DREDGE 15

Yap F D15

Dredge Sample Summary Sheet

Sample ID	Bulk CC	Layer CC	Pt & Au	Ree	OC	DPTS/TS	XRD	35mm Photo	Paleo	Archive
D15-1									X	
2										
3					X	X	X			
4					X	X	X			
5					X	X	X			
7					X	X	X			
8										
9						2X	2X			
10					X	X	X			
15							2X			
18					X	X	X			

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Location: YAP G

Sample Id: D15-1 Weight (kg): Depth (m): 3140-2500

Mn Crust Description

Surface Texture: N/A

NO PHOTO

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)
D15-1B	Paleo	mud	
	in Rose Bengal		
D15-1A	brown clast w/in mud		
	Paleo		

Substrate Description

Rock Type: BROWN MUD

Description:

Biology (?):

Described by: G.S.

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 10 x 6 x 2 ~ 7 x 4 x 2 Location: VAPG

Sample Id: D15-2 Weight (kg): 0.2 Depth (m): 3140-2500

Mn Crust Description

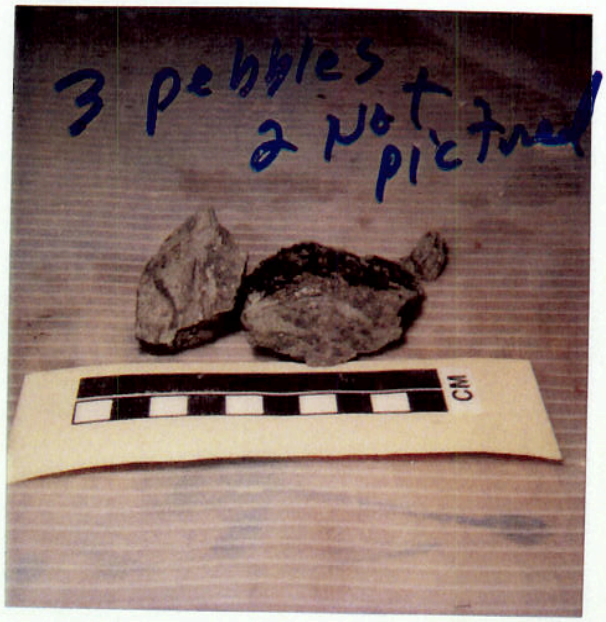
Surface Texture: Granular

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				



D15-2

Comments and XRD Mineralogy:

Sub

Substrate Description

Rock Type: Breccia

highly altered (metamorphosed)

1 piece to KORDI

2 piece to USGS

Description: Green Breccia

clasts in altered(?)

matrix. Inorganics

Biology (?):

Described by: G.S.

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Small boulder Location: [illegible]
Sample Id: D15-3 Weight (kg): 18.1 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: Smooth

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, Iron stain
2				
3				
4				
5				
6				

D15-3

Comments and XRD Mineralogy:

Peppered Mn layer on thin patches of encrusting forams on the sides.

Subsa

D15-3 TS Bulk From
OC Pillow center
XRD

Substrate Description

Rock Type: PILLOW BASALT — Nearly whole pillow
Fresh Surf. Gray
Altered Part. Greenish Yellow

Description: Glassy subtle grain
is completely altered from
. Vesicular near surface
a fractured area. Vesicles
are filled w/ a black material

Also, In between fractures surfaces are altered

50% HORD
50% USGS

Biology (?): Encrusting forams
in the patches on the surface

Described by: JW

Subsampled by:

⊥ to pillow surface
Deep fractures have travelled
into rock. Minor calcite filling in trans fractures in the
the rind..

Yoon

SAMPLE DESCRIPTION

Small boulder

Cruise Id: F11-90-CP Size (cm): 37/29x16 Location: 1AP G

Sample Id: 15-4 Weight (kg): 12.7 kg Depth (m): 3140-2500

Mn Crust Description

Surface Texture: Smooth

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, Yellow red Fe stained
2				
3				
4				
5				
6				

D15-4

Comments and XRD Mineralogy:

Subsam

D15-4 TS, OC, XRD (7kg.) Fe-Mn RX

25% FORDI
75% USGS

Substrate Description

Rock Type: Pillow Basalt?
Black (fresh)
Brown (altered rind)

Description: Outer layer completely altered
Aphanitic fresh basalt with plagioclase phenocrysts and disseminated sulfides - probably pyrite - calcopyrite

Biology (?): circular [illegible] [illegible]

Described by:

Subsampled by:

→ few deep fractures in rock
manganese vesicles on & near surface
rare calcite crystals on top

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Small boulder Location: KAP G

Sample Id: D15-5 Weight (kg): 24.5 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: Granular

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, Reddish
2				Iron staining
3				
4				
5				
6				

Comments and XRD Mineralogy:

Subsan

D15-5 — OC, TS Bulk (67%)
XRD Interior

30% KORDI
70% USGS

Substrate Description

Rock Type: Pillow Basalt ?
Altered lava: Brown
Fresh ? Green Grey - Very fresh - good for dating

Slightly vesicular basalt

Description: 4-9cm orb layer is altered w/ red & yellow iron staining. Basalt is anhamitic w/ plagioclase phenocrysts some fractures

also sulfides (Pyrite ?) in places abundant near the rim

Biology (?): encrusting forams

Described by: JW

Subsampled by: Yoon

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Small boulder Location: YAP G

Sample Id: D15-6 Weight (kg): 6.8 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: Smooth

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, some Red Iron staining
2				
3				
4				
5				
6				

D15-6

Comments and XRD Mineralogy:

Subsamp

30% HORDI
70% USGS

Substrate Description

Rock Type: Basalt
Grey to Black

Description: Very fine grained Basalt tiny vesicles some filled Reddish Orange Iron Staining Altered outer layer

Abundant tiny plagio - but maybe altered - if not probably labradorite

Biology (?): Encrusting Foram

Described by: J.W.

Subsampled by:

minor silver sulfide (marcasite), only on fractured surfaces

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 13 Cobbles 6 pebbles Location: Yap G

Sample Id: D15-7 Weight (kg): ~20 Depth (m): 3140-2900

D15-7

Mn Crust Description

Surface Texture: NONE

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:

Subsample

D15-7-1 TS Bulb basalt

OC " " (53g)

XRD

Substrate Description

Rock Type: Basalt, Pillow basalt Fragments - most w/ glassy altered surface

Description:

Some glass left in small Bag for Base

50% HOAD I

50% USGS

Biology (?):

Described by: HEIN

Subsampled by: Yoon

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 1 V. Large Cobble, 3 Small Cobbles, ~10 pebbles Location: 172 G

Sample Id: D15-8 Weight (kg): ~ 8 Depth (m): 3140 - 2500

Mn Crust Description

Surface Texture: Rare Patina

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

D15-8

Comments and XRD Mineralogy:

Subsample

Substrate Description

Probable Rock Type: Pillow Basalt Fragments

50% USGS
50% NORDI

Description: gray to gray brown glass phyric - massive to vesicular depending on nearness to margin vesicles filled w/ zeolites (?)

Biology (?):

Described by: HEIN

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 22X 17X14 8X6.5X2.10 Location: YAP G

Sample Id: D15-9 Weight (kg): 9.5 Depth (m): 3140-2300

Mn Crust Description

Surface Texture:

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, Red/Yellow Fe Stained
2				
3				
4				
5				
6				

D15-9

Comments and XRD Mineralogy:

Subsamp

D15-9-1 TS Coarsest grained
XRD

D15-9-2 TS Freshest Typical of Main Group
XRD

40% HORDI
60% USGS

Substrate Description

Rock Type: Basalt,
(Fresh) Grey or greenish grey
(Altered) Brown

Description: Coarse Grained massive basalt
Outer layer is altered + iron stained Red/Yellow
plag phyric, contain sulfides

Biology (?):
Encrusting Forams

Described by: JW

Subsampled by: HEIN

rare vesicles, some fractures in largest piece

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Pebbles ≈ 25 5 Small Cobbles Location: YAP G

Sample Id: D15-10 Weight (kg): ≈ 4 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: NONE

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

D15-10

Comments and XRD Mineralogy:

Subsampl

D15-10-1 Typical of fresher Basalt (4.9 OC, TS XRD

Substrate Description

Rock Type: Basalt

Description: massive fine-grained V. fresh to altered plag. phyric

50% HORD 1
50% USGS

Biology (?):

Described by: HEIN

Subsampled by: Yoon

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 7.5 x 3.9 x 2.2 / 5.3 x 4.2 x 2.7 Location: YAP G

Sample Id: D15-11 Weight (kg): .17 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: Smooth

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, Fe stained red
2				
3				
4				
5				
6				

D15-11

Comments and XRD Mineralogy:

