Dredge 7

Dredge Sample Summary Sheet

Sample ID	Bulk CC	Layer CC	Pt & Au	Ree	OC	DPTS/TS	XRD	35mm Photo	Paleo	Archive
D7-1							X		X	
D7-2										
D7-3										
D7-4			X		X	X	X			
D7-5			2X		2X		2X			
D7-6			X		X	X	X			
D7-7										
D7-8			2X		3X	4X	7X			
D7-9										
D7-10	X		X	X			X			
D7-11					X	4X	X			
D7-12					X	X	X			
D7-13					X	X	X			
D7-14					X	X	X			

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): > 1mm Location: YADC

Sample Id: D7-1 Weight (kg): 0.5 Depth (m): 2315-2020

Mn Crust Description

Surface Texture: none

No Picture

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D7-1	Paleo	45gm	
D7-1	XRD		

Substrate Description

Rock Type: clay? w/ fragments

Description: Poorly sorted dark grey to blue green clay? with serpentine quartz and possible peridotite fragment + crystals

Serpentine mud very little [illegible]

Biology (?): gastropods

Described by: G.S.

Subsampled by: G.S.

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 17 x .95 x .5 largest 1x.08 x.5 smallest Location: YAP C

Sample Id: D7-2 Weight (kg): 0.1 Depth (m): 2315-2020m

Mn Crust Description

Surface Texture: none

No Picture

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)

Substrate Description

Rock Type: Pumice

Description: Well rounded, lt. tan, grey + Black + Pink Pumice

Grey + tan fragments have large vesicules + fiberous texture - vesicules are directional

other samples have various [illegible] + are randomly distributed

Some Rocks are Mon dense

Biology (?): None

Described by: G. S.

Subsampled by:

SAMPLE DESCRIPTION

Thousands of pebbles — 6 bags

Cruise Id: F11-90-CP Size (cm): Ave 5 x 3 x 3 Location: VAR C

Sample Id: F7-3 Weight (kg): _____ Depth (m): 2315-2020

Mn Crust Description

Surface Texture: smooth to granular patches of crust

Mn Crust Thickness (mm):

Min: _____ Max: <10mm Ave: _____

Outer to Inner Layers (mm)

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

F7-3

Comments and XRD Mineralogy:

50% TORD I
50% USGS

Substrate Description

Rock Type: Gravel - 6 bags

Description: All rock types sampled within Bridge.

Biology (?): None

Described by: G.S.

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Really Big! Location: VAD C

Sample Id: D7-4 Weight (kg): 60-65 Depth (m): 2315-2020

Mn Crust Description

Surface Texture: Smooth Patina on outer Surfacest Fractures small (1-2mm) botryoids

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

D7-4

Comments and XRD Mineralogy:

Crust is patchy

Sub

D7-4 TS

* D7-4 OC, Pt, Au, Serpentine

Substrate Description

Rock Type: Peridotite? serpentinized

60% USGS

40% KORDI

Description: light green to Dark green crystalline Serpentine (Perplaced Peridotite?) (fibrous serpentine in places)

There is a black matrix (serpentine) that contains white altered serpentine clasts w/ small patch of brownish red garnets (1-3mm) (?!)

Also on the bottom of the sample there are calcite(?) crystals (3mm in length)

Biology (?): Fe stained encrusting forams - on substrate on fracture surface

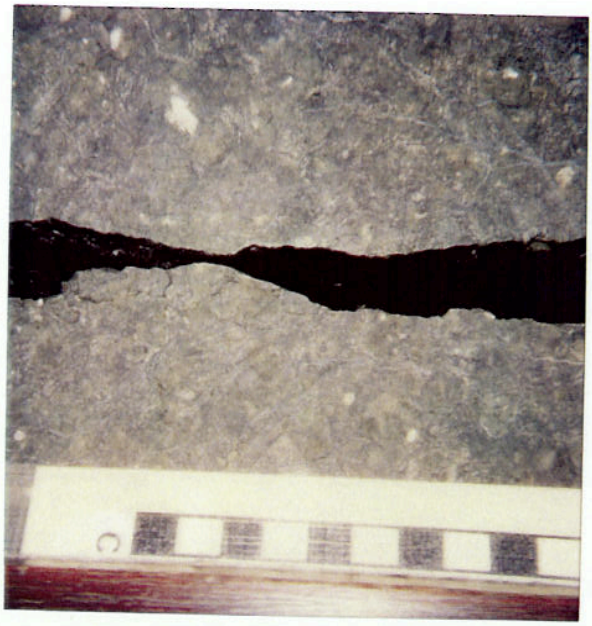
magnetic

35 mm slides

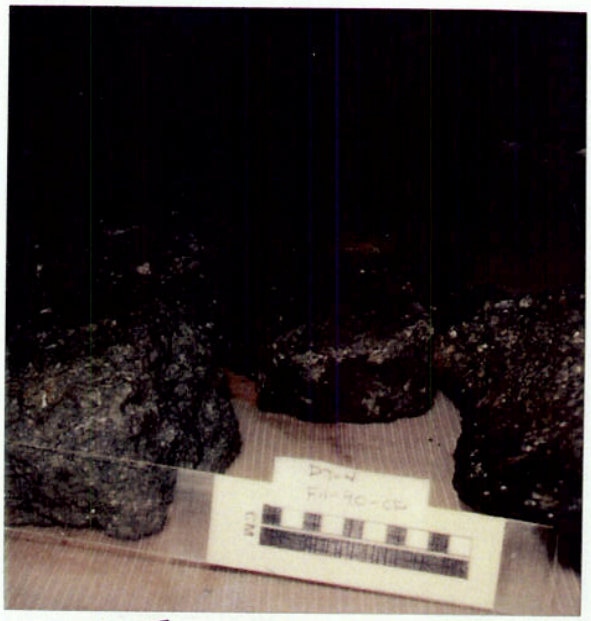
Described by: G S.

Subsampled by: HEIN

* Note Au & Pt also



D7-4



Largest Boulder IN Dredge Haul

D9-4

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 28×18×13 ~ 1.5×1.5×3 Location: YAP C

Sample Id: D7-5 Weight (kg): 40 Depth (m): 2215 ~ 2020

Mn Crust Description

Surface Texture: Granular

Mn Crust Thickness (mm):

Min: 0 Max: 7 Ave: Patina

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1	0	7	Patina	
2				
3				
4				
5				
6				

Comments and XRD Mineralogy:

Sul

D7-5A OC, XRD, Au, Pt, Quartzite 1 (92g)

D7-5A XRD, Quartzite 1

D7-5B OC, Au, Pt Quartzite 2 (96g)

D7-5B XRD Quartzite 2

Substrate Description

Rock Type: Pure quartzite (30%) and quartzite with <5% serpentine (70%) — vein quartz

Description:

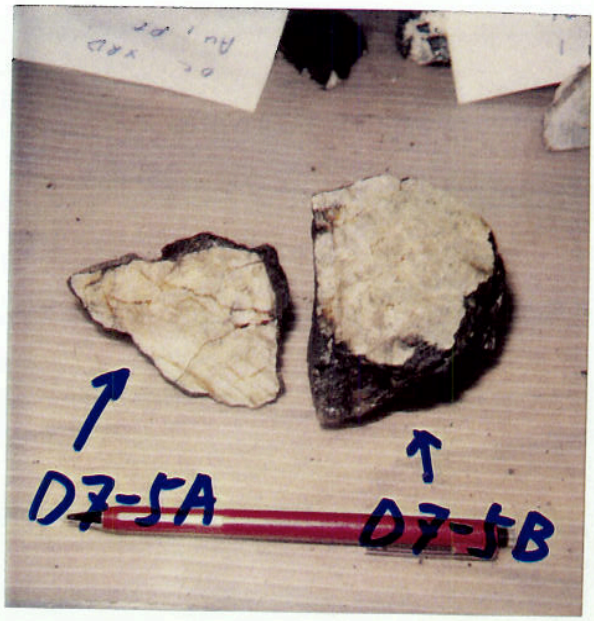
- may be talus from quartz vein
- color: green

1/4 to KORDI

Biology (?): Encrusting forams

Described by: Yoon

Subsampled by: Yoon



D7-5

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 15 X 11.2 X 8 / 2.8 X 2.1 X 2 Location: YAP C

Sample Id: D7-6 Weight (kg): 9.6Kg Depth (m): 2315 - 2020

Mn Crust Description

Surface Texture: Dominantly Smooth few granular

Mn Crust Thickness (mm):

Min: _____ Max: Patina Ave: _____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, few w/
2				Black shiny sheen
3				Porous, some Fe staining
4				
5				
6				

Comments and XRD Mineralogy:

Subs

D7-6-1 OC, PT, Au 55.9g.

D7-6-1 , TS. 22.4g

D7-6-1 XRD
60% to USGS
40% to Kordi

Substrate Description

Rock Type: Serpentine and Quartz

Description: Highly sheared serpentinized rocks with a few containing quartz Origin: Either Basalt or an Ultramafic Rx-type

Biology (?): Encrusting forams (<1%)

Described by: JJ

Subsampled by: JJ Yoon

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 21 x 11 x 4.5 / 6.2 x 4.8 x 2.2 Location: YAP C

Sample Id: D7-7 Weight (kg): 5.9 kg Depth (m): 2315 - 2020

Mn Crust Description

Surface Texture: Smooth to Granular

Botroids

Mn Crust Thickness (mm):

Min: <1 Max: 18 Ave: 3

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1	<1	18	3	Black, one dark brown porous, minor Fe staining
2				
3				
4				
5				
6				

D7-7

Comments and XRD Mineralogy:

Subs

55% to USGS

45% to Kordi

Substrate Description

Rock Type: Serpentine Breccia greenish yellow and gray or brown (clast)

Description: A shear Breccia Very high... sheared angular pebble to coarse sand sized clasts in serpentinized fine matrix one rock contains some fe rich mud (Yellow)

Biology (?): <1% Encrusting Forams

Described by: JFJ

Subsampled by:

Clasts include basalt, rock fragments, mud, quartz
Some clasts are serpentinized
minor Fe staining

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Pebbles & Cobbles Location: Yap C

Sample Id: D7-8 Weight (kg): 12 Depth (m): 2315-2020

D7-8

Mn Crust Description

Surface Texture: Patina - smooth - rare granular + botryoidal

Mn Crust Thickness (mm):

Min: patina Max: 8 Ave: patina

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				porous, brown -
2				to black
3				
4				
5				
6				

Comments and XRD Mineralogy:

Substrate Description

Rock Type: Serpentine, Serpentinized basalt, peridotite + others

Description: Various degrees of serpentinization of Ig. Rxs - unusual mineralogy (violet, pink) in places & in some veins

Biology (?):

Subsample N

D7-8-1 OC, Pt, Au Serpentine, Magn

D7-8-1 TS (56gms)

D7-8-2 TS, XRD

D7-8-3 OC, Pt, Au Qtz, Serp., TS, XRD garnet? (72gm)

D7-8-4 TS, XRD Epidote

D7-8-5 OC, XRD Opal - Qtz, Serp (29gm

D7-8-6 XRD Lavender mineral vein

Described by: HEIN

Subsampled by: HEIN JW

D7-8-7 XRD

D7-8-4 OC, ICP (15.4g) + 15.2g

sent more sample not enough for Au

D7-8-1
D7-8-2

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 25x15x12 Location: YAP C

Sample Id: D7-9 Weight (kg): ~4 Depth (m): 2315-2020

Mn Crust Description

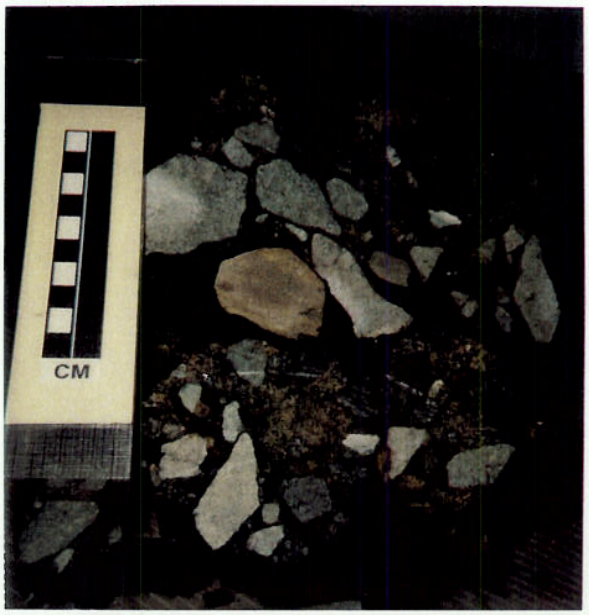
Surface Texture: PATINA - smooth to granular

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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



D7-9

Comments and XRD Mineralogy:

This sample is the type sample for this dredge. The gravel + other samples are assumed to be part of a breccia that was broken up during the dredging

Su

Substrate Description

Rock Type: Breccia - matrix supported

60% USGS
40% HORDI

Description: Angular fragments with fine grain yellow matrix (serpentinized fragments) fragments are 70% quartzite w/serpentine + 29% serpentinized gabbro(?) 1% mudstone laminated. Some individual fragments are Mn encrusted

Biology (?): minor encrusting forams

Described by: G.S.

Subsampled by:

CM

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 21x17x8 Location: Yap C

Sample Id: D7-10 Weight (kg): 3.5 Depth (m): 2315-2020

Mn Crust Description

Surface Texture: granular & Porous.

Mn Crust Thickness (mm):

Min: 10 Max: 20 Ave: 15

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1			10	v. Porous - Fe ox
2			5	massive, black
3				
4				
5				
6				

D7-10

Comments and XRD Mineralogy:

V. Porous

Mn dendrites on fracture surfaces

D7-10A [CC, PtFREE] Bulk Crust 0-15 (67gm)

Crust impregnated w/ soft sediment, probably did not get it all out!

Substrate Description

Rock Type: Altered basalt

Description: // elongate flow vesicles, some filled w/ opal & milky Qtz. along w/ veins

60% USGS

40% NORDF

Biology (?):

Described by: HEIN

Subsampled by: HEIN

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Pebbles + Cobbles Location: VAP C

Sample Id: D7-11 Weight (kg): 5 Depth (m): 2315-2020

D7-11

Mn Crust Description

Surface Texture: PATINA - granular Botryoids - 1-2mm high (one to 2 fragments)

Mn Crust Thickness (mm):

Min: >1 Max: 2 Ave: >1

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				Black porous Fe stained
2				
3				
4				
5				
6				

Comments and XRD Mineralogy:

4 types of Basalt

Substrate Description

Rock Type: Basalt

D7-11-1 Description: ① Metamorphosed Dark gray Basalt with filled + altered vesicals resembles Fe stain (?) (Dose colored)

-2 ② Brownish red Dense + with vesicals fractured, little to no crust

-3 ③ Grey coarse grained with filled + unfilled vesicals - some alteration, sm. (serpentinized)

-4 ④ TAN colored basalt with 1mm filled vesicals, minor fractures

Biology (?): FE Encrusting forams

Subsar

D7-11-1	OC	30 gms	- basalt
-11-1	T.S		basalt
-11-2	T.S		basalt
-11-3	T.S		basalt
-11-4	T.S		basalt

Described by: G.S.

Subsampled by: G.S.

Several more basalt cobbles were added to this sample after picture was taken

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 13 x 9.5 x 2 Location: YAPC

Sample Id: D7-12 Weight (kg): ~ 1 Depth (m): 2315 - 2020

Mn Crust Description

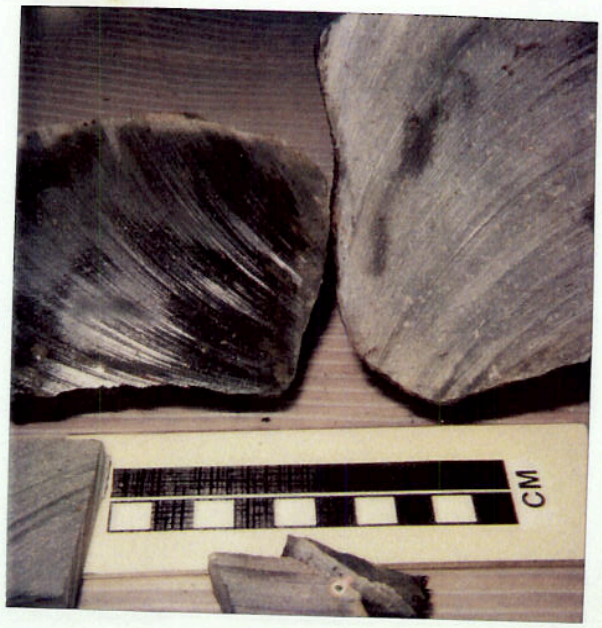
Surface Texture: granular patina

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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



D7-12

Comments and XRD Mineralogy:

Subs

D7-12 Cr 19.5 gm

D7-12 T.S

Substrate Description

Rock Type: Basalt

Description: Dark gray basalt with vesicals. Some vesicals are filled with altered Fe stained calcites. Plagioclase phenocrysts

Biology (?): Fe stained encrusting forams

Described by: G.S.

Subsampled by: G.S.

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 9×7×5~ 14×10×9 Location: YAP C

Sample Id: D7-13 Weight (kg): 3 Depth (m): 2015~2020

Mn Crust Description

Surface Texture: Granular (Fe-stained)

Mn Crust Thickness (mm):

Min: Max: Ave: Patina

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Subs

D7-13 OC magnetite (layered) (5.1g)

D7-13 XRD "

D7-13 TS "

Substrate Description

Rock Type: Layered magnetite and serpentine

60% USGS
40% HORD

Description:

Upper 2cm of one sample is layered by alternation of magnetite, silica and serpentine.

One sample shows serpentine clasts (1x1.5cm) dispersed in magnetite

Biology (?):

Described by: Yosn

Subsampled by: Yosn

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 11×7×7 and 12×9×2 Location: YAP C

Sample Id: D7-14 Weight (kg): 2 Depth (m): 2315 ~ 2020

Mn Crust Description

Surface Texture: Granular and partially smooth

Mn Crust Thickness (mm):

Min: 0 Max: 2 Ave: Patina

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1	0	2	<1	
2				
3				
4				
5				
6				

D7-14

Comments and XRD Mineralogy:

Subs

D7-14 OC sandstone 6.4 g

D7-14. XRD sandstone

D7-14. TS sandstone

Substrate Description

Rock Type: Sandstone with serpentine (?)

Description: ½ to KORDT

color: green or yellowish brown

grain size: medium to very coarse-sand

Biology (?): Encrusting foram

Described by: YBM

Subsampled by: YBM