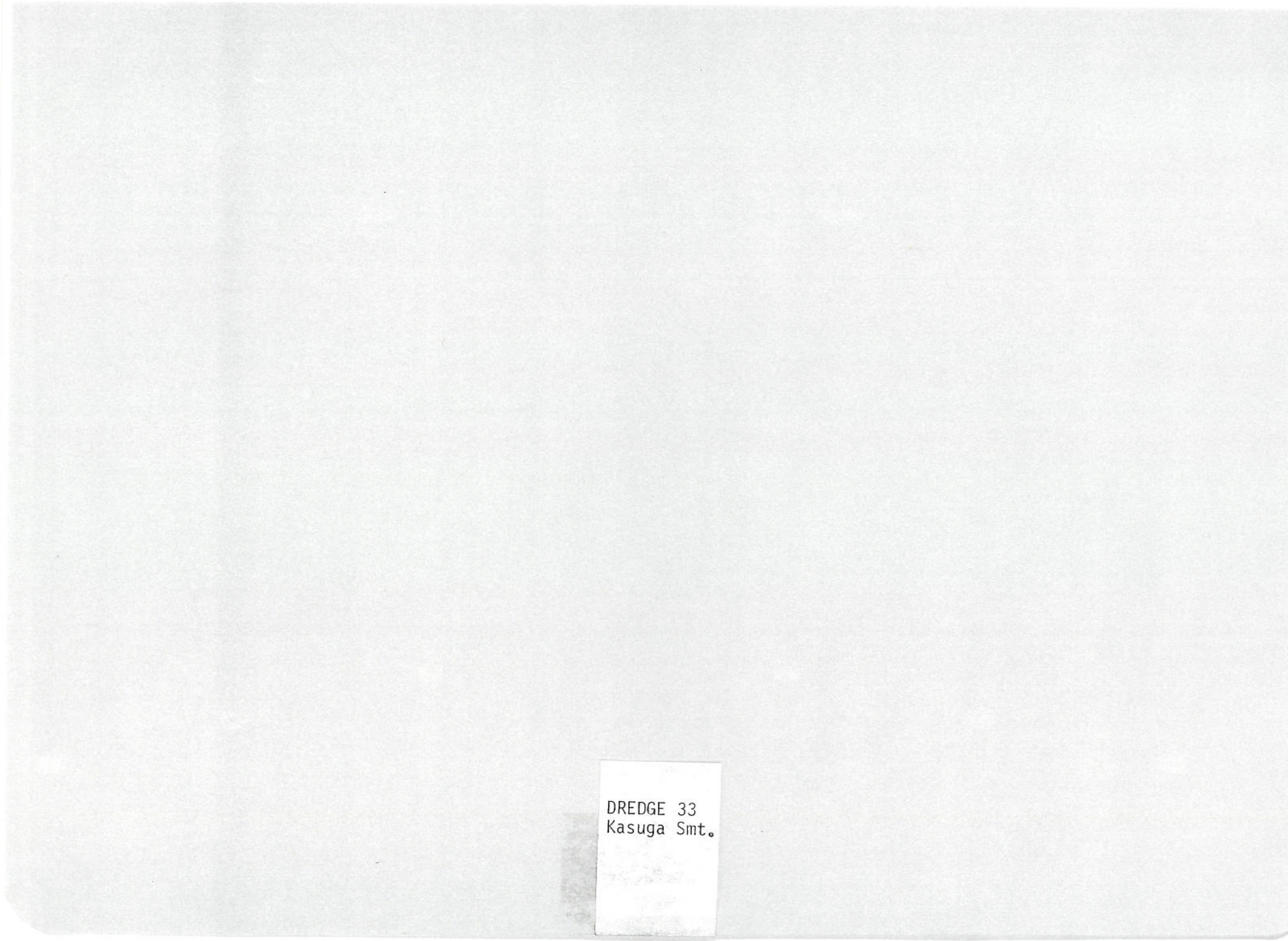

DREDGE 33
Kasuga Smt.

SAMPLE ID	Mn CHEM	Pt & Au	REE	Si Chem	P.Sect.	35mm Pho	Archive	Paleo	XRD	Hg		
D33-2-1	✓								✓			
D33-2-2	✓									✓		
D33-2-3	✓				✓							
D33-2-4												

MARIANA ISLANDS

Sample Description

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

Sample I.D: Sta: D33-2-1

Location: Kasuga Seamount

Size: 16x6x7cm Weight: 355g (or ½ rx)

Depth: 1170-600m

Mn crust thickness: 0

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Granular

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mn-volcanic breccia ??

Description: Highly altered orange-red volcanic debris infiltrated w/ Mn. Outer rim on 2 sides of massive hydrothermal Mn (0.1-5mm thick)

Chemistry Sample - had some sand and FeRich "layers" in it. After cutting piece in half (see back) scraped everything off bottom of sample.

Mineralogy (XRD):

MARIANA ISLANDS
D33-2-1

Analyses and subsamples:

analysis:	analyst:
½ rx to	R. Stern & S. Bloomer
XRD	Charlaine
D33-2-1: hydrothermal Mn from side	
D33-2-1: CC chem on massive hydrothermal Outer Rim/coating 2-68 JM	
D33-2-1A XRD Red Altered "stuff" From under the hydrothermal coating Sample JM	
D33-2-1A XRD - Mn veins, cement, sample has mud in it too.	

D33-2-1
MARIANA Is
TT192

D33-2-1
Mariana Is
TT192

Sample Description

Cruise I.D: ~~L5-83-HW~~ MARIANA ISLANDS

Sample I.D: Sta: D33-2-2

Location: Kasuga Seamount

Size: 10x6x7cm Weight: 480g

Mn crust thickness: ∅

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Rough

Internal structure:

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

MARIANA ISLANDS
D33-2-2

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mn-volc. breccia

Description: Highly altered orange-red volcanic clasts (now sediment) intermixed w/ Mn veins & Mn cement. Can barely see outline of "clasts"

Chemistry sample: Cleaned out orange-red "stuff" as best as possible; Mn around clasts & permeating sample, holding it all together here

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
x 2/3 rx given to	R. Stern & S. Blomer
D33-2-2, Bulk Mn Matrix, CC 45gm; XRD	

TT192
Mariana Is.

D33-22

Sample Description

Cruise I.D: ~~L5-83-HW~~ Mariana Island

Sample I.D: Sta: D33-2-3

Location: [illegible]

Size: 13x8x3cm Weight: 1.5Kg

Mn crust thickness: ∅

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Rough & porous to smooth & granular

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcanic Breccia

Description: Highly altered red brown to orange clasts (no definite outline) & less altered subrounded to subangular poorly sorted & loosely packed, yellow to tan volcanic clasts (3-6cm [illegible]) w/ phenocrysts of plagioclase? or qtz?? & mafics. Clasts are cemented w/ porous Mn. One small area on outer side surface w/ shiny hydrothermal Mn

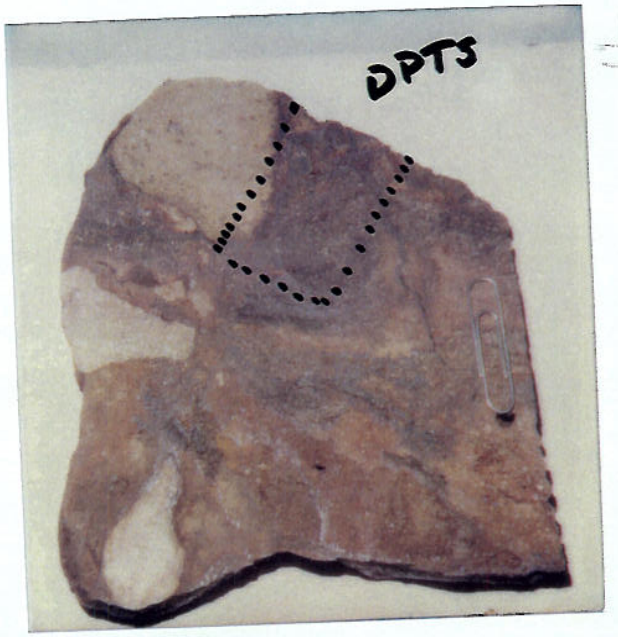
Mineralogy (XRD):

MARIANA ISLANDS
D33-2-3

Analyses and subsamples:

analysis:	analyst:
1/2 rx to	[illegible]
XRD:	Charlene
D33-2-3-I: bulk/ns	
Chemistry: D33-2-3-A: bulk Manheim metallic cement + Fe-Mn SS Clasts	E. Brown Reston USGS
D33-2-3-B Submetallic Mn Cement, 11gm; XRD (See back for sample area) - Sample had been Res.	
D33-2-3-B sub metallic Mn Cement Hg Chem	
DPTS	

Thin Slab
Resined and sliced off face of rock



TT192
D33-2-3

Sample Broke as I attempted to cut on saw
took chem samples all from top piece
The Mn Cement Filled veins and had tiny little botryoids in some areas

D33-2-3

Chem Samples of Submetallic

D33-2-3

This photo is the bottom of top piece

Sample Description

Cruise I.D: ~~L5-83-HW~~ MARIANA ISLANDS

Sample I.D: Sta: D33-2-4

Location: Kasuga Seamount

Size: 4x2x2cm **Weight:** 390g

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: ____

MARIANA ISLANDS
D33-2-4

Substratum:

Rock type: Mn [illegible]

Description: [illegible] (<3mm) [illegible]

Mineralogy(XRD): ____

Analyses and subsamples:

analysis:	analyst:
XRD [illegible]	[illegible]
D33-2-4-I: [illegible]	
[illegible]	
D33-2-4-III: [illegible]	