Subsam

Substrate Description

Rock Type: Basalt
Grey

Description: Highly vesicular aphanitic Basalt
Fe stained vesicles and on exterior surfaces

Biology (?):

Described by: JW

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 7.5 x 4 x 4 / 7.3 x 4.5 x 1.9 Location: YAP G

Sample Id: D15-12 Weight (kg): 0.23 Depth (m): 3410-2500

Mn Crust Description

Surface Texture: Smooth

No Photo

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, minor
2				Red Fe Staining
3				
4				
5				
6				

Comments and XRD Mineralogy:

Analyses

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

Substrate Description

Rock Type: 2 large pebbles: Basalt, grey

Description: Vesicular aphanitic basalt - small vesicles exterior altered, Some white fibrous alteration in basalt

Biology (?):

Described by: J.W.

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 5.6 X 3.5 X 3.4 6.5 X Location: YAPG

Sample Id: D15-13 Weight (kg): 0.45 Depth (m): 3410-2500

Mn Crust Description

Surface Texture: NONE

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

NO PHOTO

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: Basalt

Description: Vesicular w/ Calcite Amygdules Fine-grained altered grey-brown-greenish

Biology (?):

Described by: HEIN

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 1 X 3½ x 3 Location: YAPG

Sample Id: D15-14 Weight (kg): 0.12 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: Smooth

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, Red Fe stained
2				
3				
4				
5				
6				

D15-14

Comments and XRD Mineralogy:

Subsampl

Substrate Description

Rock Type: Basalt

Gray (Dry)

Brown & Black (Wet)

Description:

Slightly Altered very fine grained Basalt; minor filled vesicles

some iron staining - mostly exterior

2nd Rock: highly altered w/ alternating Coarse + fine layers

Biology (?): Encrusting Foram

Described by: JW

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): 9 Pebbles Location: Yao G

Sample Id: D15-15 Weight (kg): 1 Depth (m): 3140 - 2500

D15-15

Mn Crust Description

Surface Texture: Patchy Patina

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Subsampl

D15-15-1 XRD green

D15-15-2 XRD red

D15-15-1 OC, ICP 40EL 8.1g + augmen 10.6g

D15-15-1 TS

D15-15-1 Paleo

tms

50% HORDI

50% USGS

Substrate Description

Rock Type: yellow-green clay layers; red-brown ~~clay layers~~ grade into grey limestone

Description: Alteration rinds of limestone

Isotope Chemistry

D15-15-1 green 1.5g

D15-15-2 red 1.6g

D15-15-3 grey 2.2g

Biology (?):

Described by: AEIN

Subsampled by: Yoon JW

D15-15-1

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): Pebbles ≈100 Location: Tap G

Sample Id: D15-16 Weight (kg): ≈5 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: NONE

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

NO Photo

Comments and XRD Mineralogy:

Analyses

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

Substrate Description

Pebbles of

Rock Type: Misc Basalts — all Types Represented — mostly Pillow Fragments

30% to KORDI
70% to USGS

Description:

Biology (?):

Described by: HEIN

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F11-90-CP Size (cm): <100 pebbles Location: Tap G

Sample Id: D15-17 Weight (kg): 1.5 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: NONE

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

NO Photo

Comments and XRD Mineralogy:

Analyses

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

Substrate Description

Rock Type: Pebbles of pillow margins

30% to KORD1
70% to USG-5

Description: Altered glass margins now clays, Fe oxides + unknown

Biology (?):

Described by: HEIN

Subsampled by:

SAMPLE DESCRIPTION

Small Boulder

Cruise Id: F11-90-CP Size (cm): 24 X 21 X 14.5 Location: YAPG

Sample Id: D15-18 Weight (kg): 14.5 Depth (m): 3140-2500

Mn Crust Description

Surface Texture: Smooth

Mn Crust Thickness (mm):

Min: Max: Patina Ave:

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		Patina		Black, minor Red Iron Stained
2				
3				
4				
5				
6				

D15-18

Comments and XRD Mineralogy:

Subsampl

(64 gms)

D15-18 TS Taken from

OC Center

XRD

20% HORDS

80% USGS

Substrate Description

Rock Type: Basalt

Greenish Gray

Description: Slightly vesicular aphanitic basalt, olivine phyric, contains sulfides (1-2%) (Thick to thin) Outer layer highly altered & Reddish Orange Fe Stained

Biology (?): Encrusting Forams

Described by: JW

Subsampled by: HEIN