DREDGE 7
W. Side
Karin Rdg

AMPLE ID	Mn CHEM	Pt & Au	REE	Si Chem	ΩP.Sect.	35mm Pho	Archive	Paleo					
CD7-1													
CD7-2													
CD7-3	Inner 5mm Bulk	✓	✓	✓	✓								
CD7-4													
CD7-5													
CD7-6													
CD7-7													
CD7-8													
CD7-9	Bulk	✓		Mudstone	✓								
CD7-10													
CD7-11	Top [illegible]			[illegible]									
CD7-12													
CD7-13	Inner 5mm Bulk			Basalt									
CD7-14	Inner 5mm Bulk			Pillow w/ [illegible]					+RD on XTALS				
CD7-15					Plain T.S.				XRD				
CD7-16									XRD				

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 1.5 x 13 x 8

Sample I.D: Sta: 09 CD7-1

Location: W Side Karin Ridge

Size: _____ **Weight:** 1.5 kg

Mn crust thickness:

Total: min: 2.5 max: 3.2 ave: 2.8

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

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

Surface texture: Lizard skin botryoidal, superimposed on a smooth grading to botryoidal surface

Internal structure:

layered: [illegible]
laminated:
massive: X
porous: in areas
dendritic:
other:

Mineralogy (XRD):

CD7-1

F7-86-HW
Karin Ridge
Johnston Is

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Brown Mudstone

Description: Mn stringers Mudstone is bioturbated with burrows filled in lighter colored mudstone

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 21X18X7

Sample I.D: Sta: 09 CD7-2

Location: W side Karin Ridge

Size: _____ **Weight:** 2 kg

Mn crust thickness:

Total: min: 1.3 max: 2.0 ave: 1.7

Inner crust: min: — max: ave: —

Outer crust: min: max: ave:

Surface texture: Bulbous smooth granular on bottom

Internal structure:

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

Mineralogy (XRD):

CD 7-2

F7-86-HW
Karin Ridge
Johnston Is

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone

Description: Deeply Bioturbated, Burrows lined with Mn (granular). Some burrows are filled in other are not

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 21 x 19 x 9

Sample I.D: Sta: 09 CD7-3

Location: W side Karin Ridge

Size: _____ **Weight:** 3 Kg

Mn crust thickness:

Total: min: [illegible] max: [illegible] ave: [illegible]

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

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

Surface texture: Lizard Skin Polygonal on basically smooth surface

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone (More Clay & Less Silt than 1&2)

Description: Greenish-brown [illegible] for Mn blebs + [illegible]
Bioturbated w/ burrows coated in Mn and then filled by clay.

Mineralogy (XRD):

F7-86-HW
Karin Ridge
Johnston Is

CD7-3

Analyses and subsamples:

analysis:	analyst:
Mn Crust Chem	
CD7-3A Bulk	0-25mm
CD7-3C inner 5mm	5mm
REE	
CD7-3B Bulk	
Silicate Chem	
CD7-3B	
XRD of clay burrow infilling	⇒ CD7-3D
D. Polished Section	

Note: Inner 5mm very variable; clasts and burrows make lower content messy. Cleaned off [illegible] and then [illegible] 5mm sample.

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 21 x 15 x 5.5

Sample I.D: Sta: 09 CD7-4

Location: W. Side Karin Ridge

Size: _____ **Weight:** 1.2 kg

Mn crust thickness:

Total: min: 2.0 max: 5.5 ave: 4.0

Inner crust: min: — max: — ave: —

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

Surface texture: Botryoidal w/ lizard [illegible] texture [illegible] Granular texture in [illegible] pockets of botryoids

Internal structure:

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

Pores infilled w/ sediment

Mineralogy (XRD):

F7-86-HW
Karin Ridge
Johnston Is

CD7-4

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone

Description: Cream-colored; Bioturbated with [illegible] Mn lining [illegible]. Some are than filled with Clay

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 16x15x6

Sample I.D: Sta: 09 CD7-5

Location: W. Side Karin Ridge

Size: _____ **Weight:** 1.5 kg

Mn crust thickness:

Total: min: 1.8 max: 3.0 ave: 2.4

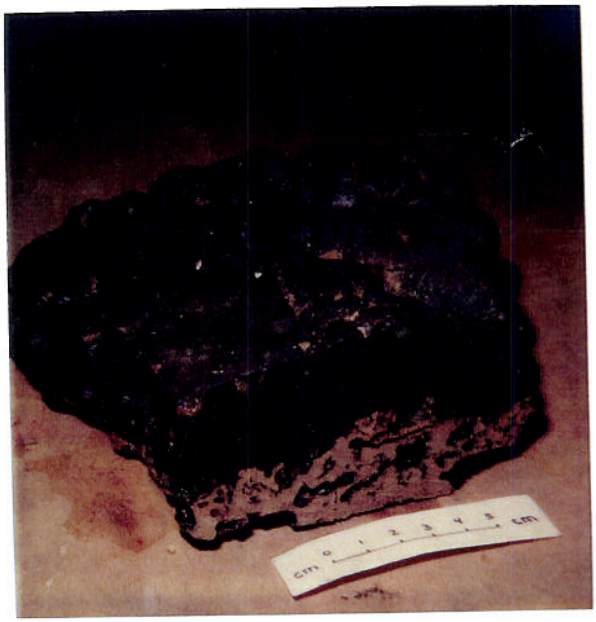
Inner crust: min: _____ max: _____ ave: _____

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

Surface texture: botryoidal w/ lizard skin [illegible]

Internal structure:

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



Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone

Description: Tan-colored, Bioturbated, burrows lined with manular Mn and then some filled with sediment and clay

Mineralogy (XRD):

F7-86-HW
Karin Ridge
Johnston Is

CD7-5

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 19 X 16 X 9

Sample I.D: Sta: 09 CD7-6

Location: W. Side Karin Ridge

Size: _____ **Weight:** 2 kg

Mn crust thickness:

Total: min: 2.5 max: 6.5 ave: 3.0

Inner crust: min: — max: — ave: —

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

Surface texture: Very strange surface texture, smooth with lizard skin, and pits which seem more granular

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone

Description: Tan colored, Bioturbated with burrows lined with granular Mn. Dendrites of Mn.

Crust has sediment "Floaters"

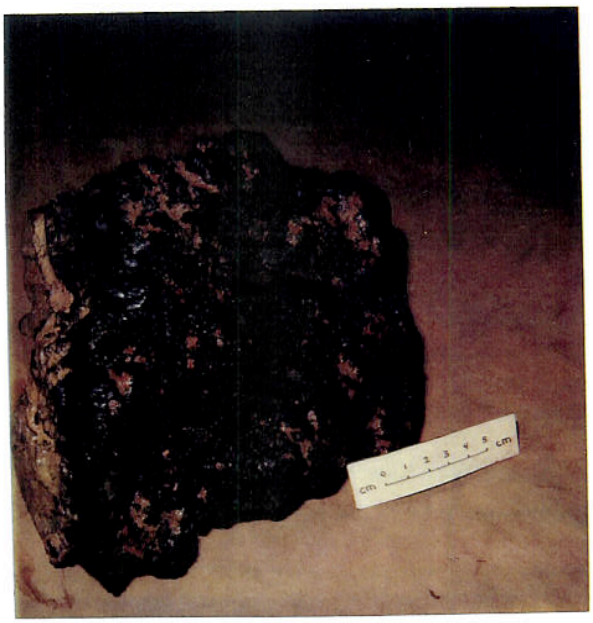
Mineralogy (XRD):

CD7-6

F7-86-HW
Karin Ridge
Johnston Is

Analyses and subsamples:

analysis:	analyst:



C07-6

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 19x12x6

Sample I.D: Sta: 09 CD7 - 7

Location: W. Side Karin Ridge

Size: _____ **Weight:** 1 kg

Mn crust thickness:

Total: min: 2.5 max: 5.5 ave: 4.0

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

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

Surface texture: botryoidal & Impatted Butty

Internal structure: _____

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

Given TO Halbach

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: Mudstone

Description: Thin [illegible] Crust

Mineralogy (XRD): _____

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 18 [illegible]

Sample I.D: Sta: 09 CD7-8

Location: W. [illegible] Karin Ridge

Size: _____ **Weight:** 0.5 kg

Mn crust thickness:

Total: min: 1.0 max: 1.5 ave: 1.25

Inner crust: min: — max: — ave: —

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

Surface texture: Bulbous with lizard skin

Internal structure:

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

Mineralogy (XRD):

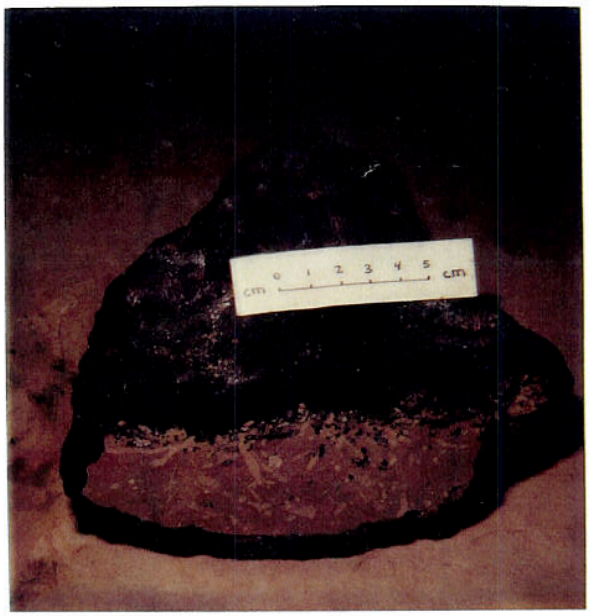
Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone

Description: Bioturbated w/ burrows filled in a lighter colored mudstone. MN staining concentrated along top layer.

Mineralogy (XRD):



F7-86-HW
Karin Ridge
Johnston Is

CD7-8

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 24 x 18 x 6.5 **Sample I.D:** Sta: 09 CD7-9 **Location:** W. Side Karin Ridge

Size: _____ **Weight:** 1.2 kg

Mn crust thickness:

Total: min: 0.8 max: 2.0 ave: 1.0

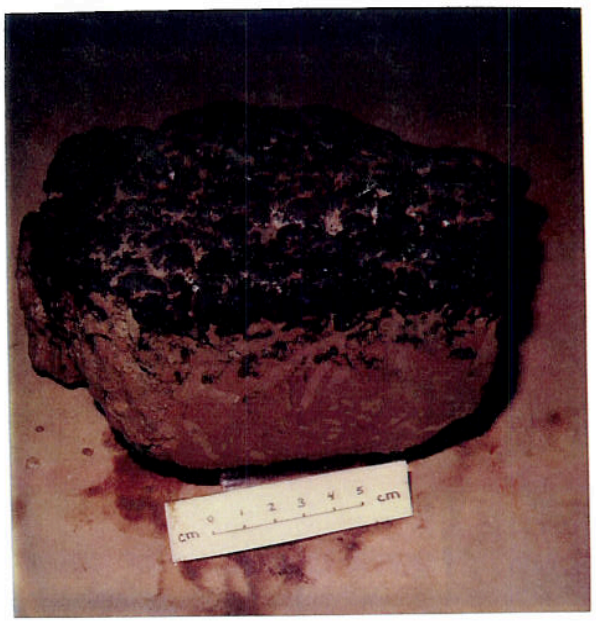
Inner crust: min: — max: — ave: —

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

Surface texture: Botryoidal w/ lizard [illegible] texture

Internal structure:

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



CD7-9

F7-86-HW
Karin Ridge
Johnston Is

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone

Description: Reddish brown, w/ mottled cream mudst (burrowed?)

Mn may replace upper part of mudst.

Bioturbated w/ burrows filled with a different color infilling

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
Mn Crust Chem CD7-9A Bulk	0-11mm
REE CD7-9B Bulk — not submitted	
Silicate Chem CD7-9C	
D.P.S.	
inner 5mm not done	

* Very difficult to separate crust from substrate [illegible] botryoidal, lower [illegible] substrate [illegible]. There is bound to be some substrate [illegible] in crust sample.

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: [illegible]

Sample I.D: Sta: 09 CD7-10

Location: W. Side Karin Ridge

Size: _____ **Weight:** 0.6 kg

Mn crust thickness:

Total: min: 0.7 max: 1.0 ave: 0.8 Top
0.2 0.4 0.5 Bottom + Sid

Inner crust: min: — max: — ave: —

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

Surface texture: Smooth Top
granular Bottom

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

CD7-10

F7-86-HW
Karin Ridge
Johnston Is

Substratum:

Rock type: Mudstone

Description: Cream mudst.
Surrounded on all but one side with crust
Bioturbated with [illegible] by lighter colored mudstone; Mn dendrites

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 20X16X6 **Sample I.D: Sta:** 09 CD7-11 **Location:** W. Flank Karin Ridge

Size: _____ **Weight:** 1 Kg

Mn crust thickness:

Total: min: _____ max: _____ ave: _____

Top crust ~~Inner~~ crust: min: 1.0 max: 1.5 ave: 1.25

Bottom crust ~~Outer~~ crust: min 0.2 max: 1.2 ave: 0.7

Surface texture: Smooth Top granular in lowers Botryoidal Bottom

Internal structure:

layered: [illegible] layer <2mm thick on top
laminated:
massive: X
porous:
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mudstone, with bioturbated

Description: Mn dendrites, bioturbated Wierd piece, Crusted ball-sides, looks like [illegible] of bottom by small area 3.5cm across

Top crust [illegible] layer 1mm or less that separates moderately easily from [illegible] the crust

Mineralogy (XRD):

CD7-11

F7-86-HW
KarinRidge
Johnston Is

Analyses and subsamples:

analysis:	analyst:
Mn Crust Chem	
CD7-11A Bulk - Top Crust	
CD7-11B Bulk - Bottom Crust	
Silicate Chem	
CD7-11C Substrate	
D. Polished Section - d.d. rat end	

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 11X8X5

Sample I.D: Sta: 09 CD7-12 Location: W. Flank Karin Ridge

Size: _____ Weight: 0.2 kg

Mn crust thickness:

Total: min: 2.5 max: 3.5 ave: 3.0

Inner crust: min: _____ max: _____ ave: 2.0

Outer crust: min: _____ max: _____ ave: 1.0

Surface texture: Smooth - some glassy bubbles
(basaltic texture)

Internal structure: _____

layered: 2
laminated: _____
massive: both
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: Volcanic Breccia

Description: Thin layer -

Mineralogy (XRD): _____

CD7-12

F7-86-HW
Karin Ridge
Johnston Is

Analyses and subsamples:

analysis:	analyst:

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 1.5×12×8

Sample I.D: Sta: 09 CD7-13 **Location:** W. Flank Karin Ridge

Size: _____ **Weight:** 1.2 kg

Mn crust thickness:

Total: min: 1.3 max: 2.1 ave: 1.5

Inner crust: min: — max: — ave: —

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

Surface texture: Smooth; microbumps granular on sides

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Basalt

Description: gray-brown, vesicular and feldspar phyric basalt - one small brown basalt frag in crust -

Mineralogy (XRD):

CD7-13

F7-86-HW
Karin Ridge
Johnston Is

Analyses and subsamples:

analysis:	analyst:
Mn Crust Chem	
CD7-13A Bulk	0-15 mm
CD7-13C inner Emm	6 gm
Silicate Chem	
CD7-13B	

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 23x17x11 **Sample I.D: Sta:** 09 CD7-14 **Location:** W Flank Karin Ridge

Size: _____ **Weight:** 3 Kg

Mn crust thickness:

Total: min: 1.3 max: 1.5 ave: 1.4 v. uniform

Inner crust: min: — max: — ave: —

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

Surface texture: Smooth, bumpy granular on sides

Internal structure:

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

Mineralogy (XRD):

CD7-14

F7-86-HW
Karin Ridge
Johnston Is

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcanic Breccia surrounding a small pillow

Description: Clasts of brown Feldspar pyric basalt in poorly indurated cream-colored mudstone Matrix & Calcite and phosphorite (?) Cement - Some Volc. Rx. Frags. are vesicular - Calcite drag - Thalassoma in vugs -

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
Mn Crust Chem	
CD7-14A Bulk	
CD7-14D inner 5mm	5gms
Silicate Chem + XRD	
CD7-14B	
XRD	
CD7-14C X-TALS	
D. Polished Section - did not send	Manw

Note: Alice & S. Clague doing Age dating from some basalt in this breccia. If Needed this sample has good plag clasts for dating

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 9X9X3.5 Sample I.D: Sta: 09 CD7-15 Location: W Flank Karin Ridge

Size: _____ Weight: 0.05 kg

Mn crust thickness:

Total: min: <1mm max: 2mm ave: 1mm

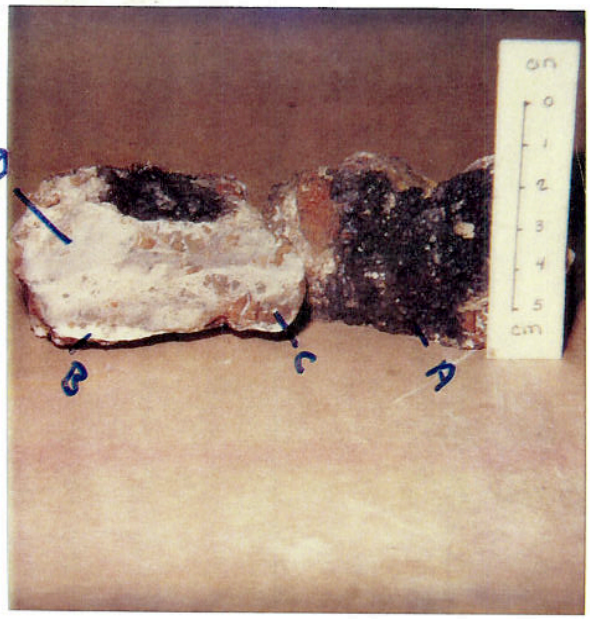
Inner crust: min: — max: — ave: —

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

Surface texture: granular

Internal structure:

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



CD7-15

F7-86-HW
Karin Ridge
Johnston Is

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Phosphorite breccia

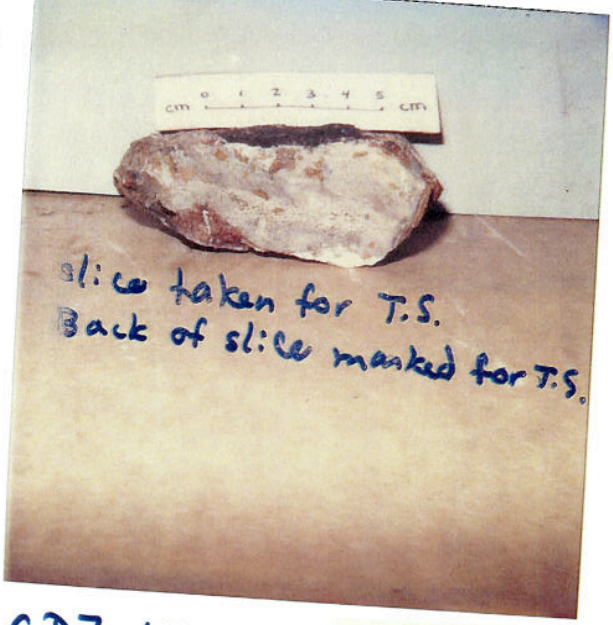
Description: Vole Rx Frags + Mn Frags floating in phosphorite?

TS

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
	→ apatite
	→ apatite



CD7-15

F7-86-HW
Karin Ridge
Johnston Is

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: 12 X 12 18

Sample I.D: Sta: 09 CD7-16

Location: W. Flank Karin Ridge

Size: _____ **Weight:** 0.5 kg

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: _____

CD7-16

F7-86-HW
Karin Ridge
Johnston Is

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: Volcanic Rock + Phosphorite

Description: highly vesicular chocolate brown Volc. Rx w/ all vesicles filled w/ calcite mixed + crucible w/ phosphorite

Mineralogy (XRD): _____

Analyses and subsamples:

analysis:	analyst: