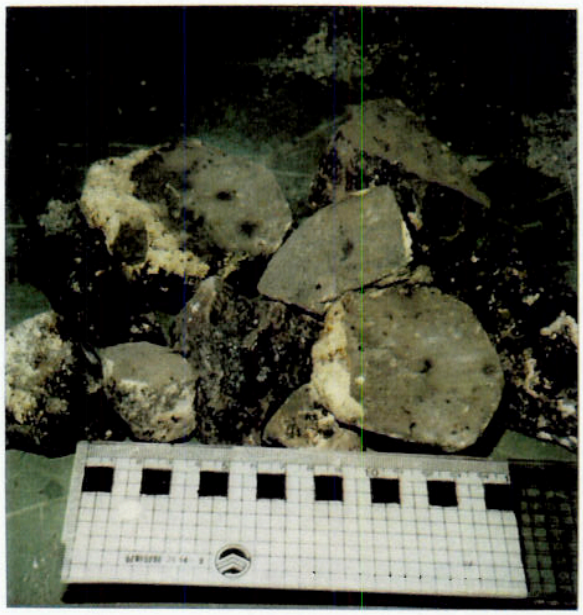
Surface Texture: granular To smooth, Patchy

Mn Crust Thickness (mm):

Min: <1 Max: <1 Ave: <1

Outer to Inner Layers (mm)

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



D7 - 7 KODOS 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)

Substrate Description

Rock Type: altered basalt. Brown vesicular limestone

100% HORDI

Description: ~~Carbonate~~ on the surface; altered olivine phenocrysts / porous black stuff fill the vesicular c hydrothermally originated Mn-oxide ?) ; orange-red Fe oxide vesicle fill in some ; → boxwork Texture

Biology (?):

Described by: S. Park.

Subsampled by:

SAMPLE DESCRIPTION
11 Pebbles & cobbles

Cruise Id: KODOS 98-3 Size (mm): 120 X 100 X 90 max Location: 8°43.561'N 138°45.046'E

Sample Id: D7 - 8 Weight (kg): 3.75 Depth (m): 2280 - 1778

Mn Crust Description

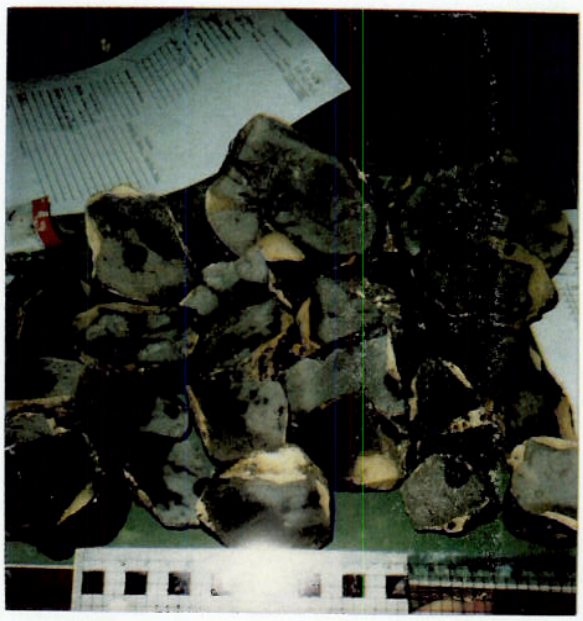
Surface Texture: Smooth to granular

Mn Crust Thickness (mm):

Min: <1 Max: 3 Ave: <1

Outer to Inner Layers (mm)

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



D7-8 KODOS 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-8-1A	XRD	Limestone	
		100% FORDI	

Substrate Description

Rock Type: Basalt - Limestone Breccia?

