DREDGE 19
S.Johnston
Is Ridge

AMPLE ID	Mn CHEM	Pt & Au	REE	Si Chem	P.Sect.	35mm Pho	Archive	Paleo					
CD 19-1	✓		✓			✓		✓					
19-2													
19-3								✓					
19-4	✓												

Sample Description

Cruise I.D: F7-86-HW Sample I.D: Sta: 21 CD19-1 Location: S. Johnston Ridge

21 x 17.5 x 17

Size: _____ Weight: 4 kg (Total)

Mn crust thickness:

Total: min: 1.4 max: 2.3 ave: 2.0 Top
0.3 1.0 0.6 Bottom + sides

Inner crust: min: — max: — ave: —

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

Surface texture: Medium Botryoidal

Internal structure: Lms block completely encased in Crust

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

CD19-1

Chemistry 6/29/90

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Phos Studn

Substratum:

Rock type: Foraminiferal Limestone

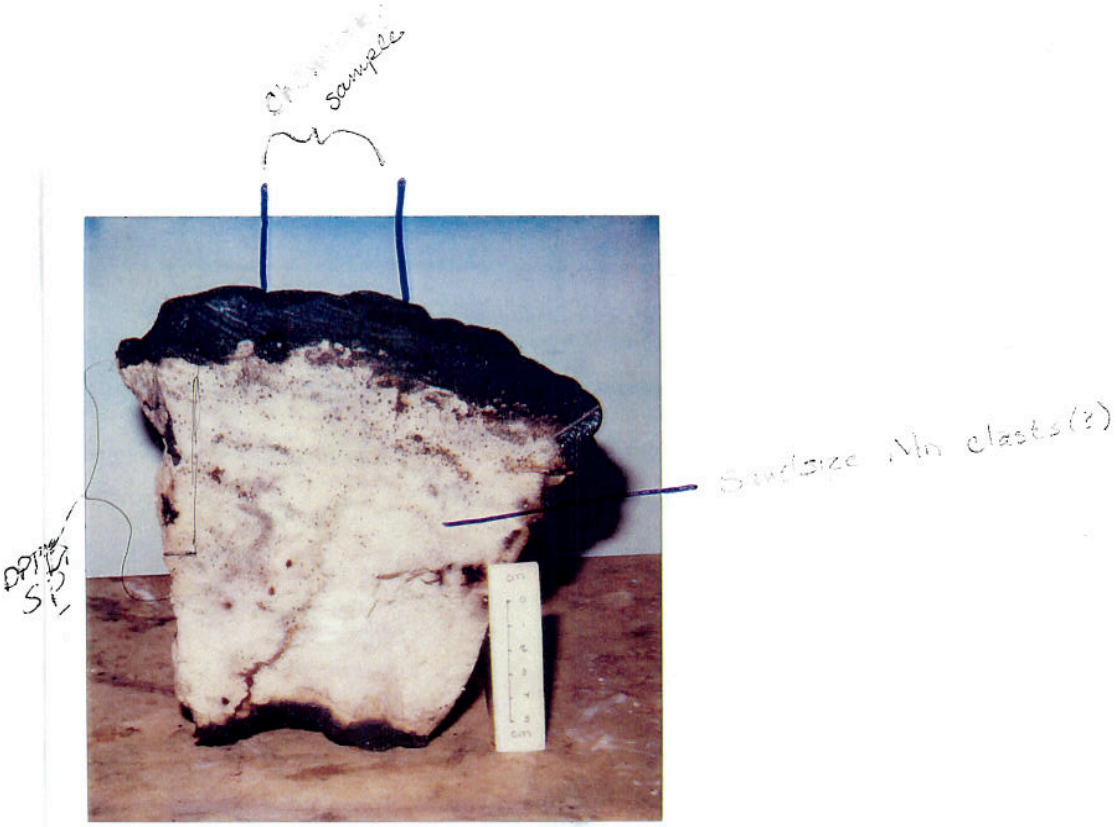
Description: Cream colored bioclastic bioclastic (?) Lms = Calcarate Sandstone - Sand-sized grains - small to medium - poorly consolidated

Diffusion front extending from crust into lms - darker cream colored -

Mineralogy (XRD): 100% Carbonate - Apatite

Analyses and subsamples:

analysis:	an
1/2 given to Bumines	
Paleo Sample	
CD19-1 Bulk CC 0-14mm	33gm 14mm
CD19-1A XRD	Ames
35mm slide	G. Smith
6/29/90 ICD OC, Fl, Cl, REE	" CD19-1A-2
Sc, O, S, U, Th	treated
OC - CD19-1A untreated	
DPTS	
Entire Crust Removed for Extractive metallurgy	Arno Kleyenstuber



CD19-1

Sample Description

Cruise I.D: F7-86-HW Sample I.D: Sta: 21 CD 19-2 Location: S. Johnston Ridge

Size: 15.5 x 13 x 9 Weight: 2 kg

Mn crust thickness:

Total: min: 1.3 max: 2.0 ave: 1 & 8

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Polished subdued botryoidal (kidneyore)

Internal structure:

layered:
laminated:
massive: X
porous: in places
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

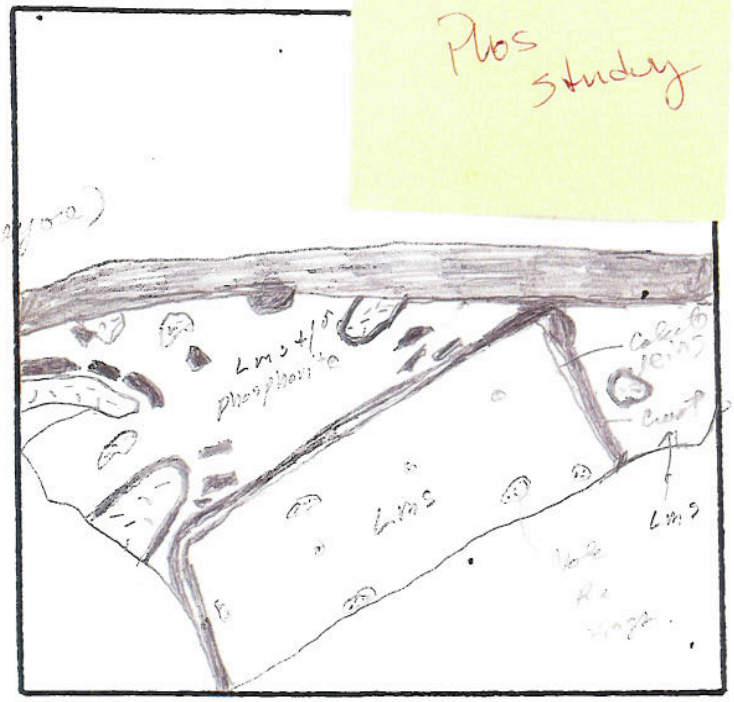
Rock type: Breccia

Description: Mn coated clasts of Volc. Rx & Lms & Volc. Rx's w/in Lms in a 2 generation breccia

Mineralogy (XRD):

100% Carbonate-Apatite

Phos study



Analyses and subsamples:

analysis:	analyst:
35 mm of surface texture & X-section	
CD19-2 XRD	Ames
35 MM slide	G. Smith

Photo surface & X-section (XRD Lms to see if phosphorite) XRD done

CD19-2

CD19-2

Sample Description

Cruise I.D: F7-86-HW Sample I.D: Sta: 21 CD19-3 Location: S Johnston I Ridge

17 x 15 x 5

Size: _____ Weight: 1 kg

Mn crust thickness:

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: Limestone

Description: Bioclastic (?) Cream, sand-sized grains

Mn Patina on Partly KR

Mineralogy (XRD): _____

CD19-3

Analyses and subsamples:

analysis:	analyst:
a similar piece went to Woods Hole	
Paleo sample	

CD19-3

Sample Description

Cruise I.D: F7-86-HW Sample I.D: Sta: 21 CD19-4 Location: S Johnston Ridge

Size: 1.5 to 4.0 cm in diameter Weight: _____

Mn crust thickness:

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

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

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

Surface texture: botryoidal to smooth w/ lizard skin

Internal structure: _____

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

CD19-4

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: Volcaniclastic Breccia & Basalt

Description:

7- small nodules from 15 x 25mm to 25 x 45mm.
Substrates: V. Breccia with altered clasts and phosphorite matrix
Vesicular basalt with phosphorite in vesicles

Mineralogy (XRD): _____

Analyses and subsamples:

analysis:	analyst:
CD19-4 Bulk (from 3 nodules)	0-5mm 11gm
XRD crust	

CDM-4

Cruise Id: F7-86-HW Size _____ (cm) Location: Johnston Island ridge

Sample Id: CD19-5 Weight: _____ (kg) Depth: _____ (m)

Mn Crust Description

Surface Texture: _____

Mn Crust Thickness (mm):

Min: _____ Max: _____ Ave: _____

Layers (Outer to Inner)(mm):

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

* Alicé has this sample
She has numbered it
CD19-A1

Comments and XRD Mineralogy:

ANALYSES

Subsample Number	Analysis	LayerThickness

Substrate Description

Rock Type: Basalt (Nephelinite)

Description:

Biology ?:

Described By: Alicé Davis

Subsampled By: