

Sediment Smear Slide / Thin Section Description Sheet

Date: 08 Jan 2019

Expedition: 358

Observer: Mati H.

Site: C0002R Hole: R ~~Core:~~ Cutting 2975MW Sect.:

Interval:

Sediment Name: Silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			✓				2.4	35.6	62

Select one and check.

Select one and check.

Percent %	Composition
Major Siliciclastic Grain Types	
14	Quartz
10	Feldspars
60	Clay minerals
Lithic Grains	
	Sedimentary Lithics
	Chert
	Mudstone
0.5	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
Volcaniclastic Grains	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microclite
	Lathwork
	Altered volcanic(palagonite)

Percent %	Composition
	Pelagic Grains
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
	Other bioclasts
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
	Other carbonate allochems
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent %	Composition
	Minor Grain Types
0.5	Dense minerals ¹ <u>zircon</u>
4	Micas (biotite, musc, chl) ¹
2	Glaucanite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
4	Terrestrial organic matter
	Other (specify):
	Authigenic components
5	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

¹ List under remarks if possible

Fill percentage (Total must be 100).

Remarks:

* This form is not designed for shallow water (neritic) carbonate sediments

Sediment Smear Slide / Thin Section Description Sheet

Date: 09 Jan 2019

Expedition: 358

Observer: Mari H.

Site: C0002 R Hole: R. Cutting: 322 SMW (# 1.)

Sediment Name: Sandstone (fine-very fine)

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture %		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			✓				55	23	24

Select one and check.

Select one and check.

Percent %	Composition
Major Siliciclastic Grain Types	
24	Quartz
19.5	Feldspars
30.5	Clay minerals
Lithic Grains	
	Sedimentary Lithics
	Chert
11	Mudstone
	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
Volcaniclastic Grains	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent %	Composition
Pelagic Grains	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
Other bioclasts	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
Other carbonate allochems	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent %	Composition
Minor Grain Types	
	Dense minerals ¹
8.5	Micas (biotite, musc, chl) ¹
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
4.5	Terrestrial organic matter
	Other (specify):
Authigenic components	
2	Pyrite (framboids)
	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

¹ List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Count number (Clay, Qtz, Fel, Mica, Org, Pyr, Lith. frag) = 61, 48, 39, 17, 9, 4, 22

* This form is not designed for shallow water (neritic) carbonate sediments

Sediment Smear Slide / Thin Section Description Sheet

Date: 11 Jan 2019

Expedition: 358

Observer: Mari H.

Site: C0002 Hole: R Cutting: 322 SMW (#2)

Sediment Name: Silty claystone (Macroscopic observation was described as "siltstone")

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture %		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			✓				11.3	33	55.7

Select one and check.

Select one and check.

Percent %	Composition
Major Siliciclastic Grain Types	
21	Quartz
1	Feldspars
55	Clay minerals
Lithic Grains	
Sedimentary Lithics	
	Chert
	Mudstone
5.5	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
Volcaniclastic Grains	
	Vitric fragments
0.5	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
R	Microcline
	Lathwork
	Altered volcanic (palagonite)

Percent %	Composition
Pelagic Grains	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
Other bioclasts	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
Other carbonate allochems	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent %	Composition
Minor Grain Types	
R	Dense minerals ¹ zircon
3	Micas (biotite, musc, chl)
0.5	Glaucinite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
2.5	Terrestrial organic matter
	Other (specify):
Authigenic components	
	Pyrite (framboids)
11	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

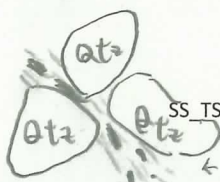
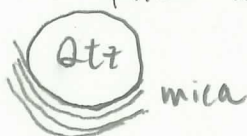
¹ List under remarks if possible

Fill percentage (Total must be 100).

Raw Count (100):
 Remarks: Clay, Qtz, Fel, Mica, Organic, Pyr, Lith frag, Glaucos, Volcanic glass:
11, 43, 2, 6, 5, 23, 11, 1, 1

* This form is not designed for shallow water (neritic) carbonate sediments

Mica and organic material + pyrite are compacted between quartz



Sediment Smear Slide / Thin Section Description Sheet

Date: 11 Jan 2019

Expedition: 358

Observer: Mari H.

Site: C0002

Hole: R

Cutting: 322 SMW

(#3)

Sediment Name: Silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture %		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			✓				4.8	29.3	65.9

Select one and check.

Select one and check.

Percent %	Composition
Major Siliciclastic Grain Types	
21.6	Quartz
1.5	Feldspars
62.2	Clay minerals
Lithic Grains	
	Sedimentary Lithics
	Chert
	Mudstone
1.0	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
Volcaniclastic Grains	
	Vitric fragments
1.4	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
R	Microclite
	Lathwork
	Altered volcanic (palagonite)

Percent %	Composition
Pelagic Grains	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
Other bioclasts	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
Other carbonate allochems	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent %	Composition
Minor Grain Types	
R	Dense minerals! Zircon
5.4	Micas (biotite, musc, chl) ¹
	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
0.5	Terrestrial organic matter
	Other (specify):
Authigenic components	
	Pyrite (framboids)
5.9	Pyrite (euhedral)
	Pyrite (grain coating)
0.5	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

¹ List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Raw count = Clay, Qtz, Fel, mica, org, pyr, Lith, cal, vol glass :
12, 44, 3, 10, 1, 12, 2, 1, 3

* This form is not designed for shallow water (neritic) carbonate sediments

Notes * Mica = Chlorite, muscovite, biotite observed.
 * Clay minerals are thin, needle like shape, weak ~ moderately aligned, preferred orientation

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* #3 was polished thinner than others.

Sediment Smear Slide / Thin Section Description Sheet

Date: 12 Jan 2019

Expedition: 358

Observer: Mari H.

Site: C0002 Hole: R Cutting: 328 SMW

Sediment Name: Silty claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture %		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			✓				3.5	35.9	60.6

Select one and check.

Select one and check.

Percent %	Composition
Major Siliciclastic Grain Types	
12.5	Quartz
0.5	Feldspars
60.5	Clay minerals
Lithic Grains	
	Sedimentary Lithics
	Chert
	Mudstone
0.5	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
Volcaniclastic Grains	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microclitic
	Lathwork
	Altered volcanic(palagonite)

Percent %	Composition
Pelagic Grains	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
Other bioclasts	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
Other carbonate allochems	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent %	Composition
Minor Grain Types	
R	Dense minerals ¹ (zircon)
7	Micas (biotite, musc. chl) ¹
7	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
7	Terrestrial organic matter
	Other (specify):
Authigenic components	
	Pyrite (framboids)
11	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

¹ List under remarks if possible

Fill percentage (Total must be 100).

Remarks: raw counts = clay, Qtz, Fel, Mica, Org, Pyr, Lith, Gls :
121, 25, 1, 14, 14, 22, 1, 2

* This form is not designed for shallow water (neritic) carbonate sediments

* Pyrites and organic materials are aligned

Sediment Smear Slide / Thin Section Description Sheet

Date: 13 Jan 2019

Expedition: 358

Observer: Mari H.

Site: C0002 Hole: R ^{Cutting} Core: 334 ^{SMW} Sect.: (smaller piece)

Interval:

Sediment Name: Claystone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture %		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			✓				4.0	14.2	81.8

Select one and check.

Select one and check.

