DREDGE
3
Rodriguez
remount

1580 - 1045 m

Rodrigues

SAMPLE ID	*Mn CHEM	Pt & Au*	REE *	Si Chem*	T.Sects.	35mm Pho	Archive	Paleo	XRD				
D3-1													
D3-2													
D3-3													
D3-4	Bulk												
D3-5	Bulk			V. Breccia matrix									
D3-6													
D3-7	Bulk												
D3-8					DPTS								
D3-9													
D3-10													
D3-11					TS								
D3-12													
D3-13													
D3-14													
D3-15													
D3-16													
D3-17					TS								
D3-18					TS								
D3-19					TS								

* All chemistry samples have XRD mineralogy done also.

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 13.5 x 7.5 x 10 cm Location: Rodriquez Seamount

Sample Id: D3-1 Weight: Depth: 1580 - 1045 m

Mn Crust Description

Surface Texture: smooth to granular

Mn Crust Thickness:

Min: 1 mm Max: 12 mm Ave: 6.5 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-1

F7-87-SC

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Volcaniclastic Breccia

Description:

Vesicular Basalt Clasts, olive-green and Black basalt Clasts

Described By:

Subsampled By:

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 19x10x7cm Location: Rodriguez Seamount

Sample Id: D3-2 Weight: Depth: 1580-1045m

Mn Crust Description

Surface Texture: Overall Smooth w/ bulbous bots

Mn Crust Thickness:

Min: 1mm Max: 10mm Ave: 5.5mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-2

F7-87-SC

Comments and XRD Mineralogy:

Some layering visible in small area of crust

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Volcaniclastic Breccia w/plus cement

Description:

There are some large holes in substrate perhaps boring?

has glass but not sampled

Described By: Subsampled By:

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 23x14x8cm Location: Rodriquez Seamount

Sample Id: D3-3 Weight: _____ Depth: 1580 - 1045

Mn Crust Description

Surface Texture: Smooth w/ some strange elongated botryoids

Mn Crust Thickness:

Min: <1mm Max: 18mm Ave: 9mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-3

F7-87-SC

Comments and XRD Mineralogy:

layering in thicker crusts phosphate between several layers

Substrate Description

Rock Type: Volcanic Breccia

Description:

One Very large basalt cobble (15cm x 8cm) matrix has phosphorite and sandstone,

Lie glass - but not sampled

ANALYSES

Subsample & Type	Analysis	Weight

Described By: J

Subsampled By:

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 30x24.5x7cm Location: Rodriguez Seamount

Sample Id: D3-4 Weight: _____ Depth: 1580 - 1045 m

Mn Crust Description

Surface Texture: Smooth w/ bulbous botryoids growing together

Mn Crust Thickness:

Min: .5mm Max: 10 mm Ave: 5.25 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-4

F7-87-SC

Comments and XRD Mineralogy:

Crust Shows Some Signs of growth laminae.

ANALYSES

Subsample & Type	Analysis	Weight
D3-4A Bulk crust	Mn Crust + Chm	0-10 g

Substrate Description

Rock Type: Volcaniclastic Breccia

Description:

This sample of the breccia has sand and phosphorite matrix. Pores near crust substrate interface are filled w/ clay

Described By: J. Morgan Subsampled By:

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 19x10.5x7cm Location: Rodriguez Seamount

Sample Id: D3-5 Weight: _____ Depth: 1580 - 1045 m

Mn Crust Description

Surface Texture: Smooth to bulbous botryoidal

Mn Crust Thickness:

Min: 4mm Max: 10mm Ave: 7mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-5 F7-87-SC

Comments and XRD Mineralogy:

Phosphorite occurs between some growth laminae.

ANALYSES

Subsample & Type	Analysis	Weight
D3-5A Bulk phosphorite layers not separable from Mn layers	Mn Crust Chem	0-10
D3-5B-Bulk picked out basalt clasts from sample chem	Silicate Chem - Breccia matrix Chem.	

Substrate Description

Rock Type: Volcanic Breccia with phosphorite and sand matrix

no zeolites?

Description:

Similar to D3-7 (no subsample)

Described By: J. Morgan Subsampled By: JSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 19.5 x 8 x 14.5 cm Location: Rodriguez [illegible]

Sample Id: D3-6 Weight: _____ Depth: 1580 - 1045 m

Mn Crust Description

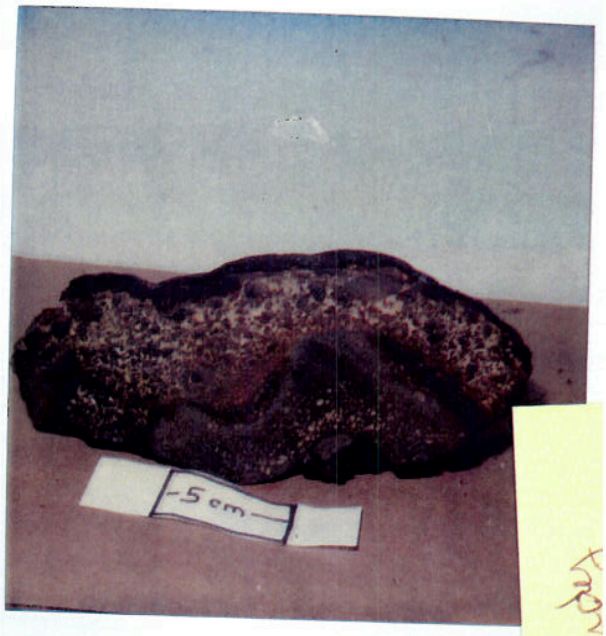
Surface Texture: Smooth with poorly developed Botryoids

Mn Crust Thickness:

Min: 2 mm Max: 5 mm Ave: 3.5 m

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				



D3-6

F7-87-SC

Comments and XRD Mineralogy:

On side/edge the crust has a few strange linear features. May be scratches which occurred during dredging.

→ Pillow Breccia

Substrate Description

Rock Type: V. Breccia over a large basalt cobble. Breccia has a phosphorite matrix

Description:

Basalt has a well defined cooling zone.

subsampled for glass [illegible]

ANALYSES

Subsample & Type	Analysis	Weight
D3-6 a glass for probe (A.D.)		
35mm slide		G Smith

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 9x6x8cm Location: Rodriguez Seamount

Sample Id: D3-7 Weight: _____ Depth: 1580 - 1045m

Mn Crust Description

Surface Texture: Smooth to granular

Mn Crust Thickness:

Min: 3mm Max: 6mm Ave: 4.5mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-7

Comments and XRD Mineralogy:

Some Very thin phosphorite layers in the crust

ANALYSES

Subsample & Type	Analysis	Weight
D3-7A Bulk	MnCC	[illegible]

Substrate Description

Rock Type: Basalt, Vesicular

Description:

Some Vesicles are full of sediment

[illegible]

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 8x 7 x 5 cm Location: Rodriguez Seamount

Sample Id: D3-8 Weight: _____ Depth: 1580-1045

Mn Crust Description

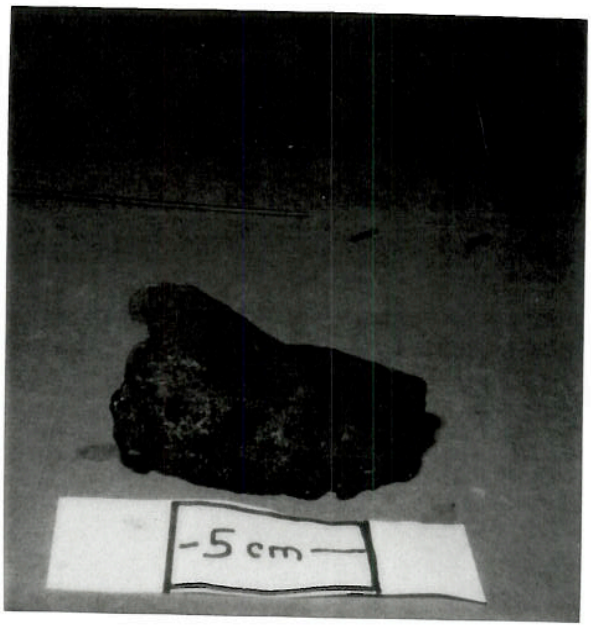
Surface Texture: Smooth to granular

Mn Crust Thickness:

