Dredges 15 ~~and 16~~

SMEAR SLIDE DESCRIPTION

LOCATOR	SAMPLE NO.	SEC.	INTERVAL	STATION NO.	Dom. LITH.	Minor LITH.	OBSERVER
L9-84-CP	D15-1					X	AD

Sediment Name: Nannofossil foraminiferal ooze JAH

ABUNDANCE	TEXTURE	SPECIFIC DATA	
50	Sand		
40	Silt		
10	Clay		
	COMPOSITION		
	Quartz		
	Feldspar		
	Mica		
	Heavy Mnls.		
	Total Detrital		
5	Clay Mnls.		
TR	Volc. Glass		
TR	Palagonite		
	Chlorite		
	Glauconite		
	Pyrite		
	Micro Nodules		
	Dolo. Rhombs		
	Zeolite		
2	Auth. Carb.		
	Rock Frags.		
TR	Apatite?		
50	Foraminifera		
40	Calc. Nannos		
	Diatoms		
	Radiolarians		
3	Sponge Spic.		
	Silicoflag.		
	Fish Remains		
	Plant Debris		

PER-CENT	DETAILED MINERALOGY

REMARKS:

no discoasters – ooze probably pleistocene or younger while coccolithospheres are present

2nd slide: showed rare discoasters and some zeolites (?)

DATA CODE LEGEND

Fossil preservation
G = good
M = moderate
P = poor

Abundance code
1% = TR (trace)
1-5% = R (rare)
5-25% = C (common)
25-75% = A (abundant)
75% = D (dominant)

NEBCO

L9-84-CP

Sample Description

Cruise I.D: ~~EW 83-MW~~ Sample I.D: Sta: 11 D 15 - 2 Location: Seamount 520

Size: 26x23x13cm Weight: ~ 10 kg

Depth = 1800-1300 m

Mn crust thickness:

Total: min: 1cm max: 6 cm ave: 3cm

Inner crust: min: ____ max: ____ ave: ____

Outer crust: min: ____ max: ____ ave: ____

Surface texture: rough, porous, knobby

Internal structure: ____

layered: ✓ ~ 4 layers

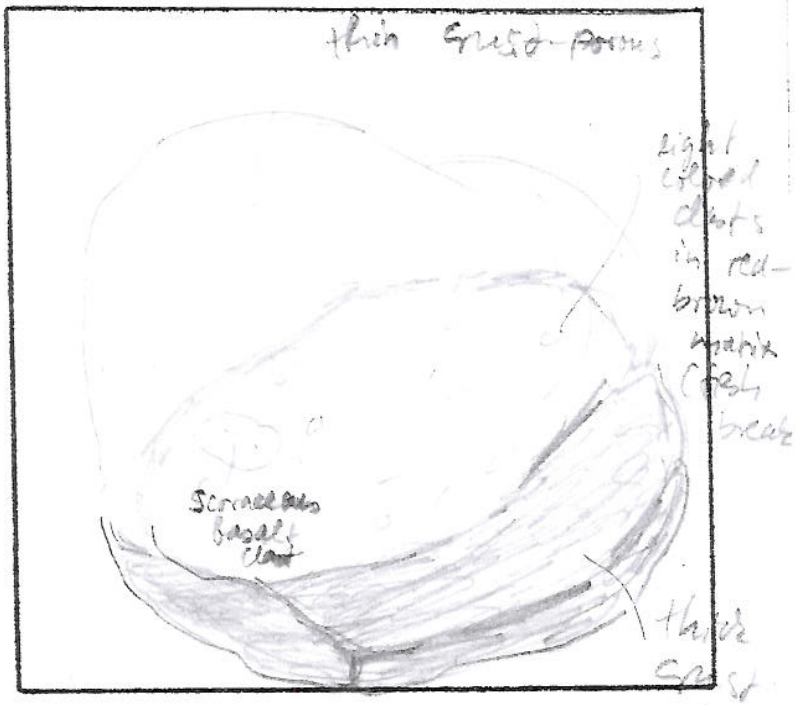
laminated: ____

massive: ✓

porous: ✓ middle layers

dendritic: ____

other: mineral grains, phosphate pieces between some layers



Mineralogy (XRD): ____

Associated alteration, phosphorite or hydrothermal deposits:

Fe oxide stringers

Substratum:

Rock type: hyaloclastite

Description: clasts of limestone, phosphorite - rare vesicular basalt clasts in red-brown palagonite(?) matrix - volcanic clasts are extensively altered

Mineralogy (XRD):

big boulder bottom apart

Analyses and subsamples:

analysis:	analyst:
piece of crust	Henry Meyer
" "	Tim Ling XRF
" crust	Jared Hawkins
slab of rock	" "
piece for T.S.	A. Davis
Sampled for chem.	C. Daniel
D15-2-a-sfc. 0-.5cm	
2-b 0.5-2.5cm	
2-c 2.5-5.5cm	
2-d substrate	
Sampled for XRD:	C. Daniel
*D15-2-I sfc. Mn crust 0-.5	
I outer 0.5-2.5cm	
I inner 2.5-6cm	
II bulk substrate	

* See back

batrapoidal crust
I
outer layer
II
III
inner layer
IV

L9-84-CP

Sample Description

Cruise I.D: ~~L5-83-MW~~ Sample I.D: Sta: 11 D 15-3 Location: Seamount 520

Size: 24x22x18 cm Weight: 5 kg *cut for Alice Depth = 1800-1300m

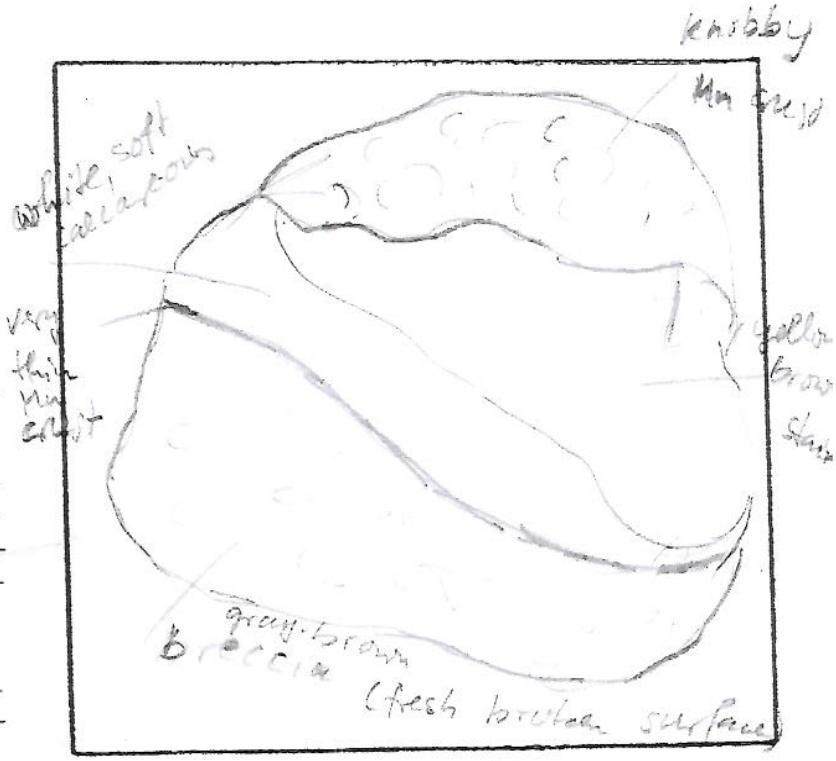
+ 3 smaller pieces 18x8x8cm, 12x7x7cm, 6x5x2cm

Mn crust thickness:

Total: min: 0.3 cm max: 2cm ave: 0.5 cm

Inner crust: min: — max: — ave: —

Outer crust: min: — max: — ave: —



X-see on back

Surface texture: smooth (abraded) porous + rough

Internal structure:

layered:
laminated:
massive: ✓
porous:
dendritic:
other: vuggy w/phosphorite

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum: upper part soft white chalk (hard & phosphatized)

Rock type: lower part breccia in phosphatized matrix

Description:

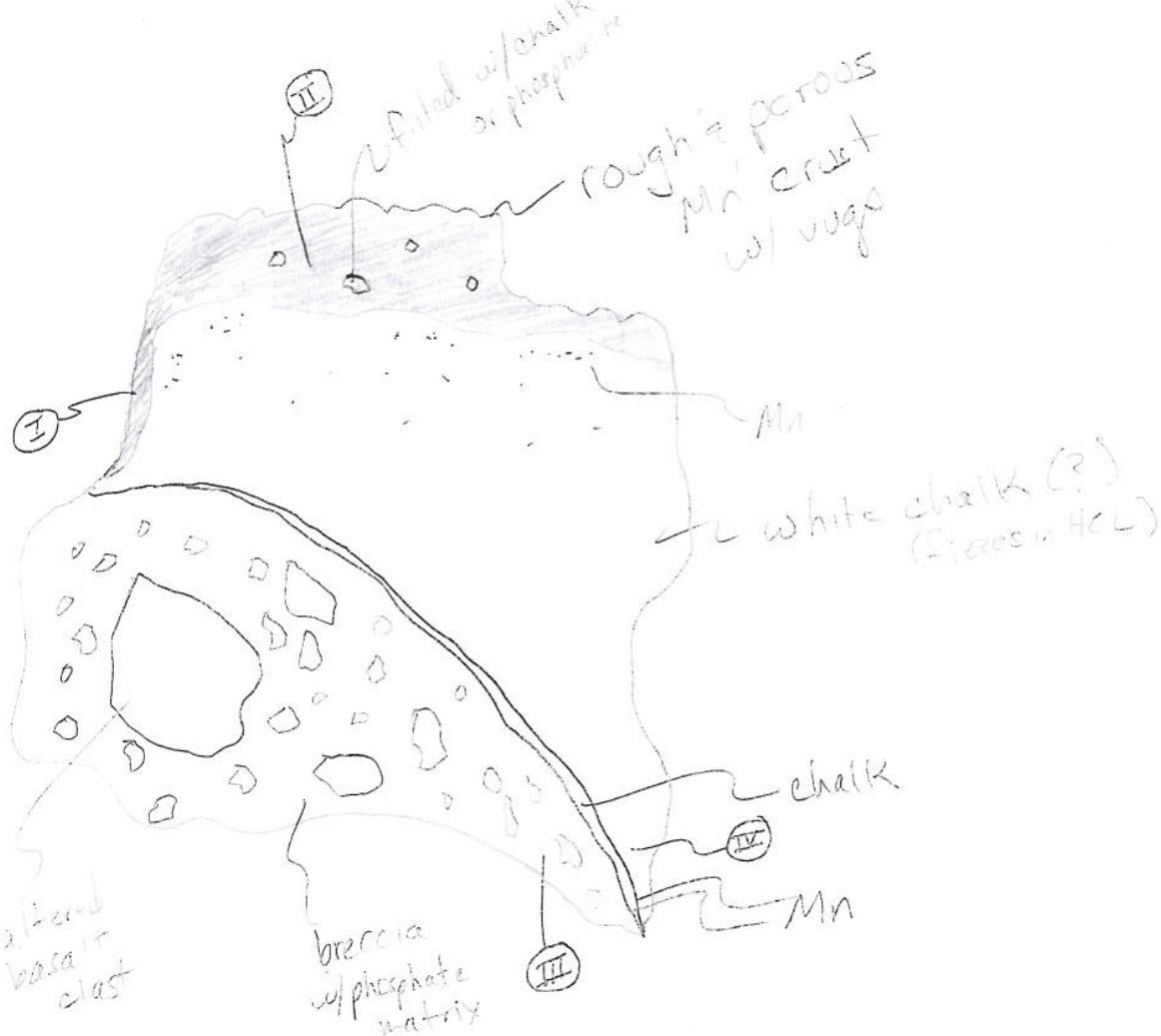
subrounded clasts of palagonite and basalt (highly altered) in phosphorite matrix olivine(?) pseudomorphs in palagonite + basalt clasts vesicular (filled w. calcite? smectite?)