Percent	% Composition
Major Siliciclastic Grain Types	
2	Quartz
1	Feldspars
81.5	Clay minerals
Lithic Grains	
	Sedimentary Lithics
	Chert
	Mudstone
2.5	Siltstone/sandstone
	Limestone
	Metamorphic lithic
	Plutonic lithic
Volcaniclastic Grains	
	Vitric fragments
	Clear glass
	Colored glass
	Pumice
	Volcanic lithics
	Felsitic
	Microlite
	Lathwork
	Altered volcanic (palagonite)

Percent	% Composition
Pelagic Grains	
	Calcareous
	Nannofossils
	Foraminifers
	Siliceous
	Diatom
	Radiolarian
	Silicoflagellate
	Sponge Spicule
Other bioclasts	
	Mollusk
	Algae
	Echinoderm
	Benthic foraminifer
	Other bioclast (specify)
Other carbonate allochems	
	Peloid
	Intraclast
	Ooid
	Silt or sand-size carbonate allochem fragment (unspecified)
	Carbonate mud (apart from nannos)

Percent	% Composition
Minor Grain Types	
0.5	Dense minerals ¹ (zircon)
3	Micas (biotite, musc, chl) ¹
0.5	Glauconite
	Phosphate (bones, teeth, etc)
	Opaque Grain
	Marine organic matter
0.5	Terrestrial organic matter
	Other (specify):
Authigenic components	
	Pyrite (framboids)
8.5	Pyrite (euhedral)
	Pyrite (grain coating)
	Calcite
	Dolomite
	Zeolites
	Fe/Mn oxide
	Other (specify):

¹ List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Raw count = Clay, Qtz, Fcl, mica, Org, pyr, lithz, zir, gla
163, 4, 2, 6, 1, 17, 5, 1, 1

* This form is not designed for shallow water (neritic) carbonate sediments

Sediment Smear Slide / Thin Section Description Sheet

Date: 12 Jan 2019

Expedition: 358

Observer: Mari H.

Site: C0002 Hole: R Cutting Core: 334 SMW (Bigger piece) Interval: _____

Sediment Name: Siltstone

Smear Slide	Thin Section	Coarse Fraction	Grain Mount	Granular Sediment			Other material	Percent Texture %		
				Siliciclastic	Volcaniclastic	Pelagic		Sand	Silt	Clay
	✓			✓				25	41	34

Select one and check.

Select one and check.

Percent	%	Composition	Percent	%	Composition	Percent	%	Composition
Major Siliciclastic Grain Types			Pelagic Grains			Minor Grain Types		
29		Quartz			Calcareous	7		Dense minerals ¹ (zircon, etc)
3.5		Feldspars			Nannofossils	8		Micas (biotite, musc, chl)
34.5		Clay minerals			Foraminifers	0.5		Glauconite
Lithic Grains					Siliceous			Phosphate (bones, teeth, etc)
		Sedimentary Lithics			Diatom			Opaque Grain
		Chert			Radiolarian			Marine organic matter
		Mudstone			Silicoflagellate	6.5		Terrestrial organic matter
6		Siltstone/sandstone			Sponge Spicule			Other (specify):
		Limestone	Other bioclasts					
		Metamorphic lithic			Mollusk	Authigenic components		
		Plutonic lithic			Algae			Pyrite (framboids)
Volcaniclastic Grains					Echinoderm	11.5		Pyrite (euhedral)
		Vitric fragments			Benthic foraminifer			Pyrite (grain coating)
		Clear glass			Other bioclast (specify)			Calcite
		Colored glass	Other carbonate allochems					Dolomite
		Pumice			Peloid			Zeolites
		Volcanic lithics			Intraclast			Fe/Mn oxide
		Felsitic			Ooid			Other (specify):
		Microlite			Silt or sand-size carbonate allochem fragment (unspecified)			
		Lathwork			Carbonate mud (apart from nannos)			
		Altered volcanic (palagonite)						

¹ List under remarks if possible

Fill percentage (Total must be 100).

Remarks: Raw count = clay, Qtz, Fel, Mica, Org, Pyr, Lith frag, Zir, Glc
69, 58, 7, 16, 13, 23, 12, 1, 1

* This form is not designed for shallow water (neritic) carbonate sediments