Min: 6 mm Max: 15mm Ave: 10.5

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				



Comments and XRD Mineralogy:

Some growth laminae are availble

Substrate Description

Rock Type: Volcanic Breccia

Description:

The V. Breccia with piece has highly irregular surface the crust laminae appear to bend around irregularities

ANALYSES

Subsample & Type	Analysis	Weight
P. Section - around irregularities		

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: Smallest 5x4x2.1cm largest 10x10x3.5cm Location: Rodriguez

Sample Id: D3-9 Weight: _____ Depth: 1580 - 1045 m

Mn Crust Description

Surface Texture: Mostly smooth; a few are botryoidal

Mn Crust Thickness:

Min: 1mm Max: 9mm Ave: 5mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-9

F7-87-SC

Comments and XRD Mineralogy:

a group of V. Breccias and Basalts, small in size. Each has a Mn crust. Crust Thickness varies

Substrate Description

Rock Type: V. Breccias & Basalt

Description:

subsampled

ANALYSES

Subsample & Type	Analysis	Weight
D3-9a	glass for probe	A.D.

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 11.5 x 9 x 6.5 cm Location: Rodrigues, Seamount

Sample Id: D3-10 Weight: _____ Depth: 1580-1045 m

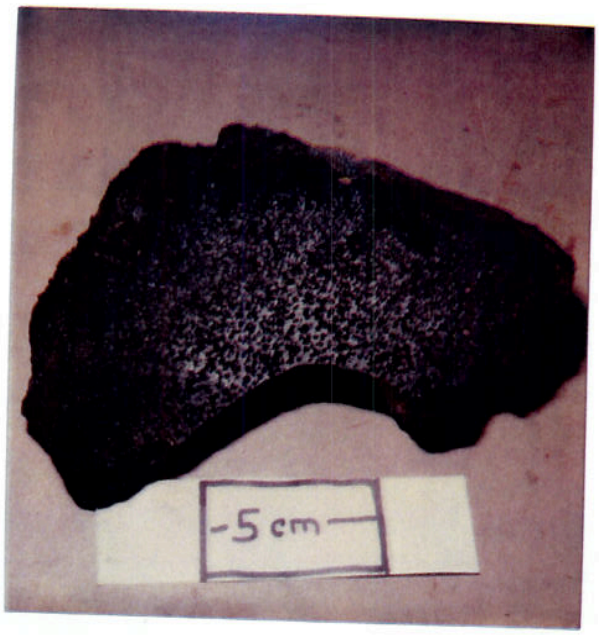
Mn Crust Description

Surface Texture: Worn botryoidal (with encrusting forams)

Mn Crust Thickness:
Min: 2 mm Max: 5 mm Ave: 3.5 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				



D3-10

F7-87-SC

Comments and XRD Mineralogy:

There appears to be a layer of something between substrate and the crust. It's Rust colored

Substrate Description

Rock Type: Vesicular Basalt

Description:

Basalt has a very recent look to it.

appears suitable for bulk chem
no sample taken as yet (A.D.)

ANALYSES

Subsample & Type	Analysis	Weight

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 50x11.5x21 Location: Rodriguez

Sample Id: D3-11 Weight: 2 kg Depth: 1580 - 1045

Mn Crust Description

Surface Texture:

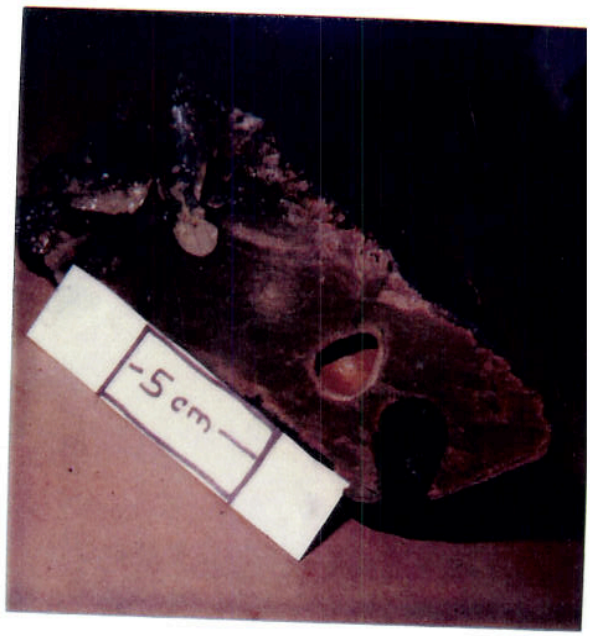
Just a patina of Mn

Mn Crust Thickness:

Min:_____ Max:_____ Ave:_____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				



D3-11

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight
D3-11		[illegible]
		XRD ([illegible])
2 bags in Different Boxes		

Substrate Description

Rock Type: ~~Phosphatized mudstone~~ Dolomite from XRD

Description:

Phosphatized mudstone w/ borings and burrows. There are some [illegible] burrows [illegible], Dorna a thin section through one

Described By: JSM Subsampled By: JSM

Need to [illegible] out

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 38x22x38cm Location: Rodriguez Seamount

Sample Id: D3-12 Weight: _____ Depth: 1580 to 1045

Mn Crust Description

Surface Texture: smooth to granular surface over bulbous botryoidal

Mn Crust Thickness:

Min: 5 mm Max: 20 mm Ave: 12.5 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-12

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: V. Breccia w/ yellow ochre phosphatized matrix

Description:

Matrix is not well consolidated ie crumbles

checked box no sample taken A.D.

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

13A-46x 22x 12 cm

Cruise Id: F7-87-SC Size: Location: Rodriguez Seamount

Sample Id: D3-13 Weight: 13A = 14.7 kg Depth: 1580 to 1045

Mn Crust Description

Surface Texture: Smooth Texture over bulbous botryoidal surface

Mn Crust Thickness:

Min: 4mm Max: 22mm Ave: 14mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-13

Comments and XRD Mineralogy:

Growth laminas are discernable
May have 2 discreet layers
Needs saw cut to tell
abundant encrusting foraminifera

ANALYSES

Subsample & Type	Analysis	Weight
D3-13C	probe glass	A.D.

Substrate Description

Rock Type: V. Breccia (most probably the same as D3-12)

Description:

~~Unconsolidated Breccia~~

Poorly Consolidated Breccia?
subrounded vesicular basalt clasts (scoria) in a phosphorite cement mixed w/ altered fine-grained volcanic debris

glass sampled A.D.

NOTE: sample broken into 3 parts for easier handling D3-13A, B & C

Described By: TSM Subsampled By: TSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 23 x 14.5 x 8 cm Location: Rodriguez Seamount

Sample Id: D3-14 Weight: 1.7 kg Depth: 1580 - 1045

Mn Crust Description

Surface Texture: granular to smooth botryoidal

Mn Crust Thickness:

Min: <1 mm Max: 10 mm Ave: 5 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-14

F7-87-SC

Comments and XRD Mineralogy:

crust is thick in places of the rock. Some areas of the rock do not have even a patina

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Vesicular Basalt

Description:

Vesicles are filled in some areas and not in others giving rock a banded look

no glass - rotten rock

Described By: JGM Subsampled By: JGM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 11x10x4 cm Location: Rodriguez Seamount

Sample Id: D3-15 Weight: Depth: 1580 to 1045

Mn Crust Description

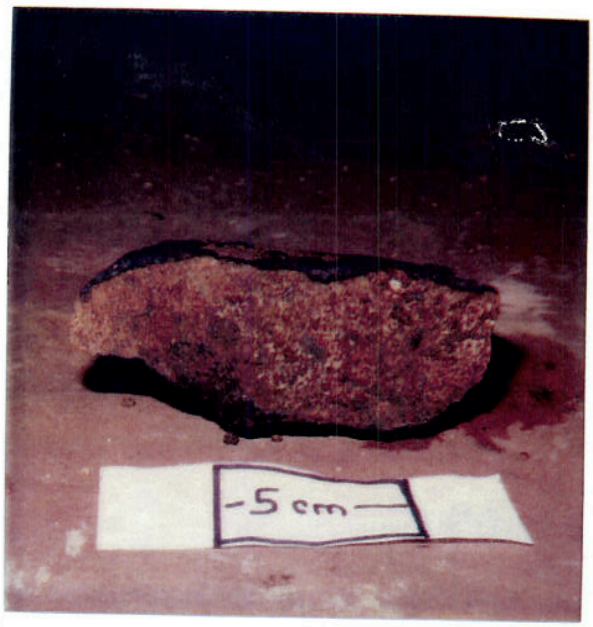
Surface Texture: Smooth

Mn Crust Thickness:

Min: <1cm Max: 2 Ave: 1

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				



D3-15

Comments and XRD Mineralogy:

Just a patina of crust

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Altered Volcaniclastic Breccia

Description:

All but the smallest clasts of Basalt are altered to rust & yellow ochre colored

no sample taken similar to D2-6

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: Various Location: Rodriguez

Sample Id: D3-16 Weight: 1.1 kg Depth: 1580 - 1045 m

Mn Crust Description

Surface Texture: Smooth

some have slight botryoidal texture

Mn Crust Thickness:

Min: <1mm Max: 10mm Ave: 5 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-16

F7-87-SC

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight
D3-16a + b both are hyaloclastite	probe for glass	(A. Davis

Substrate Description

Rock Type: Volcanic Breccia

Description:

Group of small samples w/same substrate. V. Breccia w/sand and phosphorite matrix

Described By: TSM Subsampled By: TSM

on [illegible] DAVIS

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 12 x 12 x 7.5 cm Location: Rodriguez Seamount

Sample Id: D3-17 Weight: _____ Depth: 1580 - 1045 m

Mn Crust Description

Surface Texture: No Crust

Mn Crust Thickness:

Min: _____ Max: _____ Ave: _____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-17 F7 87 SC

Comments and XRD Mineralogy:

ANALYSE:

Subsample & Type	Analysis	Weight
D3-17	TS	

Substrate Description

Rock Type: Trachyte? no!!

Calc-alkaline (?) [illegible]

Description:

Described By: [illegible] Subsampled By: [illegible]

GAVE TO A. DAVIS

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 13x12x11 cm Location: Rodriguez Seamount

Sample Id: D3-18 Weight: _____ Depth: 1580-1045 M

Mn Crust Description
Surface Texture: No Crust

Mn Crust Thickness:
Min: _____ Max: _____ Ave: _____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-18

F7-87-SC

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight
D3-18	TS	
whole rock taken	for K/Ar	dating tech. [illegible]

Substrate Description
Rock Type: Basalt

Description:
Fine grained basalt with minor small (<1mm) vesicles.

Described By: LBen Subsampled By: LBen

GAVE TO A DAV

SAMPLE DESCRIPTION

Cruise Id: F7-87-SC Size: 100 cm^3 Location: Rodriquez Seamount

Sample Id: D3-19 Weight: _____ Depth: 1580-1045 m

Mn Crust Description

Surface Texture: No Crust

Mn Crust Thickness:

Min: _____ Max: _____ Ave: _____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D3-19

F7-87-SC

Comments and XRD Mineralogy:

ANALY.

Subsample & Type	Analysis	Weight
D3-19	TS	

Substrate Description

Rock Type: Vesicular Basalt

Description:

Vesicular basalt w/vesicules <3mm across.

2 additional unnumbered rocks taken for WR-chem. D3-21, D3-23 etc.

Described By: LBen Subsampled By: LBen