Description: Gray massive basalt clasts (?) surrounded in part by yellow-brown massive, micrite to foraminiferal Limestone - All fragments except 1 have only 1 basalt clast - probably disaggregated during dredging

Biology (?): Limestone is waxy texture & may contain smectite

Described by: Hein

Subsampled by: Hein

SAMPLE DESCRIPTION
1 Cobble, 1 pebble

Cruise Id: KODOS 98-3 Size (mm): 90x80x75; 45x50x40 Location: 8°43.561'N 138°45.046'E

Sample Id: D-7-9 Weight (kg): 0.75 Depth (m): 2280-1778

Mn Crust Description

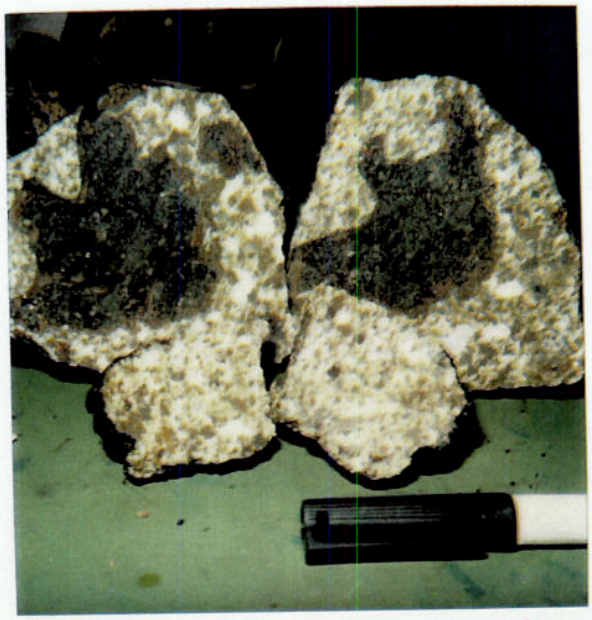
Surface Texture: Patchy granular to smooth patina

Mn Crust Thickness (mm):

Min: 0 Max: <1 Ave: <1

Outer to Inner Layers (mm)

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



D7-9 KODOS 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-9-1A	OC XRD	non-glass	26.0
9-1B	PTS-	0-5mm	24g.

Substrate Description

Rock Type: Breccia

Description: V. large basalt glass frag. w/ clasts of foram & reef Lms & fresh to completely altered basalt clasts in Calcite cement - grain-supported; some clasts are red, hydrothermally altered (?)

Biology (?):

OC - XRF-102, CO_2, H_2O^+, H_2O^-

40% USGS

60% MORDI

Described by: Hein

Subsampled by: Burrows

SAMPLE DESCRIPTION

3 Pebbles, 1 Cobble

Cruise Id: KODOS 98-3 Size (mm): 100x90x40 MAX Location: 8°43.561'N 138°45.046'E

Sample Id: D-7-10 Weight (kg): 0.43 Depth (m): 2280-1778

Mn Crust Description

Surface Texture: Granular patchy

Patina on one

Mn Crust Thickness (mm):

Min: <1 Max: 3 Ave: <1

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				Porous black
2				
3				
4				
5				
6				

KODOS 98-3
D7-10

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-10-1A	XRD	Dark green matrix	
D7-10-2A	XRD	White matrix	
D7-10-2B	XRD	green matrix	
D7-10-2C	XRD	Brown rind & clast	

Substrate Description

Rock Type: Breccia

Description: large Tabular pillow basalt 60% KORDI

alteration rinds - (glass to completly altered) 40% USGS

in yellow-white to greenish (= carbonate + smectite)

dark green clay mineral (smectite)

matrix - matrix supported - some carbonate on surface -

Biology (?):

Described by: HEIN

Subsampled by: M. Burrows

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 110x85x65 Location: 8°43.561'N 138°.45.046'E

Sample Id: D7-11 Weight (kg): 0.46 Depth (m): 2280 - 1778

Mn Crust Description

Surface Texture: granular to botryoidal

Mn Crust Thickness (mm):

Min: 2 Max: 6 Ave: 4

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				Porous, black
2				
3				
4				
5				
6				

KODOS 98-3
D7-11

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-11A	XRD CC	Bulk	0-5mm 5.0

CC = MER, Te, H_2O^-

50% HORDI
50% USGS

Substrate Description

Rock Type: Breccia

Description: Gray basalt frags. in greenish soft smectite matrix (altered glass); matrix supported; zeolite vug fill in matrix

Biology (?):

Described by: Hein

Subsampled by: Dowling

SAMPLE DESCRIPTION

7 Cobbles + Boulders

Cruise Id: KODOS 98-3 Size (mm): 300 x 190 x 160 Max Location: 8°43.561'N 138°45.046'E

Sample Id: D7-12 Weight (kg): 27 Depth (m): 2280-1778

Mn Crust Description

Surface Texture: V- Sparse patchy granular

Mn Crust Thickness (mm):

Min: <<1 Max: <<1 Ave: <<1

Outer to Inner Layers (mm)

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

D7-12 KODOS 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
95%	HORDI		
5%	USGS		

Substrate Description

Rock Type: Limestone

Description: White foraminiferal Limestone To foram-nannofossil Limestone - massive -

Biology (?):

Described by: HEN

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: KODOS 98-3 Size (mm): 130x110x80 Location: 8°43.561'N 138°45.046'E

Sample Id: D7-13 Weight (kg): 1.3 kg Depth (m): 2280-1778

Mn Crust Description

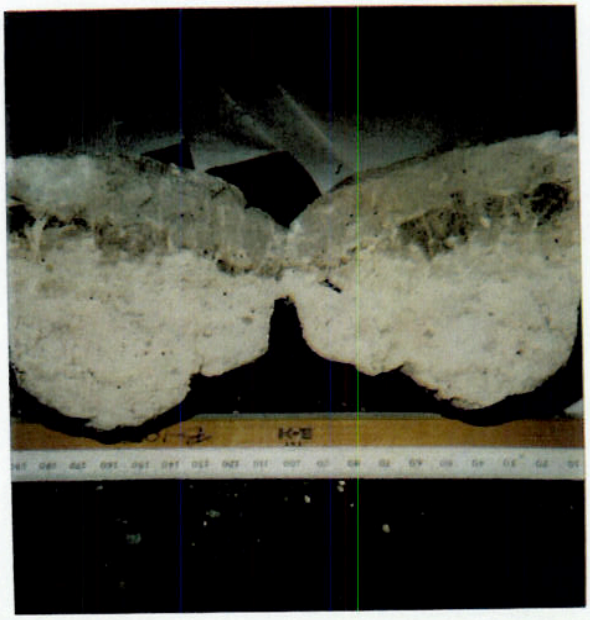
Surface Texture: Patchy granular

Mn Crust Thickness (mm):

Min: <1 Max: <1 Ave: <1

Outer to Inner Layers (mm)

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



D7-13 KODOS 98-3

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-13A	XRD	Ash	

60% KORDI
40% USGS

Substrate Description

Rock Type: Limestone + Calcareous Ash

Description: - white foraminiferal Limestone w/ layer of gray ash on Top - gradational boundary + laced w/ Calcite veins - ash is mixed w/ Carbonate + is less friable than the Limestone

Biology (?):

Described by: Hein

Subsampled by: Hein

Uncut Pebbles

SAMPLE DESCRIPTION

150 Pebbles

Cruise Id: KODOS 98-3 Size (mm): Location: 8° 43.561'N 138° 45.046 E

Sample Id: D7-14 Weight (kg): ~~10~~ 10 Depth (m): 2280-1778

Mn Crust Description

Surface Texture: granular to smooth

NO Photo

Mn Crust Thickness (mm):

Min: <1 Max: 10 Ave: 2

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
	100% Kordi		

Substrate Description

Rock Type: Basalt

Description: All varieties listed on preceeding sheets — Uncut Pebbles

Biology (?):

Described by: Hein

Subsampled by:

uncut Foram Limeston

SAMPLE DESCRIPTION

8°43.561' N

Cruise Id: KODOS 98-3 Size (mm): ~ 70 Pebbles Location: 138° 45.046'E

Sample Id: D7-15 Weight (kg): 7 + Depth (m): 2280 = ~~1778~~

2 kg Thrown over board

Total 9 kg

NO Photo

Mn Crust Description

Surface Texture: V. Sparse Patchy granular

Mn Crust Thickness (mm):

Min: <<1 Max: <<1 Ave: <<1

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
	100% KORDI		

Substrate Description

Rock Type: Limestone

Description: White foraminiferal To foram-nanno Limestone - massive

Biology (?):

Described by: Hein

Subsampled by: