Syogo Ridge

SAMPLE ID	Mn CHEM	Pt & Au	REE	Si Chem	P.Sect.	35mm Pho	Archive	Paleo					
D36-1													
D36-2	Layers				✓								
D36-3-I													
D36-4	Bulk												
D36-5													

Sample Description

MARIANA ISLANDS

Cruise I.D: ~~L5-83-HW~~

Sample I.D: Sta: D36-1

Location: SE SOYO Ridge

DEPTH: 1950 - 1860m

Size: 26x11x11cm Weight: 1.72 Kg

Mn crust thickness:

Total: min: max: ave: 2.3cm

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Porous & botryoidal (large)

Internal structure:

layered:
laminated:
massive:
porous: ✓
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcaniclastic Breccia

Description: Gray angular meta-volcanic clasts (2-40mm) & one fairly fresh gray angular aphanitic basalt clast (4cm). Also yellow-orange altered/recrystallized subrounded clasts of ??
All floating in a beige clay matrix & surrounded by Mn which is partially replacing the clay.

Mineralogy (XRD):

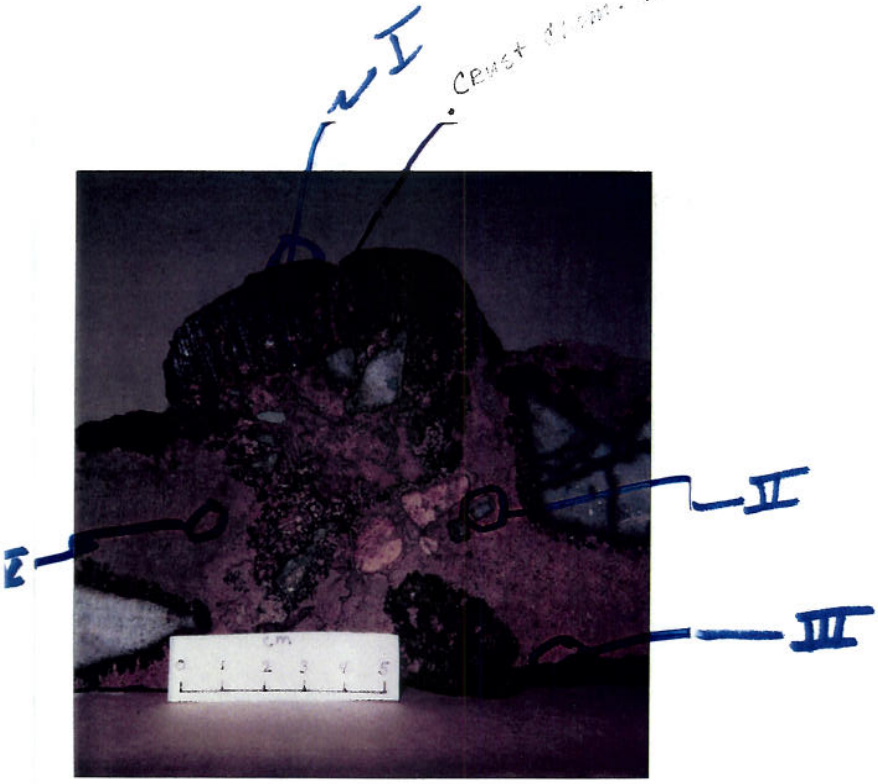
When sample opened for chemistry and grain mount. 2-4-88 MM

MARIANA ISLANDS

D36-1

Analyses and subsamples:

analysis:	analyst:
XRD: See [illegible]	
D36-1-I: bulk Mn	
II: basalt clast	
III: yellow-tan sediment	
IV: greenish tan sed. clast	
D36-1 - Bulk 0-30mm (Sand throughout crust) 22gm ~	



MARIANA ISLANDS

D36-1

Mariana Islands

Sample Description

Cruise I.D: ~~L5-83-HW~~ slabbed in

Sample I.D: Sta: D36-2

Location: SE Syoyo Ridge

Size: 24x16x8 Weight: 2.75 kg (dry)

Mn crust thickness:

Total: min: 2mm max: 2.2cm ave: 0.5cm

Inner crust: min: 1mm max: 8mm ave: 4mm

Outer crust: min: 0 max: 1.5cm ave:

Surface texture:

Internal structure:

layered: X Difficult to distinguish inner & outer layers. Inner slightly lighter in [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

laminated:

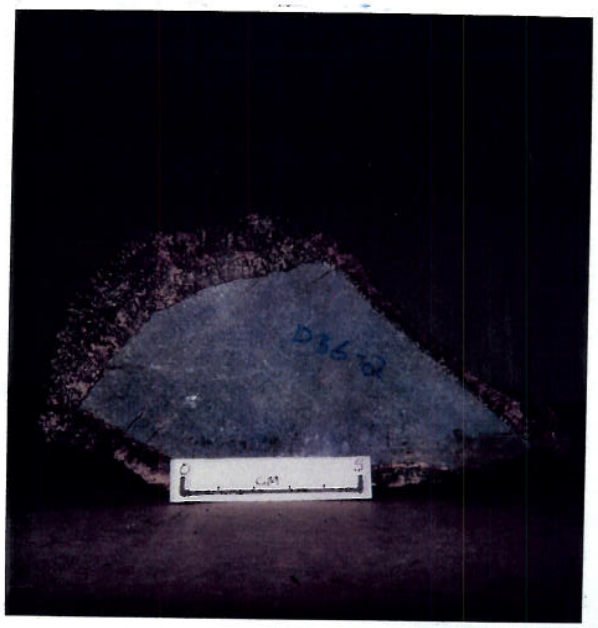
massive:

porous: X [illegible] porous, occasional basalt chips in outer layer. Cut out [illegible] [illegible]

dendritic:

other:

Depth: 1860-1950 m



Mariana Islands

D36-2

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Abundant [illegible] on crust

Substratum:

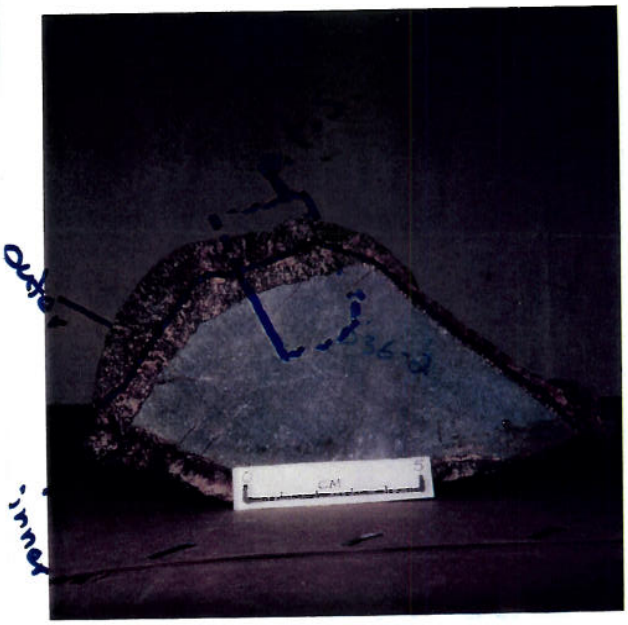
Rock type: Basalt

Description: Altered gray aphanitic, sub-angular, basalt clast.

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
Chemistry: Manheim	Lisa Morgenson
-A outer crust 0-13mm	
-B inner " 13-20mm	
XRD:	
D36-2-I outer 0-13mm	
-II inner 13-20mm	
-III substrate	
Polished Thin Section	Mann Petrographics
D36-2A resubmitted for Hg Chem	



Mariana Islands

D36-2

Sample Description

Cruise I.D: ~~L5-83-HW~~ Mariana Isl. Sample I.D: Sta: D36-3 Location: SE Sysoyo Ridge

Size: 12x6x4cm Weight: 285g Depth: 1950-1860 m

Mn crust thickness: -almost a nodule

Total: min: 2.6 max: 3.1 ave: 2.9 cm

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Rough & porous

Internal structure:

layered:
laminated:
massive:
porous: ✓ large pores on sfc. extend 2 mm beneath
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:
Patchs of orange-brown silty-sediment
Abundant worm tubes on surface of crust
Forams & worm tubes in pores on surface. Detrital grains throughout crust

Substratum:

Rock type: Basalt clast

Description: Gray aphanitic, altered? angular basalt clast

Mineralogy (XRD):

MARIANA ISL.
D36-3

Analyses and subsamples:

analysis:	analyst:
XRD:	Charlaine Fleishman
D36-3-I: bulk Mn crust	

Mariana Islands

Sample Description

Cruise I.D: ~~L5-83-HW~~

Sample I.D: Sta: D36-4

Location: SE Syuyo Ridge

Size: _____ Weight: [illegible] gms total (dry)

[illegible] x 2 cm

Depth: 1850-1950 m

Mn crust thickness:

Total: min: 8mm max: 28mm ave: 25mm

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

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

Surface texture: porous w/abundant worm tubes

Internal structure: _____

layered: _____

laminated: _____

massive: _____

porous: ✓

dendritic: _____

other: intermixed w/qtz basalt grains & sediment (altered ??) & biota (foraminifera ??)

some of the crusts →

MARIANA ISL.
D36-4

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits:

Worm tubes in surface pores

Also foram in inner crust (probably in a pore cavity)

Substratum:

Rock type: basalt clast or cuscus

Description: [illegible]

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
Chemistry: bulk crust "manhein" plug. Sent 2 of the small pieces	Lisa Magenson
XRD:	
D36-4-I: bulk Mn	
D36-4-II: bulk substrate	
D36-4-II, OC. on substrate; 11.2 gm	

Mariana Islands

Sample Description

Cruise I.D: ~~L5-83-HW~~ Sample I.D: Sta: D36-5 Location: SE Spreading Ridge

Size: 7x9x45cm Weight: 225g
(only ½ of rx)

Mn crust thickness:

Total: min: 8 max: 12mm ave: 5mm

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: porous

Internal structure:

layered:
laminated:
massive:
porous: ✓ [illegible]
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

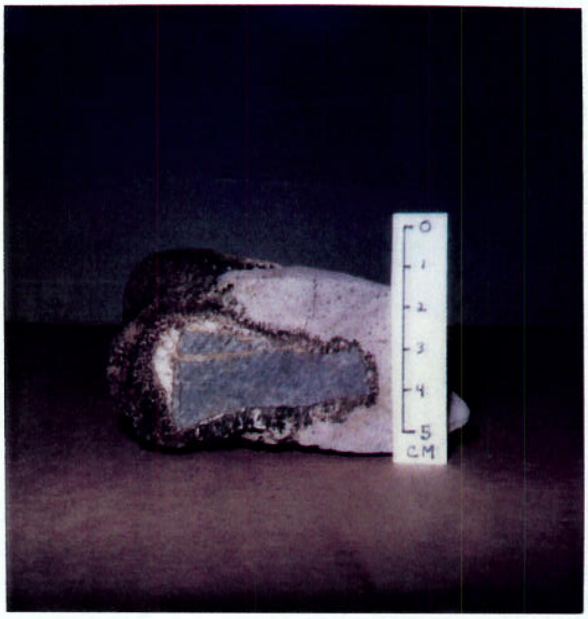
abundant worm tubes on surface

Substratum:

Rock type: [illegible]

Description: [illegible] ? manganese [illegible] manganese is replacing the mud

Mineralogy (XRD):



MARIANA ISLANDS
D36-5

Analyses and subsamples:

analysis:	analyst:
XRD:	Charlaine
D36-5-I: bulk m	
D36-5-II: bulk mud	
PALEO on Mudstone	