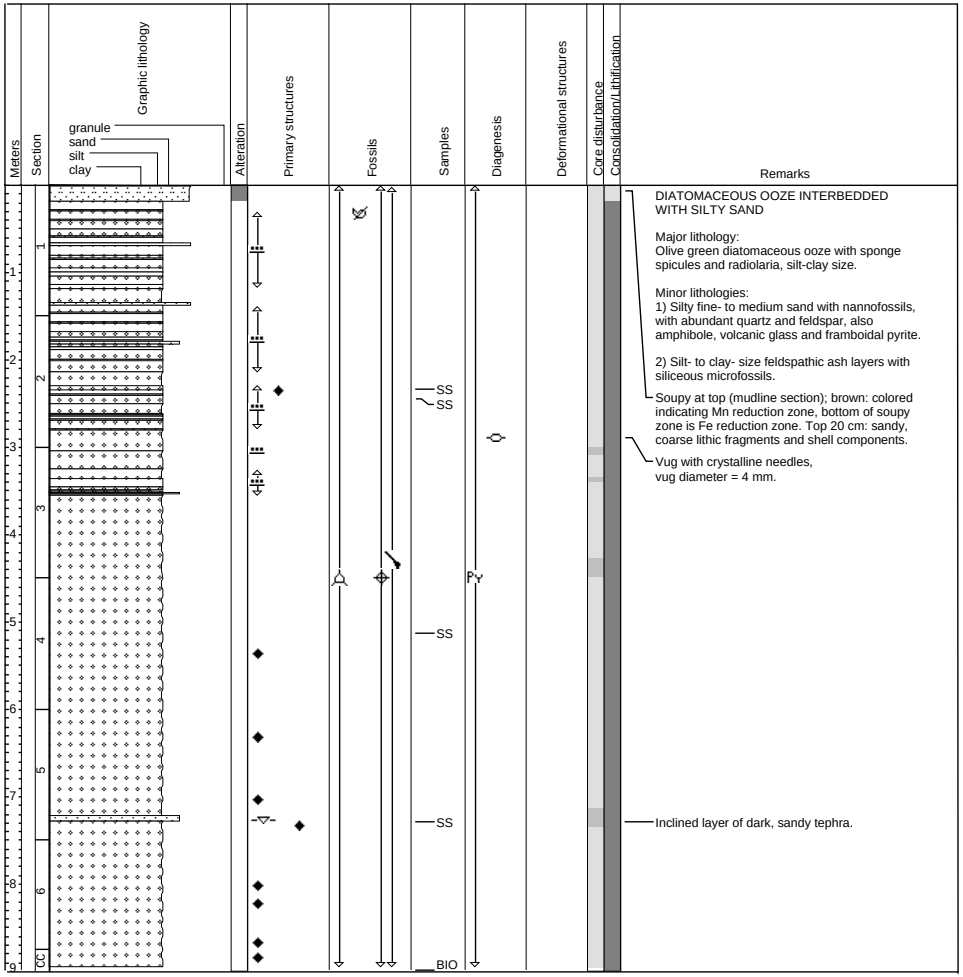
Site 1039, Hole A, Core 1H - Cored: 0.00 - 9.00 mbsf



Previous Chapter
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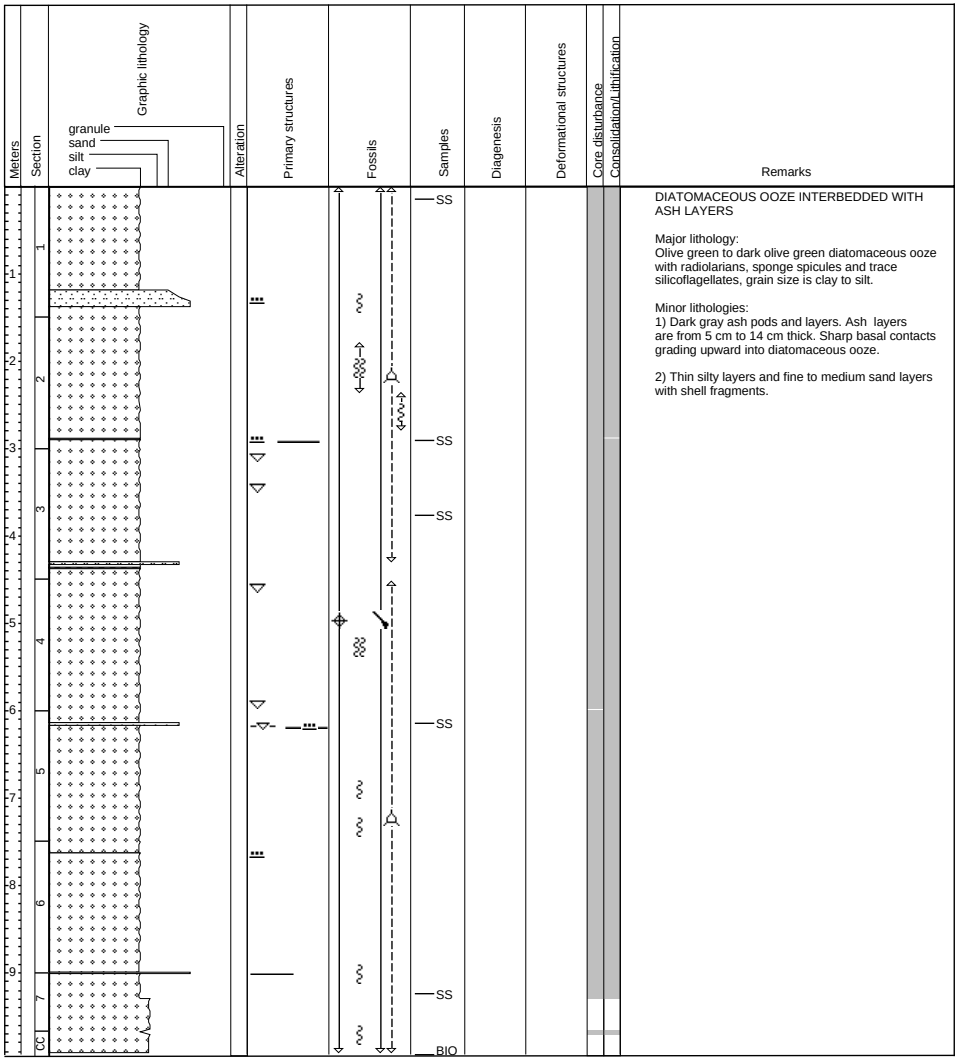
Site 1039, Hole A, Core 2H - Cored: 9.00 - 18.50 mbsf

1039A-2H



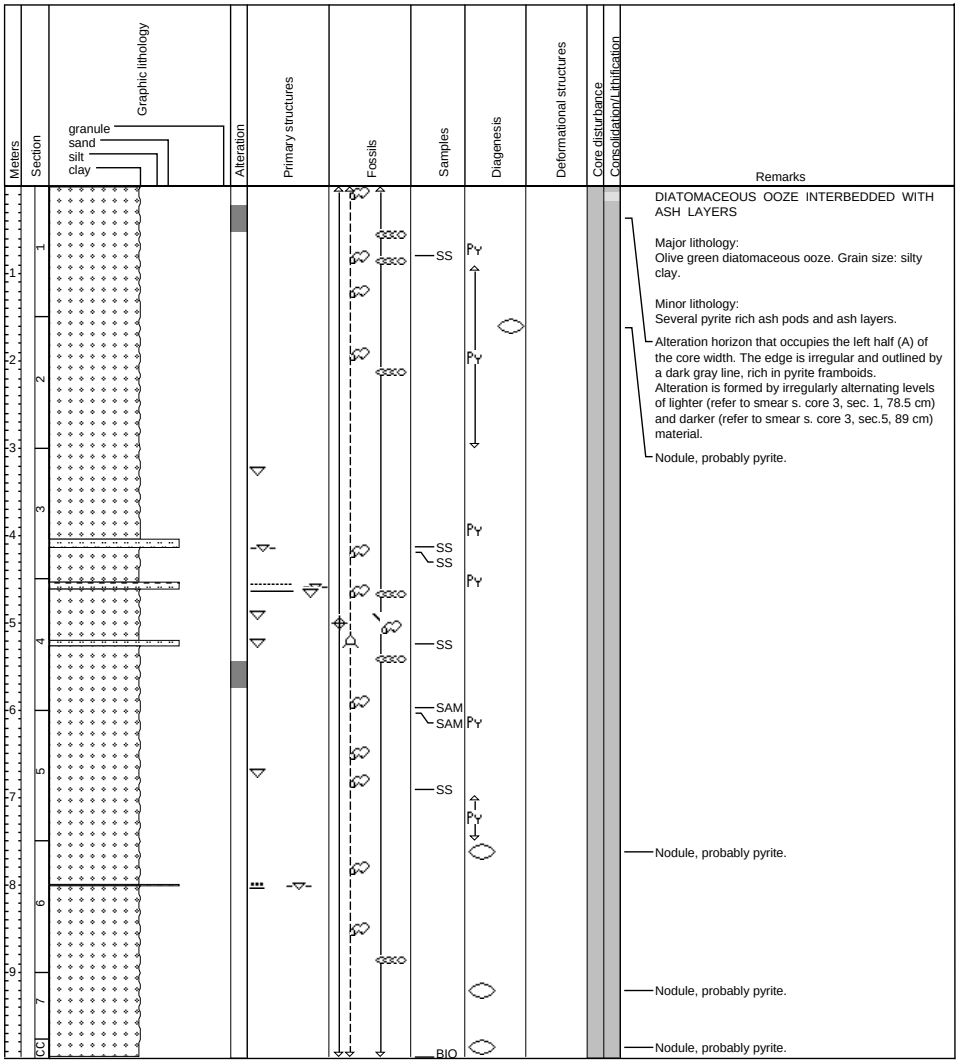
DIATOMACEOUS OOZE INTERBEDDED WITH ASH LAYERS

Major lithology:
Olive green to dark olive green diatomaceous ooze with radiolarians, sponge spicules and trace silicoflagellates, grain size is clay to silt.

Minor lithologies:
1) Dark gray ash pods and layers. Ash layers are from 5 cm to 14 cm thick. Sharp basal contacts grading upward into diatomaceous ooze.

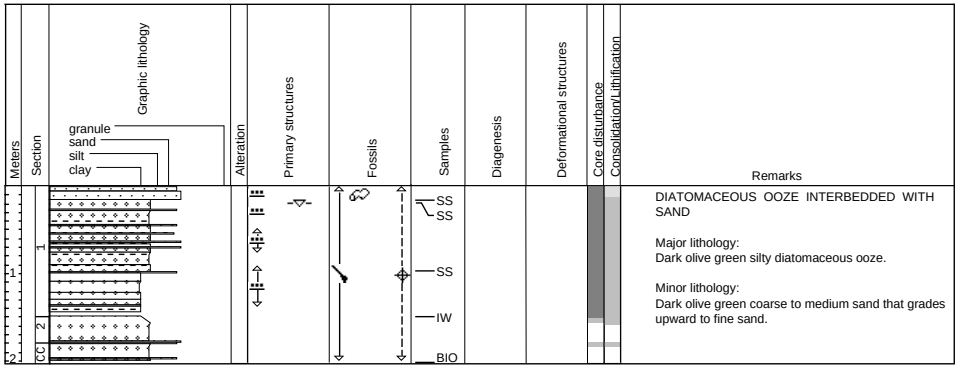
2) Thin silty layers and fine to medium sand layers with shell fragments.

Site 1039, Hole A, Core 3H - Cored: 18.50 - 28.00 mbsf



Site 1039, Hole B, Core 1H - Cored: 0.00 - 2.00 mbsf

1039B-1H

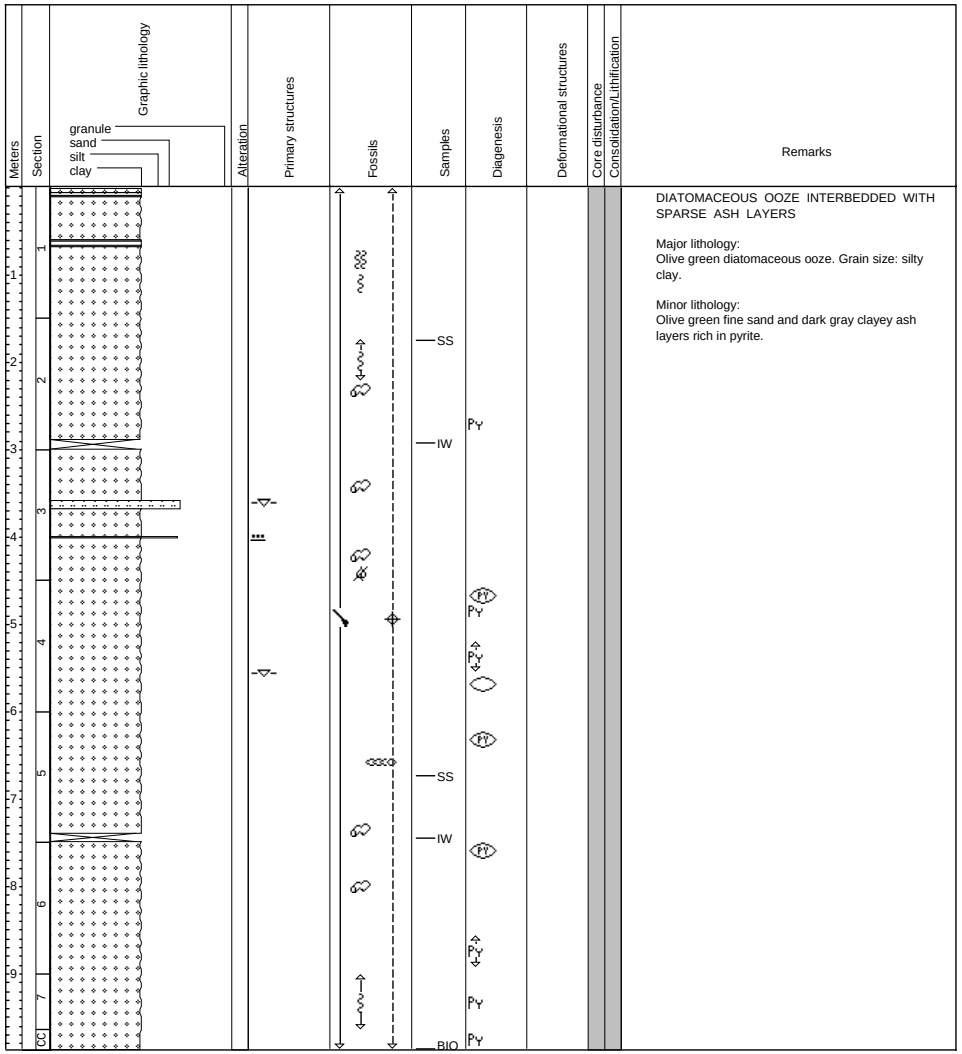


DIATOMACEOUS OOZE INTERBEDDED WITH SAND

Major lithology:
Dark olive green silty diatomaceous ooze.

Minor lithology:
Dark olive green coarse to medium sand that grades upward to fine sand.

Site 1039, Hole B, Core 2H - Cored: 2.00 - 11.50 mbsf



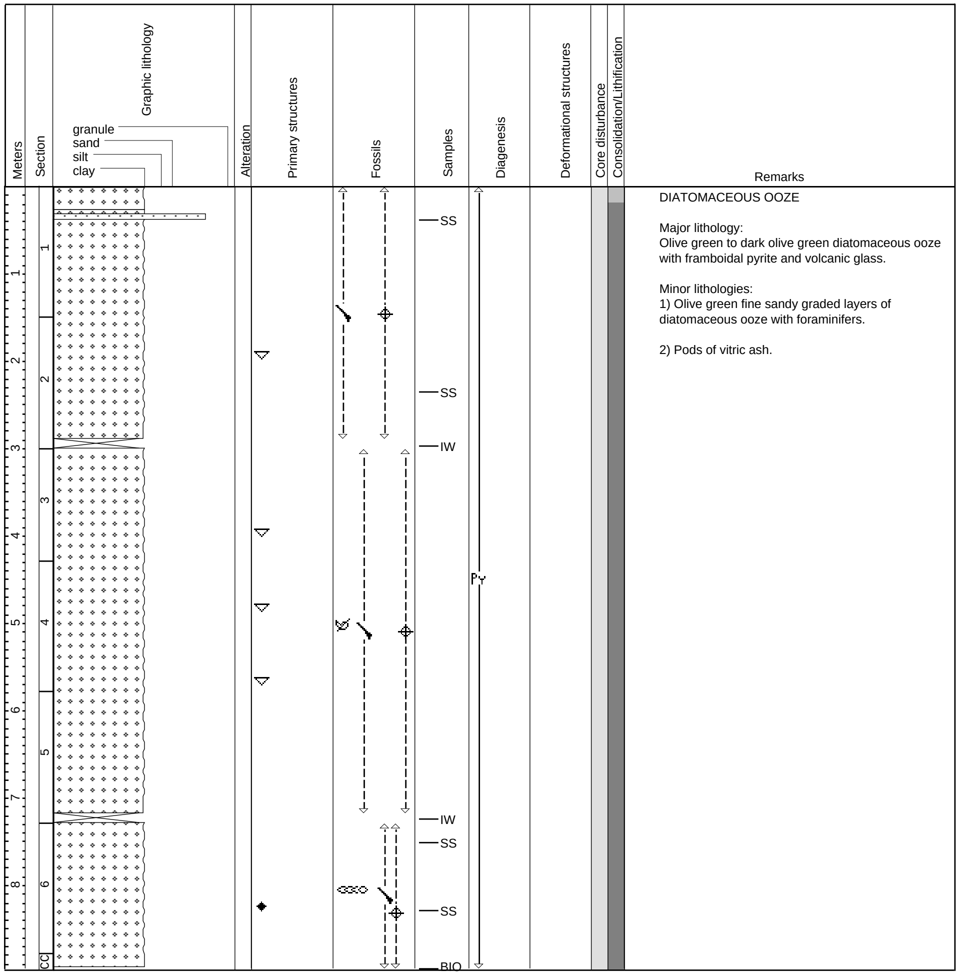
DIATOMACEOUS OOZE INTERBEDDED WITH SPARSE ASH LAYERS

Major lithology:
Olive green diatomaceous ooze. Grain size: silty clay.

Minor lithology:
Olive green fine sand and dark gray clayey ash layers rich in pyrite.

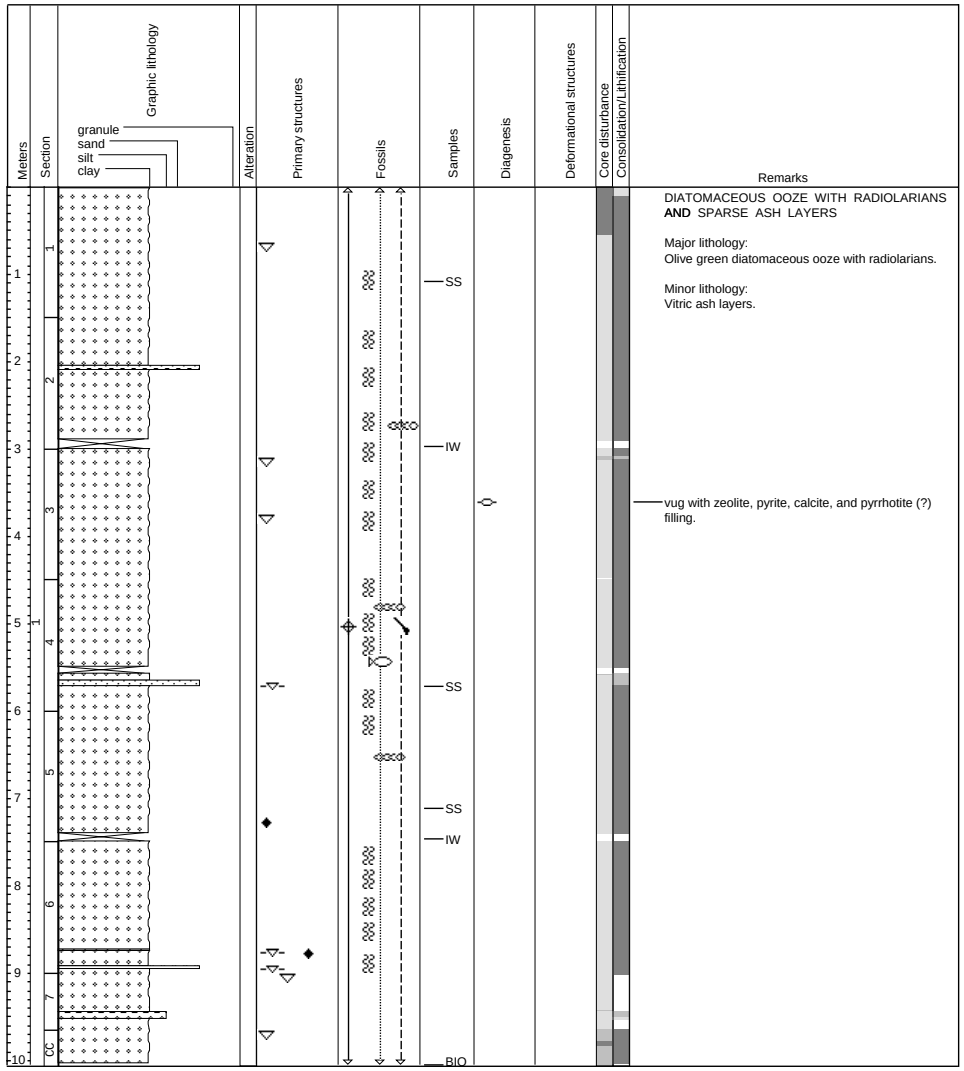
1039B-3H

Site 1039, Hole B, Core 3H - Cored: 11.50 - 21.00 mbsf



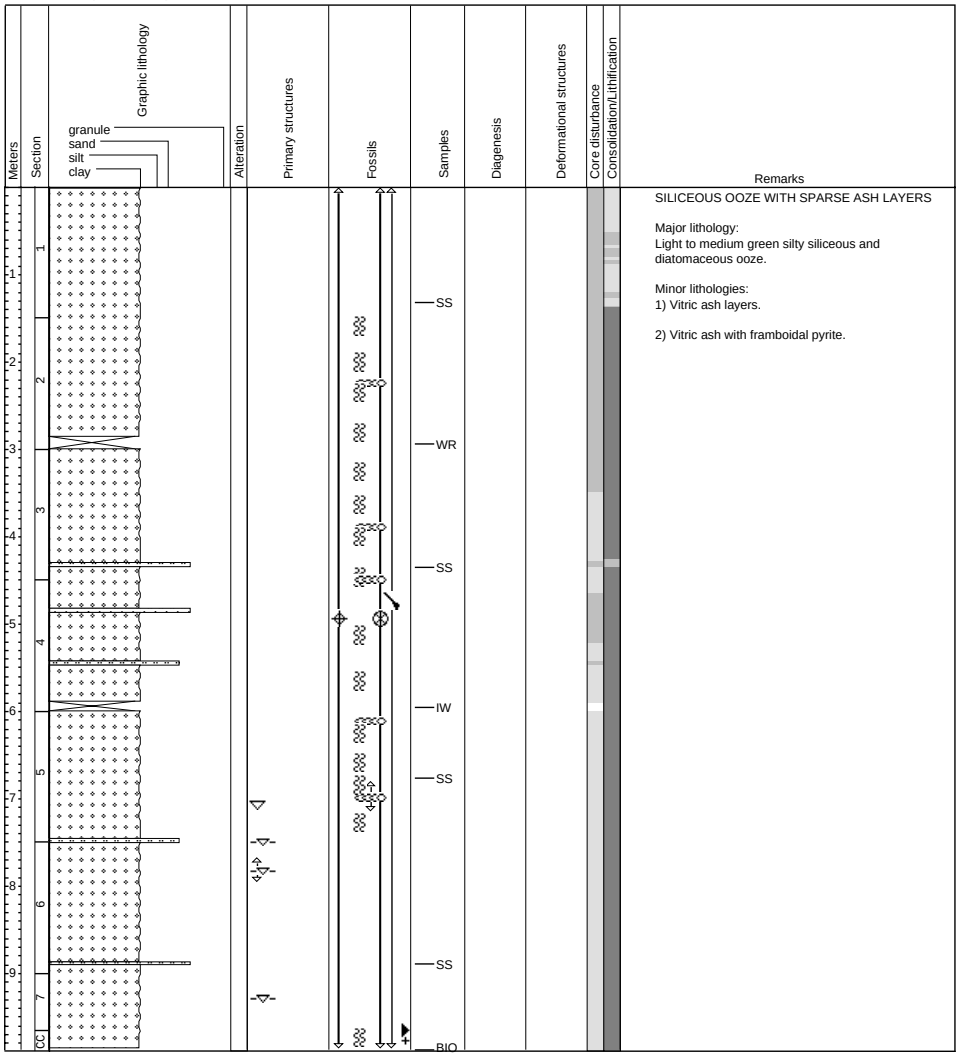
Site 1039, Hole B, Core 4H - Cored: 21.00 - 30.50 mbsf

1039B-4H



Site 1039, Hole B, Core 5H - Cored: 30.50 - 40.00 mbsf

1039B-5H



SILICEOUS OOZE WITH SPARSE ASH LAYERS

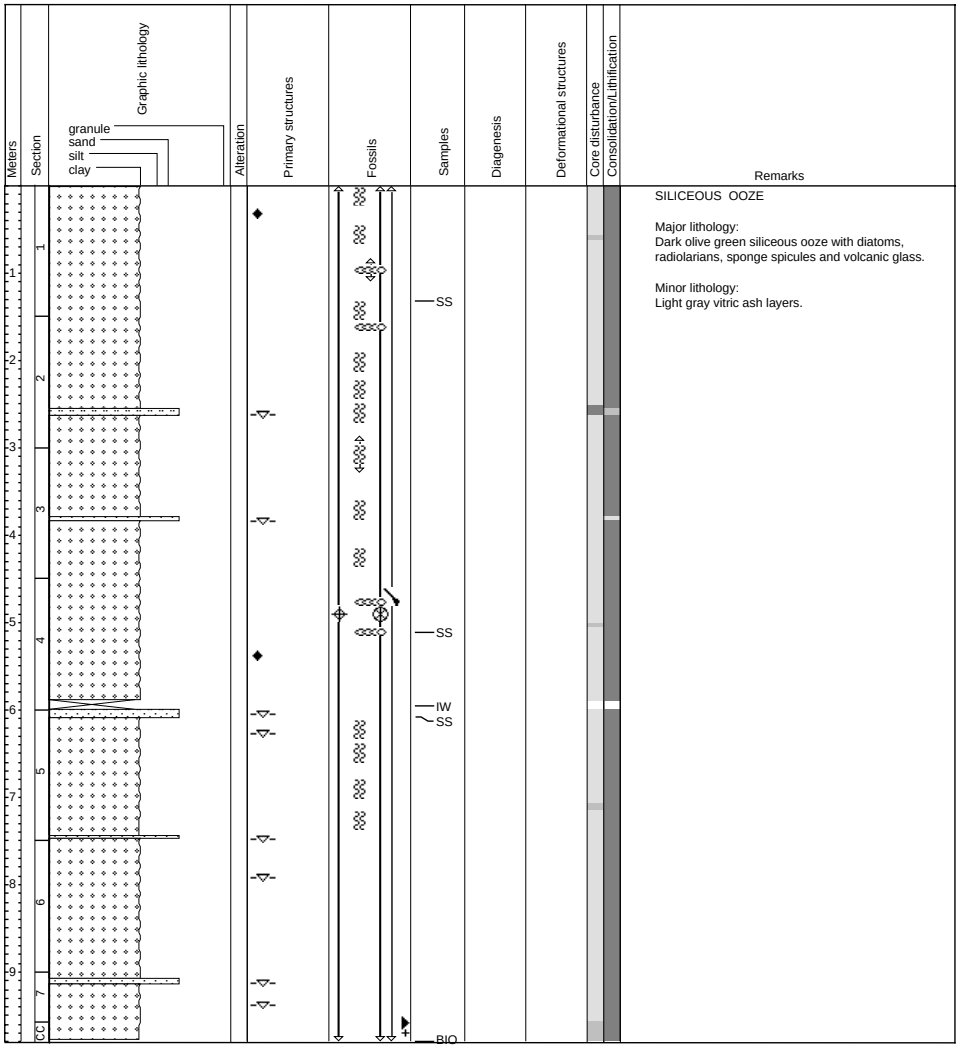
Major lithology:
Light to medium green silty siliceous and diatomaceous ooze.

Minor lithologies:
1) Vitric ash layers.

2) Vitric ash with framboidal pyrite.

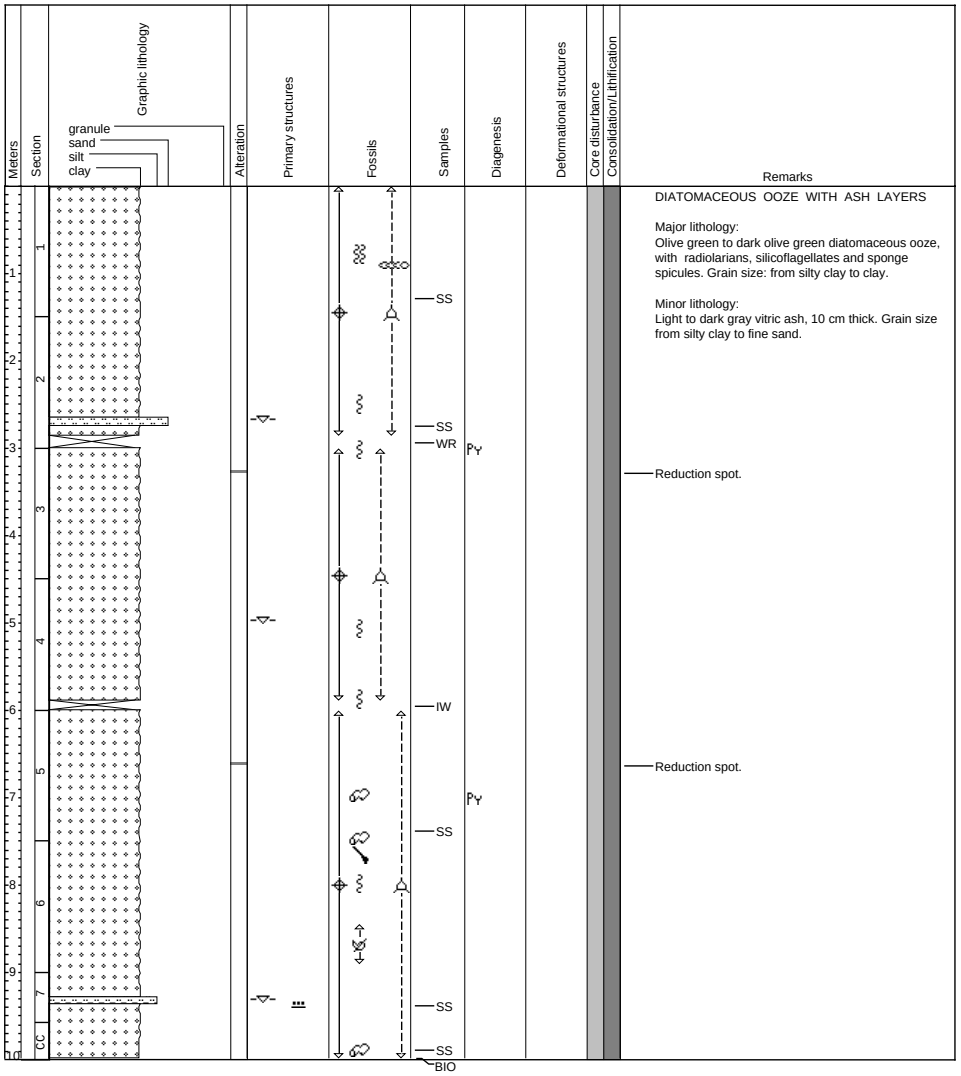
Site 1039, Hole B, Core 6H - Cored: 40.00 - 49.50 mbsf

1039B-6H



1039B-7H

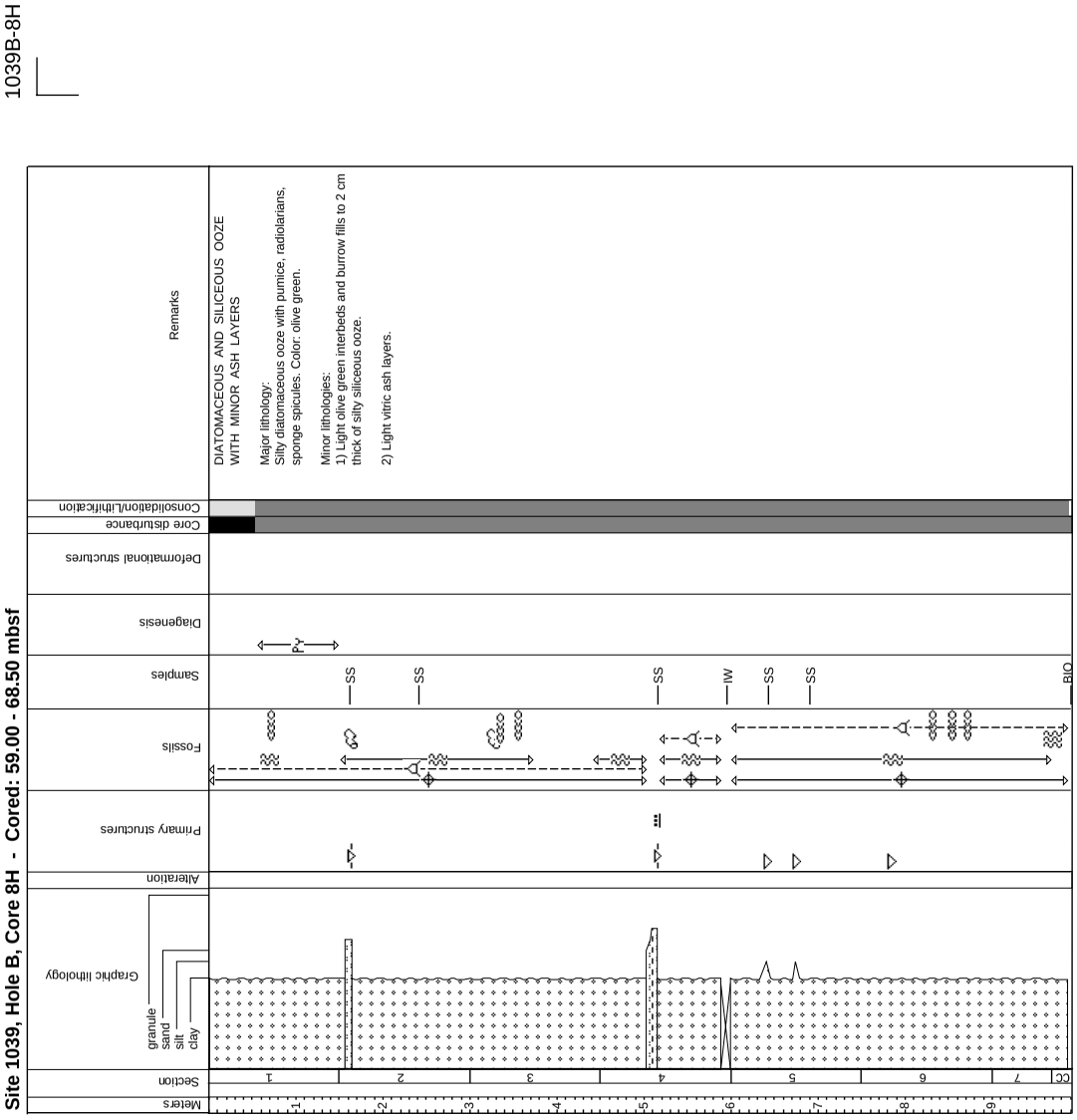
Site 1039, Hole B, Core 7H - Cored: 49.50 - 59.00 mbsf



DIATOMACEOUS OOZE WITH ASH LAYERS

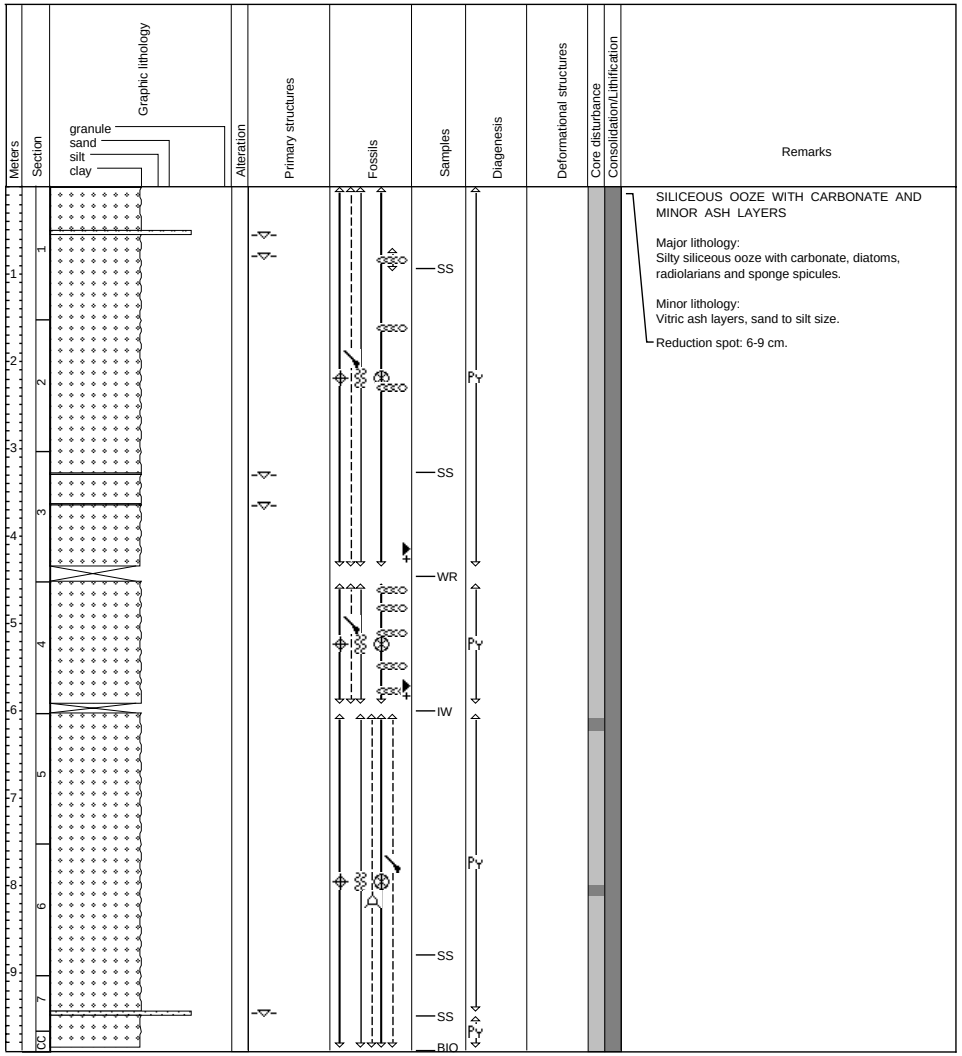
Major lithology:
Olive green to dark olive green diatomaceous ooze, with radiolarians, silicoflagellates and sponge spicules. Grain size: from silty clay to clay.

Minor lithology:
Light to dark gray vitric ash, 10 cm thick. Grain size from silty clay to fine sand.

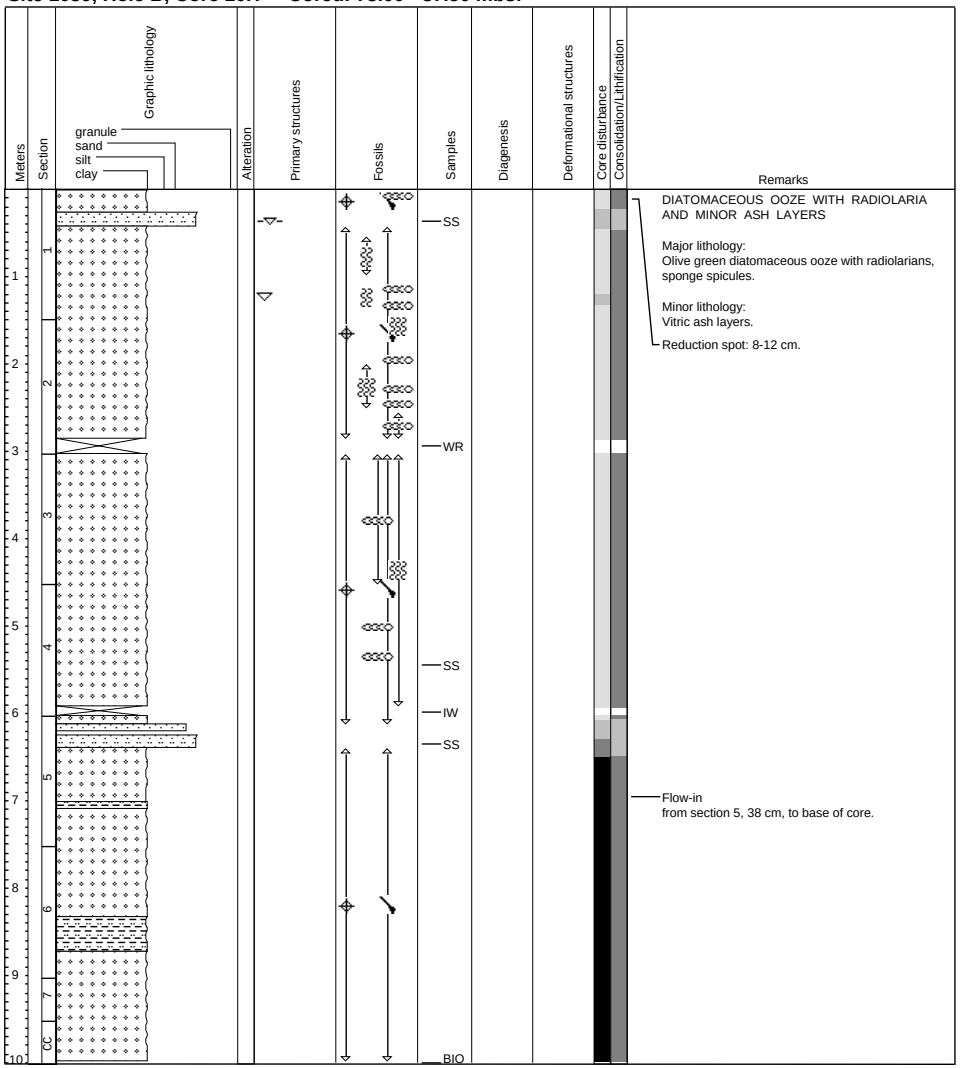

Site 1039, Hole B, Core 8H - Cored: 59.00 - 68.50 mbsf
1039B-8H
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
DIATOMACEOUS AND SILICEOUS OOZE WITH MINOR ASH LAYERS
Major lithology:
Silty diatomaceous ooze with pumice, radiolarians, sponge spicules. Color: olive green.
Minor lithologies:
1) Light olive green interbeds and burrow fills to 2 cm thick of silty siliceous ooze.
2) Light vitric ash layers.
SS
SS
SS
IW
SS
SS
BIO
1
2
3
4
5
6
7
CC

Site 1039, Hole B, Core 9H - Cored: 68.50 - 78.00 mbsf

1039B-9H



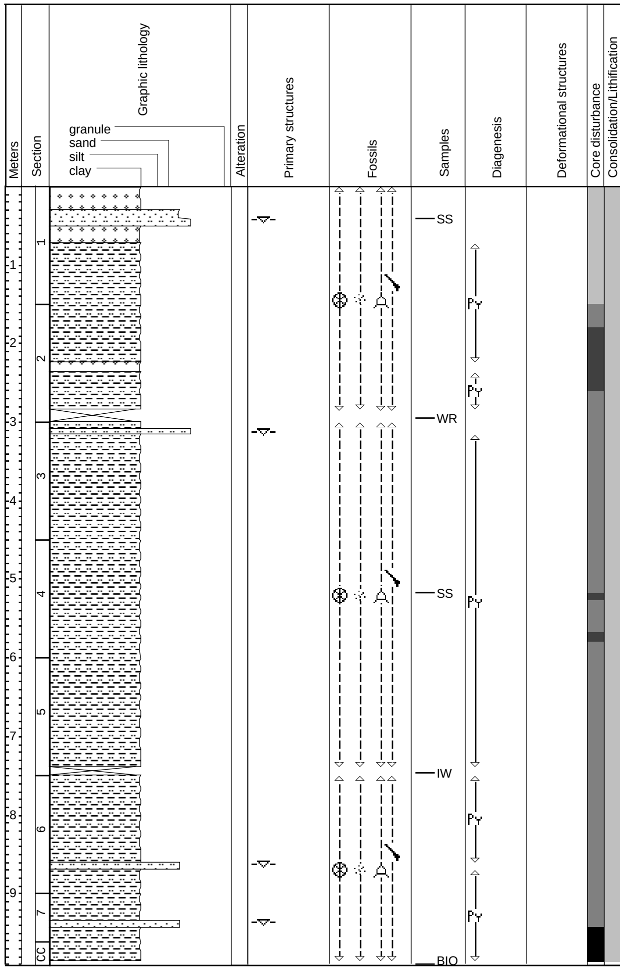
Site 1039, Hole B, Core 10H - Cored: 78.00 - 87.50 mbsf



1039B-10H

Site 1039, Hole B, Core 11H - Cored: 87.50 - 97.00 mbsf

1039B-11H



Remarks

SILTY CLAY WITH DIATOMS AND VITRIC ASH LAYERS

Major lithology:
Silty clay with siliceous microfossils and volcanic glass. Predominantly clay size, of apparent mixed clastic and biogenic fragment composition. Common to trace amounts of diatom and radiolarian fragments and clear volcanic glass.

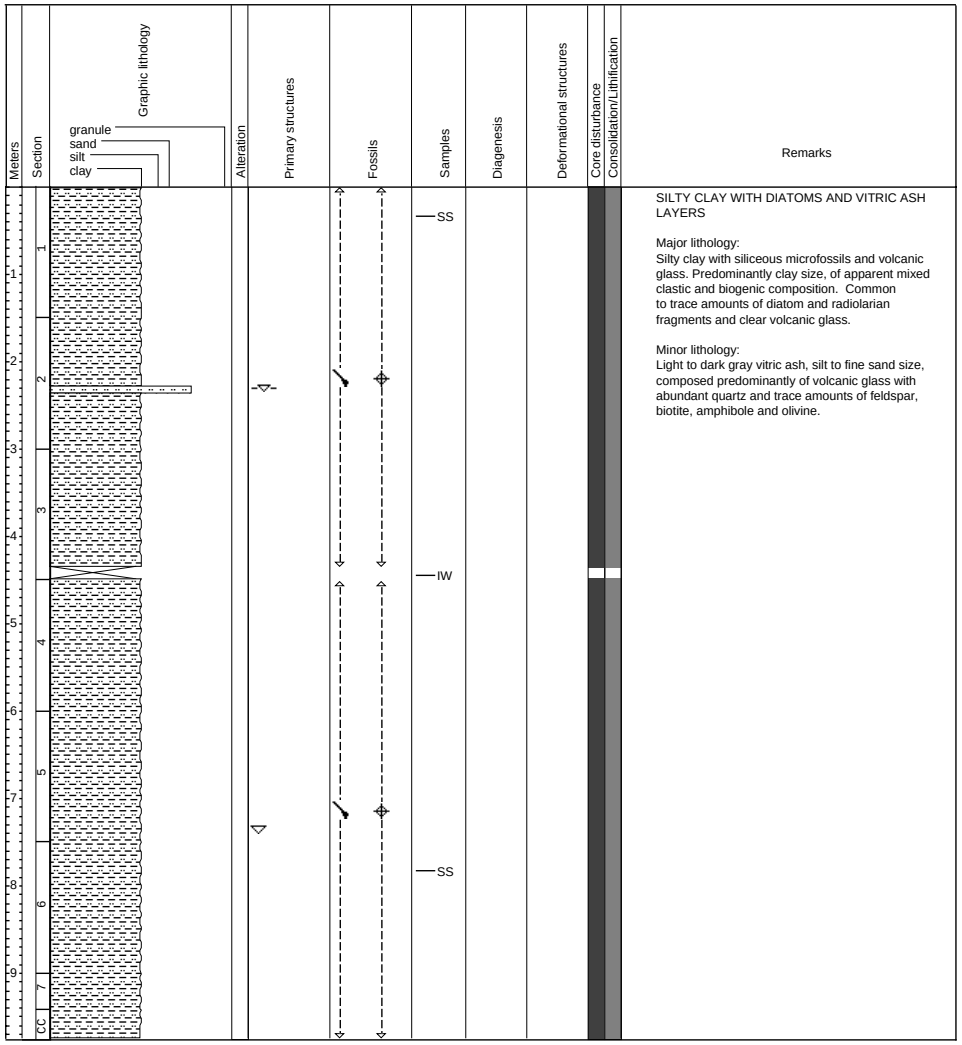
Minor lithology:
Light gray vitric ash, silt to fine sand size, composed predominantly of volcanic glass with abundant quartz and trace amounts of feldspar, biotite, amphibole and olivine.

Curviplanar "normal faults" offset zoophycos tubes.

Flow-in

Site 1039, Hole B, Core 12X - Cored: 97.00 - 103.50 mbsf

1039B-12X

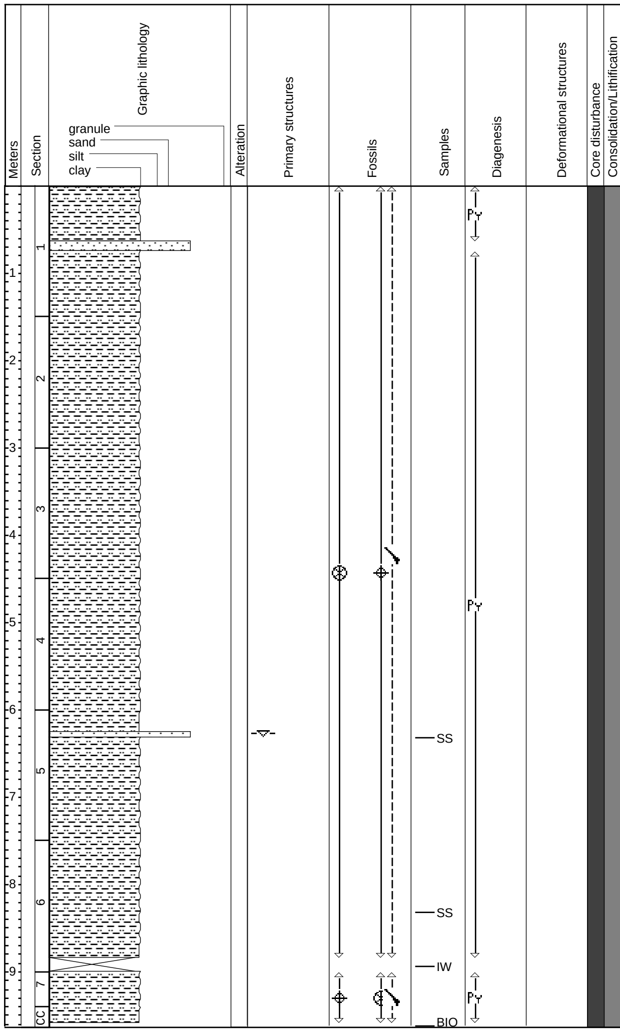


SILTY CLAY WITH DIATOMS AND VITRIC ASH LAYERS

Major lithology:
Silty clay with siliceous microfossils and volcanic glass. Predominantly clay size, of apparent mixed clastic and biogenic composition. Common to trace amounts of diatom and radiolarian fragments and clear volcanic glass.

Minor lithology:
Light to dark gray vitric ash, silt to fine sand size, composed predominantly of volcanic glass with abundant quartz and trace amounts of feldspar, biotite, amphibole and olivine.

Site 1039, Hole B, Core 13X - Cored: 103.50 - 113.10 mbsf



Remarks

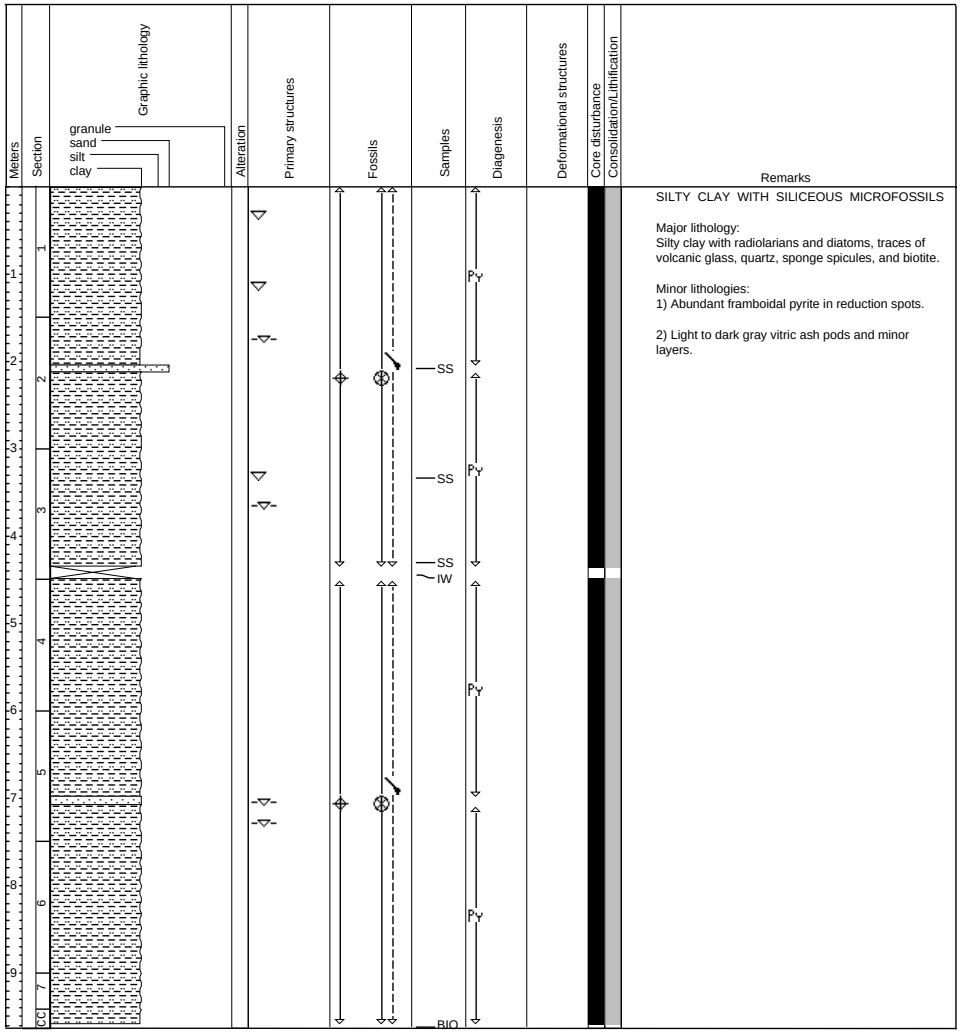
SILTY CLAY WITH SILICEOUS MICROFOSSILS AND MINOR VITRIC ASH LAYERS

Major lithology:
Silty clay with siliceous microfossils and volcanic glass. Predominantly clay size, of apparent mixed clastic and biogenic composition. Common to trace amounts of diatom and radiolarian fragments and clear volcanic glass.

Minor lithology:
Dark gray vitric ash, silt to fine sand size, composed predominantly of volcanic glass with abundant framboidal pyrite and trace amounts of feldspar, biotite, amphibole, olivine and quartz.

Site 1039, Hole B, Core 14X - Cored: 113.10 - 122.70 mbsf

1039B-14X



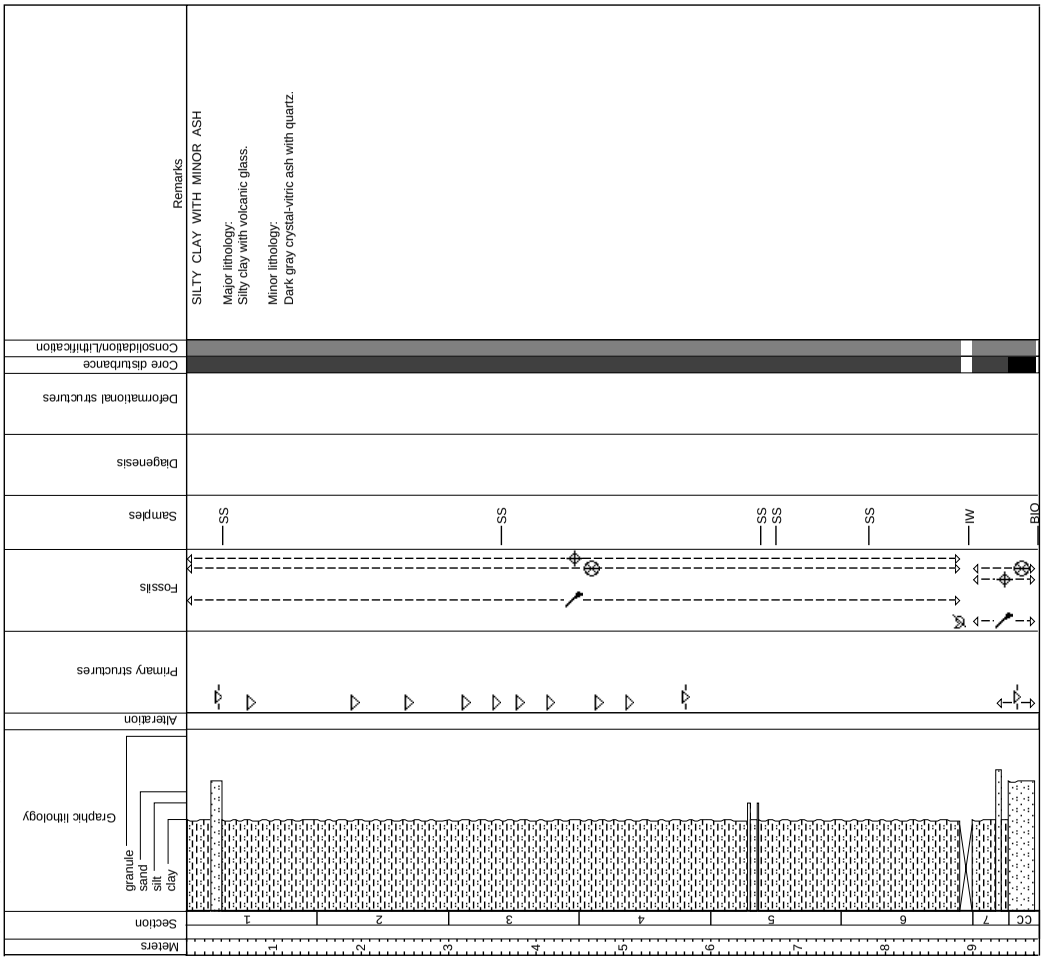
SILTY CLAY WITH SILICEOUS MICROFOSSILS

Major lithology:
Silty clay with radiolarians and diatoms, traces of volcanic glass, quartz, sponge spicules, and biotite.

Minor lithologies:
1) Abundant framboidal pyrite in reduction spots.

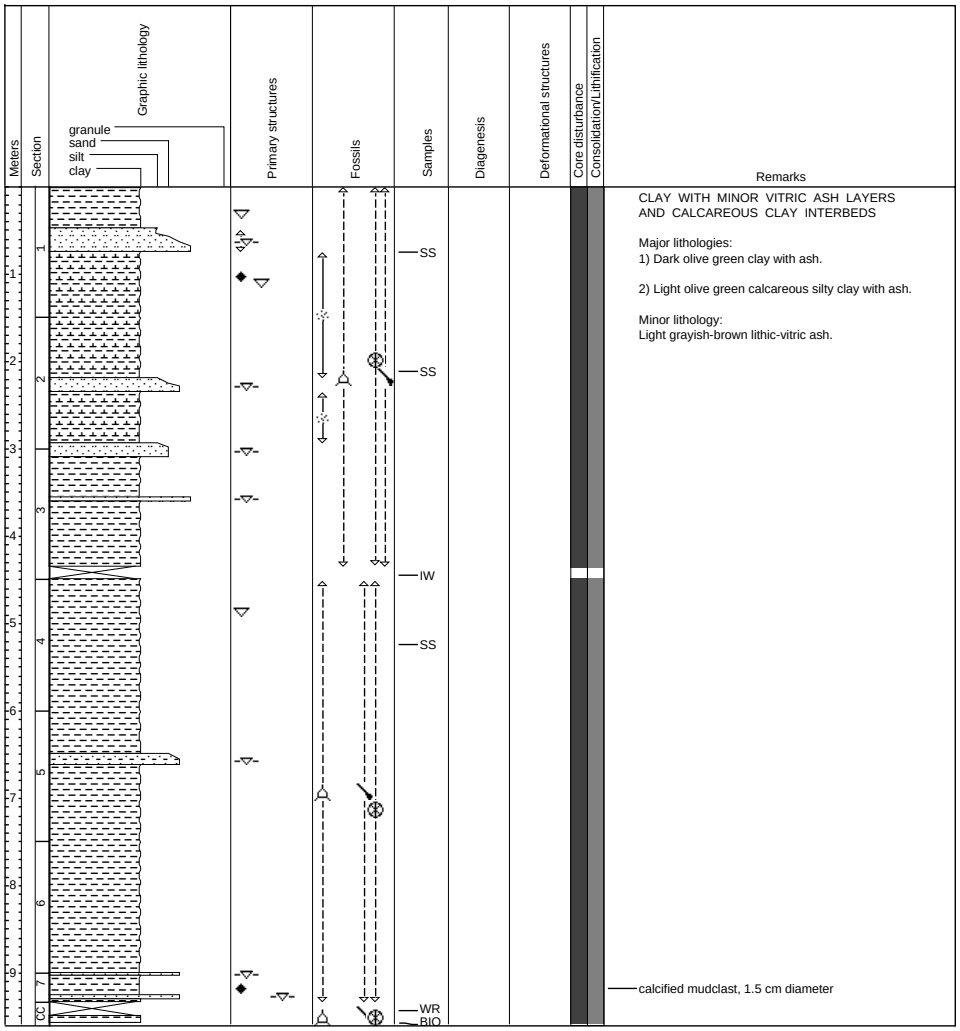
2) Light to dark gray vitric ash pods and minor layers.

1039B-15X


Site 1039, Hole B, Core 15X - Cored: 122.70 - 132.20 mbsf
Meters
Section
Graphic lithology
granule
sand
silt
clay
Alteration
Primary structures
Fossils
Samples
Diagenesis
Deformational structures
Core disturbance
Consolidation/Lithification
Remarks
SILTY CLAY WITH MINOR ASH
Major lithology:
Silty clay with volcanic glass.
Minor lithology:
Dark gray crystal-vitric ash with quartz.
SS
SS
SS
SS
SS
IW
BIO
1
2
3
4
5
6
7
CC

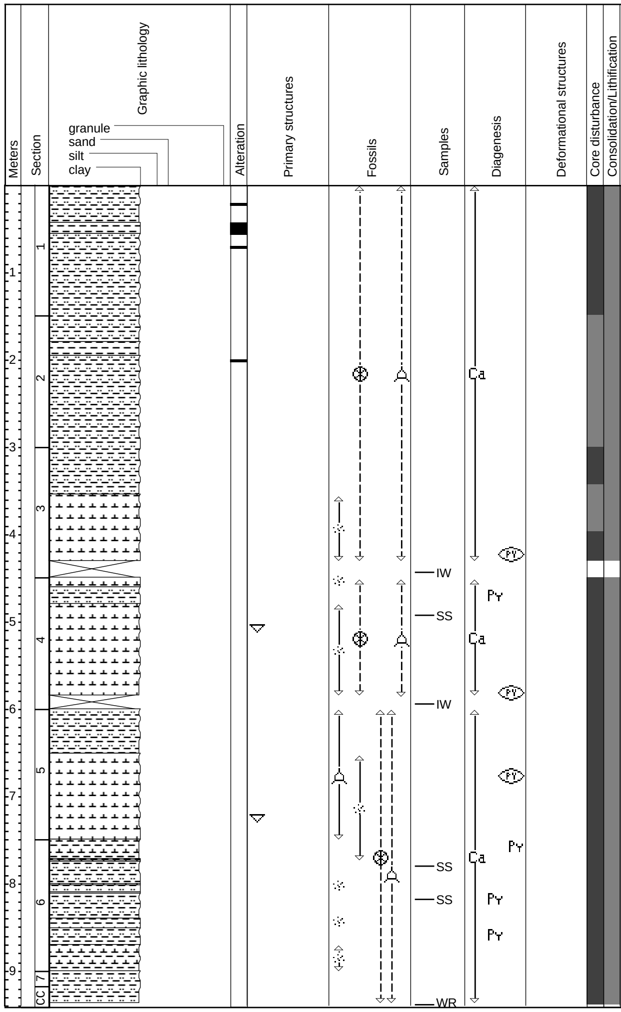
Site 1039, Hole B, Core 16X - Cored: 132.20 - 141.80 mbsf

1039B-16X



Site 1039, Hole B, Core 17X - Cored: 141.80 - 151.40 mbsf

1039B-17X



Remarks

CALCAREOUS OOZE AND SILTY CLAY

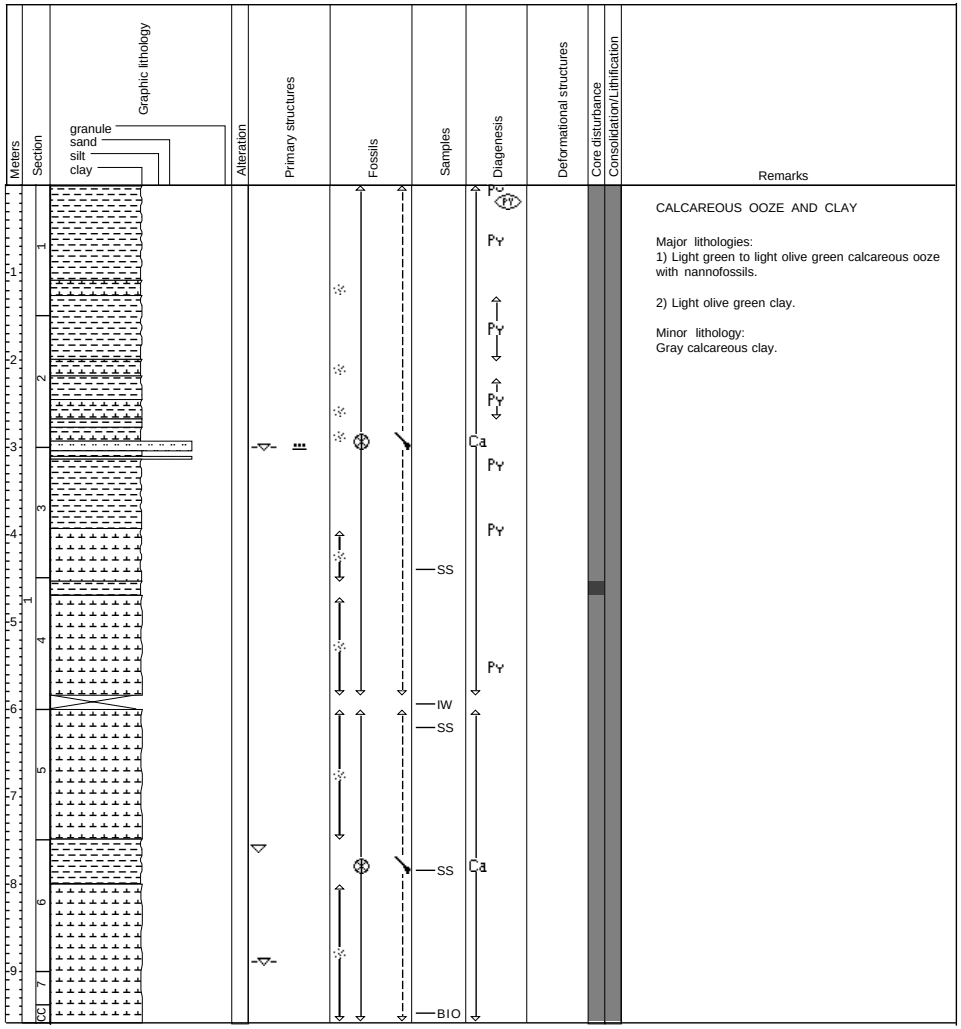
Major lithologies:
1) Light green to light olive green calcareous ooze with nannofossils.

2) Medium olive green silty clay with ash.

Minor lithology:
1) Dark gray calcareous clay with nannofossils.

Site 1039, Hole B, Core 18X - Cored: 151.40 - 161.10 mbsf

1039B-18X



CALCAREOUS OOZE AND CLAY

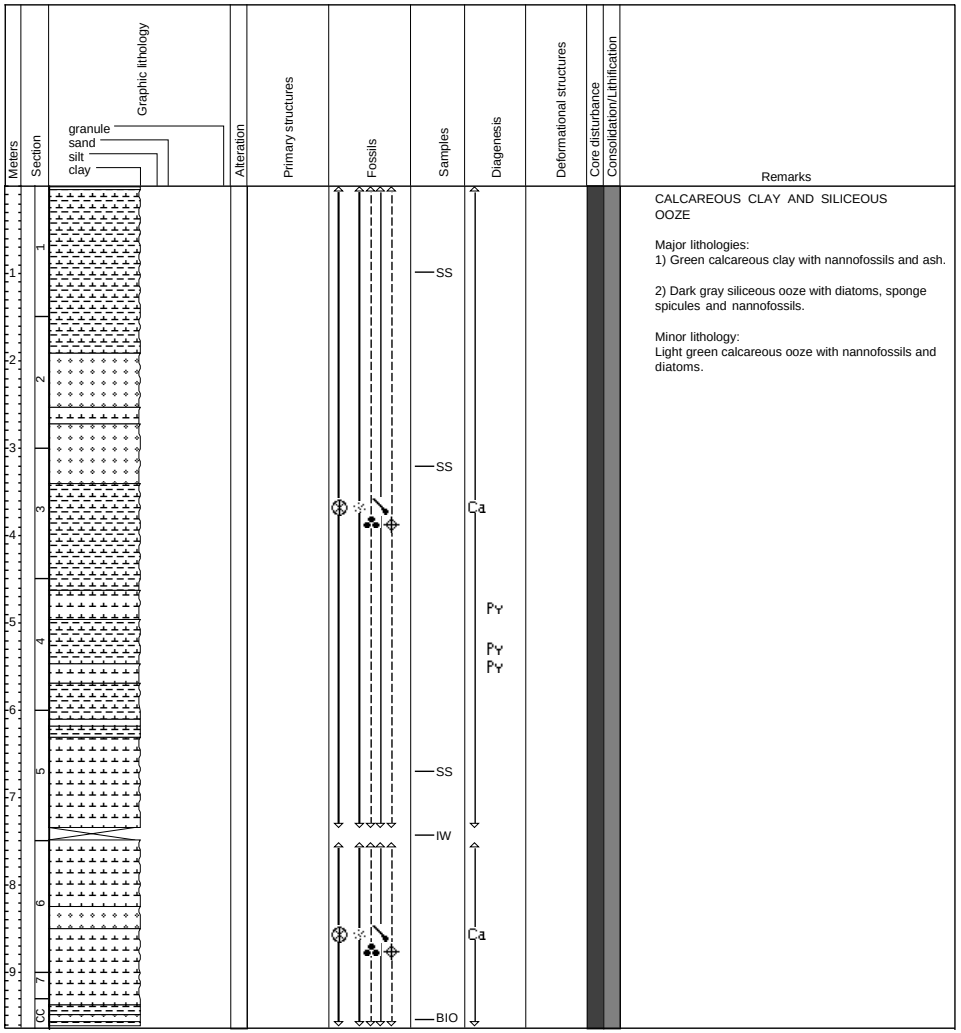
Major lithologies:
1) Light green to light olive green calcareous ooze with nannofossils.

2) Light olive green clay.

Minor lithology:
Gray calcareous clay.

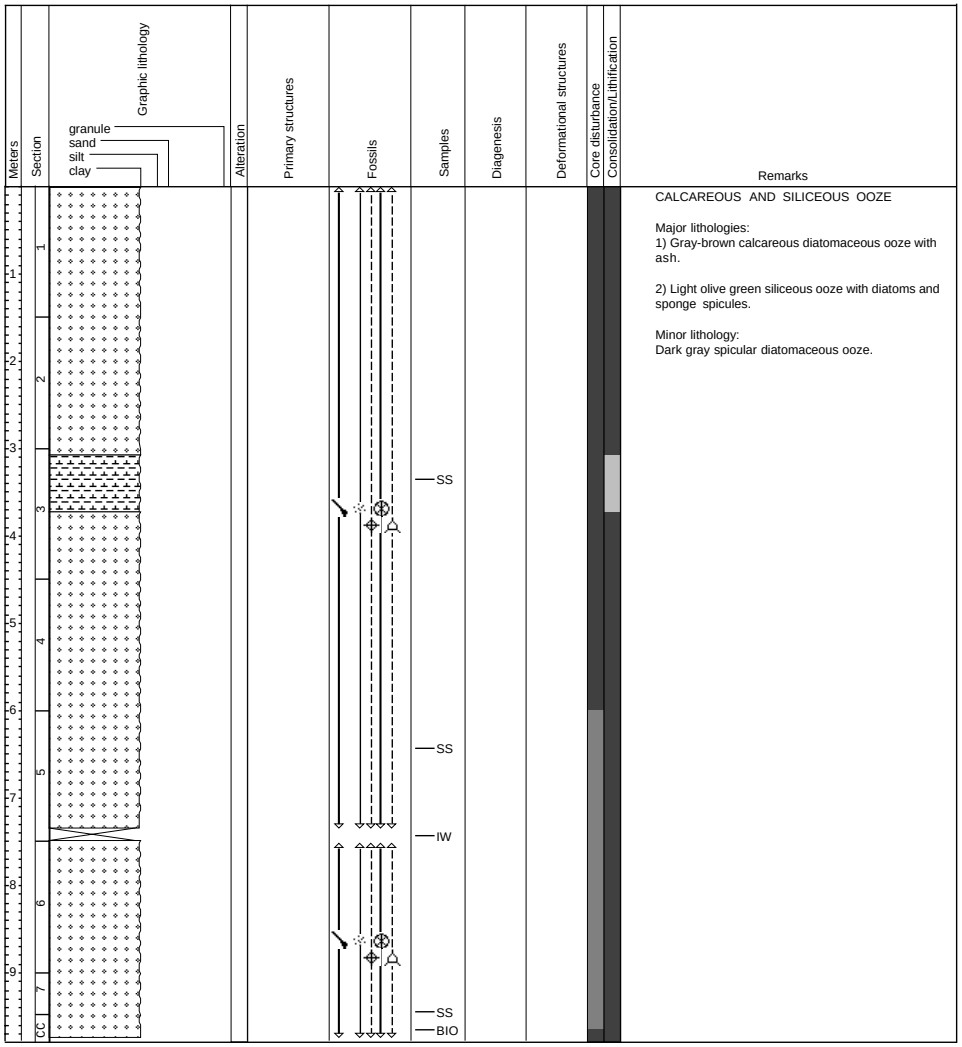
Site1039, Hole B, Core 19X - Cored: 161.10 - 170.60 mbsf

1039B-19X



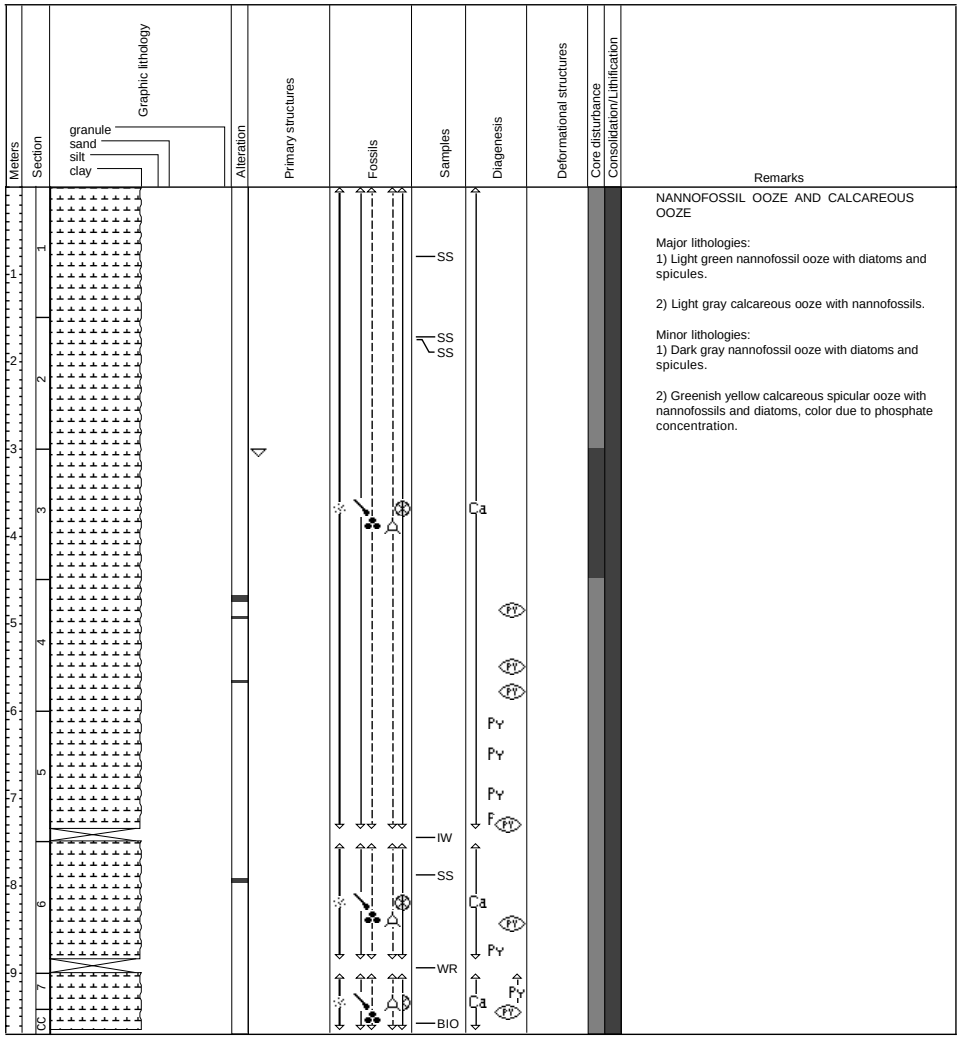
Site 1039, Hole B, Core 20X - Cored: 170.60 - 180.20 mbsf

1039B-20X



Site 1039, Hole B, Core 21X - Cored: 180.20 - 189.80 mbsf

1039B-21X



NANNOFOSSIL OOZE AND CALCAREOUS OOZE

Major lithologies:
1) Light green nannofossil ooze with diatoms and spicules.

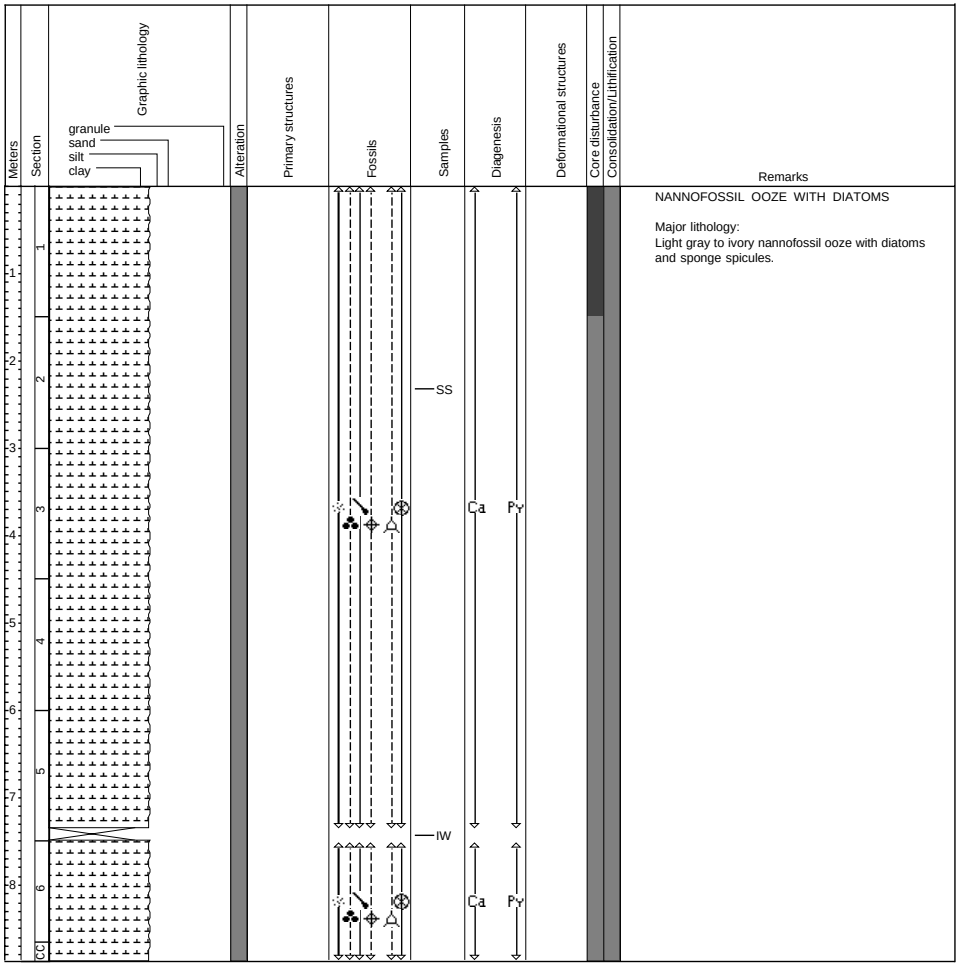
2) Light gray calcareous ooze with nannofossils.

Minor lithologies:
1) Dark gray nannofossil ooze with diatoms and spicules.

2) Greenish yellow calcareous spicular ooze with nannofossils and diatoms, color due to phosphate concentration.

Site 1039, Hole B, Core 22X - Cored: 189.80 - 199.50 mbsf

1039B-22X

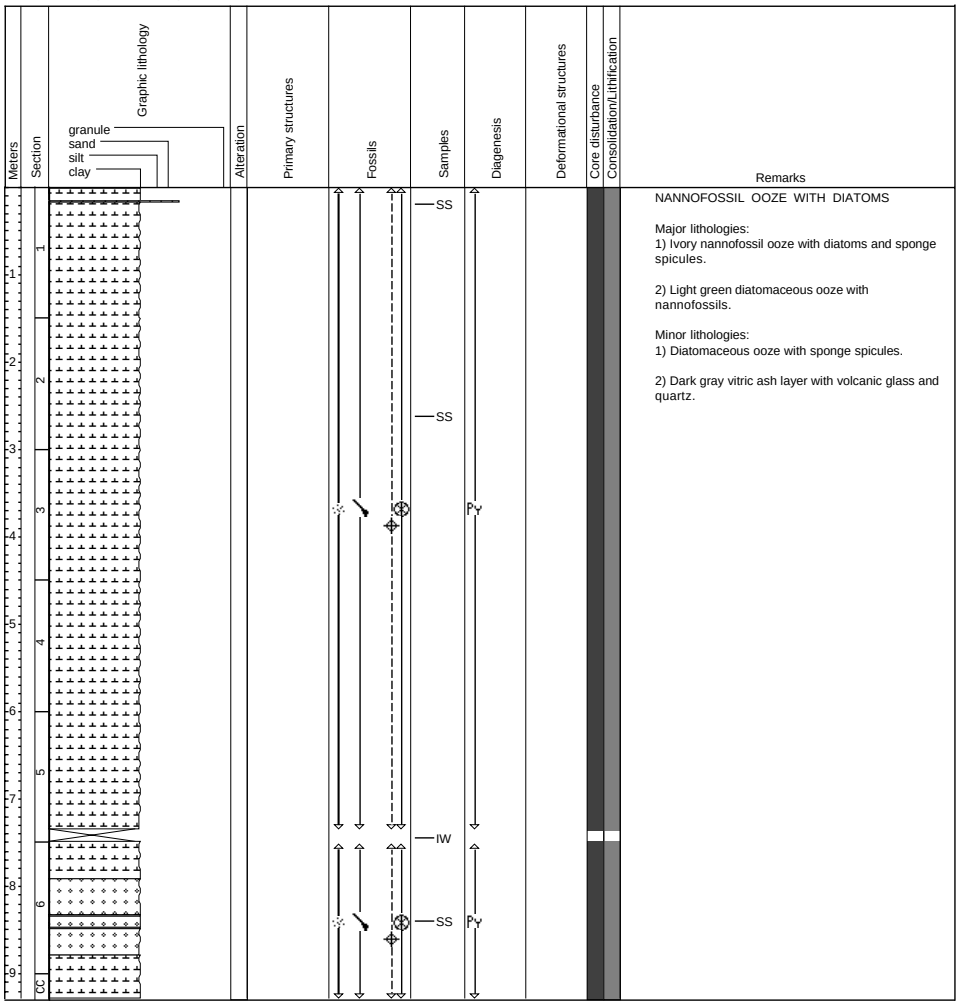


NANNOFOSSIL OOZE WITH DIATOMS

Major lithology:
Light gray to ivory nannofossil ooze with diatoms and sponge spicules.

Site 1039, Hole B, Core 23X - Cored: 199.50 - 209.10 mbsf

1039B-23X



NANNOFOSSIL OOZE WITH DIATOMS

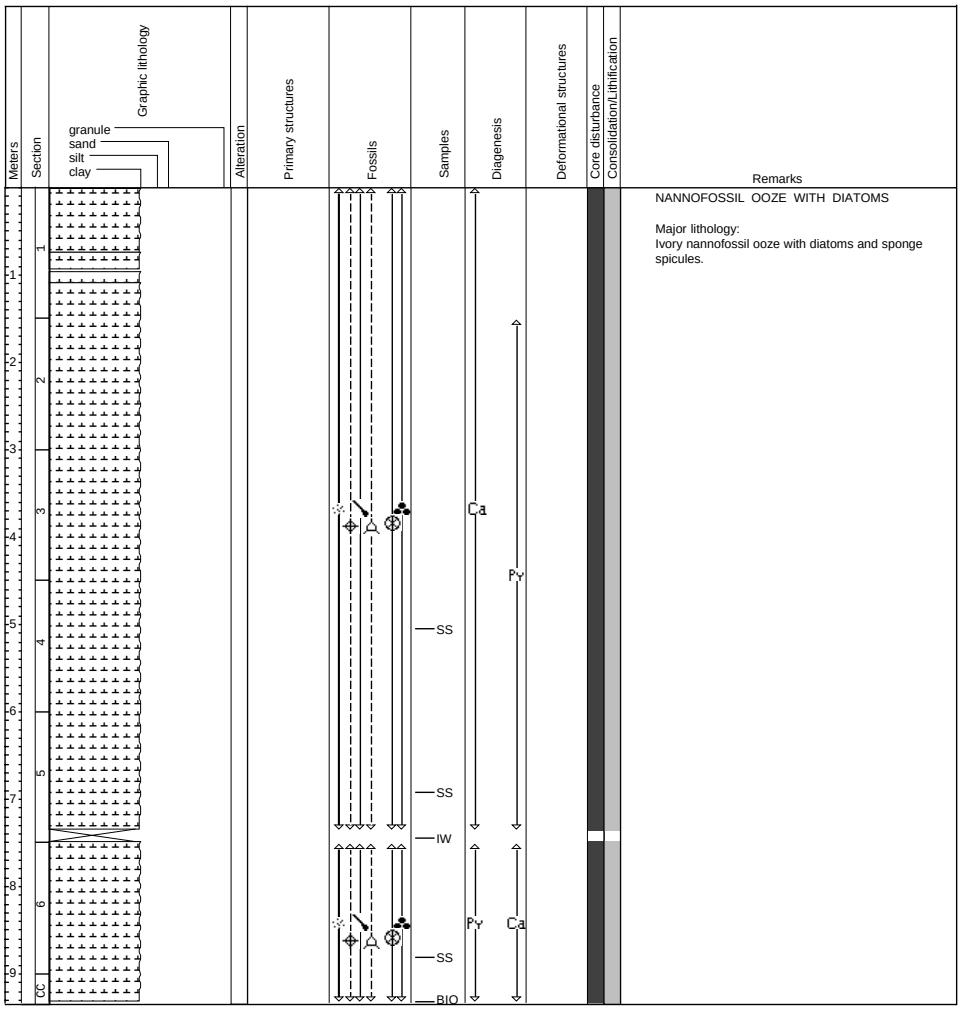
Major lithologies:
1) Ivory nannofossil ooze with diatoms and sponge spicules.

2) Light green diatomaceous ooze with nannofossils.

Minor lithologies:
1) Diatomaceous ooze with sponge spicules.

2) Dark gray vitric ash layer with volcanic glass and quartz.

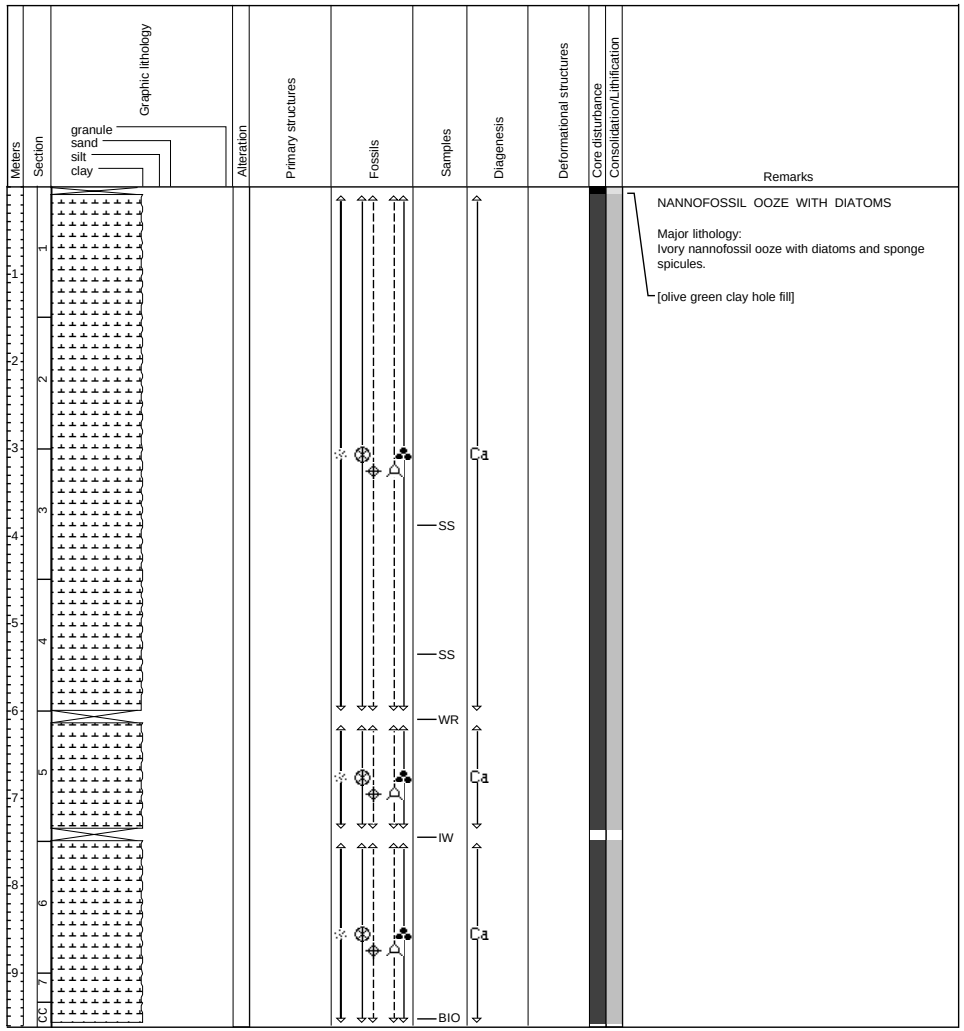
Site 1039, Hole B, Core 24X - Cored: 209.10 - 218.70 mbsf



1039B-24X

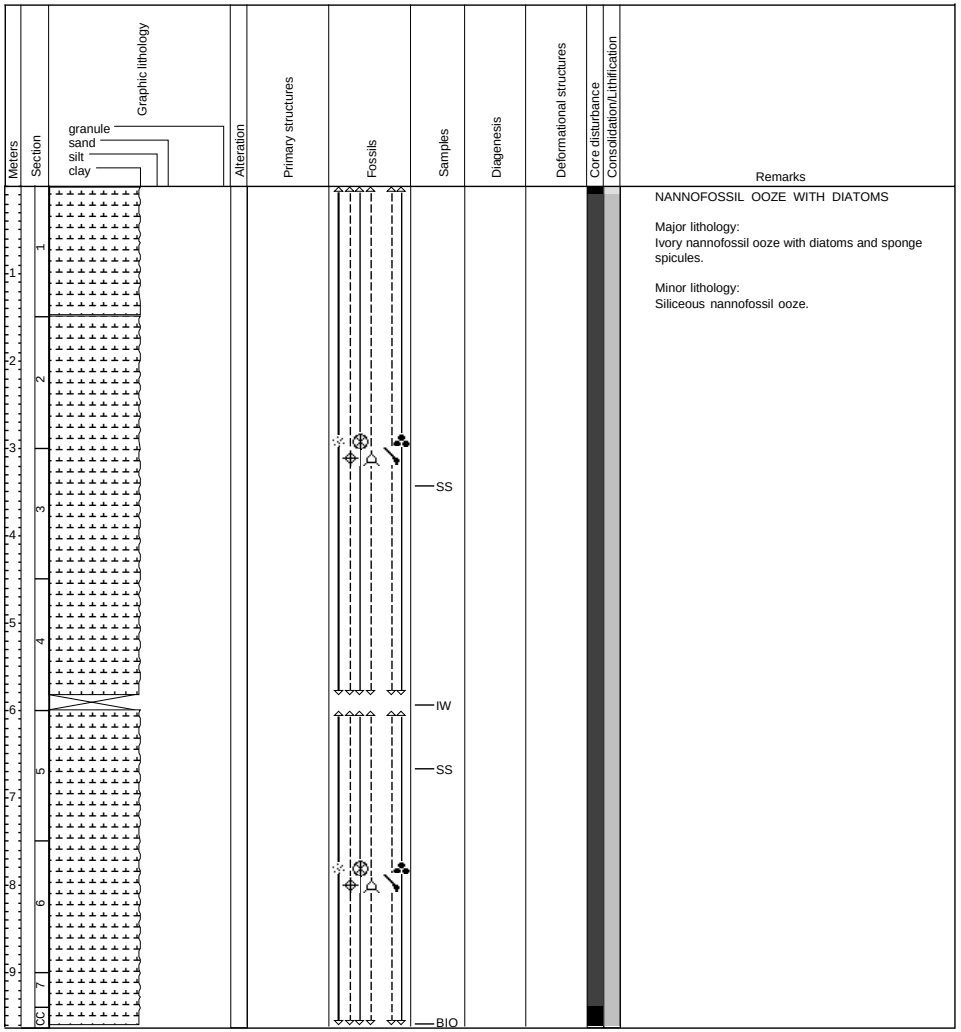
Site 1039, Hole B, Core 25X - Cored: 218.70 - 228.40 mbsf

1039B-25X



Site 1039, Hole B, Core 26X - Cored: 228.40 - 238.00 mbsf

1039B-26X



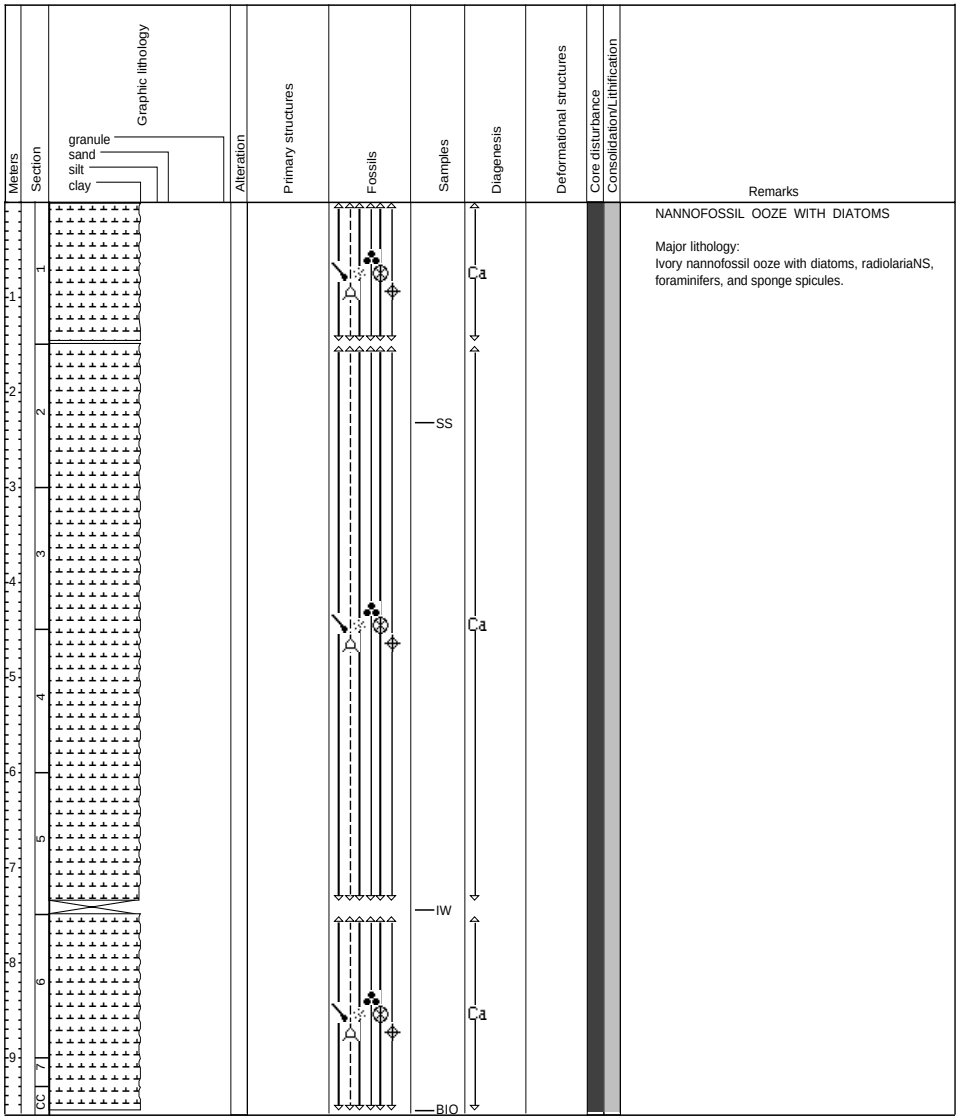
NANNOFOSSIL OOZE WITH DIATOMS

Major lithology:
Ivory nannofossil ooze with diatoms and sponge spicules.

Minor lithology:
Siliceous nannofossil ooze.

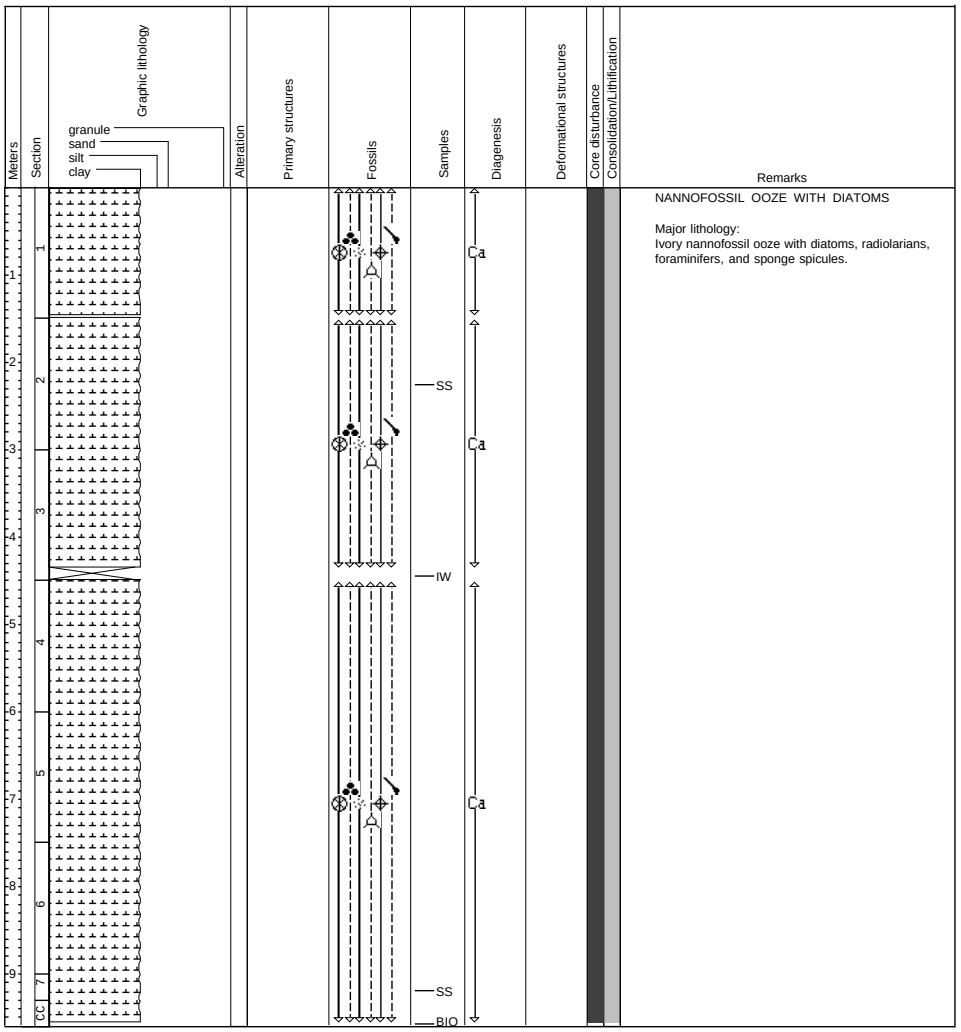
Site 1039, Hole B, Core 27X - Cored: 238.00 - 247.70 mbsf

1039B-27X



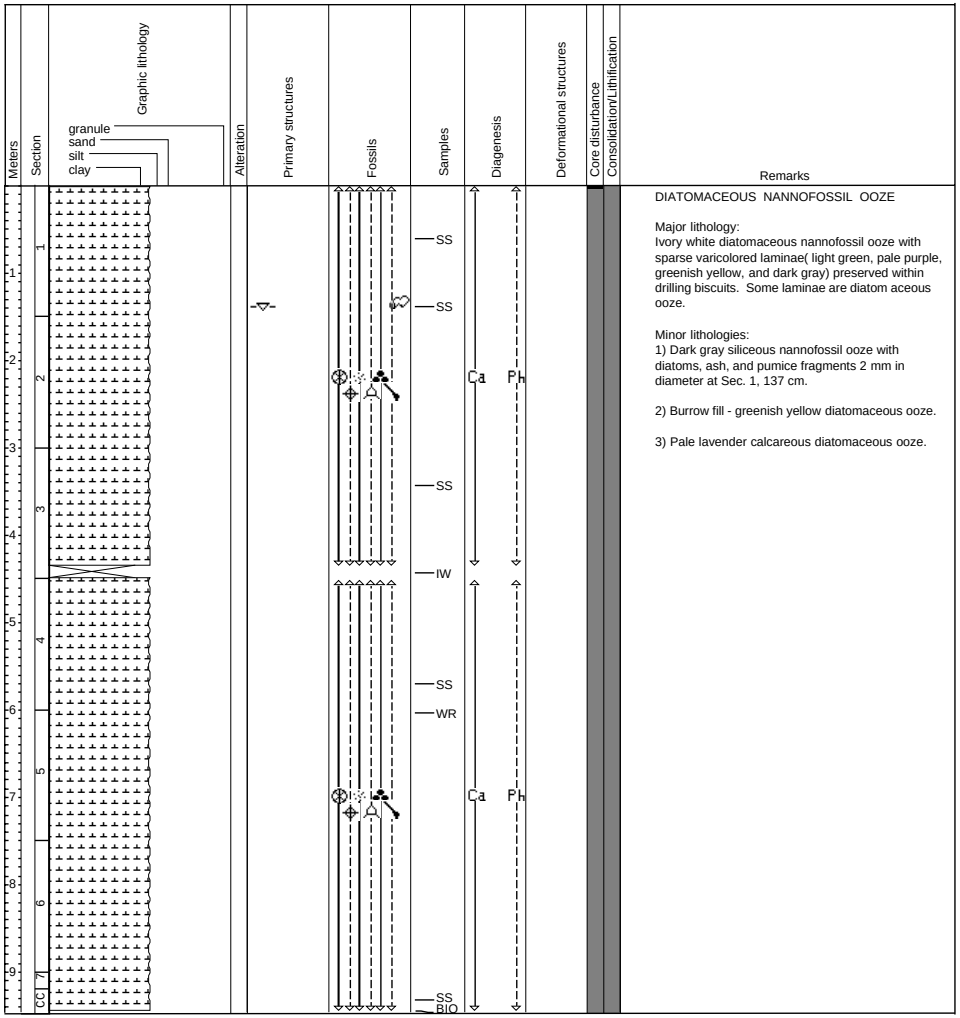
Site 1039, Hole B, Core 28X - Cored: 247.70 - 257.40 mbsf

1039B-28X



Site 1039, Hole B, Core 29X - Cored: 257.40 - 267.10 mbsf

1039B-29X



DIATOMACEOUS NANNOFOSSIL OOZE

Major lithology:
Ivory white diatomaceous nannofossil ooze with sparse varicolored laminae(light green, pale purple, greenish yellow, and dark gray) preserved within drilling biscuits. Some laminae are diatom aceous ooze.

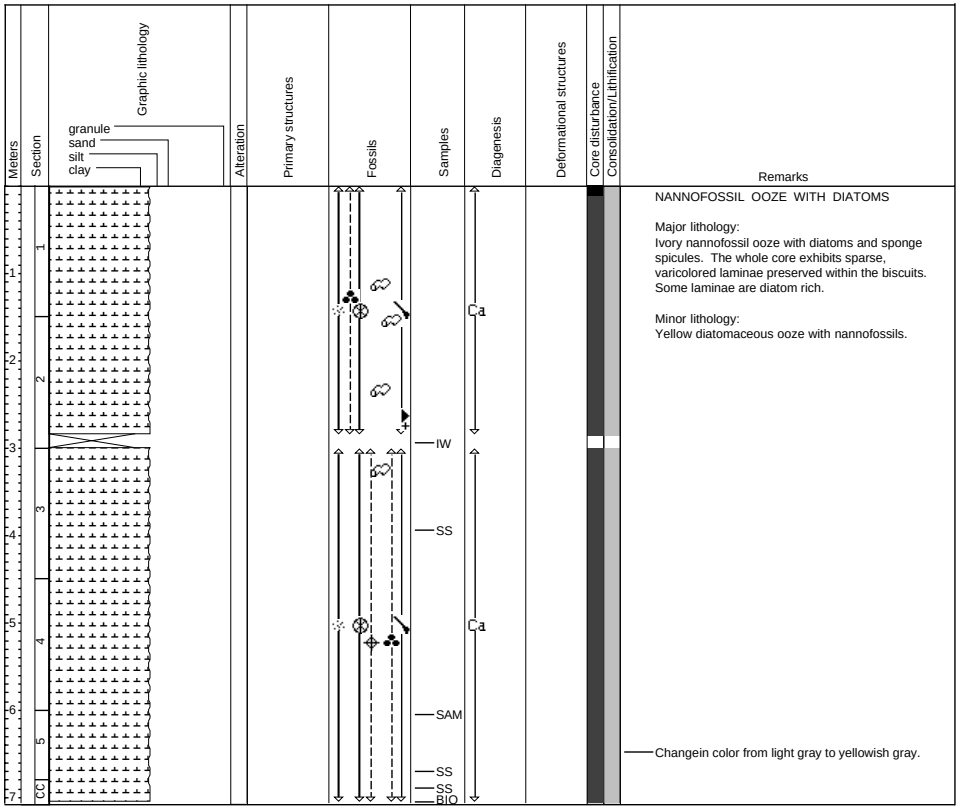
Minor lithologies:
1) Dark gray siliceous nannofossil ooze with diatoms, ash, and pumice fragments 2 mm in diameter at Sec. 1, 137 cm.

2) Burrow fill - greenish yellow diatomaceous ooze.

3) Pale lavender calcareous diatomaceous ooze.

Site 1039, Hole B, Core 30X - Cored: 267.10 - 276.70 mbsf

1039B-30X



NANNOFOSSIL OOZE WITH DIATOMS

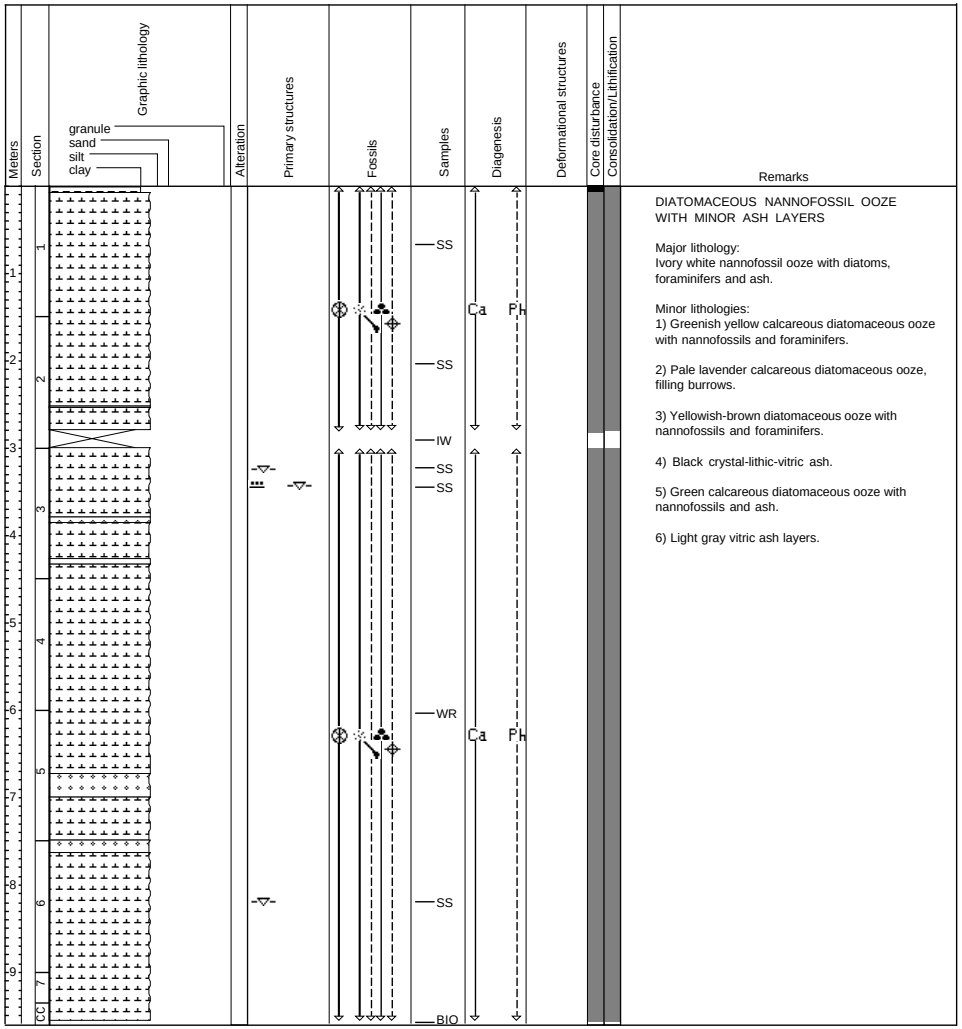
Major lithology:
Ivory nannofossil ooze with diatoms and sponge spicules. The whole core exhibits sparse, varicolored laminae preserved within the biscuits. Some laminae are diatom rich.

Minor lithology:
Yellow diatomaceous ooze with nannofossils.

Changein color from light gray to yellowish gray.

Site 1039, Hole B, Core 31X - Cored: 276.70 - 286.40 mbsf

1039B-31X



DIATOMACEOUS NANNOFOSSIL OOZE WITH MINOR ASH LAYERS

Major lithology:
Ivory white nannofossil ooze with diatoms, foraminifers and ash.

Minor lithologies:
1) Greenish yellow calcareous diatomaceous ooze with nannofossils and foraminifers.

2) Pale lavender calcareous diatomaceous ooze, filling burrows.

3) Yellowish-brown diatomaceous ooze with nannofossils and foraminifers.

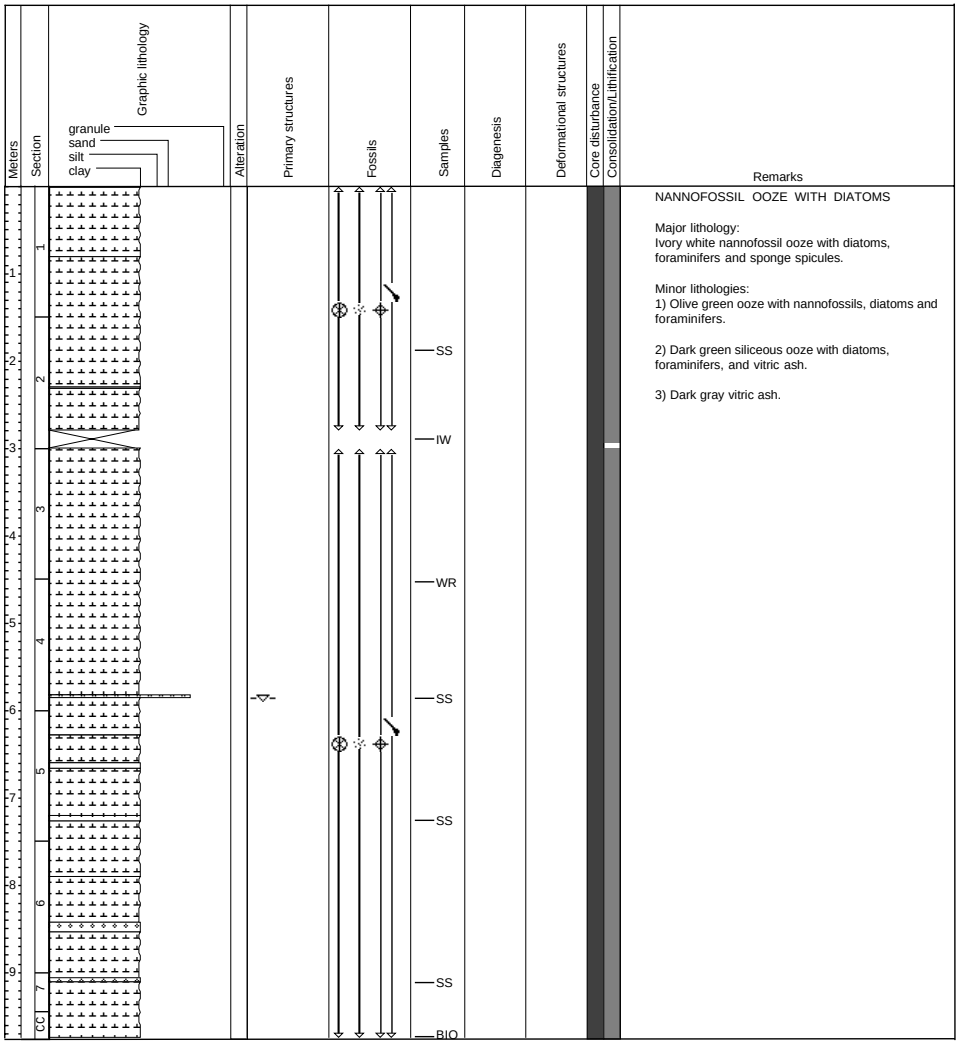
4) Black crystal-lithic-vitric ash.

5) Green calcareous diatomaceous ooze with nannofossils and ash.

6) Light gray vitric ash layers.

Site 1039, Hole B, Core 32X - Cored: 286.40 - 296.00 mbsf

1039B-32X



NANNOFOSSIL OOZE WITH DIATOMS

Major lithology:
Ivory white nannofossil ooze with diatoms, foraminifers and sponge spicules.

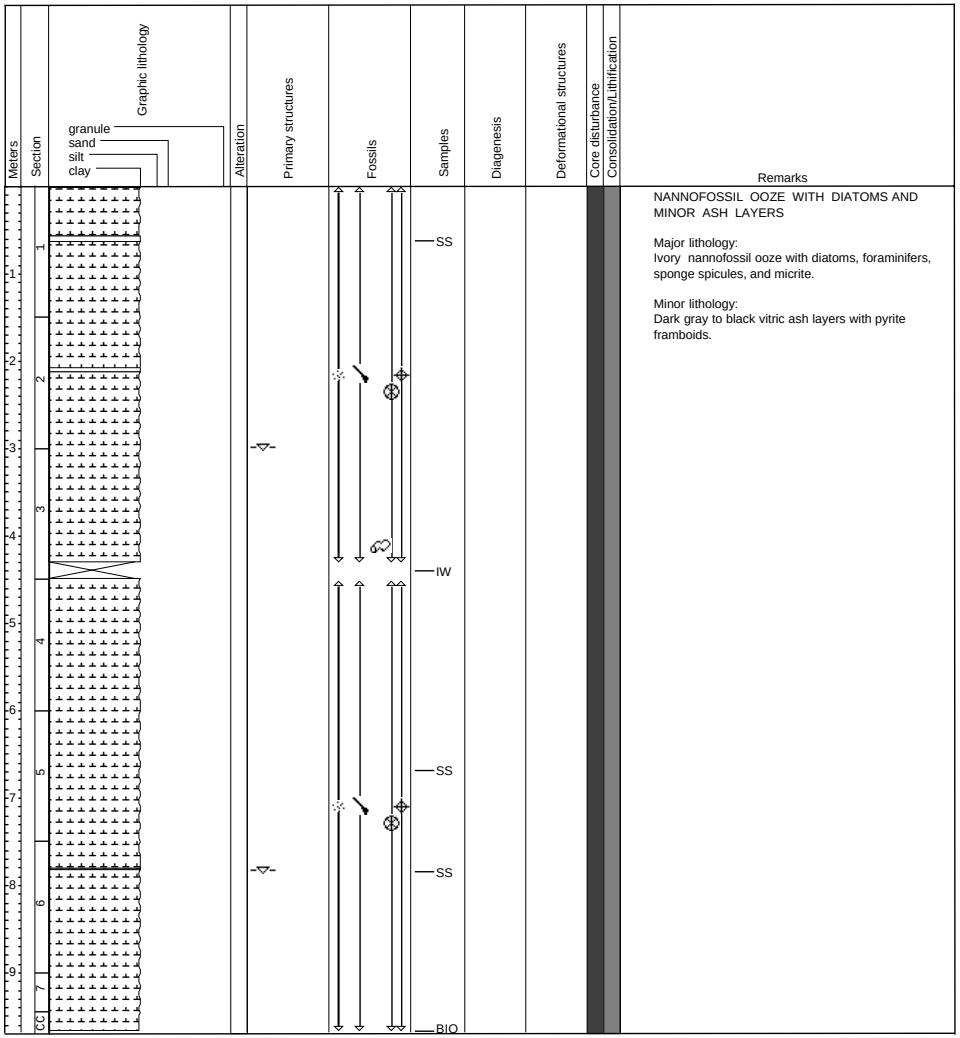
Minor lithologies:
1) Olive green ooze with nannofossils, diatoms and foraminifers.

2) Dark green siliceous ooze with diatoms, foraminifers, and vitric ash.

3) Dark gray vitric ash.

Site 1039, Hole B, Core 33X - Cored: 296.00 - 305.60 mbsf

1039B-33X



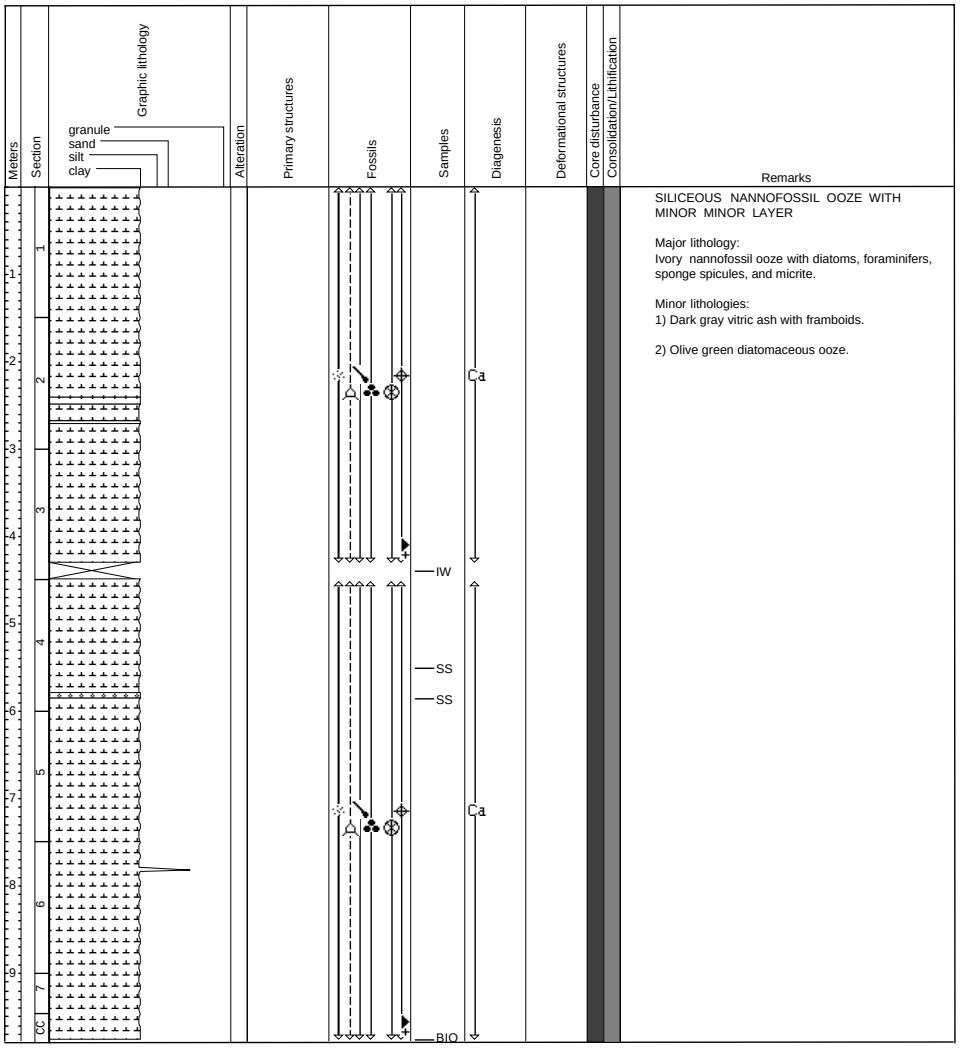
NANNOFOSSIL OOZE WITH DIATOMS AND MINOR ASH LAYERS

Major lithology:
Ivory nannofossil ooze with diatoms, foraminifers, sponge spicules, and micrite.

Minor lithology:
Dark gray to black vitric ash layers with pyrite framboids.

Site 1039, Hole B, Core 34X - Cored: 305.60 - 315.20 mbsf

1039B-34X



SILICEOUS NANNOFOSSIL OOZE WITH MINOR MINOR LAYER

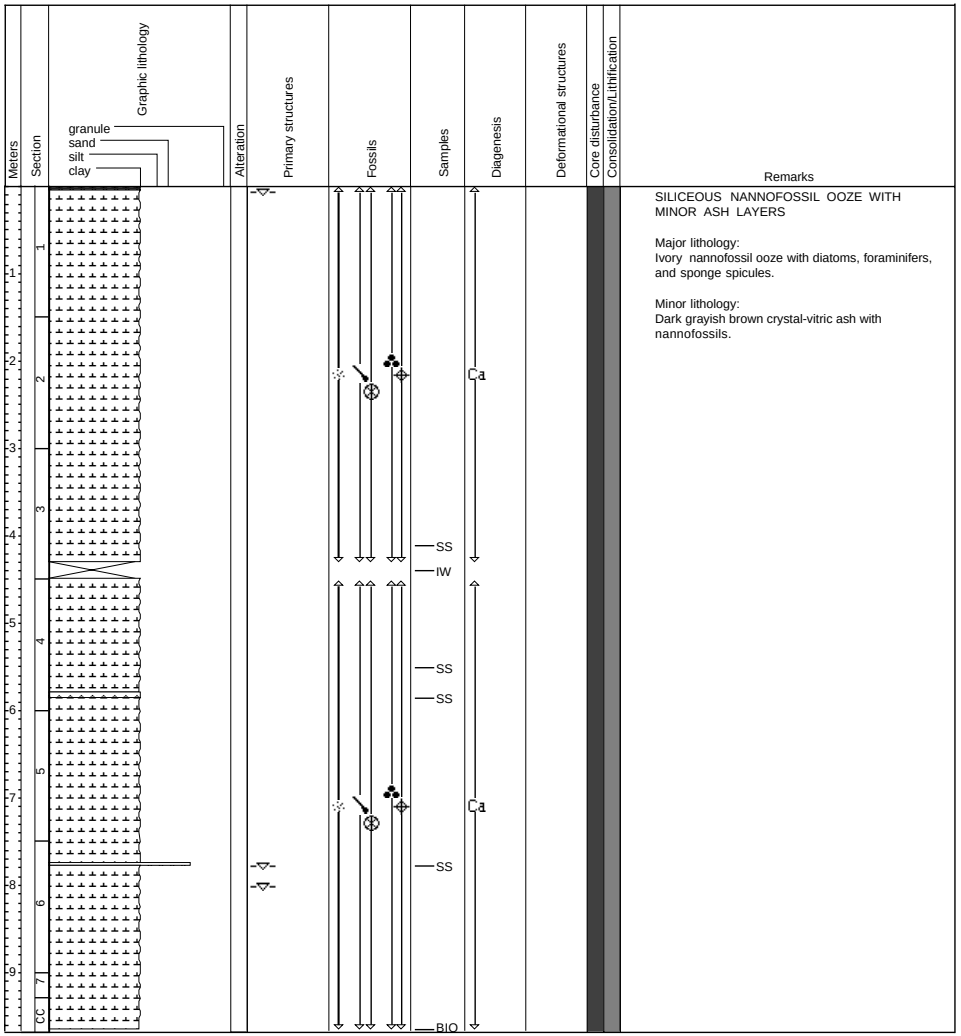
Major lithology:
Ivory nannofossil ooze with diatoms, foraminifers, sponge spicules, and micrite.

Minor lithologies:
1) Dark gray vitric ash with framboids.

2) Olive green diatomaceous ooze.

Site 1039, Hole B, Core 35X - Cored: 315.20 - 324.80 mbsf

1039B-35X

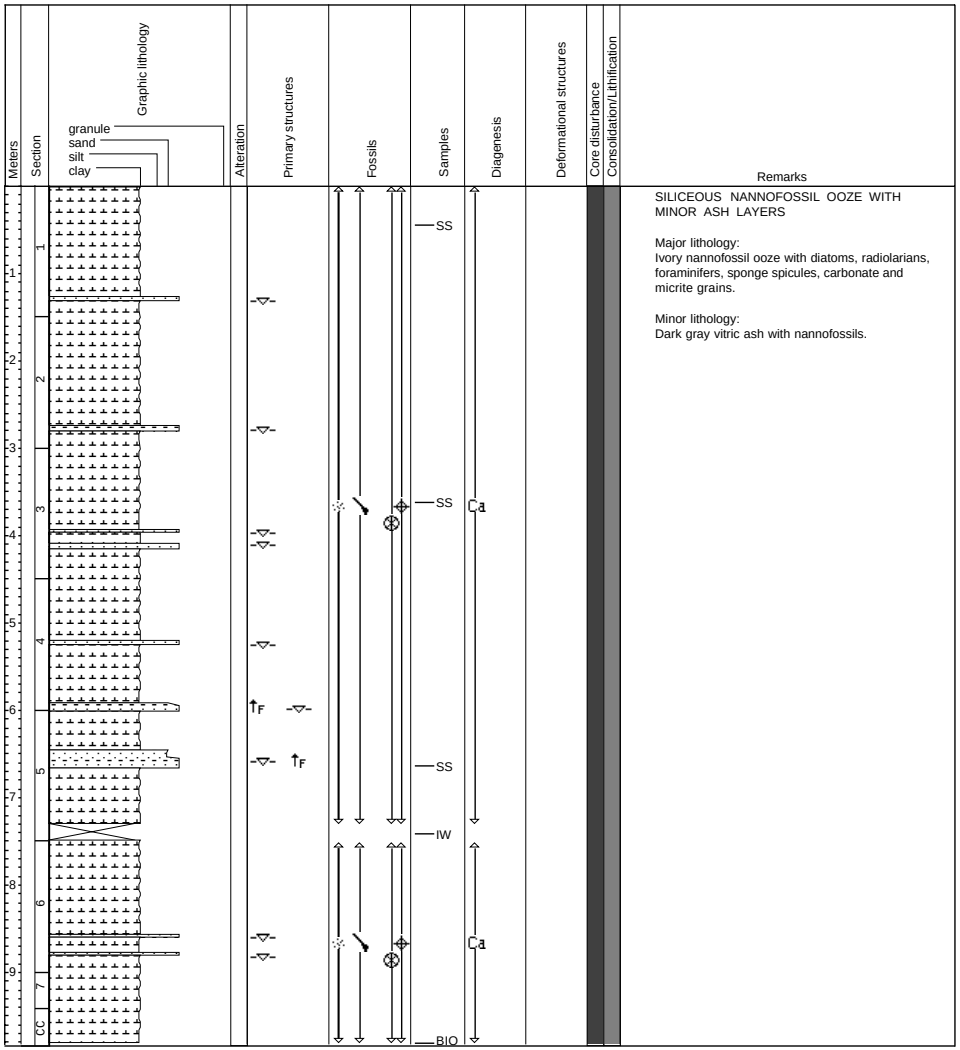


SILICEOUS NANNOFOSSIL OOZE WITH MINOR ASH LAYERS

Major lithology:
Ivory nannofossil ooze with diatoms, foraminifers, and sponge spicules.

Minor lithology:
Dark grayish brown crystal-vitric ash with nannofossils.

Site 1039, Hole B, Core 36X - Cored: 324.80 - 334.40 mbsf



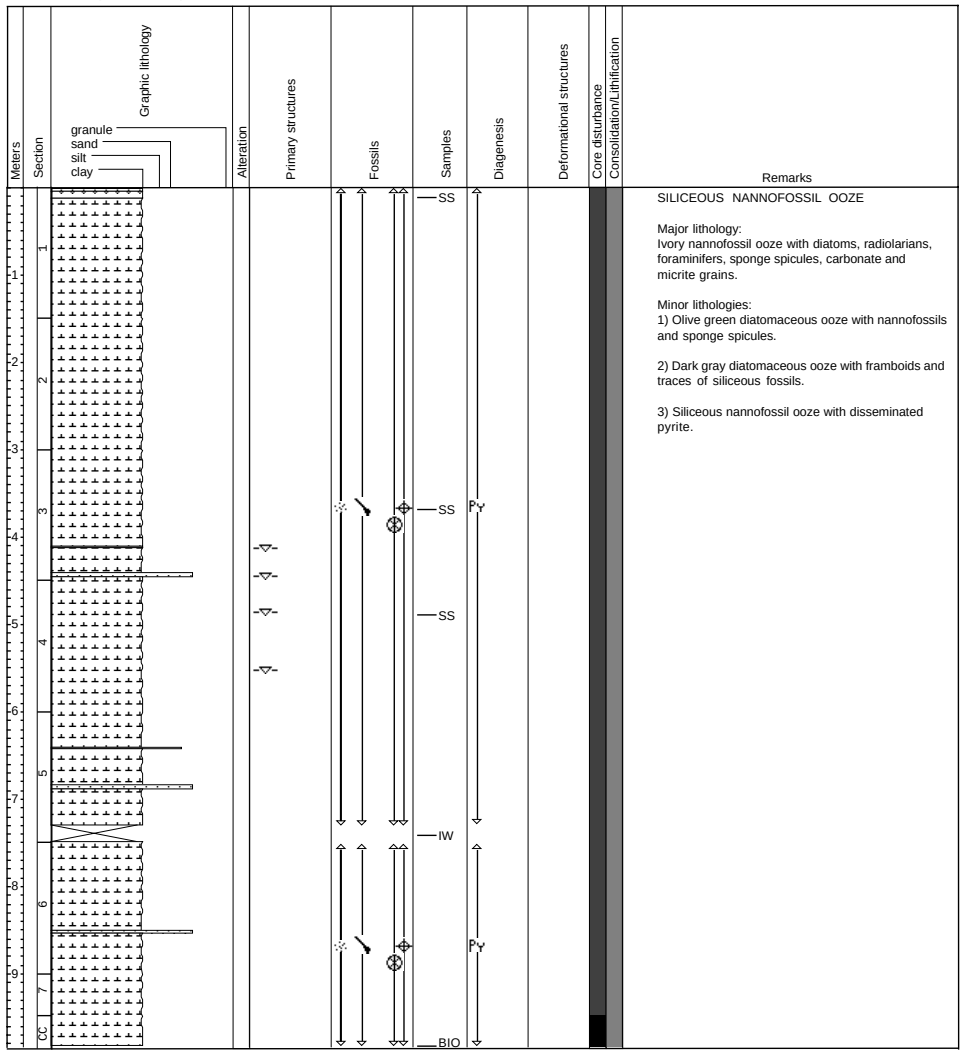
SILICEOUS NANNOFOSSIL OOZE WITH MINOR ASH LAYERS

Major lithology:
Ivory nannofossil ooze with diatoms, radiolarians, foraminifers, sponge spicules, carbonate and micrite grains.

Minor lithology:
Dark gray vitric ash with nannofossils.

Site 1039, Hole B, Core 37X - Cored: 334.40 - 344.00 mbsf

1039B-37X



SILICEOUS NANNOFOSSIL OOZE

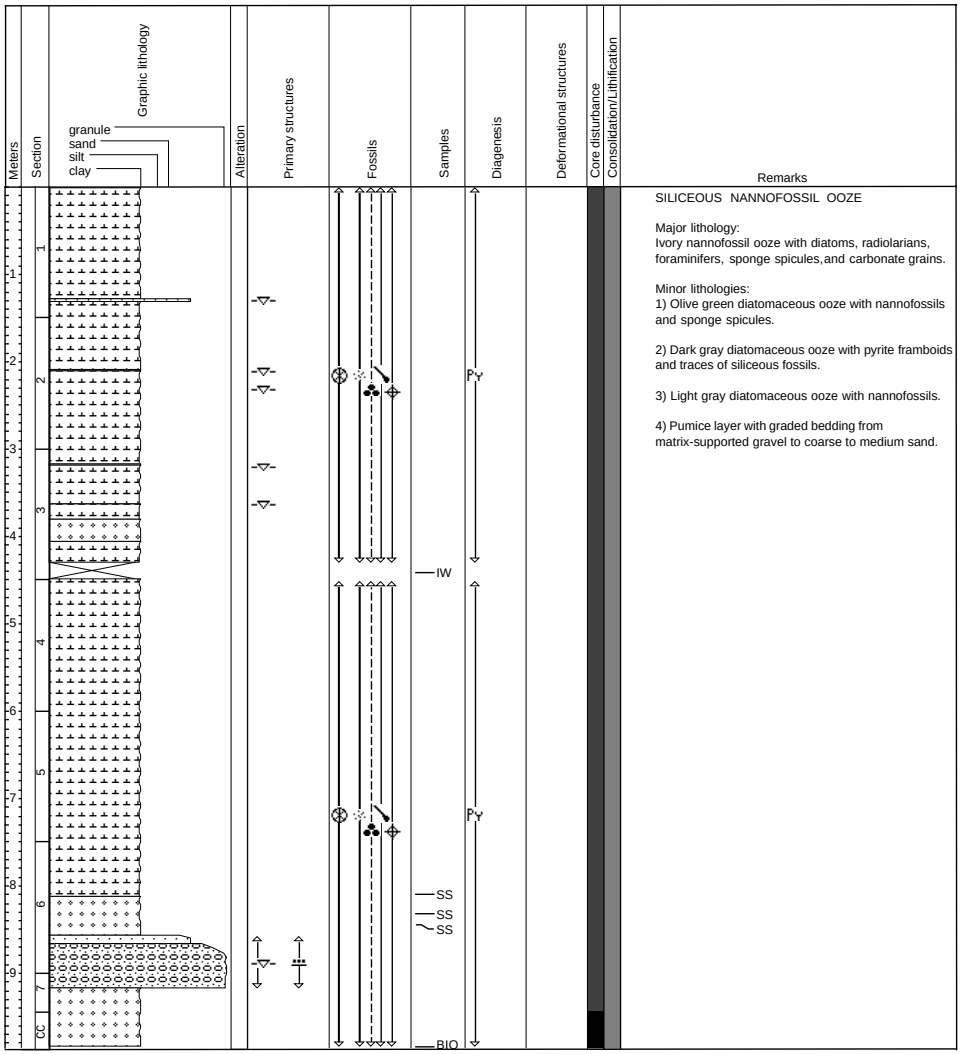
Major lithology:
Ivory nannofossil ooze with diatoms, radiolarians, foraminifers, sponge spicules, carbonate and micrite grains.

Minor lithologies:
1) Olive green diatomaceous ooze with nannofossils and sponge spicules.

2) Dark gray diatomaceous ooze with framboids and traces of siliceous fossils.

3) Siliceous nannofossil ooze with disseminated pyrite.

Site 1039, Hole B, Core 38X - Cored: 344.00 - 353.60 mbsf



SILICEOUS NANNOFOSSIL OOZE

Major lithology:
Ivory nannofossil ooze with diatoms, radiolarians, foraminifers, sponge spicules,and carbonate grains.

Minor lithologies:
1) Olive green diatomaceous ooze with nannofossils and sponge spicules.

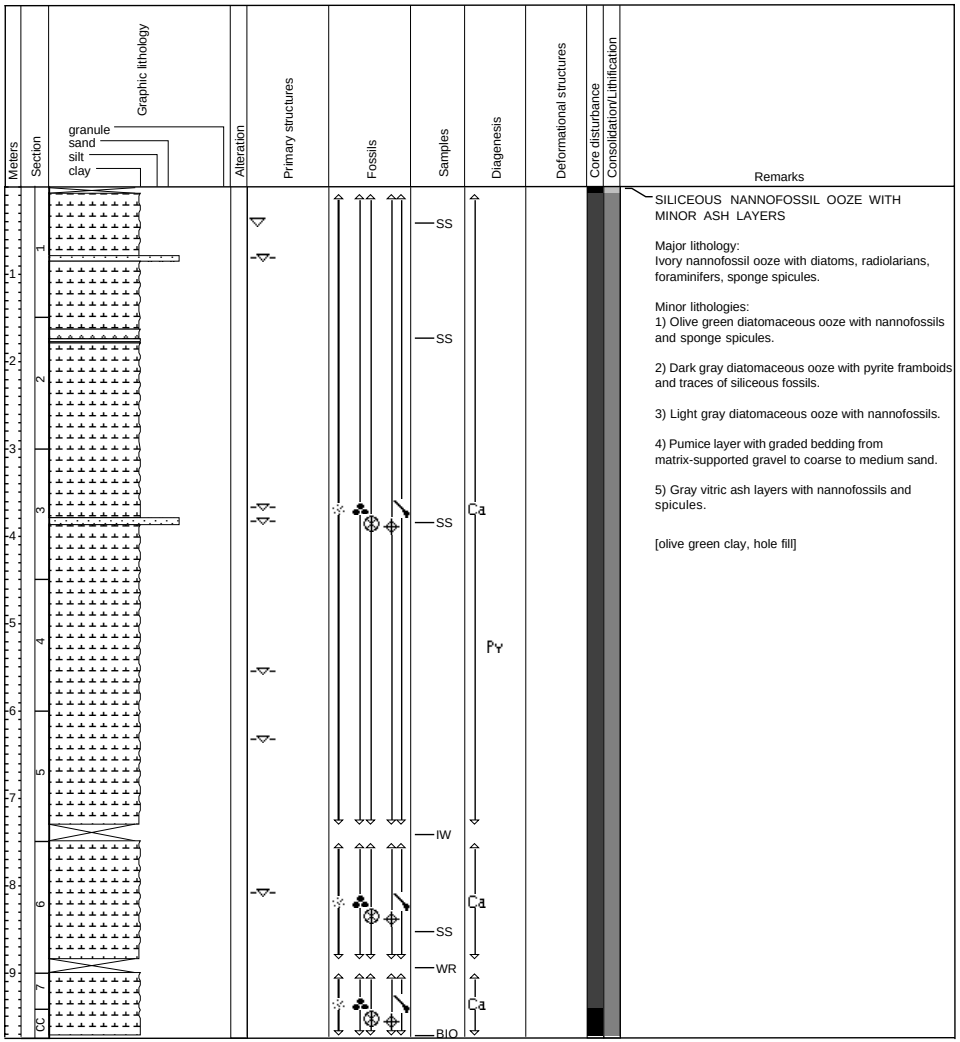
2) Dark gray diatomaceous ooze with pyrite framboids and traces of siliceous fossils.

3) Light gray diatomaceous ooze with nannofossils.

4) Pumice layer with graded bedding from matrix-supported gravel to coarse to medium sand.

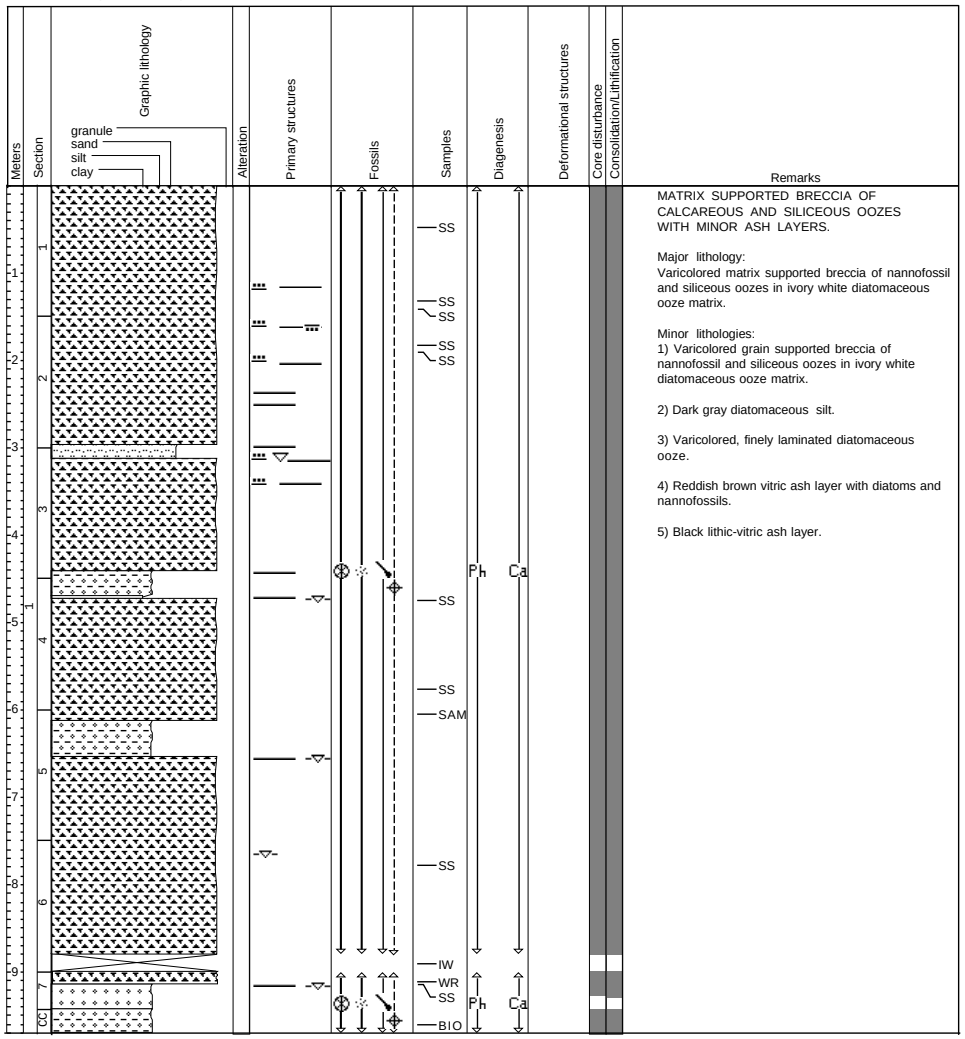
Site 1039, Hole B, Core 39X - Cored: 353.60 - 363.20 mbsf

1039B-39X



Site 1039, Hole B, Core 40X - Cored: 363.20 - 372.80 mbsf

1039B-40X



MATRIX SUPPORTED BRECCIA OF CALCAREOUS AND SILICEOUS OOZES WITH MINOR ASH LAYERS.

Major lithology:
Varicolored matrix supported breccia of nannofossil and siliceous oozes in ivory white diatomaceous ooze matrix.

Minor lithologies:
1) Varicolored grain supported breccia of nannofossil and siliceous oozes in ivory white diatomaceous ooze matrix.

2) Dark gray diatomaceous silt.

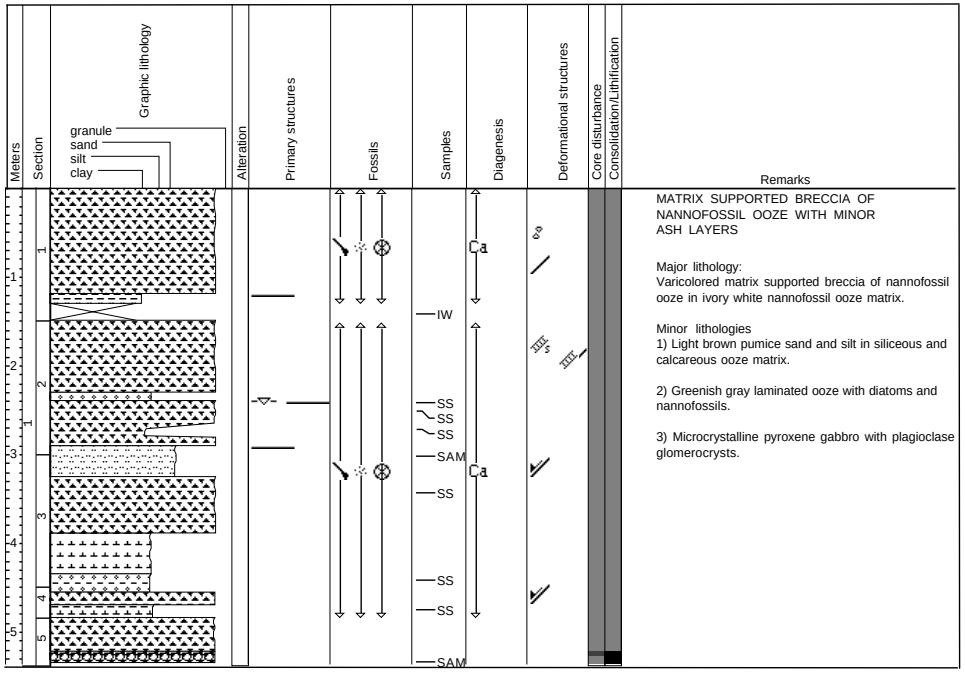
3) Varicolored, finely laminated diatomaceous ooze.

4) Reddish brown vitric ash layer with diatoms and nannofossils.

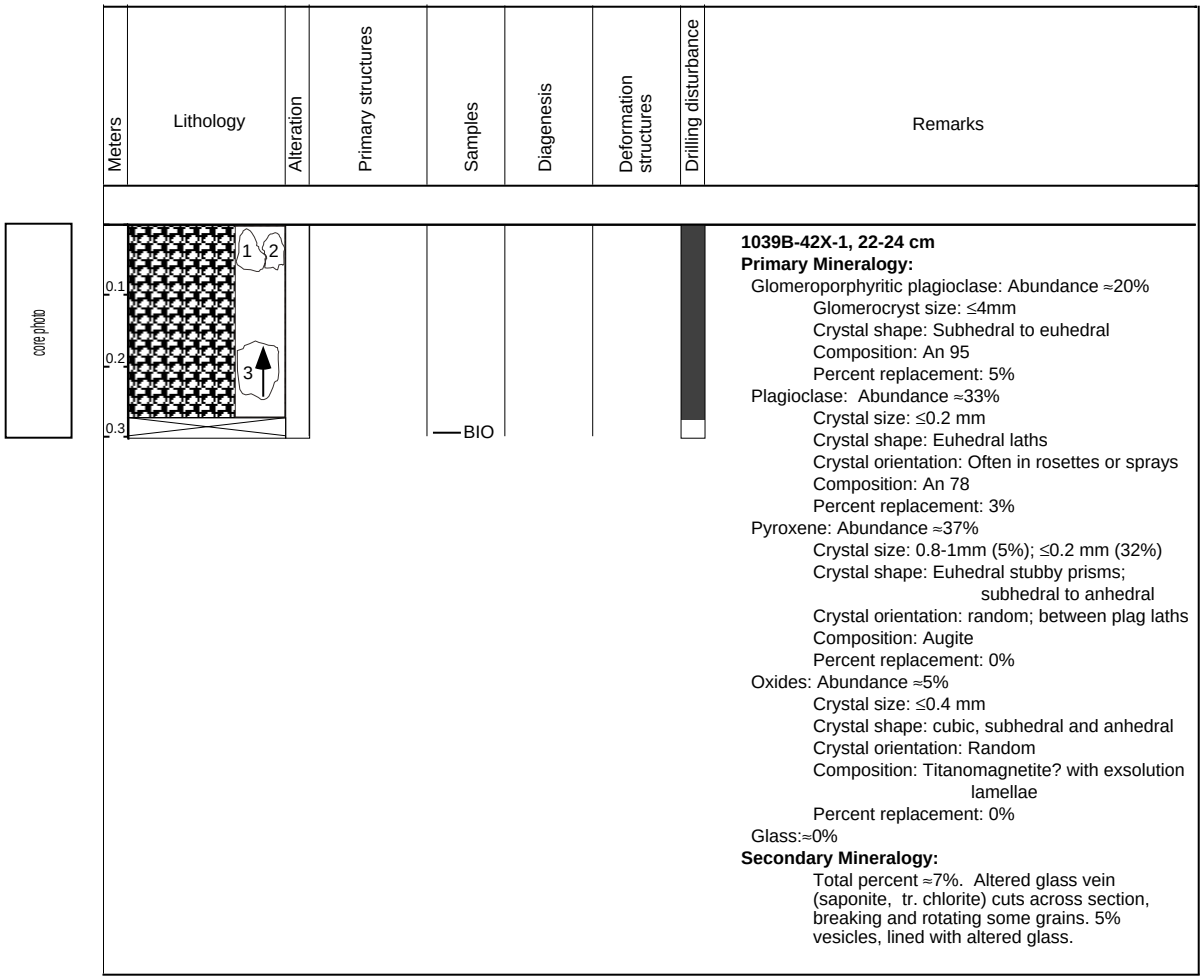
5) Black lithic-vitric ash layer.

Site 1039, Hole B, Core 41X - Cored: 372.80 - 380.80 mbsf

1039B-41X



Site 1039, Hole B, Core 42X, Section 1 - Cored: 380.80 - 384.30 mbsf



1039B-42X-1, 22-24 cm

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈20%
- Glomerocryst size: ≤4mm
- Crystal shape: Subhedral to euhedral
- Composition: An 95
- Percent replacement: 5%

Plagioclase: Abundance ≈33%
- Crystal size: ≤0.2 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition: An 78
- Percent replacement: 3%

Pyroxene: Abundance ≈37%
- Crystal size: 0.8-1mm (5%); ≤0.2 mm (32%)
- Crystal shape: Euhedral stubby prisms; subhedral to anhedral
- Crystal orientation: random; between plag laths
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈5%
- Crystal size: ≤0.4 mm
- Crystal shape: cubic, subhedral and anhedral
- Crystal orientation: Random
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈0%

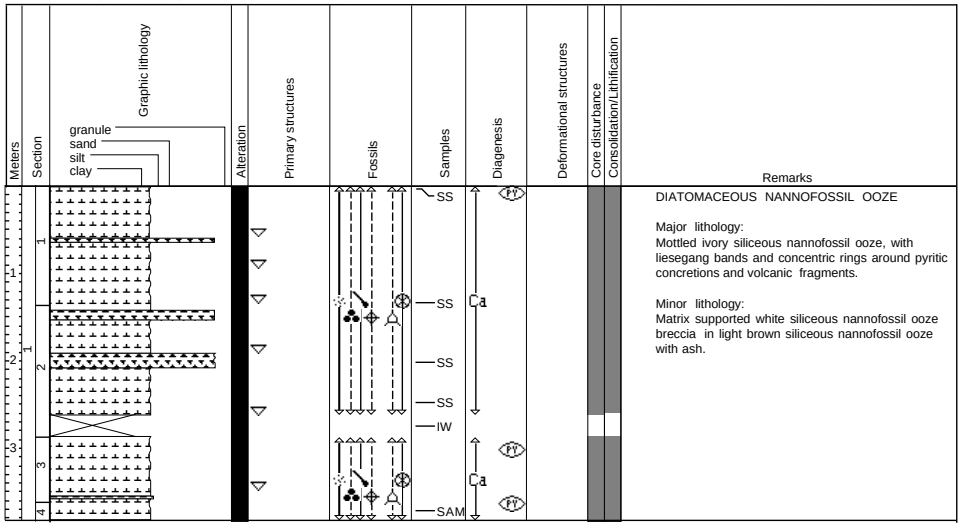
Secondary Mineralogy:

Total percent ≈7%. Altered glass vein (saponite, tr. chlorite) cuts across section, breaking and rotating some grains. 5% vesicles, lined with altered glass.

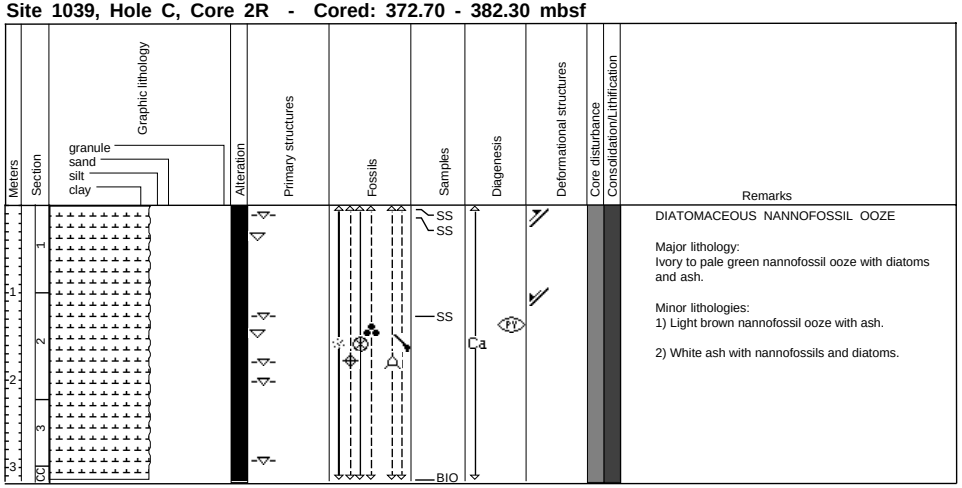
1039C-1R

1039C-2R

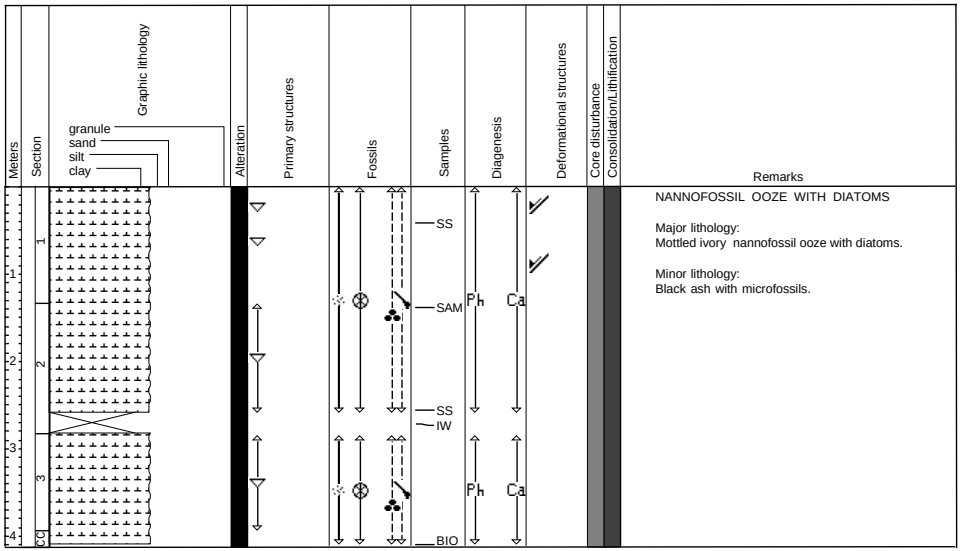
Site 1039, Hole C, Core 1R - Cored: 363.10 - 372.70 mbsf



Site 1039, Hole C, Core 2R - Cored: 372.70 - 382.30 mbsf



Site 1039, Hole C, Core 3R - Cored: 382.30 - 391.90 mbsf



NANNOFOSSIL OOZE WITH DIATOMS

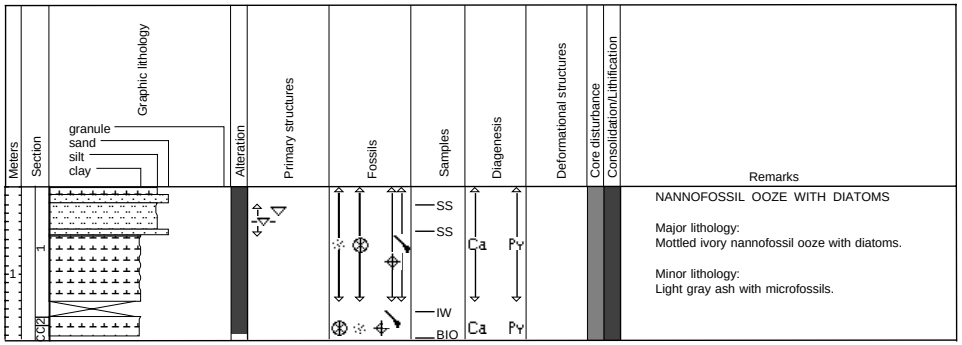
Major lithology:
Mottled ivory nannofossil ooze with diatoms.

Minor lithology:
Black ash with microfossils.

1039C-3R

1039C-4R

Site 1039, Hole C, Core 4R - Cored: 391.90 - 401.50 mbsf



NANNOFOSSIL OOZE WITH DIATOMS

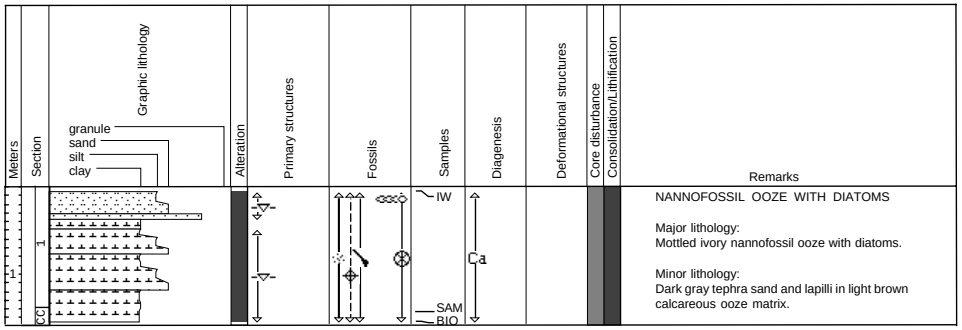
Major lithology:
Mottled ivory nannofossil ooze with diatoms.

Minor lithology:
Light gray ash with microfossils.

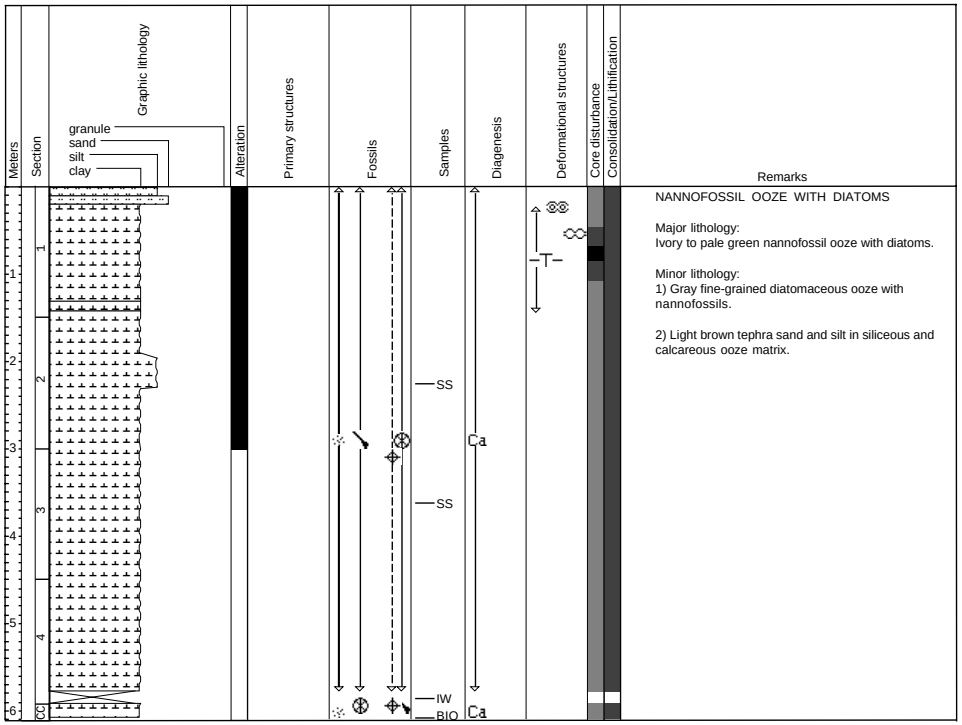
1039C-5R

1039C-6R

Site 1039, Hole C, Core 5R - Cored: 401.50 - 411.20 mbsf

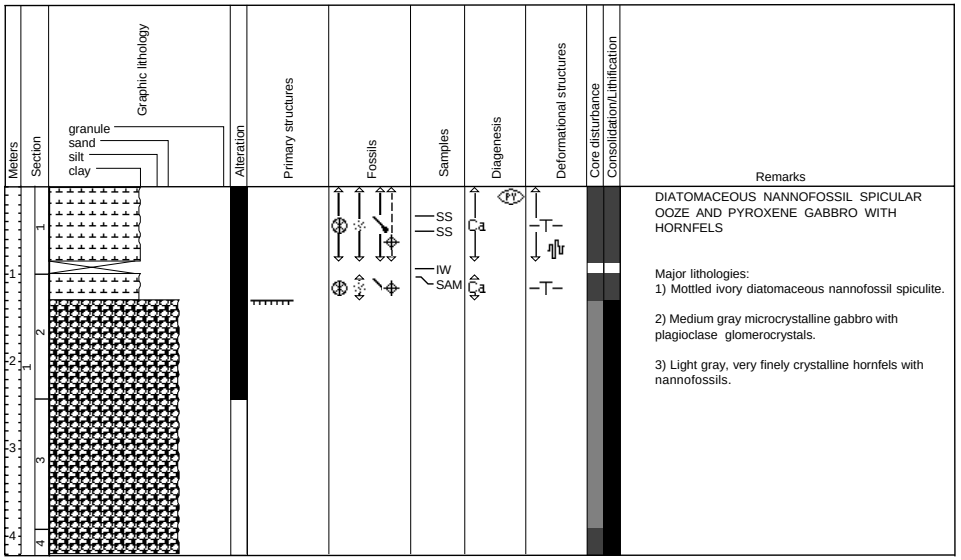


Site 1039, Hole C, Core 6R - Cored: 411.20 - 420.80 mbsf

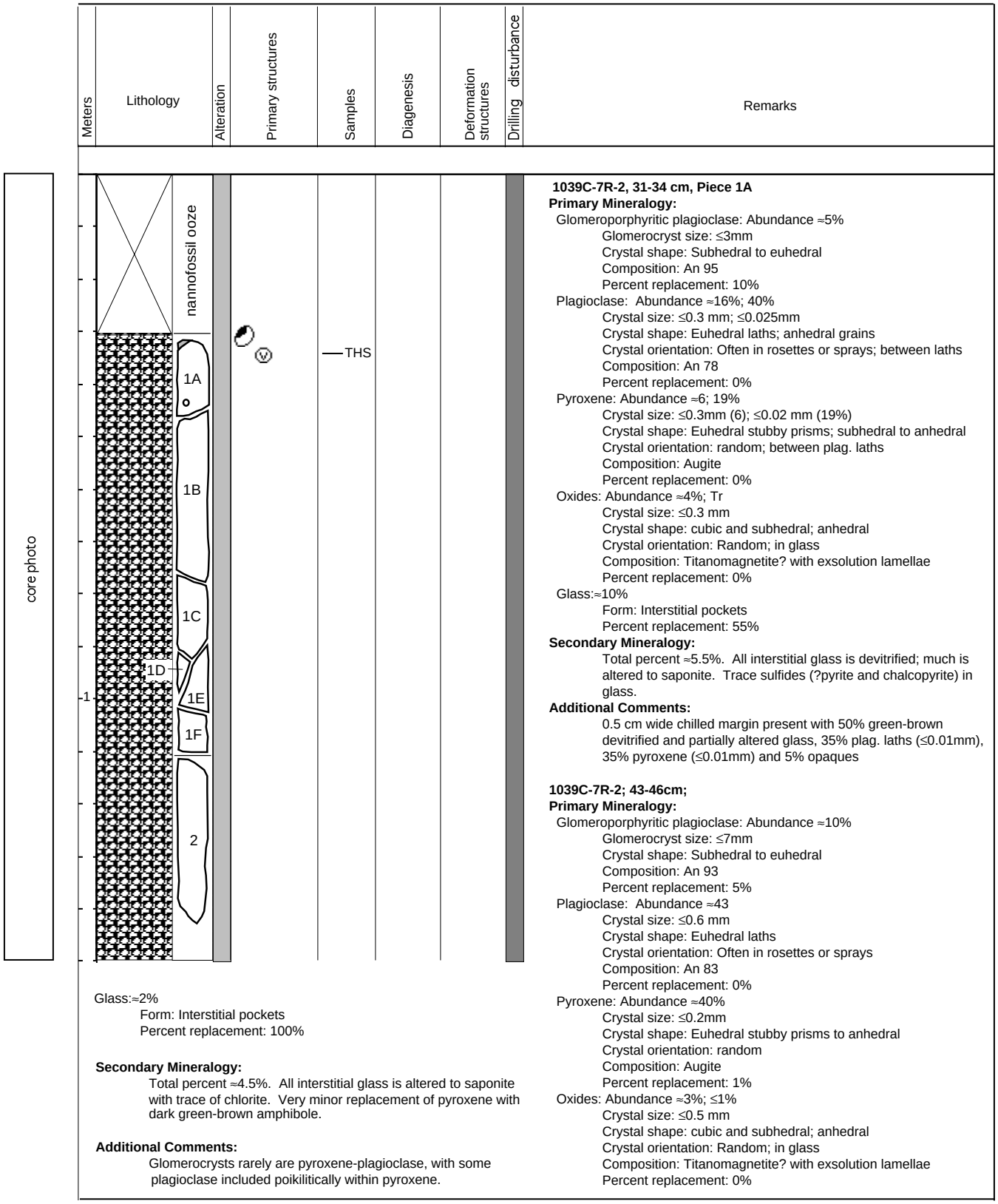


Site 1039, Hole C, Core 7R - Cored: 420.80 - 430.30 mbsf

1039C-7R



Site 1039, Hole C, Core 7R, Section 2 - Cored: 421.80 - 423.23 mbsf



Glass:≈2%
Form: Interstitial pockets
Percent replacement: 100%

Secondary Mineralogy:
Total percent ≈4.5%. All interstitial glass is altered to saponite with trace of chlorite. Very minor replacement of pyroxene with dark green-brown amphibole.

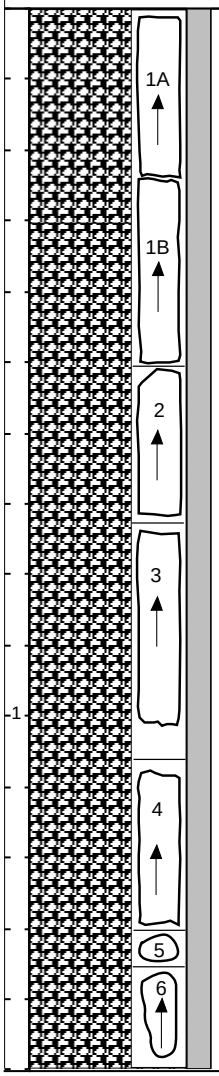
Additional Comments:
Glomerocrysts rarely are pyroxene-plagioclase, with some plagioclase included poikilitically within pyroxene.

1039C-7R-2, 31-34 cm, Piece 1A
Primary Mineralogy:
Glomeroporphyritic plagioclase: Abundance ≈5%
Glomerocryst size: ≤3mm
Crystal shape: Subhedral to euhedral
Composition: An 95
Percent replacement: 10%
Plagioclase: Abundance ≈16%; 40%
Crystal size: ≤0.3 mm; ≤0.025mm
Crystal shape: Euhedral laths; anhedral grains
Crystal orientation: Often in rosettes or sprays; between laths
Composition: An 78
Percent replacement: 0%
Pyroxene: Abundance ≈6; 19%
Crystal size: ≤0.3mm (6); ≤0.02 mm (19%)
Crystal shape: Euhedral stubby prisms; subhedral to anhedral
Crystal orientation: random; between plag. laths
Composition: Augite
Percent replacement: 0%
Oxides: Abundance ≈4%; Tr
Crystal size: ≤0.3 mm
Crystal shape: cubic and subhedral; anhedral
Crystal orientation: Random; in glass
Composition: Titanomagnetite? with exsolution lamellae
Percent replacement: 0%
Glass:≈10%
Form: Interstitial pockets
Percent replacement: 55%
Secondary Mineralogy:
Total percent ≈5.5%. All interstitial glass is devitrified; much is altered to saponite. Trace sulfides (?pyrite and chalcopyrite) in glass.
Additional Comments:
0.5 cm wide chilled margin present with 50% green-brown devitrified and partially altered glass, 35% plag. laths (≤0.01mm), 35% pyroxene (≤0.01mm) and 5% opaques

1039C-7R-2; 43-46cm;
Primary Mineralogy:
Glomeroporphyritic plagioclase: Abundance ≈10%
Glomerocryst size: ≤7mm
Crystal shape: Subhedral to euhedral
Composition: An 93
Percent replacement: 5%
Plagioclase: Abundance ≈43
Crystal size: ≤0.6 mm
Crystal shape: Euhedral laths
Crystal orientation: Often in rosettes or sprays
Composition: An 83
Percent replacement: 0%
Pyroxene: Abundance ≈40%
Crystal size: ≤0.2mm
Crystal shape: Euhedral stubby prisms to anhedral
Crystal orientation: random
Composition: Augite
Percent replacement: 1%
Oxides: Abundance ≈3%; ≤1%
Crystal size: ≤0.5 mm
Crystal shape: cubic and subhedral; anhedral
Crystal orientation: Random; in glass
Composition: Titanomagnetite? with exsolution lamellae
Percent replacement: 0%

Site 1039, Hole C, Core 7R, Section 3 - Cored: 423.23 - 424.72 mbsf

core photo



Remarks

1039C-7R-3, 73-76cm

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈10%
- Glomerocryst size: ≤7mm
- Crystal shape: Subhedral to euhedral
- Composition: An 93
- Percent replacement: 5%

Plagioclase: Abundance ≈43
- Crystal size: ≤0.6 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition: An 83
- Percent replacement: 0%

Pyroxene: Abundance ≈40%
- Crystal size: ≤0.2mm
- Crystal shape: Euhedral stubby prisms to anhedral
- Crystal orientation: random
- Composition: Augite
- Percent replacement: 1%

Oxides: Abundance ≈3%; ≤1%
- Crystal size: ≤0.5 mm
- Crystal shape: cubic and subhedral; anhedral
- Crystal orientation: Random; in glass
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈2%
- Form: Interstitial pockets
- Percent replacement: 100%

Secondary Mineralogy:

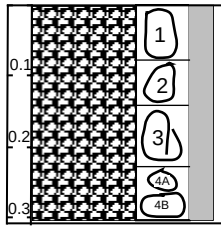
Total percent ≈4.5%. All interstitial glass is altered to saponite with trace of chlorite. Very minor replacement of pyroxene with dark green-brown amphibole.

Additional Comments:

Glomerocrysts rarely are pyroxene-plagioclase, with some plagioclase occasionally included poikilitically within pyroxene.

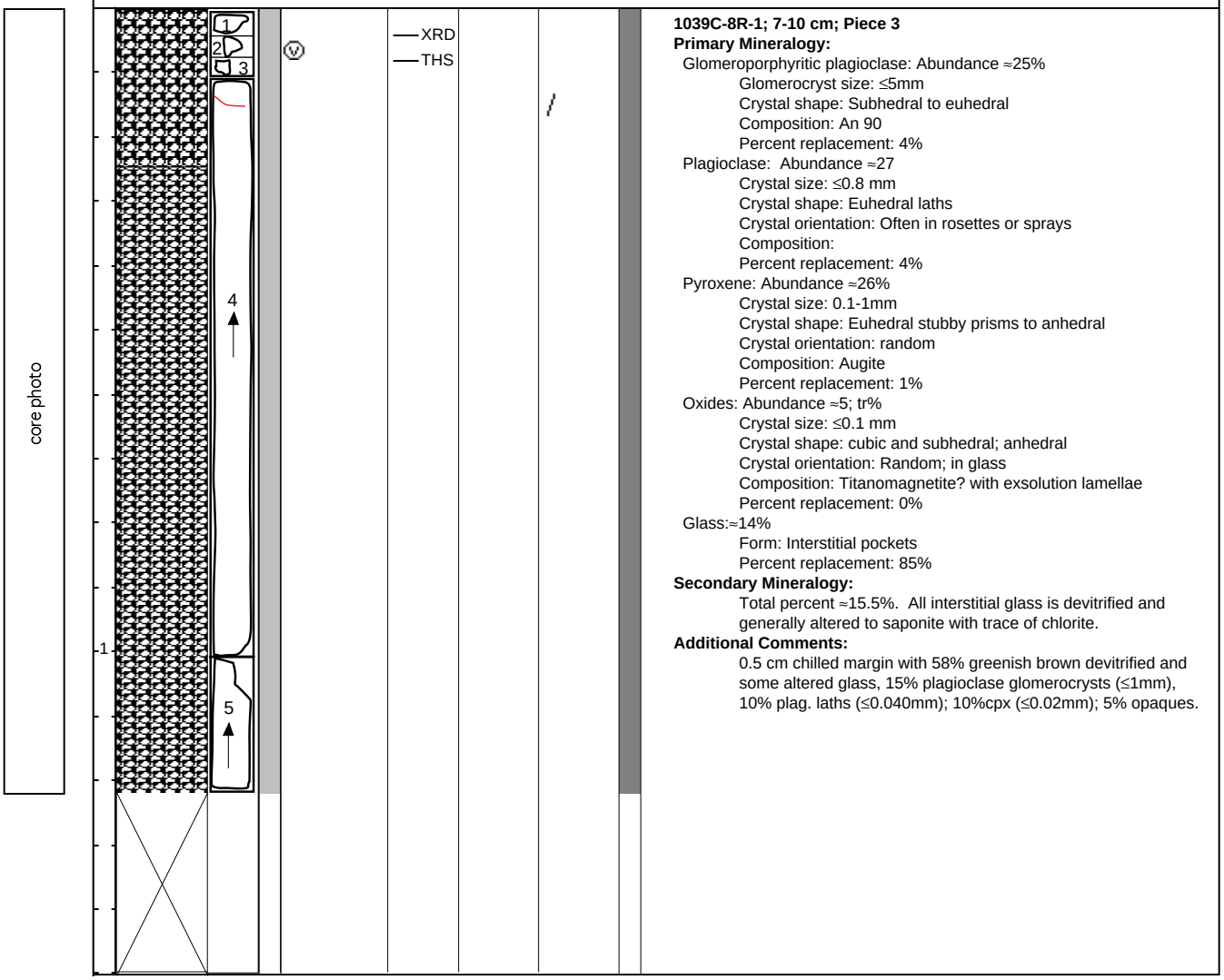
Site 1039, Hole C, Core 7R, Section 4 - Cored: 424.72 - 425.01 mbsf

core photo



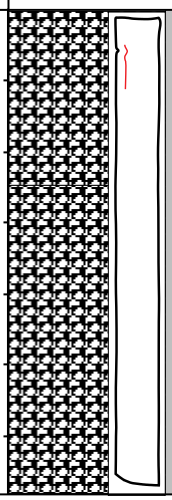
See Section 170-1039C-7R-3 for description.

Site 1039, Hole C, Core 8R, Section 1 - Cored: 430.30 - 431.52 mbsf



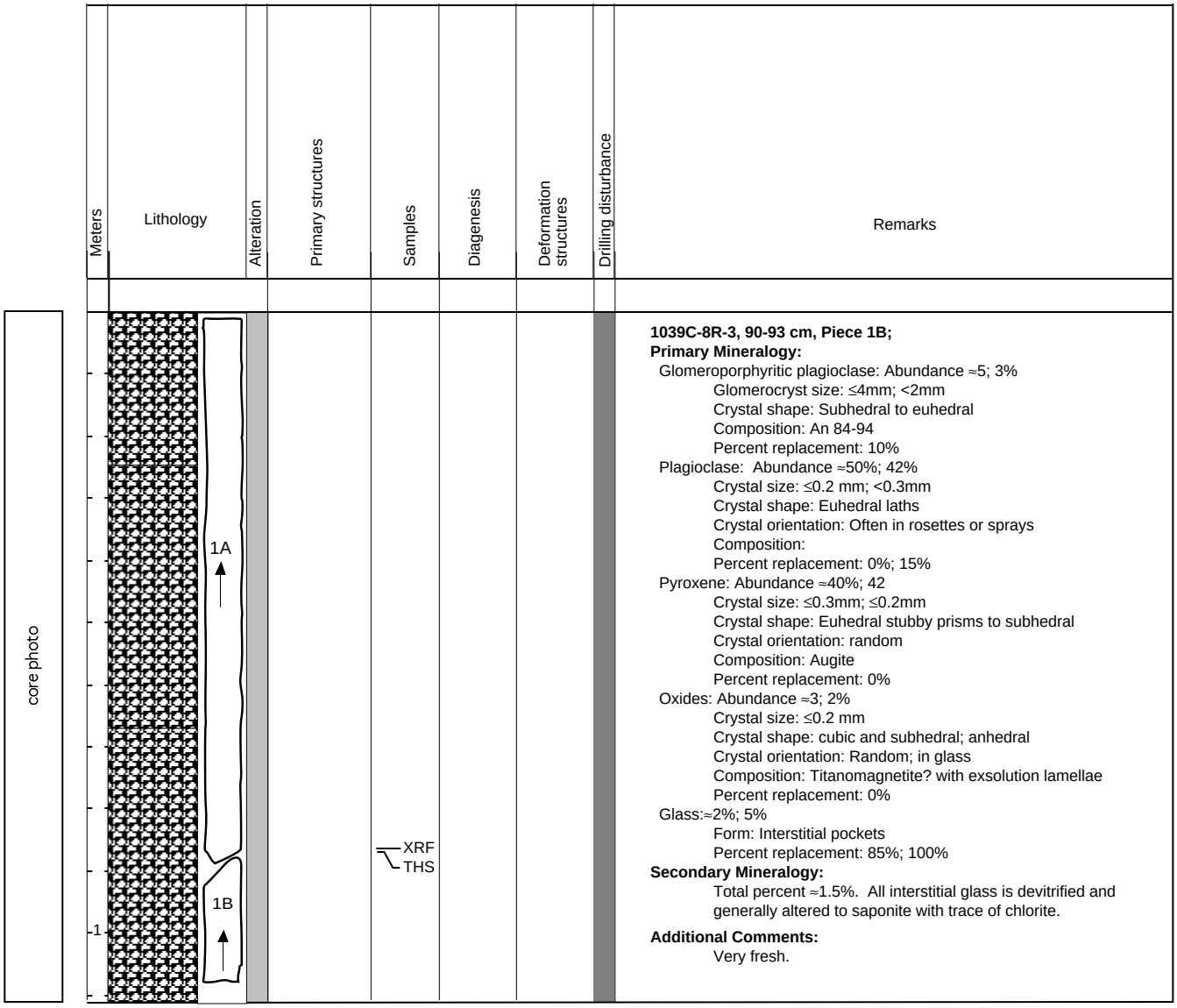
Site 1039, Hole C, Core 8R, Section 2 - Cored: 431.52 - 432.21 mbsf

core photo



Meters	Lithology	Alteration	Primary structures	Samples	Diagenesis	Deformation structures	Drilling disturbance	Remarks
								See Section 170-1039C-8R-1 for description.

Site 1039, Hole C, Core 8R, Section 3 - Cored: 432.21 - 433.33 mbsf



1039C-8R-3, 90-93 cm, Piece 1B;

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈5; 3%
- Glomerocryst size: ≤4mm; <2mm
- Crystal shape: Subhedral to euhedral
- Composition: An 84-94
- Percent replacement: 10%

Plagioclase: Abundance ≈50%; 42%
- Crystal size: ≤0.2 mm; <0.3mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 0%; 15%

Pyroxene: Abundance ≈40%; 42
- Crystal size: ≤0.3mm; ≤0.2mm
- Crystal shape: Euhedral stubby prisms to subhedral
- Crystal orientation: random
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈3; 2%
- Crystal size: ≤0.2 mm
- Crystal shape: cubic and subhedral; anhedral
- Crystal orientation: Random; in glass
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈2%; 5%
- Form: Interstitial pockets
- Percent replacement: 85%; 100%

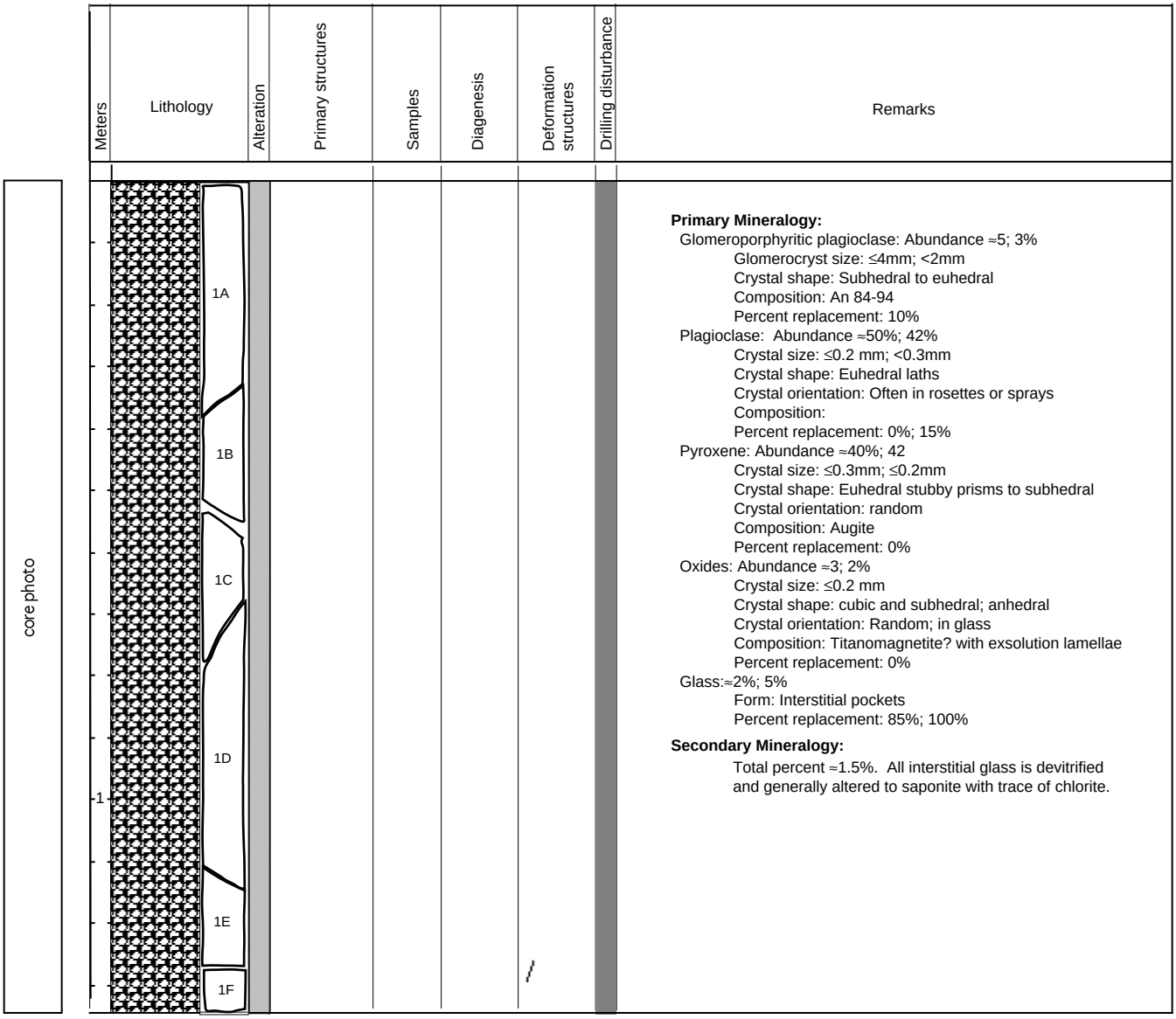
Secondary Mineralogy:

Total percent ≈1.5%. All interstitial glass is devitrified and generally altered to saponite with trace of chlorite.

Additional Comments:

Very fresh.

Site 1039, Hole C, Core 8R, Section 4 - Cored: 433.33 - 434.68 mbsf



Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈5; 3%
- Glomerocryst size: ≤4mm; <2mm
- Crystal shape: Subhedral to euhedral
- Composition: An 84-94
- Percent replacement: 10%

Plagioclase: Abundance ≈50%; 42%
- Crystal size: ≤0.2 mm; <0.3mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 0%; 15%

Pyroxene: Abundance ≈40%; 42
- Crystal size: ≤0.3mm; ≤0.2mm
- Crystal shape: Euhedral stubby prisms to subhedral
- Crystal orientation: random
- Composition: Augite
- Percent replacement: 0%

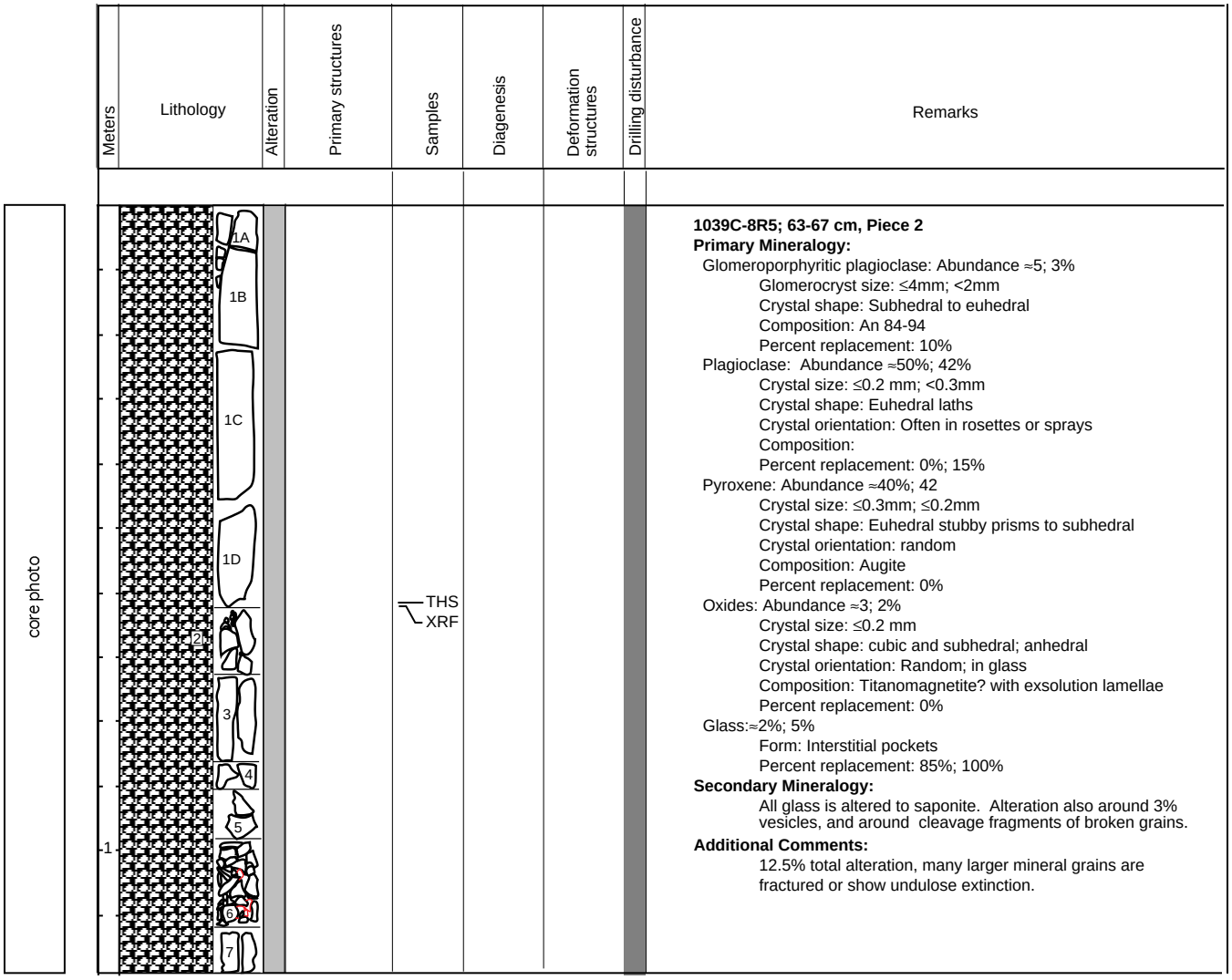
Oxides: Abundance ≈3; 2%
- Crystal size: ≤0.2 mm
- Crystal shape: cubic and subhedral; anhedral
- Crystal orientation: Random; in glass
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈2%; 5%
- Form: Interstitial pockets
- Percent replacement: 85%; 100%

Secondary Mineralogy:

Total percent ≈1.5%. All interstitial glass is devitrified and generally altered to saponite with trace of chlorite.

Site 1039, Hole C, Core 8R, Section 5 - Cored: 434.68 - 435.87 mbsf



1039C-8R5; 63-67 cm, Piece 2

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈5; 3%
- Glomerocryst size: ≤4mm; <2mm
- Crystal shape: Subhedral to euhedral
- Composition: An 84-94
- Percent replacement: 10%

Plagioclase: Abundance ≈50%; 42%
- Crystal size: ≤0.2 mm; <0.3mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 0%; 15%

Pyroxene: Abundance ≈40%; 42
- Crystal size: ≤0.3mm; ≤0.2mm
- Crystal shape: Euhedral stubby prisms to subhedral
- Crystal orientation: random
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈3; 2%
- Crystal size: ≤0.2 mm
- Crystal shape: cubic and subhedral; anhedral
- Crystal orientation: Random; in glass
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈2%; 5%
- Form: Interstitial pockets
- Percent replacement: 85%; 100%

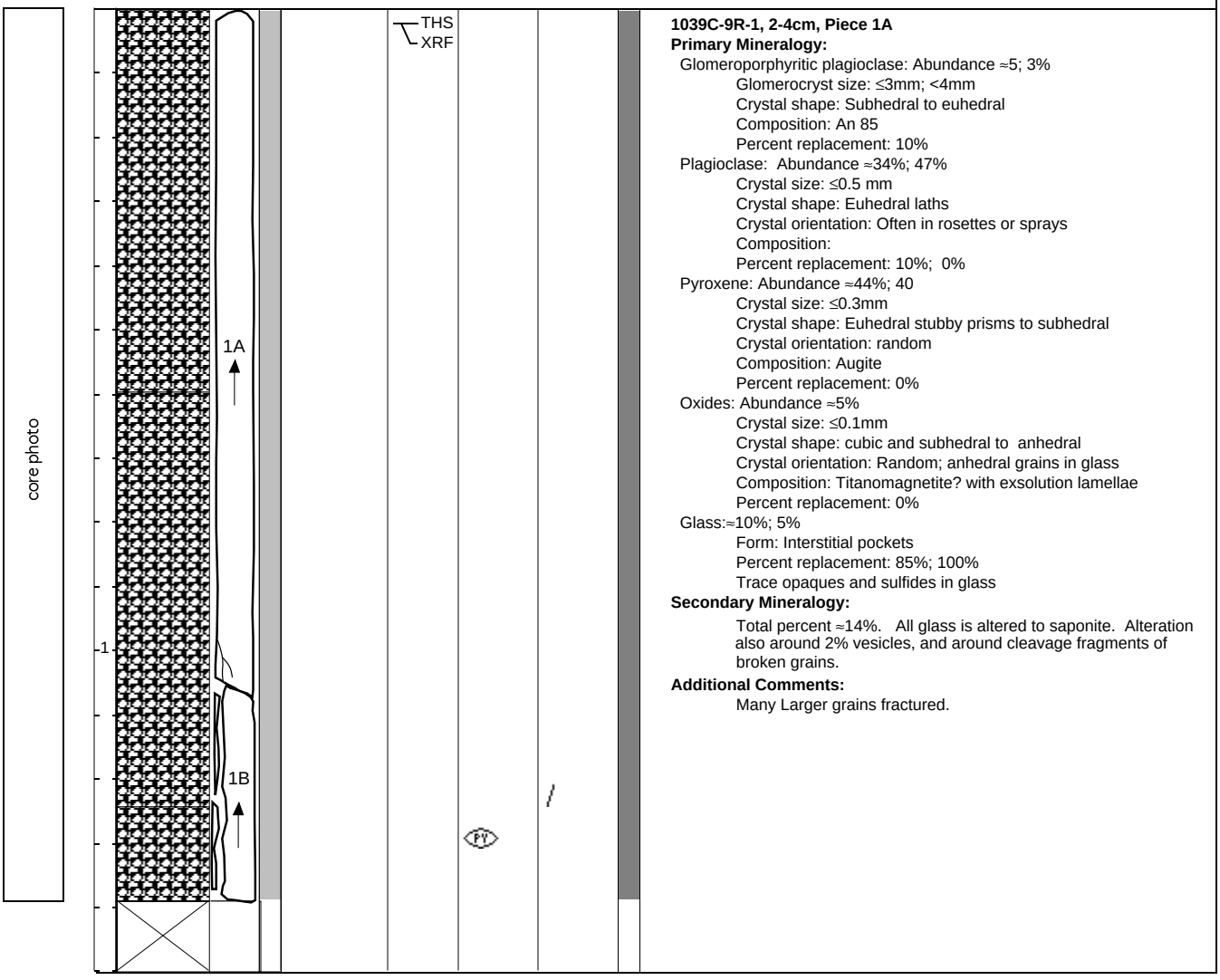
Secondary Mineralogy:

All glass is altered to saponite. Alteration also around 3% vesicles, and around cleavage fragments of broken grains.

Additional Comments:

12.5% total alteration, many larger mineral grains are fractured or show undulose extinction.

Site 1039, Hole C, Core 9R, Section 1 - Cored: 435.70 - 437.11 mbsf



1039C-9R-1, 2-4cm, Piece 1A

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈5; 3%
- Glomerocryst size: ≤3mm; <4mm
- Crystal shape: Subhedral to euhedral
- Composition: An 85
- Percent replacement: 10%

Plagioclase: Abundance ≈34%; 47%
- Crystal size: ≤0.5 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 10%; 0%

Pyroxene: Abundance ≈44%; 40
- Crystal size: ≤0.3mm
- Crystal shape: Euhedral stubby prisms to subhedral
- Crystal orientation: random
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈5%
- Crystal size: ≤0.1mm
- Crystal shape: cubic and subhedral to anhedral
- Crystal orientation: Random; anhedral grains in glass
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈10%; 5%
- Form: Interstitial pockets
- Percent replacement: 85%; 100%
- Trace opaques and sulfides in glass

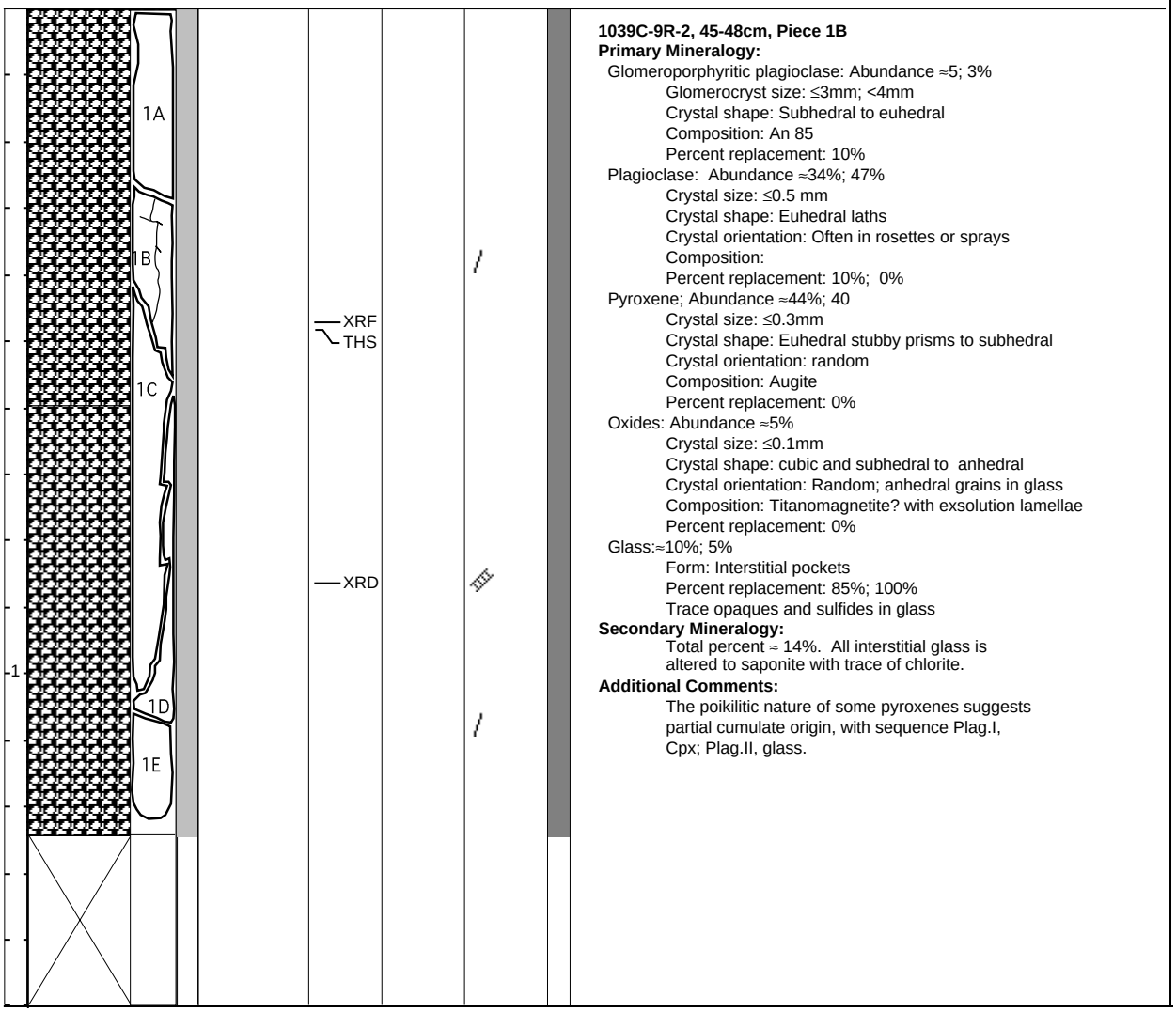
Secondary Mineralogy:

Total percent ≈14%. All glass is altered to saponite. Alteration also around 2% vesicles, and around cleavage fragments of broken grains.

Additional Comments:

Many Larger grains fractured.

Site 1039, Hole C, Core 9R, Section 2 - Cored: 437.11 - 438.24 mbsf



1039C-9R-2, 45-48cm, Piece 1B

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈5; 3%
- Glomerocryst size: ≤3mm; <4mm
- Crystal shape: Subhedral to euhedral
- Composition: An 85
- Percent replacement: 10%

Plagioclase: Abundance ≈34%; 47%
- Crystal size: ≤0.5 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 10%; 0%

Pyroxene; Abundance ≈44%; 40
- Crystal size: ≤0.3mm
- Crystal shape: Euhedral stubby prisms to subhedral
- Crystal orientation: random
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈5%
- Crystal size: ≤0.1mm
- Crystal shape: cubic and subhedral to anhedral
- Crystal orientation: Random; anhedral grains in glass
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈10%; 5%
- Form: Interstitial pockets
- Percent replacement: 85%; 100%
- Trace opaques and sulfides in glass

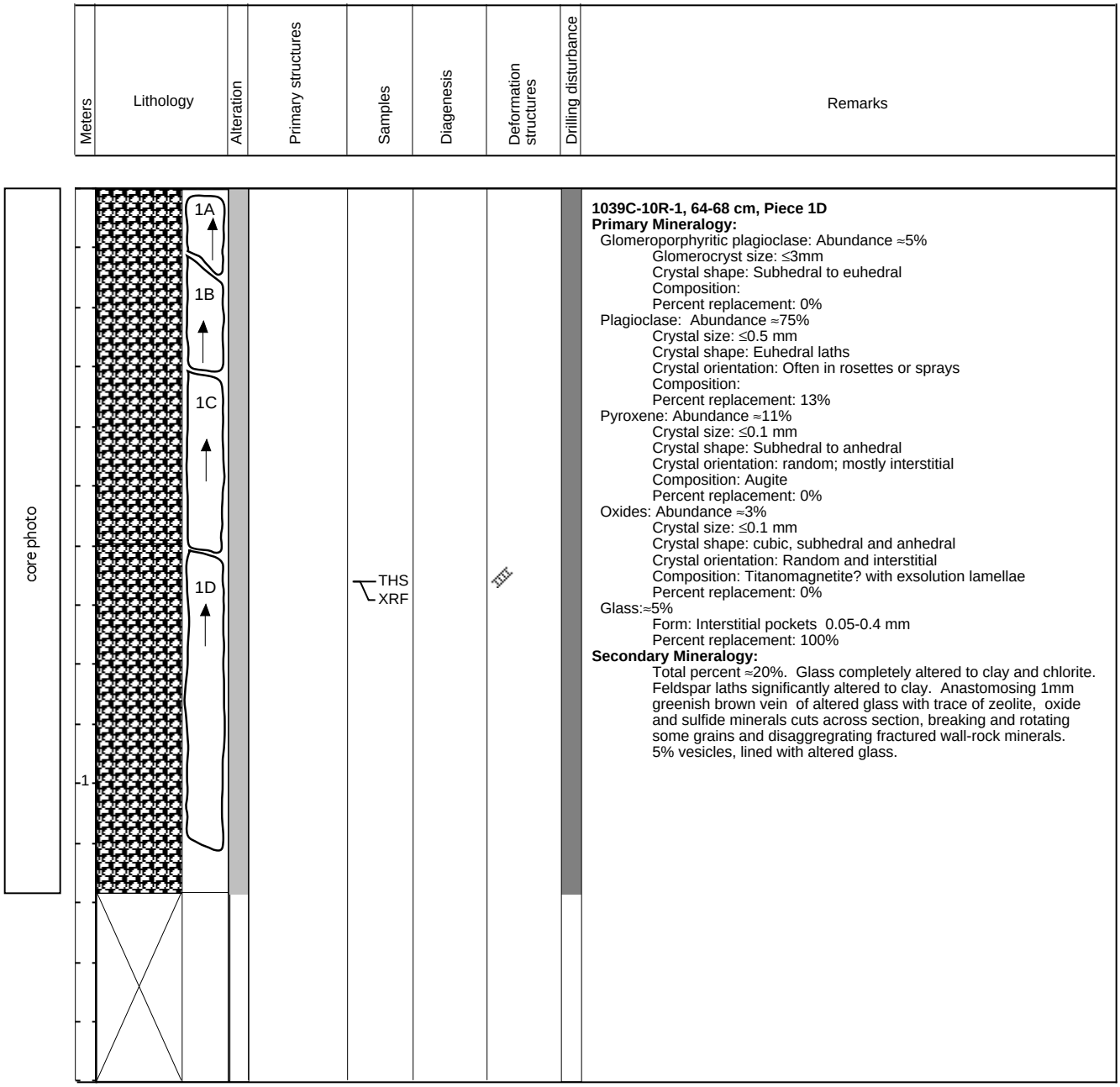
Secondary Mineralogy:

Total percent ≈ 14%. All interstitial glass is altered to saponite with trace of chlorite.

Additional Comments:

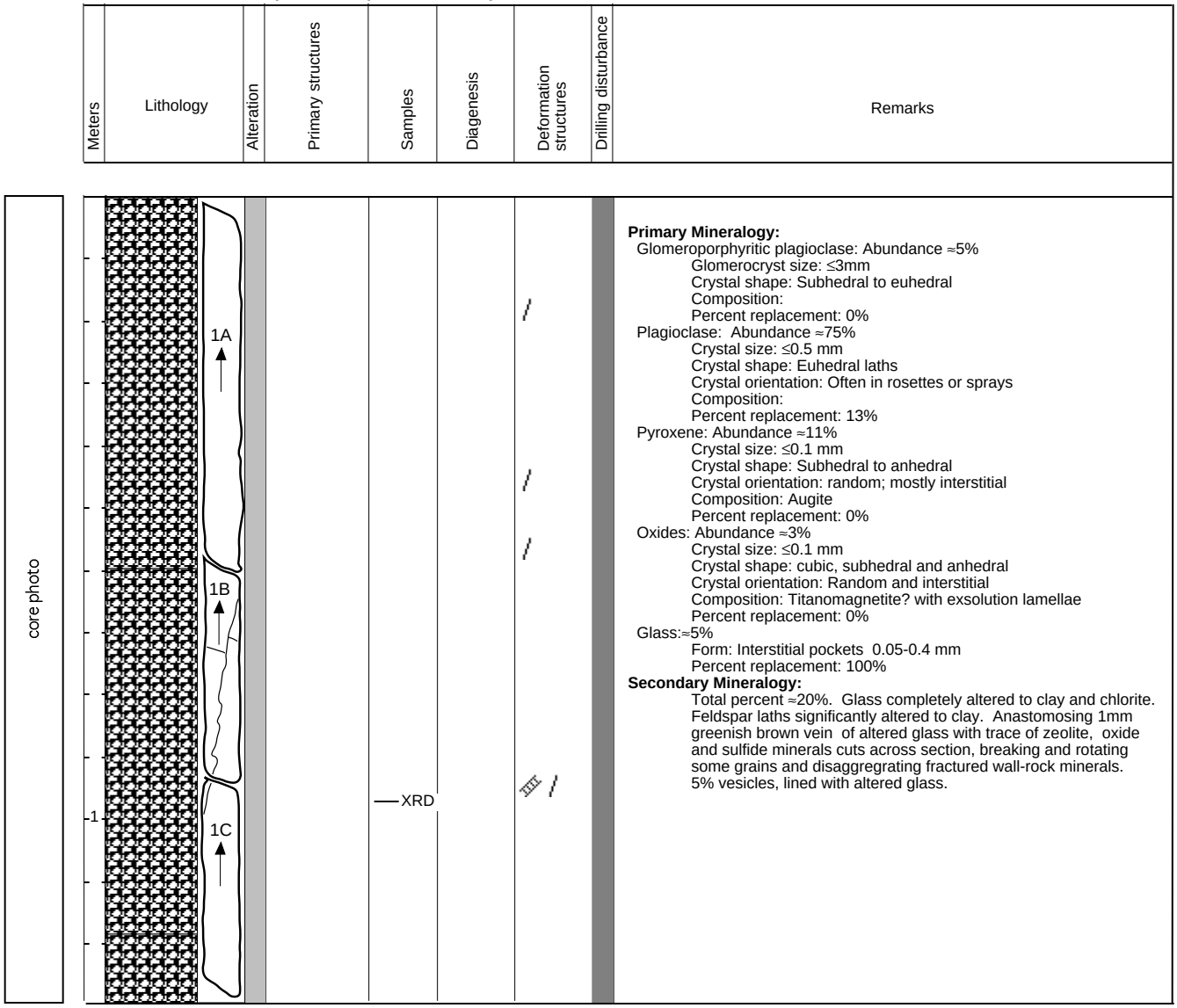
The poikilitic nature of some pyroxenes suggests partial cumulate origin, with sequence Plag.I, Cpx; Plag.II, glass.

Site 1039, Hole C, Core 10R, Section 1 - Cored: 439.90 - 441.11 mbsf



1039C-10R-1, 64-68 cm, Piece 1D
Primary Mineralogy:
Glomeroporphyritic plagioclase: Abundance ≈5%
Glomerocryst size: ≤3mm
Crystal shape: Subhedral to euhedral
Composition:
Percent replacement: 0%
Plagioclase: Abundance ≈75%
Crystal size: ≤0.5 mm
Crystal shape: Euhedral laths
Crystal orientation: Often in rosettes or sprays
Composition:
Percent replacement: 13%
Pyroxene: Abundance ≈11%
Crystal size: ≤0.1 mm
Crystal shape: Subhedral to anhedral
Crystal orientation: random; mostly interstitial
Composition: Augite
Percent replacement: 0%
Oxides: Abundance ≈3%
Crystal size: ≤0.1 mm
Crystal shape: cubic, subhedral and anhedral
Crystal orientation: Random and interstitial
Composition: Titanomagnetite? with exsolution lamellae
Percent replacement: 0%
Glass:≈5%
Form: Interstitial pockets 0.05-0.4 mm
Percent replacement: 100%
Secondary Mineralogy:
Total percent ≈20%. Glass completely altered to clay and chlorite. Feldspar laths significantly altered to clay. Anastomosing 1mm greenish brown vein of altered glass with trace of zeolite, oxide and sulfide minerals cuts across section, breaking and rotating some grains and disaggregrating fractured wall-rock minerals. 5% vesicles, lined with altered glass.

Site 1039, Hole C, Core 10R, Section 2 - Cored: 439.90 443.00 mbsf



Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈5%
- Glomerocryst size: ≤3mm
- Crystal shape: Subhedral to euhedral
- Composition:
- Percent replacement: 0%

Plagioclase: Abundance ≈75%
- Crystal size: ≤0.5 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 13%

Pyroxene: Abundance ≈11%
- Crystal size: ≤0.1 mm
- Crystal shape: Subhedral to anhedral
- Crystal orientation: random; mostly interstitial
- Composition: Augite
- Percent replacement: 0%

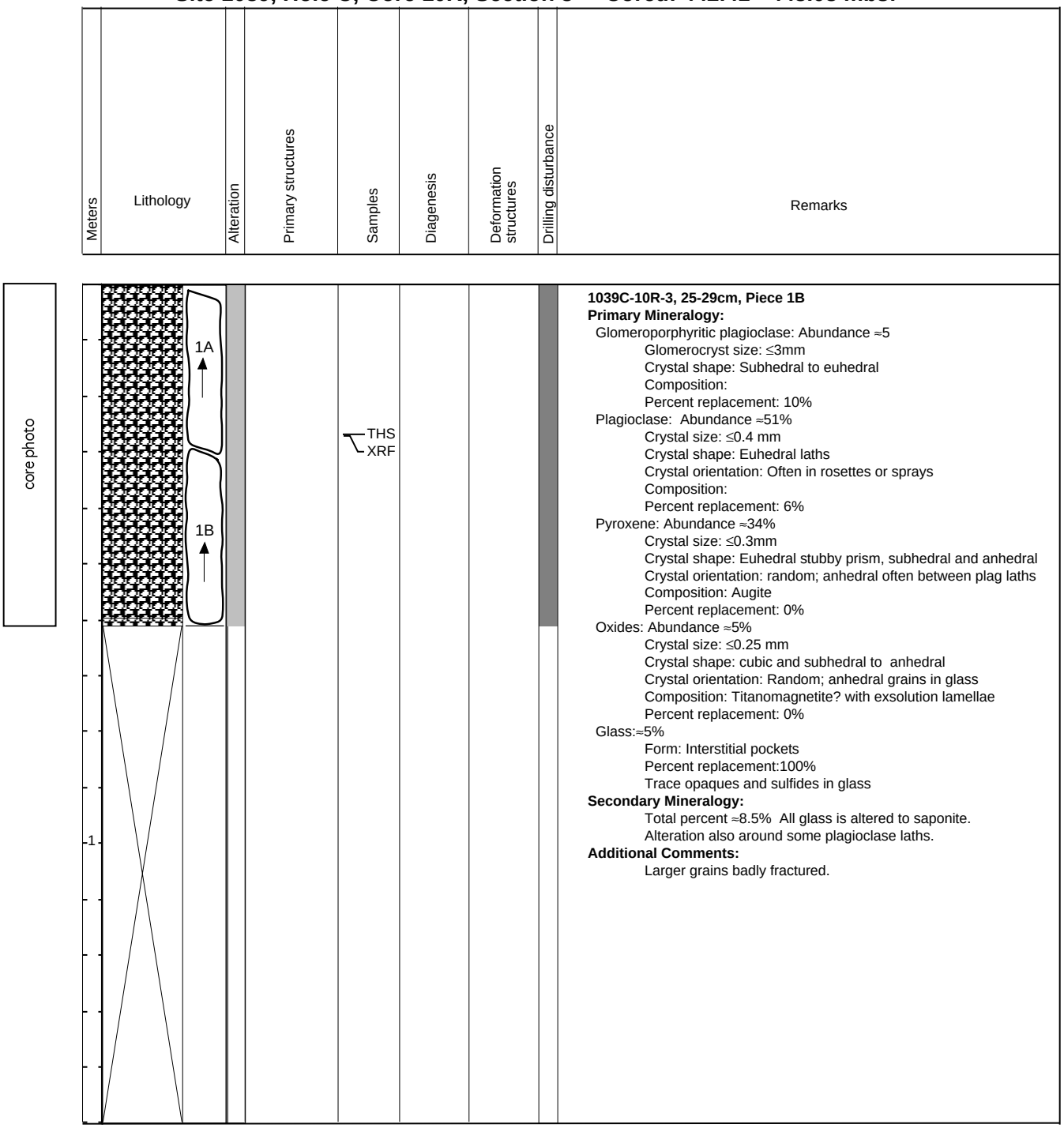
Oxides: Abundance ≈3%
- Crystal size: ≤0.1 mm
- Crystal shape: cubic, subhedral and anhedral
- Crystal orientation: Random and interstitial
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈5%
- Form: Interstitial pockets 0.05-0.4 mm
- Percent replacement: 100%

Secondary Mineralogy:

Total percent ≈20%. Glass completely altered to clay and chlorite. Feldspar laths significantly altered to clay. Anastomosing 1mm greenish brown vein of altered glass with trace of zeolite, oxide and sulfide minerals cuts across section, breaking and rotating some grains and disaggregrating fractured wall-rock minerals. 5% vesicles, lined with altered glass.

Site 1039, Hole C, Core 10R, Section 3 - Cored: 442.41 - 443.03 mbsf



1039C-10R-3, 25-29cm, Piece 1B

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈5
- Glomerocryst size: ≤3mm
- Crystal shape: Subhedral to euhedral
- Composition:
- Percent replacement: 10%

Plagioclase: Abundance ≈51%
- Crystal size: ≤0.4 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 6%

Pyroxene: Abundance ≈34%
- Crystal size: ≤0.3mm
- Crystal shape: Euhedral stubby prism, subhedral and anhedral
- Crystal orientation: random; anhedral often between plag laths
- Composition: Augite
- Percent replacement: 0%

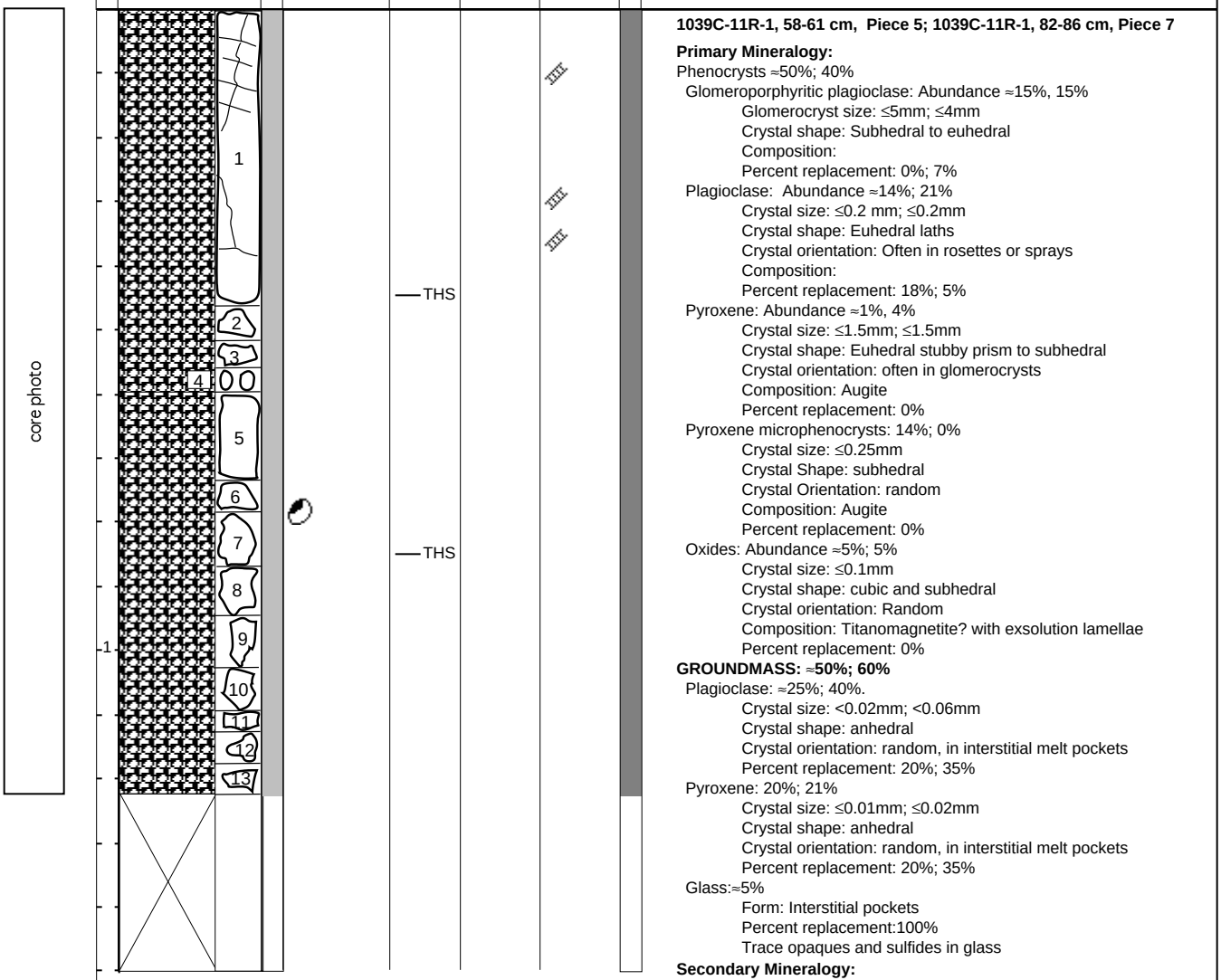
Oxides: Abundance ≈5%
- Crystal size: ≤0.25 mm
- Crystal shape: cubic and subhedral to anhedral
- Crystal orientation: Random; anhedral grains in glass
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈5%
- Form: Interstitial pockets
- Percent replacement:100%
- Trace opaques and sulfides in glass

Secondary Mineralogy:
- Total percent ≈8.5% All glass is altered to saponite.
- Alteration also around some plagioclase laths.

Additional Comments:
- Larger grains badly fractured.

Site 1039, Hole C, Core 11R, Section 1 - Cored: 443.00 444.22 mbsf



1039C-11R-1, 58-61 cm, Piece 5; 1039C-11R-1, 82-86 cm, Piece 7

Primary Mineralogy:

Phenocrysts ≈50%; 40%

Glomeroporphyritic plagioclase: Abundance ≈15%, 15%
- Glomerocryst size: ≤5mm; ≤4mm
- Crystal shape: Subhedral to euhedral
- Composition:
- Percent replacement: 0%; 7%

Plagioclase: Abundance ≈14%; 21%
- Crystal size: ≤0.2 mm; ≤0.2mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 18%; 5%

Pyroxene: Abundance ≈1%, 4%
- Crystal size: ≤1.5mm; ≤1.5mm
- Crystal shape: Euhedral stubby prism to subhedral
- Crystal orientation: often in glomerocrysts
- Composition: Augite
- Percent replacement: 0%

Pyroxene microphenocrysts: 14%; 0%
- Crystal size: ≤0.25mm
- Crystal Shape: subhedral
- Crystal Orientation: random
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈5%; 5%
- Crystal size: ≤0.1mm
- Crystal shape: cubic and subhedral
- Crystal orientation: Random
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

GROUNDMASS: ≈50%; 60%

Plagioclase: ≈25%; 40%.
- Crystal size: <0.02mm; <0.06mm
- Crystal shape: anhedral
- Crystal orientation: random, in interstitial melt pockets
- Percent replacement: 20%; 35%

Pyroxene: 20%; 21%
- Crystal size: ≤0.01mm; ≤0.02mm
- Crystal shape: anhedral
- Crystal orientation: random, in interstitial melt pockets
- Percent replacement: 20%; 35%

Glass:≈5%
- Form: Interstitial pockets
- Percent replacement:100%
- Trace opaques and sulfides in glass

Secondary Mineralogy:

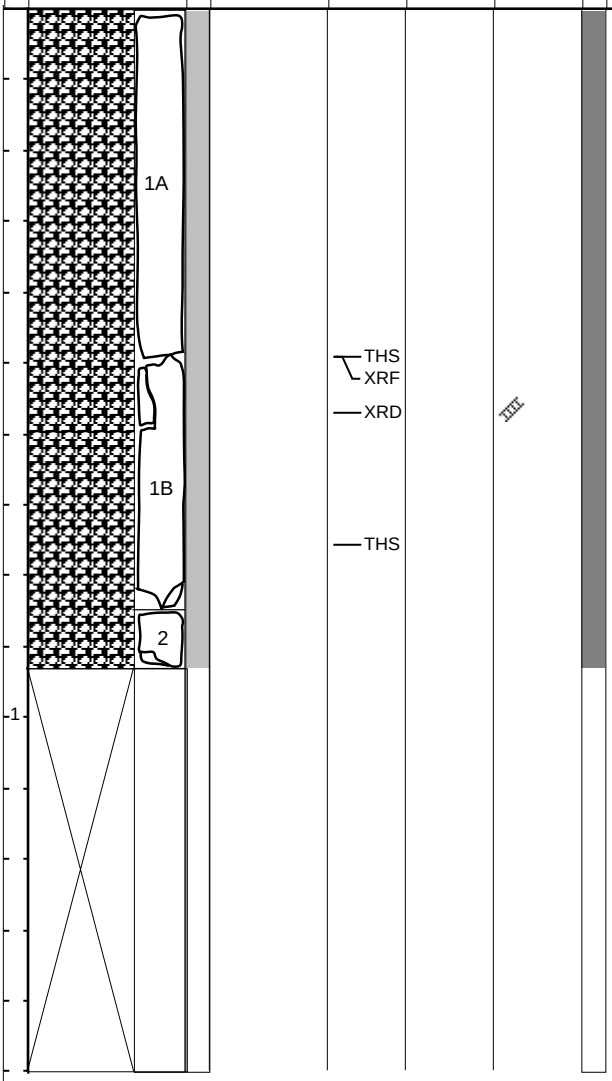
Total percent ≈13% for 11R-1, Piece 5. All glass in interstitial pockets and round groundmass crystallites is altered to saponite plus trace of chlorite.17% total alteration for Piece 7. Glass in interstitial pockets, around groundmass crystallites, and in 3% vesicles is altered to saponite plus trace chlorite.

Additional Comments:

Glomerocrysts of plag., plag. plus pyroxene, and pyroxene alone. Sub-ophitic texture common in plag.-pyroxene glomerocrysts. Larger grains badly fractured and show undulose extinction. Piece 7 shows glass rich margins or bands.

Site 1039, Hole C, Core 11R, Section 2 - Cored: 444.22 - 445.14 mbsf

core photo



GROUNDMASS: ≈40

Plagioclase: ≈16%.
- Crystal size: <0.05mm
- Crystal shape: laths and anhedral
- Crystal orientation: random, in interstitial melt pockets
- Percent replacement: 0

Pyroxene: 15%
- Crystal size: ≤0.025mm
- Crystal shape: anhedral
- Crystal orientation: random, in interstitial melt pockets
- Percent replacement: 0%

Glass:≈9%
- Form: Interstitial pockets, veins
- Percent replacement:60%
- Trace opaques and sulfides in glass

Additional Comments

Glomerocrysts of plag., plag. plus pyroxene, and pyroxene alone. In Cpx. glomerocrysts, nearly straight grain boundaries and equal angle triple junctions suggest recrystallization. A large pyroxene grain poikilitically encloses plag. grains which appear partly resorbed cumulate evidence? Several 1-2mm wide anastomosing veins cross slide, breaking and rotating some grains.

Remarks

1039C-11R-2, 47-50 cm, Piece 1A

Primary Mineralogy:

Glomeroporphyritic plagioclase: Abundance ≈10%
- Glomerocryst size: ≤4mm
- Crystal shape: Subhedral to euhedral
- Composition: An85
- Percent replacement: 5%

Plagioclase: Abundance ≈40%
- Crystal size: ≤0.4 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 0%

Pyroxene: Abundance ≈5%
- Crystal size: ≤.8mm
- Crystal shape: Euhedral stubby prism
- Crystal orientation:random
- Composition: Augite
- Percent replacement: 0%

Pyroxene microphenocrysts: 35%
- Crystal size: ≤0.1mm
- Crystal Shape: subhedral
- Crystal Orientation: random; often between plag. laths
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈5%
- Crystal size: ≤0.05mm
- Crystal shape: cubic and subhedral
- Crystal orientation: Random
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Glass:≈5%
- Form: Interstitial pockets, ovoid vugs
- Percent replacement:100%
- Trace opaques and sulfides in glass

Secondary Mineralogy:

Total percent ≈5.5%. Glass in interstitial pockets and vugs is altered to saponite plus chlorite plus trace of zeolites.

Additional Comments:

Glomerocrysts of plag., plag. plus pyroxene, and pyroxene alone. In Cpx.glomerocrysts, nearly straight grain boundaries and equal angle triple junctions suggest recrystallization.

1039C-11R-2, 74-76 cm, Piece 1B

Primary Mineralogy:

Phenocrysts:

Glomeroporphyritic plagioclase: Abundance ≈10%
- Glomerocryst size: ≤3mm
- Crystal shape: Subhedral to euhedral
- Composition: An94
- Percent replacement: 0%

Plagioclase: Abundance ≈23%
- Crystal size: ≤0.6 mm
- Crystal shape: Euhedral laths
- Crystal orientation: Often in rosettes or sprays
- Composition:
- Percent replacement: 0%

Pyroxene: Abundance ≈22%
- Crystal size: ≤ 1 mm
- Crystal shape: Euhedral stubby prism or subhedral
- Crystal orientation:random; rarely growing in rosettes
- Composition: Augite
- Percent replacement: 0%

Oxides: Abundance ≈5%
- Crystal size: ≤0.1mm
- Crystal shape: cubic and subhedral
- Crystal orientation: Random; rarely in rosettes and sprays
- Composition: Titanomagnetite? with exsolution lamellae
- Percent replacement: 0%

Secondary Mineralogy:

Total percent ≈5%. Glass in interstitial pockets and veins is devitrified, some is altered to saponite plus chlorite.

Figure 4, Chapter 2. Patterns and symbols used for lithology, abundance, structural features, fossils, and bioturbation in AppleCORE during Leg 170.

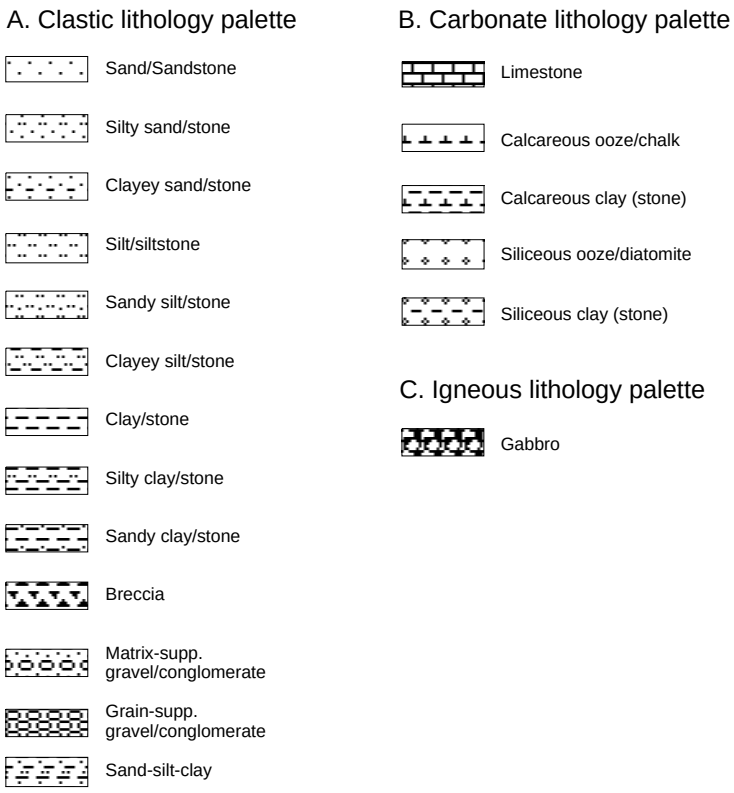


Figure 5, Chapter 2. Gray-scale patterns for three data types used with customized AppleCORE visual core description program.

	Alteration	Drilling disturbance	Lithification
Extreme	75-100%	Flow-in; Rubble and slurry	Lithified
Strong	50-75%	Disruption, contortion; Biscuits and slurry	Consolidated
Moderate	25-50%	Some contortion, bending; Strongly fractured	Firm
Weak	1-25%	Bending of layers; Slightly fractured	Soft
None	0%	None	Soupy
Not indicated			

Figure 6, Chapter 2. Symbols used with customized AppleCORE visual core description program.

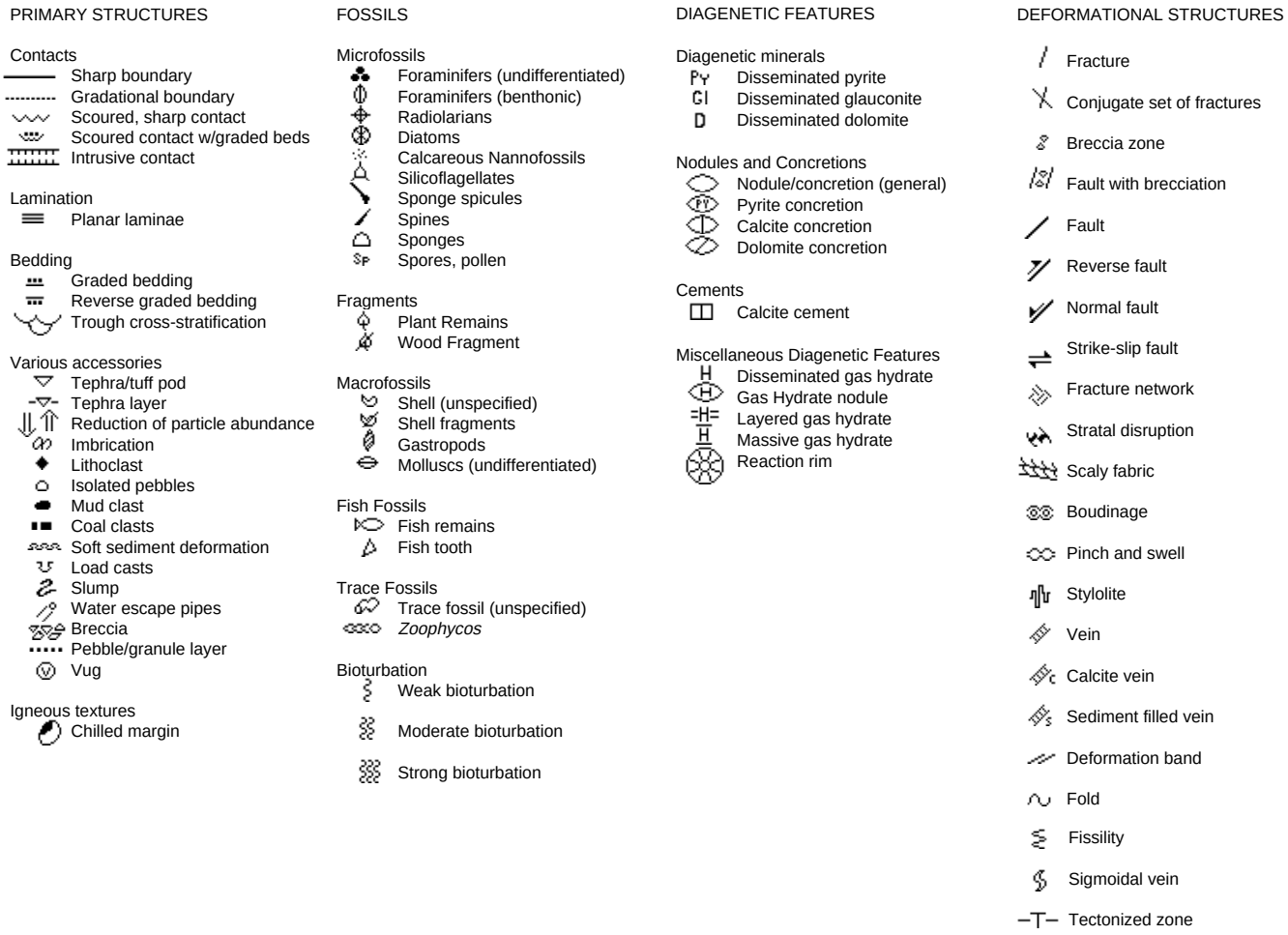


Figure 7, Chapter 2. Abundance plots associated with symbols used with customized AppleCORE visual core description program.