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
2 slabs to 1 piece for T.S.	Janet Haggerty A. Davis
Sampled for chem	C. Daniel
D15-3-a - sfc (0-.5cm)	
3-b - .5-1.5cm	
3-c - substrate	
Sampled for XRD	C Daniel
*D15-3-I - porous side Mn (0-3mm)	
II - porous crust 1-1.5cm	
III - breccia - bulk	
IV - phosphatized chalk	
resampled for chem for REE	11-16-86 Denver
D15-3-I: 0-5mm surface	
D15-3-II: 5-22mm inner	
D15-3A & D15-3B resubmitted for Hg chemistry	

* see back


II
filled w/ chalk or phosphate
rough & porous Mn crust w/ vugs
I
Mn
white chalk (?) (fizzes in HCL)
chalk
IV
Mn
lead basalt clast
breccia w/ phosphate matrix
III

L9-84-CP

Sample Description

Cruise I.D: ~~L9-84-CP~~ Sample I.D: Sta: 11 D 15-4 Location: Seamount 52C

Size: bag of broken pieces Weight: ~1.5kg

Depth = 1600 - 1300 m

Mn crust thickness:

Total: min: 1mm max: 1cm ave: 0.5 cm

Inner crust: min: max: ave:

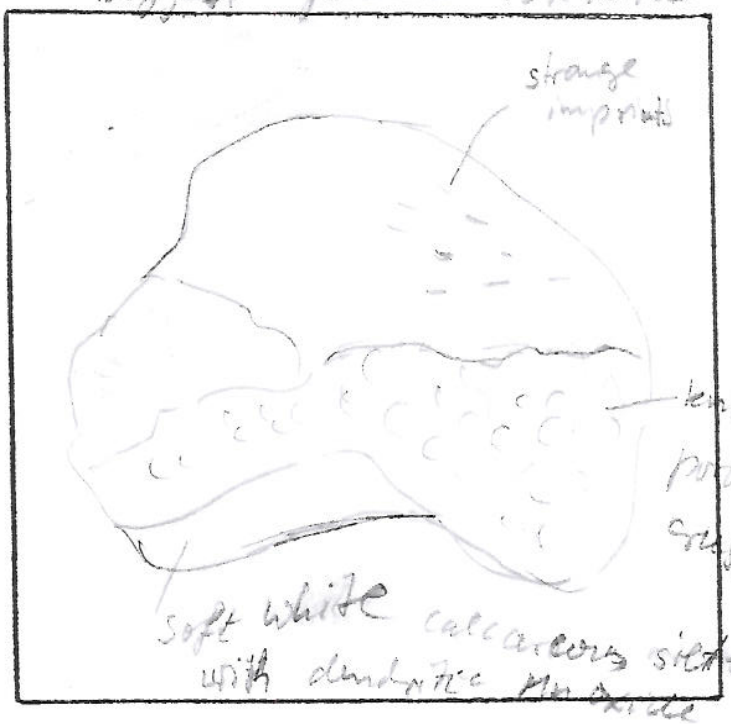
Outer crust: min: max: ave:

Surface texture: rough porous

Internal structure:

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

biggest piece 15 x 12 x 6



Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: phosphatized chalk

Description: white to beige chalk with many pieces of Mn crust and Mn oxide dendrites = highly bioturbated

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
piece of biggest slab to	Jared Haggerty
Sampled for chem	C Daniel
D15-4-a - bulk Mn crust	
D15-4-b - substrate	
Sampled for XRD	C. Daniel
D15-4-I - Scraped surface Mn crust	
D15-4-II - bulk substrate	
Doubly Polished Thin Section by Yon Hwang	

D15-4
29-84-CP

L9-84-CP

Sample Description

Cruise I.D: ~~L5-C8-HW~~ Sample I.D: Sta: 11 D 15-5 Location: Seamount 52

Size: 6cm DIA Weight: 0.2 kg

Depth = 1800 - 1300 m

Mn crust thickness: thin coating

Total: min: — max: — ave: —

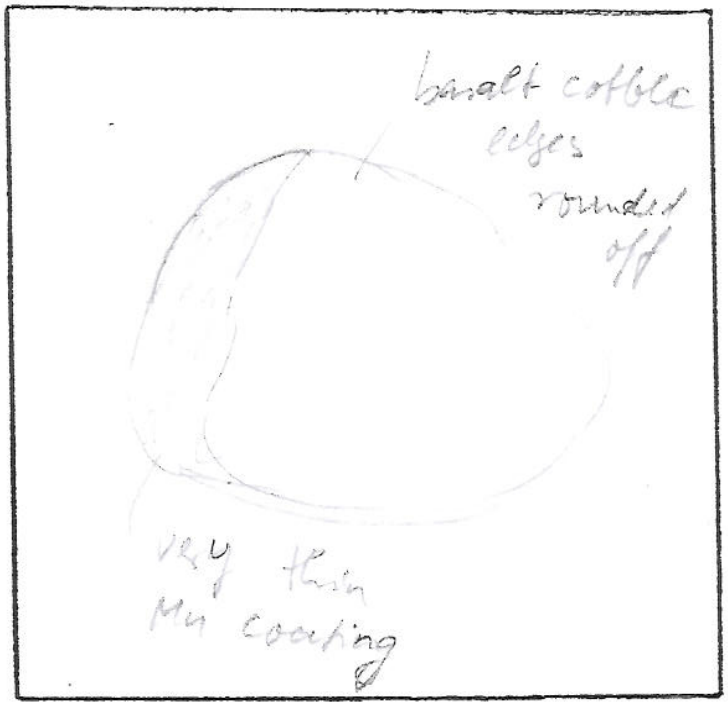
Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: rough + porous

Internal structure: —

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



Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: basalt cobble

Description: gray-brown, vesicular (>15%) porphyritic basalt probably had olivine phenocrysts completely replaced by Fe oxide. texture intersertal. Vesicules filled with calcite and/or zeolite?

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
piece for T.S. + chemistry	A. Davis

L9-84-CP

Sample Description

Cruise I.D: ~~[illegible]~~

Sample I.D: Sta: 11 D 15-6

Location: Seamount 42

Size: ~ 5cm Dia Weight: ~0.1 kg each

Depth = 1800 - 1300 m

Mn crust thickness:

Total: min: 0 max: 3mm ave: 1mm

Inner crust: min: ___ max: ___ ave: ___

Outer crust: min: ___ max: ___ ave: ___

Surface texture: abraded & granular

Internal structure: ___

layered: ___

laminated: ___

massive: ___

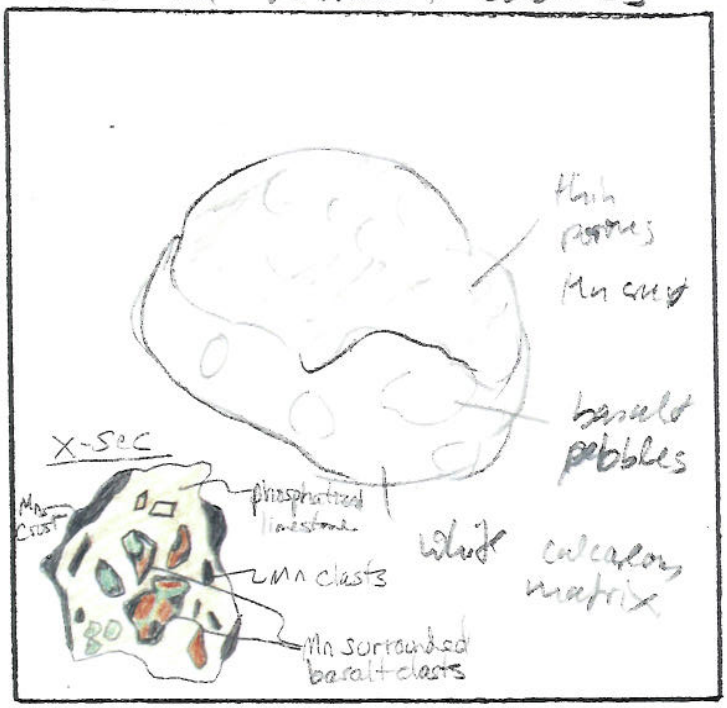
porous: ___

dendritic: ___

other: ___

Mineralogy (XRD): ___

2 small rounded cobbles



Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: limestone breccia bearing altered volcanic + phosphatized

Description: limestone-pebble

Basalt clast had olivine (?) phenocrysts - now replaced by Fe oxides

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
1 a piece for T.S. most of both pieces to	A. Davis Janet Hagberg
Sampled for XRD:	
DIS-6-I - scraped surface Mn 0-3mm	
DIS-6-II - bulk substrate	

L9-84-CP

Sample Description

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

Sample I.D: Sta: 11 D D15-7

Location: Seamount 52C

Size: _____ Weight: 0.1 kg

Depth = 1800 - 1300 m

Mn crust thickness: mostly spalled off

Total: min: _____ max: _____ ave: _____

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

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

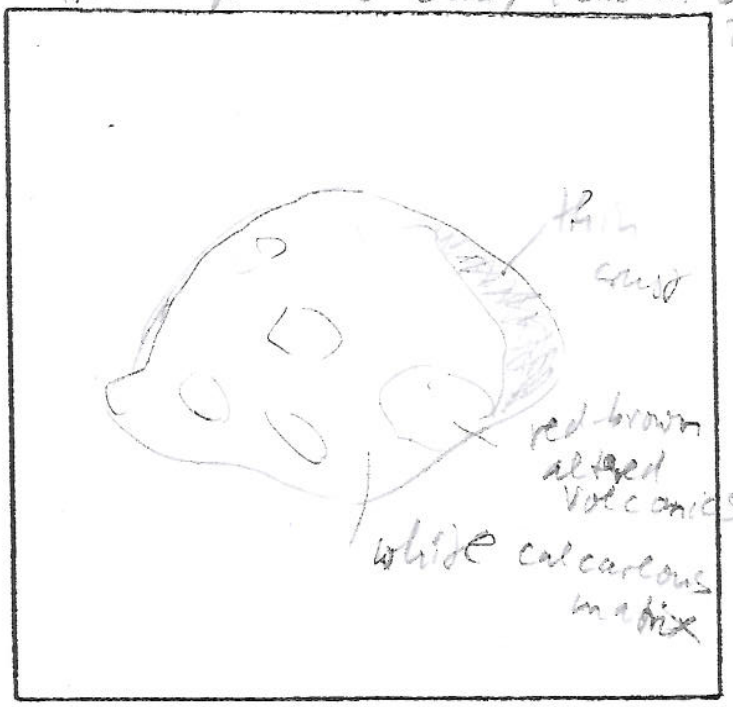
Surface texture: _____

Internal structure: _____

layered: _____
laminated: _____
massive: _____
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Three pebbles 2cm, 4cm and 5cm DIA



Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcanic breccia in white calcareous matrix

Description: _____

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
~1/3 of pebble to 2 small piece for T.S.	Jared Hegarty A. Davis

L9-84-CP

Sample Description

Cruise I.D: ~~L5-83-MW~~ Sample I.D: Sta: 11 D 15-8 Location: Seamount 52c

Size: 4x1½x1 cm Weight: < 0.1 kg

Depth = 1800 - 1300 m

Mn crust thickness: none

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:

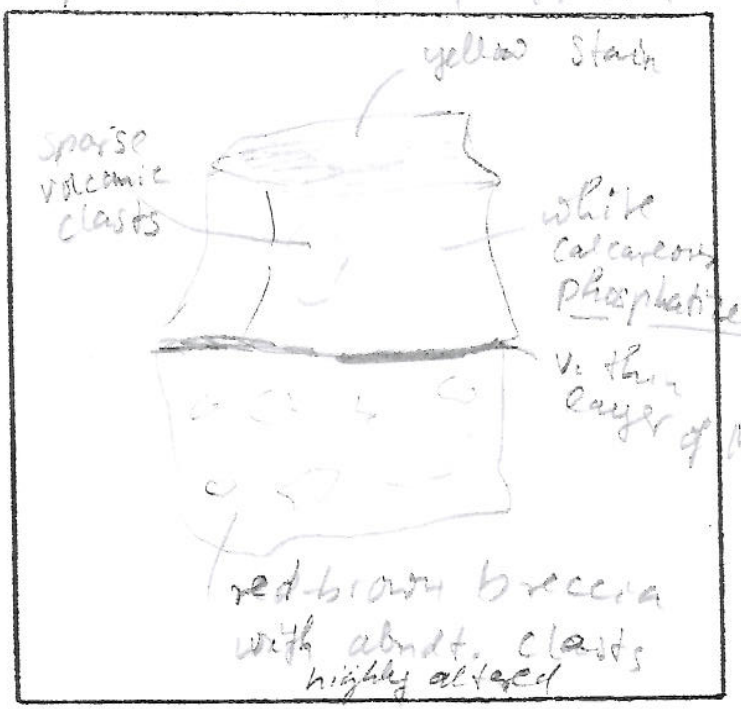
Substratum:

Rock type: upper part limestone lower part highly altered volcanics

Description:

Mineralogy (XRD):

2 pieces 4x2x1 and 4x1x1



Analyses and subsamples:

analysis:	analyst:
1 piece to 1 " for T.S.	Janet Haggerty A. Davis

L9-84-CP

Sample Description

Cruise I.D: ~~L5-80-MN~~

Sample I.D: Sta: 11 D 15-9

Location: Seamount 52

Size: _____ Weight: < 1 kg

Depth = 1800 - 1300 m

bag of broken pieces of Mn crust without substratum

Mn crust thickness:

Total: min: 1 cm max: 3cm ave: 2 cm

Inner crust: min: 0.6 cm max: 1.2 cm ave: 1 cm

Outer crust: min: 0.4 max: 0.6 ave: 0.5 cm

Surface texture: knobby, rough to porous

Internal structure:

layered: 2

laminated:

massive: ✓

porous: ✓

dendritic:

other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: NONE

Description:

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
piece to	Lauren M. (Scripps Henry Mayer
" to	
Sampled for chem D15-9 - bulk Mn (0-3.0cm)	C. Daniel
Sampled for XRD D15-9-1 bulk Mn 0-3 cm	C. Daniel

L9-84-CP

Sample Description

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

Sample I.D: Sta: 11 D 15-9

Location: Seamount 52

Size: _____ Weight: < 1 kg

Depth = 1800 - 1300 m

bag of broken pieces of Mn crust without substratum

Mn crust thickness:

Total: min: 1 cm max: 3 cm ave: 2 cm

Inner crust: min: 0.6 cm max: 1.2 cm ave: 1 cm

Outer crust: min: 0.4 max: 0.6 ave: 0.5 cm

Surface texture: knobby, rough + porous

Internal structure:

layered: 2

laminated:

massive: ✓

porous: ✓

dendritic:

other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: NONE

Description:

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
piece to	Lauren M. (Scripps)
" to	Henry May
Sampled for chem D15-9 - bulk Mn (0-3 cm)	C. Daniel
Sampled for XRD D15-9-I bulk Mn 0-3 cm	C. Daniel